

Green sea turtle (*Chelonia mydas*) in sea grass.

## Shark Tagging in the Eastern Tropical Pacific Seascape

Sharks are both a critical part of marine ecosystems and an increasingly important source of dive tourism revenues. Unfortunately, sharks are also threatened by rising demand for fins to supply an increasingly affluent Asian market for shark fin soup and other products. Many parts of the Indian, Atlantic and Pacific Oceans, once rich in these majestic creatures are now devoid of them due to over-



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exploitation. For now, the Eastern Tropical Pacific Seascape remains one of the last bastions for large concentrations of hammerheads, whale sharks and other shark species, but anecdotal evidence suggests their numbers are also dropping. To improve regional shark management, researchers, managers and NGOs are working together to track shark movement throughout the ETPS. Divers hand-tag sharks with

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# CMAR-A Global Model for Marine Management

A little over three years ago, I had the honor to sign the San José Declaration that created the Eastern Tropical Pacific Marine Corridor (CMAR) along with the governments of Ecuador, Costa Rica and Panama. We entered this agreement with high expectations and much commitment, but knowing many challenges lay ahead as we worked toward transforming our dreams into a reality where our marvelous and unique oceans would be better protected and our coastal communities would be ensured healthier stocks of marine resources on which they depend.

Thanks to the exceptional efforts and outstanding cooperation between government institutions, non-governmental organizations, international donors, and with

each passing day more support from the private sector and civil society committed to sharing our dream, we have achieved even more than we could have hoped for. Evidence of our success is the increasing number of organizations enthusiastically participating in the initiative and the considerable interest that other governments have shown to learn more about our experience. This interest was evident at the recent Second Latin American Protected Areas Congress where 2,000 participants and government representatives from Latin America and Caribbean were present.

I had the honor to open this event and provide a keynote address on Protected Areas and the Conservation of Biological Diversity. I could confidently

affirm that our multinational CMAR effort constitutes a model for the rest of the world on how countries committed to meeting their commitments under international conventions can do so. Surely there are many more challenges before us as this is a large-scale, innovative and ambitious effort. However, I am confident that the team that has come together to achieve so much already will be more than up to the task. For our part, the government of Colombia is proud to be part of the CMAR initiative and is committed to playing our part in making it even more successful for the good of our seas and for the good of our people.

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**Dr. Julia Miranda Londoño**  
**Director General**  
**Colombia's National Natural Parks System**

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## SHARK TAGGING FEATURE STORY

satellite transmitters and acoustic “pingers” which emit high-frequency sounds that are then picked up by receivers deployed throughout nearly 2,000,000 km<sup>2</sup> of the ETPS. The tracks show how the sharks move through the open ocean between oceanic islands and coasts. Researchers periodically retrieve the acoustic receivers to find out how long sharks stay around specific islands and when sharks tagged in one area appear in another.

The tagging information will

allow decision-makers and managers to design strategies to better protect sharks when and where they are most vulnerable. Initial results in the Galapagos show that hammerheads sometimes move between islands from one day to another. At another site, one hammerhead tagged in Malpelo moved nearly 2,000 km in less than a month!



**Diver getting ready to tag a shark in the Galapagos.**

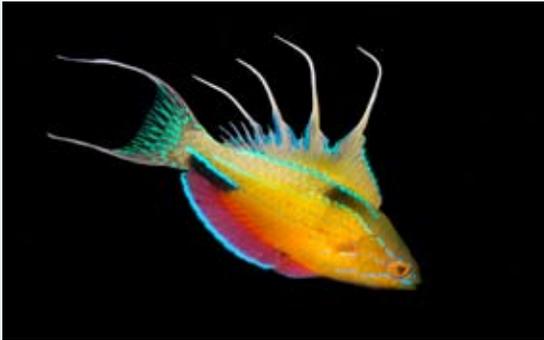
In addition to contributing to shark conservation, this effort helps build a strong multi-national coalition to help protect highly migratory species across international boundaries.

