

# Port Honduras Marine Reserve



## Annual Report 2006

**Submitted to: Belize Fisheries Department**

**Submitted by: Toledo Institute for Development and Environment**



*Promoting the sustainable development of the Toledo District by fostering the efficient and effective management of natural resources, conducting relevant research, and providing training and advocacy in order to preserve our natural heritage for present and future generations.*

## Contents

Table of Contents	1
Words from the PHMR Manager	2
About TIDE	3
Our Goals	3
Our Approach	4
Where We Work	5
Organizational Structure	6
About PHMR	7
Introduction	7
PHMR Strategic Plan and Goals	8
Zoning Plan and Regulations	9
Legal body responsible for establishing regulations and procedures	9
Staff	9
PHMR Accomplishments 2006	12
Patrols and Surveillance	12
Partnership	12
In the Community	13
Community Support	13
Community Outreach and Education	14
Community Meetings and Training	15
Reaching Out	15
Institutional Development	17
Infrastructure Development	21
Visitors to PHMR	21
Research and Monitoring	24
Users of the reserve for 2006	27
TIDE Board of Directors	25
TIDE Staff	28
PHMR Advisory Committee	28
Scholarship Students, Interns and Volunteers	29
PHMR Donors	30

## **Words from the Manager**

It is with great honor that I present the Port Honduras Marine Reserve Annual Report for 2006. This report summarizes the main activities occurring through the year 2006. This year was another successful year for the Port Honduras Marine Reserve and the Toledo District.

The Port Honduras Marine Reserve has now undergone six full years of management since its declaration in 2000. The patrols and surveillance continued this year, with a total of 822 patrols conducted. As a result of these patrols six persons were charged for illegal activity, and 19 gill-nets were confiscated. The number of arrests this year was much lower than the number of arrests made last year (32 arrests). This is a direct result of the continued effort of the PHMR staff and stakeholders, such as the tour guides and fishermen, taking an active role in protecting the Reserve. TIDE continued our community outreach program as students from within the buffer zone of the reserve were taken on educational tours to PHMR. This awareness building has also helped to reduce the amount of illegal activity in the Reserve.

The PHMR community ranger program also continues to play an integral part in the day-to-day management of the Reserve. Dedicated community rangers are called upon to help out on either temporary relief of staff or in assisting with research. TIDE's collaboration with other partners such as The Fisheries Department, Police Department, Belize Defense Force, Coast Guard, TASTE, Friends of Nature, Customs Department and the Immigration Department was also a success. Several community meetings and joint operations were conducted over the course of the year as well, and not only in PHMR but also within the waters of southern Belize.

Research and monitoring continues to play an integral part in the management effectiveness of the Reserve. This year we conducted monitoring of water quality, seagrass, mangroves, conch, lobster, coral and fish. The data is currently being analyzed and will be presented in a PHMR Biological report 2006, which will be available from TIDE in April 2007.

We also want to give special thanks to the Belize Fisheries Department, the PHMR Advisory Committee, The Oak Foundation, AVINA, the National Oceanic and Atmospheric Administration (NOAA), the United Nations Development Programme – Global Environment Facility/Small Grants Programme (GEF-SGP), The Wallace Foundation, The Nature Conservancy, Mesoamerican Barrier Reef Systems Project (MBRS), the Foundation for Environmental Solutions (FES), and the Summit Foundation. None of our work would have been possible without the dedication of our sponsors.

Special mention must also be made to the villagers of Monkey River, Punta Negra and Punta Gorda for their commitment to success, and to the rest of the TIDE team for all their help.

Sincerely,

Dennis Garbutt  
Manager  
Port Honduras Marine Reserve

## **About TIDE**

The Toledo Institute for Development and Environment (TIDE) is a non-governmental organization (NGO) founded in September 1997 to meet the growing environmental and development needs of the Toledo District, the most southern district of Belize. TIDE was conceived as a local initiative in response to the negative environmental impacts of activities such as manatee poaching, illegal fishing, illegal logging and destructive farming methods.

### **TIDE's Goal**

The organization has been hard at work over the past ten years to achieve its goal of improving organizational capacity to enable us to promote the protection and responsible management of Toledo's natural resources, while simultaneously fostering programs that create and promote sustainable alternative economic opportunities for resource users who have traditionally depended on natural resource extraction for their livelihoods. The alternative livelihoods developed by TIDE accomplish two goals: instilling a sense of ownership in our common resources, and conserving them for future generations.

