SPECIAL REPORT
PROTECTING UNOWNED OCEANS
High seas gems, alliances and heroes

PLUS
UNDERWATER PHOTOGRAPHERS OF THE YEAR
They share their best shots

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High seas on the road to Rio+20

The sustainable management of the ocean beyond national jurisdiction is one of the most pressing marine issues facing the world community. The United Nations Conference on Sustainable Development, to take place in Rio de Janeiro, Brazil from 4-6 June 2012 (known as UNCSD or Rio+20), offers an unrivalled opportunity to “green” the high seas and to initiate the institutional reforms needed to ensure sustainable development.

Marine areas beyond national jurisdiction—the high seas and seabed—cover nearly half the planet. The powers of existing piecemeal ocean management organizations are totally inadequate to effectively regulate such a huge area. The continued persistence of illegal, unregulated and unreported fishing bears testament to this, as well as the reluctance of a number of flag states to exercise proper controls over their vessels and nationals. Illegal fishing is costing the global community up to 23 billion dollars each year, whilst subsidies are contributing to overcapacity and overfishing; together these total some 50 billion dollars in lost wealth. These problems are symptoms of the lack of an integrated system of governance for these areas, based on established and agreed basic principles.

While progress has been made on some issues such as high seas bottom fishing, and in a few regions on marine protected areas, much remains to be done to fulfill the commitments made at the first Rio Summit, known as the Earth Summit, in 1992. Agenda 21 called for the adoption of integrated, precautionary and anticipatory approaches to ocean management. Principle 2 of the Rio Declaration reaffirms the responsibility of States to ensure that their activities do not cause damage to areas beyond national jurisdiction.

The principles of the Rio Declaration and the role of environmental impact assessments have yet to be implemented on anything close to a consistent basis across sectors or across regions. Issues important to developing countries such as the equitable use of resources and the transfer of technology are still outstanding.

Science is constantly revealing the richness and importance of biodiversity of marine areas, yet they face mounting threats. Rising sea temperatures, increasing acidity, intense fishing pressure and pollution all pose major challenges to policy makers that were either not known or not as pressing when the UN Convention on the Law of the Sea was negotiated or the Rio commitments agreed.

To protect the high seas, upon which we all depend, all nations will need to work together. What is needed is an institutional framework capable of delivering integrated, precautionary and ecosystem-based management, and the cooperative establishment of area-based management measures, including representative networks and systems of marine protected areas (MPAs).

We therefore urge States at Rio+20 to commit to improving, reforming and redesigning as necessary the current institutional framework for high seas management and governance. It is time to initiate the development of arrangements, processes and agreements that will enable the consistent, coordinated and coherent application of the best conservation and governance principles and approaches to marine areas beyond national jurisdiction, including:

1. integrated ecosystem-based and precautionary approaches;
2. the conservation of ecologically or biologically significant areas and vulnerable species;
3. the establishment of a comprehensive, effective and representative system of MPAs; and
4. the introduction of appropriate impact assessments procedures for activities that may have significant adverse impacts.

It is time to also examine the need for further agreements to fulfill States’ commitments under the UN Convention on the Law of the Sea for the effective conservation and protection, sustainable and equitable use of the marine environment and marine biodiversity in areas beyond national jurisdiction. An intergovernmental conference under UN General Assembly auspices with a mandate to strengthen high seas governance would provide the most logical forum for such discussions.

Rio+20 provides an unique opportunity to address the unfinished business of the Law of the Sea Convention, by paving the way for proper implementation of existing rules as well as for major reform of our system of global marine environmental governance.

IUCN’s Global Marine and Polar Programme has been and will remain a major player in this endeavour. To achieve our goals for Rio+20, however, will require a much broader effort including support from IUCN members, Commission members and many other experts and organizations – an alliance for the high seas. Exciting plans for building such an alliance are already underway, so please stay tuned and contact us if you would like to learn more.

David Freestone, Senior Advisor on the Law of the Sea, and Kristina Gjerde, Policy Advisor on the High Seas
New Publications and Reports

Workshop to identify areas of ecological and biological significance or vulnerability in the Arctic marine environment

IUCN and the Natural Resources Defense Council (NRDC) have undertaken a project to explore ways of advancing implementation of ecosystem-based management in the Arctic marine environment through invited expert workshops. The second workshop, the subject of this report, was held at the Scripps Institution of Oceanography in La Jolla, California on 2-4 November 2010. This workshop utilized criteria developed under the auspices of the Convention on Biological Diversity to identify ecologically significant and vulnerable marine areas that should be considered for enhanced protection in any new ecosystem-based management arrangements.

Coral Reef Resilience Assessment of the Bonaire National Marine Park, Netherlands Antilles

Although Bonaire’s coral reefs remain among the healthiest and most resilient in the Caribbean, this IUCN report based on the IUCN Resilience Assessment of Coral Reefs highlights some of the threats that exist to Bonaire’s coral reefs, and which could have serious implications for resilience to future climate change and other threats. The report identifies recommendations for addressing current threats, as well as high and low resilience sites.

Mitigating climate change through restoration and management of coastal wetlands and near-shore marine ecosystems: challenges and opportunities

This report, written by the World Bank, IUCN and wetland specialists ESA PWA, calls for coastal wetlands to be protected and incentives for avoiding their degradation and improving their restoration to be included into carbon emission reduction strategies and in climate negotiations.

Global ocean protection: present status and future possibilities

This publication provides a much needed and timely tool to assist in the collective effort to find new and better solutions to address the various threats to the marine biological diversity and productivity. It provides evidence-based recommendations on improving and accelerating actions on delivering ocean protection and management through marine protected areas and facilitates the sharing of experiences and lessons learned.

Ocean acidification: questions answered

This publication has been compiled by the Ocean Acidification Reference User Group and draws on the expertise of over 30 of the world’s leading marine scientists. In this guide we do four new things: we answer some key questions many people are now asking about ocean acidification; we say how sure the international scientific community is about what is already happening to the ocean; we discuss what the future may hold for the ocean in a high carbon dioxide world; and we explore the consequences for all of us of what is now happening.
Seagrass and climate change

Supported by Fondation Total, IUCN started a new scientific research project in February 2011 focusing on seagrass beds and their role in climate change mitigation. The objective of this project is to generate new scientific data and analysis on carbon dynamics in seagrass ecosystems. While highly efficient in sequestering carbon, the actual amount of carbon stored in seagrass meadows is unknown. Thus neither the ongoing nor the potential greenhouse gas emissions that may arise from further damage to these systems can be quantified reliably.

The goal of this project is also to develop recommendations on how seagrass meadows can be best managed to enhance carbon sequestration and avoid emissions through degradation. In addition to supporting climate change mitigation, this work aims to help secure the many other services seagrass meadows provide, by promoting sound management.

Seagrass beds are flowering plants that form extensive, globally distributed meadows with large amounts of underground carbon in their sediment. The current global rate of seagrass loss is several times higher than the loss of forests on land.

Ecotourism planning in Oman

Since August 2010, the IUCN Office for West Asia has been working with the Oman Ministry of Tourism to strengthen Oman’s eco-tourism sector, with a current focus on Bandar Al Khayran.

