Conservation and monitoring of endangered sawfishes in Mozambique

Interim report to the Rufford Foundation

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Protect Africa's Sawfishes

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INTRODUCTION

Sawfish are considered to be endangered worldwide and all sawfish species are listed as endangered on the IUCN Red List. In Africa, sawfishes are suspected to now be extinct throughout much of their former range. Two species, the Largetooth sawfish (*Pristis pristis*) and the Green sawfish (*P. zijsron*), have historically been present in the east and southeast Africa regions.

In 2014 the IUCN released a Global Sawfish Conservation Strategy[1], which highlighted the need for baseline data on sawfish populations in areas within the historical range of sawfishes, but where little recent research has been done. Information has been particularly lacking for much of Africa and south-east Asia. A study conducted in 2014 in Mozambique (supported by the Rufford Foundation) indicated that sawfishes were still caught at least occasionally by fishermen in two distinct habitats in the north of the country. This information suggested that there may still be a viable population of sawfishes in Mozambique and that further research, including sampling to verify the presence of live sawfishes, was warranted. This report documents the activities that have been undertaken so far in 2016 towards the second phase of this project.

Very few field studies of this type have ever been conducted on sawfishes in Africa, and none have been carried out in the past three decades, during which time sawfishes have gone from being commonly-encountered to being classified as Endangered (two species) and Critically Endangered (three species) on the IUCN Red List. This project aims to collect highly novel data on sawfishes in Mozambique. Most importantly, this study aims to verify and provide photographic evidence of the presence of sawfishes in specific habitats. This will be a huge step forwards for sawfish conservation in the developing world. The involvement of local staff will build local capacity which will benefit future studies and monitoring of sawfishes.

The Global Sawfish Conservation Strategy recommends that any country with sawfish populations develop their own National Sawfish Conservation Strategy. Following this recommendation, a workshop on sawfish conservation was held in Maputo in August 2015[2]. A follow-up workshop with representatives from all governmental institutions involved in fisheries, conservation and the environment is planned as an essential component of the second phase of this project.

AIMS

1. To conduct sampling in order to collect the first dataset on live sawfishes in Mozambique, including the species, sex, length and weight of each individual sawfish caught during the study, and the habitats where these sawfishes were captured.

2. To collect information on the threats to sawfishes in these habitats.

3. To train local staff in data collection from sawfish caught during sampling and landed by fishermen, and to encourage an enthusiasm and curiosity for these unique fishes amongst fisheries staff.

4. To hold a workshop which brings together key Mozambican fisheries and conservation actors, both governmental and non-governmental, to work together to address the significance of a population of critically endangered sawfishes in Mozambican waters.

[1] Harrison & Dulvy (eds). 2014. Sawfish: A Global Strategy for Conservation. IUCN Species Survival Commission's Shark Specialist Group, Vancouver, Canada. (http://www.dulvy.com/global-sawfish-conservation-strategy.html)

[2] Leeney & Carlson. 2016. Report of the workshop on sawfish conservation in Mozambique. NOAA Technical Memorandum NMFS-SEFSC-686.

5. To develop a conservation action plan for sawfish in Mozambican waters, developed in collaboration with local government, in particular the National Institute for Fisheries Research (Instituto Nacional de Investigação Pesceira – IIP) and the Institute for Development of Small-Scale (artisanal) Fisheries (Instituto de Desenvolvimento da Pesca de Pequena Escala - IDPPE), and other local stakeholders.

6. To raise awareness, both in Mozambique and internationally, of the presence of sawfishes in Mozambican waters, the need to protect them and the action being taken in order to do so. Awareness-raising activities should target a number of different sectors including Mozambican government institutions, fishing communities in areas inhabited by sawfishes and the wider public, both in Mozambique and internationally.

OUTPUTS

Note: Both Green and Largetooth Sawfish, the two sawfish species likely to be present in Mozambican waters, are listed as Critically Endangered, are potentially of high economic value and are threatened by trade. Furthermore, the current distribution of these species in Mozambique is not well documented. IUCN recommendations[3] on reporting the distribution of Endangered and Critically Endangered species have thus been followed and sites identified during the baseline study, at which recent sawfish captures were reported, as well sites where sampling took place during recent field activities, have not been named.

