Sebastian Troëng, Peter Bryant, Guilherme Dutra, Mark Erdmann, Ginny Farmer, Scott Henderson, Keith Lawrence, Frazer McGilvray, Jonas Rüpp, and Romeo Trono

THE SEASCAPES APPROACH Securing Healt y o eans or t rivin eo le

۲

B y 2000 it was clear that some of the most outstanding marine regions in the world were under siege, facing rapid degradation and ecosystem collapse. Just as clear was the fact that old approaches were not going to save them. Conservation International developed the Seascapes Approach to stem the decline in ocean health in some of the most outstanding marine regions of the world, and to demonstrate that transforming the management of large ocean areas to benefit people and ecosystems is possible.

The term Seascape has been used by several organizations, including World Wildlife Fund (WWF), Wildlife Conservation Society, and Conservation International (CI), to describe a large area of ocean where species and habitats depend on and interact with each other. Conservation International's and partners' Seascapes Approach, formally launched in 2004, is a set of strategies, outlined as nine essential elements, that foster the effective management of large marine areas so that people can continue to benefit from the many services that healthy oceans provide while preserving the unique biodiversity of the world's oceans. Over the last decades, ocean scientists and marine conservationists have come to realize that ocean systems and human societies are interconnected; human societies simultaneously depend on and affect the ocean. The Seascapes Approach is a response to that realization. Wide-ranging ocean connectivity and global-scale climate change-along with ocean acidification, pollution, unsustainable fishing, and other pressures-mean that marine management must target large areas, from tens of thousands to millions of square kilometers, to be effective. This is much larger than what previously has been attempted through site-level marine management or by land-use management.

PRECEDING PAGE: Effective management of large marine areas is the lynchpin of the seascapes concept. Under careful management by the government of Kiribati, the Phoenix Island Protected Area (PIPA) will continue to provide citizens like these villagers with the many services healthy oceans provide. At the same time, PIPA and other marine protected areas around the world will preserve the unique biodiversity of the world's oceans. **Photograph by George Steinmetz/ iLCP**

LEFT: A school of yellow line scads (*Selaroides leptolepis*) seeks shelter under the shade of a fishing dock in Misool, Raja Ampat, West Papua, Indonesia. **Photograph by Jürgen Freund/ iLCP**

103 OCEANS

۲

Beyond any nation's jurisdiction, the high seas cover almost half of the planet's surface and produce ten million tons of fish each year. This is where ocean governance and management remain the weakest, far from the coasts and outside the controls of national governments

۲

At the same time, ocean governance rarely aligns perfectly with marine ecosystems or patterns of human use. While the Exclusive Economic Zones, or EEZs, of individual countries extend two hundred nautical miles (370.4 km) from the coast, the distributions of many marine species and some human uses extend beyond national jurisdictions into the high seas. In Ecuador, for instance, large fishing vessels in search of tuna ply the waters of the EEZ but also venture into the high seas between Ecuador's coastal waters and the Galápagos Marine Reserve. The tuna themselves move freely between international waters and the Eastern Tropical Pacific Seascape (encompassing the territorial waters of Costa Rica, Panama, Colombia, and Ecuador). Like other ecosystem-based management efforts (McLeod et al., 2005), the Seascapes Approach considers people as part of the ecosystem and seeks to address the cumulative impacts on the ocean by different sectors of society. We must consider ocean connectivity and governance when defining the boundaries of Seascapes. Within these boundaries, the Seascapes Approach strives to maintain ocean health so that ecosystem services, such as the provision of fish for food, can continue to benefit people now and for future generations.

Large-scale marine management requires the active involvement of a wide range of stakeholders—partnerships are central to the success of the Seascapes Approach. Nongovernmental organizations such as Conservation International make important contributions to Seascapes by providing technical support, obtaining external financing, facilitating partnerships and discussions among ocean interest groups, and by funding and guiding long-term ocean planning and marine conservation projects. Government agencies with authority, capacity, and resources to regulate and manage human impacts are fundamental to Seascape success. Communities that depend on ocean resources and, in some cases are the traditional owners of marine areas, arguably are the most crucial partners of all.

