Protocol for Continuous Port Based Surveys

Interaction Between Handline Tuna Fisheries and Endangered, Threatened, and Protected Species

Yaiza Dronkers Londoño

2012

USAID | INDONESIA
FROM THE AMERICAN PEOPLE

Table of Contents

Abbreviations

CMM	Conservation and Management Measures
CR	Critically Endangered (IUCN Red List)
CPCs	Contracting Parties, and Cooperating non-Contracting Parties (IOTC)
EN	Endangered (IUCN Red List)
ETPs	Endangered, Threatened, and Protected species
FADs	Fish Aggregating Devices
FAO	Food and Agriculture Organization of the United Nations
GT	Gross Tonnage
IUCN	International Union for Conservation of Nature
IOTC	Indian Ocean Tuna Commission
IPOA	International Plan of Action
LC	Least Concern (IUCN Red List)
MSC	Marine Stewardship Council
NT	Near Threatened (IUCN Red List)
QC	Quality Control
SPC	Secretariat of the Pacific Community
WCPFC	Western and Central Pacific Fisheries Commission

1. Introduction

1.1 Background ETPs

It has been calculated that the current species extinction rate is likely to be in an order of 100 to 1000 times that which occurred before human domination of earth (1). Currently, 8 % of plant species, 5 % of fish, 11 % of (remaining) birds, and 18 % of the mammals on Earth are threatened[1] with extinction (2). There has been a disproportional loss of large marine mammals in the past, which lead to crucial changes in the ecosystem dynamics in which they played a dominant role (1). Especially the loss of top-level predators, or apex-species, can cause "top-down" effects on species lower in the food web and thereby disrupt whole ecosystems, an effect also known as a "trophic cascade" (3). In the case of marine species, clear examples exist where the population of predators was reduced so much, that the primary prey of these predators began to escalate, and thereby

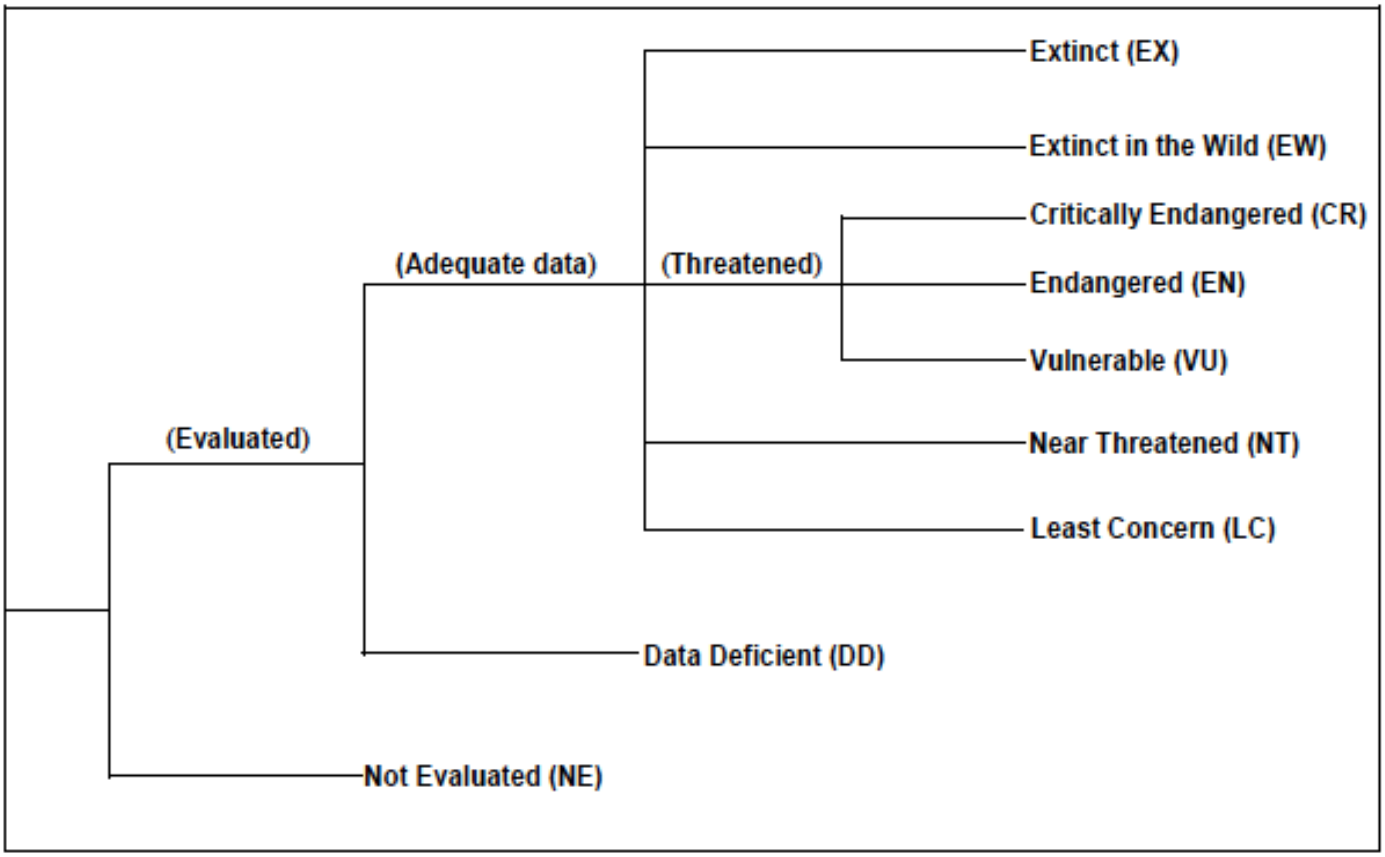


Figure 1. Structure of the IUCN Red List Categories

[1] The definition used by the IUCN Red List for a threatened species is that it may become extinct if no protection

changing the whole ecology of a certain area. The diet of apex species is normally quite varied; when populations of a certain prey species are low, predators are likely to switch to a more abundant species to prey upon, which allows various prey species to persist simultaneously (4). Thus, predators can increase biodiversity by preventing a single dominant species to monopolize a limiting resource. Top predators are a necessary component to preserve complex and rich ecosystems. Some examples in the marine environment include: 1) the collapse and recovery of sea otter populations, which lead to drastic changes in coastal ecosystems as sea otters sustain kelp forests by controlling populations of kelp-grazing sea urchins; 2) The decline of sharks in an estuarine ecosystem caused an outburst of cow-nosed rays and the collapse of shellfish populations (3). Also, it has been said that in the absence of sharks, coral reefs shift to algae dominated systems and seagrass beds decline. Besides regulating species diversity, abundance, and distribution, apex species remove weak and sick individuals from prey populations (5) and are important food sources for scavengers (6).

Large bodied-organisms are often long-lived species with 'slow' life-history characteristics (e.g. slow growth and late maturation), which is thought to explain why they are more vulnerable to extinction under high hunting pressure than short-lived species with high potential rates of increase. It is important to keep in mind that the extinction of species seriously underestimates the extent of losses in genetic variation (1), which causes the reduction in resilience of species and ecosystems and prevents humans from making use of the full range of natural products and genetic materials that are being offered (8).

The marine megafauna thought to be most at risk, although generally not the intended target of fisheries, are sea turtles, seabirds (albatrosses and petrels), sharks, and marine mammals (9). The gear types that primarily catch these large vertebrates are trawls (turtles, marine mammals), pelagic longlines (turtles, seabirds, sharks), demersal longlines (birds), gillnets (turtles, sharks, marine mammals), and purse seines (marine mammals) (7). However, most gear can catch marine mega fauna by accident and even the catch of only a few individuals from vulnerable age classes can have vast effects on the population-level (7). To be able to fully understand the effect of catching marine

mega fauna, it is necessary to know 1) the amount of individuals removed from a population; and 2) the demographic effects of these removals (7). Anova's current ETP program will focus on filling the information gap on the number of individuals being removed by handline tuna fisheries in Indonesia.

The handline tuna fisheries involved in Anova's data collection protocol and ETP program use Fish Aggregating Devices (FADs) or 'rumpons', as their primary fishing method. These FADs consist of floating bamboo platforms that are anchored to the bottom and have one or more ropes hanging vertically beneath the platform with coconut fronds or other materials attached to it, increasing the total volume of the FAD beneath the surface. Many marine species, including tunas, aggregate around such floating objects (10), which make them efficient fishing tools. As species other than tuna are also attracted to FADs, this could potentially increase the capture of non-target species. For example, it has been shown that purse seiners fishing on FADs in the Western Pacific Ocean have around six times more bycatch than purse seiners fishing on free-swimming schools (11). The primary component of this bycatch consists of teleosts (bony fish), which is followed by elasmobranchs (sharks, skates, rays).

Within the handline tuna fishery in Indonesia, the non-targeted teleosts are not being discarded; all fish not suited for export are sold locally. Therefore, Anova's Port Sampling Protocol already covers this (incidental) catch. On the other hand, slow growing marine mega fauna usually take a lot of space in handline boats, can be dangerous to handle, and often have a low market price, which makes them more likely not to be landed on shore after interaction with the handline vessels. Also, in the case of shark fins, these do not have to be kept fresh as they are sold in a dried state, thus they could easily fail to be included in regular Port Sampling. Anova's ETP program will try to cover the information gap that exists on the possible catch (or only interaction), of marine mega fauna. Through this, a clearer picture can be developed on the state of ETPs in Indonesian waters, after which a start can be made to assess the effect that catch or encounters have on the ecosystem. This will lay the groundwork for a future regulatory framework to be developed to ensure that ETPs remain/will be protected.

1.2 Rationale behind ETP data collection

To support the long-term goal of MSC certification for handline tuna in Indonesia, ANOVA has implemented a port sampling protocol (12) to fill the information gap on catch and effort data, as required for MSC certification. To further compliment the port sampling protocol, ANOVA has started a program on Endangered, Threatened, and Protected species (ETPs) to improve information/monitoring on the possible interaction between ETPs and handline tuna fisheries. According to the MSC pre-assessment report for Indonesian handline yellow fin tuna "*Handline-fishing is highly selective due to the method and size of bait used.*" and *"... it would appear highly unlikely that there are any associated ETP by-catch interactions with the handline fishery*." However, for full-assessment, information is needed to confirm these assumptions.

Indonesia is currently member of IOTC and a cooperating Non-member of WCPFC. For cooperating Non-members of WCPFC it is stated that they shall "Comply with all conservation and management measures in force in the Convention Area". The CMM (2011-04) for oceanic white tip sharks (*Carcharhinus longimanus*) states that retaining on board, transhipping, storing on a fishing vessel, or landing in whole or in part, has to be prohibited. Oceanic white tip sharks have to be released, and data has to be collected on the number of released sharks, including the status (dead or alive). For sharks in general, according to CMM 2010-07, the FAO International Plan of Action for the Conservation and Management of Sharks (IPOA Sharks) should be implemented. Sea turtles are included in CMM 2008-03, where Indonesia is expected to implement "*the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations and to ensure the safe handling of all captured sea turtles, in order to improve their survival.*" Lastly, for seabirds, Non-cooperating members shall (to the extend possible) implement IPOA for Reducing Incidental Catches of Seabirds in Longline Fisheries (IPOA-Seabirds).

In the Collection of Active Conservation and Management Measures for the IOTC, Resolution 05/05 Concerning The Conservation Of Sharks Caught In Association With Fisheries Managed by IOTC can be found. In the resolution it is stated that, amongst others, Contracting Parties shall annually

report catches of sharks. More specifically, for thresher sharks, Resolution 12/09 "On The Conservation Of Thresher Sharks Caught In Association With Fisheries In The IOCT Area Of Governance" is in place. The resolution prohibits retaining on board, transhipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family Alopiidae. For the incidental mortality of seabirds, Recommendation 05/09 is in Place, of which one of the points recommends: "*CPCs should be encouraged to collect and voluntarily provide Scientific Committee with all available information on interactions with seabirds, including incidental catches in all fisheries under the purview of IOTC"*. For sea turtles, Resolution 12/04 On The Conservation Of Marine Turtles exists, in which can be found that "*all data on their vessels' interactions with marine turtles. The data shall include the level of logbook or observer coverage and an estimation of total mortality of marine turtles incidentally caught in their fisheries*".

Although government action is needed to fully implement measures outlined in international agreements, Anova aims to lead by example.

2. Sampling Design

Observer programs are thought to collect the highest quality bycatch[2] data, but are considered costly as well trained observers are essential for these programs to be successful (7). Especially the scope of the number of boats active in small-scale tuna fisheries and their dispersion makes complete coverage difficult, if not impossible. Also, small-scale or artisanal fisheries tend to be dynamic, flexible, and active year-round, which makes season-specific estimates of bycatch[3] inappropriate for other times in the year or for other vessels (13; 14). Lastly, the small size of boats used in Indonesian handline fisheries often makes it impractical to have an extra person on board. Vessel logbooks are sometimes used as an alternative to observers, but catch and bycatch[3] data collected by this mean are often incomplete or suspect (14). Therefore, the use of interview surveys has been suggested, which has

[2] "Bycatch is the incidental take of undesirable size or age classes of the target species (e.g. juveniles or large females), or to the incidental take of other nontarget species. Individuals caught as bycatch can be unharmed, released with injuries, or killed"

[3] "Bycatch of marine mammals and sea turtles as all captures occurring outside of direct-harvest fisheries for these taxa"

indicated to be a fast way to collect coarse-level data over large areas at an economically acceptable level (14) and has been used successfully in cetacean research by Kahn (15, 16).

To be able to quantify and qualify fisheries bycatch[4], fishing effort and catch rate are both required information items (14); information on fishing effort (days at sea, capacity, fishing ground, and gear) is already collected by Anova's Port Sampling Protocol. For this reason, the questionnaire (Annex II) only focuses on the interaction between fishers and ETPs, as effort data can be extracted from Port Sampling forms; Port Sampling forms are linked to ETP questionnaires from equal unloading events. For the ETP program, it has been chosen to use one questionnaire for every fifth boat unloading, i.e. 20% coverage.

3. Studied Area

3.1 Background

To develop a more powerful questionnaire, a field study was performed in Bone, South Sulawesi. This field research also serves as a prototype on how questionnaires should be introduced and implemented in new areas of data collection, and to generate knowledge on how questionnaires are accepted and understood by the local fishing community. The introduction of the ETP questionnaire in Bone will form the basis on how this work will be expanded throughout other areas in Indonesia.

One of the processors Anova sources yellowfin tuna from, is situated in Makassar, which again sources its fish from different suppliers (or 'middlemen') at different locations. One of these suppliers is situated in Bone, with ~90 handline vessels between 2 and 6 GT under his responsibility (Annex VI). All vessels use rumpons as their fishing strategy, which are installed and maintained by the local middleman. At each rumpon fishing activities of a maximum of 4 vessels is permitted. Locations of all rumpons are known, however such information is confidential and could not be provided. The area in

[4] "Bycatch of marine mammals and sea turtles as all captures occurring outside of direct-harvest fisheries for these taxa"

which rumpons are currently deployed is approximately shown in figure 1, also indicating the position in which the placement of new rumpons is planned.

If weather conditions allow, actual fishing takes place from small canoes and caught fish is then returned to the 'mother ship'. The handline vessels land their fish at 5 landing sites in the area, from which tuna is transported by truck to the miniplant, owned by the middleman (figure 3; 4; 5). At each of the landing sites one coordinator is in place, the so-called pungawa, who works under the middleman and ensures everything is well organized within their fisher-group. All pungawa own at least some of the handline vessels. Some of the landing sites have their own simple scales; here tuna is weighed before being brought to the miniplant (figure 3). At other landing sites, all fish goes straight to the miniplant. At the miniplant all fish, weighed or not, is weighed again on a more exact, digital scale (figure 4). Here, QC samples are taken to test for both odor and color. Anova's enumerators collect the required data according to the Port Sampling Protocol at the miniplant, but checks at the landing sites are also carried out. After fish is weighed and length measurements are taken, fish is cleaned with micro-clean and put on ice. Fish is normally transported daily to the processor in Makassar. The flow of tuna in Bone/Makassar is illustrated in figure 6. The middleman collects data on total weights per landing, which is divided into small and large fish. This data goes back to 2004, and for every boat owned by the middleman a separate administration book is kept. This also includes information on total expenses and revenues.

