2019 Report
of the Species Survival Commission
and the Global Species and
Key Biodiversity Area Programme
In this issue

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SSC Chair’s Report

From 6 to 9 October 2019, we had the unique privilege to once again bring together our network of more than 9,300 members in 161 Conservation Committees, Specialist Groups, Task Forces and Stand-alone Red List Authorities, as well as Secretariat colleagues and partner organizations, at the Fourth SSC Leaders Meeting in Abu Dhabi. It was an energetic, enthusiastic and contagious meeting, where learning, planning, thinking and cooperating took center stage. Much progress occurred during plenaries as well as break out groups, but especially at informal exchanges in the hallways, over dinner or by the pool. New partnerships were struck, ideas developed, friendships made, and all voices united in the Abu Dhabi Call for Global Species Conservation Action, an inspirational document inviting to work together, especially governments, to save species at the highest risk of disappearing and address key threats driving population declines and extinctions. The sustained support of Environmental Agency – Abu Dhabi (EAD) to the work of SSC, and their active engagement in four SSC Leaders Meetings to date (2008, 2012, 2015 and 2019), is a clear indicator of their commitment to IUCN’s work on species conservation and their belief in the power of the network of experts of the Commission to deliver. We are deeply grateful to EAD for this support and look forward to continuing to develop this partnership. Finally, we would like to express our sincere congratulations to all 2019 SSC Award Winners, recognized during the Leaders’ Meeting – SSC Chair’s Citation of Excellence, George Rabb Award for Conservation Innovation, Harry Messel Award for Conservation Leadership and Sir Peter Scott Award for Conservation Merit – it is you that make the SSC thrive and shine!

IUCN is deeply grateful to the dedication of SSC Members, responsible for the creation of the knowledge that underpins the IUCN Red List of Threatened Species, the development of systematic plans to reverse biodiversity decline, and supporting evidence-based conservation action around the world.

The core content of this report are the individual accounts of SSC Groups, which start on page 52. Prior to that, we summarize the work of the SSC Chair’s Office, follow it with an analysis of the activities of SSC Groups derived from SSC DATA, and close these introductory sections with the annual report of the Global Species and Key Biodiversity Area Programme.

SSC Chair’s Office team

Our team increased slightly in 2019, from 18 to 21 members, and from seven to eight countries – but we also experienced a major departure. Rachel Hoffmann, Director of Oversight and Conservation Outcomes, who joined the SSC Chair’s Office under Simon Stuart in 2009, concluded her ten-year run. We are deeply grateful for her vision, devotion to the SSC Network, and her many valuable contributions,
aptly reflected by her active membership in a dozen groups. We will miss Rachel greatly, though her multiple links will surely keep her close. In 2019, four people joined the team: Anna Walker, Fabiana Lopes Rocha, Rosana Subirá and Eugenia Cordero. We benefitted from very generous and productive partnerships with The Deep, Georgia Aquarium, Oceanário de Lisboa, Albuquerque BioPark, and Parque das Aves, allowing us to contribute to thousands of species assessments for the *IUCN Red List of Threatened Species* (see page 370). Sumatran Rhino Rescue (page 13), our alliance with Global Wildlife Conservation (Currently Re:wild), International Rhino Foundation, National Geographic Society and WWF, continues to advance in supporting the Indonesian Government in saving the Sumatran Rhino from extinction.

**Jon Paul Rodríguez, Chair**

He holds a degree in biology from Universidad Central de Venezuela, and a Ph.D. in ecology and evolutionary biology from Princeton University. As Chair, he guides the activities of the Commission, assuring that SSC effectively delivers its strategic plan, and that the Commission works closely with our partners, the other IUCN Commissions, the Union’s members, its national and regional committees, and the Secretariat.

**Domitilla Raimondo, Deputy Chair**

She holds a Master’s degree in conservation biology from the University of Cape Town, South Africa. She plays a lead role in catalysing national red listing. In addition to her extensive support to particular red list assessment projects, Domitilla, focuses on developing the IUCN Red List as a reliable tool for the private and public sector. As a botanist, she works hard within the IUCN so plants are well represented on the red list. She is dedicated to ensuring that species information feeds into land-use decision making.

**Rachel Hoffmann, Director of Oversight and Conservation Outcomes**

Zoology graduate from Nottingham University, with a Master’s by research in ecology and environmental management, York University. Rachel has over 10 years of experience with the SSC and is the primary focal point for the SSC network. She has a lead role in strengthening the work of the SSC in providing independent scientific advice, focusing on the delivery of conservation action, and developing high quality initiatives to achieve the SSC’s mission.

**Kira Mileham, Director of Strategic Partnerships**

With degrees in both conservation biology and public relations and journalism, she also has a Ph.D. in human behaviour change all from the University of Newcastle, Australia. Kira is responsible for strategically connecting the SSC to external partners to foster stronger collaboration for improved species conservation. Kira works closely with the zoo, aquarium and botanical garden community in particular.

**Bibiana Sucre, Executive Director of the Chair’s Office**

Biologist from Universidad Simón Bolívar, with additional courses in ecology, and a Master’s degree in public management from Instituto de Estudios Superiores de Administración. Bibiana has a leading role in managing the activities of the Chair’s Office in Caracas, supporting, guiding and facilitating the activities of the team.
Anwar Purwoto, SSC Sumatran Rhino Coordinator
Anwar is a forestry engineer in forest management from Bogor Agriculture University, with a Master’s of science in environmental management from Griffith University. The Sumatran Rhino Coordinator is SSC’s representative in Indonesia regarding the Sumatran Rhino Recovery Project. He coordinates project implementation partners, secures project permissions, oversees the implementation of project activities together with his government counterpart, and works closely with the Project Steering Committee.

Edgard Yerena, Network Coordinator
Edgard is a biologist from Universidad Simón Bolívar, with a Master’s in ecology from the same university, and a law degree from Universidad Central de Venezuela. Edgard has been a long time member of SSC Bear Specialist Group, focused on biodiversity conservation policy and planning. As Network Coordinator, he supports the management of SSC Conservation Committees, Specialist Groups, Red List Authorities and Task Forces, particularly for the delivery of the IUCN Species Strategic Plan 2017-2020, appointment of roles, creation of new groups, and integration with other components of IUCN, as well as channeling enquiries and requests.

Rob Bullock, Marine Red List Officer
Having completed a degree in marine and freshwater biology at Hull University, Rob went onto study for a Ph.D. whilst conducting conservation research at Bimini Shark lab in the Bahamas. Employed by The Deep in partnership with SSC, Rob is involved in the establishment, training and support of partnerships with zoos and aquaria to advance the Red List. Rob also works with the IUCN’s Marine Biodiversity Unit to carry out Red List assessments of marine species.

Orlando Salamanca, Operations and Strategy Manager
He holds an undergraduate degree in international relations from Universidad Central de Venezuela, a Master’s degree in public management and a Master’s degree in finance, both from Instituto de Estudios Superiores de Administración. Passionate about implementation, Orlando has a lead role supporting planning and follow-up, identifying areas for improvement, and addressing the biggest operational challenges in order to stay focused on the most impactful elements.

Jafet Nassar, SSC & GSP Annual Report Coordinator
Biologist from Universidad Central de Venezuela, with a Ph.D. in tropical biology from University of Miami. Jafet is in charge of coordinating, compiling, and preparing the Species Annual Report, through integration between IUCN’s Global Species Programme and the SSC.

Simeon Bezeng, National Red List Programme Officer
He holds a degree in botany and environmental sciences from the University of Buea, Cameroon, followed by Masters and Ph.D. degrees in botany from the University of Johannesburg, South Africa. Based at BirdLife South Africa, Bezeng has key responsibilities in the promotion of Red Listing of species, ecosystems and the identification of KBAs in three African Countries, as well as to support the Red List Committee and the National Red List Working Group Alliance more generally.
Nahomy De Andrade, Partnerships and Grants Officer
Nahomy is an economist from Universidad Central de Venezuela with a Master’s degree in public management from Instituto de Estudios Superiores de Administración, and additional courses in leadership and coaching. She is responsible for overseeing the ongoing management and operation of partnerships and conservation grants programs, ensuring projects are implemented and managed according to best practices, in order to produce high standard outcomes in a timely manner.

Mayerlin Ramos, Administrative Officer
Mayerlin is a lawyer graduated from Universidad Metropolitana with a Master’s degree in public management from Instituto de Estudios Superiores de Administración and additional courses in leadership and social projects development. She is in charge of administration, supports, guides and facilitates activities of SSC staff by accomplishing results.

Aritzaith Rodriguez, Communications Officer
Aritzaith is a journalist graduated from Universidad Católica Andrés Bello with post-graduate studies in corporative communication from Universidad Montéavila, and additional courses in marketing. As the IUCN Species Survival Commission’s Communication Officer, she is in charge of developing and implementing communications strategies and products for SSC, in close collaboration with IUCN’s Global Species Programme and Global Communications Unit.

Katelyn Herman, Red List Officer, Chondrichthyans
Katelyn’s background is in marine conservation and policy, the field in which she earned her M.A. She is a Research Project Coordinator for the Research and Conservation Department at the Georgia Aquarium, and has worked in collaboration with the SSC since 2017. Katelyn works with the SSC Shark Specialist Group as part of the Global Shark Trends project.

Catarina Fonseca, Red List Officer, Marine
Catarina is the Marine Red List Officer at Oceanário de Lisboa in Portugal, where she works as part of the SSC Red List Partnerships team. She started her career focusing on cetacean ecology and moving to marine conservation after obtaining an MSc in conservation science from Imperial College London. Catarina is working on the assessment of species held in aquarium collections to improve conservation actions for these species, as well as working with IUCN’s Marine Biodiversity Unit on the Global Marine Species Assessment project.

Tim Lyons, Red List Officer
Tim has a M.S. in fisheries and aquatic sciences from the University of Florida’s Tropical Aquaculture Laboratory, where he focused on tropical invasion ecology. He is a full-time staff member at the New Mexico BioPark Society, working in collaboration with the SSC Freshwater Fish Specialist Group and the IUCN Global Programme Freshwater Biodiversity Unit on priority Red List assessment projects for freshwater fishes.

Clayton Meredith, Red List Officer, Medicinal Plants
Clay’s background is in human behavioural ecology and archaeology, in which he
holds a Master’s degree. Clay is a full-time staff member at the New Mexico BioPark Society working in collaboration with the chair of the SSC Medicinal Plants Specialist Group. Current projects in this area include Red List assessment of economically important North American medicinal plants, and imperilled species from the US Southwest, Appalachia, the Great Lakes region, and the Vancouverian Floristic Province.

Anna Walker, Red List Officer, Invertebrate Pollinators
Anna has a background in ecological monitoring of various insect groups, including ground beetles and butterflies, and she holds a M.S. in entomology from Harper Adams University, in the UK. Anna is a full-time staff member at the New Mexico BioPark Society, working in collaboration with select SSC Specialist Groups on Red List assessment projects for invertebrates. Current projects include fireflies of North America and Mexico, Hawaiian moths, and butterfly species of New Mexico, USA.

Fabiana Lopes Rocha, Head Officer
Fabiana is a wildlife veterinarian and ecologist, with a M.S. degree in ecology and conservation from the Federal University of Mato Grosso do Sul and Ph.D. in science from the Oswaldo Cruz Foundation. Her academic interest is in the areas of ecology, parasitology, and conservation of wild mammals, with an emphasis on carnivores and One Health. She is the head officer of the Center for Species Survival Brazil, a three-way partnership of IUCN Species Survival Commission, the SSC Conservation Planning Specialist Group, and Parque das Aves. Her work is focused on bringing global standards and improving national capacity to assess, plan and act within governmental agencies, NGOs, and other relevant stakeholders to save species.

Rosana Subirá, Red List Officer
Rosana is a biologist and has a Master’s degree in ecology from the University of Brasília. She was coordinator of conservation strategies at the Chico Mendes Institute for Biodiversity Conservation (ICMBio), the Brazilian environmental agency, where she coordinated the processes for assessing the risk of extinction of fauna species, and the development and implementation of tools for fauna conservation, such as the National Action Plans (PANs), Plans for Reducing the Impact of Human Activities on Biodiversity (PRIM), and integrated management of threatened native species. She is currently a consultant at Parque das Aves, working for the Center for Species Survival Brazil (CSS Brazil) as a Red List Officer. Her work is focused on articulating the integration between the Global Red List and the National Red List in close partnership with ICMBio and its network.

Eugenia Cordero, Program Officer
Eugenia has a M.S. and Ph.D. in ecology from the Universidade Federal do Rio Grande do Norte, where she focused on bat-plant interactions in the seasonally dry tropical forest. She has also participated in bat conservation strategies in Central America, using environmental education and communication as essential tools. She is a full-time staff member at the Parque das Aves, working as a program officer for the Center for Species Survival Brazil (CSS Brazil), particularly focusing on communication activities and on planning, in close collaboration with the SSC Conservation Planning Specialist Group.
**SSC Steering Committee**

The SSC Steering Committee is composed of 26 people, 10 women and 16 men. At least two members reside in each of the eight IUCN Statutory Regions. Institutional observers, plus representatives from the Secretariat, bring the total number of participants to 36.

<table>
<thead>
<tr>
<th>Chair and Deputy Chair</th>
<th>Country</th>
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<tbody>
<tr>
<td>Jon Paul Rodríguez</td>
<td>Venezuela</td>
</tr>
<tr>
<td>Domitilla Raimondo</td>
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<tr>
<td>Luigi Boitani</td>
<td>Italy</td>
</tr>
<tr>
<td>Onnie Byers</td>
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<tr>
<td>Claudio Campagna</td>
<td>Argentina</td>
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<td>Topiltzin Contreras MacBeath</td>
<td>Mexico</td>
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<tr>
<td>Ehab Eid</td>
<td>Jordan</td>
</tr>
<tr>
<td>Dmitry Geltman</td>
<td>Russian Federation</td>
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<tr>
<td>Piero Genovesi</td>
<td>Italy</td>
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<tr>
<td>Brahim Haddane</td>
<td>Morocco</td>
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<tr>
<td>Ian Harrison</td>
<td>US</td>
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<tr>
<td>Axel Hochkirch</td>
<td>Germany</td>
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<tr>
<td>Mike Hoffmann *</td>
<td>UK</td>
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<tr>
<td>Jonathan Hutton</td>
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<tr>
<td>Vololoniaina Jeannoda</td>
<td>Madagascar</td>
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<td>Oiga Krever</td>
<td>Russian Federation</td>
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<td>Mirza Kusrini</td>
<td>Indonesia</td>
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<td>Frédéric Launay</td>
<td>Abu Dhabi, UAE</td>
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<td>Gabriela Lichtenstein</td>
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<td>Vivek Menon</td>
<td>India</td>
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<td>Russell Mittermeier</td>
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<td>Gregory Mueller</td>
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<td>Nunia Thomas</td>
<td>Fiji</td>
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<tr>
<td>Pricelia Tumenta</td>
<td>Cameroon</td>
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<tr>
<td>Amanda Vincent</td>
<td>Canada</td>
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<tr>
<td>Yan Xie</td>
<td>China</td>
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<tr>
<th>Institutional observers</th>
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<tr>
<td>BirdLife International</td>
<td>Stuart Butchart</td>
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<tr>
<td>Conservation International</td>
<td>Will Turner</td>
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<tr>
<td>Fondation Franklinia</td>
<td>Jean-Christophe Vié</td>
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<tr>
<td>Global Wildlife Conservation</td>
<td>Wes Sechrest</td>
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<td>TRAFFIC</td>
<td>Steven Broad</td>
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<tr>
<td>Wildlife Conservation Society</td>
<td>Elizabeth Bennett</td>
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<tr>
<td>World Association of Zoos and Aquariums</td>
<td>Theo Pagel</td>
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<tr>
<td>Zoological Society of London</td>
<td>Mike Hoffmann *</td>
</tr>
</tbody>
</table>

* Is both a member and an institutional observer

**Representatives of the IUCN Secretariat**

Jane Smart, Global Species Programme
Richard Jenkins, Global Species Programme
Thomas Brooks, Science and Knowledge Unit
The SSC Steering Committee met in Abu Dhabi, between 3 and 4 October 2019, prior to the Leaders Meeting. Special guests included Dr Rob Shumaker, President and CEO of Indianapolis Zoo, and Craig Hilton-Taylor and Dao Nguyen, from the IUCN Secretariat.

Expanding and consolidating partnerships
Joining forces with others and sharing the load is one of our strategies for delivering optimal results under the Species Conservation Cycle.

Assess and Plan
Five productive Red List hub partnerships now exist around the world: The Deep Aquarium, led by Rob Bullock; Georgia Aquarium, by Katelyn Herman; Oceanário de Lisboa, by Ana Catarina Fonseca; Albuquerque Biopark, by Tim Lyons, Clayton Meredith, and Anna Walker; and Parque Das Aves, by Fabiana Lopes Rocha, Rosana Subirá, and Eugenia Cordero. These teams work as collaborators on Red List assessments, or are trainers of trainers for Red List assessments at global or national levels. Approximately 3,300 species assessed due to their efforts, with ~5,800 projected by the end of 2020. The in-kind contribution of these partnerships is around 1,440 person/hours per year, and they will continue to grow in 2020 where 3-5 additional Red List officers are planned to be hired by new partner organizations.

With the aim of further strengthening not just the assessment process but also the planning capacities within SSC at national and regional levels, the staff of these Red List Hubs have undertaken, or will shortly undertake, Conservation Planning Training with the Conservation Planning Specialist Group (CPSG). In June 2019, the Species Survival Centre in Paraná, Brazil, in partnership with Parque das Aves and CPSG, was established. This alliance works as a Regional Center to perform assessments and planning, starting at the national level and working with the government and Brazilian NGOs.
Sumatran Rhino Rescue: convening for emergency species conservation

The Sumatran Rhino Survival Alliance (SRSA) is a coalition of stakeholders across the Indonesian Government, local and international implementing agencies, and founding partners, Global Wildlife Conservation (Currently Re:wild), International Rhino Foundation, National Geographic Society, SSC and World Wildlife Fund. The first year of this initiative closed on 22 September 2019, on World Rhino Day. SSC works with our partners to create and implement a collaborative plan to save the species. With a 30-million-dollar budget for five years and a partnership that is growing, these are the main accomplishments of the first year of the alliance:

- Successfully rescued a healthy female rhino – Pahu – that was relocated to a secure facility in Kalimantan.
- Completed an expansion of the Way Kambas Sumatran Rhino Sanctuary, providing space for five additional rhinos, and resources approved to build a new Sumatran Rhino Sanctuary in northern Sumatra.
- Created the first-ever 3D scan of a Sumatran Rhino, at the Sumatran Rhino Sanctuary in Way Kambas National Park. The scan serves as an education and outreach tool to raise public awareness of the species.
- Created the Sumatran Rhino Husbandry and Propagation Expert Advisory Board to guide the implementation of the Indonesian Government’s Emergency Action Plan.

For more information and to learn how to contribute, please visit Sumatran Rhino Rescue.

Network

Global Center for Species Survival

This unprecedented partnership was announced on 7 October 2019, during the SSC Leaders’ Meeting in Abu Dhabi, where the official agreement was signed by the Acting Director General of IUCN, Grethel Aguilar, SSC Chair, Jon Paul Rodríguez, and the CEO and President of Indianapolis Zoo, Rob Shumaker.

This partnership aims to catalyze conservation action across the SSC network. Its main goal is to enhance the scope and capacity for species conservation, supporting the efforts of more than 9,300 SSC experts working to save threatened species worldwide.

Through this partnership, Indianapolis Zoo will employ a team of nine experts based at the zoo: one Center Manager, one Behavior Change Manager and seven Network Coordinators. These Network Coordinators will be taxonomically focused across freshwater, marine, plants and fungi, invertebrates, mammals, amphibians and reptiles, and birds. Indianapolis Zoo and SSC are in the process of recruiting these new team members to be hired in 2020. Along with being home to the team’s offices, this partnership will offer training and meeting spaces, as well as enhancements in communication, with a media facility to produce conservation success stories.

Recovery of Species on the Brink of Extinction

This is the second year of this exciting partnership between National Geographic
Society (NGS) and SSC, aimed at priorities identified in SSC action plans. Early this year, Fondation Segré joined the alliance, further strengthening the capacity to fund proposals. Five application rounds are complete, attracting 374 proposals, of which 73 were funded (~20%), with a total of more than US$ 2.5 million allocated (Table 1).

The most recent round of applications closed on 9 October 2019. For more information, please visit the NGS website. If you need assistance or have questions, please write to speciesrecovery@ssc.iucn.org.

**Reverse the Red Pavilion for the WCC**

**Reverse the Red** aims to ignite optimism and collaborative action to guarantee the survival of all species we share this planet with, and the ecosystems they live in. Reverse the Red means to reverse the declining trajectory of species and ecosystems in the Red List and to empower communities around the world to make this happen. The first step in the development of the Reverse the Red alliance, which includes more than 30 partners from the conservation world, is convening the Reverse the Red pavilion during the World Conservation Congress in Marseille.

The Reverse the Red pavilion will run over six days with each day being designed, planned and executed in agreement with the partners. Diverse interest groups will be encouraged to participate in a wide range of events, from high-level dialogues on Earth optimism to showcasing species conservation action on the ground. The pavilion may also provide a platform for making important announcements such as the launch of new projects, partnerships and publications.

The IUCN Species Survival Commission, Howard Hughes Medical Institute’s Tangled Bank Studios, Smithsonian’s Earth Optimism and the World Association of Zoos and Aquariums are among the lead partners on the Pavilion and the wider Reverse the Red alliance — an initiative that is growing and evolving rapidly, and is open for others to join.

**SSC Internal Grants**

Thanks to the generous support of the Environment Agency – Abu Dhabi, early this year, we launched the SSC Internal Grant Programme, a funding mechanism for small requests within the Network of SSC Groups with the aim to contribute to the IUCN Species Strategic Plan 2017-2020. During 2019, two application cycles – January and June – resulted in 27 proposals funded and more than US$ 85,000 allocated. The successful SSC Groups and the types of activities funded are presented in Fig 1.

Table 1

<table>
<thead>
<tr>
<th>Applications submitted</th>
<th>Proposals funded</th>
<th>Funds allocated (US$)</th>
<th>SSC members</th>
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<tbody>
<tr>
<td>1st round – April 2018</td>
<td>161</td>
<td>20</td>
<td>662,795</td>
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<tr>
<td>2nd round – July 2018</td>
<td>62</td>
<td>9</td>
<td>340,906</td>
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<tr>
<td>3rd round – October 2018</td>
<td>61</td>
<td>11</td>
<td>375,455</td>
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<tr>
<td>4th round – January 2019</td>
<td>40</td>
<td>14</td>
<td>512,118</td>
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<tr>
<td>5th round – April 2019</td>
<td>50</td>
<td>19</td>
<td>684,758</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>374</strong></td>
<td><strong>73</strong></td>
<td><strong>2,576,032</strong></td>
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Figure 1
SSC Groups awarded SSC Internal Grants in 2019

<table>
<thead>
<tr>
<th>SSC Group</th>
<th>Amount of money</th>
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<tbody>
<tr>
<td>IUCN SSC Colombian Plant Specialist Group</td>
<td>$3,500,00</td>
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<tr>
<td>IUCN SSC Mushroom, Bracket, and Puffball Specialist Group</td>
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<tr>
<td>IUCN SSC Bryophyte Specialist Group</td>
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<td>IUCN SSC Temperate South American Plant Specialist Group</td>
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<td>IUCN SSC Freshwater Fish Specialist Group</td>
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<td>IUCN SSC Dragonfly Specialist Group</td>
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<td>IUCN SSC Wild Pig Specialist Group</td>
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<td>IUCN SSC Spider and Scorpion Specialist Group</td>
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<td>IUCN SSC Macaronesian Island Plant Specialist Group</td>
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<td>IUCN SSC Horseshoe Crab Specialist Group</td>
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<thead>
<tr>
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<tr>
<td>IUCN SSC Cat Specialist Group</td>
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<td>IUCN SSC Mid Atlantic Island Invertebrate Specialist Group</td>
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<td>IUCN SSC Amphibian Specialist Group</td>
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<td>IUCN SSC Small Mammal Specialist Group</td>
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<td>IUCN SSC Anteater, Sloth and Armadillo Specialist Group</td>
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<td>IUCN SSC Antelope Specialist Group</td>
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<td>IUCN SSC Vulture Specialist Group</td>
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SSC Quarterly Report

SSC Quarterly Reports aim to provide timely advances of the work of the Chair’s Office and the Commission in general to SSC Members, partner organizations, colleagues at the Secretariat, the SSC Steering Committee, and the world outside IUCN. We welcome articles from the network and beyond, and are especially interested in thought-provoking pieces that raise controversial issues or spark a discussion. Please do reach out to us if there is a topic that you would like to cover or a subject that you believe we should address.

Ultimately, these reports facilitate communication and exchange within the SSC network and IUCN. For additional details on the activities of SSC and our partners, please visit the SSC Quarterly Report archive.

High-level Interventions

High-level interventions address conservation issues of serious concern through letters to governments or companies, which highlight species and habitats under threat, and propose actions on their behalf. Each letter provides the necessary background and technical information, following a thorough review process that engages with SSC Groups, experts across the network, and the IUCN regional offices and programmes.

- **Conservation status of the Termit and Tin-Toumma National Natural Reserve**: On 14 May 2019, Inger Andersen (IUCN Director General), Kathy MacKinnon (Chair, IUCN World Commission on Protected Areas) and Jon Paul Rodriguez, sent a letter to E. H. Monsieur Almoustapha Garba, Minister of the Environment, Urban Sanitation and Sustainable Development of Niger, regarding the National Nature Reserve of Termit and Tin-Toumma (RNNTT), particularly with regard to concerns of the long-term integrity of the reserve and the survival of its residual population of Addax antelopes (*Addax nasomaculatus*). According to our information, the institutional arrangements and partnerships under way for the management of the reserve could be an obstacle maintaining the integrity of the protected area, and to prevent any negative impact on its remarkable biodiversity. The Addax in the RNNTT are likely to be the last remaining wild individuals of the species on a global scale. This alarming situation requires the development and implementation of an emergency rescue plan, in accordance with the *Plan d’action régional pour l’addax et la gazelle dama 2018-2022*. There may be a need to
refocus management on the survival of the remaining Addax, both through *in situ* and *ex situ* measures. These include, but are not limited to a program for rescuing and relocating some individuals to ensure that the genetic stock is not lost. The letter expressed IUCN’s willingness to organize a mission, with the support of the Ministry and other relevant authorities, to evaluate the various possible options and propose recommendations. This mission would include experts from the IUCN World Commission on Protected Areas regarding the global status of the reserve, its governance, management and security, as well as scientists from the Antelope Specialist Group.

Concern and support for the conservation of the last population of the Loa water frog, *Telmatobius dankoi*, in Chile: On 8 August 2019, Jon Paul Rodríguez sent a letter to Carolina Schmidt Zaldívar, Minister of Environment of Chile, expressing concern for the survival of the Loa water frog (*Telmatobius dankoi*). With the participation of Chilean members of the Amphibian
Specialist Group, an unprecedented and swift rescue mission, led by a team of conservationists and government officials, evacuated what may be the last remaining individuals in the wild of Loa water frogs, just before their habitat dried up almost completely from the illegal extraction of water. This species is Critically Endangered on the IUCN Red List of Threatened Species and found only in a single stream in Chile. The frogs were moved to the National Zoo of Chile, where the specialists are trying to nurse them back to health and are talking to water frog experts around the world for tips on how best to care for and eventually breed them. The final objective is to restore the population in the wild and assure its habitat protection. SSC respectfully requested the Minister that these multi-institutional efforts continue with the same collaborative spirit, and that consideration be given to the development of an emergency plan for the protection and recovery of *Telmatobius dankoi*’s habitat. For this reason, Jon Paul called for the establishment of a technical working group, to assist the work in this matter, and offered the assistance of the Conservation Translocation Specialist Group. The letter was readily answered by the Minister, stating that the rescue of the population and the corresponding restoration of both the population and its habitat are Ministry’s priorities. Subsequently, she accepted the assistance offered by SSC. Chilean members of the SSC as well as the Amphibian and Conservation Translocation Specialist Groups will continue monitoring the situation.

**Guidelines, standards and action plans**

SSC continues to build the scientific foundations for evidence-based species conservation through various types of publications. Many more SSC outputs are described in the individual reports of SSC Groups (starting on page 52). There is a selection of publications, however, that I would like to highlight here, as they represent key contributions from SSC to the global conservation community and seek to catalyse conservation action.

**A miniature world in decline** is a summary of the conservation status of the European species of mosses, liverworts and hornworts, collectively known as bryophytes. It provides the first comprehensive, region-wide assessment of bryophytes and it identifies those species that are threatened with extinction at a European level.

The **European Red List of Trees** summarises results for Europe’s native species of tree (454 species), of which 265 species (over 58%) are endemic to continental
Europe, with 56% (252 species) endemic to the 28 EU Member States. Of these, 168 (42%) are threatened with extinction at the European level. The main threat to trees in Europe is invasive or problematic species, affecting 38%, followed by deforestation and wood harvesting, and urban development (both affecting 20%).

Also available in Spanish and French, the *Summaries of the IUCN and TRAFFIC analyses of the proposals to amend the CITES* involve experts from our networks, including many SSC experts. For CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) to be considered a credible instrument for conserving species affected by trade, the decisions of the Parties must be based on the best available scientific and technical information.

The purpose of *Guidelines for using a global standard for the identification of Key Biodiversity Areas* is to ensure that KBA identification is based on consistent, scientifically rigorous yet practical methods. The primary audience for the KBA Guidelines includes individuals or organisations interested in proposing or reviewing KBAs.

The *Crane Conservation Strategy*, edited by Claire M. Mirande and James T. Harris, and published by the International Crane Foundation, provides a wealth of information to guide the conservation of the world’s fifteen species of cranes and the ecosystems where they occur – 11 of them listed as threatened under the IUCN 2019 Red List. It reflects the work and knowledge of dozens of devoted colleagues in the Crane Specialist Group. The book updates and builds upon their first report, *The cranes: status survey and conservation action plan* (1996).
A collaboration of the Bear Specialist Group, Conservation Planning Specialist Group, Free the Bears and TRAFFIC, *Sun bears: global status review and conservation action plan, 2019–2028*, addresses questions about the threats, actions and priorities related to the sun bear (*Helarctos malayanus*). This species has been the focus of only a handful of studies in the wild – beginning just 20 years ago – and has attracted little world attention in terms of its conservation, despite being a charismatic bear.

Also available in Bahasa Indonesian and Malay, *Harvest monitoring of snakes in trade* aims to assist those actively engaged in snake harvest and trade situations, faced with the need to implement monitoring and management. It is for government wildlife managers, conservationists, professional scientists, and amateurs interested in ensuring the sustainable utilization of wild caught snakes in commercial trade.

Also available in Chinese, Spanish and French, *Guidelines for the management of confiscated, live organisms*, responds to increases in illegal trade in wildlife over the past decade. Successful enforcement often involves the seizure and confiscation of wild species from diverse taxa of plants, animals and fungi. With increasingly frequent confiscations and often high numbers of individuals involved, it is important that best practice management approaches are followed to maximise the conservation role and the individual welfare of these plants and animals.

*Reforesting for the climate of tomorrow* is available also in Bahasa Indonesian. Kutai National Park is home to what is likely to be East Kalimantan’s largest population of the Critically Endangered eastern subspecies of the Bornean Orangutan (*Pongo pygmaeus morio*). This publication examines restoration case studies, restoration best practice, and present sets of tree species from a set of ~250 considered in the analysis that are likely to be suited to various restoration targets for Kutai National Park.

The papers in *Island invasives: scaling up to meet the challenge*, demonstrate up-scaling of eradication operations. In the space of a few decades, the size of islands treated for invasive species has increased by five orders of magnitude – from a few hectares to over 100,000 ha or 1,000 km$^2$. Meanwhile, the diversity of species tackled has increased, as has the range of countries now actively carrying out island restoration work. This expansion has been informed by, and has in turn produced, growing experience in all aspects of this field, from non-target impacts to ecological responses to factors affecting eradication success.
Securing additional funding to support the activities of the SSC

Fiscal sponsorship of SSC
As SSC does not have formal fiscal status, external donations and funds are generously administered by Global Wildlife Conservation (Currently Re:Wild), who provides banking, accounting and contracting services at zero overhead cost to SSC, and contributes to the SSC Chair’s Office (US$ 50,000). We are very grateful to all, but especially to those that we interact with regularly and are clearly part our team: Wes Sechrest, Russ Mittermeier, Don Church, Barney Long, Robin Moore, Penny Langhammer, Jennifer Luedtke, Alex Quintero, Reagan Steppe, Tinisha Hancock and Jessica Argubright. We look forward to continuing working together on saving species!

Funding of the SSC Chairs’ Office
Most of the funding that supports the SSC Chair’s Office is provided by external donors. In addition to Re:Wild, mentioned above, and EAD, mentioned below, in 2019, the following organizations contributed an aggregate of US$ 514,936 to SSC: Al Ain Zoo, Disney’s Animal Kingdom, Chicago Zoological Society, San Diego Zoo Global, Wildlife Reserves Singapore, Environment and Global Change Canada, Woodland Park Zoo, World Association of Zoos and Aquariums (WAZA), Georgian Aquarium, The Deep, Association of Zoos and Aquariums (AZA), Beauval Nature, Columbus Zoo, Copenhagen Zoo, Detroit Zoological Society, European Association of Zoos and Aquaria (EAZA), Jacksonville Zoos and Gardens, Sea World, Saint Louis Zoo, Indianapolis Zoo, Chester Zoo, British and Irish Association of Zoos and Aquariums (BIAZA), ABQ Biopark, Milwaukee County Zoo, Oregon Zoo, Santa Barbara Zoo, Smithsonian National Park, Zoo Leipzig, Honolulu Zoo, and Oklahoma City Zoo.

SSC Commission Operations Fund
The SSC was granted a Commission Operations Fund of CHF 235,000 in 2019, the same amount as in 2017 and 2018. This was allocated as follows: CHF 65,000 for Chair’s Office travel and representation costs, CHF 50,000 salaries and consultants, CHF 47,000 SSC meetings, CHF 21,000 office and general administration costs, and CHF 9,000.00 for technology and communications (e.g. publication of Species). The remainder was carried over to 2019.

EAD-SSC-GWC Memorandum of Agreement
In October 2017, we had the honor and the privilege to sign a Memorandum of Agreement between the Environment Agency – Abu Dhabi (EAD), the IUCN Species Survival Commission (SSC) and Re:Wild concerning Support for the office of the Chair of the IUCN Species Survival Commission 2017-2020. This is a significant agreement, that provides CHF 750,000 per year for four years (2017-2020) to be administered by Re:Wild as fiscal sponsor or SSC, distributed as follows: CHF 50,000 per year as partial funding for the office of the Chair of SSC, CHF 400,000 per year as partial funding for the implementation of the 2017-2020 IUCN Species Strategic Plan by SSC, and CHF 300,000 per year to support the contribution of the IUCN Global Species Programme towards the implementation of the 2017-2020 IUCN Species Strategic Plan. We are grateful to all our EAD colleagues for their support, advice and encouragement, but are especially indebted to Razan Khalifa Al Mubarak, Shaikha Al Dhaheri, Hanan Ibrahim Al Abed, Salim Javed and Frederic Launay.
After three years implementing SSC DATA in its Excel format, we have built a four-year database (2016-2019) that allows us and SSC Group leaders to track the progress achieved in pursuing each of their targets for the 2017-2020 quadrennium. This database is a key resource for our network, available at the request of anyone interested in generating a broad variety of analyses and reports.

The 2019 version of SSC DATA contains four worksheets, described as follows:

**Group information.** Contains the general description of the group, including Co-Chairs, locations/affiliations, Red List Authority Coordinator, mission statement, projected overall impact on the species’ conservation status by the end of the 2017-2020 quadrennium, number of members, host organization, social networks, Program Officer, focal point for ex-situ expertise, focal point for conservation planning, and core partnership needs.

**Targets and activities for the quadrennium.** Contains the list of targets proposed by the group for the 2017-2020 quadrennium, the activities undertaken during 2019 and results or products derived from them. For each target, the Chair can report its status (e.g., achieved, on track, behind schedule). Targets link to a component of the Species Conservation Cycle (Table 2), a general activity category, a specific activity category, and the main Key Species Results (KSR, Table 3) derived from the implementation of the targets. The KSRs were approved in 2016 at the IUCN General Assembly, during the World Conservation Congress in
Honolulu, Hawai‘i. For targets under the ‘Act’ component, groups can indicate the target species. It is also possible to designate the geographic region and location where the activities conducted are having impact. Finally, for each target, the Chairs can indicate if results obtained helped support actions requested in any 2016 World Conservation Congress Resolutions.

Acknowledgements. In this worksheet the group recognizes individuals, institutions and organizations that significantly contributed to the achievement of the targets proposed during 2019.

Report attachments for 2019. In this worksheet the group identifies all the images available to be used in the report, including image labels, captions and credits.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Components of the Species Conservation Cycle</th>
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<tbody>
<tr>
<td>Component</td>
<td>Definition</td>
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<tr>
<td>Assess</td>
<td>Focus on monitoring species and informing the world about the status and trends of biodiversity, thus providing measures for the health of our biosphere.</td>
</tr>
<tr>
<td>Plan</td>
<td>Aims to enhance collaborative, inclusive, and science-based strategies, including policy change, to ensure the most effective species conservation actions.</td>
</tr>
<tr>
<td>Act</td>
<td>Improve the status of biodiversity, by convening and mobilizing actions involving governments, academia, civil society, and the private sector.</td>
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<tr>
<td>Network</td>
<td>Enhances and support the SSC network to further significant outcomes across the Species Conservation Cycle.</td>
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<tr>
<td>Communicate</td>
<td>The effectiveness of IUCN’s species conservation work is enhanced through strategic and targeted communications.</td>
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<tr>
<th>Table 3</th>
<th>Key Species Results approved by the 2016 IUCN World Conservation Congress.</th>
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<tbody>
<tr>
<td>Key Species Result</td>
<td>Description</td>
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<tr>
<td>1</td>
<td>IUCN Red List taxonomic and geographic coverage is expanded. Taxonomic coverage of the Red List is expanded so that it better informs biodiversity conservation.</td>
</tr>
<tr>
<td>2</td>
<td>More IUCN Red List Assessments are prepared at national and, where appropriate, at regional scales. The ongoing development of national and regional Red Lists is catalysed.</td>
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<td>3</td>
<td>IUCN Red List Index is widely used as an effective biodiversity indicator. Wide use of the Red List index (RLI) as an indicator for monitoring trends in the status of different species groups is developed and promoted at multiple geographical scales, from national to global.</td>
</tr>
<tr>
<td>4</td>
<td>The IUCN Red List is a scientifically rigorous tool for conservation. The Red List contains the necessary information to make it a reliable tool for informing biodiversity conservation.</td>
</tr>
<tr>
<td>5</td>
<td>IUCN Red Listing capacity built through expanded training programmes. Capacity developed to ensure that the IUCN Red List Criteria are applied rigorously and consistently to increase further the credibility of the Red List and its implementation at the national level.</td>
</tr>
<tr>
<td>6</td>
<td>The IUCN Red List is underpinned by cutting-edge information management technologies. The information technology infrastructure to support Species Strategic Plan objectives is enhanced.</td>
</tr>
<tr>
<td>7</td>
<td>The IUCN Red List is used effectively to inform policy and action. The IUCN Red List data and information is increasingly used to inform policy and action in private and public sector.</td>
</tr>
</tbody>
</table>
The IUCN Red List is widely communicated and recognised. The Red List is further developed as a global brand, applicable at multiple geographical scales, from national to global. The IUCN Red List is sufficiently and sustainably financed. Funds are secured to ensure the sustainability of the Red List. Strategic oversight is provided to the IUCN Red List. Strategic oversight for delivering the Red List is provided by Red List Committee. Measuring Conservation Success. State-of-the-art methods for measuring and categorising the success of conservation are in place. Population-level Monitoring and Analysis. Monitoring programmes are established for selected species and groups of species. Invasive Species. Measures to manage invasive species are greatly enhanced through focused efforts involving knowledge, policy and action. Integrating IUCN Knowledge Products. IUCN’s key biodiversity knowledge products (e.g. Red List and World Database on Protected Areas) are fully integrated to allow interoperability, promote cost-effectiveness and maximize the delivery of information to guide conservation decisions. IUCN SSC species conservation planning efforts are significantly expanded, especially for priority species. A method for prioritisation of species planning is developed and more conservation action planning is undertaken to halt the loss of biodiversity, and protect and prevent the extinction of threatened species. IUCN SSC species conservation planning efforts are monitored for impact and effectiveness. Evaluation approaches are developed and implemented to measure, improve and report on the impact and effectiveness of IUCN SSC’s species conservation planning efforts. Species conservation planning capacity is built through expanded training programmes. Capacity is developed to expand effective species conservation planning efforts throughout the SSC network and beyond, and ensure that these efforts are considered valuable and accessible to all relevant parties. IUCN SSC provides rigorous guidance for species conservation planning through the continued development and application of cutting-edge, science-based tools and processes. IUCN SSC Species Conservation Planning features best practices using an adaptive, evidence-based approach, with application of tools and processes that contribute to, and are informed by, emerging scientific and technological advances in conservation biology and related fields. IUCN SSC species conservation planning is sufficiently and sustainably resourced. Funding and human resources are secured to ensure the growth and sustainability of IUCN SSC’s species conservation planning. The discipline of "Species Conservation Planning" is formally embedded in the SSC’s organisational framework in a way that reflects its increasing importance to the SSC’s work. A Species Conservation Planning structure is put in place, catalysing and guiding the governance and implementation of species conservation planning in the SSC. IUCN SSC is recognised as a leader in species conservation action planning. IUCN SSC Species Conservation Planning processes are increasingly adopted or built upon, and evidently guide conservation actions and influence policy. Applying IUCN standard for identification of sites of global biodiversity conservation significance. Biodiversity conservation action is improved through the application of Key Biodiversity Area Standard. Wildlife Health. Wildlife health monitoring is in place where needed, and advice given on remedial actions required. Re-introductions. Information and advice service is in place to support species reintroductions. Conservation Breeding, and links to ex situ community. Advice and facilitation is in place to support ex situ species recovery programmes.
26 Global and regional policy for biodiversity conservation. Global and regional policy mechanisms are influenced to enhance the effectiveness of biodiversity conservation.

27 Policy and action at national and cross-boundary levels. Scientific advice from SSC used to drive actions and policies for species and sites are implemented at the national level (linking to NBSAPs and national red lists).

28 Communicating species conservation. The effectiveness of IUCN's species conservation work is enhanced through strategic and targeted communications.

29 Building mutually-beneficial institutional partnerships for SSC Specialist Groups and the wider work of the SSC. Institutional partnerships enable species conservation efforts that are more strategic, sustainable, and integrated.

30 Fostering conservation on land and in water. Conservation is supported through existing and novel funding mechanisms.

31 Special initiatives to tackle major conservation crises. Focused attention is brought to resolving major crises in biodiversity conservation.

32 Analyses and investigations into pressing conservation issues. High profile scientific analyses and investigations that have wide implications are completed and published.

33 Understanding and communicating sustainable use. Greater common understanding is achieved of the theory and practice of sustainable use of biodiversity, and key linkages to human livelihoods; the importance of species to supporting livelihoods, particularly of the poor, is demonstrated; and innovative, experience-based and adaptive approaches to sustainable use are explored.

34 Conservation decisions and livelihood impacts. Livelihood impacts of conservation decisions affecting human use of wild resources are analysed and communicated.

35 Traditional knowledge and species management. Traditional knowledge is integrated with science in approaches to species assessment and management.

36 Enabling and implementing strategies for sustainable use. Any use of living natural resources is legal and sustainable; sustainable use is recognized as a positive tool for achieving long-term conservation; and the importance of species to supporting the livelihoods of the poor is recognized by key stakeholders, leading to improved governance for people and nature.

37 Human wildlife interaction (including marine). Livelihoods of people and species conservation are enhanced through improved human-wildlife interactions.

38 Biodiversity and climate change understanding. Impacts of climate change on species and the response of species to climate change are documented, analysed and their vulnerability is better understood.

39 Biodiversity and conservation practice under climate change. Approaches for conservation under changing climates are developed, tested and shared.

40 Biodiversity and climate change policy. Biodiversity considerations are taken into account in public and private sector adaptation and mitigation policies and practices at global and regional levels.

41 Biodiversity and food production. Biodiversity considerations are introduced into emerging policies in the food production sector (agriculture, fisheries, and aquaculture).

42 Maintaining genetic diversity of wild relatives of crops and domesticated animals. The long-term supply of food resources is secured through the conservation of wild relatives of crops (CWR) and domesticated animals.

43 Biodiversity information for public, private and financial sectors increases their commitment to nature conservation. Biodiversity information is contributed to reduce the negative impacts of these sectors' activities on biodiversity.
Global response to the SSC DATA information gathering process

SSC DATA 2019 was launched in February 2020, and until September 2020 SSC Groups submitted their information, followed by an exhaustive process of data curation that ended with the creation of each group’s report (page 52). The assembled reports went through editing and proofreading processes to obtain the final version for publication. Each single-group report was delivered to the respective group for their use and uploaded on the SCC Specialist Group Directory.

During 2019, 164 groups were part of the SSC network: 133 Specialist Groups (91 Animalia, 29 Plantae, 5 Fungi and Lichens, and 8 Disciplinary), 1 Action Partnership, 1 Working Group, 14 Red List Authorities, 9 Task Forces, and 6 Committees. Of these, 147 (89.6%) submitted their SSC DATA files for data analysis and preparation of 2019 reports. Across all these group categories, response to the SSC DATA process was consistently high (Fig. 2).

Within Animalia groups, which comprises the category with the largest number of SSC Groups (36 Mammals, 18 Birds, 12 Amphibian and reptiles, 9 Fishes and 16 Invertebrates), all zoological categories responded massively to the data gathering process (Fig. 3).
**SSC Groups’ targets for the 2017-2020 quadrennium**

Overall, SSC Groups reported 1848 targets for the 2017-2020 quadrennium. This number represents a substantial increment with respect to the targets reported in the past two years, because many groups have included additional targets for the quadrennium and because for the 2019 Species Report we are also considering the targets formulated by the Committees in our global statistics. The allocation of the targets into the five components of the Species Conservation Cycle was not evenly distributed (Fig. 4). Thirty three percent of targets link to Assess, which indicates that actions related to Red List assessments, reassessments and Red List Indices dominate the Species Strategic Plan of the current quadrennium. Network, Communicate and Plan have similar weight in targets, each component comprising from 17% to 19%. This underlines the priority that SSC Groups give to activities aimed to support the SSC network, to facilitate the strategic communication and global projection of the SSC Groups and to formulate and monitor conservation action plans. In last place, as in previous years, we find targets linked to Act, with only 11.7% of all the proposed activities for the quadrennium.

![Figure 4](image-url)  
**Figure 4**  
Targets for the 2017-2020 quadrennium by component of the Species Conservation Cycle (%) N = 1848

The proportion of targets associated with each component of the Species Conservation Cycle varied depending on the type of group analysed. In the case of taxonomic groups (Animalia, Plantae, and Fungi and Lichens), targets linked to Assess dominated across all of them (Fig. 5). For Animalia, targets were more evenly distributed across the five components of the Species Conservation Cycle than for Plantae and Fungi and Lichens. For Plantae, Assess comprised 40% of all targets, and the remaining 60% were distributed among the other four components, with Plan comprising the smallest (11.8%) proportion of them. In the case of Fungi and Lichens, 92% of the targets corresponded to Assess, Network and Communicate, while Plan and Act comprised each less than 4% of the targets.

In Disciplinary groups, targets distributed evenly between Assess, Plan, Act, and Network, which summed 90% of all targets; on the other hand, targets allocated to the Act component were much less frequently formulated (9.8%). For the only Action Partnership, targets mostly allocated to Plan (42.9%) and Network (42.9%), while Communicate targets were of lesser importance. The only Working Group of the network concentrated its targets in two components, Assess (78%) and Act (22%), with the first component clearly dominating. In the case of the Stand-alone Red List Authority groups, concordant with their focus of action, about 57% of the
targets corresponded to Assess, followed by Network, Communicate and Plan, in this order of relative importance. Task Forces distributed most of their targets (93%) proportionally among Assess, Plan, Network, and Communicate; with only 7% of the targets allocated to Act. SSC Committees formulated targets in the five components, but their main actions concentrated on Assess (40%) and Network (28%), followed by Plan and Communicate, and Act in last place, with only 5% of the targets.

Figure 5
Targets of the different SSC Group types as a function of the five components of the Species Conservation Cycle (%)

- Fungi and Lichens: N=26
  - Assess: 23.1%
  - Plan: 42.3%
  - Act: 9.8%
  - Network: 17.5%
  - Communicate: 3.8%

- Plantae: N=211
  - Assess: 16.1%
  - Plan: 40.8%
  - Act: 11.8%
  - Network: 17.5%
  - Communicate: 3.8%

- Animalia: N=1243
  - Assess: 20.5%
  - Plan: 30.3%
  - Act: 18.7%
  - Network: 17.8%
  - Communicate: 12.7%

- Disciplinary: N=92
  - Assess: 20.7%
  - Plan: 42.9%
  - Act: 14.3%
  - Network: 9.8%
  - Communicate: 12.8%

- Action Partnership: N=7
  - Assess: 22.2%
  - Plan: 42.9%
  - Act: 14.3%
  - Network: 9.8%
  - Communicate: 12.8%

- Working Group: N=9
  - Assess: 22.2%
  - Plan: 77.8%
  - Act: 0%
  - Network: 0%
  - Communicate: 0%

- Red List Authority: N=82
  - Assess: 57.3%
  - Plan: 19.5%
  - Act: 12.2%
  - Network: 11.0%
  - Communicate: 9.5%

- Task Force: N=72
  - Assess: 29.2%
  - Plan: 26.4%
  - Act: 13.9%
  - Network: 6.9%
  - Communicate: 6.9%

- Committee: N=106
  - Assess: 40.6%
  - Plan: 28.3%
  - Act: 12.3%
  - Network: 4.7%
  - Communicate: 14.2%
The targets proposed by SSC Groups translate into 15 focal activities. For the 2017-2020 quadrennium, the top actions included, in order of importance, research activities (16.9%), red listing (16.1%) and communication (13.7%) (Fig. 6). A second group of activities, less frequently reported (3.3% - 9.5%) but common to many SSC Groups included planning, conservation actions, policy, synergy, capacity building, technical advice, scientific meetings and membership. Finally, the less frequently reported activities (0.4% - 2.3%) included proposal development and funding, Green List, documents review and agreements.

At a finer scale, the main activity types associated with the targets of Specialist Groups (Animalia, Plantae, Fungi & Lichens and Disciplinary) included red listing (12-30%), research activities (17-20%), communication (15-23%) and conservation actions (16%) (Table 4). In the case of Disciplinary Groups, technical advice was also of top importance (23%). For the Action Partnership, the activity of major relevance was planning (43%). In the case of Red List Authority Groups, the most frequently conducted activity corresponded to red listing, which represented 50% of all the activities reported. The only Working Group concentrated on red listing (78%) and technical advice (22%). For Task Forces, the three main kinds of activities linked to their targets were research (22%), policy (21%) and synergy (13%). Finally, Committees displayed activities over a broad range of options, but concentrated efforts on red listing (32%), synergy (13%), policy (12%) and communication (12%).
The Chairs of the SSC Groups indicated the level of accomplishment of targets for the quadrennium based on the progress achieved by the end of 2019. Level of accomplishment of the targets fell into three categories: (1) **Achieved**, for those completely accomplished by the end of the year, (2) **On track**, for those showing progress in their associated activities or in some cases already presenting results, and (3) **No significant progress**, for those not yet initiated or postponed due to a variety of reasons.

For the five components of the Species Conservation Cycle, the majority of targets proposed (76-84%) were already achieved or showed some level of progress by the end of 2019 (Fig. 7). Percentage of targets totally achieved varied between 19 and 38%, with the highest values associated to Communicate and Plan and the lowest to Act. The percentage of targets without significant progress varied between 15 and 23% across the five components, with the highest score linked to Plan and Assess targets.

### Activity categories of targets proposed by each type of SSC Group (%).

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<tr>
<td>Agreements</td>
<td>0.64</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Capacity building</td>
<td>4.02</td>
<td>6.64</td>
<td>11.54</td>
<td>8.70</td>
<td>14.29</td>
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<td>9.76</td>
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<td>Communication</td>
<td>15.12</td>
<td>9.48</td>
<td>23.08</td>
<td>11.96</td>
<td>14.29</td>
<td>0.00</td>
<td>7.32</td>
<td>11.11</td>
<td>12.26</td>
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<tr>
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### Degree of accomplishment of targets by the SSC Network

The Chairs of the SSC Groups indicated the level of accomplishment of targets for the quadrennium based on the progress achieved by the end of 2019. Level of accomplishment of the targets fell into three categories: (1) **Achieved**, for those completely accomplished by the end of the year, (2) **On track**, for those showing progress in their associated activities or in some cases already presenting results, and (3) **No significant progress**, for those not yet initiated or postponed due to a variety of reasons.

For the five components of the Species Conservation Cycle, the majority of targets proposed (76-84%) were already achieved or showed some level of progress by the end of 2019 (Fig. 7). Percentage of targets totally achieved varied between 19 and 38%, with the highest values associated to Communicate and Plan and the lowest to Act. The percentage of targets without significant progress varied between 15 and 23% across the five components, with the highest score linked to Plan and Assess targets.

### Figure 7

Degree of accomplishment (%) of targets by the end of 2019 as a function of components of the Species Conservation Cycle. Numbers within coloured bars indicate number of targets.

![Diagram showing the degree of accomplishment of targets by the SSC Network, with categories for No significant progress, On track, and Achieved.](image-url)
Overall, by the end of 2019, 80% of the targets formulated by the SSC Groups for the 2017-2020 quadrennium had been achieved partially or totally (Fig. 8). All group types showed substantial advance in the achievement of their targets. The Asian Species Action Partnership and Stand-Alone Red List Authorities totally accomplished more than 50% of their targets and the rest of the group types declared high percentages (49-89%) of targets on track by the end of 2019. The percentage of targets without significant progress varied between 11% and 29% across group types.

Figure 8
Degree of accomplishment (%) of targets by the end of 2019 as a function of SSC Group types. Numbers within coloured bars indicate number of targets.

- **Animalia groups**: 278 No significant progress, 614 On track, 351 Achieved
- **Fungi and Lichens groups**: 4 No significant progress, 11 On track, 11 Achieved
- **Plantae groups**: 23 No significant progress, 137 On track, 51 Achieved
- **Disciplinary groups**: 11 No significant progress, 49 On track, 32 Achieved
- **Action Partnerships**: 2 No significant progress, 1 On track, 4 Achieved
- **Working groups**: 1 No significant progress, 8 On track, 1 Achieved
- **Stand-alone Red List Authorities**: 13 No significant progress, 24 On track, 45 Achieved
- **Task Forces**: 10 No significant progress, 31 On track, 31 Achieved
- **Committees**: 25 No significant progress, 63 On track, 18 Achieved
- **All SSC Groups**: 367 No significant progress, 938 On track, 543 Achieved
Activities of SSC Groups in 2019

Global overview of activities

A total of 1330 activities were conducted and their associated results reported by SSC Groups for 2019 (Fig. 9). They mirrored the targets proposed for 2017-2020 (Fig. 6), with red listing, research, communication, conservation actions and planning occupying the first places in reported activities. The dominant activities were red listing (N= 229, 17.2%), research (N= 223, 16.8%), communication (N= 177, 13.3%), conservation actions (N= 123, 9.2%), and planning (N= 117, 8.8%). On average, each SSC Group conducted activities related to 3.2 (1.3 SD) components of the Species Conservation Cycle. A substantial proportion (19.7%) of SSC Groups reported activities covering the five components of the Species Conservation Cycle. Concordant with their central objective, many Stand-alone Red List Authorities concentrated their activities on Assess. A relatively small fraction of the groups (8.2%) reported activities related to a single component.

Red List activities primarily focused on species assessments and reassessments (83.0%), with only a few groups reporting production of documents and tools to support red listing (6.1%), technological improvements of the process (5.7%), quality control of Red List assessments (3.1%), improvements in Red List partnerships and governance structures (1.8%), and advice for Red List policy and decision making (0.4%).

Research activities of SSC Groups included production of scientific publications (26.5%), population and ecology assessments (21.5%), research programs and projects (14.3%), production of databases (10.8%), identification of natural areas with conservation needs (6.7%), expeditions and field survey collections (5.4%),
taxonomic evaluations (4.9%), data analysis (3.6%), understanding sustainable use (2.2%), integration of IUCN knowledge products (1.3%), and six other activities, each with less than 1% of report frequency.

Communication activities were diverse, including media and outreach (e.g., press, radio, social networks) (35.6%), production of group publications (e.g., guidelines, newsletters) (33.3%), on-line forums and discussion mailing lists (6.8%), promotion of use of the Red List and knowledge products (4.5%), production of technical reports on group issues (4.0%), position statement releases (4.0%), virtual libraries (4.0%), communicating sustainable use (2.3%), biodiversity information for public and private financial sectors (2.3%), and six other activities, each with less than 1% of report frequency.

Conservation actions were concentrated mainly on participation in conservation projects (58.5%), population interventions (e.g., reintroductions, control of invasive species, breeding programs) (20.3%), implementation of measures to protect natural areas (e.g., KBAs) (10.2%), participation in conservation projects on major crisis (4.2%), advice on reintroductions (3.4%), and four other activities, each with less than 1% of report frequency.

Planning activities included mainly conservation action planning (73.6%), followed by conservation action planning guidance (10.7%), conservation action planning monitoring (10.7%), conservation action planning organization (3.3%), and two other activities, each with less than 1% of report frequency.

Of the ten remaining activity categories identified in Fig. 9, those frequently reported by the groups included: advice for policy and decision making at global, regional and national level (N= 94), technical advice to organizations and institutions (N= 59), capacity building (N= 64), synergic interactions with other groups and organizations (N= 90), membership recruitment (N= 46), and organization and/or coordination of scientific meetings (N= 51).

Out of 43 KSRs, 41 were reported by the SSC Groups as the main KSRs derived from the activities conducted in 2019 (Fig. 10). From them, 11 KSRs stand out for the number of times reported (> 3% of total). The top KSR mentioned was KSR 28, which refers to strategic and targeted communications and their positive effects on effectiveness of IUCN’s species conservation work; then several KSRs follow in decreasing order of importance: KSR 1 (expansion of the taxonomic coverage of the Red List), KSR 15 (expansion of conservation planning efforts, with emphasis on priority species), KSR 26 (enhancement of effectiveness of biodiversity conservation through global and regional policy mechanisms), KSR 2 (emphasis on Red List assessments at national and regional scales), KSR 27 (use of SSC’s scientific advice at national level to drive actions and policies for species and sites), KSR 12 (population-level monitoring and analysis for selected species and groups of species), KSR 32 (completion and publication of high profile scientific analysis and research on pressing conservation issues), KSR 29 (building of mutually-beneficial institutional partnerships), KSR 18 (guidance for species conservation planning through the continued development and application of cutting-edge, science-based tools and processes), and KSR 43 (contribution of biodiversity information to public, private and financial sectors to help reduce their negative impact on biodiversity).
Figure 10
Key Species Results associated to activities
(N = 1330)

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Activities by main SSC Group types

Specialist Groups in Fungi and Lichens reported 20 activities in seven categories, with a clear dominance of red listing, capacity building and synergy, followed by research, communication, conservation action and policy (Fig. 11). Plantae Specialist Groups reported 156 activities with red listing as the dominant one, followed by conservation actions and research. Other nine activities were reported for plant groups in lower frequencies. Together, Animalia groups reported 870 activities and the highest number of activity categories (N= 15); however, only five of them stand out in numerical importance: research, communication, red listing, planning, and conservation actions. Disciplinary Specialist Groups reported 75 activities in 14 categories with three dominant ones, research, technical advice and communication. The Action Partnership Group emphasized planning. The only Working Group assisted Red List assessments and reassessments. Red List Authority groups reported 63 activities in eleven categories, but most of their efforts were concentrated on red listing, synergy and communication. Task Forces reported 40 activities in 10 different activity categories, with three dominant ones, capacity building, research, communication and synergy.

Figure 11
Activities conducted by main Specialist Group types in 2019. Activities are indicated for each activity category as percentage.
Activities by Animalia SSC Groups

Animalia Specialist Groups make up 55.5% of the SSC network; thus, their activities and results allow for more detailed analysis, disaggregated according to Mammals, Birds, Amphibia and Reptiles, Fishes, and Invertebrates (Fig. 12). Depending on the group, between 11 and 15 activity categories were identified. Although all zoological groups concentrated on a few categories, their relative effort investment varied.

**Mammal groups** led with 401 activities, focused on research (16.5%), communication (15.5%), conservation actions (10.2%), and planning (9.5%). Research activities were led by population and ecology assessments, production of scientific publications, and development of databases; communication activities were mainly related to media and outreach and production of publications of the specialist group (e.g., guidelines, newsletters, etc.); conservation actions were mainly focused on participation in conservation projects and conservation interventions; and planning activities were led by conservation action planning. These groups reported 42 of 43 possible KSRs (for description of KSRs, see page 23), only KSR 41 was not reported.

Bird groups reported 160 activities and also focused on research (28.1%), communication (15.0%), conservation action (15.0%) and planning (11.3%). Research activities focused on population and ecology assessments, production of scientific publications, and development of research programs; communication activities focused on production of specialist group publications, media and outreach, and on-line forum and discussion mail lists; conservation actions emphasized on conservation projects and population interventions; and planning activities were led by conservation action planning. These groups reported 29 KSRs: 1, 2, 3, 4, 7, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 36, 37, and 43.

Amphibian and Reptile groups reported 110 activities with major emphasis on communication (17.3%), research (16.4%), Red List (14.5%), and planning (11.8%). Communication activities mainly focused on media and outreach, production of specialist group publications and technical reports, and capacity building; research concentrated on databases, identification of natural areas for conservation and production of scientific publications; red listing consisted essentially of species assessments and reassessments; and planning focused on conservation action planning. These groups reported 27 KSRs: 1, 2, 4, 5, 8, 11, 12, 13, 15, 17, 18, 19, 20, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 37, 38, and 43.

Fish groups reported 70 activities and their main emphasis was on research (21.4%), Red List (20.0%), communication (14.3%), policy (12.9%), and planning (10.0%). Research activities mainly included development of research projects and programs and production of scientific publications; red listing concentrated on assessments and reassessments; communication activities focused on media and outreach, and production of specialist group publications and technical reports; policy consisted mainly of policy advice and decision-making, and planning consisted mainly of conservation action planning. These groups reported 20 KSRs: 1, 2, 3, 11, 12, 14, 15, 17, 18, 22, 25, 26, 27, 28, 29, 32, 33, 36, 37, and 43.

Invertebrate groups reported 129 activities mainly focused on Red List (32.6%), research (17.8%), and communication (10.1%). Red listing concentrated on species assessments and reassessments; research included a significant investment on
Identification of natural areas with conservation needs, production of scientific publications, and creation of databases; and communication activities focused on media and outreach. These groups reported 28 KSRs: 1, 2, 3, 4, 5, 7, 11, 12, 14, 15, 18, 20, 21, 22, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 38, 39, and 43.

Activities in relation to 2016 World Conservation Congress resolutions

SSC Groups reported activities and results achieved during 2019 in connection with 23 (24.0%) of the 96 IUCN Resolutions adopted during the 2016 World Conservation Congress in Honolulu, Hawai‘i.

Resolutions reported by SSC Groups were, as follows: 011, 015, 016, 017, 019, 021, 027, 039, 041, 060, 061, 067, 068, 085, 093 and 099 for Animalia; 016, 041, and 045 for Plantae; 014, 062 and 064 for Disciplinary; 009 for Action Partnership; 016 for Working Group; 024 and 045 for Red List Authorities; 041, 061, 068, 085, and 086 for Task Forces.

A total of 25 (17.0%) SSC Groups out of 147 reporting results for 2019 indicated that their activities helped support actions requested in the 2016 WCC Resolutions. The group that reported the top amount of resolutions addressed was the Sirenia SG (N=4), followed by Freshwater Plant SG (N=3), Cetacean SG (N=2), Crocodile SG (N=2), Flamingo SG (N=2), Seahorse, Pipefish and Seadragon SG (N=2), Wildlife Health SG (N=2), Human-Wildlife Conflict Task Force (N=2), Dragonfly SG (N=2), and Freshwater Conservation Committee (N=2).

Resolution 085 – “Connecting people with nature globally” was linked to the highest number of activities reported (N=17), followed by Resolution 016 – “The IUCN Red List Index for monitoring extinction risk” (N=14), Resolution 068 – “Prevention, management and resolution of social conflict as a key requirement for conservation and
management of ecosystems” (N=13), Resolution 099 – “Promotion of Anguillid eels as flagship species for aquatic conservation” (N=12), Resolution 041 – “Identifying Key Biodiversity Areas for safeguarding biodiversity” (N=11), and Resolution 015 – “Greater protection needed for all pangolin species” (N=9).

Core support and partnership needs of SSC Groups

From the 147 SSC Groups that completed their SSC DATA reports for 2019, 28 (19.0%) did not provide any information related to their core partnership needs, and 7 (4.8%) noted that they do not have any core partnership needs for the performance of their operations.

Regarding the types of support and/or needs reported by the SSC Groups, 65 groups expressed that they need partnership or funding support, followed by 45 groups that pointed out their interest in increasing group’s core capacities, 42 groups expressed their needs of workshops and training courses, and 17 groups indicated that require technical expertise (Fig. 13).

In relation to partnership and funding, the most frequent activities that require this type of support included: red listing assessments and reassessments (27.0%), host organization(s) for core support (12.2%), meetings (10.8%), core operations (9.5%), conservation actions (9.5%), conservation planning (6.8%) and hiring or funding of staff (6.8%). Within this category, 13 groups (17.6%) did not specify the activity that they plan to cover.

Regarding the interest for increasing the groups’ core capacities, some groups require administrative support, expressed mainly in the need of program officers (41.2%), others want to enhance their website and social media platforms (21.6%), as well as to improve or develop their communications strategies (21.6%), while other groups expressed their interest in improving their capacities in group management (13.7%) and in increasing membership (2.0%).

In the category of workshops and training needs, there is a special interest in our groups for training in fundraising (38.0%), red listing (34.0%), and conservation planning (26.0%). Finally, in relation to technical expertise, the main interests pointed out by SSC Groups are in conservation strategy planning (52.6%), red listing (15.8%), policy (15.8%), and fundraising (10.5%).

It is important to highlight that the results obtained are used as an important guideline for the SSC Partnership Team to outline the SSC partnership strategy, as well as to analyse and make decisions to better allocate resources and match needs with different SSC partners.
Concluding remarks

Despite the valued involvement and contribution of the majority of SSC Groups in the annual reporting process, we still have not achieved the desired goal of total participation in this important activity of our network. We will continue encouraging the group leaders to submit their annual report of activities and results. For this, our team at the SSC Chair’s Office is ready to provide all the needed support to complete the SSC DATA files and to answer all the questions our group leaders could have. Thanks to the SSC DATA database generated from the reports obtained for year 2019, we were able to launch the second program of internal grants, specifically aimed at supporting the SSC Groups with some of their needs. The grants were assigned based on the group’s proposed targets, their declared needs, and their demonstrated progress pursuing each target. The possibilities of support to the network can grow as a function of the progress demonstrated throughout the quadrennium, and for this, contributing to the Annual Species Report is of the essence.
Boadzulu Island – a newly confirmed KBA in Lake Malawi/Nyassa/Niassa
Photo: Will Darwall
Species are critical for the survival of the planet but face threats to their own survival: habitat destruction, invasive alien species, overexploitation, illegal wildlife trade, pollution and climate change are some of the most significant. IUCN’s Global Species Programme (GSP) works hand in hand with IUCN’s Species Survival Commission (SSC) at the forefront of the global fight to save species from extinction. As part of the IUCN Secretariat, GSP has distinct roles and responsibilities and jointly implements the IUCN Species Plan with the IUCN SSC. The IUCN GSP has staff in IUCN offices in Belgrade, Brussels, Cambridge, Cameroon, Gland and Washington D.C. The major roles of the IUCN GSP include ensuring The IUCN Red List of Threatened Species™ is the primary website for global species information in the world, coordinating the input into global policy from across IUCN on species conservation issues and catalysing conservation action through empowering IUCN Members to undertake conservation action.

The IUCN GSP contributes to Assess, Plan and Act through:

**Assess:** Knowledge for species conservation – species conservation is directed to priority taxa, sites and places based on biodiversity knowledge. GSP provides many of the roles and functions that both maintain and promote The IUCN Red List of Threatened Species™.

**Plan:** Policy and planning for species conservation – the status of species is improved through decisions that limit further significant declines in wild species and their habitats, and catalyse population recoveries across all scales. GSP coordinates the knowledge and expertise of IUCN and delivers them to global policy makers through policy processes of multilateral environment agreements.

**Act:** Species conservation action – improved status of wild species and habitats in key conservation sites through targeted interventions. GSP provides grants to conservation organisations.

### Knowledge for species conservation

**New and updated species assessments for The IUCN Red List**

The IUCN-Toyota Red List Partnership supported a significant increase in the number of species assessments published on The IUCN Red List in 2019. Each year, IUCN aims to publish at least two updates of The IUCN Red List, but with the pressure to achieve the Barometer of Life target of having 160,000 species on the Red List by 2020 we started increasing the number of updates. Three updates to The IUCN Red List were published in 2019 (March, July and December) and 15,563 new species assessments were processed and published on The IUCN Red List (almost three times more than the 5,527 published in 2018). The majority of these new assessments were for invertebrates (811 species), plants (11,128 species), reptiles (716 species), freshwater fishes (1,004 species) and marine fishes (1,407 species). At the end
of 2019, The IUCN Red List included assessments for 112,432 species, of which 30,178 are threatened with extinction (i.e. they are listed as Vulnerable, Endangered, or Critically Endangered) compared with 96,951 species (26,840 threatened) in 2018. The IUCN media releases that communicate the updates to The IUCN Red List received significant global media coverage and helped to raise the awareness of species conservation and the work of IUCN, the SSC and the Red List Partnership. The July 2019 media release featured the message that unsustainable fishing and hunting for bushmeat driving iconic species to extinction. The December 2019 release featured the message that species recoveries bring hope amidst the biodiversity crisis and resulted in 303 news articles from 42 different countries.

The IUCN Red List as a global platform for information on species

The IUCN Red List website and the database (Species Information Service) run from the IUCN office in Cambridge, UK. Further improvements were made to the IUCN Red List website, with new pages, enhancements and functionality added. New features in 2019 include:

- New options under the Advanced Search to filter for species tagged as ‘Critically Endangered – Possibly Extinct’ and ‘Critically Endangered – Possibly Extinct in the Wild’;
- New options under the Advanced Search to filter search results using the different ‘Country Legend’ options enabling users to e.g. remove introduced and uncertain occurrences from their search results;
- A new ‘Text Summary’ section was added to the Species Fact Sheets showing all of the narrative text fields in one section; and
- Linkage to the Conservation Evidence website has been added to the External Data sources section; this enables users to see available evidence on the impacts of various threats and conservation actions for the species of interest.

The IUCN Red List website had over 4 million visitors and almost 18 million page views. Users are able to export the results of any searches they carry out on the website, and in 2019 there were 11,075 downloads of these tabular search results, a significant increase on previous years; the previous highest was in 2015 with 8,300 downloads. In addition there were 290,802 downloads of the PDF versions of the species assessments.

Along with users being able to download tabular data, they can also download spatial data, for individual species and for sets of species based on specified search criteria or through the Spatial Data Download page where spatial data for multiple species are pre-packaged for download (e.g., for all mammals). There were over 40,000 downloads of pre-packaged data in 2019, comprising over 47.2 million individual species files. There were also 56,820 downloads of spatial data generated through search queries; once again a substantial increase on previous years. Overall, the user statistics remained very high and are significantly higher than those reported by similar conservation-related websites.

The Red List Unit was involved in a national Red List project for the United Arab Emirates funded by the UAE Ministry of Climate Change and the Environment. This project will result in the production of a series of UAE national Red Lists, the first
two of which on the mammals and herpetofauna were published in 2019 along with policy briefs on both groups (mammals and herpetofauna). The Red List Unit also continues to engage with and supports the IUCN regional assessment initiatives, the European Red List and the Mediterranean Red List, coordinated, respectively, by GSP staff in the IUCN European Regional Office (Brussels, Belgium) and by the IUCN Centre for Mediterranean Cooperation (Málaga, Spain).

**Assessing the extinction risk of species using IUCN Red List Criteria**
Efforts focussed on conducting new assessments of freshwater and marine fish, reptiles and plants.

**Reptiles & Amphibians.** Major progress on the Global Reptile Assessment was achieved in 2019 in collaboration with the SSC, including the lizards of China, widespread African species, Mozambique endemics, anolid lizards and species of boas, pythons, vipers and monitor lizards. This progress was complimented by the assessment or reassessment of over 473 species amphibian species in collaboration with the IUCN SSC Amphibian Specialist Group.

**Marine Fish.** We continued to progress with the ongoing efforts to assess all marine vertebrates and in 2019 focussed on the flatfishes (Order Pleuronectiformes). Spanning a wide range in size, larger species such as plaice and sole support major, targeted commercial fisheries, while smaller species are a large component of multi-species demersal trawl catch. The results of these assessments project will highlight important gaps in our knowledge of the species and their contribution to livelihoods and food security. Assessments of 275 coral reef fish are underway to evaluate the impacts of the trade on population status and trends on marine ornamental fish.

Regionally, we assessed more than 1,000 marine fishes of the Western Indian Ocean and continued to support national Red Listing projects in the United Arab Emirates, to assess the status of sharks and rays, corals and selected exploited bony fishes, and in the Philippines, with a focus on demersal fishes.

**Plants.** Assessments of priority plant taxonomic groups included Proteaceae of Australia, 550 ginger species, 153 species of agave and yucca and 31 aloes. Amongst the gingers, Grains of Paradise (*Aframomum melegueta*), well known for its use in the spice trade for hundreds of years, joined the IUCN Red List as Data Deficient as it is not known which plants in Africa represent a truly wild population or if they are all from cultivated sources. The September 2019 release of the European Red Lists of Trees was accompanied by a press release which led to significant media coverage, reaching an estimated ca. 2.4 million people online. A national assessment of the plants of the United Arab Emirates was completed in 2019.

**Fungi.** A total of 195 species of fungi were added to the IUCN Red List, including the striking Critically Endangered Barbie Pagoda (*Podoserpula miranda*) from New Caledonia. This fungus has an extremely high risk of extinction due to forest clearance and habitat degradation caused by introduced pigs, feral cattle and horses.

**Freshwater Fish.** The focus was the completion of globally comprehensive assessments of freshwater fishes, molluscs, dragonflies, crustaceans and selected plants. In 2019 new assessments and reassessments were published for freshwater fishes (1,744 spp.), dragonflies and damselflies (*Odonata*) (545 spp.), freshwater decapods
(13 spp.), molluscs (54 spp.), and 152 plants classified as being dependent upon freshwater habitats. Overall, 3,142 assessments of taxa classified on the IUCN Red List as being freshwater dependent were published in 2019, taking the total assessed in all taxonomic groups to 30,950.

Regionally, we supported efforts to conserve freshwater species in the Malili Lakes, Sulawesi, the Lake Malawi Basin, and the Guinean Forests of West Africa hotspot. A reassessment of all freshwater fishes in Europe is also underway in collaboration with partners.

**Invertebrates.** The European Red List of Terrestrial molluscs was completed in 2019. In January 2019, work started on a new regional project to assess the extinction risk of all native European hoverfly species (approx. 900 species). The European Red List of Hoverflies stems from the EU Pollinators Initiative put forward by the EC in June 2018 to address the decline of pollinators in the European Union.

**Capacity building for The IUCN Red List**

One of the key components to the success of the IUCN Red List is the provision of high quality training to the IUCN SSC network, Red List Partners and other external parties. In 2019 the network of certified Red List Trainers expanded from 75 to 81. The network of trainers provided Red List training and guidance to global and national Red List assessors through 50 facilitated events involving more than 1,150 participants. The IUCN GSP provides technical support to the global Red List Trainer network and a new bespoke password protected area of the Red List website was developed for Red List Trainers and the training materials they need to use. The training materials were updated in 2019. The Red List Unit manages the online Red List training course hosted for us by the Nature Conservancy (TNC) on their Conservation Training website. In 2019, 1,311 people enrolled on the online IUCN Red List Training course (taking the cumulative total of people enrolled to 6,372) and 214 people passed the online Red List exam (a cumulative total of 1,056 people have passed so far). All training materials, including the online courses, are available in English, French and Spanish. Updates to the French and Spanish versions are underway. A process to measure the impact of Red List training in terms of delivery of published Red List assessments has started.

**Assessing Key Biodiversity Areas**

In collaboration with a number of partners we led, or participated, in initiatives to identify new Key Biodiversity Areas. These efforts often had a taxonomic focus, building on new information for KBA trigger species from The IUCN Red List. These included identifying over 1,500 potential KBAs in South America (tropical Andes: Bolivia, Colombia, Ecuador and Peru), Asia (Bangladesh, Bhutan, India, Indonesia, Nepal, Pakistan, Sri Lanka, Timor Leste) and Southern Africa (Angola, Botswana, Namibia, Malawi, Zimbabwe, Mozambique, Zambia, DRC, Congo, Gabon, Equatorial Guinea, Sao Tome & Principe, Cameroon). In addition, 22 new KBAs in the Lake Malawi/Nyassa/Niassa catchment were approved by the KBA Secretariat in 2019. Work also continued on updating freshwater KBAs and 66 of the 232 (Spain, France, Portugal and Italy, Mekong) sites meet the Global KBA Standard.

We also tested the feasibility of KBA population metrics in the Greater Caribbean marine region using available occurrence and population data and species’ threat
statuses for 1,669 marine vertebrates. Using KBA criteria A1 (threatened biodiversity), B1, B2 and B3 (irreplaceable biodiversity), we identified 90 geographically unique KBA sites, 34 outside of existing PAs and 54 within, providing logical starting points for national and regional conservation managers to verify KBA thresholds were met and to delineate site boundaries. Significant data gaps, such as population sizes and extent of habitats, prevent the full application of the KBA criteria to marine biota, particularly data-poor marine species.

In addition to identify new Key Biodiversity Areas we are collaborating with partners on an Initiative called “Global Swimways – balancing conservation of migratory fishes and development”. It aims to build on the Flyways concept to generate international cooperation and awareness for the conservation of migratory birds. A key aim is to classify and map the world’s freshwater fishes according to their migration patterns, leading to the identification of “Global Swimways”.

Assessing Invasive Species
The IUCN SSC Invasive Species Specialist Group (ISSG) together with GSP has continued to develop and apply The Environmental Impact Classification of Alien Taxa (EICAT). IUCN Resolution WCC-2016-Res-018-EN, “Toward an IUCN standard classification of the impact of invasive alien species,” adopted at the 2016 IUCN World Conservation Congress in Hawaii, requested IUCN to undertake an IUCN-wide consultation before submitting the methodology to the IUCN Council to be considered for adoption as an IUCN standard. In 2019, GSP and ISSG finalised this consultation process, finalising the proposed standard which will be submitted to IUCN Council for adoption in early 2020. Work has also continued on the integration of EICAT into the ISSG Global Invasive Species Database, which will provide the data structure and interface to display EICAT results and data.

Policy and Planning for Species Conservation
In collaboration with the IUCN SSC, we engage in a number of different policy arenas through our global and regional teams.

The Post-2020 Global Biodiversity Framework
2019 was a busy year for the IUCN Global Species Programme’s engagement with the post-2020 global biodiversity framework development process. GSP worked in close collaboration with IUCN Global Policy Unit, the IUCN Council’s Post-2020 Task Force, IUCN SSC and other Commissions to increase our overall IUCN engagement with the Convention on Biological Diversity (CBD). This is to maximize our voice, knowledge, positions and standards in the frame of the Post-2020 Global Biodiversity Framework discussions. GSP led the development of various resources and position papers to help shape a relevant and impactful post-2020 global biodiversity framework, as well as facilitating coordination and alignment of policy messages between the IUCN Delegation and the IUCN Members present at the First meeting of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework and the twenty-third meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-23). GSP led a side-event at SBSTTA-23 on IUCN’s evolving position on the post-2020 global biodiversity framework, introduced the Abu Dhabi Call for Global Species Conservation Action, and called for
an ambitious global species goal and associated targets, and effective implementation to bring about species recovery through coordinated and concerted species conservation action. Specifically, GSP worked closely with the IUCN SSC Post-2020 Biodiversity Task Force and the SSC Network to develop and submit the document entitled "IUCN views on the need for a Global Plan of Action to support species conservation in the post-2020 framework" in responding to the call from the CBD for views on species conservation.

The IUCN Global Species Programme and IUCN SSC Invasive Species SG have actively engaged in the Post-2020 Global Biodiversity Framework process to further the development of a 2030 Target on invasive alien species.

**Conservation of Migratory Species**

GSP coordinated the engagement with CMS policy processes in preparation for the Thirteenth Session of the Conference of the Parties to CMS (COP13), in close connection with the SSC, and the IUCN WCPA Connectivity Conservation Specialist Group and Beyond Aichi Target Task Force. GSP participated in the Fourth Meeting of the Sessional Committee of the Scientific Council (ScC-SC4) in October 2019 in Bonn, Germany, with the participation of the SSC Network to provide scientific information as well as influence CMS policy on migratory species, especially on freshwater fish migratory issues. Prior to the ScC-SC4, GSP also coordinated with the Asian Elephant SG, Cat SG, Cetacean SG and Shark SG to provide scientific comments and inputs to CMS policy documents and listing proposals and amendment proposals.

IUCN Save Our Species have been engaging with CMS on the Central Asian Mammals Initiative (CAMI), which is the framework within which IUCN Save Our Species aims to further develop its ongoing Central Asia Initiative. In addition, discussions have been held with the CMS and CITES Secretariats on the joint CMS-CITES African Carnivores Initiative (ACI) and on how the IUCN Save Our Species African Wildlife Initiative (AWI) can support the implementation of the ACI as the four priority species of the ACI overlaps with IUCN SOS AWI's targeted species. Both the CITES and the CMS Secretariats are interested in further exploring the use of IUCN Save Our Species as a funding delivery mechanism.

**Conservation and Sustainable Use of Species**

GSP continued to harness the expertise within the IUCN SSC’s Specialist Groups to deliver a coordinated global response to issues relating to illegal and unsustainable wildlife use and trade. GSP and the SSC network supported global agreements such as CITES, and contributed to work addressing illegal wildlife trade more broadly. GSP and key SSC experts attended the 19th meeting of the Conference of the Parties to CITES in August 2019, and provided a number of technical contributions to inform the Parties’ decision-making. These included the joint IUCN/TRAFFIC Analyses of the Proposals to Amend the CITES Appendices, which provided an objective scientific assessment of whether each of the 56 listing proposals submitted by Parties met the relevant criteria established by CITES. Another joint IUCN/TRAFFIC report on the conservation status and trade of rhinoceroses, co-authored by experts from the SSC African and Asian Rhinoceroses Specialist Groups, helped inform decisions taken by Parties to combat the illegal trade in these species. SSC experts on a
wide range of other species, including cats, crocodiles, sharks, eels and seahorses amongst others, advised on recommended actions to ensure effective implementation of CITES for these species. In addition to a number of species-focused side-events led by SSC members during the meeting, GSP held a joint side-event with UNEP-WCMC on the role of the IUCN Red List in informing CITES decisions. Enhancing IUCN’s capacity to deliver effective science-based inputs to CITES and other policy instruments was also a key topic for discussion at the SSC Leaders’ Meeting, with GSP representatives contributing to several sessions focused on these issues during the meeting.

**IUCN Red List Data Used in IPBES Global Assessments**

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) published the Global Assessment of Biodiversity and Ecosystems Services and the Summary for Policy Makers in May 2019. The IUCN Red List of Threatened Species was key in informing this assessment; the first global assessment since 2005. The IPBES report uses the Red List data to graph the increasing number of extinctions over the last 500 years and the Red List Index, which shows the rate at which species groups are sliding towards extinction. The Red List Index is an official indicator for tracking progress towards Sustainable Development Goal Target 15.5. IUCN welcomed the report and was pleased that the authors had used data from The IUCN Red List for the assessment.

**Building Dialogue and Knowledge – European Habitats Forum**

Throughout 2019, the GSP Brussels continued providing the Secretariat to the European Habitats Forum (EHF), which brings together 22 leading nature organisations that provide advice on the implementation and future development of EU biodiversity policy. More info here: [https://www.iucn.org/regions/europe/our-work/policy/eu-biodiversity-policy/european-habitats-forum](https://www.iucn.org/regions/europe/our-work/policy/eu-biodiversity-policy/european-habitats-forum)

**Invasive Species Policy**

The IUCN GSP and the IUCN SSC Invasive Species Specialist Group continued to support invasive alien species policy development and implementation around the world. **Technical guidance and scientific analyses was provided to the European Commission.** This supported the implementation of the EU invasive alien species regulation (No. 1143/2014), directly linking IUCN SSC science and expertise to policy implementation. An additional project to provide support to the management of invasive alien vertebrate species, through lethal and non-lethal measures, began in 2019. It will provide information on the feasible management measures, including assessments of their humaneness, for the 22 vertebrate species that are included on the list of invasive alien species of Union concern. Technical support was also provided to the UAE Ministry of Climate Change and Environment for the development of a national invasive species strategy and action plan.

**Green List and Natura 2000**

In Europe, the Natura 2000 network of protected areas is the centrepiece of EU nature and biodiversity policy, established under the Habitats and Birds Directives. We worked with the European Commission to determine the feasibility and benefit of tailoring the IUCN Green List Sustainability Standard to the Natura 2000 network. The aim of the project was to enhance the implementation of legislation, support the

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*The Rose Mallee, *Eucalyptus rhodantha*, is confined to Western Australia. It is assessed as Endangered because of habitat clearance for agricultural crops and pastoralism. Photo: Tatters (CC BY-NC 4.0)*

*Endangered, *Syntripsa flavichela*, a crab species endemic to the Malili Lakes, Sulawesi. Photo: Will Darwall*
prolonged effective management of Natura 2000 sites within the network, and ensure the survival of Europe’s most threatened species and habitats. The ‘Green List for Natura 2000’ has great potential to become a pivotal policy tool in Europe and the GSP Brussels continues this work to ensure effective management of the Natura 2000 network, as preconized in the newly adopted EU Biodiversity Strategy.

The Conservation of Pollinators

In the European Union, 78% of native flora and 84% of crops are either partially or fully dependent on invertebrates for pollination and contribution of pollinators to economy alone is estimated to be EUR 15 billion. However, scientific studies and monitoring have indicated a concerning trend in the health of pollinator populations worldwide and Europe is no exception. Along with our partners we are producing a series of guidance that provide key knowledge and expert advice to key sectors (e.g. IAS managers, cities) and industries across Europe on how to conserve wild pollinators.

Conservation Planning Using the IUCN Red List

A pilot project in the Malili Lakes, Sulawesi, demonstrated the integrated approach of Assess-Plan-Act. The project focused on a small lake (Mahalona) which is home to many lake endemic fish, molluscs, shrimp and crab species threatened by alien invasive fish species and a nearby nickel mine. The project focused on first assessing species for the IUCN Red List, then planning conservation using the Integrated Wetland Assessment and KBA identification to produce an integrated catchment management plan.

Additionally, further testing to combine species assessments with species planning in the same workshop was conducted in Asia. In January 2019, GSP, the IUCN SSC Conservation Planning Specialist Group and the IUCN SSC Asian Species Action Partnership focused on the freshwater fishes of the Sunda Basin. The aim of the workshop was to review IUCN Red List assessments of freshwater fishes native to the basin, and to start developing conservation actions plans for threatened freshwater fishes.

Species Conservation Action

The IUCN Global Species Programme works to improve the long-term survival prospects of threatened species in line with IUCN’s mission of a just world that values and conserves nature. Key to this is the process of translating species knowledge, policy and planning into results-oriented conservation action. To facilitate this, IUCN has developed competency in coordinated grant making and grant management through its funding mechanisms, IUCN Save Our Species and the Integrated Tiger Habitat Conservation Programme.

Together these programmes support both landscape scale and site-based conservation projects that benefit species, habitats and communities; as well as their respective interactions. To date these programmes have invested in more than 172 projects across 81 countries helping protect almost 500 threatened species.

Save Our Species

The IUCN Save Our Species portfolio grew to include initiatives to conserve Snow Leopard, Goitered Gazelle, Burmese Roofed Turtle, Asian Elephant and all species of Gibbons.
Ongoing initiatives also expanded. SOS Lemurs, focused on protecting all lemur species in Madagascar, launched a third Call for Proposals and added 16 new projects to its portfolio, bringing the total number of projects under this initiative to 51. With about 40% of Madagascar’s original forest cover lost between the 1950s and 2000, reforestation is a priority for many of our grantees. Since 2017, they have planted more than 2.7 million trees to improve lemur habitat across the island.

SOS African Wildlife, co-funded by the European Union, launched its second Call for Proposals for Threatened Species projects looking to conserve carnivores and their prey species in Sub-Saharan Africa. A further 15 projects were selected for funding bringing the total number of projects funded to 25. In addition, 9 Rapid Action Grants were also awarded under this initiative to projects responding to conservation emergencies. Ongoing projects are starting to demonstrate their conservation impacts. In Zambia for example, one project aimed to prevent wildlife crime and protect threatened wild dog, lion, cheetah and leopard populations was able to report a 16% increase in snare recoveries and a 43% increase in arrests within one year of receiving an IUCN Save Our Species grant, which may be due to the 100% increase in patrols in that area.

IUCN Save Our Species’ partnership with Lacoste entered its second year with a new campaign in which the famous crocodile made way for ten threatened species to be featured not only on limited edition polo shirts, but also in Lacoste stores across the world and online. As part of this collaboration, a project to conserve the Critically Endangered Burmese Roofed Turtle was funded after an open Call for Proposals. The species was featured as one of the ten threatened species in the 2018 campaign. Just in time for World Turtle Day, the project reported early success: 51 Burmese Roofed Turtle hatchlings had arrived. The second Call for Proposals was launched at the end of 2019, with project selection taking place in early 2020.

Integrated Tiger Habitat Conservation

In 2014, IUCN launched the Integrated Tiger Habitat Conservation Programme (ITHCP) to contribute to the Global Tiger Recovery Programme (GTRP) – the landmark global agreement that aims to double wild tiger populations by 2022. Funded by the German Cooperation (BMZ), through the German Development Bank (KfW), the Tiger Programme aims to foster a collaborative approach between stakeholders from local communities, grassroots organisations, NGOs and governmental organisations. It is now one of the largest funds for tiger conservation globally and one of the major contributors to the GTRP.

In 2019, the programme was funding 12 projects across six Tiger Range Countries: India, Nepal, Bhutan, Bangladesh, Myanmar and Indonesia. Projects mainly focus on the interaction between humans, wildlife and habitats in key Tiger Conservation Landscapes, with community-based activities to improve livelihoods and reduce the unsustainable dependency on natural resources underpinning all projects. ITHCP has also brought in a private donor to the tune of several million dollars and the new actions directly build on and complement the projects previously funded, while expanding the programme’s footprint into countries not previously funded, such as Thailand. Conservation works, and countries such as Nepal and India have already announced a doubling of their tiger numbers. We are especially proud of these achievements as
Nepal is one of the countries where ITHCP has invested the most, in four protected areas critical for long-term survival of tigers. In India, some of the biggest increases in numbers were observed in the states of Karnataka and Maharashtra, both states where ITHCP has funded projects.

More good news: following the aforementioned successful ITHCP project in Maharashtra, the Government of India has recognised the importance of corridors for tigers in connecting protected areas and has now initiated schemes in Central India focusing on livelihood activities for communities in corridor areas to reduce their dependence on forest resources.

Also, Myanmar has now got robust tiger population estimates based on intensive camera tracking from the three ITHCP projects in the country. This is particularly important for southern areas of the country along the Thailand-Myanmar border, where tiger presence has always been known but no actual tiger censuses had ever been conducted before.

In 2019, the programme also brought together civil society organisations in a workshop on Human-Wildlife Conflicts and coexistence. A situation analysis funded by the programme highlighted the importance of high-altitude sites in the Himalayas for tigers. Going forward, this will form the basis of an action plan for a programme of work to safeguard critical high altitude habitats for wildlife whilst developing sustainable alternative livelihoods for the communities living there. In January 2020, a second Human-Wildlife Conflict workshop was held for the Save Our Species African Wildlife initiative.

Following additional funding from the German Development Bank (KfW) in December 2018, the programme also focused on extending and expanding multiple projects for a second phase launching in 2020. A lot of the preparatory work went into ensuring the tiger conservation projects do not create negative consequences on local communities, with IUCN’s Environmental and Social Management System (ESMS). The ESMS was piloted by the Tiger programme and is now a key element of our work.

Acknowledgements

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This section contains the individual reports of all SSC Groups that submitted their information through SSC DATA. The reports have been ordered by major SSC Groups, each marked with a specific coloured band: Animalia (dark blue), Fungi & Lichens (brown), Plantae (green), Disciplinary (grey), Action Partnership (purple), Working Group (light blue), Stand-alone Red List Authority (red), and Committee (yellow). Within Animalia, the reports have been ordered alphabetically by major zoological groups and within them, also alphabetically, by zoological groups. Following, is a succinct explanation of the structure of the individual reports and what information is found in each part of it.

**Title of the SSC Group**

**Photograph(s) of the Chair / Co-Chairs**

**Group information**
Includes names of Chair / Co-Chairs, Vice-Chairs, Deputy Chairs and Red List Authority Coordinator(s), their institutional affiliations, number of members and social networks (currently active).

**Logo of the SSC Group**

**Mission statement**

**Projected impact for the quadrennium 2017-2020**
This narration indicates how the planned activities, as a whole, will impact on the conservation status of species during the 2017-2020 quadrennium.

**Targets for the 2017-2020 quadrennium**
Targets planned by the SSC Group for the 2017-2020 quadrennium, first ordered alphabetically by component of the Species Conservation Cycle, and second by Activity Category. For each Activity Category listed, all the planned targets are indicated.

**Activities and results 2019**
Activities conducted during the 2019 period, ordered alphabetically first by component of the Species Conservation Cycle (see page 23 for description of each component), and second by Activity Category. Under each Activity Category, succinct descriptions of each activity and result achieved are listed. Each activity and result described, if applicable, includes the Key Species Result to which it is mainly associated to (see page 23 for complete description of KSRs).

**Acknowledgements**

**Summary of activities 2019**
Numerical summary of the achievements of the SSC Group in terms of components of the Species Conservation Cycle addressed (Species Conservation Cycle ratio: # components addressed/total # of components), activities conducted per Activity Category, main KSRs addressed and 2016 WCC Resolutions linked to the activities.
Mission statement
The Amphibian Specialist Group (ASG) provides the scientific foundation to inform effective amphibian conservation action around the world. More specifically, the ASG stimulates, develops and conducts scientific research to inform the conservation of amphibians and their habitats around the world, supports the assessment of the conservation status of amphibian biodiversity and informs the general public of amphibian conservation-related issues and priorities. This is attained by supporting and mobilising a global network of members to develop capacity, improve coordination and integration so as to achieve shared, strategic amphibian conservation goals.

Projected impact for the 2017-2020 quadrennium
Resources permitting, by 2020 we envision conclusion of the update of global amphibian assessments on The IUCN Red List, update of the Amphibian Conservation Action Plan for the next four years and an increased uptake of this tool by the amphibian conservation community. At the ASG membership level we envision a more proactive and engaged specialist group, with greater participation, more cross-pollination within and between regions and thematic groups and collaborations with other specialist groups with cross-cutting issues.

Targets for the 2017-2020 quadrennium

Assess
Green List: The ASG Red List Authority (RLA) provides technical feedback and expertise to the Red List Committee and Red List Technical Working Group, as necessary.
Proposal development and funding: ASG has a fully-funded Global Amphibian Assessment (GAA2) update project.
Red List: (1) completion of the Global Amphibian Assessment update (GAA2); (2) the ASG Red List Authority (RLA) provides advice and expertise for national Red List processes.
Research activities: (1) ASG supports the update of Alliance for Zero Extinction (AZE) sites; (2) ASG actively contributes to the production of scientific publications related to amphibian research and conservation.

Plan
Planning: (1) ASG Secretariat, Regional Chairs and members contribute towards single- or multi-species conservation action plans at the international or national levels; (2) update of the Amphibian Conservation Action Plan (ACAP); (3) completion of Amphibian Reintroduction Guidelines; (4) a framework for single- and multi-species amphibian action planning is created through collaboration with the Conservation Planning Specialist Group’s efforts to develop multi-species planning guidance.
Policy: (1) ASG provides scientific advice and information for the identification and conservation of species of concern in national and international contexts; (2) ASG coordinates input for the development of an updated amphibian motion for the next World Conservation Congress.
Proposal development and funding: increasing uptake of the ACAP among donors.

Technical advice: ASG provides technical advice to organisations and institutions globally.

Network
Agreements: ASG has donors that provide financial and institutional support to ASG RLA staff time.

Capacity building: (1) development of the Grant Writing Mentorship Program; (2) ASG RLA will provide Red List training through its Red List workshops and other venues when the opportunity arises; training day(s) may be open to the public or an audience wider than amphibian experts.

Membership: (1) ASG membership and regional and thematic leadership are renewed, new members are brought on board and regional representation is improved; (2) ASG proactively recruits new members, focusing on regions with little or no representation at the start of the quadrennium.

Proposal development and funding: ASG has donors that provide financial and institutional support to ASG staff time.

Synergy: (1) ASG is a key ally of Amphibian Ark and the Amphibian Survival Alliance with the shared vision of “Amphibians thriving in nature”; (2) ASG has a Strategic Plan for the remainder of the 2017–2020 quadrennium.

Communicate
Communication: (1) ASG reports its activities to SSC DATA; (2) ASG will participate in, and in some cases organise, public presentations to communicate the work of IUCN, SSC, ASG, and the Red List; (3) ASG will develop and launch its own website (we have shared our site with the
Amphibian Survival Alliance (ASA) since 2013) to continue providing information about our work and amphibian conservation globally; (4) the IUCN Red List is used to inform the project and funding priorities of NGOs and funding mechanisms with the aim of ensuring that effective amphibian conservation is taking place globally; (5) ASG develops a communications plan that will lay out the intended use of each of its communications tools (email, FrogLog, website, social media [Facebook, Twitter]); (6) together with ASA, ASG continues to produce FrogLog.

Research activities: create and establish a Repository for Amphibian Conservation literature (RAC).

Scientific meetings: (1) ASG actively participates in scientific meetings; (2) ASG actively contributes to the organisation of scientific meetings; (3) ASG will participate in, and in some cases organise, symposia to communicate the work of IUCN, SSC, ASG, and the Red List.

Activities and results 2019

Assess

Green List

i. The Amphibian RLA worked with Resit Akcakaya on the following topics: testing the extinction guidelines and developing an approach to calculate the next Red List Index data point for amphibians. (KSR #11)

Red List

i. Out of the 8,000+ described amphibian species, 3,674 amphibian species have assessments dated 2009–2019. Results include assessment dates in 2019 as the GAA2 is now planned for completion in 2020; numbers are taken from Red List version 2019-3. (KSR #1)
ii. ASG supported national Red List processes for Honduras and Mozambique in 2019. (KSR #2)

Research activities

i. The Amphibian RLA continues to work with Global Wildlife Conservation and the Amphibian Survival Alliance to provide expert input, proposed new sites, and proposed revisions to existing sites to the Alliance. (KSR #22, 31)


Plan

Planning

i. Thanks to the support of the SSC Internal Grants, it is possible for ASG to participate in a Red Listing workshop to trial the Assess to Plan (2AP) Conservation Planning Specialist Group (CPSG) framework for multi-species amphibian action plans. However, given busy schedules, we had to push back this target into early 2020. (KSR #15, 17)

ii. Given the kind and generous support provided by Detroit Zoological Society (DZS) and Amphibian Survival Alliance (ASA), we have been able to make some headway into the update of ACAP (a survey to understand how people use ACAP, identifying what to change, reinstating chairs or bringing in new ones as needed, exploring platforms to facilitate project management, developing a new framework for ACAP). However, because of unexpected delays with staff availability, we have had to push back dates into 2021 to more realistically reflect the availability of a new ACAP. (KSR #15, 17)

iii. Completion of Amphibian Reintroduction Guidelines: there were some personnel/logistic difficulties encountered by the Conservation Translocations Specialist Group (CTSG, formerly Reintroductions Specialist Group) over 2019, so there was a change in leadership for this target. However, the guidelines are now finalised (currently pending an updated logo for CTSG) and expected to be produced in 2020. (KSR #18)

iv. We submitted a project to test whether the recently developed CPSG ‘Assess to Plan’ process can help us bridge the gap between assessment and planning for threatened amphibians and to inform multi-species conservation planning for these species. With the support of an SSC Internal Grant, it will be possible for ASG to participate in a Red Listing workshop to advance the CPSG framework for multi-species action plans. (KSR #15, 17, 18, 20)

Policy

i. Scientific advice and information for the identification and conservation of species of concern in national and international contexts: (1) ASG Chile was the first to sound the alarm regarding the imminent extinction of the Loa Frog (*Telmatobius dankoi*) in Northern Chile. ASG, together with ASA and Amphibian Ark, then coordinated an emergency response that included a rescue operation, captive breeding, habitat restoration and political intervention (the latter through SSC); (2) provided input and supported the development of the *Atelopus* Survival Initiative, led by Global Wildlife Conservation; (3) provided input into several CITES-related processes; (4) provided advice on AZE trigger species; (5) together with Amphibian Ark, coordinated response to news of a Titicaca Water Frog (*Telmatobius culeus*) seizure in Peru and a request from Bolivia for ten males for captive breeding; and (6) reviewed ethical protocols for surveying Pehuenche Spiny-chest Frog (*Alsodes pehuencen*) for CICUAE (Comisión Institucional de Cuidado y Uso de Animales en Experimentación), CONICET Mendoza, Argentina. (KSR #26)

ii. Development of an amphibian motion for the World Conservation Congress (WCC) had been initiated by a law student at Pace Law School in White Plains New York. The student was a member of a class where they drafted resolutions to submit to the 2020 WCC and the student drafted a resolution on the Amphibian Crisis. ASG collated input into the draft that was sent to us but the motion was not selected so it was not submitted. (KSR #26)
Proposal development and funding

i. Multiple attempts were made to engage a species-focused small grants agency with the intent of understanding their priorities and how they relate to ACAP; however, in spite of these efforts (inclusive of SSC Chair’s Office support in establishing contact) it was not possible to get traction on this from their leadership. (KSR #19, 30)

Technical advice

i. Technical advice: (1) provided a proposal review for Rainforest Trust; (2) compiled ASG feedback for IUCN/TRAFFIC Analyses of the Proposals to Amend CITES Appendices, CITES Scientific Authorities of Slovakia, Germany and Norway; (3) coordinated feedback for CITES glassfrog proposal; (4) provided input into the 18th meeting of the Conference of the Parties to CITES (COP18) Doc 62 and coordinated broader ASG input for Docs 62 and Doc 87; (5) provided feedback on two AZE trigger species; (6) compiled and sent ASG and Amphibian RLA feedback for development of Amphibian Species of the World 6.1; (7) supported Synchronicity Earth in identifying strategic Latin American NGOs working on amphibian conservation; (8) supported the Amphibian Survival Alliance (ASA) in developing ASA partner evaluation tools; (9) supported Global Wildlife Conservation’s Lost Species initiative; (10) initiated international response to Loa Frog (Telmatobius dankoi) emergency rescue and re-wrote the SSC letter to Chilean authorities; (11) reviewed ethical protocols for surveying Pehuenche Spiny-chest Frog (Alsodes pehuenche) for CICUAE (Comisión Institucional de Cuidado y Uso de Animales en Experimentación), CONICET, Argentina. (KSR #29)

Network

Capacity building

i. The Grant Writing Mentorship Program was launched in May 2019 (https://www.iucn-amphibians.org/getinvolved-news-blog-new-asg-grant-writing-mentorship-program/); however, although we have a team of qualified reviewers in place, to date we haven’t yet received review requests from ASG members. (KSR #30)

ii. The ASG RLA provided Red List training at 10 workshops, 3 online remote training sessions, and one four-day full training course. (KSR #5)

Membership

i. Twenty-seven new members brought into ASG are primarily from Chile (16), as well as the United States (4), Australia (3), Peru (2), New Zealand (1), and Nepal (1).

Proposal development and funding

i. Thanks to a generous financial donation and in kind support from Detroit Zoological Society (DZS), as well as the Amphibian Survival Alliance (ASA), it has been possible to support two part-time positions (ASG Programme Officers) for the update of the Amphibian Conservation Action Plan. Thanks to the generous support of the ASA, it was possible to secure a part-time ASG Co-Chair (Ariadne Angulo) for 2019–2020. University of Otago kindly supports ASG Co-Chair Phil Bishop. (KSR #30)

Synergy

i. ASG, ASA and Amphibian Ark developed a coordinated emergency response to the imminent extinction of the Loa Frog in Chile. In addition, key staff from Amphibian Ark and ASA are Co-Chairs of three ACAP thematic working groups. (KSR #29)

Communicate

Communication

i. The Amphibian RLA made a public presentation on the IUCN Red List in Tegucigalpa, Honduras in March 2019, hosted by Universidad Nacional Autónoma de Honduras (UNAH) and attended by over 200 people. (KSR #28)

ii. The new ASG website, www.iucn-amphibians.org, was finalised and launched in May 2019. The Amphibian Survival Alliance (ASA) has updated its website content and retained the old domain, www.amphibians.org. (KSR #28)

iii. Interaction with Global Wildlife Conservation to promote the use of the IUCN Red List. (KSR #8)

iv. An initial communications matrix listing all ASG communication tools was compiled in mid-2019. In consulting with the then Co-Chair of the ASG Communications & Education Working Group, it became clear that we needed to further define our goals and audiences, as it would allow us to distil down the outcomes that we want to see. In the meantime, we continue to communicate about amphibian conservation through the website and social media (i.e. Twitter, Facebook), inclusive of ACAP-related Facebook groups. (KSR #28)

v. We aim to publish FrogLog four times a year; however, given reduced content submissions, it was only possible to publish one FrogLog issue in 2019 (March). (KSR #28)

Research activities

i. While there were staffing changes in the institution that had offered to take the database under its wing and while we were unable to secure all the funds needed to develop and populate a full database, we were able to secure resources to continue compiling an
amphibian conservation reference list, something that had been done monthly for many years by Professor Tim Halliday until just before his passing in April 2019. In September 2019, ASG launched the Tim Halliday Conservation Library (https://www.iucn-amphibians.org/resources/publications/halliday-conservation-library/), a joint project funded by the ASG, the Amphibian Survival Alliance (ASA) and the University of Otago. Internally, we have been compiling all the publications (pdfs) as well as the list of their titles to share with ASG members once we find a suitable medium for doing so.

