



Building Bycatch Solutions from the Ground Up for the East Pacific Leatherback

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The East Pacific population of the leatherback is one of the world's most threatened marine turtle regional management units (see *SWOT Report*, vol. VII, pp. 20–31) and has already seen dramatic declines (90 percent since 1980) in the number of nesting females at its major nesting beaches in Mexico and Costa Rica. Now there may be fewer than 1,000 adult females in this population owing to a combination of fisheries bycatch, egg harvesting, and other threats. Bycatch of adult and subadult turtles on foraging grounds is of particular concern, given the strong influence that these life stages have on population dynamics. As such, an expert working group was assembled by the IUCN Marine Turtle Specialist Group with support from the National Fish and Wildlife Foundation in 2012 to develop a 10-year regional action plan to halt and reverse the decline of the East Pacific leatherback turtle.

The regional action plan identified numerous actions to address fisheries bycatch, including the characterization and mitigation of impacts on immature and adult leatherbacks in Colombia and Panama, regions for which very little information was available. Subsequently, the Eastern Pacific Leatherback Network (LaudOPO) was formed in 2016 by a number of organizations that had been working at nesting beaches in Mexico, Costa Rica, and Nicaragua, as well as groups coordinating bycatch reduction programs in Ecuador, Peru, and Chile. Within this group, a scientific collaboration was initiated between the Latin American nonprofit JUSTSEA Foundation and the University of North Carolina at Wilmington specifically to address the lack of knowledge about bycatch in Colombia and Panama. JUSTSEA team members were trained by Mexican experts in rapid bycatch assessment methods to ensure that a standard approach would be implemented across the region and that this training was passed on to local fishers in the target study areas in Colombia and Panama.

To date, these fishers have obtained results from 800 surveys in seven Colombian port cities (Tumaco, Buenaventura, Bahía Solano, Juradó, Nuquí, Pizarro, and El Valle) and eight more ports in Panama (Muelle Fiscal, Juan Díaz, Puerto Coquira, Vacamonte, Caimito, Puerto Mutis, Puerto Mensabe, and Remedios). These surveys, coupled with extensive interviews, quantified impacts to a variety of bycatch species, including sea turtles, elasmobranchs, and seabirds. The preliminary results are already helping to identify sites of importance for East Pacific leatherback conservation.

In Colombia, reports of leatherback turtle interactions have been documented through fishers operating out of Juradó, Nuquí, Bahía Solano, and Buenaventura. In Juradó, Nuquí, and Bahía Solano, 12 leatherback bycatch incidents were related to the use of artisanal J hook longlines. In Buenaventura, one fisher reported capturing two leatherbacks while fishing for sharks with gillnets (20-centimeter mesh) near Malpelo Island National Marine Park. Another fisher from this same port reported capturing two leatherbacks just a few months later in the same area. According to fishers and government fisheries observers interviewed in Buenaventura, it is common to see leatherback turtles near Malpelo Island.

In Panama, we received seven reports of entanglements of leatherbacks from the towns of Puerto Mutis and Remedios, all of which reported using longline gear near Coiba National Park, an island approximately 50 kilometers off the Panamanian coast. In addition to providing information about leatherback interactions, our surveys also revealed very high levels of bycatch for other species of sea turtles, seabirds, and migratory sharks in both countries.

Through JUSTSEA surveys under way since 2016, good relationships have been established with local fishers, several of whom now assist by documenting geographic coordinates of leatherback interactions using handheld GPS units. Similarly, partnerships between the Colombian and Panamanian environmental ministries and government agencies in Colombia (Autoridad Nacional de Acuicultura y Pesca, AUNAP) and Panama (Autoridad del los Recursos Acuáticos de Panamá, ARAP) have been successful. Those partnerships will be very important for implementing remediation that will likely arise in the future.

AT LEFT: A severely entangled leatherback shows the dangerous and often lethal impacts of turtle interactions with fishing gear. © OCEAN SPIRITS INC. | WWW.OCEANSPIRITS.ORG

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In July 2017, JUSTSEA offered five workshops for more than 150 fishers to (1) share preliminary results of the rapid bycatch assessments, (2) train them in techniques for handling and releasing entangled turtles and seabirds, and (3) train them to use GPS units and digital cameras to record megafauna bycatches, with a special focus on leatherback turtles. In addition, 100 short-handled pigtail de-hookers were donated to fishers who primarily use longline fishing gear. The success of these workshops in Colombia (Buenaventura, El Valle, and Tumaco) was greatly enhanced by the participation of Peruvian fishers who have worked for many years in the bycatch mitigation program led by ProDelphinus (see *SWOT Report*, vol. VII, p. 15). Similar workshops were offered in Panama City and Santiago de Veraguas, with logistical support from the Smithsonian Tropical Research Institute and the University of Panama. Training on best fishing practices and bycatch release techniques at these events was led by representatives of the onboard observers program of National Oceanic and Atmospheric Administration (NOAA) Fisheries in Hawaii. The support of the ministries of the environment and national fisheries agencies mentioned previously was also fundamental to the success of all these meetings.

JUSTSEA and its partners continue to collect survey data at fishing ports to have better resolution of the leatherback bycatch in the American Pacific, and GPS reports of marine megafauna interactions continue to trickle in from project-trained fishers to this day. Moreover, onboard observer programs in gillnet and longline fisheries in both countries are being launched so we can better understand the fisheries and gear types most strongly associated with leatherback interactions and be able to identify best strategies for bycatch reduction.

Data resulting from this project have been shared in several international forums as well, including the International Sea Turtle Symposium, LaudOPO regional meetings, and the meeting of the Scientific Committee of the Inter-American Convention for the Protection and Conservation of Sea Turtles. Furthermore, JUSTSEA will contribute to efforts by the Marine Turtle Specialist Group of the International Union for Conservation of Nature to update knowledge about the conservation status of sea turtles in the East Pacific. Project staff members and participants are confident that the goal of mitigating all bycatch threats to leatherbacks in Colombian and Panamanian waters may one day be achieved through continued collaborative work with fishers and other key stakeholders. ■