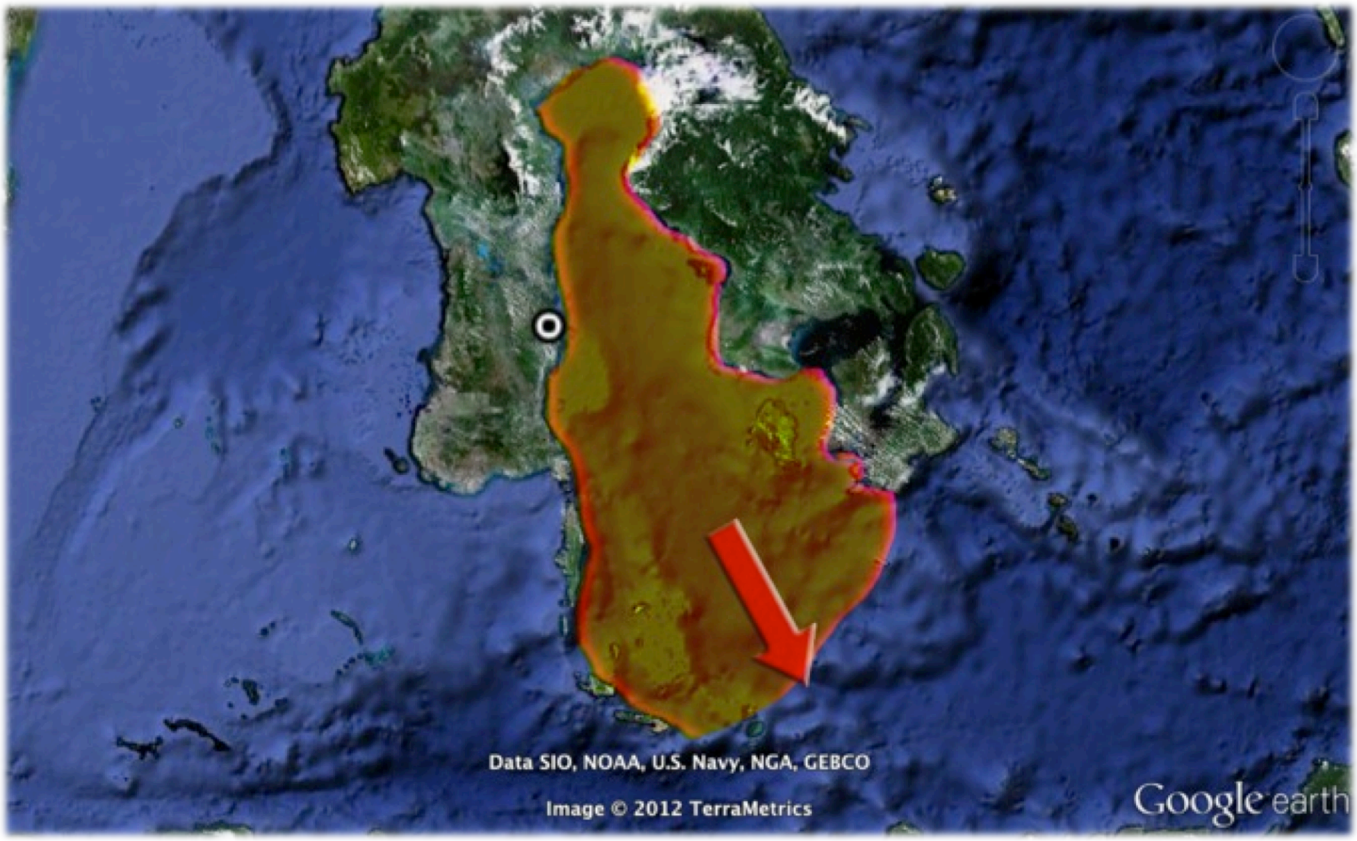


Figure 2. Fishing grounds of vessels owned and operated by profiled supplier in Bone (colored area). The arrow points in the direction in which new rumpons are being deployed.

Figure 3. Weighing tuna at a landing site in Bone, directly upon unloading .

Figure 4. At the miniplant of the middleman. Enumerator collecting data on the left; in the centre tuna is weighed and graded and QC samples are taken.

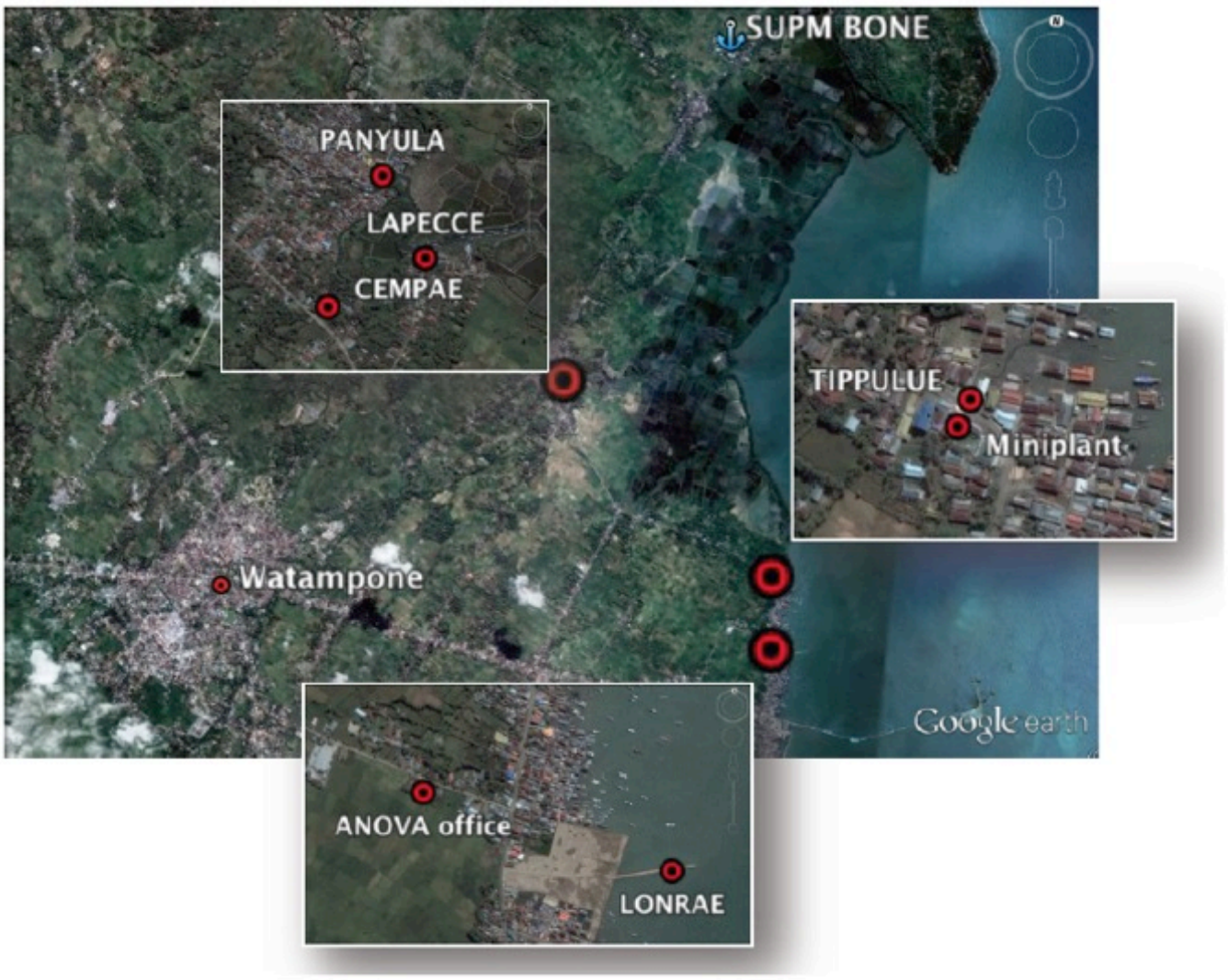


Figure 5. Different landing sites in Bone, the miniplant, and Anova's office.

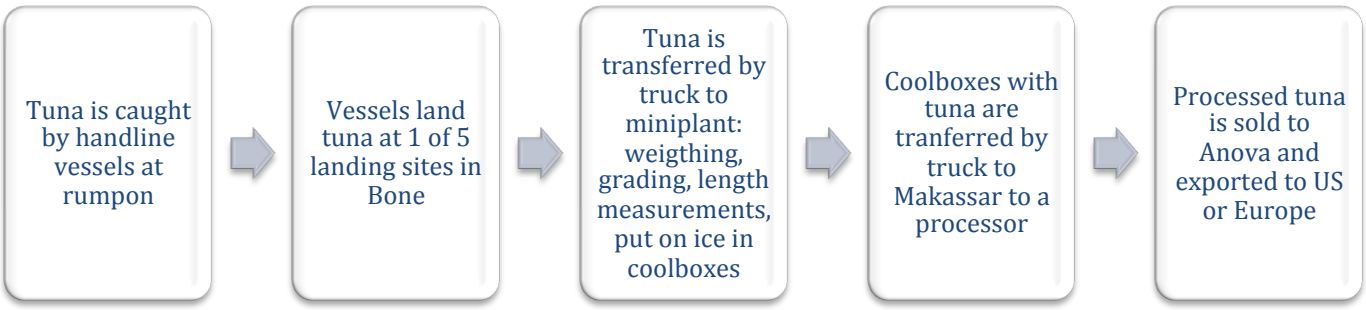


Figure 6. Flow of tuna

3.2. ETPs

As a basis for the development of the ETP questionnaire, informal interviews were held with local fishermen working under the middleman, at the different landing sites. Several weeks were spent in the area to gain more knowledge on the possible interaction with the local handline tuna fishery and ETPs.

Build-up of activities were as follows:

1. Introduction and establishment of professional relationship with the middleman: Green light to start interviewing any of the fishermen working for him. The middleman organized a meeting with the pungawa (coordinators), ensuring sustainability staff would not be hindered at any of the landing sites.
2. Confidence building within fishing communities: Accompanying on-site enumerators hired by Anova in their activities (figure 4), without asking any confronting questions yet.
3. Commencing informal interviews with fishermen at the various landing sites. Most of the interviews took place at their homes, which allowed for more privacy ensuring that others in the community would not distract interviewees; interviews held outside were normally less serious and more prone to jokes. After each interview a package of cigarettes was given to the interviewee, which was always gratefully received. Interviews covered the below listed topics:
    - Interaction of fishermen in the community with:
        - Turtles
        - Dolphins/Whales
        - Sharks
        - Birds
    - Types of interactions
    - Types of fisheries involved
    - Types of gear used
    - Landing of ETP species on-board

- State of ETP species after interaction
- Type of uses of caught ETPs, e.g. eating/selling/bait
- Locations of interactions
- Time of interactions, e.g. specific seasons
- Historical background, e.g. perception increase/decrease interactions

4. Train enumerators to carry-out phase 1 questionnaire (Annex I):
    a. Explain each of the individual questions and reasoning behind it (figure 5).
    b. Show ETP list and introduce the different groups of species.
    c. Play role-game: All enumerators have to play both interviewee and interviewer.
    d. Supervise during first interviews with fishermen (figure 6).
    e. Explanation on filling-in Excel spreadsheet (Annex V).
5. Train enumerators to carry-out ETP questionnaire 2.0 (Annex II):
    a. Explain each of the individual questions and reasoning behind it.
    b. Show ETP list and introduce the different groups of species
    c. Play role-game: All enumerators have to play both interviewee and interviewer.
    d. Supervise during first interviews with fishermen.
    e. Explanation on filling-in Excel spreadsheet (Annex V)

Figure 4. Confidence-building with the local community.

Figure 5. Training of Anova's enumerators.

Figure 6. Enumerator (on the right) interviews a fisherman (on the left).

4. Standard Operating Procedure (SOP): Continuous Port-based Surveys

- For every fifth boat unloading, one questionnaire (Annex II) should be filled-in. Thus, for this fifth unloading, both a complete Port Sampling form and a complete Questionnaire are required, as shown below:
  - **Boat 5: Port Sampling form + ETP data**
  - Boat 6: Port Sampling form
  - Boat 7: Port Sampling form
  - Boat 8: Port Sampling form
  - Boat 9: Port Sampling form
  - **Boat 10: Port Sampling form + ETP data**
  - Etc.

  Enumerators keep a logbook of all unloading events, so that no confusion exists over when ETP data should be collected (Annex VII).
- If, for any unforeseen reason, no ETP data can be collected at any fifth unloading, please collect ETP data of the next following boat and continue to collect ETP data according to the scheme (Annex VII), as shown below:
  - **Boat 5: Port Sampling form + ETP data FAILED**

- **Boat 6: Port Sampling form + ETP data**
- Boat 7: Port Sampling form
- Boat 8: Port Sampling form
- Boat 9: Port Sampling form
- **Boat 10: Port Sampling form + ETP data**
- Etc.

- One crewmember of the unloading boat, present on the last fishing trip, should be interviewed. Try to arrange an interview after the unloading activities, preferably at the fisherman's home, or another place where disturbance by other people in the community is less likely (e.g. at the Anova field office). Moreover, during unloading activities, fishermen are normally very occupied and have no time to calmly answer all questions.
- Questionnaires should be filled-in the excel sheet for submission of ETP data (Annex V).
- Workbooks are saved as follow according to the Port Sampling Protocol: *ETP_ <name landing area>_Day_Month_Year_Boat/Supplier no.* For example: *ETP_ Bone_01_10_2012_Bunga Cengke*. Questionnaire data is considered incomplete if not accompanied with a completed port sampling form. Crucial information in the Port Sampling Form in relation to the interaction with ETPs is:
    1. Rumpon area/geographic fishing area of catch in 1° Latitude and 1° Longitude squares.
    2. Trip length in days at sea.
    3. Landing site
    4. Vessel capacity in Gross Tonnage (GT).
    5. Engine capacity in Horse Power (HP or PK).
    6. Gear used: Handline (HL), Purse seine (PS), Longline (LL), Troll line (TL), or Pole and Line (PL).

4.1. Preparation Interview

The following items should always be with the enumerator on carrying out questionnaire interaction with the fishermen:

- Clipboard with:
    - 3 Questionnaires (at least 2 spare ones to cater for wetness/mistakes)
    - Identification guides
        - ETP ID – Field Guide (Annex IV)
        - SPC Guide "*Marine Species Identification Manual For Horizontal Longline Fishermen*"
- 2 pencils
- Eraser
- Sharpener

4.2. Filling-in ETP Questionnaire 2.0

Please make sure that all questions are asked in a polite and friendly way. We do not judge any interviewee!

Each form should be filled in based on the information given by one person.

- **Boat/Supplier no**.

  Please make sure that this corresponds with the name or number on the port sampling form.

- **Interviewer**

  Write down the name of the enumerator, or any other staff member from Fishing & Living, carrying out the interview.

- **Date**

  Date of the interview, to be filled in as: Day-Month-Year. Date of the interview can vary from the sampling date on the Port Sampling form, i.e. it might be later not earlier. However,

questionnaires should be filled in as fast as possible and preferably on the same day as unloading! As time proceeds, interviewee's will memorize less of what happened at sea.

- **1. Age**

  Write down the age of the interviewee in years.

- **2. For how many years has fishing been your occupation?**

  The amount of years the interviewee has been a professional fisherman.

