A survey of user attitudes towards the proposed IUCN Green Status of Species

Edited by Nigel Dudley and Hannah Timmins

INTERNATIONAL UNION FOR CONSERVATION OF NATURE

SSC Species Survival Commission

Equilibrium RESEARCH

About IUCN

IUCN is a membership Union uniquely composed of both government and civil society organisations. It provides public, private and non-governmental organisations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together.

Created in 1948, IUCN is now the world's largest and most diverse environmental network, harnessing the knowledge, resources and reach of more than 1,400 Member organisations and some 15,000 experts. It is a leading provider of conservation data, assessments and analysis. Its broad membership enables IUCN to fill the role of incubator and trusted repository of best practices, tools and international standards.

IUCN provides a neutral space in which diverse stakeholders including governments, NGOs, scientists, businesses, local communities, indigenous peoples organisations and others can work together to forge and implement solutions to environmental challenges and achieve sustainable development.

Working with many partners and supporters, IUCN implements a large and diverse portfolio of conservation projects worldwide. Combining the latest science with the traditional knowledge of local communities, these projects work to reverse habitat loss, restore ecosystems and improve people's well-being.

www.iucn.org
https://twitter.com/IUCN/

A survey of user attitudes towards the proposed IUCN Green Status of Species

Edited by Nigel Dudley and Hannah Timmins

IUCN is pleased to acknowledge the support of its Framework Partners who provide core funding: Ministry of Foreign Affairs of Denmark; Ministry for Foreign Affairs of Finland; Government of France and the French Development Agency (AFD); the Ministry of Environment, Republic of Korea; the Norwegian Agency for Development Cooperation (Norad); the Swedish International Development Cooperation Agency (Sida); the Swiss Agency for Development and Cooperation (SDC) and the United States Department of State.

Published by: IUCN, Gland, Switzerland

Citation: Dudley, N. and Timmins, H.L. (eds.) (2021). *A survey of user attitudes towards the proposed IUCN Green Status of Species*. Gland, Switzerland: IUCN.

ISBN: 978-2-8317-2095-1 (PDF)

DOI: https://doi.org/10.2305/IUCN.CH.2021.03.en

Cover photos: [front cover] Dropwing male (*Trithemis arteriosa*) © Jens Kipping
[back cover] Viviparous foxtail cactus (*Coryphantha vivipara*) © Steve Jones

Layout by: Jessica Avanidhar, jessavanidhar.com

Available from: IUCN, International Union for Conservation of Nature
Global Species Programme
Rue Mauverney 28
1196 Gland, Switzerland
Tel +41 22 999 0000
Fax +41 22 999 0002
Contact person: nigel@equilibriumresearch.com
www.iucn.org/resources/publications

Table of Contents

Introduction 1

Acknowledgments 2

Methodology and questions 3

Scope of the interviews 5

Overview and discussion of results 7

- Overarching points 7
- Analysis 8
- Recommendations from interviewees 11
- Conclusions and recommendations from the authors 11

Intergovernmental organisations 14

- Food and Agriculture Organization of the United Nations (FAO) 14
- Convention on Migratory Species (CMS) 16
- International Convention on Wetlands: Ramsar Convention 17
- The World Bank 18

Regional, national and local organisations 20

- Australia: Commonwealth Scientific and Industrial Research Organisation 20
- Canada: Parks Canada 21
- European Union 23
- India: Wildlife Institute of India (WII) 25
- Mexico: Comisión Nacional de Áreas Naturales Protegidas (CONANP) 26
- United States: US Fish and Wildlife Service (USFWS) 27

International agencies and donors 28

- Critical Ecosystem Partnership Fund (CEPF) 28
- International Finance Corporation (IFC) 29

Philanthropic donors 30

- Moore Foundation 30
- Segré Foundation 30
- Synchronicity Earth 31

Researchers **33**

Neil Burgess – UNEP World Conservation Monitoring Centre 33
Dan Laffoley – IUCN World Commission on Protected Areas - Marine 33
Kent Redford – Archipelago Consulting 36
Jon Hutton – Luc Hoffmann Institute 37
Randall Reeves – SSC Cetacean Specialist Group and Western Gray Whale Advisory Panel (by email) 38
Caroline Lees – IUCN Conservation Planning Specialist Group 38

Private sector and industry **40**

One World Standards 40
Forest Conservation Fund (FCF) 42
High Conservation Value Areas 43
Integrated Biodiversity Assessment Tool (IBAT) 44
The Long Run 44
Golden Agri Resources 46

Zoos and botanic gardens **47**

Bristol Zoo 47
Denver zoo 49
Durrell Conservation 49
Albuquerque BioPark 51
Indianapolis Zoo 52
Kew Gardens 53
Botanic Gardens Conservation International (BGCI) 56

International non-governments organisations **57**

BirdLife International 57
Conservation International (CI) 58
World Wide Fund for Nature (WWF) 59
Zoological Society of London (ZSL) 60

International Union for Conservation of Nature (IUCN) **62**

James Hardcastle – Global Protected Areas Programme 62
Giulia Carbone – Global Business and Biodiversity Programme 63
Frank Hawkins – Species Threat Abatement and Restoration Metric 64
Jon Paul Rodriguez – Chair, Species Survival Commission 66
Ricardo Tejada – Global Communications 67
Other interviews with IUCN staff 68

References **69**

Introduction

The idea that IUCN should develop a **Green Status of Species** (initially called the Green List of Species) was outlined at the World Conservation Congress in Jeju Island, South Korea in September 2012, in a resolution that also promoted a Green List of Protected Areas and a Green List of Ecosystems.[1] An early meeting to discuss the development of the Green List of Species (GLS) took place in parallel with similar discussions about the IUCN Green List of Protected Areas in Mexico in March 2014. Over the following five years, the intellectual and practical aspects of developing such a list have progressed. One important change is that after consultation, including the exercise described in this report, the name has changed from Green *List* of Species to Green *Status* of Species. This was done subsequent to the discussion here and, as some of this focused on the name itself, we continue to refer to Green List of Species (GLS) in the current document.

The aim of the GLS is to provide an objective and practical definition of species recovery, applicable across all taxonomic groups, as a counterpoint to (or possibly an aspect of) the IUCN Red List of Species.[2] But whereas the Red List identifies and to some extent quantifies threats relating to decline or extinction, the Green List focuses on positive aspects of restoration and species recovery. Specifically, it was designed to assess species recovery, provide information about declines prevented and the effect of conservation actions, and identify species that would suffer if conservation actions stopped. The strategic aim of the GLS is to help agree consistent targets in species recovery plans and to provide a simple and consistent way of reporting on their success. Underlying objectives include a desire to increase cross-government and cross-organisational cooperation to maximise effectiveness. The GLS will also provide governments and others with a way to demonstrate success, and donors a way of quantifying returns against conservation investment.

The GLS assessment of a species produces four conservation impact metrics:

1. The impact of conservation efforts to date, focusing on deliberate conservation actions and probably using 1950 as a standardised baseline date – **Conservation Legacy**
2. The dependence of a particular species on continued conservation actions over the next 10 years – **Conservation Dependence**
3. Quantification of expected gains from enacting planned conservation over the next 10 years – **Conservation Gain**
4. The maximum possible recovery for the species in the long term (100 years), if resources were no issue – **Recovery Potential**

The GLS should be applicable to taxa that are recovering, that have not yet declined, and to taxa that have not been the focus of conservation so far.

The passing of the IUCN resolution in 2012 provided an important indication of government and NGO support for the principle of the GLS. However, there was no indication of what the GLS method would look like. Since then, those details have been worked out by technical specialists. In particular, extensive testing of the GLS system has been conducted under the auspices of the IUCN Species Conservation Success Task Force, through application of the framework to 181 species representing diverse taxa, life histories, biomes, and Red List categories. Between 2018 and 2020, the Task Force solicited tests of the framework set out in Akçakaya et al. (2018)[3] by contacting all IUCN Species Survival Commission taxonomic Specialist Groups and Red List Authorities (135 in 2018) with a formal invitation to participate and provide feedback in shaping the framework.

The current project aimed to collect opinions and advice from a much wider range of stakeholders. The overall concept and approach were based on a similar user survey of Key Biodiversity Areas (KBAs), completed in 2016.[4] Results will be used in further development of the GLS methodology and, probably more importantly, in deciding when and how it will be applied.

Acknowledgments

Many thanks to all the people who responded to our requests for information, often at short notice. We hope we have represented your views fairly. Molly Grace and Sue Stolton kindly proof-read the document, and Barney Long, E.J. Milner Gulland and Liz Bennett provided oversight and advice. Thanks to Global Wildlife Conservation (GWC) and the Cambridge Conservation Initiative for funding the study. Despite the great assistance received, any remaining errors in fact or interpretation are our own responsibility.

Caesar's mushroom (*Amanita caesarea*) in Central Serbia © Nikola Lačković

Methodology and questions

The survey was carried out either over Skype or by respondents answering a series of questions by email; both methods were used although Skype was more popular (25 used Skype, 12 replied by email). Respondents were given a brief overview in an email and a copy of the paper by Akçakaya et al.,[5] along with a set of questions to be asked. Perhaps understandably, many interviewees had not read the paper before the interview and time was spent in explanations. Questions were designed by the two editors, in collaboration with and input from the team at Global Wildlife Conservation (GWC) who coordinated the survey. Results were written up in summary form for each respondent, identifying the main points made, and shared with the respondent to check that it accurately reflected their opinions. These are presented in the following report.

The main questions addressed in the survey are as follows:

1. Is the Green List of Species needed?
2. What would be the value of a Green List of Species for your work?
3. If it were available, would you use it, and how would you use it?
4. Specifically, would you use it purely at a species level or would you require place-based or global indicators?
5. What type of product would be most useful (e.g. global online database, national reports, annual report)?
6. How well would a Green List of Species match with (or clash with) existing tools and procedures?
7. Are there lessons from your experiences using other tools such as the Red List that you think would be valuable for designing the Green List?
8. For each of the four Green List axes (Legacy, Dependence, Gain and Recovery Potential), how many categories should there be per axis?
9. For each axis can there be different categories (e.g. Legacy = low, medium, high but Recovery Potential = near, middle, far), or do people want the same categories for each of the four axes (e.g. Legacy = low, Dependence = low, Gain = low, Recovery Potential = low)?
10. Should the Green List of Species be a standalone product, nested within the Red List, or wholly consumed by the Red List?
11. Is “Green List of Species” the right name, and if not, what would be better?
12. Do you have any concerns or fears about developing the Green List of Species?
13. Are there any implications in what you have said for those developing the Green List of Species?
14. Any other comments?

Not all interviewees answered every question; in particular, some of the more technical issues relating to categories and indicators were frequently omitted. Indeed, it proved more difficult to keep to a standard approach to questions than in a similar exercise carried out previously.[6] Several possible reasons suggest themselves. Many of the interviewees did not have opinions on all the questions because some were quite technical. Some of the people that we spoke to (as opposed to those who filled in the questionnaire electronically) were excited about the possibilities and conversation sometimes ran ahead of individual questions. This was also reflected in written replies where some people provided additional thoughts and information beyond the original questions. We decided that the information we were getting was worth some loss in standardisation but realise that this itself poses some issues for carrying out quantitative assessments of the results.

Once all the interviews had been completed, an overall analysis of main points was undertaken by the editors; this is presented in short form in the executive summary and in more detail in the section: Overview and discussion of results.

A saddleback individual of Nilgiri-Tahr (*Nilgiritragus hylocrius)* © Shri T. Anil Kumar

Scope of the interviews

The objective of the survey was to gather opinions and input from as wide a range of potential users as possible. Several sub-groups were identified with the aim of talking with at least five different stakeholders from each sub-group. Additionally, with we interviewed a number of IUCN staff, focusing solely on the two particular questions relating to the name "The Green List of Species" and the GLS's relationship with the Red List of Species and other knowledge products from IUCN.

The sub-groups were as follows:

- International organisations and conventions
- Regional, national, and local organisations
- Donors
- Researchers
- Business links
- Zoos and botanic gardens
- Non-governmental organisations
- IUCN Secretariat and key people from Commissions

Several organisations declined the offer to take part, either because they felt they were already too close to the process, for instance, National Geographic and the Wildlife Conservation Society, or that the GLS was outside their sphere of interest and expertise, such as the Oak Foundation. Others did not respond to multiple requests; this included a few organisations whose views we would really have liked to access. It proved particularly difficult to get information from philanthropic donors and this remains a poorly represented group in our survey.

Field image of stroma of *Hypocreopsis rhododendri* on bark of *Corylus avellana*, Pembrokeshire, UK © P.F. Cannon

The list of those interviewed is given below.

Interviewees

International organisations and conventions

- Food and Agriculture Organisation
- Convention on Migratory Species
- Ramsar Convention
- The World Bank

Regional, national, and local organisations

- Australia: CSIRO
- Canada: Parks Canada
- Europe: EU
- India: WII
- Mexico: CONANP
- United States: USFWS

Donors

- Critical Ecosystem Partnership Fund
- International Finance Corporation
- Moore Foundation
- Segré
- Synchronicity

Researchers

- Neil Burgess
- Dan Laffoley
- Kent Redford
- Jon Hutton
- Randall Reeves
- Caroline Lees

Business links

- One World Standards
- Forest Conservation Fund
- High Conservation Values
- Integrated Biodiversity Assessment Tool
- The Long Run
- Golden Agri Resources

Zoos and botanic gardens

- Bristol
- Denver
- Durrell Wildlife Conservation Trust
- Albuquerque
- Indianapolis
- Kew
- Botanic Gardens International

Non-governmental organisations

- BirdLife International
- Conservation International
- WWF
- Zoological Society of London

IUCN Secretariat and Commissions

Interviews

- James Hardcastle
- Giulia Carbone
- Frank Hawkins
- Jon Paul Rodriguez
- Ricardo Tejada

Targeted (short) survey

- Jane Smart
- Trevor Sandwith
- Thomas Brooks
- Penny Langhammer
- Craig Hilton-Taylor
- Piero Genovesi
- Greg Mueller
- Axel Hochkirch

Overview and discussion of results

Overarching points

- There is general support for the Green List, including offers to carry out further testing (from three of the interviewees), although concerns about the complexity and practical implications in terms of time and money.
- A wide range of opinions exist about how it might be used, with an emphasis on linking closely to practical application, possibly aimed at particular target species.
- The ideal tool would be an online database, closely linked to or as a part of the Red List.
- More work is needed to integrate the various IUCN knowledge products such as the various Red and Green Lists, Key Biodiversity Areas (KBAs), the Species Threat Abatement and Recovery (STAR), protected area management categories and governance types, etc.
- The name "Green List of Species" created mixed reactions, roughly one-third for and two-thirds against.

Adriatic Marbled Bush-Cricket (*Zeuneriana marmorata*) © Axel Hochkirch

Analysis

Framework: there was strong but not overwhelming support for the development of the GLS. Four interviewees stated reservations or doubts about whether they would use the tool although only one came down firmly against development. A large majority of the interviewees said that they would make use of it if it were available, although proposed uses varied greatly, as outlined below. Several volunteered to test the methodology within their country or with particular species or to compare with existing recovery measures. A few questioned the need for or usefulness of the GLS, but this was a small minority of the total.

How the Green List of Species might be used: virtually everyone had a different opinion on how the GLS might be used; we have edited these to some general themes below. The GLS could be used to:

- Send out positive messages about conservation success to counter the negativity of much environmental messaging
- Drive practical action on the conservation and restoration of key species
- Provide concrete information to guide multi-stakeholder platforms on the actions that can be taken in areas of critical importance to the recovery of a species
- Provide information for Environmental and Social Impact Assessments and similar
- Remove hitherto endangered species from national lists or lists from conventions and other institutions – at present it is difficult to know when a species has “recovered”
- Support consistency of reporting species recovery within and between countries
- Measure progress in restoration plans and towards specific species recovery targets
- Help decision-making by funding agencies
- Act as a monitoring tool for certification processes like the Roundtable on Sustainable Palm Oil
- Create a user-friendly measure for information in places like zoos, where words like “conservation” sometimes create a negative reaction
- Guide research institutions about where to focus effort
- Store information on and support the coordination of conservation efforts
- Identify overlapping conservation interventions between species to aid cost-effective scalability
- Provide a management tool and good practice advice (if management prescriptions and lessons learned are included in the analysis)
- Guide decision-making in certification schemes, codes of practice (but note that some interviewees said that as these rest on risk avoidance the Red List would be more useful)
- Provide a focus for a campaign on particular species
- Act as a data source for consultancies
- Act as a bridge between conservation and sustainable use groups
- Build a stronger species component into methodologies such as KBA and Global Forest Watch
- Link conservation and sustainable use interests
- Provide information on the health of an ecosystem through aggregated use of GLS data on indicator species
- Provide a conceptual framework for judging recovery and planning conservation actions

Standards and scope: Most the interviewees said that it was important for the information to be place-based rather than a global average, allowing recovery in some places to be recognised even if the species remained under threat in others. For example, if used in certification systems it would need to be sensitive enough to reflect efforts by individual land or water managers, which suggests a very fine-grained level of analysis. The practical implications of this in terms of time and resources were acknowledged. Considering these implications, discussion focused on which species would be prioritised for assessments with recognition that a strategic approach would be important and resources would prevent attempting a complete assessment of all species. Some suggested focusing on indicator species like birds, others on Critically Endangered species or using a sampled approach. It might also be useful to prioritise species that were the object of a concerted conservation programme, as this would be a way of both raising their profile and providing globally agreed targets and measurements. Some interviewees also recognised the potential value in a global figure for reporting against targets such as the Sustainable Development Goals.

The ideal tool: The consensus was that an online database was essential, closely modelled on if not part of the existing database of the Red List to avoid confusion. Relatively few people expressed strong opinions about the number of axes or categories, but those that did tended to stress that these should be as simple as possible and match the Red List. Several people mentioned annual reports and other materials, and one respondent explicitly linked this to the need to make information accessible to those without internet access.

The four axes: Legacy, Dependence, Gain and Recovery Potential received comment, with suggestions of how they might be used. “Dependence” and “Gain” could help determine when a species no longer needs conservation, “Gain” could show rapid conservation success and “Dependence” persuade donors of the need for long-term funds. Both could help set compensation payments. “Legacy” could help assessment of multi-species conservation and show what would have happened without conservation. “Recovery Potential” could be useful in setting and measuring restoration targets. But there were also some concerns: e.g., that the meaning of terms would not be clear for most people, that if a “recovery” target under GLS differed from a local restoration target it could cause confusion, and that it would be impossible to ever guarantee 100 per cent recovery.

