Conservation Leadership Programme: Final Report

Title Page

1. CLP project ID & Project title: **CLP ID03247215 & Whale Shark Indonesia Project**
2. Host country, site location and the dates in the field: **Indonesia,** Talisayan East Kalimantan (August-October 2015), Weh Island Aceh (October-November 2015 & February 2016), Parigi Moutong Central Sulawesi (December 2015-January 2016), Banggai Kepulauan Central Sulawesi (January 2016), Probolinggo East Java (January-March 2016), Botubarani Gorontalo (April 2016), Bolsel North Sulawesi (May 2016).
3. Names of any institutions involved in organising the project or participating: **Whale Shark Indonesia Project, Bogor Agricultural University, WWF-Indonesia.**
4. The overall aim summarised in 10–15 words: **To better understand the distribution, population characteristic and status of whale shark in Indonesia**
5. Full names of author(s): **Mahardika Rizqi Himawan, Casandra Tania, Sheyka Nugrahani Fadela, Aditya Bramandito.**
6. Permanent contact address, email and website: **Whale Shark Indonesia Office**, Gedung Marine Center Lt. 5, Departemen Ilmu dan Teknologi Kelautan IPB, Jl. Agathis No. 5 Kampus IPB Darmaga Bogor, Indonesia 16680, hiupausid@gmail.com, www.whalesharkindonesia.org.

The following information should be included in the body of the report:

Table of Contents

Include a list of contents, with section titles, subtitles and page numbers

Project Partners & Collaborators

1. Government
   a. Directorate of Conservation and Marine Biodiversity, Ministry of Marine Affairs and Fisheries. Issued a project support letter No. B.1394/KP3K.2/VII/2015 and assigned to member of the Sharks and Rays Working Group also pool of expert threatened species working group of the Indonesia CTI-CFF (Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security) National Coordinating Committee (NCC).
   b. Center of Marine and Coastal Resource Management (BPSPL) Pontianak. Collaborated on whale shark data sharing, monitoring, workshop and training at Talisayan East Kalimantan.
   c. Center of Marine and Coastal Resource Management (BPSPL) Makassar. Issued a project support letter No. 019/PRL/BPSPL.04/TU.210/I/2016 and collaborated on whale shark data sharing, monitoring, workshop and training at Parigi Moutong Central Sulawesi and Botubarani Gorontalo.
   d. Center of Marine and Coastal Resource Management (BPSPL) Padang. Collaborated on whale shark data sharing on Weh Island Aceh.
   e. Center of Marine and Coastal Resource Management (BPSPL) Denpasar. Collaborated on whale shark data sharing, monitoring, workshop and training at Probolinggo East Java.
   f. Berau District Marine and Fisheries Office. Collaborated on whale shark workshop and training at Talisayan East Kalimantan.
   g. Sabang City Marine and Fisheries Office. Collaborated on whale shark data sharing, workshop and training at Weh Island.
   h. Probolinggo District Marine and Fisheries Office. Collaborated on whale shark data sharing, workshop and training at Probolinggo East Java.
   i. Probolinggo City Supervision of Marine and Fisheries Resources Unit. Collaborated on whale shark monitoring at Probolinggo East Java.
   j. Gorontalo Province Marine and Fisheries Office. Collaborated on whale shark data sharing, monitoring, workshop and training at Parigi Moutong Central Sulawesi and Botubarani Gorontalo.

2. University
   a. Biodiversity and Biosystematics Laboratory, Marine Science and Technology Department, Bogor Agricultural University. Collaborated in genetic research and analysis.
   b. Fisheries and Marine Science Faculty, Mulawarman University. Collaborated on whale shark research through bachelor student Internship at Talisayan East Kalimantan.
   c. Marine Science Study Program, Marine and Fisheries Faculty, Syah Kuala University. Collaborated on whale shark research through bachelor student Internship at Weh Island Aceh.

d. Water Resources Management Department, Bogor Agricultural University. Collaborated on whale shark research through bachelor student research at Probolinggo East Java.
e. Marine Science Program Study, Fisheries and Marine Science Faculty, Brawijaya University. Collaborated on whale shark research through bachelor student research at Probolinggo East Java.
f. Maritime and Fisheries Faculty, Gorontalo Muhammadiyah University, Collaborated on whale shark monitoring, workshop and Training.

3. NGO
   a. WWF-Indonesia. Project Partner.
   b. WWF-Indonesia Aceh Program. Collaborated on whale shark data sharing, monitoring, workshop and training at Weh Island Aceh.
   c. WCS-Marine Program Aceh Office. Collaborated on whale shark data sharing, monitoring, workshop and training at Weh Island Aceh.

4. Local Community, Diving Club and Dive Resort
   a. Talisayan village fishermen association. Helped in providing vessel for monitoring at Talisayan East Kalimantan site.
   b. Scuba Junkie Sangalaki Resort. Collaborated on whale shark data sharing, monitoring and worksop at Talisayan East Kalimantan site.
   c. Rubiah Tirta Dive Center. Collaborated on whale shark data sharing and helped in providing vessel for monitoring at Weh Island Aceh site.
   d. Parigi Moutong Dive Resort. Collaborated on whale shark data sharing and helped in providing homestay and vessel for monitoring at Parigi Moutong Central Sulawesi site.
   e. Soa-soa Adventure Club. Collaborated on whale shark data sharing, monitoring and workshop at Banggai Kepulauan Central Sulawesi.
   f. Bentar Beach Tourism Management Unit. Helped in providing vessel for monitoring at Probolinggo East Java site.
   g. Miguel's Diving Center. Collaborated on whale shark data sharing at Botubarani Gorontalo site.
   h. Salvador Diving Center. Collaborated on whale shark data sharing, monitoring and workshop at Botubarani Gorontalo site.
   i. Bolsesl Diving Club. Collaborated on whale shark data sharing, monitoring and workshop at Bolsel North Sulawesi site.

Section 1:

Whale Shark Indonesia Project represents the first whale shark conservation effort in west and middle part of Indonesia, in collaboration with local governments and stakeholders. Conservation through research, transfer knowledge and awareness raising has been conducted in 4 main locations in Indonesia (Weh Island Aceh, Talisayan East Kalimantan, Parigi Moutong Central Sulawesi and Probolinggo East Java) and 3 additional locations (Luwuk-Banggai Kepulauan Central Sulawesi, Botubarani Gorontalo and Bolsel North Sulawesi), which is close to the main locations. A total of 77 individual whale sharks were photographically identified from each site, were dominated by immature male individuals. The whale sharks were seen on the surface as feeding behavor and genetically close to each other. Moreover, more than 102 individuals were identified through intregated data and anecdotal informations collection. The

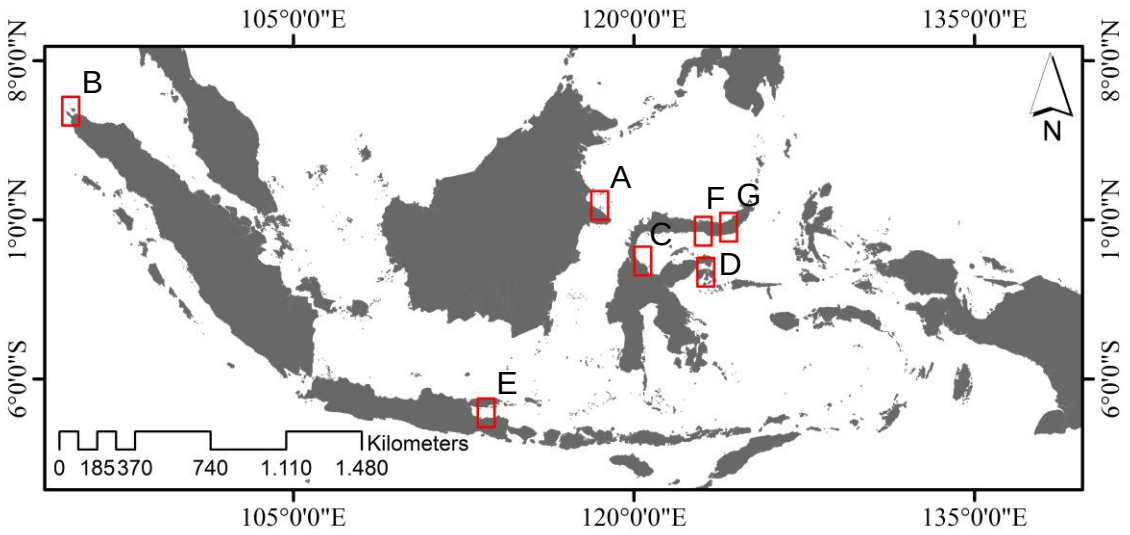
data suggests that Indonesia waters serve as important habitats for young whale sharks life. Whale shark information network has been formed as a result of training and workshop. Leds by local government, the network continues conservation efforts and establishes an acessible database center systematization. Threats i.e. zero by-catch, tourism COC and its implementation is a challenge for the network. In addition, outreach has also been produced for awareness raising to local-national community.