**Scientific meetings**

**i.** Participation in scientific meetings: (1) SSC Leaders’ meeting (Abu Dhabi, October 2019 – Phil Bishop, Jennifer Luedtke, Sally Wren and Ariadne Angulo); (2) CPSG meeting (Buenos Aires, October–November 2019 – Sally Wren); (3) CPSG Development Path training workshop (Buenos Aires, October–November 2019 – Sally Wren); (4) Mitigating Amphibian Diseases Symposium (London, April 2019 – Phil Bishop); (5) Amphibian Conservation Research Symposium (Manchester, April 2019 – Phil Bishop); (6) Workshop on Amphibian Ecology and Conservation (Pyongyang, June 2019 – Amaël Borzée); (7) Amphibian and Reptile Conservation and the British Herpetological Society Joint Scientific meeting (Bournemouth December 2018 – Leida dos Santos; not previously reported). (KSR #28)

**ii.** Contribution to the organisation of scientific meetings: (1) ASG led the consultation of Amphibian and Reptile Specialist Groups in determining whether there was interest in establishing a herpetological committee; (2) ASG supported the Amphibian Survival Alliance in developing an amphibian event for the World Conservation Congress; (3) ASG was involved in the preparation for the World Congress of Herpetology (WCH) as part of the WCH organising committee; (4) ASG organised a stand-alone ASG workshop in the context of WCH. (KSR #28, 29)

**iii.** ASG contributed to two SSC Leaders’ Meeting sessions: (1) a plenary session, and (2) a leadership and membership diversity symposia-discussion session. (KSR #28)

**Acknowledgements**

Candace Hansen-Hendrikx, Amphibian Survival Alliance, University of Otago, Global Wildlife Conservation, Detroit Zoological Society, Synchronicity Earth.
Mission statement
The Boa and Python Specialist Group (BPSG) mission is to provide expert opinion and scientific advice to IUCN and other conservation organisations, government and non-government agencies, applicable to the conservation of boas and pythons and snakes in general.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision: (1) an improved knowledge of the trade of Southeast Asian reptiles; (2) a change in the supply chain of skins from Southeast Asian reptiles due to a better interaction with traders and local governments; (3) a substantial advance in CITES provisions related to snake trade; (4) a better knowledge on the status of several threatened species but particularly of the Endangered Cropani’s Boa (*Corallus cropanii*); (5) a significant advance in Red List assessments of the species in our remit; and (6) a more integrated and communicated group which will redound in more effective conservation actions worldwide.

Assess
Red List: complete assessment of Boidae and Pythonidae species.

Research activities:
1. develop a standard reference for BPSG species taxonomy;
2. improve knowledge and status of Cropani’s Boa;
3. develop research programmes on priorities established under Southeast Asian Reptile Conservation Alliance (SARCA) cooperation.

Plan
Planning: develop BPSG Strategy Planning. Proposal development and funding: increase number of grants delivered.

Network
Capacity building: train two BPSG members in Red List assessments.

Membership: increase BPSG membership in species’ range countries.

Synergy: (1) keep participating in international forums (e.g. CITES); (2) attend Southeast Asian Reptile Conservation Alliance (SARCA) Steering Committee meetings.

Communicate
Communication: (1) increase frequency of *Serpens* newsletter to twice a year; (2) publish scientific and technical reports.

Membership: improve communication with membership.

Scientific meetings: organise the first BPSG global members meeting.

Activities and results 2019

Assess

Red List

1. By the end of 2019, most of the species in our remit (ca. 200 species) were already assessed under the IUCN Global Reptile Assessment process, with the follow up of the BPSG Red List Authority Mark Auliya. A short list of 34 species with outstanding issues were moved forward and the full BPSG remit of species is estimated to be completed by early 2020. (KSR #1)

Research activities

1. Bruno Rocha continued with the project “Building a Conservation Strategy for the Cropani’s Boa (*Corallus cropanii*)”. The main project activities in 2019 were public awareness and environmental education. Bruno expects that education and awareness will increase the probability of detecting new specimens of this elusive snake. (KSR #12)
ii. Biological data collection continues under the SARCA Initiative for python species harvested in Indonesia and Malaysia. Several peer reviewed scientific articles were published on different aspects of the sustainability of the trade on pythons from Southeast Asia, as a result of the research being conducted by BPSG members and led by Daniel Natusch. (KSR #32)

iii. The taxonomy of boas, pythons and their allies is very dynamic and attempting to have a standard reference seems yet premature. Discrepancies (e.g. in Red List assessments) are being solved on a case-by-case basis. (KSR #4)

Network

Capacity building

i. At least one additional BPSG member completed the Red List assessment training in 2019.

Membership

i. Three new members were incorporated into the BPSG in 2019.

Synergy

i. In 2019, Daniel Natusch, as part of the IUCN delegation, represented the BPSG at CITES-related meetings, including the 18th Meeting of the Conference of the Parties held in Geneva, 17–28 August 2019. (KSR #29)

ii. Daniel Natusch represented the BPSG at different Southeast Asian Reptile Conservation Alliance (SARCA) meetings during 2019, both in person and remotely through Webex, as well at the SARCA Side Event at the 18th Meeting of the Conference of the Parties to CITES held in Geneva, 17–28 August 2019. (KSR #29)

Communicate

Communication

i. A new issue of the BPSG newsletter Serpens, Volume 7, Issue 1, was published and disseminated in April 2019. (KSR #28)

ii. Different scientific papers and reports were produced by the membership in 2019, which cannot be enumerated here. As a BPSG product, we highlight the document Harvest monitoring of snakes in trade. A guide to wildlife managers, authored by several BPSG members under the auspices of BPSG and SARCA, that was published as Occasional Paper 65 of the IUCN Species Survival Commission. A humane treatment guidance was produced by SARCA together with the Swiss Veterinary Office where four BPSG members participated as authors and the BPSG participated in the review: Welfare Principles for Snakes and Monitor Lizards in the Southeast Asian Skin Trade—a guide for stakeholders. (KSR #43)

Acknowledgements

We thank the following entities for supporting the work of the BPSG during 2019: IUCN Species Survival Commission, Fundación Biodiversidad, CITES Secretariat, BSR and the Southeast Asian Reptile Conservation Alliance (SARCA) membership. Thanks to Phil Bowles and Mark Auliya, who did extraordinary work under the Global Reptile Assessment initiative and reviewing the assessments on behalf of the BPSG, respectively. Thanks to Victoria Lichtschein, Daniel Natusch and Jess Lyons for their dedicated service to the progress of the Group.

Summary of activities 2019

Components of Species Conservation Cycle: 3/S

- Assess 4
- Network 4
- Communicate 2

Main KSRs addressed: 1, 4, 12, 28, 29, 32, 43

KSR: Key Species Result
Mission statement
The mission of the Chameleon Specialist Group is to improve the conservation status and sustainable use of wild chameleons.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision having developed a comprehensive picture of the conservation status of the world’s chameleons, so that conservation efforts can be targeted effectively. Specifically, we have focused on assessing all described chameleon species on the IUCN Red List, most for the first time, and on ensuring that these assessments are current, so that we can identify conservation focal points. Further, by supporting the implementation of CITES and assisting in national management efforts, we aim to improve the conservation status and sustainable use of wild chameleons.

Targets for the 2017-2020 quadrennium

Assess
Red List: (1) ensure all newly described chameleons are assessed on the IUCN Red List; (2) ensure all chameleon assessments are re-assessed before 10 years old.

Research activities: Alliance for Zero Extinction (AZE) sites for chameleons identified and approved.

Plan
Policy: support implementation of CITES.

Network
Membership: expand membership to improve geographic coverage and representation of taxonomic experts.

Communicate
Communication: establish and develop a new website for the group.

Activities and results 2019

Assess
Red List
i. Two-hundred and two (202) of 214 recognised chameleon species (94%) are currently assessed on the IUCN Red List. All remaining species were described or revalidated in the last few years and their assessments are being planned. (KSR #1)

ii. Of the 202 chameleon assessments currently on the IUCN Red List, 193 were completed within the last 10 years. There are nine (9) chameleon assessments from 2009 that are in the process of being re-assessed. All other assessments are less than 10 years old. (KSR #1)

Research activities
i. Chameleon AZE sites have been identified as part of a BirdLife International/American Bird Conservancy project and are on the AZE web platform. (KSR #22)

Plan
Policy
i. Regular contributions are made to national CITES management authorities on chameleon-related issues in support of the implementation of CITES. (KSR #27)
**Network**

**Membership**

i. A list of new members has been compiled for membership expansion.

**Communicate**

**Communication**

i. A host server has been identified and new website design and implementation is in progress. (KSR #28)

**Acknowledgements**

The Chameleon Specialist Group would like to thank the leadership of the various Reptile and Amphibian Specialist Groups and Red List Authority focal points for their assistance and insights toward the continued development of our group.

### Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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<td>Network</td>
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<tr>
<td>Communicate</td>
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Main KSRs addressed: 1, 22, 27, 28

KSR: Key Species Result
Mission statement
The Mission of the IUCN SSC Crocodile Specialist Group (CSG) is to assist the International Union for Conservation of Nature (IUCN) and the Species Survival Commission (SSC) to meet their missions with regard to the conservation, management and sustainable use of world crocodilians.

Projected impact for the 2017–2020 quadrennium
By the end of 2020, we envisage: (1) increased reintroductions and improved status of wild populations of Critically Endangered (CR) crocodile species (e.g. *Alligator sinensis* in China, *Crocodylus siamensis* in Cambodia and Thailand, *C. mindorensis* and *C. porosus* in the Philippines, *C. rhombifer* in Cuba and *C. intermedius* in Venezuela and Colombia); (2) improved legal protection status of habitat for *C. siamensis* and *Tomistoma schlegelii* in Mesangat Lake, East Kalimantan, Indonesia; (3) publication of ‘CSG Conservation Priorities for World Crocodilians’ and species action plans.

Targets for the 2017–2020 quadrennium
Assess
Red List: review and progress Red List assessments for crocodilians.

Plan
Planning: (1) update and review Species Action Plans; (2) improve protection status of Lake Mesangat, Kalimantan, Indonesia, for Siamese Crocodile (*Crocodylus siamensis*) and False Gharial (*Tomistoma schlegelii*).

Policy: (1) complete at least two country/species reviews; (2) maintain involvement at international forums (e.g. CITES); (3) develop ‘CSG Conservation Priorities for World Crocodilians’; (4) update the *Crocodilian Capacity Building Manual*.


Act
Conservation actions: improve the status of wild Siamese Crocodile (*Crocodylus siamensis*) populations through reintroduction programmes (Cambodia, Viet Nam, and Thailand).

Network
Capacity building: (1) fund up to 20 postgraduate students per annum through the CSG Student Research Assistance Scheme; (2) continue promoting the CSG Future Leaders Program.

Communication: investigate the concept of a ‘Junior CSG’.

Documents review: update the *Best Management Practices for Crocodilian Farming*.

Proposal development and funding: establish a fundraising advisory group.

Technical advice: develop an updated standard reference source for crocodilian taxonomy and phylogenetic relationships.

Synergy: improve communication with the membership.

Activities and results 2019
Assess
Red List

i. Eight assessments were completed in 2018–2019, bringing it to 25 total assessments to date. (KSR #5)
Plan

Planning

i. Eighteen Action Plans are completed or very near completion. (KSR #15)

ii. The “Mesangat-Suwi Management Plan, 2019–2023” was developed by the Indonesian Regional Government. The Ecosystem Essential Area (EEA) Forum is now implementing activities from this plan. Although some level of protection is afforded to the area, a stronger level of protection is considered more desirable. (KSR #15)

Policy

i. A project to update the status of *Caiman latirostris* populations in Paraguay and Uruguay has been underway since mid-2018, following review of the situation in Bolivia, Paraguay and Uruguay. (KSR #27)

ii. CSG members attended the 18th meeting of the Conference of the Parties to CITES (CoP18), as well as the 71st and 72nd meetings of the CITES Standing Committee. (KSR #26)

iii. A final document on ‘CSG Conservation Priorities for World Crocodilians’ relies on all CSG Action Plans being completed. (KSR #28)

iv. Various proposed updates of the Crocodile Capacity Building Manual are currently being evaluated (Human-Crocodile Conflict). (KSR #26)

Research activities

i. Taxonomic and population status of the Rio Apaporisienas Caiman (Colombia): The genetic divergence between *Caiman c. crocodilus* and *C. c. apaporiensis* was found to be very low based on the mitochondrial genome, so there is no significant differentiation that supports the division of these two subspecies. (KSR #43)

Act

Conservation actions

i. Cambodia: Ten juvenile *C. siamensis* were released in the Cardamom Mountains; captive breeding facilities for pure-bred individuals were expanded; industry has committed animals for testing and subsequent release. Thailand: A project for release of adult *C. siamensis* has been developed, but consultation with local communities continues before reintroductions can begin. (KSR #24)

Network

Capacity building

i. Twenty-two students were funded through the CSG Student Research Assistance Scheme in 2019. A total of 175 students were funded in the period 2009–2019. The number of students funded annually has doubled since the period 2009–2016. (KSR #17)

ii. Five ‘Future Leaders’ attended CITES CoP18 and meetings of the CITES Standing Committee, under mentorship of the CSG Chair and Deputy Chair. Terms of Reference for the Future Leaders Program were drafted, for dissemination to the membership for review and comment. (KSR #17)

Communication

i. The Junior CSG programme is operating, but is focused in North America. Ways in which the concept can be extended more broadly to other regions of the world are now being examined.

Documents review

i. A review of humane slaughter methods was undertaken recently, but no update was found to be required to the Best Management Practices for Crocodilian Farming manual at this time. (KSR #25)

Technical advice

i. Development of an updated standard reference source for crocodilian taxonomy and phylogenetic relationships is ongoing. The CSG Taxonomy Working Group continues its work, with *Crocodylus suchus* and *Caiman yacare* being proposed for endorsement, *Caiman c. apaporiensis* confirmed to be genetically indistinguishable from *Caiman crocodilus*. Information on *Mecistops leptorrhynchus* and *Crocodylus halli* (= southern population of *Crocodylus novaeguineae*) has recently been published. The status of most crocodilian species (including *Caiman crocodilus* and *Crocodylus acutus*) is in a flux at this time, with cryptic species indicated or suspected, and will require significant review. (KSR #26)

Communicate

Synergy

i. An informal working group was established to look at other media platforms for communication between members.

Acknowledgements

CSG wishes to acknowledge its CSG members, who individually and collectively make an enormous contribution to crocodilian conservation, management and sustainable use, in line with the IUCN and SSC mission statements. CSG also wishes to thank the individuals and organisations that donate towards the operations of the CSG through the International Association of Crocodile Specialists Incorporated.

Summary of activities 2019

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<td>Network</td>
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<tr>
<td>Communicate</td>
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Main KSRs addressed: 5, 15, 17, 24, 25, 26, 27, 28, 43

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC Iguana Specialist Group (ISG) is to prioritise and facilitate conservation, science, and awareness programmes that help ensure the survival of wild iguanas and their habitats. To achieve this, we implement, advise and fundraise for programmes that include population surveys, protected areas management, invasive species control, field research, genetic studies, education and captive breeding/headstarting initiatives. Headstarting, in which hatchling iguanas are raised in a safe, captive environment until they reach a larger, less vulnerable size, is proving invaluable in rescuing several Critically Endangered iguanid taxa from the brink of extinction.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision improved status for many of our threatened species in Central America, the Caribbean, Fiji, and the Galapagos. Most of our programmes focus on species that are Critically Endangered (CR) or Endangered (EN) due to habitat alteration and invasive alien species (IAS). The Jamaican Rock Iguana (Cyclura collei) is a flagship species for our group and one of the most threatened species of iguana in the world. Efforts are underway to expand its area of occupancy through intensive IAS control efforts. Due to recent devastating events, intensive efforts are underway to prevent the extinction of Lesser Antillean iguana (Iguana delicatissima) by hybridisation with Common Green Iguana (Iguana iguana). Capacity building is ongoing for several species in Honduras, listed in a threatened category. Taxonomic work is underway to better understand the diversity within Iguaninae and thus guide our management and conservation actions.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete Red List assessments for 40 species of iguanas.

Plan
Planning: (1) complete action plans for 22 species of iguana; (2) compile and curate public outreach assets that can be modified and used by group members; (3) develop a rapid response protocol for assisting partners impacted by hurricanes.

Act
Conservation actions: advance the conservation and management of at least 50% of threatened iguana taxa.

Network
Membership: maintain and increase the use of the membership listserv by 50%.

Communicate
Communication: (1) publish four annual issues of Iguana Specialist Group Newsletter; (2) increase publications in the virtual library by 50 articles; (3) update the Invasive Iguana Position Statement.

Scientific meetings: convene four annual meetings.

Activities and results 2019
Assess
Red List
i. We intend to complete Red List assessments for 40 species of iguanas by the end of the quadrennium. We adjusted our completion year to meet the 20 March 2020 Global Reptile Assessment deadline. We originally miscalculated the number of assessments needed for this goal. Thirty-six Red List assessments will be completed by March 2020. (KSR #1)
Plan

Planning

i. Due to ambitious intentions of assessing the entire Cyclura genus, we will not meet our goal of completing action plans for 22 species of iguana. However, single species action planning continues and we have four action plans in progress. We are considering one additional action plan in 2020. (KSR #15)

ii. We have compiled and curated public outreach assets that can be modified and used by group members; however, due to capacity issues we have been unable to upload these resources to a central location. (KSR #18)

iii. Individual countries have developed response protocols for assisting partners impacted by hurricanes, but we have yet to develop a standard protocol due to differences in conservation needs and mitigation strategies. (KSR #18)

Act

Conservation actions

i. We have advanced conservation and management through research, outreach, and capacity building. Examples include: record number of hatching Jamaican Rock Iguanas brought into the headstart facility, rapid response to the threat of an invasive species on Dominica, a reduction in endemic iguana consumption in Guatemala, public outreach concerning tourism and iguana feeding in the Bahamas, and an updated population estimate for the Utila Spiny-tailed Iguana (Ctenosaura bakeri). (KSR #12, 13, 24, 30, 31, 32, 34, 37)

Network

Membership

i. We saw a significant increase in usage of the membership listserv from both our general membership and our Steering Committee.

Communicate

Communication

i. Our 2016 newsletter was released in 2017. Our 2017 newsletter was released in 2018. Our 2018 newsletter will be circulated in 2020. We are hoping to release our 2019 newsletter shortly thereafter. (KSR #28)

ii. Six hundred and eighty-seven new articles have been added to our virtual library since the beginning of 2017. (KSR #28)

iii. Update of the Invasive Iguana Position Statement was completed in 2018. An amended version of our position statement has been approved and endorsed by The Bahamas National Trust. (KSR #28)

Scientific meetings

i. An annual meeting was held on Roatan, Honduras, in 2019. We will hold our 2020 annual meeting in Dominica. (KSR #28)

Acknowledgements

We thank the International Iguana Foundation (IIF), and their donors, for the financial support of seven projects conducted in 2019, totalling $60,623, focused on iguana conservation in Central America, the Caribbean, Fiji, and the Galápagos. Further, we are grateful to the IIF for the End of Year campaign focusing on the restoration of the Goat Islands, Jamaica, which raised over $40,000 for these efforts. We also acknowledge the efforts of Ty Park for organising the Iguanafest – a fundraiser to support iguana conservation in 2019. We thank those members who made donations in 2019 to our annual meeting travel fund, contributed to Red List assessments, and participated in other ISG activities. Lastly, we thank all those who attended our annual meeting on Roatan, Honduras, for their contribution in realising two conservation action plans for iguanas endemic to the Bay Islands of Honduras.

Summary of activities 2019

| Components of Species Conservation Cycle: 5/5 |
|----------------|----------------|
| Assess | 1 |
| Plan | 3 |
| Act | 1 |
| Network | 1 |
| Communicate | 4 |

Main KSRs addressed: 1, 12, 13, 15, 18, 24, 28, 30, 31, 32, 34, 37

KSR: Key Species Result
Mission statement

The mission of the IUCN SSC Marine Turtle Specialist Group (MTSG) is to develop and support strategies, set priorities, and provide tools that promote and guide the conservation of marine turtles, and their ecological roles and habitats.

Projected impact for the 2017-2020 quadrennium

By 2020, we envision vastly improved global and first-ever subpopulation Red List assessments being completed for six of the seven sea turtle species, providing greater focus and clarity to conservation planning for marine turtles.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) complete global Red List assessments of the Kemp’s Ridley (Lepidochelys kempii), Olive Ridley (Lepidochelys olivacea), and Hawksbill (Eretmochelys imbricata) turtles; (2) complete 11 subpopulation assessments of the Green Turtle (Chelonia mydas).

Research activities: (1) ten Regional Reports (at least partially completed) covering >50% of countries where sea turtles occur; (2) plan, fundraise, conduct pre-workshop analyses, and implement the seventh MTSG ‘Burning Issues’ Workshop (BI-7) focused on validating regional management units (RMUs), re-assessing vulnerability of all taxa, and creating a framework for ‘Important Marine Turtle Areas’, which will be attended by 30 MTSG experts in Monaco in June 2020.

Activities and results 2019

Assess

Red List

i. The Kemp’s Ridley assessment is completed. The Northwest Atlantic Ocean Leatherback Turtle (Dermochelys coriacea) subpopulation assessment is also completed. (KSR #1)

ii. Three subpopulation assessments of the Green Turtle are completed: South Atlantic Ocean, North Central Pacific Ocean, and North Indian Ocean. Several more are in draft form, to be completed in 2020. (KSR #1)

Research activities

i. Seven regional reports were produced (one complete and six partially complete), covering 28% of the countries where sea turtles occur. Many country chapters were only drafted and could not be included due to the high workload of the editors of the regional reports. Additional editors have been recruited to improve the results in 2020. (KSR #1, 2, 4)

ii. Fundraising and planning phases to conduct pre-workshop analyses and implement the seventh MTSG ‘Burning Issues’ Workshop (BI-7) are completed. (KSR #3, 4)
Acknowledgements

We acknowledge the Oceanic Society.

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

Assess 4

Main KSRs addressed: 1, 2, 3, 4

KSR: Key Species Result

Two Green Turtles (*Chelonia mydas*) are released in China. The satellite trackers attached to their carapaces will give scientists information about their oceanic movements.

Photo: Brian Hutchinson

An Olive Ridley (*Lepidochelys olivacea*) makes her way down the beach at low tide.

Photo: Roderic Mast

A Leatherback (*Dermochelys coriacea*) hatching makes its way to the ocean in Trinidad.

Photo: Brian Hutchinson


Photo: Brian Hutchinson
Mission statement
Knowledge of the conservation status of monitor lizards (Varanus spp.) is essential for the formulation of appropriate conservation measures that would also support the protection of demarcated ecosystems. In gaining this knowledge, it is fundamental to work hand in hand with national authorities and local communities. In addition, it is important to raise awareness among the local people about the ecological function and conservation status of monitor lizards in their distribution ranges, where they are often exploited for various purposes such as traditional medicine, human consumption, and superstitious practices.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we wish to have greatly improved networking with Monitor Lizard Specialist Group (MLSG) members to reach the following goals, as a baseline for achieving the resulting impacts:

Goal 1: compile a species reference and image database including information on the distribution, natural history traits, population status and threats of single species. Impact 1: development of more efficient and accurate communication and sharing of current data on the species among group members.

Goal 2: nomination of new members to the group, particularly from range states in Africa and Asia. Impact 2: enrichment of knowledge and refinement of, e.g., national assessments.

Goal 3: continuing investigation of the taxonomic status of several species/species groups with unresolved diversity. Impact 3: establishment of regional species management plans, e.g., based on Evolutionary Significant Units (ESUs).

Goal 4: initiation of field studies, particularly on species from insular Southeast Asia and New Guinea, due to uncertainties regarding population densities and conservation status of wild populations, in cooperation with local students and scientists. Impact 4: rising public awareness for the species group, and reduction in current uncertainties to improve assessments of the conservation status of Varanus species.

Goal 5: establishment of collaborations with scientific/management authorities to improve current management schemes to maintain the viability of species/populations. Impact 5: improvement and implementation of conservation measures together with authorities of range states that harbour Varanus species.

Goal 6: based on collaborative projects, the inclusion of non-detriment findings (NDFs) and evaluation of other mechanism tools to assess the threat status of a species, e.g., environmental vulnerability scores and refining population viability analyses (PVAs). Impact 6: see impact 4 (reduction of uncertainties).
Targets for the 2017-2020 quadrennium

Assess

Red List: completion of all assessments and updating earlier assessments (e.g. Varanus komodoensis).

Research activities: (1) support research in monitor lizards, especially early-career researchers from range states; (2) production of scientific publications about biology and taxonomy as well as exploitation and threats of monitor lizards.

Plan

Technical advice: support CITES authorities, customs officers and other organisations entrusted with law enforcement and conservation of monitor lizards worldwide by providing expert knowledge from our Specialist Group.

Network

Membership: growth of the Specialist Group by invitation of new members.

Scientific meetings: organisation of the Second MLSG Meeting.

Communicate

Capacity building: raising awareness among the local population for conservation concerns of monitor lizards in their home range countries.

Communication: (1) production of an identification guide for customs and authorities of all monitor lizard species involved in the pet and leather trade; (2) provide essential information about all monitor lizard species via our homepage.

Activities and results 2019

Assess

Red List

i. Approximately 2/3 of all species were assessed, including the review and partial reassessment of 19 Varanus spp. native to
Plan

Technical advice

I. MLSG members (scientific authorities) contributed to consultations regarding trade issues of Varanus salvator in Malaysia. Both Co-Chairs provided input for James Liu, a reptile trade consultant with the United Nations helping to synthesise trade data on selected species of monitor lizards. (KSR #26)

Network

Documents review


Membership

I. In 2019, we invited Shreya Bhattacharya from India and Yulia Zima from Kazakhstan to join the MLSG.

Synergy

I. Five letters of recommendation were issued by the MLSG Co-Chairs for grant applications of research projects as well as for education purposes and a job application of early-career MLSG members: Saeed Hosseinian, Mijanur Rahman, Tom Jameson, Shreya Bhattacharya, and Daniel Bennett and Valter Weijola.

Communicate

Capacity building

I. Several awareness-raising workshops were jointly organised by MLSG member Shreya Bhattacharya, the Environment, Agriculture and Education Society (EAES) and the Co-Chairs of the MLSG in five districts of West Bengal, India, from 29 July to 2 August 2019. The main objective of the workshops was to create widespread awareness among the local youth regarding the conservation, utilisation and illegal trade of wildlife, with a special focus on monitor lizards in India. In total, more than 1,000 students aged between 12 and 24 participated in the workshops. A summary of the workshops has been published; see Bhattacharya, S., et al. (2019). Report on the Awareness Workshops “Perceptions of Wildlife Conservation of Today’s Youth in West Bengal, India, with a Focus on Monitor Lizards”. Biawak–Journal for Varanid Biology and Husbandry 13(2):94–100. Analysis of the workshops’ results will be published elsewhere and we hope to continue these efforts in 2020. (KSR #28, 37)

Communication

I. Identification guide for customs and authorities of all monitor lizard species involved in the pet trade: the final draft (200 pages) for all 81 monitor lizard species recognised in early 2019 was submitted to the German Federal Agency for Nature Conservation in August 2019. Since that time, publication is pending and scheduled for 2020. (KSR #28)

II. A homepage (http://varanus.org) about all monitor lizard species was created by our Red List Authority Daniel Bennett in 2018, but due to his severe illness, maintenance was hampered. Unfortunately, the homepage was hacked in 2019 and is therefore no longer available. (KSR #28)
Acknowledgements

We would especially like to thank the late Daniel Bennett, who was the first Red List Authority of our MLSG. We much appreciated his accuracy and care in reviewing the Red List species’ assessments. His death leaves a very big gap in our community. We also owe a big thank you to Phil Bowles and Neil Cox from the IUCN Global Species Programme. Furthermore, we thank Mona van Schingen and Ulrich Schepp (scientific authorities Germany) and Gerald Benyr (scientific authority Austria). Special thanks are due to Shreya Bhattacharya who kindly involved the Co-Chairs in the successful capacity building measures conducted in West Bengal, India, which were kindly supported by the Environment, Agriculture and Education Society (EAES).

Activities and results 2019

Components of Species Conservation Cycle: 4/5

- Assess 3
- Plan 1
- Network 3
- Communicate 3

Main KSRs addressed: 1, 2, 12, 26, 28, 32, 37

KSR: Key Species Result
Mission statement
The IUCN Skink Specialist Group (SSG) aims to complete Red List assessments for all skink species to identify species with high extinction risk, determine the factors underlying high extinction risk, develop strategies to manage risk and improve the status of threatened skink species, and coordinate conservation management for threatened skink species.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we anticipate making substantial progress towards assessing all remaining non-assessed species, coordinating re-assessment of species as their assessments expire, and coordinating the assessment of newly described species. We aim to promote and foster collaboration among the world’s skink experts, and provide an avenue for regular interaction and collaboration (annual newsletter, website, email list, assessment workshops, skink conferences). We aim to: (i) conduct analyses to determine the factors underlying extinction risk in skinks; (ii) identify regions, and taxonomic groups within skinks, that have elevated extinction risk; and (iii) determine the intrinsic and extrinsic factors that are associated with extinction risk in skinks. This will be communicated via scientific publications, regional assessment reports, our website, and through the popular media.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete assessment of all described skink species; (2) complete re-assessment of all skink species with expired assessments; (3) complete assessments for all newly described skink species. Research activities: (1) assess the current conservation status of skinks globally; (2) determine the biogeography of skinks globally.

Communicate
Communication: launch a website for the Specialist Group (Internal Grants 2019).

Activities and results 2019
Assess

i. Red List assessments are now complete for 1,194 of 1,685 skink species; 491 species are Not Evaluated. The SSG developed an agreed list of described skink species. The appropriate approvals were obtained in the IUCN SIS database for the SSG to complete its own species assessments. Volunteers have been recruited to assist with the development of draft species assessments. (KSR #1)

ii. A list of assessments that have expired or are due to expire has been prepared, and re-assessments for these species will be completed. (KSR #1)

iii. The appropriate approvals were obtained in the IUCN SIS database for the SSG to complete its own species assessments. Volunteers have been recruited to assist with the development of draft species assessments. We have developed a schematic diagram to show...
skink biologists what information needs to be included in species descriptions to assist with the Red Listing process, and this has been advertised via the website and a presentation at the World Congress for Herpetology. (KSR #1)

Research activities

i. Information and analyses have been prepared regarding the current conservation status of skinks, and this was used as the basis of a presentation on this topic at the World Congress of Herpetology in Dunedin, New Zealand. A manuscript is currently in preparation and will be submitted to an international scientific journal in 2020. (KSR #4)

ii. A manuscript on the global biogeography of skinks is currently in preparation and will be submitted to an international scientific journal in 2020. (KSR #4)

Communicate

Communicate

i. The website of the SSG was developed and launched in 2019. The website has now been completed: https://www.skinks.org/. (KSR #28)

Acknowledgements

We thank Andressa Duran for developing the website and Reid Tingley for assistance with a range of Specialist Group activities. In particular, we thank the membership of the SSG for contributing valuable time and effort to Specialist Group activities. We also thank Monash University (School of Biological Sciences) and Tel Aviv University (Steinhardt Museum of Natural History, and School of Zoology).

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 1, 4, 28

KSR: Key Species Result
Mission statement
The Mission of the IUCN SSC Tortoise and Freshwater Turtle Specialist Group (TFTSG) is to identify and document threats to the survival of all species of tortoises and freshwater turtles, and to help catalyse conservation action to ensure that none become extinct and that sustainable populations of all species persist in the wild.

Projected impact for the 2017-2020 quadrennium
In addition to helping the Red List Committee supervise the assessment of half the species in the group over the next four years, we have published *Turtles in Trouble: The World’s 25+ Most Endangered Tortoises and Freshwater Turtles* – 2018 in February 2018; we also aim to achieve (2) publication of global/regional action plans (currently in progress) by late-2019; (3) publication of a top tier scientific journal article analysing patterns of extinction risk for chelonians (this will be the most important scientific publication on chelonian conservation biology ever published, in review as of 2019); (4) site visits to conservation projects for species of concern, during the Chair’s four-year term (nine site visits in the US and overseas in 24 months so far); (5) encourage publications by other TFTSG members (a good example is Lovich, J.E., et al. (2018). Where Have All the Turtles Gone, and Why Does It Matter? *Bioscience* 68(10):771-781. [DOI: 10.1093/biosci/biy095]); (6) increase international and gender diversity within TFTSG; and (7) increase visibility of group through public lectures, social media and fundraising.

Targets for the 2017-2020 quadrennium

**Assess**
Red List: complete regional Red List assessments (Asia, South America, Madagascar and Mexico/Central America; 50% total species assessed).
Research activities: (1) publish ‘The top 25 world’s rarest tortoises and freshwater turtles’; (2) publish a top tier scientific journal article analysing patterns of extinction risk for chelonians; (3) encourage publications by other TFTSG members.

**Plan**
Planning: plan and publish global/regional action plans.

**Act**
Conservation actions: conduct site visits to conservation projects for species of concern.

**Network**
Membership: increase international and gender diversity within TFTSG.

**Communicate**
Communication: increase visibility of TFTSG through public lectures and fundraising.
Activities and results 2019

Assess

Red List
i. We plan assessments of all South American, Caribbean and Australian species starting in late-2019, with a goal of completion by 2021. We plan annual regional Red List assessments, with 50% total species assessed. (KSR #1, 2)

Research activities
i. We provide support and sponsorship for many conservation research projects: *Rafetus swinhoei* (Yangtze Giant Softshell Turtle, the world’s rarest and #1 priority species) surveys in Viet Nam; ongoing field projects on approximately 100 species with financial support from our funding wing, Turtle Conservation Fund, and endorsement by the Specialist Group. (KSR #12)

Plan

Planning
i. Publication of global/regional action plans is in progress. (KRS #15)

Network

Membership
i. Membership has grown to 343 members, from 52 countries. Our goal has been especially to add new members to increase gender and international diversity; we are currently 16% female and 84% male. We are 45% North American; 11% Latin American; 16% Asian; 16% European; 4% Australian and 6% African-based.

Communicate

Communication
i. Visibility of the group is increased through public lectures, social media and fundraising. (KSR #28)

Acknowledgements

We thank the Turtle Conservation Fund for helping with some of the Chair’s activities; also the Turtle Conservancy which has funded some of the Chair’s site visits; and The Turtle Survival Alliance.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 2, 12, 15, 28, 43

KSR: Key Species Result

**Ploughshare Tortoise, Astrochelys yniphora**, Critically Endangered, one of the world rarest tortoises, Madagascar

Photo: Craig Stanford

**Central American River Turtle, Dermatemys mawi**, Critically Endangered, Belize

Photo: Craig Stanford

**Coahuila Box Turtle, Terrapene coahuila**, Endangered, Mexico

Photo: Craig Stanford

**Black Softshell Turtle, Nilssonia nigricans**, nearly Extinct in the Wild, Bangladesh

Photo: Craig Stanford

**Amphibians and Reptiles**
Mission statement
The Viper Specialist Group (VSG) is a platform from which conservation biologists can work to increase our scientific understanding of viper biology and can implement conservation actions to prevent declines and extinctions.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we will have strengthened the organisation and effectiveness of the Viper Specialist Group in order to have a more meaningful impact on the conservation of vipers globally. We will do that by supporting the individual activities of the members, increasing the membership, repositioning the VSG officers, continuing to publish the VSG newsletter, launching a new website, reactivating the presence of the VSG on social media, continuing to support Red List assessment activities, participating more in academic meetings to network with academic institutions, zoos, NGOs and other actors interested in the conservation of vipers, continuing to explore the possibilities to purchase land for the conservation of vipers, and publishing scientific and divulgative work on vipers, among other things.

Targets for the 2017-2020 quadrennium
**Assess**
Red List: (1) complete Red List assessments for as many species of vipers in the world as possible; (2) complete assessments for European and North Asian vipers; (3) consider the assessment of *Montivipera kuhangica* (Kuhrang Mountain Viper) for the IUCN Red List.
Research activities: (1) identify priority sites for the conservation of vipers; (2) identify Black-headed Bushmaster (*Lachesis melanocephala*) distribution in relation to human presence; (3) promote the creation of areas for the conservation of vipers in each region; (4) update the distribution maps for vipers in the Western Hemisphere; (5) obtain missing ecological information for poorly known viper species in Mesoamerica; (6) project the impact of climate change on selected species of vipers in Mesoamerica.

**Plan**
Planning: (1) define regional priority species for European and North Asian vipers; (2) develop a Viper Action Plan with specific actionable items; (3) complete and publish the VSG Strategic Plan; (4) complete conservation action plans for at least 50% of VSG regions.
Policy: (1) support the proposal to include the Spider-Tail Viper (*Pseudocerastes urarachnoides*) in CITES Appendices in Iran; (2) support the in-country Memorandum of Understanding regarding the harvesting of vipers in Iran.

**Act**
Conservation actions: define regional priority species for European and North Asian vipers.
**Network**

Document review: identify knowledge gaps in species assessments.

Membership: increase representativeness in membership.

Synergy: develop effective partnerships between zoos and the VSG.

**Communicate**

Communication: (1) create a webpage about the VSG with taxonomic updates to make this information more widely available; (2) continue to publish the Viper Specialist Group newsletter; (3) restructure the editorial board of the newsletter; (4) create outreach materials for living with vipers that can be customised by region; (5) increase the efficiency and amount of internal and external communication; (6) implement subpages for each region in the VSG website.

Scientific meetings: (1) determine how to develop and implement focal species initiatives; (2) hold regular virtual meetings among the Regional Coordinators; (3) hold at least one in-person meeting with most of the Regional Coordinators in this quadrennium.

**Activities and results 2019**

**Assess**

Red List

i. Phil Bowles and Neil Cox are nearing the completion of Red List assessments of all reptile species. We were contacted by them to review 109 assessments. Steve Spear and Jesús Sigala took up the review task with the help of Jelka and several European VSG members, Marcio, Bryan, Anita and Mahmood. There were some assessments that proceeded without much change, but we are planning to do re-assessment in the near future for vipers in many regions. (KSR #1)

**Research activities**

i. Two priority sites for the conservation of vipers were considered, one in South Africa and another in Mesoamerica; however, only the South African one was proposed, and it received support from the Rainforest Fund. We will continue working on this target in the near future. (KSR #22)

ii. We continued identifying bushmaster occurrences in relation to human presence that will be informed in a 2020 detection dog survey. Five new bushmaster observations through local contacts were added to the database. (KSR #43)

iii. Updating of distribution maps for vipers in the Western Hemisphere was carried out, but the products are still not published because they are maps. We still have to find the best possible repository for them. (KSR #12)

iv. Several poorly known species were targeted for ecological research in Mesoamerica and one species, Cerrophidion tzotzilorum (Tzotzil Montane Pit Viper), was monitored exhaustively in 2019. (KSR #12)

v. We started examining the impact of climate change on selected species of vipers in Mesoamerica, considering taxa of restricted distribution in México and Central America. So far, we have finished with two species, Crotalus armstrongi and Ophryacus undulatus. (KSR #32, 38)
Plan

Planning

i. Definition of regional priority species for European and North Asian vipers: The first result is the outcome of the questionnaire shared among regional VSG members to propose priority species. The second result will be visible in 2020 but started in 2019, as an initiative of regional members to carry out an updated analysis on the phylogeny of Eurasian vipers. The study is open access in *Amphibia-Reptilia* in 2020; this will be followed by the Red List reassessments of Eurasian vipers and update of their priority status. (KSR #15)

ii. Several species were targeted to develop a Viper Action Plan; one species, *Cerrophidion tzotzilorum*, was monitored exhaustively in 2019. (KSR #31)

iii. Completion and publication of the VSG Strategic Plan is being outlined. (KSR #31)

Policy

i. Advice was given for the MoU for harvesting of vipers in Iran, but no official document was generated. (KSR #27)

Act

Conservation actions

i. One area in South Africa was created for the conservation of vipers with support from the Rainforest Fund. In Europe and North Asia, viper conservation areas should be discussed after getting consensus on priority areas for vipers, which also requires the updating of taxonomic status of viper taxa within the region. (KSR #22, 43)
ii. On the basis of a questionnaire shared among regional members, eight priority areas for European and North Asian viper are proposed, but could be subjected to further changes, when the process of updating taxonomy of Eurasian viper progresses. (KSR #22)

Network

Membership

i. In 2019, we did not advance in the process of increasing representativeness in membership, but we are in the midst of restructuring the membership of our group and will tackle it in 2020. Plans for rearrangement were outlined, with the inclusion of committees to undertake needed activities.

Synergy

i. One new partnership was developed with Universeum, in Sweden. In addition to this, our Deputy Chair attended the Association of Zoos and Aquariums (AZA) Herp Taxon Advisory Group (TAG) meeting to initiate discussions regarding the Viper Specialist Group. (KSR #29)

Communicate

Communication

i. A website was created and paid for two years in GoDaddy.com, but there were problems with the renewal, so we are moving to publishing our website elsewhere. (KSR #28)

ii. There was not much response to our call for items for the Viper Specialist Group Newsletter, but we will call again in 2020. (KSR #28)

iii. We attempted to reorganize the Viper Specialist Group Newsletter, but it was considered too time consuming and we will attempt to reactivate it again in 2020. (KSR #28)

iv. We did not move from planning to creation of outreach materials related to living with vipers, but we will be working in 2020 on similar material that could accomplish what we wanted for this target. (KSR #28)

v. We are transitioning in the leadership of the group, and we hope to be more effective in increasing efficiency of communication. (KSR #28)

vi. We created seven region subpages on the website published through GoDaddy.com. We will strive to continue this in the new version that we are preparing. (KSR #28)

Scientific meetings

i. One virtual meeting was held in 2019 among the Regional Coordinators, in which leadership renovation was achieved.

ii. Different steering committee members have been present in local meetings, but we have not yet agreed on an in-person meeting with most of the Regional Coordinators this quadrennium.

Acknowledgements

University of Niš and University of Belgrade in Serbia, Ministry of Education, Science and Technological Development of Republic of Serbia, Public Enterprise “Djerdap National Park” in Serbia and Fulbright Foundation kindly enabled the VSG Regional Coordinator for Europe and North Asia to attend the II National Conference on Mexican Vipers and Ophidism and the Societas Europaea Herpetologica (SEH) XX European Congress of Herpetology in Milan, Italy, and thus get in contact with other regional viper specialist groups as well as with the members of the home regional group to discuss current issues.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 2, 12, 15, 22, 27, 28, 29, 31, 32, 38, 43

KSR: Key Species Result
Mission statement

The IUCN Asian Songbird Trade Specialist Group (ASTSG) exists to prevent the imminent extinction of songbirds threatened by unsustainable trapping and the trade in wild-caught passerines. In addition, it seeks to address the impact of the trade and to find solutions through which the growing threat to an ever increasing number of songbird species can be reversed and improve the conservation status of all species involved.

Projected impact for the 2017-2020 quadrennium

The ASTSG gained official approval in mid-2017. This gave additional impetus to activities aimed at addressing the threat faced by a number of species as a result of the caged bird trade. As an outcome of the Songbirds Crisis Summits, hosted by Wildlife Reserves Singapore in October 2015 and February 2017, the Group had an existing framework allowing it to target and prioritise activities. The up-listing in the 2016 Red List of a number of the songbirds within the Group’s focus, several to Critically Endangered, underlined the urgency of implementing measures to address their conservation needs.

Targets for the 2017-2020 quadrennium

Assess

Research activities: (1) conservation of Tenggara Hill Myna (Gracula veneratea); (2) field study of Black-winged Myna (Acridotheres melanopterus) and Bali Myna (Leucopsar rothschildi); (3) conduct socio-economic research on cagebird keeping in Java; (4) re-survey Javan White-eye (Zosterops flavius); (5) survey Java mountains targeting Critically Endangered songbirds; (6) survey Mt. Slamat for Critically Endangered subspecies of the Rufous-fronted Laughingthrush (Garrulax rufifrons slamatensis); (7) publish papers that provide data on the trade in Asian songbirds and its effects; (8) conduct Blue-crowned Laughingthrush (Garrulax courtoisi) status survey; (9) conduct Sangkar White-eye (Zosterops melanurus) status survey; (10) conduct Bare-throated Whistler (Pachycephala nudigula) survey and trade monitoring; (11) White-eye from Wangi Wangi (Zosterops spp.) taxonomic and population status; (12) conduct Collared Laughingthrush (Trochalopteron yersini) surveys; (13) analyse genomics of Straw-headed Bulbul (Pycnonotus zeylanicus); (14) study of genomics of Magpie-robins; (15) taxonomy of West Sumatran Islands Hill Mynas; (16) Straw-headed Bulbul historic decline; (17) Straw-headed Bulbul population survey Singapore; (18) conduct surveys in North Sumatra to establish more precisely the status of a number of songbirds, including Sumatran Laughingthrush (Garrulax bicolor), Sumatran Mesia (Leiothrix laurinae), Aceh Bulbul (Pycnonotus snouckaerti), Ruby-throated Bulbul (Rubigula dispar) and Sunda Laughingthrush (Garrulax palliatus); (19) understand hobbyists: songbird owners and drivers of joining songbird competitions in Java.
Plan

Communication: (1) compile best practice guidelines for Rufous-fronted Laughingthrush; (2) compile best practice guidelines for Bali Myna.

Planning: hold biennial meeting of ASTSG.

Policy: raise awareness of the significance of international trade in songbirds in the CITES arena.

Act

Capacity building: citizen science: promote bird watching as an alternative to bird keeping.

Communication: engage in school education programmes.

Conservation actions: (1) establish captive population of Javan Green Magpie (Cissa thalassina); (2) support conservation breeding centres in-country; (3) Blue-crowned Laughingthrush, Global Species Management Programme (GSMP); (4) conservation of endemic Hill Mynas and Shamas (Kittacincla spp.) in the West Sumatran (Barus) Islands; (5) community engagement to save the Straw-headed Bulbul in Singapore; (6) establish a conservation breeding programme for Javan Pied Starling (Gracupica jalai); (7) engage songbird breeders and competition event organisers.

Research activities: (1) conduct captive breeding trials on Greater Green Leafbird (Chloropsis sonnerati); (2) alternative livelihoods: remove social barriers that can reduce songbird trapping pressure; (3) alternative livelihoods: close down songbird shops and move traders onto new sources of income via microfinance; (4) understand hobbyists: songbird owners in Singapore; (5) explore perceptions towards bird keeping in Singapore; (6) alternative livelihoods: engage local community in Bali Myna conservation; (6) alternative livelihoods: engage local community in Bali Myna conservation; (7) conservation genomic study of Javan Pied Starling; (8) study on the conservation genomics of Black-winged Myna; (9) study the conservation genomics of Rufous-fronted Laughingthrush; (10) Big Month citizen science event; (11) citizen science: promote bird watching as an alternative to bird keeping.

Synergy: partner the European Association of Zoos and Aquaria (EAZA) conservation campaign “Silent Forest” to raise awareness and funds in support of the Asian Songbird Crisis.

Activities and results 2019

Assess

Research activities

i. Work conducted on status of the Tenggara Hill Myna, including the impact of collection for cagebirds. (KSR #12)

ii. Field study of Black-winged Myna and Bali Myna: Data collection undertaken in Bali Barat National Park on Bali Myna; two data collections undertaken in Baluran National Park on Grey-backed Myna (Acridotheres tricolor); three PhD write ups commenced. (KSR #12)

result reveals that one third of Java’s 36 million households keep approximately 66–84 million cagebirds, over half of which are non-native species. It contributes to conservation efforts by providing estimates of the numbers of birds in households and trends over time to inform conservation priority setting exercises by IUCN or CITES. The paper also demonstrates the importance of understanding variation in consumer demand for cagebirds to inform evidence-based behaviour change interventions. It contributes to future demand reduction efforts to decrease the threat posed by bird keeping to wild populations by highlighting regional hotspots where demand for songbirds is high. The paper received extensive media coverage and appeared as an item on the televised BBC news (https://www.bbc.co.uk/news/science-environment-49744435). (KSR #43)

iv. A survey on Javan White-eye carried out some years ago was repeated. The results of this are being written up. (KSR #12)
v. A number of Javan Mountains have been surveyed by a team of researchers. The results of this MMU/Rainforest Trust project are being analysed. (KSR #12)

vi. A survey on Mt. Slamat for the Critically Endangered subspecies of the Rufous-fronted Laughingthrush was done as a priority as part of a Java Mountain project. The results are as yet unpublished. (KSR #12)

vii. The Blue-crowned Laughingthrush status survey is being undertaken as a three-year PhD studentship. The first two years of the PhD are completed. (KSR #12)
viii. The Sangkar White-eye recently split as a good species. It is heavily traded and therefore there is a need to establish the impact of this trade on its status in the wild, and a survey is required. (KSR #12)
The yet undescribed Wangi Wangi White-eye flagged up as extensively in trade. As endemic to the small island of Wangi Wangi, the population must be small and vulnerable. A brief visit to island found it extant and quite easy to locate. (KSR #12)

Trade in Collared Laughingthrush may be at low level and therefore not of great concern, but this has not yet been accessed. Link with in-country conservationists and BirdLife. (KSR #12)

A study on detailed population survey of Straw-headed Bulbul across Singapore is in review (Chiok et al.). (KSR #12)

Analyses in conservation genomics of Magpie-robins are ongoing. (KSR #12)

A study on West Sumatran island taxa/populations of Hill Mynas is in final stages of acceptance by Ibis (now with the journal for typesetting): Ng et al. (2020). (KSR #12)

Research was conducted to understand the economy of songbird competitions and assess what is the potential to introduce captive bred birds. Data was acquired in the latter half of 2019 through socio-economic surveys. Approximately 11,300 participants in the whole six provinces of Java were interviewed: owners (not songbird competition goers), songbird competition goers, sellers (180 sellers in six provinces) and around 30 songbird competition organisers. With competition organisers, they asked if the competition will be open to including captive bred birds in their competition. The participants were generally receptive when talking about the economy and captive bred birds. Some in Jakarta were quite closed and unhappy with our presence. (KSR #31)

Plan

Communication

i. Best Practice Guidelines for Rufous-fronted Laughingthrush compiled by Anise Tritto and officially approved by EAZA. (KSR #28)

ii. Work on Best Practice Guidelines for Bali Myna is ongoing. (KSR #28)

Planning

i. Biennial meeting of ASTSG: Core group of ASTSG held a meeting prior to a three-day conference. On day 1, each sub-group reported on their achievements for the past year. On day 2, each sub-group met separately and discussed and agreed priorities for the next year and beyond. On day 3, sub-groups reported back on the previous day’s discussions. Some 50 members of ASTSG attended.

Policy

i. Jointly with the US and Sri Lanka, we have put in a position statement on international trade of songbirds to CITES and held a side event at the Meeting of the Conference of the Parties (CoP) to CITES. (KSR #26)

Act

Capacity building

i. Promotion of bird watching as an alternative to bird keeping: Birdwatching activities engaging students and the public were conducted in Bandung, Bogor and Jakarta. Capacity building was provided to university students in Java on bird and biodiversity survey methods. This led to a bird monitoring activity in Bogor Botanical Garden involving university students.

Communication

i. Visits to schools are carried out on an ad hoc basis and presentations given about the work that Cikananga carries out and why, and about ecosystem values of the surrounding area. Both topics cover songbird conservation.

ii. The Education team has undertaken programmes in all schools in Melinggih Kelod and Melinggih villages with curriculum ranging from kindergarten to year 7; the high school curriculum includes ecotourism and its benefit. Another focus area is about waste management and recycling.

Conservation actions

i. The European Ex situ Programme (EEP) for Javan Green Magpie was approved. This includes holdings in Javan conservation breeding centres. (KSR #25)

ii. Conservation breeding centres in-country: The centre at Cikananga has received funds to rebuild several of its aviary blocks. The breeding centre at Priyen continues to increase the number of aviaries and develop. Construction of a block of aviaries at the Haven in Sumatra was commenced and the Facility for Hill Mynas on Nias continued to be developed. Much of the funding for these developments came from EAZA’s Silent Forest Campaign. (KSR #25)
iii. Blue-crowned Laughingthrush, Global Species Management Programme (GSMP): The annual meeting to draw up the management plan for the following year was held in Prague. The GSMP manages three regional populations: Europe, North America and Asia. In 2019, the global ex situ population was almost 300 individuals. (KSR #25)

iv. Status surveys of endemic Hill Mynas and Shamas have been conducted; two conservation breeding programmes are being planned; some community work is underway, but this needs to be ramped up and tailored towards the conservation of these target species. Results include a study on the extinction-in-progress of Barusan Shama (Rheindt, F., et al. 2019. The extinction-in-progress in the wild of the Barusan Shama Copsychus (malabaricus) melanurus. Forktail 35:28-35). We have engagement with the Ecosystem Impact Foundation NGO based in Simeulue. (KSR #12, 25)

v. As part of the Straw-headed Bulbul conservation planning workshop in May 2019 in Singapore, a local working group was setup in which community engagement was identified as a subgroup. Activities identified include raising awareness about the beauty of this bird among the Singaporean public, conducting walks for politicians, and developing citizen science efforts.


vii. We maintained communication with the breeders and event organisers of songbird competition in Java. Some of them already established associations to accommodate the hobbyists and develop relevant programmes. (KSR #29)

viii. A captive population of Straw-headed Bulbul is being established. Jurong Bird Park, Singapore, now has a number of breeding pairs and are starting to build an ex situ population. They are in the process of establishing Best Practice Guidelines from their experiences. The goals of the conservation breeding programme are yet to be set. (KSR #25)

Research activities

i. Small captive populations of Greater Green Leafbird are now present at both Jurong Bird Park and the Breeding Centre at Prigen and some breeding activity is taking place. (KSR #32)

ii. To reduce exploitative activities, such as bird trapping, which is a major part of the work in all three landscapes, we use a Conservation Cooperative approach, to secure resilient livelihoods, improve Community Health and Voluntary Family Planning, improve access to education, hire locals in SMART Patrols, reforestation (for Kubu Raya only), sustainable agriculture and agroforestry (for GNPL and AS landscapes only), and fisheries management (Kubu Raya only). The programme is underway. (KSR #36)

iii. A socio-economic study of songbird shop owners was completed and published in Journal of Tropical Conservation Science. (KSR #32)

iv. Understand hobbyists: songbird owners in Singapore: Surveys with songbird owners (n=114) were conducted from November 2018–February 2019 so as to determine their demography and motivational factors for owning songbirds and whether they had any preference for wild-caught or captive bred birds. A peer-reviewed publication is being developed. One follow up activity is to test out various campaign messages to see which ones are the most persuasive.

v. Perceptions towards bird keeping in Singapore: We investigated the relationships between people’s relationship with nature and pet birds. We also asked if songbird keeping was a fun hobby, part of culture and tradition in Singapore and perceptions about captive bred or wild-caught songbirds.

vi. Six local breeders were engaged in a community-based conservation programme for Bali Mynas. Birds were released through a community release programme. The community supports this initiative. A local village resident said, “I like to see the Bali Mynas flying around and especially when they come to my house! I don’t need to buy a bird myself to be put in a cage when I can see them fly.” This demonstrates a shift in mindset whereby locals can see that birds can also be enjoyed in the wild, not that they have to be kept as pets.

vii. A study (Baveja et al.) on conservation genomics and identification of founders for a Javan Pied Starling breeding programme is now submitted to a journal. (KSR #25)

viii. A study (Sadananandan et al.) on conservation genomics and identification of best breeding strategies for Black-winged Mynas is now submitted to a journal. (KSR #25)

ix. Results of work on the conservation genomics of Rufous-fronted Laughingthrush are being written up. (KSR #43)

x. Promotion of bird watching as an alternative to bird keeping: Forty Bali Myna were released in the Bali Safari Park area in April 2019, with bird watching societies, conservation agencies in Bali, and communities around Bali Safari Park invited along with the Deputy Governor of Bali.

xi. Promotion of bird watching as an alternative to bird keeping: Socialisation activities for the return and release of the Bali Myna were conducted from January–March 2019 in three
villages (Serongga Village, More Village, and Suburban Village) and nine elementary schools located around Bali Safari and Marine Park. A total of 585 people have been targeted for conservation activities and release.

**Synergy**

i. Six preselected in-region conservation projects were fully funded to address the Asian Songbird Crisis. Additional funds were raised to support further projects.

**Acknowledgements**

ASTSG would like to acknowledge Wildlife Reserves Singapore for the support they give in, among other things, providing a home base and, in 2019 in particular, for hosting its biennial meeting in March. The group’s Chair is extremely grateful to the Koln Zoo for the assistance he received from it, which is a great help in facilitating his role within the Specialist Group. Also, special mention should go to EAZA’s Silent Forest Campaign for not only helping to raise the profile of the Asian Songbird Crisis, but for money it has raised which is funding vital *in situ* songbird conservation projects.

**Summary of activities 2019**

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 12, 25, 26, 28, 29, 31, 32, 36, 43

KSR: Key Species Result
Mission statement
The mission of the SSC Bustard Specialist Group (BSG) is to actively promote bustard research and conservation by developing conservation action plans for the most threatened species, and by encouraging information exchange and cooperation amongst bustard specialists, and with other relevant organizations to enhance conservation of bustards and their habitats worldwide.

Projected impact for the 2017-2020 quadrennium
Detailed status review of all six Asian species of bustard, and enumeration and promotion of appropriate necessary interventions. Consultation with Rajasthan officials over the preservation of the Great Indian Bustard (Ardeotis nigriceps). Continuing programme of research on the Asian Houbara (Chlamydotis macqueenii).

Targets for the 2017-2020 quadrennium
Assess
Red List: feed information into Red List reassessments of all bustard species. Research activities: (1) inspire immediate management interventions on a grand scale for all six species of Asian bustards; (2) generate key data on Asian Houbara (Chlamydotis macqueenii).

Act
Conservation actions: provide advice on the conservation of the African Houbara (Chlamydotis undulata) in Lanzarote. Technical advice: provide policy advice on Asian Houbara.

Communicate
Communication: (1) deliver weekly news and research output updates; (2) create a website for the Asian Houbara project. Technical advice: develop guidelines for the optimal management of power lines in bustard areas to minimise mortalities caused by collisions.

Activities and results 2019
Assess
Red List
i. Red List reassessments of all bustard species are ongoing. (KSR #2, 4)

Research activities
i. A large and detailed multi-authored paper was published and widely circulated to promote a better understanding of threats to the species and the interventions needed to reduce the threat. (KSR #12)

ii. Generation of key data on the Asian Houbara is ongoing. (KSR #12)

Act
Technical advice
i. Policy advice on the Asian Houbara continues. (KSR #27)

Communicate
Communication
i. A weekly news and research output update is provided. (KSR #28)

ii. A website for the Asian Houbara project has been created and launched. (KSR #28)
Acknowledgements

I would like to thank Rachel Hoffmann for her dedicated and generous help, for always being there for advice and guidance when needed. I would also like to thank Sara Hallager for her commitment to the excellent weekly news round-up, and BirdLife for its general support.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 2, 4, 12, 27, 28

KSR: Key Species Result

Near Threatened Little Bustard, Tetrax tetrax, Kazakhstan
Photo: Mimi Kessler

Vulnerable Great Bustard, Otis tarda dybowskii, Mongolia
Photo: Mimi Kessler

Male Asian Houbara, Chlamydotis macqueenii. An ongoing research project is aimed at studying the population trends, demography and migration of this Vulnerable species in Uzbekistan
Photo: John Burnside
Mission statement
The mission of the IUCN SSC Crane Specialist Group is to promote the study of cranes and their threats, develop and disseminate solutions to those threats and enhance conservation of cranes and their habitats worldwide.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we will have a good understanding of the current situation for each of the world’s 15 species of crane, forming the foundation for a Crane Conservation Strategy that aims to address the key threats to each of the cranes across their distribution range. Published literature through personal experiences will be assessed and provide an understanding of the interface between cranes and agriculture that we will then use to address threats to cranes across this landscape, and provide the opportunity to use cranes as a flagship for biodiversity in agricultural landscapes. We will also have improved the situation for cranes across their range over this period.

Targets for the 2017-2020 quadrennium

Assess
Research activities: (1) publish and disseminate the Cranes and Agriculture Handbook; (2) estimate the impact of poisoning on threatened crane species and identify strategies; (3) implement the 1,000 Crane Tracking Project; (4) set up the Research and Monitoring Working Group, starting with crane tracking and movement studies.

Plan
Planning: (1) publish the Crane Conservation Strategy; (2) implement the Crane Conservation Strategy; (3) develop a user friendly resource of the Cranes and Agriculture document.
Policy: (1) advocate for reduced poisoning at hotspots; (2) secure or upgrade level of legal protection for three or more crane sites.

Act
Conservation actions: (1) implement the Single Species Action Plan for Grey Crowned Cranes (Balearica regulorum); (2) implement the Conservation Plan for the Eastern Population of the Siberian Crane (Leucogeranus leucogeranus); (3) estimate the impact of power lines on threatened crane species and work with power utilities in high impact areas to reduce/mitigate their impact.

Network
Capacity building: complete four field training courses.
Synergy: hold regular meetings of species-level networks for Red-crowned Crane (Grus japonensis), White-naped Crane (Grus vipio), Hooded Crane (Grus monacha) and Black-necked Crane (Grus nigricollis).

Activities and results 2019
Assess
Research activities
i. Cranes and Agriculture: A Global Guide for Sharing the Landscape has been distributed widely across the range of cranes, both in hard copy and in digital format. It is also readily available online at https://www.savingcranes.org/wp-content/uploads/2018/10/cranes_and_agriculture_web_2018.pdf. The publication was used as the basis of an IUCN World Conserva-
tion Congress motion which has been accepted for further comment: Motion 006 “Promoting harmony between cranes – flagships for biodiversity – and agriculture”. (KSR #43)

ii. Key areas around the world where poisoning impacts on cranes have been identified. This includes in particular, China, Kenya and Zambia. A number of other countries have also been identified where smaller numbers have been poisoned. The issue of crane poisoning was raised at the IUCN Species Survival Commission Leaders’ Meeting in Abu Dhabi in 2019. At the Thirteenth Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS COP13), a side event on “Reducing Impacts of Poison on Migratory Birds from Agricultural Chemicals and Poison Baits” was organised by the IUCN SSC Crane, Bustard, Duck, Swan, Goose, and Vulture Specialist Groups, International Crane Foundation and China Biodiversity Conservation and Green Development Foundation. Impacts of accidental and intentional poisoning on a variety of migratory bird taxa in Asia were reviewed and indicated common problems and needs. Experience in reduction of mortality of vultures in Europe following ingestion of poison baits used to kill predators provided valuable models. Proposed next steps include: conduct monitoring and research to identify high risk areas; document mortality and establish a shared database; identify commonly-used poisons; collaborate with toxicologists; work with decision makers on policy and enforcement; train first responders to collect and handle samples, volunteers to rescue birds, local enforcement officers to identify species, and laboratories to test samples; assess motivations and socio-economic aspects of poisoning; and highlight human health aspects to government agencies and other stakeholders. (KSR #32)

iii. Although the 1,000 Crane Tracking Project has been discontinued due to various reasons, we did record some interesting and valuable information from those trackers that worked. Ten Siberian Cranes showed differences in use of staging areas among seasons and years associated with increasing variability in water availability due to climate change and human development. The results showed the international importance of shallow water wetlands in the semi-arid region of Songnen Plain and Liao River Plain. Siberian Cranes increasingly fed in corn fields posing a huge risk of illegal poisoning. In 2019, the Wildlife Science and Conservation Center of Mongolia (WSCC) colour-ringed 34 White-naped Cranes, and marked 18 White-naped, two Siberian, five Demoiselle (Anthropoides virgo), and one Eurasian Crane (Grus grus) with GSM GPS tracking devices (co-financing from the Chinese Academy of Sciences). Results will be published in 2020. WSCC is monitoring eight Eurasian and over 100 Demoiselle Crane nesting pairs. Between 2016 and 2019, researchers deployed 35 GPS tracking devices on these Demoiselle Cranes (co-financing from the Max-Planck Institute of Animal Behavior in Germany), which wintered in Rajasthan and Gujarat states in northern India. Results will be published in 2020. Finally, a number of Blue Cranes (Anthropoides paradiseus) were fitted with GSM GPS trackers in the Western Cape of South Africa. Results will be published between 2020 and 2021. (KSR #12)

iv. Meetings with the European Crane Working Group, North American Crane Working Group, and six countries in the East Asia Flyway have been held to both raise the awareness of some of the challenges from crane ringing/banding and to establish a global community of practice to improve crane ringing and tracking projects. An online platform is under development for greater collaboration and information sharing. (KSR #12)

Plan

Planning

i. The Crane Conservation Strategy was published in 2019 and has been distributed both in hard copy and electronically; it is available online at https://www.savingcranes.org/wp-content/uploads/2019/10/crane_conservation_strategy_web_2019-1.pdf. The Strategy is being used to further develop species-specific crane conservation action plans for Siberian, Red-crowned, White-naped, Hooded, Black-necked Cranes, and the rapidly declining Cambodia/Vietnam population of Eastern Sarus Cranes (Grus antigone). These plans are being developed with broader stakeholder involvement from range states with a goal of endorsement by governments in 2021. (KSR #15)

ii. The objectives and actions in the Crane Conservation Strategy for 19 direct threats, seven indirect threats, and two conservation tools will be converted into an Excel spreadsheet that can be distributed according to species, region, or responsible organisation to the relevant Crane Specialist Group members to promote and monitor implementation. The Hunting and Poisoning Work Team has been
initiated and worked with IUCN SSC to communicate with Saudi Arabia to enforce laws and reduce mass slaughter of migrating Demoiselle Cranes advertised on the internet. Actions have been undertaken to address poisoning of cranes in East Asia (see activities and results reported for the target “Estimate impact of poisoning on threatened crane species and identify strategies” above). (KSR #16)

Policy

i. A plan has been developed to address the poisoning issue in Zambia, but funding is currently limiting. Although discussions have been held around the other poisoning hotspots for cranes, a plan is yet to be developed to address this and advocate for reduced poisoning. In China, information on risk of poisoning is included in presentations and awareness materials around emerging hotspots, but further assessment and action are needed. (KSR #27)

ii. The International Crane Foundation (as part of the International Crane Foundation/Endangered Wildlife Trust Partnership, or ICF/EWT Partnership) is signing a long term co-management Agreement with the Zambian Department of National Parks and Wildlife and WWF Zambia to improve management capacity, law enforcement and community engagement for the Kafue Flats in Zambia, the most important site for Wattled Cranes (Bugeranus carunculatus) and an important site for Grey Crowned Cranes. Twenty-seven (27) Conservation Agreements have been signed in East Africa (Kenya, Rwanda and Uganda) with local communities to secure crane habitats in return for benefits and livelihood options that the communities receive. In Russia, the provincial-level Kytalyk Wildlife Refuge was officially upgraded to a national-level National Park. In Mongolia, the provincial-level protected area at the Khurkh and Khuiten River Valleys was upgraded to a national-level Wildlife Refuge. In South Africa, over 98,000 ha of land is under negotiation to become protected areas; these are critical areas for cranes along the Drakensberg escarpment. The ICF/EWT Partnership team have facilitated the declaration of approximately 3,000 ha of land as Nature Reserves for cranes in South Africa in 2019. (KSR #27)

Act

Conservation actions

i. The first meeting of the African Eurasian Migratory Waterbird (AEWA) International Grey Crowned Crane Working Group was held in July 2019 in Uganda. Following an update on the status of and threats to Grey Crowned Cranes in each country, participants at the meeting developed a three-year implementation plan, highlighting activities required in each of the countries across the cranes’ range. Of particular note was the increase in poisoning events across parts of their range, the severe impact the drought had on breeding productivity, the threat of alien invasive plants in breeding sites, now in parts of East Africa, and the ongoing threat of small scale agricultural expansion into wetlands. Significant progress had been made to address some of the key threats to cranes and their habitats across several of the range states. Uganda was elected as the Chair of the Group, with Kerryn Morrison as the overall Coordinator of the Plan, with co-coordinators agreed upon for the East African subspecies (Dr Adalbert Aine-omucunguzi) and Southern African subspecies (Tanya Smith). (KSR #37)

ii. 2019 was a good year for Siberian Cranes. Breeding success was high due to favourable conditions on the Arctic tundra. High counts were recorded at staging and stopover sites and, despite low food plant productivity at Poyang Lake, cranes were able to utilise the lotus ponds for meeting their feeding needs. Three important events occurred this year. One was the approval to upgrade Kytalyk to a National Park. The two others concerned high-level events, one to affirm the commitment of Jiangxi Province to migratory waterbird conservation at Poyang Lake, the second to build on the Disney project to develop a long-term strategy for four species of cranes throughout the East Asian Flyway. (KSR #37)

iii. Data collection for the project “Assessment of the impact to cranes from a newly constructed transmission line” in the state of Wisconsin, US, has been completed. The analysis is still being finalised, and we anticipate a completed document will be presented to stakeholders in 2020. In 2019, the inaugural African conference on linear infrastructure – called African Conference on Linear Infrastructure and Ecology – was held in South Africa. Here, more than 115 delegates from over 20 countries discussed the impacts of power lines on birds. Crane Specialist Group members participated in discussions around addressing power line impacts on Grey Crowned Cranes in Uganda whilst highlighting the work to date in South Africa in addressing the threat of power lines to cranes. This has resulted in relationships with Power Africa being developed and strengthened. The NABU Crane Centre (Germany) registered 193 dead cranes (58 bird collisions with power lines, 16 other reasons like wire fence or eagle attack, 119 cause
unknown), with power lines representing the highest mortality factor. The European Crane Working Group is working with utility companies to mark or place power lines to reduce impacts. The Ministry of Natural Resources Directorate of Biological Resources in Yakutia, Russia, is conducting a state examination of projects of industrial facilities with power lines and providing recommendations for installing bird protection as needed. (KSR #27)

### Network

#### Capacity building

1. A training course on wetland hydrology and social sciences was conducted in Mongolia by the Wildlife Science and Conservation Center of Mongolia, International Crane Foundation and US Forest Service, for 14 participants from five national universities, two institutions from Mongolian Academy of Sciences, and one river basin administration. A new environmental education curriculum was launched in a local elementary school in fall semester 2019 in China and eight teachers from local schools were trained to teach the curriculum. (KSR #17)

#### Synergy

1. A landmark East Asia Crane Flyway Workshop in October brought together representatives from the six countries of the Flyway. This will mark the beginning of stronger international cooperation by Flyway countries for all crane species and build on the Disney Siberian Crane project model. The workshop also saw the launch of the 2020 Year of the Cranes in East Asia initiative to raise the profile of and support for cranes in the region. The 7th Black-necked Crane Network Annual Meeting was held at Gahai National Nature Reserve, in China, with 118 participants from 57 organisations in the US, India, Bhutan, and 12 provinces in China. There were 33 presentations on status and conservation of Black-necked Cranes, wetland protection, habitats, ecological biology, management, and education. Participants discussed the Black-necked Crane Action Plan and how to further strengthen cooperation and coordination among the three Black-necked Crane range countries – China, India, and Bhutan. (KSR #29)

### Acknowledgements

We would like to thank the International Crane Foundation (ICF) for hosting the IUCN Crane Specialist Group, the ICF/Endangered Wildlife Trust Partnership for supporting Kerryn Morrison’s involvement as the Chair, and ICF for supporting both Claire Mirande’s and Elena Smirenski’s involvement. We would like to extend a really special and big thank you to Dr Jane Austin for the many hours that she provided to the Specialist Group in finalising the Crane Conservation Strategy. Thank you, too, to Claire Mirande, Elena Ilyashenko, Christie Craig and Tanya Smith for testing the Green List Criteria for Siberian and Blue Cranes, respectively. We appreciate our numerous members who constructively led species or geographic subgroups for cranes, including the European Crane Working Group, North American Crane Working Group, Crane Working Group of Eurasia, International Red-crowned Crane Network, Black-necked Crane Network, East Asian Crane Network, and many others. To all of our partners around the world and to our many donors and supporters – thank you. Crane conservation efforts require multi-stakeholder/multi-sector involvement, and our achievements have only been made possible with the input of all of our members, partners and donors.

### Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 12, 15, 16, 17, 27, 29, 32, 37, 43

KSR: Key Species Result
Mission statement

The mission statement of the WI-IUCN SSC Flamingo Specialist Group (FSG) is to actively promote flamingo research and conservation worldwide by developing conservation action plans for the most threatened species, and by encouraging information exchange and cooperation amongst flamingo specialists, and with other relevant organisations, particularly the IUCN Species Survival Commission (SSC), Wetlands International, Ramsar Convention, WWF International and BirdLife International.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we hope to have succeeded in our aims of re-launching the FSG website and newsletter (as an online publication). We hope to have strengthened and developed links within the membership to identify roles that individuals can play in the running of the FSG. We plan to recruit new members from specific areas of the world (i.e. the Middle East and Asia) and attempt to build our links with existing in situ flamingo conservation, management and ecology organisations. We aim to build capacity across our membership by encouraging interaction with online forums and across group email discussion, as well as encourage members to submit papers to the new, re-launched newsletter. Finally, we hope to provide a new resource centre of flamingo-centred information (both in and ex situ) in the form of a website, for all (members and non-members) to engage with. Promoting the work of conservation scientists and flamingo biologists will result in increased exposure for these species, and therefore, a better chance of secured populations for the future. We hope that by continuing to support the work of scientists and flamingo biologists in the field, the conservation status of all six species does not deteriorate, and that those species currently Vulnerable or Near Threatened can be more secured in their habitats, so that future assessments of populations show an upward trend in numbers, rather than a decline. The good work currently undertaken with the Andean and Puna Flamingos (Phoenicoparrus andinus and P. jamesi, showing stable population trends) needs to be monitored, as current Red Lists assessments suggest potential declines due to past poor breeding success and human-caused impacts on populations. Continued observation of mining activities around breeding locations of Lesser Flamingos (Phoeniconaias minor) in East Africa is required, as this is potentially the biggest threat to the largest wild population of this Near Threatened species.

Targets for the 2017-2020 quadrennium

Assess

Green List: assess flamingos as part of the IUCN Green Listing test.

Red List: provide new data for the 2020 Red List assessment.

Plan

Planning: (1) investigate logistical, technical and funding needs for a pan-African Lesser Flamingo population survey; (2) establish working groups to address three priority actions.
Conservation actions: work with the African-Eurasian Migratory Waterbird Agreement (AEWA) to assess implementation of Lesser Flamingo Species Action Plan conservation objectives and tasks.

Network

Membership: renew and overhaul membership, including collecting details on individual member roles in FSG.

Proposal development and funding: develop funding opportunities and availability of grants for in situ flamingo conservation. Advertise and promote funding options for in situ flamingo conservation and work on the Wildfowl and Wetlands Trust (WWT) small grants fund.

Synergy: (1) identify and recruit a programme officer for the FSG; (2) maintain collaboration with field-based programmes (e.g. Grupo Conservación de Flamencos Altoandinos – Peru, Tour du Valat) and continue to help, support and promote in situ flamingo conservation strategies with those organisations working in the field.

Communicate

Communication: (1) re-launch the Flamingo newsletter in the form of an online scientific publication; (2) develop a new website for the FSG to link to current activities and social media campaigns; (3) build a social media presence across various platforms to promote wider education on flamingo conservation issues, and to use as a platform for fundraising or capacity building; (4) re-visit and re-draw the FSG mission statement.

Scientific meetings: (1) organise a workshop for flamingo keepers to increase awareness of current science in flamingo management (provide information based on best practice
to zoo professionals); (2) integrate the role of the FSG with the European Association of Zoos and Aquaria (EAZA; FSG aims at annual EAZA meetings to encourage links between different flamingo stakeholders).

Activities and results 2019

Assess

Green List

i. Two flamingo species (Andean Flamingo and Lesser Flamingo) were Green Listed by Paul Rose for the University of Oxford test of this conservation strategy. Publication of the Green List test (of species across IUCN Specialist Groups) is expected in 2020. (KSR #11, 12)

Network

Membership

i. Membership continues to be reviewed and managed to ensure participation is as wide as possible with the mission and aims of the FSG.

Synergy

i. FSG was included in communications with government and zoo officials as well as BirdLife South Africa regarding the rescue of 1,800 lesser flamingo chicks and eggs at Kamfers Dam, South Africa, in January 2019. The FSG provided information on suitable tagging methods and companies providing the equipment, and helped to find funding for tagging of rescued chicks. Rescue volunteers were found via FSG communications. FSG also advised on which birds would be considered non-releasable. This was the first large-scale release effort of hand-reared flamingos, and the FSG will establish a working group to produce guidelines and protocols should such events occur in the future. (KSR #29)
Communicate

Communication

i. One volume of the Flamingo newsletter was published in 2018 and one volume in 2019. The call for papers for the 2020 volume is now ongoing. The re-launch of Flamingo in 2018 has been successful in enabling further volumes to be published on the FSG website. (KSR #28)

ii. Presentations about FSG were given at several EAZA meetings in 2019 (e.g. the EAZA Bird Taxon Advisory Group mid-year meeting, EAZA Annual meeting, and the Moscow Zoo 155th Anniversary, with Russian translation), which attracted many people that do not attend the usual EAZA meetings, because of language barriers. Meeting participants were asked to provide feedback on what priorities they felt the FSG should have and in which activities we should be engaged. Individual attendants expressed approval for our current approach and activities. (KSR #29)

Acknowledgements

We thank WWT Martin Mere for agreeing to host the 2020 ABWAK Flamingo Keepers’ Workshop planned for Autumn 2020. We thank members of the Conservation Directorate at WWT (especially Robin Jones) for help maintaining the FSG’s membership database and email list, and for providing IT and technical help. We thank WWT IT and media for helping continue to develop the website and for providing the platform for the website. Grateful thanks to former Chair Rebecca Lee for problem solving with the website and helping to bring the website back online after a problem with the host platform. Thank you to Molly Grace at the University of Oxford for including the FSG in her Green Listing research. At the time of writing, COVID-19 may affect some of the activities listed.

Communicate

i. One volume of the Flamingo newsletter was published in 2018 and one volume in 2019. The call for papers for the 2020 volume is now ongoing. The re-launch of Flamingo in 2018 has been successful in enabling further volumes to be published on the FSG website. (KSR #28)

ii. The FSG website is up and running, and new pages continue to be added. The website works well as a repository for the volumes of Flamingo (our online journal). (KSR #28)

iii. The FSG Facebook page achieved a milestone of over 5,000 likes in 2019 and is now climbing towards 6,000. The Twitter account has around 800 followers. We continue to monitor number of likes and followers on the Facebook page, as well as to evaluate the reach of posts to understand which content has the widest appeal and influence for those engaging with flamingos, their ecology and conservation. We are monitoring Twitter to find new ways of engaging with a Twitter audience (this may be through recruitment of a social media volunteer). (KSR #28)

Scientific meetings

i. One workshop was held at Zoological Society of London (ZSL) London Zoo in July 2018. The output from this workshop was written up for the Association of British and Irish Wild Animal Keepers (ABWAK) journal Ratel and therefore was free to read for all ABWAK members and those interested parties with access to this publication. An audience of members from several different countries plus continued engagement with this workshop will see another one run in 2020. (KSR #18, 25)

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

- Assess 1
- Network 2
- Communicate 5

Main KSRs addressed: 11, 12, 18, 25, 28, 29

Resolutions addressed: WCC 2016 Res 041, WCC 2016 Res 085

KSR: Key Species Result
Mission statement

The Galliformes Specialist Group (GSG) is committed to the worldwide conservation and sustainable management of all native populations of Galliformes species and their habitats.

Projected impact for the 2017-2020 quadrennium

We expect to improve the protection of a suite of Galliformes species in Southeast Asia through a regionally focused action planning approach. This will be designed to influence conservation policy in one of the countries of this region containing important Galliformes species, most probably Myanmar, securing better protection for species and their habitats and leading to population recovery. In addition, we aim to use the expertise of the conservation breeding community together with field conservationists and partners to develop a ‘one plan’ approach towards the conservation of Galliformes.

Enhanced communications and support provided by the GSG will stimulate new conservation project work on the ground for threatened Galliformes in other regions of the world, designed to raise awareness and improve protection that will ultimately lead to population recovery. We aim to use the Green Listing process to predict and evaluate success.

Targets for the 2017-2020 quadrennium

Assess

Green List: actively participate in the development of the Green List by offering Galliformes species for piloting and being at the forefront of the introduction of the Green Listing process.
Plan
Conservation actions
i. No progress with the regional action plan covering Galliformes species. Our main focus has been on the Viet Nam Pheasant species recovery plan. (KSR #11)

Planning
i. A Long-Term Management Plan (LTMP) for Viet Nam Pheasant was drafted (final published version released 2020). Progress was made on developing a species recovery plan for the Viet Nam Pheasant, involving both the in situ and ex situ community, including meetings held in September as part of a Galliformes conference held in Viet Nam. Workshops were held for Green Peafowl (*Pavo muticus*) and Cheer Pheasant (*Catreus wallichii*) at the World Pheasant Association conference in September. (KSR #31)

Act
Conservation actions
i. The GSG Co-Chair joined the US Fish and Wildlife Service (USFWS) Recovery Team for Masked Bobwhite (*Colinus virginianus ridgwayi*). USFWS and the Sutton Center continue a captive rearing programme. Birds are transitioned at Buenos Aires National Wildlife Refuge in Arizona and imprinted on wild male Masked Bobwhites. (KSR #25, 31)

Network
Proposal development and funding
i. Further funding reviews were received and processed via the Co-Chairs. A service to review, improve and endorse proposals is not yet achieved. (KSR #30)

Synergy
i. The Co-Chair is on the Scientific Advisory Committee for the World Pheasant Association. Co-Chairs are also on the USFWS Masked Bobwhite Recovery Team. (KSR #29)

Communicate
Communication
i. The group remains active on social media. Our website continues to be managed internally and links to our membership and social media. Facebook has 1,218 followers and 30–40 views per day. In 2019, we had 1,170 page likes and our posts typically had reach of 100–300. The Twitter account has 111 followers and in 2019 had 974 impressions. (KSR #28)

Acknowedgements
Thanks to the World Pheasant Association for organisation of a successful Galliformes conference in Viet Nam in September. Thanks to Viet Nature for their work on species recovery for the Viet Nam Pheasant and to other partners in this endeavour, including BirdLife, Berlin Zoo, Antwerp Zoo, Wild Planet Trust (Paignton Zoo) and North of England Zoological Society (Chester Zoo). Thanks to colleagues at Newcastle University, UK, for helping to test Green List with Galliformes.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 11, 25, 27, 28, 29, 30, 31

KSR: Key Species Result
Mission statement
The Goose Specialist Group (GSG) seeks to strengthen contacts between all researchers on migratory goose populations in the northern hemisphere by organising regular scientific conferences and stimulating research on population dynamics of geese.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we will make a revision of current IUCN Red List status of goose species of concern in Europe. Addressing the conservation and management of declining, as well as growing, goose populations in Europe calls for a coordinated flyway approach amongst all range states concerned. To facilitate and implement such an approach, a European Goose Management Platform was established under the African-Eurasian Migratory Waterbird Agreement (AEWA), as called for by the AEWA Parties through Resolution 6.14. By the end of 2020, we expect acceptance of the Platform in most AEWA countries.

Targets for the 2017-2020 quadrennium
Assess
Red List: assess global status of Red-breasted Goose (Branta ruficollis) through intensive monitoring and satellite tracking at staging and wintering areas.
Research activities: investigate local movement and behaviour of geese wintering in Lower Saxony (Germany) and assess environmental factors affecting local movement and behaviour.

Act
Conservation actions: (1) recovery of the Red-breasted Goose population through reduction and mitigation of poaching and illegal hunting impact at key staging and wintering areas; (2) investigate changes in migration route and dynamic and search for possible new staging and wintering areas of the Red-breasted Goose through satellite tracking.

Plan
Planning: develop a coordinated flyway monitoring protocol for the Red-breasted Goose.

Communicate
Communication: raise awareness about Red-breasted Goose and threatened waterfowl at key staging areas in range countries.
Scientific meetings: organise the 19th Conference of the Goose Specialist Group.

Activities and results 2019
Assess
Research activities
i. Tracking of Red-breasted Geese started with delay of one year due to low numbers in traditional wintering grounds preventing catching attempts in 2018; in January–February 2019 again low numbers in Bulgaria reduced possibilities for catching and the field team of the Bulgarian Society for the Protection Birds (BSPB) was attacked by poachers shooting down the team car. Legal permit problems prevented fitting tags to birds in Kazakhstan in 2018, but in May 2019 eventually 10 birds were fitted with GPS-GSM tags in Kazakhstan, in cooperation with the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) and North Kazakhstan University. In total at least 20 more tags are to be fitted. One report on winter monitoring 2017–2018 was published. (KSR #1, 12)

ii. A report on the study of geese wintering in Lower Saxony (Germany) was created informing the Ministry of Lower Saxony. The report
is focused on the local movement of three wintering geese species: Greylag Goose (*Anser anser*), Greater White-fronted Goose (*Anser albifrons*) and the Barnacle Goose (*Branta leucopsis*). The report shows differences in behaviour during various hunting schemes. (KSR #12)

**Act**

**Conservation actions**

**i.** Spring hunting in 2019 was closed in Kalmykia; the spring hunting ban was extended successfully in Kazakhstan; no mortality of Red-breasted Goose was reported in Bulgaria in all key sites for 2019. There was 80% mortality of tagged birds during autumn migration and wintering by the end of December 2019, with losses in Russia, Kazakhstan and Romania; mortality cases of killed or injured birds from Romania were proven during the hunting period in 2019. At key wintering sites in Romania and Bulgaria, as well as in one nature park in Ukraine, patrols are organised to prevent poaching of Red-breasted Goose. Intensified patrolling is implemented in Chernie Zemly during autumn and spring, as well as in the Kostanay region of Kazakhstan. In 2019, the killing of one of the tagged Red-breasted Goose in Romania became a big case on national scale, where reports of intensive hunting at key wintering sites occurred. (KSR #34, 37)

**ii.** The process of satellite tracking of the Red-breasted Goose has been delayed as initial catching and tagging was envisaged to happen in Bulgaria in winter in order to follow both spring and autumn migration. However, mild winters and low numbers of geese in Bulgaria since 2018 have prevented successful catching and tagging. In February 2019, the catching team was attacked by poachers shooting down the BSPB team field car, which prevented further catching efforts. In 2018, disorder with the legal permits to catch geese in Kazakhstan prevented the LIFE project team from tagging geese there, but in May 2019 the international team (BSPB, Wildfowl & Wetlands Trust–WWT, ACBK, and North Kazakhstan University) successfully tagged 10 Red-breasted Goose in north Kazakhstan. As the AEWA International Working Group (IWG) proposed to ensure tagged Red-breasted Goose are available on an annual base to support on-the-ground monitoring, and given that funds allow it, these efforts will be extended beyond the initially-planned 30 tagged geese. (KSR #12)

**Plan**

**Planning**

**i.** A monitoring protocol for the Red-breasted Goose was developed by an international consultant (AEWA Red-breasted Goose IWG) and adopted in November 2019, based on existing experience and capacity in range countries. The protocol is focused on standardising the methods for counts and assessments in the staging and wintering countries, with a focus on autumn monitoring in Kazakhstan and winter monitoring in Ukraine, Romania and Bulgaria. A further proposal has been adopted to expand monitoring to add a sample section for monitoring at the breeding grounds based on sample plots; this proposal will depend on further funding availability. (KSR #15)

**Policy**

**i.** In Kazakhstan, ACBK has initiated a proposal for legislative changes to introduce a National Species Action Plan for the Red-breasted Goose in the law to allow development and implementation of such documents. In Romania, the first meetings to discuss the plan were held at the end of 2019, but the process is delayed by six months. (KSR #26)

**Communicate**

**Communication**

**i.** We raised awareness about Red-breasted Goose and threatened waterfowl in four key range countries by the end of 2019, through a company-designed interactive exhibit, which has been translated and produced in Bulgaria, Kazakhstan and Russia (Kalmykia). Additional funding was provided to translate and produce the exhibit in Ukrainian. A Romanian version of the exhibit is the last to be produced. In Bulgaria, some 1,500 people visited the exhibit; in Kazakhstan, some 4,000 people; in Kalmykia, over 500 children. During the Tulip Festival, the management of Chernie Zemly Reserve organises nationwide events in Kalmykia with children linked to Red-breasted Goose conservation, including art and drama competitions, a children’s’ painting competition, various quizzes, etc. (KSR #28)

**Scientific meetings**

**i.** The organising and programme committees of the 19th conference of Goose Specialist Group were formed, and the guidelines of the conference were determined: setting the scene – various aspects; dynamics of small populations; European Goose Management Platform; goose conflicts and management; hunting and predation; migration issues; migration issues two plus tools; breeding grey geese; and dynamics of breeding geese and disturbance. (KSR #28)

**Acknowledgements**

The work on the Red-breasted Goose has been entirely financed and supported by a European Commission LIFE funded project lead by the Bulgarian Society for the Protection Birds, with 10 partners from all the key range countries: LIFE16/NAT/BG/BG000847 ‘Life for Safe Flight’ Project. Additional funding was provided by the AEWA Secretariat and Whitley Fund for Nature. All partners and further details on activities and results can be found at the project website (https://www.savebranta.org).

**Summary of activities 2019**

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Main KSRs addressed: 1, 12, 15, 26, 28, 34, 37
Mission statement
The mission of the Heron Specialist Group (HSG) is to promote the conservation of herons and their habitats worldwide by encouraging research, inventory, monitoring, and conservation action. To achieve its mission, the HSG maintains worldwide communication linkages among heron specialists, assesses the conservation status of heron populations, provides syntheses of information and action plans for the conservation of heron populations, and otherwise facilitates conservation action on behalf of herons and their habitat.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision significant progress made towards range mapping and status update for all of our species, especially those species under categories Vulnerable, Endangered or Critically Endangered. Through agreements with zoos and other Specialist Groups (e.g. Crane Specialist Group and Stork, Ibis, and Spoonbill Specialist Group) and the 2nd Herons of the World Symposium, the HSG will be better positioned to leverage resources to support species working groups and implementation of various aspects of the conservation action plan.

Targets for the 2017-2020 quadrennium
Assess
Red List: update population status of *Egretta rufescens* (Reddish Egret) in Meso/Central America (Belize, Guatemala, El Salvador, Honduras).

Plan
Planning: (1) update the Heron Action Plan; (2) plan for Herons of the World Symposium.
Policy: restore functioning of the Waterbird Conservation for the Americas initiative.

Network
Agreements: zoo sponsorship for HSG or species working groups.
Capacity building: coordination of the Agami Heron Working Group.

Synergy: (1) connect with the Crane Specialist Group and the Stork, Ibis and Spoonbill Specialist Group to facilitate communications between Specialist Groups and for capacity-building potential; (2) recruit editor and establish editorial board for HSG’s journal (*Journal of Heron Biology and Conservation*).

Communicate
Scientific meetings: organise next Herons of the World Symposium.

Activities and results 2019
Assess
Red List
I. In conjunction with the Reddish Egret International Working Group, one rapid survey was conducted for breeding pairs of Reddish Egrets in Belize. (KSR #2, 7, 12)
Plan
Planning
i. Discussions took place between the Co-Chairs (Kushlan and Green) about the process of updating the Heron Action Plan. We will pursue this in conjunction with the Heron Symposium at the Pan-African Ornithological Congress (PAOC) in 2020. This will likely be delayed with rescheduling of the Heron Symposium. (KSR #15)
i. The Heron Symposium and PAOC have been postponed due to COVID-19; they are tentatively scheduled for November 2021. PAOC organisers have confirmed that the Heron Symposium will be part of PAOC 2021. Organisers of the Heron Symposium secured funding from IUCN SSC small grants and The Waterbird Society.

Policy

i. Clay Green communicated with Sara Schweitzer (US Fish and Wildlife Service) about the status of federal funding for the Waterbirds Chair to represent waterbirds within the North American Bird Conservation Initiative. Several agencies have begun discussions to jointly fund the position. Sara Schweitzer is leading the effort to restore membership and functions of the Waterbird Council. At the North American Bird Conservation Initiative, Sara presented the need to establish the Waterbird Council and restore functioning of Waterbird Conservation for the Americas. (KSR #27)

Network
Capacity building

i. After Anna Stier’s departure from GEPOG (Groupe d’Etude et de Protection des Oiseaux en Guyane) and the Agami Heron Working Group (AHWG), the working group does not currently have a chair. HSG is working with GEPOG and partners within AHWG to coordinate activities. (KSR #19, 29)

Synergy

i. Initial contact has been made with other Specialist Groups. We are working on a potential joint meeting with HSG and the Stork, Ibis and Spoonbill Specialist Group at the 2020 PAOC meeting (now rescheduled to 2021). (KSR #29)

ii. HSG recruited Dr. Chip Weseloh to serve as Editor for the HSG journal (Journal of Heron Biology and Conservation). Katsutoshi Matsunaga was recruited as Layout Editor. The 2018 volume (Volume 3) was published.

Communicate
Scientific meetings

i. Doug Harebottle, Chip Weseloh and Clay Green submitted a proposal to the Pan-African Ornithological Congress (PAOC) for hosting a heron symposium at the PAOC meeting in Victoria Falls in November 2020. The proposal was accepted; however, the Symposium and PAOC have been postponed due to COVID-19, and are tentatively scheduled for November 2021. PAOC organisers have confirmed that the Heron Symposium will be part of PAOC 2021. Organisers of the Heron Symposium secured funding from IUCN SSC small grants and The Waterbird Society. (KSR #28)

Acknowledgements

HSG would like to thank Phil Atkinson with the British Trust for Ornithology and Doug Harebottle with Sol Plaatje University for their efforts in working with HSG in the organisation of the Herons of the World Symposium, to be held in conjunction with the Pan-African Ornithological Congress (now November 2021 due to COVID-19). HSG also thanks Katsutoshi Matsunaga for his continued efforts in serving as Layout Editor for our journal and for maintenance and update of the Heron Conservation website. Lastly, HSG would like to thank Anna Stier for her tireless efforts in the establishment and leadership of the Agami Heron Working Group. In 2019, Anna Stier stepped down as Chair of the AHWG. During her tenure as AHWG Chair, Anna coordinated the conservation efforts through the development of the Agami Heron Conservation Plan and the implementation of the Agami Heron Working Group Strategic Statement 2015–2020.

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

Assess 1

Plan 3

Network 3

Communicate 1

Main KSRs addressed: 2, 7, 12, 15, 19, 27, 28, 29

KSR: Key Species Result
Co-Chairs
Lucy Kemp (1) (Africa)
Aparajita Datta (2) (Asia)

Red List Authority Coordinator
BirdLife International

Location/Affiliation
(1) Mabula Ground Hornbill Project, South Africa
(2) Nature Conservation Foundation, India

Number of members
142 (Asian: 106, African: 18, Others: 18)

Social networks
Facebook: IUCN SSC Hornbill Specialist Group, IUCN Hornbill Specialist Group for Public Engagement
Instagram: iucn_hornbills
Twitter: @iucn_hornbills
Website: www.iucnhornbills.org

Mission statement
The Hornbill Specialist Group (HSG) aims to use our combined knowledge and skills for evidence-based conservation action for hornbills and their habitats.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, the HSG will have definitive conservation plans in place for all Critically Endangered (CR) and Endangered (EN) hornbill species in both Asia and Africa, with implementation agencies supported by the HSG to meet their targets. Asia already has a strong and active hornbill conservation network, and by 2020 we aim to have initiated and developed an African hornbill conservation network. Efforts will be made to ensure that conservation planning takes into account Indigenous Knowledge Systems to ensure that cultural data are also considered and used in designing bespoke conservation actions where the threats are anthropogenic in nature.

Targets for the 2017-2020 quadrennium

Assess
Red List: review Red List status and information for all 62 hornbill species.
Research activities: promote and support research on hornbill species in Africa.

Plan
Planning: (1) prioritise species requiring formal conservation plans; (2) initiate an action plan workshop for the Critically Endangered Sulu Hornbill (Anthracoceros montani).

Network
Capacity building: hold annual regional capacity building workshops.
Membership: increase African membership.

Proposal development and funding: fundraise for conservation planning workshops and for support of various HSG activities.

Communicate
Communication: (1) produce one newsletter per year; (2) website and social media established and maintained.

Scientific meetings: support the International Hornbill Conference, scheduled for 2022 in Bhutan.

Activities and results 2019

Assess
Red List
i. Updated Red List assessments are underway with two interns, supported by Chester Zoo, Dr Kathryn Gamble and Milwaukee Zoo, in both Africa and Asia, working to reassess a number of lesser-known species to ensure all species have the most accurate conservation status possible, to enable swift and prioritised conservation action for the most threatened. The species factsheets are also being reviewed and updated by reaching out to our network of members. Funding was received and review work started in December 2019. A few Asian species were evaluated and revised by December 2019; this was communicated to BirdLife International. Other assessments are underway, to be communicated by March 2020. (KSR #1, 4)

Research activities
i. A PhD student has been taken on in Ghana to start much needed research into the Northern Ground-hornbill (Bucorvus abyssinicus). (KSR #12)

Plan
Planning
i. A multi-species conservation action planning workshop for five endemic and endangered West Visayan species was organised by
Talarak Foundation, facilitated by the IUCN SSC Conservation Planning Specialist Group (CPSG), and funded by Chester Zoo, Wildlife Reserves Singapore and other partners, with participation from IUCN HSG. The workshop was held in Bacolod City, Negros Island, Philippines, in June 2019. Two hornbill species were included among the five species that were part of this action planning. The HSG Co-Chair (Asia) attended the meeting and participated by facilitating and providing technical inputs during the workshop. (KSR #15)

Important meetings

i. A workshop with 44 relevant local, national and international stakeholders was held in March 2019 in Manila; this was organised by IUCN HSG, IUCN CPSG, Hornbill Research Foundation and Philippine Biodiversity. (KSR #15)

Network

Proposal development and funding

i. Several grants have been raised, such as the internal IUCN Grant, funds from our host/partner Wildlife Reserves Singapore (WRS), as well as Chester Zoo, Disney and others. (KSR #19)

Communicate

Communication

i. The Editorial Board for the HSG newsletter was set up in early 2019; guidelines were finalised in June 2019, and a call for articles announced in August 2019 with a November 2019 deadline. The articles were reviewed and formatted for publication by December 2019. The Editorial Board consists of Dr Tim O’Brien, Dr Divya Mudappa, Dr Shankar Raman, and Dr Jarryd Alexander, who reviewed the submitted articles. The first issue of our newsletter, Hornbill Natural History and Conservation, was ready for online publication in December 2019, but was published in January 2020 after a delay due to the Christmas and New Year holidays. HSG members contributed articles. The first issue has a good mix of papers from Asia and Africa. We had three main articles and four notes from the field with contributions from 26 authors. https://iucnhornbills.org/newsletter/ (KSR #28)

ii. The HSG website was established in 2018, with more content added in 2019. We have developed a communications plan/strategy (prepared by our partner Rangkong Indonesia) for the HSG for external communications and conservation messaging. Social media accounts on Twitter and Instagram will be opened soon. Some awareness content has been developed (a cartoon series for a Critically Endangered species, the Helmeted Hornbill (Rhinoplax vigil), was also created and distributed/shared widely). We also established a ‘Hornbill SG Network’ GoogleGroups listserv in February 2019 for internal member communications/discussions and sharing of information. Any member can post, share and initiate discussions. We are in the process of developing a communications plan/strategy for the HSG both for internal member engagement and communications, and for external communications and conservation messaging. (KSR #28)

Scientific meetings

i. A symposium and round table were booked for the Pan-African Ornithological Conference in Zimbabwe, in November 2020. This will be the first meeting of all African members of the group and discussions will include how to learn from other range-states, finding funding for basic research and a Red List assessment exercise. (KSR #28)

ii. Our Programme Officer, supported by WRS funds, went to Bhutan to discuss and plan the organisation of the International Hornbill Conference in May 2022. (KSR #28)

Acknowledgements

All of us are working in a voluntary capacity for the HSG and we thank our members, our Advisory Board, the Steering Committee, the Editorial Board of the newsletter and those in the IUCN SSC Chair’s office for their support as we find our feet and gather momentum. The key partner organisations who have supported the activities and work undertaken thus far are the Mabula Ground Hornbill Project, Nature Conservation Foundation, Wildlife Reserves Singapore, Hornbill Research Foundation, Rangkong Indonesia, Attica Zoological Park, Malaysian Nature Society, Disney Animal Kingdom, Kasetsart University, European Association of Zoos and Aquaria Hornbill Taxon Advisory Group (EAZA Hornbill TAG), Maguari-One Zoo and Wildlife Consultants, and the Wildlife Conservation Society. Individuals from several other institutions such as TRAFFIC, Chester Zoo, North Carolina Zoo, Hornbill Research Foundation Inc. (PBCFII), Birdlife International, Talarak Foundation, Milwaukee Zoo, Dr Kathryn Gamble, and especially the IUCN SSC Conservation Planning Specialist Group have also helped tremendously during the conservation action planning workshops and/or participated/worked in collaboration with the HSG in the last two years.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

Assess 2

Plan 2

Network 1

Communicate 4

Main KSRs addressed: 1, 4, 12, 15, 19, 28

Resolutions addressed: WCC-2016-Res-009

KSR: Key Species Result
Mission statement

The mission of the Loon Specialist Group is to contribute to increase current knowledge on the ecology of all five species across their entire geographic range of distribution and promote long-term conservation.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we envision that the population and distribution of all species of divers/loons will remain strong. Breeding populations are generally in protected areas (although stressors such as mercury pollution and oil drilling may have impacts in some areas), while wintering populations are potentially in conflict with stressors associated with marine ecosystems (e.g. oil spills, cyanobacteria outbreaks, degraded fisheries). To assess the status of each of the five loon species, an international symposium will occur in late 2020 followed by a ‘State of Global Loon Populations’ publication in a special issue of a peer-reviewed journal. A global stressor of particular concern for global loon populations is mercury. That concern will be assessed through the international symposium as well as through a new initiative to better understand mercury exposure and effects on loon populations and other IUCN SSC Groups.

Targets for the 2017-2020 quadrennium

Act

Conservation actions: establish 1-2 new breeding populations of Common Loons (Gavia immer) in Wyoming, US.

Network

Synergy: initiate and network with other SSC Groups on the new project called “The Global Footprint of Mercury: Understanding the patterns of exposure and effects to biota”.

Communicate

Scientific meetings: complete one international diver/loon conference.

Activities and results 2019

Act

Conservation actions

1. Assessment of one translocation site where 24 loons have been translocated found five individuals had returned, and one territorial pair has formed. (KSR #24, 27)

Communicate

Scientific meetings

1. Scientific and local host committees are established for the international diver/loon conference. (KSR #18, 20, 25, 28, 29)

Acknowledgements

We would like to thank the Loon Symposium Steering Committee: Deb McKew, Lucas Savoy, Jim Paruk and Mark Pokras, and interest by the Seaduck Joint Venture. Thank you to Deb McKew for organising the April 2019 kick-off event, which featured the work of nine professional artists who exhibited a selection of species listed as Endangered on the IUCN Red List.
Summary of activities 2019

Components of Species Conservation Cycle: 2/5

Act 1
Communicate 1

Main KSRs addressed: 18, 20, 24, 25, 27, 28, 29

KSR: Key Species Result

Arctic Loon, Gavia arctica
Photo: Denis Kochetkov

Common Loon, Gavia immer
Photo: Daniel Poleschook

Pacific Loons, Gavia pacifica
Photo: Ken Archer

Red-throated Loon, Gavia stellata
Photo: Ken Archer

Common Loon, Gavia immer
Photo: Daniel Poleschook
Mission statement
The mission of the Pelican Specialist Group (Old World and New World Sections) is to carry out, support and promote scientific research and conservation activities aimed at Old World and New World pelicans and enhance cooperation and diffusion of knowledge.

Projected impact for the 2017-2020 quadrennium
By the end of 2021, we envision increasing our membership (both Old World and New World sections) and being able to collect and compile better data on the global status and populations of the two (out of five) Old World pelicans which are classified as Near Threatened: the Dalmatian Pelican (Pelecanus crispus) and the Spot-billed Pelican (Pelecanus philippensis). Particularly, we will strive to assist in obtaining more knowledge about the status (distribution, populations and threats) of the highly endangered Mongolian sub-population of the Dalmatian Pelican of the East Asian flyway. In parallel, this knowledge will allow us to plan and implement necessary conservation measures. We would also like to have a better understanding of what is happening with the breeding populations of the Great White Pelican (Pelecanus onocrotalus) in its Eurasian range, as important changes have been observed in recent years. Finally, we would like to contribute to the maintenance of the small and dwindling populations of Dalmatian Pelican in South-eastern Europe and Turkey. In addition to the above, we will establish a New World membership roster.

Targets for the 2017-2020 quadrennium
Assess
Red List: improve the assessment of the global population of the Dalmatian Pelican.
Research activities: (1) collect and disseminate data on the status of pelicans in Kazakhstan; (2) review publication on the causes of morbidity and mortality for the Dalmatian Pelican in South-eastern Europe.

Plan

Network
Membership: (1) expand membership to experts on species other than Dalmatian Pelican and Great White Pelican; (2) recruit more members working in Central Asian countries and the Russian Federation; (3) build New World membership list.
Proposal development and funding: provide substantial support to individuals and organisations keen to set up new conservation projects for pelicans.
Synergy: enhance interaction with the WI-IUCN SSC Cormorant Research Group.

Communicate
Communication: enhance the degree of contact and information exchange between our members.
Scientific meetings: organise and chair a ‘Pelicans of the World Symposium’, jointly with both Old World and New World Pelican Specialist Group sections, at the 2019 Waterbird Society Annual Conference and General Meeting.
Activities and results 2019

Assess

Red List

i. We have made some progress assessing the global population of the Dalmatian Pelican but not sufficient: we have got the most updated and integrated estimation of the Russian population through the European Breeding Bird Atlas (EBBA2) programme and the estimation of the population of Kazakhstan through the paper described under ‘Research activities’. (KSR #1)

Research activities


Network

Membership

i. With four new members from Australia, we are now at 78 members.

ii. We’ve made some progress building the New World membership list but not sufficient.

