

# Port Honduras Marine Reserve

## Annual Report 2017



**Aerial view of the Mangroves Ecosystem in Port Honduras Marine Reserve (PHMR)**

**Produced By**

**Zane Zuniga**

**Marine Manager**

**Toledo Institute for Development and Environment**

**Submitted to: Fisheries Department Belize City**

## **Manager's Overview**

It is with great pleasure in presenting the Port Honduras Marine Reserve (PHMR) annual report for 2017. This report summarizes the main activities that occurred throughout the year [Jan 2017-Nov 2017]. After two years of the reserve being declared a SPAW site the staff continued with the same dedication and passion in ensuring the successful management of the area and its conservation targets remains first and foremost.

I am pleased to report that the field staff conducted a total of 430 patrols within the time period, a big decrease from the previous year however more strategic and effective. As a result of these patrols, 5 arrests were made and successfully prosecuted, 5 verbal warnings, 17 gill nets, 2 long lines and 6 fish pots were removed/confiscated from within the reserve. All of the patrols conducted were joint operation with the Belize National Coast Guard, and personnel from other protected areas managed by TIDE. Great efforts were made to strengthen the working relationships with government agencies in 2017 such as the Belize National Coast Guard and Punta Gorda Fisheries Department.

Once again, we would like to express our sincere gratitude to the Belize Fisheries Department, PHMR Advisory Committee, the Belize National Coast Guard, OAK-MARFUND, Mass Audubon, Summit, Overbrook, GCFI and PACT MARFUND. The great work towards the sound management and sustainable use of the marine resources would not have been possible without the financial contribution and commitment from these partners throughout the year.

I must make special mention of PHMR's rangers, Edwin Cabrera, Aaron Garbutt, Allan Halliday and Dervi Williams and our temporary ranger Marcos Pow for your continued dedicated support and hard work to the conservation and protection of PHMR's natural ecosystems and its marine life. A special thank you must be given to the Belize National Coast Guard for their tremendous support throughout 2017 in the enforcement of rules and regulations of the reserve and the security they provided for our staff. It has been a privilege and a great experience to have worked with you all for 2017 and looking forward to 2018 with great expectations.

Sincerely,

Zane Zuniga

Marine Manager

TIDE

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## 1.0 ADMINISTRATIVE

### 1.1 STAFFING

#### PHMR Enforcement Staff

No	Names	Position
1	Zane Zuniga	Marine Manager
2	Edwin Cabrera	Head Ranger
3	Aaron Garbutt	Ranger
4	Allan Halliday	Ranger
5	Dervi Williams	Ranger
6	Marcos Pow	Temp Ranger

#### PHMR Research Team

No	Names	Position
1	Tanya Barona	Marine Biologist
2	Ryan Moore	Managed Access Officer


#### Community Researchers and volunteers

No	First Name	Last Name
1	Fernando	Rabateau
2	Allana	Barillas
3	William	Caal
4	Edwin	Cabrera
6	Jenieve	Ramirez
7	Zane	Zuniga
8	Anthony	Rash
14	Bevington	Cal
15	Eryn	Bowden

## 1.2 TRAINING

Staff members are given the opportunity to participate in trainings on an annual basis. Table 4 below shows the trainings accomplished for 2017. Also, Table 5 expresses the training needs for 2018.


(Table4)


Area of Training	Area of Training	List of Participants
<p>Enforcement</p>   	<p>1. SMART training hosted by Wildlife Conservation Society focusing on using SMART as a tool for data collection on enforcement, research and monitoring activities for both marine and terrestrial</p>  	<p>TIDE's Marine Staff</p> <ol style="list-style-type: none"> <li>1. Zane Zuniga</li> <li>2. Allan Halliday</li> <li>3. Aaron Garbutt</li> <li>4. Edwin Cabrera</li> <li>5. Dervi Williams</li> </ol> <p>TIDE's Terrestrial Staff</p> <ol style="list-style-type: none"> <li>1. Pedro Shol</li> <li>2. Santiago Cucul</li> <li>3. Leonard Williams</li> <li>4. Andrew Williams</li> <li>5. William Garcia</li> <li>6. Ryan Moore</li> </ol>

**Table 4 (continued)**

Area of Training	Area of Training	List of Participants
<p>Enforcement</p> 	<p>1. Trial preparation &amp; Advocacy course conducted through the EU grant hosted by UWI aims at building the capacity of individuals to constructively represent themselves in court</p>	<p>Zane Zuniga (Marine Manager) Allan Halliday (Ranger)</p> 

**Table 4 (continued)**

Area of Training	Area of Training	List of Participants
<p>Enforcement</p> 	<p>1. Baton/Boarding Procedures Training hosted by Belize National Coast Guard was aimed at giving the rangers basic</p>	<p>TIDE's Marine Staff</p> <ol style="list-style-type: none"> <li>1. Zane Zuniga</li> <li>2. Dervi Williams</li> <li>3. Allan Halliday</li> <li>4. Marcos Pow</li> </ol> <p>TIDE's Terrestrial Staff</p> <ol style="list-style-type: none"> <li>1. Mario Muschamp</li> <li>2. Andrew Williams</li> </ol>

	<p>knowledge in the use of baton and proper way of boarding a vessel.</p>	<ol style="list-style-type: none"> <li>3. Pedro Shol</li> <li>4. William Garcia</li> <li>5. Santiago Cucul</li> <li>6. Juan Iraheta (Security)</li> </ol>
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**Table 4 (continued)**

Capacity Building	Participants
1. Natural Resource Valuation Course	Zane Zuniga
2. Conflict Resolution Training done by ERI-UB	Zane Zuniga Edwin Cabrera
3. Emergency First Response Training facilitated by James Foley	Zane Zuniga
4. Open Water Dive Training facilitated by James Foley	Zane Zuniga, Edwin Cabrera, Allan Halliday, Dervi Williams
5. Strategic Enforcement Planning	Zane Zuniga, Edwin Cabrera, Allan Halliday, Dervi Williams
6. Tour Guide Training	Edwin Cabrera