- **3. What was your role during this last fishing trip?**

  Fill in what the main role of the interviewee was during the last fishing trip. Captains are often fulltime fishermen once at the rumpon, in this case please fill-in "fisherman".

- **4. Did you see any A. Sharks, B. Dolphins/Whales, C. Turtles, D. Birds?**

  From question 4 - 14 please fill in the answers vertically per column, before answering questions on the next ETP-group. Thus, first answer all questions about sharks, then dolphins, etc. Encircle either YES or NO. If YES, continue to question 5 of the relevant ETP-group. If NO, the column should not be filled-in further, start filling in the next column.

- **5. Did interaction take place between these animal(s) and boat/crew/gear?**

  Encircle either YES or NO. If YES, continue to question 6. If NO, the column should not be filled-in further, start filling in the next column.

- **6. How many of these animals did you interact with?**

  Fill-in a whole number. Ask the interviewee if the given number is an estimate, or the exact number of animals with which interaction took place; encircle YES or NO. If the answer is an estimate, it means that the interviewee is not sure about the exact number of individuals with which interaction took place.

- **7. How many landed on deck?**

  Of the total amount of animals with which interaction took place, how many were landed on deck? This number can be in between zero and the total amount of animals with which interaction took place. Landed on deck means that the animal was brought aboard. Ask the interviewee if the given

number is an estimate, or the exact number of animals with which interaction took place; encircle YES or NO. If the answer is an estimate, it means that the interviewee is not sure about the exact number of individuals with which interaction took place.

- **8. Individuals landed on deck: What will happen or happened with the species?**

  Answer this question only if question 7 is larger than zero. Encircle all options that are relevant. After each encircled category the amount of individuals for which that category is relevant should be noted (behind the number sign "#"). If animals were released alive (1a), please indicate the condition of the animals (1b).

- **9. Individuals not landed on deck: What was the condition of the species after interaction?**

  Answer this question only if some individuals were NOT landed on deck, i.e. not brought aboard. This number can be in between zero and the total amount of animals with which interaction took place. Encircle all options that are relevant. Put after each encircled category the amount of individuals for which that category is relevant (behind the number sign "#").

- **10. Where did interaction take place?**

  Encircle all options that are relevant. If more then one option is encircled, put behind the number sign # the amount of individuals per option.

- **11. What gear did the individuals interact with?**

  Encircle the relevant option(s). If option 1 is encircled, describe the type of gear as specific as possible. If option 2 is encircled, write down what the target species of the gear was and describe the type of gear as specific as possible.

- **12**. **Do you know the species name?**

  Do not show the identification guide. Encircle either YES or NO. If YES, continue to question 13. If NO, continue to question 14.

- **13. Write down species name:**

  Do not show the identification guide. Write down the name as given by the interviewee, do not translate it first to, for example, English. If translations of local names are known, please put it

behind the local name between brackets. Ask the interviewee how sure he is about the given answer; choose one option and encircle.

- **14. Is the species in the identification guide?**

  Show the identification guide. Make sure that the interviewee does not feel pressured to pick an option; we rather have 'Don't know' than a false answer.

  Try to identify the encountered species as specific as possible. However, identification of the animal at the group level is already very valuable. Thus, if the species is not exactly known, try to classify the animal at a higher level. For example, for marine mammals, the following classification groups are available: Great Whales, Balaenopteridae, Physeteroidea, Black Fish, Dolphins, Oceanic Dolphins, Coastal Dolphins, Beaked Whales.

  Ask the interviewee how sure he is about the given answer; choose one option and encircle.

References

1. Vitousek, P.M., Mooney, H.A., Lubchenco, J., Melillo, J.M. (1997) *Human Domination of Earth's Ecosystems.* Science **277**, 494

2. Barbault, R., Sastrapradja, S., in (**2**), pp. 193–274.

3. James A. Estes, John Terborgh, Justin S. Brashares, Mary E. Power, Joel Berger, William J. Bond, Stephen R. Carpenter, Timothy E. Essington, Robert D. Holt, Jeremy B. C. Jackson, Robert J. Marquis, Lauri Oksanen, Tarja Oksanen, Robert T. Paine, Ellen K. Pikitch, William J. Ripple, Stuart A. Sandin, Marten Scheffer, Thomas W. Schoener, Jonathan B. Shurin, Anthony R. E. Sinclair, Michael E. Soulé, Risto Virtanen, David A. Wardle (2011) *Trophic Downgrading of Planet Earth.* Science **333** (6040): 301-306 DOI: 10.1126/science.1205106

4. Steenhof, K. and Kochert, M.N. (1988) *Dietary responses of three raptor species to changing prey densities in a natural environment*. The Journal of Animal Ecology **57** (1): 37-48.

5. Temple, S.A. (1987) *Do predators always capture substandard individuals disproportionately from prey populations?* Ecology **68** (3): 669-674.

6. Sergio, et al. (2006).

7. Lewison, R.L., Crowder, L.B., Read, A.J., Freeman, S.A (2004) *Understanding impacts of fisheries bycatch on marine megafauna.* TRENDS in Ecology and Evolution **Vol.19** No.11

8. Mooney, H. A., Lubchenco, J., Dirzo, R., Sala, O. E., in (**2**), pp. 279–325.

9. Crowder, L.B., Murawski, S.A. (1998) *Fisheries bycatch: implications for management*. Fisheries **23**, 8–15

10. Dagorn, L., Holland, K.N., Restrepo, V., Moreno, G. (2012) *Is it good or bad to fish with FADs? What are the real impacts of the use of drifting FADs on pelagic marine ecosystems?* Fish and Fisheries 10.1111/j.1467-2979

11. Dagorn, L., Filmalter, J.D., Forget, F., Amandé, M.J., Hall, M.A., Williams, P., Murua, H., Ariz, J., Chavance, P., Bez, N. (2012) *Targeting bigger schools can reduce ecosystem impacts of fisheries.* Can. J. Fish. Aquat. Sci. **69**: 1463–1467

12. Anova Asia (2011). *Port sampling protocol for artisanal handline tuna: Indonesia.*

13. Salas, S., Chuenpagdee, R., Seijo, J.C., Charles, A. (2007) *Challenges in the assessment and management of small-scale fisheries in Latin America and the Caribbean*. Fisheries Research **87**, 5–16.

14. Moore, J.E., Cox, T.M., Lewison, R.L., Read, A.J., Bjorkland, R., McDonald, S.L., Crowder, L.B., Aruna, E., Ayissi, I., Espeut, P., Joynson-Hicks, C., Pilcher, N., Poonian, C.N.S., Solarin, B., Kiszka, J. (2009) *An interview-based approach to assess marine mammal and sea turtle captures in artisanal fisheries.* Biological Conservation **143** (2010) 795–805

15. Kahn, B. (2006b) *Oceanic Cetaceans and Associated Habitats in the Western Solomon Islands*. In: Green, A., P. Lokani, W. Atu, P. Ramohia, P. Thomas and J. Almany (eds.) (2006) *Solomon Islands Marine Assessment: Technical Report of Marine Survey - May 13 to June 17, 2004*. The Nature Conservancy - Pacific Island Countries Report No. 1/06. pp 445-515.

16. Kahn, B. (2007) *Marine mammals of the Raja Ampat Islands: Visual and Acoustic Cetacean Survey & Training Program.* Technical Report AE07/01 to Conservation International - Indonesia Program. 57 pp

ANNEX I: ETP Questionnaire Phase 1

1. General Info

1.1 Age of interviewee:…… | **1.2** How many years has fishing been your occupation? ……..

1.3 What was your role during this last fishing trip: *1) Captain 2) Fisherman 3) Other*:……..

1.4 Trip length:……..

2. ETP Questions

Did you see any turtles, dolphins/whales, sharks, birds

Turtle 1) YES 2) NO	**Dolphin/Whale** 1) YES 2) NO	**Shark/Ray** 1) YES 2) NO	**Bird** 1) YES 2) NO
If yes: go to 3. Turtle	*If yes: go to 4. Dolphin/Whale*	*If yes, go to 5. Shark*	*If yes, go to 6. Bird*

3. Sharks

3.1 Where did you see the shark/ray?

……

……

3.1.1 How sure: *1) Very sure 2) Fairly sure 3) Not sure*

3.2 How many shark/rays did you see

Rumpon:…… Estimation? 1) YES 2) NO

Journey:…… .Estimation? 1) YES 2) NO

Other: ……Estimation? 1) YES 2) NO

3.3 Do you know what kind/species of shark/ray you saw? 1) Yes 2) Don't know

3.3.1 If "Yes":…… How sure: *1) Very sure 2) Fairly sure 3) Not sure*

3.3.1 If "Don't know": Is it any of the species in the ID-guide? 1) Yes 2) Don't know 3) No

If "Yes":…… How sure: *1) Very sure 2) Fairly sure 3) Not sure*

4. Birds

4.1 Where did you see the bird(s)? ……

……

4.1.1 How sure: *1) Very sure 2) Fairly sure 3) Not sure*

4.2 How many birds did you see at:

Rumpon:…… Estimation? 1) YES 2) NO

Journey:…… .Estimation? 1) YES 2) NO

Other: ……Estimation? 1) YES 2) NO

4.3 Do you know what kind/species of bird you saw? 1) Yes 2) Don't know

4.3.1 If "Yes":…… How sure: *1) Very sure 2) Fairly sure 3) Not sure*

4.3.2 If "Don't know": Is it any of the species in the ID-guide? 1) Yes 2) Don't know 3) No

If "Yes":……

…… How sure: *1) Very sure 2) Fairly sure 3) Not sure*

5. Dolphins/whales

5.1 Where did you see the dolphin(s)/whale(s) ……

……

5.1.1. How sure: *1) Very sure 2) Fairly sure 3) Not sure*

5.2 How many dolphin(s)/whale(s) did you see at:

Rumpon:…… Estimation? 1) YES 2) NO

Journey:…… .Estimation? 1) YES 2) NO

Other: ……Estimation? 1) YES 2) NO

5.3 Do you know what kind/species of dolphin/whale you saw? 1) Yes 2) Don't know

5.3.1 If "Yes":…… How sure: *1) Very sure 2) Fairly sure 3) Not sure*

5.3.2 If "Don't know" OR "yes": Which of the groups (see identification guide) did you see?

……How sure: *1) Very sure 2) Fairly sure 3) Not sure*

6. Turtles

6.1 Where did you see the turtle(s)? ……

……

6.1.1. How sure: *1) Very sure 2) Fairly sure 3) Not sure*

6.2 How many turtle(s) did you see at:

Rumpon:…… Estimation? 1) YES 2) NO

Journey:…… .Estimation? 1) YES 2) NO

Other: ……Estimation? 1) YES 2) NO

6.3 Do you know what kind/species of turtle you saw? 1) Yes 2) Don't know

If "Yes":…… How sure: *1) Very sure 2) Fairly sure 3) Not sure*

Questionnaire Instructions

Please make sure that all questions are asked in a polite and friendly way. Do not show that you do not approve with the catch of ETPs! You are just interested in what species are around. We want to improve our knowledge on the occurrence of these animals. We do not judge any interviewee!
Please do not leave any of the questions unfilled. If a fisher does not know the answer on a question, note down: 'does not know'.
Each form should be filled in based on the information given by one person. If different persons from the same boat are willing to answer questions, please use for each person a separate form. If the choice exists between asking questions to the fishing crew or to a captain, fishing crew is preferred.

Question 1.3
Please encircle what is relevant.

2. ETP Questions

1) Please indicate with either YES **or** NO per ETP.
2) It is important that the given answer is based on their last fishing trip, and provides only information of what the fisher has seen during this last trip. For example, if the fisher has seen birds while still stationary in the harbour, this does NOT count. Fishers should only mention what ETPs they saw from the start of their last fishing trip until the end of their last fishing trip.
3) Only continue to fill in the form if any of the questions is answered with 'yes'.

Question 3.1, 4.1, 5.1, 6.1 "Where did you see the *turtles/dolphins/whales/sharks/birds*

1) Let fishers tell their own story first. They might tell interesting details on specific locations. For example, if you ask right away 'did you see turtles at the rumpon' and 'did you see turtles while travelling to the rumpon'. Then you only get yes/no answers, while there might be more to it. Write down any specifics the fisher will give you.
2) Make sure whether the fisher has provided info that indicates if the ETP was seen at the rumpon and/or journey to the rumpon. If not, you can ask for this after the fisher has given its own input, see previous point.

Question 3.2, 4.2, 5.2, 6.2 "How many *turtles/dolphins/whales/sharks/birds* did you see?"
Make sure the answer is a number. NOT: 'a lot', or 'a few', etc. Note the number down. Make sure you know whether the number is an estimate or an exact number → Note this down. If the ETPs were seen on different locations, please try to differentiate the amount of ETPs per location. For example: 5 turtles at rumpon, 1 turtle on the journey to/from rumpon.

Question 3.3, 4.3, 5.3, 6.3 "Do you know what kind/species of *turtles/dolphins/whales/sharks/birds* you saw?"
Please indicate the most specific details the fisherman can provide about the encountered species. This can either be a (local) species name, or a description of what it looked like.
If more than one species was encountered, try to write down per species on what location it was found (if more than one location given in question 3.1/4.1/5.1/6.1), and how many individuals per species were sighted.
Sharks/rays and Birds: Only show the identification guide if they do not know themselves which species they saw. Make sure they do not feel forced to pick one of the pictures shown in the ID guide. Let them know that it is no problem if they are not sure which one they saw. We rather want them to answer 'don't know' than having the wrong species.
Dolphins/whales: Write down which *group* they saw (baleen whales, Physeteroidea, dolphins, porpoises). If they hesitate between one or more groups, for example write down like "baleen OR Physeteroidea". Note that the ID guide cannot be used to identify on the species level; the provided pictures are just to distinguish between the different groups of cetacean. In really much more species exist!