Introduction (max 500 words)

Whale shark (*Rhincodon typus*), the largest fish known on earth, can grow up to 18 m or more (Compagno, 2001). Despite large-size, whale shark lives as a filter feeder and mostly consuming microscopic and small prey i.e. plankton, sergestid shrimps, small fishes, fish eggs and coral spawn (Himawan et al., 2015; Rohner *et al*., 2013; Motta *et al*., 2010; Heyman *et al*., 2001). Whale shark is a slow swimmer (Motta *et al*., 2010) and live in tropical up to subtropical waters (Rowat and Brooks 2012; Compagno, 2001) including Indonesia waters (Himawan *et al*., 2015).

Whale shark have been listed as endangered species in the IUCN Red List. Directed fisheries, significant bycatch fisheries and some bias i.e aggregation dominated by juvenille in data trend and the absence of information on life stages are inferred to represent a decline in the population level (Pierce and Norman, 2016). In Indonesia, whale shark is a full protected species based on the Ministerial Decree No. 18 Year 2013. However, studies regarding whale shark are still rare. The lack of knowledge about whale shark prevents its conservation efforts in Indonesia.

This project is a representation of the first whale shark conservation effort in west and middle part of Indonesia through research, transfer knowledge and awareness rising. In collaboration with governments and stakeholders, project activities have been carried out at national and local levels; Talisayan East Kalimantan, Weh Island Aceh, Parigi Moutong Central Sulawesi, Banggai Kepulauan Central Sulawesi, Probolinggo East Java and Botubarani Gorontalo (Picture 1). Selection of the sites was based on whale shark sightings periodically information, such as from previous research result, fishermen experiences and netizen status in social media. Offsite information collection was also undertaken to identify unknown whale shark habitats. Population structure, behavior, genetic connectivity and threat of whale sharks are better understood after the project. Results of the project have described the general function of Indonesian waters in the life stage of whale shark. Moreover, data result becomes part of the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF) assessment report.



Picture 1. Site Locations: A.Talisayan East Kalimantan, B. Weh Island Aceh, C. Parigi Moutong Central Sulawesi, D. Banggai Kepulauan Central Sulawesi, E. Probolinggo East Java, F. Botubarani Gorontalo and G. Bolsel North Sulawesi.

Whale shark information network has also been formed led by governments; BPSPL Pontianak unit Balikpapan for East Kalimantan area, BPSPL Makassar for Tomini Bay area, BPSPL Denpasar unit Surabaya for east Java area and BPSPL Padang for Sumatra area. Reporting of whale shark sighting or stranded has been systematized in an effort to continue conservation efforts through local stakeholders. Online data base, www.whalesharkindonesia.org has been and is still being developed as a collected information center. Outreach about whale shark has been produced such as factsheet, poster, book, training kit, social media (facebook.com/whalesharkindonesia), newspaper and online news articles. The main threat of whale shark known through the project, i.e. irresponsible tourism, has been submitted to governments for local COC (code of conduct) tourism development. Continuation of the Whale Shark Indonesia Project are to assist the COC implementation, develop better online database, continue biology ecology research and raise awareness to minimize the whale shark threats.

Project members

1. Mahardika Rizqi Himawan, M.Sc
   a. Relevant qualifications, Master in Marine Science
   b. Experience, Project leader, Whale Shark Indonesia Project (2015-now), Research assistant, Laboratory of biodiversity and biosystematics, Bogor Agricultural University (2014-2015), Research assistant, Laboratory of Scientific Diving, Bogor Agricultural University (2013-2014), Intern, WWF-Indonesia Cenderawasih Bay Project (2013)
   c. Current occupation and employer, project leader, Whale Shark Indonesia Project
   d. Main roles in the project, project leader, species surveyor, data analyst, capacity building trainer, advocacy to national-local authorities

2. Casandra Tania, M.Sc
   a. Relevant qualifications, Master in Marine Biodiversity and Conservation

b. Experience, Marine Species Officer, WWF-Indonesia (2012 to now), Intern, WWF-Indonesia (2011-2012), Volunteer, Coral Triangle Center (2011).
c. Current occupation and employer, marine species officer, Coral Triangle Initiative Directorate, WWF-Indonesia
d. Main roles in the project, species surveyor, data analyst, capacity building trainer, advocacy to national-local authorities

3. Sheyka Nugrahani Fadela, M.Sc
   a. Relevant qualifications, Master in Marine Mammals Science
   b. Experience, Marine Species Officer, WWF-Indonesia (2017 to now), Marine Mammal Conservation Assistant, WWF-Indonesia's Coral Triangle Program (2014-2015) Social Media Coordinator, WWF-Indonesia's Communication and Advocacy (2013-2014) Social Media Coordinator, WWF-Indonesia's Seafood Savers (2013) Field Assistant, Rare Aquatic Species of Indonesia Foundation (2012) Intern, WWF-Indonesia's Forest and Freshwater Program (2012)
   c. Current occupation and employer, marine species assistance, Coral Triangle Initiative Directorate, WWF-Indonesia
   d. Main roles in the project, social media, education, and outreach coordinator

4. Aditya Bramandito, B.Sc
   a. Relevant qualifications, Bachelor in Marine Science and Technology
   b. Experience, Research assistant, Laboratory of Scientific Diving, Bogor Agricultural University (2013-now)
   c. Current occupation and employer, master's student, Marine Science Major, Bogor Agricultural University; Research assistant, Laboratory of Scientific Diving, Bogor Agricultural University
   d. Main roles in the project, laboratory work coordinator

Section 2:

Aim and objectives (max 200 words)

The aim of the project was to better understand the distribution, population characteristic and status of whale shark in Indonesia by collecting integrated data and anecdotal information through research. Futhermore, whale shark conservation efforts can be sustained led by local stakeholders.

The Project objectives were to: 1. map foraging area, identify trend and characteristic of whale shark sightings, measure water quality and genetic study; 2. to transfer knowledge and train local authorities to conduct whale shark regular monitoring and to raise awareness about whale shark in their waters trough outreach and socialization; 3. to gather information about whale shark sightings and stranded in Indonesia waters; 4. to integrated all knowledge, experience and event related to whale shark in one database which is accessible to interested parties.

Changes to original project plan (max 200 words)
Please give details of any changes to the original project plans, including any objectives that were not fully delivered and explain how this impacted the delivery of the project. Describe how any problems were addressed and what solutions were found to deal with these issues.

Whale Shark Indonesia Project supposed to work only in 4 locations i.e. Weh Island Aceh, Talisayan East Kalimantan, Parigi Moutong Central Sulawesi and Probolinggo East Java. Sites selection were based on regularly whale shark sighting records in previous years, as representatives of western and middle parts of Indonesia. Whale shark aggregation in eastern part of Indonesia has been studied in Cenderawasih Bay. While in Weh Island, no whale sharks were recorded. This means no whale shark data in the western part of Indonesia. No whale shark were recorded in Parigi Moutong either. Then, the area was expanded to cover Tomini Bay including Luwuk-Banggai Kepulauan. As a result, sightings of whale sharks were found in Banggai Kepualauan Central Sulawesi and Botubarani Gorontalo. The data complements information in the middle part of Indonesia. Thus, only whale shark area in the western part of Indonesia is still unknown. However, the sighting and stranded information that has been collected helps to indicate the potential whale shark area in Sumatra waters. To date, we still continue to gather information to identify potential whale shark aggregation area in the western and middle part of Indonesia.