Links to the Red List: Virtually without exception people would like to see the GLS linked closely to the Red List, although there was confusion about how that would be achieved. Only four people favoured a complete separation; the remainder of those commenting on this issue recommending some kind of harmonisation or nested relationship (six people) or the GLS being subsumed within the Red List (also six people). In particular, how would the Red List category of “Least Concern” be distinguished from the GLS? Furthermore, the philosophy of the GLS, in measuring recovery, is different to that of the Red List and a simplistic comparison could be misleading. Several people suggested that the GLS rating should appear where relevant on the Red List entry for a particular species.

Place within the IUCN ecosystem of knowledge products: There were questions about how the GLS would link to the Green List of Protected and Conserved Areas and the proposed Green List of Ecosystems, and a general concern about relationships between IUCN knowledge products (Red and Green Lists, KBAs, protected area management categories, other effective conservation measures (OECMs), etc.). Does the GLS sit “under” the proposed Green List of Ecosystems or the Green List of Protected and Conserved Areas; or does it and the Red List sit “over” them as a biodiversity measure? Should there be equivalence throughout the tools: Red and Green for ecosystems, species and area-based conservation? (Editor’s note: this would suggest a Red List of Protected and Conserved Areas as well.) Two interviewees asked if there should be something like an “amber” rating for species or ecosystems that were neither improving nor declining and a “grey” rating for those lacking data.

It was suggested that the Green List of Protected and Conserved Areas measures effort while the proposed GLS measures achievement; in other words, there is not direct equivalence in intention; but others said the reverse (that Green List of Protected and Conserved Areas is a stronger measure of performance). There was concern, particularly from those most closely involved in the latter that the GLS would confuse messaging and undermine an ongoing process. One proposal was for a Green List of Systems, including protected and conserved areas but also other systems, for which data collected in the GLS could provide input.

Nomenclature and branding: Many respondents supported the name as an obvious counterpoint to the Red List, some argued strongly that IUCN should not be deterred from using such a name. But quite a few disagreed, on the basis that the GLS actually measures four things rather than a single rating and is measuring recovery potential rather than status as such; the final balance was probably two thirds with serious reservations. There was concern that the Green List of Species would be confused with the Green List of Protected and Conserved Areas, which is often now known simply as the "Green List". There was also some concern that people would misinterpret, or deliberately misuse, a species' appearance on the Green List as being synonymous with it having recovered, in the same way that people often misinterpret the appearance of a species on the Red List to mean it is threatened.

Communication: There was a strong feeling that communication would be critical to avoid confusion between the aims of different IUCN Red and Green Lists, and to show how various IUCN knowledge products are interrelated. Further thought about the structure and relationship of the various lists is needed before settling on a communication strategy.

Fears: A number of concerns were expressed; all those mentioned were expressed by several people:

- The GLS is far more complicated than the Red List and the time, effort, money and other costs associated with completing and agreeing assessments will be therefore disproportionately high
- This could in turn take funding away from existing tools like the Red List, KBAs etc all of which are already struggling with data collection and management
- Insufficient data exists to make a quantifiable assessment for many species
- There is a serious problem in setting realistic baselines for many species, for example throughout large parts of the marine realm or in places that have been transformed over long periods of time, such as much of Europe
- There are methodological challenges in setting an "end point" for restoration and therefore a quantifiable way of approaching green listing
- Confusion and mixed messaging could result of the GLS analysis or targets differing from those worked out at a local level for the same species
- There may be political resistance to setting ambitious restoration goals where governments and/or businesses lack the will or ability to take the necessary conservation actions.

Hawksbill sea turtle hatchlings (*Eretmochelys imbricata*) © Bruce Hood

Recommendations from interviewees

In addition to the general points above, several recommendations were made regarding future development of the GLS:

- To minimise time and resource costs, the methodology and process should be developed with all major users and thoroughly field-tested before being launched, to reduce the risk of constant modification
- The system should be kept as simple as possible
- The methodology should be transparent and available for use by others; indeed, one possible way of developing the GLS would be for other institutions with interest in particular species to carry out an analysis for later checking by IUCN
- Streamlining decision-making is essential if the GLS (and other assessment processes like the Red List and KBAs) are to function – possibly a less formal Wiki-style approach could be considered
- One useful application would be to provide an aggregated list of GLS assessments (possibly a selected list of key indicator species) as a way of measuring progress in area-based conservation, within a KBA or in area-based conservation units
- It will be important to include abundance as a factor in determining eligibility to the GLS
- The database could include contact details for experts on a species, or people working on a particular species' recovery programme
- The GLS will be most effective if it can be applied at varying scales
- It will be very important to include lessons learned to strengthen the tool and allow wider application of best practice to other species
- Lack of data may mean that decisions need to be taken pragmatically, drawing also on expert judgement in many cases
- The GLS might be focused initially on a few species that are subject to particular restoration actions, to provide a target, political profile and way of measuring success, liaising with governments and NGOs involved in such plans
- It will be important to understand better and communicate the application of GLS to marine ecosystems (particularly with regard to a baseline) and other more cryptic species, including almost all plants, that we have little information on
- The GLS should focus more on wild than domesticated species
- Historical range may not always be an appropriate baseline, if ranges have moved due to natural processes or as a result of climate change.

Conclusions and recommendations from the authors

Drawing on the above, we present some overarching suggestions to the steering committee:

Framework: the conceptual framework attracted little criticism itself and seems to stand up, although there are serious concerns about time and cost implications. There was also a strong feeling that time investment now would be repaid with greater efficiency when the GLS was launched. We suggest amongst other actions:

- Investigating new options for verification, such as Wiki approaches, crowd sourcing etc, as a way of streamlining the process
- Early testing on marine species (perhaps the Western grey whale) to address concerns about data and baselines
- Drawing up a short list of high-profile species with three characteristics: (i) critical conservation status; (ii) an active conservation programme; and (iii) sufficient data to act as flagship species to both test and eventually lunch the GLS (note that much of this has now been done).[7]

Moss (*Breutelia azorica*), a European endangered species that is endemic to the Azores © Lars Hedenäs

Primary objective: There is continuing confusion amongst many interviewees about the exact aims of the GLS, i.e. whether it is primarily:

- To agree an objective and practical definition of species recovery
- To set a "gold" recovery standard using selected, eligible species that are in recovery
- To assess recovery status of a wide range of species.
- This suggests further work on communicating the core messages of the Green List of Species will be needed in the coming months.

How the Green List of Species might be used: We recommend a close reading of the list of suggestions, some of which have important implications for the development of the GLS. In particular, the often-repeated call for the GLS to act as tool to both drive practical action and collect lessons learned has important implications for the way in which it is developed and presented. These aspects are as much to do with presentation and positioning as with technical content. They include ensuring that the rather complex ambitions of the GLS are easily understandable by non-specialists and careful policy advocacy with governments, NGOs, donor and development agencies to ensure that the GLS is incorporated into practical conservation tools and programmes. An outreach strategy is needed to introduce the GLS to the broader conservation community. Feedback should be iterative and the medium and messages of outreach should be quick and easy to understand. Positioning in relation to the broader suite of IUCN tools is critical, including a consolidated effort by the leaders of these tools, branding and science communication experts, to standardise language, names and functions.

Standards and scope: Despite the practical challenges presented, it is clear that – perhaps unlike the Red List of Species – the GLS will only be really useful if it can reflect changes at quite a local level. This has important implications as national or regional analyses (as opposed to a global figure) will be costly in terms of time and resources, which in turn probably means fewer species being assessed. But unless the system gets traction at local level it is unlikely to succeed. The majority of people likely to utilise the GLS, work at local levels (from privately managed areas to countries), thus granularity of data is needed to influence their work. Furthermore, species that occupy more than one range are likely to warrant different axes scores across different ranges. Acknowledging that there is a delicate balance between granularity and cost efficiency, jurisdictional use and scientific accuracy (i.e. ranges and ecosystems), perhaps the use of Evolutionary Significant Units[8] or Regional Management Units[9] might suffice. Choosing the correct species to launch and ensuring good take-up and signs of success will all be important.

The ideal tool: The GLS should predominantly be an online database.

The four axes: *Legacy*, *Dependence*, *Gain* and *Recovery Potential* received comment, with suggestions of how they might be used. “Dependence” and “Gain” could help determine when a species no longer needs conservation, “Gain” could show rapid conservation success and “Dependence” persuade donors of the need for long-term funds. Both could help set compensation payments. “Legacy” could help assessment of multi-species conservation and show what would have happened without conservation. “Recovery Potential” could be useful in setting and measuring restoration targets. But there were also some concerns: e.g., that the meaning of terms would not be clear for most people, that if a “recovery” target under GLS differed from a local restoration target it could cause confusion, and that it would be impossible to ever guarantee 100 per cent recovery.

Links to the Red List: No clear consensus exists. The GLS is conceptually and methodologically different from the Red List, so a simple merging will not work. But everyone agrees they need to be closely aligned. It is particularly important to present a clear distinction between the Red List “least concern” criterion and the various criteria of the GLS.

Place within the IUCN ecosystem of knowledge products: There is clearly confusion, and the potential for time-wasting competition, between various IUCN knowledge products; to which we would add that this confusion and competition potential extends to tools of IUCN member organisations as well. We recommend a meeting of representatives of all IUCN knowledge products and perhaps selected other tools (e.g. SMART) to provide a clear set of recommendations.

Communication: A good communication package is key, although still too early to be planned in detail.

The remainder of the report summarises the results of the individual interviews and written responses from stakeholders.

Yellow-crowned night heron (*Nyctanassa violacea*) © Mark Riegner

Intergovernmental organisations

Food and Agriculture Organization of the United Nations (FAO)

Kim Friedman, Graham Mair and Irene Hoffmann

The Micro and the Macro

There is an IUCN-FAO *ad hoc* group on SDG 14; we recommend this conversation keeps going through this group. Our focuses are the genetic diversity and the system management levels and we would support the applications of Green Listing to these two levels as summarised below, however, there is clearly a lot more to be discussed around this.

The Micro: Genetic diversity in domesticated species

Our work on aquatic genetic resources mostly deals with the level below species (domesticated farmed types, strains, varieties etc.) and is largely independent of the natural range as most of these species which have been introduced, often for aquaculture, all over the world for many years. The conservation we apply is sometimes *in situ* but often *ex situ*, for example a well-managed fishery can be considered as a form of *in situ* conservation.

IUCN's Philip McGowan wrote a paper on animal genetic resources and the conservation status of wild relatives,[10] there should be a discussion between Philip and those developing the GLS about this. This would be interesting particularly for aquaculture groups in FAO. **GLS should probably focus more on wild species than domesticated, this would have most relevance in the world of fisheries and aquaculture.** Domestication in aquaculture is not well advanced and there are, as yet, relatively few developed farmed types that warrant conservation in their own right. Terrestrial domesticated species, where a multiplicity of breeds have been developed, many of which are under threat, would require a different branch of GLS and the focus would shift wholly to the viability indicator as the functionality and distribution indicators are not really applicable.

Unlike domesticated terrestrial species, there is usually direct association between wild and domesticated aquaculture populations through wild harvesting of natural populations and the culture or even stocking of cultured resources, in the same environment as stocks of their wild relatives, leading to potential interactions. Indeed, every aquaculture species still exists in the wild (not often the case for terrestrial domesticated species). There are currently strong associations through both sourcing populations from the wild and the impact of aquaculture on wild populations. However, we predict these associations will decrease over time as aquaculture becomes less reliant on sourcing from wild populations.

Lessons from the Red List: GLS must have a clear application, calibrated to the vastness of marine species, from the start

Many IUCN tools have been retrofitted to marine and aquatic species – for example, no marine species could ever meet CITES criteria because they require small numbers or small spatial scale, so the criterion was changed to 'decline criteria' from a known virgin baseline. Whereas the Red List is a sliding scale from no baseline; if you lose 30% of the stock it becomes 'endangered', if you don't lose any over three generations, it is no longer threatened. So, if there are 20,000 of a species left in the ocean, of which the virgin biomass was 5 trillion, and after three generations there's no change in numbers that species could be considered as no longer 'endangered' whereas fisheries management would claim the stock is completely depleted and needs rebuilding.

This has led to contradictions between the Red List/CITES/Fisheries criteria for which species are most in need of management and conservation and which are of least concern. This in turn leads to conflicts between groups that need to be working together to manage marine resources. GLS must have a clear application, calibrated to the vastness of marine species from the start, or else focus only on terrestrial.

The Macro: Focusing on a Green List of Systems

It has always been easier to get people to pay attention to species and much harder to raise awareness on systems. But we are now realising the importance of systems and how everything is connected, and this is reflected in changes in the IUCN and CBD (developing a definition of a healthy ecosystem under 2018 criteria for OECMs). The problem with breaking systems down into smaller and smaller components (like GLS) is that you may end up pouring resources into a single species. IUCN would be better focusing more effort on a Green List of Systems and how to bring together a variety of stakeholders and define how systems are working or not working. If GLS can act as a bridge between conservation and sustainable use groups, this could add huge value.

Protected areas are just one tool in a whole suite of conservation tools, there's much more going on outside them especially in the ocean. A Green List of Systems would be great – why alienate all those that do not use protected area mechanisms by going down the marine protected area route? We need to encourage users to show that their systems are in good shape and be involved in the conversation. The Green List of Systems would be most useful with GLS, Green List of Protected and Conserved Areas, OECMs etc being components of GL Systems.

We actually have much better data on certain marine species than we have on terrestrial species – industries must collect data and register it with authorities. The scope for IUCN to handle this data and use it to start an honest conversation with user communities about system health is enormous. However, without a fuller understanding of how systems are functioning, you cannot use past estimates of virgin biomass to project goals for recovery of marine species. The systems around these species have totally changed (temperature, prey stocks, predator stocks etc).

The development of these tools is a great opportunity for IUCN to bring everyone to the table of conservation – what can everyone deliver on a new vision for systems – and have some of these more difficult discussions e.g. How fisheries need to change but also how conservation needs to change and be better.

An important overall message is that marine/aquatic species (let's not forget the many inland species) must not be considered as an afterthought for a system developed with a focus on terrestrial biodiversity as this won't work for aquatic species. They should either be actively considered throughout the process of consciously excluded.

Dvojblanka / Vitiset (*Didymium difforme)* © Alain Michaud

Convention on Migratory Species (CMS)

Marco Barbieri (in consultation with colleagues)

How CMS might use the GLS

The GLS could be a valuable tool for CMS, particularly to inform decision making with respect to the amendment of the CMS Appendices, notably for the purpose of de-listing species. So far, no species have been de-listed, however discussion is underway within the Convention on the opportuneness to de-list some species in order to place more focus on the species that require a higher level of attention; in doing so CMS needs to know the risks of removing CMS protection and for this the GLS's "Dependence" and "Gain" axis would be very valuable. At the moment CMS is using the Red List to inform these discussions, but it does not provide all the information they need.

CMS would also use the "Legacy" axis information to assess the outcomes of their multi-species conservation initiatives and communicate conservation success.

The ideal product

CMS currently uses the Red List database extensively; ideally the GLS would be a similar product; annual updates would also be useful to inform users of major significant changes and species of interest in more detail. As a database it would be good for GLS to be nested into the Red List allowing quick comparisons between each of the metrics, so that data could be extracted and compiled quickly. The Red List database is really accessible and easy to use even for those with modest computer skills, it would be desirable that key data in the GLS be easily and quickly identifiable and comparable with the species' Red List assessment.

In the past, CMS has used the Red List for general assessments and to identify trends in the conservation status of species listed on its Appendices at the level of species, classes and geographic regions. It would be ideal if GLS could aggregate up into broader classes of taxa as well as geographic regions to support these kinds of assessments, which currently inform inter alia the assessment of progress towards the achievement of the targets of the strategic plan for migratory species.

CMS is particularly interested in the species "Representation" goal and the migration and habitat connectivity components of the "Functionality" goal. It would be useful if more detail on these elements could be extracted from a species' overall GLS evaluation and could be monitored over time i.e. allowing a deep dive into the four metrics and their specific goals.

Thoughts on the GLS metric categories

The GLS is highly ambitious, the analysis and assessments will require significant efforts, it is possible that using fewer categories may help lighten the workload – there will need to be a balance between being as accurate as possible and keeping GLS assessments practical. Using the same categories (low/medium/high) would be the best way to keep it easy to understand, again to be able to quickly extract and compare information, but if certain metrics require different categories people would get used to using them.

The "Green List" name

Although the "GLS" might suggest something a bit different from what it is, it's a nice complementary name to the Red List allowing people to grasp the GLS concept easily, so the name should not be an issue.

Giant anteater (*Myrmecophaga tridactyla*) © Fernando Faciole

International Convention on Wetlands: Ramsar Convention

Francisco Rilla, Director of Science and Policy

How Ramsar might use the GLS

Ramsar strongly welcomes the GLS and would use it directly as an input to the regular inventory of wetlands; data from Appendix 1 and 2 of CITES and from the Convention on Migratory Species are already used and the GLS would provide added value, particularly relating to the status of each species. It could for instance be used directly to assist management plan relating to particular endangered species.

The ideal product

Information at both the global and national level would be useful; specific information that could be linked with Parties would be valuable for the Convention. National reports might be the most useful product in that they could be undertaken closely with Parties and for instance could feed directly into information presented at the Ramsar Conference of Parties. Information on geographical distribution of species such as fish would be useful, particularly If geo-referenced. Elaboration of information for particular biomes might also be considered.

Further details would be useful on how it is planned to implement the GLS, the science underpinning the list and how it will be used.

Links to the Red List

The GLS should be part of the Red List to ensure full coordination.

Considerable capacity-building will be needed to promote the GLS and to ensure that users understand its purpose and its links to the Red List.

The “Green List” name

The name is fine.

Ramsar will support the development of the GLS throughout the process. The Convention has no particular concerns regarding its development and welcomes the GLS.

The World Bank

Ruth Tiffer Sotomayor, Sr. Environmental Specialist, Africa Region

The need and potential value of the Green List of Species

I think the Green List is a great idea /proposal because it can provide positive feedback to governments, so that can see good results of their efforts to improve the habitat for an endangered or flagship species. It can provide similar evidence to the Red List in terms of defining actions to support such species undergoing recovery; promote interest by governments, academia, civil society; and help to draw attention to other species in greater need for action plans in countries where they are working to recover important species.

How would the GLS be useful?