1. Sampling

A single sampling trip was conducted in May 2016, with the assistance of local fishermen. The net was set at dusk and after one hour it was discovered that the net had been insufficiently anchored and had been carried away by the currents. An hour-long search for the net was unsuccessful. No other net was available in the region and several days of travel were required to reach the nearest area where replacement fishing gear could be bought. There were also some safety concerns for the team following political unrest in areas close to the sampling sites. For these reasons, further sampling was not possible. Sampling will be continued in August 2016.

However, during the time spent with one community in Zambezia province, a large sawfish rostrum was presented to the team by a local fisherman, who stated that it had been caught in August 2014, shortly after he had been interviewed for the baseline study. Information provided by him and other fishers in the same region gave further strength to the initial data collected from that region, which had indicated that sawfish are still caught there every year by gill net fishermen.

Sawfish rostrum (115 cm in length) presented to the research team in May 2016.

[3] IUCN Red List. 2012. Rules of Procedure IUCN Red List Assessment Process 2013-2016 – Annex VI. http://www.iucnredlist.org/documents/Rules_of_Procedure_for_Red_List_2013-2016.pdf

2. Assessment of threats

Threats to sawfish in and around the sampling site appear to be primarily the use of gill nets for catching sharks. IIP is providing motors to fishermen and encouraging the use of gill nets in offshore areas in some parts of northern Mozambique, including the area where sampling took place, as a way of reducing pressure on juvenile fish which are caught by the numerous beach seine nets currently in use. Gill net use will certainly reduce pressure on inshore waters but gill nets are a non-selective gear that catch a great many sawfish as well as other sharks, turtles and dolphins.

IDPPE staff member with sawfish monitoring kit.

Deforestation is also a considerable threat to mangrove habitats and thus to juvenile sawfishes, which use river and mangrove habitats. Mangrove timber, which is used for construction of houses and the production of charcoal, was observed being landed at a fishing village adjacent to one possible sawfish habitat.

Threat to sawfish: mangrove deforestation in Zambezia province.

3. Training of local staff

Trained staff from IDPPE and IIP at two sites in Zambezia province, to collect data on sawfishes. Both of these 'Sawfish Ambassadors' were provided with a Sawfish Monitoring Kit, including a tape measure, Sawfish Conservation Society identification guide, pencil and forms on which to record the data. A camera was left with the IDPPE representative to allow him to photograph any sawfish landed locally by fishermen.

4. Workshop

The workshop has been delayed, on the advice of the Director of IIP in Maputo, until there is confirmation of the presence of live sawfishes in Mozambican waters. The workshop will now likely take place later in 2016.

5. Conservation action plan

A conservation action plan will be developed during the workshop which has been delayed until later in 2016.

6. Raised awareness

- A presentation on the results of the 2014 baseline study was given to the Director and staff of IIP's head office (Maputo) on 05 May, 2016. The research activities for 2016 were then presented and discussed with IIP and an agreement was developed to allow the research to take place.
- A public talk on sawfishes in Mozambique was given in Tofo (a major tourism destination in southern Mozambique) on 29 Apr, 2016.
- Two primary school visits were conducted, on 02 May and 30 May, 2016. Activities with the students included a short talk on sawfishes – what they are, where they live and why they are endangered, followed by a game to show how mangroves can protect baby sawfish from predators. The students were then provided with a page depicting a sawfish in a mangrove, which they were able to colour in. A sawfish poster was left at each school, for display in the classroom.

Educational activities with elementary school students in Inhambane province, May 2016.

- Ruth Leeney attended a meeting with a CCP (local fisheries organisation) in Zambezia province on 17 May, to ask whether any of the fishers attending the meeting owned sawfish rostra and to explain the work that would be conducted there. Posters on sawfish were distributed to the local marine police, the CCP president, the local offices of the IDPPE (Institute for the Development of Small-Scale Fisheries) the Ministry of Agriculture.

- A short film on sawfish in Mozambique and the need for their protection is being produced. Filming and voice-over recordings took place in May 2016 in northern Mozambique. The film will be finalised by September 2016 and will be shown to communities throughout Mozambique in late 2016. Voice-overs have been recorded in three of the many local languages used in Mozambique, as well as in Portuguese and English, to ensure the film is accessible at least to fishing communities in the areas where sawfishes are still encountered.