Methodology (max 500 words)

The project is divided into 3 activities; Research, transfer knowledge and raising awareness. All activities related to each other to support sustainable conservation efforts on whale sharks in Indonesia.

1. Research

   Research has been done to know the distribution, population characteristic and status of whale shark in Indonesia. Habitat identification, population structure, behavior, genetic connectivity and threat are important points to be discovered. Habitat identification has been done by collecting information from previous research result, fishermen experiences and netizen status in social media. Daily monitoring by boat was conducted to determine the structure of whale shark population at each site; Talisayan, East Kalimantan (August-October 2015), Weh Island, Aceh (October-November 2015, and February 2016), Parigi Moutong, Central Sulawesi (December 2015-January 2016), Luwuk-Banggai Kepulauan, Central Sulawesi (January 2016), Probolinggo, East Java (January-March 2016), Botubarani, Gorontalo (April 2016) and Bolsel, North Sulawesi (May 2016). The population structure was conducted by identifying sex and size range composition of whale shark found. Photographic identification (Photo ID) was done each individual found by photographing the white dot pattern on the right and left body (Himawan *et al*., 2015; Pierce, 2007). Sex has been identified by examining the presence of claspers on whale shark pelvic fins (Compagno, 2001). The whale shark size determination was estimated using a diver body as reference length (Himawan *et al*., 2015; Norman & Stevens 2007).

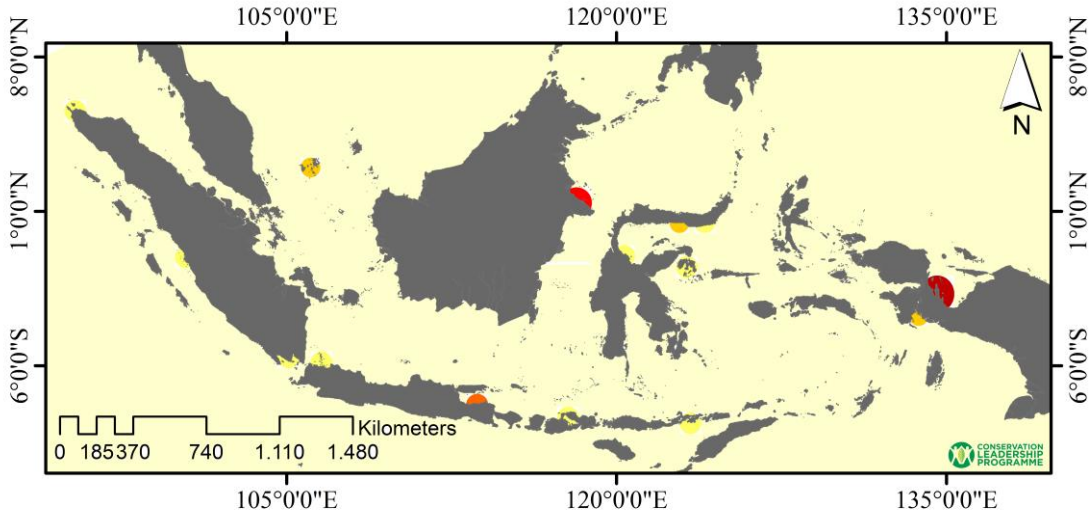
   Whale sharks behavior has been observed through its habit on the surface each site. The whale shark sighting in Talisayan water due to the catch of fishing platform “bagan” as feeding behaviour. Fish catch was obtained by interviewing fishermen while observation from the lift net to support the data (one box = 30kg) (Himawan et al., 2015). In Probolinggo, the abundance of zooplankton affected appearance of whale shark with the same behaviour. Plankton sampling was taken using plankton net (diameter 30cm; mesh size 200micron) horizontally from a depth of 10 meters (Omori dan Ikeda 1992). Furthermore, plankton identified under microscope refers to Yamaji book (1976). Feeding

activities through tourism in Botubarani waters affected appearance of whale shark. The amount of food given to whale sharks was recorded at morning and afternoon time. Genetic extraction was done using GSYCn extraction kit for each sample collected. Software Mega (alignment and sequence edit), dnasp (haplotype), Arlequin (amova) and Haplotype (connectivity) were used for analysis. Genetics study was conducted in Bogor Agricultural University (August 2016-January 2017).

2. Transfer knowledge and awareness raising
   Transfer knowledge through workshop and training has been done each site while research; Talisayan (19-25 August 2016), Weh Island (27 October 2015), Parigi Moutong (12 January 2016), Luwuk-Banggai Kepulauan (3 January 2016), Probolinggo (21 March 2016), Botubarani (23-25 August 2016), Bolsel (28 May 2016) also national level (6 April 2017). Lectures, monitoring training and data analysis of whale shark were attended to local government and stakeholders. Then, the network was formed for sustainability conservation efforts led by local government. Awareness raising has been done by producing conservation outreach (factsheet, poster, book, training kit, website, social media and news articles).

Outputs and Results (max 500 words)

1. Research
   The entire of Indonesia waters is a suitable habitat for whale sharks (Compagno, 2001). Based on research result, the presence of whale sharks periodically is known in several locations (Picture 2). Results of integrated data and anecdotal information collection are presented in Table 1.

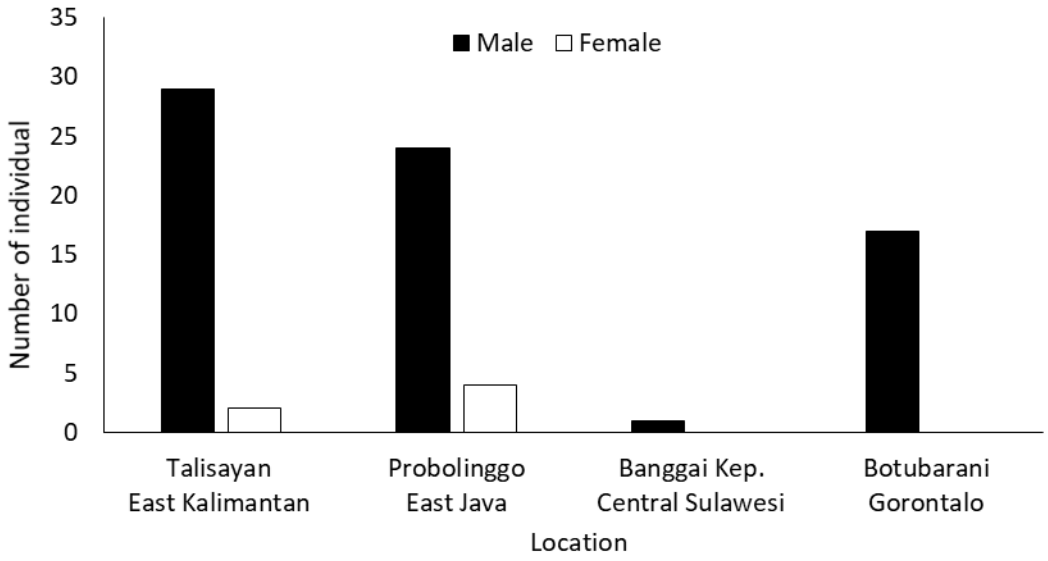


Picture 2. Whale shark distribution known in Indonesia; (○) whale shark habitat (Compagno, 2001), (○) 1-10 individuals identified, (○) 11-20 individuals identified, (○) 21-30 individuals identified, (○) 31-40 individuals identified, (○) >41 individuals identified.

