

Conservation news

Community-led management lays the foundation for coral reef recovery in Cambodian marine protected areas

The proclamation of the Koh Rong marine protected area in 2016 signified Cambodia's first foray into large-scale protection of seascapes. This achievement was built on over 7 years of collaborative effort between government ministries and non-governmental organizations, including Fauna & Flora International (FFI). This marine protected area adopts Cambodia's Community Fishery approach to resource management, whereby communities are empowered to develop and manage their own fisheries resources through the creation of voluntary management committees and patrol teams. This collaborative approach has been successfully employed throughout the extensive freshwater fisheries of Cambodia, and is now gaining momentum in the marine space.

In April 2019 FFI, in partnership with the Song Saa Foundation and Kuda Divers, and with support from the Dive Shop Cambodia, conducted a research expedition in the Koh Rong marine protected area on behalf of the Royal Government of Cambodia. This expedition was the first since formal proclamation of marine protection, and the resulting data are essential as a litmus test to investigate how conservation and management efforts have affected coral reef ecosystem condition. Surveys were conducted at long-term monitoring sites, and at new locations that reflect the expansion of the protected area in 2018.

Overall, results from the expedition indicated that current management strategies are having a positive, stabilizing influence. Hard corals, the building blocks of tropical reefs, continue to increase in coverage, with no observable impact of the 2015–2016 global bleaching event (Hughes et al., 2017, *Nature*, 543, 373–377). Abundance of fish classified as commercially and economically valuable to local small-scale fisheries also exhibited stability, a promising sign that current levels of fishing pressure are not further diminishing fish stocks within the archipelago. In Koh Rong the fish biomass, a key metric used by protected area managers to assess anthropogenic influence on marine habitats, was assessed for fish species of the grouper (Serranidae) and parrotfish (Scaridae) families. Both target families showed an increase in biomass, a promising sign of management success. However, total biomass of both families remains low, indicative of a reef system that has been previously overexploited (Roff & Mumby, 2012, *Trends in Ecology & Evolution*, 27, 404–413). This must be improved to increase ecosystem functionality and fisheries status. Overall, although no dramatic recoveries were observed, almost all reef health

indicators in Koh Rong either exhibited stability or slight recovery.

If acting alone, community-led approaches cannot be seen as a silver bullet for effective management of marine protected areas. Evidence suggests that illegal fishing has not ceased at the site and incursions by large fishing vessels from outside Koh Rong remain a threat that community patrols in small boats are unable to prevent. However, utilization of volunteer community enforcement teams, as shown here in Koh Rong, can be an effective tool in engaging local resource users and mitigating further degradation of marine habitats when complemented by wider management measures and government support. This establishes a foundation for management through community engagement, empowerment and environmental stewardship.

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Conservation Leadership Programme 2020 Team Awards announced

In early June, the Conservation Leadership Programme (CLP) announced the winners of its 2020 Team Awards, which will provide support for 19 teams of early-career conservationists leading critical projects on globally threatened species. The awardees will benefit from project funding worth a combined total of USD 342,830, thanks to support from Arcadia—a charitable fund of Lisbet Rausing and Peter Baldwin. As part of the award, one member from each winning team will be invited to participate in CLP's international Conservation Management and Leadership course, which provides trainees with essential skills and networking opportunities to help advance their career in conservation. As a result of restrictions imposed by the Covid-19 pandemic, this year the course will be held online, followed by an in-person reunion when it is deemed safe to do so. The awardees will also benefit from long-term mentoring from experts working within the conservation sector and will join CLP's global Alumni Network to gain peer-to-peer support, access to learning resources and grants, and other key information to help secure their future as conservation leaders.

