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MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION AND MANAGEMENT OF MARINE TURTLES AND THEIR HABITATS OF THE INDIAN OCEAN AND SOUTH-EAST ASIA

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Da Nang, Viet Nam, 21-25 October 2019
Agenda Item 10.5

OFFER OF COLLABORATION ON IMPACTS OF 'GHOST GEAR' ON MARINE TURTLES

(Prepared by the Secretariat)

Action requested:

- Consider the offer of collaboration by the Olive Ridley Project
- Provide guidance to the Secretariat

OFFER OF COLLABORATION ON IMPACTS OF 'GHOST GEAR' ON MARINE TURTLES

1. The Secretariat has received a proposal for collaboration between the IOSEA Marine Turtle MOU and the Olive Ridley Project (ORP), described in detail in the Annex to this document.

2. In short, the ORP is offering to expand its online data portal https://oliveridleyproject.org/report-a-ghost-net to the entire Indian Ocean region and collect the information required to assess and quantify the magnitude of the problem and inform management decisions. They are therefore inviting IOSEA Signatory States, experts and observers to submit data on ghost nets and ghost net turtle entanglement to the online data portal.

3. There are no cost implications for Signatories or the MOU. The database will be maintained by the ORP team and ORP will provide yearly analyses that will be submitted to the IOSEA Secretariat for dissemination to the Signatories, Advisory Committee and others, including through publication on the website.

Recommended Actions

4. The Meeting of the Signatories is recommended to:

   a) Consider the offer of collaboration by the Olive Ridley Project.

   b) Provide guidance to the Secretariat.

Abandoned, lost or discarded fishing nets: a need for improved quantitative analyses in the Indian Ocean

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Abstract

Sea turtle entanglements in abandoned, lost or discarded fishing nets (ghost nets) have been recognised as a major mortality source for sea turtles. However, little effort has been made to assess the impact, ghost nets have at the population level. Such limited research is likely driven by; (a) the effort required to quantitatively assess the number of ghost net entanglements and (b) methodological difficulties in tracing the origin of entangled individuals. Here we provide one solution to try and overcome these issues, principally with the application of a large-scale citizen science approach aimed at recording ghost nets and turtle entanglement throughout the whole Indian Ocean. Specifically, we propose to build upon an existing database which will allow us to quantitatively assess the impact ghost nets have on sea turtles and their habitats.

Introduction

Abandoned lost or otherwise discarded fishing gear (ALDFG) or 'ghost gear' as it is more commonly known is estimated to account for around 10% of marine debris worldwide (Macfadyan et al., 2009) which was already estimated at around 640,000 tons. It is likely that this is an underestimation since studies exploring the amount of marine litter (and ghost gear in particular), use a variety of different methods to measure; including volume, weight and/or abundance, making comparisons between studies difficult. Further, estimates do not currently include gear coming from illegal, unreported and unregulated (IUU) fishing practices and those countries that do not record gear loss.

Despite this lack of somewhat basic knowledge on the amount of ghost gear floating in our oceans, entanglement in marine debris has been recognised as a major threat to many marine animals including, seals, whales, dolphins and turtles (Laist et al., 1987; Baulch et al., 2014, Stelfox et al., 2016). Sea turtles in particular have been recognised as one major or key species

specifically vulnerable to marine debris and this is complicated by their complex behaviour, seasonal migration and foraging ecology (Heppell et al. 2002; Bolten, 2003; James et al., 2005; Heidemeyer et al., 2014). Six of the seven species of sea turtle are now protected under the Indian Ocean South East Asian (IOSEA) Marine Turtle Memorandum of Understanding (MoU). These include the; loggerhead (*Caretta caretta*), hawksbill (*Eretimochelys imbricata*), green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), flatback (*Natator depressus)* and the olive ridley (*Lepidochelys olivacea*). The impact, ghost gear (more specifically ghost nets) have on populations of these species is currently unknown and no regional impact assessment takes ghost gear into account which may undermine current conservation measures by signatory states. Wilcox et al., (2015) estimated that from the 8690 ghost nets collected in Northern Australia as many as 14,600 sea turtles may have become entangled in them during the 1 year they were drifting. Similarly, Stelfox et al., (2015) reported alarming numbers of olive ridleys entangled in ghost nets in the Maldivian archipelago with as many as 12,200 olive ridley turtles entangled in only 752 ghost nets over 51 months (Stelfox et al. in press). These two studies alone highlight the urgent need for more robust analyses of ghost nets and turtle entanglement in the Indo-Pacific. Moreover, the fact that ghost nets are transboundary in nature, and therefore cross multiple political borders the need for collaboration between governments, NGOs, fisheries and IGOs is paramount if we are even to begin to tackle the issue.

Project aim

The ORP hope to build evidence surrounding the issue of turtle entanglement in ghost nets in the Indian Ocean and provide detailed assessments to the broader turtle community. For this, we are proposing to start a collaboration with the IOSEA Marine Turtle MOU, encouraging signatory states to submit data to the online portal, hosted by ORP. We hope to see the Indian Ocean become global leaders in collecting data on turtle entanglements in ghost nets and become the global model for others to follow.

Methods to achieve the above aim

The Olive Ridley Project (ORP) would like to quantify the impact of ghost nets to sea turtles in the entire Indian Ocean in order to inform management and conservation efforts. We therefore urge signatory states to join this initiative to build evidence on the issue of ghost net and turtle entanglements in the region.

Currently the ORP have an online platform (https://oliveridleyproject.org/report-a-ghost-net) that collects data on ghost nets and ghost net/turtle entanglements since 2013. They have one of the largest and most comprehensive databases in the Indian Ocean and use this data to help build evidence on the issue in the Maldives. They collect data through citizen scientists that report ghost nets and turtle entanglements in the Maldives and more recently have expanded into Kenya, Oman and Pakistan. Through this data collection the ORP have been able to develop models that can predict the threat different net types face to sea turtles (Stelfox et al., (in press) and broadly classify nets to fisheries according to net specifications (Stelfox et al., in press). However, more data from the wider Indian Ocean will help improve model estimates. ORPs founder and CEO, Martin Stelfox, developed the data collection protocol alongside the IUCN and was the coordinator for the "build evidence working group" for the Global Ghost Gear Initiative (GGGI), a global sectoral alliance set up to tackle ghost gear globally and was a major contributor to developing the global app on ghost gear.

Here, ORP propose to increase efforts in ghost net recording and entanglement of turtles. Data will be utilised to build upon existing predictive models that are able to identify problematic fisheries through net identification (Stelfox et al., in press). Moreover, ORP hope to map the spatial distribution of ghost nets and turtle entanglements to provide evidence to the wider turtle community to incorporate into conservation management plans. `

What is needed?

The ORP would like to invite IOSEA signatory states, experts and observers to submit data on ghost nets and ghost net turtle entanglement to the online data portal (https://oliveridleyproject.org/report-a-ghost-net). This collaboration requires no monetary signup or sponsorship and can be implemented by citizen scientists and/or scientists alike.

The database will be maintained by the ORP team and ORP will provide yearly analyses that will be presented on the website of the IOSEA Marine Turtle MOU. Due to the sensitive nature of ghost gear all submissions will be confidential and no publication of results will be conducted without prior permission of the data submitters. Furthermore, the raw data will be available to all data analysts and scientists upon request.

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