Tabel 1. Results of intregated data and anecdotal informations collection

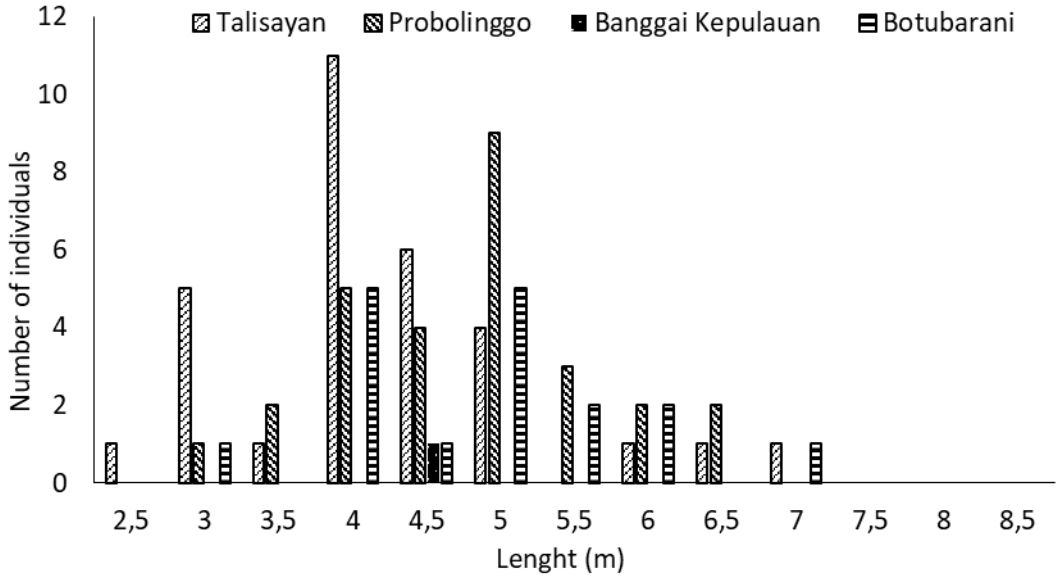
Location	Number of identified individuals	Source
1. Cenderawasih Bay	131	WWF-Indonesia
2. Talisayan East Kalimantan	31	Whale Shark Indonesia Project
3. Probolinggo East Java	28	Whale Shark Indonesia Project
4. Botubarani Gorontalo	17	Whale Shark Indonesia Project
5. Kaimana Papua	20	Conservation International
6. Anambas Kepulauan Riau	11	Nautica Diving; Whale Shark Indonesia Project
7. Lembata Nusa Tenggara Timur	10	Misool Baseftin
8. Weh Island Aceh	2	Rubiah Tirta Dive Center; Whale Shark Indonesia Project
9. Lampung bay	2	Social media; Whale Shark Indonesia Project
10. Pesisir Selatan West Sumatera	2	BPSPL Padang; Whale Shark Indonesia Project
11. Seribu Islands Jakarta	5	Social media; Diver Clean Action; Whale Shark Indonesia Project
12. Sumbawa Nusa Tenggara Barat	1	NTB Pearling Company; Whale Shark Indonesia Project
13. Parigi Moutong Central Sulawesi	2	Parigi Moutong Dive Resort; Whale Shark Indonesia Project
14. Banggai Kepulauan Central Sulawesi	1	Soa Soa Adventure; Whale Shark Indonesia Project
15. Bolsel North Sulawesi	1	Bolsel Diving Club; Whale Shark Indonesia Project
Total of Identified whale sharks in Indonesia	263	Whale Shark Indonesia Project (102) other organization (161)

Research results from project site locations (direct research), a total of 77 individual whale sharks were photographically identified between August 2015 and April 2016, with 29 males (93.33%) and 2 females (6.37%) in East Kalimantan, 24 males (85.71%) and 4 females (14.29%) in East Java, 1 male (100%) in Central Sulawesi, 17 males (100%) in Gorontalo (Picture 3).



Picture 3. Whale shark frequency based on sex (male and female) at each site locations

The result of whale shark sizes in site locations were dominated by immature individual, with a size range of 2.5–8.5 meter (Picture 4). Dominance of male and juveniles population recorded, suggests that site locations area serves as an important habitat for young male whale sharks. The total length average of whale sharks identified in site locations was 4.27 ± 1.065 m, smaller than neighbouring countries Cebu Philippines (5.34±1.325 m)(Araujo *et al.,* 2014) and Ningaloo Reef Australia (5.34±1.325 m)(Norman and Stevens, 2007) (Picture 5). Further research is needed to find out the relationship between whale sharks in Indonesia, Philippines and Australia.



Picture 4. Whale shark frequency based on total length (m) at each site locations

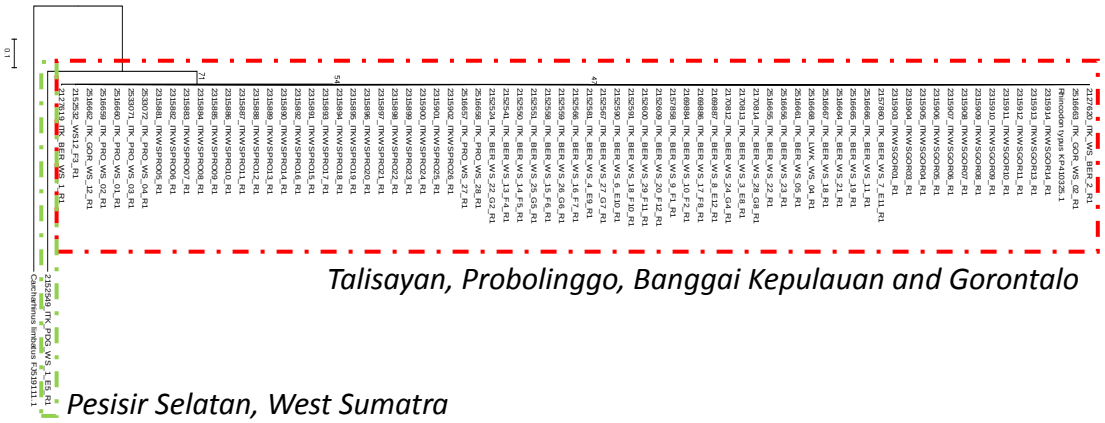
Picture 5. Comparison of whale sharks total length average in the middle part of Indonesia, Cebu Philippines and Ningaloo Reef Australia

The whale sharks identified in Talisayan water due to the catch of bagan (fishing platform) as feeding behaviour. The bagan catch, especially anchovy (58%), which reached 44.980 kg during research period, affected 77 appearance of 31 identified whale sharks. In Probolinggo water, the abundance of zooplankton faced copepods ranged from 1952-11762 individuals/m^3 on one day during research period, affected 52 appearance of 28 identified individuals with the same behaviour. Feeding activities through tourism in Botubarani water, affected 110 appearance of 17 individuals identified. Feeding of shell and shrimp heads averaged 98.68 kg/day made whale shark always come to the surface. The entangled whale shark in Banggai Kepulauan, allegedly related to the potential of large pelagic fisheries such as *Thunnus sp*. Whale shark allegedly ate what the fish eat, such as zooplankton or fish with a smaller size. The behavior of whale sharks at each site locations are presented in Picture 6.

A B C D

Picture 6. Whale shark surface behavior: A. Ate small fishes from bagan catch, B. Ate Zooplankton in the surface, C. Ate food given by tourist, D. Entangled in fishermen net

Genetic connectivity of whale shark populations found at site locations (Talisayan, Banggai Kepulauan, Probolinggo and Gorontalo) was close. The phylogenetic tree shown in Picture 7, assumes that whale sharks found in site locations were still in one population. Interestingly, the whale sharks found in Pesisir Selatan West Sumatra (Himawan data) was genetically different from the site locations. Further research is needed to find out the genetics relationship between whale sharks in Indonesia, Indian and Pacific Ocean populations.



Picture 7. Phylogenetic tree of whale shark in site locations compared with Pesisir Selatan West Sumatra

Threats of whale sharks at site locations has been identified through the presence of scars. Percentage of scars on the whale shark body was 86.67% (n=31) in East Kalimantan, 7.14% (n=28) in Probolinggo and 58.82% (n=17) in Gorontalo, were caused by fishing and tourism activities by humans. Entangled whale shark by fishing nets in Banggai Kepulauan is a threat of population decline. The threat is a challenge in protecting protected species in Indonesia.

2. Transfer knowledge and awareness raising

Transfer knowledge through workshop and training has been done each site while research. List participants were presented in Table 2 where all of them become members of whale shark information network. Awareness raising also has been done by producing conservation outreach (factsheet, poster, book, training kit, website, social media and news articles) were presented in Table 3.

