

# **Training Workshop on Reducing Bycatch of Endangered, Threatened and Protected Species (ETP) in Fisheries of the Guianas: Improved Species Identification and Monitoring**



**Report of the training workshop for fishermen and fisheries officers**

**20 – 21 November 2017, N.66 Village, Guyana**

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# 1. Introduction

Endangered, Threatened and Protected (ETP) species is a term commonly used in relation to the management of marine fisheries. ETP species include species that typically interact with fisheries, but need attention because they are endangered or threatened, and therefore either protected by local, national or international legislation, or in need of a protected status. Species are classified as ETP based on vulnerability assessments, among which the Red List of IUCN (International Union for Conservation of Nature) is probably the most widely used. ETP species might also be protected from international trade if they occur in the annexes of CITES (Convention on International Trade of Endangered Species). At least 25 ETP species are known to interact with marine fisheries in the Guianas, including sharks, rays, sea turtles and dolphins. While some of these are targeted in the fishery, most are caught as bycatch and often discarded back to sea.

To mitigate fisheries impact on ETP species, WWF Guianas aims to get more information on the bycatch of these species in different fishery sectors throughout the Guianas. However, WWF has recognized that fishermen in the region are often unable to identify ETP species and are largely unaware of the vulnerable status of these species. This also applies to personnel of the Guyana Fisheries Department (FD), Ministry of Agriculture, responsible for data collection on species captured in the fishery. This had recently become apparent during a sea-going observer program funded by WWF in collaboration with the Guyana Association of Trawler Owners and Seafood Processors (GATOSP) and the FD to characterize bycatch in industrial trawl fisheries off Guyana as well as a scoping study done on sharks and rays. Many species were misidentified due to lack of knowledge, experience and appropriate identification literature. Several species, especially sharks, present a challenge for identification, especially when they are landed headed and/or finned. Clearly, the lack of identification skills for ETP species hampers the collection of appropriate data, needed as a basis for management measures to secure their protection. This data is essential to inform decision makers on the management of bycatch in general and in particular of ETP (Endangered, Threatened and Protected) species.

In response, WWF Guianas embarked on developing an ETP species ID identification booklet for the Guianas that is waterproof and can be taken to sea to improve data from the fishermen on the types and amounts of ETP species caught. Furthermore, WWF Guianas is organizing a set of workshops to train fishermen and others in the Identification of ETP species using the ID guide as basis. The first training workshop of 2 days was held in Guyana in November 2017, for the fishermen of the Guyana East Coast area (Regions 5 and 6), and fisheries officers from the FD. The training was organized by WWF Guianas, through the Shared Resources, Joint Solutions” (SRJS) programme, in cooperation with the FD, the Upper Corentyne Fishermen Coop Society/ No.66 Village fisherfolk cooperation, and was supported by a consultant (Tomas Willems). The aim of this training was to:

- 1) train the participants on the different ETP species that occur in the coastal water of Guyana, and how they can be identified in the field
- 2) raise awareness on the interactions of ETP species with fisheries, and obtain recommendations on how these interactions can be mitigated

## **2. Workshop Description**

The workshop was held on 20<sup>th</sup> and 21<sup>st</sup> of November 2017, at the No.66 Inshore Fishport Complex in No.66 Village, Guyana. On the first workshop day, the workshop was attended by 30 participants, including 20 fisheries officers and 10 people from the private fishing sector. On day 2, 16 fisheries officers and 29 sector representatives participated. The registration sheets are attached as Annex F.

The workshop consisted of seven sessions, including theoretical sessions, discussion-oriented sessions and a practical species identification session. Most sessions were facilitated by the consultant Tomas Willems (TW). The workshop schedule is attached as annex G.

## **3. Workshop sessions**

### **3.1 Opening**

The workshop was opened by Sopheia Edghill (SE), Marine Officer at WWF Guianas.