This is the case in the Bird's Head Seascape in eastern Indonesia, where community and family ownership of ocean areas is widespread. Strong local leadership is a key component of marine management success (Gutierrez et al., 2011). Private industries and companies can also be a force for positive change in Seascapes by ensuring that their operations do not negatively affect the ocean and by underwriting marine management. They also can generate employment and income for local communities and people through the sustainable use of marine resources, such as ecologically responsible wildlife tours or local fishing enterprises using nondestructive gear in accordance with sustainable fish quotas.

Universities have a role to play in the Seascape Approach as well. By promoting greater understanding of the ecology and socioeconomic conditions of Seascapes, researchers can foster innovation in ocean management in the present and educate ocean managers for the future. To enhance the impact of Seascapes, Conservation International collaborates with and provides grants to local, national, and global organizations and institutions. Around the world, over one hundred and fifty partner organizations are collaborating to ensure the success of the Seascapes program.

Genesis of the Seascapes Approach

The first Seascape was the Eastern Tropical Pacific, established in 2004 with major grants from the United Nations Foundation and the Global Conservation Fund (Bensted-Smith and Kirkman, 2010). In 2005, Seascapes were launched in the Sulu and Sulawesi Seas between Indonesia, Malaysia, and the Philippines, and in waters around the Bird's Head peninsula in eastern Indonesia. Also in 2005, marine conservation at a similar level of effort began in Abrolhos, Brazil, and over time this region has evolved into a fourth Seascape for Conservation International. Separately, Wildlife Conservation Society has also developed Seascapes in Antongil Bay (Madagascar), Glover's Reef (Belize), Karimunjawa (Indonesia), Kenya, New Ireland (Papua New Guinea), New York (USA), Patagonia and Southwest Atlantic (Argentina, Chile, Uruguay, Brazil, and UK), and Vatu-i-Ra (Fiji).

Investing in Diverse Ocean Jewels

Conservation International supports comprehensive marine conservation in four Seascapes, ranging in size from 95,000 square kilometers in Abrolhos, Brazil, to over two million square kilometers in the Eastern Tropical Pacific. These Seascapes cover a wide variety of ecosystems, from predominantly coastal areas with coral reefs and associated habitats in Bird's Head Seascape to oceanic islands and pelagic waters in the Eastern Tropical Pacific. They include the most diverse marine ecosystems on the planet: the Bird's Head and Sulu–Sulawesi Seascapes in the Coral Triangle; the cluster of Cocos (Costa Rica), Coiba (Panama), Malpelo (Colombia), and Galápagos (Ecuador) in the Eastern Tropical Pacific; and the unique mushroom-shaped reefs, the largest in the South Atlantic, in Abrolhos Seascape, Brazil.

The primary level of political and policy work ranges from local and provincial in Abrolhos and Bird's Head Seascapes to national and regional in the Eastern Tropical Pacific and Sulu–Sulawesi Seascapes. The pressure on marine resources ranges from extremely high in the Sulu–Sulawesi Seascape, where tens of millions of people depend on

۲

Arctic Mediterranean Sea Coral Gulf of Triangle California Western Central Eastern **Indian Ocean** Tropical Pacific Abrolhos Pacific Seascape Seascape Patagonian Sea Antarctic Data Sources: NASA, ESRI

ABOVE: Seascapes and ocean regions. These areas cover polar, temperate, and tropical seas and represent a range of conservation challenges and opportunities.

the ocean for their immediate livelihoods and long-term survival, to the more sparsely inhabited coast along Abrolhos Seascape, where just 230,000 people live and work.

The investment is commensurate with the challenge facing ocean health. Overall, more than US\$60 million has been invested in the four Seascapes since 2004 to conduct scientific surveys, develop new policies, train government officials and local communities in marine management, build public awareness about the importance of ocean ecosystems to human well-being, promote best environmental and social practices for private industry and companies, and to establish marine protected area trust funds and fees for marine ecosystem services. These activities have recovered marine species and habitats and improved the quality of life for all people. This and other successes makes the Seascapes program one of the largest, most effective, and efficient regional-scale marine management efforts in the world.