For financial institutions like the World Bank, the GLS could become a reference to check, similar to the Red list that we consult as part of our due diligence processes under our Environmental and Social Framework to ensure our projects do not affect important habitats for critically endangered or endangered species as well as in other conservation situations. Also, our teams could refer it to governments to use it in their project preparation of Environmental and Social Impact Assessment, Biodiversity management plans (following our Environmental and Social Standards - ESS6) and for projects under the Global Environmental Facility (GEF) (where countries can use allocations to support recovery plans for species) and investments projects such as Development Policy Loans (that could support new policies for biodiversity or forest conservation), Investment Project Financing, etc.

Species level information is needed under our ESS6 to identified the type of habitats in the project areas; it will be particularly useful if the GLS can provide data on the species situation globally, its distribution, estimated population, some aspects of its natural history, the threats affecting it (like poaching, illegal trade), and about countries implementing recovery plans, etc.

For governments, I think it will be very valuable in the preparation of national strategies for protecting forest and biodiversity. This will be especially important for the Post-2020 Global Biodiversity Framework and the commitments to be made for the agenda 2050; the tool could help governments and agencies to track aspirations to recover many of the endangered species we have now.

Links with existing tools

It will be a useful complement to the Red List and Integrated Biodiversity Assessment Tool (IBAT), and also for the Global Biodiversity Information Facility and Map of Life datasets which are very important sources of information globally for biodiversity conservation.

Lessons from your experiences using other tools that will be useful to consider for the GLS

Several lessons come to mind:

- Using a standard report format, for instance habitat preference, density, distribution, map, photos, action plans with reference
- Including a window where users can feed in information on work or actions being implemented at local level to protect the species and habitat
- Including the names of experts that can be contacted to know more about the species under consideration
- Including information on those that are actively engaged in recovery of species
- Possibly including information on potential donors interested in particular species.

Names of the GLS axes

While “gain” and “recovery” are OK the other indicators are not necessarily self-explanatory. Use similar ranking systems as much as possible; perhaps the risk rating on the World Bank Environmental and Social Framework may be useful.

Type of product and name

The GLS should be a standalone product to generate branding and interest in recovery actions. The GLS is a good name.

Grand Canyon Quixote plant (*Hesperoyucca newberryi*) © Wendy Hodgson

Regional, national and local organisations

Australia: Commonwealth Scientific and Industrial Research Organisation

Peter Latch

Trialling GLS in Australia

We are keen to provide inputs on GLS and trial some example species. We certainly need a metric for conservation success to support reporting. Our environmental sciences programme is currently developing a Threatened Species Index, modelled on the Living Planet Index, to communicate how threatened species are doing (so far trialled on our birds). More broadly, we're currently setting up a governance system around our recovery programmes for threatened species, these will be multi-stakeholder groups that collaborate on implementation, and we are trialling a reporting system with success measures to help capture and communicate this. However, although we provide guidance, our recovery programmes are developed by different groups and so can be highly variable. We need more consistency in the way we identify threats and assign actions – perhaps GLS could help to standardize this?

Trialling could demonstrate how GLS might work as a model in practice, using different categories under the axis. Strategically we could select species that would demonstrate a range of issues from an Australian perspective – perhaps a few migratory and endemic species, species with little data? David Keith (an author of the GLS paper) sits on an advisory panel for our minister to support the listing of species, this might be why there are a few Australian examples in the paper. Perhaps David could support the trialling of species in Australia's GLS?

GLS guiding consistency within Commonwealth States

The states of Australia are all signed up to IUCN's Red List criteria, however often the state and national lists do not align; this has created confusion, inefficiencies etc. Now we are all moving towards IUCN's national standard to ensure consistency on:

- The process of identifying and listing threatened species
- The lists themselves
- Tracking and reporting recovery progress through CBD.

States are developing their own tools for measuring and reporting success – perhaps GLS could support consistency here. Each State has a manager responsible for threatened species, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) has a network with these managers to align listing processes.

However, there is currently no single coordinated voice between the different Australian states – the level responsible for species. The Commonwealth has responsibility over species deemed nationally important but ultimately, we rely on state-level implementation and reporting. So, we need to have the GLS conversation with the state agencies. How to apply or trial GLS in a devolved system like this? I recommend you consult more with state threatened species managers about the practicalities of trialling at the state level, we are happy to facilitate this.

Other applications of GLS

GLS could also help to guide consistency on reporting between countries on things like international treatises on migratory species. GLS could also help to de-list species from threatened statuses.

Data gaps and PR challenges

We have around 1,700 species listed nationally, for many of these we have imperfect and sometimes very little data, a very small percentage have strong data coverage. I would want to ensure that any lack of data we have when conducting GLS

assessments, or situations where the recovery potential of certain species is not strong, does not lead to a perception that the Australian government is failing in its conservation goals. Not every species can reach 100 per cent and for some 40 per cent might be doing really well – particularly in Australia where we have major issues with invasive species etc. So, we need to communicate the objectives of GLS well – including what GLS does and doesn't do.

Australia, and I suspect many other countries, gets a lot of short-term investments linked to budget/political cycles. One challenge is to get long-term funding into our recovery programmes. The lack of data and consistent monitoring also exacerbates difficulties in linking investment to recovery outcomes. So the long-term recovery potential of GLS could really help along with the Gains component to demonstrate more short-term wins – even if these wins are small and recovery potential is a low percentage – again this needs to be communicated well. A few years ago, we published "*The Book of Hope: Recovering Australia's Threatened Species*"[11] to try to define what recovery success looks like, including the small wins, what indicators might be and how we should be communicating that. It might help to see how this aligns with GLS.

Canada: Parks Canada

Pippa Shepherd: Parks Canada

How Parks Canada might use the GLS

National process for assessing the conservation status of species follows the IUCN Red List categories and guidelines. The Red List is used by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to develop candidate lists and assess species status based on science and traditional knowledge. Assessments are used in government decision-making on legal protection under the federal *Species at Risk Act*, keeping assessment separate from political considerations. COSEWIC has adopted the Conservation Measures Partnership classification of threats, which has improved the outcomes of both species status assessments and subsequent recovery planning efforts. A global consensus on a definition of a recovered state for species at risk, and on the key contributory factors (viability, functionality and representation), could help establishing common starting points for recovery, and for protected area establishment and management, that is currently lacking and thus improve these processes. Similarly, a consistent approach to measuring recovery progress should improve priority-setting, recovery implementation, reporting and species re-assessments.

An internationally recognised GLS could provide a standardized starting point for setting goals and measuring progress, thus improving the structure and focus of recovery plans, and aiding consensus building among governments, partners and stakeholders. It could assist managers and others in determining where to focus efforts for better outcomes and return on investment. Conservation metrics (i.e. legacy, dependence, gain and potential) could provide a consistent and transparent basis for difficult land/water/resource use and funding decisions. Finally, such a tool could feed objective and transparent information into global and sub-global efforts to expand networks of protected areas in ways that could maximize the benefits to biodiversity protection and recovery.

Parks Canada will assess the benefits and challenges of implementing a GLS and the supporting metrics in the context of its mandate and regulatory framework. The GLS could also be a meaningful way to engage Canadians in biodiversity conservation and to provide immersive visitor experiences.

The ideal product

Parks Canada is mandated to ensure the lasting ecological integrity of significant examples of Canada's natural heritage, so could benefit from place-based indicators as well as species-based indicators. A global online database could be particularly useful. In future, the value of an associated database for regional/national/place-based indicators should be assessed.

Relationship with existing tools

Parks Canada has developed a number of tools and procedures to implement the Species at Risk Act; e.g., a standardized tool to set multi-species site-based objectives, to prioritize meaningful actions, and to inform management decisions on

funding commitments; and an Information Centre on Ecosystems tool to report results to the public. A consistent GLS approach to such things as making inferences about expected gains from future conservation efforts and measuring progress towards a recovered state would match well with Parks Canada tools.

Recommendations

Parks Canada recommends ensuring: (1) the process by which the tool is developed has broad consensus from the start to allow for its straightforward adoption; (2) it is a 'living' tool that will be continually improved and updated by an IUCN committee, similar to the Red List; (3) the tool is well integrated into other initiatives such as the Red List; and (4) is developed for use at multiple scales (especially national and sub-national) at the outset. Drafters should use enough categories to illustrate progress at time intervals relevant to practitioners and decision-makers (i.e., a few years, not decades), while retaining as much simplicity as possible. The same categories should be used for the four axes to maximize tool comprehensibility.

A concern at early stage of implementation would be the need for re-focusing efforts and resources away from active recovery and conservation efforts and towards developing GLS infrastructure and quantifying metrics for many species. However, the benefits of consistent, simplified, transparent processes and improved cost-effectiveness should outweigh the concerns once the tool is up and running and has been widely adopted

Links to the Red List

The proposed GLS has a different purpose than the Red List, so it would not need to be nested within or consumed by the Red List, but nor should it be a totally standalone product. The two lists work in tandem and inform each other, so should be suitably linked.

The "Green List" name

'Green List of Species' is simple, it parallels the name for the Red List, and it is evocative of a future state of improved biodiversity, so is an appropriate name.

Green tree python juvenile (*Morelia viridis*) © Daniel Natusch

European Union

Angelika Rubin

Parallel thinking on the EU Approach for Recovery: Favourable Conservation Status

The EU has legislation on nature protection (The Habitats and Birds Directives). The Habitats Directive's objective is for specified habitat types and species to reach "favourable conservation status" (FCS). For species, this status is made up of 4 parameters (range / population / habitat of the species / future prospects). To assess each of these, EU Member States have to collect a lot of data for each species protected by the directive and report every six years to the European Commission (Art.17 reporting, 'State of Nature in the EU'). We just received the 3rd cycle of national reports, so we have now been thinking about FCS for some 15 years and are still thinking!

We assess species status to establish distance from FCS with similar data the Red List uses to establish distance from extinction. The method is a bit different (and much more data-hungry). Member States need to establish a vision on FCS of a species (i.e. a recovery status to be reached) – defining this is a big challenge. "Favourable reference values" (FRVs) have to be established for range and for population and these are not simply referencing a past/historic situation. Here, there is a lot of overlap with the thinking around GLS "recovery potential". Member States have very different approaches to setting these values, we have improved guidance on this in the last few years (relevant links below) and a contractor looked at the different methods to establish reference values (see links to these reports) – which were primarily reference-based approaches and model-based approaches.

The EU uses the Red List method on a regional level for birds' assessments (the Birds Directive is a separate legal act) and we add two categories (declining and depleted – they are basically split off the 'least concern' category of the Red List) and call the remaining ones 'secure'. Nevertheless, our contractor also looked at birds and favourable reference values and the 'Habitats Directive method' to establish such values; as is currently used by the African-Eurasian Migratory Waterbird Agreement (AEWA) in their work on greylag and barnacle goose.

Value GLS can bring

There is a lot of cooperation potential on the topic of 'recovery potential' (re. FRVs) and we're very interested in discussing all this with the GLS team. IUCN works with much more comprehensive lists of species, many of which are not under protection through EU legislation. But for the species in our legislation it would be very helpful to have a collaborative approach to defining "Recovery" – when has recovery been reached? When is the situation "favourable"?

In Europe, many habitats and species are deeply depleted – huge ranges lost, high fragmentation, a lot of repopulation potential already lost. Member states still have rather diverging views over the definition of FRVs and when FCS is reached. Please note that often sustaining the current level of a species or habitat is already a major challenge: many protected features are still showing negative trends. Aiming for a high ambition such as expressed by GLS (e.g. restoration to 1750) might in most cases be unrealistic in the EU given the high intensity of land-use, high levels of urbanisation, etc. in the EU. Timelines for a reference-based approach to recovery might differ among EU protected terrestrial features and may be very different in the marine world.

We have based a lot of our metrics on viability and spatial distribution of species, but we haven't looked into functionality much, it would be interesting to see how GLS will measure this and how we might apply it. We also don't look much at the legacy, gain or dependence components and are interested to see how these could be applied.

We don't have the final answer here on what is recovered / favourable in an EU context – work needs to continue. I suggest those developing GLS look at our FRV guidance and study. We are keen to hear feedback on them and brainstorm from there.

The ideal product

Information on specific species would be most useful for my unit that deals with implementation of FCS in Europe. We could look up a species on the database and see the expert advice for conservation. We would ideally like to see more granularity than low/medium/high categories in the GLS species recovery plans.

Potential issues

If the definitions developed for "recovery" and FCS are different but similar in its objective, this could cause problems / incoherent messages. The wolf is a good example here, we have been working with many political issues to bring it back in Europe and in spite of the positive trends and range expansions we still don't consider it fully "recovered" or favourable. If IUCN, based on the GLS method, would now assess the wolf as "Green" in the EU this could cause even more political pressure against our work. Such a – hypothetical – situation would be unhelpful.

Links and further information

Reporting guidelines & formats can be found on the reference portal for Member States: https://cdr.eionet.europa.eu/help/habitats_art17

The study on Reference values & annex: https://library.wur.nl/WebQuery/wurpubs/fulltext/469035 ; https://library.wur.nl/WebQuery/wurpubs/fulltext/468534

DG ENV – reporting website: https://ec.europa.eu/environment/nature/knowledge/rep_habitats/index_en.htm

EEA State of Nature website: https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu

Hoverfly (*Merodon aberrans*) in FruškaGora, Serbia © Credits Sarić Bojan

India: Wildlife Institute of India (WII)

Vinod Mathur and colleagues

Is the GLS needed and how would WII use such a list?

A recovery metric for species conservation is needed. If the GLS offers such objective assessment of species recovery and can serve as a conservation funding guideline then yes. But it may downplay certain flagship programmes through which many species may be linked. Therefore, weightage to functionality of such lost species including various social or sentimental values may be included.

A GLS may be of great importance for funding agencies and academia alike to focus research as well as conservation for lesser protected species. It may guide future efforts in a measurable way. Also, local factors can be accounted for when considering such species. Currently global trends or status do not attribute conservation value to regional populations or sub species. GLS may add value to such type of species. To be useful, the GLS must be comprehensive and take into consideration species from many aspects and incorporate social costs associated with such species. It should be used in a focussed way as to stress what aspects of the species can be studied or dealt with for meeting conservation potentials.

The ideal product

A place based GLS is important as it can add to the global scenario, although the contribution of point data to the global status is also important. Aspects such as the role, ecology, uniqueness, legacy, human sentiments etc can all be important for the species list. A global online database would be useful, like the Red List. Individual contributions to the GLS might be incorporated so as to enable understanding about a particular country or region's contribution to overall status.

Relationship with the Red List

This GLS could be an extension of the Red List. It could be nested within the Red List as all are familiar with the latter. Moreover, the purpose of the list to enhance conservation of Red Listed species and existing species funding may get impacted if it creates a sense of complacency based on the green score.

Thoughts on the GLS metric categories

There should be 3-4 axes. But there has to be a human sentiment, knowledge gap, endemicity etc added to these categories. Categories for different axes could be different and need to be relevant.

Recommendations

Very often globally "least concern" species do not figure in the conservation funding agenda and the fact that they may be nationally or regionally in dire straits is often hard to demonstrate. The GLS should take account of even least concern species in areas where conservation action is needed. Data on many species is negligible; the focus of the GLS should be on endangered and critically endangered species for now, along with species that are evolutionary unique or point endemics or keystone or relic species.

Microbotryum piperi from Bulgaria © T.T. Denchev

Mexico: Comisión Nacional de Áreas Naturales Protegidas (CONANP)

Eduardo Ponce

How CONANP might use the GLS

The GLS is potentially an important instrument to facilitate monitoring and as an incentive and tool to enable species to be identified as no longer being in danger and thus removed from the Red List. It is currently difficult to set clear goals to identify when a previously endangered species is in better condition or is moving in a positive direction. CONANP would use the GLS to help set clear conservation targets and hopefully as an incentive to move Mexican legislation where necessary. There is already a federal programme identifying priority species and these could be matched with the GLS to provide a stronger instrument with which to measure progress in conservation and restoration.

The ideal product

Information on both global and local levels are important. For example, although the beaver is widely distributed in North America there are only two populations in Mexico and the species is in danger; a way of demonstrating recovery would be useful but would require a regional focus. An online, digital product similar to the Red List would be the most useful product in terms of use and would also make it easy to coordinate with and compare to the Red List.

Thoughts on the GLS metric categories

The metrics could be fairly simple, for example three categories (positive, intermediate and negative).

The “Green List” name

The name is fine and balances well with the “Red List”. It works well in Spanish.

Recommendations

It is important to ensure that the valorisation methods are clear and well described so that they can be replicated between countries and with different species. This will not necessarily be easy to achieve for all parameters, which will be difficult to measure for some species and there will also be important gaps in data. It is hard to see how the GLS might be applied equally to a well-known and iconic species like the tiger and a micro-endemic species with little data available.

United States: US Fish and Wildlife Service (USFWS)

Matt Muir

Is the GLS needed and how would you use it?

I think the GLS is needed. USFWS international programmes would look to the GLS as an authoritative source on the impact of past conservation interventions and to strengthen justification for particular projects and programmes. Use would depend on context. We frequently need indicators below species-range level. I don't have much need for global summary indicators in my work.

What type of product?

An online database would be most useful. I am not familiar with any tools that directly conflict with the proposed GLS.

Recommendations

It would be good to access both the GLS and Red List at same location, so perhaps GLS could be nested or consumed within the Red List, but ideally with a better website than the current Red List redesign. I recommend using the v2.0 Conservation Measures Partnership taxonomy of conservation actions for data entry on conservation interventions. IUCN has not yet adopted v2.0 because of converting the vast number of Red List classifications from v1.0, but v2.0 is improved and should be used for the GLS. For my programme's purposes, conducting an adapted GLS at the site level, for a limited number of species, using population data or occupied range as the indicator, worked better than attempting the originally proposed GLS method. A final recommendation is the development of an evaluation protocol for internal and external assessments of the data/responses that are inputted during the GLS process.

Golden-eyed Reed Frog (*Hyperolius ocellatus*) © Jos Kielgast

International agencies and donors

Critical Ecosystem Partnership Fund (CEPF)

Nina Marshall

How CEPF might use the GLS

GLS could help prioritise species and promote a more wholistic approach to species conservation. CEPF focuses on site conservation, and specifically on KBAs. While species have been essential in helping us identify KBAs and where we should prioritise our work, we have not supported a lot of species-focused projects, due to donor emphasis on sites. However, in recent years we have increased our support for species conservation, in particular for threatened species identified by the Red List.

At present our global indicator measuring achievements in species conservation is relatively imprecise in determining the number of species that have benefited from conservation action by our grantees. Our grantees may use the Red List conservation recommendations to identify actions, but these are often not very comprehensive. Some of the actions that grantees may take to benefit species include species assessments or even species advocacy campaigns. We regard these actions as ones that could qualify as actions that benefit the species.