SE in her opening speech provided an overview of what ETP species are and explained some of the characteristics they possess which make them very vulnerable to most of the threats they face from fisheries. Emphasis was given to the critical role fisheries play in social and economic development of the county. However, fishers must be cognizant of the overlaps that occur between fishing gears/ vessels and several ETP species, either intentionally or unintentionally (as bycatch/ discards). These interactions could lead to the extinction or very low numbers of these species in our marine environment which could result in an ecological imbalance, e.g. when top-predators are removed.

Therefore, SE stressed, as fisheries stakeholders we all have our part to play in ensuring that measures are in place to reduce these interactions and that we fish in a sustainable manner. The first steps toward managing or monitoring of these species are based on us knowing what they are and being able to identify them and understand what roles they play in the ocean. SE stated that the workshop came as a result of several dialogues among fishermen, the DF and WWF who all recognize the difficulties that exist in differentiating what these species are, especially the sharks since they are landed dressed. The main aim of the workshop was to strengthen/ build our local capacities and knowledge, while identifying and discussing what possible measures could be developed to help reduce the impacts our nets / vessels may have on these species. These developments could be based on changes to gears, or changes to your current fishing practices and us working together towards implementing area/ time closures or more effective management strategies.

#### **3.1.1 Session 1: Introduction to Endangered, Threatened and Protected Species**

This session focused on the concept “ETP species”. It was explained how ETP species are defined, and through what mechanisms species can become an ETP species. In general, one could state that marine species become endangered or threatened through a combination of their vulnerability, and mortality through fisheries. Marine species have different life history strategies. This strategy is a combination of traits, resulting in various investments in growth, reproduction and survivorship. Based on typical life history traits such as maturation, number of offspring, life span, natural mortality, etc..., two major life history strategies can be defined. K-strategists live in an equilibrium state with their

environment, and have a slow growth, late maturation, long life expectancy and few offspring. On the other hand, r-strategist are species characterized by rapid growth, early maturity, high fecundity and a short generation time. Most marine species of fish and shrimp exploited in commercial fisheries are r-selected species, capable of recovering from fishing mortality. K-selected species, however, are not adapted to handle the (accidental) mortality caused by fisheries. An example include the unsustainable fisheries for Orange roughy, a typical K-selected fish species that grows over a 100 years old. Consequently, many populations of K-selected species, such as marine mammals and turtles, rays and sharks, may be severely declined by fisheries, and are classified as ETP species.

*The presentation of session 1 is attached as Annex A.*

Questions/comments following the presentation:

1. What was the international community response to the overfishing of the Orange roughy?

*TW: International NGO's have campaigned heavily against the exploitation of Orange roughy, and it was red-listed on all sustainable seafood guides.*

2. Was the plan to stop the fishing of this species came as a result from the business itself or was it the international pressure?

*TW: Fishing for a species with such a low reproductive rate is economically unsustainable in the long run. It is a 'slash and burn' fishery: local overexploitation and moving on to the next locations (usually seamounts). Many overfished locations have not recovered, so it is mainly the fishery putting itself out of business.*

3. What happens if the prawn industry collapses?

*TW: Prawns are typical r-selected species, capable of handling fishing mortality quite well. However, if they are overexploited, fishing pressure should reduce for a while to let the stocks rebuild. Otherwise, the spawning population will never reach the size required to rebuild the entire stock. So, yes, even r-selected species can be overfished, but will recover relatively quick if fishing is reduced or stops.*

4. How could you determine whether a species is a k or r strategist?

*TW: Through literature and background search on the species, e.g. on fishbase.org.*

### **3.2 Session 2: Ecology, status and occurrence of the ETP species present in Guyana**

The aim of the second session was to introduce the ETP species that occur in Guyana. ETP species are classified as such based on assessments of their population status. The IUCN Red List of Threatened Species is the most widely used in this respect. The IUCN Red List classifies species in seven different categories, from 'least concern' to 'extinct', based on the health of their global populations. A second list that might be consulted to assess whether a species classifies as ETP is annex 2 of CITES: The Convention on International Trade in Endangered Species of Wild Fauna and Flora. Based on these criteria, 15 species of sharks, 5 species of rays, 2 marine turtles and 2 marine mammals were identified as ETP species for Guyana. For each of these species, the global distribution, the habitat, interaction with fisheries and the population status was briefly reviewed.