The outstanding natural values of Bandar Al Khayran were recognized in a 1986 report by IUCN, which recommended that the area be declared as a National Nature Reserve. The IUCN report stated that: “There are a variety of habitats in a setting of unspoiled scenery, including mangroves, sand and mud flats, and well-developed coral reefs unique in the capital area for the large size and predominance of table corals. White-cheeked terns, sooty falcons, green and hawksbill turtles all nest here. There are important unexplored archaeological sites, and the sheltered bays offer excellent recreational opportunities, being among the most valued waterskiing areas in the capital. The reserve would be managed to retain scenic beauty and values for wildlife, recreation, archaeology, and fisheries.”

There is a clear need to spatially organize the use of Bandar Al Khayran and to ensure that visitor numbers and activities do not result in a deterioration of the natural environment or visitor enjoyment. The IUCN Ecotourism Planning project in Bandar Al Khayran aims to: (1) strengthen governmental and non-governmental institutions’ capacities in eco-tourism, (2) promote long-term community and stakeholder involvement, consultation and partnership in eco-tourism development, (3) promote sustainable eco-tourism by capacity building and identifying economic and employment opportunities, and (4) enhance the capacity to formulate and review policies and regulations.
Thank you for sharing your beautiful visions of the underwater world.

As part of the IUCN 2011 Underwater Photographer of the Year Contest, we received 132 photographs of exceptional quality and creativity. Congratulations to the three winners presented in this feature.

A special thank you to the four judges:
Patricio Bernal, Coordinator High Seas Initiative, IUCN
Cynthia Craker, Publishing Officer, IUCN
Borjana Pervan, Media Relations Officer, IUCN
Paule Gros, Programme Officer for the Mediterranean, MAVA Foundation
FIRST PLACE WINNER: WILLIAM GOODWIN
for his photograph Grouper Peek-a-Boo

“I have been diving and creating underwater photographs for fifty years. My reverence for the world’s oceans has led me to write a book with contributions from four leading biologists about the amazing world of marine sponges to be published in 2012 entitled The First Animal. My wife, Donna, and I created the Cayman Islands Underwater Image Bank for Students and Teachers to help increase understanding of and appreciation for the dwindling resources beneath the sea. I have seen our mother ocean decline during my life and I long for my grandchildren to know it the way it was.”

—William Goodwin

Grouper Peek-a-Boo
This Nassau Grouper followed us around for most of the dive and just when we thought he had left, there he was peeking at us through a hole in a sea fan! Location: Cayman Brac, Slip’s Island, 45 fsw. © William Goodwin

Previous page:
Shrimp Far Back in Sponge
With my video light illuminating the bottom of the thin-walled sponge, and being very careful not to touch the sponge with the light or the camera or any part of my body to prevent frightening the shrimp away, harming the sea life or raising debris, all while holding my breath and hovering motionless over the sponge while praying the shrimp doesn’t run away, I made this picture. Location: Belize, Lighthouse Atoll, 50 fsw. © William Goodwin
Hawksbill Turtle Gazing
We have encountered this young fellow many times and he usually seeks interaction with us, showing no fear. Location: Cayman Brac, Buccaneer Reef, 30 fsw. © William Goodwin

Peppermint Shrimp in Sponge Funnel
Normally facing outwards in a defensive position, I was lucky to catch this specimen in profile and backlit, ideal for the very shallow depth of field of a close macro shot. Location: Bonaire, Margate Bay, 75 fsw. © William Goodwin

Radioles of a Featherduster Worm
These worms retract their beautiful, delicate radioles if they detect any movement, so holding my breath and approaching ever so slowly, I made this picture. Location: Cayman Brac, Intersection Reef, 40 fsw. © William Goodwin

Pale Pink Frog Fish Fishing
In the Caribbean, light-colored frogfish are extremely rare, and pink is particularly extraordinary. I revisited this astounding creature eight more times over a two week period, and each time it was doing something different. It eventually became sufficiently accustomed to my presence that it even resumed fishing with its extendable lure. The very light color of the fish and the darkness of its surroundings at 75 feet deep made a good exposure extremely difficult. Location: Bonaire, Margate Bay, 75 fsw. © William Goodwin
SECOND PLACE WINNER: **ANDRE SEALE**
for his photograph **Submerged Mangrove**

With a B.Sc. in Marine Science and a Ph.D. in Zoology, Dr. Seale is a research scientist, author and award-winning wildlife photographer. For the past 18 years, Andre has participated in numerous expeditions to document marine life and expose its beauty and fragility. Amongst Andre’s photographic awards is a winning entry in the BBC Wildlife Photographer of the Year (2006). His images have been featured in hundreds of publications worldwide, in his book *Tropical Marine Gardens* and his gallery artesub.com.

**Submerged Mangrove**
Location: Pohnpei, Federated States of Micronesia © Andre Seale

**Pristine Coral Reef**
Location: Pohnpei, Federated States of Micronesia © Andre Seale

**Family of Pink Anemonefish in Host Anemone**
Location: Pohnpei, Federated States of Micronesia © Andre Seale
THIRD PLACE WINNER: LILL HAUGEN
for her photograph Coral Fans and Diver

Coral Fans and Diver
Location: Beqa Lagoon, Fiji
© Lill Haugen

Shark on Shallow Reef
Location: Beqa Lagoon, Fiji
© Lill Haugen

Spiral Whip Coral and Diver
Location: Beqa Lagoon, Fiji
© Lill Haugen
In November 2010, leading scientific experts and indigenous people’s representatives identified and mapped ecologically and biologically significant areas in the Arctic marine environment. These areas contain unique, rare, vulnerable, highly productive or diverse species and habitats that should be considered for enhanced protection.

Arctic marine ecosystems are presently undergoing rapid and unprecedented change due to ocean warming, loss of sea ice and expanding human activity. Unless priority areas are identified and protected, we risk losing productive ecosystems, specialized habitats and individual species, which collectively provide humankind with crucial services such as the production of oxygen, food, freshwater and the regulation of our climate.

Identifying ecologically important marine areas will help countries consider locations in the ocean that may require enhanced protection. But which criteria can be used to select these particularly important areas? Seven criteria to identify ecologically and biologically significant areas (EBSAs) in the marine environment have been adopted in 2008 by the Parties to the Convention on Biological Diversity (CBD), and include for example uniqueness or rarity; special importance for life-history stages of species; importance for threatened, endangered or declining species and/or habitats.

A workshop convened by IUCN and NRDC on 2-4 November 2010, together with the Center for Marine Biodiversity and Conservation (CMBC) of the Scripps Institution of Oceanography, University of California, brought together leading scientific experts and indigenous peoples’ representatives to start a process to identify EBSAs in the Arctic marine environment. Participants used the best scientific information available, recognizing that such information is less than perfect in many areas and in many respects. The key workshop outcome was a set of maps depicting 77 Arctic marine EBSAs based on the CBD criteria. Some EBSAs are seen of particular importance because they meet most or all of the CBD criteria, or meet one or more of them at a global level of significance. Participants decided to name these areas ‘Super EBSAs’. Thirteen Super EBSAs were identified: St. Lawrence Island; Bering Strait; Chukchi Beaufort Coast; Wrangel Island; Beaufort Sea Coast/Cape Bathurst; Polar Pack; North Water Polynya/Lancaster Sound; Disko Bay/Store Hellefiskebanke; White Sea/Barents Sea Coast; Pechora Sea/Kara Gate; Novaya Zemlya; High Arctic Islands and Shelf; and Great Siberian Polynya.