## BIRD'S HEAD SEASCAPE

### Historic "Blue Auction" Raises Over US\$2 Million Dollars

In September, the naming rights for ten new fish species recently discovered in the BHS were sold at a celebrity charity auction

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in Monaco, under the patronage of HSH Prince Albert II of Monaco. Sponsored by CI and the Monaco Asia Society and executed by Christie's Auction House, the Blue Auction raised over US\$2 million from the auction of 10 species lots and two non-species lots, with the highest bid of US\$500,000 garnered

**A new species of flasher wrasse, *Paracheilinus* sp., garnered the second-highest bid at US\$400,000.**

for the honor of naming a new species of *Hemiscyllium* epaulette or "walking" shark. Nearly US\$1.6 million will support three priority CI programs in the BHS, including capacity building for Indonesian taxonomists, enforcement and marine conservation education, with the remainder dedicated to conservation programs run by the Monaco-based NGOs Act for Nature and the Prince Albert II Foundation.

## EASTERN TROPICAL PACIFIC SEASCAPE

### ETPS Fisheries Progress

In August, Ecuadorian President Rafael Correa passed a law reform-

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ing existing legislation that prohibited the export of shark fins but did little to stop the overexploitation of sharks. Although the decision was criticized by some as opening the door to shark fishing, others, including CI, saw an opportunity to work with the government

**Fishing supports the livelihoods of many Ecuadorians.**

and fishermen to ensure the new law would reduce targeted shark fishing and eliminate the illegal fin trade. Also, in recent months, CI has met with industrial and small-scale fishermen to discuss environmental certification of some of the largest fisheries in the ETPS, and fishermen and fishing experts have been invited to several CI strategic planning events and ETPS network meetings.

## SULU-SULAWESI SEASCAPE

### Shaping Biodiversity Conservation Awareness

Conservation education is one of the Sulu-Sulawesi Seascape Program's priority activities to increase awareness among local communities and government leaders in the Seascape's four marine biodiversity conservation corridors. One of the most effective educational tools has been the formation of

two Conservation Ambassadors Groups. These groups of volunteer artists from local communities use music, poetry, painting, handcrafts and acting to communicate conservation information to local people. CI has also trained local government leaders and teachers in various conservation techniques and policies, sponsored lecture series for children on marine ecosys-

tems and species, produced video documentaries on the conservation corridors within the seascape, and held stakeholder perception workshops before conducting scientific surveys and activities in the corridors.

# Seascapist: Mathias Mairuma

Mathias Mairuma, vice-head of the Kaimana regency, has been instrumental in proposing a roughly 7,500 km<sup>2</sup> multiple-use local Marine Protected Area (MPA) encompassing Triton Bay

resources and fisheries. His economics background provides him with an understanding of the need to accelerate development and to simultaneously conserve natural resources.

“We need to look at development comprehensively”, Mairuma says. In keeping with these principles, the government of Kaimana declined a request from a concessionaire to operate in a mangrove area, citing the risk of ecosystem destruction. “The plan would deprive local people who depend on the resources,” Mairuma explains.

*“The national policy does not provide opportunities for locals to manage their resources, yet they suffer from impacts of resource exploitation.”*

MATHIAS MAIRUMA

and the Kaimana Marine Conservation Corridor. Mairuma sees the MPA as a way to sustainably manage marine natural

Mairuma understands the need to empower people in order for development – including conservation efforts – to succeed. As a



**Mathias Mairuma, a visionary in the Bird's Head Seascape.**

Kaimanan, he knows how to approach community members, which is important in a complex society like Kaimana. Mairuma is concerned that Kaimana's natural resources are enjoyed only by few: “The national policy does not provide opportunities for locals to manage their resources, yet they suffer from impacts of resource exploitation.” He seeks better coordination of national and local policies to sustainably manage Kaimana's natural resources, two-thirds of which lie below the ocean's surface.

## SPECIES SPOTLIGHT

### A Seascape Species – Humphead Wrasse

The humphead wrasse, *Cheilinus undulatus*, is one of the most recognizable fishes on the coral reefs of the Indo-Pacific. With its striking blue-green coloration, large size and distinctive forehead, it is major attraction for divers. The fish is also of particular interest biologically as some individuals will change sex, a feature found not only in wrasses but many

reef fishes. Unfortunately fishing pressure has taken its toll on the humphead wrasse. A favorite of the live reef fish trade, its population is a fraction of what it once was. Demand from restaurants in Hong Kong and Southern China has caused the numbers of humphead wrasse to decline to such an extent that it has been listed on the Convention on International

Trade in Endangered Species of Wild Fauna and Flora Appendix II, and a permit is now needed to both import and export the fish. Unfortunately, illegal trade still continues, particularly in South East Asia.