"How sure" questions
Ask the interviewee how sure he is about each of the given answers

ANNEX II: ETP Questionnaire 2.0

Version November 2012

Boat/Supplier no.		**Interviewer**		**Date**	

1. Age			
2. For how many years has fishing been your occupation?			
3. What was your role during this last fishing trip?	*a. Captain*	*b. Fisherman*	*c. Other:*

4. Did you see any:

A. Sharks/Rays	**B.** Dolphins/Whales	**C.** Turtles	**D.** Birds
YES / *NO*	*YES* / *NO*	*YES* / *NO*	*YES* / *NO*
5.A. Did interaction take place between these animal(s) and boat/crew/gear? *YES* / *NO*	**5.B.** Did interaction take place between these animal(s) and boat/crew/gear? *YES* / *NO*	**5.C.** Did interaction take place between these animal(s) and boat/crew/gear? *YES* / *NO*	**5.D.** Did interaction take place between these animal(s) and boat/crew/gear? *YES* / *NO*
6.A. How many of these animals did you interact with? Amount: Is this an estimate? *YES* / *NO*	**6.B.** How many of these animals did you interact with? Amount: Is this an estimate? *YES* / *NO*	**6.C.** How many of these animals did you interact with? Amount: Is this an estimate? *YES* / *NO*	**6.D.** How many of these animals did you interact with? Amount: Is this an estimate? *YES* / *NO*
7.A. How many landed on deck? Amount: Is this an estimate? *YES* / *NO*	**7.B.** How many landed on deck? Amount: Is this an estimate? *YES* / *NO*	**7.C.** How many landed on deck? Amount: Is this an estimate? *YES* / *NO*	**7.D.** How many landed on deck? Amount: Is this an estimate? *YES* / *NO*
8.A. Individuals **landed** on deck: What will happen or happened with the species?	**8.B.** Individuals **landed** on deck: What will happen or happened with the species?	**8.C.** Individuals **landed** on deck: What will happen or happened with the species?	**8.D.** Individuals **landed** on deck: What will happen or happened with the species?
1a. Released (alive) #	*1a. Released (alive)* #	*1a. Released (alive)* #	*1a. Released (alive)* #
1b. if released: What was the condition of the species after interaction?	*1b. if released: What was the condition of the species after interaction?*	*1b. if released: What was the condition of the species after interaction?*	*1b. if released: What was the condition of the species after interaction?*
1. Dead #	*1. Dead* #	*1. Dead* #	*1. Dead* #
2. Alive, seriously injured #	*2. Alive, seriously injured* #	*2. Alive, seriously injured* #	*2. Alive, seriously injured* #
3. Alive, slightly injured #	*3. Alive, slightly injured* #	*3. Alive, slightly injured* #	*3. Alive, slightly injured* #
4. Alive, no visible injuries #	*4. Alive, no visible injuries* #	*4. Alive, no visible injuries* #	*4. Alive, no visible injuries* #
5. I don't know #	*5. I don't know* #	*5. I don't know* #	*5. I don't know* #
2. Discarded (dead) #	*2. Discarded (dead)* #	*2. Discarded (dead)* #	*2. Discarded (dead)* #
3. Eat #	*3. Eat* #	*3. Eat* #	*3. Eat* #
4. Sell #	*4. Sell* #	*4. Sell* #	*4. Sell* #
5. Use as bait #	*5. Use as bait* #	*5. Use as bait* #	*5. Use as bait* #
6. I don't know #	*6. I don't know* #	*6. I don't know* #	*6. I don't know* #
7. Other: #	*7. Other:* #	*7. Other:* #	*7. Other:* #
9.A. Individuals **not landed** on deck: What was the condition of the species after interaction?	**9.B.** Individuals **not landed** on deck: What was the condition of the species after interaction?	**9.C.** Individuals **not landed** on deck: What was the condition of the species after interaction?	**9.D.** Individuals **not landed** on deck: What was the condition of the species after interaction?
1. Dead #	*1. Dead* #	*1. Dead* #	*1. Dead* #
2. Alive, seriously injured #	*2. Alive, seriously injured* #	*2. Alive, seriously injured* #	*2. Alive, seriously injured* #
3. Alive, slightly injured #	*3. Alive, slightly injured* #	*3. Alive, slightly injured* #	*3. Alive, slightly injured* #
4. Alive, no visible injuries #	*4. Alive, no visible injuries* #	*4. Alive, no visible injuries* #	*4. Alive, no visible injuries* #
5. I don't know #	*5. I don't know* #	*5. I don't know* #	*5. I don't know* #
10.A. Where did interaction take place?	**10.B.** Where did interaction take place?	**10.C.** Where did interaction take place?	**10.D.** Where did interaction take place?
1. Rumpon #	*1. Rumpon* #	*1. Rumpon* #	*1. Rumpon* #
2. Journey #	*2. Journey* #	*2. Journey* #	*2. Journey* #
3. Other: #	*3. Other:* #	*3. Other:* #	*3. Other:* #
11.A. What gear did the individuals interact with?	**11.B.** What gear did the individuals interact with?	**11.C** What gear did the individuals interact with?	**11.D.** What gear did the individuals interact with?
1. Special gear to target sharks/rays, namely:	*1. Special gear to target dolphins/whales, namely:*	*1. Special gear to target turtles, namely:*	*1. Special gear to target birds, namely:*
2. Gear to target other species of interest, namely:	*2. Gear to target other species of interest, namely:*	*2. Gear to target other species of interest, namely:*	*2. Gear to target other species of interest, namely:*
3. Bare hands	*3. Bare hands*	*3. Bare hands*	*3. Bare hands*
4. Vessel	*4. Vessel*	*4. Vessel*	*4. Vessel*
5. Other:	*5. Other:*	*5. Other:*	*5. Other:*
12.A. Do you know the species name? *YES* / *NO*	**12.B.** Do you know the species name? *YES* / *NO*	**12.C.** Do you know the species name? *YES* / *NO*	**12.D.** Do you know the species name? *YES* / *NO*
13.A. Write down species name: How sure: *1. Very sure* *2. Fairly sure* *3. Not sure*	**13.B.** Write down species name: How sure: *1. Very sure* *2. Fairly sure* *3. Not sure*	**13.C.** Write down species name: How sure: *1. Very sure* *2. Fairly sure* *3. Not sure*	**13.D.** Write down species name: How sure: *1. Very sure* *2. Fairly sure* *3. Not sure*
14.A. Is the species in the identification guide? *1. Yes, namely:* *2. No* *3. Don't know* How sure: *1. Very sure* *2. Fairly sure* *3. Not sure*	**14.B.** Is the species in the identification guide? *1. Yes, namely:* *2. No* *3. Don't know* How sure: *1. Very sure* *2. Fairly sure* *3. Not sure*	**14.C.** Is the species in the identification guide? *1. Yes, namely:* *2. No* *3. Don't know* How sure: *1. Very sure* *2. Fairly sure* *3. Not sure*	**14.D.** Is the species in the identification guide? *1. Yes, namely:* *2. No* *3. Don't know* How sure: *1. Very sure* *2. Fairly sure* *3. Not sure*

ANNEX III: ETP list

Introduction

To support the long-term goal of MSC certification for handline tuna in Indonesia, ANOVA has implemented a port sampling protocol (Anova, 2011) to fill the information gap on catch and effort data, as required for MSC certification. To further compliment the port sampling protocol, ANOVA has started a program on Endangered, Threatened, and Protected species (ETPs) to improve information/monitoring on the possible interaction between ETPs and handline tuna fisheries.
As a starting point, ANOVA has developed a list of Endangered, Threatened, and Protected species (ETPs) found in Indonesian seas, compiled in this document. This list forms the basis of a data collection protocol for ETP species encountered by the handline tuna fisheries in Indonesia.

For the handline tuna fishery in Indonesia, the non-targeted bony fish (Osteichthyes) are not discarded; all fish not suited for export can be sold locally. Therefore, Anova's Port Sampling Protocol already covers this (incidental) catch. On the other hand, slow growing marine mega fauna usually take a lot of space in handline boats, can be dangerous to handle, and often have no market price, which makes them more likely not to be landed on shore after interaction with handline vessels. Also, in the case of shark fins, these do not have to be kept fresh as they are sold in a dried state; they could easily fail to be included in regular Port Sampling. Therefore, for the development of the ETP list, there was only searched for species of shark/rays/skates, marine mammals, turtles, and birds. Other criteria used for the inclusion of species in the ETP list are mentioned per ETP category below.

Criteria for SHARKS/RAYS/SKATES

- IUCN Red List of Threatened Species ™ 2012.2

  Search terms

  Show taxa: Species

  Search by taxonomy: CHONDRICHTHYES

  Search by location: Indonesia (Native)

  Search by systems: Marine

  Search by assessment: Categories: CR[5], EN[6], VU[7], DD[8]

  Excluded:

[5] CR = Critically Endangered
[6] EN = Endangered
[7] VU = Vulnerable
[8] DD = Data Deficient

Species solely occurring at/in: soft sandy or muddy substrate, demersal / on or near bottom / benthos, reefs, mangroves, estuaries, lagoons, shallow inshore waters, intertidal mud flats, brackish water, seagrass.

- CITES Appendix I and II
  Species in Indonesia associated with the pelagic environment.
- Government regulation No.7/1999
  Species in Indonesia associated with the pelagic environment.

Criteria for MARINE MAMMALS

All cetaceans are ETPs. The provided list of cetaceans was developed in cooperation with the Indonesia Oceanic Cetacean Program *(Kahn pers. comm 2012)*. The list is based on identification standards used in the field, as interviewee's might often not be able to identify on the species level.

The dugong is the only other order of marine mammals included, as they travel through the pelagic environment to find new seagrass beds.

The developed list was tested against:

- IUCN Red List of Threatened Species ™ 2012.2
- CITES Appendix I and II
- Government regulation No.7/1999

Criteria for SEA TURTLES

All sea turtles are ETPs associated with the pelagic environment.

- IUCN Red List of Threatened Species ™ 2012.2
  Search terms
  Show taxa: Species
  Search by taxonomy: TESTUDINES
  Search by location: Indonesia (Native)
  Search by systems: Marine
  Search by assessment: Categories: CR, EN, VU, DD
- CITES Appendix I and II
- Government regulation No.7/1999

Criteria for BIRDS

- IUCN Red List of Threatened Species ™ 2012.2
  Search terms
  Show taxa: Species
  Search by taxonomy: AVES

Search by location: Indonesia (Native)

Search by systems: Marine

Search by assessment: Categories: CR, EN, VU, DD

Excluded:

Species not associated with the pelagic zone.

- CITES Appendix I and II

  Species in Indonesia associated with the pelagic environment.

- Government regulation No.7/1999

  Species in Indonesia associated with the pelagic environment.

Separate tables are provided for sharks and rays, birds, turtles, and cetaceans. Each of the tables contains information on the common names and scientific names, and in what source the species is listed, i.e. IUCN red list, CITES, and/or Government Regulation NO.7/1999.

SHARKS/RAYS/SKATES

Common name	Scientific species name	IUCN red list *Version 2012.2*	CITES *Valid from 3 April 2012*	Government regulation No.7/1999
Pelagic Thresher	*Alopias pelagicus*	Vulnerable	-	-
Common Thresher Shark	*Alopias vulpinus*	Vulnerable	-	-
Whitetip Oceanic Shark	*Carcharhinus longimanus*	Vulnerable	-	-
Sickelfin Weasel Shark,	*Hemigaleus microstoma*	Vulnerable	-	-
Snaggletooth Shark	*Hemipristis elongate*	Vulnerable	-	-
Shortfin Mako	*Isurus oxyrinchus*	Vulnerable	-	-
Sharptooth Lemon Shark	*Negaprion acutidens*	Vulnerable	-	-
Pondicherry Shark	*Carcharhinus hemiodon*	Critically endangered	-	-
Hooktooth Shark	*Chaenogaleus macrostoma*	Vulnerable	-	-
Broadfin Shark	*Lamiopsis temmincki*	Endangered	-	-
Sandbar shark	*Carcharhinus plumbeus*	Vulnerable	-	-
Pigeye Shark	*Carcharhinus amboinensis*	Data deficient	-	-
Scalloped Hammerhead	*Sphyrna lewini*	Endangered	-	-
Squat-headed Hammerhead Shark	*Sphyrna mokarran*	Endangered	-	-
Deepwater Spiny Dogfish	*Centrophorus squamosus*	Vulnerable	-	-
Megamouth Shark	*Megachasma pelagios*	Data deficient	-	-
Whale Shark	*Rhincodon typus*	Vulnerable	Appendix I	-

Greater Guinean Mobula	*Mobula tarapacana*	Data deficient	-	-
Giant Manta Ray	*Manta birostris*	Vulnerable	-	-
Reef Manta Ray	*Manta alfredi*	Vulnerable	-	-
Longheaded Eagle Ray	*Aetobatus flagellum*	Endangered	-	-
Common Shovelnose Ray	*Glaucostegus typus*	Vulnerable	-	-
-	*Narcine prodorsalis*	Data deficient	-	-
-	*Narcine timlei*	Data deficient	-	-

MARINE MAMMALS

Marine Mammals grouped according to Identification standards

In cooperation with APEX Environmental and their Indonesia Oceanic Cetacean Program (Kahn pers. comm 2012)

	Scientific species name	IUCN red list *Version 2012.1*	CITES *Valid from 3 April 2012*	Government regulation No.7/1999
A. GREAT WHALES				
1. Balaenopteridae				
Blue Whale	*Balaenoptera musculus*	Endangered	Appendix I	Listed
Fin Whale	*Balaenoptera physalus*	Endangered	Appendix I	Listed
Sei Whale	*Balaenoptera borealis*	Endangered	Appendix I	Listed
Bryde's Whale	*Balaenoptera edeni*	Data deficient	Appendix I	Listed
Minke Whale	*Balaenoptera acutorostrata*	Least Concern	Appendix I	Listed
Humpback Whale	*Megaptera novaeangliae*	Least concern	Appendix I	Listed
2. Physeteroidea				
Sperm Whale	*Physeter macrocephalus*	Vulnerable	Appendix I	Listed
B. BLACK FISH				
Orca	*Orcinus orca*	Data deficient	-	Listed
False killer whale	*Pseudorca crassidens*	Data deficient	-	Listed
Pilot whales	*Globicephala spp.*	Data deficient	-	Listed
Pygmy killer whale	*Feresa attenuata*	Data deficient	-	Listed
Melon headed whale	*Peponocephala electra*	Least concern	-	Listed
Risso's dolphin	*Grampus griseus*	Least concern	-	Listed
C. DOLPHINS				
1. Oceanic dolphins < 3 m	*Delphinidae*			Listed
2. Coastal dolphins				
Humpback dolphins	*Sousa spp.*	Near threatened	Appendix I	Listed
Irrawaddy dolphin	*Orcaella brevirostris*	Vulnerable	Appendix I	Listed
Finless porpoise	*Neophocaena phocaenoides*	Vulnerable	Appendix I	Listed
Bottlenose dolphins	*Tursiops spp*	Data deficient & Least concern	Appendix II	Listed
D. BEAKED WHALES				
Cuvier's beaked whale	*Ziphius cavirostris*	Least Concern		Listed
Ginkgo-toothed beaked whale	*Mesoplodon ginkgodens*	Data deficient		Listed
Ziphiiidae (General ID beaked whales)		All (but *Z. cavirostris)* data deficient	Appendix I	Listed
E. DUGONGS				
Dugong	*Dugong dugon*	Vulnerable	Appendix I	Listed

SEA TURTLES

Common name	Scientific name	IUCN red list *Version 2012.1*	CITES *Valid from 3 April 2012*	Government regulation No.7/1999
Olive ridley sea turtle	*Lepidochelys olivacea*	Vulnerable	Appendix I	Listed
Loggerhead sea turtle	*Caretta caretta*	Endangered	Appendix I	Listed
Green sea turtle	*Chelonia mydas*	Endangered	Appendix I	Listed
Leatherback turtle	*Dermochelys coriacea*	Critically Endangered	Appendix I	Listed under Indonesian name (typo scientific name: Dermochelys olivacea)
Flatback sea turtle	*Natator depressuS*	Data deficient	Appendix I	Listed under Indonesian name (typo scientific name: Nalator depressa)
Hawksbill turtle	*Eretmochelys imbricate*	Critically Endangered	Appendix I	Listed

BIRDS

Common name	Scientific name	IUCN red list *Version 2012.1*	CITES *Valid from 3 April 2012*	Government regulation No.7/1999
Barau's Petrel	*Pterodroma baraui*	Endangered		-
Matsudaira's Storm-petrel	*Oceanodroma matsudairae*	Data deficient	-	-
Abbott's Booby	*Papasula abbotti*	Endangered	Appendix I	-
Christmas Island Frigatebird	*Fregata andrewsi*	Critically Endangered	Appendix I	-
Chinese Crested Tern	*Sterna bernsteini*	Critically Endangered		-

ANEX IV: ETP ID – FIELD GUIDE

This guide is meant to complement the Port Based ETP questionnaire. This list contains all species listed in Anova's ETP List, plus some non-ETP species. Non-ETP species are added so that fishermen have more options to choose from than solely ETPs, which will make the given answers more robust. As all cetaceans and sea turtles are ETPs, only non-ETPs were added for shark/skates/rays and birds. Sharks/skates/rays species were complimented with species from the book "Economically Important sharks rays Indonesia" by White, W.T., P.R. Last, J.D. Stevens, G.K. Yearsley, Fahmi dan Dharmadi (2006). Non-ETPs are recognizable by having either Least Concern (LC), Near Threatened (NT), or "According to IUCN not native to Indonesia" noted behind the species name.