As an example, the polynyas, leads and coastal waters around Wrangel Island provide important spring and summer feeding habitat for polar bears, migratory and feeding habitat for Pacific walrus, and breeding and feeding for extensive seabird colonies including thick-billed and common murres, black-legged kittiwakes, horned puffins and black guillemots.

The workshop served as a venue to bring together and build on the work of several parallel projects, including those undertaken under the auspices of the Arctic Council, the World Heritage Arctic marine site identification process, and mapping efforts by non-governmental organizations including the World Wildlife Fund, Oceana and the National Audubon Society. The outcomes of this report will inform these ongoing discussions and provide new information to decision-makers.

For more information, please contact Thomas Laughlin (thomas.laughlin@iucn.org).
The destruction of coastal carbon ecosystems, such as mangroves, seagrasses and tidal marshes, is leading to rapid and long-lasting emissions of carbon dioxide into the ocean and atmosphere, according to 32 of the world’s leading marine scientists.

That key conclusion highlights a series of warnings and recommendations developed by the new International Working Group on Coastal “Blue” Carbon, which convened its first meeting in Paris last month. The Working Group was created as an initial step in advancing the scientific, management and policy goals of the Blue Carbon Initiative, whose founding members include Conservation International (CI), IUCN, and the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

Much of the carbon emitted when mangroves, seagrasses or tidal marshes are destroyed is estimated to be thousands of years old because the carbon dioxide stored in these ecosystems is found not only in the plants, but in layer upon layer of soil underneath. Total carbon deposits per square kilometer in these coastal systems may be up to five times the carbon stored in tropical forests, due to their ability to absorb, or sequester, carbon at rates up to 50 times those of the same area of tropical forest. The management of coastal ecosystems can supplement efforts to reduce emissions from tropical forest degradation.

According to recommendations from scientists in the Blue Carbon Working Group, whose collaboration pools expertise from 11 countries on five different continents, the existing knowledge of carbon stocks and emissions from degraded or converted coastal ecosystems is “sufficient to warrant enhanced management actions now.”

“The capacity of coastal wetlands to reduce climate change by capturing and storing carbon dioxide is considerable, but has been overlooked,” says Jerker Tamelander, Oceans and Climate Change Manager for
IUCN. "If valued and managed properly, coastal ecosystems can help many countries meet their mitigation targets, while supporting adaptation in vulnerable coastal areas."

Draining a typical coastal wetland, such as a mangrove or marsh, releases 0.25 million tons of carbon dioxide per square kilometer for every meter of soil that is lost. Global data shows that seagrasses, tidal marshes, and mangroves are being degraded or destroyed along the world’s coastlines at a rapid pace. In fact, between 1980 and 2005, 35,000 square kilometers of mangroves were removed globally – an area the size of the nation of Belgium. This degraded area still continues to release up to 0.175 gigatons of carbon dioxide each year – equivalent to the annual emissions of countries such as the Netherlands or Venezuela.

"We have known for some time the importance of coastal ecosystems for fisheries and for coastal protection from storms and tsunamis. We are now learning that, if destroyed or degraded, these coastal ecosystems become major emitters of carbon dioxide for years after the plants are removed. In the simplest terms, it’s like a long slow bleed that is difficult to clot. So we need to urgently halt the loss of these high carbon ecosystems, to slow the progression of climate change," says Dr. Emily Pidgeon, Marine Climate Change Director at CI.

"Scientific studies have shown that although mangroves, seagrasses and salt marshes account for less than 1% of the total plant biomass on land and forests, they cycle almost the same amount of carbon as the remaining 99%. So the decline of these carbon-efficient ecosystems is a valid cause of concern," adds IOC Assistant Director-General and Executive Secretary Wendy Watson-Wright.

The working group will meet next in August 2011, and continue their collaborative scientific study. Funding for the group has been provided by the Waterloo Foundation, National Aeronautics and Space Administration (NASA), and the United Nations Environment Programme (UNEP).

The full set of recommendations from the Blue Carbon Group are available here: http://www.marineclimate-change.com/marineclimatechange/bluecarbon_recommendations.html

For more information, please contact:
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The emission of one particular greenhouse gas, namely carbon dioxide (CO$_2$), causes more than climate change. It also increases ocean acidity (a phenomenon called ocean acidification), which threatens marine life. Ongoing research reveals that ocean acidification has the potential to change marine ecosystems and impact many ocean-related benefits to society. IUCN is therefore raising awareness, disseminating latest scientific results and spurring solution-oriented dialogue on this issue.

Currently, the ocean absorbs approximately 25% of all the CO$_2$ added yearly to the atmosphere from human activities. While this is greatly reducing the impact of this greenhouse gas on the climate, it is also changing the chemistry of the ocean. CO$_2$ dissolves in sea water to form carbonic acid, which increases ocean acidity. Numerous animals and plants are sensitive to small changes in ocean acidity and there is some evidence that they are already being affected. Many of these sensitive species are of great cultural, economic, or biological importance as primary producers, reef builders, etc. This includes microscopic plankton at the base of the food chain, shellfish and molluscs used day-to-day in our diets, and even encrusting plants that cement coral reefs together.

The Ocean Acidification Reference User Group (RUG), of which IUCN is a member, has recently launched its second information guide for policy advisers and decision makers on ocean acidification. Launched in November 2010 by Prince Albert II of Monaco at a meeting co-hosted by IUCN, the new guide, *Ocean Acidification: Questions Answered*, states that ocean acidity has increased by 30% since the beginning of the Industrial Revolution and the rate of acidification will accelerate in the coming decades. This rate of change, to the best of our knowledge, is many times faster than anything previously experienced over the last 55 million years. If the current rate of acidification continues, fragile ecosystems such as coral reefs, which host a wealth of marine life, will be seriously damaged by 2050. This guide is drawing on the expertise of over 30 of the world’s leading marine scientists.

Although ocean acidification and climate change are linked by a common driver, namely CO$_2$, and many common solutions, policy discussions and actions have so far not reflected this. IUCN is emphasizing the need to incorporate ocean acidification into the United Nations Framework Convention on Climate Change (UNFCCC). A side-event was held during UNFCCC COP16 in Cancun entitled *Taking Action on Ocean Acidification*. Opportunities under the UNFCCC. Additional dialogue is needed to ensure that ocean acidification is taken into consideration in countries’ CO$_2$ emission reduction and adaptation efforts.

Presentations of the IUCN side-event can be found on the website of the CBD Ecosystem Pavilion: http://www.ecosystemspavilion.org/en/cancun.


For more information, please contact Dorothee Herr (dorothee.herr@iucn.org) or Dan Laffoley (danlaffoley@btinternet.com)
Meet Flex. Flex belongs to the highly threatened population of western gray whales. He has been satellite tagged and tracked by scientists in the hope to discover the migration routes of this population and better protect it from threats such as accidental entanglement in fishing gear, underwater noise and exposure to spilled oil.

The western gray whale is listed as critically endangered on the IUCN Red List of Threatened Species™. In 2010, its estimated population size was about 136 whales, including only around 30 mature females. Western gray whales fast during the winter, migrate in the spring, and feast throughout the summer and autumn in the waters off Sakhalin Island in eastern Russia, before migrating again to their wintering areas. Little is known about the whales’ breeding grounds or migration routes, which makes it difficult to develop appropriate conservation measures beyond the Sakhalin Island region.