Table 2. Participants list of workshop and training

Location	Number of Participants	Participants list
Training 1. Talisayan East Kalimantan	10	BPSPL Pontianak, WWF-Indonesia, Bogor Agricultural University and Mulawarman University, Samarinda Sabang Fisheries and Marine

2. Weh Island Aceh	8	Department, WCS Sabang, WWF-Indonesia and Syah Kuala University Student
3. Parigi Moutong Central Sulawesi	4	BPSPL Makassar unit Palu and Parigi Moutong Dive Resort.
4. Luwuk-Banggai Kepulauan (Central Sulawesi)	20	Luwuk Search and Rescue Agency, Luwuk Diving Club and Luwuk-Muhammadiyah University Student.
5. Probolinggo East Java	9	Probolinggo City Supervision of Marine and Fisheries Resources Unit, Brawijaya University Student, Bunda Mulia University Student and Bogor Agricultural University Student
6. Botubarani Gorontalo	20	BPSPL Makassar, local government, local university and local community
7. Bolsel North Sulawesi	9	Bolsel Diving Club
Total	80 Participants	
Workshop		
1. Talisayan East Kalimantan	31	BPSPL Pontianak, Berau Marine Affairs and Fisheries Agency, NGO, local university and community (especially fishermen).
2. Weh Island Aceh	25	Lecturers and students of Syah Kuala University Aceh
3. Probolinggo East Java	23	BPSPL Denpasar unit Surabaya, Probolinggo Marine Affairs and Fisheries Agency, NGO, local government, university and community (especially fishermen).
4. Botubarani Gorontalo	20	BPSPL Makassar, Probolinggo Marine Affairs and Fisheries Agency, NGO, local government, university, dive center and local community
5. National, Jakarta	24	Directorate of Conservation and Marine Biodiversity-Ministry of Marine Affairs and Fisheries (MMAF), Research and Human Resources Agency for Marine and Fisheries-MMAF, Indonesia Institute of Sciences, Directorate

		of Supervision of Marine and Fisheries Resources-MMAF, NGO (WWF-Indonesia, TNC, RARE) GIZ-Germany for Indonesia
Total	123 Participants	

Tabel 3. Conservartion outreach that has been produced

Outreach Type	Outreach List
1. Factsheet	Factsheet of whale shark in Talisayan, Factsheet of whale shark in Probolinggo and Factsheet of whale shark in Gorontalo
2. Poster	Whale shark distribution poster and awareness poster; boat traffic, keep your distance I, dont overcrowd, no flash, easy prey and keep your distance II.
3. Book	Hiu Pausku (My Whale Shak) Talisayan Edition, Hiu Pausku (My Whale Shak) Botubarani Edition and Hiu Paus di Pantai Botubarani Gorontalo (Whale shark in Botubarani Beach Gorontalo) (collaborated with BPSPL Makassar).
4. Website	www.whalesharkindonesia.org
5. Social media	facebook.com/whalesharkindonesia
6. Training kit	Whale Shark Monitoring Training Kit
7. News article	a. (English version) **Where to Find Whale Sharks in Indonesia**, www.whatsnewjakarta.com, June 19, 2017, http://www.whatsnewjakarta.com/travel-where-to-find-whale-sharks-in-indonesia/ **Missing: 17 whale sharks, last spotted in Botubarani**, The Jakarta Post, August 15 2016, http://www.thejakartapost.com/news/2016/08/15/missing-17-whale-sharks-last-spotted-in-botubarani.html **Residents ignore safeguards meant to protect whale sharks**, The Jakarta Post, July 20 2016, http://www.thejakartapost.com/news/2016/07/20/residents-ignore-safeguards-meant-protect-whale-sharks.html **Gorontalo village finds profit in shark-watching tourism**, The Jakarta Post, April 25 2016, http://www.thejakartapost.com/news/2016/04/26/gorontalo-village-finds-profit-in-shark-watching-tourism.html **Gorontalo whale shark site reopens, with new rules**, The Jakarta Post, April 18 2016, http://www.thejakartapost.com/news/2016/04/18/gorontalo-whale-shark-site-reopens-with-new-rules.html b. (Indonesian version) Printed Newspaper and Magazine only (exclude online news) **Whale Shark in Botubarani, Gorontalo [Hiu Paus di Botubarani, Gorontalo]**, Scuba Diver Australasia Ocean Planet Indonesian Edition, August 20017 edition,

	https://www.pressreader.com/indonesia/scuba-diver-indonesian/20170815/281904478285509 **2,000 Visitors Visited Whale Shark Tourism Area in Gorontalo [2.000 Pengunjung Padati Wisata Hiu Paus di Gorontalo]**, Kompas.com, 17 May 2016, http://internasional.kompas.com/read/2016/05/17/114200127/2.000.Pengunjung.Padati.Wisata.Hiu.Paus.di.Gorontalo **Revealed The Whale Shark's Mystery: Mahardika Rizqi Himawan Profile [Menyibak Misteri Hiu Paus]**, Kompas National Newspaper, 28 April 2016, http://print.kompas.com/baca/gaya-hidup/sosok/2016/04/28/Menyibak-Misteri-Hiu-Paus **Hoping for Blessings from Botubarani [Berharap Berkah Botubarani],** Kompas National Newspaper, 20 May 2016, http://print.kompas.com/baca/sains/lingkungan/2016/05/20/Berharap-Berkah-Botubarani **Whale Shark Appeared in Jakarta waters [Hiu Paus Muncul di Perairan Jakarta]**, Kompas National Newspaper, 19 April 2016, http://print.kompas.com/baca/sains/lingkungan/2016/05/19/Hiu-Paus-Muncul-di-Perairan-Jakarta **The Friendly Giant in Botubarani Beach [Raksasa Ramah di Pantai Botubarani]**, Kompas National Newspaper, 17 April 2016, http://print.kompas.com/baca/sains/lingkungan/2016/04/17/Raksasa-Ramah-di-Pantai-Botubarani **The Presence of Whale Shark in Gorontalo-Studied [Kemunculan Hiu Paus di Gorontalo Diteliti]**, Kompas National Newspaper, 12 April 2016, http://print.kompas.com/baca/sains/lingkungan/2016/04/12/Kemunculannya-di-Gorontalo-Diteliti **Population of Whale Sharks in Talisayan Increased [Populasi Hiu Paus di Talisayan Bertambah],** Pontianak Post**,** 31 August 2015, https://issuu.com/ptkpost/docs/31082015

Communication & Application of results (max 200 words)

Data collection in project activities increases national whale shark knowledge, especially in the middle part of Indonesia, since the protection was established in 2013. Function of Indonesian waters as habitat and feeding ground for immature whale shark are well understood by stakeholders (local and national level). The importance of data collection and monitoring results as a basis of conservation efforts has been delivered during workshops and training. Networks that have been formed then did monitoring and reporting to continue research. The addition of individual has been reported through the network. Moreover, result of threats identification has given an illustration of the negative impact from fisheries and tourism activities. The results of genetic study shown the closeness between whale sharks suggest that the threat of one site may affect other sites. Zero by-catch, tourism Code of Conduct (COC) and its implementation have become one of the main discussions during workshop. To date, local-scale regulations and

tourism COCs are still pursued to be created and implemented, as a continuation of the project. In addition, awareness raising through outreach received positive response from the community. They read, shared and commented outreach that has been produced, also reported the whale shark that they met.

Monitoring and Evaluation (max 200 words)

Project monitoring through internal team meetings (team members, project advisors and partners (WWF-Indonesia & Bogor Agricultural University) has been conducted each site movement time. Progress results, problems and lessons learned from one site were presented in the meeting. The Meetings were useful, especially in solving the problem of no whale shark found on Weh Island Aceh and Parigi Moutong Central Sulawesi. Habitat tracing around the site was the solution at the time. Meetings with local stakeholders at the beginning time of the project per site were also undertaken to find out local issues. Much of information and help we got through these meetings. Activities, both research, training and workshop have become well-directed and effective because of have learned from previous experience and understood the local situation. Supervision by advisors and project partners has also been done on each site to ensure the project is working properly. Project evaluation has been done internally to assess the process, outcome, changes and overall goal of the project compared to the project design. In general, project implementation has been in accordance with the project's initial design. Project evaluation becomes a good learning material for future activities.