**Table 5: Training Needs for Terrestrial and Marine Staff**

## 2.0 Background of Port Honduras Marine Reserve [PHMR]

### 2.1 Introduction

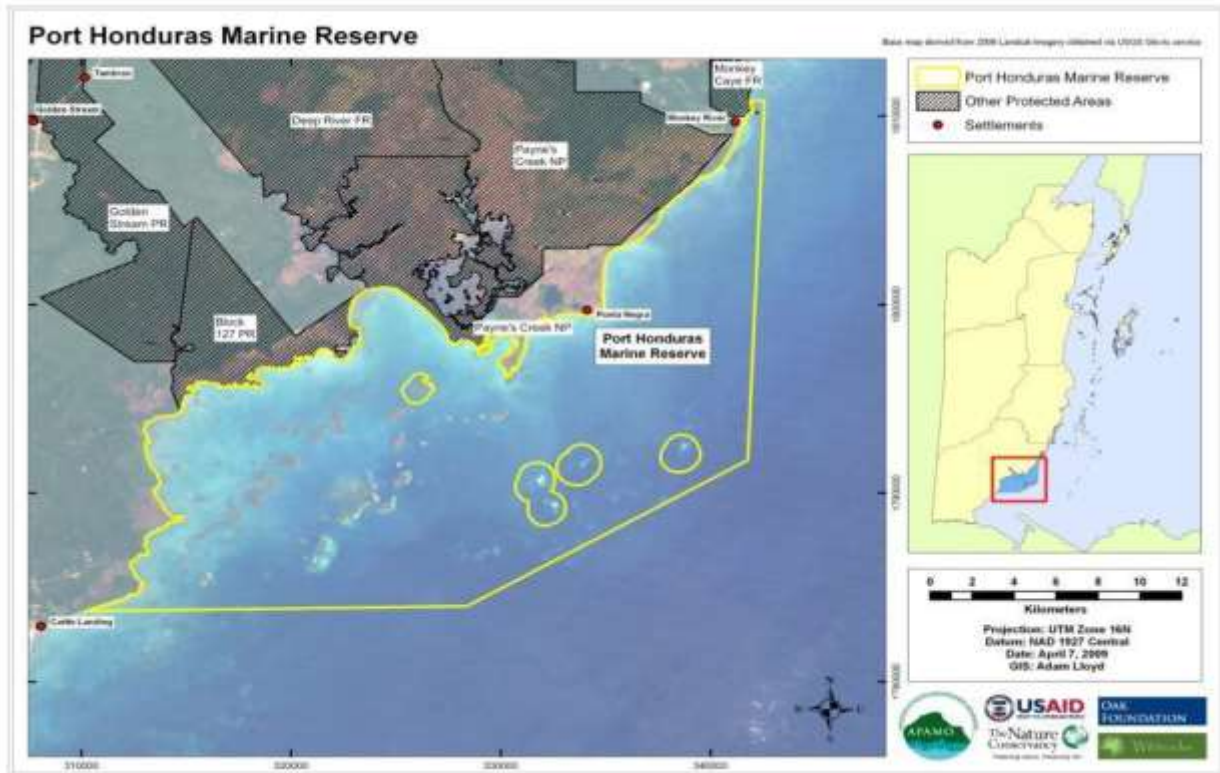
Declared by the Government of Belize on January 25<sup>th</sup> 2000, PHMR is being actively co-managed by TIDE while the governing authority being Fisheries Department. PHMR is a semi-estuarine system that covers approximately 160 square miles and is an integral part of the Maya Mountain Marine Corridor (MMMC) in southern Belize. The reserve is located just off the coast of Punta Gorda and extends north up to Monkey River Village. PHMR comprises of coastal wetlands, seabed, mangroves, lagoon, savannas of Paynes Creek National Park and national lands within the area known as the Port Honduras, with general boundaries being the Rio Grande in the south, Monkey River in the north, the snake cayes in the east and the coastal wetlands in the west. The reserve is rich in biodiversity, containing approximately 138 small mangrove cayes, which provide essential habitat and nursery for juvenile aquatic species. Other critical habitats include sea grass beds, hard bottom communities, and soft bottom communities. A large portion of the reserve is covered by sea grass, which also provides essential habitat and food for juvenile fish species, sea

1.	Boat and engine maintenance training
2.	MPA Enforcement Training
3.	Tactical Defense/Weapons Handling Training
4.	Protected Areas Management Training
5.	Report Writing Training
6.	SMART/GIS Training
7.	PADI Rescue Diver/Dive Master Training
8.	Special Constable Training

turtles, salt water crocodiles, and manatees. Also, within the reserve fringing reefs and several coral patches and coral heads are found, which provide a refuge for vertebrates and invertebrates. There are two buffer communities that are located adjacent to the reserve which are Monkey River Village and Punta Negra Village. The residents of each village are mostly commercial fishers, tour guides, or fly-fishing guides who depend on the reserve resources for their livelihood.

### Map of PHMR (Map1)





## 2.2 Reserve's Strategic Plan and Goals

The PHMR management strategy is based on five major goals:

1. To protect the physical and biological resources of Port Honduras
2. To provide education and research
3. To preserve the value of the area for fisheries and other important genetic resources
4. To develop recreational and tourism services that will enhance the economic and social benefits of the area without causing environmental damage
5. To strive for sustainable financing

## Zoning Plan and Regulations

For the purpose of the regulation and control of the Reserve, five zones were established:

1. **General Use Zone** (95% of the Reserve)

To provide opportunities for established uses and activities (e.g. fishing for conch, lobster, and finfish) under a stringent monitoring scheme

2. **Conservation Zone** (4% of the Reserve)

To provide an area free from commercial fishing to prevent overexploitation of fishery stock, provide an undisturbed area for recruitment of species, and enhance the value of the area for recreational and tourism activities

### 3. **Preservation Zone** (1% of the Reserve)

To provide areas within the marine reserve that is preserved in an entirely natural state and to protect areas of particularly fragile habitat or with threatened or rare species