For each of the biodiversity hotspots where we work, we aim to develop a long-term vision to build the capacity of civil society to address current and future threats. We prepare ecosystem profiles to inform five-year investment periods that underpin these long-term visions. The profiles identify species and site conservation outcomes in the biodiversity hotspot, the threats to the species or areas and the potential conservation actions we could fund. GLS could support our grantees to structure their projects more holistically and identify more comprehensive actions using a range of recommended interventions to reach Recovery.

The tool itself

As CEPF works at the KBA level, it might be interesting to have GLS data aggregated at that level.

The Red List as a tool is simple and accessible which the GLS could try to replicate. Ideally these tools could all sit alongside one another, to see what the Red List status of a species was as well as its conservation dependence etc. In terms of the metrics, I like the four axis, and maximum three categories to ensure its practicality and usability.

The Assessment Process

Those that will be implementing species action plans would benefit from being involved in the assessment process. GLS assessments need to be as accessible to practitioners, and therefore it would be good that they don't all take place in an HQ somewhere but instead involve local practitioners which would entrail trainings (similar to Red List trainings). In this way, the assessments themselves become a planning process for the conservation practitioners. For example, the people that will be most excited about the Saiga antelope assessment will be the wildlife departments of those countries.

I see GLS as a more planned process for developing species action plans, generating more concrete information on threats and interventions that would work throughout a species' range. In turn, these concrete actions can be used to generate more funding for species conservation. Donors already want to see these metrics and know what it will look like when we've succeeded, and a species is recovered.

In terms of semantics, I'm doubtful that any species is able to achieve full recovery or will ever be "on the Green List". Perhaps the term "Recovered" needs to change, or we need to be really explicit about what "Full Recovery" actually means. I like the name "Green List", but there will be many species on the list that are tanking and that could be quite

confusing as *green* has very positive connotations. Additionally, we shouldn't have two different meanings for *Green* list of PAs and *Green* list of species, and we need to be very clear about the difference between *indigenous* and *historical* ranges which are being used interchangeably in the paper.

Costs

My main concern is that the process looks quite heavy and costly at the moment. You will need to mobilize a lot of people to get this information. Who will pay for it? Calculating the counterfactuals in particular will be very costly, requiring a lot of research to understand what interventions have been carried out.

International Finance Corporation (IFC)

Lori Anna Conzo

The Red List tool currently meets IFC's needs

- IFC is concerned with extinction risk and aims to avoid and mitigate risk and adverse environmental and social impacts.
- Where biodiversity is affected, companies applying for IFC project financing must comply with Performance Standard 6 on Biodiversity through:
  - ® Identifying priority species which places emphasis on the use of the Red List, the national Red List and stakeholder engagement (IFC policies for Critical Habitat focus on Vulnerable, Endangered and Critically Endangered categories as well as endemic, restricted-range and migratory/congregatory species).
  - ® Conducting an impact assessment to develop a management/action plan for the area and any priority species.
- From a lending and risk management point of view the Red List seems like the more practical tool.
- The GLS seems important for conservation planning, but the premise of environmental risk management is to prevent harm; it is not clear at this time whether GLS would be relevant here.

Possible IFC uses of the GLS

- Adding more info to datasets and processes, but it is not necessary or integrated into Performance Standard 6 requirements at the moment, so IFC is not certain how to factor GLS into guidance for businesses.
- More specific data on species in the landscape (future ranges etc) could influence companies' mitigation strategies especially if the project is going to be around for 50 years (e.g. a cement plant) e.g. identifying species that should be monitored and protected even if they are not threatened on the Red List.
- GLS's counter factual data could be useful in biodiversity offset planning; identifying offset projects that will be realistic and valuable in the long-term considering all the current and future threats in the environment.
- Otherwise, GLS seems more useful for governments and conservation practitioners than for private sector international financiers, although IFC is open to exploring uses of this tool.

The type of tool

- The simpler the information for the private sector the more useful.
- An online database with few metrics and categories and a summary of recommendations.
- The old version of the Red List (over a year ago) was a great template for the GLS developers – more streamlined than the new version of the Red List.
- IFC conducts assessments largely at the site level so regional aggregation of data would be less useful

Philanthropic donors

Moore Foundation

Paulina Arroyo

How the Moore Foundation might use the GLS

It is currently very difficult to have a sense of the condition of biodiversity, particularly in the case of wide-ranging, umbrella species such as the jaguar that depend on both habitat condition and connectivity. There is no equivalent to area-based tools like Global Forest Watch for species. Moore is already working with various NGOs in improving monitoring: for example, with Conservation International on its Wildlife Insights process, on camera trapping methodologies, new technologies and the Map of Life, collaborating with WWF and the Wildlife Conservation Society, among others.

Moore might well use the GLS to fill some of these gaps, although the List will need to be robust and based on verifiable data and linked to concrete management suggestions if it is to be useful. I suggest that any new species list be clear on what is the added value it provides compared to other data points.

Currently there is still critical under-funding of species recovery and something like the GLS could help shift political will.

The ideal product

National and sub-national data would be ideal, although the level of detail will depend on the audience. For IUCN's purposes and other forms of international reporting and analysis, global data will also be required. The GLS has to be online and accessible although some form of printed information may be needed for those places where there is no or limited internet. If it could work off-line, this could resolve this issue.

It is important to use the tool strategically, in terms both of choosing which individual species to include and also which regions: a focus on key species in the Amazon could be useful for example.

The "Green List" name

It seems that there are discrepancies within IUCN about the use of the "Green List" name, so I would recommend that internal agreement be established before formally adopting a GLS name.

Recommendations

The GLS will only be worth investing in if it moves conservation action forward, i.e. if it is linked to positive management actions.

Segré Foundation

Claude Martin

Is the GLS needed and how would the Segré Foundation use such a list?

It is a good idea to have a number of cases of success available, especially if these include information on how and why success had been achieved. It is important to communicate success as well as failure in the conservation field, such as successful re-introductions (e.g. European lynx, bearded vulture). The Segré Foundation might well use such a list, including to communicate the benefits of conservation, although most of the project proposals the Segré Foundation receives are place-based.

The ideal product

There is no obvious clash with existing tools. The GLS should be in the form of a global database. It should be integrated with the Red List but remain separate and perhaps more accessible to non-specialists. It would be most useful if it helped to identify conservation opportunities, and information on both positive and negative drivers of conservation achievements should be an important element, even though it will not be easy to find data on this aspect.

Recommendations on the type of tool

The GLS needs to be as simple as possible. Data will in many cases be hard to collect. For example, it is simply too dangerous to collect data on the status of the okapi over much of its range although it could be suspected that in some areas, conservation (particularly in collaboration with local communities) may be having some success. In practice the GLS may need to rely on some qualitative data alongside quantitative measurements.

It will be important to include lessons learned, including about costs, acceptance, methodologies: the GLS will only be worth the associated investments if it provides both an incentive for conservation and some information about how best to achieve success in conservation.

The "Green List" name

The name is fine.

Synchronicity Earth

Simon Stuart

The value and necessity of the GLS

We need ways to evaluate species that go beyond measuring extinction risk and we need to be able to evaluate them against a measurable recovery plan; thus, the GLS clearly has great value. If the tool was available now, Synchronicity would use it to focus our programmes not only on the species with the highest extinction risk but also on the species with the highest potential for recovery. The Red List is currently factored into the thinking behind at least three of our programmes, as data from the GLS becomes available we would begin to factor it in too. For example, we could start identifying organisations to fund based on their ability to move a species closer to their recovery targets or on how much gain we could achieve in the right direction per unit sum of money.

The feasibility of multi-species aggregated GLS assessments

The Red List is currently used a lot to aggregate data for multi-species purposes, for example countries use it to evaluate progress in achieving their biodiversity targets. The Global Environment Facility (GEF) use it to feed data into the System for Transparent Allocation of Resources, etc. Ideally, you could also aggregate data from the GLS to produce multi-species analyses, but in order to do this we would need to have GLS assessments for many species. My biggest concern for the GLS at the moment is that the system is so heavy. I'm also concerned that those leading the GLS development are the single-species-use people and so are driving more complexity into the process, not realising that the most use of the GLS will most likely be the multi-species aggregated data.

Dividing species into sub-populations and assessing each using the four metrics will take a lot of time. At a Red List workshop, with prepopulated and reviewed data prepared, we would expect to get through an average of 30-40 species a day. I expect the GLS workshops may get through only 10 species a day. There may be ways to speed GLS assessments up as people get better at them, but we need to ensure they are not 4x slower than Red List assessments. The Red List should update its 100,000 species assessments every 10 years but we struggle to keep to these timelines; indeed the metrics of the GLS are likely to change more rapidly than the Red List and so should be measured more regularly.

At this stage the single-species applications look the most achievable and I'm not sure if the multi-species applications will be feasible but, in my view, this would be a shame. We need to spend some time thinking about ways to balance the rigor with the practicality of these assessments, ensuring they can be conducted in a timely manner without losing the good thinking that goes into the different metrics. If we cannot do this, we need to be honest with people that the multi-species applications of the GLS are just not possible.

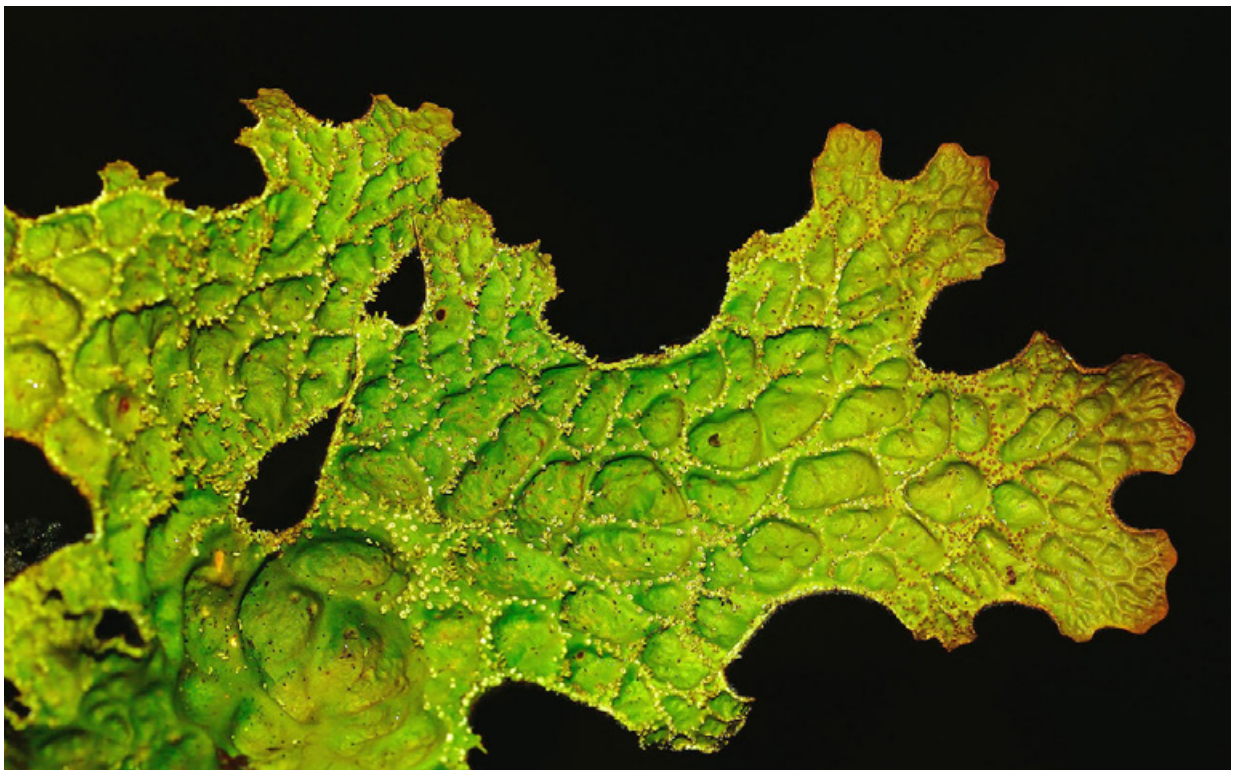
There are obviously potential synergies and budget efficiencies here, if you're spending money bringing experts from all over the world to do Red List assessments, it makes sense to also get them to do a GLS assessment. Conducting Red Listing and Green Listing simultaneously couldn't be done for the price of Red Listing alone, it would be more, but efficiencies could be gained.

Design and integration

The IUCN has invested a lot into branding and promoting the Red List and it has become widely used and successful. From what we've learnt about accessibility and interaction, it is fundamental that GLS is also an online database. The IUCN Red List of Threatened Species is also a much larger tool than just the Red List – it functions more like a species database and will soon have the Climate Dependence lists, Invasive Species Impact List etc too. So, it makes no sense to create a new separate database; we should have GLS windows inside the Red List database with the additional metrics. But any changes to the Red List name would cause branding problems so if this is deemed necessary it will need to be thought through carefully.

The Green List name

The GLS is probably not the right name; it's not just one metric, it's four, and it doesn't relate to the Green List of Protected Areas which is more of a certification mechanism and therefore a very different concept to be sharing the same name. Proponents of the latter are also concerned that it may cause confusion for IUCN to have two Green Lists. There is a Red List of Species and a Red List of Ecosystems within IUCN but these are both similar assessments, so it doesn't cause too much confusion. I think the GLS name will have to change but this will require some branding brains to think it through.



Lobaria pindarensis © Christoph Scheidegger

Researchers

Neil Burgess – UNEP World Conservation Monitoring Centre

The value and necessity of the GLS

A GLS could be useful as a counterpoint to the Red List, providing a more optimistic narrative. But conversely, if not developed or used effectively it could simply be another piece of conservation "clutter", wasting time and resources. The UNEP World Conservation Monitoring Centre (WCMC) is not a core partner on the Red or Green Lists but watches the developments carefully. Although WCMC is not predominantly species-orientated it would certainly use spatial and threats data if these were available, for example in its work on global freshwaters and to provide relevant information to businesses and other clients.

The ideal product

Global trend data would probably be the most useful for WCMC although data for specific countries or scales might also be useful, particularly population data. The level of specificity would vary with the users: companies would need specific data relating to critical habitats and often sub-populations while global studies would need to draw on a global database.

Regarding categories, those already developed for Important Bird Areas (IBAs) and KBAs are globally applicable and scalable and could be used as the basis for the GLS.

One of the challenges in using the Red List is that there is a very cumbersome process for changing from one category to another and the GLS could learn from this and develop something that could be applied more quickly, with greater sensitivity to changes in status. Because changes in species' condition may be driven by changes in drivers it will be important to reflect these within the GLS as well, for example by including drivers.

Relationship with the Red List

The GLS and Red List should be integrated; indeed, there could potentially be a way of linking the two schematically: red for in danger, amber for stable and green for improving status, with a further grey colour to indicate lack of data. One implication of the GLS is that species should be able to be taken off the Red List if their condition improves, currently there is some confusing communication issues in that species are listed on the Red List even if their status in satisfactory.

The Green List Name

The name "Green List" works.

Dan Laffoley – IUCN World Commission on Protected Areas - Marine

The value of GLS as a technical tool

Understanding what "recovered", "gain", "legacy" and "dependence" look like from a technical perspective in conservation would be highly valuable and a worthwhile pursuit. If we are being thorough with science underpinning policy, we need to measure recovery. However, I'm concerned about two things:

- The integration and efficiency for use by governments
- Its application in the oceans, as all our trends are so significantly in the opposite direction from recovery.

The rollout of this tool: Proposing Integration with the "Green List" standards for better uptake

It would be a huge shame if this initiative was blocked because of how it is rolled out and presented.

The "Green List" already exists (it's not the "Green List of Protected Areas" it's just the "Green List"), so the "Green List of Species" is confusing (before it was the "Green List" it was the "Blue List"!).

If we look at IUCN strategically, and we want to gauge the full spectrum from extinct through to recovery, we should have:

- A Red List focused on species and places that are not going well
- A Green List focused on species and places that are recovering (including species this would be a broader definition of success than the current Green List – so that the Green List standard fully embraces the species component)

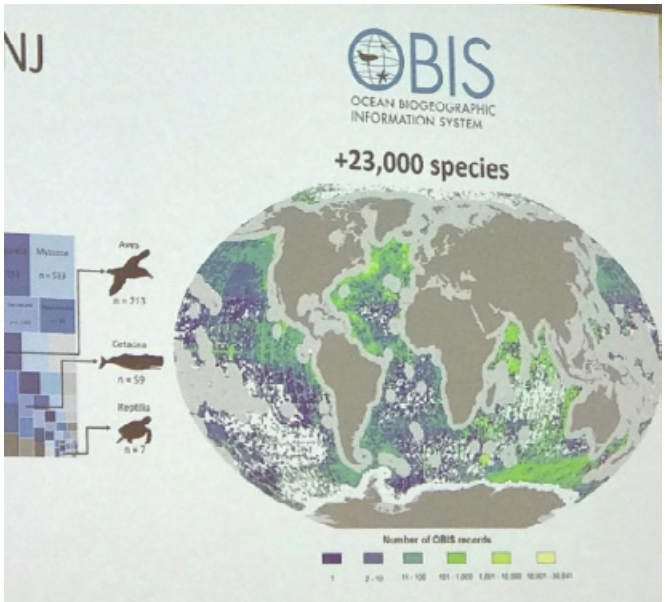
Countries' area-based measures and species recovery programs could then dovetail into these lists. This is a crucial point; we cannot force countries, and their limited capacity for conservation (especially for marine areas), to work with a new tool. **We need to tailor the tool to integrate with government interventions.** Countries could then use the Green List as an efficient tool to demonstrate success: **integrate the two Green List standards for them and uptake will be more successful.** Inserting the Green List of Species into the existing standards we have is the most valuable thing that could come out of this exercise.

This is also the most communicable concept for the general public (we may also need to consider an Orange List). However, whether we would ever end up with oceanic species on the Green List is highly debatable.

Issues in the Ocean: saying we can "apply GLS comprehensibly" is dangerously misleading

I see this as a construct by terrestrial ecologists and will, at present, have limited value in the ocean. Similar to the KBA concept, I believe the application of GLS for the oceans, 93 per cent of the living space on this planet, to be naïve.

The Ocean Biodiversity Information System (OBIS), which cost hundreds of millions of dollars and was the most comprehensive biodiversity survey ever conducted for the oceans, provides visualisation of data available for 23,000 ocean species pictured below. This diagram shows the number of species recorded in the open ocean *ever* (1 pixel = 100km^2), most of the areas are in the dark blues (1 to 10 species recorded) or even white where we have never recorded any species. There is a huge area of this planet's surface where we have literally no data.