Achievements and Impacts (Max 500 words)

Whale shark Indonesia project activities were conducted through research, transfer knowledge and awareness raising to achieve the overall aim. Project objectives were undertaken by monitoring, workshop and training. To better understand the distribution, population characteristic and status of whale shark in Indonesia: map foraging area, identify trend and characteristic of whale shark sightings, measure water quality and genetic study; gather information about whale shark sightings and stranded in Indonesia waters has been done. As results, outputs i.e. Whale shark distribution map, whale shark population structure, behavior and genetic connectivity were produced and known. Analysis result about the function of Indonesia waters as habitat and feeding ground for immature whale sharks especially males as the achievement of activities, has contributed to the addition of knowledge in Indonesia.

Futhermore, whale shark conservation efforts that can be sustained led by local stakeholders: transfer knowledge and train local authorities to conduct whale shark regular monitoring; raise awareness about whale shark in their waters trough outreach and socialization; integrated all knowledge, experience and event related to whale shark in one database which is accessible to interested parties has also been done. Outputs i.e. workshop and training has been conducted each site locations. Whale shark information network leds by local government and local stakeholders as a member has been established as the achievement of activities, which has contributed to initiate monitoring and sustainable conservation. Moreover, some outreach has been produced with a positive response from the community as a result of awareness raising activities. Database center have also been formed with mechanisms that have been set in the network so accessible for everyone. Not only for local-scale, overall aim is also connected to national-scale, rated from the MMAF directorate's interest in the project result.

Capacity Development and Leadership capabilities (Max 250 words)

Whale shark Indonesia project was an unforgettable opportunity for all members in doing conservation efforts independently. As the project executors, we have gained much experience about field monitoring, data analysis, workshop organizer, training trainer and national-local authorities' advocacy skills. Done a lot of activities in the small number of team members has required us to work effectively and efficiently. We have learned a lot about how to make all activities run smoothly, as planned and as expected. We also learned how to engage local government and stakeholders to support and involve in the project. As social media and outreach makers, we have learned how to make it more informative to get a good response from the public. As laboratory workers, we learned how to systematize the work to get the correct analysis. Moreover, we have also learned to do good financial management. Thus, with a limited budget we have done many things and got valuable results.

Section 3:

Conclusion (max 250 words)

The knowledge of whale sharks in Indonesia increases through the project results. Whale sharks in site locations were dominated by males with a size range of 2.5–7 m which were still categorized as juveniles. They often emerged to the surface as a feeding behavior and genetically close and allegedly still in the same population. More than 263 individuals were identified explaining the importance function of indonesia water for some behavior and part of whale shark life cycle. Further research is needed to know the relationship with the population in neighboring countries. Whale shark information network that formed through workshops and training with the participation of more than 203 people, continue the conservation efforts that have been done. Moreover, seven types of produced outreach have received responses from the community as conservation awareness raising efforts. The threats i.e. by catch and irresponsible tourims activity are challenges in protecting protected species in Indonesia that needs to be solved.

Problems encountered and lessons learnt (max 500 words)

All of project activities and outcomes generally went well. Activities such as research, transfer knowledge and awareness raising have been conducted which support overall aim of the project. However, no whale sharks were recorded during research in Weh Island was the most problematic activity. No sightings of whale shark as last year, meant no whale shark data in the western part of Indonesia. To solve this problem, we collected information about sightings of whale shark at several locations in Sumatra. That's was helpful to indicate the presence of whale sharks in the west part of Indonesia. Research methods undertaken on this project have been well-conducted, such as Photo Identification, sex identification, body measurement, genetic analysis and threat identification, in accordance with protocols and our previous research experience. The implementation of training, workshop and outreach production learned much from Conservation Management & Leadership Course and our project partner activities ever done. We are still improving the best method to implement by us in Indonesia. Research, training and workshop on whale sharks in 7 different locations requires considerable effort and budget. We learned how all activities can work well by getting the government and stakeholders

including dive resort involved in the project. We got a lot of help, especially cheaper boats and homestay costs.

In the future (max 200 words)
Please explain what efforts you will be taking to sustain this work beyond the grant period and what further work would be useful for the conservation of the target species/area.

The continuation of the Whale Shark Indonesia Project is to assist in the establishment of regional regulations and COC tourism. Moreover, we will develop better online database, continue biology ecology research (especially regarding the relationship of whale sharks in Indonesia and global population) and continue raising awareness to minimize the whale shark threats. We have become a member of Sharks and Rays Working Group also pool of expert threatened species working group of the Indonesia CTI-CFF. We will engage in activities related to sharks and rays in Indonesia until 2020. We have also communicated with NGOs from the Philippines and Malaysia to collaborate on the study of whale shark relations in the Sulu Sulawesi Marine Ecoregion. Thus, we will gradually establish the Whale Shark Indonesia Project as a research NGO.

Financial Report

Itemized expenses	Total CLP Requested (USD)*	Total CLP Spent (USD)	% Difference
PHASE I - PROJECT PREPARATION			
Communications (telephone/internet/postage)	135,00	127,25	-6%
Field guide books, maps, journal articles and other printed materials	70,00	84,19	20%
Insurance			
Visas and permits	80,00	89,82	12%
Team training			
Reconnaissance			
Other (Phase 1)			
EQUIPMENT			
Scientific/field equipment and supplies	1.625,00	1833,85	13%
Photographic equipment			
Camping equipment			
Boat/engine/truck (including car hire)	2.900,00	2900,45	0%
Other (Equipment)			
PHASE II - IMPLEMENTATION			
Accommodation for team members and local guides	1.920,00	1455,84	-24%
Food for team members and local guides	2.364,00	2391,11	1%
Travel and local transportation (including fuel)	1.240,00	1007,79	-19%
Customs and/or port duties			
Workshops	596,00	598,61	0%
Outreach/Education activities and materials (brochures, posters, video, t-shirts, etc.)	600,00	563,82	-6%
Other (Phase 2)	400,00	449,01	12%
PHASE III - POST-PROJECT EXPENSES			
Administration	50,00	59,88	20%
Report production and results dissemination	100,00	89,82	-10%
Other (Phase 3)	420,00	329,34	-22%
Total	**12.500,00**	**11.980,78**	

Section 4:

Appendices

Please include important additional information not required in the main text along with:

- *Completed CLP M&E measures table (see below)*
- *Raw field data: if large amounts of data were generated, include them here and summarise results using tables and statistics in the main text.*
- *Copies of any newspaper/magazine articles relating to the project.*
- *Papers published or manuscripts proposed based on project data*

Output	Number	Additional Information
Number of CLP Partner Staff involved in mentoring the Project	9	Stuart Patterson, Julie Lewis, Kiragu Mwangi, Christina Imrich, Iain Dickson, Martin Fowlie, Martin Davies, Robyn Dalzen, Charlotte Klinting
Number of species assessments contributed to (E.g. IUCN assessments)	1	Whale Shark *Rhincodon typus*
Number of site assessments contributed to (E.g. IBA assessments)	0	
Number of NGOs established	0	
Amount of extra funding leveraged ($)	0	
Number of species discovered/rediscovered	0	
Number of sites designated as important for biodiversity (e.g. IBA/Ramsar designation)	0	
Number of species/sites legally protected for biodiversity	0	
Number of stakeholders actively engaged in species/site conservation management	5	Directorate of Conservation and Marine Biodiversity, Ministry of Marine Affairs and Fisheries, BPSPL Pontianak, BPSPL Padang, BPSPL Denpasar, BPSPL Makassar
Number of species/site management plans/strategies developed	0	
Number of stakeholders reached	28	See **Project Partners & Collaborators** section
Examples of stakeholder behaviour change brought about by the project.	1	Has begun monitoring of whale shark through formed Network.
Examples of policy change brought about by the project	0	
Number of jobs created	0	