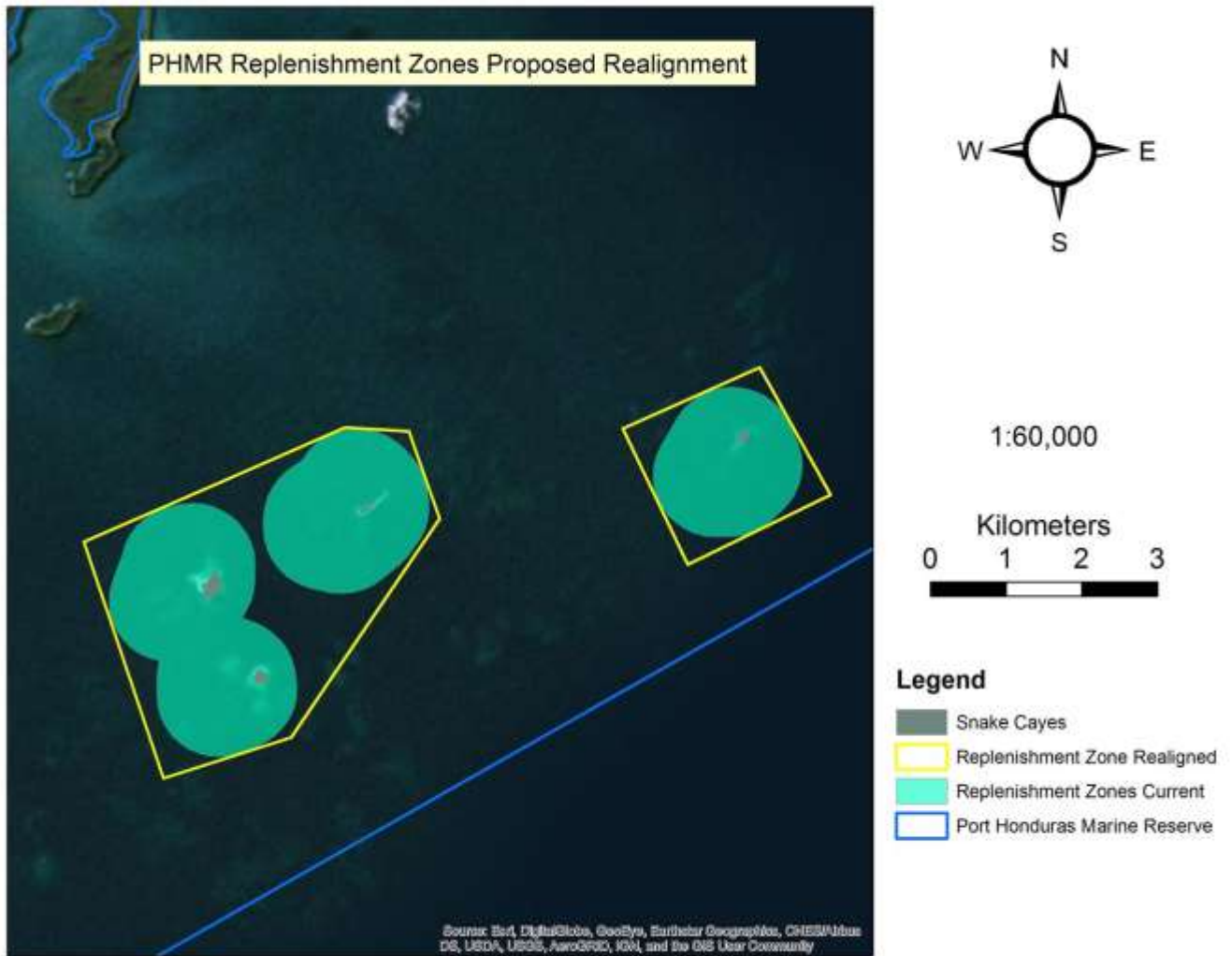
### 4. **Special Management Area**

Area reserved for special projects in an effort to improve the management of the reserve major work has been accomplished on the proposed extension of the conservation zones of PHMR. After consultations with the stakeholder communities, TIDE submitted the proposed extension map to the Belize Fisheries Department for consideration and later revision of the S.I for the reserve. It is described as follows:

**Hexagon** (South, West and Middle Snake Caye): This area is a hexagon that encompasses South Snake Caye, West Snake Caye, and Middle Snake Caye. It encompasses a bank north of Middle Snake Caye, portion of a bank found on the southeastern side of Middle Snake Caye and portion of a bank on the southeastern side of South Snake Caye. In addition, one bank on the west side of West Snake Caye was enclosed. Middle Snake Caye remains a preservation zone with the same boundaries as previously, but is now encompassed by the new zone B. The boundary is not arbitrary but encompasses areas thought to be critical conch and lobster nursery and spawning habitat in order to enhance the replenishment function of the RZ.

**Rectangular Shape** (East Snake and Wild Cane Caye): Within the old SI the RZ zones of East Snake and Wild Cane Caye were based on a circular buffer zone scaling 4 coordinates. Within the new SI it is proposed that a rectangle is used as opposed to a circle, scaling the same coordinates. Using a rectangle will make the boundary clearer and therefore aid enforcement. After reviewing the coordinates of the previous SI for Wild Cane Caye it was found that in order to generate a suitable rectangle the original coordinates would need to be altered. This alteration will not add to the area currently covered by the RZ. By making the no-take zones in this area into a rectangle there is only a small increase in the RZ, both fishers and TIDE agree that a square shape is easier for both parties to know where extraction is legal and where it is illegal.

Map 2: Proposed expansion of PHMR replenishment zone. The old boundary is represented by BERDS perceived boundary (<http://www.biodiversity.bz/mapping/warehouse/>) and the enforced SI coordinates: FISHERIES ([PORT HONDURAS MARINE RESERVE) ORDER, 25th day of January 2000.



### 3.0 PHMR Accomplishments 2017

#### 3.1 Patrols and Surveillance



##### Joint patrol with Belize Coast Guard

A total number of 430 patrols were conducted for the period Jan 2017 to Dec 2017. As a result of these patrols 17 gillnets were confiscated within the boundaries of the reserve (6 from the Monkey River area, 1 from Punta Negra area, 2 from Middle River, 2 from Poco No Boy Area, 1 from Hen & Chicken Area, 3 from Culu Caye and 2 from the Southern demarcation buoy). 2 long lines were confiscated due to the patrols done (1 from Head & Chicken Area and 1 from New Haven Area). There were also 6 fish pots that were retrieved from Stuart Caye. There were 5 arrests that were made with successful prosecution. Details of the arrests are listed below.

