

Tracking Shortfin Makos

The impressive Shortfin Mako, *Isurus oxyrinchus* (family Lamnidae), listed as vulnerable by the International Union of Conservation of Nature (IUCN) and the Convention of Migratory Species (CMS), are a prized catch for recreational, game and charter fishers. Incidental captures also occur by fishers targeting other species and as by-catch by commercial fisheries.



Shortfin Mako, captured off the South East of South Australia, to be fitted with a fin mounted satellite tag.

Shortfin Makos have a global temperate and tropical range and are among the top pelagic predators in southern Australian continental shelf ecosystems.

Due to the limited availability of data there is little evidence to suggest that Australian populations are declining. However, the well documented global decline of pelagic shark species and their importance to the structure and functioning of marine ecosystems, highlights the need to better understand their movement, distribution and habitat preferences. This would allow appropriate population management strategies to be developed.

Research, as part of a PhD project entitled 'Movement patterns of pelagic sharks in the Southern and Indian Oceans: determining critical habitats and migration paths', uses fin mounted satellite tags and a pop-up archival tags (PAT) to investigate the movement, critical habitats and migration paths of Shortfin Makos.

To date 10 Shortfin Makos (1.7 – 3m total length) have been tagged in the Great Australian Bight (GAB) and off the Bonney Coast in South East SA and have successfully transmitted data for periods ranging between 46 and 440 days.

Data collected shows that these animals migrate between the Southern and NE Indian Oceans, utilising both the outer shelf

and slope during their movements.

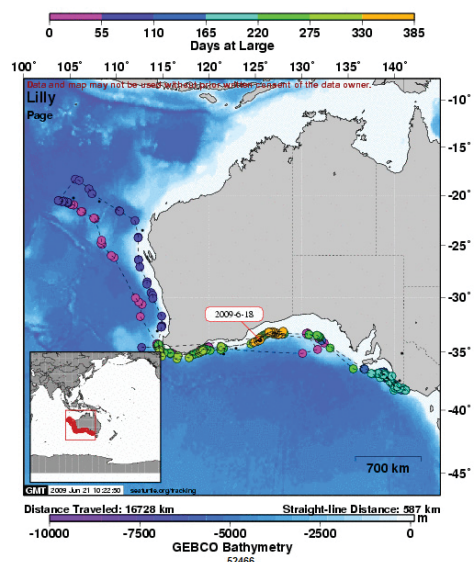
These skilled predators have also demonstrated a highly mobile foraging strategy, encompassing the mid to outer continental shelf off Southern and Western Australia.

Remarkable speeds of up to 70km/hr allowed Makos to cover large distances of up to 16,152km in 357 days.

Shortfin Makos inhabited broad temperatures ranging from 10 to 28°C, with some leaving the GAB during mid winter as water temperatures decline. Patterns of movement vary though, as one shark travelled to WA in both winter and summer.

They also dive to great depths, with a maximum dive of 700m recorded.

The broad scale migrations of these species, including entering waters beyond Australia's Exclusive Economic Zone (EEZ), suggests that future management and conservation arrangements need to encompass Australian State, Commonwealth and International waters.



Movements of a Shortfin Mako 'Lilly' off southern Australia, displayed in an animated map available at seaturtle.org.

The movements of the tagged Shortfin Makos can be viewed at http://www.seaturtle.org/tracking/index.shtml?project_id=308.

Additional information is also available at <http://www.henrythesealion.com/lilly/index.html>.

Key Points

- There is a need to better understand the movement distribution and habitat preferences of pelagic sharks in Southern Australia.
- To date, 10 Shortfin Makos have been tagged in the Great Australian Bight and off the Bonney Coast in South Australia using fin mounted satellite tags and a pop-up archival tag (PAT).
- Results demonstrate that these animals can travel at great speeds, covering large distances, inhabiting temperatures ranging from 10°C to 28°C.
- Animals migrate between the Southern and NE Indian Oceans including entering International waters.
- Preliminary data suggests that future management and conservation arrangements need to encompass Australian State, Commonwealth and International Waters.

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