**Humphead wrasse**  
*Cheilinus undulatus*

## SCIENCE UPDATES

### BIRD'S HEAD SEASCAPE

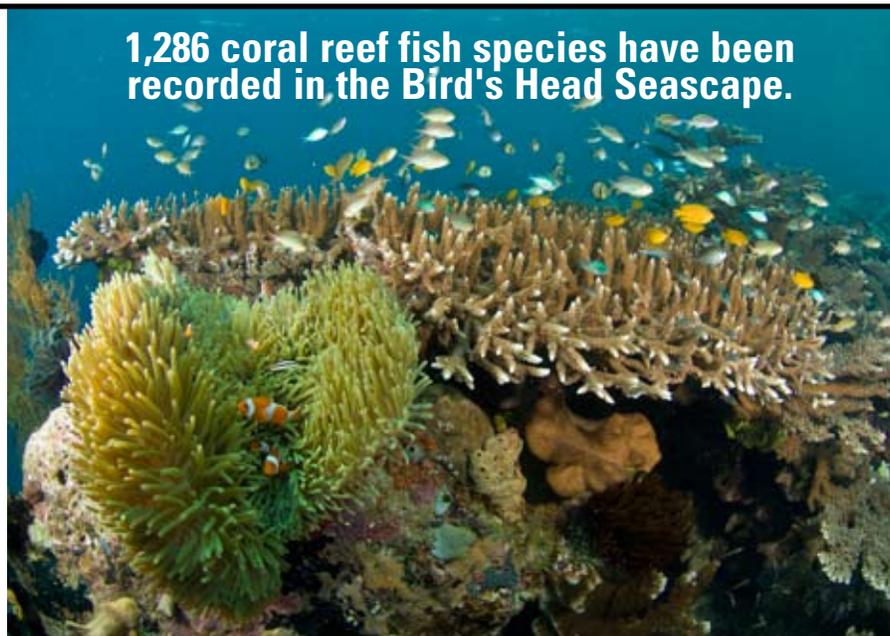
#### Fish species count approaches 1,300!

An August 2007 coral reef fish species list generated by ichthyologist Gerald Allen for the BHS includes 1,286 recorded species – approaching the 1,464 species known from the Australian Great Barrier Reef, but in a reef area only 1/10 the size. This finding underscores the global significance of the BHS as a repository for marine biodiversity. At least 26 of these fish species are known only from the BHS; while this is most certainly in part an artifact of incomplete sampling in surrounding regions, it lends weight to the assertion that this area functions as an important center of origin of marine biodiversity for the Indo-Pacific region.

### EASTERN TROPICAL PACIFIC SEASCAPE

#### Ecoregional analysis coming to a successful conclusion

The TNC-CI ecoregional analysis process is now in final review by experts from Costa Rica, Panama and Colombia. After stratifying the EEZs of the three countries into 46 coastal and oceanic strata, regional experts identified a list of conservation objects, from full ecosystems to endangered and endemic species. The team then produced a map with critical conservation areas for each country. As expected, the map includes critical marine areas that fall outside of existing MPAs. These maps are being analyzed and validated by regional experts and government authorities, before they are officially presented to each gov-



1,286 coral reef fish species have been recorded in the Bird's Head Seascape.

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ernment. Regional decision makers will then use this information to support marine management actions and plan conservation strategies and goals.

### SULU-SULAWESI SEASCAPE

#### Global Marine Species Assessment office opening up in the Philippines

The IUCN/CI Global Marine Species Assessment (GMSA) is opening an office in CI-Philippines. The GMSA, headquartered at Old Dominion University in Norfolk, Virginia, intends to support the Philippine office to collect background information on marine

species of the Coral Triangle (the Indo-Malay-Philippine marine biodiversity triangle) required to assess them for the threat of extinction for inclusion on the IUCN Red List of Threatened Species. Prompted by the finding that the central Philippines has more marine species per unit area than any other place on Earth, First Philippine Conservation Incorporated (FPCI) donated over US\$1 million to marine conservation, part of which will be used to support two GMSA positions in CI-Philippines. A third position will be supported directly by the GMSA project.