Number of academic papers published	1	www.qscience.com/doi/pdf/10.5339/qproc.2016.iwsc4.26
Number of conferences where project results have been presented	1	The 4th International Whale Shark Conference, Qatar, May 16-19, 2016

Appendix 4.1 CLP M&E measures

Raw field data

Sex

Location	Male	Female
Talisayan East Kalimantan	29	2
Banggai Kepulauan Cenral Sulawesi	1	0
Probolinggo East Java	24	4
Botubarani Gorontalo	17	0

Length

Lenght (m)	Talisayan	Probolinggo	Banggai Kepulauan	Botubarani
2,5	1	0	0	0
3	5	1	0	1
3,5	1	2	0	0
4	11	5	0	5
4,5	6	4	1	1
5	4	9	0	5
5,5	0	3	0	2
6	1	2	0	2
6,5	1	2	0	0
7	1	0	0	1
7,5	0	0	0	0
8	0	0	0	0
8,5	0	0	0	0

Talisayan East Kalimantan field data

Date	Bagan Name	Lat	Lon	Bagan catch (Kg)	Whale Shark Sightings number	
					Direct observation	Fishermen Info
14/08/2015	Dumaring	1,640667	118,2522	500	0	0
14/08/2015	Emil	1,624	118,2697	70	1	0
17/08/2015	Bintang Samudra	1,6947	118,2352	300	0	0
17/08/2015	Putra Jaya	1,70855	118,2461	600	2	0
17/08/2015	Emil	1,683783	118,2368	200	0	0

19/08/2015	Alam Nur	1,667517	118,2161	400	2	0
20/08/2015	Putra Jaya	1,664333	118,2269	51	0	1
20/08/2015	Merah Putih	1,66975	118,2199	100	1	0
20/08/2015	Samudra	1,6757	118,2273	160	0	2
20/08/2015	Anto-Alam	1,667767	118,2159	110	2	0
21/08/2015	Alam	1,667917	118,2154	106	1	0
21/08/2015	Emil 03	1,68215	118,2161	150	1	0
21/08/2015	Laut	1,685633	118,2079	10	2	0
22/08/2015	Merah Putih	1,647817	118,2315	200	1	0
22/08/2015	Husen	1,67295	118,2087	200	0	1
23/08/2015	Dua Putra	1,66669	118,1983	745	0	1
23/08/2015	Emil 01	1,67827	118,2047	300	0	2
23/08/2015	Sumber Laut	1,68586	118,2074	102,5	0	2
23/08/2015	Luis	1,67297	118,2083	0	0	0
23/08/2015	Emil 04	1,66819	118,2182	302	0	0
23/08/2015	Alam Nur	1,65937	118,2118	260	0	1
23/08/2015	Merah Putih	1,64775	118,2311	325	0	1
23/08/2015	Rahmat Abadi 03	1,62459	118,2436	300	0	1
24/08/2015	Rahmat Abadi	1,62459	118,2436	10	0	0
24/08/2015	Sinar Lampusang	1,62459	118,2436	81	0	0
24/08/2015	Sulsel	1,62459	118,2436	900	1	0
24/08/2015	Putra Jaya	1,62459	118,2436	433	1	0
24/08/2015	KM Ardika	1,62459	118,2436	32	0	2
24/08/2015	Lautan Kasih	1,62459	118,2436	550	0	1
24/08/2015	Bukit I	1,62459	118,2436	360	0	0
24/08/2015	Saleh	1,62459	118,2436	0	0	1
24/08/2015	Hj. Bangkala	1,62459	118,2436	353	1	0
25/08/2015	Mutiara	1,677233	118,1908	210	2	0
25/08/2015	Emil 04	1,668483	118,2189	800	0	1
25/08/2015	Bintang Samudra	1,676417	118,2243	850	0	0
25/08/2015	Emil 01	1,662817	118,2245	420	1	5
25/08/2015	Emil 03	1,652533	118,2228	808	0	0
25/08/2015	Ali	1,631567	118,2192	175	0	0
25/08/2015	Dika	1,618	118,2242	150	0	0
25/08/2015	Darling	1,61535	118,2443	266	1	0
25/08/2015	darwis	1,636083	118,2598	352	0	0
25/08/2015	Ammank	1,6195	118,2784	26	0	0
25/08/2015	Ali	1,6049	118,2927	31	0	0
25/08/2015	Saleh	1,599	118,287	438	0	0
25/08/2015	Kisman	1,579667	118,3016	503	3	0
25/08/2015	Tehem noname	1,58275	118,3082	74	1	0
25/08/2015	H Sangkala	1,587	118,247	152	0	0
27/08/2015	Emil 8	1,65085	118,2063	106	0	1

27/08/2015	Rahmat Abadi	1,65605	118,2001	109	1	0
05/09/2015	Emil 04	1,658633	118,23	150	2	0
07/09/2015	Emil 04	1,66735	118,2411	151	0	0
07/09/2015	Bintang Samudra	1,6607	118,2158	0	0	0
08/09/2015	Merah Putih	1,672517	118,1827	510	0	0
08/09/2015	Bagan Ali	1,692383	118,1655	80	0	**0**
10/09/2015	Tehem tehem	1,631033	118,2256	90	1	0
11/09/2015	Tehem tehen	1,630517	118,226	40	0	0
11/09/2015	Rahmat Abadi	1,656717	118,2584	170	0	0
11/09/2015	Bintang Samudra	1,665883	118,274	1310	0	1
13/09/2015	Berkat Usaha	1,66725	118,1688	1510	0	0
13/09/2015	Alam Nur	1,68505	118,1709	480	0	0
13/09/2015	Pak Guru	1,692217	118,1805	370	2	0
14/09/2015	Tanjung Batu	1,6817	118,2025	100	0	0
14/09/2015	emil 02	1,6814	118,2154	20	3	0
15/09/2015	Dua Putra	1,674633	118,1831	630	0	0
15/09/2015	Berkat Usaha	1,68905	118,194	870	0	0
15/09/2015	Sapa Indah	1,705083	118,1938	1170	0	0
15/09/2015	Bintang Samudra	1,704033	118,2037	680	0	0
15/09/2015	Emil 02	1,681467	118,2158	2136	2	0
16/09/2015	Batu	1,6813	118,2155	24	0	0
16/09/2015	Bintang Samudra	1,703267	118,2036	5	1	0
17/09/2015	Bintang Samudra	1,7035	118,2032	2915	1	0
17/09/2015	Purnama	1,698667	118,197	770	1	1
18/09/2015	Alam Nur	1,660767	118,1952	480	0	0
18/09/2015	Sinar Harapan	1,689333	118,1892	250	0	0
18/09/2015	Purnama	1,696917	118,1976	150	1	0
18/09/2015	Bintang Samudra	1,701617	118,2044	700	0	0
18/09/2015	Kembar 1	1,698033	118,1852	700	0	0
18/09/2015	Pak Kisman	1,70055	118,1783	2302	3	0
20/09/2015	Sapa Indah	1,663533	118,1982	300	1	0
21/09/2015	Sapa Indah	1,663933	118,1985	388	0	0
21/09/2015	Bagan Ali	1,655183	118,2054	200	1	0
21/09/2015	Emil 02	1,655783	118,2176	1520	0	0
21/09/2015	Bintang Samudra	1,658433	118,2328	1050	2	0
21/09/2015	Emil 03	1,645233	118,2174	750	0	0
22/09/2015	Merah Putih	1,65755	118,1963	400	1	0
22/09/2015	Sapa Indah	1,664067	118,1982	800	0	0
22/09/2015	Sinar Harapan	1,674283	118,2048	250	0	0
22/09/2015	Aan 02	1,665033	118,2085	220	0	0
22/09/2015	Emil 02	1,655717	118,2169	1170	1	0
22/09/2015	Emil 01	1,645317	118,2169	160	0	0
03/10/2015	Sapa Indah	1,646233	118,2163	715	2	0