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## **Our Approach**

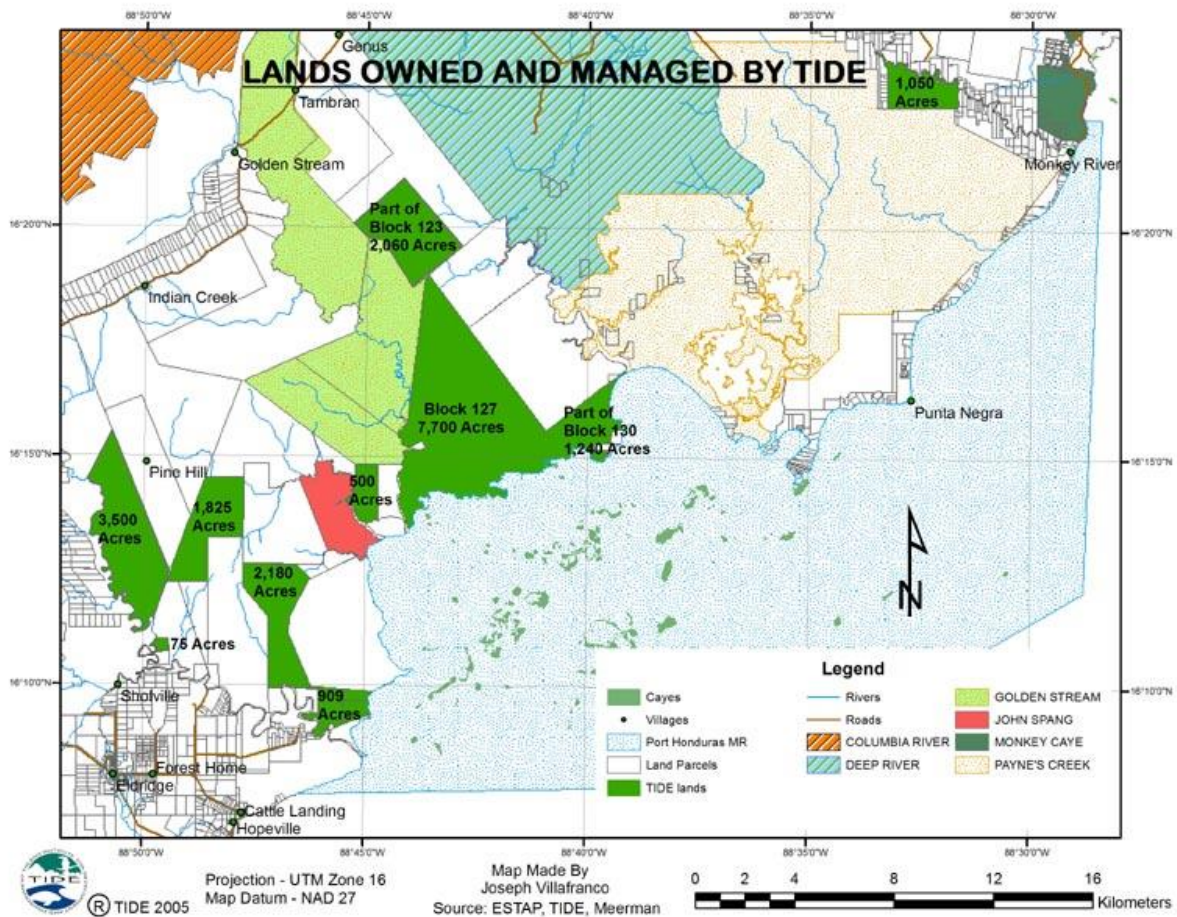
TIDE employs various methods to achieve our conservation goals, including the natural and social sciences, which fall under five strategic objectives:

1. **Protected Areas Planning and Management**  
To protect conservation targets by promoting and leading the planning and management of protected areas in the Toledo District.
2. **Sustainable Development**  
To foster integrated conservation and development initiatives that generates economic opportunities for local residents and lead to the sustainable development of the Toledo District.
3. **Research and Monitoring**  
To maintain the biodiversity and integrity of the ecosystems through continuous research, monitoring and appropriate interventions.
4. **Environmental Education and Outreach**  
To expand and enhance the knowledge base on Toledo's natural resources to promote their protection and sustainable use.
5. **Institutional Development**  
Improve TIDE's organizational capacity to accomplish its mission.