Nine Essential Elements to Turn the Tide

Despite the wide range of circumstances in the Seascapes, the Seascape managers must overcome many similar challenges. Over the past six years, the Seascape teams have converged on a framework of nine essential elements that allows sufficient flexibility to adapt to local conditions. The essential elements summarize the strategies necessary to effectively manage a large marine area. They are described below with general summaries on our experience to date. Highlights on how Conservation International and its partners are investing in the nine essential elements and are turning the tide in the four Seascapes are listed in Table 1. These four Seascapes and five additional marine regions are described in more detail later in this book in the Seascapes section.

105 OCEANS

1. Enabling legal framework of laws, conventions, regulations, and policies that facilitate marine conservation at local, national, and regional scales.

To date, much of the progress has been in the form of national and local policies to protect sensitive species and habitat while improving the management of fisheries and other marine resources. One key achievement has been catalyzing forty-three new or expanded marine protected areas across the four Seascapes. Together these areas extend 46,800 square kilometers, slightly larger than the area of the Netherlands. Several of these areas contain large no-take zones to protect highly sensitive areas, including those critical to fisheries recovery, and many are managed with the direct involvement of local communities and fishing associations.

2. Ecosystem-based management that advances large-scale marine ecosystem and species management through the use of multidisciplinary scientific information to inform effective planning, implementation, monitoring, and evaluation.

Research into ecological and genetic connectivity is important across all Seascapes. Socioeconomic research, including economic valuation of the benefits of ocean ecosystems—such as providing seafood, monitoring of governance to understand how natural resource management decisions are made, studies of local cultures and how these influence use of marine resources, and assessments of local livelihoods and how they depend on marine resources—is equally key to understanding human behavior and to helping design conservation strategies compatible with sustainable economic development. In all Seascapes, science results directly influence management decisions including marine protected area design and network expansions, and fisheries regulations and enforcement.

3. Adequate institutions and capacity, including personnel, infrastructure, and equipment, to make marine governance structures–governmental, private sector, and civil society–work effectively and efficiently.

Innovative policies and solid information are only useful in the hands of capable managers, businesses, and communities. In each of the Seascapes, we have invested heavily in capacity building for the agencies and organizations that manage local and national marine protected areas. In all, 101 marine protected areas across the Seascapes have benefited from training in different aspects of marine protected areas management for government staff, local communities, and organizations.

4. Private sector engagement that promotes the increasing convergence of conservation and development objectives by linking major economic activities' viability and profitability with sustainable management.

So far most attention has been focused on the nature tourism sector, but

increasingly Conservation International and our Seascapes partners are engaging other private industries and companies to develop innovative corporate conservation solutions.

5. Social and political support that increases the viability of marine conservation as an integral part of sustainable development and is important at all levels, from local marine managed area stakeholders up to national leaders, and the messages they convey in international arenas including conventions and policy fora.

Sustainable marine management ultimately depends on individuals and governments as committed marine resource stewards. Thus far, efforts to build a large constituency in favor of sustainable marine resource use have focused on local communities and political decision-makers with only some effort invested in influencing international agreements between countries.

6. Threatened species recovery that reverses declining population trends for threatened marine species.

Our ability to document the recovery of threatened species is influenced by several factors, including life history and ease of monitoring. Coral reef fish and sea turtles concentrate in specific locations, such as individual reefs and nesting beaches, which makes regular surveys feasible. We use these species as indicators of ecosystem health and reason that other marine species, more difficult to monitor, are likely benefiting from improved management.

7. Maintenance and restoration of critical habitats and ecosystems so that ecological processes and ecosystem services are sustained.

Abundant ecosystem services are only possible if we have healthy ecosystems. Although recovery of habitats takes from several years to decades, signs of ecosystem recovery such as increase in coral cover and recuperation of carnivorous fish populations have been documented in both anecdotal and peer-reviewed reports in all four Seascapes.

8. Human well-being benefits that improve the social, economic, and cultural well being of human communities that depend on marine resources and ecosystems.