In October 2010, a team of scientists from Russia and the United States, with IUCN’s scientific and logistical support, tagged a 13-year old male western gray whale using satellite telemetry. The researchers nicknamed it Flex and have since tracked its every move.

Flex is the first western gray whale to be tagged and tracked using telemetry.

“Tremendous care was taken to select a healthy adult male,” says Greg Donovan, Head of Science for the International Whaling Commission (IWC), based in Cambridge, who coordinated the project. “Although the risks associated with such tagging are minimal, we wanted to take absolutely no chances with females or young animals. The information we expect to get from this study is vital to international conservation efforts to preserve this population, as is the collaboration between governments, international organizations, international scientists, industry and other stakeholders.”

Flex was successfully tracked for over four months, revealing his long and unexpected migration route. Western gray whales are believed to migrate south in winter, towards Japan, Korea or China. But to everyone’s surprise, Flex moved across the Okhotsk Sea to the west coast of Kamchatka, then followed the coast around the southern tip of Kamchatka and up along the east coast to the Commander Islands, across the Bering Sea towards Alaska, through the Aleutian Island chain and across the Gulf of Alaska.

At the beginning of February 2011, Flex arrived at the US west coast off Washington State. The last information that was received about his location was off Siletz Bay on the 4th of February 2011, when the tag presumably came off. Since leaving the Kamchatka Peninsula, he travelled more than 8500 kilometers over 124 days, with an average speed of 6.6 km per hour.

This data, together with the photographic data of Flex gathered in previous years, provides the first evidence that links the Sakhalin feeding ground of western gray whales to locations in the eastern North Pacific.

Telemetry data, along with photoidentification and genetic data, is now being analyzed by scientists to...
better understand the movements of western gray whales. Scientists are also planning to tag twelve other western gray whales in August and September 2011.

"However interesting Flex’s movements are, it is important not to lose sight of the overarching aim of these satellite taggings," says Finn Larsen, coordinator of the Western Gray Whale Conservation Initiative at IUCN. "We know from a number of entanglements in Japanese fishing gear in the last 10 years that western gray whales still migrate along the coasts of Japan. It is still very important to identify the migratory destinations in Japan, Korea or China of these western gray whales."

This tagging project represents a major international collaboration between the International Whaling Commission, IUCN, the A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences, the Oregon State University and the University of Washington. Funding in 2010 was provided by Exxon Neftegas Ltd. and Sakhalin Energy Investment Company.

For more information, please visit: http://www.iucn.org/wgwap/rangewide_initiative/satellite_tagging/ and http://mmi.oregonstate.edu/Sakhalin2010

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Children – the ambassadors of our oceans

Marine turtle conservation in Vietnam

Quang Tri is a coastal province in Vietnam where species biodiversity plays an important role in supporting a healthy ecosystem and valuable fisheries industry. Given such importance, IUCN and the Quang Tri Sub-Department of Fisheries Resources Protection have collaborated on marine turtle conservation and education for many years now. In 2011, education campaigns continued with activities in Gio Hai and Trung Giang Secondary Schools, culminating in final competitions on 1-2 March, 2011.

About 750 pupils from these two schools took part in the competitions. Students displayed excellent knowledge of marine turtles and their living environment using creative drawings, speeches and poems.

For example, a Grade 7 girl invented a story of a court under the ocean between a leatherback (the defendant), an ocean king (the judge) and a little girl (a witness). The leatherback is blamed for its own homelessness but argues all the seagrass beds and coral reefs are polluted with rubbish, so it always has to migrate in search of a cleaner place to live. The judge asked why there has been a significant decrease in the number of marine turtles in his kingdom. The leatherback answered that many of its relatives have been caught and killed by fishermen, their eggs are being sold, and some even died from eating plastic bags that they have mistaken for jellyfish. The king became angry with the little girl and asked “Is it true? Why are human beings so rude to turtles?” The girl answered “My brothers gave me the brochure and reading material, and explained why we have to conserve marine turtles. We then gave it to my father, a local fisherman, who agreed that from now on our family will not catch marine turtles, sell or buy any products made from turtles, and will release any marine turtles we catch.”

There is still a lot of concern about the survival of Quang Tri’s marine turtles. The boom in shrimp farming and tourism along the coastline is disruptive for marine turtle reproduction. However, it is also clear that this educational campaign has made a real difference. Students have learnt a lot and have a strong positive attitude towards the protection of marine turtles, and there is some evidence that this is reflected in the wider community.

“What is positive is that the Quang Tri Sub-Department of Agriculture and Rural Development (Sub-DARD) has managed to develop good relations with the community and we have succeeded in changing attitudes toward marine sea turtles,” said Mr. Hoàng Đình Liên, Deputy Director, Quang Tri DARD. “When turtles are caught or sighted, the Department is now called,” he said.

The school children, the future leaders of Quang Tri, have been given an early understanding of the importance of marine turtle protection and beach cleaning. IUCN hopes this momentum can be maintained and that sea turtles will once again return to breed on Quang Tri’s beaches.

For more information, please contact Nguyễn Thùy Anh, Communications and Outreach Officer, IUCN Vietnam Office (thuyanh.nguyen@iucn.org).
The Mediterranean Sea, one of the world’s biodiversity hotspots, is increasingly threatened by human activities. The creation of Marine Protected Areas (MPAs) can reduce biodiversity loss, as long as these areas are managed effectively. Since July 2010, key actors from 6 European countries have come together to improve the way MPAs are managed in the Mediterranean. As part of this initiative, IUCN-Med is collaborating closely with MPA managers to develop methodologies and guidelines to improve the management of MPAs and address key threats such as climate change and invasive species.

A threatened sea of worldwide importance

A number of important civilizations developed and expanded worldwide from the Mediterranean shores and lands, notably the Macedonians, Greeks, Carthaginians, Romans, Spaniards, Turks and the French. Today, the Mediterranean Sea spans over 22 countries, and has over 150 million people living permanently along its coasts. It is one the world’s main tourist destinations, with 175 million people visiting it seasonally. It is expected that this figure will increase to more than 390 million tourists by 2025. The Mediterranean Sea is also one of the world’s core maritime traffic routes, connecting the Indian and Atlantic oceans with the countries of the Mediterranean basin and the Black Sea.

This long history of human settlements and developments has led to significant alterations to the Mediterranean Sea’s natural environment. Significant pressures on the Mediterranean Sea, including pollution, habitat loss and degradation, and overfishing, are affecting the unique marine biodiversity and many ecosystem services provided by these waters. Additional threats, such as climate change and the introduction of alien invasive species, can lead to dramatic changes in abundance.
and distribution of native species. The accumulated effects of these threats are of great importance, especially since the Mediterranean basin is considered one of the world’s biodiversity hotspots. Out of approximately 12,000 Mediterranean marine native species, 25 to 30% are endemic or exclusively found in the Mediterranean Sea. Conserving Mediterranean marine and coastal biodiversity is therefore crucial to slow current biodiversity loss and reach the Convention of Biological Diversity (CBD) targets for 2020.