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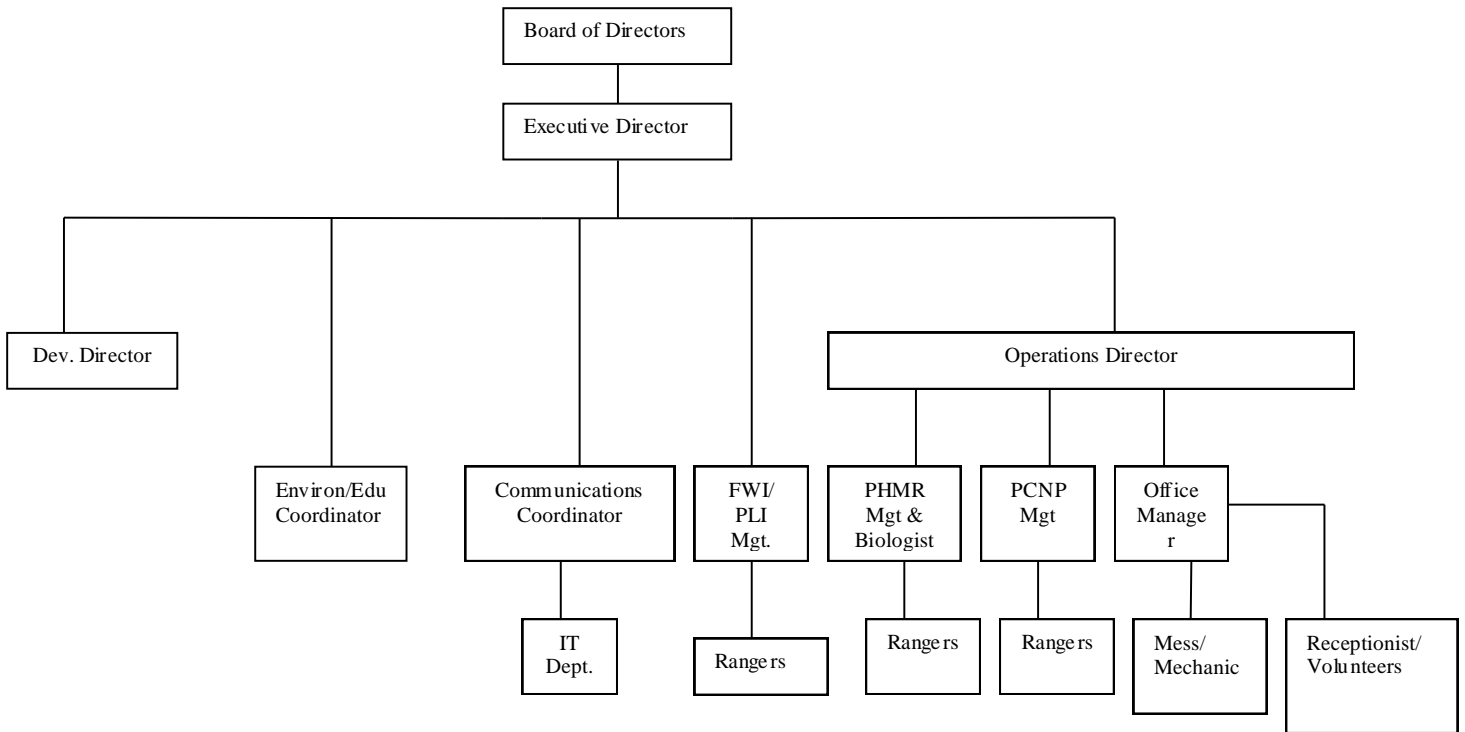
## Where We Work

Near to its inception, TIDE identified what is now known as the Maya Mountain Marine Corridor (MMMC) as a high priority conservation action site. The MMMC is a magnificent natural area covering almost one million acres of land and 1,000 square miles of sea. The MMMC extends from the crest of the Maya Mountains in southwestern Belize to the southern end of the Belize Barrier Reef System. Within this area, the more significant conservation activities revolve around management of the Port Honduras Marine Reserve, Payne's Creek National Park and TIDE's private holdings (~30,000 acres).



## TIDE's Organizational Structure

Initially started by volunteers, TIDE has now grown to include an Executive Director who manages 28 paid staff. The organization also has a policy making body – Board of Directors – comprised of individuals from a wide cross-section of the society.