Communicate

Scientific meetings

i. The ‘Pelicans of the World Symposium’ was accomplished in November 2019, jointly with both Old World and New World Pelican Specialist Group sections, at the 2019 Waterbird Society Annual Conference and General Meeting. (KSR #28)

Acknowledgements

The work of the chairman of the Old World Pelican Specialist Group is supported by the Society for the Protection of Prespa, which is partly funded for this work by the Prespa-Ohrid Nature Fund (PONT). The work of the chairman of the New World Pelican Specialist Group is supported in part by the United States Department of Agriculture, Wildlife Services, National Wildlife Research Center. Travel support (in part) for the 2019 Pelicans of the World Symposium was provided by the Waterbird Society.

Summary of activities 2019

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Main KSRs addressed: 1, 12, 28

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC Penguin Specialist Group (PSG) is to provide scientific advice that informs policy and engages people in effective conservation action.

Projected impact for the 2017-2020 quadrennium
The disconcerting and rapid population decreases reported for most of the world’s penguin species will be reversed only through immediate and affirmative action on the part of the global community of researchers, governmental entities, conservation organisations, fisheries’ managers and the general public. If we address the identified threats, undertake priority research needs using an interdisciplinary and integrated approach, and begin to implement appropriate conservation actions, management could perhaps slow or stop the observed decreases in penguin populations. We wish to call attention to the plight of this important and charismatic taxonomic group, whose dire situation is a clear reflection of the current escalating crisis facing the world’s marine ecosystems and as indicators of future global warming scenarios.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete assessment of Little Penguin (*Eudyptula minor*); (2) reassess Red List status of penguin species.

Research activities: (1) publish a paper with the most recent update on the ecology and conservation of all penguin species; (2) identify priority areas of research needed; (3) identify the three penguin species in most critical need of help; (4) publish a paper on the priority conservation and research needs for all species and the identification of three species in need of most help.

Plan
Planning: (1) convene a meeting of the PSG Steering Committee focused on catalysing a Wild Penguins in Perpetuity Conservation Strategy; (2) convene a meeting of the PSG Steering Committee to define priorities for global penguin conservation prior to the International Penguin Congress in New Zealand; (3) define priority conservation actions needed.

Policy: (1) hold a Steering Committee meeting in May 2018 to define priorities for global penguin conservation; (2) hold a Steering Committee meeting in August 2019 to update the status of PSG, suggest new members and define future goals.

Network
Membership: continue to add expert members as needed.
Synergy: (1) convene a meeting of the PSG Steering Committee to update on the progress made since our last meeting in New Zealand in September 2019; (2) convene virtual meetings with Steering Committee members in June and November 2020.

Communicate
Communication: (1) start process to design the Specialist Group official website; (2) start process to elaborate the logo of the Specialist Group.
Activities and results 2019

Assess

Red List

i. The template of the Little Penguin and its assessment was completed together with the rest of the penguin species. (KSR #1)

ii. We coordinated the process to update the Red List templates for all the penguin species. (KSR #1)

Research activities


ii. Among the 12 cross–taxa research areas we identified, we ranked quantifying population trends, estimating demographic rates, forecasting environmental patterns of change, and improving the knowledge of fisheries interactions as the highest priorities. (KSR #12)

iii. Three species were unanimously voted as international priorities: African Penguin (Spheniscus demersus), Galápagos Penguin (Spheniscus mendiculus), and Yellow–eyed Penguin (Megadyptes antipodes). (KSR #43)

Plan

Planning

i. A meeting of the PSG Steering Committee focused on catalysing a Wild Penguins in Perpetuity Conservation Strategy was held in Florida, US. The meeting took place in White Oaks and we made progress on all the goals defined. (KSR #15, 18)

ii. The highest ranked conservation action needs defined were to enhance marine spatial planning, improve stakeholder engagement, and develop disaster–management and species–specific action plans. (KSR #15)

Policy

i. We organised a meeting of the Steering Committee members and an open workshop as a side event of the International Penguin Congress 2019. (KSR #26)

Network

Membership

i. We are constantly reassessing the composition of our membership and their contribution to the group; we decided to start elaborating a list of new members that would be reassessed in March 2020 before invitations are sent.

Acknowledgements

The IUCN Species Survival Commission (SSC) Penguin Specialist Group (PSG) thanks the Chair of the SSC, J.P. Rodriguez, and the Director of Oversight and Conservation Outcomes, R. Hoffmann. The Deep Aquarium provided funding for this workshop and K. Mileham, IUCN SSC Director of Strategic Partnerships, helped to secure funding. White Oak Conservation Center provided the venue for the IUCN SSC PSG meeting. The Global Penguin Society, as the IUCN SSC PSG partner organisation, supports meetings and workshops of the Steering Committee. We owe our sincere appreciation to our many collaborators, who contributed in many different ways.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 12, 15, 18, 26, 32, 43

KSR: Key Species Result
Mission statement
The Stork, Ibis and Spoonbill Specialist Group (SIS-SG) is a global network of scientists, conservationists, governmental and non-governmental institutions and people committed to the scientific understanding and conservation of SIS species and their habitats.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision a substantial advance in creating a strong network, and a sustainable and active Specialist Group based on participation of the best specialists on our species of concern worldwide. Specifically, our focus will be to raise enough resources to maintain the activity of the Specialist Group, creating a scientific network and promoting scientific research, meetings and conservation actions among members and partners, including other Specialist Groups, who will contribute to improve the knowledge of our species of concern and their threats.

Targets for the 2017-2020 quadrennium

Network
Capacity building: organise the First World Symposium of Stork, Ibis and Spoonbill.
Proposal development and funding: obtain sponsorship for the functioning of the SIS-SG.
Synergy: (1) facilitate communications with related waterbird Specialist Groups to help with capacity building; (2) establish at least two new working groups.

Communicate
Communication: enhance wider communication and share research and conservation findings related to Stork, Ibis and Spoonbill (SIS) species worldwide.

Activities and results 2019

Network
Proposal development and funding
i. Tour du Valat covered the cost of the ISBN for the Special Issues of SIS Conservation and the Special Publication with the Abstracts of the International Workshop on Eurasian Spoonbill (Platalea leucorodia). (KSR #19)

Synergy
i. We assisted Wetlands International with our advice and comments on the development of the Water Bird Population Portal. We met several waterbird Specialist Groups during the SSC Leaders’ Meeting in Abu Dhabi to exchange experiences and information, and to learn how the groups are managed. (KSR #27)

ii. We have followed up on steps to establish a couple of new networks for Black-headed Ibis (Threskiornis melanocephalus) and Black Stork (Ciconia nigra) with specialists and experts from around the world. (KSR #27)
Communicate


ii. The International Glossy Ibis Network (IGIN) has contributed to publish the first issue of SIS Conservation, a special issue on Glossy Ibis (Plegadis falcinellus) ecology and conservation. A website has also been developed for the network. (KSR #28)

Acknowledgements

We want to acknowledge Alejandro Torés for his support in managing the website. Simone Santoro played a key role in publishing the first online issue of SIS Conservation. Jon Paul Rodríguez and his team have supported and assisted us during the whole year. Tour du Valat has sponsored the ISBN codes of our publications in 2019.

Summary of activities 2019

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Main KSRs addressed: 19, 27, 28

Resolutions addressed: WCC-2016-Res-027

KSR: Key Species Result
Mission statement
The Swan Specialist Group (SSG) is an international network of swan specialists who undertake monitoring, research, conservation and management of swan populations. Its mission is to facilitate effective communication between members and others with an interest in swan management and conservation worldwide, in order to improve national and international links for cooperative research, to identify gaps in knowledge and to provide a forum for addressing swan conservation issues.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we will have undertaken a further census of the Northwest European Bewick’s Swan (Cygnus columbianus bewickii) population to determine whether we have achieved the initial target of the African-Eurasian Migratory Waterbirds (AEWA) Bewick’s Swan Action Plan, of halting the ongoing decline in the Northwest European population and, if necessary, begin recovery of the population to its 2000 level. By 2020, we also envisage having a better understanding of the environmental factors contributing to the decline, and to have started addressing these where necessary. For the other swan species, which are currently classed as Least Concern by IUCN, we will maintain our monitoring of population trends, or collect such information where the monitoring is being undertaken by other organisations, to identify any conservation issues that may arise for the swans.

Targets for the 2017-2020 quadrennium
Assess
Research activities: (1) AEWA Bewick’s Swan Action Plan: reasons for the population decline identified; (2) population monitoring: international censuses of migratory swan populations in the Northern Hemisphere.

Plan
Planning: (1) AEWA Bewick’s Swan Action Plan: implementation workshop held; (2) AEWA Bewick’s Swan Action Plan: actions to reduce threats to Bewick’s Swans put in place; (3) AEWA Bewick’s Swan Action Plan: population decline halted and reversed.

Policy: provide information and technical advice in support of the programmes of IUCN SSC, Wetlands International, BirdLife International, Ramsar and others as necessary.

Act
Conservation actions: implementation of AEWA Bewick’s Swan Action Plan: actions to reduce threats to Bewick’s Swans put in place.

Network
Membership: improve knowledge of population trends and threats to swan species in the Southern Hemisphere.

Communicate
Communication: (1) publish Swan News newsletter annually: four issues in years 2017–2020; (2) launch Swan Specialist Group website; (3) maintain Swan Specialist Group listserv.


Activities and results 2019

Assess

Research activities


ii. Annual surveys of the two Tundra Swan (Cygnus columbianus columbianus) populations – the Eastern and Western populations – in North America coordinated by the US Fish and Wildlife Service continued in 2019. Results of the 5-yearly international censuses of the Northwest Mainland European Whooper Swan population (Cygnus Cygnus; Laubek et al. 2019. Whooper Swan Cygnus cygnus January popula-
Plan

Planning

i. Sixteen range states continued establishing activities to reduce threats to the Northwest European Bewick’s Swan, including maintaining key site networks and legislation protecting birds from illegal hunting. (KSR #18, 29)

ii. Results of the January 2015 census indicated that the rapid decline in the Northwest European Bewick’s Swan population recorded between 1995 and 2010 may have halted. Plans were put in place for a January 2020 census and the results should confirm whether the decline has been stemmed/reversed or whether it is continuing. The census has also been extended to include wintering areas traditionally used by the Caspian-wintering Bewick’s Swan population, to assess potential population interchange. (KSR #16)

Policy

i. The Chair of the Swan Specialist Group attended the IUCN SSC Leaders’ Meeting in Abu Dhabi in October 2019 and contributed to a range of workshops, including the Birds Specialist Groups session. (KSR #27)

Act

Conservation actions

i. Several activities planned for the “Swan Champions” project in the Russian arctic were progressed. Notably: preparation and distribution of a leaflet to hunters, a travelling exhibition on swans and the importance of arctic wetlands, school programmes, workshops, and use of social media. (KSR #18, 29)
An update on the movements of Bewick’s Swans tracked in relation to wind farms was presented in a seminar on the UK government’s Strategic Environmental Assessment (SEA) for offshore renewable energy, held in London in March 2019. The 2019/20 tracks were also presented in an Interim Report to the UK Department for Business, Energy and Industrial Strategy (Rees, E.C., Griffin, L.R., Wood, K.A., Nolet, B.A. and Nuijten, R.J.M. 2019. Modelling Bewick’s Swan telemetry data to assess collision risk for the birds migrating across Europe: a cumulative impact assessment), prior to modelling the collision risk to Bewick’s Swans of offshore and terrestrial wind farms across Europe scheduled for 2020. (KSR #18, 29)

Communicate


ii. The Swan Specialist Group website (https://swansg.org) provides information on all swan species, and was updated with news items throughout 2019. (KSR #28)

iii. The ssg-forum listerv, hosted by Wildfowl & Wetlands Trust (WWT), continues to be the main method for maintaining communication between Swan Specialist Group members, along with the annual newsletter. (KSR #28)

Scientific meetings

i. Eleven presentations at the 6th International Swan Symposium, on a range of subjects including population trends and delineation, habitat/resource use, demography, threats and recent tracking studies, were published as proceedings of the meeting in a special issue of the Wildfowl journal (Wildfowl Special Issue No. 5). The proceedings also include a synthesis of the meeting, overviewing current trends and future directions in swan research (Wood et al. 2019. Current trends and future directions in swan research: insights from the 6th International Swan Symposium. Wildfowl Special Issue 5:1–35; available at https://wildfowl.wwt.org.uk/index.php/wildfowl/article/view/2704). The journal is open access, and papers can be downloaded from its website at https://wildfowl.wwt.org.uk/index.php/wildfowl/issue/view/297. (KSR #28, 32)

Acknowledgements

The Swan Specialist Group would like to thank Aarhus University (Denmark) and the Wildfowl & Wetlands Trust (UK) for supporting publication of the proceedings of the 6th International Swan Symposium. We also thank the charitable trusts, scientific bodies and individuals that fund work within the Bewick’s Swan Action Plan. Swan Specialist Group members remain immensely grateful to the many volunteers who provide valuable swan count data, ring readings and other observations used in assessing the status of swan populations, and to their institutes for continuing to host swan monitoring, research and conservation programmes.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 12, 16, 18, 27, 28, 29, 32

KSR: Key Species Result
Mission statement

To conserve the world’s most threatened waterfowl by focusing on direct action; developing, demonstrating and disseminating best conservation practice and processes; and actively promoting and encouraging information exchange on threatened waterfowl monitoring, research, conservation and public awareness worldwide. We will do this through producing and implementing international action plans, incorporating in situ and ex situ conservation tools, as necessary; by providing advice to policy makers, international conventions and practitioners; and by encouraging information exchange and cooperation amongst threatened waterfowl conservationists and with other relevant conventions and organisations.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, the Threatened Waterfowl Specialist Group (TWSG) will have held the Baer’s Pochard (Aythya baeri) workshop, produced a prioritised list of conservation actions and fundraised for the highest conservation priority projects. Until the workshop is held in March 2018 it is not possible to say what these will be. By the end of 2020, we will have released over 100 Madagascar Pochard (Aythya innotata) into the wild at Lake Sofia, we will understand how best to release birds at Lake Sofia, and we will have developed clear targets for success. We will have a better understanding of the past ecology of the breeding site and will understand the impact of conservation interventions. By 2020 we hope that the population of Ruddy Ducks (Oxyura jamaicensis) in France will have been significantly reduced.
Further implementation; (12) White-headed Duck: support the European Commission LIFE project to eradicate the Ruddy Duck from France, and provide advice as required.

Technical advice: provide information and technical advice in support of the programmes of IUCN SSC, Wetlands International, BirdLife International, Ramsar and others as necessary.

**Communicate**

Communication: maintain the TWSG forum list server to facilitate communication between TWSG members.

**Activities and results 2019**

**Assess**

**Research activities**


ii. Madagascar Pochard: Twenty-one Madagascar Pochard were released at Lake Sofia in December 2018. By 2019, nine birds were living on the lake and two females hatched 12 young in November. (KSR #25)

iii. Madagascar Pochard: Local monitoring team trained and in place throughout year. (KSR #25)

**Technical advice**


**Act**

**Conservation actions**

i. Two breeding centres established and running in Antsohihy, Madagascar. (KSR #25)

ii. Madagascar Pochard: Twenty-one Madagascar Pochard were released at Lake Sofia in December 2018. By 2019, nine birds were living on the lake and two females hatched 12 young in November. (KSR #25)

iii. Madagascar Pochard: Local monitoring team trained and in place throughout year. (KSR #25)

**Technical advice**


**Acknowledgements**

TWSG would like to thank members for their regular updates and points of interest on the many taxa of concern to the group. We particularly want to thank Richard Hearn and Nigel Jarrett for their contribution to the understanding of Baer’s Pochards, Diana Solovyeva for updates on Scaly-sided Mergansers (Mergus squamatus), Iain Henderson for reports on Ruddy Ducks and Richard Lewis, Felix Razafindrajao and Floriot Randrianarimangason for news of Madagascar Pochard. We are also grateful to Vivek Menon, Rathin Barman and Wildlife Trust of India for inviting TWSG to take part in the White-winged Wood Duck (Asarcornis scutulata) Conservation Strategy workshop in Assam in 2019 and to William van Lint and Bernd Marcordes for including TWSG in the European Association of Zoos and Aquaria (EAZA) Waterfowl and Pellecaniformes Taxon Advisory Group (TAG) Regional Collection Plan workshop in the UK in 2019. We also thank Jan Harteman, Durrell Wildlife Conservation Trust and Guido Vandenbroucke for photographs included in the report and Dan Wright for producing the group’s first logo.
Mission statement
The IUCN SSC Vulture Specialist Group (VSG) aims to advocate and create greater awareness of the plight of vultures and coordinate and support effective conservation activities to their benefit.

Projected impact for the 2017-2020 quadrennium
Completion and planned implementation of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) Vulture Multi-species Action Plan (MsAP) aims to halt the decline in Old World Vulture populations in Africa-Eurasia over the next 12 years, commencing in 2018.

Targets for the 2017-2020 quadrennium

Assess
Research activities: publish four editions of the VSG journal Vulture News.

Plan
Planning: (1) engage members and others to implement the Vulture Multi-species Action Plan (MsAP) for all Old World vultures; (2) support implementation of the MsAP at a regional and sub-regional level.

Network
Membership: build and develop VSG membership.
Synergy: (1) develop links with other relevant SSC Groups, e.g. Conservation Planning Specialist Group (CPSG), African Elephant Specialist Group, Canid Specialist Group, Wildlife Health Specialist Group; (2) participate in and support the work of the SSC CPSG.

Communicate
Communication: (1) produce outputs from the Abu Dhabi Meeting that assist with the implementation of the Multi-species Action Plan; (2) promote The International Vulture Awareness Day each September; (3) produce two newsletters annually; (4) develop VSG website presence; (5) act as a key partner in promoting the CMS Multi-species Action Plan for African-Eurasian Vultures; (6) develop a video communication tool to highlight the plight of African vultures and promote implementation of the Vulture MsAP to African governments.

Activities and results 2019

Assess
Research activities
i. Two editions of the journal Vulture News were published and distributed to subscribers. Numerous key articles were included. (KSR #28)

Plan
Planning
i. In Africa, we worked with a total of 32 partner organisations from government, private sector, NGOs and other organisations on a range of projects and activities in 14 countries. In Asia, we worked primarily through the Saving Asia’s Vultures from Extinction (SAVE) Partnership (24 organisations including several governments). No government support has yet been granted for coordination of implementation. One highly successful international workshop was held (see reports) to develop best practice harnessing methodology for satellite tagging vultures. Also, one position statement was agreed with members’ inputs on the role of vultures in human health. (KSR #15)

ii. We worked on various activities with government institutions in 14 African countries. We had active engagement with the SAVE Blueprint
element of the Action Plan for all six key Asian range countries, including work on two national action plans. Activities in Africa included support with drafting on national vulture conservation strategies, training of staff and initiation or continuation of research and monitoring activities. (KSR #21)

**Network**

**Membership**

i. The global membership now stands at 110, with 29 members in Africa, 38 in Europe, 15 in the Americas, and 28 in Asia. Membership is expected to increase further in 2020.

**Synergy**

i. We participated in a workshop with the Wildlife Health, Canid, Cat, Bovine and Elephant Specialist Groups on 4 October 2019 in Abu Dhabi. VSG also hosted a wildlife poisoning discussion group on 5 October 2019 with representatives from these groups as well as the Crane Specialist Group. Meeting with the Crane Specialist Group resulted in us programming a joint participation in an event focused on wildlife poisoning at the 13th Conference of the Parties to the Convention on Migratory Species (CMS CoP13) in India, in early 2020. (KSR #29)

ii. We participated in the drafting of National Vulture Conservation Plans in six African countries, i.e. South Africa, Botswana, Kenya, Nigeria, Cabo Verde, and Rwanda, and also saw the approval of the Zimbabwe National Vulture Conservation Strategy in April 2019. (KSR #29)

**Communicate**

**Communication**

i. We arranged and participated in a successful side event at the 18th Conference of the Parties to CITES (CITES CoP18) in Geneva on 18 August 2019, which assisted with the adoption of the proposal submitted to the CITES plenary on 20 August 2019. (KSR #28)

ii. The Vulture Awareness Day took place on 7 September 2019 with contribution from 40 countries, of which 38 registered their participation on the website www.vultureday.org/activities. This event continues to grow in reach and profile. (KSR #28)

iii. Two newsletters were produced and circulated on time in March and September 2019. Both were also distributed to the wider SSC membership. The current distribution list now exceeds 700 subscribers (grown by 200 during the year). Note this newsletter is in addition to the journal Vulture News, which publishes longer articles. (KSR #28)

iv. The VSG website is running and functional and can be accessed at https://www.iucnvsg.org. Having this web presence is a major development, which has been eagerly anticipated. It has also been important for lodging a position statement (on vultures’ role in human health). (KSR #28)

v. We completed a video product in partnership with the Cornell Lab of Ornithology, which is available in four languages and was launched at CITES CoP18 and on International Vulture Awareness Day. We report a total of 7,055 views on YouTube as of the date of this report. (KSR #28)

**Acknowledgements**

We would like to again thank the Royal Society for the Protection of Birds and the Endangered Wildlife Trust for enabling the Co-Chairs to continue in their roles and allocate substantial amounts of their time to the work of the IUCN SSC Vulture Specialist Group. Thank you also to our Steering Committee members/Regional Chairs Darcy Ogada, José Tavares, Sergio Lambertucci, Keith Bildstein and Campbell Murn for their continued support and input. Further acknowledgement is due to the Hawk Conservancy Trust, especially volunteer Lesley Jerome, for their continued administrative support and for initiating work on the VSG website. We would also like to acknowledge the excellent work by the team from the Cornell Lab of Ornithology for the production of the excellent video, which is available in four languages. We continue to work closely with a range of other organisations, but would like to acknowledge BirdLife International, Vulture Conservation Foundation, the CMS Raptors MoU and IUCN SSC staff for their continued support. We also appreciate the IUCN SSC Internal Grant that made the harnessing workshop possible.

**Summary of activities 2019**

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Main KSRs addressed: 15, 21, 28, 29

KSR: Key Species Result
Mission statement
The first aim of the Woodcock and Snipe Specialist Group (WSSG) is to provide up-to-date knowledge on eight woodcock and 18 snipe species in the world. It is also expected to encourage new research and to facilitate contacts between researchers. WSSG plays the role of expertise platform for biologists, conservationists and wildlife managers interested in woodcocks and snipes to share and exchange information. As these are game species, the final objective is to ensure the sustainable use of the populations.

Projected impact for the 2017-2020 quadrennium
The group’s workshop, held in Pico in 2017, the publication of the respective minutes and the annual newsletter, all contribute to increased knowledge about our target species and their conservation and sustainable management. In this sense, we also perceive an increasingly important role for our members alongside the entities responsible for assuring effective conservation and management. In 2019–2020, we will participate in the re-evaluation of the IUCN Red List status of the world’s birds, along with the IUCN Red List Authority for birds.

Assess
Research activity: (1) improve knowledge on the conservation status of African, South American and Asian woodcock and snipe species; (2) participate in the re-evaluation of the IUCN Red List status of the world’s birds, with BirdLife (IUCN Red List Authority for birds).

Plan
Policy advice: continue working closely with entities involved in hunting management.

Network
Membership: visit the US to meet American colleagues, strengthen collaboration within the group and recruit new members.

Communicate
Communication: (1) publish the WSSG Annual Newsletter (numbers 43, 44, 45 and 46); (2) publish the Proceedings of the 8th Woodcock and Snipe Workshop.

Scientific meetings: (1) organise the 8th Woodcock and Snipe Workshop; (2) participate in the 11th American Woodcock Symposium, 24–27 October 2017, Roscommon, Michigan, US.

Activities and results 2019
Assess
Research activity
A coordinator was identified within the group to lead a project which aims to contribute to better knowledge of the species of Scolopax in Asia, namely in Indonesia and the Philippines. The coordinator has started to recruit collaborators for the project. (KSR #23)
Acknowledgements

We would like to thank all members and collaborators who sent us articles to be included in the annual newsletter. We also would like to thank the IUCN Species Survival Commission for the support that allowed the Chair of the group to participate in the Fourth Leaders’ Meeting (6–9 October 2019, Abu Dhabi, United Arab Emirates).

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

Assess 1

Main KSRs addressed: 23

KSR: Key Species Result
Mission statement
To coordinate effective conservation and management activities for the benefit of eel species, as well as acting as advocates and increasing awareness of the threats to them.

Projected impact for the 2017-2020 quadrennium
Despite the fact that three anguillids are listed as Endangered or Critically Endangered – the European Eel (Anguilla anguilla), Japanese Eel (Anguilla japonica) and American Eel (Anguilla rostrata) – these are relatively well studied, and it is arguable that the other 13 species are in greater need of conservation attention, as little is understood of their status. The Anguillid Eel Specialist Group’s (AESG) aim is to increase our understanding of all anguillids, the tropical species in particular, in order that conservation actions, policy interventions and use are guided by up to date science. Further, it is becoming clear that there are lessons to be learnt from interventions relating to the better studied species that can be applied when working directly with and/or advising managers and policymakers, and catalysing communication between range states of all species. Over the past five years, trade and use of anguillids has altered dramatically – both in relation to species traded and countries trading – to meet the ongoing demand in East Asia; therefore, increasing our understanding of the global dynamics of import and export will be essential to ensure sustainable use.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) hold a Red List assessment workshop for all 16 anguillid eel species (13 updates and three new) in 2018; (2) maintain ongoing engagement with academic institutions, government agencies and NGOs who can provide and/or initiate the collection of robust monitoring data for inclusion in Red List assessments, including from CITES processes if draft decisions from the 17th meeting of the Conference of the Parties to CITES (CoP17) are adopted. Research activities: (1) increase engagement in relation to the practice of re-stocking of anguillids and determine how effective this measure is locally, regionally and globally; (2) monitor use and trade in anguillid species; (3) initiate a PhD on the socioeconomics of eel fisheries and trade; (4) initiate monitoring in key sites for species where no data is being collected or gaps exist in species ranges; (5) develop a ‘threat index’ for anguillid eels using the European Eel as a case study.

Plan
Planning: (1) develop a Species Action Plan for the Japanese Eel in Japan; (2) develop a Species Action Plan for the American Eel in Costa Rica. Policy: (1) engage Japanese stakeholders and the Ministry of the Environment with regards to updating the national assessment of Anguilla japonica; (2) ensure all relevant information on anguillids is shared in relation to the needs of conventions such as CITES and the Convention on the Conservation of Migratory Species of Wild Animals (CMS); (3) continue engagement with the Sargasso Sea Commission regarding the importance of this region for American and European Eels.
Conservation actions: produce a national management plan for eel fisheries in the Philippines.

Synergy: engage with range states encompassing transboundary watercourses in Europe as part of CMS cooperative actions.

Communication: (1) expand ongoing engagement with policy makers and industry stakeholders in range states to improve the understanding of Red List assessments, the data used in them and the benefits of incorporating information in them in conservation and management activities. Information from Red List assessments used as species/trade reviews are carried out on behalf of CITES parties; (2) develop the strategy of using eels as a flagship species for aquatic conservation.

Activities and results 2019

Assess

Red List

i. All but three Red List assessments have been submitted. We expect all assessments to be published in 2020. (KSR #1)

ii. Engagement is ongoing with relevant organisations, particularly in Europe and Japan, who can provide and/or initiate the collection of robust monitoring data for inclusion in Red List assessments. AESG provided input to CITES CoP17 and the relevant decisions were adopted. (KSR #1, 2, 32)

Research activities

i. Studies/engagement are ongoing, particularly in Japan, in relation to the practice of re-stocking of anguillids and determining how effective this measure is locally, regionally and globally. (KSR #33)

ii. Monitoring of use and trade in anguillid species is ongoing, particularly through engagement via CITES. (KSR #33)

iii. The student conducting a PhD on the socio-economics of eel fisheries and trade has ongoing health issues and progress is slow. (KSR #32)

iv. Monitoring for species where no data is being collected or that fills gaps in species ranges continues in new areas in Africa and Asia. (KSR #12)

v. The staff member leading development of a ‘threat index’ for anguillid eels using the European Eel as a case study has moved to a new role and this activity has paused. (KSR #32)

Plan

Planning

i. The Species Action Plan for the Japanese Eel in Japan is still not developed; however, it is hoped that a regional workshop to discuss coordination of efforts across the species’ range will be held in 2020. (KSR #15)

ii. Development of a Species Action Plan for the American Eel in Costa Rica has been dropped due to lack of resources in-country. (KSR #15)

Policy

i. The Ministry of Environment is choosing not to engage in relation to eel matters, including updating the national assessment of Anguilla japonica. (KSR #27)

ii. Engagement with CMS and CITES is ongoing; we are expecting AESG members to deliver key pieces of work in 2020. (KSR #26)

iii. We attended the Sargasso Sea Commission Strategic Planning Meeting, and presented on the importance of the Sargasso Sea to anguillid eels and fed into strategy development. (KSR #26)

Act

Conservation actions

i. There is still discussion at the national level in relation to the production of a management plan for eel fisheries in the Philippines; however, at present progress is uncertain. (KSR #36)

Network

Synergy

i. Engagement with range states encompassing transboundary watercourses in Europe as part of CMS cooperative actions will be absorbed into the CMS Action Plan that will be developed in 2020. (KSR #26)

Communicate

Communication

i. Engagement is ongoing through CITES, CMS, International Council for the Exploration of the Sea (ICES), General Fisheries Commission for the Mediterranean (GFCM) and Food and Agriculture Organization (FAO). (KSR #3)

ii. There is increasing understanding of the linkage eels represent in the aquatic realm. We are drafting a paper on this hypothesis in relation to the Japanese Eel. (KSR #3, 28)

Acknowledgements

We would like to thank Synchronicity Earth and the Sargasso Sea Commission for funding.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

Assess 7

Plan 5

Act 1

Network 1

Communicate 2

Main KSRs addressed: 1, 2, 3, 12, 15, 26, 27, 28, 32, 33, 36

Resolutions addressed: WCC-2016-Res-099

KSR: Key Species Result
Mission statement

The Mission of the Groupers and Wrasses Specialist Group (GWSG) is to promote the conservation, management and wise use of groupers and wrasses, and to enhance awareness of the vulnerability of this group of fishes, which includes the groupers (family Epinephelidae) and wrasses (family Labridae), and of the habitats upon which they depend.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we would like to see conservation and management attention paid to groupers that are threatened and near-threatened and international trade reduced to sustainable levels in the case of the CITES-listed Humphead (Napoleon) Wrasse (*Cheilinus undulatus*). We hope to increase our representation in Asia, which will support the development of national planning in the region, and to stimulate research into species that are listed as Data Deficient. More educational materials will be developed on species that are important for fisheries.

Assess

Red List: complete Red List assessments for all groupers. Since these will be reassessments of all the species in the taxon (all 160-plus species are published on the Red List), we can also do an Indicator Analysis of changes, if any, over time.

Research activities: (1) publish one high impact paper on the outcomes of the grouper Red List reassessments; (2) publish proof of concept for phone app tool to improve enforcement of CITES listing of Humphead Wrasse in Hong Kong; (3) publish report on Live Reef Fish Trade for the International Coral Reef Initiative.

Plan

Planning: develop an Action Plan for Asia focusing on Data Deficient and threatened species.

Policy: (1) publish report on live reef fish trade, which is a major threatening factor for groupers and Humphead Wrasse; (2) publish outcomes of 10 years of surveys of Humphead Wrasse in Indonesia following its CITES Appendix II listing.

Act

Conservation actions: develop educational materials for Humphead Wrasse for selected aquaria exhibits.

Network

Membership: (1) enhance GWSG membership in Asia (increase number to at least eight members in Asia); (2) review and update membership of GWSG.
Activities and results 2019

Assess

Red List
i. A workshop and follow-up communications led to completion of all grouper re-assessments in 2018 and also to strengthening of the Specialist Group through face-to-face meeting at a very pleasant venue. Communications continue, but commitments to produce specialised papers by some Specialist Group members have not yet materialised. (KSR #2)

Research activities
i. A paper on grouper assessments was submitted in 2019. Paper compilation took longer than expected, but the outcome was much improved from earlier drafts and we have already had multiple requests for copies of the publication. Several GWSG members have committed to produce more detailed papers on several more specific topics. (KSR #43)

ii. A paper was published in the scientific literature on the potential of a Humphead Wrasse facial recognition tool to improve enforcement of the CITES listing (available at https://onlinelibrary.wiley.com/doi/abs/10.1002/aqc.3199). (KSR #43)

iii. A report on Live Reef Fish Trade was published for the International Coral Reef Initiative (see https://www.facebook.com/gcfi.fisheries/posts/4241471342537091). This is part of an initiative by Indonesia in collaboration with the International Coral Reef Initiative and the GWSG to better manage the live reef fish trade, which comprises mostly groupers and Humphead Wrasse. (KSR #32, 37)

Plan

Policy
i. The first fully comprehensive report in almost two decades was published on the global live fish trade, which is a major pressure on groupers and Humphead Wrasse. It has been extensively circulated and provides recommendations for reducing threats from the trade. Available at: https://www.admcf.org/research-reports/the-live-trade-in-live-reef-food-fish-going-going-gone/. (KSR #26)

ii. A paper ‘Quantifying the Rare’ was published in the scientific literature; it covers changes since CITES listing and identifies ongoing threats to the species (available at https://onlinelibrary.wiley.com/doi/abs/10.1002/aqc.3124). (KSR #27)

Network

Membership
i. To enhance GWSG membership in Asia we organised a workshop; however, we have had to postpone it twice, once due to administrative problems (with job changes) and once to the Hong Kong protests (it was unsafe to hold the workshop late last year). The workshop is still pending; it will have the same work outline and participants attending from south and Southeast Asia and regional assessments will be conducted of selected groupers.

Acknowledgements

Funding and in kind support for our work has variously been awarded by the Ocean Park Conservation Foundation (Hong Kong), the CITES Secretariat, and the University of Hong Kong. We thank these sources. Science and Conservation of Fish Aggregations (SCRFA) works on aggregating groupers are acknowledged. We are most grateful for the ongoing help and support from the Marine Biodiversity Unit, in particular Gina Ralph.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 2, 26, 27, 32, 37, 43

KSR: Key Species Result
Mission statement
To promote the long-term conservation of the world’s Syngnathiform fishes (seahorses, pipefishes, seadragons) and their near relatives through the illumination and alleviation of threats to wild populations and their ocean habitat.

Projected impact for the 2017-2020 quadrennium
The Seahorse, Pipefish and Seadragon Specialist Group (SPS SG) will seize these four years to understand and help reduce pressures on syngnathids in at least three geographic areas – Southeast Asia, South Africa and Atlantic South America – that are home to species of particular conservation concern. We will do this through integrated research, management support and policy development. We plan a special effort to urge reduction in perverse incentives (such as fuel subsidies) and to foster enhanced enforcement of existing laws. We hope other Specialist Groups will join us in promoting such changes, which would be of broad benefit. At the same time, we will be making a real effort to reduce the number of our species that are assessed as Data Deficient on the IUCN Red List by expanding our knowledge base. These four years will further see us grow our membership, with respect for diversity of sex, ethnic background, taxonomic focus and technical experience. We are particularly keen to engage youth and non-scientists to add to our effectiveness. Using all members, we plan to raise the profile of our species to help grow the constituency of their supporters.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) monitor and evaluate priority species (redo Red List assessments); (2) redo Red List assessments for priority Data Deficient species.
Research activities: (1) marshal obscure/grey information on Data Deficient species; (2) promote research agenda for all species; (3) collate new data and knowledge.

Plan
Planning: (1) priority action statement for Hippocampus capensis (Knysna Seahorse; Endangered – South Africa); (2) priority action statement for Hippocampus whitei (White’s Seahorse; Endangered – Australia); (3) priority action statement for Syngnathus watermeyeri (Estuarine Pipefish; Critically Endangered – South Africa); (4) priority action statement for Microphis pleurostictus (Endangered – Philippines); (5) priority action statements for Vulnerable species; (6) monitoring and evaluation for Southeast Asian marine environments; (7) determine priority Data Deficient species.
Policy: (1) select priority regions in which to promote greater implementation of rules and laws that affect syngnathids; (2) create scoping document on implementation for most relevant rules and laws that affect syngnathids in the following regions: Southeast Asian marine, South African estuarine, India and South-east Asian freshwater, and Brazil and Argentina marine; (3) disseminate scoping document to resource managers and policy makers; (4) complete matrix on perverse incentives that affect syngnathids in Southeast Asian marine environments; (5) complete scoping document on perverse incentives for Southeast Asian marine environments.
Network
Capacity building: mentor next generation leaders/succession planning.
Membership: grow the SPS SG membership in strategic ways by taxon, region, discipline, etc.
Proposal development and funding: source funding for SPS SG programme officer and meetings.
Synergy: (1) collaborate with aquariums; (2) collaborate with multiplier organisations; (3) tighten links with other IUCN units; (4) develop strategic partnerships/synergies with multiplier organisations.
Technical advice: develop urgent action response capacity.
Communicate
Communication: (1) catalyse campaign to effect change in Southeast Asian marine environments; (2) develop outreach capacity for syngnathid conservation issues; (3) create synopsis of issues for donors, policy makers and the public; (4) deploy social media campaign; (5) create a taking action toolkit; (6) create a set of communication tools for the SPS SG.
Scientific meetings: (1) catalyse joint meeting with Specialist Groups for other marine taxa; (2) hold annual meetings of the SPS SG.

Activities and results 2019

Assess
Red List
i. Draft assessments were produced for the priority Data Deficient species, Hippocampus hippocampus (Short-snouted Seahorse) and H. guttulatus (Long-snouted Seahorse). (KSR #1, 32)

Research activities
i. Obscure and grey information were collated to re-assess two Data Deficient species, Hippocampus hippocampus and H. guttulatus. (KSR #1, 32)

ii. We promoted research agendas for seven species in four countries by connecting Specialist Group members with Seahorse Ambassadors and local conservation groups to engage in seahorse monitoring and conservation outreach in Greece, Mexico, Mozambique and Portugal. (KSR #32)

iii. Continued monitoring and focused research continues for our Endangered seahorse species, H. capensis and H. whitei in South Africa and Australia, respectively. (KSR #32)

iv. The research agenda was enhanced for the Critically Endangered Syngnathus watermeyeri in South Africa through funds received by the National Geographic Conservation Grant. (KSR #32)

v. We collated new survey and population data from ongoing research with Specialist Group members through collaborations with small NGOs and local interest groups in South Africa, Mozambique, Tanzania, Portugal and Greece. (KSR #12)

vi. SPS SG members published a paper on describing a new species of Pygmy seahorse, Hippocampus japapigu, in Japan.

vii. An SPS SG member described a new species of Pipefish in Argentina, Leptonotus vincentae, named after our Chair, Amanda Vincent.

viii. We embarked on a seahorse trade survey in the Philippines with colleagues from Zoological Society of London – Philippines to document changes in the catch and trade of seahorse post-CITES. Results were documented in a University of British Columbia Fisheries Centre Research Report and were communicated to the Philippines Government to affect and guide policy for the sustainable management of seahorse catch and trade in the Philippines.

Plan
Planning
i. The priority action statement for H. whitei was the basis for and aided in the creation of a New South Wales Department of Primary Industries Priorities Action Statement, promoting the recovery of this species in New South Wales, Australia. (KSR #15)

ii. We supported, provided endorsement and helped propel an SPS SG member to secure funds from the National Geographic Society Conservation Grant to conduct research on the Critically Endangered Estuarine Pipefish, Syngnathus watermeyeri, in South Africa. (KSR #15)
iii. An expert in the region has been identified and is ready to conduct preliminary surveys and population assessments of the Endangered Microphis pleurostictus. This is dependent on funding. (KSR #15)

Policy

i. We have embarked on an ambitious plan to extend the creation of a scoping document on implementation to include all relevant rules and laws that affect syngnathids at the national level in all countries where syngnathids occur through an IUCN Internal Grant. (KSR #26)

ii. We performed literature reviews to gather all available information on perverse subsidies that affect syngnathids in eighteen countries (Argentina, Brazil, Cambodia, Costa Rica, Ecuador, Guatemala, Honduras, Indonesia, Malaysia, Mexico, Myanmar, Nicaragua, Peru, Philippines, South Africa, Thailand, Uruguay, Viet Nam). (KSR #26)

iii. We developed high-level scoping documents on perverse incentives for Southeast Asian marine environments in six key countries (Brazil, Indonesia, Thailand, Mexico, Philippines, South Africa, Thailand). (KSR #26)

iv. We created a summary or synopsis on perverse incentives that affect syngnathids. (KSR #26)

v. Project Seahorse, acting as the SPS SG, collaborated with the Maldives, Monaco, Sri Lanka and US governments to address ongoing challenges in CITES implementation for seahorses. Document 27 and its decisions received unanimous support and were passed by the CITES committee at the 18th meeting of the Conference of the Parties to CITES (CoP18) in Geneva, Switzerland. (KSR #26)

vi. We developed and submitted an IUCN World Conservation Congress (WCC) motion to be voted on at the IUCN WCC: Motion 111 – Conservation of seahorses, pipefishes and seadragons (family Syngnathidae). (KSR #26)

Network

Capacity building

i. Dr Sarah Foster was appointed as the Global Trade Officer and Dr Paula Carlson as the focal point for ex situ expertise for the IUCN SSC Seahorse, Pipefish and Seadragon Specialist Group. (KSR #17)

Synergy

i. Specialist Group members collaborated with SEA LIFE Sydney Aquarium on a new conservation programme to breed the Endangered Hippocampus whitei (in a closed system), tag, release, and monitor in Sydney Harbour, Australia. (KSR #25, 29)

ii. SPS SG consulted with the Birch Aquarium and provided ideas and suggestions for key messages to be displayed in a new seadragon/seahorse exhibit, and discussed opportunities for collaboration on ex situ syngnathid research. (KSR #29)

iii. SPS SG partnered with 4Ocean, increasing our outreach capacity and sharing message of seahorse conservation. (KSR #29)

iv. SPS SG collaborated with Oceanário de Lisboa and their Red List Officer to complete Red List assessments of two seahorse species. (KSR #29)

v. We have an ongoing partnership with Guylian Belgium Chocolates to help plan and execute a biennial Guylian Seahorses of the World photo competition. (KSR #29)

vi. Connections made with IUCN units through Amanda’s role as Chair of the IUCN SSC Marine Conservation Committee include: IUCN SSC Chair’s office, Conservation Planning Specialist Group, Climate Change Specialist Group, Snapper, Seabream and Grunt Specialist Group, Shark Specialist Group and others during the IUCN SSC Steering Committee meeting, through ocean themed workshop/discussion for SSC leaders in Abu Dhabi in October 2019. (KSR #29)

vii. We supported and provided endorsement for an SPS SG member to secure funds from the National Geographic Society Conservation Grant to conduct research on the Critically Endangered Estuarine Pipefish, Syngnathus watermeyeri, in South Africa.

viii. We drafted and submitted an IUCN WCC Motion co-sponsored by 16 organisations (NGOs and government agencies) from 10 countries around the world: Motion 111 – Conservation of seahorses, pipefishes and seadragons (family Syngnathidae).

Technical advice

i. We connect SPS SG members with members of our citizen science programme iSeahorse (Ambassadors and Trends Monitors) as well as general public requests to address pressing conservation concerns and provide them with tools and resources to increase their knowledge and capacity to respond. (KSR #18)

Communicate

Communication

i. Country specific briefing documents on the status of syngnathids have been drafted for Cambodia, Indonesia, Malaysia, Mozambique, and Peru, that will be shared and posted onto the IUCN SSC SPS SG website. (KSR #28)

ii. We collaborated with the Coalition to End Wildlife Trafficking Online to address trade in wildlife products through e-commerce, social media and tech company platforms by develop-
oping a harmonised wildlife policy framework. The framework provides simplified language for advertising and content policy teams as well as enforcement teams for companies to adopt, aligning wildlife policy at an international level. (KSR #28)

Project Seahorse acting as the SPS SG published 14 blogs varying in topic from highlighting and sharing knowledge of seahorse species to field notes and commentaries on our research project collaborations and policy work (including seahorse exploitation and trade and CITES). In addition, we regularly post syngnathid information on our social media pages (Twitter, Facebook and Instagram). (KSR #28)

Toolkits were created to communicate and raise awareness for: (1) Ria Formosa seahorses in Portugal, (2) seahorse exploitation and trade in the Philippines, and (3) a CITES toolkit for seahorses in trade. (KSR #28)

A taking action toolkit has been drafted and is ready for review. (KSR #28)

Scientific meetings

A virtual Specialist Group meeting was held in January 2019 where members updated progress on the strategic plan and developed priority action points for the upcoming year. (KSR #28)

A focused meeting on the release of captive bred animals was held where a working group was created to develop guidelines and protocols for the release of captive bred syngnathids. (KSR #28)

Acknowledgements

The SPS SG benefits from support to Project Seahorse, acting as the core of the SPS SG. Project Seahorse is hugely grateful to our long-time major partner in marine conservation, Guylian Belgium Chocolates, and to our faithful supporters at the Langar Foundation. Sincere thanks to Oceanário de Lisboa and team member Catarina Fonseca for their tremendous help in drafting Red List assessments of two seahorse species. Project Seahorse also thanks our host institutions, the University of British Columbia in Canada and Zoological Society of London in the UK, who provide support for the Chair and some SPS SG and Project Seahorse activities.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 12, 15, 17, 18, 25, 26, 28, 29, 32

Resolutions: WCC-2016-Res-016, WCC-2016-Res-021

KSR: Key Species Result
Mission statement
To secure the conservation, management and, where necessary, the recovery of the world’s sharks, rays and chimaeras by mobilising global technical and scientific expertise to provide the knowledge that enables action.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision a substantial advance in reducing the extinction risk of the top three most threatened groups of chondrichthyans, namely the Sawfishes, Angel Sharks, and Guitarfishes. Eight regional and two thematic workshops will be undertaken to inform updated Red List assessments for all remaining chondrichthyans (942 species), thereby informing conservation prioritisation beyond these most threatened groups moving forward.

Targets for the 2017-2020 quadrennium
Assess
Policy: develop a Living Planet Index for Chondrichthyans.
Red List: (1) complete nine hundred and forty-five assessments/reassessments through eight regional and two thematic workshops (all chondrichthyans not recently assessed); (2) develop a Global Red List Index for chondrichthyans; (3) predict the conservation status for all species assessed as Data Deficient.

Plan
Planning: (1) develop a conservation strategy for Wedgefishes and Guitarfishes; (2) organise a Mediterranean Angel Sharks: Regional Action Plan workshop for Angel Sharks.
Research activities: advance the shark and ray Marine Protected Area (MPA) project.

Act
Policy: (1) provide policy advice on the use of Red List categories and criteria in fisheries management to the International Council for the Exploration of the Sea (ICES); (2) provide policy advice on chondrichthyans to the Convention on Migratory Species (CMS).
Research activities: (1) creation of EDGE (Evolutionarily Distinct and Globally Endangered) Sharks with Zoological Society of London (ZSL); (2) begin funding and development of a sawfish sightings database.
Technical advice: (1) provide advice on shark and ray conservation priorities to donors, including the Shark Conservation Fund; (2) provide advice on reintroduction to zoos and aquaria; (3) provide advice as part of progress reporting on implementation of the Protocol for Specially Protected Areas and Biodiversity Information on the reporting party; (4) advance national shark report card work.

Network
Synergy: create a collaborative network focused on wedgefish and guitarfish conservation.

Communicate
Communication: (1) launch the Sawfish Progress and Priorities report; (2) raise awareness about extinction risk in sawfishes; (3) maintain an active and engaged Shark Specialist Group membership; (4) make contributions to the SSC e-Bulletin.
Technical advice: provide advice to Humane Society International.
Activities and results 2019

Assess

Policy

i. A Living Planet Index was developed for Oceanic sharks and rays; others are in progress. (KSR #11, 12)

Red List

i. One-hundred and sixty-three assessments were published. Workshops were held to assess ~300 species of sharks and rays in the Southeast Pacific, Northwest Atlantic, and Northwest Pacific. These are being written up for publication in 2020. (KSR #1)

ii. We developed Red List Indices for: (1) wedgefishes and giant guitarfishes (16 species); (2) pelagic sharks (31 species); (3) Northeast Atlantic and Mediterranean Sea (127 species). (KSR #3)

iii. A paper was accepted in Biological Conservation: Walls et al. ‘Predicting the conservation status of Data Deficient species in the Northeast Atlantic and Mediterranean’. (KSR #1)

Plan

Planning

i. A paper was published summarising extinction risk in guitarfishes and wedgefishes; we submitted a wedgefish and guitarfish motion to IUCN for the World Conservation Congress 2020; proposal for concerted action submitted to CMS. (KSR #15)

ii. An expert workshop was hosted by the Shark Trust at the National Institute of Sciences and Technologies of the Sea (INSTM) in Salammbô, Tunisia, from 25–27 March 2019, to initiate the development of the Mediterranean Angel Sharks: Regional Action Plan. (KSR #15)

Research activities

i. The Shark and Ray MPA Project is nearing its completion. It is a multi-disciplinary project that is aimed at providing guidance on the design
of MPAs that will be optimal for achieving conservation objectives for sharks and rays. The project has developed new metrics for quantifying shark and ray movements to help inform the scale of movements relative to MPA size and applied this to large sets of satellite, acoustic and conventional tagging data. Individual-based movement models have been developed to enable the use of these movement metrics in the assessment of MPA efficacy, with a case study for coral reef sharks being recently published. Socioeconomic research has identified indicators that predict the success of MPAs in achieving positive outcomes for sharks and rays, with five key factors identified. An online tool has been developed to allow practitioners to explore the potential benefits of MPAs for shark and ray conservation efforts at a national or regional level. This tool also collates a broad range of other data, including Red List status, life history parameters, distributional information, and more, to enable users to evaluate a broad range of data relative to MPA planning. Recent publications: (1) Dwyer, R.G., et al. (2020). Individual and population benefits of marine reserves for reef sharks. Current Biology 30:480–489.e485; (2) Mizrahi, M.I., et al. (2019). Global opportunities and challenges for Shark Large Marine Protected Areas. Biological Conservation 234:107–115; (3) Mizrahi, M.I., et al. (2019). A systematic review of the socioeconomic factors that influence how marine protected areas impact on ecosystems and livelihoods. Society & Natural Resources 32:4–20; (4) Mackeracher, T., Diedrich, A. and Simpfendörfer, C.A. (2019). Sharks, rays and marine protected areas: A critical evaluation of current perspectives. Fish and Fisheries 20:255–267. (KSR #26, 32)

The IUCN SSC Shark Specialist Group met in Cali, Colombia in February to assess 100 sharks and rays that are endemic to the Eastern Central and Southeast Pacific for the IUCN Red List.

Photo: SSG archives

An expert workshop was hosted by the Shark Trust at the National Institute of Sciences and Technologies of the Sea (INSTM) in Salammbo, Tunisia from the 25th – 27th March 2019 to initiate the development of this Mediterranean Angel Sharks: Regional Action Plan.

Photo: SSG archives
Act
Policy
i. Policy advice provided to the Convention on Migratory Species for the following: Appendix I: Oceanic Whitetip Shark (Carcharhinus longimanus); Appendix II: Smooth Hammerhead (Sphyrna Zygaaaa), Tope Shark (Galeorhinus galeus); Concerted Actions: Common Guitarfish (Rhinobatos rhinobatos), Bottlenose Wedgefish (Rhychnobatus australiae), Largetooth Sawfish (Pristis pristis), Smalltooth Sawfish (Pristis pectinata). (KSR #27)

Research activities
i. EDGE Sharks and Rays event with ZSL: 162 people registered from 7 countries; 35% were potential funders or partners; 90 people attended. (KSR #17)

Technical advice
i. National shark report card work was presented to a National Shark Conservation Summit in early 2019. This Report Card covers and assesses 194 Species (199 stocks); of these, 124 stocks have been assessed to be sustainable at current levels of fishing. Many are managed through fishing regulations. Others are sustainable, because the level of fisheries taken is very small. For example: for the Gummy Shark (Mustelus antarcticus; southern stock), nine stocks are recovering, six were depleting, 18 were depleted and 42 were undefined due to very limited information on which to base assessments. The full report is available here: https://www.fish.gov.au/shark-report-card. (KSR #27)

Network
Synergy
i. There are sixty-six members in the network; two newsletters have been sent to 96 people (combined with sawfish as ‘rhino rays’). (KSR #29)

Communication
i. International Sawfish Day was a success again; two ‘Rhino Rays’ newsletters were produced. (KSR #15)
ii. Five articles were included in SSC Species e-Bulletin. (KSR #28, 29)

Acknowledgements
The IUCN SSC Shark Specialist Group would like to thank all of our funders, partners, collaborators, and workshop participants. In particular, special thanks are due to Rob Bullock, Ed Brooks, Emily Brown, Patricia Charvet, Martin Clark, Zoe Crysler, Marc Dando, Al Dove, Brit Finucci, Laetitia Hannan, Katelyn Herman, Rima Jabado, Peter Kyne, Paola Mejia-Falla, Kira Mileham, André Navia, Caroline Pollock, Riley Pollom, Gina Ralph, Cassie Rigby, Eric Schneider, Brendan Talwar, Wade VanderWright, Rachel Walls, Atsuko Yamaguchi, and Helen Yan. Thanks are also due to institutional partners including the Angel Shark Project, Bristol Aquarium, Cape Eleuthera Institute, Charles Darwin University, the Faculty of Fisheries at the University of Nagasaki, the IUCN Red List Unit, the IUCN SSC Amphibian Specialist Group, the IUCN SSC Chair’s Office, James Cooke University, the Shark Trust, the Squalus Foundation, Universidad de Las Palmas de Gran Canaria, and the Zoological Society of London. Funding was graciously provided by the Shark Conservation Fund, the Disney Conservation Fund, The Mohamed Bin Zayed Species Conservation Fund, the National Science and Engineering Research Council of Canada and the Canada Research Chairs Program, and the Save Our Seas Foundation.

Summary of activities 2019
Components of Species Conservation Cycle: 5/5
Assess 4
Plan 3
Act 3
Network 1
Communicate 2
Main KSRs addressed: 1, 3, 11, 12, 15, 17, 26, 27, 28, 29, 32
Resolutions addressed: WCC-2016-Res-016
KSR: Key Species Result
Mission statement
To achieve conservation and sustainable use of snappers, seabreams, grunts and associated reef-fish species through the application of improved scientific knowledge and community engagement to management decision-making.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, the Snapper, Seabream and Grunt Specialist Group (SSG SG) aims to complete over 90% of the Red Listing of all snapper, seabream and grunt (SSG) families (more than 4500 species), with conservation planning underway for at least two species. Given limited resources, there is a focus on the conservation of threatened spawning aggregations of major SSG species. We also plan to develop Red List training workshops and assessments in understudied regions with diverse SSG species. Some species are highly vulnerable and need conservation planning linked with applied fishery management and increased engagement with user communities. We will also examine climate change vulnerabilities of key species in the SSG and continued efforts to bring fisher knowledge (FK) further into management and conservation.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete global assessment of Family Nemipteridae (target completion of 73 species total); (2) complete global assessment of Family Lutjanidae (target completion of 113 species total); (3) complete global assessment of Family Haemulidae (target completion of 136 species total); (4) complete global assessment of Family Lethrinidae (target completion of 44 species total); (5) complete global assessment of Family Caesionidae (target completion of 23 species total); (6) update global assessment of Family Sparidae (target completion of 166 species total).
Research activities: (1) assess potential climate change impacts on 5 haemulid and lutjanid species; (2) develop collaborative report on FK in fishery science and management.

Plan

Act
Conservation actions: (1) assist Regional Fisheries Management Organisation (RFMO) implementation of five new spawning reserves; (2) provide technical consultations on SSG information availability, reviews of reports, species identifications, and management suggestions to RFMOs, NGOs and coastal habitat management agencies in several regions.

Network
Capacity building: foster training of at least two members per region using species conservation planning tools, with preliminary development of new conservation planning efforts in two regions.

Communicate
Communication: (1) complete and expand a website for the Specialist Group and other users; (2) produce guides in three languages for common, difficult to identify life stages of near-shore snappers, grunts, and porgies.
Activities and results 2019

Assess

Red List

i. Family Nemipteridae: in conjunction with the Global Marine Species Assessment Project (GMSA), a cumulative total of 42 (57%) species Red Listed. (KSR #1)

ii. Family Lutjanidae: in conjunction with GMSA, a cumulative total of 104 (93%) species Red Listed. (KSR #1)

iii. Family Haemulidae: in conjunction with GMSA, a cumulative total of 101 (75%) species Red Listed. (KSR #1)

iv. Family Lethrinidae: in conjunction with GMSA, a cumulative total of 42 (84%) species Red Listed. (KSR #1)

v. Family Caesionidae: in conjunction with GMSA, a cumulative total of 20 (87%) species Red Listed. (KSR #1)

vi. Family Sparidae: in conjunction with GMSA, a cumulative total of 152 (92%) species Red Listed. (KSR #1)

Plan

Planning

i. Marine components of the Species Conservation Planning document have been widely distributed within and outside of our Specialist Group. SSG members are encouraged to learn the guidelines and get formally trained. (KSR #18)

Act

Conservation actions

i. The complete multi-group report on guidelines for the use of fisher knowledge in science and management is in final review with IUCN. (KSR #32)

Research activities

i. We began a climate change vulnerability assessment for five species of lutjanids and haemulids with resolution at the scale of 5-7 life stages per species. (KSR #12)

ii. The complete multi-group report on guidelines for the use of fisher knowledge in science and management is in final review with IUCN. (KSR #32)

Network

Capacity building

i. We generated information for all SSG members on training opportunities using species conservation planning tools. We will follow up with members and develop ways to increase that percentage via applications in fishery management processes. (KSR #17)

Communicate

Communication

i. The SSG website has been widely used since its completion. (KSR #28)

ii. Progress has been made on guides for common, but difficult to identify, life stages of nearshore snappers, grunts, and porgies. Substantial work is planned for the summer of 2020. (KSR #28)

Acknowledgements

We thank the many members of the SSG SG for their input, particularly for efforts on the hundreds of first Red List assessments of these species among diverse global regions, often with limited data. We greatly appreciate the support and assistance of Prof. Kent Carpenter and his staff, IUCN Global Marine Species Assessment/IUCN Species Programme Marine Biodiversity Unit. We also appreciate the assistance of Rob Bullock and the efforts of Amanda Vincent and the IUCN Marine Conservation Committee.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 12, 17, 18, 22, 28, 32

KSR: Key Species Result
IUCN SSC Sturgeon Specialist Group

2019 Report

Co-Chairs
Phaedra Doukakis (1)  
Arne Ludwig (2)

Red List Authority Coordinator
Leonardo Congiu (3)

Location/Affiliation
(1) National Marine Fisheries Service, US  
(2) Leibniz Institute for Zoo and Wildlife Research (IZW), Berlin, Germany  
(3) Department of Biology, University of Padova, Padova, Italy

Number of members
49

Mission statement
The mission of the IUCN Sturgeon Specialist Group (SSG) is to provide accurate information on the status of sturgeons and paddlefishes and promote their conservation and recovery.

Projected impact for the 2017-2020 quadrennium
By 2020, we envision an SSG with enhanced capacity to contribute to the conservation of sturgeons and paddlefishes on global, regional and local scales. The SSG will have greater impact on decision-making at global meetings (CITES, Convention on the Conservation of Migratory Species of Wild Animals (CMS)), and will provide expertise in the areas of conservation of wild stocks and impact of aquaculture. With an up-to-date Red List for all species, accurate information on the status of wild species and necessary conservation actions will be available. For the most threatened species, action plans will be under development to guide restoration and recovery efforts.

Targets for the 2017-2020 quadrennium

Assess

Plan
Planning: action plans under development for at least four of the most imperilled species.  
Policy: (1) increased presence at CMS; (2) prepare position papers/information documents for CITES meetings where sturgeon is discussed, particularly in areas of aquaculture, labelling and stock identification.

Network
Membership: enhanced regional representation (e.g. Hungary, Bulgaria, Georgia, Azerbaijan and Uzbekistan).  
Proposal development and funding: at least two grants submitted by SSG members as a result of SSG activities.  
Scientific meetings: annual meetings held for regional representatives.  
Synergy: strong working groups created on topics of importance (e.g. identification of management units, stock assessments, trade control and link to aquaculture).

Communicate
Communication: (1) mission statement, website and portal membership list revised; (2) better communication internally and with outside groups (e.g. World Sturgeon Conservation Society, North American Sturgeon and Paddlefish Society); (3) at least two position papers published.
### Activities and results 2019

#### Assess

**Red List**

1. Some assessments for European and Asian species are finished, all other assessments close to final verification. (KSR #2)
2. Assessments for North American species in final verification. (KSR #2)

#### Plan

**Planning**

1. Action plans came in action for Chinese sturgeon (*Acipenser sinensis*) and Dabry’s sturgeon (*Acipenser dabryanus*). (KSR #31)

#### Policy

1. Joint meeting organized by members of SSG. (KSR #26)
2. Review of forensic methods on sturgeon/caviar trade for Animal Committee is under preparation. (KSR #26)

#### Proposal development and funding

1. Members of SSG applied for several grants from IUCN, National Geographic and EU.

#### Scientific meetings

1. Meetings happen annually (e.g. North America & Europe). (KSR #28)

#### Synergy

1. New cooperation agreements with WSCS and WWF.

#### Communicate

**Communication**

1. Members of SSG are authors in many sturgeon papers. (KSR #28)

### Network

**Membership**

1. New members from Georgia, Ukraine, China and Romania. Most of them are woman increasing their number.

### Summary of activities 2019

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<th>Component of Species Conservation Cycle</th>
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Main KSRs addressed: 2, 26, 28, 31

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*Any conservation action has to include local people, like in this “young generation workshop”, organized for sturgeon release.*

Photo: Lina Florian

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**Fishes**

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IUCN Species Annual Report 2019

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Mission statement
To bring together a variety of stakeholders to increase knowledge on the global status and conservation of the world’s tuna and billfish species.

Projected impact for the 2017-2020 quadrennium
Reassessments of the world’s tunas and billfishes will greatly improve and consolidate the current state of knowledge of these species around the globe. Many regional and national fisheries management organisations, in addition to other sustainable seafood and research organisations, are relying on these data to inform and update current policies and management recommendations.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete reassessments for 51 scor- brids and 10 billfishes.
Research activities: complete the book *Tunas and Billfishes of the World.*

Activities and results 2019
Assess
Red List
i. We have recently hired a post-doc who will spend 25% of her time on the tuna/billfishes reassessments, and a consultant who will help her compile stock assessment data. (KSR #1)

Research activities
i. *Tuna and Billfishes of the World* (Collette and Graves 2019) was published. All Word docs and maps in the book have been provided to the Red List Authority and post-doc to start entering the updated species data into the IUCN SIS database. (KSR #43)

Acknowledgements
We thank Arizona State University and the Red List Committee IBAT funds for providing funds to support our new post-doc, Krista Kemppinen, who will help with the tuna and coral reassessments over the next year. We also thank David Shiffman and Maria Juan Jorda, who have volunteered many hours to help with tuna data collection.
## Summary of activities 2019

Components of Species Conservation Cycle: 1/5

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Main KSRs addressed: 1, 43

KSR: Key Species Result

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**Sailfish (*Istiophorus platypterus*) off Cancún**

Photo: Daniel Botelho

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Bruce B. Collette and Beth Polidoro, AbuDhabi, 2015

Photo: TB5G archives
Mission statement
The Bumblebee Specialist Group (BSG) exists to foster the conservation of bumblebees and their habitats around the world by evaluating the extinction risk of all ca. 265 species of bumblebees worldwide using the IUCN Red List Criteria and publishing species profiles on the IUCN Red List.

Projected impact for the 2017-2020 quadrennium
The Bumblebee Specialist Group aims to support evaluation of the extinction risk of all ca. 265 species of bumblebees worldwide using the IUCN Red List Criteria and publishing species profiles on the IUCN Red List.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete Red List assessments for remaining bumblebee species that have not yet been assessed.

Activities and results 2019
Assess
Red List
1. For a summary of activities completed by members of the Bumblebee Specialist Group in 2019, please consult the annual report available at: https://bumblebeespecialistgroup.org/about-the-bbsg/.

New assessments have not been completed. The regions that remain to assess their fauna lack training and resources to support staff time to complete these assessments. (KSR #1)
Invertebrates

**Bombus dahlini**, Endangered
Photo: Victor Raimilla, courtesy of José Montalva

**Rusty patched bumblebee, Bombus affinis**, Critically Endangered
Photo: Rich Hatfield, The Xerces Society

**Western bumblebee, Bombus occidentalis**, Vulnerable
Photo: Rich Hatfield, The Xerces Society
Mission statement

The mission of the IUCN SSC Butterfly Specialist Group is to increase knowledge on the taxonomy, ecology and conservation status of butterflies and moths around the world and promote their long-term conservation.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, the group will be re-established with an active membership driving forward the assessment of species’ conservation status. By the end of 2020, the group will have completed its first major assessment project by publishing the findings of a status assessment of the world’s swallowtails. The group will have also re-established its presence on social communication platforms, built a membership throughout the world’s regions and pinpointed additional projects for the next quadrennium.

Targets for the 2017-2020 quadrennium

Assess

Green List: complete assessment of 1–2 species of butterfly for the IUCN Green List testing process.

Proposal development and funding: establish a collaboration with Butterfly Conservation to inventory butterfly monitoring schemes and available data worldwide (time series of abundance data and presence/absence data, to help us assess data gaps, capacity needs and build a Living Planet Index for butterflies). The first target is to secure funding for this.

Red List: (1) complete assessment of ~550 species of swallowtail butterfly (comprehensive assessment); (2) assessment of 29 species of North American prairie butterfly, led by Minnesota Zoo; (3) implement assessment of 400 South Asian endemic butterflies, in conjunction with the South Asian Invertebrate Specialist Group.

Network

Capacity building: carry out capacity building for Red Listing within the group via targeted Skype or online sessions/have members sign up for the online Red List training course.

Membership: build a global network of members, covering at least 20% of Lepidoptera range countries.
Activities and results 2019

Assess
Proposal development and funding
i. Funding proposal completed for inventory of butterfly monitoring schemes and available data worldwide.

Red List
i. By 2019, we have published 117 species of swallowtail on the IUCN Red List, with another 37 due to be published on the IUCN Red List in 2020. Another 171 species have been drafted and are in final review stages. (KSR #1)

ii. By 2019, two species assessments of South Asian endemic butterflies were published and another 11 drafted. However, the activity got delayed due to staff changes at Minnesota Zoo. (KSR #1, 2)

Network
Membership
i. So far, we have expanded to 28 members, representing 19 countries.

Acknowledgements
We want to thank The IUCN-Toyota Red List Partnership for supporting the assessment of swallowtails.

Summary of activities 2019
Components of Species Conservation Cycle: 2/5

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<td>Network</td>
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Main KSRs addressed: 1, 2

KSR: Key Species Result
Mission statement
The Cave Invertebrate Specialist Group (CISG) is a global network of experts working on organisms associated with karst and caves. Our goal is to contribute to increase the knowledge of these animals extremely rich in narrow endemics, and to promote conservation action through Red Listing, mostly focused on species under threats like limestone quarrying or water pollution.

Projected impact for the 2017-2020 quadrennium
Most cave-restricted and many deep soil species are narrow endemics and vulnerable to disturbance, but very few have been evaluated so far. During the 2017–2020 quadrennium, Red List assessment by CISG will increase significantly, with focus on the most critical sites on earth. This will allow us to provide validated information to the media, to stakeholders and to companies at the origin of the most important threats to this fauna. They will have full knowledge of the impact of their local activities on these biotas. A complementary objective will be to integrate, when possible, basic guidelines about the preservation of highly endemic cave-related fauna in the environmental policy of public and private companies, in first line quarrying companies.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete assessments of 132 cave Trechinae from China; (2) increase the number of cave invertebrate species assessed for the Red List, focusing on the most threatened; (3) upgrade the Brazilian cave species from national lists to the IUCN Red List; (4) complete assessments of 20 cave species from Maros karst, South Sulawesi; (5) complete assessment of six cave flatworm species from Italy; (7) complete assessments of several cave species from Georgia; (8) complete assessments of Remipedia; (8) complete assessments of Hon Chong karst species.

Network
Membership: diversify membership for coverage of all subterranean invertebrate groups and all subterranean habitats.
Proposal development and funding: Tony Whitten fund for grants on cave biodiversity of Southeast Asia.

Communicate
Communication: (1) develop our own website; (2) develop a virtual library in our own website.
Research activities: prepare a special issue of a taxonomic journal in honour of Tony Whitten.
Scientific meetings: (1) participate at the 21st International Conference on Subterranean Biology; (2) participate at the International Union of Speleology congress in Lyon (France); (3) conservation session and communications at the 25th Conference on Subterranean Biology in Romania.
Synergy: establish a network of regional contact persons for identifying and dealing with regional issues.
Activities and results 2019

Assess

Red List

i. A large portion of the assessments of cave Trechinae from China (N= 87, 66%) were completed and published in 2019, while others are still underway and are expected to be finished and published in early 2021. (KSR #2)

ii. Although upgrading of the Brazilian cave species from national lists to the IUCN Red List is an important task for the Group, in 2019 it was delayed due to the focus on initiating new assessments of cave-related taxa. (KSR #2)

iii. The expert is preparing the data needed for assessment of six cave flatworm species from Italy. The task is expected to be finished in 2021. (KSR #1)

iv. The expert is preparing the data needed for assessments of several cave species from Georgia. The task is expected to be finished in 2021. (KSR #1)

Network

Membership

i. The CISG is no longer focusing on acquiring new members. The new member acquired in 2019 joined the Group on their own initiative. Specialists for all large cave groups are now represented among CISG members.

Proposal development and funding

i. From a large number of young candidates from Southeast Asian countries, six received a Tony Whitten Fund grant for small projects on taxonomy and conservation, mostly on Southeast Asian karst invertebrates.

Communicate

Research activities

i. The special issue of a taxonomic journal in honour of Tony Whitten is completed with 18 contributions and is expected to be published in the beginning of 2020. Although planned to be published in 2019, the large number of contributions extended the time needed to finish the publication. (KSR #43)

Scientific meetings

i. Registration for the 18th International Congress of Speleology, organised by the Union Internationale de Spéléologie (UIS), opens in 2020. We have initiated a session devoted to cave biodiversity and conservation. (KSR #28)

Synergy

i. Network of regional contact persons: to date, we have identified contact persons for a few regions, while others are still in progress. (KSR #29)

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

Assess 4 ||||

Network 2 ||

Communicate 3 |||

Main KSRs addressed: 1, 2, 28, 29, 43

Acknowledgements

Thanks to: the IUCN-Toyota Red List Partnership funding for the kick-off Red Listing workshop organised in Cambridge in January 2018 and associated assessment completion; the Global Wildlife Conservation and Fauna & Flora International (FFI) for the one-year grant awarded to Ana Komericki for her part-time work in CISG; FFI for financial support for publication of a special issue dedicated to Tony Whitten in the Raffles Bulletin of Zoology; all those who financially contribute The Tony Whitten Conservation Prize.
Mission statement

The IUCN Coral Specialist Group (CSG) brings together leading scientists, practitioners and conservationists under the Species Survival Commission of the International Union for the Conservation of Nature. Reflecting the vast diversity of coral reefs, their importance to people in so many ways and the imminent threat to their very existence from climate change and human uses, the group has a broad ecosystem and conservation focus. Our combined knowledge contributes to inform society and policy makers to take science-based action.

Projected impact for the 2017-2020 quadrennium

The focus this quadrennium is to update the Red List of Threatened Corals and the coral Red List Index, last calculated in 2008, and to develop a general approach to the Red List of Ecosystems applied to coral reefs. This is in order to contribute to policy and decision-making processes that culminate in 2020 with major global events relevant to coral reefs, oceans and climate, and to align the actions of diverse coral reef stakeholders around the world.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) complete reassessment of Red List status of reef-building corals; (2) develop an approach to applying the Red List of Ecosystems (RLE) to coral reefs applicable to all coral reef regions around the world and initiate global RLE for coral reefs.

Activities and results 2019

Assess

I. Red List assessment of 846 coral species underway. The funding raised from National Geographic Society (US$ 39,500) and pledged by Eurofins (€10,000) is insufficient for a regular workshop assessment process; an online method is under development. (KSR #1, 3)

II. The Red List of Ecosystems of Western Indian Ocean corals is near completion, and aspects of the method for applicability to other regions under ‘stress test’. (KSR #1)
Acknowledgements

Funding was provided by Norad for the Red List of Ecosystems, and by National Geographic Society and Eurofins for the Red List of Threatened Species. In kind support was provided by Arizona State University, Zoological Society of London and CORDIO East Africa.

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

Assess 2

Main KSRs addressed: 1, 3

Resolutions addressed: WCC-2016-Rec-106

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC Dragonfly Specialist Group (DSG) is to increase the knowledge on taxonomy, ecology and biogeography of all Odonata (damselflies and dragonflies). Based on this information, we are currently working on the final steps towards assessing all species globally against the criteria of The IUCN Red List of Threatened Species, while outdated assessments are updated. In parallel, we help conservationists and countries to protect threatened species.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we want to see all Odonata assessed on the IUCN Red List of Threatened Species. We hope to be able to help more countries with their National Red Lists and their endeavours with Biodiversity Action Plans. Hopefully, more conservation projects and capacity building, not only for threatened species, can be established. Another goal is to establish dragonflies as “guardians of the watershed”, enabling a better understanding of biodiversity, a healthy environment and human well-being.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete the global dragonfly assessment (6,300 species); (2) add assessments focusing on African and South American dragonflies to National Red Lists; (3) contribute to the Barometer of Life by completing the assessments of ca. 500 dragonflies in Southeast Asia; (4) contribute to the Barometer of Life by completing the remaining assessments of ca. 1,000 dragonflies globally; (5) gather data in North America through Odonata Central to feed into global Red List assessments.
Research activities: (1) gain more information on Lestes umbrinus to assist conservation planning; (2) research and produce a scientific publication on dragonflies in Tatamá National Park and its buffer area in the Colombian western Andes; (3) contribute to the process of delineating Key Biodiversity Areas (KBAs) for freshwater conservation; (4) delineate KBAs for freshwater conservation in Lake Tanganyika Catchment, Africa; (5) develop an Atlas of the dragonflies of Bhutan/the Eastern Himalaya; (6) use the atlas to develop a Dragonfly Biotic Index for the Eastern Himalaya; (7) develop a field guide for the odonates in the Tatamá region; (8) conduct research on impacts of climate change on mountainous dragonflies in the Andes, Colombia; (9) delineate KBAs for freshwater conservation in Lake Malawi Catchment, Africa; (10) create an open online database for Odonata; (11) contribute to producing a KBA monitoring plan; (12) contribute to KBA assessment for Greece.
Plan
Planning: (1) produce a Species Conservation Action Plan for *Ceriagrion citrinum* (Yellow Waxtail); (2) produce a Species Conservation Action Plan for *Notogomphus maathaiae* (Maathai’s Longleg); (3) produce a Species Conservation Action Plan for *Platycepha amboniensis*.

Policy: (1) develop a Dragonfly Biotic Index for Monitoring and Prioritising Restoration Sites within the Congo-Nile Crest Watershed, Rwanda; (2) develop a Dragonfly Biotic Index for Monitoring and Prioritising Restoration Sites within Europe.

Act
Conservation actions: (1) implement conservation action for *Lestes umbrinus*; (2) implement conservation actions for endemic dragonflies in the Cape Region.


Network
Agreements: develop a scientific research collaboration to generate conservation information for the Sarawak Forestry Corporation.

Capacity building: (1) capacity building and training of Red List assessors worldwide (several people trained in workshops on various continents); (2) continued focus on capacity building and training in Africa and South America for Red Listing and on-the-ground conservation work; (3) increase the number of Red List trainers in the DSG.

Proposal development and funding: increase funding for scientific and research projects for dragonflies globally.

Synergy: expand the network of odonatologists and freshwater conservationists in Africa as members of the DSG.

**Activities and results 2019**

**Assess**

**Red List**

i. Over 5,000 dragonfly assessments are in the IUCN SIS database. (KSR #1)

ii. At the moment, our focus for Red List assessments is to complete the global assessment. This is ongoing for some countries (Brazil, Rwanda, Kenya). (KSR #1, 2)

iii. Over 500 assessments in Southeast Asia are completed. (KSR #1, 2, 4)

iv. We contributed to the Barometer of Life with over 500 assessments completed. (KSR #1, 2, 4)

v. All North American Odonata species are on the global Red List. (KSR #1, 12, 26)

**Research activities**

i. Fifty-three sites were visited, but *Lestes umbrinus* was only found at one place. (KSR #12)

ii. A research project on determination of new Odonata species in a Colombian Tropical rainforest is ongoing (see https://www.researchgate.net/project/Determination-of-new-Odonata-species-in-a-Colombian-Tropical-rainforest-an-integrative-approach). (KSR #11, 12)

iii. Odonata were included in all African KBA assessments and in the European KBA approach. (KSR #22)

iv. The Atlas of the dragonflies of Bhutan/the Eastern Himalaya is currently in preparation. (KSR #1, 3, 7, 14, 15)

v. A Field guide for the odonates in the Tatamá region was published: see https://www.researchgate.net/publication/334119212_LIBELULAS_DE_LA_CORDILLERA_OCCIDENTAL_COLOMBIANA_una_mirada_desde_el_Tatama_DRAGONFLIES_OF_THE_COLOMBIAN_CORDILLERA_OCCIDENTAL_a_look_from_Tatama. (KSR #28, 43)

vi. Publications and references are available on the SOL (Sociedad Odonatológica Latinoamericana) website: https://www.odonatasol.org/boletin-cientifico-de-la-sol/. (KSR #38)

vii. One map of Lake Malawi was produced: see https://www.iucn.org/theme/species/our-work/freshwater-biodiversity/what-we-do/lake-malawi-catchment. (KSR #22)

viii. An open online database for Odonata is completed for some regions, e.g. Africa (see http://addo.adu.org.za/). (KSR #1, 2, 12, 32, 43)

ix. Odonata are included in the KBA assessment in Greece. (KSR #22)

**Plan**

**Conservation actions**

i. Conservation actions for *Lestes umbrinus* were prepared together with the villagers of the village Phagora in Batagram, with actions ongoing. Several workshops and meetings took place in Phagora. (KSR #33, 34, 35, 43)

ii. Conservation actions for endemic dragonflies in the Cape region are ongoing (https://jrsbiodiversity.org/grants/odonatafrc2019/). All South African Odonata are on the National Red List (new assessments and updates finished in 2019, including conservation recommendations). (KSR #22)

**Technical advice**

i. Publication of book on New Zealand Odonata species is still ongoing (http://www.perfectly-worded.co.nz/dragons/dragons.html). (KSR #28)

**Network**

**Capacity building**

i. Capacity building and training of facilitators in Africa for Red Listing and on-the-ground conservation work: two at Ethiopian Biodiversity Institute and two at Rwanda University. (KSR #5)

ii. Training and Red Listing in South America is ongoing (http://www.odonatasol.org/). (KSR #5)

iii. Capacity building and training in Africa is ongoing: Jens Kipping joined Erasme Uyizeye in Rwanda, KD Dijkstra and Viola Clausnitzer trained a team in Ethiopia. Ten people in Ethiopia were trained (members of the Ethiopian Biodiversity Institute, scientists and rangers), three people in Guinea were trained, and three people in Rwanda were trained. (KSR #5)

iv. New people were largely trained in South America. (KSR #1, 2, 4)

**Proposal development and funding**

i. Several proposals were written for research projects for dragonflies globally; some were
granted (National Geographic Society – Rwanda, International Dragonfly Fund – Nigeria) and many are still pending. Around 10 proposals were written (including to National Geographic Society, Mohamed bin Zayed Species Conservation Fund, International Dragonfly Fund, Rufford Small Grants, SSC).

**Scientific meetings**

- We are planning a meeting of the European DSG members at the European Congress on Odonatology, scheduled for 29 June to 2 July 2020; it is still open, if it can be facilitated. (KSR #28, 31, 32)

**Synergy**

- The next term will see many new members and a new Co-Chair in the DSG.

**Acknowledgements**

We thank the National Geographic Society, Rufford Small Grants, Chicago Zoological Society (CBOT grants), Eppley Foundation, Dian Fossey Fund International, and NABU for supporting conservation and assessment work on dragonflies worldwide. Our gratitude also to Marcelo Tognelli for his constant advice on mapping and Red Listing issues to the SOL (Sociedad Odonatológica Latinoamericana) and to IUCN’s Freshwater and Red List Units for their tireless help in Red List assessments.

**Summary of activities 2019**

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Main KSRs addressed: 1, 2, 3, 4, 5, 7, 11, 12, 14, 15, 20, 22, 26, 28, 31, 32, 33, 34, 35, 38, 39, 43

Resolutions addressed: WCC-2016-Res-016, WCC-2016-Res-041

KSR: Key Species Result

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Papyrus Wisp, *Agriocnemis palaeforma*, a habitat specialist; only found in papyrus swamps with clean and running water in Rwanda and Uganda

Photo: Jens Kipping
Mission statement
Our mission is to compile existing knowledge for ~2000 lampyrid species worldwide on their geographic range, population size, and population trends, to identify major extinction threats and risk factors, to increase public knowledge concerning firefly diversity, ecology and behaviour, and to promote long-term conservation efforts.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, the Firefly Specialist Group (FSG) envisions: (1) compilation and publication of a global review of firefly extinction threats; (2) complete data compilation (extent of occurrence (EOO), area of occupancy (AOO), population size, risk factors) in preparation for Red List assessment for fireflies in certain regions (North America, others); (3) increased communication and educational initiatives through the newly announced World Firefly Day, the Selangor Declaration on firefly conservation, and awareness campaigns conducted in individual member countries.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete Red List assessments for a selection of 1–10 flagship species in one year; (2) complete global Red List assessments of 100–200 species for 2020; (3) develop and disseminate standardised methodologies for monitoring firefly species abundances.

Research activities: (1) develop a global distribution database for fireflies that includes relevant behavioural and life history data, then use this information to inform Red List assessments; (2) determine whether the congregating mangrove fireflies in Malaysia and other Southeast Asian countries could be used to establish Key Biodiversity Areas (KBAs); (3) develop a prioritised list of threats to firefly population persistence within different regions.

Network
Membership: recruit members, appoint regional coordinators.
Synergy: provide guidance and work with local communities to protect threatened species and prevent their extinction.

Communicate
Communication: (1) articulate and share guidelines to promote sustainable firefly ecotourism; (2) ignite public interest and garner local and regional support for firefly conservation and management; (3) develop a medium to track FSG activities and keep members updated; (4) information about the FSG posted on the Fireflyers International Network (FIN) website: https://fireflyersinternational.net
Technical advice: disseminate technical information and advice about firefly conservation issues to interested parties.
Activities and results 2019

Research activities

i. Global distribution database for fireflies that includes relevant behavioural and life history data: Checklist sent in by members from Taiwan, Korea, North America, Japan, Central America, Papua New Guinea/Pacific Islands, Bangladesh, Indonesia, India, Philippines, and Australia. This was not entered into the database; it was compiled by the Red List Authority. (KSR #1)

ii. A preliminary KBA for mangrove fireflies workshop was held in July 2019 in Malaysia; we planned a Southeast Asian workshop in Thailand in 2020. (KSR #14, 22)


Network

Membership

i. We have recruited four new members; recruitment is ongoing.

Synergy

i. In Malaysia, formation of the Firefly Komuniti network is involving local communities in firefly conservation, outreach and monitoring as well as tourism. Sharing sessions took place during the annual get-together. (KSR #15)

Communicate

Communication

i. Facebook pages: Fireflyers International; Silent Sparks: The Wondrous World of Fireflies. (KSR #28)

Technical advice

i. The firefly conservation guidelines prepared in cooperation with The Xerces Society have been published: Fallon, C., et al. (2019). Conserving the Jewels of the Night: Guidelines for Protecting Fireflies in the United States and Canada. Portland, Oregon, USA: The Xerces Society for Invertebrate Conservation. (KSR #26)

Acknowledgements

Supporters: Fireflyers International Network and Firefly Specialist Group members for their contributions to the firefly checklist; Tufts University and FSG led a paper on global firefly extinction threats; The Xerces Society for Invertebrate Conservation, Tufts University and FIN contributed to guidelines for protecting fireflies in the US and Canada; and Malaysian Nature Society, FSG and FIN for a trial run designating KBAs for fireflies, especially the congregating mangrove fireflies.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 14, 15, 22, 26, 28

KSR: Key Species Result
Mission statement

The mission of the IUCN SSC Freshwater Crustacean Specialist Group (FCSG) is to work towards all aspects of the long-term conservation of freshwater decapods (freshwater crabs, crayfish, freshwater shrimps, and aeglids) worldwide. Specific goals are: (1) to act as the Red List Authority and to update IUCN Red List species assessments; (2) to promote their long-term conservation worldwide by management of habitats and by the development of conservation strategies and, where necessary, the recovery of populations; (3) to promote integrated research on biodiversity and conservation; (4) to educate non-specialists about all aspects of the group; and (5) to create and maintain the FCSG website of the IUCN SSC that will provide up-to-date world species lists, keep track of the discovery of new species, and list the Red List status for each species.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we envisage that we will have made progress towards a second global reassessment of the freshwater crabs, including up to 300 newly described species assessed for the first time. This will guide the prioritisation of species for future conservation actions for Critically Endangered species of freshwater crabs. We will also have added the entire global fauna of the Aeglidae (South American anomuran freshwater crabs) to the IUCN Red List. Again, this will guide the prioritisation of species for future conservation actions, especially for Critically Endangered species. We are on track for the stabilisation of the populations of the Critically Endangered species Johora singaporensis in Singapore and the reduction of threats and specific management of habitat for this species, at least in part of its range. We will have implemented additional conservation strategies for Critically Endangered species of highest priority, and our focus will be on developing conservation action plans for the two rediscovered threatened species of freshwater crabs in Cameroon. We will also have expanded our scope to include all the world’s land crabs.

Targets for the 2017-2020 quadrennium

Assess

Red List: begin the assessment of 1,500 species of primary freshwater crabs, plus about 90 species of newly described crayfish, and 86 species of aeglids. Also targeted are 27 species of land crabs, and more than 100 species of mangrove crabs.

Plan

Planning: develop conservation action plans for two threatened species recently re-discovered in Cameroon.

Act

Conservation actions: (1) follow up on the progress of the project initiated in 2015 to save a Critically Endangered species of freshwater crab from Singapore (Johora singaporensis) from extinction; (2) begin implementation of conservation action plans for two threatened species recently re-discovered in Cameroon.

Network

Capacity building: (1) organise two Red List training workshops; (2) organise one conservation planning training workshop.

Membership: increase membership from China, Taiwan, Singapore, Costa Rica, the US, Colombia and Australia.
**Communicate**

Communication: develop a website for the FCSG.

**Activities and results 2019**

**Assess**

**Red List**

i. Although some Red List assessment progress has been made for a few geographical areas, the global initiative has stalled following lack of success in securing funding for the necessary meetings. (KSR #1)

**Plan**

**Planning**

i. We have completed preliminary data gathering and monitoring plans for the conservation of two threatened species in Cameroon. However, the country is currently suffering political unrest and it is unsafe to go there. A third species of conservation concern is found in an accessible area and we may develop plans for this species first. (KSR #15)

**Act**

**Conservation actions**

i. The third year of the project to save *J. singaporensis* from extinction is progressing well. Its habitat is protected, wild population monitoring is in place, and captive breeding is finally working; possible reintroductions in the wild are planned for the next phase (2020/2021). (KSR #24, 27)

**Network**

**Capacity building**

i. Workshops planned for the second Global Freshwater Crab Assessment are still pending. The planned funding was not realised. (KSR #5)

ii. A conservation planning workshop for threatened species of freshwater crabs in Cameroon was postponed before the Coronavirus pandemic (due to political unrest in the study area). This may be deferred further because of the pandemic, so we are planning for 2021. We are not entirely confident that we can organise a remote meeting in this part of Cameroon given the poor internet in most areas. We may seek funding for a face-to-face training workshop in 2021, which would be preferable. (KSR #17)

**Membership**

i. Three colleagues from China with expertise in freshwater crab taxonomy and conservation will be invited to become members of the FCSG.

ii. Four colleagues from Costa Rica, the US, Colombia, and Australia with expertise in freshwater crab taxonomy and conservation will be invited to become members of the FCSG.

**Communicate**

**Communication**

i. Development of a website for the FCSG has not yet happened and needs a new start. This could be accomplished if there were some funding to bring in web-building expertise. Applying for an IUCN Internal Grant in June 2020 would get this process moving again. (KSR #28)

**Summary of activities 2019**

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 5, 15, 17, 24, 27, 28

KSR: Key Species Result
Mission statement

The mission of our group is to foster the conservation of orthopteroid insects (grasshoppers, katydids, crickets, mantids, stick insects) and their habitats around the world. We assess their conservation status, raise awareness and engage in practical conservation of this amazing and highly diverse group of insects.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we want to increase the number of Orthoptera, Phasmida and Mantodea species on the IUCN Red List by ca. 1,000 species. This will help to raise awareness for this species group and foster research and conservation activities. We are particularly interested in engaging local park managers to consider grasshoppers, bush-crickets, crickets, stick insects and mantids in conservation planning, monitoring and management. We want to increase the number of conservation strategies for threatened Orthoptera species and help to implement these plans. This will help to avoid future extinctions and set best practice examples for other projects.

Targets for the 2017-2020 quadrennium

Assess
Red List: (1) complete Red List assessments of 400 Tanzanian Orthoptera species, 17 Bladder Grasshoppers (Family Pneumoridae), 84 Agile Grasshoppers (Subfamily Euryphyminae), 36 European mantises, 80 Mediterranean mantises, four Razor-backed bush-hoppers (Xyronotidae), three Tanaoceridae grasshoppers, 270 Malagasy grasshoppers, 29 Socotran endemic Orthoptera; (2) start Sampled Red List Index for Orthoptera (1,500 species).

Plan
Planning: (1) develop a conservation strategy for the Endangered Zeuneriana marmorata in Slovenia and Italy; (2) develop a conservation strategy for the Critically Endangered Peripodisma ceraunii in Albania.

Act
Conservation actions: (1) implement the conservation action plan for Zeuneriana marmorata in Italy; (2) implement the conservation action plan for Zeuneriana marmorata in Slovenia; (3) develop and implement a population monitoring programme for the Critically Endangered Prionotropis rhodanica.

Communicate
Communication: (1) organise a performance of the Locust Opera at the World Conservation Congress in Marseille; (2) develop monitoring standards for Orthoptera in Europe.
Activities and results 2019

Assess

Red List

i. Assessments of 141 Tanzanian Orthoptera species have been completed. (KSR #1)

ii. Assessments of all European mantises have been completed and reviewed. They will be submitted in early 2020. (KSR #1)

iii. New populations of *Xyronotus aztecs* and *X. cohni* have been discovered during expeditions in 2018 and 2019. (KSR #1)

iv. We are exploring funding options for Red List assessments of three Tanaoceridae grasshoppers. (KSR #1)

v. A total of 200 assessments for the Orthoptera Sampled Red List Index have been published on the Red List website so far. (KSR #1, 3)

vi. The assessor of Dichoroplini grasshoppers from South America has completed the Red List assessment online course and started the first assessments. (KSR #1)

vii. Assessments of grasshoppers from the Western Ghats (India) are embedded in the Nilgiri Mountains Assess-Plan-Act project. (KSR #1)

viii. Regional assessments of all European mantises are currently being conducted by Roberto Battiston; half of them are completed. (KSR #2)

ix. Ahmed Samejo has completed Red List training and will soon start the assessment of 20 Orthoptera species from Pakistan. (KSR #1)
The national action plans for the Adriatic Marbled Bush-Cricket (Zeuneriana marmorata) are now being implemented in Slovenia and Italy.

Photo: Axel Hochkirch
Plan
Planning
i. The plans for a conservation strategy for the Endangered Zeuneriana marmorata in Slovenia and Italy are published and are now being implemented. (KSR #21)

ii. Developing a conservation strategy for the Critically Endangered Peripodisma ceraunii in Albania is still on hold due to lack of funding. A proposal to National Geographic was not successful. In 2020, an application to the Mohamed bin Zayed Species Conservation Fund will be submitted. (KSR #21)

iii. An application was submitted to National Geographic to fund the project to develop a conservation strategy for the Critically Endangered Isophya beybienkoi in Slovakia, but it was not successful. (KSR #21)

Act
Conservation actions
i. The populations of Zeuneriana marmorata in Italy have been monitored and some new populations have been discovered. Funds have been raised to initiate habitat restoration next year. (KSR #12)

ii. The populations of Zeuneriana marmorata in Slovenia have been monitored and some new populations have been discovered. Studies on the habitat preferences have been made allowing for adequate habitat management. (KSR #12)

iii. A monitoring programme for the Atlantic Beach Cricket (Pseudomogoplistes vicentae) has been established in the British Isles. (KSR #12)

iv. Prionotropis rhodanica is continuously monitored in two populations. Access to the third population is currently not possible (it is on private land owned by BMW). The monitoring method has been optimised and the optimisation method has been published in the journal Conservation Biology. (KSR #12)

Communicate
Communication
i. Some funds have been secured for the performance of the Locust Opera at the World Conservation Congress in Marseille and the logistic planning has begun. (KSR #31)

ii. Due to health issues of the leading member, developing monitoring standards for Orthoptera in Europe is behind schedule, but some email discussions have been held. (KSR #32)

Scientific meetings
i. The Third European Congress on Orthoptera Conservation is organised and will be held in March 2021 (delayed due to the COVID-19 outbreak). (KSR #30)

Acknowledgements
We are grateful for the constant support by the Mohamed bin Zayed Species Conservation Fund as well as to National Geographic for funding the implementation of the Crau Plain Grasshopper Strategy in France. Furthermore, we would like to thank The IUCN-Toyota Red List Partnership for providing funding to continue with the Red List assessments for the Sampled Red List Index. We are also grateful to all Orthopterists who have helped us with the assessments.

Summary of activities 2019
Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 2, 3, 12, 21, 30, 31, 32

KSR: Key Species Result
Mission statement

The four extant species of horseshoe crabs are imperilled, because of overfishing for use as food, bait, production of biomedical products derived from their blood, and because of habitat loss or alteration due to shoreline development and armouring against coastal erosion. The group aims to protect horseshoe crabs in the world through collaborative effort in conservation of their populations and habitats, and in raising public awareness of their importance in evolutionary history, marine coastal ecology and biomedical uses.

Projected impact for the 2017-2020 quadrennium

The three species of horseshoe crabs in Asia, Tachypleus tridentatus, T. gigas and Carcinoscorpius rotundicauda, are currently listed as Data Deficient, and we expect that our current activities will lead to a change in this status in the current quadrennium. While it is premature to assign a status without a formal review of the data, most studies indicate a moderate to severe threat to local populations and a lack of genetic connectivity among populations. We expect to submit a Red List assessment for each of the three Asian horseshoe crabs as an important first step in leading to greater conservation measures for these animals, including greater protection for essential spawning and juvenile nursery habitats. Our group will continue being an active advocate for these unique animals through the support of various outreach and educational programmes that our members have developed.

Targets for the 2017-2020 quadrennium

Assess

Green List: complete Green List assessment of American Horseshoe Crab (Limulus polyphemus) and Tri-spine Horseshoe Crab (Tachypleus tridentatus) through assessing the recovery of species’ populations and measuring their conservation success.

Red List: update Red List assessments of all three Asian species of horseshoe crab.

Network

Capacity building: develop best practices for adult and juvenile horseshoe crab population assessments.

Communicate


Activities and results 2019

Assess

Green List

1. After updating the Red List category for the American Horseshoe Crab (Limulus polyphemus) as Vulnerable, we formed a team to complete the Green List Assessment (GLA) for Limulus as a tool to help identify, prioritise, and communicate conservation and information needs throughout the species’ range. The Limulus GLA team comprised both geographic...
and topical representation and was an extension of the team that conducted the Limulus Red List Assessment. The Limulus GLA was conducted by engaging in an informed and structured discussion on past, current, and future conservation efforts and population status based on expert judgment and the existing literature. The GLA team used a Google sheet template developed by IUCN to facilitate working on the GLA from an online platform. Our team conducted the assessment remotely over a series of working conference calls and webinars. During the process, the team had in-depth discussions on historical range and status, delineation of spatial units for analysis, definition of ecological function, species response to future scenarios with and without conservation, and long-term recovery potential. The GLA complements existing management systems, such as the Atlantic States Marine Fisheries Commission and states agencies. The GLA process helped provide conservation guidance and identify knowledge gaps in areas where management systems are absent or where horseshoe crabs are not receiving high management priority, e.g. in the Gulf of Mexico. (KSR #11)

Red List

i. The Red List assessment for the Tri-spine Horseshoe Crab (Tachypleus tridentatus) was submitted to IUCN in August 2018 and accepted in March 2019. This was the first Red List assessment of T. tridentatus in which this species is categorised as Endangered instead of Data Deficient. The assessment involved extensive collaboration and contribution from scientists from nine countries/regions in Asia, as well as from the US. (KSR #2)

Network

Capacity building

i. A round table discussion on survey methodologies was conducted with participants attending the 4th International Workshop on the Science and Conservation of Horseshoe Crabs in June 2019 in Qinzhou, China. Based on the input from participants, an Excel spreadsheet summarising the survey and monitoring methodologies used by researchers was produced and circulated to concerned members of the Specialist Group. (KSR #18)

Communicate

Research activities

i. In addition to earlier email circulation, a formal invitation to participants for papers to be reviewed and published in an upcoming book on horseshoe crab research was announced at the 4th International Workshop on the Science and Conservation of Horseshoe Crabs in June 2019; 48 papers were submitted from eight countries/regions. The submission deadline has been extended until spring of 2020. (KSR #28)

Scientific meetings

i. The 4th International Workshop on the Science and Conservation of Horseshoe Crabs was held in June 2019 in Qinzhou, China. Apart from presentations and exchanges among participants from different countries and regions, the meeting attracted much public attention, especially in China. The three species of Asian horseshoe crabs are now proposed as national protected species under category 2 in China and will be subject to confirmation later. The meeting also resulted in the designation of 20 June every year as International Horseshoe Crab Day, so as to promote and celebrate the conservation efforts for these species with the public in different countries/regions. A ‘Beibu Gulf Declaration’ for protecting horseshoe crabs was endorsed and announced at the meeting, which covers: (1) the strengthening of legislation and enforcement to protect horseshoe crabs, (2) expanding scientific monitoring and research, (3) promoting sustainable management of horseshoe crab resources, (4) restoring horseshoe crab populations through protection of their habitats, and (5) encouraging the public to be involved in the conservation of horseshoe crabs. (KSR #28)

Acknowledgements

We thank Beibu Gulf University, Guangxi Key Laboratory of Beibu Gulf Marine Biodiversity Conservation, Guangxi First-Class Aquaculture Platform (incubation) and Guangxi Biodiversity Research and Conservation for organising the 4th International Workshop on the Science and Conservation of Horseshoe Crabs. Funding and sponsorship support for the meeting from the IUCN Species Survival Commission, Ocean Park Conservation Foundation Hong Kong, Tracetech (Shenzhen) Co. Ltd., Guangxi Institute of Oceanology, Guangxi Hepu State Dugong Nature Reserve, Beihai Binhai National Wetland Park and Beihai Golden Bay Mangrove Forest Ecological Tourism Zone Management Co. Ltd. is much appreciated.

Summary of activities 2019

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KSR: Key Species Result
Mission statement

The mission of the IUCN SSC Hoverfly Specialist Group (HSG) is to accomplish the Red Listing of European hoverflies, and in so doing to increase current knowledge of the taxonomy, ecology and distribution of European hoverflies, promoting their long-term conservation.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we expect to have completed the Red Listing of a substantial proportion of European hoverflies, drawing together for the first time the European-wide distribution and status of the species. This will identify critical sets of species on which Europe-wide conservation efforts can be targeted, and promote the inclusion of hoverflies in conservation planning and education.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) assess a selection of 650 European hoverfly species; (2) assess globally all species currently listed on existing national or regional Red Lists.

Research activities: (1) identify new Key Biodiversity Areas (KBA) according to IUCN standards; (2) stimulate research on the distribution of particular species and threats affecting them; (3) produce publications about the conservation of hoverflies.

Plan

Planning: develop conservation strategies for threatened Syrphidae.

Network

Capacity building: hold a training workshop for 17 European Hoverfly experts to do Red List assessments.

Membership: increase and balance membership in terms of gender, age and geographic location.

Synergy: develop a network of institutions and individuals dealing with hoverflies.

Communicate

Communication: (1) develop guidelines for the conservation management of Syrphidae habitats; (2) establish an HSG communication platform among members; (3) establish HSG social media accounts; (4) create an HSG logo; (5) promote awareness about hoverflies through specialised and general social media; (6) accomplish a photographic competition and exhibition on syrphids.

Activities and results 2019

Assess

Red List

i. Two Red List assessment workshops of European hoverfly species (ca. 200 species) were held. The first workshop was in Lesvos (Greece) in September 2019, after the 10th International Syrphidae meeting, involving two of the eight working groups; the second was in Novi Sad (Serbia) in December 2019, involving two different working groups. (KSR #1)

Research activities

i. As species assessments are carried out, so requests for information and help on particular species go out to the established network of syrphid workers. We presented the HSG at the 10th International Syrphidae Meeting; there are regular requests for data and help on particular species. (KSR #4, 7, 15, 21, 22, 26, 27)
Plan
Planning
i. Ante Vujic attended the Fourth SSC Leaders’ Meeting in Abu Dhabi, where the Ancient Tree initiative was presented; Dr Martin Speight produced a document on over-mature trees. We hope this can be used by IUCN to feed into modifications to various objectives, e.g. Natura 2000. We are involved in the Ancient Trees initiative of IUCN to press for changes to various conservation targets.

Network
Capacity building
i. A workshop to train European hoverfly experts in Red Listing was held in Novi Sad, Serbia, in April 2019; 23 people were trained (13 women, 10 men). (KSR #5)

Membership
i. We were very pleased that nearly everyone who was asked agreed to join the HSG; we have nearly all the top experts and we have achieved magnificent support in sharing data. We have twenty-six members (eight women, 18 men); the ca. 1,000 species were divided into eight groups; experts and assessors were assigned for each group.

Synergy
i. The network of institutions and individuals dealing with hoverflies is already very strong, a consequence of the regular International Syrphidae meetings every two years; Red Listing has really been enabled because of existing cooperation, rather than the other way round. (KSR #28, 43)

Communicate
Communication
i. Development of a Hoverfly Specialist Group communication platform among members is via an email group; we also employ document sharing via IUCN. (KSR #28, 43)

ii. We have not used social media much yet; we have regular Facebook postings and notifications, and communicated information about the Lesvos meeting. (KSR #28, 43)

iii. An HSG logo is now available. (KSR #28, 43)

iv. The HSG Co-Chairs gave interviews published on the IUCN website to promote awareness about hoverflies. (KSR #28, 43)

Acknowledgements
Via IUCN calls, one person (Andrea Aracil) received funding to attend the 1st assessment workshop.

Summary of activities 2019
Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 4, 5, 7, 15, 21, 22, 26, 27, 28, 43

KSR: Key Species Result
Mission statement
The mission of our group is to promote the conservation of Mayfly, Stonefly and Caddisfly species and their habitats around the world. Our goal is to raise awareness of these important orders of small insects and undertake Red List assessments to inform practical conservation activities.

Projected impact for the 2017-2020 quadrennium
The focus of the Mayfly, Stonefly and Caddisfly Specialist Group (MSCSG) for the remaining years of the quadrennium is on fully establishing the group and undertaking assessments of a small number of Ephemeroptera, Plecoptera and Trichoptera species.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) organise a meeting to progress Red Listing of a selection of 20 African Ephemeroptera species thought to be endangered; (2) assess 25 micro-endemic and a further 25 randomly selected European Trichoptera species; (3) organise a meeting to progress Red Listing of 25 Plecoptera species at a global level.

Network
Membership: continue to invite members (taking into account a balanced representation across geography, gender and age) to join the newly established group.
Proposal development and funding: prepare a funding application to undertake Red List assessment of all European Trichoptera.
Synergy: (1) organise a meeting of the Co-Chairs and Red List Authority Coordinator; (2) organise a meeting for all members of the MSCSG.

Communicate
Communication: (1) develop a logo and a website for the group; (2) create Twitter and Instagram accounts to establish a social media presence for the MSCSG; (3) organise an awareness-raising campaign in connection to the World Fish Migration Day (16 May 2020).

Activities and results 2019
Assess
Red List
i. A meeting was held in December 2019 with relevant experts to discuss Red List assessments for Madagascan Ephemeroptera. Discussions are also underway with an expert in South Africa about undertaking assessments for endemic Ephemeroptera species. (KSR #1)
ii. Data on 25 micro-endemic and a further 25 randomly selected European Trichoptera species are available for the assessments; however, we lack funding to bring together experts to undertake the assessments. (KSR #1)
Network
Membership
i. We have invited a core group of 20 members to join the Specialist Group. Further members will be invited to join the group on a geographical basis as we progress Red List assessments.

Synergy
i. Two virtual meetings of the Co-Chairs and Red List Authority were held in 2019. In addition, the Red List Authority and one of the Co-Chairs attended the Fourth SSC Leaders’ Meeting in October.

Communicate
Communication
i. Our logo is ready but we have not yet progressed with the development of the webpages. (KSR #28)

ii. Our Twitter account was created @IUCN_riverflies and currently has 68 followers. (KSR #28)

Acknowledgements
Thanks to Buglife and BOKU for supporting the MSCSG Co-Chairs, and National Museums Scotland for supporting the Red List Authority. Thanks also to Edgard Yerena for his assistance.

Summary of activities 2019
Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 28

KSR: Key Species Result
Mission statement

To increase the evidence and action for invertebrate conservation on the islands of: Gough, Tristan, St Helena, Ascension, Cape Verdes, Canaries, Madeira, Azores, and São Tomé and Príncipe.

Projected impact for the 2017-2020 quadrennium

We envision by the end of 2020 significant progress in raising awareness of invertebrates and their conservation issues across the Mid-Atlantic Islands; at least one other island that previously had no direct invertebrate conservation to have established programmes; a total of 500 invertebrate Red List assessments achieved; and another new conservation action plan to be operating. We also expect to contribute to conservation policy in Azores by informing the Azorean Conservation Agency about the arthropod species in urgent need of conservation. These combined efforts will create more secure invertebrate populations on these islands.