The presentation of session 2 is attached as Annex B.

### **3.3 Session 3: Fishery types in Guyana**

Session 3 was facilitated by Ms. Ingrid Peters (IP), the Principal Fisheries Officer at the Guyana Fisheries Department. The aim of this session was to give a brief overview of the fishing sector in Guyana in terms of target species, boats and gear, fleet sizes and landings, and the known interactions with ETP species in the Guyana fishery. The offshore industrial trawl fishery off Guyana consists of some 113 trawlers, including 86 for seabob and 21 for prawns. Some 38 semi-industrial vessels fish with traps and 18 with long-lines and 6 target tuna. The inshore artisanal sector is the largest fishing sector, comprising over a 1000 boats fishing with gill nets, pin seine, cadell or Chinese seine. The data collection system of the Fisheries Department was briefly introduced. IP explained that there are some challenges with this system, also related to (potential) ETP species such as sharks. Limited access to the resources and lack of cooperation from fishers lead to inaccurate data. Due to poor collection of biological data, the status of many species remains unassessed, and their vulnerability in Guyana is unknown. FD staff is often unable to identify sharks at landing sites because they are landed finned and/or headed. IP suggested to develop a national plan of action for sharks, which should include training on species identification, improvements to the national data collection program and research to assess the status of shark populations.

The presentation of session 3 is attached as Annex C.

Questions/comments following the presentation:

1. Data are being collected by the fisheries cooperation in No.66 village. These include, for each fishing trip: days-at-sea, depth of the water, color of the water, number of drags, etc. (head of No. 66 fishers cooperation)  
*IP: Very pleased to hear this. Please share the data with the FD.*
2. The FD is weak and not supportive to the artisanal sector. Trawlers catch a lot of small fish. Little enforcement on the area trawlers are allowed to work. (fishermen)  
*IP: The FD is supportive of the entire fishing sector in Guyana. No financial support (subsidies) can be given, but technical advice yes. Trawlers are required to use TED and BRD to reduce bycatch, and the trawl areas are monitored through VMS. In order to come to good understanding and agreements, fishers should be present at meetings, which often they are not.*
3. Leaders of fisheries cooperations have a good relationship with their community. They should be the in-between between the FD and the fishermen.

### **3.4 Session 4: Interaction of Guyana fisheries with ETP species, and mitigation measures**

The aim of this session was to use the experience and knowledge of the workshop participants to answer some questions related to ETP species interaction in fisheries in Guyana. Four groups were formed, with two groups discussing industrial fisheries, and the other dealing with artisanal fisheries. Each group was asked to answer the following questions:

1. Are interactions ETP species known to occur in the fishery? (species that were reviewed, or other potential ETP species)
  - a. What kind of interactions?

- b. What is the frequency of the interactions?
  - c. Do they occur in specific areas or seasons?
- 2. How are these interactions perceived in the fishery?
  - a. Positive/negative?
  - b. Are the species retained or discarded?
- 3. Are there any measures in place in relation to ETP species interactions in the fishery?
  - a. If yes, what measures?
  - b. Are they effective?
  - c. What other potential measures could be taken to reduce ETP species interactions in the fishery?

*The answers were summarized on flip-chart papers, presented and discussed in plenary.*

**Group 1 (artisanal):**

- 1. a. Yes, nurse shark, blackfin shark, tiger shark, hammerhead shark, rays, manatees and turtles are caught by drift seines, Chinese seines and cadell
- 1. b. Sharks: every trip; rays: almost every trip; turtles: occasionally; manatee and dolphins: occasionally
- 1. c. Both
- 2. a. Sharks: positive (marketable); rays: negative (non-marketable)
- 2. b. Sharks and turtles are retained, rays are discarded
- 3. a. Avoid fishing in the area
- 3. b. Not to the extend desired
- 3. c. Training/educating fishers on identifying ETP species; releasing life species when caught