## **About the Port Honduras Marine Reserve (PHMR)**

### **Introduction**

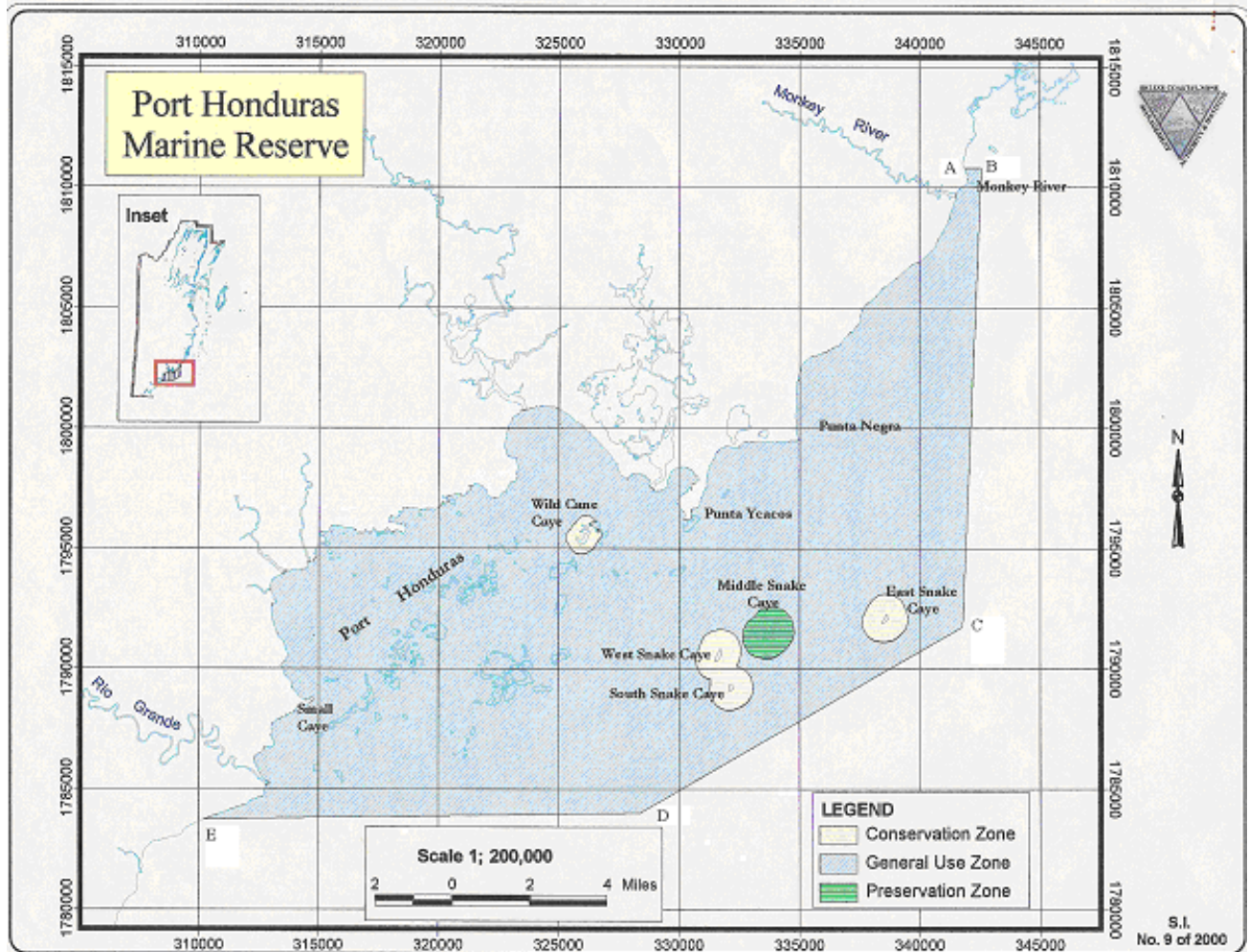
Declared by the government of Belize in January 2000, the Port Honduras Marine Reserve is being actively co-managed by the Toledo Institute for Development and Environment (TIDE) and the Belize Fisheries Department. The Port Honduras Marine Reserve comprises an area of approximately 160 square miles. The PHMR is an integral part of the Maya Mountain Marine Corridor and is located in southern Belize just off the coast of Punta Gorda Town, (Ganja Point - between Rio Grande Bar and Monkey River Village). PHMR comprises all the coastal wetlands, sea, seabed, and national lands within the area known as Port Honduras with general boundaries being Rio Grande in the South, Monkey River in the North, the Snake Cayes in the East and the coastal wetlands along the coast in the West.

The Port Honduras Marine Reserve is rich in biodiversity containing approximately 138 small mangrove cayes, which provide essential habitat and nursery for juveniles. Other critical habitats include sea grass beds, hard bottom communities, and soft bottom communities. A large portion of the reserve is inhabited by seagrass, which also provides essential habitat and food for juveniles, sea turtles, crocodiles and the West Indian manatee. Within the Port Honduras Marine Reserve are also fringing reefs and several coral patches and coral heads, which provide habitat for vertebrates and invertebrates.

