

Turtles are loyal in feeding as well as in breeding

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A research team led by the Dr Annette Broderick of the University of Exeter's School of Biosciences has discovered that, after laying their eggs, sea turtles travel hundreds of miles to feed at exactly the same sites. The research, funded by the Natural Environment Research Council (NERC), shows for the first time that marine turtles appear to be as loyal to specific foraging sites and migratory routes as they are to nesting sites.

Published today in the journal *Proceedings of the Royal Society B: Biological Sciences*, the findings strengthen the argument for the protection of key foraging sites of these endangered species.

'The extent to which turtles showed fidelity to specific foraging sites and routes was a surprise,' said Dr Annette Broderick of the University of Exeter's Cornwall Campus. 'Marine turtles migrate hundreds of miles between breeding and foraging grounds, so it is amazing that they are able to return to exactly the same sites via very similar routes. We do not yet know why they return to the same sites, but these findings give us a much better picture of the behaviour of adult turtles at sea, where they spend the majority of their life cycle.'

Scientists have long known that marine turtles return to the same breeding sites each year, but did not know until now that they also revisited foraging sites. Dr Broderick and her team tracked twenty green and loggerhead turtles nesting at two beaches on Cyprus, using satellite transmitters. All females tracked for more than six months remained in

the same foraging grounds, moving to deeper water for the winter where they conducted dives of up to a record breaking 10.2 hours. Five females were also tracked when they nested again up to five years later and returned to the same foraging sites.

Green turtles have been observed cropping sea grass gardens to encourage new growth, so there could be a benefit to them returning to foraging grounds. Loggerheads have an omnivorous diet, including molluscs and crustacea, so the benefit to them revisiting feeding areas is unclear. Scientists do not yet know why this behaviour has evolved, but it is possible that sea turtles are territorial or are responding to limited food resources by sticking to their own feeding patches.

‘There are estimated to be as few as 300 female green turtles breeding annually in the Mediterranean,’ continued Dr Broderick. ‘This new information is timely and our research findings strengthen the case for the protection of key migratory and foraging areas. We have shared our findings with the Libyan authorities and are encouraging them to investigate these ‘hotspots’ further.

One of the major threats to marine turtles globally is fisheries bycatch. Hundreds of thousands of marine turtles die each year as a result of fisheries interactions. Identifying and protecting key habitats is critical for the future of these endangered species.

Source: University of Exeter

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