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**The Bird's Head and Sulu-Sulawesi Seascapes are rich in biodiversity and are home to some of the world's most abundant marine life.**



## Wayag-Sayang-Uranie Archipelago MPA in Raja Ampat

Of the six new MPAs gazetted in the Bird's Head Seascape in May 2007, the Wayag-Sayang-Uranie Archipelago is the “crown jewel” of the Raja Ampat MPA network. The 1,550 km<sup>2</sup> MPA is comprised of more than 100 stunning karst islands that line the Indonesian border with Micronesia. Though this archipelago is under the traditional ownership of Papuan clans from two nearby villages, it is completely uninhabited due to its remoteness and the lack of freshwater. The archipelago's stunning white sand beaches represent one of SE Asia's most important rookeries

for green and hawksbill turtles, and the steep rocky Pacific reef slopes were once patrolled by vast numbers of reef sharks and other large pelagic fishes. Unfortunately, the area has been a magnet for shark fin fishers and turtle poachers, and the lack of human settlements has allowed these illegal activities to continue unhindered for decades.

The new MPA represents an important step for the Papuan traditional owners in reclaiming their natural heritage from the lawlessness that has prevailed until recently. With grant support from CI, the Papuan Sea Turtle Conservation Foundation

(PSTCF) set up a turtle nest guarding program that employs 12 local villagers round-the-clock. Poaching of nesting turtles and their eggs has been completely eliminated in the past year, and over 950 green turtles successfully nested in 2007. Incidents of shark-finning have decreased as well, and a soon-to-be-launched joint patrol system promises to further reduce illegal fishing.

CI is working closely with PSTCF, the local village tenure-holders and the Raja Ampat government to draft a management plan for the new MPA and set up a zoning system. Primary objectives will include recovery of shark and turtle populations in the archipelago. CI is also exploring the potential for a conservation incentive agreement with the two villages that own the archipelago, which would designate 100 percent of the MPA as “no-take.” If all goes according to schedule, the MPA will be fully operational by the end of 2008.

**(Above) Wayag Islands. (Right) After her release from captivity, an adult hawksbill turtle that was headed for the dinner plate now returns to the seas of Raja Ampat.**

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## Ladies in Waiting...

The Balabac Strait Corridor in the Philippines, part of the Sulu-Sulawesi Seascape, is not merely a seat of floral and faunal diversity; it is also a crossroads of diverse cultural influences, home to both Muslim and Christian populations. The original Balabac settlers were the Molbogs, who gradually adopted the Muslim faith as more and more Muslim migrants from Mindanao settled in the area. Malaysian influences can also be seen, as most trading activities in the Balabac islands took place in the nearby Malaysian province of Sabah.

One tradition of note in Balabac is that of the Samal–Pangutaran, a Muslim tribe residing on Bangcalaan Island, one of the 20 island barangays or villages in Balabac. Pangutaran maidens paint their faces white with a mixture called badak, made from rice powder, extracted guava leaves and

water. The white paint traditionally indicated that a woman is now ready to accept suitors and/or wedding proposals.

While badak traditionally signifies a readiness to get married, most modern women in the tribe use it mainly as protection from the sun during fieldwork. Badak is also used as a whitening exfoliant, to keep skin young-looking. However, many women would still insist that they adhere to the tradition of “ladies in waiting,” as a sign of their Muslim faith.

**Traditionally, Pangutaran maidens paint their faces white to indicate they are ready for wedding proposals, but it also protects their skin from the sun during fieldwork.**



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## SEASCAPES IN FOCUS

Conservation International  
 2011 Crystal Drive, Suite 500  
 Arlington, VA 22202  
<http://marine.conservation.org>