Targets for the 2017-2020 quadrennium

Assess
Red List: (1) complete assessments of 100 St Helena endemic invertebrates; (2) complete assessments of 40 Ascension Island endemic invertebrates; (3) complete assessments of 211 Azorean endemic arthropods; (4) complete assessments of 25 Azorean endemic spiders; (5) complete assessments of 120 Madeira endemic Carabidae and Staphylinidae; (6) the BIOS2020 project (2019–2022) was submitted by IFCN IP-RAM (Madeira Government) to the second call of the European Union Madeira-Açores-Canarias (EU MAC) Programme; if approved, it will contribute to the update of the conservation status of the endemic Madeiran land snail species, namely those from the Madeiran Natural Forest Laurissilva.

Plan
Planning: (1) assess invertebrate conservation needs on Tristan and Gough islands; (2) initiate conservation planning for threatened Azores invertebrates; (3) implement the European Commission LIFE Programme project ‘LIFE BEETLES – Bringing Environmental and Ecological Threats Lower to Endangered Species’.

Act
Conservation actions: (1) initiate a project on the conservation of Ascension Island endemic invertebrates; (2) complete a project on increasing data on St Helena endemic invertebrates; (3) implement a species recovery project for the Spiky Yellow Woodlouse (Pseudolaureola atlantica) on St Helena.

Network
Documents review: (1) review the St Helena Invertebrate Strategy; (2) review the Spiky Yellow Woodlouse Conservation Plan.

Communicate
Communication: (1) publish a paper on establishing conservation on St Helena; (2) finish invertebrate identification book for St Helena; (3) circulate group newsletter at least three times per year; (4) publish a paper on the species conservation profile of Azorean endemic forest beetles; (5) publish a paper on the species conservation profile of Azorean endemic moths; (6) publish a paper on the species conservation profile of Azorean endemic cave arthropods; (7) establish a webpage; (8) publish a paper on a Global Island Monitoring Scheme (GIMS) for the long-term
coordinated survey and monitoring of forest biota across islands; (9) realise Forest Giants project targets for awareness and conservation of *Archachatina bicarinata* and review Red List assessment for the species.

**Activities and results 2019**

**Assess**

*Red List*

i. The target of 100 St Helena endemic invertebrate species was surpassed; 130 species are now listed. (KSR #2)

ii. One Red Listing assessment for the Ascension Islands was completed: *Garypus titanius* (Giant Psuedoscorpion), assessed as Critically Endangered. (KSR #2)

iii. A total of 118 Azorean endemic insect species were published on the IUCN Red List. (KSR #2)

iv. Seventeen Azorean endemic spider species will be published in March 2021. (KSR #2)

v. Sixty-four Azorean endemic arthropod species will be published in March 2021. (KSR #2)

vi. The BIOS2020 project was not successful and has been superseded by other projects, such as: Ecology and Conservation of the Endangered Moniz’ Ground Snail (*Geomitra moniziana*); target species: *Geomitra moniziana* (endemic to Madeira; IUCN Red List category Endangered); programme: LIFE4BEST; status: passed the first stage with a preselected concept note, with the next step being submission of the full proposal by 23 March; duration of the project: 14 months (starting 1 July 2020 and ending 31 August 2021); total cost: €45,541.60. (KSR #2)

**Plan**

**Planning**

i. The LIFE Project ‘LIFE BEETLES’ was submitted and approved. It will initiate in January 2020. (KSR #15)

ii. The Forest Giants project is on track; a conservation plan is currently being written to identify priorities and actions, its status will be reviewed after its completion, and an *ex situ* population has also been established (KSR #15, 24)

**Act**

**Conservation actions**

i. Work on the formulation of a Darwin Plus application for financial support of a project on the conservation of Ascension Islands endemic invertebrates, to be submitted in 2020. (KSR #27)

**Communicate**

**Communication**

i. The invertebrate identification book for St Helena is with the designer. It will be printed in late 2021 or early 2022. (KSR #28)

ii. Three newsletters were circulated in 2019. (KSR #28)


**Acknowledgements**

We would like to thank all the MAISG members and all their hard work during 2019.

**Summary of activities 2019**

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 2, 15, 24, 27, 28

KSR: Key Species Result
Mission statement
To provide information to IUCN on mollusc biodiversity conservation, the inherent value of species, their role in ecosystem health and functioning, the provision of ecosystem services, and their support to human livelihoods.

Projected impact for the 2017-2020 quadrennium
We aim to have over 8,700 species listed on the Red List by 2020. In terms of strategic importance, the Mollusc Specialist Group (MSG) expects to accomplish the following targets with direct or indirect impacts on the conservation of mollusc biodiversity: (1) completing the European Union (EU) combined report and presenting to ministers, to inform on the state of biodiversity and the possibility that without actions the EU would not achieve their Aichi Targets; (2) developing and testing on Key Biodiversity Area (KBA) monitoring protocols for freshwater systems (molluscs (gastropods and bivalves), fish, dragonflies, crustaceans and plants) in Morocco, that could be used in any freshwater system worldwide; (3) sharing knowledge on the conservation actions for land snails on islands: ex situ breeding, management of invasive species and reintroduction and translocation protocols; (4) sharing knowledge on the conservation actions for freshwater bivalves at the global level: survey, systematics, threat analysis, habitat management, ex situ breeding, management of invasive species, reintroduction and translocation protocols, including papers from Australia, US, South America, Asia, Russia, Japan, Europe, and Morocco; (5) recognition of an overlooked threatened habitat with endemic marine species in deep ocean hydrothermal vents; and (6) various small Mohamed bin Zayed Species Conservation Fund grants on local projects.

Targets for the 2017-2020 quadrennium

Assess
Red List: (1) conduct Red List assessment of assorted groups of land snails; (2) conduct Red List assessment of freshwater molluscs (snails and bivalves); (3) fundraise for Red List assessment of freshwater molluscs; (4) conduct Red List assessment of marine molluscs.

Research activities: (1) study freshwater bivalves in Morocco; (2) publish review paper on freshwater bivalves; (3) publish paper on threats to hydrothermal vents molluscs.

Plan
Planning: (1) develop protocols managed by MSG for the IUCN Centre for Mediterranean Cooperation on how to monitor freshwater KBAs, fish, dragonflies and plants; (2) test protocols scoping workshop managed by MSG for the IUCN Centre for Mediterranean Cooperation on how to monitor freshwater KBAs, fish, dragonflies and plants; (3) develop guidelines for management of molluscs in freshwater systems.

Act
Conservation actions: (1) implement Partula Project in French Polynesia; (2) reintroduction of Greater Bermuda Land Snails, Poecilozonites bermudensis.

Communicate
Communication: publish the Mollusc Specialist Group newsletter, Tentacle.

Scientific meetings: contribute to a conference on Pacific land snails, especially on management of alien invasive species.

Activities and results 2019
Assess
Red List
i. Land snails: An EU-funded European project to assess 1,200 species was completed with
I formal presentation by Zoltán Fehér, and a PDF report submitted to EU Ministers led by David Allen, Eike Neubert and Mary Seddon. A tranche of 100 Australian and 20 Asian species was submitted by Frank Kohler and Mary Seddon but are still to be published; they were resubmitted for 2020. (KSR #1)

ii. Freshwater projects: Several regional projects were completed (Malili Lakes; first global assessment of 40 species; 13 freshwater bivalves from Asia submitted, eight published). Ongoing projects are continuing (in Africa, Asia, North America) by Dirk Van Damme, Manuel Lopes-Lima and Art Bogan. A workshop was held on South American freshwater molluscs, with planning for their assessment work by Cristian Clavejo. (KSR #1, 2)

iii. Grant application for 2020 reassessment of freshwater molluscs of Europe is in review. (KSR #1, 2)

iv. Hydrothermal vents molluscs: First tranche of 16 species assessed, after long discussions on the application of the Red List categories and criteria to properly assess these species, including work by Resit Akçakaya to confirm we had used the guidelines appropriately. Abalone: 55 species are in review; we expect the process to be completed by the end of 2020, with a scientific paper to follow. (KSR #1)

Research activities

i. One monitoring site was established to study freshwater bivalves in Morocco, as well as survey visits to other sites that had the species at various points in the recent past. (KSR #12)

ii. The Sampled Red List index paper was presented at a conference in 2018 and was due for publication in a Freshwater Mollusc Conservation Special Issue of Hydrobiologia in 2019; however, revisions were required, so it was resubmitted and accepted for publication in 2020. (KSR #43)


Plan

i. A scoping workshop to develop the protocols managed by MSG for the IUCN Centre for Mediterranean Cooperation on how to monitor freshwater KBAs, molluscs, fish, dragonflies and plants. (KSR #15)

ii. Testing protocols scoping workshop managed by MSG for the IUCN Centre for Mediterranean Cooperation on how to monitor freshwater KBAs, molluscs, fish, dragonflies and plants. (KSR #15)

iii. A new European Cooperation in Science and Technology (EU COST) project was funded for three years on guidelines for management of molluscs in freshwater systems. (KSR #15)

Act

Conservation actions

i. Nearly 6,700 individuals of nine species of genus Partula were returned to reserve areas on three different islands, bringing a total of 15,585 individuals released on four different islands in the last five years. On one island, a second invasive predator, the New Guinea flatworm, Platydernus manokwari, was identified in 2017, meaning that plans to reintroduce Partula were placed on hold, pending identification of a suitable site. (KSR #24)

ii. Chester Zoo, in conjunction with Zoological Society of London, have been propagating the Great Bermuda Land Snail (Poecilozonites bermudensis) since 2014, when it was rediscovered on the edge of a town. There are now over 30,000 individuals at Chester Zoo, and some have reached the point where they can be released. Each snail has been tagged to enable future monitoring of the species, to see how effective translocation has been. (KSR #24)

Communicate

Communication

i. Tentacle newsletter 27 was published in March 2019. (KSR #28)

Acknowledgements

We thank EU Life, MAVA Foundation, Chester Zoo, Zoological Society of London, IUCN Freshwater Biodiversity Unit, IUCN Centre for Mediterranean Cooperation, IUCN Red List Unit, Queens University Belfast, Bishop Museum, University of York, Berne Museum, Australian National Museum, Simon Stuart, Resit Akçakaya, and the Global Marine Assessment Unit. Thanks also due to the many scientists that give their time for survey work that inform distribution and threat information, compile Red List assessments and assist with the reviews process. Many other Zoos, Aquariums and Mussel Farms maintain ex situ breeding populations for threatened species around the world, and we are grateful for their ongoing work maintaining these collections and their expertise in assisting others to establish new species in ex situ breeding programmes.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

| Assess | 7 |
| Plan   | 3 |
| Act    | 2 |
| Communicate | 1 |

Main KSRs addressed: 1, 2, 12, 15, 24, 28, 43

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC South Asian Invertebrate Specialist Group is to encourage and assist invertebrate specialist institutions and agencies in South Asia to conserve invertebrate taxa at species, genetic and habitat level, and to make it into a region that appreciates and conserves invertebrates.

Projected impact for the 2017-2020 quadrennium
The priority, at this point in time, is to document information for species that require attention and to prioritise some important invertebrate groups that require conservation action. By the end of 2020, we aim to assess some of the families of arachnids (Theraphosids) to determine the status of the species. Another important component of our activities is conservation education. We are committed to education and promoting conservation of freshwater biodiversity of the Western Ghats, targeting a wider audience of people who live at the grassroots level, student communities and the public.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) assess 53 theraphosid spiders of South Asia (Bangladesh, Bhutan, India, Nepal and Sri Lanka); (2) assess 60 mantids of India.
Research activities: conduct a surveillance study on the mosquitoes of Southern India and identify species shifts, if any, due to climate change (MOSI Project).

Act
Conservation actions: create a protected area for the Critically Endangered theraphosid spider *Poecilotheria hanumavilasumica* in Rameshwaram.

Activities and results 2019
Assess

Red List
i. Theraphosid spider species data has been collected for most of the species; however, assessment is pending. We are experiencing difficulties accessing additional data. (KSR #2)

ii. Mantid species data has been collected for most of the species; however, assessment is pending. We are experiencing difficulties accessing additional data. (KSR #2)

Research activities
i. Surveillance under the MOSI project is ongoing, with data collected successfully. (KSR #38)

Act
Conservation actions
i. Due to political reasons and high cost, the creation of a protected area for the Critically Endangered theraphosid spider *Poecilotheria hanumavilasumica* in Rameshwaram is pending.

Acknowledgements
Zoological Society of London; Paul Pearce Kelly; Axel Hochkirch, Co-Chair of the IUCN SSC Grasshopper Specialist Group; The Rainforest Trust.
Summary of activities 2019

Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 2, 38

KSR: Key Species Result

Tamarind tree, habitat of Poecilotheria spiders
Photo: B. A. Daniel

Male damselfly of Disparoneura apicalis
Photo: Abraham Samuel

Male damselfly of Calocypha laidlawi
Photo: Abraham Samuel
Mission statement

The main objectives of the Spider and Scorpion Specialist Group (SSSG) are: (1) assess, plan and act towards arachnid conservation in collaboration with the other IUCN Task Forces, Specialist Groups and the Invertebrate Conservation Committee; (2) assist on international law and agreements (e.g. Habitats Directive, Convention on International Trade in Endangered Species – CITES) as well as towards national and regional legislation; (3) support and promote public knowledge of arachnids across different media; (4) develop scientifically sound species conservation strategies in cooperation with relevant authorities, to facilitate or mobilize resources for any activity promoting arachnid conservation, as well as those which promote the protection of their habitats; (5) identify gaps in expertise by taxa and/or region and engage with the global network of experts with a view to addressing these gaps, while increasing the diversity of active members.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we expect to: (1) develop tools that facilitate Red List assessments, (2) significantly increase the number of assessed species, (3) reduce the extinction risk of a number of species, (4) provide advice on CITES species, and (5) increase and diversify our membership.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) Red List assessments for Sampled Red List Index (SRLI): 200 species; (2) Red List Nephilidae: 35 species; (3) Red List Archaeidae: 80 species; (4) Red List Macaronesian endemics: 170 species; (5) develop R package to assist Red Listing; (6) conduct two assessment workshops (for SRLI and CITES); (7) conduct one Red List assessment workshop.

Research activities: develop an IUCN Data Paper in Biodiversity Data Journal.

Plan

Planning: develop a Species Conservation Plan for Hogna ingens (Desertas Wolf Spider).


Act

Conservation activities: ex situ breeding of Hogna ingens.

Network

Capacity building: conduct four Red List teaching workshops.

Membership: increase the number and range of group membership.

Communicate

Communication: (1) conduct interviews with media outlets; (2) produce a group website.

Activities and results 2019

Assess

Red List

Support was awarded to conduct a Red List Assessment Workshop, but conflict in the region prevented entrance to be allowed in the country. We plan to use the funds to conduct another workshop in 2020. (KSR #1)
Network
Membership
i. We have recruited researchers, students, conservationists and outreach advocates into the SSSG, and efforts have been made to increase the geographic representation of the group. Still, the group’s range remains biased and we hope to procure support to address it.

Communicate
Communication
i. A number of interviews were given for a National Geographic series on illegal trade; an interview was recorded for a wild science podcast and another given to National Public Radio (NPR); an interview was also given for the online wildlife magazine Wilder (in Portuguese). (KSR #4, 28)

ii. The official website is running and available on the IUCN webpage, but improvements are still underway; this should remain a target for 2020. (KSR #28)

Acknowledgements
The group is sincerely grateful for an SSC Internal Grant Award and we hope to be able to use those funds in the near future. We are also grateful for the opportunity to attend the SSC Leaders’ Meeting in Abu Dhabi and for all the interesting discussion generated in that venue.

Summary of activities 2019
Components of Species Conservation Cycle: 3/5
Assess 1
Network 1
Communicate 2
Main KSRs addressed: 1, 4, 28

KSR: Key Species Result
Mission statement
The mission of the African Elephant Specialist Group (AfESG) is to promote the long-term conservation of Africa’s elephant throughout their range.

Projected impact for the 2017-2020 quadrennium
An average population decline of approximately 21%, mainly due to illegal killing, was reported between 2007 and 2016, a period that partly overlapped with the previous quadrennium. We expect that illegal killing of elephants will decline and population numbers will increase in the available and potential range during this quadrennium. A confirmation of the forest and savannah elephants as separate species is likely to lead to more conservation focus on each species separately, thus improving their conservation status. Similarly, the results of the red listing process, the draft of which was submitted for review by the IUCN Red List team in 2019, will reshape the conservation focus for African Elephants. The July 2019 AfESG members meeting will generate emerging issues and urgent areas of focus to improve on the science and conservation of the elephants. The publication of the 2016 African Elephant Status Report on a website platform, now provides a wider audience with the latest population status of the species and is eliciting questions that would prompt the AfESG to update the status report through a functional African Elephant Database.

Targets for the 2017-2020 quadrennium

Assess
Agreements: finalise African Elephant Database (AED) data acquisition and use license.

Research activities: (1) enhance functionality and performance of the African Elephant Database (AED); (2) contract University of Washington to carry out the African Elephant Taxonomy project; (3) scope the African Elephant Database’s integration into the IUCN database systems and capacity to host multiple elephant species.

Plan
Policy: (1) determine whether the African Elephant is one or two species and revise policy accordingly; (2) review proposals for the 18th meeting of the Conference of the Parties to CITES (CITES CoP18) and attend the CoP. Proposal development and funding: fundraise for AfESG activities and support for its Secretariat.

Network
Capacity building: strengthen the AfESG Secretariat.
Membership: strengthen AfESG membership.
Proposal development and funding: secure funding for the AfESG members meeting.
Scientific meetings: hold the AfESG meeting.
Synergy: (1) handover the AfESG leadership to the new Co-Chairs; (2) reach out to elephant technical experts within government conservation agencies; (3) build synergies with other Specialist Groups and multi-lateral agencies.

Communicate
Technical advice: respond to technical requests by the Global Species Programme.
Activities and results 2019

Assess

Agreements

i. Draft AED data acquisition and use licence submitted to IUCN Headquarters’ legal department. The AED Data Terms of Use were forwarded to the IUCN Headquarters legal team for review and approval before final implementation. In the meantime, a draft version is in use for all requests for AED data. (KSR #14)

Red List

i. Draft assessment report submitted to the IUCN Standards and Petitions Committee. The process was initiated in the group, and a draft submission submitted to the IUCN process. Feedback was received from the Standards and Petitions Committee, including comments about sensitivity to assumptions of the modelling. The team worked through the issues at the end of 2019, without a satisfactory outcome. At the end of 2019, we initiated revising the Red List assessment to consider the Forest and Savanna species separately, which will provide a more robust assessment outcome. (KSR #1)

Research activities

i. The African Elephant Database (AED) officer was recruited, and refreshed all in the processes for getting new data from the various populations. She engaged with the stakeholders and the data are flowing. We have not been able to finalise the software of the database as it is a complex process. We issued a contract to the IUCN Global Species Programme to do an assessment of the best way forward, and we await that report prior to proceeding further. The Data Review Working Group has been restarted, and is functional in terms of ability to conduct data quality and review. More than 100 recent survey reports were collated and stored in the AED. The new AED officer will maintain the AED. (KSR #14)

ii. The African Elephant Taxonomy report was part of a discussion at the July meeting of the AfESG, where there was a session on taxonomy. The details are captured in the proceedings from the meeting. This has reinforced a decision to initiate a process to recognise two species of African Elephant – forest and savannah. (KSR #12)

iii. Integration of the African Elephant Database into the IUCN database systems and capacity to host multiple elephant species: the draft report was received, we’re awaiting the final report. The draft report recommends a rethink of the whole approach for the AED and focusing on the core work with respect to elephant data. AED in its current status would require significant input/investment, in terms of resources (money and developer resources) and time from other members. For this to happen, it is critical that the key people are in place and collaborate well together. The report contains a brief review of the AED database, outlining the current status of the systems, as well as mentioning areas where improvements could be made. AED is a core biodiversity dataset which is recognised internationally and supported by international conventions like CITES and Monitoring the Illegal Killing of Elephants (MIKE); therefore, it is critical that such a dataset/database is stable and has good support behind it. (KSR #14)

Plan

Policy

i. The issue of whether the African Elephant is one or two species was a key topic on the first day of the AfESG members meeting in July 2019. Experts made presentations, and then there was a facilitated discussion on the matter. It was agreed by the delegates that there are indeed two species. However, concern was raised as to the legal and political implications of such a decision, for example in terms of illegal trade laws in different countries. The delegates agreed that we would initiate a process to move to two species, taking into account the political dimensions, and that a task force would be established to take this matter forward. This will be done in 2020. (KSR #27)

ii. AfESG studied and provided input on 18 relevant documents for CITES CoP18, including three African Elephant listing proposals, the Extinct Woolly Mammoth listing in CITES Appendix II, documents defining “appropriate and acceptable” destinations for traded live elephants, MIKE and Elephant Trade Information System (ETIS) documents, and several compliance matters. All proposals related to Appendices changes in African Elephant populations at CITES CoP18 were rejected through a vote, which retained the status quo. As Parties prepare for CoP19, it will be important to make deliberate efforts to unite African Elephant Range States and focus on the review and implementation of the African Elephant Action Plan (AEAP), developed and owned by all 37 African Elephant Range States and formalised through CITES CoP14 in 2010. The AEAP seeks to address those actions that must be taken in order to effectively conserve elephants across their African range, and in so doing it identifies activities that most urgently require funding to achieve this goal. The AfESG is currently engaged in providing technical input.
for potential review of the AEAP; Dr Ben Okita-Ouma attended the CITES CoP18 meeting as one of the Co-Chairs, and was supported by the Senior Programme Officer Lamine Sebogo and Dr Jeanetta Sellier, an AfESG member from South Africa with CITES experience. Besides the direct work at CITES, the AfESG team participated in a MIKES-CITES side event, and an African Range States meeting with African Elephant Fund Secretariat. There was a lot of exciting networking taking place including meet- ings with Wildlife Conservation Society, the UK Department for Environment, Food and Rural Affairs (DEFRA), Association of Zoos and Aquariums (AZA), European Association of Zoos and Aquariums (EAZA), World Association of Zoos and Aquariums (WAZA), US Fish and Wildlife Service, foreign affairs representative of France, World Bank, and African Elephant Coalition. (KSR #26) Proposal development and funding i. Fundraising for the AfESG activities and support for its Secretariat is in progress. There are strong commitments and interest to support from the organisations approached so far. Proposals and concepts have been developed and various organisations approached: African Wildlife Fund (AWF), Save the Elephants (STE), Vulcan, CITES-MIKE under European Union funding. A sustainable financial model for AED and AfESG will be developed and implemented in 2020. Technical advice i. A technical input document on the African Elephant Action Plan (AEAP) was received and submitted to the African Elephant Fund (AEF) Steering Committee. The AfESG meeting in July 2019 presented an opportunity for our experts to engage with the AEP. The expert members focused their attention on technical inputs and insights into the AEAP’s vision, goal, and objectives (including prioritisation); in addition, each of the strategies and activities were considered for gaps, emerging issues, or a need for rewording/rephrasing. This was in response to a request by the African Elephant Fund Steering Committee to AfESG to provide technical input for consideration by the Range States, who will through their own process decide whether to review or update the AEAP (which, having been adopted in 2010, will be 10 years old in 2020). Although the AEAP goal remains very relevant, the actions required to achieve this goal, and thus the AEAP itself, could benefit from a review. It was reported to us by the AEF Secretariat in November that the African Elephant Range States agreed through a postal procedure to review the AEAP through a process that will be discussed and hopefully determined by the AEF Steering Committee in the first quarter of 2020. (KSR #32) Network Capacity building i. Lamine Sebogo was appointed as Senior Programme Officer; Rose Mayienda was appointed as Database Officer. Membership i. We decided to delay appointment of any new members until the new quadrennium; however, we identified a number of key people involved with elephant conservation across the world, including from priority Range States with under-representation, and invited them to the AfESG members meeting, where they participated very well. Analysis of skills, identification of gaps and appointment of new members will be done in 2020. Proposal development and funding i. A total of $128,891.00 in funds were raised, sourced from CITES MIKES ($58,000.00), African Elephant Fund ($52,195.00), WWF International ($10,000.00) and WWF-Namibia ($8,696.00, provided by WWF-US). (KSR #30) Scientific meetings i. A members meeting was convened in Pretoria in July 2019 over a period of four working days. The meeting gathered over 50 of our 62 members, but we also made a point of identifying and inviting delegates from across the Range States who work closely with elephants, whether as managers of reserves with elephants, or as the practitioners in government responsible for their conservation. We specifically targeted additional delegates from Range States that did not have existing representation among the AfESG membership. Through this process, almost 100 delegates in total attended our meeting, including a substantial representation from Francophone Africa, which is an important voice for elephant conservation within the Range States. Delegates were present from 27 of the Range States. Topics we discussed included monitoring and the African Elephant Database, the Red List assessment revision, taxonomy (whether one or two species), and sustainable use and trade. Importantly, we facilitated a workshop for the non-member delegates, to provide an opportunity for the practitioners to participate and influence our thinking and processes as we go forward. Issues related to people were highlighted as important in the fourth day of the meeting, when we addressed elephants in a human landscape. The AfESG recognises the African Elephant Action Plan as the framework for conservation of elephants as provided, and agreed, by the Range States, and we had a meaningful engagement with the Plan on the third day, to understand it better among members, as well as discussing gaps, emerging issues and reframing that may impact on the effectiveness of the Plan. At the meeting, the members also provided input and direction for the Co-Chairs in terms of priorities to take forward, and task teams that need to be formed for priority work. This includes, for example,
re-establishing the Data Review Working Group, and establishing a still-to-be-formed task team to better understand sustainable use of elephants. In addition, as Co-Chairs, we are taking the approach of creating small groups of members to engage with what we see as key issues for the group, where we have to prioritise serving the various stakeholders that draw on our expertise, and where investment can have substantial impact to improve the conservation status of elephants. (KSR #28)

Synergy

i. Dr Holly Dublin, the outgoing Chair, provided a detailed handover report and was available to discuss and clarify any aspects, and the Co-Chairs regularly engaged with her through the year about various matters. Jon Paul Rodriguez convened a handover meeting in Nairobi in late 2018 to ensure that the handover went smoothly, as well as to orientate the Co-Chairs into the work of the IUCN SSC.

ii. Outreach to elephant technical experts within government conservation agencies will only be completed in 2020, although work has already started in 2019 – see results reported about the year about various matters. Jon Paul Rodriguez convened a handover meeting in Nairobi in late 2018 to ensure that the handover went smoothly, as well as to orientate the Co-Chairs into the work of the IUCN SSC.

iii. Synergies were formed with the Sustainably Use and Livelihoods Specialist Group (SULi), Asian Elephant Specialist Group, Human-Wildlife Conflict Task Force, Conservation Genetics Specialist Group, Species Monitoring Specialist Group, Wildlife Diseases Working Group, Conservation Planning Specialist Group, the Biodiversity and Protected Areas Management (BIOPAMA) Programme at the IUCN Eastern and Southern Africa Regional Office (ESARO); Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA), the Convention on the Conservation of Migratory Species of Wild Animals (CMS) and TRAFFIC. Most of these synergies were made when Prof. Rob Slotow and Dr Ben Okita-Ouma attended the SSC Leaders’ Meeting in Abu Dhabi in September 2019. There were many other prospects that were made and will be followed up, such as working with the Indianapolis Zoo on in situ conservation or approaching National Geographic to consider supporting implementation of the AEP. Dr Ben Okita-Ouma also attended the 10th meeting of the Asian Elephant Specialist Group (AsESG). This was to reciprocate representation of the AsESG at the AfESG meeting. For the first time, these two ‘sister’ Specialist Groups attended each other’s member’s meeting. Dr Ben Okita-Ouma also attended and made presentations to five heads of States from KAZA TFCA at the Kasane Elephant Summit in 2019. Strong synergies were made with the KAZA TFCA Secretariat, especially given that the TCFA holds close to 50% of the African Elephants. (KSR #29).

Communicate

Scientific meetings

i. Dr Ben Okita-Ouma is the representative Co-Chair on MIKE-ETIS TAG, and attended all meetings through the year, as well as providing the information requested for various meetings by the Chair of the TAG. He also represented AfESG at the MIKE Africa regional meeting. (KSR #28)

Technical advice

i. Technical requests generally consisted of opinions or additional information to help IUCN respond to or assess the implementation of high level policies. The majority of the responses were made by the Co-Chairs in consultation with the AfESG group members. Topics included: live trade in situ to ex situ statement, additional information to CITES on countries for national ivory action plans (NIAPs), progress with implementation of WCC-2016-Res-011 on domestic markets for elephant ivory, AfESG position on in situ ex situ animal movement, CITES CoP18 assessments of listing proposals, CITES CoP18 overall takeaway message for African Elephant, and Draft statement to the IUCN Director General on movement of baby elephants from the wild in Zimbabwe. (KSR #29)

Acknowledgements

The European Union, through the CITES-MIKE project, WWF-Namibia (The Luc Hoffmann Institute), WWF International, Save the Elephants and The African Elephant Fund are thanked for their financial support. The IUCN Global Species Programme is thanked for its continued support. We sincerely thank both Cecily Nyaga and Lamine Sebogo, who unfortunately had to move on for reasons beyond the AfESG’s control, for their dedication and contribution to AfESG as staff. We hope to continue working with them closely from time to time when the need arises.

Rose Mayienda is also thanked for helping with the administrative work of AfESG in addition to her African Elephant Database duties. All the AfESG members are thanked for their continued support and commitment to the Specialist Group’s mission. We hope to achieve even more for happy elephants and happy people in 2020.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 12, 14, 26, 27, 28, 29, 30, 32

Resolutions addressed: WCC-2016-Res-011

KSR: Key Species Result
Mission statement
The AfRSG guides and facilitates the conservation of viable African rhino populations across their natural range.

Projected impact for the 2017-2020 quadrennium
The African Rhino Specialist Group (AfRSG) wants: (1) secure, viable and valued rhino populations in their natural habitat; (2) rapidly growing and genetically diverse rhino populations facilitated through adaptive biological management; (3) a reduction in the threat to rhinos from poaching, driven primarily by the high illegal demand for rhino horn; and (4) an incentivised communal and private sector investing in rhino conservation through continued range expansion and numbers.

Targets for the 2017-2020 quadrennium

Assess
Red List: update Red List assessments for Black Rhinos (*Diceros bicornis*) and White Rhinos (*Ceratotherium simum*).

Plan
Planning: (1) review the South Africa Biodiversity Management Plan for Black Rhinos; (2) contribute to delivery of national plans; (3) assist with implementation of the Rhino Range State Plan; (4) provide official support for the Rhino Management Plan for Chad.

Policy: (1) compile joint IUCN/TRAFFIC report for the 18th CITES Conference of the Parties (CoP18); (2) review Range State proposals for IUCN/TRAFFIC analyses; (3) attendance and technical role at CITES Conference of the Parties (CoP); (4) attendance and technical role at CITES Standing Committee (SC) and Working Group (WG) meetings.

Act
Conservation actions: engage in the Rhino Impact Investment Project (RiIP).
Technical advice: (1) participate in the Black Rhino Range Expansion Project (BRREP); (2) participate in the Rhino DNA Indexing System (RhODIS) Advisory Board; (3) review hunting applications; (4) engage with ex situ conservation (European Association of Zoos and Aquaria (EAZA) Taxon Advisory Group (TAG), etc.); (5) provide expert advice to range states and conservation authorities; (6) provide expert advice to MyPlanet Rhino Fund; (7) improve efficiency of the AfRSG.

Network
Capacity building: (1) East African Rhino Management Group capacity building; (2) conduct biological management workshop.
Documents review: scientific peer review of rhino papers.
Membership: diversify the AfRSG.
Proposal development and funding: (1) submit donor applications; (2) complete funding reports.
Synergy: (1) participate in Rhino and Elephant Security Group/INTERPOL Environmental Crime Working Group (ECWG) meetings; (2) establish a new management partner for AfRSG.
Technical advice: attendance at workshops/government meetings as invited or presentations given.

Communicate
Communication: (1) Southern African Development Community Rhino Management Group and Chairing; (2) publish the *Pachyderm* Chair Report; (3) respond to media requests; (4) improve communication of rhino issues to members, state and private sectors.

Scientific meetings: hold biennial ARSG meetings.

Activities and results 2019

Assess

Red List

i. We had two meetings and numerous email engagements with Red List Authorities regarding the completion of Red List assessments for African Black Rhino and White Rhino. The assessments will be released in March 2020. We have proposed novel methods of using the Red List criteria in assessing the status of long lived species such as rhinos. (KSR #1)

Plan

Planning

i. We pressurised the Zimbabwe Government to finalise their plan; it is expected to be finalised in 2020. (KSR #27)

ii. An assessment was sent to range states for their assessment of the degree to which they are compliant with the Rhino Range States Plan. We will need to send a follow up in 2020 and endeavour to make sure it is signed off and incorporated in state plans. (KSR #27)
**Policy**

i. A report from the IUCN SSC African and Asian Rhino Specialist Groups and TRAFFIC was submitted to the CITES Secretariat pursuant to Resolution Conf. 9.14 (Rev. CoP17). See https://cites.org/sites/default/files/eng/cop/18/doc/E-CoP18-083-01.pdf. In addition, an updated population status document was produced but was held back at the last minute. (KSR #26)

ii. Three rhino related proposals to CITES CoP18 were reviewed, from South Africa, Eswantini and Namibia. (KSR #26)

iii. One CITES CoP meeting was attended. (KSR #26)

iv. We attended CITES CoP18 and the Rhino Working Group, involving our Scientific Officer and one AfRSG member. (KSR #26)

**Act**

**Conservation actions**

i. There were three board meetings of the Rhino Impact Investment Project (RIIP). We had numerous engagements with the Project manager on issues. (KSR #11)

**Technical advice**

i. The Black Rhino Range Expansion Project meeting was postponed until March 2020. (KSR #18)

ii. We prepared a submission to the UK government on banning the importation of hunting trophies, to be sent in early 2020. (KSR #27)

iii. We engaged with TAGs of the Association of Zoos and Aquariums (AZA) and EAZA for ex situ conservation, as well as another on the Northern White Rhino committee. (KSR #27)

iv. We provided advice to the Ministry of Environment and Tourism (on rhino introduction, CITES), Namibia, Zimbabwe (on rhino plan), South African National Parks (SANParks, on concerns regarding the Kruger National Park rhino population), South Africa and Kenya (on rhino capture and wildlife translocation protocols). (KSR #27)

v. Expert advice to Myplanet Fund finished due to resignation from the committee as moved to Namibia. (KSR #27)

vi. Three task forces were established: one in engaging with SANParks, one to meet with John Hume (the largest private owner of rhinos), and one to review Kenyan rhino capture policies. (KSR #27)

**Network**

**Documents review**

i. Four papers were reviewed for scientific journals.

**Membership**

i. We have thirty-nine new members; 15 of our 51 members are either Africa state representatives or persons of colour, and 76% of members are resident in Africa.

**Proposal development and funding**

i. Successful donor application submissions to US Fish and Wildlife Service (USFWS), Oak Foundation, International Rhino Foundation (IRF), Save the Rhino International (SRI), Safari Club International (SCI) and African Wildlife Foundation (AWF), for funding for the AFRSG 2019 meeting. We successfully raised support for the AFRSG Secretariat from USFWS, IRF, SRI and AWF. (KSR #9)

ii. We completed two funding reports, with an additional three in process. (KSR #9)

**Synergy**

i. One meeting involving the Rhino and Elephant Security Group (RESG) was attended by the AFRSG Scientific Officer. (KSR #28)

**Technical advice**

i. We participated in four meetings: one with SANParks, one with MET (Namibia), one with USFWS, and one with RESG. (KSR #27)

**Communicate**

**Communication**


ii. Participation in the media: the Secretariat (Chair and Scientific Officer) provided contributions to numerous researchers/media outlets (including Smithsonian, Namibia’s Radio Kosmos, BBC Inside Science, BBC World Service, The Art Newspaper, CBS News, IUCN communications, Tony Carline, Edinburgh Napier University, Project Earth Films, Bonne de Bod), AFP and Tony Grogan’s documentary series. (KSR #28)

iii. We had a minimum of 87 communications with AFRSG members on rhino issues. (KSR #28)

**Scientific meetings**

i. A successful 13th IUCN SSC African Rhino Specialist Group meeting was held in Gross Barmen, Namibia, and attended by 73 delegates, 46 (of 51) AFRSG members and 28 invited guests/observers from a total of 12 different countries in Africa, together with delegates from America, Asia (India, China) and Europe. See Pachyderm 60:14–39. (KSR #28)
Acknowledgements

We would like to thank the following donors that have allowed the AFoRS to deliver on its mandate: the continued support and cooperation of rhino Range States is appreciated. The AFoRS is also grateful to the Save the Rhino International (SRI), International Rhino Foundation (IRF), the US Fish and Wildlife Service’s Rhino and Tiger Conservation Fund (USFWS RTC) and the Endangered Wildlife Trust (EWT) for support provided to the AFoRS Secretariat. WWF in Namibia is also thanked for its support of the Chair. WWF Netherlands via WWF African Rhino Program and WWF South Africa are thanked for funding the East African Community Rhino Management Group meeting. The following are thanked for supporting the AFoRS 2019 meeting: AWF, IRF, Oak Foundation, SCI, SRI, WWF-South Africa and USFWS. The CITES Secretariat is thanked for support in drafting the joint report to CoP18.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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<td>Network</td>
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Main KSRs addressed: 1, 9, 11, 18, 26, 27, 28

KSR: Key Species Result
**Mission statement**

The IUCN SSC Afrotheria Specialist Group (ASG) facilitates the conservation of hyraxes, aardvarks, elephant-shrews or sengis, golden moles, tenrecs and their habitats by: (1) providing sound scientific advice and guidance to conservationists, governments, and other interested groups; (2) raising public awareness; and (3) developing research and conservation programmes.

**Projected impact for the 2017-2020 quadrennium**

If the ASG achieved all of its targets, it would be able to deliver more accurate, data-driven Red List assessments for more Afrotherian species and, therefore, be in a better position to move to conservation planning, especially for priority species.

**Targets for the 2017-2020 quadrennium**

**Assess**

Red List: reassess Red List categories in species for which new information arises (e.g. Nimba Otter Shrew, *Micropotamogale lamottei*, for which we have new extent of occurrence (EOO) data) or for newly described species that may be described during the quadrennium (such as golden moles or sengis).

Research activities: (1) develop five standardised monitoring protocols for each group of Afrotherians to track trends over time and produce more data for Red List assessments; (2) complete 2–4 reassessments of taxonomy of golden moles in species where it is necessary (e.g. *Amblysomus* and *Neamblysomus* species); (3) collect basic data for 3–4 golden mole species, including geographic distributions and natural history data; (4) conduct surveys to determine distribution and abundance of five hyrax species; (5) revise taxonomy of five hyrax species; (6) develop and assess field trials for standardised camera trapping methods to determine population estimates for giant sengis; (7) conduct surveys to assess distribution, abundance, threats and taxonomic status of the Data Deficient sengi species; (8) build on current research to determine the systematics of giant sengis, especially *Rhynchocyon* species; (9) survey Aardvark (*Orycteropus afer*) populations to determine abundance, distribution and trends; (10) conduct taxonomic studies to determine the systematics of Aardvarks, with a focus on contrasting Aardvarks from central African forests with southern African savannah Aardvarks; (11) integrate the monitoring of tenrecs in the management of key protected areas with threatened species in order to track their status and threats and identify key conservation concerns; (12) conduct genetic studies to clarify the taxonomy and species diversity within the genus *Microgale*.

**Communicate**

Communication: (1) update and maintain the afrotheria.net website; (2) produce one Afrotheria Specialist Group newsletter every year.

**Activities and results 2019**

**Assess**

Red List: we did not conduct any re-assessments for the Afrotheria during 2019. Although there will likely be some new species of tenrec to assess soon, these have not yet been formally described in the literature. We have not been informed by IUCN whether we need to restart the assessment process for our species, most of which were last assessed in 2014. (KSR #1)
Research activities

i. No progress during 2019 as this requires funding. However, the ASG aardvark section and ASG golden mole section are investigating ways to survey their species. (KSR #43)

ii. The golden mole team were unsuccessful in acquiring funding from the Mohammed Bin Zayed Foundation and the Foundational Information Biodiversity Programme (FBIP). Dr Samantha Mynhardt will re-apply for the FBIP Small Grant in 2020 (she will be attending an FBIP grant-writing workshop at SANBI). She will also apply for the Rufford Small Grant. Samantha will take on an honours student in 2020 to work on Amblysomus phylogenetics, while Paulette Bloomer and Nigel Bennett will investigate the availability of funds for fieldwork in order to establish exactly what will be feasible for the project. (KSR #12)

iii. Cobus Theron (from the Endangered Wildlife Trust, Johannesburg) has secured funding for trialling the use of sniffer dogs and drones to find and collect golden mole specimens and collect natural history information for the two threatened Cryptochloris species in Namaqualand. Samantha Mynhardt will be developing a method for mammalian eDNA extraction from soil, and subsequent species identification through barcode sequencing of small mtDNA fragments. Without a reference sequence for the Cryptochloris species, rudimentary identification will be based on phylogenetic placement. The initial goal is to detect golden mole species in these areas and catch some golden moles to obtain reference sequences. (KSR #12)

iv. An application for a National Geographic Society grant was submitted during 2019 to conduct surveys to determine distribution and abundance of five hyrax species. (KSR #12)

v. The revision of the taxonomy of five hyrax species was set back during 2019 due to the death of Hendrik Hoeck, who was a lead. Lukas Keller continues to work on this project. (KSR #43)

vi. There has been no progress with the survey of Aardvark populations due to the lack of funds to support it and the difficulty in quantifying Aardvark populations. The ASG Aardvark section has started internal discussions about how such a process might be conducted using photographic (camera trap) surveys and machine learning technology. If the technique seems promising, funding will be sought to initiate it. (KSR #12)

vii. The genomic work on Aardvark was put on hold after the PostDoc in charge of the project was not confirmed in her position (i.e. after the probationary period). The project is on hold until new funding and new candidate can be found. (KSR #43)

viii. Integration of monitoring of tenrecs in the management of key protected areas with threatened species: At present, the biggest problem is lack of a consistent approach to monitoring. 'Monitoring' means different things to different people, and for small-bodied tenrecs, particularly shrew tenrecs (Microgale and Nesogale), identification to species is almost impossible without collecting voucher specimens or genetic samples. Also, there are very few longitudinal demographic studies, so we don't yet know if and to what extent some species fluctuate. So, 'monitoring' is likely a premature concept for these species, and inventories are still needed. (Interestingly, this is an issue the US National Park Service has struggled with in its federally mandated Inventory and Monitoring Program--where does the former stop and the latter begin?) So, the primary need in this case is agreement, or at least consensus, as to what 'monitoring' entails. For large-bodied species, especially Tenrec ecaudatus and Setifer setosus, population declines have become apparent in some areas, and these are also more directly threatened by exploitation (e.g. bushmeat) and are likely being adversely affected by zoonotics. These species are easier to 'monitor' in that they can be confidently identified to species without having to inspect craniodental features that require specimen collection. But again, the primary need is for an actual strategy for monitoring. (KSR #32)

Communicate

Communication

i. Website maintenance for 2019 will be paid for in early 2020. No website updates were conducted during 2019. The Afrotheria Specialist Group gratefully received funding from the iUCN internal grants to pay for 2 years of website maintenance and updating websites for aardvarks and tenrecs. This work needs to be paid for in 2020. (KSR #28)

ii. Our annual newsletter (Afrotherian Conservation) 15 was released in September 2019, and we have put out a first call for submissions for the 2020 edition. The editors for the last few editions have stepped down from the position, and PJ Stephenson, a previous editor for the newsletter, has resumed his role as new editor. Andrew Taylor will assist. (KSR #28)

Acknowledgements

We thank our Afrotheria Specialist Group members, all of whom are volunteers, who contributed towards ongoing work on our species and to those who contributed towards the annual newsletter. In particular, we are grateful to our section coordinators, Gary Bronner, Lee Koren, Thomas Lehmann, Voxhangy Soaramalay, Link Olson and PJ Stephenson, as well as our newsletter editors, Chris and Mathilde Stuart (who edited their final newsletter in 2019 and have now stepped down from the position). We also thank Avian Designs for supporting our website at discounted rates. Finally, we again remember our group founder and long-time Co-Chair Galen Rathbun, who died in April 2019.

Summary of activities 2019

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KSR: Key Species Result
Mission statement

The mission of the IUCN SSC Anteater, Sloth and Armadillo Specialist Group is to promote the long-term conservation of the extant species of xenarthrans (anteaters, sloths and armadillos) and their habitats.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we envision the Anteater, Sloth and Armadillo Specialist Group (ASASG) will have achieved increased protection for our priority species, the Critically Endangered Pygmy Three-toed Sloth (*Bradypus pygmaeus*) and the Vulnerable Brazilian Three-banded Armadillo (*Tolypeutes tricinctus*). We aim to reach this goal by increasing scientific knowledge, raising awareness, developing and implementing comprehensive action plans and securing protection of their habitat. Capacity building through training courses will allow us to increase the number of researchers dedicated to conservation-relevant research on armadillos, sloths and anteaters. We predict that our awareness campaigns will increase knowledge about our species and their conservation problems among the general public.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) complete assessment of seven silky anteater species; (2) complete re-assessment of all Xenarthra species; (3) facilitate assessments of other taxa for the IUCN Red List; (4) support assessment of mammals of Argentina. Research activities: collection of scientific data about Brazilian Three-banded Armadillo (*Tolypeutes tricinctus*) and Pygmy Three-toed Sloth (*Bradypus pygmaeus*).

Plan

Planning: plan for protection of Brazilian Three-banded Armadillo and Pygmy Three-toed Sloth.

Act

Conservation actions: effective protection of Brazilian Three-banded Armadillo and Pygmy Three-toed Sloth.

Network

Capacity building: (1) teach five training courses; (2) train Argentinean mammalogists in Red List assessments. Proposal development and funding: secure funding to replenish the Xenarthra Conservation Fund. Synergy: enter into partnership with zoological institutions.

Communicate

Communication: (1) publish four issues of the ASASG Newsletter; (2) increase awareness through campaigns at zoos and other institutions; (3) increase awareness for Xenarthra.

Activities and results 2019

Assess

Red List

i. We have postponed the assessments of seven silky anteater species and all Xenarthra species until we can organise assessment workshops with our Specialist Group members. We are currently looking for funding to hold the workshops. (KSR #1)

ii. ASASG members (specifically, the Chair and RLA) have trained researchers in the use of IUCN methodology for Red List Assessments and participated in assessment workshops for other taxa: (1) we have provided Red
List training to researchers in Peru, Honduras, and Argentina; (2) we have facilitated national assessment workshops on the extinction risk of Brazilian snakes and Argentinian plants; (3) we have provided advice to the environmental authorities of Peru and Argentina regarding their national Red List assessments. We will continue providing training and facilitating assessments in 2020. (KSR #1)

iii. We have collaborated with the Argentinean Mammalogy Society and the national wildlife authorities in the re-assessment process of all mammals of Argentina using the regional Red List Guidelines. The national Red List of Mammals is available at http://cma.sarem.org.ar/. (KSR #2)

Research activities

i. The first stage of the Brazilian Three-banded Armadillo Conservation Program, which is supported by our Specialist Group and whose scientific coordinator is our member Flávia Miranda, concluded in 2019. Over 30 expeditions were made to document the area of occurrence of the species and to interview local communities about the species; two scientific expeditions allowed the collection of biological data on this rare species. (KSR #12)

ii. Our member Diorene Smith, in collaboration with the Zoological Society of London, has been monitoring 10 Pygmy Three-toed Sloths with radio transmitters, to collect information about their home range, habitat preference, activity, and behaviour in different habitat types. (KSR #12)

Plan

Planning

i. Diorene and her team have been working towards an effective management plan through strengthening of local networks and actively involving the communities that use the island Escudo de Veraguas. They also delivered a training course on biodiversity conservation to members of the local Ngäbe community, local NGOs, government agencies and university students to continue building key capacity. (KSR #18)

Act

Conservation actions

i. Six of the 38 actions included in the Action Plan were addressed over the past four years within the framework of the Brazilian Three-banded Armadillo Conservation Program. The declaration of the Poti River Canyon State Park in Piauí State provides effective protection to this threatened species. (KSR #27)

Network

Capacity building

i. The planned courses were cancelled or postponed due to a lack of funding. (KSR #2)

Synergy

i. We have started discussing the possibilities of a partnership between an institution and our Specialist Group. (KSR #29)

Communicate

Communication

i. In December 2019 we published volume 20 of *Edentata*, which included seven articles related to the conservation of Xenarthra. (KSR #28)

ii. The “Year of the Anteater” campaign, a joint initiative of Association of Zoos and Aquaria of Brazil and Instituto Tamanduá, and supported by the ASASG, aimed at raising awareness for anteater conservation. It was initiated in April 2018 and ended in May 2019. More than 40 institutions (zoos, aquaria, and educational institutions) from Brazil and other parts of the world have carried out environmental education activities to disseminate knowledge about anteaters, raise awareness, and promote their conservation. More than 50,000 people from all age groups and a variety of social, cultural, and economic levels have been reached. (KSR #28)

iii. We have been increasing awareness for Xenarthra through different strategies: (1) by providing information on Xenarthra through our newly designed website, www.xenarthrans.org, and our Facebook page, www.facebook.com/xenarthrans; (2) by providing advice to researchers, students, and schoolchildren; (3) by giving talks and interviews to different media, and participating in documentaries. (KSR #28)

Acknowledgements

We would like to thank Animal Educators Inc. and Nurtured by Nature for their support. We also thank the IUCN SSC for the financial support that allowed us to redesign our website and publish this year’s issue of *Edentata*.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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<th>Component</th>
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Main KSRs addressed: 1, 2, 12, 18, 27, 28, 29

KSR: Key Species Result
**Mission statement**

The mission of ASG is to promote the conservation of the world’s antelope diversity and to contribute to the mission of SSC.

**Projected impact for the 2017-2020 quadrennium**

By the end of 2020, we expect: the Antelope Specialist Group’s (ASG) global framework for antelope conservation; road maps for all threatened taxa; action plans for key species; updated Red List assessments; advice to IUCN, CITES, CMS, governments and INGOs; support for project proposals; and dissemination of information will collectively have made a significant contribution to stabilising and/or improving the status of antelopes and also to specific targets on the SSC Strategic Plan.

**Targets for the 2017-2020 quadrennium**

**Assess**

Green List: complete Green List assessments for 93 species.

Red List: (1) maintain regular updates of 93 species’ Red List datasheets; (2) complete all (144) Red List reassessments.

Research activities: (1) enter baseline data for all species and subspecies (144) into the Antelope e-database; (2) expand fields of the Antelope e-database.

**Plan**

Planning: (1) publish the ASG planning guidelines; (2) develop the Global Antelope Strategy; (3) publish action plans for eight key antelope taxa; (4) enhance the link between Red List assessments and species planning.

Policy: (1) revise the Intensive Genetic Manipulation Policy; (2) liaise annually with the Convention on the Conservation of Migratory Species of Wild Animals (CMS); (3) provide advice to the SSC Chair and IUCN; (4) liaise annually with the CITES Animals Committee, Standing Committee and Conference of the Parties, and attend two standing meetings per year for two species, as well as additional events ad hoc; (5) liaise with, and provide advice to, national government agencies.

**Act**

Conservation actions: review Key Biodiversity Area (KBA) sites for antelopes.

**Network**

Agreements: sign Memorandum of Understanding (MoU) with Royal Zoological Society of Scotland (RZSS) on genetics and planning.

Membership: increase regional and gender diversity of members of the ASG.

Proposal development and funding: support preparation of grant proposals as requested.

Synergy: liaise with the UN Food and Agriculture Organization (FAO) and World Organisation for Animal Health (OIE) for the Global Eradication Campaign of “Peste des Petits Ruminants” (PPR GEP).
Communicate
Communication: (1) produce policy statements as appropriate; (2) publish six Gnuletter regular issues (2 per year) and special issues; (3) re-launch website; (4) maintain Facebook page with one post per month; (5) create a Twitter account and a blog; (5) publish book project entitled *The African Buffalo: ecology and management*, containing 20 chapters and 100,000 words.


Activities and results 2019

Assess
Green List
i. Green List assessments of several species were made as part of the Green Status development process. (KSR #11)

Red List
i. Datasheets of 30 threatened species were updated whenever new information became available. Datasheets on some non-threatened species were also updated on an *ad hoc* basis. (KSR #1)

ii. We are awaiting a decision on whether the next Global Mammal Assessment will be in 2020 or at a later date to complete all (144) taxa Red List assessments. (KSR #1)

Research activities
i. ASG is looking for an intern or placement student to expand fields (two fields) of the Antelope e-database.

Plan
Planning
i. The ASG planning guidelines are still in draft form. We plan to complete them in 2020. (KSR #18)

ii. Action Plans: (1) The Saiga (*Saiga tatarica*) work plan under the CMS MoU was updated for 2020–2024 at a workshop in April 2019; (2) the Slender-horned Gazelle (*Gazella leptoceros*) roadmap draft was completed in November 2019 in English and French and circulated for comment; (3) the Addax (*Addax nasomaculatus*) roadmap was initiated in late 2019; (4) the Dama Gazelle (*Nanger dama*) Conservation Strategy 2019–2028 was published in December 2019 in English and French; (4) we will provide advise on planning of the Peninsular Pronghorn (*Antilocapra americana peninsularis*) strategy workshop (planned for February 2020); (5) we commented on the Kenya National Action Plan for Roan Antelope (*Hippotragus equinus*); (6) our collaboration continues with an Ethiopian Government Agency on the development of a national antelope strategy (a workshop is planned in 2020). (KSR #15)

iii. Insufficient work took place to enhance the link between Red List assessments and planning. This is a priority for 2020. (KSR #18)
Recent legal developments in South Africa require a response and will influence the content of version 2 of the Intensive Genetic Manipulation Policy. (KSR #26)

We liaised with CMS on the following activities: (1) Saiga antelope MoU; (2) Central Asian Mammals Initiative (includes five antelope species); (3) Sahelo-Saharan Antelopes Concerted Action (seven antelope species). (KSR #26)

We provided advice to the SSC Chair and IUCN on the following: (1) declassification of Termit and Tin Toumma National Nature Reserve, Niger; (2) SSC draft strategy comments. (KSR #26)

Formal responses to the CITES Secretariat were made as requested on Saiga and Tibetan Antelope (Pantholops hodgsonii). Both species are listed on Appendix 1 and are standing items at the Animals Committee. (KSR #26)

Some further progress was made in 2019 reviewing KBA sites for antelopes, until a placement student left. The target is behind schedule. (KSR #22)

The MoU with RZSS on genetics and planning runs until the end of 2020. (KSR #29)

New Range state members have been identified and invited. Gender diversity increased by a small amount. We are still behind the target of 40% by end of 2020.

Six grant applications supported to: National Geographic, IUCN Save Our Species, Rufford Small Grants, Fondation Segré. (KSR #19)

Interactions with FAO and OIE for the Global Eradication Campaign of “Peste des Petits Ruminants” (PPR GEP): (1) P. Chardonnet (ASG Co-Chair) was invited by OIE and FAO to attend a workshop on PPR GEP in wildlife organised in Rome, Italy; (2) P. Chardonnet became a member of the Peste des Petits Ruminants Global Research and Expertise Network (PPR-GREN) Wildlife Working Group under the auspices of OIE and FAO; (3) P. Chardonnet and ASG members Alex Caron and Richard Kock co-authored an article on PPR in wildlife in the journal Frontiers in Veterinary Science. (KSR #23)

We need to establish a schedule for regular posting on the Facebook page. (KSR #28)

The ASG Programme Office takes the lead on issuing tweets regularly using our official Twitter account. (KSR #28)

Within the context of the 4th African Buffalo (Syncerus caffer) workshop, the concept of the book entitled The African Buffalo: ecology and management was generated. (KSR #28)
Acknowledgements

We are grateful to the following: Marwell Wildlife for supporting the ASG Programme Office; White Oak Conservation, Steve Shurter (Editor of Gnusletter) and Stephanie Rutan (Editorial Assistant); Helen Senn (RZSS) for advice on genetics issues; staff in the SSC Chair’s Office and Global Species Programme for their support and advice; and all members and others who responded to requests for information or contributed to Gnusletter. We are also grateful to the Environment Agency – Abu Dhabi for having invited both Co-Chairs to the SSC Leaders’ Meeting in Abu Dhabi in November 2019.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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<td>Communicate</td>
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Main KSRs addressed: 1, 11, 15, 18, 19, 22, 23, 26, 28, 29

Resolutions addressed: WCC-2016-Res-041, WCC-2016-Res-100

KSR: Key Species Result
**Mission statement**

The Asian Elephant Specialist Group (AsESG) does not have a mission statement, but has developed a mandate for the group: (1) AsESG shall provide best available scientifically-grounded evidence as to the abundance, distributions and demographic status of Asian Elephant populations in all 13 range states. It shall also set forth advisory guidelines for range states and assist in capacity building in performing their own assessments; (2) the AsESG shall analyse threats to wild populations and raise awareness by communicating both within and outside the scientific community and also set forth advisory guidelines for range states and assist in capacity building in performing their own assessments; (3) the AsESG shall analyse threats to wild populations and raise awareness by communicating both within and outside the scientific community and also set forth advisory guidelines for range states and assist in capacity building in performing their own assessments; (4) the AsESG may choose to meet regularly to share information and conduct its own activities as well as convene gatherings in the form of conferences/workshops on specific themes open to external participants for furthering the protection of Asian Elephants.

**Projected impact for the 2017-2020 quadrennium**

Conservation prospect of Asian Elephant across 13 range states improved through collaborative efforts of range countries and AsESG members.

**Mission statement**

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**Projected impact for the 2017-2020 quadrennium**

Conservation prospect of Asian Elephant across 13 range states improved through collaborative efforts of range countries and AsESG members.
Communicate

Communication: (1) communicate elephant conservation and research on Asian Elephants through Gajah journal; (2) communicate elephant conservation and research on Asian Elephants through other publications; (3) communicate information on Asian Elephants and the activities of the group through an updated website.

Scientific meetings: (1) organise two meetings of the Asian Elephant Specialist Group members in 2018 and 2020; (2) help to organise the 3rd Asian Elephant Range States meeting; (3) take up the elephant conservation issues and mitigation plan in at least three meetings/ conventions.

Activities and results 2019

Assess

Red List

i. The updated Red List assessment of the mainland Asian Elephant (Elephas maximus) except the Sumatran subspecies, was submitted in September 2019. We have received few comments from the Red List Authority and the assessment will be re-submitted in early 2020. (KSR #1)

Research activities

i. The group presented the detailed methodology to map the distribution of elephants in all 13 range states in Asia at the AsESG meeting in Sabah, Malaysia, in December 2019, and the Working Group is working on the data collection protocol. The data is being collected; the map has not yet been prepared.

ii. The group confirmed the need to develop the database at the AsESG meeting in 2019 and will initiate the process in 2020. (KSR #16)

Plan

Planning

i. Bhutan, Sabah (Malaysia) and Cambodia have published their National Elephant Conservation Action Plans (NECAP). The Sumatra NECAP has also been drafted and the public consultation is ongoing. On request of the AsESG Secretariat, the Government of India and Lao PDR have also formed technical committees for the preparation of their National Elephant Conservation Action Plan and the consultation process is in progress. The links to the NECAP are available on the Resources section of the AsESG website (https://www.asesg.org/resources.php). (KSR #18)

Policy

i. The draft plan for Viet Nam has been prepared. The Viet Nam Government and AsESG are in consultation to draft their NECAP, so that a definite course of action can be planned and implemented. The Working Group on Viet Nam has drafted the plan for arresting the decline of the elephant population and this plan was presented. (KSR #27)

ii. A major issue impacting elephant habitat in Bangladesh has been the influx of Rohingya refugees in Cox’s Bazar in August 2017 and their resettlement in 27 camps. Over 8,200 acres of forest have been cleared for the camps. The camp has also hindered elephant movement between Myanmar and Bangladesh, thereby increasing human-elephant conflict in the region. A total of 14 human deaths and 46 human injuries were reported between 2017 and November 2019 caused by elephants in and around the camp area. AsESG has formed a working group which, along with Bangladesh Forest Department and IUCN Bangladesh, is working on a mitigation plan to minimise the impact on elephants and their habitat. The working group suggested the following long-term management needs: (1) to collect information on group size, seasonal use of habitat condition, corridors used by elephants, human-elephant conflict status, etc.; (2) radio-collaring of a few elephants; (3) secure the patch of elephant corridor; (4) further enhance the capacity of the Forest Department and Elephant Response Team; (5) engage the local villagers in human-elephant conflict management; (6) fence off the camp area to prevent human-elephant conflict; and (7) trans-boundary dialogue be initiated between Forest Department of Bangladesh and Myanmar. The IUCN Bangladesh Office along with Bangladesh Forest Department has undertaken various mitigation measures to minimise conflict. (KSR #26)

Technical advice

i. AsESG connected MIKE with all the 13 range countries and also provided a platform during the 9th AsESG meeting in Bangkok to organise their regional meeting on 29–30 October 2019 in Bangkok for Southeast Asian countries, where three AsESG members as well as ex officio members participated. The MIKE Regional Meeting for South Asian countries was organised in Bhutan on 1–2 December 2019 and four AsESG members and four ex officio Government representatives participated. (KSR #16)

ii. Six Working Groups assigned to prepare the guidelines/plan have finalised their outcome documents and presented them at the AsESG members meeting in Sabah, Malaysia, in December 2019. These documents will be soon reviewed, finalised and updated on the AsESG website: Bhutan National Elephant Conservation Action Plan, Sabah National Elephant Conservation Action Plan, Guidelines for…
creating artificial water holes in elephant habitats, Guideline for welfare and use of elephants in tourism, Guidelines for management and care of captive elephants in musth, and Guidelines for the reintroduction of captive elephants in the wild as a possible restocking option. Five Working Groups are still working on the outcome documents; two of these were formed in mid-2018. (KSR #26)

**Act**

**Proposal development and funding**

i. The group has received support from Elephant Family and International Fund for Animal Welfare (IFAW) for AsESG Secretariat and group activities. Sabah Government and Sabah Wildlife Department provided the logistical support to host the AsESG members meeting in Sabah, Malaysia in December 2019. It also received funds from WWF International and Saint Louis Zoo to support the AsESG group meeting. (KSR #19)

**Network**

**Capacity building**

i. During the 10th meeting of AsESG in Sabah, Malaysia, in December 2019, a separate session was organised: the Young Professionals workshop and capacity building training. The session was organised to provide a forum for young researchers and conservationists working on Asian elephants but who are not members of AsESG to present their work to the AsESG members and range officials. This also provided them an opportunity to interact with subject experts and Range State officials as well as conservation partners to support their research/conservation activities. Six youths from three countries presented their work and were also provided with training on proposal writing, the Spatial Monitoring and Reporting Tool (SMART), and human-elephant conflict. The participants were supported by AsESG for their travel, stay and conference participation. (KSR #18)

ii. Capacity building training of veterinarians and field teams from Viet Nam and Cambodia on radio collaring of elephants and human-elephant conflict mitigation was conducted by AsESG-Wildlife Trust of India (WTI) in Kaziranga, India, from 26 November–2 December 2018. Following this, IFAW-WTI veterinarians went to Cambodia to assist the WWF Cambodia team in radio collaring of elephants from 26 July–7 August 2019 and train the team. (KSR #17)

**Membership**

i. The group has 111 experts as voluntary members from 19 countries, including from all 13 range countries. In 2019, about 28 experts from diverse skill sets were selected to join the team, including three from Viet Nam. However, only 22 applicants completed their registration process. The group also has 15 ex officio Government members nominated by range countries and five other ex officio members.

**Communicate**

**Communication**

i. The Gajah editorial team has published one volume (Vol. 49) covering a variety of research, conservation work and developments along with news updates. (KSR #28)

ii. AsESG has published a paper on the population status of Asian Elephants (*Elephas maximus*) and key threats in the 2019 issue of *International Zoo Yearbook*. (KSR #43)

iii. A four-page brochure on AsESG was printed and circulated among members during the AsESG meeting in Sabah, Malaysia, in December 2019. (KSR #28)

iv. The AsESG website (www.asesg.org) is updated with all details and stories. (KSR #28)

**Scientific meetings**

i. The 10th meeting of the Asian Elephant Specialist Group (AsESG) was held at the Shangri La’s Tanjung Aru Resort & Spa, Kota Kinabalu, Sabah, Malaysia, from 4–6 December 2019 and was jointly hosted along with Sabah Wildlife Department. A wide range of issues were discussed, including standards and guidelines for the management and welfare of elephants in the wild and in captivity, wildlife emergencies, national action plans, Red Listing of Asian Elephants and challenges for the conservation of elephants in Sabah. The meeting was attended by 148 people including 62 AsESG members, 17 Government officials from all Asian elephant range countries, three other ex officio members, 36 invitees from across the globe, as well as 20 organisers and 10 exhibitors. The meeting also provided a forum for AsESG members and young professionals to present their work. A partners’ meeting between AsESG partners and range country officials was also organised to explore the possibilities of supporting priority conservation activities of Range States. (KSR #28)

ii. The 3rd Asian Elephant Range States meeting is scheduled to be held in Nepal in 2020. The AsESG Chair, Deputy Director General Nepal and other members of the organising committee discussed the plan during a side meeting in Sabah (during the members meeting in December 2019). The Range State meeting, originally scheduled for April 2020, was rescheduled to a later date in 2021. (KSR #28)

iii. AsESG organised a session at the 29th International Congress for Conservation Biology (ICCB 2019) in Kuala Lumpur, Malaysia, on 25 July 2019, jointly with IFAW and Elephant Family, on ‘Challenges confronting conservation of Asian Elephants: Securing corridors as a mitigation strategy’. (KSR #28)
iv. AsESG organised side event at the 18th meeting of the Conference of the Parties to CITES (CoP18) in Geneva on 22 August 2019, in partnership with IFAW, Elephant Family and WWF, on ‘Impact of poaching and illegal trade on Asian Elephants’. (KSR #28)

v. AsESG WCPA proposed Transport Working Group: A meeting of the proposed linear infrastructure Working Group with members from World Commission on Protected Areas (WCPA) Connectivity Conservation Specialist Group and AsESG was held in Kuala Lumpur, Malaysia, on 8 April 2019, to discuss the formalities and Terms of Reference. (KSR #28)

Acknowledgements

The AsESG Secretariat would like to thank all the members for actively participating in discussion, assistance and contributing to the overall goal of the Group. We would especially like to thank the Working Group convenors and the members who have successfully completed their outcome documents and other groups that are working to their outcome document. Thanks to our Red List Coordinator and other members for successfully undertaking the Red List assessment of Asian Elephants. The Chair would like to thank the Government of Sabah, especially Datuk Christina Liew, Hon’ble Deputy Chief Minister of Sabah State Government/Minister of Tourism, Culture and Environment and the Sabah Wildlife Department for jointly hosting the 10th meeting of the group in Sabah, Malaysia, and the hospitality. The Chair expresses his thanks to the Range Country Government officials for coming for the AsESG meeting and actively participating in the discussion. The AsESG Secretariat would like to thank Elephant Family and the International Fund for Animal Welfare (IFAW) for supporting the activities of AsESG. We are also grateful to Saint Louis Zoo, WWF International and WWF US for the financial support to organise the members meeting in Sabah. We would also like to thank our other partners for coming to the Sabah meeting and actively participating in the Partners’ meeting. The AsESG Secretariat would also like to thank Jon Paul Rodríguez, SSC Chair, and his team for extending all assistance and help to AsESG.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

Assess 3

Plan 5

Act 1

Network 3

Communicate 9

Main KSRs addressed: 1, 16, 17, 18, 19, 26, 27, 28, 43

Resolutions addressed: WCC-2016-Res-068

KSR: Key Species Result
Mission statement
Foster conservation and management of three species of Asian rhinos and their habitats.

Projected impact for the 2017-2020 quadrennium
In the 2nd Asian Rhino Range States Meeting that AsRSG organised at New Delhi, India, from 26-28 February 2019, all five Asian Rhino range states attended and decided to secure the future of all three species of Asian Rhinos by adopting the New Delhi Declaration on Asian Rhino Conservation. The Greater One Horned Rhino was downlisted from “EN” to “VU” in IUCN Red Lists in 2008 as its status improved, which reflects the true sense of conservation success. However, Critically Endangered Sumatran and Javan Rhino, currently found in Indonesia, continue to face diverse challenges. IUCN/SSC along with NatGeo, International Rhino Foundation, Global Wildlife Conservation and WWF joined hands with Indonesia’s Ministry for Environment and Forestry to launch Sumatran Rhino Rescue Project in July 2019 to make extra efforts to save Sumatran Rhinos. Interactions among AsRSG members have also contributed new ideas to secure the three species of Asian Rhinos in the wild.

Targets for the 2017-2020 quadrennium

Planning
(1) initiate preparation of Javan Rhino (Rhinoceros sondaicus) Conservation Plan;
(2) initiate preparation of Sumatran Rhino (Dicerorhinus sumatrensis) Conservation Plan;
(3) initiate preparation of Greater One-horned Rhino (Rhinoceros unicornis) Conservation Plan.

Policy: hold the 2nd Asian Rhino Range States Meeting.

Activities and results 2019

Planning

i. Collation of information needed for various chapters of Javan Rhino Conservation Plan in progress. The content of various chapters are being assigned and maps and other materials are being prepared for Javan Rhino distribution. (KSR #15)

ii. Collation of information needed for various chapters of Sumatran Rhino Conservation Plan in progress. Since Sumatran Rhino is currently found in Indonesia only, discussion with Ministry for Environment and Forestry is also on as the country itself is making an emergency action plan for Sumatran Rhino, because the species is currently in need of urgent attention. The contents of various chapters are being assigned and maps and other materials are being prepared for Sumatran Rhino distribution. (KSR #15)

iii. Collation of info needed for various chapters of Greater One Horned Rhino Conservation Plan in progress. The contents of various chapters are being assigned and maps and other materials are being prepared for Greater One Horned Rhino distribution in India and Nepal. (KSR #15)

Policy

i. The 2nd Asian Rhino Range States Meeting was attended by about 55 participants from five Asian Rhino range countries and also from US and Venezuela. In this 2nd Asian Rhino Range States Meeting, India launched its National Conservation Strategy for the Indian One Horned rhinoceros. The purpose of this meeting was: (1) facilitate information sharing and promote collaboration between range states in order to raise the level of political commitment to save the three species of Asian Rhino, (2) agree on specific priorities and measures to conserve the three Asian Rhino
species effectively. The government delegates from Bhutan, India, Indonesia, Malaysia, and Nepal agreed to the following strategic actions outlined below and signed the New Delhi Declaration on Asian Rhinos 2019 on 28th February 2019 at Ganga Auditorium, Ministry of Environment, Forests and Climate Change, New Delhi. The 12 agreed points are as follows: (1) collaborate to strengthen protection regimes, intelligence gathering, and real-time sharing of intelligence information on rhino crime and its horn trade to secure the rhino population within and between range countries; (2) initiate research on various habitat parameters, including invasive species threatening the suitable habitats of Asian rhinos and take appropriate steps to optimally manage the habitats; (3) explore possibilities of expanding rhino ranges within country or between rhino range countries for optimal population management; (4) strengthen transboundary collaboration among India, Nepal, and Bhutan for the greater One-horned Rhino conservation and protection; (5) identify connectivity and corridors across international boundaries and keep them functional, safe and secure for free movement of Asian rhinos and other wildlife; (6) increase the engagement of the local communities as stewards to secure the future of rhinos in range countries; (7) initiate proactive monitoring on potential adverse impacts of climate change on rhino health and their habitats in range countries; (8) undertake studies on rhino health issues and potential diseases and take necessary steps for management intervention; (9) regularly organize exposure visits for managers and frontline staffs of the rhino range countries and to document the best practices for wider dissemination; (10) collaborate and strengthen wildlife forensics for the purpose of investigation; (11) accelerate natural and conservation breeding of Critically Endangered Sumatran Rhino, including best use of all available individuals and technologies; (12) call to the attention of all countries that possible opening of international trade of rhino horn and other derivatives will have a severe detrimental impact on rhino populations in Asian rhino range countries. (KSR# 26, 27).

Acknowledgements

AsRSG offers its sincere sense of gratitude to the Ministry of Environment, Forests and Climate Change, and the Government of India for hosting 2nd Asian Rhino Range States Meeting at its auditorium in New Delhi, 26-28 February 2019. AsRSG is grateful to International Rhino Foundation, WWF-India and Aaranyak for supporting the 2nd Asian Rhino Range States Meeting, which was attended by government representatives from five Asian range countries - India, Bhutan, Nepal, Sabah-Malaysia and Indonesia.

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

| Plan | 4

Main KSRs addressed: 15, 26, 27

KSR: Key Species Result
Mission statement

The mission of the Asian Wild Cattle Specialist Group (AWCSG) is to promote the long-term conservation of the Asian wild cattle species and their habitats by means of information sharing, identification of conservation priorities and facilitation/delivery of these priority actions through collaborative conservation work.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we will have enhanced the partner network, planning and coordinated action for four wild cattle species. For the Tamaraw (Bubalus mindorensis), range-wide conservation actions will be defined, agreed amongst stakeholders, and being implemented, following a PHVA workshop in 2018. The One Plan approach for conserving Anoa (Bubalus depressicornis and B. quarlesi) and Banteng (Bos javanicus) in Indonesia will be implementing two site-based projects, while the ex situ status will have been improved with cooperative breeding efforts in Indonesian zoos. This programme (Action Indonesia Global Species Management Plans) will have built capacity of the national zoo association and set up cooperative breeding programmes for the first time that can be used as a model for other species. The most likely remaining locations of Saola (Pseudoryx nghetinhensis) will have been searched, and efforts conducted to capture individuals for a captive breeding programme.

Targets for the 2017-2020 quadrennium

Assess

Red List: complete Red List assessments for eight of nine species.
Research activities: (1) produce publications on Anoa and Babirusa (Babyrousa babirussa, B. celebensis, B. togeanensis) genetics, Tamaraw, Kouprey (Bos sauveli), and hunting in Sulawesi; (2) Tamaraw population monitoring and improved assessment; (3) Banteng monitoring in east Javan park; (4) Anoa and Babirusa monitoring in Sulawesi park; (5) Saola camera trapping study.

Plan

Planning: (1) hold first planning workshop for Banteng, Anoa and Babirusa Global Species Management Plans (GSMPs); (2) host the Saola working group biennial meeting; (3) participate in the Conservation Planning Specialist Group (CPSG) visioning workshop; (4) organise Sabah Banteng conservation planning workshop; (5) complete a GSMP master plan for Anoa, Banteng and Babirusa; (6) contribute to the European Association of Zoos and Aquaria (EAZA) Regional Collection Planning for wild cattle; (7) set up a programme to increase support for Tamaraw conservation.
Policy: sign memorandum of understanding (MOU) between the partners of Action Indonesia GSMPs for Banteng and Anoa, with Indonesian partners, SSC and the Wild Pig Specialist Group.

Act

Conservation actions: (1) construct Saola breeding centre in Viet Nam; (2) improve protection of Tamaraw population.
Network
Capacity building: (1) hold one training workshop for Indonesian zoo educators to set up network and test out materials; (2) hold a Tamaraw PHVA workshop and produce a report; (3) hold two animal husbandry training workshops for zoo keepers on Banteng, Anoa and Babirusa; (4) hold one animal husbandry training workshop for forest ranger staff on Anoa and Babirusa; (5) assess Indonesian zoo experts to plan future training.

Communicate
Communication: launch AWCSG newsletter.

Activities and results 2019

Assess
Research activities
i. Saola camera trapping survey results have been summarised in the Saola Working Group report for 2019. There has been some exciting evidence of rare species, such as Large-antlered Muntjac (Muntiacus vuquangensis) and Annamite Striped Rabbit ( Nesolagus timminsi), which is encouraging news. (KSR #27)

ii. An important publication on the population structure of the Anoa and Babirusa across their range was published. This shows priorities for conservation of these two flagship taxa for the Wallacea region. It received wide awareness through an article in the UK’s The Guardian newspaper. (KSR #32)

iii. A review of Tamaraw conservation status was published to share the status of the species. The results of this review showed a positive story for the Tamaraw of Mounts Iglit-Baco Natural Park, which is one of the few large mammal populations in Southeast Asia to be expanding over a 10-year period. There remain many challenges to overcome, which we hope will be addressed with the new Tamaraw Conservation and Management Action Plan. (KSR #32)

Plan

Policy
i. MOU approved and signed for a five-year extension for collaboration on the One Plan approach to conservation for Banteng and Anoa in Indonesia. This involves SSC, the Wild Pig Specialist Group and AWCSG, as well as Indonesian Zoo and Aquarium Association, Association of Zoos and Aquariums (AZA) and EAZA. This sets up a framework and remit for in situ as well as support for ex situ activities in Indonesia, which is key to the success of this partnership. (KSR #27)

Act
Conservation actions
i. Rangers are enhancing their skills to conduct more effective anti-poaching patrolling using the SMART system. (KSR #31)

Network

Acknowledgements
We would like to acknowledge the IUCN SSC Office: Jon Paul Rodriguez, Rachel Hoffmann, Kira Mileham, Nahomy De Andrade and Orlando Salamanca, for all their support to help set up this collaboration and continued support to grow and strengthen our network. We are very grateful to the supporters of the AWCSG, in particular Mark Pilgrim, Simon Dowell, Scott Wilson, Tim Rowlands, Charlotte Smith at Chester Zoo; Barney Long of Global Wildlife Conservation; and Jeff Holland of Center for Conservation of Tropical Ungulates. Also, thanks to all the active members of the AWCSG for their continuing hard work to conserve these species. In particular, the species coordinators, Bill Robichaud, Olivia Petre, Paul Buzzard, Penny Gardner, Simon Hedges, Rahul Kaul, Tom Gray and Emmanuel Schultz. We acknowledge the hard work of the Saola Working Group members in their many areas of work. We also appreciate the dedication that all members of the GSMP Committees have contributed throughout the last year, especially the conveners/co-conveners and new Working Group Leaders and all the institutions supporting the GSMPs. We are grateful to those from the Philippine Government, NGOs and other partners that have made huge progress to conserve Tamaraw in the last year.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5
Assess  3  ||||
Plan  1  ||
Act  1  ||
Network  1  ||
Main KSRs addressed: 15, 27, 31, 32

KSR: Key Species Result
Mission statement
To enhance the long-term conservation outlook for the marsupials and monotremes of Australia, Papua New Guinea and Indonesia.

Projected impact for the 2017-2020 quadrennium
Major focal areas in the 2017–20 period will be on increasing conservation efforts for marsupials and monotremes in Papua New Guinea and Indonesia; increasing the representation of stakeholders in those countries; completing conservation status assessments for the minority of species not covered by recent assessments; and seeking to catalyse research on Data Deficient species. Following the devastating wildfires in eastern and southern Australia in 2019–20, the group will also help progress recovery of fire-affected species and contribute to any consequent re-assessment of conservation status.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete conservation status assessment for all taxa not assessed within last 10 years; (2) contribute to conservation status re-assessment for species significantly affected by the 2019–20 Australian wildfires.

Network
Membership: (1) rebuild membership, especially to include more experts and other stakeholders for species from Papua New Guinea and Indonesia; (2) hold first face-to-face meeting with members and other interested individuals.

Synergy: review and re-establish internal structure.

Communicate
Communication: enhance communication within and beyond SSC.

Activities and results 2019
Assess
Red List
i. Substantial progress has been achieved completing conservation status assessments; accounts still to do are mostly complex or data poor. Nineteen species had Red List accounts published in 2019, bringing to more than 90% the number of species in the group (ca. 270) with accounts published in the last 5 years. The species without recent accounts are mostly recently described, have taxonomic challenges, or are data poor. (KSR #1)

Network
Membership
i. Membership increased substantially from 2019 to 2020. There are now 37 active members, six are from Papua New Guinea/Indonesia.

Synergy
i. The first ever meeting of the AMMSG was held at the Australian Mammal Society meeting in July 2019, with 50+ attendees.

Communicate
Communication
i. A volunteer has been recruited and is committed to building the website. Our Twitter account is established. (KSR #28)
Much of the response to the 2019-20 Australian wildfires focused on rescue of injured koalas and their heightened imperilment, and heroic effort saved many koalas as here. But the fires also caused even more substantial losses for many less charismatic species.

Photos: Melbourne Zoo, Zoos Victoria

Acknowledgements

Many experts contributed to Red List assessments in 2019.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 28
Resolutions addressed: WCC-2016-Res-016

KSR: Key Species Result

A singed Antechinus agilis captured in a burnt landscape near Canberra, Australia
Photo: Diana Fisher
Mission statement

(1) To contribute to the mission and goals of IUCN/SSC.
(2) To ensure the maintenance or recovery of populations of threatened bat populations.
(3) To ensure that other bat species remain at a favourable conservation status.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we envision that having effective Red List assessments in place, informed by current taxonomy, will underpin effective conservation planning for bat species globally. The Bat Specialist Group (BSG) anticipates a sustainable resolution to the human-bat conflict in Mauritius, and an end to Government culls of *Pteropus niger* (Greater Mascarene Flying Fox, also known as the Mauritius Fruit Bat). A conservation networking initiative in Oceania is intended to promote regional capacity and conservation of threatened island bat species. The North American Bat Conservation Alliance will be solidly in place and recognised by the three federal governments of Canada, the US and Mexico, as the entity to promote bat conservation on the continent. RELCOM, the Latin American Alliance, will have the network of important Areas for Bat Conservation (AICOMs) and Important Sites for Bat Conservation (SICOMs) articulated and integrated into a GIS platform upon which each country will enable investment in bat conservation priorities. Following the Convention on the Conservation of Migratory Species of Wild Animals (CMS) listing of four species of *Lasiusrus, the implementation of the associated requirements is a priority for the quadrennium; additional species are likely to be listed. A survey to monitor the presence of *Pseudogymnoascus destructans* will have, by the end of 2020, expanded to Mexico and research for treatment and recovery of bats affected by White Nose Syndrome will continue.

Targets for the 2017-2020 quadrennium

Assess
Red List: (1) complete assessment of Old and New World bats; (2) establish a global bat taxonomy database and review process. Research activities: compile all Important Areas for Bat Conservation (AICOMs) and Important Sites for Bat Conservation (SICOMs) in one GIS platform.

Plan
Capacity building: capacity building for disease management, surveys, important areas and sites for bat conservation, etc. Research activities: secure standardised protocols to monitor *Pseudogymnoascus destructans* (Pd) in North America.

Network
Synergy: (1) resolve human-bat conflict and secure stable populations of *Pteropus niger*; (2) strengthen interaction with wind energy companies for bat conservation; (3) develop a network of bat conservation researchers in Oceania; (4) create a network of networks around the world for bat conservation.

Communicate
Communication: (1) improve BSG communication with all its members; (2) produce a position statement on emergent diseases and bats.
Activities and results 2019

Assess

Red List
i. The assessments of Old and New World bats were completed by local and regional experts, with the majority coming from Asia. We are in the process of updating the maps. (KSR #1, 2)

ii. The database ‘Bats of the World: A Taxonomic and Geographic Database’ (https://www.batnames.org) was established and made publicly available in 2018. Work continued in 2019 to update species accounts within it and develop a review process. The Global Bat Taxonomy Working Group was established including expert taxonomists from around the world, and in 2019 a process for reviewing changes was developed. In 2020, a Slack workspace will be created for this purpose. (KSR #4)

Plan

Capacity building
i. The new disease research network WABNet (Western Asia Bat Research Network) includes several IUCN members. The second annual workshop was held in Amman, Jordan, in December 2019, and included extensive capacity building. (KSR #18)

ii. IUCN members are also part of the Bat One Health Research Network (BOHRN) and participated in a workshop in Thailand in August 2019. (KSR #18)

Research activities
i. The protocol for Canada and the US to monitor Pd in North America has been finalised in the context of the White Nose Syndrome Response Team (WNS Team). The WNS Team in Mexico, led by R. Medellin, is implementing parts of the protocol and the information on hibernating bats in Mexico has grown exponentially over the past three years. A review of bat hibernation in Mexico is ready to be submitted for publication. After three years of surveys in Mexico, all samples from Mexican caves have come back negative for Pd and there are no cases of mortality or the disease per se. All samples are processed at the US Geological Survey (USGS) National Wildlife Health Center by Dr Anne Ballman. (KSR #12)

Network

Synergy
i. Extensive discussions on strategy took place between Co-Chair Kingston and the Chair of the Human-Wildlife Conflict Task Force, Alex Zimmerman, at the Chairs’ Meeting. (KSR #29)

ii. The Third Workshop in the mitigation series, which focused on working with the media, was held in Mauritius in November 2019, led by Dr Ewan McDonald from Said Business School, Oxford University, in collaboration with the Mauritian Wildlife Foundation and Mauritian Government. Despite this, there was another (4th) cull in December 2019. The target number of individuals was 10,000. There was also a census by the National Parks and Conservation Service who estimated that the current population is over 106,000 individuals. There are concerns that this figure is an overestimate. (KSR #29)
Thomas’s Fruit-eating Bat, *Artibeus watsoni*, carrying a fig in Costa Rica
Photo: Angelica Menchaca

Vulnerable Banana Bat, *Munonycteris harrisoni*, Mexico
Photo: Rodrigo Medellín

Endemic Malagasy Trident Bat, *Triaenops menamena*, Madagascar
Photo: Rodrigo Medellín

Thomas’s Fruit-eating Bat, *Artibeus watsoni*, carrying a fig in Costa Rica
Photo: Angelica Menchaca
iii. Medellin was invited to be a member of the Energy Task Force of the Convention for Migratory Species (CMS). After his efforts, four species of Lasiurus were listed in the CMS Appendices via a proposal compiled by Medellin and E. Baerwald that the government of Peru submitted. This proposal was adopted by consensus. Meetings were held with Mexican wind energy companies, but in 2019 the Mexican government all but deactivated all sustainable energy initiatives. (KSR #29)

iv. Waldien coordinated with the Austral-asian Bat Society (ABS) leadership to develop a broader vision for the ABS to better meet their commitment to fully represent bat conservation research throughout Oceania. A special section and specific presentation on the needs and opportunities was proposed for their 2020 conference; the presentation was moved to their general assembly meeting as it provided a better forum for the meaningful discussions that are needed for lasting change. (KSR #29)

v. The Red List assessments have also been used to catalyse and engage people from across Oceania. ABS leadership assigned regional representation to their conservation officer (Dr Michael Pennay). (KSR #29)

vi. Representatives of most of the networks met at the International Bat Research Conference in Thailand in August 2019 and reaffirmed their commitment to a global network of networks. (KSR #29)

vii. We submitted to the US National Science Foundation’s Accelerating Research through International Network-to-Network Collaborations (AccelNet) programme for support in February 2019. The proposal was evaluated as competitive but was not funded. It was decided to revise and resubmit in 2020. (KSR #29)

Communicate

Communication

i. Our newsletter was disseminated (see https://www.iucnbsg.org/uploads/6/5/0/9/6509077/iucn_bsg_newsletter_2019.pdf). One-way interactions took place through distribution of National Geographic Society funding opportunities and similar, but bi-directional communication was not achieved globally. (KSR #28)

ii. Given the complexity and rapidly changing nature of emergent diseases, e.g. SARS, we are thinking through the best strategy and whether a ‘blanket’ statement is appropriate. Many members of the BSG, including the two Co-Chairs, are fully engaged and constantly active in this context, lecturing and giving interviews to a plethora of media around the world. (KSR #28)

Acknowledgements

Funding for the Mauritius Fruit Bat Research Strategy Workshop was generously received from Chester Zoo, Mauritius Wildlife Foundation, and Government of Mauritius. WABNet is supported by a grant to EcoHealth Alliance (PI Kevin Olival) from the US Defense Threat Reduction Agency (DTRA). Bats of the World: A Taxonomic and Geographic Database is supported by the American Museum of Natural History Taxonomic Mammalogy Fund. The AICOMs and SICOMs Regional Project is supported by CYTED and is conducted by all the Bat Conservation Programmes of the RELCOM network.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 2, 4, 12, 18, 28, 29, 43

Resolutions addressed: WCC-2016-Res-019

KSR: Key Species Result
Mission statement

The Bear Specialist Group (BSG) strives to promote the conservation of bears living in their natural habitats across their worldwide distribution. We do this by gaining, synthesising and disseminating information; aiding, promoting and supporting conservation initiatives; providing technical assistance and building capacity of those involved or interested in bear conservation; and becoming directly involved in issues that reduce threats and foster the conservation of any of the seven species of terrestrial bears.

Projected impact for the 2017-2020 quadrennium

We will enhance the conservation status of bears in this quadrennium by (1) improving global outreach via completion of our website; (2) implementing several portions of the Sun Bear (*Helarctos malayanus*) conservation action plan; (3) providing guidelines for more rigorous monitoring of Asian bears; and (4) conducting or facilitating several on-the-ground conservation projects.

Targets for the 2017-2020 quadrennium

Assess

Red List: assess Red List bear species at the population level.

Research activities: (1) finish bear farming situation analysis; (2) publish peer-reviewed paper on Asiatic Black Bear (*Ursus thibetanus*) range map.

Plan

Communication: issue position statement on bear collaring.

Planning: (1) set conservation priorities and develop a method for prioritisation of species planning; (2) finish and publish the Sun Bear (*Helarctos malayanus*) action plan; (3) finish and publish the Sloth Bear (*Melursus ursinus*) action plan.

Act

Conservation actions: (1) start implementing the Sun Bear action plan; (2) mitigate bear-human conflicts on the Tibetan Plateau.

Technical advice: (1) complete and publish the human-bear conflicts manual; (2) complete and publish monitoring protocols for Asian bears.

Network

Proposal development and funding: secure a longer-term and viable funding base.

Synergy: seek a Programme Officer.

Communicate

Communication: (1) build a new independent website; (2) maintain ongoing regular communication both internally and externally.

Activities and results 2019

Assess

Research activities

1. Bear bile situation analysis: we held two meetings in China in 2019 to outline and organise the papers stemming from this study. Drafts of some papers are completed. (KSR #43)
Plan
Communication
i. The position statement on bear collaring was completed and posted. (KSR #28)

Planning
i. We have discussed ideas on conservation priority-setting, and tried to interest some collaborators, but not much progress. (KSR #15)
ii. The Sun Bear action plan was finished in June 2019. (KSR #15)
iii. Preliminary work must be accomplished before the Sloth Bear action plan can be started; that work is being held up for a number of reasons. (KSR #15)

Act
Conservation actions
i. Some parts of the Sun Bear action plan have been funded and work has started. The BSG is helping to coordinate these, and led in one aspect (developing monitoring guidelines). (KSR #27)
ii. Mitigation of bear-human conflicts on the Tibetan Plateau is delayed by a change in personnel, and failure to obtain promised funding. (KSR #37)

Technical advice
i. The framework for the human-bear conflicts manual is now completed and published. We held a workshop to kick this off in November 2017, followed by a meeting of select participants (authors of sections) in September 2018. (KSR #37)
ii. We held a workshop on monitoring protocols for Asian bears in Taiwan in November 2019, with 25 invited participants. We have five papers outlined and authors chosen. (KSR #43)

Network
Proposal development and funding
i. An NGO in Taiwan offered to provide a portion of their proceeds to BSG. (KSR #19)

Synergy
i. Two BSG members indicated they would help to do some of the Programme Officer duties. (KSR #17)

Communicate
Communication
i. Technical details and lack of time have hindered progress to establish a new independent website. (KSR #28)
ii. We completed three newsletters and multiple emails to the group. (KSR #28)

Acknowledgements
We are immensely thankful to a new partnership with the Taiwan Black Bear Conservation Association, with whom we co-organised a workshop on Developing Population Monitoring Guidelines for Asian Bears. We thank the following organisations for support of this workshop: Forestry Bureau, Yushan National Park Headquarters, Taipei Zoo, Ministry of Interior/Construction and Planning Agency, E. SUN Bank, and Everest Textile Co., LTD. We are grateful to the Taipei Zoo for providing a delightful venue for the meeting, and Georny Liu and Vina Liu for their extraordinary logistical arrangements.

Summary of activities 2019
Components of Species Conservation Cycle: 5/5
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Main KSRs addressed: 15, 17, 19, 27, 28, 37, 43

KSR: Key Species Result
Mission statement

The Bison Specialist Group (BSG) is committed to the development of comprehensive and viable strategies and management actions to enhance conservation and ecological restoration of European Bison (Bison bonasus) and American Bison (Bison bison), including Plains Bison (Bison bison bison) and Wood Bison (Bison bison athabascae), as wildlife where feasible across their original range. The BSG operates under the authority of the Species Survival Commission of the International Union for Conservation of Nature to conduct comprehensive assessments, provide evidence-based advice and support, and communication and outreach activities in support of this mission.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, the American Bison Section of the BSG anticipates a substantial advance in the knowledge of the location and size of bison herds through a global bison census. The census will be critical to the understanding of the bison metapopulation across North America, as it will include all jurisdictions in all nations and management designs. This will be a crucial tool for recovering bison at local, national, and international levels.

The world population of European Bison has increased from ~3,000 in 2006 to ~8,400 in 2019. Approximately 1,700 are in captivity, 480 in semi-free living herds, and 6,240 as free-living wildlife, though there is concern about long-term sustainability because ~80% of all free-living herds include fewer than 150 mature individuals. There is a need to update the 2004 IUCN SSC BSG European Bison conservation action plan to address key issues such as metapopulation strategies, changing land use, new science on genetics and landscape ecology, climate change, disease and parasitology, and increasing social interest in restoration of large mammals across Europe.

Targets for the 2017-2020 quadrennium

Assess

Green List: produce a new Green List assessment.
Red List: produce an updated Red List assessment report.
Research activities: (1) produce a new global census of the Bison genus; (2) prepare guidelines for veterinarians about bison health protection.

Plan

Planning: (1) produce new long-term conservation action plans for the American Bison and the European Bison; (2) initiate a series of regional conservation guidelines/strategies.
Policy: advise decision makers regionally.

Communicate

Communication: (1) hold a BSG meeting; (2) create a library.
Scientific meetings: hold a yearly conference.
**Activities and results 2019**

**Assess**

**Green List**

i. An initial test Green List Assessment (GLA) was completed for the North American Northern Great Plains as part of the IUCN protocol testing project. This initial GLA provided sufficient information and confidence in the GLA protocol to initiate an MSc project by Mr. Luke Rogers at the University of Nebraska at Kearney (UNK), in partnership with the BSG and World Wildlife Fund, to conduct a GLA analysis for the American Bison in three ecoregions (Northern Great Plains, Boreal Forest, Southwest Grasslands). (KSR #11, 32)

**Red List**

i. The American Bison Red List Assessment Committee is developing a team to conduct an updated Red List assessment, including training and updated information collection. (KSR #2)

**Research activities**

i. Mr. Luke Rogers, MSc student at UNK, has initiated the online Global Bison Census (<https://bisonsurvey.com>) to be completed in late 2020, which will provide new detailed information on American Bison abundance, distribution, management, and jurisdiction; this will inform the GLA outlined above, and will be made available to the public. (KSR #32)

**Plan**

**Planning**

i. The BSG American Bison Section met in October 2019 and decided to develop a suite of regional bison status surveys and conservation strategies, instead of attempting a comprehensive continental conservation action plan. The regional strategies may then be aggregated into a continental framework. (KSR #15)

ii. The BSG European Bison Section is partnering with the World Wildlife Fund, Mammal Research Institute Polish Academy of Sciences, the German Federal Agency for Nature Conservation (BfN), and the IUCN SSC Conservation Planning Specialist Group to undertake conservation planning to produce an updated IUCN SSC BSG Conservation Action Plan that will serve as an innovative, efficient and effective milestone for its potential to empower new initiatives and result in better alignment of multinational conservation strategies and actions. A conservation planning meeting has been confirmed for April 2021 at the BfN International Conservation Academy, Vilm, Germany. (KSR #15)

**Policy**

i. The BSG American Bison Section formally participated in the US Department of the Interior Bison Conservation Initiative and co-authored a major government-wide bison population viability assessment. Additional formal presentations were given to the National Bison Association, Comisión Nacional de Áreas Naturales Protegidas, American Bison Society, Defenders of Wildlife, and InterTribal Buffalo Council. Overall, five meetings/presentations were made. (KSR #27)

**Communicate**

**Communication**

i. The BSG American Bison Section met formally in October 2019 at Santa Fe, New Mexico, US, in conjunction with the American Bison Society Biannual Meeting. The meeting included virtual online access/attendance. (KSR #28)

**Scientific meetings**

i. The BSG European Bison Section did not formally meet in 2019; only a short ad hoc informal meeting of a small group of interested individuals took place after the 2019 European Bison Friends Society conference. (KSR #28)

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**Acknowledgements**

The BSG American Bison Section met formally in October 2019 at Santa Fe, New Mexico, US, in conjunction with the American Bison Society Biannual Meeting. The meeting included virtual online access/attendance. (KSR #28)

**Summary of activities 2019**

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Main KSRs addressed: 2, 11, 15, 27, 28, 32

KSR: Key Species Result
Mission statement
Our mission is to promote the long-term conservation of all wild Canidae species throughout their ranges.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we aim to make advances in reducing the extinction risk of key threatened canid species. Our focus will be on species currently classified as Critically Endangered, Endangered, Vulnerable and Near Threatened. This aim will be achieved through the implementation of the following objectives: (1) to compile, synthesise and disseminate information on the conservation and status of all canid species across their range, with particular emphasis on species which are threatened or rare; (2) to provide and improve technical information and advice on all matters concerning wild canids, including their status in the wild, the threats they face and their conservation requirements, biology and natural history to all relevant bodies (range state government agencies; non-governmental organisations, including national and international organisations and potential funding bodies; inter-governmental organisations, e.g. IUCN, CITES; field projects concerned with canid conservation); (3) to promote and catalyse conservation activities benefitting wild canids, to be carried out by the above, prioritising and coordinating efforts of researchers and conservationists worldwide; (4) to help raise funding for canid research and conservation and undertake research directly when necessary or appropriate; (5) to improve management of the common and sometimes troublesome species; (6) to build capacity through the exchange of ideas, information, and technical expertise among the members of the Group.

Targets for the 2017-2020 quadrennium
Assess
Green List: complete Green List assessment for two canid species.
Red List: complete Red List reassessment of all canid species.
Research activities: (1) complete update of status of Grey Wolves (Canis lupus) in Europe; (2) conduct survey of Kit Fox (Vulpes macrotis) and Swift Fox (Vulpes velox) research and conservation efforts; (3) resolve systematic ambiguity surrounding old ‘Canis lupus’ taxa; (4) monitor the status of the Darwin’s Fox (Lycalopex fulvipes) in two protected areas of southern Chile; (5) generate and maintain information on Dhole (Cuon alpinus) distribution and identify sub-populations and connectivity to ensure viable populations.

Plan
Planning: (1) more effective engagement within the Maned Wolf Working Group through developing collaborative actions; (2) implement regional strategies and support new national action plans under the Range Wide Conservation Program for Cheetah and African Wild Dogs; (3) develop national conservation action plan for Darwin’s Fox (Lycalopex fulvipes); (4) contribute to the new document on guidance to species conservation of the European Commission; (5) organise Dhole Population and Habitat Viability Assessment (PHVA).
**Act**

Conservation actions: (1) advance recovery of Red Wolf (*Canis rufus*) under the Endangered Species Act; (2) protect Ethiopian Wolves (*Canis simensis*) from disease through an integrated disease management strategy, with One Health benefits; (3) rescue Ethiopian Wolves through conservation translocations.

**Network**

Communication: establish Amazonian Canids listserv.

Membership: (1) develop Canid Specialist Group (CSG) membership and invigorate Working Groups; (2) address succession plan for the CSG.


**Communicate**

Communication: (1) develop context-specific methods for estimating Dhole abundance, demographic and ecological requirements; (2) compile Dhole publications and post on the Dhole Conservation Fund website; (3) develop range-wide health canid monitoring capacity and response; (4) evaluate human-Dhole conflict and relevant mitigation methods for use across the Dhole distribution range; (5) develop Amazonian Canids Section in canids.org.

Scientific meetings: (1) co-host the 2nd International Jackal Symposium, Marathon Bay, Greece; (2) endorse and contribute to the 6th Arctic Fox Conference in Svalbard; (3) organise the Annual Island Fox Group Meeting.
Activities and results 2019

Assess

Red List

i. All canid species assessments are currently completed (and less than 10 years old). (KSR #1)

Research activities

i. A meeting was organised by CSG and CIBIO (Research Centre in Biodiversity and Genetic Resources, Porto University) to resolve the systematic ambiguity surrounding the old ‘Canis lupus’ taxa, in Porto, Portugal. It was attended by 14 experts, most of them CSG members (see https://www.canids.org/CBC/Old_World_Canis_Taxonomy_Workshop.pdf). (KSR #32)

Plan

Planning

i. Two countries (Zambia and Zimbabwe) secured official endorsement for revised and updated National Conservation Action Plans (NCAPs) for Cheetah and African Wild Dogs. One country (Senegal) developed plans in 2019 for conducting a workshop to develop an NCAP for African Wild Dogs (Lycaon pictus) in 2020; Terms of Reference are being developed. One region (eastern Africa) secured funding (from SAFE: Saving Animals From Extinction) for an international workshop in 2020 to review the regional conservation strategy for Cheetah and African Wild Dogs. Three countries with resident African Wild Dog populations (Ethiopia, South Sudan, and Chad) were added to the 11 countries engaging in the Range Wide Conservation Program for Cheetah and African Wild Dog (RWCP) National Cheetah/Carnivore Coordina-
tors (NCCs) programme to promote implementation of NCAPs for Cheetah and African Wild Dogs. Each NCC has either planned or begun to implement their own small-scale projects, at least one in each country, towards the implementation of their NCAPs. Ten countries with resident African Wild Dog populations received training from the RWCP and either planned or initiated small projects in 2019 towards implementing NCAPs. NCC training was carried out for all NCC countries (brackets are countries without resident African Wild Dogs) and small NCC projects either planned or implemented in: (Algeria), Angola, (Benin), Botswana, (Burkina Faso), Chad, Ethiopia, Kenya, Namibia, (Niger), South Sudan, Tanzania, Zambia, Zimbabwe. (KSR #15, 18, 20)

ii. Meetings were held in Bruxelles, in 2019, to contribute to the new document on guidance to species conservation of the European Commission. (KSR #15, 26)

iii. The February 2019 Population and Habitat Viability Assessment (PHVA) workshop brought together 30 experts from nine range countries, to produce a plan for the Dhole for its entire range. Outcomes include: (1) species distribution model, (2) population viability model, and (3) identifying conservation priorities and actions specific to each range country. The report and action plan will be shared with stakeholders to help guide management policies for Dhole in each country. Additionally, a network of relevant professionals and institutions was established, leading to collaborative research, synergistic knowledge-sharing and communication/outreach activities. See https://www.canids.org/resources/Dhole_PHVA_Report_2020.pdf. (KSR #15)

Act
Conservation actions
i. Protection of Ethiopian Wolves from disease through an integrated disease management strategy: Refer to Ethiopian Wolf Conservation Programme (EWCP) Annual Reports (available at https://www.ethiopianwolf.org). (KSR #23, 32)

ii. Fundraising efforts to rescue Ethiopian Wolves through conservation translocations: we secured some seed money for phase I. (KSR #24)

Network
Membership
i. Working Groups have been reinvigorated, a new Dingo Working Group was established, and membership reviewed, with 15 new members recruited.

Communicate
Scientific meetings
i. The Annual Island Fox Group Meeting has been conducted annually since 2004 and will be continued for the foreseeable future. (KSR #28)

Acknowledgements
The CSG is hosted by the WildCRU at the University of Oxford. The Chair is kindly sponsored by the Born Free Foundation, who funds his Bill Travers Chair for Conservation Biology at Lady Margaret Hall, University of Oxford. We are grateful to the many organisations and charities, including Born Free Foundation, Fondation Segre, IUCN SOS, Wildlife Conservation Network, Wildlife Conservation Society, and many more, that have supported key field activities to protect wild canids. We are grateful for the many colleagues that assisted in Red List reassessment and attended the Dhole and canid taxonomy meetings.
Mission statement
To promote conservation of wild Caprinae and their environments, in collaboration with IUCN itself, international and local agencies, NGOs and anybody who struggles for the same objective of participating, endorsing and helping in any initiative that helps to promote the status and habitat of these species.

Projected impact for the 2017-2020 quadrennium
We plan to increase connections between stakeholders and specialists on Caprinae conservation. We plan to inform both Caprinae Specialist Group (CSG) members and other interested people about the results of relevant research, management and conservation initiatives through our revived newsletter Caprinae News. One topic several of us have been working on is the consequences of current climatic changes on the distribution and numbers of mountain-dwelling herbivores, especially wild sheep, goats and goat-ante-lopes. Furthermore, several of us have been working on the evolutionary effects of trophy hunting on the hunted populations and several papers on this very important, controversial issue will be published. New and ongoing conservation initiatives will be furthered. The 7th World Mountain Ungulate Conference will be organised in Bozeman (Montana, US) in September 2019 and the Caprinae Specialist Group will cooperate in its organisation.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) advise and support administrations, NGOs and other bodies on Caprinae conservation initiatives; (2) conduct Caprinae reassessment.
Research activities: publish a paper on the effects of trophy hunting banning in the journal Science.

Network
Documents review: advise and support administrations, NGOs and other bodies on Caprinae conservation initiatives.
Synergy: advise and support administrations, NGOs and other bodies on Caprinae conservation initiatives.
Technical advice: advise and support administrations, NGOs and other bodies on Caprinae conservation initiatives.

Communicate
Communication: (1) edition of Caprinae News, one issue per year; (2) produce communications using public media.
Scientific meetings: organise the 7th World Mountain Ungulate Conference in Bozeman, Montana, US.
Activities and results 2019

Assess

Red List

i. The reassessment of 29 Caprinae species was initiated and coordinated by the CSG. These included new taxonomic concepts for two Ovis (split), one Capricornis (merger) and Naemorhedus species (merger). By the end of 2019, assessors had been identified for all species. The work will continue in 2020 and by March the reassessments for 20 species should be submitted. (KSR #1) 07483 114587

Research activities


Network

Technical advice

i. Several letters were written to national and international bodies, including national CITES authorities and the Convention on the Conservation of Migratory Species of Wild Animals (CMS) Secretariat. (KSR #27)

Communicate

Communication


Scientific meetings

i. We organised and participated in the 7th World Mountain Ungulate Conference, Bozeman, Montana. (KSR #28)

Acknowledgements

We acknowledge the tremendous amount of work done by the lead assessors of reassessments submitted by March 2020 and their co-authors. We are also grateful for the ongoing work by assessors who are still in the process of finalising reassessments for submission during the next round. We further recognise the hard work of all assessors, co-authors and contributors, who show immense dedication despite the difficulties of locating and gathering data on often poorly-known species.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 27, 28, 32, 34, 37

KSR: Key Species Result
Mission statement

Cat Manifesto (www.catsg.org/index.php?id=44).