Mediterranean MPAs

MPAs are set up with a conservation goal as well as to promote sustainable use of natural resources. They are also important for the preservation of local culture and associated historical features, such as subaqueous archaeological sites. According to the last report from the Regional Activity Centre for Specially Protected Areas (SPAs) there are over 750 SPAs in the Mediterranean, covering 144,000 km². This includes a diverse array of sites under different protection categories: fisheries reserves, national parks, Ramsar sites, marine reserves, biosphere reserves and others. Over two thirds of SPAs are marine protected areas, covering approximately 97,000 km² or roughly 4% of the marine environment of the Mediterranean Sea. However, the distribution of these sites is uneven, with a greater proportion occurring in the northern and western part of the basin. The protection figures are still far from the 2020 CBD target, which proposes that we should effectively protect at least 10% of coastal and marine ecosystems.

In addition to increasing the number of MPAs in the Mediterranean, effective management of existing MPAs is crucial to reach intended objectives. A designated MPA without effective management is simply a paper park lacking the necessary means and measures to reach its conservation and sustainable use targets.

MedPAN NORTH project

The MedPAN Association was created as a legally independent structure under French law at the end of 2008 to represent managers of Mediterranean MPAs. Its purpose is the establishment and the effective operation of a Mediterranean network of MPAs to support the conservation of regionally important coastal and marine biodiversity features.

Under the umbrella of the association, the MedPAN North project, cofunded by the European Regional Development Fund through the Med Programme, was initiated in summer 2010. It aims to improve the management effectiveness of Mediterranean MPAs. It brings together 12 key actors from 6 European countries bordering the Mediterranean: Spain, France, Greece, Italy, Malta and Slovenia. The main project activities aim to promote innovative aspects of MPA management and a more sustainable management of fisheries and tourism.

IUCN-Med is collaborating closely with MPA managers and leading the project’s technical aspects to promote innovative aspects of MPA management. In particular, a harmonized methodology will be provided to Mediterranean MPA managers to assess the effectiveness of their MPAs. IUCN will also assist managers in developing guidelines on how to address climate change and in designing a common strategic orientation and monitoring programme for invasive species.

For more information, please visit:
http://iucn.org/about/union/secretariat/offices/iucnmed/iucn_med_programme/marine_programme/marine_protected_areas/regional_work/medpan/
http://www.medpan.org/

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PROTECTING UNOWNED OCEANS
In this section

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Protecting the Ross Sea: a high seas gem

Photograph: © John Weller
High seas at the cross-roads
Interview with Kristina Gjerde, IUCN expert on regulating the high seas

What are some of the biggest environmental issues in the high seas that need the attention and collaboration of global leaders?

What really should grab the attention of global leaders are the cascading and cumulative impacts of human activities on ocean ecosystems. Unsustainable fishing, ocean acidification and pollution don’t operate in isolation, but together undermine the ability of ocean life to survive, let alone thrive.

For too long we humans have been taking too much out and putting too much in. Two-thirds of high seas fish stocks are already overfished, some to the point of no return. Carbon dioxide emissions from factories on land and ships at sea are changing the very chemistry of the ocean, making it more corrosive to life. Huge rafts of plastic are floating in Indian, Atlantic and Pacific ocean gyres, filled with the flotsam of our throw-away lives.

There is thus an urgent need for global leaders to work together to build effective management institutions that maintain ocean health while enabling sane use. Sadly, out of 18 Regional Fisheries Management Organizations (RFMOs), only the Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR) is really achieving this balance. It is guided by a broad mandate for conservation, science and precaution. We need to find ways to bring the 17 other RFMOs rapidly up to the standards of CCAMLR, if we wish to have fish – and functioning ecosystems – in the near future.

What progress are we making towards marine protected areas beyond national jurisdiction?

This is an exciting time for high seas marine protected areas (MPAs). Just last September, States in the Northeast Atlantic established the first high seas MPA network of six sites. In the Southern Ocean, CCAMLR has committed to establishing a comprehensive system of MPAs by 2012, having designated its first high seas MPA in 2009. Moreover, the Mediterranean states are also considering a suite of potential high seas protected areas.

At the same time, new alliances are emerging to promote additional sites. For example, the Sargasso Sea Alliance is focusing on the “golden ocean rainforest” that spans two million square miles across the central Atlantic (see the Sargasso Sea Alliance article on page 22). To promote cooperation in creating high seas MPAs across the globe we are now building a broader High Seas Alliance of scientists, conservation organizations and others committed to high seas reforms.

We also know much more now about the vast open and deep ocean, thanks to the Census of Marine Life (www.CoML.org). Scientists have tracked sea turtles as they move thousands of miles across the Pacific, and discovered new hydrothermal vents deep below the Southern Ocean. Global leaders can use this information to identify key places to protect and to establish systems of protected areas that capture the dynamism and diversity of marine life. To kick-start this process, the Global Ocean Biodiversity Initiative (GOBI) is working with the Convention on Biological Diversity (CBD) to organize a series of regional workshops. But as described above, many challenges remain.
What is the Global Ocean Biodiversity Initiative and why is it important to marine conservation?

The Global Ocean Biodiversity Initiative (GOBI), GOBI for short (www.GOBI.org), is an international partnership dedicated to advancing the scientific basis for conserving biological diversity in the deep sea and open ocean. GOBI was launched by the German government and IUCN in 2009 to help governments identify critical ocean areas in need of special care because of their importance as feeding, breeding and nursery grounds, as migratory corridors, or for their uniqueness, naturalness, biodiversity, productivity or sensitivity. This work is based on internationally agreed criteria adopted by the CBD in 2008. GOBI’s scientific and technical partners use and develop data, tools and methodologies from a wide variety of disciplines to locate specific places and to predict patterns of ocean use.

GOBI currently consists of 20 research institutes, government agencies, non-governmental and intergovernmental organizations, including the Census of Marine Life, the Intergovernmental Oceanographic Commission and its Ocean Biogeographic Information Service (OBIS). Through these partners, GOBI reaches out to thousands of scientists around the world.

The sort of information that GOBI provides is vital to global leaders and decision-makers seeking to manage any human activity in the high seas. It provides the scientific underpinning for identifying and protecting vitally important ecosystems that support the larger ocean economy.

By sharing images and information about these special places, we hope to inspire a new generation of ocean stewards and global leaders to care about something not because we own it, but because it belongs to the collective legacy of us all.

Photographs: © John Weller

The Sargasso Sea Alliance was launched in 2010 as a collaborative partnership between the Government of Bermuda and a group of scientists, international marine conservation groups and private donors, who all share a vision of protecting the unique and vulnerable ocean ecosystem of the Sargasso Sea.

Sylvia Earle has called the Sargasso Sea “the golden rainforest of the ocean” and it is included in the list of global High Seas Hope Spots by Mission Blue as well as in IUCN’s list of High Seas Gems. It is a unique pelagic ecosystem based on species of Sargassum that are able to develop and reproduce without contact with land. The Sargasso Sea was first discovered by Christopher Columbus who thought he was nearing land when he encountered the seaweed mats after which the sea is named. It is an extraordinary open-ocean ecosystem, occupying a 2 million square mile body of water and based on two species of free floating golden-brown seaweed, Sargassum fluitans and S.natans, which grow in vast mats and teem with marine organisms. It is unique in that it has no shores; instead it is bounded by ocean currents forming the North Atlantic sub-tropical gyre. Although it includes the Bermudan Economic Exclusive Zone (EEZ), the vast majority occurs in areas beyond national jurisdiction (ABNJ).