Improved ocean management has many benefits for people. Reduced local conflicts over marine resources, better organization, and empowerment of local communities to actively manage marine areas and resources are some of the immediate benefits. Income from tourism and sustainable fisheries and enhanced food security may take longer to materialize but can be substantial over time. Already there are compelling examples of human well-being benefits emerging from the four Seascapes, includ-

ing increased income from tourism and perceived increases in local fish catch.

9. Sustainable financing and market mechanisms with funding portfolios that are stable, diverse, and large enough to implement all priority activities.

The Seascapes were established with outside funding, but the long-term goal is to replace that funding with funds generated locally by fees for ecosystem services and income from sustainable uses of fisheries and other marine resources. User fees for diving and entry fees to protected areas, trust funds, conservation agreements, and increased local and national government allocations for marine management have been secured in all Seascapes, moving them toward the goal of full internal funding.

The time required to achieve success varies among essential elements. We are making progress on the legal framework, ecosystem-based management, and adequate capacity relatively rapidly in a matter of two to five years. Documenting behavior changes among citizens, politicians, and business leaders takes more time. Ecosystems take even longer to recover, and witnessing that recovery and the benefits to human well being from improved management takes even longer because of the lag between management action and ecosystem recovery. Still, we have already seen dramatic and surprisingly rapid change in all four Seascapes, with enthusiastic and growing support from local stakeholders and government agencies.

What We Have Learned

Build a strong team: All of the Seascapes' successes depend on strong partnerships that allow for complementary strengths, a common and shared vision, mobilization of more financial and human resources, building of long-term capacity, and ensuring conservation groups and governments share a common agenda.

Foster champions: Strong leadership among staff and local partners at the local and national levels can, with Seascape funding, make the difference between success and failure.

Good timing matters: Although it is critical to act quickly on timesensitive opportunities, it's also crucial to know when to wait before advancing specific initiatives. A strong base is essential to avoid catalyzing political and business opposition that can overwhelm stakeholder support.

Stable funding makes risk-taking possible: Having committed and flexible long-term donor support allows the Seascape Approach to adapt to new opportunities and challenges, and allows teams to focus on delivering outcomes rather than continuous fundraising. Fewer opportunities need to be passed up due to lack of resources. Stable funding thus enables a level of experimentation and risk-taking that is necessary to try innovative approaches in the Seascapes.

Seascapes deliver: A thorough review of five approaches to largescale marine management showed that Seascapes stood out for having delivered impressive results in a short time period. The authors attributed this success to the flexible nature of the funding and the effective mobilization of many partner organizations in the Seascapes (Bensted-Smith & Kirkman, 2010).

Remaining Challenges

Although it has been underway for centuries, the degradation of marine ecosystems has accelerated in most areas in recent decades. Achieving and sustaining ocean health and benefits for people at the Seascape level will take decades. Long-term commitment and investments are necessary to secure fully functional Seascapes. Conservation International has decided to commit to a small number of Seascapes, but to do so over the time span and scale required to achieve transformational change.

Progress across the nine essential elements has been uneven, in part because most conservation organizations have well-developed natural science expertise but only nascent financial and private-sector experience that is required for long-term sustainable solutions. The private sector needs to be more fully engaged in all Seascapes; this engagement represents both a challenge and a major opportunity. If businesses can align their practices and profits with sustainable behavior and local benefits, the Seascape Approach can move dramatically toward long-term sustainability.

For Seascapes to become sustainable, we need to increase our focus on effective governance of the Seascapes, placing decision making in the hands of local people and reducing their reliance on external funding and technical support. In this way, the Seascapes can become robust enough to influence dominant economic and social trends such as population growth, coastal development, marine fisheries, and new phenomena such as rapid aquaculture expansion, as well as make sure these take place using best environmental and social practices. This may include informing national development plans to direct economic and population growth to areas and in ways that minimize impacts on sensitive marine and coastal ecosystems. We must use Seascapes to catalyze development on a more sustainable path, toward a "green economy" that benefits its citizens while respecting the limits of its natural resources.