**Group 2 (artisanal):**

- 1. a. Blacktip shark, Hammerhead shark, Nurse shark, Waterbelly shark
- 1. b. Seasonal: October November
  - Bangamary seine: 30-40 lbs per vessel, per trip, per day
  - 4 - 5" cat guts (monofilamanet): 200 – 300 lbs per trip (3 days)
  - 5 – 7" seine catches Blacktip shark at 40-80 lbs per trip
- 1. c. Corentyne River 10 – 12 fathoms
- 2. a. Positive: export of fins, meat, skin, cartilage
- 2. b. Retained
- 3. a. No
- 3. b. -

**3. c.** Avoid fishing in 8-9 fathoms of water during the period October – November in the Corentyne River (but probably not feasible – expenses override income)

**Group 3 (industrial):**

**1. a.** Yes, there is interaction with rays, sharks, dolphins and turtles

- Rays: caught as bycatch
- Sharks: juvenile sharks caught as bycatch
- Turtles: observation
- Dolphins: sightings

**1. b.**

- Rays: each day (10 on scale 0-10)
- Sharks: periodically (5)
- Turtles: occasionally (2/3)
- Dolphins: seldom (1)

**1. c.** Rays have specific areas; Turtles are seasonal (Feb – June)

**2. a.** Rays: negative; sharks: positive/negative; Turtles: negative; dolphins: positive (sighting)

**2. b.** Sharks: retained; Rays, turtles: discarded

**3. a.** Yes

**3. b.** Yes

**3. c.** Research to determine high frequency of location

**Group 4 (industrial):**

**1. a.** Yes: observed, caught, discarded (alive, dead and injured), retained

**1. b.** High: rays

Infrequent: sharks, turtles, marine mammals

**1. c.** Yes: marine turtles

**2. a.** Negative

**2. b.** Discarded

**3. a.** Yes: awareness sessions, mandatory use of TED and BRD, submission of ETP log sheet

**3. b.** Partially

3. c. Proper monitoring; ID workshop; penalty for not submitting or falsification of log sheet; move-on rule; identify habitat and seasons

### **3.5 Session 5: Identification of ETP species occurring in Guyana (theory)**

During this session, the identification of all 25 ETP species was discussed in detail. Most attention was given to the sharks, which present the most challenging group, represented by 15 species. Next, the rays were treated, followed by the marine turtles and marine mammals. For each group, the terminology of the different body parts was introduced first. Diagnostic features, separating the different species in Guyana, were emphasized. All the participants received a copy of the draft identification sheets for ETP species in the Guianas, developed by WWF. In this way, participants could take notes on the most important identification characteristics, pointed out by the trainer.

The presentation of session 5 is attached as Annex D.

### **3.6 Session 6: Identification of ETP species occurring in Guyana (practice)**

Using the information provided in session 5 and the ETP identification sheets, the participants could now practice identification skills. Seven fresh specimens of sharks and rays were displayed. The participants were given some time to identify these, after which the identification was discussed in plenary. Although some shark specimens were headed and/or finned, identification was still possible based on characteristics related to the position of the fins, body color, etc.

The identification of sharks presents the biggest challenge. After the workshop, an identification key for the 15 shark species covered in the ID sheets was drafted (Annex G).

### **3.7 Session 7: Data collection and monitoring of ETP species interactions**

The aim of this session was to use the experience and knowledge of the workshop participants to answer some questions related to data collection and monitoring of ETP species interaction in fisheries in Guyana. Three groups were formed and each group was asked to answer the following questions:

1. What information is currently being collected on ETP species interactions?
2. Which of the following (or other) methods could be used to collect data on ETP species?
  - a. At-sea observers
  - b. Landing site observations
  - c. Interviews
  - d. Reporting obligations
3. Recommendations for information collections on ETP species interactions

*The answers were summarized on flip-chart papers, presented and discussed in plenary.*

#### **Group 1:**

1. Industrial:

- ETP sheet submission
- Last haul: sharks and ray
- Data collection activities (sharks and turtles)

