A tracked green sawfish gives-up vital data

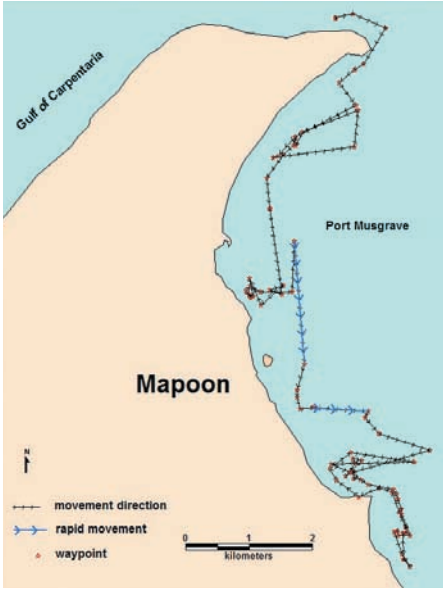
Scientists have tagged and tracked a rare green sawfish for the first time in Australian waters, giving hope that gathering more knowledge of the threatened species will greatly assist conservation efforts to prevent its extinction.

Sawfish species have undergone drastic declines worldwide in the past 30 years, due largely to fishing pressure and habitat loss. Australia's four known sawfish species are listed as endangered under the IUCN Red List of Threatened Species, and there is an almost complete lack of data on habitat usage and movement patterns of sawfish both in Australia and worldwide.

The 3.6 metre female green sawfish, *Pristis zijsro,* was fitted with an acoustic tag in May after being caught by a commercial gillnet fisherman Peter Tonon, near Port Musgrave, 100 km north of Weipa in Queensland.

Marine scientists Richard Pillans of CSIRO, and Stirling Peverell of the Queensland Department of Primary Industries and Fisheries, then tracked the sawfish for 28 hours as it swam steadily through shallow, coastal waters in the Gulf of Carpentaria.

'Luck was on our side,' Pillans says. 'Although sawfish abundance is greater in the gulf than in most places, their distribution is patchy and you could fish for a month without catching one.



Pillans and Peverell spent over 27 hours tracking the sawfish on a feeding run in the shallow coastal waters of Port Musgrave.
Richard Pillans & Stirling Peverell/QLD DPI

The green sawfish is one of four threatened species recorded in Australian coastal waters.
Richard Pillans & Stirling Peverell/QLD DPI

'Green sawfish once occurred at least as far south as Sydney, but now are virtually extinct in New South Wales and are very rarely found south of Townsville,' Pillans says. 'Everything works against them. They live in muddy, bottom habitats and frequently enter shallow water and estuaries where they are susceptible to capture.'

Sawfish use their spectacular and highly sensitive rostra (saws) to grub around on the bottom for invertebrates, and to slash at schools of prey fish such as mullet and herring. But the toothed rostra are highly prone to entanglement in all net types.

Once entangled, sawfish are difficult and dangerous to release, a problem gulf fishers are addressing through new handling practices designed to increase the likelihood of survival after capture.

Pillans says little is known about sawfish movements, biology and habitats, but as a general rule, sawfish species have much lower reproductive rates than bony fishes.

'To reduce interaction between fishing nets and sawfish, we need first to understand the animal's habitat requirements,' he says. 'We're only beginning to learn how large they grow, when they mature, how often they breed and how many pups they have.

'Peter [Tonon] helped us to quickly bring the sawfish to shore, untangle it, attach the acoustic tag and release it. Within an hour of release the sawfish was observed feeding.

'We then spent a long, uncomfortable night in the rain, staying with the animal all the time to track and map its path with a hand-held GPS and directional hydrophone.'

'This is the first data gathered in Australia about what green sawfish do on a daily basis'

The sawfish swam from just outside the Port Musgrave mouth and moved up the estuary, staying in water less than two metres deep. It moved steadily over 27 hours, travelling about 28 km and within 200 metres of the shore.

'This is the first data gathered in Australia about what green sawfish do on a daily basis, and it's a start,' Pillans says.

'In future studies we hope to fit sawfish with satellites that will tell us more about their long-term movement patterns and habitat requirements.'

A National Oceans Office grant funded the acoustic tracking to provide information on key species groups in northern Australian as part of its regional marine-planning activities.

The tagging complements a study of northern Australian sharks and rays that is helping to assess the status of sawfish populations. This study, funded by the Fisheries Research and Development Corporation, involves CSIRO and the WA, NT and Qld fisheries departments.

More information:
A report on the sawfish acoustic tracking is available at http://www.oceans.gov.au/publications/final_tracking.doc

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