##### 3.1.1 Details of Arrests

Date	Name of Person	Nationality	Description of activity	Outcome	Fine/penalty	Arresting Officer
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27/02/17	Ulises Boniila, Jose Maquin, Mynor Tiul	Guatemalan	Engaged in commercial fishing with the use of restricted gear (gill net)	Detained and transported to the police station	They were each charged \$1,420 and their engine and equipment confiscated	Edwin Cabrera
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<b>Date</b>	<b>Name of Person</b>	<b>Nationality</b>	<b>Description of activity</b>	<b>Outcome</b>	<b>Fine/penalty</b>	<b>Arresting Officer</b>
02/06/17	Earl Bowden, Allan Buchub	Belizean	Engaged in commercial fishing using expired captains license	They were escorted out of the reserve and handed over to the PG Port Authority		Edwin Cabrera

<b>Date</b>	<b>Name of Person</b>	<b>Nationality</b>	<b>Description of activity</b>	<b>Outcome</b>	<b>Fine/penalty</b>	<b>Arresting Officer</b>
03/06/17	Felix Arzu, Narciso Martinez	Belizean	Engaged in commercial fishing without boat marking, fish	They were escorted out of the reserve and handed over to the PG		Edwin Cabrera

			licensee, mullet net and no captains license	Fisheries Department		
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<b>Date</b>	<b>Name of Person</b>	<b>Nationality</b>	<b>Description of activity</b>	<b>Outcome</b>	<b>Fine/penalty</b>	<b>Arresting Officer</b>
20/06/17	Sergio Miranda, Claude Trombetta, Jean Trombetta, Nicholas Dorion	American/ Guatemala n	Destruction of patched corals on the west side of West Snake Caye	The captain of the boat was taken to Belmopan to settle the fine out of court with Minister. Omar.		Allan Halliday

<b>Date</b>	<b>Name of Person</b>	<b>Nationality</b>	<b>Description of activity</b>	<b>Outcome</b>	<b>Fine/penalty</b>	<b>Arresting Officer</b>
03/06/17	Edgar Randas, Anthony Coleman	Belizean	Engaged in commercial fishing using	They were arrested and handed over to the police department for	Edgar Randas was fine \$1500 and the charge was dropped against	Allan Halliday

			restricted gear	detention until the case file is produced	Anthony Coleman due to him being a minor.	
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Table 6 summarizes the number of patrols, warnings written and verbal as well as summons issued and arrests made; both in and outside of the reserve for the period Jan 2017 to Dec 2017. All patrols were done jointly with the Belize Coast Guard.

**Table 6**

Patrols by PHMR Rangers 2017									
	Inside PHMR		Outside PHMR						
	Day	Night	Day	Night	Total patrols	Total hours	Number of arrests or warnings	Results of patrols	
Jan	28	3	1	0	32	102	0	16 vessels with managed access fishers, 6 vessels conducting tourism related activities and 3 vessels doing recreational fishing in the reserve	

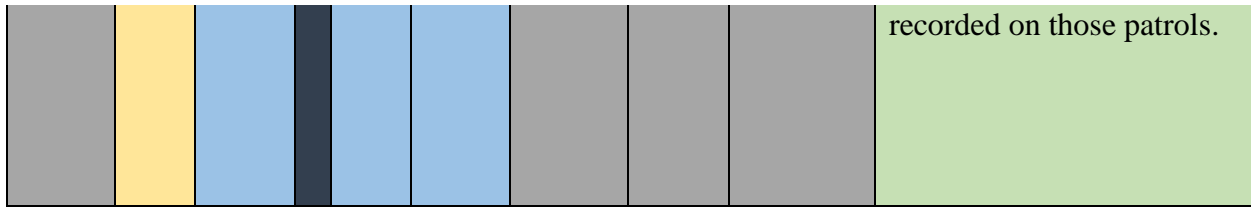
<b>Feb</b>	25	3	3	0	<b>31</b>	<b>131</b>	<b>1</b>	16 vessels with managed access fishers, 8 conducting tourism related activities and 4 vessels conducting recreational fishing in the area. 3 Guatemalans were arrested and charged \$1,420 Belize dollars each for using prohibited gear and no boat license and personal license.
<b>Mar</b>	27	2	0	0	<b>29</b>	<b>124</b>	<b>1</b>	18 vessels with managed access fishers, 7 vessels conducting tourism related activities and 3 vessels doing recreational fishing. A verbal warning was given to Earl Bowden as he failed to produce his documents (captain's license, boat license, fisherfolk license)
<b>Apr</b>	30	2	0	0	<b>32</b>	<b>127</b>	<b>0</b>	12 vessels with Managed Access Fishers, 10 vessels conducting tourism related activities and 10 vessels doing recreational fishing in the area



