

## Unintended Consequences of Development

# Saving lives welcome byproduct of GPS training

By Brian D. Smith, Director, WCS Asian Coastal Cetacean Program.

A sudden cyclone hit the Bay of Bengal on 18 September 2015. We knew from long experience working with hilsa gillnet fishermen in Bangladesh that the situation was desperate. Indeed the next day the Daily Star newspaper reported that 67 fishermen were missing and that 10 hilsa gillnet fishing boats had been lost. Mahmud Rahman, a marine scientist working for the Wildlife Conservation Society (WCS) Bangladesh Program, started calling the fishing vessel captains participating in our citizen science fishermen safety network, an initiative supported by WorldFish through the USAID EcoFish Project. This network has been collecting vital scientific data on bycatches of threatened dolphins, sharks, rays and marine turtles needed for developing solutions for saving these iconic species from extinction. In exchange, WCS provides them with a Global Position System (GPS) and training on how to use it to navigate to safety during extreme storms.

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Under normal conditions, the fishing vessel captains are excellent navigators but when cyclones hit the coast and the seas become chaotic, they cannot find the deep channels leading to safety and their small wooden

vessels often capsize with tragic consequences.



As Mahmud called the fishing vessel captains in our network, he was relieved to find that most had successfully used their GPSs to arrive safely back home. However, he became increasingly concerned when he could not reach Captain Akkas Ali. Mahmud had recently given Captain Ali a pair of waterproof binoculars as a prize for being the best performing captain in terms of data collection and mentoring his fellow hilsa fishing boat captains on the use of the GPS and data collection. It was therefore with immense relief when three days after the storm he was finally able to reach Captain Ali. Mahmud was astonished at what he learned.

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During the storm Captain Ali was able to signal other hilsa fishing vessels by searchlight to follow him. Using the track-back function on his GPS, Captain Ali led the boats through a deep channel into the Sundarbans mangrove forest where they found refuge from the most destructive impacts of the cyclone. The next day Captain Ali led a search and rescue effort. Directed by his GPS he searched along transect lines in a 50 km<sup>2</sup> grid where he predicted the fishermen were most likely to be. This was a much more efficient way to search for survivors compared to following a haphazard route. Using the binoculars we had given him, Captain Ali was able to save four fishermen floating in their life jackets at sea and another 18 fishermen stranded on remote coastal islands. He later spoke on local TV about the rescue and cited the great value of the GPS and binoculars in safeguarding the lives gillnet fishermen.



saving these threatened marine wildlife from extinction but also for saving the lives of fishermen whose lives are also at risk due to extreme storms that are becoming more frequent and intense due to global climate change. With further support from WorldFish and USAID, WCS looks forward to expanding our citizen science fishermen safety network to additional hilsa fishing vessels in the Bay of Bengal. This is a win-win situation for marine biodiversity and the hilsa fishing communities in Bangladesh.

The goal of citizen science fishermen safety network is to balance community fishing needs with protecting dolphins, sharks, rays and marine turtles at risk of extinction from entanglement in gill nets. Working together with hilsa gillnet fishermen, WCS, WorldFish and USAID are finding solutions not only for