The Secretariat of the Pacific Community (SPC) has developed a valuable identification guide for horizontal longline fishermen (2006). Although not including the exact species of the ETP list, this guide can be of great use and should be kept by the enumerators. The guide can be found on www.spc.int/oceanfish: "Work Areas" → "Fisheries Monitoring" → "PIRFO" → "Species ID Guide" → "*Marine Species Identification Manual For Horizontal Longline Fishermen".*

SHARKS, SKATES, RAYS

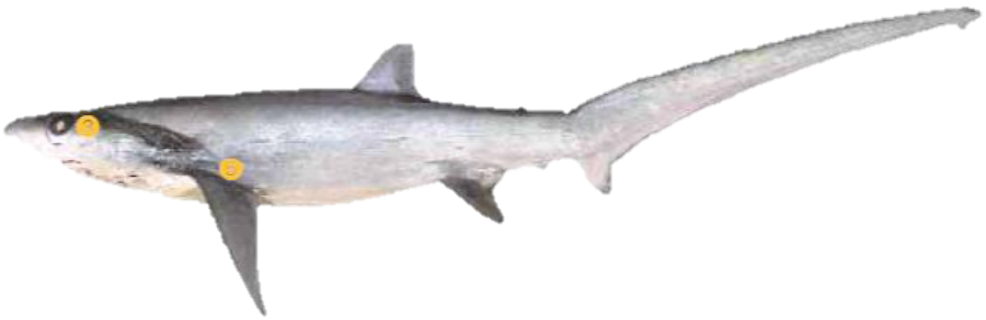
1.1 Pelagic Thresher Shark (VU)

Local names: hiu monyet, hiu lancur (Bali), hiu tikus (Lombok), cucut pedang (Jakarta), tikusan (Cilacap)

Maximum size (TL): can reach a length of 365 cm
Size at birth (TL): 130-160
Shark ID extract from White et al.

1.2 Bigeye Thresher (VU) – According to IUCN not native to Indonesia

Local names: hiu monyet, hiu lancur (Bali), hiu tikus (Lombok), paitan (Cilacap)



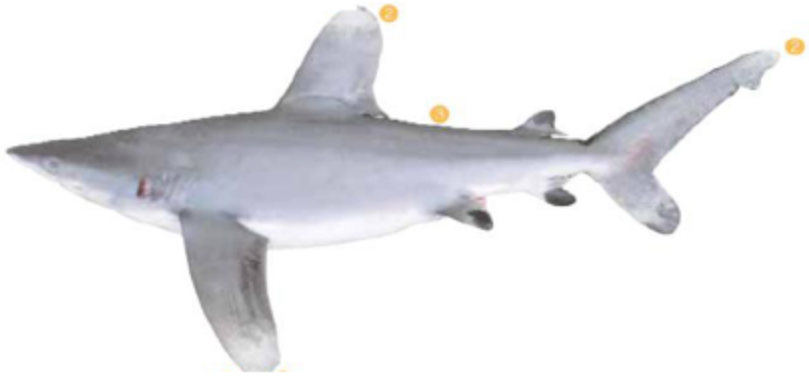
Maximum size (TL): 461
Size at birth (TL): 100-140
Shark ID extract from White et al.

1.3 Common Thresher Shark (VU)

Local names:

Maximum size (TL): 415-573 cm
Size at birth (TL): 100-158 cm

1.4 Whitetip Oceanic Shark (VU)
Local names: hiu koboy, cucut koboy (Jawa)

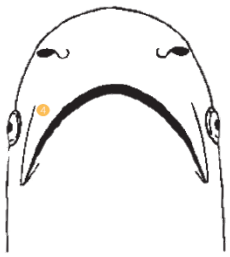


Maximum size (TL): 350-395 cm
Size at birth (TL): 60-65
Shark ID extract from White et al.

1.5 Dusky whaler - *Not yet assessed for the IUCN Red List*
Local names: merak bulu (Lombok), cucut lanjaman, hiu lanyam (Jawa)

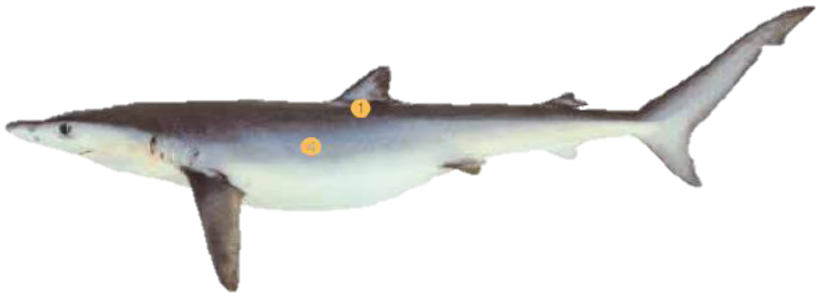
Maximum size (TL): 360-400 cm
Size at birth (TL): 69-100 cm
Shark ID extract from White et al.

1.6 Tiger shark (NT)
Local names: mungsing jara (Bali), hiu macan (Lombok), hiu omas (Jawa)



Maximum size (TL): 740 cm
Size at birth (TL): 51-76
Shark ID extract from White et al.

1.7 Blue shark (NT)
Local names: hiu aer (Bali), hiu karet (Lombok), hiu lalaek, cucut selendang (Jawa)

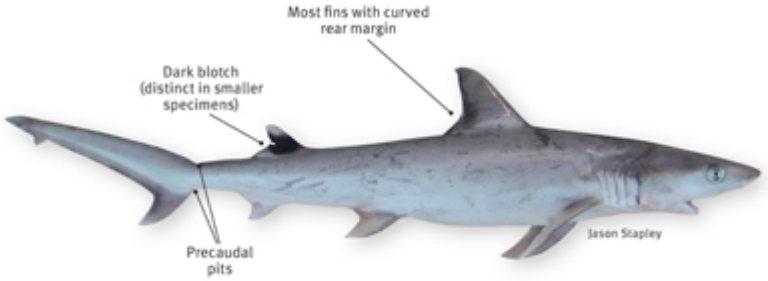


Maximum size (TL): 383 cm
Size at birth (TL): 35-44

1.8 Sicklefin Weasel Shark (VU)
Local names:

Maximum size (TL): 114 cm
Size at birth (TL): 47 cm

1.9 Fossil Shark (VU)

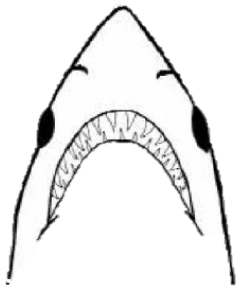


Maximum size (TL): 240 cm
Size at birth (TL): 45-52 cm

1.10 Shortfin Mako (VU)
Local names: hiu tenggiri, hiu anjing, hiu mako, hiu kakap

Maximum size (TL): 400 cm
Sizes at birth (TL): 70 cm
Shark ID extract from White et al.

1.11 Longfin Mako (VU) - According to IUCN not native to Indonesia
Local names: hiu tenggiri, hiu mako bersirip panjang, hiu anjing



Maximum size (TL): 417 cm
Size at birth (TL): 97-120
Shark ID extract from White et al.

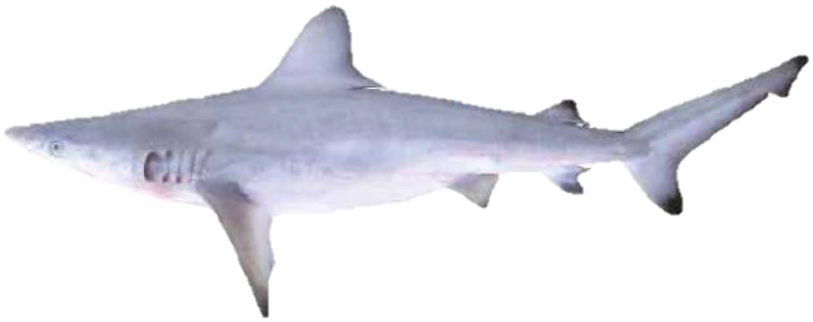
1.12 Crocodile shark (NT)
Local names: hiu tongar (Jawa barat)

Maximum size (TL): 110 cm
Size at birth (TL): ~ 41 cm
Shark ID extract from White et al.

1.13 Silvertip shark (NT)
Local names: hiu plen (Bali), hiu sonteng (Lombok), cucut lanjaman, hiu lanyam (Jawa)

Maximum size (TL): 300 cm
Size at birth (TL): 73-81 cm
Shark ID extract from White et al.

1.14 Bignose shark (DD) - According to IUCN not native to Indonesia
Local names: merak bulu (Lombok)



Maximum size (TL): 300 cm
Size at birth (TL): 70-90 cm
Shark ID extract from White et al.

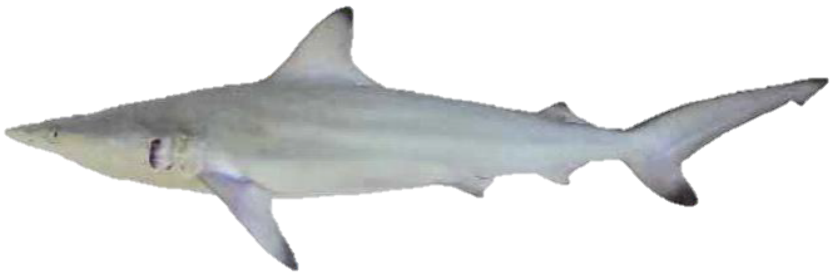
1.15 Spinner shark (NT) - According to IUCN not native to Indonesia
Local names: hiu plen (Bali), hiu lonjor, merak bulu (Lombok), cucut lanjaman (Jawa)

Maximum size (TL): 283 cm
Size at birth (TL): 68-81 cm
Shark ID extract from White et al.

1.16 Silky shark (NT)
Local names: mungsing (Bali), hiu lonjor (Lombok), cucut lanjaman, hiu lanyam (Jawa)

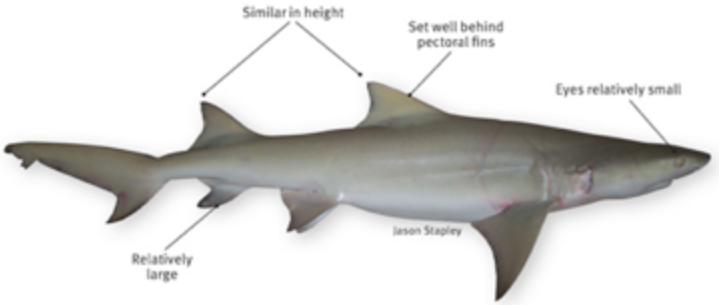
Maximum size (TL): 350 cm
Size at birth (TL): 55-72
Shark ID extract from White et al.

1.17 Common Blacktip Shark (NT)
Local names: hiu kejen, merak bulu (Lombok), cucut lanjaman, hiu lanyam



Maximum size (TL): 255 cm
Size at birth (TL): 55-66
Shark ID extract from White et al.

1.18 Sharptooth Lemon Shark (VU)
Local names:



Maximum size (TL): 300 cm
Size at birth (TL): 60 cm

1.19 Pondicherry Shark (CR)
Local names:

Maximum size (TL): uncertain, but probably not more than 100 cm
Size at birth (TL): 32 cm

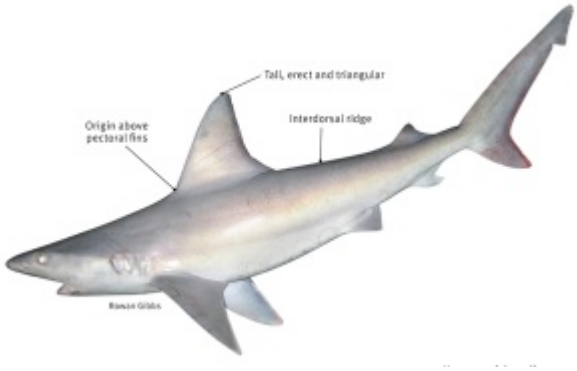
1.20 Hooktooth Shark (VU)
Local names:

Maximum size (TL): 125 cm
Size at birth (TL): 20 cm

1.21 Broadfin Shark (EN)
Local names:

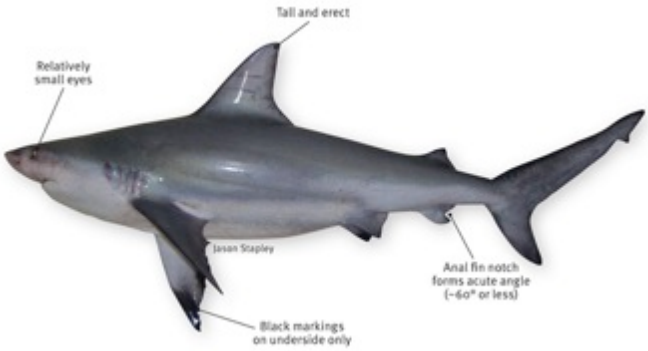
Maximum size (TL): 168 cm
Size at birth (TL): 40-60 cm

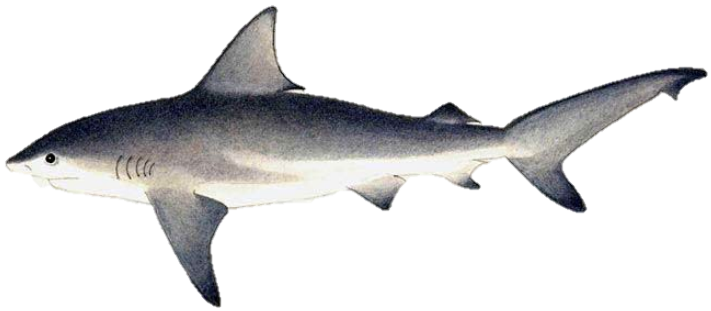
1.22 Sandbar shark (VU)
Local names:



Maxiumum size (TL): 240 cm
Size at birth (TL): 55-75 cm

1.23 Pigeye Shark (DD)
Local names:





Maximum size (TL): 245 cm
Size at birth (TL): 60-75 cm

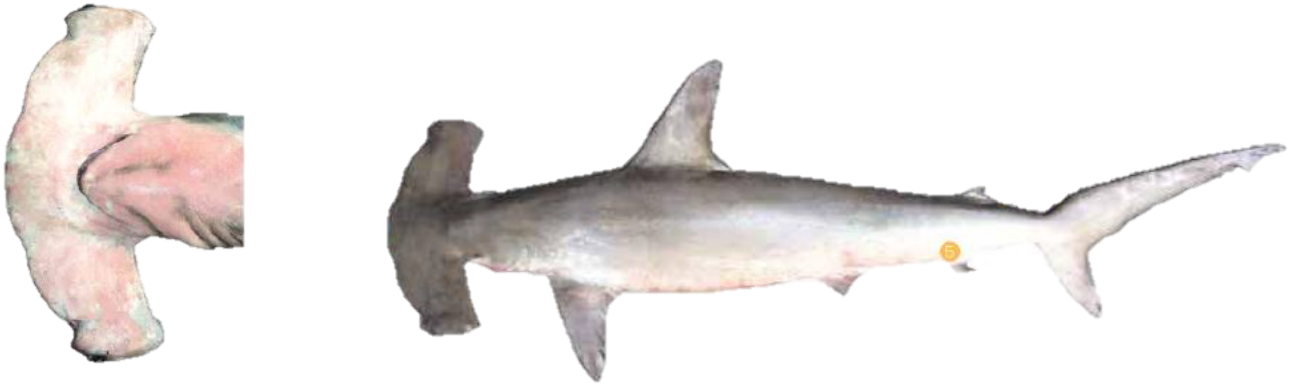
1.24 Scalloped Hammerhead (EN)
Local names: hiu caping (Jawa), hiu capil (Bali), hiu bingkoh (Lombok)

Maximum size (TL): 370-420 cm
Size at birth (TL): 39-57 cm
Shark ID extract from White et al.