**2. a.** At-sea observer

**2. b.** landing site observations

**2. c.** Interviews

**2. d.** Reporting obligations: considers the factors

- time
- availability of captains
- miss reporting

**3.** - Mandatory submission of logsheets

- Logbook for artisanal fleet
- Observer on vessels (including artisanal), by fish. Dept.
  - ETP awareness of species
  - Extension services
  - Reward for data collection on a consistent base

### **Group 2:**

**1.** No information is currently being collected: we just collect information on amount of catch being landed

**2.** Landing site observation

- bear in mind fishers have to give accurate information

Reporting obligation

- making it mandatory for fishers to report ETP interaction, especially with turtles and dolphins

**3.** Recommendations:

1. Making it compulsory for fishers to report ETP interactions (turtles, dolphins,...)
2. More posters, flyers,... on importance of protection of ETP species (for public, fishers, public awareness)

### **Group 3:**

1. Species count, name, area, depth, time,... when observed or captured and if captured if its released dead or alive
2. At-sea observers, landing site observations, interviews and reporting obligations
3. - Mandatory submission of ETP log sheets, penalized if not adhere to
  - Scientific research
  - Awareness workshops

*Questions/comments following the presentation:*

1. IP asked the question whether posters are the most effective way of conveying a message or raise awareness these days.  
*In response, it was mentioned that posters can help but we should look for modern ways, probably something on smartphone.*

### **3.8 Closing of the workshop**

SE closed the workshop and thanked all participants for their time and active cooperation. It is also expected that the fishers and fisheries staff will now take what they've learned and apply same to their job.

## **4. Recommendations**

During the workshop, especially during the group discussion sessions (session 4 and 7), several ideas and recommendations were formulated related to data collection on ETP species in Guyana, and the mitigation of ETP species interactions in Guyana fisheries. For future reference, the recommendations are briefly summarized below:

### **4.1 Recommendation to improve data collection**

- Improve the ETP identification sheets:
  - o include an identification key to shark species
  - o print in color on water-resistant paper
  - o highlight diagnostic characteristics
  - o correct mistakes in sheets (submitted to WWF by TW)
  - o include sheet with shark/ray/turtle body part nomenclature
  - o Include more species in the ETP identification sheets: certain species seem to be lacking from the sheets, while others are very rarely encountered
- Training and education of fishers on identifying ETP species + develop and distribute training materials
- Proper monitoring through ETP log sheets: introduce penalty for not submitting the log sheet or falsifying it + Reward fishermen who actively cooperate in the data collection
- Use a combination of the following methods for ETP data collection:
  - o At-sea observers (also on artisanal vessels)

- Landing site observations
- Interviews
- Reporting obligations (be aware of mis-reporting)
- Introduce a logbook (including ETP encounters) for artisanal fishing fleet

## **4.2 Recommendations to mitigate ETP species interactions**

- Avoid fishing with certain gear in certain areas or seasons to minimize interaction
  - E.g. areas with high ray concentrations
  - E.g. turtle season
  - E.g. avoid fishing in 8-9 fathoms of water during the period October – November in the Corentyne River to minimize shark captures
- Educate fishers on handling of ETP species so specimens can be released alive with minimal damage
- Execute more research to identify areas with high probability of ETP encounters
- Implement move-on rules for industrial fisheries

