

# **Electronic Monitoring Systems in ecotourism: an effective tool for collecting information to assist in whale shark management and conservation at Ningaloo Reef, Western Australia**

Danielle Rob<sup>1</sup>, P. Barnes<sup>1</sup>

<sup>1</sup>Department of Parks and Wildlife, Western Australia [whaleshark@dpaw.wa.gov.au](mailto:whaleshark@dpaw.wa.gov.au)

**Background:** The whale shark eco-tourism industry has been operating at Ningaloo Reef in North Western Australia since 1989 and is successfully managed by the Department of Parks and Wildlife (DPaW). A paper logbook system was introduced in 1995 as a way of collecting shark sighting information and industry trends. An electronic monitoring system (EMS) was implemented in 2009 to assist operators by improving their efficiency and accuracy in recording and providing logbook information.

**Methods:** Once an EMS unit is installed on a vessel, operation is the responsibility of the skipper or crew. The following information is manually entered: start of tour, passenger numbers, start of contact with each shark, end of contact with each shark, shark size and sex, direction of travel, whether it was shared with another vessel and end of tour. The following information is automatically recorded: GPS location of vessel and times when either the start or end button is pressed.

**Results:** The EMS has been widely accepted by skippers as the preferred method of collecting data. Data obtained from the EMS have shown a steady increase in the number of tours and passenger numbers over the last five years, and a strong increase in the number of shark interactions. The most common size of whale sharks encountered is 4 m TL (total length). Sex ratio is 3:1 male to female.

**Conclusion:** Using the EMS, DPaW can remotely monitor whale shark tourism operators in real time. Research data can be gathered, activity analysed and compliance with local regulations monitored. Having accurate data lodged to DPaW in real-time has made season reporting and analysis easier, less time-consuming and facilitates in-season as well as post-season reporting.

**Key words:** electronic monitoring system, monitoring, data collection, whale shark sightings, Ningaloo, tourism.