There are two villages located in the Marine Reserve, 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 for their income.

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## Map of the Port Honduras Marine Reserve

### 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 purposes 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**  
To provide an area free from commercial fishing to prevent fishery stocks from over-exploitation, provide an undisturbed area for recruitment of species, and enhance the value of the area for recreational and tourism activities.
3. **Preservation Zone**  
To provide areas within the reserve that are 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

## **Legal body responsible for establishing regulations and procedures**

Under the Fisheries Amendment Act of 1983, the Fisheries Department is ultimately responsible for the establishment and implementation of marine reserves. However, the Fisheries Department entered into a formal agreement for co-management of the PHMR with TIDE. Management of the Reserve is delegated to a management committee that TIDE chairs. The role of the PHMR Advisory Committee includes: ensuring regular revision and review of the management plan, commenting on and recommending legislation and regulations, assisting in the development of sustainable financing mechanisms for the Reserve and decisions relating to research to be conducted in the Reserve. Under TIDE's leadership, the management committee has developed a division in roles and responsibilities, job descriptions and clarity over day-to-day management of the Reserve's resources.

## **Staff**

The Port Honduras Marine Reserve is managed by a total of 5 full time TIDE staff members for the year 2006. These include a Manager, Dennis Garbutt, who is supported by acting Head Ranger Marlon Williams, two full time rangers; George Sambula and Janelle Borland and several temporary rangers. The ongoing research and monitoring of the reserve's biological resources is headed by the Marine Biologist, Juan Chub. The Head ranger and other rangers are stationed at the PHMR ranger station on a weekly basis. The staff conducts regular patrols to monitor activities within the Reserve and reduce threats such as gill-net use, illegal fishing and over-fishing. These rangers also enhance TIDE's public relations by conducting community meetings and play an active role in research activities being conducted within the Reserve. The rangers also orient visitors to the ranger station by reviewing the Reserve's educational display of rules, facilities, and zoning.

**PHMR Manager:** Mr. Dennis Garbutt

Mr. Garbutt is an experienced Reserve Manager, active in monitoring, research and baseline studies for PHMR. He is a PADI Certified Dive Instructor responsible for training TIDE staff as well as members of the community. He has experience in coral and fish monitoring and identification and leads the SPAG studies for the southern portion of the Belize Barrier Reef. Mr. Garbutt also has training in engineering technology and has directed numerous construction projects for TIDE, including the building of two Ranger Stations. Mr. Garbutt oversees the day-to-day activities of the reserve.

**PHMR Marine Biologist:** Mr. Juan Chub

Juan has a Bachelor's degree from the University of Belize and has extensive experience in marine monitoring. Since joining TIDE, he has participated in a number of training courses to hone his skills and build upon his knowledge of protected areas management. The Marine Biologist is responsible for developing, coordinating, and implementing all of TIDE's research and monitoring in the PHMR.

**PHMR Acting Head Ranger:** Mr. Marlon Williams

Mr. Marlon Williams is the acting head ranger for the Port Honduras Marine Reserve. He has been with TIDE since 2004 and has excellent boat handling skills. He is also active in research and monitoring and the daily patrols and surveillance within PHMR.

**Ranger:** George Sambula

Mr. George Sambula joined the team in August 2003. Mr. Sambula is a native of Punta Gorda Town. He is active in the upkeep of the ranger station and daily patrols and surveillance as well.

**Ranger:** Janelle Borland

Janelle is one of the first female rangers to work in the Port Honduras Marine Reserve. She is also one of the first female rangers with a valid boat captain license and boat handling skills. Before becoming a PHMR ranger, she was a ranger for TIDE's Private Lands.

*Temporary Rangers, volunteers, interns and community researchers for 2006*

Alexander Agustin	Temporary Ranger	Punta Gorda Town
Darnell Dawson	Temporary Ranger	Monkey River
Edwardo Bochub	Temporary Ranger	Head Caye
Ceferino Lino	Temporary Ranger	
Kenan Sentino	Temporary Ranger	
William Villiar	Temporary Ranger	
Jimmy Boucher	Temporary Ranger	
Kenton Galvez	Temporary Ranger	
Michael Daniels	Temporary Ranger	
Lionel Martin	Temporary Ranger/Community researcher	
Neville Smith	Community Researcher	
Isani Chan	Community Researcher	

Eloy Cuevas	Community Ranger
George Garbutt	Community Ranger
Kenworth Martin	Community Ranger
George Ramirez	Community Ranger
Oliver Garbutt	Community Ranger
Alex Leonardo	Community Ranger
Alexander Garbutt	Community Ranger