The extent to which climate change might compromise the Seascapes achievements remains unknown. Increased sea water temperature, ocean acidification, changes in ocean currents, sea level rise, and increased frequency and intensity of storm are highly likely to negatively affect sensitive species and habitats. Seascapes aim to maximize the resilience of ecosystems and human societies to these and other stressors basing plans on vulnerability assessments. Such assessments should make Seascapes better able to cope with climate change than regions with weak or nonexistent large-scale marine management.

107 OCEANS

	· · ·			
	Abrolhos	Bird's Head	Eastern Tropical Pacific	Sulu–Sulawesi Seas
Enabling legal framework	Extractive reserves, a management category developed for terrestrial areas to allow co- management and sustainable use, have been successfully applied to three large marine areas in the Seascape	The <i>Bupati</i> (mayor) of Raja Ampat has banned manta ray and shark fishing as these charis- matic species attract tourists who generate income and livelihoods for local communities. For similar reasons, the Bupati outlawed coastal mining and promotes ecotourism.	In Costa Rica, new management categories for marine areas have been created to allow for context-specific management needs. In Ecuador, a ban on manta ray fishing was put in place, and sharkfinning has been regulated Seascape-wide	The President of the Philippines issued a decree on biodiversity conservation after being inspired by scientific findings reported in the media highlighting the Verde Island Passage as the global center of marine shorefish diversity. Local governments have established dozens of marine protected areas.
Ecosystem-based management	Mangroves, nearshore, and offshore reefs are ecologically connected by commercially important fish species. Research surveys doubled the size of known reefs, the largest in the South Atlantic	A set of 17 research studies, ranging from genetic connectivity analyses to marine tenure mapping, informed the design of a network of 10 marine protected areas encompassing 36,000 km2	Migrations of sharks and sea turtles between coastal and oceanic marine protected areas demonstrate ecological connectivity across the Seascape.	Results from fish eggs and larval connectiv- ity studies informed the design of marine protected area networks.
Adequate institu- tions & capacity	Workshops for the marine extractive reserve councils have greatly increased the capac- ity for informed decision-making. Training courses for marine protected area managers and students have improved their monitoring and management capacity. Training for local associations have improved their participation in marine protected area co-management.	Local leaders hired to manage marine protected areas have received technical training in management and have performed beyond expectations. Several of them are now participating in a campaign with RARE Conservation to build local pride in no-take marine reserves.	A new Ecuadorian Navy and Park Service vessel monitoring system for Galápagos, sup- ported by WildAid, Conservation International, WWF, and others, has vastly increased surveillance efficiency and has facilitated high profile illegal fishing arrests in the marine reserve	A Trinational Committee for the Sulu–Sulawesi Seascape has been formalized and is opera- tional. Capacity building efforts have resulted in a <i>Bantay Dagat</i> force of more than 1,000 municipal marine protected area and fisheries enforcement volunteers, now equipped with patrol boats and other equipment.
Private sector engagement	A local tourism company agreed to support the Canavieiras Extractive Reserve to ensure sus- tainable fisheries in their hotel surroundings	BP agreed to reroute their tankers from a huge natural gas facility to avoid sensitive coral reef areas around the Raja Ampat archipelago, in spite of significantly increased transporta- tion costs.	Aviatur, the largest nature tourism operator in Colombia, has worked with Conservation International and partners to make opera- tions in Gorgona National Nature Park more sustainable and more beneficial to the local community.	Energy company First Gen provided a landmark grant to First Philippine Conservation Incor- porated for marine conservation in the Verde Island Passage.
Social & political support	Former President Lula of Brazil personally attended the creation of the Cassurubá Marine Extractive Reserve. The SOS Abrolhos Coalition brings together 23 non-governmental organizations to build support for sustainable management and to prevent destructive development projects.	The brightly painted and eye-catching outreach vessel Kalabia has visited each of the 103 communities in Raja Ampat. A customized interactive curriculum is taught to schoolchildren, and adults are invited to attend evening film sessions to learn about marine ecosystems and stewardship	The president's office has been actively involved in promoting expansion of marine conservation efforts in Colombia.	National government officials, four provincial governors, and ten mayors attended the 2nd Sulu–Sulawesi Seascape Conference and expressed their support for the Seascape. The community of Cagayancillo fully supports marine protected areas and has expanded the marine protected area network due to perceived increases in local fish catch.