For well documented areas like coastal zones (not illustrated in the picture above) or Exclusive Economic Zones we do have some data, hence why these areas provide the foundations for marine KBAs and these are probably the only areas where you can apply GLS. However, 50% of MPAs are “paper parks” with no resources, no management etc. Much effort is going into data collection on more iconic whale and dolphin species, and we are relatively richer in information on sea birds but again very few areas critical for them would meet KBA standards. Like KBAs, you might be able to apply GLS for some more visible species like seabirds, but the assessment outputs will dissolve as soon as you go beneath the ocean surface.

The implication is that if we set conservation standards for recovery by the capacities of terrestrial species, then we cut off at the knees the conservation efforts for species and areas using lower levels of information.

The danger then is that people that want to abuse the ocean (e.g. mining firms targeting precious ocean floor metals) can use this information, or lack of it, to undermine ocean conservation efforts. If we are not careful how we articulate this, we might set ourselves up with unattainable standards. KBAs are a good example of this; because we are so data deficient, we cannot meet KBA standards in areas of high conservation value, antagonists of the conservation movement then use that lack of KBA status to begin harvesting resources from the area.

So, the idea of conducting the GLS assessments on species that live here is naïve, the data doesn’t exist. This is the harsh reality if we are thinking of rolling GLS out as a global mechanism.

Concerns that GLS is a distraction

We are working with limited capacity and limited finances which we need to focus on the species that are in trouble – where we are fighting the fires, if they’re fine then it’s a moot point. If the system does have the capacity to run these assessments, there is a danger that outputs may become a distraction and reduce the focus on the crisis we are in.

Male Pyrenean chamos (*Rupicapra pyrenaica*) © Javier Ara

Polyporus umbellatus in Slovakia © Vladimír Kunca

Kent Redford – Archipelago Consulting

The value and necessity of the GLS

The GLS is absolutely necessary as a counterbalance to the negative messages from the Red List: what a doctor might describe as “dead”, “almost dead”, “badly sick” and “we don’t care about you”.

The ideal product

Place-based information is essential; global data hides differences at local level and we therefore need something that is not just reporting a global average but also speaks to the status of different populations, often at a sub-national level and ideally on an annual basis.

It is also very important to provide some estimate of abundance, against a baseline. Survival in depleted numbers may not guarantee long-term security; for example, the young of some Atlantic salmon populations traditionally evaded predators through timing their descent of rivers at the same time as the much more abundant river herring whereas today the much smaller populations of both salmon and river herring result in predation of salmon at a proportionately far higher level

“Species” is a human construct and we should not let this dominate the GLS to the extent that it distorts the message or ignores the importance of sub-species and races; for example, should we be changing the genetic make-up of the black-footed ferret to help it resist plague?

Relationship with the Red List

It is very important that the GLS is harmonised with the Red List; currently it is not clear for instance how “species of least concern” on the Red List relates to those species that might be included on the GLS. The way the GLS is promoted and marketed will be very important to ensure that a clear message is sent out about both how the GLS and Red List relate to each other and to stress the positive message associated with the GLS.

Design of the tool

The GLS should as closely as possible match the Red List in format (axes, number of criteria etc) to minimise confusion. Clear management actions need to flow from each of the categories once they have been applied.

Jon Hutton – Luc Hoffmann Institute

The value of the GLS

Ultimately, I'm unsure of the value of GLS, but a lot of conservation practitioners that I respect, believe GLS has value, so I will believe them. Many people that are supposed to be close to the GLS process are also still unclear what it is about. I'm sceptical but happy to be persuaded and I want to use this opportunity to give you challenges.

Suggestions on IUCN Tools

IUCN tool integration should have been thought about a long time ago. This includes the Red List – a chief scientists of a major conservation organisation, upon visiting the Red List site, saw how many species had been assessed, assumed they were all threatened and wrote a paper on this which was then forwarded to me. Can we get ourselves out of this communications mess? We need a new mental model – IUCN should have a species database framework from which we pull an annual Red List, a GLS, an invasive species (black) list etc. Once we have this new IUCN database, we can start to work out where the GLS intersects with the Red List and prioritise species for assessments.

If GLS is the answer, what is the question?

Realistically, given the resource costs and data deficiency, only a small list of species will be able to be Green Listed, so the species assessed need to be selected carefully.

If we had £20,000, what would be the priority to demonstrate with the GLS? What are we trying to communicate? Who are we trying to influence and about what? What are all the things that the GLS can answer or demonstrate? What messages should we prioritize?

These answers will tell you what kinds of species you should be on the Green Listing. Either:

1. We could start with the sample of Red List species to focus GLS assessments OR
2. If the GLS objective is to demonstrate how conservation can work, then pick a stratified sample of species from the database to demonstrate how conservation action is important etc…

If 2, GLS could say "Species X is not threatened yet, but it's only not threatened because of conservation actions Y. So, we cannot lose conservation action Y (national park, IWT patrols etc)" – this is a useful message. GLS might also be able to identify the gap of conservation action Z that is still needed – this is useful too. This needs to be thought through carefully now and I don't get the impression this is what is happening.

The GLS name

It is not a list… and I would be inclined to drop the term "green". It's more of a living dashboard or set of case studies on the importance of conservation and how it works… Again, thinking through the objectives of GLS might help you to develop a name that fits.

Other questions I have

How will GLS be governed? How will it be funded? Will GLS and Red List compete or have to share funds?

Randall Reeves – SSC Cetacean Specialist Group and Western Gray Whale Advisory Panel (by email)

I have collaborated with several of the authors of the GLS paper on other (but not totally unrelated) matters, but I still keep feeling stymied by my own Red List experience and by the biases that have accumulated over the decades in my thinking about this subject, or these subjects. The Red List's refinement to its present state occupied some very smart, dedicated people for many years. And in my view, the Red List has become more and more significant in our losing battle to 'achieve' conservation. It's important, actually essential, that the Red List-refining process continues because there is an ever-present risk of people losing faith in its legitimacy and value. Some, maybe much, of that risk comes from unrealistic expectations and the lack of awareness of how underfunded and understaffed the Red List programme is. So, although I'm grateful to Resit and his blue-ribbon panel of brilliant people for continuing to chip away at the task of improving the species and population assessment process, I'm not convinced that the world needs another, parallel thing like the Green List.

From my reading of the paper, I infer that the movers and shakers and big-thinkers (which all of the authors are in this context) are inclined to regard green-listing as a concept rather than a basis for an entirely new standalone IUCN product. That is, I can at least hope that they are inclined to move in the direction of 'integrating' green-listing concepts into the existing Red List framework, making a seamless and unobtrusive transition, recognizing that the large contingent of people who collectively (and many of them, individually) spend huge amounts of time (usually unpaid or at least grossly underpaid) doing the hard work of assessment at ground-level. As one who has struggled myself to keep up with the episodic refinements of the Red List, I know how frustrating it can be for such people to finally 'get the hang of it' only to find that the prescribed procedures have changed, yet again. But to start from scratch with a new tool or product that would require its own infrastructure, bureaucracy etc. -- and which would inevitably add to the burden on all those Red-Listers out there, plus require substantial infusions of funding (that might otherwise go to Red List improvements or even more importantly to so-called action rather than 'just' more assessing and planning, which is the rubric under which both Red-Listing and Green-Listing must fall) -- would in my opinion not be warranted.

I also worry about donor-driven priorities. I suspect, but don't know, that the idea of a Green List has been sold as something that a donor, or donors, can underwrite in exchange for a nice 'green' trophy. Funding or helping to fund the system to support a few tweaks or even some major improvements to the Red List is, I would guess, a lot less appealing than a shiny new list that could be pointed to as a major contribution etc.

I'm truly sorry not to be more helpful, but simply can't spare more time to ponder and respond properly to your list of questions, carefully crafted and thoughtful though they are. In fact, that's part of the problem -- they are indeed thought-provoking and deserve more time than I can presently afford.

Caroline Lees – IUCN Conservation Planning Specialist Group

The value of GLS

From the planning perspective, elements of GLS will be useful and in some cases are already being incorporated into planning. For example, in the pre-planning stage we capture information on past and present distribution. During workshop visioning (or defining success) sessions we encourage participants to visualise the potential future ranges or locations of a species (among other things), similar to GLS but using a more qualitative, less rigorous approach. The value here is that this process is conducted with conservation stakeholders so that they collectively agree on what's possible (and this definition can change as the project moves forward). GLS will produce an independent assessment of what is possible, and by implication what should be attempted, but if this is the output of a small number of assessors that may not be involved in conservation implementation, I'm concerned this won't add much value. Indeed, if the two outputs of recovery potential (that of GLS and that of the community that will be rolling out the project) are different, I worry that this disjoint might confuse donors etc. Ideally, the entire conservation community says the same thing to avoid confusion.

I can see GLS as a nice framework for looking in depth at the past, present and (potential) future conservation of relatively data rich high-profile taxa.

Concerns and questions on GLS objectives

What are the objectives of the GLS? Is GLS intended to be rolled out across all taxa? Very few species receive dedicated individual planning, most taxa fall under planning for the area they live (sometimes via umbrella species etc) or for generalised mitigation of known threats (e.g. invasive species, pollution etc) and for these species, I'm not sure what GLS assessments would add.

If the purpose of the GLS is to provide metrics on the value conservation has provided in the past and the extent to which species have been recovered against their potential, then some indicator species would be good to assess. The outputs of this would be interesting and you could have criteria of what makes good indicator species depending on what you're trying to track i.e. recovery of taxa/ecosystems etc.

GLS name

GLS seems to be using the same language as Green List of Protected and Conserved Areas to describe different things. "GLS" sounds like a list of species that are doing well, which it is not. Perhaps "Conservation Assessment Index" or "Conservation Progress Assessment" or "Species Recovery Index/Metric/Assessment" would fit better? Maybe something in the medical world which describes the potential recovery of a patient and the trajectory…? But Green List is a very catchy name…

Thoughts on the Categories

'Legacy' and 'Dependence' are not intuitive names to me, if the public and even conservationists are having to get over a hurdle to understand either unusual terminology or the same terminology but used differently (i.e. Green List of Protected and Conserved Areas) you are creating a barrier to understanding these concepts – the simpler the better. I think you probably need to test different categories on the target audience. You may need different categories across the metrics as they are each so different. My intuition is no more than five categories but probably more than three so that assessments don't lean towards the middle to avoid the extremes.

Lack of data

I fear for most species there is far too little data available to do a convincing GLS assessment and that the assessments will be very subjective. For a standard like GLS to be accepted we need to be sure that the assessments are replicable and that requires sufficient, standardised data – for many taxa this doesn't exist, and you'll need to rely on different methods to conduct the assessments. This may hamper GLS in communicating what the different results mean. For example, for potential future range, one persons' idea of what a recoverable patch of forest is, might be very different from someone else's.

How regularly will the metrics be revised? It seems that revising the Recovery Potential metric could be less regular than the others.

Connections to the RL

For species where GLS has been rolled out, it makes sense for the GLS assessment to sit within the species profile on the Red List. Ideally, we don't want to duplicate any efforts and we take every opportunity to enhance the gains from the existing Red List assessment process. However, GLS does sound more resource intensive (having read PJ Stephenson's report) and I do have concerns that this will eat into resources otherwise intended for Red Listing time or conservation planning.

Private sector and industry

One World Standards

Matthew Wenban Smith

Potential value of GLS for industry certification

I'm currently working on certified steel, so the sites we work with are typically pre-existing industrial sites, which are small compared to a species range or most protected areas – e.g. a few hundred hectares. Our standards are intended to ensure that they are doing the right thing by biodiversity within their site and the sites where they source their raw materials (iron ore etc). Responsible Steel standards are designed for evaluating a well-managed, responsible mill, some aspects of these standards intersect with biodiversity (see Principle 11). We then look to see how this principle is addressed by other standards systems applicable to mine sites.

Our requirements in relation to biodiversity focus on the Red List and protected areas: is the site in/close to a protected area? Any impacts on KBAs? Any Red List species they will impact? Any emissions and pollution that impact any protected area or Red List species? If so, what are they doing about it? If there are no Red List species or protected areas effected, the certification scheme might also ask them to do extra – planting trees etc. Red Listing works as a flag here: if Red List species are present, how is the business supporting them? If there was more info about that species via GLS status perhaps that could be useful.

How can smaller subsets of species' ranges, like industry sites, feed into GLS?

Mining/steel sites and even protected areas are likely to be small subsets of the potential or historical range of a species, so whether they could have an impact on a species recovery index is uncertain. There is a gap between what's achievable as a company and the GLS score over the much larger range. How can these actors/areas/tools link up?

I see the most sensible synergies working the other way around; many certification systems ask businesses to work towards and monitor species-specific objectives. They may be asked to contribute data on Red List species within their sites to the GLS. If GLS became an established tool that everyone used, we may suggest this as good practice advice. However, there would need to be a really good reason to ask a mill to hire ecologists etc. to do something that is very different to their core business. To advise a steel mill to collect metrics on biodiversity for GLS, the tool would need to be well-established first with clear, easy metrics to gather data on. Ultimately, it feels like a marginal tool to be asking a steel mill to use unless it connects up with e.g. GLPA or IUCN Protected Areas definitions.

If GLS plugged into the Green List of Protected and Conserved Areas that could be useful. Has the latter defined what success looks like for the key species protected within individual protected areas? We need some good thinking here on making the links between these and the Red List really robust, coherent and clear. If we can't solve this problem the other GLS issues are going to be an order of magnitude greater.

Industries with larger footprints

It would be good to go through the IUCN mitigation hierarchies for companies to dig out more where GLS could fit in. The main components are:

- Respect Red List species, protected areas and KBAs
- Assess what you have in your own immediate footprint and your area of influence
- Do no harm and if you can, do more to support biodiversity through offsets etc (this is at the bottom of the hierarchy though)
- Management plans also need a feedback loop to take into account biodiversity monitoring

Landscapes and Integration with other tools

Around things like water and biodiversity its ideal to work collaboratively in a landscape. Tools like KBAs, high conservation values (HCVs), the Alliance for Water Stewardship etc guide this. Is there a plan for the greater landscape in place? How are companies contributing? These schemes are also used as plug-ins for developing and evaluating standards – perhaps GLS could also work in these ways? Ideally, these tools would all be integrated.

Nervousness to note

Occasionally businesses will worry that if they were successful in creating new habitat for species inside their sites, they might end up with that area being protected by law, and if that business then has an expansion plan losing access to its own land could be a real problem. If a company has unused land it may not be in the company's interest to improve its biodiversity value and in consequence lose its access to the land. With respect to potential ranges, you may encounter problems here.

Is there a risk that GLS could become a triage system? If policy makers were to deem a species incapable of ever meeting "Green status", I'm concerned they might think it's a waste of money and just let that species go? There is potential for misuse and misinterpretation here. It might be useful to communicate that the number of species that have the capacity to reach 100% recovery is vanishingly small, so that govts, businesses etc don't see the tool as too threatening.

Outplanting Plant Extinction Program © Hawaiian Plant Specialist Group archives

Forest Conservation Fund (FCF)

Charlotte Opal

Use and value for FCF and HCS

In theory I think it would be great to map out how species get off the Red List as a way to rally conservation actors around specific paths they should take.

The High Carbon Stock (HCS) Approach group wants to focus on Priority Areas of a minimum 500ha, and at this stage we're just trying to lock down forest blocks where we find them – not very concerned about quality of that particular forest. I'm not sure how we would use GLS differently from KBAs or Alliance for Zero Extinction (AZE) lists (https://zeroextinction.org/) and other existing tools that prioritize certain areas for conservation.

For GLS to be valuable to FCF we would need to see some metrics around habitat intactness and quality relative to the historical range. Our plan is to support good NGOs that are already doing this work and we see the value of a forest not just in terms of habitat but also ecosystem services, carbon etc. I don't think we'll have the luxury of picking and choosing so I don't want to narrow down our options. Having said that, if the project is in an area of critical habitat for species X on the GLS we would love to support that.

In tropical forests where we have lots of Red List species, GLS could be very relevant as a tool if it helps to develop and evaluate a management strategy for an area, in this case, we could definitely recommend using it. FCF is using the Red List to determine our policies around hunting/fishing/subsistence use of species by local communities. Would the GLS provide more information on this? Could GLS integrate with the Management Effectiveness Tracking Tool (METT), SMART (https://smartconservationtools.org/) etc? We are requiring all our projects to utilize SMART and if the whole species has a strategy to improve the GLS score, it would be great to aggregate SMART data globally to feed into this score perhaps through a dashboard under IUCN's Species Survival Commission (SSC). (Some more interesting work on performance and locations of protected areas - https://www.cbd.int/pa/presentations/performance-potentials-of-protected-areas.pdf)

Green List as a name

We should think about what species will be assessed on the GLS carefully. Being "on the GLS" sounds as if a species has recovered. My understanding of GLS metrics is that they will show us what 'better' looks like so that eventually the species can get on a "Green List". I don't think a species should be able to get "on the Green List" until it's fully on a path to recovery or fully recovered – maybe have a yellow list in-between? The score is valuable but the term "Green" is not something that should be thrown around lightly. The Monterey Bay Aquarium has a Red-Yellow-Green classification for fisheries and "Green" is well managed, "Red" is poor etc (https://fisheryprogress.org/fip-profile/pacific-tuna-longline) this gives the fisheries industry a clear path to recovery.

With the Green List of Protected and Conserved Areas, I was concerned it would draw more funding to areas that are already well protected. To have a standard on protected areas is good especially when we're saying that 80% are not well managed (https://news.mongabay.com/2014/11/is-the-world-moving-backwards-on-protected-areas/) but what will the implications be for funding? Will GIZ (the German development agency) only be funding protected areas on the Green List? Likewise, for species – this has funding implications. Would donors only fund species that had already 'made it' off the Red List?

High Conservation Value Areas

Anders Lindhe

Need for a GLS

There is a need to communicate conservation successes, but I am not convinced that a separate GLS is the best way to do so. The main value of the project as outlined on the website is to add information on present vs past range and status of a species, but to me these aspects are more logically extensions and regional complements to the 'extinction threat perspective' of the Red List, than 'green list' parameters.

An ideal tool

For information to be useful to HCV assessors, information needs to be place-based (local/national/regional) rather than global. For assessors, online databases with good maps are certainly important. However, to help incentivize conservation through success stories etc, reports associated with press releases may be more effective – linked to where progress have been made on a case-by-case basis rather than on certain intervals / geographical coverage. If easily available at no or little cost (avoiding the costs of using e.g. KBA info) it would certainly match with other tools and resources that we (assessors) use. An initial filter that allows for focusing on the species that occur / whose former ranges overlaps with a certain country would be very useful. Intuitively, the same categories for each axis would seem to be the clearest way to proceed.