The Sargassum mats are home to many endemic species and play a critical role in supporting the life cycle of a number of threatened and endangered species. Porbeagle sharks pup in the Sargasso Sea and endangered European and American eels migrate to the Sargasso to breed. Wahoo, mahi mahi, tuna and other pelagic fish forage in and migrate through the Sea, as do humpback whales. There is emerging recognition of the crucial role it plays in the wider Atlantic ecosystem ranging from Europe and North American coasts to the Caribbean and the Gulf of Mexico. However, like ocean ecosystems the world over, this system is under increasing pressure from myriad human activities that threaten both the habitat and the species the Sargasso supports.

An Ecosystem under Pressure

Because the Sargasso Sea is in the center of a vast gyre system, pollution from both land and sea accumulates there. Pollutants include oil and garbage, chemical discharges and non-biodegradable plastic wastes. The impacts of commercial fishing operations and associated by catch, both in pelagic and benthic fisheries, are a cause for concern. The scars of bottom trawling in seamounts in the northern Sargasso Sea still remain as a stark reminder of the vulnerability and slow recovery of these fragile environments. Other concerns include the possible impacts of recreational fishing and possible harvesting of Sargassum for fertilizer and biofuel – which although banned in the United States by NOAA is under active consideration elsewhere. Major shipping routes crisscross the area and underwater noise may adversely...
The Alliance plan is that the Sargasso Sea, an extraordinary open-ocean ecosystem occupying a 2 million m² body of water, will join the growing list of high seas MPAs around the world.

The scientific basis for any proposals for protection which the Alliance may make. In this he is working with Dan Laffoley, who is coordinating the work of a number of eminent scientists and research institutions. Dan is the IUCN Senior Advisor on Marine Science and Conservation and the Marine Vice Chair of the World Commission on Protected Areas. The work of the Alliance has received generous support from a number of donors including the J.M. Kaplan Fund, Richard Rockefeller, Erik H Gordon, the Waitt Foundation and the Black Point Group.

The Alliance aims to continue to mobilize support from a wide variety of national and international organizations and governments to ensure legal protection for this critical habitat and to provide insights for the establishment of other MPAs on the high seas.

Over the next three years, the Alliance aims to accomplish four key objectives:

• Building an international partnership that will secure recognition of the ecological significance of the Sargasso Sea and the threats that it faces;
• Using existing regional, sectoral and international organizations to secure a range of protective measures for all or parts of the Sargasso Sea to address key threats;
• Developing a management plan for the Sargasso Sea; and
• Using the process as an example of what can and cannot be delivered through existing institutions in areas beyond national jurisdiction.

The Alliance plan is that the Sargasso Sea will join the growing list of high seas MPAs around the world and that it will serve as an example of leveraging regional and international agreements toward biodiversity and environmental protection. It also hopes to provide specific recommendations for what can and cannot be delivered through existing institutions in areas beyond national jurisdiction, thus informing high seas protection work into the future.

For more information, please contact David Freestone (dfreestone@sargassoalliance.org) and Kate Killerlain Morrison (kmorrison@sargassoalliance.org)
High seas heroes
Celebrating the JM Kaplan Fund’s commitment to high seas conservation

In October 2002, the JM Kaplan Fund gave IUCN, WCPA and WWF International a small planning grant for a workshop on high seas marine protected areas (MPAs). From an obscure issue promoted by a few passionate individuals in 2002, this modest grant catalyzed huge gains for the high seas, as the Kaplan Fund realized the importance of protecting international places and has maintained its support for IUCN for nearly nine years. IUCN and WCPA would like to honor the JM Kaplan Fund for their vision, courage and long-term commitment to IUCN and to high seas conservation.

Back to the future
In September 2002, government leaders at the World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, committed to a target date of 2012 for the creation of representative networks of MPAs. At the time, however, there was no discussion on how to achieve this target in the 64% of the ocean lying outside the jurisdictional zones of individual states -- the high seas and seabed area. There was just the clear statement that such MPAs were to be established consistent with international law and based on scientific information.

With the initial Kaplan Fund grant, IUCN, WCPA and WWF convened a small expert workshop in early 2003. Workshop outcomes included a 10-year Strategy for High Seas MPAs (http://cmsdata.iucn.org/downloads/10ystrat.pdf) and the establishment of the WCPA High Seas MPA Task Force as a platform for continued cooperation. Marine experts at the Vth World Parks Congress in Durban approved the Strategy in September 2003.

Rather than balking at the complexities inherent in tackling global issues, the Kaplan Fund expanded its commitment, sparking others to do the same.
Rather than balking at the complexities inherent in tackling global issues, the Kaplan Fund expanded its commitment, sparking others to do the same. Through this catalytic effect, IUCN and partner organizations have forged an international consensus on the importance of establishing high seas MPAs. As envisaged in the 10-year strategy, we have worked with governments to secure:

- **Recognition of the legal tools available to protect high seas areas.** Starting with the publication of the 2003 workshop report, IUCN, WCPA and WWF produced a series of reports for United Nations (UN) and Convention on Biological Diversity (CBD) discussions on legal options for cooperation to establish high seas MPAs.

- **A platform at the UN to discuss high seas MPAs and other issues related to conservation and sustainable use of marine biodiversity beyond the limits of national jurisdiction.** Established in 2004, an informal, ad hoc open-ended UN Working Group has met three times, in 2006, 2008 and 2010. It will meet again in May 2011.

- **Scientific criteria for the identification of ecologically or biologically significant areas and guidance for the design of representative networks of MPAs.** These technical tools were adopted by the CBD in 2008 following a series of workshops involving IUCN and WCPA experts.

- **Scientific capacity to apply these criteria and guidance.** In 2009, IUCN launched the Global Ocean Biodiversity Initiative with the German government, the Census of Marine Life and scientific partners from inside and outside the WCPA Task Force to provide governments with the best available scientific information and tools.

- **Regional workshops to describe ecologically significant areas.** The CBD Conference of Parties in 2010 called on the CBD Secretariat to organize a series of workshops to bring together national, regional and global experts and agencies for this purpose by 2012.

- **The establishment of new high seas MPAs.** In 2009, after years of effort, the first fully high seas MPA was established in the Southern Ocean. In 2010, the first network of six sites was adopted in the Northeast Atlantic. We are now working through the Sargasso Sea Alliance to create a high seas MPA in the Northwest Atlantic. Similar efforts are underway in the Mediterranean, the Southeast Pacific and Western Indian Ocean.

Recognizing that high seas MPAs must be complemented by broader actions, the Kaplan Fund also supported IUCN together with the Deep Sea Conservation Coalition to protect deep sea biodiversity from the most immediate threat of high seas bottom fishing. By 2006, we secured a UN resolution that shifted the paradigm of high seas bottom fisheries management to one of precaution and prior assessment. Through the CBD in 2007, we initiated the development of international guidelines to ensure that all high seas activities are assessed and managed to prevent significant harm.

A key element in this progress was the willingness of the Kaplan Fund to support targeted workshops in addition to annual grants. For example, a Kaplan-funded scientific workshop in Mexico City in early 2007 developed a new global biogeographic classification system for the open ocean and deep seabed to assist in the design of representative networks. Seed funding for a meeting of legal experts in late 2007 stimulated a comprehensive set of recommendations that directly fed into UN deliberations for improving overall management and governance of the high seas. And funding for a workshop in Bermuda in February 2010 sparked the formation of the Sargasso Sea Alliance. Most recently, in March 2011, the Kaplan Fund supported a planning workshop for an expanded global alliance of conservation organizations, scientists and others to accelerate progress towards the WSSD 2012 MPA target and to improve how we manage all the high seas.