Projected impact for the 2017-2020 quadrennium

By 2020, we will have implemented the Assess-Plan-Act (APA) approach for additional cat species. We envision improving the status assessments and launching new conservation planning processes. These conservation initiatives will be combined with communicational and educational programmes for people and institutions living with these species.

Targets for the 2017-2020 quadrennium

Assess

Capacity building: attend and facilitate a workshop to develop recommendations for the conservation of the Persian Leopard (*Panthera pardus tulliana*) in July 2020.

Documents review: initiate the development of the Cat Specialist Group’s Small Cat Agenda that includes three over-arching themes, which are related to each other and serve the overall goal to advance the conservation of small cats and their living spaces. This is reached through improving our knowledge on small cats, raising awareness, building up a ‘small cat community’, and initiating specific conservation programmes wherever needed and possible.


Plan

Planning: (1) revise the National Action Plan for Asiatic Cheetah (*Acinonyx jubatus venaticus*) in Iran; (2) participate in Javan Leopard (*Panthera pardus melas*) workshop; (3) facilitate lynx workshop; (4) develop conservation strategy for the Pallas’s Cat (*Otocolobus manul*); (5) planning for the Leopard in Africa and Southeast Asia; (6) updating and coordination for the Lion (*Panthera leo*) Conservation Strategy; (7) facilitate a workshop to develop a conservation strategy for the Jaguar (*Panthera onca*) in a number of neglected countries in collaboration with San Diego Zoo Global.

Scientific meetings: attend workshop on non-detriment findings in regard to trophy hunting in Sevilla, Spain.

Synergy: attend European Association of Zoos and Aquaria (EAZA) and Association of Zoos and Aquariums (AZA) Felid Taxon Advisory Group (TAG) meetings.

Technical advice: (1) attend Convention on Migratory Species (CMS) Central Asian Mammals Initiative (CAMI) midterm workshop; (2) attend CITES Animal Committee.

Research activities: develop camera trapping database which feeds into the Global Mammal Assessment and the IUCN SIS database.

Technical advice: (1) develop Cat Monitoring Guidelines; (2) conservation of the Wild Cat (*Felis silvestris*) in Scotland: review of the conservation status and assessment of conservation activities.
Steering Committee meetings and Conference of the Parties (CoP); (3) attend first range state meeting of the joint CITES-CMS African Carnivores Initiative (ACI); (4) organise a one-day workshop with CITES and CMS Secretariats to discuss cat items on their agenda and how we can support them, and to have an initial discussion of the Programme of Work for the joint African Carnivores Initiative; (5) finalise the Roadmap for the Conservation of the Leopard in Africa on a mandate from CMS under the African Carnivores Initiative; (6) submit the final version of the Guidelines for the Conservation of Lions in Africa to the CITES Secretariat in time for CoP18.

Act

Conservation actions: (1) support implementation of the revised strategy for Leopard in the Caucasus ecoregion; (2) support implementation of the revised National Action Plan for Asiatic Cheetah in Iran.

Network

Communication: (1) maintain the Digital Cat Library; (2) attend the SSC Leaders’ Meeting in Abu Dhabi and contribute to various sessions. Policy: attend CITES Animal Committee, Steering Committee meetings and CoP.

Technical advice: organise a meeting with Lion specialists and the appointed Lion database manager to discuss the Lion database and the content of the Guidelines for the Conservation of Lions in Africa.

Synergy: attend the World Conservation Congress in Marseille in June 2020 and participate in a number of sessions during the forum.

Communicate

Communication: (1) World Wildlife Day celebration: Cat theme; (2) develop a Cat News issue on the Status and Conservation Needs for Pallas’s Cat; (3) develop a Cat News issue on the Status and Conservation Needs for Eurasian Lynx (Lynx lynx) in Continental Europe; (4) scale up communication and fundraising; (5) produce two regular Cat News issues per year.

Policy: attend the CMS CoP13 in India and participate in a side event on the African Carnivores Initiative.

Scientific meetings: (1) participate in the Suicide or Survival (SOS) Conference in The Hague representing the IUCN SSC APA approach; (2) attend the 2nd International Small Wild Cat Conservation Summit; (3) attend meeting of the African Lion Working Group; (4) attend the II International Symposium on the Ecology and Conservation of the Jaguar and other Neotropical Cats in Foz do Iguaçu, Brazil in August 2020 as a member of the scientific committee and key note speaker; (5) attend international conference on Snow Leopard monitoring and conservation and organise a side event for the Pallas’s Cat in May 2020.

Activities and results 2019

Assess

Documents review

I. Draft assessments of the knowledge base and the quality of the Red List assessment for eight species: Andean Cat (Leopardus jacobita), African Golden Cat (Caracal aurata), European Wildcat (Felis silvestris), Jungle Cat (Felis chaus), Rusty-spotted Cat (Prionailurus rubiginosus), Flat-headed Cat (Prionailurus planiceps), Pallas’s Cat, and Borneo Bay Cat (Catopuma badia). (KSR #15)

Red List

I. Assessment for Indochinese Leopard (Panthera pardus delacouri) completed and uploaded; assessment for Sri Lankan Leopard (P. p. kotiya) completed and submitted. Because the Wild Cat is now two species, we initiated the assessment of both species, Felis silvestris and Felis lybica. We also initiated the reassessment of Pallas’s Cat, Chinese Mountain Cat, Indian Mammals

Vulnerable Leopard, Panthera pardus
Photo: P. Meier
Leopard (P. p. fusca), Arabian Leopard (P. p. nimr) and Cheetah (Acinonyx jubatus). (KSR #1)

Technical advice
i. Initial discussions to develop cat monitoring guidelines started in 2019; the first expert workshop for Lions will be in 2020. (KSR #18)

Plan
Planning
i. Planning and fundraising phase for the Leopard started for southern Africa. (KSR #15)

ii. We developed the Guidelines for the Conservation of Lions in Africa, delivered to CITES in English and French, together with more than 50 authors from the wider Cat Specialist Group network. (KSR #15)

iii. We facilitated a workshop to develop a regional conservation strategy for the Jaguar in South America in collaboration with San Diego Zoo Global. The strategy together with a status update and a number of topical chapters will be published as a Special Issue of Cat News in 2020. (KSR #15)

iv. Conservation strategy for the Pallas’s Cat published as part of Cat News Special Issue 13 in spring 2019. (KSR #15)

Technical advice
i. A workshop took place in October 2019 together with CITES and CMS Secretariats to discuss cat items on their agenda and how we can support them, and to have an initial discussion of the Programme of Work for the joint African Carnivores Initiative. We have also invited the SOS African Wildlife Initiative to attend. (KSR #26)
ii. We revised the first draft of the Roadmap for the Conservation of the Leopard in Africa based on the comments from the Range States and submitted it to CMS Secretariat in September 2019, in English and French. It will be discussed at CMS CoP13 and the CITES Animals Committee meeting in 2020. (KSR #15)

iii. We have revised the Guidelines for the Conservation of Lions in Africa based on input from the Range States and submitted the revised version in English and French to the CITES Secretariat in time for CoP18. It was also submitted as an Information Document for CMS CoP13. (KSR #26)

Network

i. We have uploaded 630 papers to the Digital Cat Library, which contained at the end of 2019 a total of 12,749 cat conservation relevant publications.

ii. Urs gave a talk under 1.3 ‘Species Strategic Plan, IUCN Programme 2021–2024, SSC Data and experiences delivering assess, plan, policy, and action’ on our APA approach. Christine was part of the Facilitator Team in 4.4.b ‘How to boost SSC engagement on conservation action’ and gave an interview to HHMI Tangled Bank Studios and Part2 Pictures. (KSR #29)

Policy

i. We attended CITES CoP18 in Geneva, in August 2019. There were six cat relevant items on the agenda: Cheetah, Leopard, Lion, Jaguar, Asian big cats and African Carnivores Initiative (ACI). We participated in a side event on the ACI with a talk about the status of the four species included in the initiative. (KSR #26)

Communicate

Communication

i. We published Cat News Special Issue 13 in Spring 2019. (KSR #28)

ii. A symposium took place in June 2019, with 50 lynx experts from continental Europe participating. The recommendations have been presented to the Standing Committee of the Berne Convention in December 2019. The Cat News Special Issue on the Status and Conservation Needs for Eurasian Lynx Lynx lynx in Continental Europe is under way and will be published in 2020. (KSR #28)

iii. We produced two regular Cat News issues (CN69 and CN70) with 35 peer reviewed papers. (KSR #28)

Scientific meetings

i. We attended both the Kenya Wildlife Service Carnivore Symposium in Nairobi and the African Lion Working Group (ALWG) meeting in Mpala. We signed a memorandum of understanding (MoU) with the ALWG. (KSR #28)

Acknowledgements

Working very closely with the Cat Specialist Group Co-Chairs were Manuela von Arx (Digital Cat Library, Balkan Lynx Recovery Programme), Tabea Lanz (Assistant to the Chair, website, Red List Assessments), Roland Bürki (support to the Chair), Anna Huber (book keeping): a great thank you to all of them. We would like to thank the many dedicated people who helped develop and run the various projects: Keith Richmond, Brian Bertram, Juan Repucci and Maximilian Allen (associate editors Cat News). Alex Sliwa, Patrick Meier and Sebastian Kennerknecht have generously made available their superb cat pictures for Cat Specialist Group purposes. Our projects would not be possible without financial support from many committed institutions and private persons. We are very grateful for the support of the Friends of the Cat Group, MAVA Foundation, Zoo Leipzig, Fondation Segré, Taiwan Council of Agriculture’s Forestry Bureau, AZA Felid TAG, HIT Stiftung, The New Mexico Biopark Society, IUCN SSC Internal Grant, Environment Agency – Abu Dhabi, The Wild Cat Conservation Foundation, Council of Europe, CMS Convention on Migratory Species, Stämpfli AG, and especially Patrick Meier and Peter Stämpfli.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 15, 18, 26, 28, 29

KSR: Key Species Result
Mission statement
The Cetacean Specialist Group (CSG) promotes and facilitates the conservation of cetaceans worldwide. It functions as a catalyst, clearing house, and facilitator for cetacean-related research and conservation action. Our guiding premise is that conservation ultimately depends upon good science, and the group’s credibility and value are based on maintaining high standards of scientific rigour. The advice we provide relates mainly to the status of populations, abundance, trends, the effects of current or potential threats, and the efficacy of mitigation. Our emphasis is on the recovery of endangered species and populations, but we also recognise the importance of maintaining the full diversity of the Cetacea, which includes about 90 species and many populations.

Projected impact for the 2017-2020 quadrennium

Assess
Red List: (1) complete assessments and reassessments of all baleen whale species and selected subspecies and subpopulations; (2) complete assessments and reassessments of all toothed cetacean species and selected subspecies and subpopulations.

Plan
Planning: (1) co-organise and co-convene a workshop for marine mammal experts regarding a One Plan approach for the conservation of small cetaceans and in partnership with ex situ Options for Cetacean Conservation (ESOCC); (2) increase engagement with the Conservation Planning Specialist Group to ramp up conservation planning for cetacean species.

Policy: (1) establish link with the Indian Ocean Tuna Commission (Ninth Session, co-led by WWF-UAE); (2) maintain ongoing links with the Indian Ocean Tuna Commission; (3) help to prevent extinction of the Vaquita (Phocoena sinus); (4) maintain ongoing involvement in the work of the International Whaling Commission’s Scientific and Conservation Committees; (5) serve on an independent expert panel to review New Zealand’s Threat Management Plan for the two endemic subspecies of Hector’s Dolphin, Cephalorhynchus hectori hectori (Endangered) and C. h. maui (Critically Endangered); (6) provide support for relevant IUCN World Conservation
Congress (WCC) Motions; (7) advise the Food and Agriculture Organization (FAO) on ways to reduce/mitigate cetacean bycatch in fisheries.

**Act**

Conservation actions: (1) provide technical support for the IUCN Marine Mammal Protected Areas Task Force (https://www.marinemammalhabitat.org/); (2) launch and maintain an initiative to improve the conservation status of the Critically Endangered Atlantic Humpback Dolphin (*Sousa teuszii*) in West Africa.

Policy: maintain ongoing involvement in work of the Society for Marine Mammalogy’s Conservation Committees.

Technical advice: (1) continue involvement in the IUCN Western Gray Whale Advisory Panel (see https://www.iucn.org/western-gray-whale-advisory-panel); (2) assist efforts to prevent extinction of the Taiwanese Humpback Dolphin (*Sousa chinensis taiwanensis*); (3) assist efforts (mainly by WWF-Cambodia) to prevent extirpation of Mekong River Irrawaddy Dolphins (*Orcaella brevirostris*; see iucn-csg.org/index.php/mekong-dolphins/); (4) provide support to South Korean conservationists to reduce massive bycatch of Endangered Narrow-ridged Finless Porpoises (*Neophocaena asiagonialis*); (5) collaborate with the Convention on Migratory Species to advance Concerted Actions for threatened cetaceans.

**Network**

Capacity building: increase engagement with the Conservation Planning Specialist Group to ramp up conservation planning for cetacean species.

Membership: increase CSG membership in South Asia and Africa.

Synergy: (1) help to expand and consolidate the Arabian Sea Whale Network (see iucn-csg.org/index.php/csg-special-projects/arabian-sea-humpback-whales/, also https://arabiansea-
Sousa chinensis
catalogue.

Activities and results 2019
Assess
Red List
i. In addition to the published assessments, a number of additional assessments were completed and submitted to the Red List in time for publication in 2019 but were not published. Also, work has continued steadily to complete assessments of the remaining taxa that need updating. Nine new species assessments, three new subspecies assessments, and one new subpopulation assessment were published; we made three website postings. (KSR #1, 2)

Plan
Planning
i. We co-organised a workshop for marine mammal experts regarding a One Plan approach for the conservation of small cetaceans. We are drafting and editing an ESQCC report for publication as an SSC Occasional Paper and working on report production. (KSR #15)

ii. CSG organised, chaired and co-sponsored two workshops: one in October in Wuhan, China, on Yangtze Finless Porpoises (Neophocaena asiaeorientalis asiaeorientalis), and one in November in San Clemente del Tuyú, Argentina. We worked on report production for both and gave a presentation at an Association of Zoos and Aquariums (AZA) conference in New Orleans. (KSR #15, 17, 20, 21, 22, 27, 29)

Policy
i. We participated in the International Whaling Commission’s Scientific and Conservation Committees. All meetings were attended in May by many CSG members, including a workshop on bycatch in the West Indian Ocean, annual meetings of both committees and associated workshops. (KSR #26, 27)

ii. A workshop under IWC sponsorship in May led to a submission to the Indian Ocean Tuna Commission’s Working Party on Ecosys - tems and Bycatch in September; several CSG members were heavily engaged in the IWC bycatch initiative. (KSR #26)

iii. Preventing the extinction of the Vaquita: A Recovery Team meeting was held in La Jolla in March; the Upper Gulf World Heritage Site (Islands and Protected Areas of the Gulf of California) was listed on the List of World Heritage in Danger due mainly to Vaquita endangerment (https://iucn-csg.org/northern-gulf-of-california-world-heritage-site-listed-as-in-danger/). One meeting of the Recovery Team was held, and we supported the World Heritage in Danger listing for the protected area. (KSR #26, 27, 43)

iv. Minton assisted development of several WCC Motions; Reeves helped with Motion 110 – Safeguarding the Endangered narrow-ridged finless porpoise (Neophocaena asiaeorientalis) in the Yellow Sea, and served as Facilitator for Motion 110 and Motion 024 – Restoring a peaceful and quiet ocean (noise mitigation). See "https://iucn-csg.org/iucn-world-conservation-congress-motions-relevant-to-cetacean-conservation/". (KSR #26)


Act
Conservation actions
i. Technical support was provided to the IUCN Marine Mammal Protected Areas Task Force (https://www.marinemammalhabitat.org/ immas/). A workshop was held in March in Oman. Two workshops were held to document, map and designate Marine Mammal Protected Areas, followed by peer review provided by CSG. (KSR #26, 27, 43)

ii. Initiative to improve the conservation status of the Critically Endangered Atlantic Humpback Dolphin in West Africa: A meeting was organised by Tim Collins (CSG Africa Coordinator), with follow-up email correspondence led by Collins. One informal meeting was held (at the World Marine Mammal Science Conference in Barcelona in December 2019), with initial communications among the working group. (KSR #26, 27, 43)

Policy
i. We maintain involvement in the work of the Society for Marine Mammalogy. Letters from the Society are intended to influence government decision making (usually). (KSR #26)

Technical advice
i. We continued developing recommendations for oil companies operating on the Sakhalin Shelf, as well as engaging with government

Endangered South Asian River Dolphin, Platanista gangetica, Nepal
Photo: Grant Abel
bodies at Federal and Oblast level in Russia (https://www.iucn.org/western-gray-whale-advisory-panel). One Panel meeting took place, along with four task force meetings. (KSR #26, 27, 28, 43)

ii. An international workshop was held in London, Ontario, co-organised and led by CSG members; we produced a recovery plan for the Taiwanese Humpback Dolphin population that was presented to Chinese authorities (who were also represented at the workshop) and windfarm developers (https://www.iucn.org/critically-endangered-taiwanese-white-dolphin-international-collaboration-for-recovery-plan/). We provided advice on negotiations in Taiwan. Some coordination took place with the IUCN Business and Biodiversity Programme. One workshop was held, and one co-authored publication produced (in Trends in Ecology & Evolution). (KSR #26, 27, 43)

iii. Extensive support was provided in advising WWF-Korea to reduce massive bycatch of Endangered Narrow-ridged Finless Porpoises; Motion 110 – Safeguarding the Endangered narrow-ridged finless porpoise (Neophocaena asiaeorientalis) in the Yellow Sea, was proposed for the IUCN World Conservation Congress. (KSR #12, 26, 27, 37)

iv. Extensive support was provided to the Convention on Migratory Species by numerous CSG members; see https://iucn-csg.org/cms-scientific-council-meeting-and-outcomes-relevant-to-cetacean-conservation. Planning and discussions were held in 2019 in anticipation of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS CoP) in 2020; a website article was produced. (KSR #18, 21, 26, 27, 29)

Network
Membership
i. New members were recruited from Madagascar, La Reunion, South Africa, Pakistan, Oman, and other countries. We added 11 new members in 2019, of which seven live and/or work in Africa or South Asia.

Synergy
i. Support was provided to the Arabian Sea Whale Network. A fluke photo data platform was launched (for northern Indian Ocean Humpback Whales, Megaptera novaeangliae), and we provided advice to a United Nations Development Programme project with Seychelles and Mauritius to support the development of a marine spatial planning framework. One data platform launched. (KSR #29)

ii. We provided feedback to the Sustainable Use and Livelihoods Specialist Group on their guidelines for exploitation of threatened species and to the Freshwater Conservation Committee on networking. We also advised the Global Species Programme on, e.g., Japanese resumption of commercial whaling (January 2019). (KSR #29)

Communicate
Communication
i. Communication and outreach on all aspects of Vaquita conservation efforts: We published articles covering net-removal efforts during Totoaba (Totoaba macdonaldi) season, finding of dead Vaquitas, fieldwork results, etc. Six articles were posted on the CSG website. (KSR #28)

Policy
i. WWF’s Global River Dolphin Strategy: We participated in a workshop led by WWF (and CSG member Khan), as well as formal review of a draft document by Reeves, Braulik and Smith. The resultant strategy was finalized and publicly released by WWF in early 2019. (KSR #26, 28)

Scientific meetings
i. The 2019 Biennial Conference of the Society for Marine Mammalogy was organised in concert with the European Cetacean Society and called the World Marine Mammal Conference. Many CSG members were in attendance. (KSR #28)

ii. We presented a poster report in Abu Dhabi. Selected leaders were in attendance – Notarbartolo di Sciara, Hoyt, Taylor, Minton. (KSR #28)

Acknowledgements
YAQU PACHA, Zoo Nuremberg and Association Friends of the Zoo Nuremberg for sponsoring the Franciscana workshop in Argentina, and Institute of Hydrobiology (Wuhan), WWF (China), City of Nuremberg and an anonymous private donor for sponsoring the Yangtze Finless Porpoise workshop in China; the Marine Mammal Center (Sausalito, California) for website support and administering donations.

Summary of activities 2019

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Main KSRs addressed: 1, 2, 12, 15, 17, 18, 20, 21, 22, 26, 27, 28, 29, 37, 43

Resolutions addressed: WCC-2016-Res-017; WCC-2016-Res-067

KSR: Key Species Result
Mission statement
The mission of the Deer Specialist Group (DSG) is to contribute to biodiversity conservation through improvement of the welfare and sustainability of deer populations around the world. Our challenge is to find conservation alternatives to mitigate conflicts and to enable rare and threatened species to survive.

Projected impact for the 2017-2020 quadrennium
We aim to explore new collaborations to evaluate possible monitoring methodologies to survey the deer species of the world. We will be seeking to share experiences and survey methodologies and how to create a database. We will be focused on promoting capacity building of new field deer biologists to obtain biological data to update the species information and advise policy makers on critical species and ecosystems, as well as problematic overabundant populations, and generate appropriate management guidelines.

Targets for the 2017-2020 quadrennium

Assess
Red List: complete reassessment of 71 deer species (20% increase in knowledge of species). Research activities: conduct genetic analysis of widespread species (20% of deer species analysed).

Plan

Act
Conservation actions: contribute to the West Visayas Conservation Planning Workshop.

Network
Capacity building: hold three workshops to train field biologists to collect data on deer species and to provide capacity building to the Estación Fauna Cría Autóctona (EFCA) personnel. We plan to offer two workshops in 2018 and one in 2019.

Communicate
Communication: publish an annual newsletter.

Activities and results 2019

Assess
Red List: complete reassessment of 71 deer species (20% increase in knowledge of species). Research activities: conduct genetic analysis of widespread species (20% of deer species analysed).

Plan

Act
Conservation actions: contribute to the West Visayas Conservation Planning Workshop.

Network
Capacity building: hold three workshops to train field biologists to collect data on deer species and to provide capacity building to the Estación Fauna Cría Autóctona (EFCA) personnel. We plan to offer two workshops in 2018 and one in 2019.

Communicate
Communication: publish an annual newsletter.

Activities and results 2019

Assess
Red List: complete reassessment of 71 deer species (20% increase in knowledge of species). Research activities: conduct genetic analysis of widespread species (20% of deer species analysed).

Plan

Act
Conservation actions: contribute to the West Visayas Conservation Planning Workshop.

Network
Capacity building: hold three workshops to train field biologists to collect data on deer species and to provide capacity building to the Estación Fauna Cría Autóctona (EFCA) personnel. We plan to offer two workshops in 2018 and one in 2019.

Communicate
Communication: publish an annual newsletter.

Activities and results 2019

Assess
Red List: complete reassessment of 71 deer species (20% increase in knowledge of species). Research activities: conduct genetic analysis of widespread species (20% of deer species analysed).

Plan
Plan

Planning

i. The EAZA RCP process will in essence consist of two parts: (1) a process leading to a decision as to which species will be managed in an EAZA ex situ Programme, and with which roles; (2) the completion of EAZA ex situ Programme application forms, because all existing, as well as any new, ex situ programmes will have to be converted into a new style EAZA ex situ Programme set up. (KSR #25)

Act

Conservation actions

i. The Talarak Foundation, from Negros Island in the Philippines, had started the first exploratory releases of Visayan Spotted Deer (*Rusa alfredi*) following a workshop that was held earlier in the year and which Noam Werner attended. The workshop was aimed at planning future steps for five West Visayan endemic species. (KSR #24)

Network

Capacity building

i. The Dirección Nacional de Medio Ambiente (DINAMA) will be funding the Action Plan for the Pampas Deer (*Ozotoceros bezoarticus*) population in Uruguay. This will be the initial step to implement this to the South American Pampas Deer populations. (KSR #17)

Communicate

Communication

i. The newsletter is published annually with the voluntary contribution of the membership, contributing and peer reviewing the articles. (KSR #28)

Acknowledgements

We thank Comisión Sectorial de Investigación Científica (CSIC-UdelaR), Dirección Nacional de Medio Ambiente (DINAMA) and the Women in Science Award of the L’Oréal Foundation-UNESCO-MEC in Uruguay for awarding Susana González for her research and contribution to the advancement of scientific knowledge on Neotropical deer species.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 17, 24, 25, 28

Resolutions addressed: WCC-2016-Res-085

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC Equid Specialist Group (ESG) is to conserve biological diversity by developing and executing programmes to study, save, restore, and manage wisely wild equids and their habitats. Our greatest challenge is to improve wild equid conservation status, to sustain their ecosystems and to enhance the livelihoods of local communities.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we hope that the conservation status of the African Wild Ass (*Equus africanus*, Critically Endangered) is improved by capacity building in the two main range states, Ethiopia and Eritrea, and the establishment of a protected area in Eritrea. The Convention on the Conservation of Migratory Species of Wild Animals (CMS) Road Map for the Conservation of the African Wild Ass has been completed and the species is listed on Appendix I of CMS. Przewalski’s Horse (*Equus ferus przewalskii*, Endangered) populations are expected to increase in Mongolia, and further reintroduction sites may become necessary; a national Action Plan for the species will be developed. Equid species in Africa – Grevy’s Zebra (*Equus grevyi*, Endangered), Mountain Zebra (*Equus zebra*, Vulnerable), and Plains Zebra (*Equus quagga*, Near Threatened) – are at threat from catastrophic droughts; conservation efforts in range states will aim to ameliorate these effects. In Asia, conservation efforts of Asiatic Wild Ass (*Equus hemionus*, Near Threatened) and Kiang (*Equus kiang*, Least Concern) will continue, so we do not expect to see a decline in population numbers.

Targets for the 2017-2020 quadrennium

Assess
Red List: complete Red List assessments of all seven wild equid species.

Plan
Planning: complete Ethiopian national action plan for three wild equids.
Policy advice: (1) produce a CMS road map for African Wild Ass conservation; (2) African Wild Ass listed on CMS Appendix 1; (3) Przewalski’s Horse listed on CMS Appendix 1.

Act
Conservation actions: (1) demarcate an African Wild Ass protected area in Eritrea; (2) continue working with all ESG members towards conservation of wild equids.

Network
Capacity building: (1) Eritrean national to obtain PhD on African Wild Ass; (2) Ethiopian national to obtain PhD on African Wild Ass; (3) conduct scout training courses in Ethiopia and Eritrea.
Membership: increase membership diversity.

Communicate

Activities and results 2019

Assess
Red List
1. The Red List assessment of all wild equid species has been completed. The current assessments are African Wild Ass (Critically Endangered), Grevy’s Zebra (Endangered), Przewalski’s Horse (Endangered), Mountain Zebra...
(Vulnerable), Asiatic Wild Ass (Near Threatened), Plains Zebra (Near Threatened), and Kiang (Least Concern). Dr Sarah King is the Red List Coordinator. (KSR #1)

Plan
Planning
i. One action plan for three wild equids has been completed, printed and distributed. Implementation has started with the scout training workshop and focused research. (KSR #15, 26, 28)

Policy advice
i. Implementation of the CMS Road Map for the Conservation of the African Wild Ass is underway. For sections 1.1.1 conduct research on the range and ecological requirements of the African Wild Ass and livestock, and 1.1.5 improve access to water and forage at key sites, research was conducted on: (1) diet and nutritional overlap between African Wild Ass and associated livestock (cattle, sheep, goats, donkeys and camels), and (2) identification and mapping of permanent water sources. In addition, research was conducted concerning the threat of small population size by continuing the research on 4.1.1 population dynamics, 4.2.1 documentation of all individuals and collection of data on natality and mortality, 4.3.1 collection of faecal samples for population genetics analyses, 4.4.1 collection of faecal samples for analyses of nutritional status, and 4.5.1 collection of skulls and skeletal material for morphological analyses. This research has been accomplished in Eritrea and Ethiopia. (KSR #15, 26, 28)

ii. Przewalski’s Horse listed on CMS Appendix I. (KSR #18, 26)

Conservation actions
i. African Wild Ass protected area in Eritrea: Mr Redae Teclai Tesfai’s research has substantiated that the most important area for African Wild Ass reproduction and population viability in Eritrea is the Messir Plateau, Northern Red Sea Zoba. He has determined that a ‘protected area’ is needed to remove competition from cattle which negatively impact available forage/ carrying capacity for this Critically Endangered species. (KSR #22, 30)

Network
Capacity building
i. One dissertation is in final steps of preparation, to be submitted in June 2020. (KSR #32, 38)

ii. A major threat to the African Wild Ass is inadequate access to forage and water. Objectives 3.1 and 3.4 of the Roadmap address this threat by: 3.1 conducting research and monitoring on dietary overlap and resource competition; and 3.4 developing rangeland and water management schemes. Hence, research is ongoing on: (1) African Wild Ass spatial and dietary overlap with livestock by collecting GPS location data and faecal samples, and (2) identifying and mapping permanent water sources. (KSR #32, 38)
iii. The Ethiopian Wildlife Conservation Authority (EWCA) Scout Training Workshop was held in Awash from 10–13 December 2019. The workshop was led by the EWCA and was supported by the Grevy’s Zebra Trust and the IUCN/SSC Equid Specialist Group. There were 18 participating scouts and experts. The workshop involved two and a half days of training in Awash and a half-day field visit to the proposed Hallaydeghe Asebot National Park to observe the northern most population of Grevy’s Zebra. (KSR #12)

Membership

i. We now have 79 members from 26 countries (30 female; 49 male).

Communicate

Scientific meetings

i. The IUCN/SSC Equid Specialist group co-organised the Second International Wild Equid Conference (IWEC), which took place in Prague, Czech Republic, on 1–5 September 2019, and was attended by 120 registrants from around the world. The aims of the Second IWEC were to increase the network of equid scientists and conservationists and to enable ESG members, particularly from developing countries, to attend. This conference allowed participants to present scientific research and new technologies and tools for conservation and management; provided opportunities for international networking; allowed participants to share knowledge on the ecology and conservation of equid species; and promoted international collaboration. There were symposia covering the following topics: equid population dynamics, population viability, population estimation, behavioural ecology, genetics, taxonomy, disease, and conservation. The first day of the conference included a closed meeting for ESG members. (KSR #28, 32, 33, 34, 38)
Acknowledgements

We thank the following donors that have provided funding for operations, research, training and conservation action: EcoHealth Alliance, Basel Zoo, IUCN/SSC Species Conservation Planning Sub-Committee, Knowsley Zoo, Plock Zoo, SeaWorld Busch Gardens Conservation Fund, and Little Rock Zoo. We thank Dr David Mallon for facilitating the Ethiopia National Wild Equid Action Plan workshop. We thank the Ethiopian Wildlife Conservation Authority for hosting and organizing the Ethiopia National Wild Equid Action Plan workshop. We are very grateful to the Convention on Migratory Species (CMS) for hosting the African Wild Ass Range State meeting in Bonn, Germany. The Government of the Federal Republic of Germany Ministry for the Environment, Nature Conservation, Building and Nuclear Safety provided funding for the range state meeting and the development of the African Wild Ass road map and participation of range state nationals at CMS COP12. Subsequently the Germany Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and CMS provided funding for implementing road map actions; we would particularly like to thank Dr Elsa Nickel, Christiane Paulus, Oliver Schall, Bert Lenten, Yelizaveta Protas and Clara Nobbe for their contributions and support. The IUCN Save Our Species fund provided support for the conservation work on African Wild Ass in Ethiopia and we thank Remco van Merm for his support. We thank Dr Jon Paul Rodriguez and the SSC Internal Grant programme for their support of the 2nd International Wild Equid Conference.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 12, 15, 18, 22, 26, 28, 29, 30, 31, 32, 33, 34, 38

KSR: Key Species Result

Two Plains Zebras, *Equus quagga*, Serengeti NP, Tanzania

Photo: P. D. Moehlman
Mission statement
The vision of the Giraffe and Okapi Specialist Group (GOSG) is: viable populations of Giraffe and Okapi, iconic African species, and their habitats, are conserved sustainably and for their evolutionary potential across, and role in, naturally functioning ecosystems; are valued and protected, locally and globally, recognising their independent right to existence and our duty to current and future generations. We will achieve our vision by: (1) providing coordination, support and technical advice; (2) monitoring and reporting of population status and trends; and (3) raising awareness and providing information.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we expect to have a clearer, coordinated, joint framework for conserving both Giraffe (*Giraffa camelopardalis*) and Okapi (*Okapia johnstoni*) in the form of two species-wide conservation strategies, guiding conservation action and resources. This will guide and support newly developed national-level conservation strategies and engagement to support priority populations and increase multi-stakeholder buy-in and cooperation. We will also have further raised awareness of the plight of both Giraffe and Okapi at the international level and within range states, by improving and scaling up the GOSG communications and working to support things like World Okapi Day and World Giraffe Day and increase range state involvement. We hope to have increased funding targeted towards conservation of both species and raised the need for safeguarding of their habitats and management actions up the political agenda.

Given the pressures on both species, we do not anticipate improving the Red List status at species-level within this quadrennium, but hope to begin to stem the species-wide declines and increase some populations, such as the Niger Giraffe (*Giraffa camelopardalis peralta*). However, we do need to increase survey effort and accuracy in order to gauge any sort of conservation success, so this is a priority for Okapi, though heavily dependent on funding and the security situation which is a considerable and difficult to counter threat to this species in particular.

Targets for the 2017-2020 quadrennium

**Assess**
Red List: (1) update Giraffe and Okapi species Red List assessments; (2) complete nine Giraffe subspecies Red List assessments.

Research activities: (1) establish a giraffid publications/metadata repository; (2) Giraffe and Okapi taxonomy review; (3) develop standardised methods or protocols for Giraffe and Okapi surveys.

**Plan**
Planning: (1) develop an Africa-wide Giraffe conservation strategy; (2) develop four national Giraffe conservation strategies.

Policy: (1) submit an IUCN resolution to highlight the decline of and threats to giraffids and conservation needs; (2) proposal submitted and accepted to list Giraffe on the Convention on the Conservation of Migratory Species of Wild Animals (CMS) Appendix II.
**Act**

**Network**
Proposal development and funding: support fundraising for Giraffe and Okapi research and conservation.

Synergy: establish an Advisory Committee to improve governance of GOSG and support Co-Chairs.

**Communicate**
Communication: (1) develop and implement GOSG communications strategy; (2) develop and publish improved GOSG website and social media outreach; (3) support communications around World Okapi Day and World Giraffe Day; (4) produce and disseminate biannual Giraffid newsletter.

Technical advice: provide technical advice to relevant parties on Giraffe and Okapi research and conservation issues.

**Activities and results 2019**

**Assess**

**Red List**

i. One subspecies was assessed: the Masai Giraffe (*Giraffa camelopardalis tippelskirchi*) was the eighth Giraffe subspecies assessed on the Red List, listed in the category Endangered (first time assessed). (KSR #1)

**Research activities**

i. More than 600 Giraffe references uploaded on the Giraffe Resource Centre (www.girafferesourcecentre.org).

ii. No coordinated efforts to develop standardised methods or protocols for Okapi have been conducted yet; however pilot work by Chester Zoo (Uganda), the Okapi Conservation Project (Okapi Faunal Reserve (RFO), Democratic Republic of the Congo (DRC)) and the Lukuru Foundation (Lomami National Park, DRC) have all tested camera trapping for Okapi monitoring and survey methods. Novel camera trap methods for distance sampling of terrestrial mammals were further developed by the Wildlife Conservation Society, Max Planck Institute and others throughout 2019 and we expect publication of results and methods in mid-2020. These efforts will help guide standardising survey techniques for Okapi in 2020. With respect to Giraffe, various members have trialled methods and published papers, including standardised survey methods for ground and aerial surveys during 2019, which are in use. (KSR #32)

**Plan**

**Planning**

i. No funds were sought by any of the membership for development of an Africa-wide Giraffe conservation strategy, although CMS was approached following Giraffe being listed on Appendix II in 2018. (KSR #15)

ii. The Tanzanian and Kenyan National Giraffe Conservation Strategies and Action Plans were completed and launched. (KSR #15)

**Act**

**Conservation actions**

i. A number of actions from the IUCN Okapi Conservation Strategy continued (notably protection of the RFO in DRC, and species monitoring and protection in Lomami National Park); however, many actions remain unimplemented. (KSR #31)

**Communicate**

**Communication**

i. The GOSG communications strategy was initiated; however, the focal person resigned from the voluntary position and is yet to be replaced. (KSR #28)

ii. The focal person responsible for the GOSG website and social media outreach resigned from the voluntary position and is yet to be replaced; therefore there is no increase in social media presence. (KSR #28)

iii. Considerable range-wide and international publicity and awareness was raised by GOSG members for World Giraffe Day and World Okapi Day. There was a high level of engagement and publicity. (KSR #28)

**Technical advice**

i. Stuart Nixon provided technical advice to the Uganda Wildlife Authority (UWA) on Okapi conservation issues in the Semuliki National Park following surveys for the species in 2018. A full technical report was provided to UWA and disseminated to GOSG members in mid-2019. (KSR #27)

**Acknowledgements**

We thank all Giraffe range States and partners who have assisted in the development of the updated Red List assessment(s) and ongoing field conservation efforts. Additionally, we would like to thank the Giraffe Conservation Foundation and Zoological Society of London for co-hosting the Specialist Group.

**Summary of activities 2019**

Components of Species Conservation Cycle: 4/5

| Assess | 3 ||
| Plan   | 2 ||
| Act    | 1 |
| Communicate | 4 ||||

Main KSRs addressed: 1, 15, 27, 28, 31, 32

Resolutions addressed: WCC-2016-Res-012

KSR: Key Species Result

IUCN *Species* Annual Report 2019
Mission statement
We are committed to working with the global conservation network, governmental and other entities to ensure the long-term survival of the two hippo species (Common and Pygmy) and to support sustainable conservation and management of hippos across their range.

Projected impact for the 2017-2020 quadrennium
The Hippo Specialist Group (HSG) has identified three key priorities for the current (2017–2020) quadrennial to ensure that we can achieve the desired direct impact on hippo species conservation:

1. Communication and outreach: to strengthen and improve awareness of hippo conservation within the general public and conservation community. Key impact activities for this priority are website re-development and launch, social media engagement, and stronger intra-group communication.

2. Partnerships: it is clear that to catalyse conservation and research action the HSG needs partners. We are looking for partner institutions willing to host the HSG website, help fund management, and work collaboratively with the HSG to support shared vision and activities.

3. Conservation projects: Common Hippos (Hippopotamus amphibius) need regional action plans including coordination across West, Central, and East Africa; Pygmy Hippos (Choeropsis liberiensis) already have action plans in place, but require a conservation network that has the ability to support key initiatives in implementing this action plan. There are eight key projects that HSG will initiate as soon as funding becomes available. We plan to work with our partners to secure resources that can support these and other conservation and research projects.

Targets for the 2017-2020 quadrennium
Assess
Red List: update the Red List assessment for the Common Hippo.

Plan
Planning: organise a Common Hippo West African regional conservation strategy workshop.

Act
Conservation actions: (1) support conservation mechanism of Hippos in the Ruzizi River and Tanganyika Lake in South Kivu Province, eastern Democratic Republic of the Congo; (2) implement The Côte d’Ivoire Pygmy Hippo Project: Research and actions for the conservation of Pygmy Hippopotamus in Côte d’Ivoire; (3) protect Common Hippo in the Luama Landscape, Democratic Republic of the Congo; (4) implement the Pygmy Hippo community youth conservation volunteer programme of the Gola Rainforest National Park (GRNP), Sierra Leone; (5) protect Liberia’s Pygmy Hippo with community-based conservation initiatives; (6) implement monitoring, restauration and long-term conservation of Common Hippo population in the Mbari and Chinko drainage, eastern Central African Republic.

Research activities: (1) implement the project ‘Hippos as ecosystem engineers: Habitat use, ecology and behaviour of hippos in an important waterbody of Zululand’; (2) counting of Common Hippos in eight West African countries.

Network
Proposal development and funding: support hippo conservation projects through fundraising and capacity building.
Synergy: (1) strengthen HSG intra-group communication by initiating quarterly emails/informal
newsletters to members; (2) strengthen HSG intra-group communication by creating an online resource site for HSG members.

**Communicate**

Communication: (1) update the HSG website; (2) launch Facebook account.

Scientific meetings: participate actively in the Pygmy Hippo regional conservation strategy workshop.

**Activities and results 2019**

**Plan**

Planning

i. There has been initial discussion on the necessity of organising a Common Hippo West African regional conservation strategy workshop. It is in our plan for the next quadrrennium. (KSR #15)

*Act*

Conservation actions

i. Seven community patrol committees for the follow-up of hippopotamus families were set up in the Ruzizi plain in Kamanyola, Katogota, Kinangati, Sango, Biboko, Kashianjana, and Kindobwe. A roadmap for the identification of the needs of local communities in the management and conservation of hippopotamus habitat has been produced. (KSR #37)

ii. In 2019, the main activities of the Tai Pygmy Hippopotamus Project consisted of exploring appropriate and effective tools for assessing the abundance of the Pygmy Hippo in Tai National Park. To this end, a study was conducted to determine the rate of degradation of the Pygmy Hippo dung in the park. (KSR #12)

iii. The conservation of hippos in Luama-Kivu Hunting Reserves has continued to monitor hippos through community members’ reports and information. The irregular field visits by rangers have been negatively affected by lack of funding and insecurity. The plan is to resume with law enforcement interventions once rangers are deployed back in the area. (KSR #37)

iv. In 2019, six community youth conservation volunteers refreshed their training in the field and six new volunteers were hired and trained. A further 37 camera traps were installed and 15 of them caught pictures or videos with Pygmy Hippos. (KSR #12)

v. In 2019, the exploring of Chinko Reserve went on with the following results: at least six (6) different breeding metapopulations of Common Hippopotamus could be actively preserved along three (3) major rivers (Chinko, Vovodo and Mbutu) and two (2) lake/pond systems (Yassa and Ngoy along the Mbangi River) within the Aire de Conservation de Chinko (ACC). (KSR #12)

**Research activities**

i. In 2019, two scientific publications were released. In addition, the team began collecting data on aspects of hippo behaviour that contribute to their ecological role in a perennial river system on the Olifants River in Kruger National Park (KNP), South Africa, using telemetry. (KSR #12)

**Network**

Synergy

i. The newsletter *Suiform Soundings* involves new reports on hippo conservation activities regularly; the grant applications were submitted; the project leaders informed us regularly on progress of their work. The members are regularly informed on current issues (e.g. hippo conservation in South Kivu) and asked for expertise; members are regularly invited to submit reports to the newsletter and informed about internal IUCN SSC grants. (KSR #15)

**Communicate**

Communication

i. HSG websites were regularly updated. The websites involve species accounts, a list of HSG members and the list of projects supported by HSG. (KSR #28)

**Scientific meetings**

i. We participated in the workshop for Pygmy Hippo conservation in Monrovia, 2–4 July. One of the Co-Chairs attended the meeting, presented the Hippo Specialist Group (HSG) and actively contributed to the workshop discussions. In addition, two other members of HSG actively participated there. (KSR #28)

**Acknowledgements**

We would like to thank all active members of HSG, namely Beatrice Steck, Gabriella Flacke, Ollo Dibloni, Josué Aruna, Colleen Downs, Thierry Aebischer, Deo Kujirakwinja, Jerry Garteh, and Benjamin Barca for their help as well as for their activities in the field. We are very grateful to Thiemo Braasch for his hard editorial work on our newsletter and webpages.

**Summary of activities 2019**

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 12, 15, 18, 28, 37

KSR: Key Species Result
Mission statement

The mission of the IUCN SSC Hyaena Specialist Group (HSG) is to contribute to and promote the understanding and conservation of the species in the family Hyaenidae: Spotted Hyaenas (Crocuta crocuta), Striped Hyaenas (Hyaena hyaena), Brown Hyaenas (Parahyaena brunnea) and Aardwolves (Proteles cristata).

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we will have completed the data collection and parts of the analysis for a new range-wide occurrence study and maps for the four species of hyaenas. This will hopefully then pave the way towards a new action plan, which is sorely needed; the current plan was published in 1998 and much has changed since then. Only after this study is completed can we determine whether we have achieved any targets in original plan. There has been little conservation planning for the hyaenids, especially when compared to the felids and canids with overlapping ranges, and despite their ecological importance and the potentially high rate of conflict between humans and the Spotted Hyaena. To the best of our knowledge, based on a review of the literature and all data collected to date, the conservation status of the four hyaenids has not changed since the most recent Red List assessment (2015).

Targets for the 2017-2020 quadrennium

Assess

Research activities: (1) develop an online threats assessment survey; (2) publish a range-wide occurrence study (action plan) for the four species of hyaena.

Plan


Act

Conservation actions: (1) have a rabies vaccination day in two hyaena areas to treat 500 specimens in 2018, in two hyaena areas to treat 500 domestic dogs and cats in 2019, and in three hyaena areas to treat 750 domestic dogs and cats in 2020.

Network

Proposal development and funding: fundraise to support new research for hyaena conservation. Synergy: create three working groups within the HSG.

Communicate

Communication: (1) establish a new website; (2) establish additional social media.
Activities and results 2019

Assess
Research activities
i. Data on range-wide occurrence of the four species of hyaena were collected and preliminary analyses done. We have completed the literature reviews and the vast majority of data collection. We are now finalising data sets and working towards analysis and new range maps. We held a workshop at Ongava Research Centre, Namibia, in June 2019, where several HSG members worked with range mapping experts to move the project forward. (KSR #32)

Act
Conservation actions
i. Rabies vaccinations delivered to more than 1,000 domestic dogs and cats in two regions in Kenya. We helped coordinate two rabies vaccination campaigns for domestic dogs and cats in two key carnivore conservation areas adjacent to the protected areas of Amboseli National Park and the Masai Mara National Reserve, both in Kenya. (KSR #37)

Network
Proposal development and funding
i. We were not successful with the internal grant proposal we submitted, and none of the hyaena research and conservation projects we endorsed for the National Geographic/IUCN funding opportunities were successful. (KSR #19)

Acknowledgements
We thank Andrew Jacobson and Florian Weise for their extensive work towards the Hyaena Distribution Mapping Project (HDMP). We are also grateful to Florian Weise, Ken Stratford, and John Mendelsohn for facilitating a workshop for several HSG members and the HDMP team at Ongava Research Centre in Namibia.

Summary of activities 2019

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Main KSRs addressed: 19, 32, 37

KSR: Key Species Result
Mission statement
To promote the conservation and effective sustainable management of all species of lagomorph through science, education and advocacy.

Projected impact for the 2017-2020 quadrennium

The Lagomorph Specialist Group (LSG) is “middle-sized” – not a single species, nor composed of hundreds of species. We have slightly less than 100 species in our brief. However, these are distributed around the globe, and there are few similarities among any of our many forms that are Red List classified as Threatened. Thus, we do not have a single programme or a single thrust; there is no one-size-fits-all to our approach. LSG members largely work independently in their region, and the Co-Chairs serve more as a nerve centre. This has always had to be our approach; the broad geographic reach of our members and the cost that would be involved in attempting to meet as a body of the whole essentially prohibit planning such a meeting. We judge our success based on the terrific work done by our members in their respective regions, and as this summary of our activities shows, this body of work is encouraging. What we are all doing collectively is to make Lagomorph a known entity, and to ensure that lagomorph diversity worldwide is maintained by minimising extinction risk, addressing climate change, working with local communities, stopping horrific poisoning campaigns, etc.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) improve knowledge and assessment of lagomorph systematics, (2) complete all Red List reassessments of all lagomorph species.
Research activities: (1) improve knowledge of Brachylagus idahoensis (Pygmy Rabbit); (2) examine population trends of all lagomorphs in the western United States; (3) improve knowledge of Lepus callotis (White-sided Jackrabbit); (4) improve knowledge of Lepus fugani (Ethiopian Hare), L. habessinicus (Abyssinian Hare), and L. starcki (Ethiopian Highland Hare) in Ethiopia; (5) improve knowledge of Lepus flavicularis (Tehuantepec Jackrabbit); (6) improve knowledge of all Chinese Lepus; (7) improve knowledge of Nesolagus netscheri (Sumatran Striped Rabbit); (8) improve knowledge of Nesolagus timminsi (Annamite Striped Rabbit); (9) improve knowledge of Ochotona iliensis (Ili Pika); (10) improve surveys of poorly-studied Ochotona in China; (11) understand the role of climate change in the determination of Ochotona princeps (American Pika) populations; (12) understand how climate change and reduced snow cover may affect populations of Lepus americanus (Snowshoe Hare); (13) try to find anyone to study the Pronolagus species in Africa; (14) improve understanding of Romerolagus diazi (Volcano Rabbit); (15) improve understanding of lesser-known species of Sylvilagus in North America and South America; (16) increase knowledge of lagomorphs via publication of peer-reviewed publications (as indicated via The Web of Science); (17) improve knowledge of Sylvilagus insonus (Omiltemi Rabbit).
Plan

Act
Conservation actions: (1) reintroduction of Brachylagus idahoensis into the Columbia Basin, Washington; (2) improve knowledge and conservation of Bunolagus monticularis (Riverine Rabbit); (3) improve knowledge and conservation of Caprolagus hispidus (Hispid Hare); (4) stop poisoning of Ochotona curzoniae (Plateau Pika); (5) control feral cats and their negative impact on Pentalagus furnessi (Amami Rabbit); (6) improve the status of Oryctolagus cuniculus (European Rabbit) in its native range, as a prey item of the endangered Iberian Lynx; (7) improve conservation to recover Sylvilagus transitionalis (New England Cottontail); (8) protect Ochotona hyperborea (Northern Pika) in Hokkaido; (9) protect and monitor the endangered subspecies Sylvilagus bachmani riparius (Riparian Brush Rabbit); (10) monitor the endangered subspecies Sylvilagus palustris hefneri (LKMR = Lower Keys Marsh Rabbit).

Network
Membership: review and expand the LSG membership.

Communicate
Communication: (1) develop a new improved LSG webpage; (2) publish overarching book on the biology and conservation of all lagomorphs. Scientific meetings: plan for 6th World Lagomorph Conference.

Assess
Red List
i. A workshop on knowledge and assessment of lagomorph systematics is included as part of the 6th World Lagomorph Conference, scheduled for July 2020. Several taxonomic experts have been approached to form a Lagomorph taxonomy working group which will focus on evaluating the evidence for and conservation implications of taxonomic revisions within the Order. (KSR #6)

ii. Assessment of all named Lagomorph species was completed in 2019. We are developing a plan for reassessments and updates as taxonomic changes are made. (KSR #1)

Research activities
i. Important recent findings on Brachylagus idahoensis include evaluating the potential for managing for other threatened species (Sage Grouse) to positively impact Brachylagus habitat, dietary partitioning, genetic studies of population size and gene flow, and habitat selection. (KSR #12, 16)

ii. A major review paper was published in 2018, and subsequently a ‘Jackrabbit Working Group’ was formed with biologists from the Arizona Game and Fish Department. They have conducted a series of investigations on the Antelope Jackrabbit (L. alleni) at the northwestern edge of its range. They have determined that the Antelope Jackrabbit undergoes population fluctuations, not in concordance with changes in precipitation, but possibly due to variability in predation levels. Comparisons of lagomorph trends across states has revealed starting declines in several species of Lepus and Sylvilagus. Evidence suggests habitat alterations and climate change may be driving these declines. LSG member Brown has also recently reinstated the species status of the
Tamaulipas White-sided Jackrabbit (\textit{L. altimira}) from eastern Mexico, placing it alongside other White-sided Jackrabbits (\textit{L. flavigularis}, \textit{L. callotis}, \textit{L. alleni}), and removing it as a subspecies of the Black-tailed Jackrabbit (\textit{L. callotis}). (KSR #12, 27)

\textbf{iii.} Out of the 109 observed and 14 examined (through PCR) Jackrabbits, all represented \textit{Lepus californicus} and not \textit{L. callotis}, work undertaken with financial support from the Phoenix Zoo and the Arizona Center for Nature Conservation. Continued research and monitoring are needed to determine the present status, population fluctuations, and possible extirpation of \textit{L. callotis}. This will entail multiple expeditions to Durango and Chihuahua to obtain biological, ecological and taxonomic data. A minimum of five surveys of 15 days of duration, divided into north Mexico (two surveys) and central-south Mexico (three surveys) are anticipated. (KSR #12, 16)

\textbf{iv.} While research focused intently on \textit{Lepus faganii}, \textit{L. habessinicus}, and \textit{L. starkii} in Ethiopia over the last few years, 2019 was a slow year due to lack of funding. New LSG members interested in these species were recently recruited and research priorities are being identified. No new surveys were conducted in 2019, mainly due to a lack of funding. Research needs include a better understanding of population biology and reproduction, feeding ecology, distribution and habitat fragmentation. (KSR #12, 16)

\textbf{v.} The recent Red Listing process brought together updated information on \textit{Lepus flavigularis}. Censuses are continuing and a solid team is assembled to monitor the status of the species. (KSR #12, 16)

\textbf{vi.} Surveys on all Chinese \textit{Lepus} species (Xinjiang, Tibet, and Hainan) were part of a broader effort focused on mammals but didn’t uncover usable leporid data. Most of the people working on Lagomorphs in China are not primarily focused on conservation. (KSR #12, 16)

\textbf{vii.} The Striped Rabbit Working Group (focused on both species of \textit{Nesolagus}) met in 2019. They identified the need for additional ecological information for the species, including distribution, and are planning to write grants to support a more targeted and systematic survey in Sumatra. They are also working with the government on official recommendations for the species. In addition, research has been done to quantify the number of animals being targeted for illegal trade. (KSR #12, 16)

\textbf{viii.} The Striped Rabbit Working Group (focused on both species of \textit{Nesolagus}) met in 2019. They identified the development of a captive breeding programme as a key need for the Annamite Striped Rabbit. Systematic camera-trapping surveys were conducted in Pu Mat National Park and Bach Ma National Park / Saola Nature Reserves in Viet Nam in 2019. Preliminary results suggest that populations in these areas are low, partially due to intense poaching pressure. Additional surveys as well as population and habitat modelling are planned for 2020 and into the future. (KSR #12, 16)

\textbf{ix.} In 2019, all six known III Pika (\textit{Ochotona ilinensis}) sites were monitored for pika presence through in-person surveys and infrared cameras. Pikas were confirmed at five of the sites across two mountain ranges; no III Pika were found at one of the jinghe jipuk South points this year. Both the distribution and habitat of III Pikas are getting higher, possibly related to global climate change. Currently, two III Pika protection sites have been established on the Tianshan Mountains. In 2019, III Pika was first included in the new draft of the People’s Republic of China Key Wildlife Conservation List. It was initially designated as a national second-level protected animal and was the only lagomorph included in the protection list. Also, funding for the III Pika Conservation Project was secured by the China Environmental Protection Foundation. (KSR #12, 16)

\textbf{x.} Highlights on surveys of \textit{Ochotona} in China include the rediscovery of Kozlov’s Pika (\textit{O. koslowi}) at the Dinjzikou (northern shore of the Aqike Lake, Arjinshan National Nature Reserve) in Xinjiang, China. This represents a re-discovery of the species near its type locality, at a site where it was missing in 2016 surveys. A new investigation is underway on its current survival status. Additional surveys have targeted the Alpine Pika (\textit{O. alpina}) and Pallais’s Pika (\textit{O. pallasi}), focusing on their habitat, survival status, and communication. Finally, three additional surveys (Xinjiang, Tibet, and Hainan) were undertaken as part of a broader effort focused on mammals but didn’t uncover usable ochotonid data. A number of studies of pika phylogeny, population genetics, and demography are ongoing in the region, and are revising our understanding of species boundaries and gene flow in this taxonomically complex genus. Weidong Li, a member of the IUCN SSC lagomorph expert group, has submitted a proposal to the relevant department to include two species of Chinese pika on the protection list. (KSR #12, 16)

\textbf{xi.} Given the large body of research on \textit{Ochotona princeps}, it is relatively well represented in the literature on climate change vulnerability, with much of the work conducted...
by members of the LSG. Research suggests that the relationship between temperature and occurrence may differ across the range, with some populations facing greater climate change risk. However, the magnitude of risk is still under debate. (KSR #12, 16, 38)

xii. Range margin declines and increasing habitat mismatch is occurring for populations of *Lepus americanus* as consequence of climate change and reduced snow cover. (KSR #12, 16, 38)

xiii. We are still looking for anyone with relevant expertise on Pronolagus species in Africa, and plan to continue recruitment in 2020 at the World Lagomorph Conference and in 2021 at the International Mammal Congress, where there will be a symposium on African mammals. (KSR #12, 16)

xiv. mtDNA was sequenced from faecal pellets of *Romeralagus diazi*, representing 152 individuals collected at 45 different sample sites. Results indicate that five historical lineages of *R. diazi* form four populations, connected by either current gene flow or shared ancestral polymorphisms. Based on this result, four evolutionarily significant units (ESUs) were proposed for the species, and recommendations were made to adapt this information for captive breeding programmes. (KSR #12, 16)

xv. Projects focusing on the status and distribution of *Sylvilagus dicei*, *S. gabbi*, *S. floridanus*, *S. andinus*, *S. brasiliensis* and *S. nuttalli* are underway, some accepted pending revisions and others at earlier stages. These results suggest the elevation of several subspecies, with relevance for revision of species ranges and conservation status. (KSR #12, 16)

xvi. Results of literature review on lagomorphs via publication of peer reviewed publications are based upon Web of Science searches. Matches represent field or laboratory studies with relevance for conservation, ecology, or evolution. (KSR #43)

xvii. Research on *Sylvilagus insonus*: All 55 images of leporids obtained appear to be *Sylvilagus cunicularius* (Mexican Cottontail). The local inhabitants insist that two species of rabbits are present and a recent photo of *S. insonus* (July 2009) by Stephen Davies suggests that the Omiltemi Rabbit is still extant. Plans include continued searching and to collect pellet samples from suspected *S. insonus* latrines for DNA confirmation. (KSR #12, 16)

**Plan**

**Conservation actions**

i. As of 2019, Pygmy Rabbits (*Brachylagus idahoensis*) have been re-established in the Columbia Basin in three non-connected locations with suitable deep soil sagebrush habitat in historically occupied sites. The population established in 2012 contains an estimated minimum of 140 rabbits, the sites established in 2018 are comprised of less than 10 rabbits each, and 19 rabbits are held within a naturalised breeding enclosure onsite. These populations contain ~ 17–22% Columbia Basin ancestry, with remaining genetic contributions from other parts of the Pygmy Rabbit’s range. From 2011–2017, 1,782 juveniles and 165 adults were released from onsite captive pens into the wild at the population established in 2012. All wild rabbits detected in this population since 2018 were wild born, and 11% of rabbits detected in winter surveys had survived a second winter. Recent genomic analysis identified four distinct genetic groups of pygmy rabbits throughout their range: (1) Columbia Basin, (2) Northern Utah/Wyoming, (3) Southern Utah, and (4) Great Basin (includes Nevada, Oregon, California, Idaho, and Montana). Ongoing research activities include a genomic panel to assess ancestry in the wild mixed-ancestry Columbia Basin individuals and identification of adaptive loci for each of the regions. Ongoing management activities include on-site semi-wild captive breeding, translocation of both captive and wild kits with soft-release, annual transects to record burrows and scat, and non-invasive genetic sampling. (KSR #24)

ii. The presence of a population of Riverine Rabbits (*Bunolagus monticularis*) was confirmed on the western side of the Baviaanskloof, South Africa, in late May 2019. This population represents a completely new distribution of the species not anticipated by any previous population modelling. This is an historic find with the closest confirmed sightings of the southern population having been more than 250 km to the west. (KSR #11, 12)

iii. In 2019, surveys were conducted in Phibsoo Wildlife Sanctuary, Bhutan, but no *Caprolagus* were observed. Due to COVID-19 delays, we don’t have additional information on other 2019 survey efforts. (KSR #12, 16)

iv. There is increased understanding in China of the folly of widespread indiscriminate poisoning of the Plateau Pika (*Ochotona curzoniae*). More local scientists embrace...
a cessation of poisoning. It remains difficult to get government statistics as to the actual percent decline in control measures. As a result of Smith's work, there is now increased attention being paid to the Plateau Pika, and an indication that some of the poisoning has stopped. A recent China Global Television Network story was entitled *A Late Apology to the Plateau Pika*, showing the tide turning against control with poisons. (KSR #27)

**v.** A gradual recovery of the Amami Rabbit (*Pentalagus furnessi*) is taking place following feral cat control. Also, the Amami Rabbit was a key factor in the recent designation of Amami island and surrounding islands as a World Heritage Site. (KSR #27)

**vi.** The status of *Oryctolagus cuniculus* was changed from Near Threatened to Endangered during the 2019 Red List assessment, highlighting declines of >50% in its native range due to a new variant of Rabbit Haemorrhagic Disease (RHD). Rabbits are very scarce (and even almost absent) in many natural areas where they were historically abundant. The assessment suggests focusing efforts on “increasing habitat protection (e.g. building artificial rabbit warrens), reduction of rabbit mortality by humans (hunting, inappropriate management practices) and reducing disease impacts.” (KSR #27)

**vii.** Production of *Sylvilagus transitionalis* juvenile rabbits relied on two zoo-based facilities, one large enclosure, and two free-ranging offshore island colonies. Captive breeding resulted in an annual production of 110 juvenile New England cottontails, with 48 surviving to release. Juvenile rabbits were released into vacant habitats and augmented existing populations. Winter pellet surveys continued to monitor cottontail distribution. (KSR #15, 27)
viii. The Pika Fan Club, under the leadership of LSG member Toshimi Ichikawa, conducted 13 surveys to assess the status of the Northern Pika (Ochotona hyperborea) population in Hokkaido, resulting in 10 published reports. The Northern Pika on Hokkaido has been decreasing in numbers in recent years due to habitat loss caused by development. The Pika Fan Club has been successful in arresting some development projects and continues to push for continued protection of the habitat of this subspecies. (KSR #21, 27)

ix. The Riparian Brush Rabbit (Sylvilagus bachmani riparius) is listed as Endangered by the state of California and the US Federal government. A number of significant conservation and recovery actions have been implemented since 2001 in its remaining habitat in the central valley of California. These include establishment of new populations, restoration and creation of new habitat, and the provision of high ground with suitable cover for shelter and protection when rivers within their range flood. The impacts of major flooding in 2019 due to the above average precipitation and snowpack in the Sierra Nevada were reduced due to habitat modifications that provided flood refuges for Riparian Brush Rabbits to move above flood waters, and connect to higher ground. Monitoring for this species is ongoing. (KSR #12, 16)

Communicate

ii. We get many queries concerning conservation and biology of lagomorphs, and we recommend people consult our book. Book sales are strong; as we do not get royalties, we do not have a statement on exactly how many books have been sold or distributed. (KSR #28, 43)

Scientific meetings

i. A call for abstract submission was broadly disseminated in 2019 for the meeting scheduled in July 2020. (KSR #28)

Acknowledgements

Research on Lepus callotis was funded by the Phoenix Zoo and the Arizona Center for Nature Conservation. An IUCN internal grant funded the first working group meeting on Striped Rabbits (Nesolagus spp.). Nesolagus timminsi surveys were supported by the World Wildlife Fund (Russel E. Train Fellowship to Thanh Nguyen) and the Leibniz Institute for Thanh Nguyen and the Leibniz Institute for Zoo and Wildlife Research. The Wildlife Conservation Fund supported an effort to search for Sylvilagus insonus.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 6, 11, 15, 16, 21, 24, 27, 28, 38, 43

KSR: Key Species Result
IUCN SSC
Large Carnivore Initiative for Europe Specialist Group

2019 Report

Luigi Boitani

Chair
Luigi Boitani

Location/Affiliation
University of Rome Sapienza, Roma, Italy

Number of members
46

Social networks
Website: www.lcie.org

Mission statement
Maintain and restore, in coexistence with people, viable populations of large carnivores as an integral part of ecosystems and landscapes across Europe.

Projected impact for the 2017-2020 quadrennium
The Large Carnivore Initiative for Europe (LCIE) report on the status of large carnivores in Europe is largely regarded as the most reliable information source on the status of these species. Our previous report was a highly-cited paper published in Science (Chapron et al. 2014) and we intend to do similar scientific publications in 2019. Our report is also instrumental to inform the policy of the European Commission and several European countries on managing large carnivores and their conflicts with human activities. The LCIE regularly supports the European Commission’s work on large carnivores through scientific and technical advice. LCIE, through the Institute of Applied Ecology in Rome, has just been awarded (December 2017) a contract to develop four regional and national platforms of stakeholders on large carnivore management.

Targets for the 2017-2020 quadrennium
Assess
Research activities: (1) complete update of the status of large carnivores in Europe (numbers and distribution); (2) produce a technical document on defining and managing bold wolves; (3) produce a technical document on the impact of artificial feeding of carnivores and their prey; (4) produce a technical document of recommendations on how to survey and monitor carnivore populations; (5) produce a technical document on the legal and technical opportunities to establish management zones for large carnivores in Europe.

Network
Membership: focus on recruiting more young members to the LCIE Specialist Group.

Activities and results 2019
Assess
Research activities
i. The new assessments for 6 species of large carnivores in Europe have been published on the Red List. (KSR #1)
ii. Technical document on defining and managing bold wolves available on https://www.lcie.org (KSR #27)
iv. Technical documents of recommendations on how to survey and monitor carnivore populations on national scale approved by individual LCIE members. (KSR #27)

Network
Membership
i. Several candidates identified.
**Summary of activities 2019**

Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 1, 27

KSR: Key Species Result

Large carnivores, such as brown bears and wolves, are increasing in number and distribution areas across most of Europe. Their return to ranges where they were eradicated centuries or decades ago poses difficult challenges toward coexistence.
Mission statement
The mission of the New World Marsupials Specialist Group (NWMSG) is to increase our knowledge of the taxonomy and ecology of American marsupials, ensure that conservation status and species accounts have been correctly assessed based on IUCN Red List Categories and Criteria, and that these assessments have been correctly submitted to The IUCN Red List.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, the remaining species that have been described in recent years should be added to the IUCN Red List with a species account. This would increase the taxonomic and geographic coverage of species analysed, bringing them closer to the recent taxonomic arrangements (i.e. newly described species). We encourage our members to increase awareness of the IUCN Red List assessments, and to get involved in the categorisation at a country level.

Assess
Red List: (1) complete the assessment of 15 newly described species; (2) complete re-assessments of the 110 species of New World marsupials.

Plan
Planning: generate a conservation plan for New World marsupials, combining geographic information with ecological, physiological and other natural history data, which should set a framework to identify areas of taxonomic singularity and richness, increase our knowledge on different ecological traits (e.g. reproduction, feeding), and help define species for which conservation efforts should be implemented.

Activities and results 2019
Assess
Red List
1. We have completed the list of species that need to be updated and new species that haven’t been assessed before. We have reached out to some of the experts that will generate the new assessments. (KSR #1)

Summary of activities 2019
Components of Species Conservation Cycle: 1/5
Assess 1
Main KSRs addressed: 1

KSR: Key Species Result
Near Threatened Paraguayan Fat-tailed Mouse Opossum, *Thylamys macrurus*, Campo Grande, MS
Photo: Nilton Cáceres

Silky Shrew Opossum, *Caenolestes fuliginosus*
Photo: Gabriel Martin

Agile Gracile Opossum, *Gracilinanus agilis*, Corumbá, MS
Photo: Nilton Cáceres
Mission statement
The Otter Specialist Group (OSG), founded in 1974: (1) provides leadership for the conservation of all 13 otter species; (2) determines and reviews on a continuing basis the status and needs of otters, and promotes the implementation of necessary research, conservation and management programmes by appropriate organisations and governments; (3) communicates the status and conservation needs of otters and promotes the wise management of otter species.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we hope to reduce the extinction risk of four Asian otter species, our current high priority. We published the Asian Otter Conservation Manifesto in 2016 and our Global Otter Conservation Strategy in late 2018. The Strategy lists regional conservation priorities for each of the 13 otter species and the budgets required, which will help accelerate project funding and implementation. We published our second and third TRAFFIC reports on the Illegal Otter Trade in Asia in 2018, which will expand targeted conservation actions and community programmes. In South America, we bolstered national initiatives and programmes for three endangered otter species in Brazil, Peru, Chile and Argentina with targeted field research, local assistance from NGOs, and national parks. In April 2019, we held our 14th International Otter Congress in the Tangjiahe Nature Reserve, Sichuan, China, with 140 participants from 39 countries in attendance. Representatives from Chinese Nature Resources and National Park ministries participated and pledged to finance a China-wide survey with the OSG’s assistance.
Activities and results 2019

Assess
Green List
i. A close collaboration with the Green List has produced quick results setting up an Otter Green List. By 2019, eight out of 11 Green List assessments were completed. (KSR #11)

Red List
i. No Red List species status have been changed. All 13 species and distribution maps have been updated. (KSR #1)

Plan
Planning
i. Projects of the African Otter Network: two research projects have been funded in Benin and South Africa and are due to start in late 2020. (KSR #15)

Policy
i. At the 18th meeting of the Conference of the Parties to CITES (CoP18), two species of Asian otter were successfully uplisted from Appendix II to Appendix I. Eighty percent of the parties to CITES voted for the uplisting of the two Asian otter species to Appendix I. (KSR #21, 26)

Act
Conservation actions
i. We are expanding OSG otter educational materials to new countries/languages, including Siberia (Russia), Lao PDR, Taiwan, and Indonesia. We are also promoting World Otter Day to encourage community celebrations in Asia, Europe, North America and South America. Many educational materials are available for all 13 otter species, including: species information, maps, games, colouring books, posters, postcards, and the We Love Otters! book.

Network
Synergy
i. In an effort to expand our close association with otter ex situ efforts, we have collaborated with both Association of Zoos and Aquariums (AZA) small carnivore and European Association of Zoos and Aquaria (EAZA) otter Taxon Advisory Groups. There are two new TAG coordinators for the US and Europe. Our close collaboration with the Conservation Planning Specialist Group (CPSG) will continue. (KSR #29)

Communicate
Communication
i. The OSG bulletin is published online, which allows for rapid peer review and publication. Two bulletins were published as scheduled. (KSR #28)

Scientific meetings
i. 14th International Otter Congress, Chengdu, China: one-hundred and forty participants from 39 countries attended the meeting. Funding for a China-wide survey was assured at the meeting. (KSR #28)

ii. The 2nd Nepal Otter Network Meeting took place 15–16 February 2019, in Pokhara. The Himalayan Otter Network has been very active in the field and in planning since its first meeting in 2017. It is currently developing its country-wide otter action plan. (KSR #28)

Acknowledgements
The IUCN Otter Specialist Group is grateful to the following: Fondation Segre (Southeast Asian illegal otter trade funding research and meetings); Houston Zoo Foundation (Pantanal Giant Otter research); Wildlife Reserves Singapore (meetings and research); Kadorie Farm and Botanical Gardens Hong Kong; World Animal Protection (otter trade research, CITES); Natural Resources Defense Council (otter trade research, CITES); Altman Foundation (OSG overhead and project funding); Columbus Zoo (Sea Asian projects, printing Strategy); Honda Foundation (Uganda otter conservation action); Rufford Small Grants for Nature Conservation (SE Asian projects); SSC Internal Grant 2019 (Africa). We are particularly grateful to our OSG and SSC colleagues. Kira Mileham, Onnie Byers, Rachel Hoffmann, Sonja Luz, and so many others that have always been generous with their time and support.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 11, 15, 21, 26, 28, 29

KSR: Key Species Result
Mission statement
To work within the framework of the IUCN SSC to secure a future for wild pangolins through advancing knowledge on pangolin status, threats and conservation priorities, and by catalysing action to conserve them.

Projected impact for the 2017-2020 quadrennium
By 2020, subject to secured resources, we envision publication of updated assessments for each species of pangolin on The IUCN Red List and a greater number of conservation strategies for pangolins developed at the national and regional level, to complement global conservation planning and guide investment in reducing the extinction risk to pangolins. The Pangolin Specialist Group will be a global hub of knowledge and best practice on pangolins and their conservation, including the rehabilitation of trade-confiscated pangolins and applicable ecological monitoring methods. It will continue to provide technical and scientific expertise to CITES, having developed a pangolin trade resource kit to assist countries in combating illegal trade in pangolins and their parts. We envision a larger, more diverse, proactive membership that readily collaborates with other stakeholders and communicates effectively internally and externally with diverse audiences.

Targets for the 2017-2020 quadrennium
Assess
Red List: re-assess all species of pangolin for the IUCN Red List.
Research activities: (1) publish research papers on the most suitable methods for monitoring wild pangolin populations; (2) conduct research to investigate the impact of pangolin farming on demand and wild populations.

Plan
Planning: (1) hold a workshop to develop a regional conservation strategy for the Sunda Pangolin (Manis javanica); (2) hold a workshop to develop a national conservation strategy for the Philippine Pangolin (Manis culionensis) in the Philippines; (3) hold a workshop to develop a national conservation strategy for the Chinese Pangolin (Manis pentadactyla) in Taiwan; (4) hold a workshop to develop a national conservation strategy for the Sunda Pangolin in Singapore; (5) hold workshops to develop regional conservation strategies for pangolins; (6) hold workshops to develop national conservation strategies for pangolins.
Policy: (1) complete an authoritative report on the status, trade, conservation and legislation affording protection to pangolins for the 69th meeting of the CITES Standing Committee (CITES SC69); (2) contribute scientific and technical expertise to CITES meetings.
Act
Scientific meetings: hold a workshop to determine the most appropriate methods for detecting and monitoring pangolin populations. Technical advice: (1) provide technical support to implementation of existing national/regional strategies; (2) develop a pangolin trade resource kit for CITES parties; (3) provide technical advice on rehabilitation and husbandry of pangolins; (4) provide technical advice on methods for detecting and monitoring pangolin populations to key stakeholders; (5) provide technical guidance on collecting, storing and transporting samples for genetic analyses; (6) serve as a hub of knowledge and best practice on pangolin conservation.
Network
Membership: increase membership of the group to include at least one individual from each range state.
Proposal development and funding: secure finances to support Pangolin Specialist Group priorities and conservation work. Synergy: build relationships with range state governments.

Communicate

Communication: (1) develop position statements on key issues facing pangolins; (2) communicate the Pangolin Specialist Group’s conservation work through strategic and targeted communication; (3) document and communicate successful local community engagement case studies to catalyse such engagement in other places; (4) document and communicate successful law enforcement effort through case studies; (5) develop educational resource packs to educate and inspire young people about pangolin conservation; (6) maintain and enhance where possible communications with members, donors and other key stakeholders.

Activities and results 2019

Assess

Red List

i. Revised Red List assessments for eight species of pangolin were published in 2019. (KSR #2)

Research activities

i. Two papers were published in a peer-reviewed journal. A third paper is about to be submitted for publication. (KSR #27)

ii. Research to investigate the impact of pangolin farming on demand and wild populations is ongoing. (KSR #32)

Plan

Planning

i. Action plan for the Sunda Pangolin published. (KSR #15)

ii. Action plan for the Philippine Pangolin in the Philippines published. (KSR #15)

iii. Action plan for the Chinese Pangolin in Taiwan published. (KSR #15)

iv. Action plan for the Sunda Pangolin in Singapore published. (KSR #15)

v. Workshop to develop regional conservation strategies for the Sunda and Philippine Pangolins accomplished. (KSR #15)

vi. Preparation of workshops to develop national conservation strategies for pangolins is in progress. (KSR #15)

Policy

i. The group attended the 18th meeting of the Conference of the Parties to CITES (CoP18), contributed to international decision making, and held a side event on pangolins to disseminate guidance on monitoring pangolin populations. (KSR #26)

Act

Technical advice

i. Technical support to implementation of existing national/regional strategies is provided on an ongoing basis. (KSR #18)

ii. A guide for first responders to live pangolins seized from illegal trade should be completed by July 2020. Other discrete parts of this guide are also in the pipeline. (KSR #27)

iii. The Pangolin SG held a side event at CITES CoP18, and submitted guidance documents to the meeting, ensuring guidance was disseminated to the world’s governments. (KSR #27)

Network

Membership

i. Twenty new members joined the Specialist Group.

Proposal development and funding

i. We have about GBP 20,000 in the bank raised primarily through our website. (KSR #19)

Communicate

Communication

i. We are about to launch a consultation with members on a position statement on pangolin farming; this is ongoing. (KSR #28)

ii. We have an active social media profile and maintain our website well. (KSR #28)

iii. We maintain fluent communications with members, donors and other key stakeholders. (KSR #28)

Scientific meetings

i. Members were convened to strengthen the network during the CITES CoP18 meeting and side event on pangolins. (KSR #28)

Acknowledgements

We thank all government, foundation and individual donors that supported the Pangolin Specialist Group in 2019. In particular, we thank Fondation Segré for generous ongoing support to the group and the U.S. Fish and Wildlife Service for their support of our ecological monitoring work. We are grateful to Zoological Society of London (ZSL) for their continued hosting and support to the group. We thank all our members for their continued commitment to the group.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

Assess | 3
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Act | 3
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Communicate | 4

Main KSRs addressed: 2, 15, 18, 19, 26, 27, 28, 32

Resolutions addressed: WCC-2016-Res-015

KSR: Key Species Result
The overall aim of the Peccary Specialist Group is to promote the long-term conservation of peccaries and their natural habitats, and the recovery or restoration of peccary species, populations and communities. The specific objectives are: (1) contribute to peccary conservation through management and research; (2) consolidate the group of researchers and other people interested in the biology, conservation and management of peccaries; and (3) foster communication, coordination, collaboration and exchange of information.

Projected impact for the 2017-2020 quadrennium
We are focusing on the most endangered, endemic species in the Chaco region. We are uniting efforts with organisations that are addressing large scale deforestation and land title issues. We aim at promoting more awareness about the importance of this and the other species as ecosystem engineers.

Targets for the 2017-2020 quadrennium
Assess
Red List: reassess threat levels for White-lipped Peccary (Tayassu pecari).
Research activities: (1) obtain the most recent population density estimates of White-lipped Peccary across their geographical range; (2) conduct a research project on the mating system of White-lipped Peccaries utilising genetic samples from a large geographical region; (3) complete an assessment of the population crashes of White-lipped Peccary across its range as a collaboration among group members.

Plan
Planning: create a Species Conservation Plan for White-lipped Peccary.

Act
Conservation actions: (1) continue the implementation in the field of the Chacoan Peccary (Catagonus wagneri) Conservation Plan, which was published in 2016; (2) conduct a research project on the reintroduction of Collared Peccaries (Pecari tajacu) in South America; (3) expand environmental education programmes in the Chaco related to the conservation of the Chacoan Peccary.

Network
Synergy: have a new Red List Coordinator as soon as possible.

Communicate
Communication: reach a wider audience by further developing a shared homepage with the Hippo Specialist Group and keeping an active Facebook group.

Activities and results 2019
Assess
Red List
1. The assessments of the conservation status for White-lipped Peccary (Tayassu pecari) started for the Mesoamerica region and Brazil. Plans are being developed for a re-assessment to be done during the XIV CIMFAUNA Latin American wildlife conference in November 2020. (KSR #2)
Research activities

i. Two papers were published with new findings about the mating system of the White-lipped Peccary: one defining the White-lipped Peccary mating system, and the other a collaborative work indicating genetic diversity and gene flow between three different biomes in Brazil. (KSR #12)

ii. Many group members shared information on population crashes of White-lipped Peccaries across its range and one member is coordinating the effort. A paper co-authored by several group members is in the process of review. (KSR #32)

Act

Conservation actions

i. There are active research and education programmes carried out in the Argentine Chaco responding directly to the goals identified in the Chacoan Peccary species conservation plan. (KSR #27)

ii. In 2019, we delivered one publication about the performance and monitoring of a Collared Peccary reintroduction project in Argentina. Another paper with more information on the follow up of the reintroduced herds is under review. (KSR #24)

iii. Environmental education programmes related to the conservation of the Chacoan Peccary: A local environmental educator is visiting local schools and giving talks about the Chacoan Peccary and its habitat. During this year, we accomplished 25 visits to local schools. In the process, several printed educational materials were made (one banner and two flyers with information on the species). This material was bilingual, in Spanish and the Wichi indigenous language. (KSR #28)

Network

Synergy

i. Richard Bodmer offered to be the Red List Coordinator and the rest of the group approved. Richard started to train himself in the process.

Communicate

i. We opened a space for the group within the Hippo and Wild Pigs Specialist Group website and we keep an active Facebook page. We have about 2,850 followers and users of our Facebook group. The homepage however is not getting visitors. (KSR #28)

Acknowledgements

We acknowledge the Mohamed Bin Zayed Fund for supporting conservation efforts for the Chacoan Peccary.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 2, 12, 24, 27, 28, 32

KSR: Key Species Result
Mission statement

The mission of the Pinniped Specialist Group (PSG) is to promote awareness regarding conservation threats to pinnipeds worldwide and to actively take a role in ensuring good management practices that ensure healthy, robust pinniped populations.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we envision updated assessments at the population level for all threatened subspecies of pinnipeds and accompanying action plans for these populations that will serve to improve their status.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) complete assessment at the population level of all threatened subspecies; (2) complete population level assessments for the Mediterranean Monk Seal (Monachus monachus).

Research activities: (1) serve as reviewers for IUCN assessments of Important Marine Mammal Areas; (2) engage with pinniped research and conservation-oriented programmes across the globe.

Plan

Policy: (1) advise the IUCN Climate Change Specialist Group and other IUCN instances; (2) advise governments around the world regarding conservation of pinniped populations.

Network

Capacity building: help launch grassroots efforts for threatened pinniped populations.

Communicate


Activities and results 2019

Assess

Red List

i. We have shifted completion of the conservation action plan to 2021 to ensure that we are using IUCN approved status for all of the updated Red List assessments for pinnipeds (to be completed in 2029). (KSR #1, 2)

ii. Two monk seal population assessments were prepared in 2019 and are ready for review by the Rome mammal assessment office. (KSR #1, 2, 3)

Research activities

i. Some 20 Important Marine Mammal Areas were reviewed; several were reviewed again post-revision. (KSR #32)

ii. All members of the PSG are actively engaged with conservation-oriented work with pinnipeds in their respective countries. At least 30 projects are currently active, some of them cross-border, multinational efforts. (KSR #12, 14, 23, 32, 38, 39)

Plan

Policy

i. All advice requests from the Climate Change Specialist Group were dealt with in 2019. (KSR #7, 26, 38, 39, 40)

ii. At least 10 of our ‘member’ countries sought advice this calendar year and received it from PSG members. (KSR #7, 26, 40, 43)
Network
Capacity building
i. The Marine Mammal Commission of the US held a workshop in 2019 to kick off a grassroots group to facilitate conservation efforts for threatened pinnipeds. PSG members gave the majority of talks at the kick-off workshop and have joined in this ongoing initiative to ensure scientific inputs to the group. (KSR #5, 8, 11, 12, 15, 17, 18, 28, 39)

Communicate
Communication
i. We are in the planning phase to produce an update of the 1993 report of the Status Survey and Conservation Action Plan. (KSR # 10, 11, 15, 26, 30)

Acknowledgements
Employers of all the Pinniped Specialist Group members are thanked for their support of PSG activities.

Summary of activities 2019
Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 2, 3, 5, 7, 8, 10, 11, 12, 14, 15, 17, 18, 23, 26, 28, 30, 32, 38, 39, 40, 43

Opportunistic where it comes to comfort – a Svalbard Walrus, Odobenus rosmarus, makes use of pinniped researchers boat as a pillow.

Photo: Kit M. Kovacs

Mammals
Mission statement
The mission of the Primate Specialist Group (PSG) is to maintain the current diversity of the order Primates by ensuring the survival of threatened species wherever they occur and providing effective protection for large numbers of primates in areas of high primate diversity and abundance. In essence, the PSG has a Zero Extinction policy for all primate species.

Projected impact for the 2017-2020 quadrennium
During this quadrennium, we will continue to support primate conservation activities worldwide through the maintenance of networks, especially our newsletters and journals, finalise Red Listing for all primate species, and continue to fund primate conservation projects through existing sources as well as new ones to be identified. There will also be a strong emphasis on stimulating appropriate primate ecotourism as a tool for primate conservation through the production of new field guides, pocket guides, apps, and other tools to facilitate primate-watching and primate life-listing. The ultimate goal of all our activities is zero extinctions for primates, that is not allowing any named taxon to go extinct.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete assessment of 111 lemur species and subspecies.
Research activities: (1) maintain a taxonomic, geographic and conservation status (Red List) database for primates; (2) publish articles on the taxonomy, geographic distributions, surveys and conservation status of primates.

Plan
Planning: elaboration of action plans for the conservation of primate species and species groups.
Act
Conservation actions: stimulate primate ecotourism, that is primate-watching and primate life-listing, as a major conservation tool for primates.
Proposal development and funding: dramatically increase funding for primates by 2020.
Network
Capacity building: Promote, organise, and participate in: (1) field courses for primate field research and conservation, and (2) congresses and meetings.
Proposal development and funding: (1) manage the Primate Action Fund, a small grants scheme for primate conservation, monitoring, surveys, research, and education; (2) manage the Lemur Conservation Action Fund, a small grants scheme for lemur conservation, monitoring, surveys, research, and education.
Communicate
Communication: (1) compile and edit regional newsletters/journals for the Neotropics, Africa, Asia, and Madagascar: Neotropical Primates, African Primates, Asian Primates Journal, Lemur News; (2) edit and publish the journal Primate Conservation; (3) maintain a list of the 25 Most Endangered Primates; (4) produce field guides and pocket field guides for primates.
Activities and results 2019

Assess

Red List

i. Results of the Lemur Red Listing Workshop, Carlton Hotel, Antananarivo, Madagascar, 6–11 May 2018: 111 lemurs were assessed. The assessments were compiled, written, entered into the IUCN Species Information Service database (SIS), and reviewed for publication in 2020. (KSR #1)

ii. Backlog from the African Primates Red Listing Workshop, Università di Roma, Roma, Italy, 18–23 April 2016: Assessments of 64 African primates were compiled, written, entered into SIS, and reviewed for publication in 2020. A remaining 39 assessments will be completed, ready for publication, in June 2020. (KSR #1)

iii. Backlog from the Asian Primates Red Listing Workshop, Wildlife Reserves Singapore, Singapore, 23–27 November 2015: Assessments of 163 species of Asian primates were compiled, written, reviewed, and entered into SIS for publication in 2020. A further 26 species and subspecies will be processed in early 2020. (KSR #1)

iv. Backlog from the Neotropical Primates Red Listing Workshop, Houston Zoo, Texas, USA, 26–30 January 2015: Assessments of 27 Neotropical primates were reviewed and published. Assessments of the remaining 191 are ongoing and should be completed by mid-2020. (KSR #1)

Research activities

i. Taxonomic changes were incorporated for Patas monkeys, Savannah monkeys, Guenons, Uakaris, Colobus monkeys; new species and subspecies and taxa synonymised. (KSR #43)

ii. Taxonomic notes were written up for 11 genera of Asian primates, and for Red Colobus monkeys, Dryas Monkey (*Cercopithecus dryas*), Mt. Kilimanjaro Guereza (*Colobus caudatus*), and Patas monkeys, amongst others. (KSR #43)

iii. Three new species and four resurrected taxa were included. (KSR #43)


Plan

Planning

i. Compilation and layout completed for the Red Colobus Action Plan, covering the 18 species and subspecies of Red Colobus monkeys of Sub-Saharan Africa (all of them threatened); it will be ready for printing in early 2020. (KSR #15)

Act

Conservation actions

i. Lemur Conservation Network: increased the global platform of the Lemur Conservation Network (LCN) online presence (website and social media), for augmenting lemur conservation education and awareness in Madagascar and in the rest of the world; this became a capacity building, training, outreach
and communication tool for Malagasy LCN
members, to strengthen their capacities and
communication tools to educate their audi-
ences and improve their lemur conservation
efforts at their project sites. The lemur-watching
app is nearing the completion stage with antici-
pated launch in winter 2020. (KSR #36)

Proposal development and funding

i. We applied to the Margot Marsh Biodiversity
Foundation (MMBF) for a renewal of the Primate
Action Fund (Small Grants Mechanism) in March
2020. (KSR #19)

ii. Funding was received under the IUCN SOS
Small Grants Mechanism (Lemur Conservation
Action Fund), along with major funding
to support the Lemur Conservation Network,
among other projects. (KSR #19)

iii. We also received major funding from MMBF
(32 grants in all, which includes the Primate
Action Fund) for targeted species, including the
Niger Delta Red Colobus (Piliocolobus epieni)
and Miss Waldron’s Red Colobus (Piliocolobus
waldroni); funding to support PSG publications
and newsletters, papers, congresses, primate/
lemur websites, ecotourism efforts, and
red-listing activities. (KSR #19)

iv. We secured funding from the Mohamed Bin
Zayed Species Conservation Fund to support
15 primate conservation projects. (KSR #19)

v. We secured funding from the Arcus Founda-
tion to support the ARRC Task Force for EEAI
(Avoid, Reduce, and Restore negative impacts
from Energy, Extractive and Associated Infra-
structure) projects on apes and contribute posi-
tively to their Conservation. (KSR #19)

vi. We secured funding from Virgin Unite to
support local guide associations in Madagascar.
(KSR #19)
Network

Capacity building

i. Participation in field courses for primate field research and conservation was supported by the Primate Action Fund: three grants for $6,100. (KSR #18)

ii. Participation in field courses for lemur field research and conservation was supported by the Lemur Conservation Action Fund: one grant for $5,000. (KSR #18)

iii. Participation in congresses and meetings was supported by the Primate Action Fund: 17 grants for $36,008.30. (KSR #18)

iv. Participation in congresses and meetings was funded by the Lemur Conservation Action Fund: seven grants for $21,517. (KSR #18)

Proposal development and funding

i. Thirty-seven small grants were awarded in 2019 through the Primate Action Fund for primate conservation, monitoring, surveys, research, and education. A request was submitted to the Margot Marsh Biodiversity Foundation for renewal of the fund in March 2020. (KSR #30)

ii. Twenty-nine small grants were awarded in 2019 for lemur conservation, monitoring, surveys, research, and education through November 2017 to August 2019, via the Lemur Conservation Action Fund, through Global Wildlife Conservation. They ranged from financing academic theses, training Malagasy biologists, providing support for participation in international meetings, rapid surveys in remote areas and protected areas under threat, boosting and professionalising tourist guide associations to, for example, an initial evaluation of hunting pressure and forest resource use in local communities. (KSR #30)

Communicate

Communication


Acknowledgements

We thank the following organisations for their support: Global Wildlife Conservation, International Primatological Society (IPS), Bristol Zoological Society, and the Houston Zoo. The following organisations were generous in their funding: Margot Marsh Biodiversity Foundation, Mohamed bin Zayed Species Conservation Fund, Arcus Foundation, IUCN SOS Fund, Andrew Sabin Foundation, Primate Partnership Fund, and Virgin Unite. For the compilation, editing and submission of Red List assessments over the year, most notably: Liz Williamson, Sanjay Molur, Christoph Schwitzer, Kim Reuter, William Konstant, Thomas M. Butynski and Yvonne de Jong, with help from Craig Hilton-Taylor, Caroline Pollock and Federica Chiozzi.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 15, 18, 19, 28, 30, 36, 43

KSR: Key Species Result
Mission statement

The mission of the Sirenia Specialist Group (SSG) is to contribute to increase current knowledge on the status and distribution of Order Sirenia across the entire geographic range of its distribution, to identify issues of concern, and to provide recommendations in research and conservation actions to ensure their long-term conservation.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we aim to have achieved a substantial advance in reducing the risk of extinction of:

1. West Indian Manatee (Trichechus manatus) and Amazonian Manatee (Trichechus inunguis) in Central and South American countries, by increasing community awareness of the risks of poaching and habitat loss through management tailored to specific countries or regions.
2. African Manatees (Trichechus senegalensis) through information sharing and training of African researchers throughout the species’ range via a collaborative network for manatee field work and conservation in 18 African countries, providing basic field research equipment and assisting with the development of plans tailored to specific countries or regions.
3. Dugongs (Dugong dugon) through the Global Environment Facility Dugong and Seagrass Conservation Project, which focuses on conservation through sustainable community-led stewardship and socio-economic development in Indonesia, Madagascar, Malaysia, Mozambique, Sri Lanka, Timor-Leste, and Vanuatu, and in-country actions in the remaining range states.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) revise West Indian Manatee assessment; (2) complete Dugong regional assessment.

Communicate

Communication: (1) publish Sirenews regularly; (2) ensure sirenian bibliography is readily accessible.

Activities and results 2019

Assess

Red List

1. The regional Dugong assessment for Japan has resulted in that Dugong population being listed as Critically Endangered. Funding has been requested from the Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats throughout their Range (UNEP CMS Dugong MOU) to continue this work. (KSR #2)

Communicate

Communication

1. The newsletter was published in April and October. (KSR #28)
Acknowledgements

We thank the NGO ‘Save Our Seas’ for organising and publishing the newsletter and Buddy Powell and Bob Bonde for their tireless work to produce a comprehensive newsletter. The US Marine Mammal Commission, Toba Aquarium Japan and the UN Environment Programme provided funding support to enable the listing assessment for the Japanese Dugong and the associated Action Plan to be completed. Many scientists also provided in kind support.

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 2, 28


KSR: Key Species Result
Co-Chairs
Daniel Willcox (1)
José F. González-Maya (2)

Red List Authority Coordinator
Will Duckworth (3)

Location/Affiliation
(1) Save Vietnam’s Wildlife (SVW), Viet Nam
(2) ProCAT Colombia, Bogota, Colombia
(3) Bath, United Kingdom

Number of members
111

Mission statement
The mission of the SCSG is to build capacity among small carnivore researchers and conservationists, particularly those that live or work in developing countries, to provide a venue to publish new knowledge, maintain the most up-to-date status assessments for its species, and to engage in priority research and conservation related to small carnivores.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, the Small Carnivore Specialist Group (SCSG) aims to: (1) host a workshop to develop an action plan for all threatened species in the group; (2) acquire resources and develop a research programme for Data Deficient species (which are threatened but lack critical information to understand the extent of threats); (3) find an organisational host for the Small Carnivore Conservation journal, including resources for a part time Editor in Chief (currently managed by volunteers); (4) work with other specialists and Specialist Groups to capture and publicise ‘by-catch’ data on small carnivores from other programmes; and (5) help establish strategic partnerships with other Specialist Groups whose species are impacted by similar threats, for example indiscriminate snaring in protected areas.

Targets for the 2017-2020 quadrennium
Assess
Documents review: prepare an update on the knowledge and conservation status of Data Deficient species of the Americas.
Research activities: (1) explore the magnitude and implications of human-wildlife conflict for small carnivores globally; (2) develop a research strategy for Data Deficient species.

Plan
Planning: (1) complete Action Planning for threatened taxa; (2) publish a conservation strategy and action plan for Owston’s Civet (Chrotogale owstoni).

Act
Conservation actions: engage a programme officer for coordinating the Owston’s Civet conservation strategy.
Planning: assist implementation of three priority actions from the Owston’s Civet conservation strategy.
Synergy: engage with wider issues re: snaring, wild meat trade, and impacts on biodiversity loss in Southeast Asia.

Network
Membership: increase membership from priority countries/regions as they relate to distribution of globally threatened and Data Deficient small carnivores.

Communicate
Communication: (1) update SCSG’s website and other communication platforms; (2) reduce journal to one high quality issue per year.
Activities and results 2019

Assess
Documents review
i. Data on all American species of small carnivores is being gathered, including an update on distribution and conservation priorities. An MSc student recently started studies that will develop the analyses and reporting under our supervision. An alliance is being explored with the American Society of Mammalogists’ Conservation Committee to join efforts on preparing the update. (KSR #1, 15, 18)

Research activities
i. We established contacts with other carnivore Specialist Groups and with the Human-Wildlife Conflict Task Force (HWCTF) to explore the magnitude and implications of human-wildlife conflict for small carnivores globally. A database was started and is in progress. A course and symposium was developed in Mexico and Colombia to start addressing the topic systematically. (KSR #32)

Plan
Planning
i. A conservation planning workshop was held in Hanoi in April 2019. Over 60 participants attended, including representatives from Wildlife Conservation Society (WCS), WWF, TRAFFIC, Fauna & Flora International (FFI), IUCN SSC Chair’s office, several national conservation NGOs, and the Vietnamese government. One conservation plan was produced for Owston’s Civet, one of the group’s priority species. (KSR #15)

ii. Two conservation strategies have been produced for Owston’s Civet, one in English and one in Vietnamese. (KSR #15)

iii. Four priority actions from the Owston’s Civet conservation strategy have been supported by the Co-Chair (through project design and assistance with grant applications), including: (1) research on civet coffee farms in Vietnam and impacts on Owston’s Civet; (2) hiring a dedicated Vietnamese Owston’s programme coordinator; (3) reviewing legal framework for NGOs to operate wildlife centres in Vietnam; (4) developing a project to focus on wild meat trade and links to legal snaring. (KSR #16)

Act
Conservation actions
i. Work on snaring, wild meat trade, and impacts on biodiversity loss in Southeast Asia is ongoing. (KSR #27, 31)

Network
Capacity building
i. A Vietnamese Programme Officer was hired in late-2019 to coordinate the Owston’s Civet Conservation Strategy. The Programme Officer is a full-time employee of Save Vietnam’s Wildlife, one of the main organisations for Owston’s Civet conservation in the world. Support is given via technical advice and mentoring by the Small Carnivore Specialist Group (Daniel Willcox).

Membership
i. Both Co-Chairs have made a big push to include more members from priority regions/countries. Membership has increased from 86 at the last report, to over 100. Twenty-five new members have been included in the group, the majority from developing countries/priority regions for the Specialist Group including Benin, Cambodia, China, Uganda and Vietnam.

Communicate
Communication
i. A volunteer technical editor of the Small Carnivore Conservation journal has been in position since 2019, and a new associate editorial board is being constructed. One issue of the journal will be published in 2020. (KSR #28)

Acknowledgements
Special thanks to Save Vietnam’s Wildlife (SVW) for supporting the work of Co-Chair Daniel Willcox and to ProCAT Colombia for supporting the work of Co-Chair José F. González-Maya. Also special thanks to SVW for their long-term commitments to Owston’s Civet conservation. Thanks to Wild Planet Trust, Wildlife Reserves Singapore, Ocean Park Conservation Foundation, and the Friends of Tallinn Zoo for supporting the Owston’s Civet conservation planning workshop, and for their commitments to this species’ conservation since. Thanks to ProCAT for hosting the III Simposio de Pequeños Carnívoros at the V Colombian Congress on Zoology and to INECOL (Mexico) for helping co-host the course: “Tópicos en Ecología y Conservación de Mesopredadores (Orden Carnivora) en América”.

Summary of activities 2019
Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 15, 16, 18, 27, 28, 31, 32

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC Small Mammal Specialist Group (SMSG) is to serve as the global authority on the world’s small mammals through developing a greater scientific understanding of their diversity, status and threats, and by promoting effective conservation action to secure their future.

Projected impact for the 2017-2020 quadrennium
Within this quadrennium, we will have expanded our global-level research for small mammals and we will have made considerable progress in each of our three programmes of activities within our strategy: Key Regions, Key Species, and increasing our influence within the global zoo network. From our list of priority Key Regions, where there are high densities of Globally Threatened and Data Deficient species, we will specifically concentrate on Mexico, Borneo and Ethiopia. We will prioritise species and areas in most urgent need of conservation efforts and help to build capacity in country to begin research and conservation work. Additionally, we will catalyse conservation actions on the ground for at least 10 key species. This will involve recruiting species champions and assisting our champions with fundraising, training, research activities, networking opportunities and/or facilitating conservation planning. We will build on our work to promote small mammal conservation within the world’s leading zoos, in particular focusing on both the Association of Zoos & Aquariums (AZA) and the European Association of Zoos and Aquaria (EAZA). We will bring experts together for a series of regional planning workshops to secure support for small mammal conservation, both for financing conservation within wild habitats and to increase representation in zoo collections of small mammal species facing extinction. Finally, we will have grown the membership of the SMSG so that it is taxonomically and geographically balanced and covers all priority skills and knowledge areas.

Targets for the 2017-2020 quadrennium

Assess
Red List: Red List assessments published for 100% of small mammal species.
Research activities: (1) one high impact publication, 2–3 lower impact publications; (2) two expeditions to areas with high densities of Data Deficient species; (3) appoint new taxonomic specialist, Dr Nate Upham.

Plan
Planning: hold eight action planning workshops (for zoos and regions).

Act
Conservation actions: active conservation efforts in place for 10 key species.

Network
Membership: taxonomic and geographic coverage for the majority of species results from a geographically diverse membership.

Communicate
Communication: keep membership updated.
Activities and results 2019

Assess

Red List

i. Three-hundred and sixty-seven assessments were published in 2019. (KSR #1)

Research activities

i. The global analysis for Rodentia and Eulipotyphla was prepared for submission. (KSR #32)

ii. Nate Upham continues to be the SMSG taxonomic advisor. (KSR #43)

Plan

Planning

i. Finding funding for action planning workshops has been difficult. At the end of 2019, we had secured funding for a workshop for Borneo. (KSR #17)

Act

Conservation actions

i. Funding has been found for several species projects and assistance to several of our members to design conservation work and research. (KSR #27)

Network

Membership

i. We had 142 members at the end of 2019.

Communicate

Communication

i. Quarterly newsletters are sent to members. (KSR #28)

Acknowledgements

We would like to thank Global Wildlife Conservation for their continued support for the SMSG. We have also received funding support from Ernest Kleinwort Charitable Trust for our Key Species work. Texas A&M University has provided financial support for some travel for Co-Chair Tom Lacher and members of his research group. The Santa Catarina Guinea Pig workshop was funded by Fundação Grupo Boticário de Proteção à Natureza, Brazil.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

- Assess: 3
- Plan: 1
- Act: 1
- Network: 1
- Communicate: 1

Main KSRs addressed: 1, 17, 27, 28, 32, 43

KSR: Key Species Result
Mission statement
To promote the conservation and sustainable use of (wild) South American Camelids in their area of geographic distribution.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision a substantial advance in reducing the extinction risk of some reduced and isolated populations of camelids, and reducing/managing the conflict between the species and human activities in recovered and abundant populations. Through scientific information, accurate assessment of the populations at regional scale for local classification in conservation categories, and the implementation of national conservation plans for Guanaco (*Lama guanicoe*) and Vicuña (*Vicugna vicugna*), we will build a governmental scenario for working with the species with local communities. We will continue to support sustainable use of species to benefit local people, and to fight against poaching and illegal trade in order to reduce their impact on natural populations. These conservation initiatives will be combined with communication and educational programmes, that we predict will impact positively on the attitude of human communities across the camelids’ distribution.

Targets for the 2017-2020 quadrennium

**Assess**

**Green List:** (1) complete Guanaco assessment for the Green List; (2) complete Vicuña assessment for the Green List.

**Policy:** include assessment of the Vicuña in the US Endangered Species Act.

**Red List:** (1) complete one Vicuña reassessment for the Red List; (2) complete Guanaco subspecies assessment for the Red List; (3) complete Vicuña subspecies assessment for the Red List; (4) carry out classification of the Vicuña in a conservation category in Chile.

**Research activities:** write scientific articles affiliated as a Specialist Group.

**Plan**

**Agreements:** include the wild Bactrian Camel (*Camelus ferus*) within the remit of our Specialist Group.

**Planning:** (1) complete a conservation plan for Vicuña in Peru; (2) complete a management and conservation plan for Vicuña in Bolivia; (3) complete a conservation plan for Vicuña in Argentina; (4) complete a conservation plan for Vicuña in Chile; (5) complete a conservation plan for Guanaco in Peru; (6) complete a conservation plan for Guanaco in Bolivia; (7) complete a conservation plan for Guanaco in Paraguay; (8) complete a conservation plan for Guanaco in Argentina; (9) complete a conservation plan for Guanaco in Chile; (10) planning and assessment of a meeting for a new Conservation and Management Plan for South American Camelids.

**Policy:** (1) delineate Animal Welfare Criteria for the Management of South American Wild Camelids, and Protocol of Good Management Practices for Wild Guanacos; (2) apply the animal welfare protocol to commercial hunting.

**Network**

**Membership:** (1) update the membership protocol; (2) develop membership cancellation protocol.

**Proposal development and funding:** sign three funding agreements.

**Synergy:** formalise the group’s host organisation.
Communications

Communication: (1) publish four issues of the newsletter; (2) obtain a newsletter ISSN; (3) publish the Vicuña book (The southern subspecies); (4) update the website; (5) develop position statement about commercial hunting; (6) solicit report about mange disease in Vicuña; (7) develop report about methods of abundance estimates in large mammals; (8) review the proposal for a resolution about poaching and trafficking of Vicuña products for discussion at the 18th Conference of the Parties (CoP18) of CITES.

Activities and results 2019

Assess

Green List

i. The Guanaco assessment for the Green List was finished by our Red List Authority and its results were shown in Abu Dhabi as an example. An article about the results will be included in our Specialist Group newsletter. (KSR #11)

Red List

i. The Vicuña assessment for the Green List was finished by our Red List Authority and the results were shown in Abu Dhabi as an example. An article about the results will be included in our Specialist Group newsletter. (KSR #11)

Research activities

i. Only the Chair published a scientific article that included the Specialist Group as affiliation. (KSR #43)

Plan

Agreements

i. Despite our efforts during the Abu Dhabi meeting, no agreements or scheduled plans were developed with the Antelope Specialist Group. We will not pursue this target any further. (KSR #1, 29)

Planning

i. No news from the Argentinian government or agencies about the Guanaco Conservation Plan in Argentina. Nevertheless, a resolution for the next World Conservation Congress was approved for discussion. (KSR #18)

Policy

i. Our animal welfare protocol applied to commercial hunting is being reviewed by our members. (KSR #26, 35, 36)

Network

Proposal development and funding

i. Funding agencies dropped for several reasons, mainly in Chile. (KSR #19)

Synergy

i. The Faculty of Forest Science and Conservation of Nature, University of Chile, signed an agreement with SSC and is acting as the Specialist Group’s host organisation for three years. (KSR #29)

Communications

Communication

i. Our 2019 newsletter was delayed, because invited authors have not finished their articles. The newsletter will be published in the course of 2020. (KSR #28)

ii. The Vicuña book (southern subspecies) was finished in 2019, but will be printed in January 2020. (KSR #28)

iii. The South American Camelid Specialist Group website was updated at least four times during 2019. Nevertheless, funding is needed to continue with the updates. (KSR #28)

iv. Our position statement about commercial hunting is being reviewed by our members. (KSR #28)

v. Our report about mange disease in Vicuña is on course. The final version must be sent to the Vicuña Convention. That meeting has been delayed until the end of 2020. (KSR #27, 28)

vi. The proposal for a resolution about poaching and trafficking of Vicuña products was approved by all parties at CITES CoP18, Geneva, in 2019. (KSR #26, 27)

Acknowledgements

We thank the following agencies and organisations: Vicuña Convention; Servicio Agrícola y Ganadero (SAG) and Corporación Nacional Forestal (CONAF), Chile; Faculty of Forestry Science and Conservation of Nature, University of Chile, Chile

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

Assess 4

Plan 3

Network 2

Communicate 6

Main Key Species Results (KSR) addressed: 1, 2, 11, 18, 19, 26, 27, 28, 29, 35, 36, 43

Resolutions addressed: WCC 2016 Res 093

KSR: Key Species Result
IUCN SSC Tapir Specialist Group

2019 Report

Chair
Patrícia Medici (1)

Red List Authority Coordinator
Cody Schank (2)

Location/Affiliation
(1) IPÊ - Instituto de Pesquisas Ecológicas, Brazil
(2) Department of Geography and The Environment, University of Texas, Austin, Texas, US

Number of members
130

Social networks
Facebook: Tapir Specialist Group
Twitter: @IUCN_Tapirs

Mission statement
The IUCN SSC Tapir Specialist Group (TSG) is a global group of biologists, zoo professionals, researchers and advocates dedicated to conserving tapirs and their habitat through strategic action-planning in countries where tapirs live, information sharing and through educational outreach that shows the importance of the tapir to local ecosystems and to the world at large.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we want to have a strong representation in all tapir range countries in Latin America and Southeast Asia and stable, long-term research and conservation programmes in several of these countries. In addition, we want to see our Action Plans implemented.