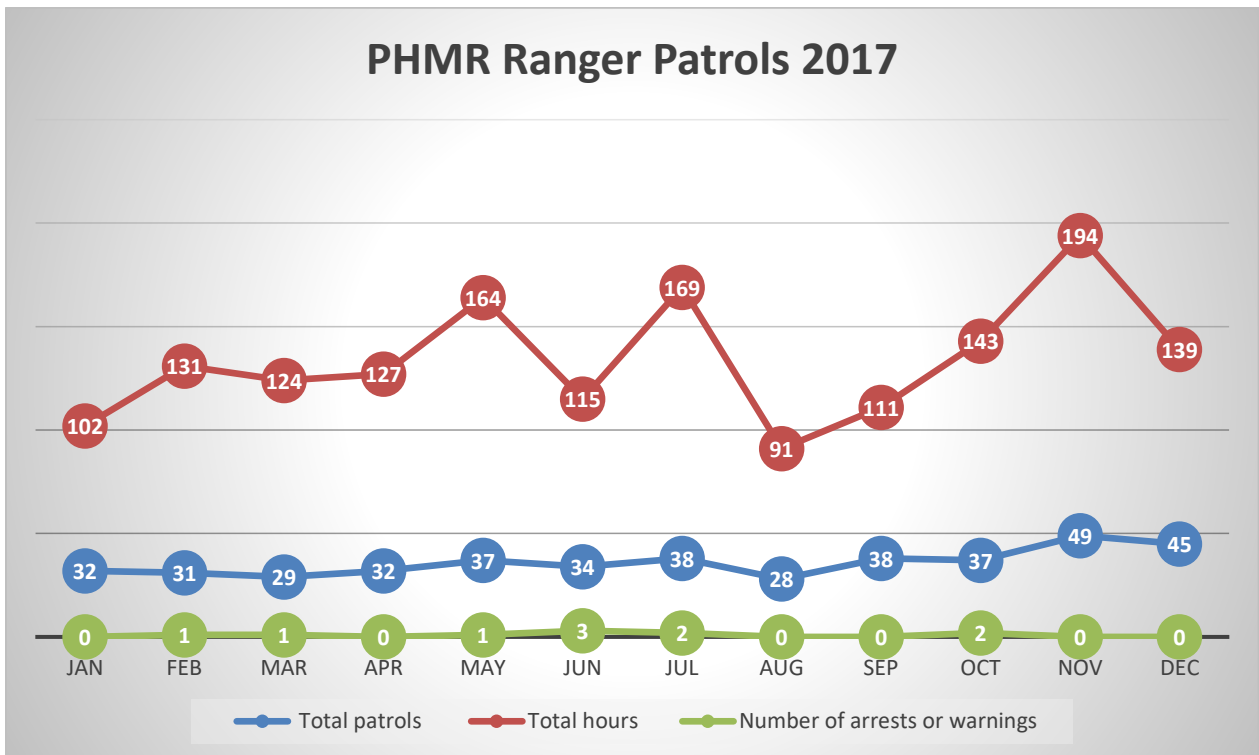
<b>May</b>	35	2		0	0	<b>37</b>	<b>164</b>	<b>1</b>	14 vessels with Managed access fishers, 10 vessels doing tourism related activities and 4 vessels doing recreational fishing in the area. A verbal warning was given to Mr. Lopez because he was engaged in recreational fishing in Paynes Creek National Park Lagoon.
<b>Jun</b>	29	3		2	0	<b>34</b>	<b>115</b>	<b>3</b>	16 vessels with managed access fishers, 8 vessels doing tourism related activities and 4 vessels doing recreational fishing in the reserve. Three offences were committed, one for expired captains license, another for boat marking, fishing license, captain license and mullet net and the third for destruction of patched coral reefs.

<b>Jul</b>	34	4		0	0	<b>38</b>	<b>169</b>	<b>2</b>	15 vessels with managed access fishers, 6 vessels doing tourism related activities and 7 vessels doing recreational fishing in the reserve. A verbal warning was given to Avington Ramirez about the use of mullet net within the reserve and for have an individual on board captaining the boat without a valid Captains' license. 2 locals were arrested and charged for using restricted gear in the marine reserve (gill net).
<b>Aug</b>	25	3		0	0	<b>28</b>	<b>91</b>	<b>0</b>	12 vessels with managed access fishers and 5 vessels conducting tourism related activities and 2 vessels doing recreational fishing in the reserve
<b>Sep</b>	28	4		5	1	<b>38</b>	<b>111</b>	<b>0</b>	15 vessels with managed access fishers, 2 vessels conducting tourism related activities and 5 vessels doing recreational fishing in the reserve.

<b>Oct</b>	29	7	1	0	37	143	2	11 vessels with managed access fishers, 1 vessel conducting tourism related activities and 3 vessels recreational fishing encountered on these patrols. 2 verbal warnings were issued within this month. Gerson Coleman was warned about engaging in commercial fishing with a minor on board without a permit. The second warning was given to Oliver Rojas for engaging in commercial fishing with an individual who doesn't have a fisherfolk license.
<b>Nov</b>	38	10	1	0	49	194	0	14 managed access vessels, 11 vessels conducting tourism related activities and 5 vessels recreational fishing encountered on these patrols.
<b>Dec</b>	35	8	2	0	45	139	0	13 boats with Managed Access Fishers, 7 boats conducting tourism related activities and 9 boats recreational fishing



<b>Total</b>									
<b>s</b>	<b>363</b>	<b>51</b>	<b>15</b>	<b>1</b>	<b>430</b>	<b>1610</b>			<b>10</b>



### Maintenance of patrol Equipment

The upkeep of the patrol equipment such as the regular cleaning of patrol vessel, regular servicing of the outboard engine [engine oil and oil filter change, gear oil change, freshwater wash and re-grease] were done by rangers and coast guard personnel] major repairs and any technical problems were done by mechanic in Punta Gorda Town.



### 3.2 Infrastructure Maintenance

The upkeep of the ranger station was done by the rangers and personnel from the Belize Coast Guard station at PHMR, as well as the maintenance of the mooring and demarcation buoys. Monitoring and maintenance of solar system was done by rangers and major issues and quarterly checks were done by Christopher Nesbitt who designed and installed the system. Christopher Nesbitt also installed the new solar batteries for the system after they collapsed in the latter part of 2017.



### 3.3 Partnerships

The PHMR staff continues to work with local and partner organizations, these partners include Southern Environmental Association, the Fisheries Department, the Police Department, the Belize Defense Force, the Belize Coast Guard, the University of Belize and Tour Guide and Fishermen Associations from the buffer communities of the reserve.



### Communications

Communication between manager and staff of PHMR improved in many ways during 2017. With the assistance of the Environmental Research Institute-University of Belize a Conflict-Resolution training was held with the manager being a participant. The objective of the training was geared at developing a curriculum for training in collaborative governance, negotiation, conflict management and dispute resolution. Although, this training was looking at a larger scale communication it is very useful in the workplace when communicating with communities and users of a resource. The staff has improved with the help of technology as well. The internet mifi along with a computer at the station is helping with the rangers reporting.

#### **4.0 Erosion of Abalone Caye**

Gabion baskets can be described as a system that is filled with rocks and placed above and along eroded soil in order to provide soil stability and strength. The permeability of baskets allows for soil collection or introduction and will eventually re-vegetate allowing for greater retention of soil. After construction of the gabion basket and the sea wall out at PHMR, greater coverage of the island has resulted in a dramatic decrease of erosion occurring out at the island. However, the aim is to continue with project to encompass the western side of the island.