Relationship with the Red List

Ideally the GLS should be incorporated into the Red List rather than stand alone.

The name "The Green List of Species"

The name is not ideal due to the connotations of being a separate list – see above. Not sure it even needs a name – in my mind green list parameters could be extensions of the existing Red List information.

Potential concerns and recommendations

It will be difficult to quantify things like conservation efforts and counter factual status, and there is a risk that a 'green list' – if perceived as less rigorous – may undermine the perception of the Red List as based on sound science.

"Functional" as the pinnacle of species status comes with the (scientifically) questionable assumption/connotation that all species have 'roles'. Also, I don't think we want to (reinforce) people's thinking along such lines, as they may conclude that species without apparent roles are 'unnecessary'…

Integrated Biodiversity Assessment Tool (IBAT)

Eugenie Regan

Need for a GLS

There is a huge need for an aspirational, exciting and positive way of reporting conservation success, particularly if it can be presented at a population level and if it emphasises the actions that have been necessary to send species in a trajectory that means they qualify for the GLS.

Usefulness for IBAT

IBAT is focused mainly on avoiding risk and uses the "critically endangered" category of the Red List. The GLS could provide a counterpoint to this by providing positive messaging, but only if implemented at a scale where companies can see results in their own geographical areas of operation, related to populations of particular species.

Relationship with the Red List

It is not clear how the GLS of species would differ from "least concern" in the Red List. The GLS should be separate from but closely related to the Red List.

Concerns and recommendations

The review process in both the Red List and Key Biodiversity Areas is currently a huge bottleneck; there is a serious risk that the GLS would simply add to that burden, which would probably fall mainly on the same group of people and thus slow down all three listings. The review process needs a fundamental overhaul and perhaps redesign, and the GLS could be a testing ground; for example, it would be worth considering some kind of Wiki process rather than a formal review. This would also broaden the community of people involved in making assessments, away from "white men in Cambridge". If the GLS is to be an exciting, ambitious tool it needs to avoid getting caught up in a long bureaucratic process; rather it should draw on the latest technology and monitoring options to provide an up-to-the-minute, reactive tool.

The name "the Green List of Species"

The name is perfect, and IUCN should resist calls to change.

The Long Run

Delphine Malleret-King

Value and use for the long run

GLS sounds like a great way to be able to articulate where we are and what has been gained by conservation. Especially in places where there have not been clear results, in places where it seems like conservation is failing, or the status is being maintained but no visible gains, and in areas where the projects are not so glamourous.

If GLS is user friendly (a la the Red List), The Long Run would absolutely use it to articulate what our members are doing. Conservation actors, like our members, are not necessarily NGOs and often lack the capacity to articulate their successes and link it into the bigger picture. Privately protected areas in particular often have no history of monitoring and baselining, so the conservation legacy of "what would have happened if we hadn't been there" is really important and really encouraging to those doing the work on the ground.

Articulating what recovery looks like in 100 years would also be great. It can be difficult to make decisions in the field in short-lived projects, especially if those decisions involve easements or legal status. To remind ourselves of the bigger future

vision and how we feed into it might be really helpful. Articulating why these interventions and decisions are important to investors, who are also often thinking short to medium term.

Some of the members do their own species monitoring (indicator species, vegetation cover etc) to demonstrate conservation impact. I don't think GLS would replicate this, it seems the data is complementary.

Aggregating data

Impact data is often tough to demonstrate, especially as a collective – aggregating data at this level or at the landscape-level would be very useful. One of the landscapes we work in is Samburu Reserve. Having aggregated legacy data on key species for these landscapes would be really useful.

Ideas on the product and branding

It seems like a very aspirational, ambitious process and I'm concerned this may reduce user friendliness. Online databases are best, Red List is user-friendly GLS should learn from this.

A lot of conservancies are aware of or have worked with the Green List of Protected and Conserved Areas. If this continues, it will definitely be too confusing. Maybe a "Restoration Value List", "Conservation Gains List", "Species List" or "Species Status List"? We need to think about what the story is coming out of the Red List? Conservation Focus? Coming out of the GLS? Conservation Value? The name should reflect the content.

Either way, you will need to do a lot of marketing around it to ensure people know what it's use is and if you do a huge media campaign, it doesn't really matter what you call it.

Black-Spotted Rock Frog (*Staurois guttatus*) © Debbie Bishop

Golden Agri Resources

Ambang Wijaya

Value and use for Golden Agri Resources

Our holdings have many areas set aside for conservation, some of which form habitat for species of global concern, such as the orangutan. We would likely continue to use the Red List as this is a red flag system for high conservation value assessments to plan management, monitoring and business operations. However, whilst we aim to manage these areas to maintain the current populations, our goal is to support them to reach a level of viability. We would use the GLS as a scientific reference to determine precise conservation targets for key species that live in our plantations. Those targets would be embedded in our strategic and annual action plans through HCV management and monitoring.

Conservation Gain and Dependence metrics could also feed into Roundtable on Sustainable Palm Oil (RSPO) Compensation Projects (RACP) which have a minimum project life of 25 years. We would be especially supportive of GLS as an internationally recognised, transparent management standard and it would be ideal if others in our sector would collaborate on conservation efforts, co-funding and monitoring using GLS to achieve the Sustainable Development Goals (SDGs), Aichi Targets and other global commitments. Above all, we are happy to continue conversations on the applications of GLS in the palm oil sector.

Place-based indicators

If our business operations overlap with the spatial units of GLS-assessed species, this should be identified during standard HCV assessments, the HCV assessor should take GLS spatial data into account in their management recommendation.

An online database, integrated into the Red List

An online database will be far easier to use for global stakeholders and partners like RSPO. However, for Indonesian Sustainable Palm Oil (ISPO) certification, a national report and annual report would be more useful. Integration with the Red List would avoid the overcrowding of tools required, especially for palm oil operations. Many plantation managers do not fully appreciate the benefits of conservation and excessive tools and procedures may overwhelm them.

Roles and responsibilities

My concerns are around who is expected to be involved or lead GLS assessments. I am unsure whether we (grower businesses) have sufficient expertise and knowledge to do this. If there are funding implications, this may also be a challenge for most agribusinesses wishing to contribute.

Zoos and botanic gardens

Bristol Zoo

Alison Cotton

The need for a GLS and usefulness to the zoo

It is certainly useful to have some metric of potential conservation recovery for each species. It provides a nice, comparable framework to assess interventions and potential for success. Primarily it would be useful as a general resource for background research on other species that I know little about – getting an immediate sense of recovery potential and intervention success. For my given species, I would certainly look at it, but there is so much inherent uncertainty in modelling contraindicated trajectories, it would be of limited use. It would therefore be useful as a tool for understanding the conservation of species I am less familiar with – similar to how I use the Red List. While it would be interesting to see what the higher-level indicators looked like, but realistically, given the difficulty of even doing it at the species level, I would focus on that to begin with.

The ideal tool

Definitely online, a global database would work best in my opinion. It would be a good addition to a species information 'pack' when nested within the Red List. People are always trying to quantify project success for a species, so the metrics would be a useful addition to this information and given it is done at the species level, it shouldn't clash with existing tools. In saying that, it would be interesting to see whether different groups conducting the assessment, would get different results as there is more scope for interpretation and bias than the Red List has for example.

The GLS would need to accommodate two different groups simultaneously – firstly the general public need to see some clear, comparable output that tells them about species recovery potential. Secondly, conservationists and scientists will want to see the detail behind the decision and how everything was calculated. So, the initial view needs to be clear and easily digestible. Keeping the same axes offers helps understanding for those without an in-depth knowledge of the process, but the definitions could be targeted to make sure it makes sense for each axis (even if the words are kept the same).

Relationship to the Red List

The GLS should be nested within the Red List – then the latter provides a much more complete 'package' of information about a species, but it must be made clear that the GLS doesn't inform the Red List status, but rather is an additional source of information on recovery potential.

The name "the Green List of Species"

It makes sense as a name, given the connection to the Red List, but my concern is that the general public still get the idea of the Red List wrong (i.e. they think it is just a list of threatened species) and I think that they will think the GLS is a list of species that are doing well – so it will confuse them to see that some species are on both lists, some only on the Red List (if a GLS is not possible) and they will misunderstand the point.

Concerns

My major concern (having been heavily involved in assessing species for the Red List), is that the vast majority of species will not have enough data to make this assessment meaningful. We barely have enough information to Red List most of the primates (a heavily studied group of taxa), so the GLS would be a logistical headache. Many conservation efforts for primates are not done on the species level and it will be very difficult to quantify meaningful recovery, particularly against a hypothetical counterfactual.

As discussed above, it is open to the public misinterpreting the meaning, so I would caution that the press around the launch needs to be very carefully worded.

I question who is doing the assessments – due to the inherent uncertainty and some potential bias, you need to be careful to maintain consistency. Along this line, given that the assessment is quite complicated and involved, if the assessments are to be done by volunteers, this will be hugely problematic in terms of getting them done in a sensible time frame and to a consistent standard.

Although I have no problem with the axis and clearly a lot of thought has been put in, I do think that correctly assessing vastly different conservation interventions will be so difficult, for example global initiatives to control climate change vs. supplementary feeding – predicting the future and particularly the future without these differing interventions is hugely tricky to the point of being pretty much impossible for many taxa.

Finally, beware of impending controversy – the Red List is now very quantifiable and people still debate that; the proposed GLS is much more flexible and open to different interpretation so I wouldn't be surprised to see far more discussion, particularly about heavily studied species.

Bellflowers (*Campanula mugeana*) © HasanYıldırım

Denver zoo

Brian Aucone

How zoo conservation might use the GLS

Having a tool to evaluate success and where species are headed instead of always being in a firestorm would be very valuable and GLS would certainly enhance other existing tools. Personally, I'm excited to start using it to communicate how the conservation needle may be moving and what would be the effects without our field programmes. As conservation results can take a long time to manifest, it can be hard to show our achievements and generate support and financing, so the trajectories showing non-intervention vs. intervention could be very useful. The Recovery metric could also be used as a navigational tool.

Main concern: perceptions and the GLS name

The general public presents the biggest conservation challenge and opportunity. A lot of our work is about communicating conservation to the public and in our experience many people strongly associate the Red List with extinction risk; if you say a species is on the Red List, the public will assume it's endangered. The Red List name has effectively become synonymous with "endangered". As conservation communicators and educators Denver Zoo also uses these terms in this way; we would never say "the Western Diamond-backed Rattle Snake is listed on the IUCN Red List as Not Threatened", we only reference the Red List to the public when a species is threatened.

Psychologically and culturally we think of red as bad, orange as caution/ok and green as good, if we put GLS in relation to the Red List, I worry that this is the message people will take away. If the public hear a species is on the GLS, they will assume the species is doing fine and requires no further conservation action, particularly if the GLS is embedded into the Red List.

The ideal GLS Tool

It might be good to have annual reports which could be embedded online but for maximum use and accessibility, GLS would be an online database that could aggregate info at the species or landscape level. This would be most useful for our field conservation programmes.

Technicalities

The fewer categories we have per axis the better, it will be harder to force data into fewer categories but ultimately this will be easier to manage, utilize and communicate. It would also be best if you could find categories that work consistently across all metrics. There are probably some nuances with how GLS assessments will need to be applied to different species; needing to account for some variation in data or species characteristics etc.

Durrell Conservation

Jeff Dawson

The value and necessity of the GLS

There is a lot of value in the GLS as a tool for demonstrating conservation success, specifically when sourcing funding to show:

- What conservation has achieved for that species or similar species, i.e. demonstrating proof or success particularly after many years of conservation efforts with a species.
- What is the need (or potential "Gain") for that species – particularly in the early stages of a project when planning and securing funding.

Species conservation needs 20-30+ years before producing results and when projects don't demonstrate success in a 3-5 year grant cycle this can lead to donor fatigue. Quantifying potential gain and conservation success and that dependence could help ensure funding long-term. Durrell and many others use Red List in this respect, but it doesn't/or shouldn't really function as a prioritization tool. GLS will be more valuable for communicating these specific messages to donors but also to partners, board members, local communities, governments etc.

Other tools

The Durrell Index started five years ago, it measures Durrell's own conservation success, i.e. the counterfactual situations or conservation legacy of species we work with. This has been a really powerful tool for communication and Richard Young who developed the Durrell Index is now working on GLS. GLS is an evolution of the Durrell Index adding the pieces of potential gains, dependence and recovery.

How GLS might look and function

Durrell would use it more at the species level (as opposed to regional or global) but GLS could aggregate up to the regional/global levels if other users need those indicators. Durrell might use this as a global snapshot of what conservation has achieved so far.

As it would be resource intensive and some species have received little/no targeted conservation, there would be a much smaller subset of species from the Red List that you could do a GLS assessment for. Ideally, GLS could be nested in the "Conservation Actions" section of Red List and this could expand out into the different axis.

Design of the metrics

Good to make metrics as simple, clear and easy to understand as possible to aid in the GLS's function as a tool for communication and minimise the risk of misunderstanding. 3-4 categories like "Low", "Medium" and "High" per axis seems suitable. Recommend using only 3-4 categories and keeping categories and terminology consistent across each axis to reduce risk of misinterpretation. Perhaps a bit more explanation on each category would also be good to aid understanding and communication.

Thoughts on the GLS assessment process

The assessment process needs to be rigorous with strong oversites and high standards. There is a risk that people close to a certain species might want to influence the assessment so that species receives more attention. The paper mentions the perverse relationship between high threatened status and conservation attention or funding. It is important that the GLS tries to mitigate this as much as possible, particularly at times when a species status is being downgraded (i.e. from high to medium Dependence). Utilising counterfactual methods means there will always be elements of best guess/assumptions based on available data, it is hard to make this a perfect process but it should be as robust as possible.

The GLS assessment should be conducted alongside the Red List assessments to streamline the process and reduce pressure on resources, particularly expert opinions.

Thoughts on communicating about GLS

GLS name seems good, there might be misinterpretation around the idea that its the opposite of the Red List so you need a little more explanation:

- It is not an alternative to the Red List, as it is focusing on different metrics (the need for conservation, the legacy etc).
- If a species has a GLS assessment that is not because it doesn't need conservation (some people think that if a species has a Red List assessment it must be endangered etc)

Great to get some guidance on how to utilise the GLS/how to interpret GLS assessments and how to utilise it alongside the Red List, particularly in prioritisation exercises, to ensure they are both functional and people understand their different functions.

Oriental Pied hornbill male (*Anthracoceros albirostris*) © Aparajita Datta

Albuquerque BioPark

Baird Fleming and Tim Lions

Connections to the Red List

There is great value in the GLS, but the GLS should be a part of the Red List Index. Although you won't GLS all the species on the Red List Index, it seems a waste not to use that platform. I would suggest just incorporating the GLS criteria into the Red List, so that the Red List becomes a more comprehensive tool.

There would be a lot of useful information for a GLS assessment already built into the conservation section of the Red List assessment of a species. There is also a movement within the Red List to start to build conservation action planning into the assessments in an 'Assess, Plan, Act' model. It sounds like the information needed to produce a GLS Assessment is along the same lines so it would make sense to try to integrate these.

Interest in conducting Green List assessments alongside RL assessments

We have three full time Red List assessors (working on freshwater fish, pollinators and medicinal plants), a new one starting next year and a staff member that will be devoted to running high level Red List workshops for species of political importance. We would like to get this team to run some GLS Assessments.

In early 2020, Tim will conduct Red List assessments on all the freshwater fish in Central America. If we can flesh out a GLS assessment methodology, we could definitely give this a pilot run in February in parallel to our Red List assessments. Perhaps we could look into ways to streamline the two assessments together.

Our Red Listers will also be facilitating National Red Lists and national conservation plans – it would be great to blend in the GLS process here. I imagine a strong knowledge of government interventions and conservation plans for species should feed into GLS assessments, so our Red Listers would be well placed to ensure this information gets incorporated.

Concerns

Is there enough data for the smaller, less-studied species? I guess the species that are selected for GLS assessment will be strategic to the GLS objectives. Ideally, all species would be GLS listed, or are there any species that it would not be strategic to List?

Indianapolis Zoo

Rob Shumaker

Value of the GLS

The GLS paper is brilliant, the concept is great, and it is frankly overdue! I can see tremendous application for the conservation sector as a whole: the scientists, practitioners and also educators.

Our uses of the GLS

Education: Being able to pair GLS outputs with Red List information could be immensely powerful. We have between 1.1 and 1.2 million visitors to the zoo every year, our visitors are always asking if our animals are endangered, it would be wonderful to answer using the GLS: 'look, species X is doing well in the wild, thanks to these interventions, as compared to species Y which isn't doing so well and here's why'.

Identifying recipients for our conservation funds: Several hundred thousand dollars a year is provided to field conservation support from Indy Zoo, even more from the Association of Zoos and Aquariums and the World Association of Zoos and Aquariums – GLS could help us justify and perhaps re-evaluate where we put money and help track the success of programmes we support. I'm not clear yet how we will use the different metrics to identify priorities for example between a species that is doing well and requires funding to stay that way compared to a species that is struggling; perhaps we'll decide we need a more even blend of projects across the metrics?

Contextualising our new Global Centre for Species Survival (a collaboration with SSC): very few of our donors and zoo-goers are familiar with IUCN, even fewer are with SSC. GLS could help us contextualise these groups and where our new Centre fits in.

Detail of stromatal lobes of *Hypocreopsis rhododendri* on bark of *Corylus avellana*, with ostioles visible as dark dots. © P.F. Cannon

GLS scores versus categories

A week ago, we conducted some focus groups on species conservation – the majority of people were lost, many didn't like or understand the word 'conservation', they couldn't explain it, many felt the word was politicized. I have a lot of respect for our visitors and the general public, but most people are profoundly lost when it comes to understanding conservation. The time is right to rejuvenate these conversations with the public. Instead of the word 'conservation', we could talk about where species are on the Green Scale or their Green Numbers.

A number would be easily graspable – i.e. species X, at 75 on the Green Scale, is doing better than species Y, at 50. Numbers work best – people understand scores as part of their lives (e.g. salaries, sports, academics etc). This would be a more neutral way to convey information to people and more graspable than concepts like 'Vulnerable' or 'Near Threatened' etc. the general public has a very weak understanding of these words.

If you cannot explain what you do in conservation to the average person, that is a problem. I really admire both the sophistication of the GLS too and the simplicity of its outputs. The power is in the simplicity that you can convey really sophisticated information.

Connections to the Red List

If the GLS score was featured in the Red List profiles, that would be great for people that routinely use the Red List. However, the general public have very little knowledge on the Red List – they don't know about it; they don't use it. We would need a summary that could be extracted from GLS to place in literature, project websites, enclosure signage etc.