Targets for the 2017-2020 quadrennium

Assess
Research activities: (1) establish a working inventory of the tapirs under human care in tapir range countries; (2) work on and update a list/map for existing biosamples and biobanks; (3) augment the number of people/projects collecting biosamples for each tapir species; (4) raise, at least by one, the number of tapir-related citizen science projects; (5) establish a network of tapir research and conservation programmes representing all tapir range countries.

Network
Capacity building: integrate our education curriculum ‘Tapir Tracks’ with education programmes.

Documents review: enhance the ex situ Tapir Husbandry Manual.

Synergy: (1) have one governmental representative from each tapir range country present at the next Tapir Symposium; (2) establish three additional long-term partnerships between tapir projects with zoos; (3) ensure that ex situ tapir populations are utilised in basic and applied research contributing to conservation; (4) create a TSG full-time representative position to attend (participate in and report on) international meetings; (5) involve TSG members in at least three TSG Strategic Plan actions; (6) share information available through existing databases (Species 360) with in situ and ex situ partners; (7) obtain a minimum of 10 new alliances between ex situ and in situ conservation efforts; (8) prepare an evaluation survey for self-assessment in place for TSG Country and Species Coordinators; (9) implement an internal online communication channel; (10) establish a Global Species Management Plan in range countries of Malayan Tapir (Tapirus indicus); (11) liaise with other ecosystem/restoration stakeholders; (12) expand the TSG fellowship; (13) establish tapir conservation alliances for the purpose of networking, national action planning, and fundraising.

Communicate
Communication: (1) publish a scientific article (newsletter) annually for a scientific audience to cover tapir conservation topics; (2) prepare an awareness campaign about tapir conservation that includes TSG talking points for every country with a TSG representative; (3) publish a visual, popular version of at least two TSG Action Plans (Baird’s Tapir Tapirus bairdii and Mountain Tapir Tapirus pinchaque), condensed, accessible and mobile for use; (4) effectively communicate one success story from each species every year; (5) upload at least 100 papers to the TSG Virtual Library; (6) increase the search visibility of the TSG website.
Activities and results 2019

Assess

Research activities

i. We have established a project where several zoos in the US and Brazil are photographing tapir calves over time as they lose their skin pattern (spots and stripes). This will be useful so that tapir researchers working in the wild will be able to estimate tapir age. (KSR #12)

Plan

Planning

i. TSG Country Coordinators are working on reviewing Species and National Action Plans. (KSR #15)

Network

Capacity building

i. We now have Tapir Tracks available in Portuguese and Spanish. (KSR #17)

Synergy

i. Our tapir conservation alliances have been successful in raising funds from several zoos in the US, Europe and Latin America.

ii. We have concluded the first grant from our TSG & Fondation Segre World Tapir Conservation Programme. We have approved a continuation grant for three more years.

iii. TSG members have been requested to list at least three TSG Strategic Plan actions with which they would like to get involved.

iv. The TSG Fellowship is a major success. We have trained dozens of tapir conservationists from all over Latin America.

v. New alliances: (1) we have linked a number of tapir researchers and conservationists with zoo conservation funds; (2) we have facilitated the link between staff from field projects and zoo personnel, creating opportunities for professional exchanges; (3) zoos and breeding centres in Brazil are supporting a Lowland Tapir (Tapirus terrestris) re-introduction programme in Rio de Janeiro State. (KSR #29)

Communicate

Communication

i. TSG members in different countries have been running a multitude of education and awareness campaigns. (KSR #28)

ii. One-hundred and fifty papers have been uploaded to the TSG Virtual Library. (KSR #28)

Acknowledgements

Association of Zoos and Aquariums (AZA) and Tapir Taxon Advisory Group (TAG) (Michele Stancer), Copenhagen Zoo, Denmark; European Association of Zoos and Aquaria (EAZA) Tapir TAG (Bengt Holst); Fondation Segre, Switzerland; Houston Zoo, US; IPE - Institute for Ecological Research, Brazil; IUCN SSC Conservation Planning Specialist Group (CPSG); ProCAT Colombia.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 12, 15, 17, 28, 29

KSR: Key Species Result
Mission statement

The SSC Wild Pig Specialist Group (WPSG) has not yet defined a mission statement. Key components of such a statement would be: (1) viable wild pig populations, (2) all wild pig taxa, (3) threat management, (4) conservation breeding, (5) reintroduction, (6) habitat restoration and management, and (7) resolution of conflicts with people. Most wild pig species are in decline, especially the various species and subspecies in Indonesia and the Philippines. The WPSG uses a combination of strategies to try to reduce these population declines. This primarily includes (1) research on taxonomy and distribution (the cornerstone of any conservation management), and (2) management of captive and wild populations to prevent the extinction of the most threatened species.

Projected impact for the 2017-2020 quadrennium

We aim to safeguard the small populations of the two Critically Endangered suid species, Pygmy Hog (Porcula salvania) and Visayan Warty Pig (Sus cebifrons) and continue the captive breeding and release programmes. The target for Pygmy Hogs is to ensure a population in the wild of at least 250 individuals. For Visayan Warty Pig, we still need to confirm that the species survives in the wild, as no such information has been forthcoming. For all other species, we are still in the stage of assessing population status and trends, and we do not have conservation programmes that can realistically aim to stabilise populations in the wild. For Wild Boar (Sus scrofa), we aim to revise the taxonomy of the current 18 subspecies.
Conservation actions: (1) Babirusa Global Species Management Plan; (2) release programme for Javan Warty Pig; (3) European Association of Zoos and Aquaria (EAZA) Tapir and Suiform Regional Collection Plan; (4) Visayan Warty Pig captive breeding program 1: stud-book with data of all breeding centres ready and regularly updated; (5) Visayan Warty Pig captive breeding program 2: annual transfer plan with breeding recommendations (regional and international) for Visayan Warty Pigs completed; (6) wild populations of Visayan Warty Pigs: reintroduction on Negros island; (7) collaborative captive breeding of Javan Warty Pigs.

Network

Agreements: sign a new memorandum of understanding (International Conservation, Management and Research MoU) between the partners (Durrell Wildlife Conservation Trust; WPSC; Forest Department Government of Assam; Ministry of Environment and Forest, Government of India; and local partners Aaranyak and Ecosystems-India) for five years for continuation of the Pygmy Hog Conservation Programme.

Membership: update membership and recruit new members for neglected species and other disciplines.

Proposal development and funding: develop a fundraising plan, making contact with the pig production industry for fundraising.

Synergy: formalise the advisory committee and regional advisors.

Communicate

Communication: (1) publish Suiform Soundings; (2) update the website, include restricted member area for communication.

Scientific meetings: organise an African Pigs Conference.
Activities and results 2019

Assess

Research activities

i. We undertake continuous gathering of ecological, behavioural, and distribution data (long-term, ongoing). The Warthog Database has been in place for some years. (KSR #32)

ii. The survey of Hairy Babirusa has been conducted on Buru and published in *Suiform Soundings*. The Red List update is not yet done. (KSR #12)

iii. Javan Warty Pig status surveys were extended into 2020; the results are not yet published. (KSR #12)

iv. Studies on the genetics of Javan and Bawean Warty Pigs are ongoing. Preliminary results have been published, but final results depend on more samples (currently being collected). (KSR #32, 42)

Plan

Planning

i. Discussions on the conservation needs assessment and planning strategy with CPSG have been held, including the idea of connecting a meeting to the International Symposium on Wild Boar and Other Suids, but funding is still lacking. (KSR #15)

ii. Collaborative captive breeding of Javan Warty Pigs is behind schedule because collaboration between captive breeding facilities in Indonesia is challenging. A dedicated workshop could possibly help. (KSR #15)

iii. The complete updated Pygmy Hog Species Action Plan is ready for printing and printing is secured; the task will be achieved early 2020. (KSR #15)
Policy

i. A report on UK Wild Boar was submitted to the Department for Environment, Food and Rural Affairs, but the decision was that excessive Wild Boar numbers in the Forest of Dean need to be brought under control before any serious consideration can be given to translocations or a new modus operandi for this species in the UK. The Forestry Commission ranger team increased to eight rangers in the Forest of Dean, so any work beyond this region on boar wouldn’t be implemented until after the population here is at a manageable level. (KSR #27)

Act

Conservation actions

i. A workshop on the Visayan Warty Pig was held in June 2019 and captive breeding was discussed. We made overviews of all pigs in captivity globally. The report of this meeting is not yet finished, and actions have not yet started. (KSR #25)

ii. The project on reintroduction of Visayan Warty Pigs into wild populations on Negros is progressing according to plan, there is just a slight delay due to clarification of ownership. (KSR #25)

Network

Agreements

i. Progress towards signature of the International Conservation, Management and Research MoU has been made: the MoU is in New Delhi with the Ministry of Environment and Forest, Government of India. Progress is being tracked. (KSR #29)

Membership

i. The membership was updated using a member survey, with neglected species and disciplines identified. We are actively searching for new members.

Communicate

Communication

i. Two issues of Suiform Soundings were published. (KSR #28)

Scientific meetings

i. African pigs conference: Thirty people brought together knowledge from eight countries, and that knowledge was compiled during a two-day workshop in Uganda. The five African species of wild pigs were discussed, and the assessment updated. An interest group for African pig species was built, headed by Rafael Reyna as the Africa coordinator. The ‘Kibale Call in Favour of Wild Pig Conservation’ was written. A report is available. (KSR #28)

Acknowledgements

Thank you to all the WPSG members who actively contribute to the work of the WPSG, especially to the Regional Advisors, Red List Authority and Suiform Soundings Chief Editor and Social Media Officer. We would also like to thank the Species Conservation Foundation and Association of Zoological Gardens for providing the new Chair with the time and space to work on WPSG activities. A thank you also to Durrell Wildlife Conservation Trust for providing the funds for the species action plan for Pygmy Hog.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

| Assess | 4 |||| |
| Plan   | 4 |||| |
| Act    | 2 || |
| Network| 2 || |

Main KSRs addressed: 2, 15, 25, 27, 28, 29, 32, 42

KSR: Key Species Result
Co-Chairs
Mayra Camino Vilaró (1)
Tetiana Kryvomaz (2)

Red List Authority Coordinator
Mayra Camino Vilaró (1)

Location/Affiliation
(1) National Botanic Garden, University of Havana, Havana, Cuba
(2) Kyiv National Construction and Architecture University, Ecology Department, Kyiv, Ukraine

Number of members
25

Social networks
Facebook: Slime Mold Identification & Appreciation
Website: www.cybertruffle.org.uk/moulds/index.htm

Mission statement
The mission of our IUCN Specialist Group is to promote the conservation of chytrids, downy mildews, myxomycetes and zygomycetes.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision a substantial advance in understanding extinction risks for certain ecological groups of myxomycetes (slime moulds), chytrid, zygomycete, downy mildew and particular species. One of the most important aspects of evaluating possible impacts of climate change and anthropogenic influence is to demonstrate that changes are occurring in the distribution of particular species. In future research, at least two possible effects of climate change and other negative impacts should be clearly distinguished. First, the negative impacts on composition of species assemblages, which does not necessarily threaten particular species, must be assessed. Second, the negative impacts on a single species, which may well be threatened and thus would warrant inclusion on Red Lists, needs to be evaluated. In addition, promotion of conservation activities for neglected groups of living organisms will provide a more comprehensive vision of how nature processes function; in particular, attention needs to be focused on discovering the role of chytrids, zygomycetes, downy mildews, and myxomycetes in people’s lives and their relationships with other species. Furthermore, the conservation action network of experts and amateurs will expand.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete assessment of 100 species of myxomycetes (slime moulds).
Research activities: (1) study climate change impacts on myxomycetes, chytrid, zygomycete, downy mildew; (2) analyse population trends, threats, and assess species using the IUCN Red List criteria and determine conservation actions for chytrids, zygomycetes, downy mildews, and slime moulds.

Plan
Policy: promote the conservation of different groups of living organisms that were not considered to be in danger before, but are in need of protection today.

Network
Capacity building: train professionals on how to carry out Red List assessments.
Synergy: organise a network of specialists and stakeholders for discussing conservation problems for “lower fungi” and for exchange of successful protection measures.

Communicate
Communication: advance conservation activity for chytrids, zygomycetes, downy mildews and slime moulds.
Activities and results 2019

Assess
Red List
i. For 10 myxomycete species, all information for Red List assessment was prepared and published in Description Sheets (CABI). (KSR #1)

Research activities
i. Ten description sheets were published in the UK about myxomycete species which have the ability for heavy metal accumulation; one article was published in France about nivicolous species, which were evaluated as sensitive to climate change impact; three publications were produced in Cuba, including a guide for a botanic garden, which contains conservation aspects. (KSR #43)

ii. A population survey with analysis of population trends, threats, and assessment of species using the IUCN Red List criteria and determination of conservation actions for chytrids, zygomycetes, downy mildews, and slime moulds was completed in English, Spanish and Ukrainian. (KSR #12)

Plan
Policy
i. We produced a policy brief to promote the conservation of myxomycetes and other groups of living organisms that were not considered to be in danger before, but are in need of protection today. (KSR #2)

Network
Capacity building
i. Presentations about Red List assessments were made in Cuba, France and Ukraine. (KSR #5)

Synergy
i. A collaborative system continues globally, with branches established in France, activation developing in Latin America, and starting in Malaysia. (KSR #29)

Communicate
Communication
i. The International Congress on the Systematics and Ecology of Myxomycetes (ICSEM10) was held in Costa Rica with around 50 participants; International Days for the Search and Study of Nivicolous Species of Myxomycetes organised in France with around 70 participants; expeditions carried out in Guadeloupe, France, Cuba, Ukraine, and the UK. (KSR #28)

Acknowledgements
We are grateful to Environment Agency – Abu Dhabi for the opportunity to participate in the Fourth IUCN SSC Leaders’ Meeting. Thanks to the Mohamed bin Zayed Species Conservation Fund for their support.

Summary of activities 2019

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<thead>
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Main KSRs addressed: 1, 2, 5, 12, 28, 29, 43

KSR: Key Species Result
Mission statement
To promote conservation of ascomycete fungi by raising awareness that they have vital roles as nutrient recyclers, mutualistic symbionts of animals and plants, and as checks and balances in freshwater, marine and terrestrial ecosystems, and that like animals, plants and other fungi, they are endangered by climate change, persecution and pollution.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we plan to have the basic infrastructure within IUCN to enable conservation of ascomycete fungi to be promoted, with global Red List evaluations for at least 150 species. This will in turn mean more Specialist Group members, their training in communication skills and in Red Listing procedures, and greater activity by those members, so that the group is nowhere dependent on a single person. We intend to achieve an increase in awareness of the vital role of fungi first among IUCN personnel, and thereafter in an expanding range of other conservation NGOs, in the public, and among national focus points for the Convention on Biological Diversity.

Targets for the 2017-2020 quadrennium
Assess
Red List: evaluate 150 non-lichen-forming ascomycetes for the IUCN Red List, particularly those with human food value (The IUCN-Toyota Red List Partnership).

Network
Capacity building: develop a list of essential sources to consult for evaluating species. Scientific meetings: collaborate with the European Mycological Association and International Society for Fungal Conservation in organising a European-level meeting on fungal conservation in Macedonia in October 2017. Synergy: appoint a Specialist Group Co-Chair, Red List Authority Coordinator and Programme Officer.

Communicate
Communication: (1) register an Internet domain name for Specialist Group; (2) establish a Specialist Group website; (3) establish dedicated email addresses for the Specialist Group Chair, Specialist Group Co-Chair, Red List Authority Coordinator and Programme Officer; (4) establish a Facebook account; (5) establish a Twitter account.

Activities and results 2019
Assess
Red List
i. Red List assessment of non-lichen-forming ascomycetes: Of the first tranche, 15 species covered by this group are now published on the IUCN Red List, 26 are currently under review by the Red List Authority, and nine are at proposal stage. Of the second tranche, 21 species are at proposal stage, while data are gathered and draft proposals prepared for 29 species. Of the third tranche, data are gathered and draft proposals prepared for 50 species. (KSR #1, 2)
**Network**

**Capacity building**
1. Version 1.00 of the list of essential sources to consult for evaluating species is available on the website; a revised version is expected to be uploaded in June 2020. (KSR #5)

**Synergy**
1. Deputy Chair appointed, Programme Officer appointed, two new members of the Red List Authority Group appointed and undergoing training. (KSR #5)

**Communicate**

**Communication**
1. To date, our website has been basic. A full version is now being populated with text and is expected to be uploaded in June 2020. (KSR #28)

2. A member of the group agreed to establish a Facebook account, which is not yet achieved. (KSR #28)

3. A member of the group agreed to establish a Twitter account, which is not yet achieved. (KSR #28)

**Summary of activities 2019**

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 2, 5, 28

KSR: Key Species Result
Co-Chairs
Christoph Scheidegger (1)
Jessica L. Allen (2)

Red List Authority Coordinator
Christoph Scheidegger (1)

Location/Affiliation
(1) Swiss Federal Institute for Forest, Snow and Landscape Research, Switzerland
(2) Conservation and Research Department, Atlanta Botanical Garden, US

Number of members
34

Mission statement
Promote studies assessing lichen diversity, population dynamics and conservation genetics in order to evaluate the conservation status of lichen species according to IUCN criteria.

Projected impact for the 2017-2020 quadrennium
By 2020, we will strengthen the visibility of lichens in biodiversity conservation strategies by (1) publishing Red List assessments of lichens from all continents, and (2) further developing research and outreach in lichen conservation in Asia.

Targets for the 2017-2020 quadrennium
Assess
Red List: Red List assessments of 200 species with a focus on edible and otherwise economically important taxa and very rare and well-documented species.

Research activities: conduct detailed studies on rare and endangered species.

Act
Conservation actions: development of conservation actions in the respective regions for Erioderma pedicellatum.

Activities and results 2019
Assess
Red List
i. Five additional species were published in 2019 for a total of 28 lichen assessments. (KSR #1)

Research activities

Acknowledgements

The Swiss Federal Institute for Forest, Snow, and Landscape Research and Eastern Washington University supported the work of the Lichen Specialist Group in 2019.

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

Assess 3

Main KSRs addressed: 1, 27, 32

KSR: Key Species Result
Mission statement
The mission of the Mushroom, Bracket, and Puffball Specialist Group is to advance fungal conservation by raising awareness of the importance of fungi and the need to conserve them, building capacity among the mycological community, and greatly increasing the number of fungi on national and the global Red Lists.

Projected impact for the 2017-2020 quadrennium
By the end of this quadrennium, fungal conservation efforts will have developed substantially. There will be a broader interest in and understanding of the need for including fungi in conservation discussions and actions. The number and diversity of mycologists trained and engaged in generating conservation assessments will be greatly increased and processes for generating Red Lists will be enhanced. The number of mushrooms and relatives on national and global Red Lists will be significantly higher than in 2015, providing insight into the conservation status of mushrooms and related fungi. The Mushroom, Bracket, and Puffball Specialist Group will have begun to add conservation planning into their activities.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete commitment of 1,000 Red List assessments for The IUCN-Toyota Red List Partnership; (2) increase quantity and quality of fungal national Red Lists by providing advice and encouragement for national Red List committees that are either creating fungal Red Lists for the first time or in the process of revising their fungal Red List.

Network
Capacity building: build capacity among the mycological community (2–3 courses/workshops per year).
Synergy: Establish a Fungal Conservation Committee to better coordinate efforts among the fungal Specialist Groups and other parts of IUCN, create a higher profile for fungal conservation, and diversify participants in fungal conservation.

Activities and results 2019
Assess
Red List
i. Red List workshops were held in Australasia (Melbourne), Europe (Cambridge), and Southeast Asia (Malaysia, Sarawak, Borneo). Over 200 species were assessed and published in 2019. (KSR #1)

ii. National and regional Red Lists were a focal point of the Red List workshops, short courses at congresses, and the Latin American and Caribbean Fungal Strategy workshop. (KSR #2)
Network

Capacity building
i. We were invited to participate in a workshop held in Panama to develop a Latin American and Caribbean Fungal Conservation Strategy; we presented a short course plus a symposium at the Congress of European Myologists; we also led a fungus session at the Fourth SSC Leaders’ Meeting in Abu Dhabi. (KSR #5)

Synergy
i. A draft proposal was developed and submitted for review. (KSR #2, 5, 28)

Acknowledgements

The progress made in 2019 would not have been possible without the support of the Mohamed bin Zayed Species Conservation Fund, Sarawak Forestry Corporation, and The IUCN-Toyota Red List Partnership.

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 1, 2, 5, 28

KSR: Key Species Result
Mission statement

The mission of the Rust and Smut Specialist Group (RSSG) is to promote the study and conservation of the rust and smut fungi by: (1) increasing current knowledge on the taxonomy of the species, (2) identifying and documenting threats to the survival of the species, and (3) assessing and monitoring their conservation status.

Projected impact for the 2017-2020 quadrennium

The conservation status of 50 species of rust and smut fungi will be assessed.

Targets for the 2017-2020 quadrennium

Assess

Red List

1. The assessments of six species are at an advanced stage. (KSR #1)

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

Assess 1

Main KSRs addressed: 1

KSR: Key Species Result
Ustilago suddiana from South Sudan
Photo: C. M. Denchev
Mission statement
The mission of the IUCN SSC Bryophyte Specialist Group is to promote the exploration of bryological diversity across all geographic scales and its long-term conservation.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we expect that substantially more bryophyte species will be properly assessed or reassessed at the global scale, following the latest IUCN guidelines. We expect the European Red List of Threatened Bryophyte Species, to be published in autumn of 2019, will support priority making for conservation actions and inform policy decisions on biodiversity conservation in Europe. It will serve as a critical instrument to measure some aspects of the progress towards achieving the EU 2020 Biodiversity strategy. The European Committee for Conservation of Bryophytes (ECCB) currently works on defining ‘Important Bryophyte Areas’ for Europe, based on the European Red List data. Many members of the Bryophyte Specialist Group (BSG) and other bryologists are now, after having attended the IUCN Red Listing workshop (https://www.bryology2019.com/iucn-red-listing-workshop/), familiar with the IUCN methodology for Red List assessment and its application. Several work on assessing species for the global Red List, while others focus on national and regional levels.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete assessment of 1,800 European bryophytes and publication of a European bryophyte Red List; (2) Top 10 Initiative; (3) Red List assessment of all Swiss bryophytes; (4) Red List assessment of South African Pottiaceae; (5) critical terms necessary for the application of Red List categories and criteria refined to be suitable for clonal organisms, and consistently used in the assessments of European bryophytes.

Research activities: analysis of the endemic bryophyte elements of southern Africa (South Africa, Botswana, Namibia, Swaziland, Lesotho).

Network
Capacity building: capacity building among BSG members through a training workshop on IUCN Red List methodology.

Communicate
Communication: publish paper on the most strongly threatened African bryophytes.

Activities and results 2019
Assess
Red List
i. For assessment of European bryophytes, 1,817 species were considered, 1,796 assessments were completed, and 21 species were Not Assessed. The European Red List has been published (ISBN: 978-2-8317-1994-8, print version): Hodgetts N., et al. (2019). A miniature world in decline: European Red List of Mosses, Liverworts and Hornworts. Brussels, Belgium: IUCN. Assessments were conducted in the IUCN SIS database and published on the IUCN Red List website (https://www.iucnredlist.org/). Endemic species were assessed, mapped and published at the global level. (KSR #1, 2)
Anthoceros neesi belongs to the phylogenetically distinct hornwort lineage, it is one of the few endemic bryophytes in Central Europe, and is globally at risk for extinction. Photo: Lars Hedenäs

Acroponium procerum is a rare species in tropical South-East Asia that grows on peaty soil at higher elevations. Photo: Lars Hedenäs

Tetrastichum virens is an Ibero-Macaronesian endemic species that is assessed as Near Threatened. Photo: Lars Hedenäs

**Research activities**

i. Student re-registered at Wits University for 2019. The databases were completed, and the student is working on a draft manuscript analysing endemism (Centres of Endemism and Areas of Endemism) in southern Africa. The student presented the poster ‘Centres of endemism across mainland Africa and adjacent islands’ by Phephu, N., Witkowski, E.T.F., Van Rooy, J., Sim-Sim, M.M., and Papo, L., at Island Biology 2019 – III International Conference on Island Evolution, Ecology, and Conservation, held 8–13 July 2019, at the University of La Réunion, Saint-Denis, La Réunion Island, France. (KSR #26, 43)

**Network**

**Capacity building**

i. Twenty-nine bryologists participated in the workshop on IUCN Red Listing methodology. The IUCN Red Listing workshop was held as a pre-conference event (before the IAB iMOSS SEB 2019 Conference) on 7–8 July 2019, in Royal Botanic Garden in Madrid. Two certified facilitators from the IUCN Centre for Mediterranean Cooperation Malaga, the IUCN Global Species Programme Red List Unit Cambridge, the Royal Botanic Garden (RBG, CSIC) Madrid, and the International Association of Bryologists. Jacques van Rooy, Ariel Bergamini and Irene Bisang acknowledge the continuous encouragement and financial support of their employers (South African National Biodiversity Institute, Swiss Federal Research Institute, Swedish Museum of Natural History).

Special thanks to Jesus Muñoz (RBG) and Olivier Hasinger, former SSC Network Coordinator, for their facilitation of the Red Listing training.

**Summary of activities 2019**

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<td>Network</td>
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Main KSRs addressed: 1, 2, 5, 26, 43

**Ackowledgements**

The European Red List of bryophytes was funded by the European Commission (LIFE grant agreement No. IFE14PREE001) and co-funded by the Ministry of the Environment of the Czech Republic and ArtDatabanken from the Swedish University of Agricultural Sciences. The IUCN Red Listing training was supported, either economically or in kind, by Mohamed bin Zayed Species Conservation Fund, the IUCN Centre for Mediterranean Cooperation Malaga, the IUCN Global Species Programme Red List Unit Cambridge, the Royal Botanic Garden (RBG, CSIC) Madrid, and the International Association of Bryologists. Jacques van Rooy, Ariel Bergamini and Irene Bisang acknowledge the continuous encouragement and financial support of their employers (South African National Biodiversity Institute, Swiss Federal Research Institute, Swedish Museum of Natural History).

Special thanks to Jesus Muñoz (RBG) and Olivier Hasinger, former SSC Network Coordinator, for their facilitation of the Red Listing training.
**Mission statement**

The mission of the Cactus and Succulent Plant Specialist Group (CSSG) is to contribute to the conservation of cactus and succulent plants through better understanding of their taxonomy, ecology and threats.

**Projected impact for the 2017-2020 quadrennium**

By the end of the quadrennium, we envisage a priority conservation plan to conduct activities on the ground to improve the conservation status of highly threatened cactus species. We will have generated the Red List assessments for other complete groups of succulent plants that will enable us to start setting and planning conservation. We will have a more diverse CSSG that includes members from a wider geography.

**Targets for the 2017-2020 quadrennium**

**Assess**

Red List: three hundred succulent plant species assessed.

Research activities: (1) one scientific paper published; (2) Alliance for Zero Extinction sites (A2Es) and Key Biodiversity Areas (KBAs) identified for all cacti.

**Plan**

Planning: one national or regional conservation action plan for cacti produced.

Policy: participate in one policy-related forum.

Research activities: one scientific paper published.

**Network**

Capacity building: four CSSG members trained as Red List Assessors.

Membership: increase in number of CSSG members, with 40 as goal.

Research activities: strategic planning of activities to conduct with host institution Desert Botanical Garden.

Synergy: hire a Programme Officer.

**Communicate**

Communication: (1) publish a CSSG Newsletter; (2) build a presence on social media platforms.

**Activities and results 2019**

**Assess**

Red List

The majority of the 311 Red List assessments committed for the quadrennium were done during two workshops held in 2018. However, we had a number of *Agave* and *Yucca* species, mainly from the US, that could not be completed during these workshops. In order to complete these assessments, we have been working remotely with CSSG members from the US, some of which are based in our host institution, the Desert Botanical Garden (DBG), and include the Red List Authority Coordinator. These assessments will be published on The Red List in 2020. (KSR #1)

**Plan**

Planning: one national or regional conservation action plan for cacti produced.

Policy: participate in one policy-related forum.

Research activities: one scientific paper published.
Research activities

i. One scientific paper related to illegal trade on cacti was published. The scientific manuscript entitled ‘Illegal wildlife trade and the persistence of “plant blindness”’, reported as “submitted” in our previous report, was published in July 2019 in the journal *Plants, People, Planet* (https://doi.org/10.1002/ppp3.10053). This paper was co-authored by many of the experts, including the CSSG Co-chair Bárbara Goettsch, who participated in the event ‘Raising the profile of plants in IWT policy: an evidence-based agenda setting workshop’ that took place during the Evidence to Action: Research to Address Illegal Wildlife Trade conference. This publication identifies the results found about practical opportunities for raising the profile of wild plant species that are actively traded across international markets. (KSR #32)

ii. All AZE and KBA for cacti have been identified (the CSSG provided support on this process, led by IUCN and Birdlife). (KSR #22)

Plan

Planning

i. One national conservation action plan for cacti: action-planning workshop for *Copiapoa* cacti conservation in Chile. The CSSG is working on its first conservation action plan for a complete genus of cacti. In collaboration with Chester Zoo in the UK and Concepción University in Chile, the three-day stakeholder workshop ‘Conservation action-planning workshop for *Copiapoa* cacti’ was initially planned for 25–27 May 2020. Unfortunately, it is now postponed as a result of travel restrictions and social distancing due to COVID-19. We are already looking at future potential dates that will be revisited by the organisers in July 2020.
The workshop will focus on understanding the current conservation status of the genus *Copiapoa*, which comprises 22 cactus species endemic to the Atacama Desert in northern Chile, their threats and conservation needs, to develop a 10-year conservation action plan.

**Network**

**Capacity building**

i. Six members of the Specialist Group are now officially trained as Red List Assessors. In addition to the five CSSG members trained as Red List assessors in 2018, our Programme Officer, Jael M. Wolf, was officially trained during an Assessors Red List training workshop held 18–21 February 2019 in Tegucigalpa, Honduras.

**Membership**

i. The CSSG has been actively expanding the taxonomic and geographic representation for the group. In 2019, we recruited a total of 20 new experts (three experts are pending registration but have verbally accepted), increasing the number of members from 18 to 38. In addition to expanding the collective knowledge of cactus and agaves, our new members broaden the expertise of our group to policy, invasive species, aloes and yuccas. Our group has become more diverse with the addition of new members from countries previously not represented in the CSSG such as Cuba, El Salvador, Madagascar and Venezuela. We have also increased female participation and now 26% of our members are women.

**Synergy**

i. The CSSG now has a part-time Programme Officer, Jael M. Wolf, who started in this role in February 2019. This position is possible thanks to the kind support of our host institution, the Desert Botanical Garden. Jael has been instrumental in developing our communication products, including our bi-annual newsletter and managing our social media campaigns. She also organises regular meetings among the group members, supports new members in the completion of the registration process, assists on the Red List assessment process and helps generating reports. She participated in the Fourth SSC Leaders’ Meeting in Abu Dhabi, 6–9 October 2019, which was a great opportunity for her to meet many other members of the SSC network. (KSR #1, 5, 29, 43)

**Communicate**

**Communication**

i. The CSSG has been successful in producing its newsletter. We now release a bi-annual newsletter in May/June and December to keep our members updated on the CSSG work, developments, involvement in workshops and other activities, news including the addition of new members, grant-funding opportunities, and promoting our social media platforms. (KSR #28, 43)

ii. Since April 2019, the CSSG has had a presence in the following three social media platforms: Twitter (212 followers), Facebook (551 followers) and Instagram (366 followers). Through these platforms, we seek to raise
awareness among the general public about the importance of cactus and succulent plants and their conservation. We have been publicising the work of the CSSG and IUCN’s Knowledge Products, in particular The IUCN Red List of Threatened Species, by pairing them with interesting facts and visual campaigns to inform people about these trendy and most at-risk groups of plants. In order to have a greater impact, we are teaming up with DBG’s Marketing Communications Department to improve our communication strategies and broaden our audience. For instance, we will be working together to develop relevant content that can be shared across the social media platforms of both organisations and will include images of cactus and succulent species from the DBG’s living collections. (KSR #28, 43)

Acknowledgements

We thank our host institution Desert Botanical Garden for their generous support of the Specialist Group, kindly sponsoring the part-time position of our Programme Officer and her participation in a Red List training workshop in Honduras. The Aloe workshop was possible thanks to the support of Royal Botanical Gardens, Kew and The IUCN–Toyota Red List Partnership; the Agave and Yucca workshop was possible thanks to Desert Botanical Garden and The IUCN–Toyota Red List Partnership, with logistic support from Jardín Botánico de Celaya and technical support from CONABIO. We are grateful to the IUCN Species Survival Commission and the Environment Agency – Abu Dhabi for sponsoring the participation of our Co-Chairs, Red List Authority and our Programme Officer in the Fourth SSC Leaders’ Meeting.

Summary of activities 2019

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<td>Main KSRs addressed: 1, 5, 15, 22, 28, 29, 32, 43</td>
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KSR: Key Species Result

Yucca baccata  
Photo: Wendy Hodgson

Yucca kanabensis  
Photo: Wendy Hodgson

Yucca utahensis  
Photo: Wendy Hodgson
Co-chairs
Cristina López-Gallego (1)
Carolina Castellanos-Castro (2)

Red List Authority Coordinator
Nestor García (3)

Location/Affiliation
(1) University of Antioquia, Medellin, Colombia
(2) Alexander von Humboldt Institute, Bogota, Colombia
(3) Departamento de Biología, Universidad Javeriana de Bogotá, Colombia

Number of members
18

Mission statement
To generate baseline information to support decision making for plant conservation by different stakeholders in Colombia.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we will have advanced in Red List evaluation for ca. 50% of our endemic plant species (3,000 species evaluated) and other strategic groups of conservation concern. This information on threat evaluation will be used to inform conservation planning, in terms of feedback for conservation action plans for species groups and for supporting the implementation of KBAs (Key Biodiversity Areas) in Colombia.

Targets for the 2017-2020 quadrennium

Assess
Red List: advance in the National Red List of plants (3,000 assessments), particularly for endemics, other species of conservation interest and potential Least Concern species within taxonomic groups or ecosystems.

Plan
Planning: implementation and evaluation of short-term targets of existing conservation action plans for plants (some timber trees, palms, cycads, orchids) and development of new plans for other strategic groups (such as cacti, medicinal plants, crop wild relatives, and other species of socio-economic importance). Policy: incorporate plant Red List information into conservation planning, including national landscape management tools.

Act
Conservation actions: incorporate plant Red List information into conservation planning, including identification of Important Plant Areas (IPAs).

Activities and results 2019

Assess
Red List
i. We had two members meetings during the year: one virtual meeting in February (60% members attended) and a face-to-face meeting in August (50% members attended), during the National Botany Congress. We shared lessons learnt about Red List assessments and using that information for conservation planning with environmental authorities. We also had a meeting with the Colombian Herbaria Association, to establish an official collaboration with Herbaria across the country, which are the most important sources of information for Red List assessments. (KSR #2)

ii. We carried out two Red List workshops where we trained botanical experts and carried out and/or reviewed 500 assessments with botanical experts from around the country: one in Florencia in August and another in Bogota in November. (KSR #2)

iii. We completed 1,043 assessments corresponding to the following groups: 24 orchids (Gongora), 140 tree-ferns, 40 endemics of dry forests, 254 endemics of the paramo, and 585 species of bryophytes, lichens, bromeliads and orchids that have legal bans against exploitation. All these evaluations were carried out with grants from the Ministry of Environment (585 species) and IUCN SSC (294 species). All the assessments were uploaded to the IUCN SIS database platform and are being processed for publication (except for tree-ferns, which will be uploaded in 2020). About half of these assessments still require external peer review (the step we are finding more challenging). In 2020 we will complete 1,780 assessments for endemics, which will get us above to our goal of 3,000 endemics in the quadrennium. (KSR #2)
**Summary of activities 2019**

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 2, 6, 7, 8, 16, 22, 27

**Conservation actions**

1. We have submitted to the IUCN Committee information on 24 of 35 new KBAs identified using Red List assessments for plants in the Tropical Andes hotspot (Critical Ecosystem Partnership Fund project with Bromeliaceae and Ericaceae), carried out in 2018. We continue promoting the use of plant assessments for identification of KBAs in the country (as most of them are currently based on animal assessments). (KSR #22)

**Plan**

**Planning**

1. Out of the four national conservation action plans that are being implemented for strategic groups (timber, palms, cycads, orchids) in the period 2015–2020, we managed to produce a progress report for the one on cycads. This progress report was delivered to different stakeholders to continue promoting concrete actions for plant conservation and to discuss and adjust targets for the period 2020–2025. The other conservation action plans should be reviewed in 2020. (KSR #16)

**Policy**

1. Our Specialist Group is heavily focused on working to carry out Red List assessments and using these assessments for identifying new KBAs. We are giving less priority to conservation action, regarding the implementation of conservation action plans and the collaboration with environmental authorities to incorporate our results into their management strategies. We have decided to wait until we can advance more on Red List assessments (so far, we only have covered about 6% of the species in the country) to identify iPAs (Important Plant Areas), KBAs and, in general, to make recommendations about management decisions at the national level. (KSR #27)

**Act**

**Conservation actions**

1. We have submitted to the IUCN Committee information on 24 of 35 new KBAs identified using Red List assessments for plants in the Tropical Andes hotspot (Critical Ecosystem Partnership Fund project with Bromeliaceae and Ericaceae), carried out in 2018. We continue promoting the use of plant assessments for identification of KBAs in the country (as most of them are currently based on animal assessments). (KSR #22)

**Acknowledgements**

The Colombian Plant Specialist Group thanks all the support that Instituto Alexander von Humboldt and University of Antioquia provided as host institutions for all our activities. We also thank the Colombian Ministry of Environment, Botanic Gardens Conservation International (Global Tree Assessment) and IUCN SSC who provided funding, and the Colombian institutions SINCHI, ICESI University, Instituto de Ciencias Naturales-Universidad Nacional De Colombia (UN-ICN) and ACH that collaborated with us in all our Red List projects. Finally, the Colombian Cycad Society is the NGO that collaborates with our Specialist Group and the National Strategy for Plant Conservation to implement one of the conservation action plans for Colombian plants.
**Mission statement**

The Conifer Specialist Group helps promote the long-term survival of the world’s conifers through rigorous conservation assessments, which help to guide conservation planning and conservation action.

**Targets for the 2017-2020 quadrennium**

**Assess**

Red List: complete Red List assessments of 50 conifer species.

**Act**

Conservation actions: (1) continue the *ex situ* conifer conservation programme in the UK; (2) restore the forests of the threatened conifer *Glyptostrobus pensilis* in Lao PDR.

**Activities and results 2019**

**Assess**

Red List

1. The reassessment of conifers is working towards the third global assessment of this group. (KSR #1)

**Act**

Conservation actions

1. *The ex situ* conifer conservation programme, using a network of over 200 sites, is ongoing and each year the network is increased to accommodate more conifer species. In some cases, a site may accommodate a single individual of a species or larger numbers; therefore, it is difficult to specify the number of breeding populations. (KSR #25)

2. Restoration of conifer populations is very long-term and it takes many years to start this important process; therefore, it is much too early to ascertain any percentage of population increase. Forest restoration of the threatened conifer *Glyptostrobus pensilis* in Lao PDR is still at the nursery stage, but with some early experimental planting achieved. (KSR #12)
Acknowledgements

We would like to thank the following people who have helped with the restoration work of the degraded Glyptostrobus stands in Lao PDR: Professor Vichith Lamxay (National University of Lao PDR); Daophone Suddychanh (Nam Theun Power Company); Dr Gretchen Coffman (University of San Francisco); Dr Brendan Buckley (Columbia University, New York) and Dr. Lianming Gao (Kunming Institute of Botany, CAS).

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

| Assess | 1 |
| Act | 2 ||

Main KSRs addressed: 1, 12, 25

KSR: Key Species Result
Mission statement
The vision of the Crop Wild Relative Specialist Group (CWRSG) is the effective conservation and use of crop wild relatives (CWR) and their increased availability for crop improvement, for the benefit of the environment and human society worldwide.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we hope to have established a global network of in situ conservation sites to complement current ex situ conservation activities. Our vision is a developing world in which the full potential of crop wild relatives diversity is used to maximise the development of healthy, resilient food systems, where rural communities/family farmers are recognised for their sustaining of vital conservation action, and where nutritional security is not limited by climate change or breeders’ access to crop wild relatives diversity.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete threat assessment of 1,400 global priority CWR taxa (500 new Red List assessments).

Plan
Planning: (1) establishment of global networks of CWR in situ conservation (25 genetic reserves for the in situ conservation of CWR populations); (2) establishment of European regional networks of CWR in situ conservation (25 genetic reserves for the in situ conservation of CWR populations); (3) establishment of regional networks of CWR in situ conservation (25 genetic reserves for the in situ conservation of CWR populations) outside Europe; (4) establishment of national networks of CWR in situ conservation (25 genetic reserves for the in situ conservation of CWR populations); (5) CWR conservation planning (2,000 plans published).

Policy: improving CWR conservation policy context (all 16,000 global CWR).

Act
Conservation actions: ex situ conservation of CWR diversity in gene banks (1,392 priority CWR species conserved).

Activities and results 2019
Assess
Red List
i. Global and regional assessments: (1) in 2019, we have submitted 92 assessments of global priority CWR taxa and an additional seven CWR taxa. By the end of 2019, around 1,000 global priority CWR and a further 150 other CWR taxa have already been published or assessments were being drafted; (2) at national level, the Finnish flora was Red Listed during 2019 and no changes in the assessments of priority CWR taxa were observed in comparison to the red list of 2010; (3) in Spain, an addendum to the National Red Data Book was published [Moreno Saiz, J.C., Iriondo Alegría, J.M., Martinez García, F., Martinez Rodríguez, J. and Salazar Mendiás, C. (eds.) (2019). Atlas y Libro Rojo de la Flora Vascular Amenazada de España. Adenda 2017. Madrid, Spain: Ministerio para la Transición Ecológica-Sociedad Española de Biología de la Conservación de Plantas.] where two CWR were assessed and included, *Allium grosii* Font Quer (Serapio et al. 2019) and *Erodium paularense* Fern. Gonz. & Izco (Iriondo et al. 2019) [Iriondo, J.M., Rebole, R., Lara-Romero, C., Rubio Teso, M.L. and García-Fernández, A. (2019). ‘Erodium paularense Fern. Gonz. & Izco.’ In: Moreno Saiz,
Plan

Planning

I. Global network of CWR in situ conservation: the global network of genetic reserves for globally important CWR has been designed and published, but not yet implemented; see Vincent, H., et al. (2019). Modeling of crop wild relative species identifies areas globally for in situ conservation. Communications Biology 2, Article number 136. [DOI: 10.1038/s42003-019-0372-z]. (KSR #42)

II. European regional networks of CWR in situ conservation: (1) in 2019, the design of the European network for the in situ conservation of CWR has been initiated and almost finalised within the Farmer’s Pride project (www.farmerspride.eu); within this context, the importance of the Natura 2000 sites for the conservation of CWR in Europe was studied and highlighted [Kell, S., Iriondo, J.M., Rubio Teso, M.L., Álvarez, C. and Maxted, N. (2019). ‘Natura 2000 and conservation of plant genetic resources for food and agriculture.’ 30 years of Eurosite. New approaches to nature conservation and securing resources. Museo della Biodiversità di Monticiano, Italy, 05–07 November 2019.]; (2) in 2019 the project Wild Genetic Resources—A Tool to Meet Climate Change (a follow-up of the project Ecosystem Services: Genetic Resources and Crop Wild Relatives) came to an end. These projects, funded by the Nordic Council of Ministers and by self-funding from the participating organisations, involved partners from all the Nordic countries. The project activities and results are summarised in a report published by the Nordic Council of Ministers [Palmé, A., Fitzgerald, H., Weibull, J., Bjureke, K., Eisto, K., Endresen, D., Hagenblad, J., Hyvärinen, M., Kiviharju, E., Lund, B., Rasmussen, M. and Porbjörnsson, H. (2019). Nordic Crop Wild Relative conservation: A report from two collaborative projects 2015–2019. Copenhagen, Denmark: Nordic Council of Ministers.]. Within this project, the Nordic European network of genetic reserves for regionally important CWR was designed and published [Fitzgerald, H., et al. (2019). A regional approach to Nordic crop wild relative in situ conservation planning. Plant Genetic Resources: Characterization and Utilization 17(2):196–207]. (KSR #42)

III. Regional networks of CWR in situ conservation: (1) a Darwin Initiative funded project, Bridging Agriculture and Environment: Southern African Crop Wild Relative Regional Network (www.cropwildrelatives.org/sadc-cwr-net), initiated in 2019 and will end in 2021; one of the objectives of this project is the establishment of a network of sites for the in situ conservation of CWR in the Southern African Development Community (SADC). A paper establishing the priority CWR for conservation in the SADC region was prepared in a previous project (the African, Caribbean and Pacific Group of States (ACP)–European Union funded project, SADC Crop Wild Relatives—In Situ Conservation and Use of Crop Wild Relatives in Three ACP countries of SADC Region, www.cropwildrelatives.org/sadc-cwr-project) and published in 2019 [Allen, E., et al. (2019). A crop wild relative inventory for southern Africa:
A first step in linking conservation and use of valuable wild populations for enhancing food security. Plant Genetic Resources 17(2):128–139., and a paper recommending the sites for in situ conservation of regional priority CWR has been drafted (Magos Brehm, J., et al. (In prep.) Conservation planning of crop wild relative diversity in the SADC region); (2) priority sites for the in situ conservation of regionally priority CWR in the Fertile Crescent were identified in 2019 (Zair, W., et al. (In prep.) Complementarity analysis for crop wild relative in the Fertile Crescent); (3) priority sites for the in situ conservation of wild relatives of cereal crops across the Mediterranean Basin and West Asia were identified [Phillips, J., Whitehouse, K., Amri, A. and Maxted, N. (2019). In situ gap analysis of temperate cereal crop wild relatives in their Mediterranean Basin and West Asian centre of diversity. Plant Genetic Resources: Characterization and Utilization 17(2):185–195.]. (KSR #42)

iv. National networks of CWR in situ conservation: (1) 13 papers regarding CWR conservation planning at national level have been drafted and/or published in 2019; (2) in Benin, an MSc thesis on 'Ecogeographic study, modelling of favourable habitats and conservation gap for 15 species of wild parents of cultivated plants priority for conservation in Benin' was being prepared. In addition, within the frame of the Regional Academic Exchange for Enhanced Skills in Fragile Ecosystems Management in Africa (REFORM) Intra-Africa Academic Mobility Scheme, two PhD students were working on wild relatives of cultivated leafy vegetables of Solanum genus: Biodiversity, distribution, traditional knowledge and adaptation (countrywide assessment of the diversity of leafy vegetables' wild relatives, including distribution mapping, local uses of these resources, importance in food security and nutrition reach and their adaptive strategies in changing climates) and ecogeography and adaptive response to water and weed stress of Vigna crop wild relatives in Benin (assessment of the environmental conditions associated with the diversity of wild relatives of cowpea, assessment of ecophysiological adaptation strategies in relation to resistance to drought and weeds, namely of the genus Striga). Moreover, four MSc theses were associated to these PhD studies; (3) in Belarus, the National Strategy for the Conservation of Plant Genetic Resources for Food and Agriculture was completed in 2019; this document devotes a section to CWR, in addition, a CWR inventory, which includes 668 species, was prepared and will soon be published; the identification of priority CWR was initiated; (4) the Finnish CWR conservation project, funded by the Finnish Ministry of Agriculture and Forestry, was underway in 2019. The main project partners are the Natural Resources Institute Finland (Luke), the Finnish Museum of Natural History (Luomus) and Metsähallitus Parks and Wildlife Finland. Several activities were carried out: second iteration of the list of priority CWR, ex situ and in situ conservation planning and inventorying CWR species in a pilot site (Nuuksio National Park); (5) considerable progress in CWR conservation in Germany was achieved in 2019, namely the establishment of the German Network of Genetic Reserves for CWR conservation, the Wild Celery Genetic Reserves Network, and a list of national priority CWR agreed in a
national symposium on genetic reserves: (a) German Network of Genetic Reserves: it was established in 2019 as a framework for the in situ conservation of priority CWR. It is coordinated by the Federal Office for Agriculture and Food (BLE). The in situ conservation of CWR is addressed by the German National Agrobiodiversity Strategy (BMELV 2007) and the National Programme for Plant Genetic Resources for Food and Agriculture (PGRFA, BMEL 2012). (b) Wild Celery Genetic Reserves Network: the first thirteen genetic reserves for wild celery species were established and further wild celery genetic reserves are in the process of being established. This network is managed by the Julius Kühn-Institut Federal Research Centre for Cultivated Plants (JKI). The establishment of this network was the result of a three-year project financed by the German Federal Ministry for Food and Agriculture (BMEL) and is part of the German Network of Genetic Reserves that has been established in 2019 in Germany as a framework for in situ conservation of priority CWR. The in situ conservation of CWR is an area of PGRFA conservation, which the German national agrobiodiversity strategy (BMELV 2007) contains 126 taxa of which 44 are considered to be of higher priority. (BMELV (2007). Conservation of Agricultural Biodiversity, Development and Sustainable Use of its Potentials in Agriculture, Forestry and Fisheries. A Strategy of the German Federal Ministry of Food, Agriculture and Consumer Protection on Conservation and Sustainable Use of Biodiversity for Food, Agriculture, Forestry and Fisheries. Bonn, Germany: Federal Ministry of Food, Agriculture and Consumer Protection, BMEL. (2012). National programme for the Conservation and Sustainable Use of Plant Genetic Resources of Agricultural and Horticultural Crops. Bonn, Germany: Federal Ministry of Food, Agriculture and Consumer Protection; Nick, P. (2014). 'Schutzen und nützen – von der Erhaltung zur Anwendung, Fallbeispiel Europäische Wildrebe.’ In: Poschlod P., Borgmann, P., Listl, D., Reisch, C., Zachgo, S. and das Genbank WEL Netzwerk. (eds.) Handbuch Genebank WEL, pp. 159–173. HOPPEA Denkschriften der Regensburgischen Botanischen Gesellschaft. Sonderband 2014. (6) in 2019, a pioneer project in Spain, "Conservación in situ y ex situ de parientes silvestres de los cultivos en la Reserva de la Biosfera Sierra del Rincón", was funded by the Consejería de Medio Ambiente y Ordenación del Territorio de la Comunidad de Madrid and implemented by Banco de Germoplasma Vegetal César Gómez Campo, General Directorates of Biodiversity and Reursos Naturales y de Agricultura, Ganadería y Alimentación de la Comunidad de Madrid and Universidad Rey Juan Carlos. The main objective of this project is the implementation of a genetic reserve for nationally important CWR; (7) in Tanzania, within the Darwin Initiative SADC CWR project (www.cropwildrelatives.org/sadc-cwr-net), conservation planning activities were initiated in order to identify CWR in situ conservation sites; in Botswana, Comoros, the Democratic Republic of the Congo, Eswatini, Lesotho, and Seychelles, CWR conservation planning activities have also started under the mentoring programme implemented via the Darwin Initiative SADC CWR project. (KSR #42)

v. CWR Conservation planning: (1) a paper describing five tools that were developed to guide and facilitate countries in CWR national conservation planning and in developing National Strategic Action Plans for the Conservation and Sustainable Use of CWR was published in 2019 [Magos Brehm, J., et al. (2019). New tools for crop wild relative conservation planning. Plant Genetic Resources: Characterization and Utilization 17(2):208–212.]; (2) nine papers targeting various aspects of CWR conservation planning methodologies were presented or published in several international conferences and journals, including Global Ecology and Conservation, Genetic Resources and Crop Evolution, Crop and Pasture Science, Plant Biology and Land Use Policy.
Policy

Improving CWR Conservation policy context:

(1) in 2019, the design of the European network for the in situ conservation of CWR has been initiated and its governance structure has been drafted and discussed among major national and regional stakeholders. A stakeholder consultation document on the Farmer’s Pride network concept has been drafted which will then be shared among national stakeholders who are the ultimate implementing agencies of the European network; (2) a policy brief about CWR conservation in the Nordic countries has also been prepared [Palmé, Å., Asdal, Å., Endresen, D., Fitzgerald, H., Kiviharju, E., Lund, B., Rasmussen, M., Thorbjørnsson, H. and Weibull, J. (2019). Policy Brief – Crop Wild Relatives: actions needed to assure conservation of an important genetic resource. Available at: https://doi.org/10.6084/m9.figshare.7558658.v1 ]; (3) some members of the CWRSG have been actively engaged in the drafting of the genetic diversity goal (Goal C) of the Post 2020 Biodiversity Framework as well as in the Biodiversity Indicators Partnership Initiative. (KSR #26)

Act

Conservation actions

Ex situ conservation of CWR diversity in gene banks: (1) we don’t have access to global data yet; however, we do have information about a global project (Adapting Agriculture to Climate Change–Collecting and Protecting the Wild Relatives of the World’s Most Important Food Crops to Safeguard our Future Food Security in a Changing Climate) that aimed at collecting seeds of CWR for ex situ conservation and pre-breeding activities. In 2011, the Crop Trust, with support from the Government of Norway, embarked on a global 10-year project to collect, conserve and use CWR. The project was implemented in partnership with the Millennium Seed Bank (MSB) of the Royal Botanic Gardens, Kew, UK and with dozens of specialist institutes and national and international conservation and pre-breeding programmes around the world. In 2019, the collecting phase of the project concluded. Over 6 years, project partners were in the field for a combined 2,973 days, in 25 countries all over the world, to collect and safeguard 4,644 seed samples of 371 different species of CWR, far exceeding expectations. Many species were collected multiple times – on different continents, in different countries and in different regions within a country; capturing and conserving as much diversity as possible both within and among species was at the core of this global collecting effort. CWR seed samples collected during the project were conserved in the national gene bank of the partner country, and also shipped to Kew’s MSB, and other gene banks, where they will be available according to the terms of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). Some examples of collecting missions: (a) dispatches from Ecuador, part 1: Searching for Wild Potatoes (https://stories.cwrdiversity.org/story/ecuador1/); (b) dispatches From Ecuador, part 2: Farmers Using CWR (https://stories.cwrdiversity.org/story/ecuador2/); (c) seed collecting in Pakistan (https://www.cwrdiversity.org/seed-collecting-in-pakistan/). This CWR project had also a strong pre-breeding component and it has brought together more than 100 national and international partners in 49 countries. All projects have strong capacity-building elements and involve both North–South and South–South partnerships. The work is currently transitioning from creating new materials derived from CWR to actually growing them in farmers’ fields. This allows researchers to obtain production data from various locations and enables farmers to evaluate new material and communicate their preferences to scientists. The most promising pre-bred material, and their associated data, will be available under the terms of ITPGRFA. Some examples include: (a) Alfalfa: a CWR-derived alfalfa variety has survived record cold snaps in Inner Mongolia and is also drought tolerant. This variety, Zhongcao No. 3, was released to farmers in 2019; the Chinese Academy of Agricultural Sciences (CAAS) is developing a participatory seed multiplication project with small-holder farmers who will be able to keep, use and sell the seeds of Zhongcao No. 3 as part of a new seed sharing scheme; (b) Banana: Wild about bananas (https://www.cwrdiversity.org/wild-about-bananas/); (c) Chickpea: Beyond hummus (https://www.cwrdiversity.org/beyond-hummus/); (d) Cowpea: the International Institute of Tropical Agriculture (IITA) identified CWR in Africa that have more tolerance to heat and drought, and resistance to aphids than the domesticated cowpea; they have crossed the best of these CWR with high-performing cowpeas and evaluated a number of promising climate-smart lines in Nigeria, Burkina Faso and Niger; (e) Durum wheat: initial results coming from the International Center for Agricultural Research in the Dry Areas (ICARDA) indicate that CWR-derived lines of durum wheat are performing better than currently available commercial varieties in terms of both yields and quality; farmers throughout Morocco are currently evaluating this material, and reporting that some lines are drought tolerant; (f) Finger millet and grasspea: A boost for pre-Breeding for Grasspea and Finger Millet (https://www.croptrust.org/blog/pre-breeding-gets-a-boost/);
(g) Pigeonpea: Evaluation of six pigeonpea pre-breeding lines (https://www.cwrdiversity.org/evaluation-of-six-pigeonpea-pre-breeding-lines/); (h) Pearl millet: Wild relatives of pearl millet can take the heat (https://www.cwrdiversity.org/wild-relatives-of-pearl-millet-can-take-the-heat/); (i) Wheat, barley and lentil: Selection by stone (https://www.cwrdiversity.org/selection-by-stone/); (j) Pre-breeders go wild in Rabat (https://www.cwrdiversity.org/pre-breeding-workshop/); (2) specifically in Canada, and as part of the above-mentioned project, about 190 accessions of oats CWR (Avena) were collected, identified, regenerated and characterised. The collected material will be integrated in the active gene bank collection of the Canadian national gene bank, Plant Gene Resources of Canada, and be made available for distribution to gene bank clients. In addition, the Canadian national gene bank, Plant Gene Resources of Canada, collected seeds of the weedy/ruderal species Camelina microcarpa, a wild relative of C. sativa, in the province of Saskatchewan; (3) in Belarus, 117 samples of CWR species were deposited in the national gene bank totalling more than 1,000 samples of CWR; (4) in Finland, collecting missions of CWR accessions for ex situ conservation took place in 2019 and the material collected was conserved at the seedbank of the Finnish Museum of Natural History (Luomus). Additionally, the national plant genetic resources programme coordinated by the Natural Resources Institute Finland (Luke) has been conducting surveys, inventories and evaluations in many berry and fruit plants, vegetables, hops and herbs; (5) in the Nordic countries, NordGen planned and organised seed sampling and collecting missions for forage wild relatives. (KSR #42)

Acknowledgements

We would like to give special thanks to the CWRSG Programme Officer, Joana Magos Brehm for compiling this report and to all CWRSG members who contributed with information, namely Achille Assogbadjo, Axel Diedrichsen, Dzmitryieva Safiya, Hannes Dempewolf, Heli Fitzgerald, Imke Thormann, Jens Weibull, José Iriondo, Juozas Labokas, Rodrigue Idohou, Rudolf Vögel, and Susanne Sharrock. We also thank the following donors for providing resources to support conservation planning, conservation implementation, policy enhancement and threat assessment: United Nations FAO; ITPGRFA; World Bank; Consultative Group on International Agricultural Research (particularly Bioversity International); Global Environment Facility; IUCN SSC; European Commission (including Horizon 2020 Framework Programme); European Parliament; European Cooperative Programme for Genetic Resources; Nordic Council of Ministers; REFORM—the Intra-Africa Academic Mobility Scheme; Consejería de Medio Ambiente y Ordenación del Territorio de la Comunidad de Madrid; national governments of Belarus, Denmark, Finland, Germany, Iceland, Indonesia, Lithuania, Malawi, Mauritius, Mexico, Norway, South Africa, Spain, Sweden, Tanzania, Turkey, United Kingdom, Zambia; Royal Botanic Gardens, Kew; MAVA Foundation and Toyota Foundations. And finally, to all the experts involved in Red Listing who are not members of the CWRSG (Alejandro Zuluaga, Ali Shehadeh, Allan Tye, Ana Planchuelo, Arnoldo Santos Guerra, Evren Cabi, Fernando Patiño, Gianluigi Baccheta, Gianniantonio Domina, Guillermo Seijo, John Wood, Jonathan Timberlake, José F.M. Valls, Lorenzo Maggioni, Marcelo Simón, Margoth Atahuachi, Miguel A. Carvalho, Nagib Nassar, Norihiko Tomooka, Panayotis Dimopoulos, Sina Morufu Omosowon, Vaclav Mahelka, and Ximena Cadima).

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 26, 42

KSR: Key Species Result
Mission statement
The mission of the Cuban Plant Specialist Group (CPSG) is to contribute to increase current knowledge on the taxonomy and ecology of the species across the geographic range of distribution and promote their long-term conservation.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision a significant advance in plant conservation in the country. The conservation status of at least 80% of the Cuban flora will be known and appropriately documented, and the assessments will be available to the public, researchers, decision makers and policy makers. A network of plant conservationists with the support of the local communities will be conducting actions to reduce the extinction risk of native plant species and recover their populations across the country, with an emphasis in areas of high plant diversity. Species recovery plans for at least 27 species will be produced and partially or fully implemented. An updated list of Cuban native plants will be available, and the Cuban relatives of globally important plants for food, agriculture and forestry will be identified.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete assessment of all species of palms; (2) complete assessment of all species of cacti; (3) complete assessment of all species of orchids; (4) complete assessment of endemic plant species; (5) complete assessment of bryophytes; (6) develop a conservation network aiming at conducting Red List assessments and promoting and supporting conservation initiatives in the Caribbean region, with emphasis in plant species that are shared among islands; (7) update the Checklist of vascular plants of Cuba; (8) complete assessment of all species of ferns. Research activity: (1) identify and document natural areas with conservation needs; (2) identify Cuban wild relatives of cultivated plants important for food, agriculture and forestry.

Plan
Planning: (1) produce and partially or fully implement recovery plans for 27 species of Cuban plants; (2) revise Protected Areas Management Plans as needed by the National Centre for Protected Areas.

Act
Conservation actions: (1) implement Species Recovery plans; (2) monitor mangrove and restoration initiatives in the south of Artemisa and Mayabeque.

Network
Capacity building: build Red Listing capacities.

Activities and results 2019
Assess
Red List
i. We completed the assessments for all Cuban palms. The assessments are in the Cuban Plant Specialist Group database. Instead of entering the information manually into the IUCN SIS database, we worked on developing a module to export the assessments to SIS Connect. The module is finished, and a trial assessment was exported successfully to SIS Connect. Once the exported assessment passes the Red List Check status, we will bulk-export the palm assessments and others into the IUCN SIS database. (KSR #1)
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**Acknowledgements**

We thank the following donors that support our mission: Plantlife Conservation Society, Whitley-Sagre Conservation Fund, Fondation Franklinia, Mohamed Bin Zayed Species Conservation Fund, Project: P211LH005-046 of the Programme: Sustainable use of Biological Diversity in Cuba, the National Environmental Agency (Cuba), the Programa de las Naciones Unidas para el Desarrollo (PNUD) Project Conectando Paisajes. Moreover, we want to thank the National Botanical Garden, University of Havana for hosting our group and the Cuban Botanical Society for its organisational support. Our very special thanks and appreciation to the local conservationists and volunteers who work with us for the conservation of Cuban plants and their habitats.

**Network**

**Capacity building**

1. During 2019, we continued with our training programme for early-career biologists. This year we trained six graduate students on Red Listing. (KSR #5)

**Plan**

**Planning**

i. We started the recovery plans of *Juniperus lucayana*, *Roystonea violacea* and *Thespesia cubensis*. This work and the consultation process will continue through 2020. We will not be able to meet the target of 27 recovery plans, because we could not secure the necessary funds. (KSR #15)

ii. During 2019, our members from central Cuba reviewed the Management Plan of the Protected Area ‘Mogotes de Jumagua’. (KSR #15)

**Act**

**Conservation actions**

i. We continue with the implementation of the recovery plans for the following species: *Coccothrinax borbudiana*, *Dendrocerus nudiflorus*, *Ekmanianthe longiflora*, *Harpylyce macrocarpa*, *Leuenbergenia zinniiflora*, *Magnolia cristakensis*, *Magnolia minor*, *Magnolia orbiculata*, *Magnolia cubensis*, *Podocarpus angustifolius*, and *Tabebuia sauvallei*. Over 7,000 plants of these species were introduced in the wild. (KSR #24)

ii. Between April and June, four expeditions were conducted to establish 21 permanent plots for monitoring swamp forest restoration in the south of Artemisa and Mayabéque. These plots aim to set a baseline for monitoring these communities in the long-term. (KSR #25)
**Mission statement**

The Cycad Specialist Group (CSG) exists to bring together the world’s cycad conservation expertise, and to disseminate this expertise to organisations and agencies which can use this guidance to advance cycad conservation.

**Projected impact for the 2017-2020 quadrennium**

By 2020, we want to ensure that no cycad has become extinct because all high risk taxa are adequately represented in botanic gardens, that substantial advances are made in identifying and securing habitat for Critically Endangered species, and that reintroduction programmes are supported to start to increase population numbers for species reduced to <250 individuals. This will be achieved through our own efforts as well as collaboration with other organisations and will be supported by traditional strengths within the Cycad Specialist Group such as compiling the World List of Cycads, updating the Red List Index, studying the biology of cycads, understanding trade and the conditions required for sustainable use, developing conservation plans and managing ex situ collections.

**Targets for the 2017-2020 quadrennium**

**Assess**

Red List: update the Cycad Red List Index by undertaking a third global assessment of 350 species.

Research activities: strengthen information, knowledge and capacity to support cycad conservation actions.

**Act**

Conservation actions: (1) increase the representation of threatened cycads in ex situ collections with at least 90% of Critically Endangered species in collections, beginning with benchmarking; (2) initiate projects to secure habitat and/or restore populations for at least five Critically Endangered species.

**Activities and results 2019**

**Assess**

i. Updating of the Cycad Red List Index: eighty-two percent of all assessments are complete. The remaining 56 species are going through final checks and will be completed by 31 March 2020. (KSR #1)

**Research activities**

i. At least 20 papers were published by members of the Cycad Specialist Group in 2019, providing critical information to inform cycad conservation. In addition, the Proceedings of the 9th International Cycad meeting, hosted by the CSG, were published. (KSR #32)
i. Of 51 Critically Endangered cycad species, 41 are in protective cultivation at recognised botanic gardens. This metric obscures three areas of need for future work, however: (1) many of these species are at fewer than five gardens, (2) the genetic representation of most of these species is not known, and (3) many provisionally-listed Critically Endangered species (22 as of 2020) are yet unassessed with regard to ex situ protection. The CSG has been in discussions with Botanic Gardens Conservation International and various gardens around the world to establish a Global Cycad Conservation Consortium along the same lines as the Global Oak Conservation Consortium. Newly secured funding from the US Federal Government will pilot this Cycad Consortium between 2020 and 2023. (KSR #14)

ii. Projects to secure habitat and/or restore populations for Critically Endangered species: not all cycad plans are managed by CSG members. For example, 12 species in South Africa have plans managed by state and provincial agencies and Australia has a national multispecies management plan for cycads as well as regional plans for cycads in the Northern Territory, covering 12 species. China has partial plans for 23 cycad taxa (either for in situ or ex situ efforts) including representation in reserves and restoration (e.g. Cycas debaoensis). Mexico has community-based management and propagation programmes for at least five species. The CSG is currently putting together action plans for ca. 70 Critically Endangered or Extinct in the Wild cycads based on an analysis of the main barriers to cycad conservation (e.g. loss of habitat or population decline). (KSR #31)

Acknowledgements

We are grateful to Montgomery Botanical Center and SANBI for providing infrastructure and staffing for administration of the CSG.

Summary of activities 2019

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Main KSRs addressed: 1, 14, 31, 32

KSR: Key Species Result
Mission statement
The FPSG exists to promote and further the conservation of plant species which are dependent upon wetlands and the habitats upon which they depend.

Projected impact for the 2017-2020 quadrennium
Unless the funding situation changes, we do not envisage any significant change in the conservation condition of freshwater plants as a result of action by the Freshwater Plant Specialist Group (FPSG).

Targets for the 2017-2020 quadrennium

Assess
Red List: (1) complete a conservation assessment of wetland-dependent plants in the Indo-Burma region; (2) develop a baseline for a Red List Index of wetland-dependent plants in the Mediterranean; (3) complete Red List assessment of nationally endemic freshwater plants in Canada.

Research activities: (1) conduct research into reproductive strategies along water depth gradient of Vallisneria natans and V. spinulosa in shallow lakes of the Yangtze River, China; (2) conduct research into plant community patterns in Moroccan temporary ponds along latitudinal and anthropogenic disturbance gradients.

Act
Conservation actions: (1) assess conservation requirements of Crinum malabaricum; (2) global conservation action for the genus Isoetes; (3) conservation of ‘ferricretes’ in Satara District, Western Ghats, India as Conservation Zones.

Network
Capacity building: develop a decision support tool to improve restoration projects with emphasis on freshwater wetland vegetation.

Communicate
Communication: (1) raise awareness of global conservation of freshwater wetland plants; (2) use of charophytes for description and monitoring of inland waters in Sicily; (3) global conservation assessment of the genus Callitriche; (4) global conservation assessment of the genus Cryptocoryne; (5) complete a wetland vegetation restoration literature review.

Activities and results 2019

Assess
Red List
i. Progress on the conservation assessment of wetland-dependent plants in the Indo-Burma region is frustrated by a lack of support in region. (KSR #1, 2, 3, 4, 7)

ii. Baseline of 500 taxon assessment for a Red List Index of wetland-dependent plants in the Mediterranean compiled. (KSR #1, 2, 3, 4, 7)

iii. Red List assessment of nationally endemic freshwater plants in Canada was accomplished. (KSR #1, 2, 3, 4, 7).
Act
Conservation actions
i. Partial funding obtained to complete the work on assessment of conservation requirements of *Crinum malabaricum*. (KSR #27)

ii. Funding sought for global conservation assessment of the genus *Cryptocoryne*, but not acquired. (KSR #1, 2, 3, 4, 7, 8, 15, 18, 20, 21, 22)

Communicate
Communication
i. The Master’s degree thesis on use of charophytes for description and monitoring of inland waters in Sicily is completed and due to be defended in March 2020. (KSR #28)

ii. Work on global conservation assessment of the genus *Callitriche* is ongoing. An article clarifying taxonomy of South American taxa, including seven new species, was published; an article on species in Oceania is near completion. (KSR #28)

Summary of activities 2019
Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 2, 3, 4, 7, 8, 15, 18, 20, 21, 22, 27, 28


KSR: Key Species Result
Mission statement
The Galapagos Plant Specialist Group promotes the conservation of all Galapagos native plants and plant-like organisms (including algae, fungi, lichens and similar taxa), with the intention to be inclusive rather than exclusive.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we expect to have draft reassessments for at least 10 vascular plants and at least 50 lichens submitted to the IUCN Red List Unit, and to have increased the effort directed to threatened plant conservation by the Charles Darwin Research Station and the Galapagos National Park Directorate.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) begin re-evaluation of endemic vascular plants; (2) conduct Red Listing of all ca. 200 endemic species of lichenised fungi.

Research activities: (1) evaluate the conservation status of the Scalesia forests on the islands of Santa Cruz and Isabela; (2) assess the value of water-saving technology on the recovery of threatened plant populations.

Plan
Planning: contribute to research and conservation planning in Galapagos.

Act
Conservation actions: restore threatened and endangered plant populations within protected and populated areas.
Acknowledgements

Crop Wild Relative Specialist Group, Charles Darwin Research Station, Galapagos National Park Directorate, IUCN SSC Lichen Specialist Group, Instituto Nacional de Biodiversidad (INABIO, Ecuador).

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 16, 18, 24, 27

KSR: Key Species Result

Galápagos lichen, Acantholichen galapagoensis, EdLR
Photo: Frank Bungartz

Seedlings of Galvezia leucantha, target species for restoration, in cultivation ex situ before planting out in the wild
Photo: Patricia Jaramillo

Galvezia leucantha planted out using Groasis water retention technology to assist the young plants to establish in the wild
Photo: Patricia Jaramillo

Scalesia affinis, one of the target species for restoration
Photo: Patricia Jaramillo

Plantae
Mission statement

The aims of the Global Tree Specialist Group (GTSG) are: to promote and implement global Red Listing for trees and to act in an advisory capacity to the Global Trees Campaign.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we will have completed conservation assessments for the world’s tree species using the IUCN Red List categories and criteria. The goal is to complete IUCN Red List assessments for all species included in Global-Treasure. However, it may be necessary to accept nationally equivalent assessments for endemic species of some countries. A Global Tree Assessment report will be produced with analyses of the major threats to tree species, conservation measures underway, and priority conservation needs. This will draw attention to tree species that are Data Deficient and in need of further taxonomic work or field survey. It will provide a road map of major actions needed to conserve trees on a global scale relating to the post Global Strategy for Plant Conservation (GSPC) agenda, implementation of the Reducing Emissions from Deforestation and Forest Degradation (REDD+) initiative at national level and the Sustainable Development Goals.

Targets for the 2017-2020 quadrennium

Assess
Red List: assessment of all tree species (ca. 60,000).

Network
Membership: strengthen group membership. Synergy: (1) collaborate with other plant SSC Groups; (2) enable planning and collaboration through meetings.

Communicate
Communication: (1) publish a GTSG newsletter; (2) publicise the conservation status of trees.

Activities and results 2019

Assess
Red List
1. We completed and submitted assessments for 9,285 tree species. Of these, 8,000 were published on the IUCN Red List by the end of the year and the remaining ~1,000 assessments will be published in 2020. This brings the total number of tree assessments available on the IUCN Red List to 20,334 species and in total, 32,994 tree species have a conservation assessment following analysis using BGCI’s Threat-Search database. (KSR #1)
i. We have thirteen new members.

Synergy

i. In 2019, we collaborated with the China Plant Specialist Group, Brazil Plant Red List Authority, East African Plant Red List Authority, Central African Plant Red List Authority, Madagascar Plant Specialist Group, Indonesian Plant Red List Authority, Mascarene Islands Plant Specialist Group, New Caledonia Plant Red List Authority, Colombian Plant Specialist Group, Cuban Plant Specialist Group, Southern African Plant Specialist Group, West Africa Plant Red List Authority, Crop Wild Relative Specialist Group, Palm Specialist Group, and the Conifer Specialist Group. These collaborations were facilitated by the SSC Leaders’ Meeting in Abu Dhabi. (KSR #29)

ii. We held two regional meetings in 2019 (Costa Rica and Brunei). (KSR #29)

Communicate

i. Two GTSG newsletters were published: Spring and Autumn. (KSR #28)


Acknowledgements

We are most grateful to BGCI for providing the Secretariat for the GTSG, and for the generous support from botanic gardens including Morton Arboretum and Rio de Janeiro Botanic Garden. Support from the University of Bournemouth is also acknowledged. The rewarding partnership with Fauna & Flora International continues to be extremely important to the GTSG, helping to ensure that IUCN Red List assessments for trees inform priority conservation action through the Global Trees Campaign. We also wholeheartedly thank Foundation Franklinia, CEPF, Mohammed bin Zayed Species Conservation Fund, University of St Andrews/STFC, the Rufford Foundation, CBD/Japanese Biodiversity Fund, DeltaAnalytics, Keidanren Nature Conservation Fund and The IUCN-Toyota Red List Partnership for their support.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 28, 29

KSR: Key Species Result
Co-Chairs
Lauren Weisenberger (1) (former Deputy Chair)
Vickie Caraway (2)

Mission statement
The mission of the Hawaiian Plant Specialist Group (HPSG) is to prevent the extinction of native Hawaiian plants and provide for their recovery through a cooperatively administered off-site plant conservation system, in collaboration with on-site management partners to sample, propagate, and reintroduce rare plants; and to advance the preservation of native plants and their habitats through effective communication and public education.

Projected impact for the 2017-2020 quadrennium
In 2019, the IUCN SSC Hawaiian Plant Specialist Group (HPSG) continued to meet quarterly with its members. We added 54 new members this year. We also added the opportunity for remote participation at our quarterly meetings, with support from Laukahi, the Hawaii Plant Conservation Network. The chair, Vickie Caraway, asked to step down and Lauren Weisenberger, the Deputy Chair, assumed the role of Chair. Major highlights and projects from 2019 include: (1) drafting new best management practices for conservation collections at botanical gardens, (2) developing an evaluation and ranking process to determine at-risk species that are not currently federally-listed, (3) formed a conference sub-committee to help organise the timelines for local conferences and workshops to maximise participation, (4) started presenting and sharing all published literature relevant to HPSG, and (5) submitted Red List assessments for 30 species for review; currently one-third of the flora has been initiated or assessed. The Plant Extinction Prevention Program, started in 2003 to conduct conservation actions for species with fewer than 50 individuals remaining in the wild, continued these activities on Kaua‘i, O‘ahu, Moloka‘i, L‘na‘i, Maui, and Hawai‘i islands. Activities in 2019 focused on 101 species most in need of monitoring and propagule collections, threat control, and translocation. Lastly, the Hawaiian Rare Plant Program at Lyon Arboretum, the main research and ex situ facility for rare plants in Hawaii, initiated the research and development of a cryopreservation facility for long-term germplasm storage, especially for Pteridophytes as well as angiosperms with recalcitrant seeds.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete Red List assessments of Plant Extinction Prevention species.
Research activities: develop a number of guidelines.

Act
Technical advice: develop online Rare Plant Restoration Guidelines based on workbook developed for the 2012 World Conservation Congress workshop held at Lyon Arboretum.

Communicate
Communication: participate in the 2020 World Conservation Congress.
Activities and results 2019

Assess

Red List

i. We continue Red Listing species, focusing on taxa of interest and rarity. One hundred and seventy-one species have been assessed as of 2019. There are 65 Plant Extinction Prevention Program species to be completed, including eight that are extinct. (KSR #1)

Research activities

i. We drafted a guide of best management practices for conservation collections at botanical gardens. We are looking to draft additional best management practices for plant propagation. (KSR #14, 18, 43)

Act

Technical advice

i. We have continued making more HPSG products available to the public and members through the Laukahi.org website. All best management practices are now available there. It was determined that the 2012 Handbook is now out of date, and sections will be revised and published separately. One major achievement was the publication of the seed storage behaviour of Hawaiian plants in the American Journal of Botany. (KSR #14, 18, 43)

Communicate

Communication

i. The IUCN Hawaii Hui organised and completed an application process, and secured funding, to send a delegation from Hawaii to attend the World Conservation Congress in 2020. Of this delegation, there are eight botanists representing Laukahi to participate in a forum. (KSR #28)

Acknowledgements

We would like to thank all our members and partners for their continued dedication to Hawaiian plant conservation. We are so enormously grateful to Vickie Caraway for her endless motivation to support and encourage plant conservation in Hawaii, as well as her big picture thinking to keep our efforts grounded, relevant, and effective. We also would especially like to thank Laukahi for improving our communication both internally and to the public through their remote conferencing capabilities, website, and mission for public outreach. We would also like to thank both the State of Hawaii and Laukahi for continuing to support our Red Listing efforts. Lastly, we are also so grateful for our host, Lyon Arboretum, who not only supports the HPSG through hosting quarterly meetings but continues to remain the leading research and germplasm storage facility for rare plants.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 14, 18, 28, 43
Mission statement
To support conservation of Korean plant diversity, for present and future generations, through interdisciplinary collaboration, applied conservation biology and professional development.

Targets for the 2017-2020 quadrennium

Assess
Proposal development and funding: seek funding for the publication of the regional Red List in Korean peninsula.
Red List: (1) complete assessment of Korean endemic plants; (2) conduct regional Red List assessments including North and South Korea; (3) collaborate with Botanic Gardens Conservation International (BGCI) for the global Red List assessment of tree species; (4) conduct assessment of sub-endemic vascular species from the Korean Peninsula.

Plan
Policy: (1) plan regional network organisation for regional Red List assessments in East Asia; (2) strategic planning to engage other national institutes with the Korean Plant Specialist Group (KPSG).

Act
Conservation actions: implement conservation actions related to ex situ and in situ conservation, including plant introductions.
Technical advice: provide technical advice on biodiversity policy to the national institutions and universities in Korea.

Network
Capacity building: provide a Conservation Biology course to increase Red Listing capacities with the help of Korea National Arboretum.
Membership: (1) KPSG membership recruitment and reorganisation; (2) KPSG membership database management.
Synergy: meeting for the future collaboration with the National Institute of Biological Resources.

Communicate
Communication: organise the KPSG annual meeting.

Activities and results 2019

Assess
Proposal development and funding
1. KPSG carried out fundraising for the publication of the regional Red List book.

Communicate
Communication
1. KPSG conducted its annual meeting and a workshop in October 2019, for conservation organisations, regional Red Listing and population monitoring. (KSR # 28)
Acknowledgements

We are grateful to all the members of the Korea National Arboretum and other colleagues from Korea who provided essential advice, invaluable guidance, and supplementary information on the plant species included in the database.

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

Assess 1

Communicate 1

Main KSRs addressed: 28

Resolutions addressed: WCC-2016-Res-016

KSR: Key Species Result
Mission statement
The IUCN SSC Macaronesian Islands Plant Specialist Group (MIPSG) will act as a mechanism for driving and implementing urgent conservation actions across the region, supported by solid and updated scientific evidence, in a collaborative framework that encompasses regional Universities, Botanic Gardens and Administrations.

Projected impact for the 2017-2020 quadrennium
Considering that two of the main weaknesses previously identified for the Macaronesian Region are ‘Lack of laws or enforcement’ and ‘Poor education and awareness’, by the end of 2020 we envision to have accomplished several public outreach activities, and to have promoted meetings with political actors, aimed at an effective application of scientific results for improving and enforcing existing nature protection laws. We also aim to have completed assessments for all Azorean endemic species, in order to provide environmental government stakeholders with a tool to implement conservation actions in the archipelago.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete and publish new Red List assessments of Macaronesian plants on the IUCN Red List of Threatened Species website; (2) update existing assessments of Macaronesian plants on the IUCN Red List of Threatened Species website.

Research activities: (1) monitor populations of Critically Endangered, Endangered and Vulnerable taxa and diagnose their current threat status; (2) monitor the distribution ranges of invasive plants, animals, and other consequences of global changes; (3) develop completed cartography of habitat types; (4) develop activities such as enrichment of public biological databases, and seed and herbarium material held by different institutions; (5) apply genetic and taxonomic information to reveal populations, cryptic species or lineages worthy of increased protection.

Plan
Planning: (1) upscale the application of multi-disciplinary research results (reproductive biology, genetics, taxonomy, ecology) in the planning of reinforcements, reintroductions and/or assisted migrations of plant endemics; (2) develop Critically Endangered and Endangered species recovery plan documents in the Canaries.

Act
Conservation actions: (1) carry out in situ and ex situ conservation (seeds and living collections) of Critically Endangered and Endangered plants and preventive sampling of seeds of more widely distributed plant taxa; (2) carry out eradication/control of invasive plants and mammals in protected natural spaces.

Network
Capacity building: conduct capacity building activities with Master and PhD students from Cabo Verde Islands.
Synergy: (1) network with research institutions related to the conservation of insular floras; (2) develop an early warning network for the detection of invasive alien species.
Communicate
Communication: develop different outreach programmes aimed at stimulating actions and social awareness of the importance of and degree of threat to insular floras.
Scientific meetings: (1) organise periodic meetings of the MIPSG panel members by videoconference or in the Macaronesian archipelagos, during FloraMAC congresses; (2) include sessions/discussion panels on the activities and deliverables of the MIPSG in FloraMAC or other regional or international island plant biology meetings.

Activities and results 2019
Assess
Red List
i. A workshop was organised in the meeting at Ponta Delgada, where the Red List Authority Coordinator gave important updates to the rest of the group. The Ponta Delgada group prepared the applications for both the IUCN and the Azores government grants and also organised the workshop in the Azores. The work in Gran Canaria has just started. If possible, the group from Gran Canaria aims to budget the publishing of assessments as part of the activities of the European project NEXTGENDEM (MAC2/4.6d/236). Internal budget used for the seed, DNA and herbarium collections, fulfilling some of our institutional missions. (KSR #1)

Research activities
i. Gran Canaria: Work has just started. Many of the activities of the European project NEXTGENDEM (MAC2/4.6d/236) encompass these aims (especially seed banking, DNA banking, herbaria and phylogenetic data). Seed, DNA and herbarium material collected for eight Critically Endangered, six Endangered, and nine Vulnerable species. (KSR #43)

ii. Madeira: Seeds and herbarium material have been exchanged with two national and foreign institutions (University of Madeira; Botanical Garden Viera y Clavijo, Canary Islands).

iii. Sao Miguel: We enriched the AZB herbarium with a few hundred specimens of Brassicaceae for the project ‘CV Agrobiodiversity’ and have generated around 300 new sequences of Azorean material. (KSR #43)

iv. Gran Canaria: Forthcoming publication and ongoing preparation of relevant papers for Dracaena tamaranae and D. draco (now in press), several species of Lotus (seven Endangered taxa, submitted), Canarian endemic Ruta (at least four taxa, submitted), Canarian Solanum (four taxa, submitted), Canarian Dorycnium (at least four taxa, in prep.), Canarian Rhannus (three taxa, in prep.), Dracunculus (one taxon, in prep.), Neochaemaelea (one taxon, in prep.). In all these, genetic data (through different techniques) reveal taxonomically overlooked or cryptic lineages in different Canarian plant endemics. (KSR #18)

v. Gran Canaria: eight Critically Endangered, six Endangered and six Vulnerable species. Monitoring and diagnosis of the Critically Endangered taxa: Helianthemum bystropogophyllum, Globularia ascani, Hypericum coadunatum, Helianthemum inaguae, Solanum lidi, Parolinia glabriuscula, Limonium sventenii, and Sideritis amagroi. Monitoring of the Endangered taxa: Descurainia artemisoides, Gonospermum ptermiciflorus, Micromeria pineolens, Isoplexis isabelliana, Convolvulus caput-medusae, Atractylis arbuscula var. schyzogynophylla, and of the Vulnerable taxa: Dendropoterium menendezii, Cheirolophus arbutifolius, Sventenia bupleuroides, Teline rosmarinifolia, Marcetella moquiniana, and Convolvulus scoparius. All these activities were developed with institutional budgets or project budgets to fulfil some of our institutional missions. (KSR #12)
vi. Faial Botanic Garden/Azores Seed Bank: monitoring was achieved for 25 plant species and two animal species on three islands of the Azores in 17 project areas (areas under Project LIFE VIDALIA (LIFE17 NAT/PT/000510)). Monitoring of 22 plant taxa took place under seed banking activities. Project Life Vidalia encompasses monitoring of coastal habitats in 17 intervention areas. Monitoring includes both native and exotic species on the perspective of quantifying impacts of project actions on target species, companion species and invaders. (KSR #12)

Plan

Planning

i. In Gran Canaria, a list of genetic and other guidelines for improving the management of reintroduction nurseries has been produced. Currently, it is under discussion for possible implementation. (KSR #31)

ii. No new recovery plans were approved by the Canarian Government. The assembly of new ones is presently ongoing. (KSR #15, 31)

Act

Conservation actions

i. The reinforcement actions undertaken with Sideritis amagroi in the Massif of Amagro (Gran Canaria) have continued during 2019, especially regarding the monitoring and watering of the reintroduced plants. (KSR #24, 30)

ii. After the fires that affected most protected areas in Gran Canaria in August 2019, initial investigations were carried out to assess the degree of impact to the flora, with a special focus on the most threatened species with populations in that area. Reintroduction actions will follow in 2019 for at least Isoplexis isabelliana, Helianthemum inguae, Helianthemum bystopogrophyllum, and Pericallis hadrosoma. (KSR #24, 30)

iii. Seeds were collected for the Critically Endangered taxa: Parolinia gabirosula, Isoplexis chalcantha, Argyrothemum aduactum subsp. erythrocarpon, Bencomia sphaerocarpa, Crambe feuilleei, Sonchus gandogerii, Cheirolophus durani, Morella rivas-martinezii; the Endangered taxa: Atractylis arbuscula, Atractylyla preauxiana, Convolvulus caput-medusae, Adenocarpus ombriosus, Cerastium sventenii, Limonium brassicifolium subsp. Brassicaefolium; and the Vulnerable taxa: Convolvulus scoparius, Cheirolophus arbutifolius, Dendropterium menendezii, Arbutus canariensis, Argyranthemum sventenii, Erysimum bicolor, Scrophularia smithii subsp. hierrensis, Silene sabinoae and Carex cananiensis. (KSR #24, 30)

iv. We carried out planning of the actions within the European project NEXTGENDEM (MAC2/4.6d/236) related to sampling and restoring threatened taxa from Gran Canaria and Cape Verde, the latter in coordination with a stakeholder institution (INIDA). All these activities were developed with institutional budgets or project budgets to fulfill some of our institutional missions. (KSR #24, 30)

v. Group from Tenerife: Vegetative multiplication (using arbuscular mycorrhizal fungi) and reintroduction of Lotus berthelotii (Critically Endangered) was carried out in its natural habitat in Tenerife. (KSR #24, 30)

vi. An annual ex situ seed banking campaign was implemented as well as in situ conservation projects. Faial Botanic Garden/Azores Seed Bank: 22 taxa were added to the seed bank, one Critically Endangered, one Endangered, four Least Concern, and 16 Not Evaluated. In situ conservation was carried out under the Life Vidalia Project. (KSR #24)

vii. Tracking the evolution of invasive species after the fires in Gran Canaria during 2019, a list and recommendations were passed on to managers. We participated in meetings to review the censuses of introduced herbivores in protected areas which were the subject of past Life+ projects led by the Cabildo; reviews were made, and recommendations passed on to decision makers. Eradication seems difficult to achieve in both cases. (KSR #13)
viii. Faial Botanic Garden/Azores Seed Bank: Invasive alien species (IAS) control measures have been achieved during 2019 in an area of 26 ha in 17 intervention areas on three islands of the Azores (areas under Project Life Vidalia (LIFE17 NAT/PT/000510)). Project Life Vidalia encompasses IAS control measures, including plants and animals, the development of protocols and cost/effectiveness analysis on an operational point of view. (KSR #13, 30)

ix. Sao Miguel: The group is collaborating on a project to develop a strategy for invasive species. A regional strategy for the control and prevention of exotic invasive species is being developed within the Project LIFE IP AZORES NATURA (LIFE17 IPE/PT/000010), Direção Regional do Ambiente, Secretaria Regional da Energia, Ambiente e Turismo. Implemented by the centres Grupo da Biodiversidade dos Açores (GBA-cE3c) and Centro de investigação em Biodiversidade e Recursos Genéticos – Açores (CIBIO-Açores, InBIO). (KSR #13)

x. Sao Miguel: The Red List Authority Coordinator has been coordinating a project with the Government of the Azores that will contribute to regulating the importation of ornamental species, through development of the project of the catalogue of flowering species of the Azores with the Secretaria Regional da Energia, Ambiente e Turismo. It includes a risk analysis of invasion of ornamental species, and a recommended checklist of species that could be used for that purpose without major risks. (KSR #13)

Network

Capacity building

i. Group from Cabo Verde/University of Lisbon: Capacity building activities were conducted with three Master’s and three PhD students from Cabo Verde Islands. All these Cabo Verde graduate students are developing their theses with endemic plants from Cabo Verde and are addressing several questions related to conservation issues and molecular, phytochemical and ecological studies.

Synergy

i. Several actions were promoted with Uni-CV (University of Cabo Verde); in August and October, we supported networking with local research institutions related to the conservation of Cabo Verde flora. (KSR #29)

ii. The groups from Tenerife and Gran Canaria participated in a meeting devoted to the restoration of arid areas in Lanzarote, organised by the local administration of that island. (KSR #24, 29)

Communicate

Communication

i. Master’s and PhD students from Cabo Verde Islands are actively participating in international conferences (e.g. EEF 2019–15th European Ecological Federation Congress). (KSR #28)

ii. Sao Miguel: Project eAZFlora is now a web app as well as iOS and Android apps, to promote the Azorean flora. We have started to communicate this development. (KSR #28)

iii. Sao Miguel submitted an application to the IUCN World Conservation Congress in Marseille for a session organised by the Macaronesian Island Plant Specialist Group on ‘Digital tools for empowering citizen science-based conservation’. (KSR #28)

iv. The Cabo Verde and Azores Group organised the symposium ‘Macro and Microevolutionary Processes in Macaronesian Plant Lineages’, focused on drivers of speciation of endemic island plants, during the 15th European Ecological Federation Congress (EEF 2019). (KSR #28)

Acknowledgements

The group from Gran Canaria acknowledges the Cabildo de Gran Canaria and the Canarian Government for support, and the programme Interreg-MAC for funding the project NEXT-GENDEM (MAC2/4.6d/236), many of whose activities will provide data (and maybe funding) relevant for the objectives of the SSC. We also thank the Fundación Canaria Amurga-Maspalomas for dissemination and support. The group of Cabo Verde/University of Lisbon acknowledges the support of the international project CV-Agrobiodiversity, funded by Fundação para a Ciência e Tecnologia (FCT) and Aga Khan Development Network (AKDN) under the project CVE18002/33311699. The group from Sao Miguel acknowledges the funding of grants by IUCN and the Azores government to organise the workshop for the Specialist Group in Ponta Delgada, and the University of the Açores in Ponta Delgada for support.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 12, 13, 15, 18, 24, 28, 29, 30, 31, 43

KSR: Key Species Result
**Mission statement**

The mission of the Madagascar Plant Specialist Group (MPSG) is to increase the knowledge on Madagascar plant diversity (flora and habitats) by assessing and/or reviewing their conservation status (especially for IUCN and CITES) and promote their conservation by identifying conservation priorities, giving recommendations for their survival, and reinforcing people’s efforts toward the conservation of plant diversity.

**Projected impact for the 2017-2020 quadrennium**

By the end of 2020, we envision that we will complete the assessment of 3,500 Madagascar plant species, which represents one of the targets of the Barometer of Life. By achieving that goal, we hope to increase our knowledge of the Key Biodiversity Areas (KBAs) of our country. Through the implementation of conservation programmes developed by ourselves and in collaboration with our partners, we hope to bring to local communities the capacity to restore the threatened crop wild relative species and patrimonial species through setting up of nurseries, in situ and ex situ conservation activities and developing management plans for natural resources. We also plan to generate more knowledge for Data Deficient species by conducting research on lost species that have not been collected for more than 50 years. Since the MPSG is also part of the CITES scientific authority of Madagascar, the assessments that have already been done or will be done during the 2017–2020 quadrennium, especially those on orchids, succulents and timber wood (palissander, rosewood and ebony), will contribute to reinforce implementation of CITES’ rules.

**Targets for the 2017-2020 quadrennium**

**Assess**

Red List: (1) reassess and review assessment of a total of ca. 1,700 Madagascar plant species; (2) review assessment of a total of ca. 350 endemic species belonging to different taxonomic groups or belonging to specific habitats; (3) assess and review assessments of ca. 2,000 Madagascar trees; (4) start a national Red List for plants.

Research activities: research on lost species from Madagascar.

**Plan**

Planning: (1) elaborate a conservation strategy for threatened wild yams and the most used yams from Madagascar; (2) elaborate a national strategy for plant conservation in Madagascar.

**Act**

Conservation actions: (1) traditional knowledge and conservation and restoration of patrimonial plant species in Vohibola forest (a KBA); (2) elaborate a national strategy for plant conservation in Madagascar.

**Network**

Capacity building: (1) workshop on the integration of Knowledge Products mobilised by IUCN through the Integrated Biodiversity Assessment Tool (IBAT) to support decision making; (2) start a national Red List for plants.
**Activities and results 2019**

**Assess**

**Red List**

i. Assessments were completed for 160 endemic species from miscellaneous plant families including Xanthorhoeaeae (Aloe, 106 species), Orchidaceae, Acanthaceae and Rubiaceae. Assessments were undertaken by the team of Kew Madagascar Conservation Centre (KMCC) and reviewed by the MPSG. The reviewers were composed of botanists from Missouri Botanical Garden (MBG), the Department of Plant Biology and Ecology (University of Antananarivo), and The Parc Botanic and Zoologique de Tsimbazaza (PBZT). Final results are all now published on the IUCN Red List website. (KSR #2)

ii. Of the 2,000 tree species targeted for assessment under the project ‘Assessing the Status of Madagascar’s Trees for Effective Conservation of Key Biodiversity Areas And Protected Areas’ (a collaboration between Botanic Garden Conservation International (BGCI) and the Madagascar Plant Specialist Group), 1,497 endemics species from miscellaneous families in the Western region, including Araliaceae, Boraginaceae, Pandanaceae, Sarco- laenaceae, Sphaerosepalacaeae and Thyme- laeaceae, were assessed. By the end of the year 2019, 956 species were published on the IUCN Red List, of which 782 species were assessed as threatened (299 Vulnerable, 384 Endangered and 99 Critically Endangered) and 17 Data Deficient. In order to reduce the current lack of comprehensive conservation assessments for trees in some KBAs of western Madagascar, assessments of the target species were undertaken by the botanists from Missouri Botanical...
Garden and Kew Madagascar Conservation Centre. The work was coordinated by Botanic Garden Conservation International and the Madagascar Plant Specialist Group. Three workshops were organised in Antananarivo in order to reinforce the capacity of the MPSG in Red List assessment and for the validation of the assessments. About 30–40 members of the MPSG, together with two representatives from BGCI, participated in the review of each species assessment. (KSR # 1, 2, 22, 35)

iii. Publication of the book Red List of the Dry Forest Trees of Madagascar, including 900 assessments of trees in the west of Madagascar: the book is part of the output of the project on the assessment of western Madagascar KBA trees undertaken by MPSG and BGCI. It is a compilation of all tree species assessed since 2018 and published now on the IUCN Red List website. The book is planned to be launched in the last quarter of 2020. (KSR #1, 4, 22)

Plan
Planning

i. Action plan for eight species of trees from western KBAs in Madagascar: this is a part of the MPSG/BGCI project on Western KBA Trees of Madagascar. In order to mitigate the main threats on eight threatened target species, an action plan for each of them was developed taking into account all available data about the taxonomy, the description, IUCN Red List status, distribution range, ecology, biology and life history and the description of the threats on the wild population. Research for each species was undertaken by MSc students from the Department of Plant Biology and Ecology of the University of Antananarivo and was supervised by lecturers of the same Department, and comprised field studies on each species which dealt with population data. It allowed the students to defend a Master thesis at the University of Antananarivo. The specific objectives of each of these studies are: (1) to characterise the habitat of each target plant species; (2) to describe the biogeographic distribution of these species (sub-populations and populations); (3) to know the different ways in which these species are used and/or exploited and their local values by the population; (4) to determine conservation status according to the IUCN (2001) approach for these species. The students were trained on surveys and inventory methods to build their capacity to develop a species management plan: (1) extensive interaction with the project team: study largely supervised by the site manager; (2) the three KBAs subject to the field studies are all important plant areas and identified as priority for plant conservation; (3) eight threatened woody species proposed by the managers to be the targets of the studies. (KSR # 7, 12, 28, 35)

Act
Conservation actions

i. Action plan for the Palms of Madagascar: with the funding from the Sud Expert Plantes Développement Durable (SEP2D), a national action plan was initiated between various partners of the MPSG: University of Antananarivo, PBZT, Arboretum de Ranomafana, MBG and Royal Botanic Gardens, Kew. The aim of this action plan is to describe the current conservation status of the palms of Madagascar, and then to suggest adequate conservation measures to be prioritised at different levels and with all involved stakeholders. For this action plan, a collaboration with the IUCN SSC Palms
Specialist Group is planned. The final version of the strategy is expected to be published at the end of 2020. (KSR # 7, 12, 28, 35)

**Network**

**Capacity building**

i. **National Red List Alliance (NLRA):** MPSG has been invited to join the Alliance for Africa region; the aim of the alliance is to set up species assessment working sets in the IUCN SIS database, IUCN SSC internal grants, IUCN Red List training, etc. These requests will be easy to process if we motivate that these countries are part of the NRLA. (KSR #8)

**Acknowledgements**

We thank Critical Ecosystem Partnership Fund (CEPF) that helped us to cover different costs: the funding of the project, the assessment of the trees from Madagascar western KBAs, the training workshop and the review workshop for the trees from western KBAs. We also want to thank Sarah Oldfield from the Global Tree Specialist Group, Malin Rivers and Emily Beech from BGCI, who provided Red List training and assistance during the Western KBAs trees project.

**Summary of activities 2019**

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Main KSRs addressed: 1, 2, 4, 7, 8, 12, 22, 28, 35

KSR: Key Species Result
Mission statement
No formal mission statement.

Projected impact for the 2017-2020 quadrennium
Globally, mangrove species and mangrove ecosystems are still under grave threats due to urbanisation and other forms of exploitation. The impact of these threats is potentially exacerbated by global climate change, such as sea level rise. We aim to complete an updated assessment of the approximately 80 species of mangroves within this quadrennium, with particular reference to how these anthropogenic impacts may influence their long-term survivorship. We also expect to contribute significantly to IUCN’s new initiative on Red Listing ecosystems. We shall also continue to contribute to the current knowledge base for global mangrove conservation, through organising international workshops and symposia.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete assessment of 80 species of mangroves; (2) participate in the red-listing of significantly threatened ecosystems.

Network
Capacity building
i. A Mangrove Specialist Group meeting was held as a side event of the 5th International Mangrove Macrobenthos and Management Meeting (MMM5) in Singapore (July 2019). (KSR #18)

Communicate
Communication
i. Mangrove Specialist Group web pages were renewed. (KSR #28)

Research activities
i. The Special issue coming out of the 2017 workshop in Bremen is already published in *Estuarine, Coastal and Shelf Science*. Entitled ‘Turning the tides on mangroves: Knowledge-based conservation, rehabilitation and sustainable use of mangroves’, the Special Issue contains 18 papers on various aspects of mangrove biology, ecology and conservation. (KSR #32)
Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 2, 18, 28, 32

KSR: Key Species Result

MSG workshop in Singapore, July 2019.
Dr Tom Worthington was giving a presentation on a proposed approach to the red-listing of mangrove ecosystems
Photo: S. V. Lee

IUCN Critically Endangered Bruguiera hainesii,
individual flower, Pulau Manukan
Photo: John Yong

IUCN Species Annual Report 2019

Merope angulata flower and fruit,
Singapore
Photo: John Yong

Plantae
Mission statement
To conserve native plants of the Mascarene Islands.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we hope to significantly advance towards finalisation of the national Red List of endemic plants of Mauritius and Rodrigues. We also hope to establish or reinforce collaboration with a number of international conservation organisations, and take actions significantly improving the conservation of at least 10 endemic plant species. We expect to keep a fully up-to-date database of all plants present in La Réunion in order to deliver regular Red List reassessments of the entire Réunion Flora to guide our conservation actions. We envision producing factsheets on techniques for how to grow each rare plant species from La Réunion.

Targets for the 2017-2020 quadrennium

Assess
Red List: complete the assessment of 200 endemic plants from Mauritius and Rodrigues. Research activities: (1) update on a regular basis the database of all plants present in La Réunion, including rare plant species; (2) develop new knowledge to improve the conservation of rare plant species from La Réunion (both research and grey literature).

Plan
Planning: publish emergency action plans for Extinct in the Wild plant species (22 species) and national or local action plans for rare plant species (39 species).

Act
Conservation actions: (1) conserve in situ and/or ex situ 50 Critically Endangered plant species from Mauritius and Rodrigues; (2) contribute to the successful implementation of the project ESPECE (Études et Sauvegarde des Plantes En danger Critique d’Extinction; www.reunion-parcnational.fr/); (3) contribute to the successful implementation of the project LIFE+ forêt sèche, which aims to prevent the complete loss of a patrimony and a unique biodiversity in the world: La Réunion dry forest (general information at https://www.foretseche.re/en/).

Network
Capacity building: conduct training courses in plant conservation.
Synergy: develop or reinforce collaboration with at least three international conservation organisations.