Threatened species recovery	Research on the effect of no-take reserve areas shows increase in fish biomass of Endangered greenback parrotfish (<i>Scarus</i> <i>trispinosus</i>) and spillover from no-take reserves of economically important species such as the squared grouper (<i>Mycteroperca</i> <i>bonaci</i>) and yellowtail snapper (Francini-Filho & Moura, 2008).	In the Piai-Sayang Endangered green turtle (<i>Chelonia mydas</i>) rookery, an agreement with the local community employs villagers to patrol the nesting beach and has virtually eliminated sea turtle and egg poaching, with nesting increasing to over 1,000 nests per year.	Record nesting by vulnerable olive ridley tur- tles (<i>Lepidochelys olivacea</i>) has been recorded although improved management is only one contributing factor. Also, coral recovery across the Seascape since the last serious bleaching event suggests management is contributing to increased resilience.	Approximately one million Endangered green turtle (<i>Chelonia mydas</i>) eggs have been protected on Baguan Island. Abundance of reef fishes has increased in the Barangay Papaya marine protected area in the Verde Island Passage.
Maintenance & restoration of critical habitats & ecosystems	Mapping of critical habitats has informed marine protected area network expansion, including the protection of mangrove areas in Cassurubá that are important for the Abrolhos reef fauna.	n the 1,550 km2 Kawe marine protected area, all finfish are protected, and occasional collec- tion of sea cucumber, top shell, and lobster by the community is allowed in less than 2.5% of the reefs. Dynamite fishing and sharkfinning have been eliminated, and observations suggest that bombed reefs are recovering, and juvenile blacktip reef sharks (<i>Carcharhinus</i> <i>melanopterus</i>) are increasing.	Monitoring shows that well-enforced marine protected areas display greater biomass of higher carnivorous fishes, lower densities of asteroids and urchins, and higher coral cover than less effectively enforced marine protected areas (Edgar et al., in press).	Marine protected area networks based on connectivity studies and life histories of focal species have been designed for Verde Islands Passage, Cagayan Ridge and Balabac Strait, and the Sea Turtle Corridor.
Human well-being	As many as 20,000 fishers and their families benefit from marine protected areas. Better community organization has allowed greater access to public services such as electricity and new housing. More sustainable fishing and increased tourism have generated opportunities for greater income and more diversified livelihoods.	The dive fee system in Raja Ampat generated nearly US\$250,000 in 2010 alone for maternal health care in remote communities. At least seven villages in Raja Ampat are now deriving 20% or more of their total cash income from tourism.	Support to micro-business organization ARTURIS in Panama has helped the members make a better living from their small-scale businesses (95% have seen increased incomes) as well as created a very proactive constituency opposing destructive develop- ment projects.	Both in Cagayan Ridge and the Verde Island Passage, small-scale fishers have recorded an increase in fish catch and attribute this to marine protected areas and improved fisheries enforcement.
Sustainable financing & market mechanisms	A trust fund for all protected areas in the region is under development. Reduced reliance on philanthropic funding is secured by govern- ment agencies taking on monitoring responsi- bilities. Fisheries monitoring will be conducted by a government agency, and discussions are under way with other entities to continue socioeconomic and ecological monitoring.	The dive fee system in Raja Ampat captures direct financial benefits from the increase in dive tourism from 300 visitors in 2001 to 4,500 visitors in 2010. Another example of innovative financing was the Blue Auction hosted by Prince Albert II at the Mo- naco Oceanographic Museum, where bidders competed for naming rights to newly found species, raising US\$2 million for the Bird's Head Seascape.	Malpelo Fauna and Flora Sanctuary in Colom- bia now has a trust fund that, in collabora- tion with the navy, pays for permanent boat patrols. In another World Heritage Site, Coiba in Panama, the income from higher visitor and user fees is used to fund improved manage- ment of the site.	Local governments are allocating increasing resources for marine protected area manage- ment and fisheries enforcement, with over US\$270,000 contributed in 2010.