**Seawall out at Abalone Caye**

#### **5.0 Community Education and Outreach**

**TIDE Freshwater Cup 2017 CARS Project**



The project tackles the root causes of crime and violence in the Toledo district of southern Belize by engaging youth in skills development, sport and education as preventative measures for engaging in crime. Toledo's youth face a number of challenges, including poverty and low education and employment rates, which make them particularly vulnerable to the risk of becoming engaged in illegal activities. The lack of productive alternative activities limits youth's opportunities for cultural and social development, and unemployment leads to listless youth who are constantly struggling to find a place in society. These factors may lead to youth becoming affiliated with gangs and the drug trade.

The main **activities** were:

**Freshwater Cup:** Support school teams to design, implement and evaluate Freshwater Cup projects, which through this project will be extended to include more schools with a broader project topic base. Enable schools to create a *video story* after completion of their project. Coordinate Freshwater Cup competition, and ceremony where teams that excel are publicly recognized. Coordinate training workshops for teachers to enable them to be more confident and effective coaching.



**National awareness of the project:** Publicly advertise the Freshwater Cup and create a video to promote it. Present the Freshwater Cup to decision makers in Belmopan. Provide regular updates to Minister of Education, Youth, Sports and Culture, and other decision-makers.





As a **result** of this project, youth participating in the Freshwater Cup will benefit from productive alternative activities, providing them with leadership and education opportunities that will encourage them to remain in school.

**Planned Activities and Indicators:**

*Objective 3: To engage  $\geq 1000$  school children and adolescents in activities that contribute to enhanced life skills: team work, self-esteem, leadership, environmental or healthy-living awareness, and reduce pressure to collaborate with or work for narco-traffickers.*

3.1. Support teams to design and implement Freshwater Cup environmental projects.



3.2. Support teams to design and implement Saltwater Cup environmental projects.



3.3. Support teams to design and implement the Bishops Cup ‘healthy living’/drug awareness projects.





3.4. Evaluation of environmental projects and award ceremony.



3.5. Complete risk assessments prior to the Freshwater/Saltwater/Bishops cup activities.

Each school participating in the Freshwater Cup program, were able to compile a risk assessment with the help of their staff. These schools look at internal and external factors that would be of risk for the proper implementation for the Freshwater Cup for 2017. The risk assessment looks at safety through proper transportation, field of play and proper footwear.

3.6. Enable schools to create a video story after completion of their environmental project.

3.7. Coordinate Freshwater Cup football competition and awards.



### 3.8. Coordination of Saltwater Cup Volleyball games and play-for-fun games.



Monkey River and Punta Negra were so remote that their inclusion in the regular Freshwater Cup was prohibitively expensive; therefore, students from Cattle Landing and Punta Negra were transported to Monkey River for games. Winning teams were recognized with a framed photograph of team.

### 3.9. Coordination of Bishop's Cup football competition and award ceremony.



### 3.10. Focus group meetings for monitoring and evaluation.

The Education Coordinator arranged meetings with the schoolteachers and principals for feedback on the above activities. There were as many eight trips: the Saltwater Cup communities was visited in one trip, the Freshwater Cup high schools were seen in one trip, but there were as many as five meetings for the 16 Freshwater Cup primary schools. A meeting for the Bishop's Cup schools was held at a schools committee meeting to maximize efficiency. Information was recorded and made available for the end of project evaluation.

***Objective 4:*** To train  $\geq 10$  school teachers, including  $\geq 5$  females to be more confident and effective at sports coaching.

- 4.1. Coordinate training workshop for school teachers to enable more confident and effective coaching.



***Objective 5:*** To engage the Government of Belize, to increase the level of understanding of sports for development projects with the aim to increase political will to replicate the Freshwater Cup.

- 5.1. Create and implement a mini communications plan.

The Project Coordinator created a small communications plan to increase awareness of the Freshwater Cup program at the ministerial level. This project actively encouraged expansion of the Freshwater Cup model at the national level through engagement with the Belize government.

- 5.2. Freshwater Cup publicly advertised during the competition.

- 5.3. Create a video to promote the Freshwater Cup

The 3-5 minutes video featured children interviews speaking about the positive benefits of the program as well as short action clips of the environmental projects implemented by the schools. Weekly results of the games will also be aired on national radio (Love FM) sports report. This will garner both local and public support that is a vital consideration for national expansion.

- 5.4. Present the Freshwater Cup to decision makers in Belmopan.

- 5.5. Provide regular updates to Minister of Education, Youth, Sports and Culture as well as other decision-makers.

## **Summer Camp**

### **Overview of 2017 TIDE Summer Camp**

This year marks the 11<sup>th</sup> consecutive environmental summer camp at the Toledo Institute for Development and Environment, in the Toledo District of Belize.

The camp was offered to children aged 10-13 and 14-17. The TIDE Summer camps were held from July 18-29 (half days) in Punta Gorda, and from August 18-22 (full days) in Punta Gorda only.

TIDE and the Toledo communities are very thankful for the sponsorship from OCEANA, which made it possible for 48 youth to be involved in the 2017 camp. There were 6 volunteers who assisted in the proper execution of the camp. When these children are involved and engaged in programming such as summer camp, they are less likely to fall victim to crime and violence.

### **Highlights and Key Achievements of 2017 Camp**

#### **“Life Below Water”**

TIDE summer camp has a different theme each year. This year’s theme was “Life below water” and the main objective of this camp was to help the children to develop an appreciation for their personal impact on the environment.

#### **Camp Objectives**

The TIDE summer camp built on the established theme by accomplishing the following objectives:

1. Foster an appreciation for and knowledge of personal impact on the environment
2. Develop a greater understanding of marine resources and its value.
3. Define climate change and sustainability
4. Highlight everyday actions that affect the environment (positively and negatively)
5. Involve equal numbers of girls and boys in camp, enhancing self-esteem, improving interpersonal skills, and involving them in healthy outdoor activities to promote a healthier lifestyle



**Figure 1:** Students at TIDE Summer Camp in creating poster highlighting week's activities with theme.

### **Camp Focus**

To promote hand washing and good hygiene behaviours at the camps, each camper was provided with hand soap and toilet paper, and access to washroom facilities was ensured. Children were encouraged to wash their hands after using the restrooms and before eating during camp.