Communicate
Technical advice: publish factsheets on techniques for how to grow each rare plant species from La Réunion.
Activities and results 2019

Assess

i. Over 50 Rodrigues species, including 33 trees, were pre-assessed (33 species were entered into the IUCN SIS database); draft Species Action Plans for five Rodrigues species were initiated. Funding for the Rodrigues assessment was obtained from Botanic Gardens Conservation International’s Global Trees Campaign (Franklinia funding). Training and workshops were conducted in both Mauritius and Rodrigues. IUCN SIS data entry for ca. 260 Mauritian species and 16 Rodrigues species is still pending, with the constraints being the time consumption of entry into the IUCN SIS database and data entry staff shortages. (KSR #1, 2, 32)

Research activities

i. Five scientific papers have been published in 2019 to improve the conservation of rare plant species from La Réunion: Albert et al. (conference paper, Island Biology) confirm the fundamental role of seed dispersal loss in ecosystem stable-state shifts and the urgency to restore it through large frugivore rewilding actions; Bytebier, B. and Pailler, T. (Phytotaxa) demonstrate a new combination in Cynorkis (Orchidaceae, Orchidoideae) for the Mascarenes; Pailler et al. (Phytotaxa) describe a new Disperis (Orchidaceae) for the flora of the Mascarenes; Lerperlier et al. (Global Ecology and Conservation) describe germination barriers in four native Malvaceae shrub species of Reunion island to improve restoration in arid habitats; Baret et al. (Cahiers scientifiques de l’océan Indien occidental) highlight the importance that forestry
One of the few truly wild individuals of Critically Endangered Zanthoxylum heterophyllum on a private land at Trou d’Eau Douce, east Mauritius

Photo: Phil Lambdon, Durrell / MWF

Group work

Photo: Mascarene Island SG
plantations act as a buffer and not as a pathway for invasive alien plants in the national Park at Réunion island, recommend strengthening early detection and rapid response of alien plants, and suggest alternative management approaches in forestry plantations, including the use of community-based restoration programmes. (KSR #32)

Planning

i. Three thematic action plans have been developed, according to homogenous themes: species from littoral *Euphorbia* genus (three species), species from dry areas (~20 species), and very threatened plant species (~10 species). (KSR #15)

Act

Conservation actions

i. The National Parks and Conservation Service has set up a 5.5 ha arboretum in Curepipe, Mauritius, where over 150 endemic plants of Mauritius are preserved. Over half would be Critically Endangered species. In addition, over 20 putative Critically Endangered species are conserved on Rodrigues. However, on both islands, especially on Mauritius, continuous habitat degradation and loss continues to seriously threaten endemic plants. (KSR #29)

ii. A total of 1,450 individuals of 20 rare, protected plants have been produced and are present in nursery. They will be planted in 2020 within 14 different sites around the island (~5 ha in total). Knowledge of 100 rare plant species (Critically Endangered, Endangered) has been updated and 200 wild individuals have been marked in the field in order to facilitate monitoring over time. In parallel, field restoration has been done around 20 mature individuals of seven plant species in situ, and the future site plantations have been identified and alien control has been initiated for some. (KSR #25, 27)

iii. Eighteen ha of relictual natural habitats have been restored; 7.5 ha of forest have been planted (rehabilitation of very degraded forest but in order to connect fragmented habitats). For that, 7,700 plants of 13 rare, protected species have been planted with around 20,000 other indigenous plants. The project will be finished in 2020. (KSR #31)

Network

Capacity building

i. Several Brest Botanical Garden (France) training sessions have been provided on Mauritius and Rodrigues and online for database for Mauritian Wildlife Foundation, Forestry Service, National Parks and Conservation Service, and private sector actors. In Rodrigues, training was also provided to Mauritian Wildlife Foundation staff by Brest Botanical Garden in the setting up of an ‘ancient seeds’ project in alluvial deposits. (KSR #17)

Synergy

i. Partnerships were established or reinforced with Brest Botanical Gardens (France), Missouri Botanical Gardens (US) and Botanic Gardens Conservation International, and links made with a few others (e.g. Leon Levy Native Plant Preserve, Bahamas). (KSR #29)

Communicate

Technical advice

i. About 10 factsheets on indigenous plants have been done (half are rare plants). As it is important to include rare plant species inside a most preserved ecosystem, it is also important to develop factsheets for common indigenous plants in order to restore the habitat well. (KSR #18)

Acknowledgements

Many thanks to all those who have helped with this contribution: Yann Fontaine, Sarah Roussel, and Christophe Lavergne, as well as those who helped me all year with IUCN work: Christian Fontaine, Dominique Strasberg, Mathieu Rouget, Vincent Bouillet, Frédéric Picot, and Joël Dupont. A specific thanks to all who worked hard in the field whether through an NGO or personally, such as José Minatchy, Max Félicité, and all others. Many thanks to the Ministry of Agro Industry and Food Security (Mauritius) and the Rodrigues Regional Assembly (Rodrigues) staff, Mauritian Wildlife Foundation staff, Durrell/ Mauritian Wildlife Foundation staff (Nik Cole, Phil Lambdon), Brest Botanical Gardens, France (especially Stéphane Buord), Botanical Gardens Conservation International (especially Paul Smith and Alex Hudson), Leon Levy Plant Preserve, Bahamas (Ethan Freid), Missouri Botanical Gardens, USA (especially Peter Wyse-Jackson and Andrew Wyatt), and private sector staff (Ferney Valley, Ebony Forest, Francois Leguat Reserves).

Summary of activities 2019

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KSR: Key Species Result
Mission statement
The Medicinal Plant Specialist Group (MPSG) is a global network of specialists contributing within our own institutions and in our own regions, as well as worldwide, to the conservation and sustainable use of medicinal plants. The MPSG was founded in 1994 to increase global awareness of conservation threats to medicinal plants, and to promote sustainable use and conservation action.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision a significant increase in knowledge of the conservation status of priority species of medicinal and aromatic plants, planning and actions to conserve and sustainably use these species, and broader industry and consumer awareness and participation in the conservation of threatened species.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete IUCN Red List assessment of 1,500 priority species of medicinal and aromatic plants.

Plan
Policy: promote the recognition of the sustainable use, trade and conservation of medicinal and aromatic plants in policy and action at the global, regional and national levels (action via Convention on Biological Diversity (CBD), CITES, World Health Organization (WHO), International Treaty on Plant Genetic Resources (ITPGR), and other policy fora).

Act
Conservation actions: (1) develop and implement Plants for People initiatives for medicinal plants in at least three regions; (2) contribute to the implementation of the FairWild Standard and certification scheme for sustainable use of wild plants for at least 50 species, 50 companies and 20 countries.

Communicate
Communication: increase the visibility and recognition of the contribution of medicinal and aromatic plant conservation and sustainable use to livelihoods, health, food security and biodiversity.

Activities and results 2019
Assess
Red List
i. Fifty-nine global species assessments were submitted in 2019; 13 global assessments have been drafted; approximately 60 national/regional assessments were reported by MPSG members as completed in 2019. MPSG made significant progress on assessment of North American medicinal plant species, contributing to a regional Plants for People Initiative. Supported through partnership with the New Mexico BioPark Society/Albuquerque BioPark, and working with NatureServe (IUCN Red List Partner/Red List Authority for North American Plants), regional partners, and indigenous communities, we held a workshop in Albuquerque, USA, in July 2019 to complete Global Red List assessments of 17 medicinal plants and close relatives endemic to the Southwestern US/Northern Mexico ‘Borderlands’ region, and to review additional draft assessments for this region. A workshop hosted by Mt. Cuba Center, Delaware, USA, in partner-
ship with NatureServe and supported by New Mexico BioPark Society, resulted in completed Global Red List assessments of 42 *Trillium* species native to North America, a significant genus among the priorities for North American assessments identified in 2018. Drafts for additional North American priority species were prepared and sent for expert review. In all, 59 completed assessments were submitted to the IUCN Red List Unit in 2019. Preparatory work and partner consultations to publish a comprehensive list of 3,200 North American medicinal plants were undertaken and plans for additional regional workshops in 2020–2021 developed. Remaining assessment priorities for North America include 15 WHO monographed species, nine CITES Appendix II-listed species, 41 species included as herbs in trade by the American Herbal Products Association, and 92 medicinal plant species and close relatives considered conservation priorities by the United Plant Savers. Assessments for these species have been drafted and will be submitted for review in 2020. Some ad hoc progress was made on medicinal plant assessments via other regional projects. None of these is included, however, in the 1,500 species identified as MPSG global priorities for Red List assessment. (KSR #1)

**Plan**

**Policy**

i. Application of CITES non-detriment findings (NDF) guidance for perennial plants is ongoing. Guidance itself has been referenced in the 18th meeting of the Conference of the Parties to CITES (CoP18) documents linked to the implementation of the Convention (conducting NDFs). Review of the applicability of the Fair-Wild Standard and certification scheme for CITES-listed medicinal plants: this project was completed, and a key output of the project was delivered to the primary audience – the Parties to CITES – as an information document to CoP18, submitted by Germany and Mexico. The project findings were also summarised in a TRAFFIC Bulletin article. MPSG engagement in CITES processes: MPSG was represented at CITES CoP18 (August 2019), making several key interventions (which influenced the language of the CoP18 Decisions) on behalf of the IUCN Medicinal Plant Specialist Group. A number of MPSG members participated in the government delegations. A key new CITES Decision on medicinal and aromatic plants was supported at CITES CoP18, and MPSG remains engaged on the issues of implementation of the decisions. Publication of the revised WHO/IUCN/WWF/TRAFFIC Guidance on Conservation of Medicinal Plants did not advance. The IUCN MPSG Co-Chair has, however, produced a paper reviewing the linkages between COVID-19 and the use of wild medicinal plants, hoping this would trigger further discussions in the nexus of health, biodiversity and wild plants’ use (despite this happening in early 2020, it is included in this report). Recognition of the value of wild plants to sustainable development and their sustainable management was higher on the agenda at CITES CoP18, and MPSG remains engaged on the issues of implementation of the decisions. The final Forum Declaration makes clear links between the importance of wild species, plant conservation and the Sustainable Development Goals. An MPSG member in India as Chairman of a Regional level Committee constituted by the Government of Karnataka, India, guided and assisted the Government in streamlining the laws and regulations in the Medicinal Plants sector and helped the industries in resolving several impediments in the lawful sustainable use of the medicinal plants. (KSR #26)

**Act**

**Conservation actions**

i. Partnership with New Mexico BioPark Society included training of MPSG members in conservation planning, development and implementation of undergraduate-level training in Red List assessment (North American region) with a focus on incorporation of Traditional Ecological Knowledge; some progress was made on development of a regional Plants for People initiative in South America, and Red List training and assessments in Central America. (KSR #1, 15, 31)

ii. An MPSG member in Iran has been developing a national strategy/policy for environmental education that encourages and enables society and government to actively become involved in biodiversity conservation and other related efforts. This included organising annual biodiversity related festivals, and exhibitions in the National Botanical Garden of Iran; implementation of educational programmes for students on biodiversity and teaching them the values of biodiversity and the natural environment, and diversity of plant species in the natural environment in the National Botanical Garden of Iran; enrichment of the medicinal plant collection in the National Botanical Garden of Iran and using the plant materials for research purposes. (KSR #15, 31)

*Trillium erectum,* the most widely harvested *Trillium* species in North America on medicinal markets, is one of over forty *Trillium* species assessed by the Medicinal Plant Specialist Group in 2019

Photo: Tara Littlefield
** iii.** Member initiatives in India, China, and the Southern Cone of South America may contribute to the development of Plants for People (Medicinal Plants) initiatives. (KSR #31)

** iv.** IUCN MPSG contributed to the overall uptake of the FairWild Standard and certification scheme. Two new companies registered to trade in Fairwild-certified materials and a new collection operation for Frankincense was certified, bringing the total number of participating businesses at the end of 2019 to 34 (13 wild collection operations, 13 traders, and eight licensees – an increase from 30 at the end of 2018). Work to bring the first FairWild-certified products from China to market took several important steps forward, with a pre-audit of Schisandra berry harvest practices in Sichuan and an interested buyer identified in France. Approximately 60 different products containing FairWild-certified ingredients are now on the market, with the newly formed beverage company Baobabes set to launch a Baobab drink product in 2020. (KSR #36)

** v.** MPSG actively contributed to the technical implementation of FairWild, including through several MPSG members being on the Board, Advisory Board or in partner organisations to the FairWild Foundation. MPSG contributed technically to the FairWild Forum, held in April 2019, which discussed the Standard revision issues. (KSR #36)

** vi.** Risk analyses were completed for two species wild-harvested in the country Georgia: *Tilia dasystyla* subsp. *caucasica* and *Sambucus nigra* (Elder). (KSR #36)

** vii.** MPSG is a partner to TRAFFIC, Asia Network for Sustainable Agriculture and Bioresources (ANSAB) and others in a conservation project in Nepal, focusing on sustainable management of Jatamansi (*Nardostachys jatamansi/grandiflora*), with the focus on two districts in Nepal. (KSR #36)

** viii.** In the North Western Ghats of India, an MPSG member reported on Applied Environment Research Foundation (AERF)/Nature Connect successfully accomplishing the FairWild certification of two species – *Terminalia bellirica* and *Terminalia chebula* – for the fifth successive year in 2019 at two different locations in the northern Western Ghats. Nature Connect, in collaboration with certified registered collectors, collected and processed 11.5 tonnes of FairWild-certified fruits of *T. chebula* and 12.5 tonnes of FairWild-certified fruits of *T. bellirica* in 2019. All the processed material was exported to Pukka Herbs (UK) in part directly by Nature Connect and in part through Phalada Agro Pvt. Ltd. In addition to this existing project, AERF field teams mapped wild populations of *T. chebula*, *Asparagus racemosus* and *Pterocarpus marsupium* for sustainable utilisation and value chain development in Junnar, Velhe and Sangameshwar block, Northern Western Ghats of India. (KSR #36)

** Communicate**

** Communication**

** i.** IUCN World Conservation Congress 2020 Forum event proposals were developed, along with contributions to planned pavilion/booth events (United Plant Savers and TRAFFIC booths; North American pavilion). (KSR #28)

** ii.** MPSG Newsletter: a new partnership with United Plant Savers (IUCN member, US) was created to link MPSG’s Medicinal Plant Conservation newsletter with United Plant Savers’ *Journal of Medicinal Plant Conservation*; the first combined edition is expected in mid-2020. (KSR #28)

** iii.** Website: the IUCN platform website was updated; some work to develop a stand-alone website on another platform advanced. (KSR #28)

** iv.** Presentations: (1) making CITES work through the application of voluntary certification standards (VCSS) (January 2019, Cambridge, UK); (2) human health and biodiversity conservation through sustainable trade in wild plants presentation to participants of an India sustainable use workshop (February 2019, Kotagiri, India); (3) sustainability issues in the context of wild collection, FairWild Forum (April 2019, Budapest, Hungary); (4) Latin American Zoo and Aquarium Association 2019 (April 2019, Santiago, Chile), on progress and ABQ BioPark partnership; Red List Hub Model; (5) Global Trade in Medicinal Plants: Threats and Opportu-
nities, presentation to China Wild Plant Conservation Association (June 2019, Cambridge, UK); (6) Red List Workshop for Rare Plant Species in New Mexico hosted at the Albuquerque BioPark (July 2019, Albuquerque, New Mexico); (7) Red List Workshop for North American Trillium Species hosted at Mt. Cuba Center (October 2019, Hockessin, Delaware); (8) plants use and trade presentation for the IUCN Plant Conservation Committee and IUCN SSC Plant Specialist Groups (October 2019, Abu Dhabi, UAE); (9) global progress in the delivery against Target 12 (sustainable use of wild plants) of the Global Strategy for Plant Conservation presented at the Global Summit on Plant Conservation (November 2019, China); (10) results of New Mexico rare species assessments, MPSG collaboration with Botanic Gardens presented to the Native Plant Society of New Mexico (November 2019, Santa Fe, US). (KSR #28)

MPG participated in FairWild Week 2019, including by providing data on the conservation status of medicinal and aromatic plants. (KSR #28)

Acknowledgements

We thank the following donors and organisations for support in 2019: New Mexico BioPark Society / Albuquerque BioPark for Red List Assessment and conservation planning contributing to our People and Plants Initiative for North American medicinal plants, in particular, we thank Clayton Meredith for his amazing work in this capacity; NatureServe US for contributions to species assessments, to Mt. Cuba Centre for hosting our Trillium workshop, and to the many resource management agencies, botanic gardens, and individuals who provided expertise; TRAFFIC International for ongoing support to the Co-Chair of MPSG, and ongoing implementation of projects supporting sustainable trade in medicinal and aromatic plants, including those supported through the UK Defra Darwin Initiative, Keidanren Nature Conservation Fund, and Bundesamt für Naturschutz (BfN); and Dr Uwe Schippmann for ongoing development and deployment of the MAPROW database to support the efforts of our Specialist Group.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 15, 26, 28, 29, 31, 36

KSR: Key Species Result
Mission statement
Implementation of field conservation projects for Critically Endangered Mediterranean plants with authorities and local populations / Identification of Important Plant Areas in Mediterranean countries / Raising plant conservation profile in the Mediterranean / Networking with botanists and conservationists / Sharing best practices in plant conservation / Education and raising awareness of the public and stakeholders at regional, national and local levels.

Projected impact for the 2017-2020 quadrennium
For the end of the quadrennium, the Mediterranean Plant Specialist Group (MPSG) intends to continue to make IUCN Red List assessments of the most threatened restricted endemic taxa, as well as to implement ex situ and in situ conservation actions with a special focus on non-European Union Mediterranean countries. The networking of specialists in the conservation of Mediterranean flora will be strengthened. MPSG will continue to offer multilateral programmes for the conservation of flora and raise awareness among donors and policy makers. MPSG will continue to be a partner and adviser of CEPF (Critical Ecosystem Partnership Fund) and of the IUCN Centre for Mediterranean Cooperation.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete thirty Red List assessments.

Act
Conservation actions: (1) in situ conservation measures implemented for 30 threatened plants; (2) ex situ conservation measures implemented for 50 threatened plants; (3) identify 50 Key Biodiversity Areas (KBAs) for plants.

Activities and results 2019
Assess
Red List
i. Twenty-two Red List assessments were submitted to the IUCN Red List Unit for processing. (KSR #1)

Act
Conservation actions
i. Sixty-three in situ conservation actions and measures (for 51 plant species) were implemented: (1) translocations, (2) control/removal of invasive/ornamental species, and (3) management measures. (KSR #31)

ii. Seven-hundred and forty (740) accessions (seed lots) from 429 species were collected and stored in seed banks; collection, curation and storage of seeds were performed according to national and international regulations and standards for germplasm conservation. (KSR #31)

iii. One hundred and fifty (150) Key Biodiversity Areas for plants have been identified in the Mediterranean area, comprising eight countries of the South and East Mediterranean region. Eighty one percent (81%) are Global KBAs and 19% are regional KBAs. (KSR #22)
In situ conservation of Rhamnus persicifolia, an extremely rare endemic tree of Sardinia (CARE MEDIFLORA Project)  
Photo: Bertrand de Montmollin

Population reinforcement for Horstrissea dolinicola, a very rare endemic of the mountains of Crete (CARE MEDIFLORA Project)  
Photo: Bertrand de Montmollin

Acknowledgements

Sóller Botanical Garden Foundation (Balearic Islands), Office de l’environnement de Corse et Conservatoire Botanique National de Corse, Hortus Botanicus Karalitanus – University of Cagliari (Sardinia), Department of Biological, Geological and Environmental Sciences, University of Catania (Sicily), CIHEAM Mediterranean Agronomic Institute of Chania (Crete), Agricultural Research Institute & Department of Forests (Cyprus), IUCN Centre for Mediterranean Cooperation (Malaga, Spain), Critical Ecosystem Partnership Fund (CEPF).

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 1, 22, 31

KSR: Key Species Result
Mission statement

Orchidaceae are the largest family of flowering plants and they occur in a wide range of ecosystems and habitats. A charismatic group, many species are important in horticulture. Habitats of orchids are, however, threatened throughout the world, and the Orchid Specialist Group (OSG) is dedicated to their conservation and sustainable use.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we envision a substantial advance in our understanding of threats to orchids. This will be achieved in the following ways: (1) global assessments will be published for a range of taxonomic and geographical subsets of orchids; (2) meetings will be organised to facilitate the exchange of information between orchid conservation practitioners (members of the OSG and others) to ensure that best practice is followed in orchid conservation; (3) we will strive to involve young orchid conservationists from a diversity of countries, especially those with high orchid diversity and perceived threat; (4) we will work with the CITES authorities and others to improve awareness and monitoring of orchid trade, much of which is currently undocumented, illegal and unsustainable.

Targets for the 2017-2020 quadrennium

Assess

Red List: process ca. 300 Red List assessments for inclusion in the Global Red List.

Research activities: complete publication of papers from the 6th International Orchid Conservation Congress.

Plan

Policy: write review of orchid conservation for Botanical Studies.

Network

Proposal development and funding: raise funds for up to 20 bursaries for students from developing countries to attend the 7th International Orchid Conservation Congress (IOCC VII). Synergy: consolidate the two new groups within OSG, one looking at trade issues and one looking at molecular identification tools.

Communicate

Scientific meetings: complete planning for the 7th International Orchid Conservation Congress (IOCC VII).

Activities and results 2019

Assess

Red List

i. More than 1,500 species are now published on the global Red List, including 352 in 2018 and 258 in 2019. (KSR #1)

Research activities

i. Special issue published in April 2018 on papers from the 6th International Orchid Conservation Congress. (KSR #43)

Network

Proposal development and funding

i. Funds raised for students from developing countries to attend IOCC VII; 14 bursaries offered, with 12 taken up.

Synergy

i. The new Working Groups, one looking at trade issues and one looking at molecular identification tools, are progressing well. (KSR #5)

Communicate

Scientific meetings

i. The 7th International Orchid Conservation Congress (IOCC VII) was held successfully, from 28 May–1 June 2019, with 180 delegates in attendance. (KSR #28)
Acknowledgements

We acknowledge the generosity of the Lennox-Boyd Trust, Orchid Conservation International, the Linnean Society of London and the friends and family of Amy Morris for support towards the bursaries for the 7th International Orchid Conservation Congress.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 5, 28, 43

KSR: Key Species Result

Angraecum coutrixii (Madagascar) grows on granite outcrops in a protected area, but is endangered due to a range of threats including fire, invasive species and illegal collection.

Photo: Landy Rajaovelona

Orchis purpurea (Lady Orchid; France) is widespread European species, that is currently the subject of a project investigating the impact of hybridization of this species with some of its close relatives.

Photo: Leif Bersweden

Ophrys helenae (Helen’s Bee Orchid; Greece). Sometimes treated as a subspecies of O. sphegodes, it is listed as rare in the Greek Red List book, although it can still be found in relatively large numbers in the NW of the country.

Photo: Martha Charitonidou

Orchis purpurea (Lady Orchid; France).
Mission statement
To conserve palms by assessing the threats that they face and developing programmes to protect palm species for the future.

Projected impact for the 2017-2020 quadrennium
We envision to have increased Red Listing of palm species worldwide, in particular Least Concern status.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) expedite assessment of Least Concern palms (work led by Royal Botanic Gardens, Kew); (2) Red Listing of Indian palms for Indian palm website; (3) Red Listing of western Ecuadorian palm species.
Research activities: study the ethnoecology of Raphia vinifera in North Western Cameroon.

Network
Synergy: refresh the Palm Specialist Group in this quadrennium.

Activities and results 2019
Assess
Red List
i. Within the PALMS 2020 congress, we plan to submit a preliminary estimate of Least Concern palms. (KSR #1)

Network
Membership
i. We added 12 new members to our group, mainly from southern countries. This allowed us to keep our member numbers stable given 13 old members were deleted from the list.

Acknowledgements
We thank the following donors: Environment Agency – Abu Dhabi (United Arab Emirates) via the Chair of the IUCN Species Survival Commission (SSC); the French Foundation for Research on Biodiversity (FRB) and the Provence-Alpes-Côte d’Azur region (PACA) region via the Centre for Synthesis and Analysis of Biodiversity data (CESAB) RAINBIO research project; Agence Nationale de la Recherche, France (grant number ANR-15-CE02-0002-01); Agropolis Fondation under the reference ID 1403-026 through the «Investissements d’avenir» programme (Labex Agro: ANR-10-LABX-0001-01).

Summary of activities 2019
Components of Species Conservation Cycle: 2/5
Assess 1
Network 1
Main KSRs addressed: 1
KSR: Key Species Result
*Bactris gasipaes* var. *gasipaes*, Manabi, Ecuador
Photo: Couvreur TLP

*Heterospathe fernandi*, Samar, Philippines
Photo: Jiro Adorador

*Phytelephas aequatorialis*, Pichincha, Toachi
Photo: Couvreur TLP
Mission statement
The Seagrass Species Specialist Group (SSSG) contributes to and encourages seagrass science and conservation, with the goal of protecting seagrass species biodiversity worldwide and preserving the functions and values of seagrass habitat, including its role in protecting threatened and endangered species that depend on seagrasses for their survival.

Projected impact for the 2017-2020 quadrennium
At the time of the 14th International Seagrass Biology Workshop (ISBW14) in the United States (November 2020), 10 years will have passed since the last species status review was completed (Short, F.T. et al. (2011). Extinction risk assessment of the world’s seagrass species. Biological Conservation 144(7):1961–1971. [DOI: 10.1016/j.biocon.2011.04.010]). The SSSG will affirm the proposed updates at ISBW14. During the workshop, the Red List Authority will organise a conversation about a seagrass ‘Green List’, including contributions for a global database of seagrass population and species recovery efforts that have proved successful around the world.

Co-Chairs
Frederick T. Short (1)
Brooke Sullivan (2)

Location/Affiliation
(1) University of New Hampshire, Durham, New Hampshire, US
(2) University of Washington, Seattle, Washington, US

Number of members
72

Social networks
Twitter: @ISeagrass

The SSSG is comprised of approximately 70 seagrass biologists worldwide, who have volunteered to participate and contribute their time by reviewing the status of seagrasses in their bioregions and contributing their knowledge. This has been effective over three successive International Seagrass Biology Workshop sessions, beginning with ISBW10 in Canada (2012).

Looking forward to ISBW14 in the United States, the SSSG plans to seek final approval of the proposed updates confirmed at the last meeting. The Red List Authority will present the results of our updated Red List contributions and solicit a final round of feedback from the SSSG prior to publishing the seagrass Red List of Threatened and Endangered Species in 2021. We plan to continue strengthening the contributions to the Red List and to advance coordination of data on natural and human assisted recovery of species in our database.

As our climate and oceans are rapidly changing, it becomes critical for the SSSG to continue encouraging research that contributes to an effective Red List assessment process, such that we are better prepared to review and investigate changes to global seagrass species conservation status in the future. We expect continued inclusion of the IUCN forum at seagrass workshops will expand the number of researchers who are aware of the Red List Authority and also the number of specialists actively contributing their research to the results of the IUCN Red List of Threatened Species SSSG and progress towards recovery.
Targets for the 2017-2020 quadrennium

Assess
Red List: complete reassessment of seagrass species with changed status or taxonomy. Research activities: review taxonomy of seagrass to improve the reassessments process.

Network
Capacity building: train members and collaborators on the Red List categories and criteria. Synergy: expand the network of researchers and collaborators engaged in taxonomy and reassessments.

Communicate
Communication: increase awareness of IUCN Red List and seagrass extinction risks.

Activities and results 2019

Assess
Red List
i. In 2019, we focused on generating a leadership team to expand the Seagrass SG and develop a system for coordination among global leaders in seagrass conservation. The target was broken down into further subtasks needed to achieve this target. (KSR #1)

Research activities
i. We reviewed the taxonomic status of 19 species in 2019. (KSR #43)

Network
Capacity building
i. All members of bioregional teams and the GIS lead were introduced to the Red List process and have initiated training through TNC portal. (KSR #5)

Synergy
i. Bioregional teams were formed from the membership to focus efforts on reassessing all seagrass species.

Communicate
Communication
i. One public talk was held about seagrass extinction and IUCN results and one manuscript was drafted but has not been submitted to date. (KSR #28)

Summary of activities 2019

Components of Species Conservation Cycle: 3/5
Assess 2
Network 2
Communicate 1
Main KSRs addressed: 1, 5, 28, 43

KSR: Key Species Result

Photo: F.T. Short

Blades and flowers of Thalassodendron ciliatum floating at the water surface at low tide in a Madagascar seagrass meadow

Photo: F.T. Short

Single plant of the Vulnerable seagrass, Zostera caespitosa, South Korea

Photo: Seagrass Net
Mission statement

The mission of the Seed Conservation Specialist Group (SCSG) is to promote seed conservation by providing a network for knowledge-sharing in different ecosystems around the world, and aiding in prioritisation, capacity building, and development of best practices.

Projected impact for the 2017-2020 quadrennium

At the end of 2020, we expect that the sharing of experience and knowledge among our group members and the global conservation community will help to identify gaps in the seed conservation of vulnerable species and inform world policies for ecosystem restoration and species recovery. In particular, we hope that our collective efforts in identifying these gaps in knowledge will encourage improvements to seed banking processes in countries of Latin America, East Asia and other areas that are identified as regions with high conservation needs. Through the policy documents developed for seed conservation, we hope that our efforts will contribute towards at least a 15 percent increase in species from each ecological region being conserved for the future through effective seed banking.

Targets for the 2017-2020 quadrennium

Assess
Research activities: conduct and publish a regional and topical gap analysis of seed conservation expertise.

Act
Technical advice: create IUCN Guidelines on Seed Conservation.

Network
Membership: recruit at least 100 members for the new Specialist Group.

Communicate
Communication: create an online global Seed Conservation Directory of Expertise.

Activities and results 2019

Assess
Research activities
1. The SCSG has made progress on this target for 2019 by creating an outline, conducting a literature review, and creating a plan for completing the project. We extended this target to 2020 in order to collect additional data that will increase the impact of the publication. (KSR #32)

Act
Technical advice
1. The SCSG has made progress on this target for 2020 by planning a strategy for completion and beginning to recruit a team of contributors to the guidelines. (KSR #26)

Network
Membership
1. We have maintained the target of recruiting at least 100 members for the new Specialist Group in 2019, even as we have had some attrition, by continuing to recruit new members.
Acknowledgements

We thank Guangxi University, Kalehua Seed Conservation Consulting, and the IUCN SSC for funding and/or institutional support of the Co-Chairs’ participation in specialist group meetings, SSC Leaders’ Meeting, and related activities.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 26, 32

KSR: Key Species Result
Mission statement

The mission of the IUCN SSC Sonoran Desert Plant Specialist Group is to assess the extinction risk of all Sonoran Desert plant species, educate the public about Sonoran Desert species and threats, and implement conservation plans supported by the Red Listing process.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, the IUCN SSC Sonoran Desert Plant Specialist Group (SDPSG) strives to have made substantial progress in beginning the ambitious agenda of assessing all Sonoran Desert species. At the same time, we expect to make substantive progress in surveying and removing high priority invasive species through greater coordination. Conservation planning will begin concurrently with the Red List assessments as species are assessed. We will work with other Specialist Groups to coordinate conservation planning on threatened species across taxa in the region.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) identify target assessment groups for 2019–2020; (2) assess 250 species of Sonoran Desert plants.

Research activities: (1) complete vetting process of taxonomic list; (2) compare vetted plant list with remits of other Specialist Groups and agree on how to coordinate overlapping species; (3) complete a draft list of endemic species found in the Sonoran Desert; (4) monitor the distribution ranges of invasive plants, animals, and other consequences of global changes.

Plan

Planning: coordinate with other Specialist Groups to create an up-to-date list of threatened species in the Sonoran Desert and initiate conservation planning across taxonomic groups.

Proposal development and funding: submit three funding proposals to support assessments and expert workshops.

Act

Conservation actions: (1) control of invasive plants and mammals in protected natural spaces; (2) in situ and ex situ conservation (seeds and living collections) of Critically Endangered and Endangered plants and preventive sampling of seeds of more widely distributed plant taxa.

Communicate

Communication: (1) create logo; (2) regular communications and updates to members through an e-newsletter; (3) create a web presence and social media, e.g. Twitter and Facebook accounts.

Scientific meetings: (1) organise SDPSG meetings during regional meetings such as the Arid Lands Symposium; (2) include sessions/discussion panels on the activities and deliverables of the SDPSG in the Arid Lands Symposium or other relevant regional or international meetings.
Activities and results 2019

Assess

Red List
i. We will target Fabaceae as our target assessment group. We are also conducting rapid assessments using the new shiny app for all species. (KSR #1)

Research activities
i. Vetting of the taxonomic list against World Flora Online was completed; it is now being vetted against Tropicos. This process is complete for 1,500 of 4,000 of our species. (KSR #1)
ii. The Red List coordinator is comparing the vetted taxonomic list with species in the IUCN SIS database. This process is complete for 1,500 of 4,000 of our species. (KSR #1)
iii. Our host organisation has trained volunteer groups to survey invasive species across Maricopa County. Removal efforts are underway. Regional invasive species planning is underway. Coordination on invasive species mapping is progressing. (KSR #12)

Plan

Planning
i. Dr Rowe is working with undergraduate students to document conservation planning across the Sonoran Desert, starting with US Fish and Wildlife Service documents. (KSR #4, 7, 15)

Act

Conservation actions
i. We undertook thirty acres of invasive species removal. (KSR #4, 7, 13)

Communicate

Communication
i. We have completed a rough draft.

Scientific meetings
i. The Red List coordinator met with members at Botany meetings in Tucson, Arizona, in July 2019, to discuss priorities/next steps to organise SDPDG meetings during regional meetings.
ii. Dr Rowe presented IUCN work in September 2019 at the 15th Biennial Conference of Science and Management on the Colorado Plateau and Southwest Region. We are planning a session at the 2020 Arid Lands Symposium. (KSR #28)

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 1, 4, 7, 12, 13, 15, 28

Acknowledgements

We thank the McDowell Sonoran Conservancy for providing support as a host organisation to initiate this new Species Specialist Group.

IUCN Species Annual Report 2019
Mission statement

With more than 19,800 species of plants under the scope of the Temperate South American Plants Specialist Group (TSAPSG), and considering that the SSC strategic plan indicates that the assessment of plants needs to be substantially enlarged to represent adequately the diversity of life, we are focusing our efforts to assess: endemic species, whose vulnerability is more likely because of their restricted distribution; wild harvested species, whose are actually under different pressure of use; and trees.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we expect to assess 216 new species and to improve our Red List assessment procedures.

Targets for the 2017-2020 quadrennium

Assess
Red List: (1) complete assessment of 50 species of terrestrial plants by the end of 2018; (2) complete assessment of 66 species of terrestrial plants by the end of 2019; (3) complete assessment of 100 species of terrestrial plants by the end of 2020.

Activities and results 2019

Assess
Red List
1. During the development of the project, 56 species were successfully assessed, which represents having achieved our goals by 85%. Some species were not evaluated because, although they were not published on the Red List, they were in the process of assessment while the project was written. It was also decided not to evaluate species of the genus Polylepis, a group of high mountain trees of the South American Andes, since the regional expert could not participate in the project and the team considered that it was not appropriate to carry out the assessment without their experience. From an initial list of 66 species, we performed full assessment of 58 species: Alnus acuminata, Alsophila odorelliana, Alvaradoa subovata, Amburana cearensis, Amomymtelia güili, Athyana weinmannifolia, Blepharocalyx salicifolius, Bocconia integrifolia, Calycophyllum multiformum, Cascaronia australiana, Cedrela angustifolia, Cedrela balansae, Cedrela saltensis, Coccoloba tiliae, Cochlospermum tetraporum, Cordia saccaria, Crinodendron tucumanum, Diatenothele sorobolia, Eriotheca roseorum, Erythrina falcata, Ficus maroma, Handroanthus impetigosus, Handroanthus lapacho, Handroanthus ochraceus, Helioacarpus popayanensis, Ilex argentina, luglans australis, Lonchocarpus illroi, Loxophyllum grisebachii, Luehea fiebrigi, Morus insignis, Muntingia calabura, Myracrodruon urundeuva, Myrcianthes callicoma, Myrcianthes mato, Myrcianthes pseudomato, Myrcianthes pungens, Myrrhinium atrpurpureum var. octandrum, Myrsine coriacea, Myrsine laetevirens, Nectandra angusta, Ocotea porphyria, Ocotea puberula, Oreopanax kunzii, Prosopis ferox, Pseudobombax argentinum, Sapindus glandulosus, Schinus gracilipes, Styrax subargenteus, Tabebuia aurea, Tecoma stans, Terminalia triflora, Tipuana tipu, Trichilia clavati, Trithrinax schyzophylla, Vachellia albici-cata, Vasconcellea quercifolia, Xylosma pubescens. (KSR #1)
Acknowledgements

We want to acknowledge Global Wildlife Conservation whose financial contribution allows us to carry out the assessment workshops scheduled for 2019 and 2020. We also want to thank the Faculty of Agronomical sciences of the National University of Catamarca, Argentina, in whose facilities assessment workshops were conducted. Finally, we want to acknowledge the authorities and officials of the SSC for their permanent support and advice.

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

Assess 1

Main KSRs addressed: 1

KSR: Key Species Result

Vulnerable Loxopterygium grisebachii
Photo: Pablo Demaio

Vulnerable Cedrela angustifolia
Photo: Pablo Demaio

Vulnerable Terminalia triflora
Photo: Pablo Demaio

Near threatened Prosopis ferox
Photo: Pablo Demaio
Mission statement

The mission of the Western Ghat Plant Specialist Group (WGPSG) is to improve current knowledge on taxonomy and ecology of plants of the entire region of the Western Ghats and thereby enhance their conservation status in the long term.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we plan that a substantially higher number of experts are brought together in this forum and an assessment workshop leads to the training of assessors who will ensure that a substantial number of plants are assessed. We will identify Key Biodiversity Areas in this landscape and collaborate with stakeholders to take this beyond a declaration on paper. We will conduct a field taxonomy course to get students and amateur plant enthusiasts interested in the identification, assessment and conservation of Western Ghats plants.

Targets for the 2017-2020 quadrennium

Assess


Red List: (1) complete 100 new IUCN Red List assessments by 2020; (2) complete two genera assessments by 2020.

Act

Conservation actions: (1) establish at least one of the six planned nurseries by 2020; (2) identify six Key Biodiversity Areas.

Network

Capacity building: (1) establish one network and conduct two workshops annually to train on Red Listing; (2) conduct two field courses on plant conservation.

Scientific meetings: hold an annual meeting of all members.

Communicate

Communication: initiate a sustainable forum.

Activities and results 2019

Assess

Capacity building

i. Preparation of standard protocols for Red List assessment are underway. (KSR #5)

Red List

i. Offline assessments are being collected and reviewed. (KSR #2)

ii. Four genera are short-listed, with opinions sought from various groups. (KSR #2)

Act

Conservation actions

i. Discussions started to establish the first of six plant nurseries. (KSR #25)

Network

Capacity building

i. A number of experts were contacted to establish a network and plan workshops. (KSR #5)

ii. One course on plant conservation is being planned. (KSR #17)
Acknowledgements

We thank the Steering Committee and Plant Conservation Committee of the IUCN SSC for having supported our proposal and we look forward to working together.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 2, 5, 17, 25

KSR: Key Species Result

Ceropegia jainii (Apocynaceae), North Western Ghats of Maharashtra
Photo: Navendu Page

Nanothamnus sericeus (Asteraceae), North Western Ghats of Maharashtra and Karnataka
Photo: Navendu Page

Plantae
Mission statement
To support and strengthen nature conservation in a changing climate.

Projected impact for the 2017-2020 quadrennium
By 2020, the Climate Change Specialist Group (CCSG) aims to have made a significant contribution to strengthening nature conservation in a changing climate. By fostering collaboration between climate change and biodiversity experts working at the interface between science, policy and practice, we hope to: (1) provide the IUCN Species Survival Commission with strategic guidance, support and information on climate change related risks to biodiversity and conservation responses; (2) promote coordinated responses to climate change within and among the IUCN Species Survival Commission, IUCN programmes and IUCN partner organisations; and (3) catalyse and support sound science, effective policy and evidence-based conservation practice informed by a deeper understanding of climate change, its impacts on biodiversity and the responses required. Through the activities our group carries out, we will advance: (a) understanding of climate change impacts, (b) assessment of vulnerability, (c) development of adaptation responses, and (d) climate change policy.

Assess
Research activities: (1) document, attribute and monitor climatic change impacts; (2) assess vulnerability of species arising from climatic change and publish a paper on understanding and use of climate change vulnerability assessment; (3) develop and recommend climate change adaptation measures and monitor their effectiveness.

Plan
Planning: develop and recommend climate change adaptation measures and monitor their effectiveness by publishing guidelines update (species conservation planning).

Policy: inform IUCN policy and outreach on climatic change issues.

Network
Synergy: support the SSC.

Communicate
Communication: assess vulnerability of species arising from climatic change and generate updated guidelines.

Activities and results 2019
Assess
Research activities
1. An IUCN report, Reforesting for the Climate of Tomorrow, was published in January 2019 in both English and Indonesian. The report presented the results of a climate change vulnerability assessment of approximately 250 plant species native to Kutai National Park, Indonesia. The researchers used a trait-based analysis to measure species’ susceptibility to fire and drought, conditions expected to escalate under climate change. Native species
found to be climate resilient were identified and recommended for reforestation efforts to expand crucial habitat for threatened species such as the Northeast Bornean Orangutan (*Pongo pygmaeus morio*). The publication was covered by press outlets around the world, from the US and Nigeria to Italy and Indonesia. (KSR #28, 38, 39)

ii. An extensive literature review has been completed on human responses to climate change and their impacts on biodiversity. The results have been compiled in a database and are currently undergoing analysis and write-up for publication. Once completed, the results will be integrated into existing protocols to strengthen vulnerability assessments. (KSR #28, 38, 39)

iii. Editors of Wiley’s *WIREs Climate Change* journal solicited a review paper from the CCSG on the rapidly emerging field of climate change vulnerability assessments (CCVAs). The resulting paper, “Climate change vulnerability assessment of species” (DOI: 10.1002/wcc.551), was co-authored by 18 CCSG members. It provides clarity on the key concepts, steps, terminology, and aspects to consider when performing and interpreting CCVAs and will improve the integration of climate change threats into Red List assessments. The paper was first available online in October 2018, but formally published in the January/February 2019 edition of *WIREs Climate Change*. The guidance presented in the paper builds on the consensus forged during the production of the *IUCN SSC Guidelines for Assessing Species’ Vulnerability to Climate Change* and lays the groundwork for version 2 of the guidelines. The results were also presented during a climate change workshop at the SSC Leaders’ Meeting in Abu Dhabi to provide key guidance and facilitate discussion with other specialist groups. (KSR #4, 32, 38)

High altitude species like this Wiñay Wayna Orchid, *Epidendrum secundum*, found along the Inca Trail in Peru, are under pressure even in areas where their habitats are protected. Warming temperatures cause their zones of suitable climate to move up mountain slopes, thereby reducing their size and ultimately causing them to disappear altogether. Photo: Wendy Foden

Predators like this Cat-eyed Mangrove Tree Snake, *Boiga dendrophila*, in areas likely to be altered by sea-level changes can be especially hard hit, because of habitat loss or degradation to these fragile zones between land and sea. When areas of mangroves become inundated by rising sea levels, these predators will have nowhere else to forage. Photo: David Bickford
Climate change is expected to have severe and irreversible effects on Southeast Asian amphibians and reptiles, such as this panther Flying Frog, *Rhacophorus pardalis*. Being completely dependent on free-standing water for reproduction, changes in patterns of when and how much rain comes can severely affect these amphibians.

Photo: David Bickford
iv. The CCSG’s Climate Extremes team published a global assessment of primate vulnerability to extreme climatic events. Following the IUCN SSC Guidelines for Assessing Species’ Vulnerability to Climate Change, the study analysed primates’ sensitivities and adaptive capacities associated with their intrinsic biological traits, while considering their exposure to cyclones and droughts over the past 45 years. The findings, published in *Nature Climate Change*, call for increased efforts to investigate the context-specific mechanisms underpinning vulnerability to extreme climatic events. (KSR #4, 32, 38)

v. The CCSG is working with the US Geological Survey (USGS) to assess species’ innate capacity to cope with climate change. The resulting paper is currently in review, supporting the ultimate goal of producing a decision framework that can be used to assess and facilitate capacity to cope with climate change. (KSR #38, 39)

vi. An extensive literature review has been completed to evaluate the efficacy of climate change adaptation interventions based on existing evidence. The results have been prepared for publication and will soon be submitted to a journal. (KSR #32, 38)

vii. The CCSG has added a new activity focused on defining and measuring climate adaptation success in the conservation sector. (KSR #32, 38)

Plan

Policy

i. The CCSG supports the broader IUCN network by providing a crucial conduit between policy, science, and practice in the realm of climate change and biodiversity. CCSG Chair Wendy Foden served as SSC liaison on the IUCN Council Climate Change Task Force, providing key guidance and feedback to its members. Deputy Chair Bruce Young served on the IUCN Post-2020 Agenda Task Force, providing a climate perspective on IUCN input into the agenda of the Convention on Biological Diversity (CBD) after the conclusion of the current Strategic Plan for Biodiversity 2011–2020. The CCSG also collaborated with many groups to develop and comment on climate change resolutions for the IUCN World Conservation Congress. (KSR #40)

Network Synergy

i. The CCSG provides ongoing support to the SSC in the form of input, feedback, modelling support, and advice to other SSC Specialist Groups and Task Forces. Our members provide key linkages to other SSC Groups including: the Red List Committee, Standards and Petitions Committee, Green List Task Force, Hornbill Specialist Group, Pinniped Specialist Group, Small Mammal Specialist Group, and others. We communicated with the broader SSC community across multiple platforms (including our website, newsletter, Facebook and Twitter accounts), the SSC Species Bulletin, the Leaders’ Meeting in Abu Dhabi, and various workshops and conferences. In 2019, the CCSG collaborated with the Invasive Species Specialist Group to draft a policy brief on invasive species and climate change. We are also in the process of developing a Red List training module as part of a broader strategy to increase our support to the SSC. (KSR #29)

Communicate

Communication

i. Planning for an updated version of the IUCN SSC Guidelines for Assessing Species’ Vulnerability to Climate Change is underway. The paper ‘Climate change vulnerability assessment of species’ (Foden et al. 2019, DOI: 10.1002/wcc.551) laid the groundwork for this important update. The CCSG is currently evaluating new strategies to make the updated version more accessible and user friendly in an effort to better meet the needs of SSC Specialist Groups. (KSR #28)

Acknowledgements

The CCSG expresses its sincere gratitude to our many members and supporters for their ongoing support and commitment to strengthening nature conservation in a changing climate. We especially want to thank Environment Agency – Abu Dhabi, Global Wildlife Conservation, Yorkshire Wildlife Park Foundation, and Indianapolis Zoo for their generous support.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Communicate 1

Main KSRs addressed: 4, 28, 29, 32, 38, 39, 40

KSR: Key Species Result

The metabolic rate of Komodo Dragons, *Varanus komodoensis*, is directly dependent on temperature, and as the climate warms, they will need more food to grow, stay healthy, and to reproduce. Over time, this will most likely result in a population of smaller individuals or a population decline as competition for food increases and more calories are needed.

Photo: David Bickford
Mission statement
The Conservation Genetics Specialist Group (CGSG) will establish guidance for pressing genetic policy and management issues. CGSG also provides genetic advice on policy and management within IUCN’s Species Survival Commission (SSC) and expert knowledge and assistance to SSC Specialist Groups. CGSG will facilitate a fuller appreciation, evaluation and conservation of genetic diversity and resources at all levels, providing a forum for all stakeholders to value and conserve this crucial element of Planet Earth’s life systems.

Projected impact for the 2017-2020 quadrennium
Genetic diversity is one of the three major components of biodiversity, but still overlooked in most plans for conserving biodiversity. We foresee that raising the awareness of genetic diversity as one of the key requisites for species to adapt and survive will directly benefit species action plans. In addition, the implementation of genetic criteria into the Red List assessment process will help us to define the conservation status more precisely.

Targets for the 2017-2020 quadrennium

Plan
Policy: (1) engage with the Convention on Biological Diversity (CBD) 2020 process; (2) propose an IUCN resolution on genetics in CBD targets; (3) develop IUCN guidance for monitoring changes in genetic diversity; (4) develop a guidance document on biobanks and planning for conservation of intra-specific genetic diversity.

Network
Capacity building: (1) develop Guidelines on Distinct Genetic Diversity during the development of A Global Standard for the Identification of Key Biodiversity Areas; (2) build regional capacity for conservation genetics advice with an aim of having self-supporting regional groups in five years; starting groups will contain domiciled individual and non-domicile advisors active in regional research and capacity building, under the understanding that non-domicile individuals will step back from the group after five years.

Synergy: every Specialist Group chair has a direct contact point(s) in CGSG, who is responsible for rapid response to genetic questions, advice, support and escalation of major issues to the wider IUCN CGSG.

Communicate
Communication: (1) publish position statement for the use of genetics in defining conservation units; (2) provide online resources for definitions of genetic terminology, guidelines on sampling and study design, and distinguish among technical approaches; (3) be pro-active in communicating the activities of the CGSG; (4) raise awareness of conservation genetics within the broader community.

Technical advice: produce a guidance document for the use of genetics in Red Listing.

Activities and results 2019

Plan
Policy
i. CBD 2020 process: We provided input to the SSC Post-2020 Biodiversity Targets Task Force. (KSR #26)
ii. A resolution on genetics in CBD targets was submitted and is now being discussed as Motion 109. (KSR #26)
iii. IUCN guidance for monitoring changes in genetic diversity: A working group has been established and continued developing a protocol for meta-analysis. A complete step by step protocol has been established and 34,000 papers identified to be screened. (KSR #26)

iv. A group has been established under the leadership of Mike Bruford, Christina Hvilsom and Ania Brown to work on a guidance document on biobanks and planning for conservation of intra-specific genetic diversity. (KSR #26)

Network
Capacity building
i. Mike Bruford contributed to the current set of guidelines on Distinct Genetic Diversity during the development of A Global Standard for the Identification of Key Biodiversity Areas (he is a member of the KBA Standards Group). However, more work needs to be done for the next version to adequately include genetic diversity. (KSR #18)

ii. For all regions, regional self-supporting groups have been established for conservation genetics advice. (KSR #18)

Synergy
i. With the availability of a specific person (Silvia Pérez-Espona) as a part-time secretary based at University Edinburgh, we have established a central focal person for contact to provide rapid response to genetic questions, advice, support and escalation of major issues to the wider IUCN CGSG. Contacts with the Connectivity Conservation Specialist Group (CCSG) and the Cat Specialist Group have been established for establishing a connectivity plan for large carnivores in Europe. Gernot Segelbacher is member of the Technical Group of the Task Force on Synthetic Biology. (KSR #29)

Communicate
Communication
i. A working group has been established under the leadership of Dr Helen Senn to prepare a position statement on the use of genetics in defining conservation units. An article was recently published by members on species delimitation using genomics (Stanton, D.W.G., et al. (2019). More grist for the mill? Species delimitation in the genomic era and its implications for conservation. Conservation Genetics 20:101–113. [DOI: 10.1007/s10592-019-01149-5; three CGSG members as co-authors), but a position statement remains pending. (KSR #28)

ii. G-BiKE COST Action, involving CGSG members, was funded and kicked off March 2019 (https://www.cost.eu/actions/CA18134/), and is upgrading the existing ConGRESS website to include genomic indicators (http://www.congressgenetics.eu/Default.aspx). (KSR #28)

iii. A number of different conferences or sessions have been organised by members: (1) G-BiKE kick off meeting, Brussels; (2) G-BiKE conference, Sarajevo; (3) G-BiKE working group 2 meeting, Novi Sad; (4) GenRes Bridge workshop, Finland; (5) African Lion Working Group; (6) Workshop on Conservation Genetics of Southeast Asian Wildlife; (7) conference regular updates on Facebook and Twitter. (KSR #28)

iv. An EU COST Action Programme (G-BiKE) has been kicked off by several members to raise awareness of genetic tools in a conservation background. For this, a first policy brief has already been issued (sites.google.com/fmach.it/g-bike-genetics-eu/home). (KSR #28)

Technical advice
i. A working group under the lead of Prof. Cock van Oosterhout has been established to prepare a guidance document for the use of genetics in Red Listing. (KSR #4)

Acknowledgements
We thank Future Earth bioGENESIS for funding a trip to Cornell University (MWB) and the European Ecological Federation for inviting MWB to talk at their Congress in Lisbon, as well as the Norwegian Environment Agency to enable GS to contribute to the Nordic Baltic GMO workshop in Tallin.

Summary of activities 2019
Components of Species Conservation Cycle: 3/5
Plan 4
Network 3
Communicate 5
Main KSRs addressed: 4, 18, 26, 28, 29

KSR: Key Species Result
Mission statement
The mission of IUCN SSC Conservation Planning Specialist Group is to save threatened species by increasing the effectiveness of conservation efforts worldwide. For over 40 years, we’ve accomplished this by using scientifically sound, collaborative processes that bring together people with diverse perspectives and knowledge to catalyse positive conservation change. We provide species conservation planning expertise to governments, Specialist Groups, zoos and aquariums, and other wildlife organisations.

Projected impact for the 2017-2020 quadrennium
Through the implementation of the IUCN SSC Conservation Planning Specialist Group (CPSG) 2017–2020 Strategic Plan, we will more efficiently prioritise and plan for target species; develop and apply best practice planning methods that are based on a One Plan approach; increase species conservation planning capacity across the SSC, governments and other key partner organisations; improve the ability of governments to reach biodiversity targets through species conservation planning; and continuously improve species conservation planning methods by evaluating their impact and effectiveness. Together, these goals will allow us to enhance our and the SSC’s ability to plan more effectively for threatened species and ultimately improve the status of biodiversity worldwide.

Targets for the 2017-2020 quadrennium
Assess
Red List: explore deployment of a more rapid risk assessment tool for Specialist Group-driven risk assessments, particularly for species-rich taxonomic groups, to accelerate the diagnosis of taxa for which planning might be needed.

Plan
Planning: (1) deploy a universally applicable conservation needs assessment tool; (2) improve complementarity between Red Listing, conservation needs assessments, and conservation planning; (3) develop and test new mechanism(s) for evaluating the impact of conservation plans and enhancing the SSC’s species conservation planning process to increase probability of implementation and facilitate future evaluation; (4) implement and manage the SSC monitoring and evaluation mechanism; (5) lead, guide and support SSC Specialist Groups in species conservation planning.

Act
Conservation actions: (1) increase awareness and consideration of potential ex situ conservation roles and activities where appropriate among all species conservation planners and population managers; (2) provide tools and processes for evaluating and incorporating ex situ options into species conservation and collection planning; (3) promote integrated species conservation planning by involving both in situ and ex situ communities in the One Plan Approach to species conservation and collection planning processes.
Facilitating action planning for South African Cape parrots
Photo: Wild Bird Trust’s Cape Parrot Project

Network

Capacity building: (1) establish and implement CPSG’s Species Conservation Planning Training Programme; (2) launch the Species Conservation Planners Development Path programme. By 2020, a minimum of 50 participants will have passed through the development path.

Synergy: establish CPSG Species Conservation Planning Learning Network (sPLAN).

Technical advice: (1) provide a generic process for species prioritisation for planning, adaptable to a range of relevant situations; (2) increase the rate of conservation planning (number of species with identified conservation needs and actions); (3) explore opportunities to strengthen the tools and processes used for single-species conservation planning activities; (4) develop a suite of planning tools and templates that can be applied to planning activities for multiple species on a landscape; (5) contribute to enhancing the SSC Species Conservation Planning Guidelines; (6) increase the value to SSC planning of the IUCN SSC Species Conservation Planning Tools Library; (7) create a facilitation skill sub-section of the species conservation planning processes tools library; (8) within our area of influence, develop a clear and practical response to the challenge countries face in achieving Biodiversity Targets; (9) assist governments to use the SSC species conservation planning process to help them meet their obligations under Target 12 of the Convention on Biological Diversity 2020 Strategic Plan; (10) play a meaningful role in influencing the next iteration of biodiversity targets, post-2020, ensuring that species conservation planning is included in the next set of internationally agreed biodiversity conservation targets; (11) CPSG to expand capacity in Southeast Asia.
Activities and results 2019

Assess

Red List

i. From 2018: “After exploring options for developing a more rapid risk assessment tool for Specialist Groups, we decided the best option was to refer Specialist Groups with high Red List commitments to the Red List Unit for support.” (KSR #6)

Plan

Planning

i. The “Assess to Plan (A2P)” process was explicitly designed to operate as part of the Red Listing process, to move more threatened species, more quickly, from assessment to action via good planning. In 2019 the process was trialled in three countries, at four Red List workshops, covering more than 1,000 species. The process was presented to the SSC Steering Committee in October 2019. There is now a small, global group of A2P practitioners and further projects are planned. (KSR #15)

ii. An Excel tool has been developed to track plan implementation and in 2019 is being trialled by Banded Langur, Sun Bear and Helmeted Hornbill projects. Also, in 2019, a study was started to evaluate the impact of planning on species’ extinction risk over time. This is due for completion in 2020. (KSR #16)

iii. In 2019, a number of planning projects were carried out in partnership with SSC Specialist Groups (Sulu Hornbill, Owston’s Civet). (KSR #16)

Act

Conservation actions

i. We published a paper on Integrated Collection Assessment and Planning (ICAP) in Zoo Biology, a chapter on ex situ conservation in the Encyclopedia of UN Sustainable Development Goals, and a paper in BioScience on a novel partnership – the Source Population Alliance – applying the one plan approach; we presented on ex situ conservation and the One Plan Approach at the International Congress for Conservation Biology (ICCB); an ex situ webinar was posted to the CPSG website; we incorporated the One Plan Approach and ex situ overviews as appropriate into CPSG training; we incorporated identification and evaluation of ex situ options into pre-workshop checklist. (KSR #25)

ii. Tools and processes for evaluating and incorporating ex situ options into species conservation and collection planning: Draft process document and slides have been created; we are collaborating with the Species Conservation Toolkit Initiative (SCTI) in expanded tool development for PMx (a package of demographic and genetic analysis tools) for use with IUCN Ex Situ Guidelines; workshop processes are being tested before finalising documentation via a workshop for the Blue-eyed Ground-dove and Alagoas Antwren as well as one for the Sunda Pangolin. (KSR #25)

iii. Featured presentations were given on application of the One Plan Approach to small cetaceans at dedicated planning workshops in Argentina and China. (KSR #25)
Network

Capacity building

i. CPSG’s Species Conservation Planning Training Programme: By the end of 2019, we trained a further 200+ people through 10 courses with a focus on government personnel and Specialist Groups for the August 2019 online course. (KSR #17)

ii. Species Conservation Planners Development Path Programme: A further five mentees began the development path in 2019, joining the original eight who started in 2018. Individuals from 2018 are taking more leading roles in planning and facilitating species conservation planning processes. More mentors and funding are needed to cover mentee participation in workshops. (KSR #17)

Synergy

i. CPSG Species Conservation Planning Learning Network (sPLAN): The webinar series launched in 2019 shared eight webinars with the CPSG network, from which it received very positive feedback. Two cohort-based learning networks are now running, and a Development Path network is being cultivated to encourage cross-linkages between existing development paths. (KSR #29)

Technical advice

i. The generic process for species prioritisation for planning, adaptable to a range of relevant situations, is linked to Species360 Data Hub development, which is moving forward. (KSR #21)

ii. The new “Assess to Plan (A2P)” process has been designed to move more threatened species, more quickly, from Red List assessments into action via good planning. This process was tested at four IUCN Red List workshops in 2019, covering more than 1,000 species. (KSR #21)

iii. Exploring and testing specific planning elements from other processes in CPSG workshops: Work is currently underway to design a hybrid process linking population viability analysis (PVA) with Open Standards planning via the Liberian Chimpanzee National Action Planning process. Also, we are currently working with SCTI to develop a species conservation planning data hub to facilitate access to and assembly/analysis of relevant data for risk analysis and planning. (KSR #18)

iv. The CPSG Annual Meeting trialled application of existing CPSG planning methods to threat-based multi-species planning problems (specifically trade and disease). The “Assess to Plan (A2P)” process tool was developed and tested in 2019 and can be used to identify the conservation planning needs of multiple species on a landscape. (KSR #18)

v. The CPSG Facilitator’s Handbook is complete; the Principles & Steps are being finalised; we plan to develop this into an online toolkit, pending funding. (KSR #18)

vi. CPSG staff contributed to the IUCN SSC Post-2020 Task Force and worked with the IUCN Global Species Programme on IUCN responses to relevant discussions. (KSR #21)

Acknowledgements

The Global Conservation Network (GCN) is a non-profit that supports the activities of the IUCN SSC CPSG. We thank all of our 126 generous institutional and individual donors, our 310 members, our 11 Regional Resource Centers and host institutions, and our many project partners. With their support, CPSG’s work is made possible. A special thanks to the Minnesota Zoo for hosting our offices for over 40 years.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

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Main KSRs addressed: 6, 15, 16, 17, 18, 21, 25, 29

KSR: Key Species Result
Mission statement

The mission of the IUCN SSC Conservation Translocation Specialist Group (CTSG) is to empower responsible conservation translocations that save species, strengthen ecosystems, and benefit humanity.

Projected impact for the 2017-2020 quadrennium

Advancements of the Conservation Translocation Specialist Group in terms of conservation science, policy development, and action are integral to the mission of IUCN generally and the Species Survival Commission specifically. Strategic alignment of increased guideline translations, increased science, hosting the second global conference, and upscaling training programmes will result in more effective conservation translocations around the world. By 2020, responsible conservation translocations will continue to increase for more species, in more places, more of the time for benefits to nature and humanity. Such positive conservation actions, which help to restore species and ecosystems, will continue to increase global optimism that conservation is worthwhile, effective, and worthy of increased investments around the world.

Targets for the 2017-2020 quadrennium

Assess


Act

Conservation actions: (1) IUCN Reintroduction Perspectives book document will be submitted to the IUCN Editorial Board for sign-off by end of 2017 or early 2018; (2) encourage translation of the IUCN Guidelines for Reintroductions and Other Conservation Translocations into two more languages; (3) respond to global issues regarding conservation translocation policy or practice as they arise.

Network

Capacity building: run training courses on IUCN Guidelines for Reintroductions and Other Conservation Translocations on four continents by 2020.

Communicate

Scientific meetings: (1) host Reintroduction Conference in Chicago, US, 10 years after the first conference in 2008; (2) begin to work with individuals from the next host country to begin preparations of a 2022 conference outside North America.

Activities and results 2019

Assess

Research activities

i. New Reintroduction Perspectives book: In alignment with original planning, 40+ case studies were compiled, and edited to be ready for publication in 2020. (KSR #43)

Act

Conservation actions

i. In 2019, the 2018 book on Conservation Translocation Case Studies continued to be distributed worldwide, including to other SSC leaders at the Abu Dhabi Leaders’ Meeting in October 2019. (KSR #24)

ii. In alignment with original planning, the IUCN Guidelines for Reintroductions and Other Conservation Translocations were also translated into Czech and a revision of the French Guidelines has commenced. (KSR #24)
iii. Over 20 global issues regarding conservation translocation policy or practice have been addressed. Examples include workshop training or funding support relevant to Leatherback Sea Turtles, Green Turtles, Scarlet Macaw, Great Green Macaw, Canary Island passerines, Formosan Clouded Leopard, Scottish Wildcat, Northern Bald Ibis, Loa frog, and Spanish sturgeon. (KSR #24)

Network

Capacity building

i. In alignment with original planning, the International Training Course on Structured Decision Making for Conservation Translocations was given in Costa Rica by CTSG leaders; a commitment was also made with Brazilian agencies to bring the course to Brazil in October 2020. (KSR #18)

Communicate

Scientific meetings

i. In collaboration with the Government of West Australia, a formal committee was formed in Australia to scope, outline, and drive forward planning for the next Global Conservation Translocation Conference which will occur in Perth in November 2021. (KSR #28)

Acknowledgements

The Conservation Translocation Specialist Group is thankful to all CTSG members, the SSC Secretariat, and the IUCN Secretariat for assistance in refining and amplifying CTSG’s mandate in its ongoing ambitious evolution. CTSG is grateful to the Calgary Zoological Society and Environment Agency – Abu Dhabi for core in kind and financial support.

Summary of activities 2019

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Main KSRs addressed: 18, 24, 28, 43

KSR: Key Species Result
Mission statement
The Invasive Species Specialist Group (ISSG) aims to reduce threats to natural ecosystems and the native species they contain by increasing awareness of invasive alien species, and of ways to prevent, control or eradicate them.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, the ISSG envisions indications of reductions in the global overall rates of biological invasions and targeted successful management options by national governments. Robust and current data and information are invaluable for planning management and action ranging from prevention of introductions to ongoing management of invasions. By providing this support to our stakeholders, we hope to contribute to significant reductions in biological invasions, both in preventing introductions of alien species and optimal management of ongoing invasions. Biodiversity indicators allow decision makers to see the result of their decisions, and the development of sound indicators is supported by sound and current data. The ISSG hopes to use the data it collates to develop practical and informative indicators leading to better decision making. The planned global assessment of the impacts of invasive alien species on the natural environment, to be completed by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), will use all the data and information generated during the development of Invasive Alien Species (IAS) indicators and an expert group will compute the qualified impacts of IAS on the natural environment. The ISSG envisions that this informed assessment will be a key resource when the next Strategic Plan on Biodiversity is developed in 2020.

Targets for the 2017-2020 quadrennium
Assess
Research activities: (1) complete 20% of proposed linkages between the ISSG knowledge products and other significant knowledge products of the IUCN and partners, such as the Red List, Protected Planet, ECOLEX, etc.; (2) aim to complete at least 200 Environmental Impact Classification of Alien Taxa (EICAT) assessments for the most harmful alien invasive species, and post them on the Global Invasive Species Database (GISD) also as preliminary profiles; (3) develop an interlink between GISD and Global Register of Introduced and Invasive Species (GRIS), to display 30% of information available in GRIS also through the GISD webpage; (4) prepare at least 100 species profiles for GISD; (5) update all four Biodiversity Indicators related to invasive species; (6) complete a global assessment of the impact of invasive alien species.

Activities and results 2019
Assess
Research activities
i. All four Biodiversity Indicators related to invasive Species are currently under update and all will be completed by June 2020. Data collection for three indicators is completed and analysis to commence. Data collection for the legal response indicator is ongoing. (KSR #32)

ii. The global assessment of the impact of invasive alien species cannot be undertaken until all the indicators are updated and funding received to complete the pending work on impact mechanisms. (KSR #32)

iii. The database infrastructure to develop an interlink between GISD and GRIS is still incomplete.
Acknowledgements

Funding from the Environment Agency – Abu Dhabi (EAD), facilitated through the IUCN SSC, supported ISSG’s operability. Funding from the European Union facilitated through the Secretariat of the Convention on Biological Diversity (CBD) in the form of a small grant, funding for mobilisation of data from the Global Biodiversity Information Facility Infrastructure (GBIF), and a small grant from the French Ministry for the Ecological and Inclusive Transition for supporting IUCN’s engagement with IPBES, have facilitated the work on the update of the indicators. Also, we would like to acknowledge the support of the ISSG membership involved in this task, especially Prof. Melodie Mcgeoch (Monash University, Australia) and members of her lab, Island Conservation (indicator related to vertebrate eradications).

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

Assess  

Main KSRs addressed: 2

Resolutions addressed: WCC-2016-Res-018-EN

KSR: Key Species Result
Mission statement
The IUCN SSC Species Monitoring Specialist Group (SMSG) aims to enhance biodiversity conservation by improving the availability and use of data on species populations, their habitats and threats.

Projected impact for the 2017-2020 quadrennium
By 2020, the capacity of the SSC network and its partners for data collection, analysis, sharing and use is enhanced, resulting in at least ten significant initiatives starting to fill identified taxonomic and geographic gaps in species data needed for IUCN Red List assessments. We therefore expect Red List assessments for at least 30 species to use richer data sets.

Targets for the 2017-2020 quadrennium
Assess
Research actions: (1) review of IUCN Save Our Species (SOS) portfolio data completed and taxonomic and geographic trends identified; (2) survey of SSC taxonomic Specialist Groups completed and trends in taxonomic and geographic data gaps, as well as Specialist Group monitoring capacity needs, identified; (3) at least one scientific paper published annually promoting the goals of the group and IUCN data products; (4) at least one project implemented per year to demonstrate monitoring tools and best practices and deliver the group’s strategic plan; (5) at least three monitoring frameworks produced for specific uses (e.g. protected areas, Key Biodiversity Areas, business, restoration, etc.); (6) a database of monitoring systems, tools and data sources is available online; (7) at least one IUCN data product per year is improved through input from the SMSG.

Act
Technical advice: at least eight monitoring plans are developed for taxonomic Specialist Groups, including at least two for taxa previously unmonitored systematically.

Network
Capacity building: at least one training webinar per year offered to SSC Groups and their partners to improve capacity for monitoring. Proposal development and funding: funding secured annually (CHF) for core and project costs (value of grants received: US$ 150,000).

Activities and results 2019
Assess

Research actions
i. Review of SOS portfolio data completed; paper submitted to peer-reviewed journal and now under revision. (KSR #32)
ii. Survey of SSC taxonomic specialist groups completed; report produced; paper in preparation. (KSR #32)
iv. SMSG projects implemented in 2019 were:
(1) a global audit of biodiversity monitoring;
(2) biodiversity monitoring and reporting frameworks for business;
(3) improving capacity for protected area management in Ghana;
(4) assessing biodiversity data sets; (5) testing the IUCN Green List of Species. Updates are on the SMSG website at: https://www.species-monitoring.org/projects.html (KSR #32)

v. Monitoring guidelines were produced for Nespresso; monitoring guidance was developed for the IUCN Green List of Protected and Conserved Areas; the IUCN Green List of Species was tested on 15 species and the Standard improved. (KSR #14)

vi. Database of monitoring systems: a preliminary list of tools and data sources is available online. A full database of known monitoring projects, and an additional database of all available data sets, will be published online in 2020.

vii. The Chair is an active member of the IUCN Green List of Species Task Force and in 2019 he helped finalise the standard and the guidelines; he is also a member of the Green List Working Group of the IUCN World Commission on Protected Areas and in 2019 provided input into the guidelines for the IUCN Green List of Protected and Conserved Areas. (KSR #14)

Network
Proposal development and funding
i. We have four main funding sources:
(1) funding from Nespresso supported the IUCN Global Business and Biodiversity Programme and the SMSG Chair to implement the project Biodiversity Monitoring and Reporting Frameworks for Business; (2) funding from Audemars-Watkins Foundation to the Centre for African Wetlands for the protected area project in Ghana; (3) funding from the National Geographic Society supported the testing of the IUCN Green List of Species on 15 species; (4) funding from Global Wildlife Conservation allowed an assessment of available global data sets for biodiversity. (KSR #19)

Acknowledgements
We are grateful to the Audemars-Watkins Foundation and Nespresso for supporting group projects in 2019.

Summary of activities 2019
Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 14, 19, 32

Resolutions addressed: WCC-2012-Res-41

KSR: Key Species Result
Mission statement
For nature and for people: building global understanding on sustainable use of wildlife.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we foresee that key influential conservation debates and policies will reflect a better understanding and knowledge, intervening and changing particularly influential decision-making dynamics that have potentially large impacts. We seek to build a stronger base of knowledge and understanding on key high profile and important issues, create much greater awareness among a broad range of constituencies of the importance and role of sustainable use of wildlife for conservation and livelihoods, and boost the ability of the Indigenous Peoples and local communities who live with wildlife to effectively participate in conservation decision making.

Targets for the 2017-2020 quadrennium

Assess
Technical advice: fund and initiate an SSC situational analysis on conservation and livelihood impacts of hunting.

Plan
Policy advice: (1) Wild Life, Wild Livelihoods report disseminated; (2) engage with planning and activities aimed at influencing the London Illegal Wildlife Trade (IWT) Conference; (3) hold “OPEN COMMUNITY VOICES” day in association with the London IWT Conference; (4) highlight research findings on Communities and IWT at Oxford-led conference pre-London IWT conference.

Synergy: establish and support the CITES Rural Communities Working Group.

Technical advice: (1) Latin America workshops held; (2) develop dialogue, resources and guidance on integration of indigenous and local knowledge into small scale fisheries management.

Act
Capacity building: First Line of Defence (FLoD) initiative rolled out in further East/Southern African countries.

Communicate
Capacity building: populate the Communities and IWT Learning Platform, conduct periodic analyses of lessons learnt and run learning activities including webinars.

Communication: (1) build a new major website on sustainable use, to act as a repository for knowledge, enhance understanding of the diversity and impact of sustainable use approaches, serve as a resource for communications efforts and media engagement and provide useful general guidance for implementing sustainable use; (2) develop and implement a strategic communications plan; (3) launch an Interactive Learning Platform to raise awareness of the importance of incentives, rights and sustainable use among a broad conservation and development audience to increase understanding and acceptance of the role of sustainable use in supporting conservation and livelihoods outcomes; (4) contribute to the Collaborative Partnership on Wildlife (CPW) high level policy document on sustainable wildlife management, CPW strategic plan, publications on hunting in North America and Europe and other selected high profile wildlife management issues to be identified; (5) develop internal SULi communications materials.

Technical advice: (1) publish a new Annex on harvesting of threatened species; (2) disseminate briefing paper on trophy hunting to suitable policy makers at appropriate conservation fora;
(3) raise awareness about the role of sustainable use for both conservation and livelihoods and key international policy fora; (4) engage at CITES to raise awareness about sustainable use and support rural communities process.

Activities and results 2019

Assess

Technical advice

i. No funding was secured for the SSC Situation Analysis on conservation and livelihood impacts of hunting, despite concerted efforts particularly by Shane Mahoney, SULi Vice Chair. (KSR #19, 21)

Plan

Policy advice

i. The "OPEN COMMUNITY VOICES" day was held prior to the London IWT Conference. See https://pubs.iied.org/17633IIED/ for details. (KSR #26)

ii. The event on research findings on communities and IWT held prior to the London Conference included presentations from SULi members. (KSR #26)

Synergy

i. The Rural Communities Working Group (RCWG) was disbanded at the CITES Conference of the Parties (CoP) in August 2019, but support continued through development of a briefing on options (https://sites/default/files/eng/cop/18/inf/E-CoP18-Inf-046.pdf) as well as technical support at CITES CoP. (KSR #29)

Technical advice

i. A Latin American workshop was held in September 2019: see https://pubs.iied.org/17657IIED/. (KSR #26)

ii. A report on integration of Indigenous and Local Knowledge into small scale fisheries management is completed and undergoing final proof reading, etc., prior to publication. (KSR #26)

Act

Capacity building

i. Despite fundraising efforts via the Global Environment Facility (GEF), WWF and the UK Illegal Wildlife Trade Challenge Fund, we have been unsuccessful in securing funding for the roll out of the First Line of Defence initiative (FLoD initiative). We did, however, hold a familiarisation workshop with Kavango Zambezi Transfrontier Conservation Area (KAZA) government agencies. (KSR #17)

Communicate

Capacity building

i. A database was established at www.peoplenotpoaching.org with over 100 case studies on Illegal Wildlife Trade (IWT). Case study compilation was produced for the Latin America regional conference on Illegal Wildlife Trade in October 2019. (KSR #28)

ii. A communications strategy is still in progress but meanwhile, the SULi Twitter and Facebook accounts were revitalised and a new website was developed. (KSR #33)

iii. A Learning Platform was launched (www.peoplenotpoaching.org) which enables users to directly contribute case studies. However, it has a specific focus on communities and IWT rather than the broader remit anticipated. (KSR #33)

iv. Specific Collaborative Partnership on Wildlife (CPW) publications on hunting, etc., were put on hold until a communications strategy is agreed. Nevertheless, SULi has been an active participant in CPW meetings and publications, including a workshop on sustainable use of wildlife as an input to the consultation on the Convention on Biological Diversity (CBD) post 2020 biodiversity framework, in June 2019. (KSR #33)

v. Six issues of the SULi Digest were produced in 2019, and are available to view at https://us20.campaign-archive.com/home/?u=be614a0f-c60e463867f7499dd&l=740bc34e68 (KSR #33)

Technical advice

i. Publication of a new Annex on harvesting of threatened species is still under discussion with the Red List Committee Chair. (KSR #26)

ii. The IUCN briefing paper on trophy hunting was updated in 2019. In addition: FAQs on hunting were developed with the IUCN Global Species Programme; at least two letters to UK newspapers were published; one article was published in Science; at least two UK government consultations were attended. (KSR #26, 28)

Acknowledgements

We would like to acknowledge support from the German Polifund Project and its succession 'Partnership' project of the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMUB) and Ministry for Economic Cooperation and Development (BMZ), implemented by GIZ; and the UK Government Illegal Wildlife Trade Challenge Fund.

Summary of activities 2019

Components of Species Conservation Cycle: 4/5

Assess 1

Plan 5

Act 1

Communicate 8

Main KSRs addressed: 17, 19, 21, 26, 28, 29, 33

KSR: Key Species Result
Mission statement
The group is commissioned to serve as a first response for wildlife health concerns relevant to conservation around the world. The focus of the group is on health impacts that relate to the conservation of species, some of which are negative to wildlife population persistence and a risk to threatened species.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision wildlife health will be recognised as a critically important dimension of species survival, enabling the SSC to more proactively and effectively manage wildlife disease threats and threats to wildlife health from human activities, spill over of domestic animals and human diseases or inappropriate reactions to wildlife disease events. We will focus our efforts on policies that support prevention and management of disease, including disease-specific recommendations (e.g. to governments), as well as simplified processes to facilitate timely international movement of emergency diagnostic specimens for conservation purposes under CITES and in terms of growing restrictions to timely diagnosis under Nagoya Protocols and similar initiatives. We apply the IUCN-OIE Guidelines for Wildlife Disease Risk Analysis as well as embed wildlife health considerations in future IUCN and United Nations (Convention on Migratory Species (CMS), Global Environmental Outlook (GEO), Convention on Biological Diversity (CBD), etc.) knowledge products to help proactively reduce disease risks and impacts of human activities on wildlife health. Through our regionally-diverse expert membership, we will aggregate information on wildlife disease events and adverse impacts on wildlife health as well as provide technical support on investigations of key wildlife morbidity and mortality events for enhanced understanding of disease pathways and drivers to inform conservation action. Through our ongoing work with international and regional partners (e.g. UN CBD, World Health Organization (WHO), Wildlife Disease Association, World Organisation for Animal Health, UNEP GEO, UNEP CMS), we will continue to highlight and raise awareness of the links between the health of humans, animals and the environment and showcase how ‘One Health’ approaches can help mainstream biodiversity and ecosystem services.

Targets for the 2017-2020 quadrennium
Assess
Red List: ten technical assessments delivered to SSC taxonomic groups.
Research activities: five wildlife mass morbidity/mortality events investigated.

Plan
Policy: policy for simplified process for international movement of emergency diagnostic specimens of conservation species adopted.

Act
Technical advice: ten technical recommendations delivered.
Network
Documents review: ten SSC documents reviewed.
Membership: expand WHSG membership representation to 100 countries.
Synergy: ten external outreach events/materials/forums (e.g. policy conventions, social media) delivered showcasing relevance of wildlife health to One Health.

Activities and results 2019

Assess
Research activities
i. Ongoing collaboration with the Vulture Specialist Group and Wildlife Poisoning Listserv to assess health impacts of target and non-target poisoning. (KSR #7, 32)
ii. Our research has contributed to determine that translocations of red squirrels to mainland UK destinations are counterproductive for conservation efforts and a concern on welfare grounds. (KSR #7, 32)
iii. Conducted analysis of wildlife disease event reports to the World Organisation for Animal Health (OIE) by species Red List status. (KSR #7, 32)
iv. Continued research on Saiga mortality events including both Haemorrhagic septicaemia, and Goat Plague (PPR) and Lumpy Skin Disease. (KSR #23)
v. Collaboration with Vulture Specialist Group on stocktaking and policy recommendations regarding diclofenac use. (KSR #23)
vi. Review of wildlife disease morbidity and mortality event reporting and monitoring systems, including analysis of the past 10 years of data reported to the World Organisation for Animal Health (OIE) and other systems to identify key gaps and recommendations for improved tracking and event determination. (KSR #23)

Plan
Policy
i. CITES resolution adopted (simplified procedures for permits and certificates) at COP18, providing a pathway to facilitate expedited sample movements to promote timely diagnostics in disease emergencies. This is a successful outcome of our group’s work on this issue for the past several years. Following the passage of the resolution, WHSG leadership met with the CITES Secretariat point of contact in November 2019 to explore next steps for ensuring effective implementation. (KSR #26)

Act
Technical advice
i. WHSG South America Regional Coordinator Dr Marcela Uhart led a team from Argentina on a publication documenting the impacts of lead pollution from hunting ammunition on waterfowl, wetland ecosystems, and public health, providing key policy recommendations and building on their decade-long effort engaging stakeholders on the issue: Uhart, M., et al. (2019). Lead pollution from hunting ammunition in Argentina and current state of lead shot replacement efforts. Ambio 48:1015–1022. [DOI: 10.1007/s13280-019-01178-x]. (KSR #26, 27)
ii. WHSG held a workshop on ‘Mainstreaming Wildlife Health for Conservation Management’ preceding the IUCN SSC Leaders’ Meeting (October 2019, Abu Dhabi) with Specialist Group leaders (Antelope, Canid, Conservation Translocation, Coral, Asian Rhinos, Vulture) to identify specialist group needs and areas of focus for WHSG support and present main recommendations at the SSC Leaders’ Plenary presentation. (KSR #26, 27)
iii. Co-organised session on wildlife health and wildlife poisoning with the Vulture Specialist Group and the Wildlife Poisoning and Health Forum with key recommendations for biodiversity-relevant One Health strategies. (KSR #26, 27)

Network
Documents review
i. Provided input to draft SSC documents, including the IUCN Policy on Synthetic Biology and Biodiversity Conservation and outputs of the Post-2020 Biodiversity Framework working group. (KSR #23, 26)
Panoramic view of team doing transect work locating saiga calves in 2019 as part of wildlife health research activities including IUCN WHSG members supporting the team from Association for the Conservation of Biodiversity Kazakhstan and the Astana Veterinary Reference Laboratory. The site is extremely remote and close to the Ural Sea in Kazakhstan

Photo: R. Kock

View of a spring, with tall reed grass below the escarpment of the Irgiz region of Kazakhstan, a remote wild area where saiga antelope thrive. The accommodation is simple and includes a weather station (with resident crow) to record conditions that sometimes influence mortality events

Photo: R. Kock
ii. We collaborated with the Antelope Specialist Group on a proposed WCC motion consistent with a One Health approach, “Strengthening mutual benefits of livestock and wildlife in shared landscapes”, helping to coordinate a diverse range of viewpoints and co-sponsors to promote multi-sectoral synergies for conservation and health. (KSR #23, 26)

iii. Recommended expert for analysing and prioritising pathways of introduction of exotic pathogens with IUCN and IUCN Invasive Species Specialist Group. (KSR #23, 26)

Membership
i. Added our first member from Bangladesh, and appointed a new regional coordinator to enhance regional communications and networks. Overall, we have members in 86 countries.

Synergy
i. Submitted statement on lead ammunition and fishing weights to the European Chemicals Agency under their call for evidence. (KSR #29)

ii. Served on delegation to Global Health Security Agenda (GHSA) Steering Group meetings (February and April 2019, The Netherlands and the World Bank headquarters), successfully integrating the environment sector into the GHSA Roadmap to 2024. (KSR #29)

iii. Served on IUCN Commission on Ecosystem Management Task Force on Ecosystems and Human Health to promote One Health synergies and ensure species and wildlife health-specific considerations are integrated. (KSR #29)

Communicate

Communication

ii. Presented on drivers of emerging diseases and the need for coordinated biodiversity and health surveillance and risk communication at the West African Health Organization Technical Meeting on One Health (October 2019, Lome, Togo). (KSR #28)

iii. Organised workshop on ‘Operationalising One Health in Cote d’Ivoire’, emphasising wildlife disease surveillance and multi-sectoral coordination (May 2019, Abidjan, Cote d’Ivoire). (KSR #28)


v. Participated in expert Biosecurity Symposium hosted by the Canadian Institute for Advanced Research (January 2019, Toronto, Canada), which focused on transnational environmental crime. (KSR #28)

vi. Integrated wildlife-sensitive messaging in disaster assistance consortium project focused on disease emergency response. (KSR #28)

Acknowledgements

We thank the following donors that provided core funding for the group’s activities (e.g. website administration, membership outreach, article publication, expert participation in UN policy fora): USAID Emerging Pandemic Threats PREDICT-2 project, EcoHealth Alliance, and the Royal Veterinary College, as well as Environment Agency – Abu Dhabi and IUCN SSC in supporting a wildlife health workshop held in October 2019. We are grateful for the assistance of Ms. Amanda Andre.

Summary of activities 2019

Components of Species Conservation Cycle: 5/5

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Communicate 6

Main KSRs addressed: 7, 23, 26, 27, 28, 29, 32

Resolutions addressed: WCC-2016-Res-014 and WCC-2016-Res-064

KSR: Key Species Result
Mission statement
Avert the extinctions of Critically Endangered land and freshwater vertebrate species in Southeast Asia.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision a number of Asian Species Action Partnership (ASAP) species (Critically Endangered land and freshwater vertebrates found in Southeast Asia) will have benefited from effective conservation action. ASAP will have: created an enabling environment to catalyse effective conservation action for ASAP species with a focus on those most neglected; increased funding available for the conservation of ASAP species; developed a comprehensive capacity building and training strategy to improve Southeast Asian leadership and conservation capacity; and developed appropriate tools and mechanisms to raise the profile of ASAP species, increasing understanding and awareness of the urgent need to avert ASAP species extinctions.

Targets for the 2017-2020 quadrennium
Plan
Planning: (1) ASAP strategy developed and priorities agreed; (2) conservation action of ASAP species promoted with increased implementation (ongoing) and specific conservation strategy and action plans developed for at least three ASAP species; (3) Ex Situ Working Group with clearly defined goals created.

Network
Capacity building: capacity building and training strategy developed, and priorities agreed.
Proposal development and funding: an increase in funding available to support ASAP species conservation and prevent extinctions.
Synergy: at least 80 institutions become partners of ASAP.

Communicate
Communication: ASAP species communication strategy developed and being implemented.

Activities and results 2019
Plan
Planning
i. The ASAP strategy is being implemented. (KSR #31)

ii. The first ever regional conservation strategy for Sunda Pangolins was published in 2019; Asses to Plan for freshwater fishes in the Sunda Basin was carried out as part of a Red Listing workshop to identify priority conservation actions. (KSR #31)

iii. Further work needs to go into the structure and operations of the Ex Situ Working Group. This will be followed by a focused assessment of how to best identify priority ASAP species needing Ex Situ conservation actions. (KSR #25)
Network

Capacity building
i. Report and roadmap finalised: Building capacity for species conservation: An assessment of needs and opportunities for ASAP. (KSR #17)

Proposal development and funding
i. Partnerships are being developed with donors and behind-the-scenes technical support is provided. (KSR #30)

Synergy
i. Partnerships grew from 80 to 99 Partner organisations over 2019. (KSR #28)

Communicate

Communication
i. The ASAP species communications strategy has been developed and is being implemented, including improvements to the ASAP website and initiation of quarterly newsletters. (KSR #28)

Acknowledgements

We thank Wildlife Reserves Singapore (WRS) as the host organisation to the ASAP Secretariat and the major financial contributor to the initiative. We are extremely grateful to all organisations that have contributed to the core costs of the ASAP Secretariat: IUCN SSC through their partnership with the Environment Agency – Abu Dhabi, European Association of Zoos and Aquaria (EAZA), Synchronicity Earth in part through their partnership with the Taiwan Forestry Bureau, Wildlife Conservation Society (WCS) and an anonymous donor. We also thank the following organisations for in-kind contributions: WRS, Synchronicity Earth, Global Wildlife Conservation (GWC), WCS. The conservation of ASAP species would not be possible without the continued dedication and innovative approaches of ASAP Partners, along with the donors who support their work.

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 17, 25, 28, 30, 31

Resolutions addressed: WCC-2016-Res-009

KSR: Key Species Result
Mission statement
The BirdLife Partnership strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources.

Projected impact for the 2017-2020 quadrennium
BirdLife’s Preventing Extinctions Programme expects to have had the following impacts by 2020: (1) status of the world’s most threatened bird species improved through the work of BirdLife Species Guardians and other effective action; (2) overall extinction risk across all bird species reduced; (3) the global Red List for birds regularly updated, improved and promoted, with knowledge gaps filled through targeted research and monitoring; and (4) declines in common bird species prevented, halted or reversed.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) active reassessment of several hundred bird species per year, and updated factsheets for as many relevant Critically Endangered species as possible; (2) support the development of national and regional Red Lists and Red List Indices for birds where resources allow, to build capacity and feed into global Red List assessments.

Network
Documents review: contribute to the Species Recovery Request for Proposals.
Red List: contribute to strategic processes underpinning the maintenance and further development of the Red List.

Communicate
Red List: (1) promote the Red List index for birds as an effective biodiversity indicator; (2) promote the use of the Red List to inform policy and action; (3) communicate the Red List widely to further increase its recognition and use.

Activities and results 2019
Assess
Red List
i. In December 2019, we released updated Red List factsheets for 479 bird species, including 273 reassessments, 199 amended assessments and seven minor corrections, and 401 map changes. We prepared discussion topics and ran online consultations about proposed changes to the status of bird species on BirdLife’s Globally Threatened Bird Forums (https://globally-threatened-bird-forums.birdlife.org/). These resulted in 36 species being downlisted to lower threat categories and 26 species uplisted to higher threat categories. These included formalising the changes recommended in our paper applying a new method to determine more reliably which bird species are Critically Endangered, Possibly Extinct or Extinct (Butchart, S.H.M. et al. 2018. Which bird species have gone extinct? A novel quantitative classification approach. Biological Conservation 227:9–18. [DOI: 10.1016/j.biocon.2018.08.014]). We produced the first assessments for 70 newly described or taxonomically ‘split/lumped’ species, and for two species previously listed as Data Deficient. We updated the global distribution (range) maps for 401 species, recalculated their extent of occurrence (EOO) using the minimum convex polygon method, and incorporated the new maps and values in the 2019 Red List. We continued our work to take into account the implications of newly avail-
able, remotely sensed, high resolution data on forest cover and rates of forest loss worldwide (Hansen, M.C. et al. 2013. High-Resolution Global Maps of 21st-Century Forest Cover Change. Science 342:850–853. [DOI: 10.1126/science.1244693]). By intersecting these data with BirdLife’s maps of the distribution of forest-dependent bird species, we determine the area of suitable habitat and the rate at which this has been lost within individual species’ ranges. We use these data to infer the rate at which each species is declining, and the implications for their extinction risk and Red List category, building on earlier work (Tracewski, L. et al. 2016. Toward quantification of the impact of 21st-century deforestation on the extinction risk of terrestrial vertebrates. Conservation Biology, 30(5), pp.1070-1079). We released revised factsheets, including text accounts, tables and maps, on BirdLife’s Data Zone. We completed our long-running work to calculate species-specific generation lengths for all the world’s birds using a robust repeatable method that conforms to IUCN Red List requirements. (Bird, J.P. et al. 2020. Generation lengths of the world’s birds and their implications for extinction risk. Conservation Biology 34: 1252-1261.) The values produced by this method will be refined and applied when reassessing bird species from 2020 onwards. (KSR #1)

Technical advice

i. We supported ongoing efforts to identify Key Biodiversity Areas (KBAs), including for threatened species, using data from the IUCN Red List. This includes our role as manager of the World Database of KBAs, co-chair of the KBA Technical Working Group, and as members of the KBA Secretariat. (KSR #22)

Network

Documents review

i. As >90% of all bird species, and >80% of all threatened bird species, are not covered by IUCN Bird Specialist Groups, tens of requests for endorsement of projects to the Species Recovery Request for Proposals for all other bird species have been reviewed by the Bird Red List Authority for each of the two rounds of applications during 2019. (KSR #30)

Red List

i. BirdLife’s experience and expertise on bird assessments for the Red List was shared in a variety of governance fora at multiple levels. Stuart Butchart sat on the Red List Committee and contributed to meetings in 2019. Hannah Wheatley represented BirdLife on the Red List Technical Working Group, and its Spatial Tools Sub-group, collating and inputting views and information from colleagues as needed. Ian Burfield and Rob Martin represented BirdLife at the IUCN SSC Leaders’ Meeting in Abu Dhabi, where they were able to meet and engage with the Chairs of most Bird Specialist Groups for the first time, and provide input to various sessions on BirdLife’s approach to updating the Red List. Claudia Hermes and Ian Burfield applied the IUCN Green List method to a suite of bird species as part of a Cambridge Conservation Initiative Collaborative Fund project (involving IUCN and others) to test its fitness for use. (KSR #10)

Communicate

Red List

i. We provided Red List Indices (RLIs) and Red List information for use in Global Biodiversity Outlook 5, which is due to be published in 2020. We updated RLIs for each country for inclusion on the ‘country profiles’ in the Integrated Biodiversity Assessment Tool (IBAT). We calculated updated RLIs for each country and SDG region, and provided these for the UN’s annual report on global progress towards the Sustainable Development Goals. We developed improved codes and methods for annually updating the RLI and its various disaggregations, and provided the data and graphs for
Vulnerable Echo Parakeet, *Alexandrinus eques*, formerly one of the world’s rarest birds, saved from extinction by conservation action in Mauritius. Photo: Colin Houston / Wikimedia Commons

Near Threatened Markham’s Storm-petrel, *Hydrobates markhami* Photo: Jaime Jahncke
inclusion in a RLI portal on the IUCN Red List website that is being developed with Swiss government funding. We made national RLIs for birds for each country available for the first time in a new ‘Species Dashboard’ on the BirdLife Data Zone, where it is also possible to compare two national RLIs (or one national RLI and the global RLI) on screen (http://datazone.birdlife.org/species/dashboard). We developed a paper, accepted for publication in 2020, with colleagues in Colombia presenting national and disaggregated RLIs for Colombia (Renjifo, L.M., Amaya-Villarreal, A.M. and Butchart, S.H.M. 2020. Tracking extinction risk trends and patterns in a mega-diverse country: A Red List Index for birds in Colombia. PLOS ONE [DOI: 10.1371/journal.pone.0227381]). (KSR #3)

ii. We published a review paper in Science (Díaz, S. et al. 2019. Pervasive human-driven decline of life on Earth points to the need for transformative change. Science 366: eaax3100. [DOI: 10.1126/science.aaw3100]), summarising the first Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment, including a graphic showing the proportion of species threatened in different taxonomic groups. We contributed to the development of a ‘Species Threat Abatement and Recovery’ (STAR) metric, based on data on threats to birds from our Red List assessments, for use in facilitating impact investing and a species-focused ‘science-based target’. We contributed to ongoing work to develop ‘Area of Habitat’ (formerly ‘Extent of Suitable Habitat’) maps, derived from Red List spatial and tabular data, to serve a number of purposes including in relation to action and policy. We contributed through the IBAT Governance Committee, Technical Committee and Scientific Advisory Committee to promoting the use of Red List data by the private sector and others through IBAT. We supported integration of IUCN Red List data into the Global Forest Watch Platform (range-rarity of forest-dependent species) through an ongoing collaboration under a memorandum of understanding. (KSR #7)

iii. We publicised the December 2019 IUCN Red List update for birds widely on our website and through social media, resulting in considerable media interest. See https://www.birdlife.org/worldwide/news/red-list-2019-guam-rail-2nd-bird-species-recover-extinction-wild and https://www.birdlife.org/worldwide/news/7-things-you-might-have-missed-2019-red-list-update. Numerous other articles relating to the Red List were published in 2019. See https://www.birdlife.org/worldwide/news/tag/iucn-red-list. We contributed to ongoing work to update the Red List website and facilitate download of RLI datasets and graphs (see above). We led or co-authored a number of scientific papers that were based on or utilised IUCN Red List data, or informed Red List Assessments, as well as advancing others on a variety of approaches. (KSR #8)

Acknowledgements
BirdLife acknowledges and thanks its Founder Patrons, Benjamin Olewine, Ryuzo Kosugi, the Aage V. Jensen Charity Foundation, the A.G. Leventis Foundation, the Tasso Leventis Foundation, the Japan Fund for Science and all BirdLife Species Champions for supporting its Red List assessments and the taxonomic work that underpins them. Thanks also to Lynx Edicions/HBW and to everyone who contributes information to the Red List assessments, including via the Globally Threatened Bird Forums: www.birdlife.org/globally-threatened-bird-forums.

Summary of activities 2019
Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 1, 2, 3, 7, 8, 10, 22, 30

KSR: Key Species Result
Mission statement
To coordinate, promote and contribute to all necessary conditions to avoid extinctions of Brazilian flora species, in line with the targets of the Global Strategy for Plant Conservation (GSPC) and with the national mandate to assess extinction risk for the National Red List of Brazilian flora, for the elaboration of action plans and maps of priority areas for the conservation of species threatened with extinction.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we aim to increase knowledge about the state of conservation of Brazilian endemic flora. The focus of extinction risk assessments will be on endemic tree species that occur throughout the country, especially those occurring in territories that have a small number of conservation mechanisms. Re-assessments of threatened or Near Threatened species will be carried out, focusing on tree species and especially those with economic value. Supporting the extinction risk assessments is a network of approximately 208 experts in the taxonomy and ecology of Brazilian flora. In addition, a new version of the CNCFlora system will be developed, containing a database of threats, Red List Authority assessment reviews, and a module for the National Action Plans that lead to improvements in status and, ultimately, removal of species from the Red List. In a megadiverse country, where native vegetation is being converted or fragmented, conservation actions involving government agencies and local actors must be developed. Thus, by 2020, the Brazil Plant Red List Authority (BP-RLA) will participate in the elaboration of National Action Plans for threatened species with a focus on Critically Endangered species that do not currently benefit from conservation mechanisms.

Targets for the 2017-2020 quadrennium
Assess
Capacity building: (1) provide Red List capacity building for botanic experts; (2) provide two trainings on Communication and the Red List; (3) teach two training courses on georeferencing for assessment.
Green List: test the Green List for one species.
Red List: (1) complete assessment of 2,600 Brazilian endemic trees; (2) complete assessment of 884 endemic species from Rio de Janeiro State; (3) review assessment of Brazilian endemic trees from Botanic Gardens Conservation International (BGCI) and Royal Botanic Gardens, Kew; (4) update CNCFlora Information System to version 3; (5) complete extinction risk assessments for Brazilian native species occurring in Pantanal, Caatinga and Pampas; (6) carry out extinction risk assessments of Brazilian endemic trees; (7) quality control of Red List assessments; (8) participate in the workshop on regional reassessment of endangered flora and fauna.
Research activities: (1) carry out expedition field survey collections; (2) generate databases to be used for Red List assessments.
Plan
Planning: (1) conduct field expeditions for the elaboration of Territorial Action Plans; (2) publish Territorial Action Plans for conservation of flora; (3) organise meetings of the National Action Plan for the conservation of Rio’s endemic flora.

Policy: (1) include species assessed as threatened in the National Official Red List; (2) organise meetings on the Impact Reduction Plan to support decision and environmental management; (3) provide advice for policy and decision-making at the national level.

Network
Capacity building: complete training courses on Conservation Action Plans.
Membership: recruit new members.
Scientific meetings: participate in symposia, meetings, and workshops.
Synergy: (1) engage in internal organisational issues of SSC Groups, four meetings, collaborations and training; (2) strengthen cooperation agreements and partnerships; (3) provide letters of endorsement; (4) organise working groups of expert teams and networks; (5) participate in one meeting on invasive exotic species.

Communicate
Communication: (1) support and contribute to virtual libraries; (2) conduct media and outreach events; (3) produce Specialist Group publications; (4) participate in the Fourth IUCN SSC Leaders’ Meeting.

Assess
Capacity building
i. In October, CNCFlora’s co-chair held two training sessions at the Fourth SSC Leaders’ Meeting in Abu Dhabi regarding the use of social media by conservation organisations and an information session for Red List Authority Coordinators. (KSR #5)

ii. In 2019, the team taught a georeferencing course to four undergraduate students focused on assessing conservation status. The students made valuable contributions to the assessments of Monimiaceae. (KSR #5)

Green List
i. We participated in the testing of the Green Status protocol, developed by the IUCN Green List Task Force (GLTF), with the study and application of the methodology for an important endemic tree species in Brazil, Dimorphandra wilsonii Rizzini (Fabaceae), in partnership with Dr Fernando Fernandes. Our results showed that, although the species is conservation dependent, there is hope for conservation gain and for improving its conservation status. We also shared the aforementioned deliverables with the GLTF and, recently, the data for D. wilsonii were incorporated into Green List efforts around the world, to be included in a scientific paper proposing to update the species’ Green List status. It is anticipated that the paper will be published in 2020, pending the responses of peer reviewers. (KSR #1, 11)

Red List
i. In 2019, 1,003 assessments and reassessments of Brazilian endemic trees in Brazil were carried out as a contribution towards the Global Tree Assessment (GTA) goals. Among these, 701 species were considered threatened, 71 classified as Data Deficient and 394 species classified as Near Threatened and Least Concern. The other group consists of 302 reassessments of species already assessed by CNCFlora and/or the IUCN Red List. The reassessed species were firstly evaluated against the IUCN criteria between 2012 and 2014 in two National Red Books published by CNCFlora (http://dspace.jbrj.gov.br/spui/handle/doc/26 and http://dspace.jbrj.gov.br/spui/handle/doc/27) and most of those taxa deemed as threatened are legally protected by the Brazilian Government. The results of the reassessments show that 219 species remain threatened with extinction. Assessments are constantly being submitted to the Red List of Threatened Species via SIS Connect by the team of experts of GTA/BGCI. The species evaluated in 2019 are available at this link: https://ckan.jbrj.gov.br/dataset/avaliacao-2018-junho2020. (KSR #1, 2, 7, 8)

ii. We completed the review of the conservation assessment of 685 species of Brazilian plants, represented by the group of Myrtaceae, at Royal Botanical Gardens, Kew, led by Eimear Nic Lughadha. (KSR #1, 2, 7, 8)

iii. In 2019, version III of the CNCFlora system began to be developed. This system performs assessments of the extinction risk of flora in Brazil. We also began the Brazilian Flora Information Panel, which synthesises data related to conservation assessments in a Business Intelligence (BI) format for public access. The forecast for completion of the two products is 2021. (KSR #6)
iv. In 2019, we carried out studies, reviews and improvements in the workflow designed to assess extinction risk, prioritising standardisation, updating manuals for internal use by CNCFlora/Jardim Botânico do Rio de Janeiro (JBRJ) and promoting greater agility in assessing the risk of extinction of species of Least Concern. A study of the documentation of the IUCN SIS database and SIS Connect systems was also carried out. As a result, the CNCFlora system is now fully compatible with the SIS Connect system information fields. (KSR #2)


Research activities

i. Three field expeditions were carried out to collect propagules of the target species of the Discocactus horstii Conservation Research Project: a Critically Endangered species of
Cactaceae from the North of Minas Gerais. The propagules are used in the experiments of cultivation and propagation of species aiming at reintroduction. This project aims to implement three conservation actions of the National Action Plan for the conservation of endangered flora in the region of Grão Mogol Francisco Sá. (KSR #8)

ii. An expedition was carried out in a priority conservation area in the Biological Reserve Springs of the Serra do Cachimbo (June 2019); 225 samples were collected. (KSR #1, 15)

iii. CNCFlora/JBRJ maintain a data repository page open to the public within the Research Department of the Botanical Garden of Rio de Janeiro for storing all geospatial data of the species evaluated. CNCFlora/JBRJ also keep an image database for internal use, consisting of images and metadata of endangered species, field activities and conservation actions. We also maintain a database of threats that covers the entire country, in the software CartoDB, for internal use by staff of CNCFlora/JBRJ while developing extinction risk assessments and conservation action plans. The CNCFlora/JBRJ website also stores data from publications and species risk assessment sheets (http://cncflora.jbrj.gov.br/portal). The latter needs updates to better serve the public. Therefore, updated data is available in the repositories previously mentioned. (KSR #6, 7, 8)

Plan

Planning

i. We produced a Territorial Action Plan for the conservation of threatened species of the Southern Plateau of Brazil. (KSR #15)

ii. We provided technical advice at workshops that developed Territorial Action Plans for the ‘Cerrado Tocantins’ and ‘Pampa Bagé’. (KSR #15, 20, 21)

iii. Six meetings were held on the implementation and monitoring of the National Action Plan for the Conservation of Endemic Endangered Flora of the State of Rio de Janeiro. (KSR #15)

Policy

i. A meeting was held on the Oil and Gas Exploration Impact Reduction Plan for Marine and Coastal Biodiversity; a preparatory meeting was held on the Mining Impacts Reduction Plan for Biodiversity. (KSR #27)

ii. We elaborated a technical note on behalf of the Ministry of the Environment 2019, regarding the current conservation status of ‘ipê’, Handroanthus serratifolius Mattos (Bignoniaceae), a taxon that is a candidate to be included in CITES Appendix II as the most illegally logged timber species in the Amazon. Additionally, we collaborated with the non-profit organisation Biodiversitas, providing data related to threatened plant species to achieve the goals of the Brazilian Alliance for Zero Extinction (BAZE). Finally, we also provided data on Critically Endangered species of plants for state governmental agencies planning to implement Territorial Action Plans. All information provided technical inputs for decision makers at the Ministry of the Environment, and positively influenced public policies at the national level. (KSR #15, 27)

iii. CNCFlora endorsed a release documenting irregularities in a bidding process of a mining company in the south of Brazil, led by the Lagoas do Sul Action Plan committee, to which we belong. We are also members of the Lagoas do Sul Technical Advisory Group. (KSR #29)

Network

Capacity building

i. Training was provided on Territorial Action Plans for the conservation of threatened species for staff of 13 State Environmental Agencies. (KSR #17)

Membership

i. Seven new members were recruited for the Brazilian Plants Red List Authority in 2019. These new members have been working directly with extinction risk assessments and conservation action planning for Critically Endangered species, which are being targeted for tailored territorial action plans currently under development within the GEF Pro-Species project framework and partners. This year we also strengthened a partnership with the Centre for Social and Environmental Responsibility, which is also part of the Research Institute of the Botanical Garden of Rio de Janeiro. Collaborators from this centre are being trained and are also carrying out research activities related to the georeferencing of occurrence records of species submitted to the extinction risk assessment process. (KSR #29)

Scientific meetings

i. We participated in the IV Interinstitutional Meeting on Conservation, Restoration and Forest Economy. (KSR #28)

Synergy

i. In 2019, we participated in three internal meetings of the IUCN SSC Plant Conservation Committee (PCC). CNCFlora was also represented at the Fourth SSC Leaders’ Meeting in Abu Dhabi, at which we were awarded a recognition prize for our efforts towards the complete risk assessment of the Brazilian flora. Collabo-
Rations were carried out through the preparation of technical documents, reports, reviews of evaluations of other Red List Authorities’ assessments, and testing of new technologies to enhance our capability to produce reliable risk assessments and identify potential Least Concern species. We also participated in the testing of the Green Status protocol, developed by the Green List Task Force, with the study and application of the methodology for an important endemic tree species in Brazil, *Dimorphandra wilsonii* Rizzini (Fabaceae). Another point of collaboration was the training in the IUCN SIS database system offered by Marcello Tognelli in August. CNCFlora/JBRJ also collaborated with current extinction risk assessments for Brazilian trees in association with the Global Tree Assessment programme of Botanic Gardens Conservation International (GTA/BGCI). (KSR #29)

In 2019, CNCFlora and partners strengthened their cooperation agreements and partnerships, including the extinction risk assessments of trees with GTA/BGCI, a constant flow of assessment reviews with Kew’s conservation unit. CNCFlora was also engaged directly in activities with departments within the Brazilian Ministry of the Environment, such as Chico Mendes Institute for Biodiversity Conservation (ICMBio) and Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), particularly under the scope of the GEF Pro-Species project.
We also strengthened our cooperation with SOS Mata Atlântica, a non-profit organisation monitoring forest cover loss within this biome. Specific partnerships were strengthened within protected areas, such as Serra dos Orgãos National Park and Tijuca National Park, both in Rio de Janeiro, as well as Grão-Mogol State Park, where we conducted a project to improve the status of the Critically Endangered *Disco-cactus horsti*. Finally, we carried out activities related to the development of the Arboretum Programme, an initiative aiming to detect, gather, reproduce and reintroduce threatened tree species of southern Bahia’s Atlantic Forests, which are among the richest tropical areas in the world. (KSR #29)

**Communicate**

**Communication**

i. CNCFlora/JBRJ maintains a data repository page open to the public within the Research Department of the Botanical Garden of Rio de Janeiro, called ckan, geonode and an image bank. All data regarding species evaluated in 2019 are available at: https://ckan.jbrj.gov.br/dataset/avaliacao-2018-jun2020. (KSR #28)

ii. Sixty-eight postings were made on social media (https://www.facebook.com/jbrj.cncflora; https://www.instagram.com/jbrj.cncflora/?hl=pt-br). (KSR #28)

iii. Five notes were published in the Pro-Species Project newsletters (https://mailchi.mp/0c8afce35b6e/pr-especies-boletim-mensal-no6; https://mailchi.mp/ea63af203b01/pr-especies-boletim-mensal-no15), and a scientific letter analysing the impacts of 2019’s fire surges in Amazonia and its threatened flora was published in the renowned journal *Frontiers in Ecology and the Environment* (available at: http://dx.doi.org/10.1002/fee.2197) (KSR #28, 43)

iv. In October, CNCFlora’s co-chair participated in the Fourth SSC Leaders’ Meeting in Abu Dhabi. (KSR #28)

**Acknowledgements**

We thank the Global Tree Assessment/Botanic Gardens Conservation International (GTA/BGCI), Global Environment Facility – GEF PROSPECTS, O Boticario Group Foundation, Belo Horizonte Municipal and Zoobotanical Park Foundation, Arboretum Programme, Public Ministry of the State of Bahia, National Institute of the Atlantic Forest, Rio de Janeiro State Secretary of Environment, Chico Mendes Institute for Biodiversity Conservation – ICMBio, WWF-Brazil, Ministry of the Environment – MMA.