In short, the steadfast support of the JM Kaplan Fund has prompted huge gains for the high seas, for the ocean, and for the planet. Our thanks go to the JM Kaplan Fund Trustees and staff for making this progress possible. In particular, IUCN and WCPA would like to acknowledge the visionary efforts of Conn Nugent, Executive Director of the JM Kaplan Fund.
Protecting the Ross Sea: a high seas gem

Antarctic and Southern Ocean Coalition

Although only minimal progress has been made toward the global targets for the establishment of networks of marine protected areas (MPAs), the organization with authority over the Southern Ocean around Antarctica is on track to give that region a substantial level of protection. In 2009, the countries that signed the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), which governs the Southern Ocean, took the revolutionary step of setting a goal to have a network of MPAs in place by 2012. CCAMLR has identified 11 Southern Ocean areas that are priorities for protection, one of them being the Ross Sea, which a recent analysis has concluded is the closest to pristine of any open ocean region remaining on Earth.1

Waters overlying the Ross Sea continental shelf and slope comprise about 2.0% of the Southern Ocean south of the Antarctic Polar Front – 647,194 km². The Ross Sea is of high global importance in terms of its biodiversity, evolutionary significance, disproportionate presence of many charismatic high-latitude species, and potential as a climate refuge and reference zone for continued and future change. Former biotic exploitation has been minimal, it has had no pollution, introduction of alien species, blooms of toxic algae or fish-bird die-offs, all of which plague ocean systems elsewhere. Furthermore, for over a century, the Ross Sea has been a key location for scientific research in a broad spectrum of disciplines, due to its unique characteristics.

From a global perspective, a Ross Sea MPA is of enormous biological and scientific significance. An MPA will protect a refugia for cryopelagic (sea ice associated) communities in the face of sea ice disappearance in other areas of the Southern Ocean; preserve habitat for significant proportions of the populations of many species; and preserve the primary habitat for sub-adult growth and adult spawning recovery of the largest fish predator in the Southern Ocean, the Antarctic toothfish. The MPA will also enable scientists to continue researching climate change and ecosystem functions in an environment with minimal human interference – providing data that is extremely valuable to the scientific community but no longer obtainable in most parts of the world.

The Antarctic and Southern Ocean Coalition (ASOC) has been working for three years to gain support for designating the Ross Sea as a no-take reserve, developing compelling scientific and policy materials to present to relevant Antarctic governance bodies. ASOC’s 30 member organizations have a unified policy position on this objective. Internationally renowned oceanographer Sylvia Earle has chosen the Ross Sea as one of her top ‘Hope Spots’ and ASOC works closely with her on this initiative. To achieve the designation of a Ross Sea MPA, a consensus among CCAMLR countries will be required, and as an observer to CCAMLR, ASOC is the primary organization that can make the case.

The definitive scientific case supporting the need to protect the entire shelf and slope was made in a paper submitted in 2010 by the United States government to a key CCAMLR working group. The paper incorporated a broad range of data and demonstrated that the Ross Sea shelf and slope function as a single ecosystem. What remains to be done is convince CCAMLR members, including those that are currently fishing for Antarctic toothfish in the Ross Sea, to support the designation of a no-take MPA. This fishery is not large compared to other global fisheries but threatens to upset the ecosystem by removing substantial amounts of a top predator. Toothfish are a commercially valuable species, and getting agreement will require substantial work to overcome the objections of fishing nations.

ASOC is undertaking this challenging endeavor because achieving a large Ross Sea MPA would represent a major high-seas conservation victory – a gem for the global campaign to enhance marine protection.

From scientific expeditions to governance framework

A focus on seamounts in the southern Indian Ocean

Little is currently known about the life-rich underwater mountains called seamounts. Through scientific expeditions in the southern Indian Ocean, followed by taxonomic and governance workshops, the IUCN Seamounts project is filling crucial gaps in our understanding and will hopefully lead to improved management and conservation of seamount ecosystems.

A 2009 expedition in the southern Indian Ocean led to the discovery of a new species of squid. The new species was identified during a Total Foundation/Censeam-sponsored taxonomic workshop in Grahamstown, South Africa, in November 2010. It is 70 cm long and a member of the chiroteutid family. In addition to this newly discovered species of squid, many species have been recorded for the first time in the region.

This first seamounts expedition in the southern Indian Ocean and the taxonomic workshop in South Africa were both part of the IUCN-led Seamounts project. By focusing on seamounts in the southern Indian Ocean, this GEF/UNDP-funded project aims to improve the scientific knowledge, conservation and management of Indian Ocean resources, and develop sustainable management of high seas biodiversity globally.
Seamounts are underwater mountains which are defined by oceanographers as independent features of the ocean (see image above). Across the globe, there are an estimated 100,000 seamounts that rise to at least 1,000 meters above the seafloor. Until now, only few of them have been studied. Due to seamounts’ elevated position in the water column and their interactions with underwater currents, ecosystems developing on these special features of the high seas are remarkably rich. These ecosystems attract predators like sharks, whales and seabirds.

Seamounts are hotspots of biological activity and their aggregational effect has been noted by the commercial fishing industry. For the last 30-40 years, extensive fisheries have been a major threat to many seamount ecosystems. One particularity of these ecosystems is the slow growing rate of seamount species. These communities take a long time to recover from ecological damage like overexploitation of marine resources (depleting fish stocks) and destruction of benthic habitats (bottom trawling). Latest research suggests that seamounts may act as a source area for colonization of other parts of the deep seas.

It is crucial to improve scientific understanding of the role of seamount ecosystems in global ocean biodiversity. As part of the scientific component of the Seamounts project, a second research expedition is planned at the end of 2011 to conduct a comprehensive biological survey of seamount ecosystems. Whereas the first expedition focused on the pelagic ecosystem, fishery resources and oceanography, the second one will study the benthic ecosystem. It will focus on the same six seamounts: five on the South West Indian Ocean Ridge (SWIOR) and one seamount further north at Walters Shoal (see image below). Remotely Operated Vehicles (ROVs) will be deployed on the seamounts to examine their benthic communities.

Within the framework of this project, a workshop on governance in this area, with a special focus on seamounts, will be held in Grahamstown in June 2011. The main expected output of this workshop is a clear set of options and recommendations to improve the governance framework in the southern Indian Ocean.

For more information, please visit: http://www.iucn.org/marine/seamounts

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Changing Oceans Expedition
Takes you on a Red Sea mission

The Changing Oceans Expedition is a journey of discovery, an adventure through which you learn while we are learning, in which you act while we are acting. It is an intense, hands-on journey to determine the state of the seas and where we most need to get our feet wet. It’s a whole new way to connect with the sea. Through interactive, multimedia coverage you’ll not only get plenty of action on video, but also get to ask us questions and have your say in what happens. The Changing Oceans Expedition is changing the way we explore, so we can all partake in the wonders of the sea.

The ecosystems of our oceans are facing serious threats all over the globe. Many of our most favorite tropical beach destinations and the marine life within them are slowly being destroyed. This threat to our oceans is a global problem that transcends demographic boundaries and will inevitably impact every single one of us. Addressing this very serious issue requires community outreach on an international scale, coupled with an educational campaign and platform for global citizens to become involved.