Technical concerns and thoughts

Having read the paper, I don't fully understand how historical range is being calculated and when the benchmark is being set – 1750 or 1950? What if a species is doing poorly in its historical range, but it has moved into a new range through a normal process of natural selection and it's doing well here? Projected range is in the paper but, why are we so focused on historical range? It seems a bit restrictive.

What about invasive species? The Burmese python is doing very well in the USA – how will this feed into their GLS assessment? This article and paper raise these questions (https://bit.ly/35syzVW). Also, do the ranges of introduced ecological equivalents count e.g. tortoises in Mauritius?

Kew Gardens

Eimear Nic Lughadha and conservation staff

The value and necessity of the GLS

We understand that it addresses a need articulated by those working on species whose conservation status has improved but for which conservation action is still needed in order for them to not merely survive but thrive. Specifically, it has been argued that the GLS will enable funders to understand and support requests for resources to invest in recovery of species that are not considered to be threatened with extinction. However, the value of a GLS would be limited for our work focused primarily on tropical plant diversity because of the difficulty in defining with any degree of confidence the fully recovered state whereby the species is viable and ecologically functional in every part of its indigenous range and projected future range. For most tropical plant species, we struggle to obtain and interpret data sufficient to evaluate current range and range at relatively recent points in the past (e.g. 100 years or less) for use in Red Listing.

Delivering credible, consistent and evidence-based estimates of indigenous range 250 or 500 years ago as well as estimates of projected range shifts due to climate change, as required for the GLS is unrealistic for most tropical plant species, many of which are represented by too few data points to enable robust species distribution modelling. The value of the

GLS for any purpose will depend on the credibility of these estimates used to define 'the fully recovered state' which in turn provides the scale against which the Conservation Metrics will be measured.

If it was available, would you use it, and how would you use it?

In discussion with colleagues we identified the most likely scenario in which we would use the GLS to be in relatively well-known and relatively species-poor situations in which the availability of long-term records and the presence of clear constraints to geographical distribution enabled a greater degree of confidence in estimating the 'fully recovered state'.

We could envisage using a GLS approach for particularly well-documented plant species and potentially for geographically bounded areas. For example, there was interest in piloting the application of a GLS approach in one of the UK's island Overseas Territories. We found it hard to envisage the GLS as a global indicator because of the challenges in ensuring consistency of recovery definitions across areas with very heterogeneous knowledge levels.

What type of product would be most useful)?

A global online database is essential in the interests of consistency, transparency etc. Other products should be demand driven.

Links to the Red List and other tools

There are obvious potential synergies with the Red List in terms of data required, likely contributors and likely users. However, there are potential clashes in terms of resourcing. The IUCN Red List Unit in Cambridge is already chronically under-resourced, leading to long delays in the processing and publication of Red List assessments submitted there. It is vital to ensure that work on the GLS is not at the expense of the Red List of Threatened Species, IUCN's best known and most valuable global knowledge product.

The intention to integrate the GLS within the Red List has been stated and published https://doi.org/10.1111/cobi.13112. We would not favour development of the GLS as a standalone product. The GLS should be integrated with the Red List so that conservation assessment resources are used as efficiently as possible and so as to minimize risks of diverging datasets and evaluations of the same species.

Recommendations

The key learning from a plant perspective is that the criteria should be stabilised, and the guidelines established before massive investment in GLS activities. Plant Red Listing still suffers from the 'hangover' of the fact that the largest Red Listing efforts ever undertaken for plants immediately preceded a major change in Red Listing criteria, with the result that tens of thousands of completed Red List assessments were inconsistent with the criteria. To minimise the risk of a major change in criteria that renders a large number of GLS assessments out of date or obsolete, extensive testing is needed before the criteria are finalised.

Technical decision about the number of categories should be based on evidence emerging from testing across groups and not from opinion gathered in surveys. Ideally, the number of categories and the thresholds between them could be informed by the distribution of the data. If the axes differ in their number of categories, then best use different names for them. For example, it would be confusing to have *Legacy* with options of high, medium and low, and another axis with options being just high or low. If some axes end up having more than 3 or 4 categories then perhaps best to give them numbers or letters of the alphabet, so that their order is obvious. More intensive and extensive testing is required covering more species, preferably selected at random, so that the numbers and thresholds of categories are data-driven rather than opinion-driven.

Although we recommend that the GLS should be embedded within the Red List there should be no requirement that an assessor undertaking a Red List assessment should also complete a GLS assessment. GLS should therefore be an option, rather than a requirement, for those undertaking a Red List assessment.

Much more testing is needed in order to support evidence-based decisions re numbers of categories and thresholds between them. Ideally, testing should include random samples of species from each major group rather than focusing on some of the best-documented species as appears to have happened to date. It will be important to quantify and understand the extent to which variation between Green List assessments of different species is driven by variation in the initial step of defining the fully recovered state. This step has scope for much subjectivity and therefore for gaming the system to produce an assessment considered most likely to appear to funders.

Concerns

Apart from the feasibility of generating reliable Green List assessments for plants, our main concerns relate to realism, resourcing and expectations.

Red Listing of plants has been gaining momentum with support from a variety of funders. We have a concern that the novelty of the GLS may attract funders to the detriment of support for the Red Listing efforts, which are still urgently required for the majority of plant species, as well as for most invertebrates. Some conservation funds are restricted to species in certain Red List categories or to those having a species action plan or a letter of endorsement from an IUCN specialist group. These eligibility requirements limit opportunities for conservation action on taxa with low Red List coverage and those lacking a specialist group. We have a concern that the development of the GLS may provide another means by which funds are differentially allocated to the better documented organisms which are not necessarily the same as those which would most benefit from conservation action.

Current state of knowledge is insufficient to support Red List assessments for most of the world's known species, let alone GLS assessments, which are more data hungry.

Finally, we have a concern that any of the above may lead to the generation of GLS assessments which are little better than supposition, diluting the credibility of the Red List.

The name "The Green List of Species"

No problems with the name, except for the fact that the Green List of Protected and Conserved Areas is conceptually very different, which might cause confusion.

Neotropical otter (*Lontra longicaudis*) © Nicole Duplaix

Field expeditions to collect propagules of the target species of the *Discocactus horstii* © Melissa Bocayuva

Botanic Gardens Conservation International (BGCI)

Malin Rivers

The value and use of the GLS

The Green List will be a valuable tool to showcase and highlight conservation success, if applied correctly. BGCI would potentially use the results of the GLS, especially for individual species to show conservation success or conservation legacy.

The ideal tool

We would probably only need use it for individual species. It would be difficult to use in different way as there are unlikely to be comprehensive (or even representative) GLS assessments to use more generally. I would advocate for keeping things simple, particularly with regard to number of axes and categories, and for making the system as user friendly as possible. Online training tools will be important.

Relationship with the Red List

If done well, the GLS should be nested within the Red List. There is however considerable risk of it competing with the Red List, not in scope but in space on the conservation scene and therefore competition for time, resources, funding and “publicity”.

Is Green List of Species the right name?

I would prefer to have something that focus on success/achievement.

International non-governments organisations

BirdLife International

Stuart Butchart

The value and necessity of the GLS

The GLS is not necessarily needed as a standalone list, probably better as coding on the Red List.

For BirdLife, the main values would be (a) to identify conservation dependent species, and as an outcome we can point to when people oppose 'their' species being down listed on the IUCN Red List as a result of conservation success; (b) to quantify conservation impact to date (lots of focus on how bad the world is, but how much worse would it be without conservation to date?); and (c) to help to set recovery targets in a more standardised way. For (b) we'd report the results in *State of the World's Birds*. For (c) we would use GLS status assessments to support BirdLife Partners and others planning recovery projects. Place-based or global indicators based on the GLS assessments would be useful if global and representative (or through random sampling if not comprehensive, given the latter is not feasible).

The ideal tool

A global dataset integrated into the Red List would be the most useful product.

Concerns

If promoted as an independent list, the GLS risks considerable confusion with the Red List, given the latter is a comprehensive list of all species. Much better to have scores for the various metrics integrated into SIS and presented on the Red List website. There should be no clash with STAR given the difference in objectives and scale.

There is a significant trade-off between utility and practicality. The more intensive and complicated the assessment, the more useful it is, but the fewer will be completed.

There are also risks of end user confusion by use of another 'List' nomenclature. Excessively complicated methods will be a problem; avoid a perfect system that is little used because it is too onerous. There may be unrealistic expectations about how widely it will be applied.

Links to the Red List and "The Green List of Species" as a name

I'd be inclined to drop the whole green list terminology. It doesn't really help. Choose a completely different name for a set of fields or evaluations that sit within the Red List: "Impact of Conservation scores" or something like this.

Recommendations

Some kind of sampled approach would be a neat way of getting a more realistic global picture of conservation legacy, and this would be very useful.

Ustilago suddiana in South Sudan © C. M. Denchev

Conservation International (CI)

Dave Hole and Daniel Juhn

The value and necessity of GLS and its role within CI

The idea makes sense. The proposed list probably has less utility than it once would to CI because of the organisational switch towards focusing more on natural capital than biodiversity conservation in the pure sense, but could be important with respect to particular species, such as fish that have direct value to humans. Species also underpin nature's contribution to people so the field programmes could well use the GLS.

The ideal tool

Place-based data is the most important. The GLS should follow the same format as the Red List; national reports would also be very useful, annual reports less so. Simplicity is important so a limit of 3-4 categories per axis would be ideal, with equivalence between the categories. The GLS should be nested within the Red List.

Recommendations

Likely audiences for the GLS should be identified early in the process – companies, governments, the CBD etc – and brought into discussions from the outset to ensure that the GLS fulfils their expectations and needs. There is considerable overlap between the GLS and emerging thinking about ecosystem accounting or biodiversity accounting and the GLS could be a contribution towards or measure of biodiversity accounting. Planning for biodiversity and for ecosystem services may be quite different and IUCN knowledge products should be able to align with both approaches.

Concerns

The Red List is already chronically underfunded, which undermines its usefulness and ability to report; the is a real risk that the GLS will simply compete with funds with the Red List; being newer the GLS may for instance be more attractive to funders.

Donors may also be more likely to support species with a high chance of recovery, with the perverse incentive that species facing more intractable challenges will be left out of support packages. There could also be a bias towards charismatic species.

World Wide Fund for Nature (WWF)

Wendy Elliott

Overall perspective

There is cautious support for the GLS, with the caveat that it is important to get existing tools such as the Green List of Protected and Conserved Areas and Conservation Assured | Tiger Standards (CA|TS) working effectively first, as well as strengthening the Red List. Unclear why focus would be diverted from these crucial efforts to something new. The GLS is only worth pursuing if it incentivises conservation. That said, WWF would certainly use it if available, probably by employing it as an incentive for conservation of particular species.

Form that the GLS should take

It would be most useful as a country-based scorecard, running alongside and closely linked with the Red List and acting as a comparison. However, a national GLS would only really be useful if there was also Red List analysis at country level and this is not currently the case. Given above concerns about not diverting resources and effort away from existing tools that need strengthening, GLS should only really be considered if done for a clear and small subset of species, with a particular purpose in mind that would mobilise support for conservation. It could for example be used as a way of measuring progress towards the St Petersburg target for tiger recovery.

Clashes with other tools

See above. Major concern is diverting time and effort away from existing tools that need strengthening and would be of higher priority.

The name “Green List of Species”

“Green List of Species” is not an inspirational name but it describes the tool well and matches with the Red List. A bigger problem is that there is already confusion between this and the Green List of Protected and Conserved Areas (which most people call the ‘Green List’). Would definitely suggest this is strengthened and institutionalised before additional ‘Green Lists’ are added.

Concerns

Two concerns are that the GLS could cause confusion by adding to the long list of existing tools available and could develop into a huge, expensive and time-consuming global exercise.

It would work best as a targeted list focusing in detail on important species and helping to spur additional interventions for their conservation.

Recommendations

The GLS should focus first on species that are subject to particular conservation actions to provide a scorecard and incentive to persuade governments and others to act; such scoring could be controversial but could provide an important tool to help drive forwards conservation.

Zoological Society of London (ZSL)

Andrew Terry

Value of GLS assessments as a platform recovery planning tool

GLS would be a great tool to help track species' recovery, but it should also be used as a species planning tool to set recovery targets and to structure responses with partners and track these over time. Maybe the official GLS assessments might only happen once every 5-10 years, but the framework could be used as a management tool on a far more regular basis. This way the assessment process itself would have value rather than it just being a cost on resources.

Who will be conducting and leading these assessments, just the species specialist groups as in the Red List assessments? I think assessments should **involve all stakeholders** that will participate in the species' recovery to set longer-term recovery targets. For example, in the case of the Saiga (a wide-ranging cross boundary species), many agencies and governments are involved, whereas for the Lord Howe stick insect (one island, very focused recovery effort) there is a small group of partners with a more explicit relationship between action and response. This should then feed into national/institutional target setting.

It would be great to integrate GLS into ZSL as a framework for strategic planning, target setting and board-level reporting, return on investment reporting etc. I'd like us to trial this. ZSL's "*Back from the Brink*" exercise aimed to set recovery targets for species ZSL are engaged on recovery for, outputs were low resolution, the next step is to deepen this process with a couple of ZSL focal species.

An agribusiness managing a large area that can significantly impact a species may like to use the GLS to identify different management responses based on costs and benefits for landscape-level scenario-based planning. Red List is currently not sensitive enough to be used for organisational/national strategic planning as achieving a change in Red List assessment can be extremely difficult. I believe GLS would be more flexible with more granularity.

A tool to provide scale?

If the data are rich enough and you can aggregate at the taxonomic level, we could see:

- How different taxonomic groups are responding
- Which investments are most strategic (can we overlay cost on the GLS?)
- Challenges
- Priority landscapes and taxonomic groups
- Where we can generalise recovery efforts to broader suites of species/areas
- Where we can replicate successful recovery efforts for species with similar challenges

Species recovery programmes are so fragmented, we are just thinking about that one species, there are many gaps and efforts are high investment. How do we have a greater impact than just the small sum of recovery programmes – where can we create leverage? Can GLS help us avoid the following pathway:

Madagascar Pochard Recovery = $5M
No. CE Birds = 10,000
Saving birds = 5M x 10,000 = $50,000,000,000

Product and communication

The GLS is fundamentally different from the Red List so I don't think it should sit under the Red List umbrella. I'm not sure how it should relate to the Green List of Protected and Conserved Areas or the proposed Green List of Ecosystems. I suppose we would start by Green Listing species that are threatened on the Red List?

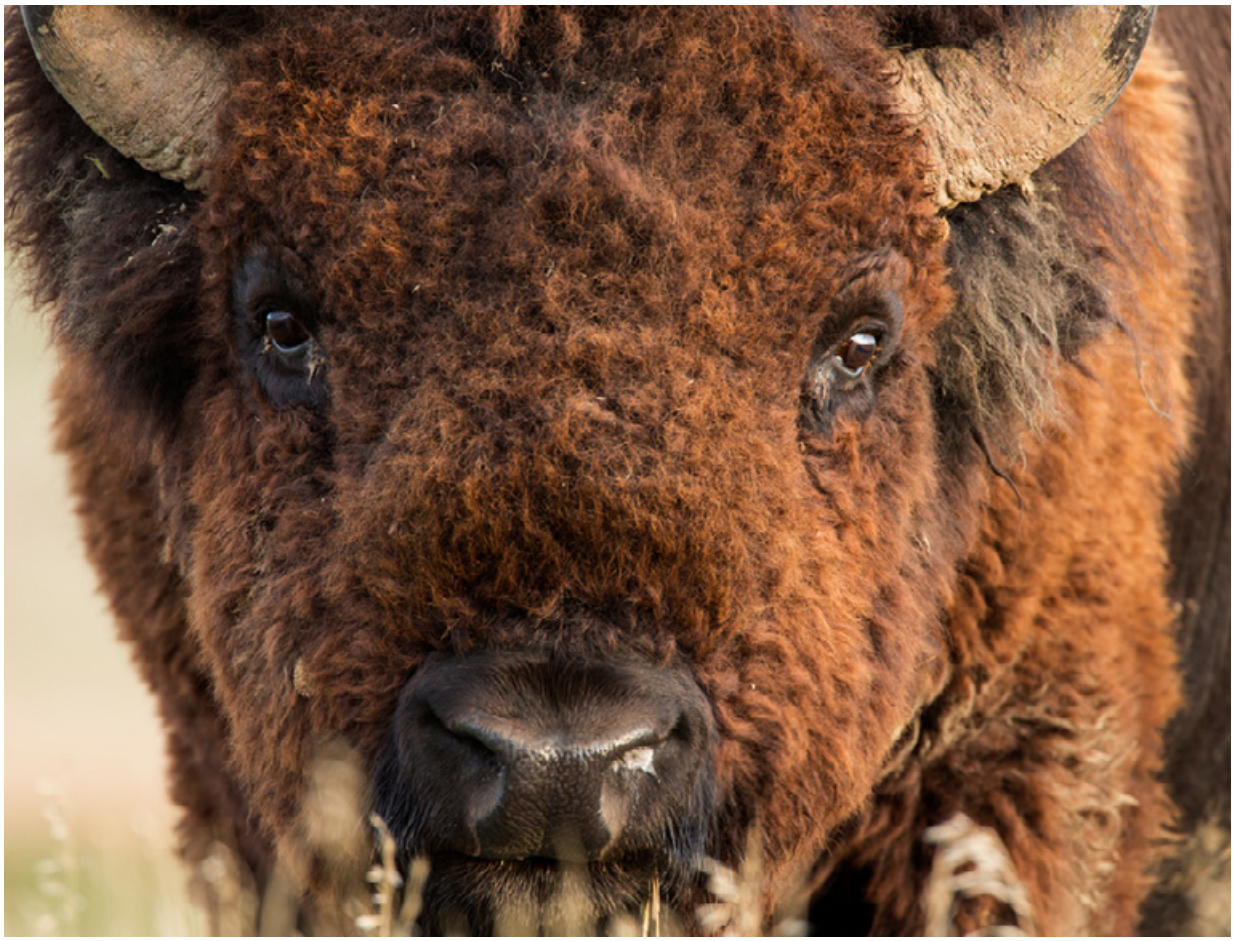
How you store and communicate data depends on the outreach intention. Is the tool aimed for institutional donors, policy makers, influential sectors like the private sector? Biologists and conservation practitioners should probably not be your primary aim as however user-unfriendly it is, we will probably still use it. We're also probably not the right people to be asking about the name. In general people get the Red List; it's misinterpreted a lot but on the whole people understand red = warning. There is a misinterpretation risk with the GLS name.