1.25 Great Hammerhead (EN)
Local names: hiu caping (Jawa), hiu capil (Bali), hiu bingkoh (Lombok)

Maximum size (TL): 610 cm
Size at birth (TL): 50-70 cm
Shark ID extract from White et al.

1.26 Smooth hammerhead (VU) - According to IUCN not native to Indonesia
Local names: hiu caping (Jawa), hiu capil (Bali), hiu bingkoh (Lombok)

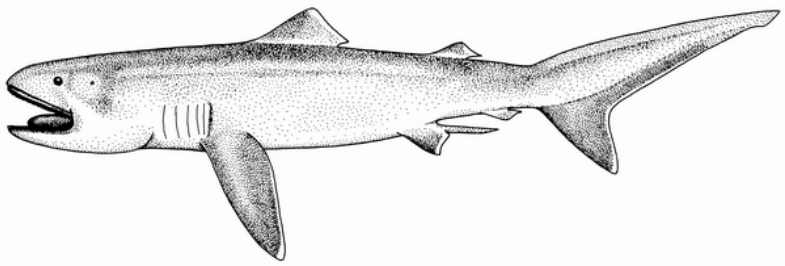


Maximum size (TL): 350 cm
Size at birth (TL): 50-60 cm
Shark ID extract from White et al.

1.27 Deepwater Spiny Dogfish (VU)
Local names:

Maximum size (TL): 160 cm
Size at birth (TL): 35 – 43 cm

1.28 Megamouth Shark (DD)
Local names:

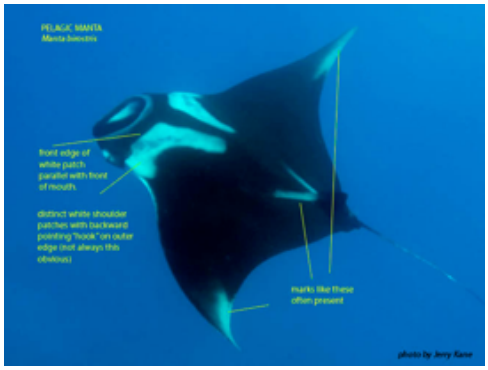


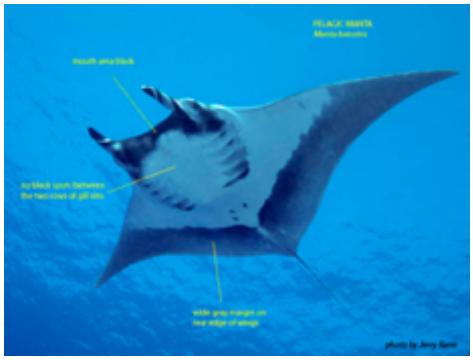
Maximum size (TL): 550 cm
Size at birth (TL): ?

1.29 Whale shark (VU)
Local names:

Maximum size (TL): 2000 cm
Size at birth (TL): 40 – 60 cm

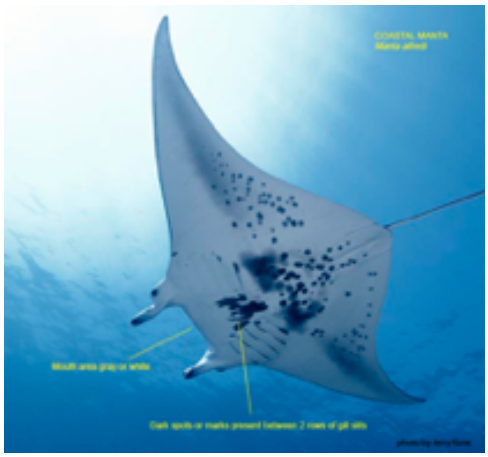
1.30 Giant Manta Ray (VU)
Local names:

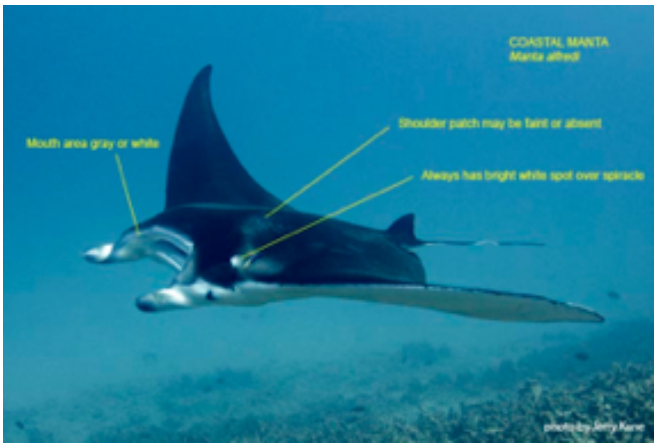




Maximum size (DW): 910 cm
Size at birth (DW): ?

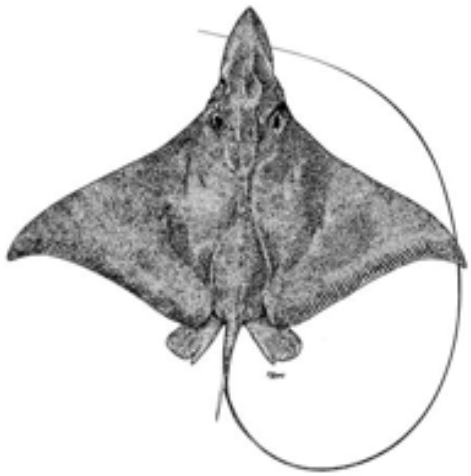
1.31 Coastal Manta Ray (VU)
Local names:





Maximum size (DW): 500 cm
Size at birth (DW): ~180 - 190

1.32 Londheaded Eagle Ray (EN)
Local names:



Maximum size (DW): 47 cm
Size at birth (DW): ?

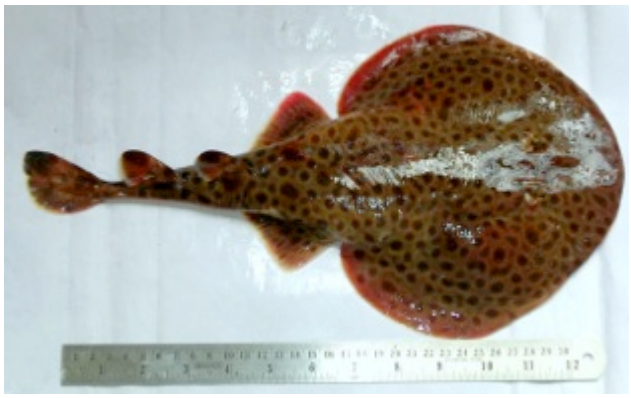
1.33 Pelagic stingray (LC)
Local names: pari lampin, payubek (Lombok), pari lemer (Jawa)

Maximum size (TL): The body can reach a length of 350 cm
Size at birth (TL): 50-60 cm

1.34 Common shovelnose ray (VU)
Local names:

Maximum size (TL): 270 cm
Size at birth (TL): 38 – 43 cm

1.35 Narcine prodorsalis (DD)
Local names:



Maximum size (TL): 40 cm
Size at birth (TL): ?

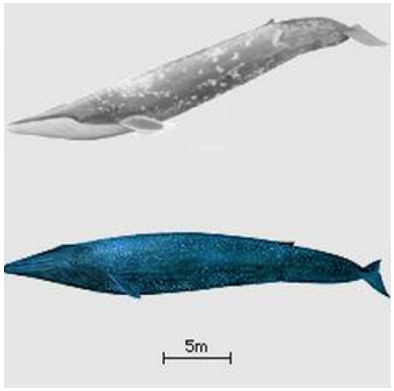
1.36 Narcine timlei (DD)
Local names:

Maximum size (TL): 38 cm
Size at birth (TL): ?

2. Marine Mammals - ID

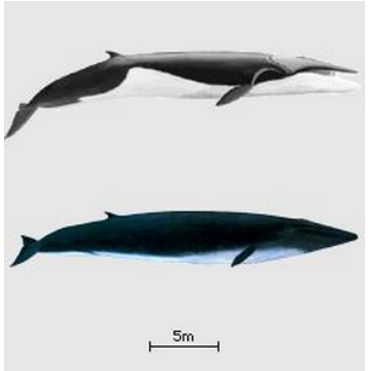
A. Great whales

2.1 Blue whale (EN)
Local name: Paus biru



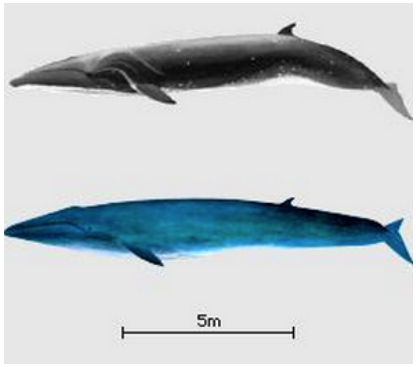
- Average 23 – 27 metres
- Baleens
- Bluish grey dorsally and somewhat lighter underneath
- Head is uniformly blue, but back and sides are mottled
- Relatively small dorsal fin

2.2 Fin whale (EN)
Local name: Paus sirip



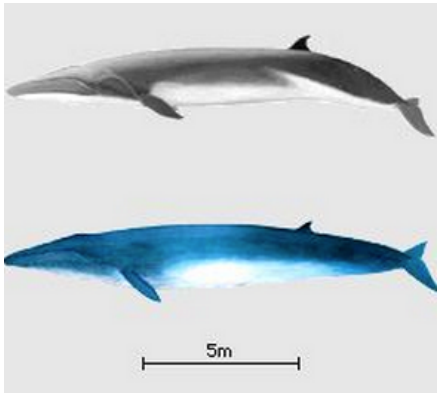
- Black or darkish brown grey above and on the sides; white below
- Asymmetrical coloration head; left lower jaw mostly dark while right jaw mostly white
- Baleens
- Maximum length 27 metres

2.3 Sei whale (EN)
Local name: Paus sei



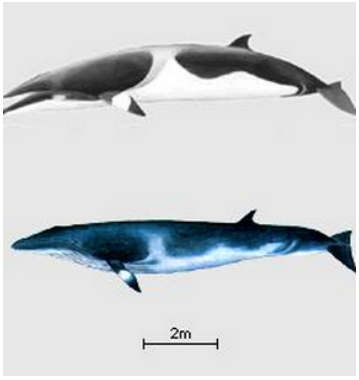
- Average 12 – 16 metres
- Single prominent ridge on rostrum
- Mostly dark grey, except for a whitish area on the belly
- Back often mottles with scars
- Baleens

2.4 Bryde's whale (DD)
Local name: Paus Bryde



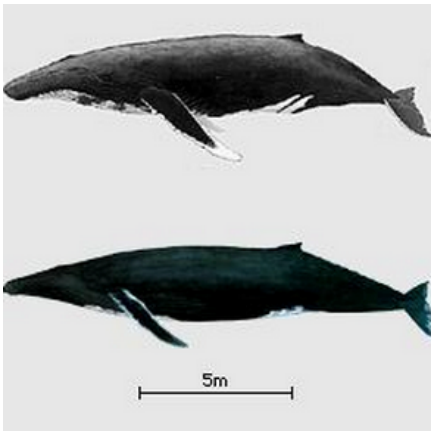
- 14 – 16 metres
- Baleens
- Three lateral ridges (between blowhole and rostral tip)
- Mostly swim alone or in pairs
- Dark grey dorsally and lighter ventrally

2.5 Minke whale (LC)
Local name: Paus minke



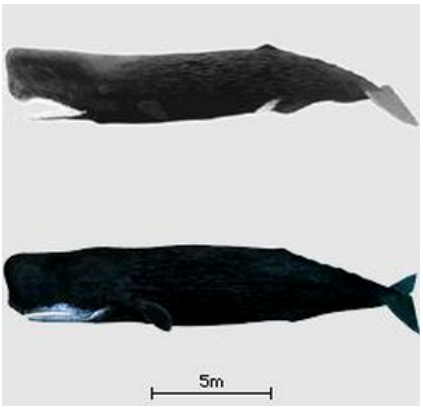
- **7 –** 10 metres
- Torpedo shaped head with sharply pointed snout and central ridge
- Baleens
- Sickle shaped dorsal fin
- Solitary or small groups of 2 – 3 animals

2.6 Humpback whale (LC)
Local name: Paus bongkok



- Average size is 12 - 16 metres
- 'Hump' on the leading edge of their dorsal fin
- Extremely long flippers
- Dark grey or black body dorsally, may be white ventrally
- White flipper on ventral side, dorsal surface varies from all white to mostly black

2.7 Sperm whale (VU)
Local name: Paus sperma



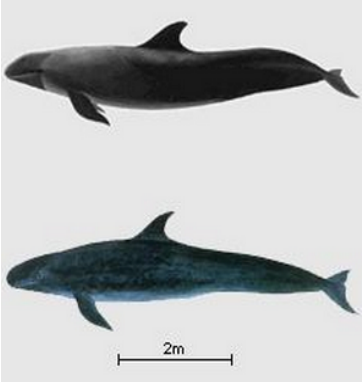
- 11- 16 metres
- Extremely large head
- Single blowhole asymmetrically situated on the left side of the head near the tip
- Mostly dark grey to brownish-grey
- Teeth

B. Black Fish

2.8 Orca (DD)
Local name: Paus pembunuh

- Erect dorsal fin
- Large oval flippers
- Black-and-white colour pattern
- Maximum length 8.5 – 9.8 metres
- Teeth

2.9 False killer whale (DD)
Local name: Paus pembunuh palsu

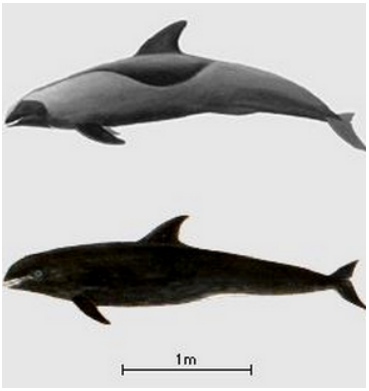


- Dark grey to black colour, faint grey patch on chest
- Rounded overhanging forehead
- Teeth
- Hump on leading edge of flippers
- Maximum length 5 – 6 metres

2.10 Pilot whales (DD)
Local name: Paus pemandu sirip pendek

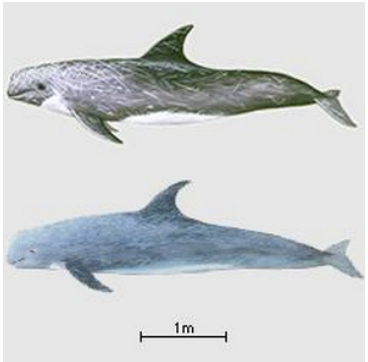
- Bulbous head
- Short or non-existent beaks
- Teeth
- 5.5 – 6.7 metres

2.11 Melon headed whale (LC)
Local name: Paus kepala semngka



- Teeth
- Pointed flippers
- Light stripe from blowhole to snout tip
- Maximum length 2.75 metres

2.12 Risso's dolphin (LC)
Local name: Lumba-lumba abuabu



- No distinct beak
- Long pointed recurved fins
- Typically covered with white scratches, spots, and blotches
- Teeth
- Maximum length 3.8 metres

C. Dolphins

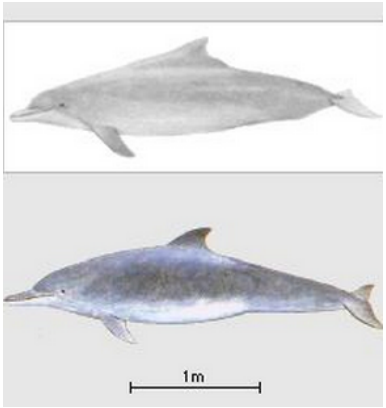
Oceanic dolphins

2.13 Oceanic dolphins

- Found at open sea
- Teeth
- Typically curved dorsal fin
- A clear beak
- Wide range of colours and patterns