**Summary of activities 2019**

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Main KSRs addressed: 1, 2, 5, 6, 7, 8, 11, 13, 15, 17, 20, 21, 27, 28, 29, 43

KSR: Key Species Result
Mission statement
The mission of the Central African Plant Red List Authority (CARLA) is to promote high quality Conservation Assessments within Central Africa and to use this information to support conservation actions.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we envision a substantial advance in assessing the preliminary conservation status of the most threatened species in Central Africa. Specifically, using a computer routine, we will establish a working list of the species that could be considered as threatened and then use this information to focus on potentially Critically Endangered and Endangered species, for which we will conduct and submit full assessments to the Red List. We will continue publishing assessments of endemic plants (orchids, Cameroonian plants, trees from the Flore d’Afrique Central region, trees of Principe) and of highly threatened species such as members of Podostemaceae, while also developing the Red Listing skills of young African botanists.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete preliminary assessments of species endemic to Central Africa; (2) complete assessments of 150 orchid species endemic to Atlantic Central Africa; (3) complete assessments of the plant species endemic to Cameroon; (4) complete assessments of the tree species endemic to Flore du Congo; (5) produce assessments of endemic tree species from Principe; (6) produce assessments of the threatened plant species of Sao Tomé and Principe; (7) produce assessments of the threatened plant species of Nimba and Lofo-Gola-Mano complex; (8) complete preliminary assessments of species endemic to Gabon.

Activities and results 2019
Assess
Red List
i. Seven hundred and forty-two assessments of species endemic to Central Africa are completed. This is the overall number of assessments completed and published on the Red List online. Part of the species may not be endemic to Central Africa, because under the Global Tree Assessment, trees were not chosen only within Central Africa, but all the reviews were done by CARLA. (KSR #2)

ii. Thirty-seven assessments of orchid species endemic to Atlantic Central Africa submitted to the Red List Unit. (KSR #2)

iii. A workshop for assessment of 106 tree species endemic to Flore du Congo was conducted in Meise (Belgium) in June 2019. (KSR #2, 5)

iv. Fieldwork to collect recent data on the threatened plant species of Sao Tomé and Principe was conducted. (KSR #2)

v. Sixty assessments of the threatened plant species of Nimba and Lofo-Gola-Mano complex were prepared in 2019. They will be uploaded to the IUCN SIS database in 2020–21. (KSR #2)

vi. Three hundred and twenty preliminary assessments of species endemic to Gabon are all available through the Tropicos project. (KSR #2, 22)
Acknowledgements

Martin Cheek, Poppy Lawrence, Isabel Baldwin and Ben Fish are acknowledged for the preparation of the datasets. The IUCN–Toyota Red List Partnership is acknowledged for its contribution to the completion of many of the assessments carried out by Royal Botanic Gardens, Kew. Fondation Franklinia supports the ECAT project at Meise Botanic Garden. The Global Trees Campaign, which supports Red Listing work in Principe carried out by Fundação Príncipe, the Missouri Botanical Garden and the University of Coimbra, is a partnership between Fauna & Flora International and Botanic Gardens Conservation International. The American Orchid Society supports Missouri Botanical Garden work on assessments of the orchids endemic to Atlantic Central Africa. The Red Listing work of Nimba’s flora in Guinea was supported by the Société des Mines de Fer de Guinée (SMFG).

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

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Main KSRs addressed: 2, 5, 22

KSR: Key Species Result

The first ECAT workshop held at Meise Botanic Garden in June 2019. The ECAT project aims to assess 400 tree species, mostly endemic to Congo, Rwanda and Burundi, as part as the Global Tree Assessment Initiative

Photo: Tariq Stévart, MBG

Polystachya lejolyana, one of the most threatened orchid species of Atlantic Central Africa was assessed as EN B2ab(iii). The species occurs in dense humid submontane forest in Cameroon and Gabon, and is highly threatened by small scale agriculture

Photo: Vincent Droissart, IRD
Co-Chairs
Orangel Aguilera (1)
Ying Giat Seah (2)

Red List Authority Coordinators
Orangel Aguilera (1) (Brazil, South America)
Ying Giat Seah (2) (Malaysia, Asia)

Location/Affiliation
(1) Departamento de Biologia Marinha (GBM), Universidade Federal do Fluminense, Rio de Janeiro, Brazil
(2) Faculty of Fisheries and Food Science, Universiti Malaysia Terengganu, Terengganu, Malaysia

Number of members
55

Mission statement
The mission of the Croaker and Drum Fishes Red List Authority is to revise and submit the assessment of all 300 species of Sciaenidae, and in addition, to redefine the goal of the second phase of Global Sciaenidae conservation.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we will complete the first global assessment of sciaenid fishes and will submit it to IUCN for final publication. A significant threat to Sciaenidae conservation has become more prominent since 2016 due to the popularity of Sciaenid Maws (dried gas bladder) for food and medicinal use in Asian countries. Larger species of Sciaenidae are sought to extract their gas bladders for the luxury market demand. The case of the Gulf of California Totoaba (Totoaba macdonaldi), a Critically Endangered species, has caused the near extinction of the endemic Vaquita (Phocoena sinus). Several large Sciaenidae species of the genus Argyrosomus and Boesemania are greatly sought after in Southeast Asia and conservation actions are urgently needed. Sciaenid species are popular food fish and are mostly captured for local food supplies. It is a very difficult resource for which to enforce policies regulating the capture of threatened species.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) organise a Red List assessment and training workshop, planned for 25–29 September 2018, at the University of Malaysia, Terengganu, Malaysia (expecting 50 members to participate); (2) complete revision and new data for global Sciaenidae Red List assessments; (3) submit final draft reviews (proposed) of Sciaenidae Red List reassessments.

Network
Synergy: strengthen relationships among SSC Leaders, as well as develop new collaborations with other IUCN Commissions and open discussion for strategies, priorities and opportunities. Participate in the Fourth International Union for Conservation of Nature (IUCN) Species Survival Commission (SSC) Leaders’ Meeting, 6–10 October 2019, Abu Dhabi, United Arab Emirates.

Activities and results 2019
Assess
Red List
i. One hundred and eleven Sciaenidae reassessments were accomplished. An update of Sciaenidae data and new information for reassessments’ discussion was completed. Consultations and discussions were held with Sciaenidae expert group collaborators to improve the species reassessments. (KSR #1)

ii. Final reviews of Sciaenidae Red List reassessments will be submitted to the members of the Sciaenidae Group in early 2020 for criticism, corrections, and the reviewers’ criteria for conservation. (KSR #1)
Both Co-Chairs participated in the panel of discussions of the Fourth International Union for Conservation of Nature (IUCN) Species Survival Commission (SSC) Leaders’ Meeting; oral presentations and exposition of a poster of IUCN SSC Sciaenidae group strategies for conservation were given. Meetings took place with the participation of more than 300 IUCN species conservation experts; one poster discussion: ‘Fisheries impacts on marine and freshwater biodiversity of Meso and South America: Sciaenidae’. Interaction took place with the Marine Fish expert groups network to improve the criteria for species reassessment and explore the best option to measure the effectiveness of SSC’s actions on biodiversity conservation. (KSR #1)

**Acknowledgements**

Universiti Malaysia Terengganu, Malaysia; National Museum of Marine Biology and Aquarium, Taiwan; Global Sciaenidae Conservation Network, National Museum of Marine Biology and Aquarium, Taiwan; International Union for Conservation of Nature; Species Survival Commission; Sciaenidae Red List Authority, Environment Agency Abu Dhabi; Boston Bio-Amazonia Conservation International; National Sun Yat-sen University, Taiwan; Xiamen University, China; Universidade Federal Fluminense, Brazil.

**Summary of activities 2019**

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KSR: Key Species Result.
Mission statement
The mission of the Indonesian Plant Red List Authority (IPRLA) is to conduct comprehensive risk assessment for Indonesian plant species occurring in the country and as the basic information to be used for further conservation actions and sustainable forest management in Indonesia.

Projected impact for the 2017-2020 quadrennium
This quadrennium will become a very important period for Indonesia, as we start to work on assessing the conservation status of at least 350 plant species native or naturally occurring in Indonesia. We targeted endemic and most commercial plant species for our Red List assessments, because such species are likely under serious threat, mainly due to land conversion to oil palm plantations, mining and other agricultural practices. We predict that by year 2020, the national Red List data will be used as a standard guideline for government and related stakeholders to undertake best forest management practices.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) complete assessment of 350 species, including commercial timber species, trees, non-tree species, and ornamental species, with a mainly Malesian distribution, most of which are narrow endemic to Indonesia; (2) review assessments of 74 Indonesian plant species (Lauraceae, Zingiberaceae, Dipterocarpaceae).

Research activities: book writing, publish the first Indonesian Red Data Book, containing 50 commercial timber species (in Indonesian language).

Network
Capacity building: (1) Red List training and workshop for assessors; (2) Red List training and workshop for trainers; (3) Red List training and workshop for assessors in Indonesian language; (3) Red List training and workshops: Dipterocarps assessment (West Kalimantan), plants of Maluku assessment (West Java).

Activities and results 2019
Assess
i. 100 species assessments were completed on commercial timber species. (KSR #2)
ii. The RLA assessment carried out in 2019 was the result of the second workshop, i.e. 76 species of Dipterocarps and 24 non-Dipterocarps. Most of the assessments were completed for national status. (KSR #2)
iii. We initially proposed to assess 350 species of 31 families during this quadrennium. Of these, 144 species are Dipterocarpaceae. But, over time, with the increased collaborations, especially with Botanic Gardens Conservation International (BGCI) and its Global Trees Campaign (GTC), most of the assessments are prioritised for Indonesian endemic tree species, especially the Dipterocarpaceae. Following this, the composition of the target plant species also changed, for which we would focus mostly on Indonesian endemic trees to contribute to the Global Tree Assessment (GTA) target. The RLA assessment in 2019 mostly came from the results of Bornean RLA workshop organised by Global Trees Campaign. Of the total 179 global
Dipterocarpaceae species assessed (published 2019), 47 species were further examined to obtain the national status. In addition, we also carried out an RLA workshop focused on non-tree species. From this workshop, we have assessed 53 species from 17 families, including Araceae, Begoniaceae, Ferns families, Orchidaceae, Rafflesiaaceae, Rosaceae and Zingiberaceae. Most of these assessments are still in the draft manuscripts and are to be completed for submission for the global assessment in 2020. (KSR #2)

**iv.** We reviewed Red List assessment of Lauraceae (17 species) and Zingiberaceae (57 species). (KSR #1)

**Research activities**

i. Indonesian Red Data Book: The book contains 50 species of commercial timber species; it was written by 12 authors and published in 2019. (KSR #43)

**Acknowledgements**

We would like to thank Research Centre for Biology and Bogor Botanic Garden of the Indonesian Institute of Sciences, Ariefyana Fuji Lestari, BGCI, the GTA Team especially Malin Rivers and Megan Barstow, the IUCN Red List Unit, the IUCN SSC, Global Trees Campaign—Fauna & Flora International, TFCA Kalimantan, WWF-Kalimantan Barat, Darwin Initiative, and Domitilla Raimondo for their continuous support during the year.

**Summary of activities 2019**

Components of Species Conservation Cycle: 1/5

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Main KSRs addressed: 1, 2, 43

KSR: Key Species Result
Mission statement

The mission of the IUCN Marine Fishes Red List Authority is to transform global, regional and local marine conservation capabilities by completing Red List assessments for all marine fishes.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we expect to substantially increase the number of published Red List assessments of marine fishes. Specifically, our focus will be on species in the orders Clupeiformes (sardines, herrings, menhadens and their allies) and Pleuronectiformes (flatfishes), species occupying the deep sea (more than 200 m depth), and species of the Western Indian Ocean. The completion of these assessments will bring us closer to the goal of completing assessments for the more than 17,000 marine fishes and will improve our knowledge of the status of marine vertebrate biodiversity globally.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) complete assessments of 800 Western Indian Ocean marine fishes, with the main focus on exploited and coral-reef associated families; (2) complete assessments of 403 Clupeiform species; (3) complete assessments of 1,001 deep sea marine fishes.

Activities and results 2019

Assess

Red List

i. Assessments of Western Indian Ocean marine fishes are completed (800 species) and most are published on the IUCN Red List website. (KSR #1)

ii. Assessments of deep sea marine fishes are completed (1,001 species) and published on the IUCN Red List website. (KSR #1)

Acknowledgements

We thank The IUCN–Toyota Red List Partnership, Total Foundation and the Government of Switzerland for their support of marine Red Listing. The continued partnerships with The Deep Aquarium and Oceanario Lisboa, resulting in the hosting of two marine Red List Officers, have been most successful. We also thank the many scientists who have contributed to the marine Red List assessments, including through the participation in Red List assessments workshops.

Summary of activities 2019

Components of Species Conservation Cycle: 1/5

Assess 2

Main KSRs addressed: 1

KSR: Key Species Result
The Marine Fishes RLA is providing first time Red List assessments for more than 15,000 marine fishes that are not included in other marine fish groups.

Photo: Beth Polidoro
Mission statement

Our goal is to assess the conservation status of the whole flora of New Caledonia by 2020. New Caledonia contains some 3,371 native species of vascular plants, of which 74% are considered endemic. This exceptional floristic diversity is threatened by accelerating development. The Red Listing activities will: (1) bring a valuable tool for local institutions in charge of setting conservation priorities, and (2) allow knowledge improvement by identifying Data Deficient species.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we intend to assess the entire New Caledonian flora using the IUCN Red List of Threatened Species, to generate the critical information needed to catalyse and prioritise conservation actions on the most threatened plants of New Caledonia. Through this process, we are generating information on their distribution, habitats, ecology, population trends, threats and ultimately their probability of extinction (extinction risk), which is the starting point for conservation. This information will then be used for conservation planning and priority setting at the national level, to inform private sector decision making and for education and public awareness, which will impact positively the conservation status of New Caledonian flora and sustainable development at the national level.

Targets for the 2017-2020 quadrennium

Assess
Red List: complete the IUCN Red List assessment of the entire New Caledonian Flora (3,400 species).
Research activities: publish scientific papers about our Red List Authority’s (RLA) work and its results.

Communicate
Communication: (1) raise awareness among citizens and decision makers about the vulnerability of New Caledonian flora; (2) expand the scope of communication beyond local citizens and decision makers.

Activities and results 2019

Assess
Red List
1. Two hundred and fifty-five species were assessed in 2019. This year we have essentially reached the halfway point of the RLA’s work, having roughly assessed 50% of the New Caledonian flora. Maintaining a good working pace for five years was a great accomplishment per se, but now we need to recalibrate our original goal. The main reason for this is that taxonomic issues will prevent us from keeping up the pace in the coming years. We will not stop altogether, of course, but assessments will demand more work and the pace should certainly slow down a little. (KSR #2)

Research activities
1. Publication of scientific papers about our Red List Authority’s (RLA) work had been discussed by former RLA Coordinator Vincent Tanguy with a couple of experts and was projected to be re-launched with the help of the current Endemia/RLA coordination team. Unfortunately, none of the members could make time in 2019 to work on this publication. (KSR #32)
Communicate

Communication

i. The photo exhibit raising awareness among citizens and decision makers about the vulnerability of New Caledonian flora has kept on traveling throughout New Caledonia, with nine presentations in eight different venues. In addition, a new exhibit was created to communicate about New Caledonian endemic lizards (66 days of presentations), assessed in late 2017 by Endemia and a group of experts. Overall, the photo exhibits have been displayed for 191 days of presentations. (KSR #36)

ii. The work of the New Caledonia Plants RLA was presented during three conferences in mainland France and in Réunion Island. In addition, contacts were made with botanical gardens in the US and Australia in order to present the photo exhibit there, but this could not come to fruition. Another opportunity will present itself in 2020, when New Caledonia will be hosting the Pacific Conference for Biodiversity (April). (KSR #36)

Acknowledgements

We thank the following donors, who helped Endemia set up the New Caledonia Plants Red List Authority in 2014 and allowed it to coordinate the assessment effort: the North and South Provinces of New Caledonia, the French government (by way of the Direction for Agriculture, Forest and Environment), as well as Société Le Nickel, Koniambo Nickel SAS and Vale NC. We would also like to thank the French Biodiversity Agency and the National Centre for Technological Research on Nickel and its Environment, who provided grants for specific Red Listing projects in the coming years. Moreover, we want to thank our scientific and technical partners in and outside of New Caledonia: IRD (French Research Institute for Development), IAC (Agronomical Institute of New Caledonia), NOU and P herbaria, etc. And of course we give huge thanks to all members of our RLA and outside contributors, whose outstanding efforts have helped us accomplish all this work.

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

Assess 2

Communicate 2

Main KSRs addressed: 2, 32, 36

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC Snake and Lizard Red List Authority is to undertake and support IUCN Red List assessments for reptile groups not covered by other Specialist Groups, including most snakes and lizards and the New Zealand Tuatara (Sphenodon punctatus), and to curate IUCN’s global taxonomy for these groups.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, the Global Reptile Assessment will have been both completed – insofar as every described species of reptile will have been assessed on the IUCN Red List at least once – and, with continued financial support, updated to ensure that no assessment is more than 10 years old. The Snake and Lizard Red List Authority, which has responsibility for the majority of reptile species, will be expanded and more formally structured around a series of regional Red List Coordinators, a process which is already underway. For the first time, it will be possible to evaluate the conservation status of reptiles globally and identify priority targets for reptile conservation at a global scale.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) support the completion of the Global Reptile Assessment (ca. 10,265 squamate species) through clean up, review and submission; (2) identify new assessments needed and prepare reassessments for outdated assessments.

Network
Membership: expand the network of Snake and Lizard Red List Authority members and regional coordinators to support management of reptile assessments following the end of the Global Reptile Assessment.

Activities and results 2019
Assess
Red List
i. Total number of assessments (2,500) finalised and submitted, including both pre-existing projects and the results of 2019 assessments for Africa, Indonesia and South Asia. (KSR #1)

Network
Membership
i. The completion of the Global Reptile Assessment took priority over the development of the Red List Authority in 2019. Three new members were added to the network.
Acknowledgements

Particular thanks are owed to the other members of the Biodiversity Assessment Unit, led by Neil Cox, and to the ZOO Outreach Organisation and its head Sanjay Molur, who arranged the logistics of the South Asia and Sri Lanka workshops, as well as to Red List Authority member Krystal Tolley and her organisation South African National Biodiversity Institute (SANBI) for leading the organisation of the Africa workshop.

Summary of activities 2019

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Main KSRs addressed: 1

KSR: Key Species Result
Mission statement
To support the expansion of invertebrates assessed for the IUCN Red List.

Projected impact for the 2017-2020 quadrennium
Our activities contribute to the continued extremely slow progress towards a meaningful Barometer of Life. Suggestions for new open systems to make this possible will continue to be made.

Targets for the 2017-2020 quadrennium
Assess
Red List: support any invertebrate Red List assessment not currently covered by any Specialist Group.

Activities and results 2019
Assess
Red List
i. Where required, 84 assessments have been reviewed, and potential assessors encouraged. (KSR #1)

Summary of activities 2019
Components of Species Conservation Cycle: 1/5
Assess 1
Main KSRs addressed: 1
KSR: Key Species Result
Unidentified cave isopod in Madagascar, a representative of the largely unknown and unassessed biodiversity of much of the world.

Photo: Justin Gerlach
Mission statement
The mission of the group is to assess the status of endemic plant species in Turkey and to fill in the important knowledge gaps on the status of plants of Turkey.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, the group will mainly target bringing together information towards assessing the Red List status of endemic plant species in Turkey. This will permit in the longer run to have a pool of information which will establish the basis for species-level conservation actions to be carried out in a prioritised and effective manner.

Targets for the 2017-2020 quadrennium
Assess
Red List: (1) commence the assessments of endemic plants of Turkey and publish, when finalised, on the IUCN Red List of Threatened Species (300 new Red List assessments by 2019); (2) carry out IUCN Red List assessments for near endemic and non-endemic plant species in Turkey at national scale (the priority of the Specialist Group is to finalise first the endemic species assessments and, in accordance with progress on this topic, the work on non-endemics and near endemics will be planned from 2021 onwards); (3) finalise the draft design of the Red Book. The Ministry of Agriculture and Forestry General Directorate of Nature Conservation and National Parks is part of the expert group. Progress of the group will be presented in the IUCN National Committee meetings in Turkey.
documentation are needed. The Specialist Group is willing to share this knowledge both with the Red List Unit for the documentation and with countries willing to establish a database similar to the one developed in Turkey. (KSR #2)

**Communicate**

*Communication*

1. The first meeting of the group was held in January 2019. Three internal meetings were accomplished (with the participation of 60, 80 and 30 participants). Regular monthly emails informing the members of the group about progress were shared, and Skype meetings carried out almost weekly for the development of the database. (KSR #28)

**Acknowledgements**

We thank the Ali Nihat Gökyiğit Foundation for the provision of funding for this project, through the Nezahat Gökyiğit Botanic Garden in Istanbul (NGBG; http://www.ngbb.org.tr/en/), which is a member of Botanic Gardens Conservation International. The foundation is currently managing the finances of the funded project; it will likely serve as the financial home institution for the proposed Specialist Group for future projects. We also thank Prof. Dr Reşit Akçakaya for his support on the project.

**Summary of activities 2019**

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Main KSRs addressed: 1, 28

KSR: Key Species Result
Mission statement

The IUCN SSC Red List Technical Working Group reports to the Red List Committee and is responsible for ensuring consistency and developing improvements in: (a) the application of the IUCN Red List Categories and Criteria; (b) the documentation of Red List assessments, including through the design and coding of the IUCN Classification Schemes and creation of GIS data; (c) the design and implementation of Red List Indices; and (d) the use of the Species Information Service (SIS) to facilitate (a) to (c). In particular, the Red List Technical Working Group seeks to ensure that the SSC’s major global and regional biodiversity assessment projects are implemented in a consistent manner.

Projected impact for the 2017-2020 quadrennium

By working towards ensuring consistency and developing improvements in (a) the application of the IUCN Red List Categories and Criteria; (b) the documentation of Red List assessments, including through the design and coding of the IUCN Classification Schemes and creation of GIS data; (c) the design and implementation of Red List Indices; and (d) the use of the Species Information Service (SIS) to facilitate (a) to (c), the impact of the Red List Technical Working Group (RLTWG) on species’ conservation status will be the delivery of high-quality assessments with appropriate documentation.

Targets for the 2017-2020 quadrennium

Assess

Red List: (1) identify major areas of possible inconsistency in the data generated by the different assessment projects, evaluate the nature and extent of the problems, and propose solutions; (2) provide comments and, wherever possible, examples to the Standards and Petitions Committee on the practical consequences of proposed revisions to the Guidelines for Using the IUCN Red List Categories and Criteria; (3) propose developments and improvements to the documentation of Red List assessments, and develop/ improve associated guidance, definitions, etc.; (4) monitor, and develop when appropriate, the structure, content, guidance and implementation of the Classification Schemes; (5) oversee the continuing development of The IUCN Red List Index, and advise on its use; (6) monitor the development of SIS and its use, make proposals for changes and improvements as needed, and review all requests for changes and modifications to SIS; (7) provide feedback and guidance on the presentation of The IUCN Red List of Threatened Species data on the IUCN Red List website.

Act

Technical advice: (1) monitor the implementation of all the major biodiversity assessment projects, and other assessment work carried out by Red List Authorities, Red List Partners and the IUCN Global Species Programme; (2) identify issues that need to be covered and clarified in the Guidelines for Using the IUCN Red List Categories and Criteria (https://www.iucnredlist.org/resources/redlistguidelines), and refer these issues along with, wherever possible, real examples to the Standards and Petitions Sub-Committee.
Activities and results 2019

Assess

Red List

i. Work has been carried out on Red List Index documentation and Mapping Guidelines. (KSR #4)

ii. RLTWG provided feedback on the new Guidelines for Using the IUCN Red List Categories and Criteria, version 14 (published in August 2019). (KSR #4)

iii. An update of the Mapping Standards and Data Quality for the IUCN Red List Categories and Criteria was published. (KSR #4, 5)

iv. The RLTWG is investigating both the processes needed and the impacts of adopting new Classification Schemes for the IUCN Red List. In first instance, the Threats and Conservation Action schemes have been investigated, but the issues extend to all classification schemes. (KSR #4, 6)

v. Guidance on the Red List Index Documentation has been drafted. (KSR #3, 4)

vi. RLTWG suggested several changes and improvements to SIS, including enhancements and improvements of the Validity Checker. (KSR #6)

vii. Various edits were suggested and implemented for the IUCN Red List website (for example, the introduction of a text summary option). (KSR #8)

Act

Technical advice

i. Progress of the assessment work by various key stakeholders is monitored in collaboration with the Red List Committee and progress presented at the Red List Committee meetings. (KSR #1)

ii. The working group has identified issues in need of clarification in the Guidelines for Using the IUCN Red List Categories and Criteria. For example, RLTWG suggested new wording regarding how to deal with seed collections. (KSR #4)

Acknowledgements

We acknowledge financial support from the IUCN SSC Chair’s Office and the Global Species and Key Biodiversity Areas Programme.

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

Assess 7

Act 2

Main KSRs addressed: 1, 3, 4, 5, 6, 8

Resolutions addressed: WCC-2016-Res-016

KSR: Key Species Result
Mission statement
The Joint IUCN SSC/WCPA Biodiversity and Protected Areas Task Force has two formal objectives. Objective 1 is to understand the drivers of successful biodiversity outcomes in protected areas, on land and in sea. Objective 2 is to consolidate a global standard for the identification of Key Biodiversity Areas.

Projected impact for the 2017-2020 quadrennium
By the end of 2020, we anticipate a substantial increase in the safeguard of sites important for globally threatened, geographically restricted, and congregatory species through: (1) demonstration that protected areas are effective at conserving species and the management inputs necessary to achieve conservation outcomes in protected areas, and (2) application of the global Key Biodiversity Areas (KBAs) standard to identify important sites in need of protection, dissemination of these data through the World Database of KBAs, and enhanced efforts by the KBA Partners and other conservation organisations, governments and the private sector to safeguard KBAs. The work of the Task Force also provides scientific analysis on the drivers of protected area effectiveness. This research was directly built into the IUCN Green List of Protected Areas and provides the basis for countries to manage for effective and equitable protected areas that lead to effective biodiversity outcomes.

Targets for the 2017-2020 quadrennium
Assess
Research activities: (1) complete a peer-reviewed publication of the global Key Biodiversity Areas standard; (2) complete Guidelines for using A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0; (3) complete an IUCN guidance document on assessing the value of ecosystem services at sites, for KBAs, protected areas, and World Heritage Sites; (4) complete research papers on protected area effectiveness and biodiversity outcomes: 'A global analysis of management capacity and ecological outcomes in terrestrial protected areas'; (5) complete research papers on protected area effectiveness and biodiversity outcomes: 'Why Make Protected Areas Effective in Conserving Nature'; (6) hold training workshops on the KBA standard; (7) assist in development of a KBA National Coordination Group for Canada; (8) complete a research paper on the relationship between Key Biodiversity Areas and systematic conservation planning; (9) complete a research paper on the end user engagement process during development of the global Key Biodiversity Areas standard.

Plan
Policy: (1) help develop an IUCN-led guidance document on businesses working in or impacting Key Biodiversity Areas; (2) promote KBAs as a key part of the post-2020 conservation targets under the Convention on Biological Diversity (CBD).

Act
Conservation actions: participate in the Key Biodiversity Areas Partnership as representative for the World Commission on Protected Areas (Stephen Woodley).
Activities and results 2019

Assess

Research activities


ii. The Canadian National Coordination Group is led out of the office of Wildlife Conservation Society Canada (Justina Ray). The effort involved all Canadian KBA partners, as well as Federal, Provincial and Territorial Government. Over USD 800,000 has been raised and over 100 KBAs tentatively identified. (KSR #22)

Plan

Policy

i. Presentations on KBAs were given as part of IUCN interventions at CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and Conference of the Parties (COP) meetings, as well as during side events. (KSR #26)

Act

Conservation actions

i. Stephen Woodley represented WCPA on the KBA Partnership. WCPA Chair Kathy MacKinnon was also involved in a number of partnership issues. (KSR #22)

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 22, 26, 32

Resolutions addressed: WCC-2016-Res-041

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC Task Force on Human-Wildlife Conflict is to support the IUCN SSC network in addressing human-wildlife conflict (HWC) by providing interdisciplinary guidance and expert support, through an integration of ecological and social sciences.

Projected impact for the 2017-2020 quadrennium
The SSC Human-Wildlife Conflict Task Force was created for the 2017–2020 quadrennium. Its remit is to focus on SSC Key Species Result 37 (KSR-37): Livelihoods of people and species conservation are enhanced through improved human-wildlife interaction. The Task Force is not taxon-specific, it focuses on humans and their conflicting interactions with any species. It has predominantly social scientist members, and strongly emphasises interdisciplinary working. The main needs for reducing and managing HWCs worldwide are: (a) better understanding and awareness of the complexities of conflict; (b) more collaboration between practitioners and policy; (c) more resources committed to good HWC management; (d) more proactive conflict mitigation is undertaken; and (e) better confidence among practitioners in how to approach and work with conflicts. To this end, the Task Force’s role is: (1) act as an authoritative advisory body on matters of human-wildlife conflict mitigation by encouraging the collaboration of experts from biological as well as social sciences, economics, humanities and other fields; and (3) build capacity to support the SSC network by developing technical or framework guidance materials, tools and training as needed by those working on human-wildlife conflict issues.

Targets for the 2017-2020 quadrennium
Plan
Policy: (1) publish academic papers on HWC; (2) provide support and advice to governments, organisations and individuals on HWC matters.

Network
Capacity building: (1) identify the capacity needs for practitioners working on HWC; (2) work with SSC Specialist Groups to develop species-specific resources on HWC; (3) develop training material for practitioners of HWC.

Membership: maintain a diverse membership of the Task Force both in topic and species expertise.

Synergy: (1) produce an IUCN definition and position statement on HWC; (2) collaborate with Specialist Groups within the SSC and other IUCN Commissions on HWC matters.

Communicate
Communication: (1) produce a website for the HWC Task Force; (2) produce and maintain a resource library to highlight some of the key papers and resources for HWC topics and species; (3) identify and use online platforms to communicate to relevant audience members the work of the Task Force and key information regarding HWC; (4) lead or attend relevant meetings and events to present the work of the Task Force and network with relevant attendees.
Activities and results 2019

Plan

i. No papers were published as the Task Force jointly in 2019, but discussions during the 2019 annual meeting resulted in some concepts being developed and these are being taken forward by Task Force members. Individual Task Force members have published dozens of papers, which are listed in our online library. (KSR #26)

ii. Task Force member Virat Singh attended two meetings in Mauritius regarding conflict with Mauritius fruit bats on behalf of the Task Force. He presented at a meeting for backyard fruit growers and presented in a workshop for the media. (KSR #26, 27)

iii. The Chair, Programme Officer, and several Task Force members provided input into the Convention on Biological Diversity (CBD) Post-2020 Framework for a target on HWC. (KSR #26)

iv. Input was provided into the IUCN Integrated Tiger Habitat Conservation Programme and the IUCN Save Our Species African Wildlife Programme. (KSR #26)

Policy

Network

Capacity building

i. In April 2019, in collaboration with the World Bank-led Global Wildlife Programme, the Task Force launched a global survey of training and information needs in human-wildlife conflict. In the six weeks the survey was live we received 1,013 responses. The results are currently being analysed and will be written up as a report to help to guide further capacity building training that will be conducted by the Task Force. (KSR #18)

ii. In collaboration with the IUCN SSC Asian Elephant Specialist Group, the Chair and several Task Force members are currently drafting chapters for ‘Guidelines for Managing Human-Elephant Conflict and Coexistence’. (KSR #18)

iii. In February 2019, the Chair and several Task Force members organised a Master Class on the Prevention and Mitigation of Human-Elephant Conflict in collaboration with the Asia Protected Areas Partnership (APAP) and the Monitoring the Illegal Killing of Elephants (MIKE) Programme to representatives from 12 Asian countries in Bangkok, Thailand. (KSR #18)

iv. In November 2019, the Chair conducted a training workshop for human-wildlife conflict management and coexistence, in Bangkok, Thailand, for representatives of the Integrated Tiger Habitat Conservation Programme (ITHCP) projects/studies. (KSR #18)
Membership

i. In 2019, seven additional members joined the Task Force, with a diverse range of expertise in topics including community livelihoods, journalism and media, conflict and environmental peacebuilding and governance.

ii. The Task Force also hired a part-time editorial officer in 2019 to assist in editing and drafting chapters for the IUCN SSC Guidelines on Human-Wildlife Conflict.

Synergy

i. The IUCN position statement on human-wildlife conflict was drafted in 2019 and is currently being finalised for publication. (KSR #26)

ii. The IUCN definition on human-wildlife conflict was drafted and will be published alongside the position statement. (KSR #26)

iii. The Task Force regularly and extensively collaborates ad hoc with many groups in the SSC (HWC is of interest/concern to around 20 SSC Groups) as well as the IUCN Commission on Environmental, Economic and Social Policy (CEESP); this increased substantially during the preparation of the HWC Conference planned for 2020. (KSR #29)

iv. The Task Force and the Asian Elephant Specialist Group are preparing joint guidelines on management of human-elephant conflict in Asia. (KSR #29)

v. The Task Force received the Chair’s Citation of Excellence Award at the SSC Leaders’ Meeting in Abu Dhabi. (KSR #29)
Communicate

Communication
i. The HWC Task Force website was maintained during 2019, with the text updated on pages regarding HWC and what the Task Force does, as well as our members’ page. The website was visited by 14,000 users resulting in just over 34,000 unique page views. (KSR #28)

ii. Relevant key pieces of literature and resources continued to be added to the document library during 2019. Resources in the document library were utilised over 4,000 times. (KSR #28)

iii. A page dedicated to resources on human-shark conflict was added to the library (http://www.hwctf.org/document-library/shark). (KSR #28)

iv. The platforms used to deliver information about the Task Force and HWC continued to grow in 2019. Facebook page likes grew from 1,028 to 2,757, while followers on Twitter grew from 797 to 1,472. Sixty new members joined the People & Wildlife google group. (KSR #29)

Scientific meetings
i. Both the Chair and Programme Officer attended the IUCN SSC Leaders’ Meeting in Abu Dhabi in October 2019. The Chair presented on the work of the Task Force, provided training on conflict analysis, mediation and negotiation, and conducted a consultation on the structure of the IUCN SSC Guidelines on Human-Wildlife Conflict. The Chair attended the 10th Asian Elephant Specialist Group Meeting, in Sabah, in December 2019, presenting the progress on the Guidelines for Managing Human-Elephant Conflict and Coexistence. (KSR #28)

ii. In July 2019 the Task Force held its annual meeting in Cambridge, UK. The three-day meeting was attended by 21 Task Force members with the focus being discussions around the structure and content of the IUCN SSC Guidelines on Human-Wildlife Conflict. (KSR #28)

iii. In March 2019 we announced that, in collaboration with several partners, we would be organising an International Conference on Human-Wildlife Conflict and Coexistence, to be held in Oxford, UK, on 1–3 April 2020 (www.hwcconference.org). During our call for contributions we received nearly 700 abstract submissions from over 600 candidates and from August onwards much of the work focused on organising the conference. (KSR #28)

Acknowledgements

We thank Chester Zoo for funding the salary of our part-time Programme Officer and Editorial Officer, and the Wildlife Conservation Research Unit of Oxford University for hosting the Task Force. We are grateful to the Luc Hoffmann Institute for providing funding for our fourth annual meeting of the Task Force in 2019 and the David Attenborough Building for providing in-kind support for this meeting.

Summary of activities 2019

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Main KSRs addressed: 18, 26, 27, 28, 29

Resolutions addressed: WCC-2016-Res-068, WCC-2016-Res-085

KSR: Key Species Result
Mission statement

The goal of the Marine Mammal Protected Areas (MMPA) Task Force is to facilitate mechanisms to encourage collaboration, sharing information and experience to access and disseminate knowledge and tools for establishing, monitoring, and managing MMPAs and promoting effective spatial solutions and best practices for marine mammal conservation.

Projected impact for the 2017-2020 quadrennium

By bringing to the attention of managers, decision makers and the general public the presence and whereabouts of important marine mammal areas (IMMAs), we are facilitating the consideration of marine mammal habitats in decisions concerning marine spatial planning and the planning of human activities at sea that have or can have a negative impact on marine mammal status. IMMAs have also been brought to the attention of policy makers, having been the subject of Convention on the Conservation of Migratory Species of Wild Animals (CMS) Resolution 12.13. Most of this work, however, is given the recent date IMMAs made public.

Targets for the 2017-2020 quadrennium

Act

Conservation actions: complete Important Marine Mammal Areas (IMMA) identification in the tropical and temperate Indian and South Pacific Oceans.

Network

Membership: increase Task Force membership through addition of regional group coordinators. Synergy: improve streamlining between the IMMA and the Key Biodiversity Area (KBA) processes.

Activities and results 2019

Act

Conservation actions

I. On 4–8 March 2019, the Task Force completed the fifth Important Marine Mammal Area Workshop in Salalah, Oman. The week-long workshop hosted 38 marine mammal scientists and observers from 15 countries to map the important habitats for marine mammals in the western Indian Ocean and Arabian Seas. Fifty-five candidate IMMAs were identified, along with 13 areas of interest (AoI) which will be retained as potential future IMMAs pending further research. Of these, 37 IMMAs were approved by the Independent Review Panel and are now displayed on the Task Force’s e-Atlas. (KSR #26)
Network Membership
i. New members were recruited in large part by inviting to the Task Force regional experts who volunteered to act as Regional Coordinators. Overall, 15 new members joined.

Synergy
i. Creating KBAs is not part of our tasks, but we facilitate the process by indicating IMMAs that could qualify as KBAs during regional workshops. In 2019, we were not systematic about facilitating transition from IMMA to KBAs during regional workshops, although we remained aware of the possibility of IMMAs qualifying as KBAs and have had a KBA researcher involved. But it was left mostly to the initiative of relevant KBA National Coordination Groups (e.g. Mozambique). (KSR #29)

Acknowledgements
The Task Force wishes to acknowledge the support of the German Ministry of Environment through its IKI programme, facilitated by the Global Ocean Biodiversity Initiative (GOBI), which made the effort of identifying IMMAs in the West Indian Ocean and Arabian Seas possible. Tethys Research Institute and Whale and Dolphin Conservation provided key administrative support.

Summary of activities 2019
Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 26, 29

KSR: Key Species Result
Mission statement
The Oil Palm Task Force (OPTF) aims to inform the debate on the sustainability of palm oil, using the latest research and scientific information, and give guidance to, for example, IUCN about its policies and strategies that affect or are affected by palm oil. We aim to make use of IUCN’s extensive knowledge networks on biodiversity and environmental issues, social, economic and cultural issues, and policy to comprehensively guide thinking on the complex issues of agro-industrial and small-holder oil palm in the world’s tropical regions. The OPTF will act as an authoritative advisory body on oil palm and how this relates to global sustainability objectives, and an intermediary between the oil palm industry, the IUCN network, and the other stakeholders in the oil palm discussions.

Projected impact for the 2017-2020 quadrennium
Oil palm threatens tropical wildlife when plantations are developed in forested areas. We seek to minimise impacts on tropical wildlife by helping promote palm oil production practices that avoid negative impacts on threatened wildlife species, such as orangutans, while maximising socio-economic benefits from palm oil production. The broader sustainability context of vegetable oil production requires that the Task Force also looks at other oil producing crops to ensure that reductions in palm oil production and concomitant reductions in conservation threats do not lead to disproportionate increases of production of other vegetable oil crops and even larger negative conservation impacts elsewhere.

Targets for the 2017-2020 quadrennium
Assess
Research activities: coordinate the IUCN review process of the draft Situation Analysis (with support from the SSC Chair’s Office), incorporate the comments and suggested edits into the final Situation Analysis, and publish Situation Analysis.

Plan
Planning: develop a study on the socio-economic impacts of oil palm and how these affects biodiversity and environmental outcomes.
Policy: global mapping of oil palm and other vegetable oil crops.

Network
Membership: expand Task Force membership and coordinate membership registration with IUCN.
Synergy: (1) conduct third workshop for discussing situation analysis and developing OPTF strategies 2018-2020; (2) internal IUCN meetings to discuss strategic objective of IUCN Oil Palm Task Force to focus on palm oil production in forest frontiers; (3) get conflict of interest statements from all Task Force members.

Communicate
Communication: (1) develop Task Force website; (2) translation of Oil palm and biodiversity. A situation analysis by the IUCN Oil Palm Task Force into Indonesian.
Scientific meetings: organizing symposium at IUCN Congress.
Activities and results 2019

Plan

Policy

i. The global mapping of oil palm continues. We have compared machine learning versus deep learning approaches, allowing more accurate crop mapping.

Communicate

Scientific meetings

i. The Task Force successfully applied for a Session at the IUCN World Conservation Congress. We are currently discussing the program for this 2-hour session, inviting speakers, agreeing on presentation topics and seeking communication opportunities. (KSR #28)

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

Plan  1  |
Communicate  1  |
Main KSRs addressed: 28
Resolutions addressed: WCC-2016-Res-061

KSR: Key Species Result
Mission statement
The aim of the IUCN SSC Phylogenetic Diversity Task Force (PDTF) is to provide leadership and guidance on the inclusion of phylogenetic diversity in conservation strategies. By providing the necessary scientific and technical expertise, we will promote wider adoption and greater understanding of this approach by conservation practitioners, decision makers, and the public.

Projected impact for the 2017-2020 quadrennium
Established in 2019, the PDTF has developed a work plan with the aim of delivering measurable results in the next quadrennium.

Targets for the 2017-2020 quadrennium

Assess
Communication: develop a consultative database by compiling information on the applied use of phylogenetic diversity (PD) in conservation around the world, including organisations and contacts, to assess the current extent of application of PD-metrics. This will contribute to better monitoring and evaluation of the impact of PD-prioritisations on the effectiveness of conservation action and inform the future PDTF membership.

Research activities: identify gaps in knowledge or application of PD-metrics as a result of the review and guidance planning. Encourage PDTF members and the wider scientific and conservation community to undertake targeted scientific research and conservation applications (such as through post-graduate research or conservation projects) that will add to our knowledge base. High profile scientific analyses and investigations that have wide implications will be completed and published. These will enable the updating and generating of guidance as required, feeding back into the other objectives.

Plan
Communication: consider a structure for information exchange and collaboration to occur more effectively to increase understanding of PD importance and application in conservation by practitioners; adding value to existing activities through conferences, meetings, grant support.
Planning: develop state-of-the-art methods for measuring and categorising the success of conservation. These will be the two indicators proposed by the PDTF to the Convention on Biological Diversity (CBD) Secretariat for inclusion in the post-2020 framework.
Policy: develop a variety of guidance documents that will include practical examples and review obstacles and lessons to share best practice on the ground. This will contribute to improved and more widely adopted approaches for species prioritisation for incorporation into conservation planning (KSR 15); creating cutting-edge tools and approaches for incorporating evolutionary history into conservation (KSR 18); supporting conservation planning processes to include evolutionary history and thus feed into policy and action (KSR 21).
Proposal development and funding: develop consultation-informed recommendations for guidance documents. Initiate guidance planning consultation with IUCN Specialist Groups, interested academics and practitioners to identify the potential for a variety of guidance documents for practitioners and policy makers that will address current barriers to the use of
PD-metrics to inform conservation. Encourage consideration of PD and use of PD-based metrics in new sectors, such as business.

**Act**

Policy: (1) develop knowledge-exchange and consultation between various stakeholders to enable adoption of PD-prioritisation and guidelines to inform global and national conservation policy (KSR 26) – such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the post-2020 CBD framework, CITES, Convention on Migratory Species (CMS), and Ramsar – and at national and cross-boundary levels (KSR 27). Scientific advice from PDTF used to drive actions and policies for species and sites are implemented at the national level (linking to National Biodiversity Strategies and Action Plans (NBSAPs) and national Red Lists); (2) contribute as a Task Force to the increased awareness and wider adoption of PD-informed conservation, through representations at conferences, workshops and other events, to develop knowledge-exchange amongst attendees.

**Network**

Capacity building: (1) develop knowledge-exchange and consultation between academics, practitioners and policy makers. This will contribute to building capacity for species conservation planning (KSR 17), feed in to the identification of sites of global biodiversity conservation significance (KSR 22) such as Key Biodiversity Area prioritisation, building mutually-beneficial institutional partnerships for SSC Specialist Groups and increasing the number of groups that adopt PD as a prioritisation tool (KSR 29); (2) develop or support training programmes on species conservation planning by building capacity. Capacity is developed to expand effective species conservation planning efforts throughout the SSC network and beyond and ensure that these efforts are considered valuable and accessible to all relevant parties.

**Synergy:** collaborate with and contribute to IUCN strategy and World Conservation Congress conferences to promote the uptake of PD in policy and conservation practices.

**Communicate**

Communication: communicate species conservation work, such as application of PD, best practice, PDTF achievements and activities that frame PD around evolutionary heritage as a storehouse of future benefits, and so linked to a fundamental value of biodiversity, namely the maintenance of options. This could be done through the PDTF website, social media, and other mass media avenues.

Documents review: develop and update PDTF governance documents, foundational statements, work plan and review of members to ensure continued strategic planning and progress.

**Activities and results 2019**

**Network**

Membership

i. We have a founding membership of 12 plus 2 new members.

**Communicate**

Communication

i. The PDTF website has been developed and launched (www.pdtf.org). (KSR #28)

**Acknowledgements**

We thank On the EDGE Conservation for resourcing the group and their activities, the EDGE of Existence Programme at the Zoological Society of London for facilitating meetings and sharing technical resources, and the Muséum National d’Histoire Naturelle for promoting the Task Force’s technical submission within the Convention on Biological Diversity’s negotiation process.

**Summary of activities 2019**

**Components of Species Conservation Cycle: 3/5**

| Act | 2 |
| Network | 1 |
| Communicate | 1 |

Main KSRs addressed: 26, 27, 28
Mission statement
The IUCN SSC Post-2020 Biodiversity Targets Task Force aims to provide a focus and leadership on species issues in the framework of the post-2020 Strategic Plan for Biodiversity to the Parties to the Convention on Biological Diversity (CBD), through coordination with IUCN Secretariat. The Task Force seeks to do this by collating inputs and views from across the SSC network, and providing scientific and technical expertise on species related target(s).

Projected impact for the 2017-2020 quadrennium
At the end of 2020, there will be a deeper understanding amongst CBD Parties of the importance of an ambitious target for species conservation and the challenges of meeting that within the 10 years of the 2011–2020 Strategic Plan for Biodiversity. This understanding will be reflected in a strong target for species conservation being kept in the post-2020 Strategic Plan (or Framework for Biodiversity), and with a more realistic mechanism for measuring progress, and the stronger engagement of the species conservation community, represented by SSC, in delivering this new target.

Targets for the 2017-2020 quadrennium
Plan
Policy: (1) ensure that, in 2020, any new or revised conservation targets relating to species under the CBD and associated Protocols and Multilateral Environmental Agreements (MEAs) are ambitious while achievable, practical and helpful in terms of implementation of the overall goals of the CBD. These goals are the conservation and sustainable use of biodiversity, and the fair and equitable sharing of benefits arising out of use of genetic resources; (2) work with the IUCN Secretariat to support the development of a short policy position paper framing and outlining what is needed for species conservation for the next decade, within the framework of the CBD and other MEAs/mechanism of biodiversity/living in harmony with nature (2021–2030); what will Target 12 look like post 2020?; (3) position the Assessment-Plan-Action approach for species conservation: for example, by ensuring the IUCN Red List informs and feeds into the CBD post-2020 process, as well as a mechanism for measuring conservation actions at the national level (i.e. hold CBD Parties accountable for reporting).

Act
Technical advice: work in collaboration with the IUCN Secretariat to provide scientific and technical guidance to Parties on species conservation planning and implementation.

Network
Synergy: (1) determine the views of members of the SSC on the species conservation planning targets beyond 2020, and their views on potential advice that can be provided to help with implementation of work towards any future species conservation targets. This will allow
the Task Force to identify key issues for species in the post-2020 agenda; (2) develop a road map of engagement so that the Task Force, working with IUCN Secretariat, will be ready for the major CBD milestones over the next three years.

Activities and results 2019

Plan

Policy

i. In 2019, we started work on proposed wording for a new species target, including baselines, indicators and milestones. The Task Force held a meeting in Cambridge in September 2019, which greatly facilitated the development of this comprehensive document. (KSR #26)

ii. We investigated which threats are addressed by each of the Aichi Targets to quantify which targets need most action to prevent species loss. We did so by matching threats to species, as identified by the IUCN Red List, to the Aichi targets. (KSR #26)

Act

Technical advice

i. In 2019, we provided input on IUCN’s position for the 23rd meeting of the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 23) and IUCN’s response to the Post-2020 Global Biodiversity Framework discussion paper. We also submitted an information document to the first meeting of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework (OEWG-1), and SBSTTA 23, on a new species target. (KSR #18)

Network

Synergy

i. We are monitoring the developments of proposed meetings regularly and keep an eye on any documents published on the CBD post-2020 website.

Acknowledgements

We thank the following organisations: BirdLife International, Botanic Gardens Conservation International, Conservation International, the Conservation Planning Specialist Group, EcoHealth Alliance, the Institute of Botany at the Chinese Academy of Sciences, International Institute for Environment and Development, ISPRRA (Institute for Environmental Protection and Research), the Morton Arboretum, NatureServe, SSC, SSC Mollusc Specialist Group, South African National Biodiversity Institute, UNEP WCMC, University of Brasilia, Wildlife Trust of India, Wildoceans, WWF, and Newcastle University (UK).

Summary of activities 2019

Components of Species Conservation Cycle: 3/5

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Main KSRs addressed: 18, 26

KSR: Key Species Result
Mission statement
To develop a “Green List of Species” to document and incentivise successful species conservation and recovery.

Projected impact for the 2017-2020 quadrennium
Not applicable as the product is still in development.

Targets for the 2017-2020 quadrennium
Assess
Green List: Green List criteria for species conservation actions developed and ready for implementation, including links with Green List criteria for ecosystems and protected areas.

Activities and results 2019
Assess
Green List
i. The Green List criteria framework is completed. It has been tested on 191 species from over 90 Specialist Groups with experts from 38 countries. (KSR #11)
ii. The standards document and guidelines are completed. They will be sent for IUCN membership review in early 2020. (KSR #11)
iii. The End User Survey is completed. (KSR #11)

Research activities
i. Five peer-reviewed publications have been published. (KSR #11)

Acknowledgements
We acknowledge WWF–US, NERC Knowledge Exchange Fellowship, IUCN SSC, Global Wildlife Conservation, Fondation Franklinia, Cambridge Conservation Initiative, ninety Specialist Groups and all those who helped test the framework.

Summary of activities 2019
Components of Species Conservation Cycle: 1/5
Assess 4
Main KSRs addressed: 11 KSR: Key Species Result
Plant assessment testing workshop
Photo: Barney Long/GWC

SSC Leaders Meeting discussion
Photo: Barney Long/GWC

SSC Leaders joining Green List to Planning session with CPSG
Photo: Barney Long/GWC

Task Force meeting to finalize the Standards documentation
Photo: Barney Long/GWC

SSC Leaders joining Green List to Planning session with CPSG
Photo: Barney Long/GWC

Plant assessment testing workshop
Photo: Barney Long/GWC

Task Force meeting to finalize the Standards documentation
Photo: Barney Long/GWC

Plant assessment testing workshop
Photo: Barney Long/GWC
Mission statement
No mission statement.

Targets for the 2017-2020 quadrennium
Plan

Activities and results 2019
Plan
Policy
i. The Technical Subgroup completed and published the Technical Assessment Genetic frontiers for conservation: an assessment of synthetic biology and biodiversity conservation and a companion Synthesis and key messages in May 2019. (KSR #26)

ii. The Task Force completed the draft policy and accompanying Resolution text and sent them to the IUCN Council for their edits. In its revised form it was posted and underwent two revisions through the online dialogues. (KSR #26)

iii. The Task Force planned a 2-hour session for the IUCN World Conservation Congress to discuss the Assessment and its reception by various publics. (KSR #26)

Acknowledgements
Acknowledgements of financial support from:
Federal Office of the Environment, Switzerland; Gordon & Betty Moore Foundation; Luc Hoffmann Institute and Ministry of Ecology, France.

Summary of activities 2019
Components of Species Conservation Cycle: 1/5 Plan 3
Main KSRs addressed: 26
Resolutions addressed: WCC-2016-Res-086
KSR: Key Species Result
Technical Subgroup meeting in Brazil to work on the Technical Assessment
Photo: Kent Redford

Synthetic Biology and Biodiversity Taskforce
Photo: Kent H. Redford
Mission statement
The IUCN SSC CEM Task Force on Systemic Pesticides is the response of the scientific community to concern around the impact of systemic pesticides on biodiversity and ecosystems. Its intention is to provide the definitive view of science to inform more rapid and improved decision making.

Targets for the 2017-2020 quadrennium

Assess
Research activities:

Plan
Policy: publish open letter to policy makers and regulators on use of neonicotinoid pesticides.

Network
Capacity building: hold the first workshop in Africa on neonicotinoids, organised by the South African Academy of Sciences.

Communicate
Scientific meetings:
1. We participated in an invited conference in an international symposium: Bonmatin J.M., Invited conference, ‘The use of pesticides should be critically considered’, Society of Environmental Toxicology and Chemistry (SETAC) Europe 29th Annual Meeting, Helsinki, Finland, 27 May 2019 (see https://globe.setac.org/your-science-or-my-science/). (KSR #28)

Acknowledgements

The TFSP would like to thank the Stichting Triodos Foundation (The Netherlands) for funding the Task Force on Systemic Pesticides (TFSP) as a totally independent research group, for making scientific studies possible, for their publication in open access, and for organisation of scientific meetings. The Stichting Triodos Foundation received funds from the Umwelt Stiftung Greenpeace (Germany), Pollinis (France) and the M.A.O.C. Gravin van Bylandt Stichting (The Netherlands). The funders had no role in study design, data collection and analysis, decision to publish, writing of the manuscripts, or organisation of meetings.

Summary of activities 2019

Components of Species Conservation Cycle: 2/5

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Main KSRs addressed: 23, 28, 31, 36

KSR: Key Species Result
Mission statement
To raise the profile of freshwater biodiversity through: (1) coordinating freshwater species conservation activities through the SSC, highlighting emerging patterns and ensuring that increasing attention is given to issues concerning freshwater biodiversity conservation; (2) making freshwater recommendations to the SSC based on the work of the Freshwater Conservation Committee, and ensuring that freshwater species conservation issues are well represented within the SSC and the wider IUCN; (3) assisting the SSC by providing authority and credibility in its engagement with policy processes and major freshwater related events.

Projected impact for the 2017-2020 quadrennium
By 2020, we envision that the Freshwater Conservation Committee (FCC) can provide stronger recommendations for freshwater conservation priorities, in terms of which species and regions require most urgent action, and how to link conservation action between regions through habitat connectivity. We can achieve this through mobilising the newly assimilated Red List assessment data for application to management and policy. Conservation action will be directed at selected, leading threats to freshwater ecosystems, for example, invasive species and fragmentation of habitats by dams. By working with partners such as the IUCN World Commission on Protected Areas (WCPA) Freshwater Specialist Group, we can provide guidance for better conservation of freshwater ecosystems in protected areas. By facilitating communication and collaboration between SSC Specialist Groups with a freshwater interest, and by linking this to the work of other IUCN Commissions and the Secretariat, as well as contributing to other major freshwater initiatives beyond IUCN, we can ensure that future freshwater conservation planning is more fully integrated across IUCN’s programmes. Conservation of freshwater species and habitats will be given a higher profile as a core component in wider landscape management, conservation and policy making. Freshwater conservation initiatives will be better coordinated to complement each other, rather than operating in parallel.

Targets for the 2017-2020 quadrennium
Assess
Red List: complete Red List assessments of all freshwater species targeted by IUCN for global coverage (ca. 38,300 species).
Research activities: (1) develop a programme of Conservation Evidence, documenting conservation success (e.g. what is the relationship between conservation success and protected areas, and links between biodiversity and ecosystem services/human health); (2) Ramsar site review; (3) meta-data analysis of freshwater biodiversity and dams/other infrastructure.

Plan
Planning: (1) promote the inclusion and effective management of freshwater ecosystems in protected areas and other effective area-based conservation measures (OECMs); (2) provide input into the development and implementation of the IUCN 2021–2024 Programme of Work.
Policy: (1) publish a paper on review of threats to freshwater wetlands; (2) ensure that freshwater ecosystems are better integrated into the post-2020 global biodiversity outlook.
**Act**
Conservation actions: develop projects and collaborations focused on freshwater invasive species.

**Network**
capacity building: (1) plan and run a workshop, focused on challenges, opportunities and priorities for freshwater biodiversity conservation, at the 2019 SSC Leaders’ Meeting; (2) following the freshwater workshop at the 2019 SSC Leaders’ Meeting, plan and run a cross-linked series of freshwater themed events at the 2020 World Conservation Congress, focused on challenges, opportunities, and priorities for freshwater biodiversity conservation.

Proposal development and funding: fundraising for projects/Programme Officer.

Synergy: (1) be a key partner in developing the IUCN One Programme Strategy for Freshwater Biodiversity (as defined by a white paper describing the objectives of the strategy); (2) develop and help coordinate an IUCN Freshwater Network, for sharing information and freshwater objectives, with an online mechanism for sharing information; (3) review freshwater targets and objectives of other Specialist Groups to identify areas of shared or supporting interest; (4) be a key partner in developing the new initiative, the Alliance for Freshwater Life (AFL); (5) be a key partner in a new initiative/NGO focused on fundraising for freshwater biodiversity conservation; (6) be a source of advice and coordination on freshwater activities in SSC and partners; (7) support, promote and communicate the activities of the IUCN SSC Task Force on Global Freshwater Macroinvertebrate Sampling Protocols (MSP TF). The objectives of the MSP TF are integrated into FCC reporting; the FCC will assist the MSP TF with fundraising activities over the quadrennium period; when FCC is consulted for advice by IUCN on matters relating to macroinvertebrates and freshwater ecosystem health, the FCC will consult with the MSP TF; FCC and MSP TF will collaborate in the production of key papers/reports that relate macroinvertebrate biodiversity to freshwater ecosystem health.

**Technical advice:** collaborate with Indianapolis Zoo in determining the functions of the Freshwater Officer position in the newly forming Global Centre for Species Survival.

**Communicate**
Communication: (1) create a list of ‘25 top species’ – representative across taxonomic groups and regions – that highlight some of the main issues associated with freshwater ecosystem conservation; (2) establish effective outreach and communications; (3) assist the BBC Natural History Unit in development of freshwater stories for their Planet Earth III series.

**Activities and results 2019**

**Assess**

**Red List**


Research activities

I. Development of a programme of Conservation Evidence: No significant progress on this activity thus far, since it is dependent on funding to develop this programme. As previously noted, Co-Chair Topis Contreras MacBeath had a discussion with Bill Sutherland from Cambridge about developing a Conservation Evidence review for freshwater fishes, and Bill is keen to do this on fishes, but it would require a postdoc. Bill’s standard rate for a postdoc over 3 years is about US$ 90,000. Topis was preparing a funding proposal for the project, but thus far we have not found support. FCC member Phil Boon, who is Chief Freshwater Editor for Aquatic Conservation: Marine and Freshwater Ecosystems, has stated that the journal is interested in publishing short accounts of “conservation success.” (KSR #32)

Plan

Planning

I. FCC members have provided recommendations on the IUCN Programme of Work as it has been developed. But, most importantly, a large number of members attended a session on the Programme during the 2019 SSC Leaders’ Meeting in Abu Dhabi and made recommendations for strengthening the freshwater component of the programme. Specific written recommendations were then supplied to the IUCN Secretariat in follow up, and additional comments were provided on the draft circulated in 2020. Once the 2021–2024 Programme of Work is finalised, the FCC will review what aspects of our work are priorities in terms of contributing directly to the Target impacts for the Freshwater area programme. (KSR #14, 21, 29)

II. Co-Chair Topis Contreras MacBeath and Committee member Harmony Patricio (who is also Co-Chair of the WCPA Freshwater Specialist Group) attended a Workshop on Transboundary Protected Area Research and Management Cooperation, and the 2019 International Alliance of Protected Areas Annual Meeting in China in July 2019; they discussed freshwater ecosystems in protected areas. Patricio has a plan to do a meta-analysis of protected areas and their coverage of freshwater ecosystems. The FCC’s work on this target is likely to be a focus of action for the 2021–24 quadrennium. (KSR #26)

Policy

I. No progress in the publication of a paper on a review of threats to freshwater wetlands. The paper is less of a priority now, following the publication of Reid, A.J. et al. (2018). Emerging threats and persistent conservation challenges for freshwater biodiversity. Biological Reviews 94:849–873. [DOI: 10.1111/brv.12480]. However, the data in an initial survey compiled by Committee member Richard Lansdown will be very useful for informing future work of the Committee, and for future publications. (KSR #26)

II. Our engagement in planning for the Post-2020 Global Biodiversity Framework has been one of the priorities for the FCC in 2019. FCC members have contributed feedback to the IUCN Global Species Programme’s request for comments on Convention on Biological Diversity (CBD) documents. This included comments on CBD’s (24 January 2019) Synthesis of Views of Parties and Observers on the Scope and Content of the Post-2020 Global Biodiversity Framework, where CBD recognises (page 14)
that freshwater ecosystems and the conservation and wise use of wetlands were gaps in the 2011–2020 Strategic Plan, as well as comments on CBD’s Post-2020 Global Biodiversity Framework: Discussion Paper (no reference to freshwater/inland waters). IUCN compiled its response to the discussion papers and FCC provided input. IUCN’s response documents to the feedback (available at https://www.iucn.org/sites/dev/files/iucn_response_cbd_post_2020_part_1_issues_and_questions_for_discussion_12_april_2019_final.pdf and https://www.iucn.org/sites/dev/files/iucn_response_cbd_post_2020_part_2_target_formulations_and_topics_12_april_2019_final.pdf) included, in Part 2, 15 recommendations on freshwater, including the statement “Far more emphasis needs to be placed on the importance of conserving freshwater biodiversity post-2020, given that a sustainable future depends upon targeted actions for conservation of inland waters.” FCC members also provided specific feedback on how the existing Aichi targets should be edited and adapted for the Post-2020 Framework; this was done within the FCC and transited to IUCN, and at plenary sessions at the 2019 SSC Leaders’ Meeting. CBD subsequently produced their Zero Draft of the Post-2020 Framework and, starting in late 2019, UN Water led a consultative process to provide feedback on this document. Co-Chair Harrison was part of the working group involved in this process and the resulting document "UN-Water input on Freshwater-Biodiversity Linkages: Response to the Zero-Draft Document from the Open-Ended Working Group on the Post-2020 Global Biodiversity Framework;" includes several recommendations for inclusion of freshwater systems in the Zero Draft Goals and Targets. (KSR #7, 26)

**Act**

**Conservation actions**

i. Committee members have worked with the new initiative ‘Freshwater Life’ (https://fwlife.org/), that is focused on the removal of freshwater invasive species and restoration of ecosystems. FCC Co-Chair Ian Harrison has assisted Freshwater Life in seeking funding opportunities, providing contact to at least one funding organisation. FCC member Harmony Patricio was Chief Scientist for Freshwater Life and has worked with FCC Co-Chair Topis Contreras MacBeath in developing a project (now funded by National Geographic and the Mohamed bin Zayed Species Conservation Fund) on eradicating invasive trout and carp from lakes in Lagunas de Zempoala National Park, Mexico, which is home to an endangered species of salamander, the Zempoala Axolotl. FCC Co-Chairs have worked with the Invasive Species Specialist Group, Post-2020 Biodiversity Targets Task Force, IUCN Global Species Programme, and CBD in planning a session on ‘Global Invasive Alien Species Target for the Post-2020 Global Biodiversity Framework’, for the 2020 World Conservation Congress. (KSR #31)

**Network**

**Capacity building**

i. Input to the Fourth SSC Leaders’ Meeting, and the SSC Steering Committee that preceded it, was an important activity for the FCC. While at the SSC Leaders’ Meeting, the FCC spent one day in an internal meeting reviewing its own work, and the afternoon of another day sharing discussions with other SSC members. FCC members also contributed to sessions focused on the CBD Post-2020 Global Biodiversity Framework and the IUCN 2021–2024 Programme of Work, with a view to ensuring that freshwater ecosystems are adequately included in both. Our inputs to both of these processes were constructive and the IUCN Programme of Work now includes better representation of freshwater ecosystems. (KSR #18)

ii. Our engagement in planning for the World Conservation Congress has been one of the main areas of activity for the FCC in 2019. FCC members have contributed as lead, or as collaborators, to planning the following six Forum sessions: ‘Opening Plenary: Our Freshwater Global Risk – Taking Actions to Reverse the Trend’, ‘A cascade of benefits from healthy freshwaters’, ‘Protecting aquascapes: integrating freshwater, estuarine and marine conservation’, ‘Improving Protected Area designation, management and design for freshwater biodiversity’, ‘Global Invasive Alien Species Target for the Post-2020 Global Biodiversity Framework’, ‘Scaling up – expanding action on the global crisis facing freshwater biodiversity’. Co-Chair Harrison is also part of the Planning Committee for the Freshwater Theme events. FCC members have also provided input to the development of the following four Motions: 009 – Protecting rivers and their associated ecosystems as corridors in a changing climate; 013 – Protection of Andes-Amazon rivers of Peru: the Marañón, Ucayali, Huallaga and Amazonas, from large-scale infrastructure projects; 014 – Aquatic biodiversity conservation of shallow...
Synergy

i. The plan for developing the IUCN One Programme Strategy for Freshwater Biodiversity Conservation is being managed by IUCN Water. However, administrative changes within IUCN Water in 2018 slowed the process down, and the Strategy document for developing the plan has not been prepared. Co-Chairs Contreras MacBeath and Harrison remain in communication with IUCN Water about the One Programme Strategy for Freshwater Biodiversity Conservation. IUCN Water has stated their continued interest in advancing this agenda when they have greater capacity. In the interim, FCC members have integrated some of the objectives of the One Programme Strategy for Freshwater Biodiversity Conservation into their recommendations for the IUCN 2021–2024 Programme of Work, as well as recommendations made for the Zero Draft of the Post-2020 Global Biodiversity Framework. (KSR #29)

ii. IUCN Freshwater Network: Committee members assimilated a list of Specialist Groups, Committees and Task Forces within the IUCN Commissions that have an interest in freshwater. In April 2019, an email was sent out (initially focusing mainly on SSC) to the Specialist Groups, Committees and Task Forces requesting some general information about their types of activities and priorities for freshwater species and systems. However, information has not been fully compiled thus far, in order to assess areas of shared interests and objectives and possible collaborations. Developing these actions further, in order to initiate an IUCN Freshwater Network, should be a priority for the FCC. (KSR #29)

iii. Both Co-Chairs and some other members of the Freshwater Conservation Committee have been closely involved with the development of the Alliance for Freshwater Life (AFL). Committee members assisted in submitting a proposal (accepted) for a session on ‘The Alliance for Freshwater Life – fostering multidisciplinary freshwater research on local to global scales’ for the 2019 Annual Meeting of the Society for Freshwater Science. Committee members have also assisted in preparation of documents for the Alliance, including a promotional brochure for the Alliance; a Memorandum of Understanding Among Parties of the Alliance for Freshwater Life; a ‘Declaration’ of objectives of the Alliance, to send to potential funders; and Terms of Reference/Job Description for a Director position for the Alliance. Committee members have also planned an Alliance Forum session (‘Scaling up – expanding action on the global crisis facing freshwater biodiversity’) for the 2020 World Conservation Congress. (KSR #29)

iv. Shoal initiative: The mission of Shoal is to engage a wide range of organisations to accelerate and escalate action to save the most threatened fish and other freshwater species. Co-Chair Harrison attended the Shoal partnership launch in London in March 2019. Committee members have provided feedback on potential projects (on freshwater ecosystems, fishes and freshwater plants) that could be prioritised by Shoal. Co-Chair Harrison attended a meeting with Shoal and the Albuquerque BioPark, in July 2019, to discuss areas of collaboration between the BioPark, Shoal, the FCC and the SSC Freshwater Fish Specialist Group. (KSR #29)

Technical advice

i. FCC members discussed the Freshwater position with Dr. Rob Shumaker, president of the Indianapolis Zoological Society, at the SSC Leaders’ Meeting, outlining areas of work where the FCC and the Global Centre for Species Survival might have complementary interests and needs. The FCC’s focus on this target will become more important once the position is advertised and filled. (KSR #14, 29)

Communicate

Communication

i. A grant proposal has been developed to create a list of ‘25 top species’, but no funding has yet been received. (KSR #28)

ii. FCC members have worked individually on publications, and a few members have collaborated on publications (e.g. in 2019, some members collaborated on the article ‘Bending the Curve of Global Freshwater Biodiversity Loss: An Emergency Recovery Plan’ by Tickner et al., that will be published in 2020), but there have been no substantial joint publications of the FCC. This is something that Co-Chairs Contreras MacBeath and Harrison would like to address. The FCC has been running a Twitter account since 2014; it has 738 followers, but...
the Committee still needs to develop its own website and Facebook page. As noted previously, Co-Chair Contreras MacBeath spoke in 2019 with Sean Southey, Chair of the IUCN Commission on Education and Communication (CEC), who is willing to help us. (KSR #28)

iii. FCC consulted internally and with colleagues in freshwater focused SSC Specialist Groups and drew up a list of just under 100 possible freshwater story topics that have been suggested to the BBC Natural History Unit to develop as freshwater stories for their Planet Earth III series. This Unit is now following up on some of them. (KSR #28)

Acknowledgements
We are grateful to Synchronicity Earth and Conservation International for providing support for Co-Chair Ian Harrison to work on Committee activities. We are grateful to administrative assistance and advice from Rachel Roberts, SSC Director of Oversight and Conservation Outcomes. We would also like to thank the International Alliance for Protected Areas for sponsoring a workshop on Freshwater Protected Areas in Inner Mongolia (2019), with the participation of Topis Contreras and Harmony Patricio. Also National Geographic and the Mohamed bin Zayed Species Conservation Fund for supporting our invasive species work. We are also very grateful to the Albuquerque Biopark for hosting and funding two workshops where freshwater fishes from Mexico (526) and Central America (200) were assessed. The Biopark has also provided fulltime funding for Tim Lyons, who has compiled data and prepared assessments.

Summary of activities 2019
Components of Species Conservation Cycle: 5/5

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Main KSRs addressed: 1, 7, 14, 18, 21, 28, 29, 31, 32
Resolutions addressed: WCC-2016-Res-062, WCC-2016-Res-086

KSR: Key Species Result
Mission statement
The mission of the Invertebrate Conservation Committee (ICC) is to foster the conservation of terrestrial and freshwater invertebrates and their habitats around the world. We assess their conservation status, raise awareness and engage in practical conservation of these most species-rich taxonomic groups on Earth.

Projected impact for the 2017-2020 quadrennium
Our work will help to increase the taxonomic diversity represented in the IUCN SSC. The higher number of Red List assessments and new Specialist Groups will help to instigate new conservation actions for invertebrate species.

Targets for the 2017-2020 quadrennium

Assess
Red List: add 500 charismatic invertebrate species to the IUCN Red List.
Research activities: (1) develop monitoring standards for selected groups of invertebrates; (2) write publication on closing knowledge gaps in invertebrates.

Network
Capacity building: meet with invertebrate Specialist Group Chairs and Red List Authority (RLA) coordinators.
Membership: increase the number of invertebrate Specialist Groups (N=15).

Communicate
Communication: (1) produce guidelines for Invertebrate Conservation in Protected Areas; (2) publish a roadmap on insect conservation; (3) publish a ‘Scientists Warning’ on insect declines; (4) publish a ‘Solutions’ paper on insect declines.

Activities and results 2019

Assess
Research activities
i. A revised version of a manuscript on closing knowledge gaps in invertebrates has been submitted to the journal Conservation Biology. (KSR #43)

Network
Capacity building
i. A meeting with IUCN SSC Chairs and RLA coordinators of invertebrate Specialist Groups was held during the 2019 SSC Leaders’ Meeting in Abu Dhabi.

Membership
i. Discussions are ongoing regarding the establishment of Specialist Groups for ants, ground beetles, saproxylic beetles, dung beetles, wild bees and soil fauna.

Communicate
Communication
i. Draft contents of the ‘Guidelines for Invertebrate Conservation in Protected Areas’ are completed, but there has been no progress so far due to lack of time. (KSR #28)
A paper outlining a roadmap on insect conservation has been accepted for publication in *Nature Ecology and Evolution*: Harvey, J.A., Heinen, R., Armbrrecht, I. et al. ‘International scientists formulate a roadmap for insect conservation and recovery on an international roadmap to insect conservation’. The article will appear in 2020. (KSR #43)

A paper by Cardoso, P., Barton, P.S., Birkhofer, K. et al. ‘Scientists’ warning to humanity on insect extinctions’ has been accepted for publication in *Biological Conservation*. The article will appear in 2020. (KSR #43)

A paper by Samways, M.J., Barton, P.S., Birkhofer, K. et al. ‘Solutions for humanity on how to conserve insects’ has been accepted for publication in *Biological Conservation*. The article will appear in 2020. (KSR #43)

**Acknowledgements**

We thank The IUCN-Toyota Red List Partnership for funding of invertebrate Red List assessments. Furthermore, we are grateful to the Mohamed bin Zayed Species Conservation Fund for constant support of invertebrate conservation projects by IUCN SSC Invertebrate Specialist Groups.

**Summary of activities 2019**

Components of Species Conservation Cycle: 3/5

- **Assess**: 1
- **Network**: 2
- **Communicate**: 4

Main KSRs addressed: 28, 43

KSR: Key Species Result
Mission statement
The mission of the IUCN SSC Marine Conservation Committee is to support, connect and promote expertise in marine species conservation. Its mandate is to ensure that decisions taken on the future of marine species are directed at long-term population health and based on sound technical knowledge. Specifically, it helps and links volunteer experts from the IUCN Species Survival Commission’s (SSC) network who have special knowledge of particular taxa or of cross-cutting concerns. It also advocates the use of SSC marine knowledge and skills in the broad global community, particularly by policy makers and resource managers.

Projected impact for the 2017-2020 quadrennium
The SSC Marine Conservation Committee (MCC) acts to support, connect and mobilise expertise in marine species conservation to secure a healthy ocean. We make a difference by encouraging and advancing SSC excellence in marine taxa and issues, energising IUCN’s engagement with the ocean, and ensuring SSC marine expertise is put into service effectively around the world. The MCC assists SSC Specialist Groups, stand-alone Red List Authorities and Task Forces to meet their Assess-Plan-Act objectives. We are particularly determined that the World Conservation Congress theme of Restoring Ocean Health will mark real change. The MCC is also energetically promoting far better coverage of ocean concerns in the post-2020 Biodiversity Targets. A key focus of the MCC is to develop tools and approaches to connect SSC expertise with management and policy initiatives globally.

Targets for the 2017-2020 quadrennium

Plan
Planning: ensure that the Marine Conservation Committee (MCC) is working effectively.

Act
Policy: promote and mobilise SSC marine expertise to advance ocean conservation globally.

Network
Policy: (1) advance IUCN capacity for marine conservation; (2) support and enhance SSC marine expertise.

Activities and results 2019

Plan
Planning
i. We held seven virtual meetings of the MCC, each lasting two hours, and one in-person meeting during the IUCN SSC Steering Committee meeting in Abu Dhabi. (KSR #29)
ii. We collaborated with the Conservation Planning Specialist Group to develop SSC planning initiatives. (KSR #15)

Act
Policy
i. The MCC provided briefings for the IUCN process for the new Biodiversity Targets post-2020. (KSR #26)
ii. We provided a post hoc review of a long report submitted directly to the Convention on Biological Diversity by the Commission on Ecosystem Management’s Fisheries Expert Group about Aichi Target 6. (KSR #26)
iii. The MCC drafted a new Aichi Target 6 for the post-2020 Global Biodiversity targets. (KSR #26)
iv. The MCC was deeply involved with and/or endorsed the following event proposals for IUCN WCC: (a) Conservation Planning Specialist Group (CPGS), (b) deep sea conservation, (c) equitable approach to Marine Protected Areas (led by the IUCN Commission on Ecological, Economic and Social Policy’s People and the Ocean Specialist Group, which supported most of our MCC proposals cross-Commission). (KSR #26)

Synergy

i. We organised and hosted two-hour Zoom discussions with marine Specialist Group Chairs (or their delegates) on the following topics: (a) funding meeting led by Jon Paul Rodriguez, IUCN SSC Chair, Nahomy De Andrade, Partnerships and Grants Officer, Olivier Hasinger, SSC Network Coordinator and Kira Mileham, Director of Strategic Partnerships; (b) Strategic Action Planning meeting led by Onnie Byers, Chair of the Conservation Planning Specialist Group, and Jamie Copsey, Director of Training; (c) Climate Change discussion led by Wendy Foden, Chair of the Climate Change Specialist Group.

ii. We assisted Co-Chairs of the Snapper, Seabream and Grunt Specialist Group to develop a briefing document that should help attract funds for their Specialist Group.

iii. We helped connect marine Specialist Groups on matters of common interest, through emails and calls.

iv. We connected people and acted as a marine hub at the SSC Leaders’ Meeting in Abu Dhabi. (KSR #29)

v. The MCC hosted a marine-related Specialist Group discussion/workshop at the SSC Leaders’ Meeting in Abu Dhabi. (KSR #29)

vi. The MCC Chair met with IUCN World Commission on Protected Areas Climate Change Specialist Group.

Communicate

Communication

i. We continue to develop and improve on the IUCN SSC MCC website. (KSR #28)

ii. We maintain a social media presence for the MCC on Twitter with over 450 followers and over 400 tweets. (KSR #28)

iii. We drafted two logos for the IUCN SSC MCC.

iv. We produced a banner for the MCC for the IUCN SSC Leaders’ Meeting. (KSR #28)

Acknowledgements

The SSC Marine Conservation Committee thanks the SSC Chair’s Office and the IUCN Global Species Programme for their support, with particular gratitude to Jon Paul Rodriguez, Rachel Hoffmann and Olivier Hasinger. The MCC operates from the Chair’s institution at the University of British Columbia, which funds her salary as a professor and other benefits. The Chair is also grateful to Guylian Belgian Chocolates and the Langar Foundation for their long-standing support for her Project Seahorse team’s conservation activities, including some assistance to the MCC. We also thank Lily Stanton very much for her wonderful support work that helps power the MCC.

Summary of activities 2019

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KSR: Key Species Result
Mission statement
The IUCN SSC Plant Conservation Committee (PCC) leads IUCN’s efforts in stemming the loss of global plant diversity through its wide-ranging network of plant conservationists. The PCC is responsible for advising and assisting on the overall prioritisation and programme oversight within the SSC to deliver on its plant conservation responsibilities. The PCC works to support and facilitate the activities of the SSC Chair, the IUCN Global Species Programme, and the expert volunteer network of Specialist Groups, Red List Authorities, Task Forces and others, providing overall strategic guidance and direction in accordance with the mandate of the SSC.

Projected impact for the 2017-2020 quadrennium
The Plant Conservation Committee aims to achieve the following outputs by 2020:
(1) barometer of life targets achieved for plants (38,000 plants included on the IUCN Red List); (2) guidelines on including plant diversity in action plans and sector based plans developed; (3) *ex situ* conservation of plants promoted by involving botanic gardens in conservation and support of IUCN SSC Groups; (4) each IUCN SSC Specialist Group has a sustainable use focus; (5) quantifiable targets related to plant diversity incorporated into the post-2020 global biodiversity framework.

Targets for the 2017-2020 quadrennium
Assess
Green List: test the Green List for Cycads, Kew Caribbean plants, Cacti, and sample Global Tree Campaign Species.
Red List: (1) manage and drive assessments forward in 13 megadiverse countries (US, Mexico, Colombia, Brazil, Ecuador, Peru, South Africa, Ethiopia, Madagascar, India, Indonesia, China, Australia); (2) champion Red List assessment of CITES-listed plants (those affected by trade, not look-alike): identify the gaps, encourage Specialist Groups to prioritise assessments; (3) assess conservation status of species important to livelihoods (Plants for People/PAP species prioritised) in order to support conservation action, such as species conservation action plans, national strategies, etc.; (4) develop a system for automating Least Concern assessments for plants, that includes: (i) clearly defined thresholds for what qualifies as Least Concern, e.g. minimum extent of occurrence (EOO) and number of countries, (ii) determine how habitat information can be automatically brought in and test different spatial ecosystem classification systems, e.g. ecosystem assessment for South America, WWF ecoregions, etc., (iii) determine what land cover layers are best used to determine level of habitat loss, (iv) determine thresholds of habitat loss that mean a species cannot qualify as Least Concern; (5) prioritise Crop Wild Relative (CWR) assessments in hotspots, e.g. Indonesia (underway with Crop Wild Relative Specialist Group; Global Trees to build it in through David Gill), investigate working on Crop Wild Relatives in Brazil with the Brazilian Agricultural Research Corporation (EMBRAPA) and in Ethiopia; (6) develop an information system to automate Least Concern assessments that is compatible with SIS Connect; (7) develop a protocol for producing semi-automated Least Concern assessments approved and signed off by the Red List Committee; (8) determine timelines for production of Least Concern assessments and determine feasibility of conducting global plant assessments.
Plan

Policy: (1) produce a policy brief on Crop Wild Relatives (CWR) and their role in adaptation to climate change, and consider turning this into a resolution for the IUCN World Conservation Congress (WCC); (2) champion/support piloting of the FairWild Standard and certification for high risk CITES-listed species, and summarise the case study at the relevant CITES events (in particular as relevant to livelihoods and incentives agenda items); (3) develop the next iteration of the Global Strategy for Plant Conservation that incorporates the views and aspirations of the entire plant conservation community (not just the ex situ community), develop better indicators for the post-2020 global biodiversity targets, and develop tools and data services for conservation practitioners and policymakers, including Convention on Biological Diversity (CBD) national focal points.

Research activities: (1) hotspot regions (Indonesia, Brazil, South Africa, Madagascar, Colombia) to list Alliance for Zero Extinction (AZE) sites for plants (once on the Red List); (2) hotspot regions (Indonesia, Brazil, South Africa, Madagascar, Colombia) where possible to identify Key Biodiversity Areas (KBAs) for plants (once on the Red List).

Act

Conservation actions: (1) ensure that use and trade of plants is reflected in the work of Specialist Groups as/when appropriate, including to request plant Specialist Groups integrate species use and trade in their work, in particular for the new Specialist Groups; (2) champion the use of the Plant Sustainable Use guidelines by expanding the use of the FairWild Standard and its certification scheme as a recognised international best practice for sustainable harvest and trade in wild plants.

Network

Capacity building: (1) support Specialist Groups to achieve the assessments committed to in the IUCN Species Strategic Plan, through having one-on-one skype calls with each group and emailing them to encourage progress; encourage them to submit in new languages allowed on the Red List; provide training and reviews of assessments where needed; (2) encourage students to conduct assessments at selected universities where a champion lecturer is able to both teach assessment methodology and review assessments produced.

Synergy: (1) map where we have Specialist Groups and if they have links to Botanical Gardens, and post survey of groups; (2) produce case studies on good relationships between Botanic Gardens and Specialist Groups (that include both examples of re-introductions and ex situ work); (3) at least two new formal partnerships in place by next meeting; (4) facilitate the identification and engagement of plant Specialist Groups, designate CITES focal points with IUCN Global Species Programme (GSP) and SSC and work together to: (i) review plant Specialist Group engagement with CITES in 2017–18 and report back to PCC, (ii) make Specialist Groups aware of the usefulness of the application of the CITES Non-detriment Findings Guidance for Perennial Plants (the nine-steps methodology) for relevant taxa, (iii) identify how to flag priority issues to the Specialist Groups prior to particular CITES events; (iv) identify Specialist Group members who are involved with wildlife trade discussions and ask how to best support them in strengthening the arguments for plant trade in the international wildlife trade discussions, (v) encourage plant Specialist Groups to contribute to the CITES and livelihoods item, including responding to the current call for case studies on CITES and livelihoods, and also the CITES Rural communities process. Specifically, some of the potential case studies include: Palms; Medicinal plants; FairWild; Madagascar CITES species (ornamental); Central African ebonies—Taylor guitars (check with George Schatz).

Activities and results 2019

Assess

Green List

i. Little progress has been made on testing the Green List for plants due to limited time and funding availability. (KSR #11)

Red List

i. Active Red Listing work is taking place in South Africa, Madagascar, Colombia, Brazil, Indonesia, China and the US. During this quadrennium, South Africa has assessed 2,900 plants for National Red Listing work, of which 1,000 species will be submitted to IUCN before the end of 2020. A total of 2,293 plant species were published for Madagascar between 2016 and 2019. A further 1,649 were published for Indonesia, 2,585 for Brazil, 2,244 for Colombia, 2,268 for Mexico, 1,604 for China and 1,551 for the US. (KSR #1)

ii. Kew has developed a ‘Rapid Least Concern’ tool to automate the generation of required data for Least Concern assessments. User can do an assessment, one at a time or run batches of species. See: https://spbachman.shinyapps.io/rapidLC/. (KSR #1)

iii. The Kew Rapid Least Concern tool has been used to generate assessments which have been sent to the IUCN Red List and have been published. Furthermore, over 10,000 Least Concern species have been published. Furthermore, over 10,000 Least Concern species have been published.
Concern assessments have been rapidly generated for the Global Tree Assessment and have been successfully published on the IUCN Red List. (KSR #1)

iv. The process for automating Least Concern Assessments has been checked by the Red List Committee’s Technical Working Group and a protocol has been developed for the Red List Committee for their endorsement and use for other taxonomic groups. (KSR #6)

v. The number of plants on the IUCN Red List has more than doubled with 20,797 added since 2016, bringing the total number of assessments to 40,468 by the end of 2019 and ensuring the plant target for the Barometer of Life of 38,000 plants has been met. Despite this significant increase in the rate of plant assessments, a global assessment of over 360,000 taxa will not be feasible in the next decade. Instead, an assessment of all the World’s Trees (ca. 60,000 species) is underway and a global assessment of the Legume family (ca. 28,000 species) is currently being considered. (KSR #1)

vi. Assessment of Crop Wild Relatives has been prioritised, in hotspots where these species are concentrated, and includes assessments of species in the Mesoamericas; in Madagascar all Yams (Dioscorea and Tacca) species have been assessed; Indonesia has conducted assessments of Crop Wild Relative tree species; while Kew has funded a Wallacea Project, which will include Red List assessments for Crop Wild Relatives of the Lessa Sunda Islands. (KSR #1)

vii. Members of the Plant Conservation Committee have championed conducting Red List assessment of the CITES-listed plants. For example, Brazil assessed the risk of extinction of 96 species that are cited in Appendix II of CITES. The 96 species consist of four Dalbergia species (Fabaceae), eight Cactaceae species, and 84 Orchidaceae species. South Africa has completed an assessment of succulent species threatened by international trade and has selected a number of these species for inclusion on CITES appendices. (KSR #1)

viii. A project on Mesoamerican Crop Wild Relatives (CWR), financed by the Darwin Initiative, has been ongoing since the last semester of 2016 and was completed in 2019. The efforts have been led by IUCN, with the coordination of the University of Birmingham and CONABIO in Mexico, and with the participation of Mexico, El Salvador, Guatemala and Honduras. This effort has permitted the study of CWR of 251 taxa of several economically, biologically and culturally important crops. (KSR #1)

Plan Policy

i. A policy brief on Crop Wild Relatives has been drafted by the team working on the Darwin Initiative project funded for the conservation of Mesoamerican Crop Wild Relatives in 2019. This policy will be further refined during 2020 with inputs from members of the Crop Wild Relative Specialist Group and the Crop Trust. Once completed, it will be published as an IUCN guidance document. (KSR #42)

ii. A process to explore voluntary certification standards (VCS) and how these can assist to the implementation of CITES requirements for Appendix II listed medicinal and aromatic plants is under development. During 2019, work was conducted to develop the overall concept of how the voluntary certification standards (VCS) can assist to the implementation of CITES requirements for Appendix II listed medicinal and aromatic plants; this was discussed at the Plants Committee, and at a stakeholder workshop. Plans are in place to take this to the 18th meeting of the Conference of the Parties to CITES (CoP18; see https://www.traffic.org/news/making-cites-work-for-wild-medicinal-and-aromatic-plants/). Among the priority potential species on Appendix II are Euphorbia antisipillitica, Prunus africana, Agarwoods (Aquilaria spp.), Aloe ferox, as well other non-CITES listed species (e.g. Boswellia spp.). (KSR #26)

Research activities

i. During 2019, work by members of the PCC was undertaken to identify Alliance for Zero Extinction sites (AZEs) for plants focused on plant hotspot regions. Kew implemented a project to identify plant based AZEs in Madagascar. South Africa completed an assessment of AZE sites as part of comprehensive assessment of Key Biodiversity Areas. (KSR #22)

ii. The identification of Key Biodiversity Areas (KBAs) in hotspots has been prioritised by the PCC. In Colombia, a project funded by the Critical Ecosystem Partnership Fund (CEPF) has identified KBAs in the Andes using data from Bromeliaceae and Ericaceae. Madagascar KBAs have been identified with funding from CEPF. South Africa has completed a nationwide systematic assessment of all KBAs; plants were the key triggers for the identification of KBAs, with 88% of KBAs being triggered due to the presence of threatened or restricted range plants. (KSR #22)
Act
Conservation actions
i. There has been ongoing discussion with Plant Specialist Groups to include sustainable use and trade issues as part of their activities. We are likely to see the results of this encouragement only during the next quadrennium, as these changes take some time to be implemented. (KSR #36)

ii. TRAFFIC, IUCN SSC Medicinal Plant Specialist Group and other partners initiated a project in Nepal on piloting FairWild certification of CITES Appendix II-listed Nardostachys jatamansi (see https://www.traffic.org/news/succeeding-with-cites-new-project-aims-to-promote-sustainable-wild-jatamansi-trade-from-nepal/). South Africa is in the process of piloting the Fairwild standard to develop a legislated management plan for five medicinal plants in the eastern parts of South Africa. (KSR #36)

Network
Capacity building
i. Capacity development has been ongoing to the plant conservation network. University students in Madagascar, Colombia, and at various universities in Europe have been trained to use the IUCN Red List Categories and Criteria. During 2019, all plant Specialist Group Chairs and Red List Authority Coordinators met in October at the SSC Leaders’ Meeting and lesson exchange took place; furthermore, two new plant groups were established: the Plants of Turkey Stand Alone Red List Authority and the Western Ghats Plant Specialist Group. (KSR #5)

ii. Ongoing Red List training support has been provided to all plant Specialist Groups; specifically, all leaders of plant Specialist Groups and Red List Authority Coordinators met in October 2019 at the SSC Leaders’ Meeting. (KSR #1)

Synergy
i. In order to provide more support to Plant Specialist Groups, the PCC is working to ensure as many groups can be hosted supported by a Botanic Garden. In order to assess the status quo, a survey was sent out before SSC Leaders’ Meeting in late 2019 and good response was received. This identified where there are already good partnerships in place, and which Specialist Groups are keen for closer partnerships. (KSR #29)

ii. Case studies of good example of partnerships between Botanic Gardens and Specialist Groups exist for the Cactus and Succulent Plants Specialist Group, the Medicinal Plant Specialist Group, and the Cycad Specialist Group. These are being written up and will be placed on the Botanic Gardens Conservation International website to inspire other botanical gardens to come forward as hosts. (KSR #29)

iii. We aim to set up new partnerships for at least two Specialist Groups before the end of 2020. (KSR #29)

iv. The PCC has proposed that a sub-group of the Sustainable Use and Livelihoods Specialist Group (SULi) is formed that focuses on plants trade and use issues (see e.g. https://www.cites.org/eng/news/cites-further-recognized-as-a-crucial-conservation-tool-that-benefits-wildlife-conservation-and-livelihoods-of-rural-communities_08112018). This group will be established during 2020 and will work on promoting plant sustainable use issues during the upcoming 2020–2024 quadrennium. (KSR #26)

Acknowledgements
We thank the IUCN SSC for providing funding to support the meetings of the Plant Conservation Committee.

Summary of activities 2019

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Main KSRs addressed: 1, 5, 6, 11, 22, 26, 29, 36, 42

KSR: Key Species Result
Mission statement
Provide information and analyses on the status, trends and threats to species in order to inform and catalyse action for biodiversity conservation.

Projected impact for the 2017-2020 quadrennium
The goal of the IUCN Red List of Threatened Species is to provide information and analyses on the status, trends and threats to species in order to inform and catalyse action for biodiversity conservation.

This goal includes the ‘traditional’ role of the IUCN Red List in identifying particular species at risk of extinction. While the role of the IUCN Red List in underpinning priority-setting processes for single species remains of critical importance, the goal has been expanded to encompass the use of data from the IUCN Red List for multi-species analyses in order to identify and monitor trends in species status and to catalyse appropriate conservation action.

To achieve this goal, the IUCN Red List has three main objectives:
(1) To establish a baseline from which to monitor the change in status of species;
(2) To provide a global context for the establishment of conservation priorities at the local level;
(3) To monitor, on a continuing basis, the status of a representative selection of species (as biodiversity indicators) that cover all the major ecosystems of the world.

With these objectives in mind, the IUCN Red List Committee (RLC) sets forth ten key strategic results as its measures of success and which it aims to achieve by year 2020:
(1) IUCN Red List taxonomic and geographic coverage is expanded to achieve the Barometer of Life target of 160,000 species assessed;
(2) More IUCN Red List Assessments are prepared at national and, where appropriate, at regional scales;
(3) The IUCN Red List Index is widely used as an effective biodiversity indicator;
(4) The IUCN Red List is a scientifically rigorous tool for conservation;
(5) IUCN Red Listing capacity is built through expanded training programmes;
(6) The IUCN Red List is underpinned by cutting-edge information management technologies;
(7) The IUCN Red List is used effectively to inform policy and action;
(8) The IUCN Red List is widely communicated and recognised;
(9) The IUCN Red List is sufficiently and sustainably financed;
(10) Strategic oversight is provided to the IUCN Red List.

Targets for the 2017-2020 quadrennium
Assess
Green List: implement processes for documenting conservation success (‘green listing’).
Red List: (1) complete global comprehensive assessments for 58,836 taxa; (2) complete global non-comprehensive assessments for 56,434 taxa; (3) complete global sampled assessments for 15,765 taxa; (4) conduct core reassessments for long-term indicator groups (mammals, birds, amphibians, corals, cycads, conifers), totalling 25,790 taxa; (5) complete comprehensive reassessments to produce Red List Indices for key new indicator taxa, focusing on marine, freshwater and invertebrate taxa, totalling 3,728 taxa; (6) undertake reassessments for selected regions where appropriate policy or implementation mechanisms, adequate funding and capacity exist (e.g. Europe, Africa),
IUCN Species Annual Report 2019

Activities and results 2019

Assess

Green List

i. The Green List standards and guidelines have been developed and a framework paper has been published, testing this approach for ~200 species covering a wide range of realms and taxa. Other organisations are being helped to test this approach, including National Geographic, US Fish and Wildlife Service, etc. More work is needed to prioritise all unresolved issues in the Green List of species standards, add marine species to the testing, complete end-user surveys and incorporate in communication, development links to conservation planning, seek RLC and SSC feedback. There are plans to launch the Green List standards at the IUCN World Conservation Congress 2020. (KSR #11)

Red List

i. Global comprehensive assessments: Progress has been made on completing the global reptile assessment, and most of the freshwater fish assessment; good progress was made on plant and invertebrate groups funded by The IUCN-Toyota Red List Partnership. A number of freshwater and terrestrial invertebrate groups have not progressed due to lack of funding. Total 35,292 taxa completed so far. (KSR #1)

ii. Global non-comprehensive assessments: While we may not reach the Barometer of Life target, good progress is being made overall with non-comprehensive assessments. The Global Tree Assessment has helped to boost the plant numbers. More than 1,500 species were assessed for 2019. (KSR #1)

iii. Global sampled assessments: First samples completed, for Monocots, Legumes, Cephalopods and Bryophytes on track for 2020. Pteridophytes, Butterflies, Dung beetles and Ascomycete Fungi are behind schedule. More than 750 species were assessed for 2019. (KSR #1)
ix. Core reassessments for long-term indicator groups: There is progress with reassessments of mammals, birds, amphibians, corals, cycads, and conifers with the hope to complete all reassessments by the end of 2020. (KSR #1)

v. Comprehensive reassessments to produce Red List Indices (RLIs) for key new indicator taxa: This is behind schedule; only groupers have been reassessed, with cartilaginous fish, tunas and billfish, and seagrasses on track for reassessment. Freshwater Decapods, Mangroves, Hornshoe Crabs and Bumble Bees are behind schedule. (KSR #3)

vi. Regional assessments for Europe and the Mediterranean are completed (7,606 species). (KSR #2)

vii. No meeting of the National Red List Coordination Group was held in 2019. However, in Africa and through the Biodiversity for Spatial Prioritisation in Africa (BASPA) project, an African National Red List Alliance was established for lesson sharing and capacity building, including the following countries: Cameroon, Gabon, Kenya, Malawi, Namibia, Mozambique, Tunisia, Madagascar and South Africa. Through this initiative, Red List experts from South Africa have provided training on Red List data preparation and assessments in Cameroon, Kenya and Mozambique. Plans are underway to submit all Red List assessments for publication. (KSR #2)

viii. Sampled reassessments conducted for speciose taxonomic groups: Monocots, eucots (Legumes), and reptiles are on track for back cast assessment; bryophytes, pteridophytes, and reef building corals are behind. (KSR #1)

ix. The SIS interface has been improved to allow the use of > and < signs, change in extinction date, criterion calculator, five years rule in SIS, update on SIS integrity and validity checkers. Also, SIS allows for assessments to be submitted from external databases. (KSR #6)

x. SIS Connect continues to be developed to allow assessments to be submitted based on existing assessments (such as national level). Spanish and French language assessments are already accepted in SIS, while for Chinese assessments the rationales will need to be translated into English. Work is ongoing to translate all field names, headings, classification schemes, etc., into the other languages. Different taxonomies for national use can now be managed. (KSR #6)

xi. Some progress has been made in terms of the functionality of the Species Information Service (SIS), mostly related to SIS Connect, and this is constantly being updated. (KSR #6)

xii. Guidelines to support the Red Listing process provided and testing for a few taxa on when to list a species as Extinct and Possibly Extinct. (KSR #6)

xiii. The Red List partner agreement is up for revision by the end of the quadrennium and discussions are ongoing to investigate changes and solutions to expanding the Red List Partnership model. Two new Red List partner applications, for Global Wildlife Conservation and Missouri Botanical Garden, have been signed by the IUCN Acting Director General and these partnership agreements await approval at the IUCN Council. The Albuquerque BioPark Red List partnership agreement has been approved by the RLC. (KSR #10)

xiv. The Red List Committee convenes twice a year (i.e. face-to-face and virtually) to track progress on the delivery of the Red List Strategic Plan. In 2019, a face-to-face RLC meeting was held from 7–10 May 2019 and a virtual meeting on 12 December 2019. Several working groups and task force meetings were held in 2019 to provide strategic guidance on Red List issues. (KSR #10)

xv. A developer has been identified to redevelop the National Red List website and database to be easier to maintain but funding has been a limitation to moving this forward. (KSR #6)

xvi. Training workshop resources are kept updated as the Red List guidelines are updated; they were fully reviewed in 2019. The online course will be under review in 2020. All resources are available in English, French and Spanish, though not yet in other languages. Additional resources (online lessons, workshop sessions) have not yet been fully developed for incorporating climate change into Red List assessments, calculating criteria parameters from available data, and links between

Thelymitra variegata (Queen of Sheba orchid; Western Australia). This is a narrow endemic to SW Western Australia. It has now been successfully propagated as part of a conservation programme

Photo: Belinda Davis
the Red List and other Knowledge Products and processes (e.g. Key Biodiversity Areas, Assessing to Plan (A2P), etc.). (KSR #6)

**Plan**

**Policy**

i. The Red List is maintained as a core offering through IBAT, to nearly 100 commercial users. (KSR #7)

ii. Fifty percent of governments made reference to the IUCN Red List in their sixth National Reports to the Convention on Biological Diversity. (KSR #7)

iii. The Red List and the post-2020 biodiversity framework and its associated mission, targets and indicators: (1) the Red List provides the underpinning data to the work of the SSC Post-2020 Biodiversity Targets Task Force (https://research.ncl.ac.uk/biodiversitypost2020/), including specifically; (2) SSC provided input into proposals for the post-2020 species goal, adding a species management target into the zero draft, and maintaining the Red List Index (RLI) as a core indicator; (3) development of the Species Threat Abatement and Recovery (STAR) metric, which draws from Red List data (category, range, elevation, habitats and threats classification schemes) to allow countries and non-state actors to develop science-based targets for biodiversity at the species level under the post-2020 framework; (4) comprehensive evaluation of mammal and bird species extinctions averted since 1993. (KSR #7)

**Network**

**Capacity building**

i. Since the start of 2017: 767 people have passed the default exam; 1,639 people have participated in Red List Training workshops (workshops of 1–4 days in length); 34 Red List Trainers received their certificates. (KSR #5)

ii. New Red List Authority (RLA) Coordinators are asked to take the online course and to pass the exam. Forty SSC members (some of them RLA Coordinators) and 25 Red List Partner staff are certified Red List Trainers and have therefore passed the advanced level exam. We have certainly not reached the target of all SSC RLA Coordinators passing the exam: by May 2020, out of 130 RLA Coordinators, we know that 12 have passed the Advanced exam (seven since 2017); another 11 have passed the Default exam (four since 2017). (KSR #5)

**Synergy**

i. Improved linkages with peer organisations and agencies, including other biodiversity knowledge products: (1) the Red List is maintained as a core offering through IBAT, to nearly 100 commercial users; (2) the RLI is maintained as a UN indicator for Sustainable Development Goal 15.5, and reported in the annual Sustainable Development Goals report; (3) both the Red List and RLI are profiled at high-level in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment Summary for Policymakers. (KSR #10)

ii. An evaluation and monitoring process of whether existing partners continue to meet the criteria for being an effective partner and to investigate changes and solutions to expanding the Red List Partnership model have been instituted. All Red List partners are mandated to submit annual financial and technical reports to the RLC, and the Global Species Programme will provide a synthesis of the Red List partner reports and report back to the RLC. (KSR #9)

**Communicate**

**Communication**

i. The IUCN Red List enhances its credibility in the academic and scientific community: (1) searching Google Scholar for “IUCN Red List” and 2019 yields 12,500 results; (2) there was no specific symposium on the Red List at the 2019 International Congress for Conservation Biology (although there were symposia on Key Biodiversity Areas and the Red List of Ecosystems, both of which referenced the Red List heavily, as well as many individual presentations drawing on the Red List); (3) DOIs were allocated to all Red List assessments and re-assessments published in 2019. (KSR #4)

ii. The Red List website is live and working since November 2018, but some issues remain to be fixed and these form an ongoing discussion at the Red List Technical Working Group meetings. Areas that need critical attention are: (1) pdf/doi generation system, (2) Red List APIs (tabular, spatial), (3) SIS Connect, (4) maintaining and upgrading of our hardware, and (5) work on data validation script for Red List updates. (KSR #8)

**Acknowledgements**

We thank all Red List Committee members and partners for their dedication and immense contributions to achieving the targets of the RLC for the quadrennium.

**Summary of activities 2019**

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Main KSRs addressed: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

KSR: Key Species Result

White-bellied pangolin, *Phataginus tricuspis*  
Photo: Tim Wacher/ZSL
Mission statement
The Standards and Petitions Committee is responsible for ensuring the quality and standards of the IUCN Red List of Threatened Species, developing guidelines for the application of the IUCN Red List Categories and Criteria and ruling on petitions against the listings of species on the IUCN Red List of Threatened Species.

Projected impact for the 2017-2020 quadrennium
The impact of the Standards and Petitions Committee (SPC) on conservation is indirect, through its efforts to maintain and increase the credibility and reliability of the IUCN Red List as the most authoritative source of the conservation status of species.

Targets for the 2017-2020 quadrennium
Assess
Red List: Production of a new version of guidelines for application of the IUCN Red List Categories and Criteria.

Activities and results 2019
Assess
Red List
i. An update of version 14 of the Red List Guidelines was published in August 2019. (KSR #4)
ii. We provided guidelines on how to list species as Extinct and Possibly Extinct. (KSR #4)
iii. We dealt with several issues from the Red List Unit on misapplication of the Red List Guidelines. (KSR #4)

Summary of activities 2019
Components of Species Conservation Cycle: 1/5
Assess  3  
Main KSRs addressed: 4

KSR: Key Species Result
Standards and Petitions Subcommittee at a meeting in November 2015 at the University of New South Wales, Sydney, Australia.
Photo: Craig Hilton-Taylor