Sawfish posters were provided to the Marine Police (pictured here) and other local authorities in Zambezia province, to raise awareness about the need to protect sawfishes.

- A book on sawfish and the concept of ecosystem balance is in development and will be finalised by September 2016. The book is aimed both at children and adults in fishing communities and has been designed in such a way as to be understandable even to people with little or no reading ability. The book will be distributed in late 2016 or early 2017.

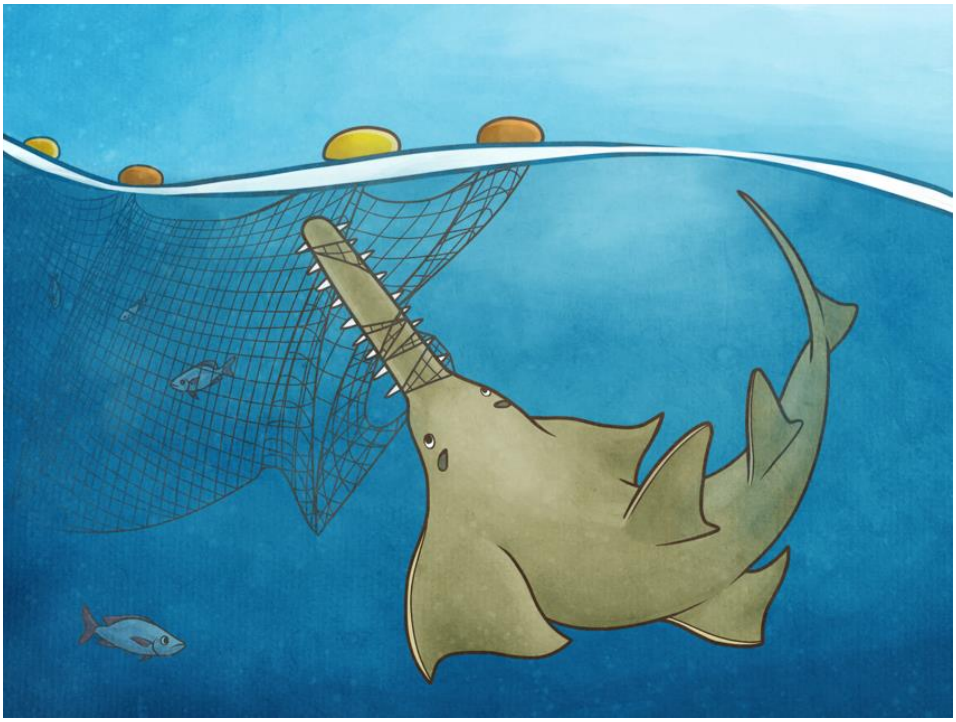

Illustration from the book on sawfish and ecosystem balance, which is being produced by this project as an educational tool for fishing communities. Illustration by Jen Richards.

Ruth Leeney with elementary school students in Zambezia province.

Film maker Chris Scarffe filming IIP staff members Anastasia Sitao and Carlota Amoda, interviewing a fish vendor about sawfish, as part of the educational film which will be produced later in 2016.

NEXT STEPS

A second phase of sampling will be conducted in August 2016, at two sites. Verification of the presence of sawfish is considered a key next step for the project. The identification of sites where sawfish are present is essential in order to plan for appropriate research and management activities.

The workshop to develop a National Sawfish Conservation Strategy will only be organised once sampling has verified the presence of live sawfishes. Thus, for the moment, the project will focus on developing a robust sampling protocol and working closely with fishermen and fisheries (IIP and IDPPE) staff at several sites to ensure that any sawfish catches are reported immediately, documented appropriately and, where possible, that the sawfishes are released alive.

Production of the educational film will be completed in August 2016 and the film will then be shown to communities in northern Mozambique, focusing on areas highlighted by the baseline study as being likely sawfish habitats. Copies of the film (on DVD) will also be left with these communities. The film will also be shown to government organisations at an event in Maputo. The sawfish book will be distributed to schools and communities in northern Mozambique as part of ongoing efforts to encourage the reporting of sawfish catches and to promote the release of sawfishes by fishermen.