

# The Nicholas Environmental Notebook II\*

*Stories from the front line*



## Netting New Insights on Turtle Declines

Sea turtles are among Earth's oldest species. They've survived disasters, plagues and predators for more than 110 million years. Today, however, hundreds of thousands of them are accidentally snared in fishing gear and killed or maimed each year. All seven species are endangered or threatened.

Larry Crowder, director of the Center for Marine Conservation at Duke University's Nicholas School of the Environment and Earth Sciences, is working to reverse this deadly decline.

Crowder heads a team of Duke scientists and students who combine expertise in marine biology, social sciences, policy and geospatial technology to identify where and when by-catch is likely to occur, and devise strategies to reduce it. The team collaborates with conservation groups, researchers, governments, fishing commissions and fishermen worldwide.

Crowder's team published the first global assessment of sea turtle by-catch in longline fisheries in 2004. By compiling records from 13 major fishing nations and extrapolating data for nations where no data was available, they estimated more than 250,000 loggerhead and 60,000 leatherback turtles

are snared annually by these industrial-scale fishing fleets.

Since then, they've also shed new light on by-catch by small fishing fleets that ply coastal waters, primarily in developing nations. In one study, they estimated that by-catch from just two small fleets off the Baja California coast accounted for at least 1,000 loggerhead turtle deaths a year—a number large enough to appreciably increase the species' risk of extinction, and comparable to sea turtle deaths in the entire North Pacific longline fleet.

To reduce casualties, Crowder and his colleagues have created an online digital archive that maps where turtles and other protected species may cross paths with fishing fleets. They are promoting the design of fishing gear less likely to snare turtles. And they are working with fishermen, policymakers and conservationists to set aside critical turtle habitats as marine protected areas.

"The goal is not to point a finger of blame," Crowder says, "but to point out opportunities where, working together, we can save these majestic creatures and promote sustainable fisheries."

**Solutions start here at the Nicholas School**



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