Coastal dolphins

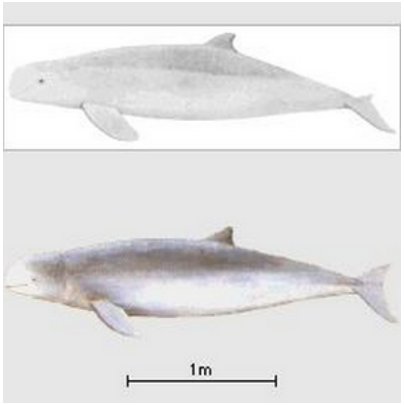
2.14 Humpback dolphins - Coastal dolphins (NT)
Local name: n/a



- Long well-defined beak
- Dorsal fin sits on a hump
- Robust body shape
- Colour can vary from dark grey, nearly white, or pinkish
- Maximum size 2.5 – 3.2

2.15 Irrawaddy dolphin – Coastal dolphins (VU)

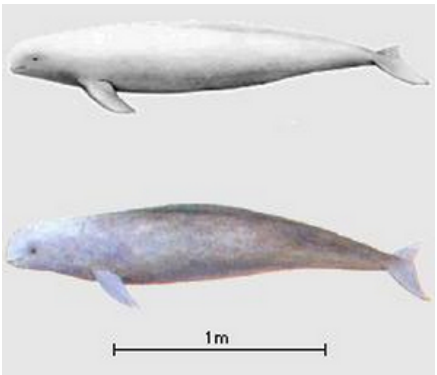
Local name: n/a



- Small triangular dorsal fin
- Large flippers with curved leading edges and rounded tips
- No beak
- Teeth
- 2 – 2.75 metres

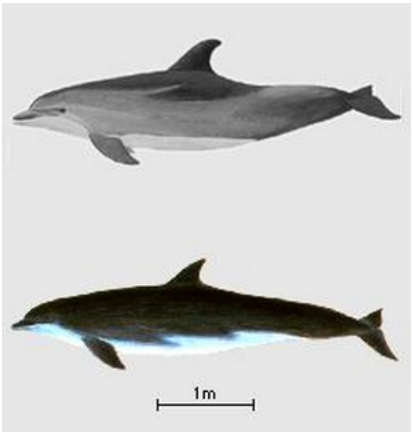
2.16 Finless porpoise – Coastal dolphins (VU)

Local name: Lumba-lumba tak bersirip



- No dorsal fin
- No beak
- Grey colour
- Teeth
- Average length 1.9 metres

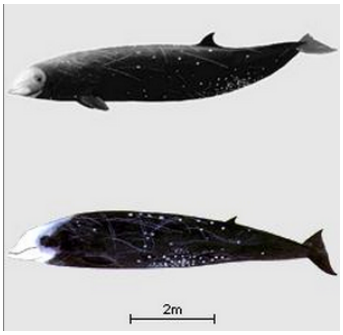
2.17 Bottlenose dolphins – Coastal dolphins (DD & LC)
Local name: Lumba-lumba hidung botol



- Light grey to nearly black on back and sides, fading to white on belly
- Teeth
- Snout set-off from melon by a crease
- Tall and falcate dorsal fin
- Length 1.9 – 3.8 metres

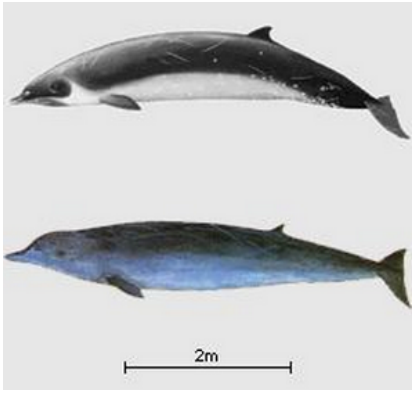
D. Beaked Whales *(Local name: Ika mea)*

2.18 Cuvier's beaked whale (LC)
Local name: Paus paruh Cuvier



- Short, poorly defined beak
- Mouthline is upcurved at the rear
- Small and falcate dorsal fin
- Lighter areas around head and belly
- Maximum length 7 – 7.5 metres

2.19 Ginkgo-toothed beaked whale (DD)
Local name: -



- Males are dark grey with light spots; females are lighter
- Teeth
- Erupted teeth in males
- Maximum length 4.8 – 4.9 metres

Dugongs

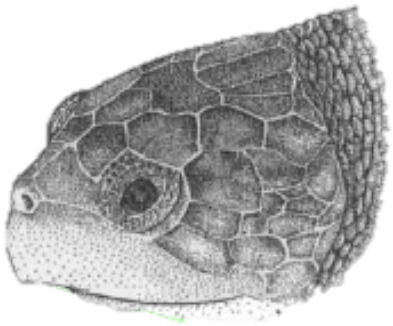
2.20 Dugong (VU)
Local name: Duyung

- Whale-like flukes
- Paddle-shaped flippers
- Smooth skin sprinkled with short hairs
- Maximum size 3.3 metres

3. Sea turtles – ID

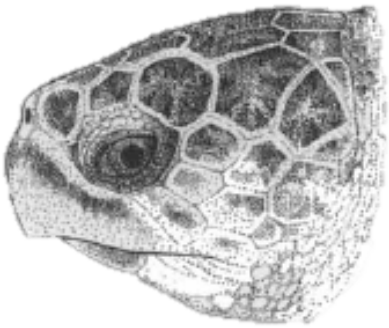
3.1 Olive Ridley Sea Turtle (V)

Local names: Penyu ridel



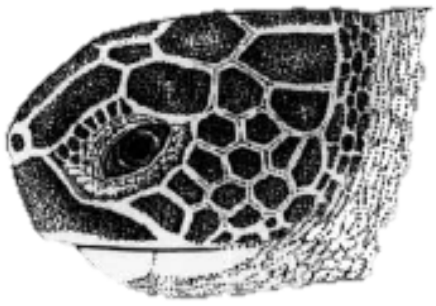
3.2 Loggerhead Sea Turtle (E)

Local names: Penyu tempayan

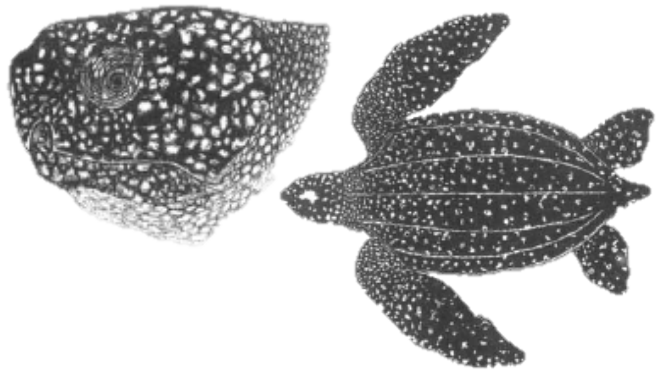


3.3 Green Sea Turtle (E)

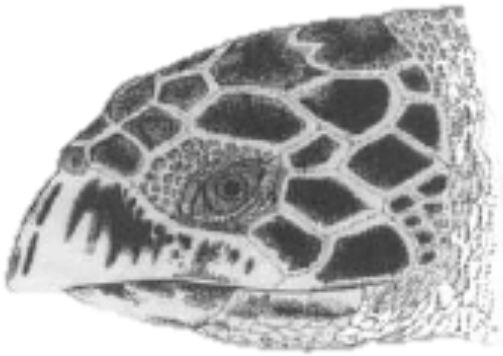
Local names: Penyu hijau



3.4 Leatherback Turtle (CE)
Local names: Penyu belimbing
- Leathery
- *5 long ridges*



3.5 Hawksbill Sea Turtle (CE)
Local names: Penyu sisik



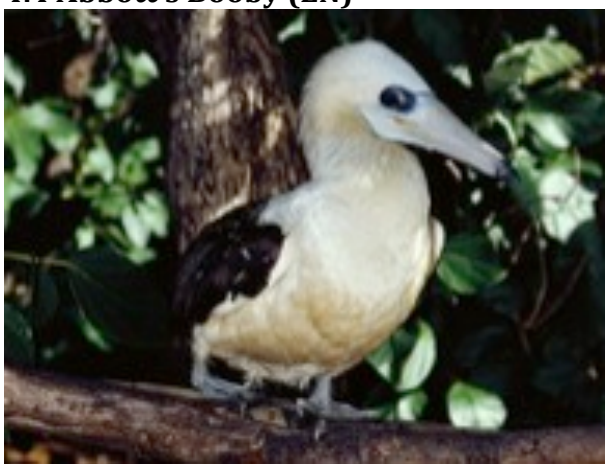
3. Birds – ID

4.1 Barau's Petrel (EN)

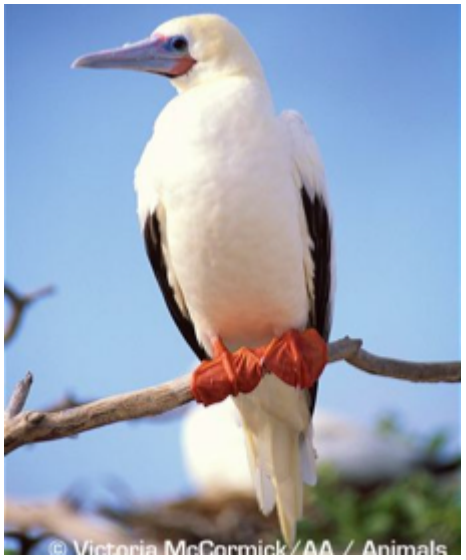
4.2 Bulwer's Petrel (LC)

4.3 Matsudaira's Storm-petrel (DD)

4.4 Abbott's Booby (EN)

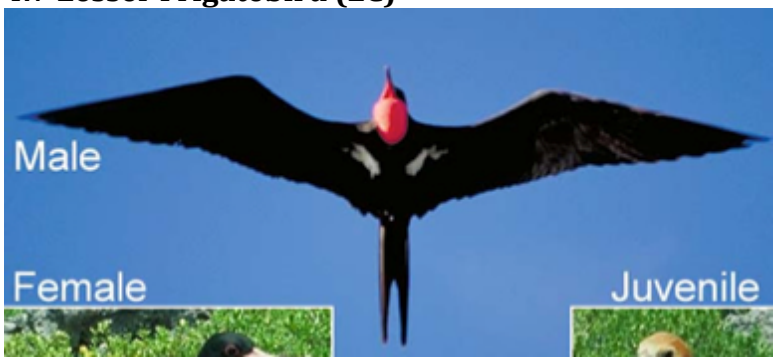


4.5 Red-footed Booby (LC)



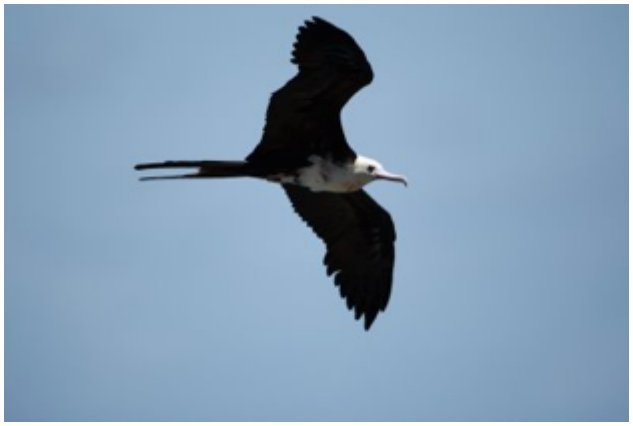
4.6 Masked Booby (LC)

4.7 Lesser Frigatebird (LC)



4.8 Christmas Island Frigatebird (CE)

4.9 Greater Frigatebird (LC)



4.10 Chinese Crested Tern (CE)

4.11 Bridled Tern (LC)

4.12 Aleutian Tern (LC)

ANNEX V: EXCEL SHEET FOR SUBMISSION OF ETP DATA

Below an example of a filled-in excel sheet, containing answers of ETP questionnaire 2.0.

Kapal / No	Pewawancara	Tanggal	1 Umur	2 Sudah berapa lama bekerja	3 Jabatan terakhir	*Jiki lain*
AIR ZAM-ZAM	WILDAN	19-Dec-12	44	27	KAPTEN	

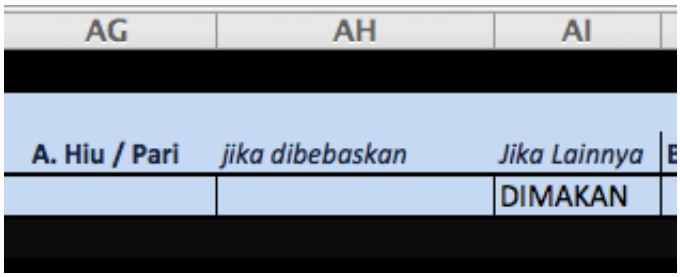
COMMENTS:
NELAYAN JUJUR DAN SERIUS MEMBERIKAN INFORMASI

4. Apakah anda melihat			
A. Hiu / Pari	B. Lumba-lumba/Paus	C. Penyu	D. Burung
YA	YA	YA	YA

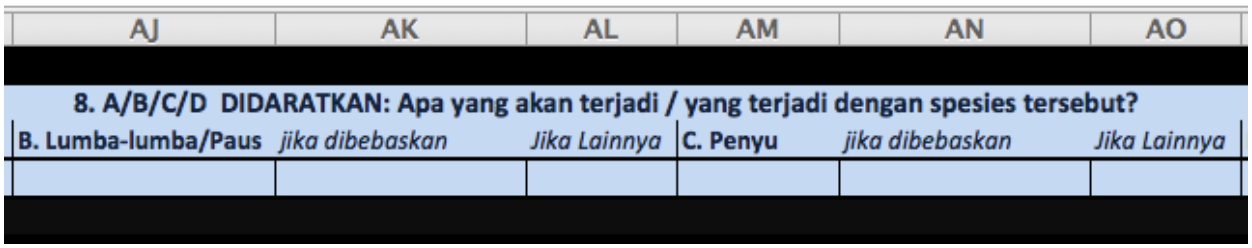
JIKA 4. = YA			
5. A/B/C/D - Apakah ada interaksi			
A. Hiu / Pari	B. Lumba-lumba/Paus	C. Penyu	D. Burung
YA	TIDAK	TIDAK	TIDAK

JIKA 5. = YA							
6. A/B/C/D - Berapa banyak yang berinteraksi dengan hewan ini?							
A. Hiu / Pari	*P?*	B. Lumba-lumba/Paus	*P?*	C. Penyu	*P?*	D. Burung	*P?*
1	TIDAK						

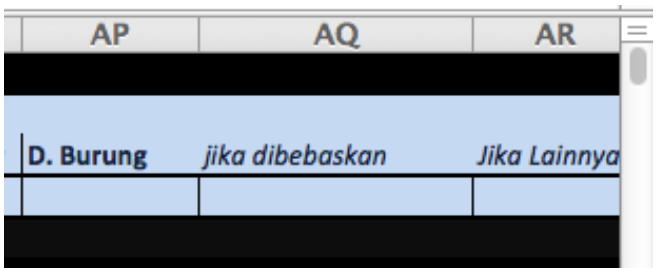
7. A/B/C/D - Berapa banyak yang didaratkan di atas kapal?							
A. Hiu / Pari	*P?*	B. Lumba-lumba/Paus	*P?*	C. Penyu	*P?*	D. Burung	*P?*
1	TIDAK						



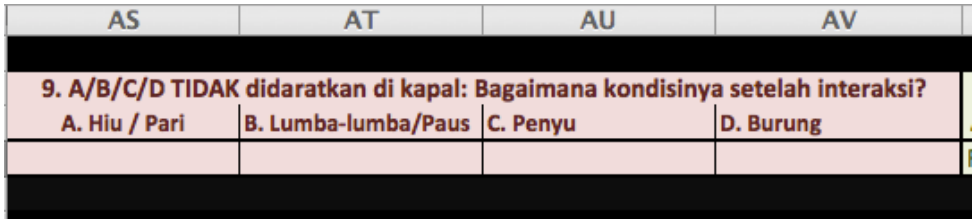
AG	AH	AI
A. Hiu / Pari	*jika dibebaskan*	*Jika Lainnya*
		DIMAKAN