03/10/2015	Emil 02	1,655633	118,2174	0	0	0
05/10/2015	Lautan Kasih	1,689483	118,2027	450	0	1
05/10/2015	Basri	1,689517	118,1754	65	0	0
07/10/2015	Emil 02	1,6634	118,2311	200	0	0
07/10/2015	Bintang Samudra	1,680317	118,2301	592	0	0
07/10/2015	Lautan Kasih	1,689783	118,2041	3231	0	0
09/10/2015	Bintang Samudra	1,6764	118,2234	2213	1	0

Probolinggo East Kalimantan field data

Date	Whale Shark Sightings number	Lat	Lon	Plankton Abundance (mg/m3
22/01/2016	2	-7,764233333	113,2841	
		-7,7571	113,284317	3360
23/01/2016	1	-7,768883333	113,2857	
29/01/2016	0			11762
03/02/2016	0			
21/02/2016	2	-7,775643	113,281464	
		-7,753403	113,274634	
22/02/2016	3	-7,731148	113,375557	
		-7,729573	113,378289	
		-7,728248	113,377905	
24/02/2016	6	-7,725416667	113,403367	
		-7,723933333	113,402167	
		-7,725683333	113,400983	
		-7,7286	113,4133	5083
		-7,720216667	113,40925	
		-7,72165	113,409783	
25/02/2016	6	-7,723216667	113,4049	
		-7,722	113,430083	
		-7,7222	113,434917	
		-7,75955	113,332317	
		-7,719266667	113,43485	
		-7,719366667	113,433683	
01/03/2016	1	-7,714216667	113,43255	
03/03/2016	13	-7,7192	113,418983	
		-7,71635	113,439717	
		-7,7142	113,44205	
		-7,711233333	113,4491	9099
		-7,713533333	113,444083	
		-7,715716667	113,442133	
		-7,716516667	113,4417	
		-7,72425	113,398683	

		-7,712833333	113,446433	
		-7,71105	113,448867	
		-7,71215	113,446033	
		-7,7156	113,44335	
		-7,715466667	113,443467	
07/03/2016	4	-7,756333	113,324733	
		-7,693667	113,483767	
		7,6997	113,4746	
		7,74795	113,3419	
09/03/2016	5	-7,69255	113,484317	
		-7,690566667	113,4847	
		-7,691966667	113,485433	
		-7,7173	113,408067	
		-7,6916	113,481217	
17/03/2016	4	-7,758583	113,265933	
		-7,757583	113,26755	
		-7,752683	113,265617	1952
		-7,754333	113,265317	
22/03/2016	5	-7,69862	113,47533	
		-7,69494	113,48212	
		-7,69479	113,47606	
		-7,69803	113,47741	
		-7,69739	113,4771	

Botubarani Gorontalo field data

Date	Whale Shark Sightings Number		Total food (Kg)	
	Morning	Afternoon	Morning	Afternoon
12/04/2016		6		45
13/04/2016	3	2	55	25
14/04/2016	4	3	55	75
15/04/2016	3	2	45	75
16/04/2016	4	3	75	75
17/04/2016	4	3	85	85
18/04/2016	4	4	45	55
19/04/2016	7	5	25	45
20/04/2016	5	3	45	70
21/04/2016	5	5	25	45
23/04/2016	5	4	25	70
24/04/2016	8	5	25	115
25/04/2016	6	3	45	60
26/04/2016	5	5	35	65
27/04/2016	5	9	60	75

28/04/2016	7	6	45	85
29/04/2016	4	5	25	25
30/04/2016	4	5	45	25

Scars Raw Data

Location	Percentage			
	Fin Scars	Body Scars	Mouth Area Scars	No Scars
Talisayan East Kalimantan (n=31)	80%	3,33%	20%	13,33%
Probolinggo East Java (n=28)	7,14%	0%	0%	92,86%
Banggai Kepulauan Central Sulawesi (n=1)	0%	0%	0%	0%
Botubarani Gorontalo (n=17)	29,41%	11,76%	23,53%	50%

Genetics Raw Data

ID Number	Composition of Nucleotide				
	T(U)	C	A	G	Total
2516660_ITK_PRO_WS_01_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516659_ITK_PRO_WS_02_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2533071_ITK_PRO_WS_03_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2533072_ITK_PRO_WS_04_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315881_ITKWSPRO05_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315882_ITKWSPRO06_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315883_ITKWSPRO07_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315884_ITKWSPRO08_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315885_ITKWSPRO09_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315886_ITKWSPRO10_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315887_ITKWSPRO11_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315888_ITKWSPRO12_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315889_ITKWSPRO13_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315890_ITKWSPRO14_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315892_ITKWSPRO16_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315891_ITKWSPRO15_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315893_ITKWSPRO17_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315894_ITKWSPRO18_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315895_ITKWSPRO19_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315896_ITKWSPRO20_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315897_ITKWSPRO21_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315898_ITKWSPRO22_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315899_ITKWSPRO23_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315900_ITKWSPRO24_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315901_ITKWSPRO25_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315902_ITKWSPRO26_R1	29.05.00	15.03	32.03.00	22.09	555.00.00

2516657_ITK_PRO_WS_27_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516658_ITK_PRO_WS_28_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2127619_ITK_BER_WS_1_R1	29.05.00	15.05	32.04.00	22.05	555.00.00
2152524_ITK_BER_WS_22_G2_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152541_ITK_BER_WS_13_F4_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152550_ITK_BER_WS_14_F5_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152551_ITK_BER_WS_25_G5_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152558_ITK_BER_WS_15_F6_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152559_ITK_BER_WS_26_G6_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152566_ITK_BER_WS_16_F7_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152581_ITK_BER_WS_4_E9_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152567_ITK_BER_WS_27_G7_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152590_ITK_BER_WS_6_E10_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152591_ITK_BER_WS_18_F10_R	29.05.00	15.03	32.03.00	22.09	555.00.00
2152600_ITK_BER_WS_29_F11_R	29.05.00	15.03	32.03.00	22.09	555.00.00
2152609_ITK_BER_WS_20_F12_R	29.05.00	15.03	32.03.00	22.09	555.00.00
2157858_ITK_BER_WS_9_F1_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2169884_ITK_BER_WS_10_F2_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2169886_ITK_BER_WS_17_F8_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2169887_ITK_BER_WS_8_E12_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2170812_ITK_BER_WS_24_G4_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2170813_ITK_BER_WS_3_E8_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2170814_ITK_BER_WS_28_G8_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516655_ITK_BER_WS_22_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516656_ITK_BER_WS_23_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516661_ITK_BER_WS_05_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516668_ITK_LWK_WS_04_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516667_ITK_BER_WS_18_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516664_ITK_BER_WS_21_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516665_ITK_BER_WS_19_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516666_ITK_BER_WS_11_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2157860_ITK_BER_WS_7_E11_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315903_ITKWSGOR01_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315904_ITKWSGOR03_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315905_ITKWSGOR04_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315906_ITKWSGOR05_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315907_ITKWSGOR06_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315908_ITKWSGOR07_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315909_ITKWSGOR08_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315910_ITKWSGOR09_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315911_ITKWSGOR10_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315912_ITKWSGOR11_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2315913_ITKWSGOR13_R1	29.05.00	15.03	32.03.00	22.09	555.00.00

2315914_ITKWSGOR14_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2127620_ITK_WS_BER_2_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2152532_WS12_F3_R1	29.07.00	15.03	32.03.00	22.07	555.00.00
2516663_ITK_GOR_WS_02_R1	29.05.00	15.03	32.03.00	22.09	555.00.00
2516662_ITK_GOR_WS_12_R1	29.05.00	15.03	32.03.00	22.09	555.00.00

Copies of any newspaper/magazine articles relating to the project

See Table 3

Papers published or manuscripts proposed based on project data

www.qscience.com/doi/pdf/10.5339/qproc.2016.iwsc4.26

Bibliography

List all the sources that you used, highlighting the most important ones. Also include the publications and communication outputs from the project as well as papers being prepared for publication by project members.

Papers being prepared for publication by project members:

1. Population Size and structure of Whale Shark Based on Their Sighting Behavior Across Indonesian Seas
2. Review of whale shark sighting, stranded and their threats in Indonesian Seas
3. Genetic connectivity of whale shark *Rhincodon typus* populations in Indonesian Seas

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Address list and web links

An annotated list of useful names, addresses and websites

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