## **Campers Participate in Field Trips to Port Honduras Marine Reserve and Punta Negra coastal community.**

**Figure 3:** Youths from camp visiting Port Honduras Marine Reserve.



## **Volunteers Committed to Facilitating 2017 Camp**

**Figure 4:** 2017 volunteers from Punta Gorda, following the summer camp cleanup campaign with ages 10-13.



## ***6.0 Managed Access in PHMR and other Fishing zones of Belize***

### ***Overview***

For 2017 the main focus of the managed access program was education and outreach on National Managed Access Roll out, the new vessel color coding system and fishing areas to be implemented with the national roll out. Updates on analysis of the data collected from catch logs was also presented. In the second quarter of 2017, implementation of the EU project was done. Under the



title “Restoring fisheries in the Mesoamerican Barrier Reef System” this project was geared towards strengthening the roll out of Managed Access in Zones 3,4 and 5. Some activities conducted were fisher forum, fishers exchange and managed access committee meeting

In the second quarter of 2017 boat painting and outreach was done along with the MA officer from fisheries department at Placencia Village.



2017 also saw the introduction of the European Union Project, “Restoring fisheries in the Mesoamerican Barrier Reef System.” This project is geared towards the strengthening of the managed access roll out in Zones 3,4,5 and 7 of the managed access areas. TIDE held its first managed access Fishers Forum for 2017 in Punta Gorda which saw the participation of fishers from Punta Gorda, Punta Negra and Monkey River.



TIDE also participated in the first ever Fishers Forum for zones 3 and 7 in Placencia and Copper bank respectively. These trainings were funded by the European Union project.



TIDE also introduced a finfish data collection survey at the Punta Gorda fish market. Through this medium data collector have sampled over 900 individual fish and collected data from over 20 fishers for the last quarter of 2017.



2017 also saw a fisher's exchange from Sarteneja. These fishers were primarily interested in lobster shade construction and the benefits of harvesting whole lobsters.



These fishers were extremely grateful for their experiences and the collaboration between fishers from PHMR

A managed access committee meeting was also held in Punta Gorda at the fisheries department.



Members continued to advocate for the successful implementation of managed access as well as ways to strengthen current activities.

Outreach was also done at TIDE's Fish Festival to attendees which included children of all ages.





As part of the EU project, fishers from zones 3,4 and 7 also visited Port Honduras Marine Reserve. This exchange also included a session on proper data entry by fishers from these zones.



During the last quarter of 2017 TIDE held its second fishers' forum with participants from Barranco village attending. Major discussions included the banning of mullet net, presentations of finfish market surveys data collected and the invitation to the national fishers' forum.



At the National Fishers Forum, representatives from zones 3,4, 5 and 7 attended. Managers and Co-managers of these areas gave updates and presented; on how through the participation of fishers managed access can continue to be a success



## **Research and monitoring**

TIDE continues to do regular monitoring of marine resources such as queen conch, lobster, sea cucumber and fin fish population and dynamics, coral reef health including coral bleaching and conch lip thickness study to determine conch maturity which can assist in changing policies to improve the conch fishery. Details of research and monitoring are available in the yearly report.

## 7.0 Logged Visitation to PHMR

A total of forty-four Belizeans visited our ranger station and received a presentation from the rangers. Americans and other nationals also continue to visit our field station, a total of one hundred seventy-two stopped by the station a slight decrease from previous years.

Data below depicts the number of visitors per month and country of origin for 2017.

**TABLE 7: Visitation to PHMR for Jan 2017 to Dec 2017 by Country (Data from the Logbook at Abalone Ranger Station)**

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total by Country
Belize		5	20	17			1			1			44
Canada	2		4		7								13
Costa Rica	1												1
France	2	1											3
Germany	1												1
Miami			1										1
Morocco							1			9			10
Nepal			1										1
South Africa	1												1
UK								12					12
USA	21	23	65	16	2			1		1			129
<b>Total</b>	<b>28</b>	<b>29</b>	<b>91</b>	<b>33</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>13</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>216</b>

There are visitors that venture direct to West Snake Caye an island within the Conservation Zone and conduct sport fishing within the reserve, and do not visit the ranger station so a record of their visit is not recorded in the log book but are captured in the ticket sale record.

**8.0 (Table: 8) Users of the Reserve and vessel names for 2017**

<b>Names of Fishers</b>	<b>Boat Name</b>
Eloy Cuevas sr.	Trouble
George Gordon/Anthony Coleman	Parrot Fish
Percival Gordon	Barracuda
Mystic	George Garbutt sr.
Ameerah	Darren Castellanos
Evan Cuevas	Fugitive
Alexander Garbutt jr.	Wildlife
Victor Cuevas	Monica
Jason Garbutt	Jaylan
Damian Garbutt	Vibzs
Winsley Garbutt	Dania
Apolonio Westby	Big Wave
George Ramirez	Walrus
Carlos Ramirez	Slice of Life
Lionel Decid	Gilda
Yonardo Cus	Igloo
Roy Ramirez	Tesha
Toribio Parchue	Moharita
Angel Paiz	Danto
Minor Perez	Mission
Servando Canelo	Melissa F
Roberto Caal	Killer
Elmer Saldivar	Kismet
Rafael Ramirez	Mullet
Mr. Winston Thompson	D Tour
Kent Audinet	Admiral
Martin Reyes	Charity
George Alford	Lobster Pot

Gerson Coleman	Julianna
Alonso Raymundo	Carino
Joel Casimiro	Irie
William Maheia	Binky
Ray Arzu/Greg Morgan	Kelly
Armando Ramirez	Blue Shark
Allan Perez	Blue Fury
Louis Cabrera	Joselyn
Leslie Williams	Queen Bee
Julio Williams	Julissa

*(Table: 8) Sport Fishing/tour guides and their vessel names 2017*

<b>Names of Guides</b>	<b>Vessel Names</b>
Thomas Garbutt	Unity
Eworth Garbutt	Destiny
Oliver Garbutt	Sealife
Alex Leonardo	Splash
Lionel Martin	Fish Lies
Victor Jacobs	Mandingo
John Young	Cursoe
Eloy Cuevas	Trouble
George Garbutt	Mystic
Ian Cuevas	Opportunity
Bruce Leslie	Nervous Wata
Wayne Castellanos	Supreme
Daniel Castellanos Jr.	Xavi
Daniel Cabral	Danika
Earl Godfrey	Teresa G
Kirk Godfrey	Tarpon
Kevin Modera	Bad Tide