Campaigning for an improved network of marine protected areas (MPAs), the Geneva-based Antinea Foundation launched in 2009 a 10-year expedition around the world: the Changing Oceans Expedition. In collaboration with UNESCO and IUCN, the Changing Oceans Expedition aims to establish the status of human impact on key marine ecosystems and specific locations around the world. These snapshots, based on various studies and observations, will give scientists and decision makers a reference for future research and actions. Fleur de Passion, the sailing ship used by the Antinea Foundation for this expedition, is fully equipped with tools needed by both scientists and communicators to reach into the depths of the sea and out to the eyes and ears of the online world. Over the 10 years of the expedition, hundreds of scientists, journalists and volunteers will participate in the discoveries and bring to life the words, images, and sounds of this journey.

After a successful pilot year (2009-2010) spent in the Mediterranean, North and Baltic seas, this year’s mission takes Fleur de Passion to the Red Sea to study and document human impacts to this ecosystem. In terms of its marine biodiversity, very few places on earth compare to the Red Sea. The region represents one of the most unique marine environments and one of the world’s most important repositories of marine biodiversity. In just over 2 decades, the Red Sea went from a remote frontier to an international tourism hotspot. In a frenzy to capitalize on the “tourism boom” and blinded by the industries’ lucrative appeal, the Red Sea’s world-renowned resources are slowly being depleted. It is estimated that over 3 million tourists visit the Red Sea annually and it is one of the fastest growing tourism development areas in the world. This rapid growth...
in tourism presents a potential threat to the natural resources that bring visitors to the area in the first place. The Red Sea is an intricately connected ecosystem. Coral reefs and associated environments such as mangroves, seagrass, and wetlands provide food and shelter for thousands of living species. In this region’s arid coastal zone, these resources represent the very lifeline of this harsh environment. Reef destruction and degradation is one of the greatest threats facing the Red Sea ecosystem. Additional environmental threats such as overcrowded marine sites, environmental pollution, and overfishing are intensifying the stress on an already disturbed ecosystem.

The Red Sea mission of the Changing Oceans Expedition is organized in collaboration with the Hurghada Environmental Protection and Conservation Association (HEPCA), one of the main organizations managing the Red Sea’s environmental threats. HEPCA is an internationally recognized NGO, which is currently spearheading various resource monitoring and management projects, public awareness campaigns, solid waste management strategies, boat mooring systems, and community development projects, to name a few of their efforts.

The Changing Oceans Expedition focuses its scientific mission on the development of a global map of the cumulative impact of human activity on the oceans. The initial projection-based map, which took over five years to develop and was published in 2008, paints a picture of the total consequence of human activities on the oceans. However, it is essential, as a next step, to validate it in the field by visiting diverse ecosystems and assessing how actual ocean health relates to the predicted cumulative impact on the map. By studying some of the last remaining pristine marine areas, as well as areas suffering from various levels of degradation, the expedition validates and refines the projections that were used to develop the first version of the map. The results will provide a timely contribution to understanding the extent of ocean degradation and finding effective, practical solutions to reverse this trend. It will enhance our understanding of the combined effect of the myriad of human activities stressing our living oceans, from fishing to climate change to land-based pollution. Two sites will be sampled in the Red Sea: the Gulf of Aqaba and the southern Egyptian coasts. While the boat sails south towards the Sudan border, HEPCA scientists will also pursue dolphin population surveys.

In terms of outreach, Antinea will produce numerous tools using state of the art and innovative multimedia technologies during the Red Sea mission. For example, a team of 3D modelisation specialists will be onboard Fleur de Passion to develop different interactive 3D models based on real Red Sea diving sites. Internet users will be able to virtually explore the Red Sea as if they were divers. The project is run within the framework of a European research project whose objective is to digitalize seafloor sites in 3D imagery, edit interactive virtual animated environments that integrate audiovisual contents. Furthermore, the 3D modelisation system will facilitate the monitoring of marine ecosystems and their biodiversity. A team from the Deutches Meeres Museum will also join the boat to modelise a coral pinnacle using a photogrammetric technique.

A specific objective of the mission is the creation of a multimedia DVD about the Red Sea, with around 20 short films describing the ecosystems, key species, human threats, and solutions put in place. Also, an impressive underwater film for the cinema, OCEAN 3D/5D will be produced in stereoscopic 3D. It will be shot with the latest technologies in full digital 3D.

The Antinea Foundation believes that the combination of sound science, clear communication and wide participation will help to drive the implementation of solutions to protect the marine environment.

For more information, please contact Ronald Menzel, Director Antinea Foundation (ronald.menzel@antinea-foundation.org)
Upcoming Events

May 2011

- 10th meeting of the Western Gray Whale Advisory Panel (WGWAP), 10-15 May 2011, Geneva, Switzerland
- Arctic Council Ministerial Meeting, 12 May, Nuuk, Greenland
- International Marine Conservation Congress (IMCC), 14-18 May, Victoria, Canada
- GOBI Pelagic workshop
- United Nations Working Group on Marine Biodiversity Beyond National Jurisdiction meeting, 31 May - 3 June
- Scientific Committee on Antarctic Research (SCAR) Antarctic Conservation Workshop, 31 May - 2 June

June 2011

- World Oceans Day, 8 June
- United Nations Framework Convention on Climate Change (UNFCCC) subsidiary bodies meetings, beginning of June, Bonn, Germany
- Antarctic Treaty Meeting, 20 June - 1 July, Buenos Aires, Argentina
- Governance of the Indian Ocean workshop (focus on high seas seamounts), 23-24 June
- Chinese Academy of Science meeting on blue carbon

July 2011

- Baltic meeting on environment, 1st week of July
- Large Marine Ecosystems (LME) meeting, 12-13 July, Paris

August 2011

- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) Marine Protected Area workshop, 29 August - 2 September, Brest, France

September 2011

- NY Informal Consultations including deep-sea fisheries
- World Conference on Marine Biodiversity, 26-30 September, Aberdeen, Scotland

October 2011

- CCAMLR, Hobart, Australia
- Port Cros meeting on Ocean Acidification, 5-7 October
- GEF 6th International Waters Conference, 17-20 October, Croatia
- Western Indian Ocean Marine Science Association (WIOMSA) meeting, 24-29 October

November 2011

- NY Informal Consultations
- Workshop Report on ecologically and biologically significant areas in the Arctic marine environment, La Jolla
- 1st International Marine Conservation Think Tank, Christchurch NZ, 25-28 November
- 11th meeting of the WGWAP
- UNFCCC Conference of the Parties, 28 November - 9 December, Durban, South Africa

December 2011

- Start of 2nd seamounts cruise
- NY United Nations General Assembly (UNGA) debate

2012

- Sixth World Fisheries Congress, 7-11 May 2012, Edinburgh, Scotland
- Earth Summit 2012 (Rio+20), 4-6 June 2012, Rio de Janeiro, Brazil
- International Coral Reef Symposium, 9-13 July 2012, Cairns, Australia
- Scientific Committee on Antarctic Research (SCAR) and Open Science Conference, 13-25 July 2012, Portland, USA
- IUCN World Conservation Congress, 6-15 September 2012, Jeju, Republic of Korea
- Mission Blue Arctic expedition 2012
- Oceans Coasts and Islands 2012
- Conference on Biological Diversity (CBD) 2012
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