Thomas Buerens	Volunteer/student
Silvia Norales	Volunteer/Student

*Other Community Members*

1. Thomas Garbutt
2. John Young
3. Ovel Leonardo
4. Wallace Young
5. Roberto Echavarria



*Abalone Caye – Port Honduras Marine Reserve*

## PHMR Accomplishments 2006

### Patrols and Surveillance

A total of 822 patrols were conducted from January 2006 to December 2006. As a result of these patrols 21 gill nets were confiscated. No long lines were encountered during the course of this year. Six persons were arrested in 2006. In February 2006, four persons (3 adults and 1 minor) were arrested for fishing in the conservation zone. In March 2006, two persons were arrested for fishing lobster out of season. All persons were brought to court and charged.

Table 1 summarizes the number of patrols done from January 2006 to December 2006 and also includes the number of arrests made, reason for arrest, number of gill nets confiscated and the number of long lines confiscated.

Table 1: Patrol summary for January 2006 to December 2006

Month	# of Patrols	# of arrests	Reason for arrest	# of gill nets confiscated	# of long lines
Jan-06	61	0		4	0
Feb-06	42	4	Fishing in the conservation zone	0	0
Mar-06	101	2	Lobster out of season	0	0
Apr-06	68	0		0	0
May-06	57	0		2	0
Jun-06	60	0		2	0
Jul-06	63	0		1	0
Aug-06	82	0		2	0
Sep-06	75	0		5	0
Oct-06	71	0		3	0
Nov-06	70	0		2	0
Dec-06	72	0			0
<b>TOTAL</b>	<b>822</b>	<b>6</b>		<b>21</b>	<b>0</b>

### Partnership

The PHMR staff continues to work along with other local and international partner organizations. These partners include SCMR/TASTE, the Fisheries Department, the Police Department, the Belize Maritime Wing, University of Belize, Earthwatch, TNC and other local governmental and non-governmental organizations in the Toledo District. During this year several joint patrols were conducted with the police department, the Belize maritime wing, the Fisheries Department, and SCMR/TASTE.

In addition, during the early part of the year 2006, PHMR Manager, Marine Biologist, Science and Stewardship Director and the Executive Director for TIDE attended a meeting with the Fisheries Department in Belize City to discuss collaborative efforts with the Department. Few

times during this year, two fisheries officers from the Fisheries Department in Punta Gorda Town went out in the field to assist the PHMR rangers in their daily patrols and surveillance. Partnerships and collaboration efforts with TASTE was also done during this year. The PHMR rangers also provided assistance to other ongoing research projects such those headed by WCS (Goliath grouper, sharks and rays). In 2006 TIDE signed an agreement with Earthwatch, under which Earthwatch would assist TIDE by providing volunteers to assist in research and monitoring in the Port Honduras Marine Reserve. A total of five teams consisting of four to six local and international volunteers assisted PHMR in 2006.

## **In the Community**

### **Community Support**

The PHMR staff gave their maximum support to the community this year, especially to the Monkey River Tour Guide Association in their lobster-shed project. The PHMR staff was part of the preliminary phases of the project; hence full support was given to the association. In January 2006, PHMR rangers assisted the Monkey River community in the construction of these lobster sheds. In May 2006, PHMR Manager and Marine Biologist went to Monkey River Village to give assistance to the Monkey River Tour Guide Association in mapping sites for their lobster shed project. Several sites where the lobster sheds would potentially be placed were marked using a GPS. In August 2006, Mr. Dennis Garbutt and Mr. Joseph Villafranco went to Monkey River to assist the Monkey River Fishermen Association with the mapping of the lobster fishing area. TIDE produced a map for the Association showing the different grass and coral areas.

This year TIDE also worked with the Monkey River Community on the renovation of the Monkey River Tour Guide Association's building. Mr. Dennis Garbutt assisted the Monkey River Tour Guide Association with the renovation of their office building by providing technical support. The Monkey River Tour Guide Association held the opening of their newly refurbished building on 12<sup>th</sup> October 2006. This building is now used for the day-to-day business of the Association such as office area and visitor center as well as an area for tour guide meetings. Proposals developed by TIDE and funded by donors such as PROARCA/APM provided \$17,000 for materials to refurbish the building while the Association members provided the labor.