George Alford/Kenworth Martin	Good Times
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## 9.0 TIDE Board of Directors

Albert Gabriel Roches (Chair)	Public Officer (Public Health)
Jeremy Enriquez (Director)	Program Manager, Ecology Project International
Alexander Garbutt (Director)	Local Fisherman and Tour Guide in Monkey River/Monkey River Village Council
Marie Aleman (Vice-Chair)	Entrepreneur/Community Representative
Dale Gomez (Director)	PCNP Advisory Council Representative
Paula Williams (Director)	PHMR Advisory Council Representative
Williams Tate (Treasurer)	Entrepreneur/Tourism Community Representative
Celia Mahung	Executive Director (Ex-Officio)

## 10.0 TIDE Staff

### Management Staff – support to PHMR

Celia Mahung	Executive Director
Allan Genus	Program Manager
Stephene Supaul	Operations Manager
Joe Villafranco	Development Director
Zane Zuniga	Marine Manager
Caroline Oliver	Sale and Marketing Manager
Delonie Forman	Financial Sustainability Manager
Elmar Requena	Community Development Officer
Federico Caal	Environmental Education Officer
Jasmine Faber	EU- Project Manager
Mario Muschamp	Terrestrial Manager
Ryan Moore	Managed Access Coordinator

### Administrative staff

Kimberly Lawrence	Financial Administrator
Alaine Noralez	Accounts Clerk
Ishamae Gomez	Receptionist/Janitor
Paul Etienne	Information Technology Officer

### **Tide Private Protected Land Staff**

Andrew Williams	Head Ranger
Santiago Cucul	Ranger
William Garcia	Ranger
Pedro Shol	Ranger

### **Paynes Creek National Park**

Mario Muschamp	Terrestrial Manager
Augustin Pop	Ranger
Leonard Williams	Ranger

### **10.1 PHMR Advisory Committee**

Dennis Garbutt/ Alex Leonardo	BTIA/PG Tour Guide Association
Armando Ramirez	Rio Grande Fisherman Cooperative
Daniel Castellanos	Monkey River Village Council/ Fishers Assoc.
Hon. Michael Espat	Area Representative
Mrs. Paula Jacobs	Chairperson Punta Negra Village Council
Mrs. Celia Mahung	TIDE Executive Director
Mario Muschamp	Terrestrial Manager
Roy Polonio	University of Belize-Toledo Campus
Mr. Lyndon Rodney/Victor Vasquez	Fisheries Department-PG
Edgar Correa	Forest Department
Aphane Avila	PG Town Council/Teacher
Ivan Williams	Monkey River Village Council

Dale Gomez	Large Land Developer
Celia Mahung	TIDE Executive Director
Mario Muschamp	Terrestrial Manager
Zane Zuniga	Marine Manager

### 11.0 PHMR Donors

1	The Oak Foundation
2	PACT-EG
3	The Summit Foundation
4	Overbrook
5	MAR Fund
5	EU

### 12.0 Annual Accomplishments

1.) Created a database for marine infractions (written warning, verbal warning, successful prosecutions). This will benefit the organization as a source document for presenting in court with repeated offenders, record keeping and a valuable tool for networking between Government agencies and other NGOs protecting marine resources.



2.) Developed an emergency assistance plan (safety manual) for PHMR. This safety manual consists of a collection of information, instructions and procedures intended to ensure the safe operation and conduct within PHMR.

EMERGENCY ASSISTANCE PLAN  
PORT HONDURAS MARINE  
RESERVE



3.) Generated an employee medical profile for rangers of PHMR. This will aid in giving the institution a better knowledge about the health of an employee and emergency contacts in the case of an emergency.



4.) Created a database for entry of visitor log. This will aid in efficiency of time spent on recording of visitor's information and will serve as an effective way in presenting information at the end of the year.



5.) Currently engaged in finalizing Standard Operating Procedures for Port Honduras Marine Reserve. SOPs are important in an organization because it is a step-by-step instruction that acts as guidelines for employee work processes.





### **13.0 Conclusion and Recommendations:**

In conclusion we have addressed some of the recommendations especially as it relate to the expansion of the replenishment zones by providing inputs into the revision of PHMR SI and submitted it to the Fisheries Department for approval and the revision of the reserve's management plan for the next 5 years [2017-2021]. We have completed research on conch with the conch lip thickness study to determine conch maturity which we hope will assist with improving regulations on the species in order to improve this fishery that is rapidly declining and will need urgent attention in order to save this fishery. TIDE has completed its 3-year annual work-plan/budget 2017. Information was gathered from technical documents such as management plan, strategic plan and strategic enforcement plan to name a few.

For the coming year 2018, it is recommended we follow up on concerns raised by fishers pertaining to bait fishing, and recreational fishing as it is believed that recreational fishers are extracting quite a bit of the marine resources and that record is not being collected or submitted so we can track what is coming out of the reserve.

#### **Recommendations**

- Continue to collect socioeconomic data of the communities adjacent to the MPA to determine level of impact from management of the Reserve.
- Revised PHMR Carrying Capacity Document to ensure it is relevant to current and future conditions especially with the development of cruise tourism in the south.
- Continue evaluate success derived from activities or trainings that created local jobs to demonstrate MPA's contribution to the sustainable development in the area as well as identify gaps and opportunities for sustainable livelihood development activities.
- Continue to build staff capacity and Improve in technology to be more cost effective in the management of the protected areas.
- Continue to monitor and lookout for new development in and around to the reserve that can pose serious threat to the integrity of the protected area and ensure the EIA process is followed for the development and implementation of those projects.

#### **14.0 Lessons Learnt**

- Building capacity of staff and stakeholder can lead to effective management
- Continuously invest in community to garner support for conservation
- Presentation from ongoing activities in PHMR with the use of visuals
- Continuous outreach to buffer communities to enhance relationship

Appendix 1: Patrol Routes 2017