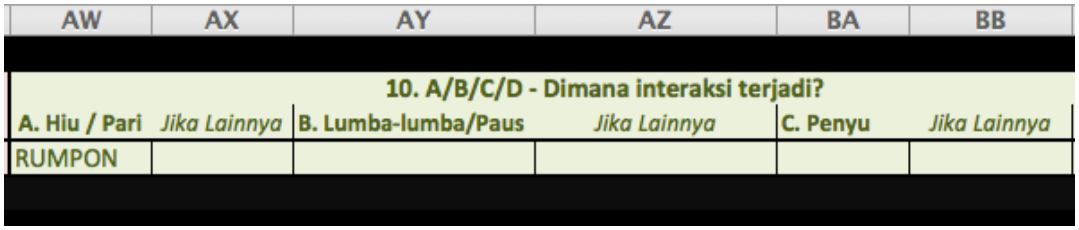
AJ	AK	AL	AM	AN	AO
8. A/B/C/D DIDARATKAN: Apa yang akan terjadi / yang terjadi dengan spesies tersebut?					
B. Lumba-lumba/Paus	*jika dibebaskan*	*Jika Lainnya*	C. Penyu	*jika dibebaskan*	*Jika Lainnya*



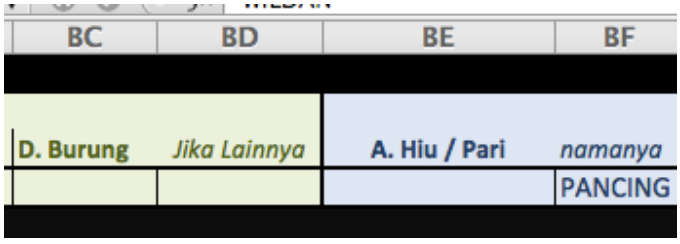
AP	AQ	AR
D. Burung	*jika dibebaskan*	*Jika Lainnya*



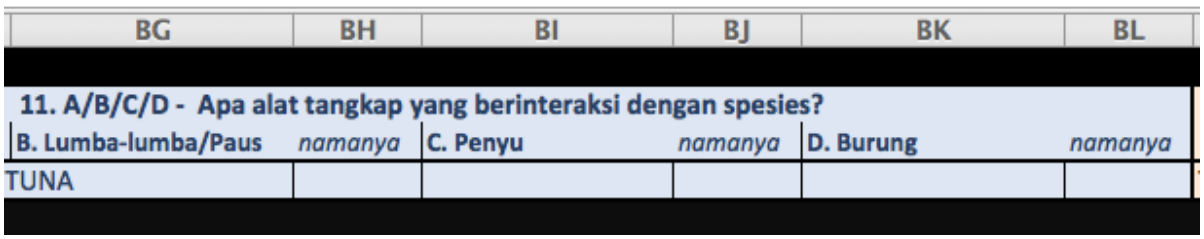
AS	AT	AU	AV
9. A/B/C/D TIDAK didaratkan di kapal: Bagaimana kondisinya setelah interaksi?			
A. Hiu / Pari	B. Lumba-lumba/Paus	C. Penyu	D. Burung



AW	AX	AY	AZ	BA	BB
10. A/B/C/D - Dimana interaksi terjadi?					
A. Hiu / Pari	*Jika Lainnya*	B. Lumba-lumba/Paus	*Jika Lainnya*	C. Penyu	*Jika Lainnya*
RUMPON					



BC	BD	BE	BF
D. Burung	*Jika Lainnya*	A. Hiu / Pari	*namanya*
			PANCING



BG	BH	BI	BJ	BK	BL
11. A/B/C/D - Apa alat tangkap yang berinteraksi dengan spesies?					
B. Lumba-lumba/Paus	*namanya*	C. Penyu	*namanya*	D. Burung	*namanya*
TUNA					

BM	BN	BO	BP
12. A/B/C/D - Apakah anda tahu nama spesiesnya?			
A. Hiu / Pari	B. Lumba-lumba/Paus	C. Penyu	D. Burung
TIDAK			

BQ	BR	BS	BT	BU	BV	BW	BX
JIKA 12. YA							
13. A/B/C/D - Tulis nama spesies							
A. Hiu / Pari	*Seberapa yakin:*	B. Lumba-lumba/Paus	*Seberapa yakin:*	C. Penyu	*Seberapa yakin:*	D. Burung	*Seberapa yakin:*

BY	BZ	CA	CB	CC	CD	CE	CF
14. A/B/C/D Apakah spesies tersebut ada dalam panduan identifi							
A.5 Hiu / Pari	*Jika ya:*	*Seberapa yakin:*	B.5 Lumba-lumba/Paus	*Jika ya:*	*Seberapa yakin:*	C.5 Penyu	*Jika ya:*
YA	1.5 FOSSIL SHARK						

CG	CH	CI	CJ
asi?			
Seberapa yakin:	D.5 Burung	*Jika ya:*	*Seberapa yakin:*

ANNEX VI: VESSEL LIST BONE

DATA KAPAL YANG AKTIF BONGKAR DI MINI PLANT H. ANDI JAHI

DIKUMPULKAN OLEH TEAM ANOVA - BONE 2012

NO	NAMA KAPAL	NAMA KAPTEN	ASAL	KAPASITAS MESIN	GT KAPAL	PEMILIK / PUNGGAWA	VERIFIKASI SURAT KAPAL
1	AINUN	HARDI	CUMPAE	22-24	2	IBU CAKKA	
2	AMAL JAYA	SUMAJI	CUMPAE	300-22	2	IBU HJ. NARE	
3	AMAN JAYA	ARIFIN	CUMPAE	300-22	2	IBU HJ. NARE	
4	C 59	RUSTANG	CUMPAE	24-24	2	IBU CAKKA	
5	BAYU PUTRA	BASRI	CUMPAE	24-24	2	PAK AMBO	
6	BUNGA CENGKEH	HASAN	CUMPAE	300-24	2	IBU CAKKA	
7	DANIL	PUDDING	CUMPAE	24-28	3	PAK AMBO	
8	HAMLIA	ILHAM	CUMPAE	24-24	2	PAK AMBO	
9	MATAHARI TERBIT	TAHANG	CUMPAE	300	3		
10	MUSDALIFA	ACO	CUMPAE			H. ANDI JAHI	
11	NUR LISA	ASIS	CUMPAE	24-22	2	IBU RI	
12	TAMALIA		CUMPAE	24-24	3		
13		UDIN	CUMPAE	24-28	2	PAK AMBO	
14		SAENAL	CUMPAE	26	2	H. ANDI JAHI	
15		DG.PATAPPA	CUMPAE			H. ANDI JAHI	
16	ARSTYANANDA		LAPECCE	20-23	2		
17	ASWAR 89		LAPECCE	180	3		
18	BUAH MIMPI	AMI	LAPECCE	24 - 22	2	H. ANDI JAHI	
19	ERNI JAYA	BAHTIAR	LAPECCE	20-23	2	PA NURDIN	
20	FAISAL 89	RUDDING	LAPECCE	24-300	2	H. ANDI JAHI	
21	FAREL	LU/DG.MASERONG	LAPECCE	24-16	2	H. ANDI JAHI	
22	KRISTAL		LAPECCE	22-24	2		
23	MULTASANG	CATI	LAPECCE	22 - 22	2	H. ANDI JAHI	
24	MUSDALIFA	LUKMAN	LAPECCE	24	2	H. ANDI JAHI	
25	MUSDALIFA 02	AKMAL	LAPECCE	300	2	H. ARIFIN	
26	MUSDALIFA 89	SUDI MAHI	LAPECCE	24	2	H. ANDI JAHI	
27	NANDA 89	ARAS	LAPECCE	24-22	2	MUMMU	
28	PAULINA	M. TANG	LAPECCE			PAK NURDIN	
29	PUTRA MAKASAR	DG. BUMBUNG	LAPECCE		2	PAK NURDIN	
30	RAODA	PIRMAN	LAPECCE	24-28	2	H. ANDI JAHI	
31	SAPUTRA		LAPECCE	24	2		
32	SENTOSA		LAPECCE	25-300	3		
33	SURYANI JAYA	ATTUNG	LAPECCE			PAK NURDIN	
34	USAHA BARU		LAPECCE	23-16-12	2		
35		BASRI	LAPPECE			SEYYENG	
36		AMBO SAKI	LAPPECE			SEYYENG	
37		ABIDING	LAPPECE			SEYYENG	
38		SUKI	LAPECCE	24	2	H. ANDI JAHI	
39		JUDDIY	LAPECCE			H. ANDI JAHI	

40		ALIMUDDIN	LAPECCE			H. ANDI JAHI	
41		LAGU	LAPECCE			H. ANDI JAHI	
42		LIAS	LAPECCE			H. ANDI JAHI	
43		ALIMUDDIN	LAPECCE			H. ANDI JAHI	
44		H. SUDIRMAN	LAPECCE			H. ANDI JAHI	
45		WAHAB	LAPECCE			H. ANDI JAHI	
46		SAMSUL BAHRI	LAPECCE			PAK NURDIN	
47		MADE ALI	LAPECCE			PAK NURDIN	
48		A. MAHMUD	LAPECCE			PAK NURDIN	
49		UDIS	LAPECCE		2	PAK NURDIN	
50		ANDI RUSTAM	LAPECCE			PAK NURDIN	
51		SUBHAN	LAPECCE			MUMMU	
52		JAPARE	LAPPECE			H.ARIFIN	
53		SUDI	LAPPECE			H. ARIFIN	
54	AISYAH		LONRAE	300-300	3		
55	FATMA WATI		LONRAE	24-30	2		
56	JABAL RAHMAH	MAIL	LONRAE	24-300	3	H. ANDI JAHI	
57	RESKI 01	BURHAN	LONRAE	300	5	H. ANDI JAHI	
58	RESKINA	SUKIRMAN	LONRAE	300-300	4	H. ANDI JAHI	
59		BAKRENG	LONRAE	26-26	2	H. ANDI JAHI	
60		AMBO	LONRAE	24	5	H. ANDI JAHI	
61			LONRAE			H.RESMI	
62	AIR MUDA	IWAN	PENYULA			PAK BEDU	
63	CINTA MEGA	CAKUR	PENYULA			PAK BEDU	
64	HIKMAH JAYA	BUSTAN	PENYULA			PAK BEDU	
65	INTAN	SALAHUDIN	PENYULA			PAK BEDU	
66	LASKAR	JAFAR	PENYULA			PAK BEDU	
67	MASNAJAYA 01	MUCHTAR	PENYULA			PAK BEDU	
68	MASNAJAYA 02	MANSYUR	PENYULA			PAK BEDU	
69	MUSDALIAH	AMBO	PENYULA			BURHAN	
70	PADECENGI 01	SANDI	PENYULA			PAK BEDU	
71	PADECENGI 02	ANSAR	PENYULA			PAK BEDU	
72	PADECENGI 03	ARDI	PENYULA			PAK BEDU	
73	PAREDEANG	USMAN	PENYULA			PAK BEDU	
74	PATRIA	SYAHRUDIN	PENYULA			SYAHRUDIN	
75	PUTRA KAJANG	RUDDING	PENYULA			PAK BEDU	
76		SULTAN	PENYULA			PAK BEDU	
77		AHMAD	PENYULA			PAK BEDU	
78		RASYID	PENYULA			PAK BEDU	
79		NASRON	PENYULA			PAK BEDU	
80	AL ANFAL	UNDING	TIPPULUE	300-300-230	3	H. ANDI JAHI	
81	AL MUKARAMA	PUDDING /BAHRI	TIPPULUE			H. ANDI JAHI	
82	AL MUNAWARA	ASI & KAHAR	TIPPULUE			H. ANDI JAHI	
83	ASISIYAH 89	PANDUE	TIPPULUE	30	4	H. ANDI JAHI	SURAT LENGKAP
84	BUNGA HARAPAN	H.UCI / H. TANGKE	TIPPULUE	300-300	4	H. ANDI JAHI	
85	HARAPAN JAYA	CULLA	TIPPULUE	330-330	3	H. ANDI JAHI	
86	HARAPAN BARU	HENI	TIPPULUE	33-27	6	H. TAGI /	

						KADIR	
87	HARATULISAN	JANGGO LAHI	TIPPULUE			H. ANDI JAHI	
88	HAWA SURGA	SEBBI	TIPPULUE	45	6	H.TAGI /KADIR	
89	JABAL HUD	SABA/JUDIN	TIPPULUE			H. ANDI JAHI	
90	MAMMINASAE		TIPPULUE	220-300	6		
91	MINASA DECENG	SUNUSI HJ.TANG	TIPPULUE	300-300	4	H. ANDI JAHI	
92	MINASA INDAH	KAMA	TIPPULUE			H. ANDI JAHI	
93	MINASA MEKKA	ELANG	TIPPULUE	33 - 180	5	H. ANDI JAHI	
94	MISVALAH	MANSYUR	TIPPULUE	300-300	5	H. ANDI JAHI	
95	MULTASAM	SAEPUL	TIPPULUE			H. ANDI JAHI	
96	PUTRA BONE	BIBI / SUKI MANE	TIPPULUE	300 - 300	3	H. ANDI JAHI	
97	RAHMA ILAHI	REMAN	TIPPULUE	220-300	4	H. ANDI JAHI	
98	REMAJA INDAH	RUSE	TIPPULUE			H. ANDI JAHI	
99	SETIA KAWAN	BABA/RUSMAN	TIPPULUE	300 - 300	3	H. ANDI JAHI	
100		H.AMBO TANG	TIPPULUE			H. ANDI JAHI	
101		SUKI/WERO	TIPPULUE			H. ANDI JAHI	
102		SUBAIR/H.JINI	TIPPULUE			H. ANDI JAHI	
103		DARWIS, HJ.ESA	TIPPULUE			H. ANDI JAHI	
104		SAMA, RAHMAT	TIPPULUE			H. ANDI JAHI	
105		HASE-JU	TIPPULUE			H. ANDI JAHI	
106		SUMAJI	TIPPULUE			SURYADI	
107	HARAPAN	MAMIN	LONRAE	29-190	2	H. JEMMA	
108	PUTRA BONE 05		TIPPULUE	30 - 30	4	H. ANDI JAHI	SURAT LENGKAP
109	MASNA 02	MUCHTAR	PENYULA		6	PAK BEDU	

ANNEX VII: ETP Data Collection Scheme

Below an example of a filled-in ETP data collection scheme.

Number	Date	Boat name	ETP	ETP collected?		Comments
1	26-12-2012	Ikan Dua		YA	NO	
2	26-12-2012	Lumba		YA	NO	
3	27-12-2012	Kapal III		YA	NO	
4	28-12-2012	Penyu		YA	NO	
5	29-12-2012	Laut Besar	ETP	YA	NO	
6	29-12-2012	Ombak		YA	NO	
7	30-12-2012	Mata hari		YA	NO	
8	30-12-2012	Bagus Air		YA	NO	
9	30-12-2012	Ikan tuna		YA	NO	
10	31-12-2012	Orang Besar	ETP	YA	NO	Fishermen direct on next trip → no time
11	02-01-2013	Paus Kuat		YA	NO	
12	02-01-2013	Kapal II		YA	NO	
13	03-01-2013	Made IV		YA	NO	
14	05-01-2013	Ketut		YA	NO	
15	05-01-2013	Agus	ETP	YA	NO	
16				YA	NO	
17				YA	NO	
18				YA	NO	
19				YA	NO	
20			ETP	YA	NO	
21				YA	NO	