Conservation dependence is a tough pill to swallow for donors etc – the idea that some species will always rely on some form of conservation support because of habitat degradation etc. So that metric will be particularly important for our work. For example, Durrell has been able to show success in Pink Pigeon recovery and population growth but if we withdrew support those populations would crash.

Integration with other tools

With respect to the EDGE (Evolutionarily Distinct and Globally Endangered) of Extinction process, it would be great to see the GLS categories included, whether we're tracking recovery or gauging recovery potential. Great to brainstorm what that would look like? It would be fantastic to demonstrate GLS potential achievement to EDGE species donors/partners and build a GLS planning exercise into each of the EDGE species.

The Durrell Index started off as a retrospective measure of legacy and what had been achieved in the past and is now beginning to gauge where we are now and where we could be in the future. There is clearly some overlap here between the Durrell Index and GLS methodologies and these will hopefully be aligned.



American Bison (*Bison bison*) at Badlands National Park © Day's Edge WWF-US

International Union for Conservation of Nature (IUCN)

James Hardcastle – Global Protected Areas Programme

GLS concept has merit

Any tool to promote species recovery and envision recovery pathways, shifting focus away from the crisis narrative is good. However, it has to be a complementary part of the Red List. The name is therefore not compatible. I suggest the Species Recovery Index (SRI).

More dialogue on the names – Terminology tripping us up

At IUCN, we have too many tools and we're good at coming up with new tools but we're poor at articulating how they connect. With the 'Green List' concept we're talking about three (or more) different things with the same language and the public and partners (e.g. Moore Foundation) are already confused – this is now impacting our work.

More dialogue on the integration – Tying together species recovery and effective protected areas

The IUCN Green List of Protected and Conserved Areas (often just called The Green List) is a sustainability standard that promotes and recognises conservation effort and achievement. The proposed new species list is an index of species recovery – we need to be mindful of this difference. They cannot both be 'Green Lists'. IUCN needs to develop an open dialogue strategy on how we articulate these tools and relegate the concept of "Green Listing", so we don't end up competing for donors/partners and confusing people. Any time we lose competing against one another is a waste. We need to be practical in working out how these tools integrate and how they'll be used in the real world. We also don't want to denigrate the Red List with our communications. By having a GLS we are automatically challenging the integrity of the Red List. You cannot have both a Red List and a Green List without a very, very clear articulation! Either change the whole Red List to a Green List, or incorporate a Species Recovery Index into the Red List.

My thoughts on integration

The "Green List" (we do not use an acronym for the Green List of Protected and Conserved Areas – it is the 'Green List') is an umbrella encompassing a lot of other tools needed to demonstrate successful protected areas. The Standard is approved by IUCN Council, the certificate has value, the branding is strong: agencies, governments etc. like the positive recognition. The Green List of Protected and Conserved Areas has a more direct connection to providing recognition/giving value/providing incentives and motivation etc. We support protected area teams and conservation agencies to identify the values they have and how can they articulate them through evidence. However, we need to understand what that means within the larger landscape – if a protected area has 100 tigers but according to densities in the wider landscape, they should have 1,000 that isn't good enough. You need the broader context of their potential contribution to the species and biodiversity within the landscape. The Green List should include the species recovery index, whatever it is finally renamed, rather than it being a separate list, so that protected areas could demonstrate how they are contributing to global species recovery as part of their recognition and certification. Considering the above, I think the Green List (of PAs) has a lot more capacity for including tools than we're making use of.

Places where we can pilot and illustrate integrating these concepts

We could identify key species in an important landscape. Engage with the protected areas, the unit of protection within that landscape, and promote the management and connection of areas outside the landscape for species recovery. You will need the broader information from Red List or Species Recovery Index about the species globally or in that landscape to do this properly.

Giulia Carbone – Global Business and Biodiversity Programme

Green List – misleading name

Green is misleading, we are not listing recovered species here, which is how I interpreted it, actually this concept is very different but so much more exciting! If a protected area is in the Green List of Protected and Conserved Areas, it means it is well managed, but the GLS is measuring potential, it's about how people can contribute and putting these contributions and actions into a context. Perhaps a "Recovery Potential" or "Recovery Opportunity Spectrum". Frank Hawkins and Tom Brooks are currently developing a recovery metric which could be linked to this, it measures current pressures and their changes. You should definitely speak with them. They've been thinking about units of recovery and how to communicate this.

Value for business

These metrics seem very relevant for businesses to use as baselines to demonstrate the actions they are taking to conserve species are having impacts. I suggest you speak with a few companies that have a direct link with land use (mining companies – we work with Alcoa, Shell and Rio Tinto) to understand better how they might use this tool. Most of these companies use the Red List as a risk factor in impact assessments. Could the GLS metrics fit into this process? It would also be good to talk to the impact assessment community. Prioritise species that can be used as environmental indicators first, such as birds. Businesses could use these indicators to gauge health of their environment. However, maybe more charismatic species would help to fund the GLS?

How would I use GLS?

The more tangible information we have on pathways for recovery, the better we can convince people to take action. It would be great to say there is an assessment conducted through a formal protocol that can indicate impacts from different actions, including full conservation action and explicitly link these to outcomes. For example, the advisory panel for the Western Gray Whale could use the four metrics to support a conversation with all the different stakeholders, including those that are putting pressure on the species. A lack of evidence of threats posed by a company to the species is a big problem in this group's discussions. Having a defined vision for this species would be very useful.

Of course, aggregated data for multiple species in this area would also be great to aid discussions. We are criticised for spending lots of time and money on one species when actually the problem is at the ecosystem level. It would be good to find out more about the value of a GLS assessment for developing a species management plan.

Links with protected areas

Perhaps this could be an indicator for Green List of Protected and Conserved Areas, but I would also say that the latter should contribute to a GLS score. GLS is about species whether or not they are in a protected area, and many are not. They are very different tools; one measures human effort and the other species recovery achievement. Could GLS help identify future protected areas? How much of GLS will fold into KBAs?

Frank Hawkins – Species Threat Abatement and Restoration Metric

Value and use of GLS

I've recently been involved in a lot of CBD conversations around 'Bending the Curve' – GLS would help us identify the pathways to bend the curve particularly for species of economic or cultural importance. The value of GLS is to show that you are having an auditable impact on a named species.

Some thoughts on how STAR and GLS might function together

STAR aims to change the way vast amounts of money flow through the global economic system to:

1. Deflect money away from where it is negatively impacting biodiversity (this can have massive impact)
2. Orient money to where it can have positive impacts on biodiversity and demonstrate how that outcome can be generated

If you want to bend the curve of species loss, you cannot do that individual species by individual species. You need to find leverage. STAR assesses the threats to species across sites or landscapes, so that by addressing these threats, you can reduce the risk of extinction of all the species that are affected by them. STAR will not tell you directly how your interventions are impacting individual species. But, if you know of an individual species that is impacted by your interventions to reduce threats, you could use GLS to understand better what impact is happening.

STAR is used to help actors to focus efforts on the right pressures and species that apply across an actor's footprint. If they want to, they could align their actions with other organisations that focus on specific species outcomes, using an auditable standard – I see GLS filling this gap.

For example, species in an East Africa savannah habitat are under threat from infrastructure, hunting, land use change etc. STAR could help an infrastructure company operating in this area to calculate how much they can adjust their impact on the risk of species extinction across the range of terrestrial vertebrates there. GLS could then produce recommendations to help the company accommodate the specific requirements of individual species.

Connections to RL

The SDGs are measured with the Red List Index (changes in the assessed threat levels for taxa), STAR allows you to identify and deliver management which brings a set of species within a particular area or site under less pressure, so taking them towards a reduction in their threat category. Detailed further management, planned and implemented using GLS, allows us to ensure that those species proceed to a lower threat category. The GLS is a process that will lay out a specific set of steps to work towards changing species threat status. If species' threat status are changed, then the Red List Index will be change.

GLS and STAR in the CBD

Most importantly, we need to publish something that demonstrates how these tools fit together – similar to STAR's frequently asked question document.

It would be good to understand how GLS is relevant to the CBD. How many species it is realistic to be able to conduct a GLS process on over the next five years? It is likely that only a few hundred species will be "Green listable" every year. I think the speed at which you can get species 'Green Listed' means that it will be difficult to use progress on the GLS as a measure of success in conservation in the CBD. In this event, we won't know how many species extinctions are going to be avoided in the next phase of the CBD – this is urgent so the GLS will likely have to strategically select a subset of species to work on. In the meantime, STAR can be applied to thousands of species so we can get a much more complete idea of changes in species extinction rates from STAR than from GLS.

To underscore – GLS and STAR are very compatible, it's important that we get the two tools and Red List linking together and demonstrate the links as soon as possible.

Thoughts on IUCN tool names and timing

STAR is a metric; it measures change in the intensity of the pressures that cause species extinctions. It can be measured at relatively short intervals – the speed at which pressures can be mitigated – so is amenable to being measured at the pace of investment. GLS is a process that gives you the explicit steps to reduce threats to individual species and gives you auditable results or individual species. The Red List Index shows you, at intervals, what changes on species extinction risk have happened at the higher taxonomic level (birds, amphibians, etc). They are designed for different purposes and are therefore mutually compatible.

Angraecum coutrixii in 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 © Landy Rajaovelona

Jon Paul Rodriguez – Chair, Species Survival Commission

Value of GLS

The GLS has real value as a framework to communicate conservation success and to measure the effects of interventions. I'm a big fan of telling stories that get people excited about conservation. There are two strategies here:

1. "The polar bears are drowning" – making people feel bad
2. "The Mauritius pink pigeon has gone from two pairs to six hundred birds".

I'm for the second style of communication and I think GLS can help us to synthesise and summarise these cases and build a culture within the Red List of recognising success. I look forward to this change.

Categories and simplification

When we started working on GLS the focus was simply on celebrating conservation success, recognising past interventions, rewarding preventative conservation and avoiding increased risk in the future. GLS has become more complicated as the idea has evolved with multiple categories and multiple metrics. Technically this is fine, but when it comes to communicating these messages to the public you need to simplify.

The Red List has five criteria but the categories are independent so any criteria can take you to the same categories i.e. a species can be Critically Endangered through A, B, C, D or E. The GLS could have three or four categories, within the different metrics, but the category names should be **meaningful and intuitive** in the same way that the Red List categories are. Categories probably should not be different across the metrics unless they are extremely intuitive.

Here we must get outside of the conservationist echo-chamber and ask marketing and communications specialists, otherwise we will come up with ideas that cannot be communicated to the public. There might be trade-offs here with technical applications, but we need to separate the notions of anchoring our assessments to good science and communicating the results to the public – there is a huge cost if the public cannot understand the results.

"Everything should be made as simple as possible, but no simpler." – Albert Einstein

Type of tool and connection to the Red List

The Red List and GLS are two different tools to document species and their conservation. I envision GLS to be some kind of flag or symbol or word within the Red List Assessment with perhaps one label – "High potential for recovery" or "Key for investment" – something that explains the situation well – and an optional section to explain the GLS assessment process. It is after all the same species and the same information – it would be a shame not to take advantage of the comprehensive database the Red List has developed.

GLS analyses should also take advantage of the Red List documentation, data and assessment process. But keep in mind that assessors are already pushed to the extreme so again, some of the details may have to be sacrificed. I understand the importance of scientific rigor in the assessments; but do not let perfection be the enemy of the good.

One of the values of the Red List Index is its capacity to aggregate and consolidate data to regions or taxa etc. it would be good if GLS could do this too, although this wasn't how I'd originally envisaged the GLS.

The GLS name

On the one hand, the Green List of Protected and Conserved Areas has gained a lot of traction and developed a clear communicable language. The GLS measures different things, but it aims to communicate the same message: recognising people's impact and efforts. So, I'm not really worried that two will clash. I'm happy with GLS as a name and an IUCN brand linked to success but if we could package it differently (i.e. Recovery Potential) I would also be happy.

Ricardo Tejada – Global Communications

Given Ricardo Tejada's role in advising the Union about communicating messages, the interview focused solely on the question of the name and the relationship to the Red List.

Introduction

It is important to stress that I am a big fan and proponent of the Green List of Species as a key indicator and think it will be a very valuable addition to the IUCN knowledge products.

The name "The Green List of Species"

Although I have no personal objection to the phrase "The Green List" and recognise that many IUCN members have been using and are supportive of the term; I have become convinced, from a communications point of view, that it is the wrong name for this particular IUCN knowledge product, for two main reasons:

1. The name Green List of Species is misleading. Will the data ever be presented as a list? It is much more likely that it will be presented alongside a Red List category. The Red List of Species describes the *status* of a species and is therefore a static picture which can be collected in a list, whereas the GLS describes a *trend*. My experience is that even when the name GLS is presented to fellow communications colleagues and other specialists, most of them have a completely different picture of what the GLS represents. This will be hard to correct with audiences outside the intimate circle of scientists working in this area.

2. There is already a "Green List of Protected and Conserved Areas", which because the name is long and clumsy, inevitably gets shortened to just "The Green List"; it is about to have a major branding campaign that may well reinforce this tendency. The "Green List of Species" is also rather a long name and is already informally being shortened; there is therefore a real risk of confusion. This is important because the two are again very different. The Green List of Protected and Conserved Areas is essentially a certification system, with the GLS, as mentioned, being measurement of a trend.

Taken together, these two issues will make branding and raising awareness about the GLS much more challenging, as initial misconceptions will need to be corrected and the distinction between the two lists made clear. It should be possible to find a clearer alternative. From a programmatic point of view, we definitely need to sort this out early in the process and avoid the risk of a re-branding in the future.

Relationship with the Red List

The GLS has the potential to enhance the Red List to a major extent and should logically be subsumed within the Red List or otherwise closely linked. Three points are particularly significant:

1. The GLS will itself be heavily influenced by the Red List: for example, the GLS category will carry more weight with highly threatened species than less threatened ones. It will presumably be a higher priority to carry out a GLS assessment for those species that are classified among the more threatened categories of the Red List.

2. Currently the Red List suffers from having relatively few time-series data points, nor does it provide a good vehicle for reporting these kinds of data. This is a gap that the GLS is ideally suited to fill and could therefore itself improve the usefulness of the Red List.

3. Although it is relatively unknown by the general public, the Red List gets a lot of attention from specialists and also from the more informed journalists. It therefore provides a great catalyst for promoting the GLS as well, which is essentially an effectiveness indicator. It is not always easy to promote IUCN knowledge products, and this is an excellent opportunity.

Whooper Swans (*Cygnus cygnus*) © Robert B.J. Falcon

Other interviews with IUCN staff

We also received responses on the specific questions of the name and relationship between the Green and Red Lists from:

- Jane Smart
- Trevor Sandwith
- Thomas Brooks
- Penny Langhammer
- Craig Hilton-Taylor
- Piero Genovesi
- Greg Mueller
- Axel Hochkirch

There is a wide divergence of opinion within IUCN on both these issues.

Most people felt that the Green List of Species should be subsumed within the Red List in some way, albeit most supported the Green List name; everyone agreed the relationship between the two is critical and requires further work.

It was pointed out that the GLS is not a list as such, but rather a means of measuring species recovery and conservation success.

It therefore differs significantly from the Green List of Protected and Conserved Areas, which is more in the nature of a certification system. It was suggested that the quality of information determining whether or not a site is applicable for the latter is likely higher quality than the data determining the GLS, which might cause further confusion.

Some of these anomalies also apply to the Red List, which instinctively sounds as if it is a danger list (the original intention of Sir Peter Scott) but is today confusing because most of the species listed are of “least concern”. There is an argument for rebranding the Red List itself although the practical reasons for doing so are apparent.

The proposed name, whilst attractive, gives the impression that the Green List of Species would be following a similar conceptual framework to the Red List of Species, whereas in fact the two are quite different.

References

[1] WCC (2012). Resolution 041: Development of objective criteria for a Green List of species, ecosystems and protected areas, https://portals.iucn.org/library/node/44008 accessed 1st November 2019.

[2] Akçakaya, H.R., Bennett, E.L., Brooks, T.M., Grace, M.K., Heath, A., ... Young, R.P. (2019). Quantifying species recovery and conservation success to develop an IUCN Green List of Species. *Conservation Biology* 32(5): 1128-1138. DOI: 10.1111/cobi.13112

[3] Akçakaya, H.R., et al. (2018) op cit.

[4] Dudley, N., Boucher, J., Cuttelod, A. Brooks, T.M. and Langhammer, P.F. (eds.) (2015). *Applications of Key Biodiversity Areas: End user consultations*. Gland, Switzerland: IUCN. https://portals.iucn.org/library/node/44911

[5] Akçakaya, H.R., et al. (2018) op cit.

[6] Maxwell, J., Allen, S., Brooks, T., Cuttelod, A., Dudley, N., ... Woodley, S. (2018). Engaging end users to inform the development of the global standard for the identification of Key Biodiversity Areas. *Environmental Science & Policy* 89: 273-282. DOI: 10.1016/j.envsci.2018.07.019.

[7] Stephenson, P.J., Workman, C., Grace, M.K. and Long, B. (2020). Testing the IUCN Green List of Species. *Oryx* 54(1): 10-11. DOI: 10.1017/S0030605319001200.

[8] Wilting, A. Courtiol, A., Christiansen, P., Niedballa, J., Scharf, A.K., ... Kitchener, A.C. (2015). Planning tiger recovery: understanding intraspecific variation for effective conservation. *Science Advances* 1: e1400175. DOI: 10.1126/sciadv.1400175.

[9] Wallace, B.P., DiMatteo, A.D., Hurley, B.J., Finkbeiner, E.M., Bolten, A.B. ... Mast, R.B. (2010). Regional management units for marine turtles: a novel framework for prioritizing conservation and research across multiple scales. *PLOS One* 5(12): e15465. DOI: 10.1371/journal.pone.0015465.

[10] McGowan, P., Mair, L., Symes, A., Westrip, J.R.S., Wheatley, H. ... Butchart, S.H.M. (2019). Tracking trends in the extinction risk of wild relatives of domesticated species to assess progress against global biodiversity targets. *Conservation Letters* 12(1): e12588. DOI: 10.1111/conl.12588.

[11] Garnett, S., Latch, P., Lindenmayer, D. and Woinarski, J. (eds.) (2018). *Recovering Australian Threatened Species: A book of hope*. Canberra: CSIRO.

INTERNATIONAL UNION
FOR CONSERVATION OF NATURE

WORLD HEADQUARTERS
Rue Mauverney 28
1196 Gland, Switzerland
mail@iucn.org
Tel +41 22 999 0000
Fax +41 22 999 0002
www.iucn.org