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Leatherback Sea Turtles Careening Towards Extinction

Scientists Call For International Cooperation to Save Giant Turtles that Pre-date Dinosaurs

Denver, CO. Today, at the American Association for the Advancement of Science Meeting (AAAS) scientists made an impassioned appeal for international cooperation to save leatherback sea turtles from extinction.

Leatherbacks are the oldest, largest, and widest-ranging marine animals ever to swim through our global ocean. Nine feet long, six feet wide, and weighing almost a ton they dive as deep as half a mile. Leatherbacks swam with pleiosaurs—outlasting them and the dinosaurs by 65 million years. Now the question is, can they survive us?

Leatherback sea turtles are declining rapidly – especially in the Pacific Ocean — and are the world’s most endangered sea turtle. “They survived over 100 million years, through climate change and asteroid impacts, but they could become extinct in the next 10-20 years unless sufficient international cooperation is mounted to reverse this dramatic decline,” says Larry Crowder of Duke University. “There are probably fewer than 1500 females nesting throughout the Pacific Rim.”

Global industrial fishing—in particular, pelagic longlines used to catch swordfish and tuna and gill nets, pose the principal threats to leatherbacks at sea, while the exploitation of eggs and destruction of nesting habitat threaten them during their short time on land. The task of reversing the decline of Pacific leatherbacks is daunting because they nest in four different countries, range through territorial seas of many nations, and ply international waters where protection is extremely limited.

Ironically, leatherbacks were long thought immune from extinction due to their widespread geographic distribution. They nest primarily in four Pacific rookeries where the number of individual nesting females has declined by more than 95% over the past 22 years to about 900 in Indonesia, 45 in Mexico, 55 in Costa Rica, and 2 in Malaysia. Populations in Mexico have declined 20 percent per year for nearly a decade. Scientists are predicting that the Malaysian and Costa Rica populations will go extinct in the next 3 to 30 years. Even in the Indonesian rookery, nesting females have declined fivefold over the past half-century and adult turtles are still actively harvested

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Yet saving sea turtles *is* possible. International cooperation has worked before to reverse the decline of Kemp's ridleys – another species of sea turtle whose numbers became dangerously low in the mid 1980's. Kemp's ridleys sank to about 300 nesting females per year before their decline was reversed by an international effort, protecting them on their nesting beaches in Mexico and by requiring turtle excluder devices (TEDs) in U.S. and Mexican trawl fisheries. TEDs are metal grids placed in the backs of trawl nets that allow the turtles to slip out of harm's way instead of being entrapped in the net, then drowning. Since the implementation of these efforts in the late 1980's, Kemp's ridleys have been increasing 11-13% per year, from a low of only 800 nests in 1986 to 6,200 in 2002.

“People worked very hard for over a decade protecting them on nesting beaches and in the water, and now we're seeing recovery. So there is a precedent for success. Saving leatherbacks will be harder because of their range,” says Crowder. “It will require even more international cooperation. There is hope, but we need to act now.”

Unlike the Kemp's ridleys that stay in the coastal zone of the US and Mexico – leatherbacks roam the world. In the Pacific, leatherbacks are declining at all major rookeries, primarily due to bycatch in longlines and gillnets.

What can be done to save the Pacific leatherback?

In order to save the leatherbacks and other sea turtles, U.S. scientists and managers are examining three options: 1) Develop and implement a gear fix to reduce bycatch in longlines and export this technology to other longlining nations, 2) Examine the spatial and temporal distribution of turtles and fishermen internationally to determine the potential for time or space closures to reduce bycatch, and implement these measures accordingly and 3) Consider trade or market-based approaches to reduce imports of target species in fisheries that take sea turtles.

Critical to the success of the first two options will be international cooperation, implementation, and enforcement from the major longlining nations. Scientists have examined what best predicts bycatch. Is it where the hooks are set? Is it water temperature or bottom features? “Unfortunately the single best predictor is swordfish catch – the more swordfish caught, the higher the rate of leatherback bycatch,” says Crowder. To help remedy this problem, U.S. longline fisheries already have been restricted or closed, but this will not adequately protect leatherbacks. More than 90% of longlining effort in international waters originates from international fleets, primarily from Japan, Taiwan, Korea, and China. Finding a fix across a global ocean will require both international governments' and fishermen's buy-in.

The third option involves US imports and choices consumers make when buying seafood.

New research funded by the Pew Charitable Trusts suggests that sea turtle captures in longline fisheries are ten times higher in swordfish sets than sets targeting tuna. “So simply choosing to consume less swordfish could reduce market demand and reduce the impact on critically endangered leatherbacks,” says Crowder.

Since saving leatherbacks also may require reductions in the overall quantity of fishing effort, scientists suggest that transitional aid should be allocated to fishermen and coastal communities as we try to move toward sustainable use of ocean ecosystems. “Bold measures are necessary,” says Crowder. “At this point "the survival of each turtle counts.”

“We have been successful in finding technological and operational solutions to reduce bycatches in some fisheries (dolphins in tuna seines and in gillnets, Kemp’s ridley sea turtles in trawls, sea birds in longlines and gillnets),” says Martin Hall of the Inter-American Tropical Tuna Commission. “In those cases, the remaining challenge is the communication and implementation of the solutions to all fleets. In other cases, such as the Pacific leatherbacks, the solution has yet to be found, and only an inspired and intense research effort may produce one before we run out of time.”

“The humbling thing about humans having this effect is that leatherbacks have been on earth 25 times longer than humans but we’re the cause of their decline. We’ve been here about 4 million years, they’ve been here 100 million,” says Crowder. “Measured in evolutionary time leatherbacks are one of most successful organisms in the sea, but unless things change fast, they are not likely to be here much longer. They will disappear if things don’t change - the only disagreement is exactly how long it will take.”

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MEDIA NOTE: The scientists will discuss their findings at the AAAS Annual Meeting in Denver on Monday, February 17th at 8:30 a.m. Mountain Time at the session: Conserving Migratory Marine Organisms: Protecting Animals with Ocean-Sized Habitats. Larry Crowder will show rare underwater footage of swimming leatherbacks at this session.

For assistance contacting the speaker during AAAS please call Jessica Brown at #202-497-8375. Additional material can be found at www.seaweb.org/AAAS

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