۲

۲







Going Global

In 2011 the four Seascapes made up less than 1% of the global ocean, but their influence was growing. For them to have a global impact, we must scale up the Seascapes approach through policies and by helping others to replicate and adopt the methodology.

Already there are encouraging signs that the Seascapes Approach is gaining wider acceptance. The Coral Triangle Initiative for Coral Reefs, Fisheries, and Food Security is a six-country agreement governing the most diverse ocean region on the planet, where over 150 million people depend on ocean resources for survival. One of five goals of the Coral Triangle Initiative is the designation and effective management of priority Seascapes. The Philippines is moving forward with a South China Sea Seascape, and ideas for additional Seascapes, declared and promoted by individual or multiple governments, are gaining political traction and momentum.

Similarly, fifteen heads of state of countries in the western and central Pacific announced the Pacific Oceanscape in August 2010, envisioning a secure future for Pacific island nations based on ocean conservation and management, strong leadership, and regional cooperation. Although not explicitly mentioning Seascapes, the designers of the Pacific Oceanscape benefited from the Seascapes experience.

The Eastern Tropical Pacific Seascape, the Coral Triangle Initiative, and the Pacific Oceanscape were recognized as models for conservation and collaboration in the United Nations General Assembly's Coral Reef and Oceans and the Law of the Sea resolutions passed in New York in December 2010. This is evidence that the Seascape Approach and its successes are inspiring decision makers at the global level.

PREVIOUS PAGE: Wide-ranging ocean connectivity and global-scale issues like climate change, which is already causing coral bleaching in many shallow areas, as can be seen here on Lissenung Island, Papua New Guinea—along with ocean acidification, pollution, unsustainable fishing, and other pressures—mean that marine management must target large areas, from tens of thousands to millions of square kilometers, to be effective. **Photograph by Jürgen Freund/ iLCP**

LEFT: Perhaps nowhere is the shaping hand of evolution on an odd assemblage of fauna more evident than in the Galápagos. Endemic penguins (the Galápagos penguin, *Spheniscus mendiculus*) and fur seals (*Arctocephalus galapagoensis*), originating from coasts bathed by Antarctic waters, dart with Galápagos sea lions (*Zalophus wollebaeki*), like these seen on the island of Española whose ancestors originated from North America, through coral reefs teeming with a mix of colorful fish with affinities throughout the Pacific. **Photograph by Tim Laman/ iLCP**

111 OCEANS

B eyond any nation's jurisdiction, the high seas cover almost half of the planet's surface and produce ten million tons of fish each year. This is where ocean governance and management remain the weakest, far from the coasts and outside the controls of national governments. Conservation International is exploring how the Seascape experience and its nine essential elements can be adapted and applied to the high seas, a final frontier for the Seascapes Approach.

The oceans are the largest habitat on earth, and they demand our commitment on a global scale. Merely the name Seascape won't be enough, and no one country, organization, or agency can solve the ocean crisis alone. What will be necessary to manage our oceans—for the survival of people and all life on Earth—will be commitment on an international scale, across boundaries of expertise and ideologies, directing adequate resources to effectively address threats to ocean health. Only through a shared ambitious vision of restored ocean health aggressively pursued through joint actions at the Seascape level—and by sharing our experiences and learning from them as we collaboratively implement Seascapes—will we be able to achieve ocean health at a global scale. This endeavor calls for a transformation of the relationship between people and the oceans and will lay the building blocks for a new future, both for the unique biodiversity of the largest biome on Earth and for people around the world.

RIGHT: Coral reef in Komodo National Park, Komodo, Indonesia. The reefs in Komodo are among the richest in the world and home to over 1,000 types of fish, nearly 400 varieties of coral, 70 kinds of sponges, and several types of whales, sharks, turtles, and dolphins. Photograph by Michael Patrick O'Neill

FOLLOWING SPREAD: Green sea turtles (*Chelonia mydas*), like this one photographed off Mabul Island, Sabah, in Malaysian Borneo, migrate long distances between feeding grounds and hatching beaches. **Photograph by Stewart Westmorland**



(

