

“Investigation on wildlife migration”

The wildlife migration service developed by DIVERSITY uses near-real time oceanography products (sea surface temperature, water quality, surface currents) to study migrations of satellite-tracked hammerhead and Ferox sharks in the Tropical East Pacific Corridor.

Relations between the observed movements of the hammerhead sharks (equipped with electronic tags) and the EO-derived oceanic parameters (sea surface temperature, water quality, surface currents) in the Tropical East Pacific Corridor were analysed by the project scientists in collaboration with Malpelo Foundation scientists.

A clear tendency to move along temperature fronts was observed for some individuals. However, little or no correlation was detected between the sharks' movements and the chlorophyll-a concentration. This had to be expected as sharks prey at high trophic levels (i.e. sharks are upper predators, not feeding on plankton).

Electronic tags analyses in combination with EO derived information have thus demonstrated their ability to deliver unique observations of how marine animal are linked to, and exploit, their oceanic environment. In the present situation of climate change and related ocean warming, this kind of information is indispensable to elaborate pertinent, adaptive, marine ecosystem management procedures.

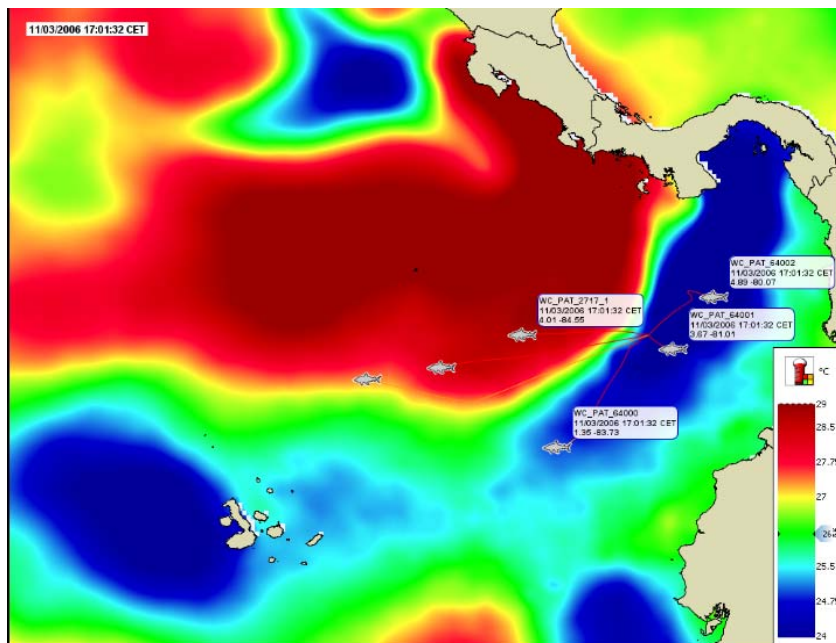


Figure 1: Shark's trajectories in the Tropical East Pacific Corridor (tracking data courtesy of Malpelo Foundation)

In addition to the horizontal movements, the vertical behaviour of the sharks was also studied. The results show that the different sharks species studied have different vertical habitats closely linked with the ocean vertical thermal structure.

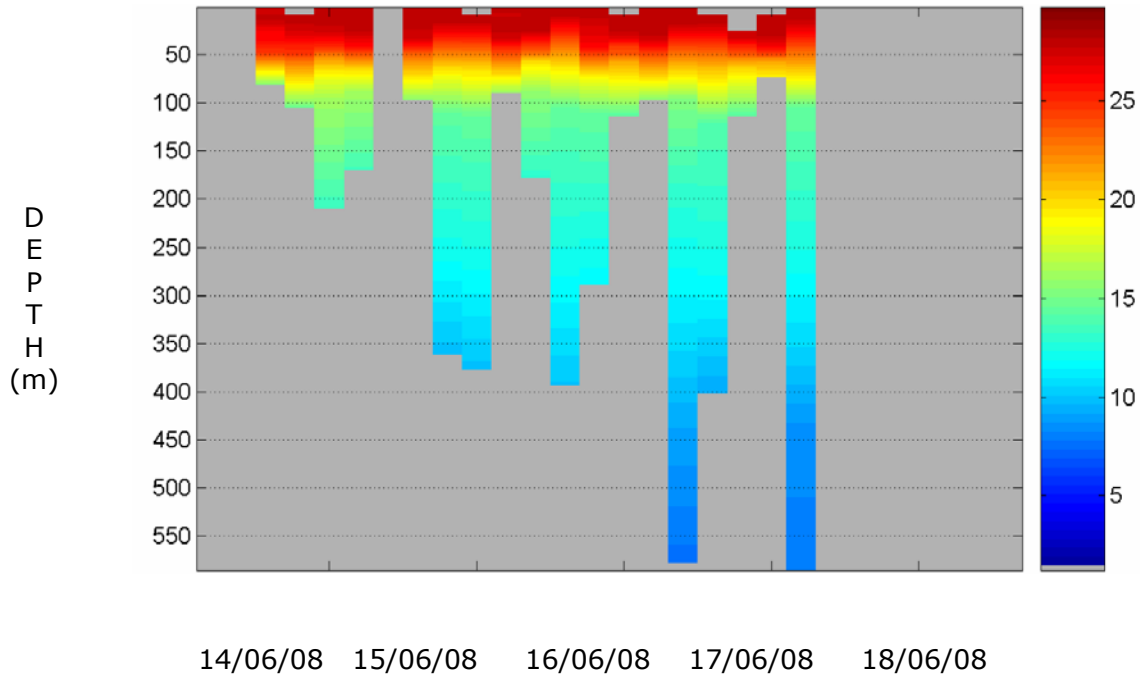


Figure 2: Vertical temperature profiles recorded by a tagged hammerhead shark. This figure also shows the typical dive range of this animal

For further information, please have a look at the Deliverable D10 (Operational Documentation), or contact Philippe Gaspar, CLS (Email: philippe.gaspar@cls.fr , Phone: ++33 561 3947 81).