## 5. Annexes

Annex A: PPT presentation session 1

Annex B: PPT presentation session 2

Annex C: PPT presentation session 3

Annex D: PPT presentation session 5

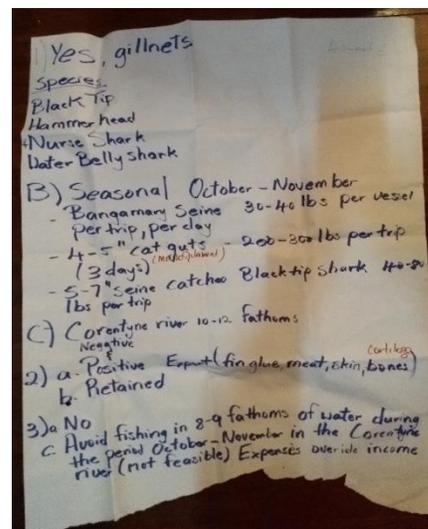
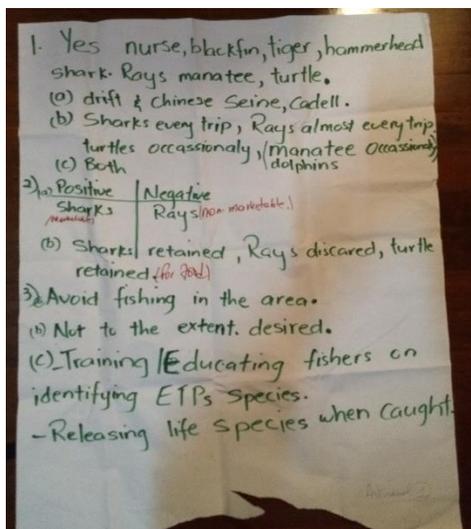
Annex E: Workshop agenda

Annex F: Lists of Participants

Annex G: Identification key for 15 shark ETP species

Annex H: Pictures of the workshop:

### Session 4



(A) Yes, there is interaction Rays, Sharks  
 - Rays dolphins turtles  
 a) Ray - Caught as bycatch  
 - Sharks - Juvenile sharks  
 - Turtles - (b) bismarck  
 - Dolphins - Sightings  
 b) Rays - each, elms (1-10)  
 Sharks - Juvenile - 5  
 Turtles - Commonly - 2/3  
 Dolphins - Seldom - 1  
 c) Ray has spike area  
 Turtles are seasonal - Feb-June  
 a) Ray - Negative  
 Sharks - Positive / Negative  
 Turtles - Negative  
 Dolphin - Positive (8/5)  
 b) Retained - Sharks  
 Discarded - Rays, turtles  
 c) 1) Yes  
 2) Yes  
 3) Research to determine high frequency of detritus

Industrial Fisheries  
 1. Yes  
 a) observed, caught, discarded, retained (alive & dead) also injured.  
 b) High - Rays  
 - Infrequent - sharks, turtles, marine mammals  
 c) Yes - marine turtles  
 2 a) Negative  
 b) Discarded  
 3 Yes  
 - Awareness Sessions  
 - Mandatory use of TED & BRD  
 - Submission of ETP Log sheet

Cont'd  
 b) Partially  
 c) Proper monitoring  
 - ID workshop.  
 - Penalty for NO submission or falsification of log sheet  
 - Move on rule.  
 - Identify habitat & season  
 THANK YOU!!

Session 6



Session 7



**Data Collection and monitoring of ETP Species interactions.**

1- Industrial - ETP sheet submission

- last haul: Sharks & Ray
- Data collection activities (sharks/turtles)

2- (a) at sea observer

(b) Landing site observations

(c) Interviews

(d) Reporting Obligations - due to factors

- time
- availability of captains
- Miss reporting

3- Mandatory submission of logsheets

- Log book for artisanal
- observer on vessel (art.) By Dept.
- ETP awareness of species.

Extension services

Reward for data collection on a consist base.

1. No information is currently being collected

- We just collect information on amount of catch being landed.

2. Landing Site Observations

- Bow in mind Fishers have to give accurate information
- Reporting Obligations
- Making it mandatory for fishers to report ETP interactions esp with turtles and dolphins

3. Recommendations

1. Making it compulsory for fishers to report ETP interactions (turtles, dolphins, ...)
2. More posters, focus on importance of protection of ETP species (public-fishers, public awareness)

FISHERIES DEPARTMENT

- 1) Species count, name, area, depth, time when observed or captured and if captured if it's released, dead or alive.
- 2) At-sea observer, landing site observations, Interviews and reporting obligations.
- 3) Mandatory Submission of ETP log Sheets, penalized if not adhere to.
  - Scientific research
  - Awareness workshops