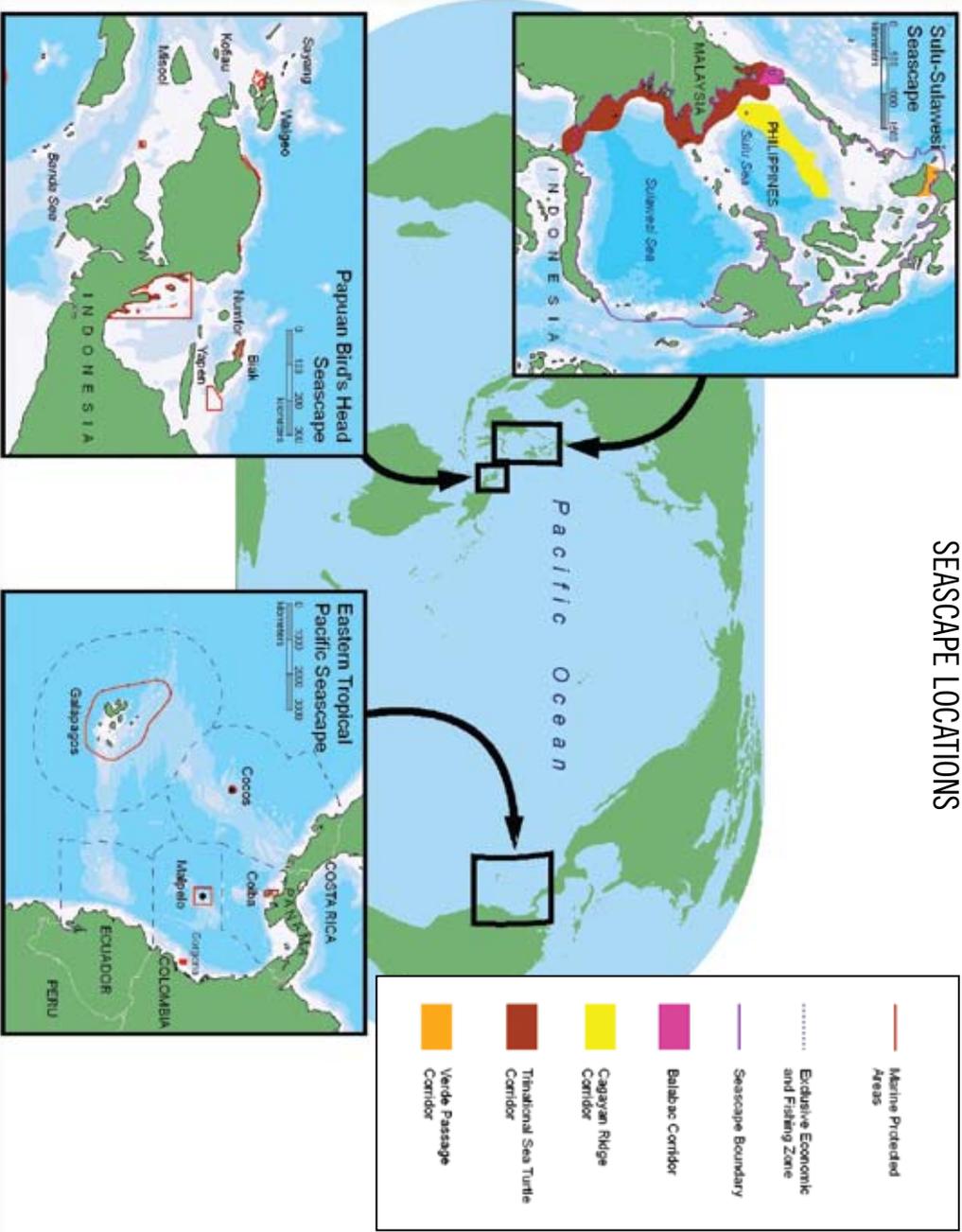
A Giant sea anemone (*Stichodactyla gigantea*) and pink anemonefish, (*Amphiprion perideraion*).

## SEASCAPES IN FOCUS

Seascapes are large, multiple-use marine areas, defined scientifically and strategically, in which government authorities, private organizations and other stakeholders cooperate to conserve the diversity and abundance of marine life and to promote human well-being.

If you are interested in learning more or want to support the Bird's Head Seascape contact:

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## CI'S MISSION

Founded in 1987, Conservation International (CI) believes that the Earth's natural heritage must be maintained if future generations are to thrive spiritually, culturally, and economically. Our mission is to conserve the Earth's living heritage, our global diversity, and to demonstrate that human societies are able to live harmoniously with nature.