This year, TIDE, specifically the PHMR Manager, was involved with the formation of the Southern Belizean Fishermen Association. These include fishermen from Punta Gorda Town all the way to Hopkins village. The association comprises of five different fishing associations and two cooperatives. These include; the Punta Gorda Fishing Association, the Monkey River Fishing Association, Independence Fishing Association, Rivers Dale Fishing Association, Hopkins Fishing Association, Rio Grade Fishing Cooperative and Placencia Fishing Cooperative. TIDE provided transportation, facilities and logistics for the meeting. The main purpose of the formation of the association is for each member to become more organized and more recognized, hence they would have stronger voices to lobby for the betterment of the fishing industry.

As part of TIDE's support for the community and to build community relationships, each month the PHMR rangers transports a team of medical personnel from the Jericho Road Clinic to Monkey River Village to give medical assistance to the community.

PHMR supports the community in several other instances as well. For example, the PHMR staff assisted the Punta Negra community in the cleaning and preparation for their Easter weekend fair. Traditional rituals, such as the Garifuna "Dugu", are also supported by TIDE (in this instance the Dugu participants are permitted to camp at the TIDE ranger station. Other ways in which PHMR supports the community is by providing transportation when necessary. PHMR Rangers transported all students and teachers from Punta Negra Village to Punta Gorda town for the student parade in the September celebrations. Also, during the funeral of the late Paul Jacobs, a PHMR vessel transported the PG community to Punta Negra Village for funeral services.

Although one of the priority tasks for the rangers are patrols and surveillance and making sure that the laws of the reserve are kept, one of their important tasks as well is safety. In July 2006, PHMR rangers assisted with the search for Albert King, who was lost at sea; while in August 2006, PHMR Rangers assisted the community and Police Department with the search for one missing fishermen, Mr. Denver Gomez. Although only one body was recovered, PHMR staff is always there to support the community when necessary.

## **Community Outreach and Education**

This year the PHMR staff continued with their community outreach and education. The PHMR staff gave a tour to several high school and primary level classes. These schools include the Toledo Community College, Julian Cho Technical High School, Saint Peter Claver School, Seven Days Adventist Primary School, Cattle Landing Primary School, Forest Home Methodist School, Big Fall Primary School and Little flowers R.C Primary School. All students were given a presentation based on the activities occurring within the reserve. Presentations were given on the different laws governing the reserve, zoning, conflicts, management techniques, research and monitoring and more.

## **Community meetings and training**

### *Community Meetings*

Community meetings were held in Monkey River Village and Punta Negra Village. These are highlighted below:

On February 5, 2006, PHMR staff, along with SCMR staff and Fisheries PG, attended a community meeting at Punta Negra Village and Monkey River Village. The main purpose of this meeting was to inform the communities of the collaboration efforts between the organizations and to discuss community issues and concerns in relation to the management of the Reserves.

On 11<sup>th</sup> July, Dennis Garbutt attended a Southern Belizean Fishermen Association meeting in Rivers Dale. The purpose of the meeting was to discuss the make-up of the Association and to determine the goal and direction of the Association. TIDE's involvement in this was to give assistance to ensure that the fishermen were properly represented and to provide support. A follow-up meeting will be held to elect members.

On 27<sup>th</sup> July, a Global Environment Facility/ Small Grants Programme (GEF/SGP) end of Project Evaluation workshop was held at the TIDE conference room. The purpose of this workshop was to get qualitative information from the community members who received training through this project, to find out how their business or skills have improved or how they have benefited from it. The participants also pointed out where improvements should be made for future trainings.

On 21<sup>st</sup> July, Mrs. Leandra Cho-Ricketts, a consultant hired by TIDE, gave a presentation on her study, "Management Effectiveness of Port Honduras Marine Reserve". The purpose of this meeting was to present the findings on the study of the Management Effectiveness of PHMR to the stakeholders. In general, the results of the management effectiveness of PHMR were good. The full report is available upon request.

On the 14<sup>th</sup> September the PHMR Manager attended a meeting at Monkey River Village with the fishermen, GEF/SGP, Fisheries personnel, and representative from Friends of Nature. The meeting provided an update on the lobster-shed project.

On June 19, 2006, TIDE's Executive Director (Wil Maheia), PHMR Manager (Dennis Garbutt) and Science and Stewardship Director (Dr. Robin Coleman) attended a meeting with the Monkey River Village Council. The purpose of the meeting was to air grievances by both parties and to work on a plan for moving forward and working together.

## **Reaching Out**

As part of the daily responsibilities of the PHMR staff in the management of the Reserve, reaching out to the community plays a major role. Reaching out to the community is done in several ways, including daily education to community members in the field, newsletter articles, radio shows, brochures, school visits, etc. On a quarterly basis TIDE produces a newsletter in



which the main activities of PHMR, such as research and monitoring, training, community involvement, etc., are highlighted. This newsletter is distributed to friends, donors, schools, local NGO's and to communities such as Punta Gorda, Punta Negra and Monkey River village. The PHMR staff also produces weekly news on the "Rising TIDE" radio show on Monday nights. On several occasions the PHMR manager, Marine Biologist and PHMR ranger went on these radio shows to talk about their experiences in the field.