This year's 19 award-winning projects span the globe—with six in Africa, five in Eurasia, four in Asia and the

Pacific, and four in Latin America—and include the first-ever CLP Team Awards granted to projects in Costa Rica, Botswana and Tajikistan. The successful projects will undertake research and practical conservation action to save a range of threatened species, many of which are categorized as Vulnerable, Endangered or Critically Endangered on the IUCN Red List. These include the Vulnerable snow leopard *Panthera uncia* in India and Tajikistan, the Endangered white-bellied pangolin *Phataginus tricuspis* in Nigeria, the Critically Endangered El Rincon stream frog *Pleurodema somuncurensis* in Argentina, and the Vulnerable red-breasted goose *Branta ruficollis* in Kazakhstan. Other projects focus on threatened but relatively neglected flora and fauna, including endemic invertebrate species living in the dark karst caves of western Georgia, important seagrass ecosystems in Costa Rica, and the species-rich mecrusse forest in Mozambique.

The teams will use a variety of research methods, such as GPS-tagging and camera traps. For example, GPS-tagging will be used to monitor the last known population of the Vulnerable short-tailed roundleaf bat *Hipposideros curtus* in Nigeria, and camera traps will track elusive carnivores, such as the Endangered dhole *Cuon alpinus*, through the forest reserves of north-east Bangladesh. Many teams will conduct outreach activities to engage local communities in long-lasting conservation solutions. For example, the recipients of this year's top prize, the Conservation Leadership Award (worth USD 50,000), will train 30 conservation champions and engage 50 local schools in a long-term plan to save the snow leopard in the trans-Himalaya, India.

CLP is now inviting applications to its 2021 Team Awards (see p. 750). To view a full list of the funded projects, visit conservationleadershipprogramme.org/our-projects/latest-projects-2020. CLP was initiated in 1985 and is a partnership between BirdLife International, Fauna & Flora International and the Wildlife Conservation Society.

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Decline of whale shark deaths documented by citizen scientist network along the Venezuelan Caribbean coast

At the beginning of this century, observations of the Endangered whale shark *Rhincodon typus* in Venezuelan waters comprised 20 opportunistic records spanning the previous 51 years (Romero et al., 2000, *Biodiversity* 1, 11–15), suggesting they were present infrequently. A decade later, there were sightings year-round, distributed all along the coast. News of killings of whale sharks also became more frequent. In 2014, the Centro para la Investigación de Tiburones de Venezuela began to systematically document

whale shark observations and engage fishers linked to shark encounters. They interviewed 222 people from 17 towns, spanning Maracaibo in the west to Margarita Island in the east. Reports included 142 sightings and 21 deaths of whale sharks during 2014–2017, the latter by entanglement in nets, harpooning or other capture methods. Although most encounters were opportunistic or incidental, they generally lead to the killing of sharks and the sale of their fins.

In 2016–2020 the organization visited the 17 coastal towns where reports were more frequent. Firstly, they contacted community leaders and fishers connected to shark kills, built personal relationships, developed trust, and explained the work of the organization. After one or two visits, workshops at schools, fisher cooperatives or local businesses expanded the visibility of and interest in the project. An invitation to share information on social media followed. Whale shark sightings now reach the organization within minutes. Fishers film untangling and releasing of sharks instead of killing them. Others film themselves swimming with whale sharks. Diving operators offer whale shark watching tours, increasing their value from a one-time sale of fins to repeat visits with tourists.

The clearest success indicator, however, is a sharp decline in shark killing. Prior to October 2017, interviews documented 21 shark kills. In contrast, during 2018–2020, after implementation of workshops, relationship building, and establishment of the social media network, no whale shark killings were reported. Although underreporting is possible, it seems likely that the news would reach the organization, in particular as news of captures of other shark species rapidly spread. The evidence collected through this citizen scientist network suggests that the whale sharks seen are mostly juveniles (with a mean length of c. 7 m), and appear in a number of localities along the Venezuelan coast. Reports have mentioned the presence of 1–10 sharks simultaneously and during several months. Additional field data would facilitate estimation of seasonality and abundance. Although past records suggest whale sharks were only present occasionally along the Venezuelan coast, they are now a common occurrence and perhaps are here to stay.

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