To reach out to the public on a more national, regional and global level, most of the general information about the reserve, activities occurring within the reserve, news and events and research reports are available on the TIDE website at [www.tidebelize.org](http://www.tidebelize.org). The website is updated periodically and an entire section is devoted to the PHMR.

The PHMR rangers participated in the Independence Day, 21 September, parade activity. They participated in the float competition displaying the conservation efforts and importance of protection for the endangered sea turtles.

TIDE held its fifth Annual Fisherman's Festival on November 19th and 20<sup>th</sup>, 2006. TIDE collaborated with the National Garifuna Council to make this event successful. A TIDE booth was made available whereby the activities occurring within the Port Honduras Marine Reserve were displayed. This year's fish fest again was a huge success and lot of people from outside the Toledo District got the opportunity to learn about TIDE and the Toledo District.



## **Institutional Development**

### **Training, workshops and meetings**

#### *Major Training for staff in 2006*

This year the PHMR staff received a number of different trainings to build and strengthen their capacity for the more effective monitoring and management of the Port Honduras Marine Reserve. Below is a list of the major training for staff in 2006.

### **Research Related training**

From January 8 to January 14, 2006, PHMR Manager, Dennis Garbutt, attended a spawning aggregation monitoring/training in Tortola (British Virgin Islands). The main purpose of this training was to participate and share experiences in reef fish spawning aggregation monitoring. This training was sponsored by The Nature Conservancy, which was held for the Department of Conservation and Fisheries.

Marine Biologist, Juan Chub, attended an Earthwatch fellowship research program on Queen Conch populations (*Strombus gigas*) at the Sapodilla Cayes in Belize from March 30 to April 2, 2006. Several juvenile queen conchs were measured and tagged using spaghetti tags.

Mr. Chub also attended an AGRRA training that was held from May 15 to 19, 2006 at the CZMAI training room in Belize City. The main purpose of this training was to become familiar with the AGRRA coral and fish monitoring methodology. Ten of the AGRRA sites are located within the Port Honduras Marine Reserve.

On the 12<sup>th</sup> September 2006, Mr. Chub attended a Spawning Aggregation (SPAG's) database training that was conducted at the CZMAI training room in Belize City. The main purpose of this training was to become familiar with the SPAGs database and web-based system that was being developed by TNC.

### **Capacity building**

In May 2006, Marine Biologist, Juan Chub, did a Rescue Diver and Dive Master training course at the Sapodilla Cayes Marine Reserve with OWSI Instructor Dennis Garbutt. This training was necessary since presently there are no certified dive masters present during research, which includes diving. This training course is also a part of TIDE's capacity building program to increase the ability of the staff to conduct research in a more safe and efficient way.

Juan Chub attended a DAN oxygen provider training at Seaport Belize on May 2, 2006. Earthwatch Institute sponsored this training in preparation for the safety of the Earthwatch volunteers who would assist TIDE in research.

From May 12 to 13, 2006, Juan Chub attended an Emergency First Aid and CPR training at the Red Cross office in Punta Gorda Town, also sponsored by Earthwatch Institute.

On June 6 and 7, 2006, boat handling, engine maintenance, boat safety and team building training were conducted at the PHMR ranger station. Participants for this training included all TIDE rangers as well as Mr. Fernando Mencias and Mr. Royston McKenzie from the Fisheries Department, Punta Gorda Branch. This training was facilitated / conducted by Mr. Dennis Garbutt, Mr. Eugenio Ah, Mr. Mario Muschamp, and Mr. Ernest Caliz, all of TIDE.

Mr. Marlon Williams, Acting Head Ranger for PHMR, attended a Ranger Training course in Belize City offered by the Fisheries Department. The training was held from the 21<sup>st</sup> to 25<sup>th</sup> August, 2006.

Mr. Marlon Williams also attended a 'Training of Trainers' training in Belize City from the 28<sup>th</sup> August to 1<sup>st</sup> September. This was also offered by the Fisheries Department.

On 6<sup>th</sup> and 7<sup>th</sup> October 2006, TIDE Rangers participated in a first aid training held by the Red Cross. This enables staff to be better prepared in any emergency situation.

On 13<sup>th</sup> October 2006, a team building exercise was held for the TIDE staff at the Machaca Hill Lodge in Toledo. The purpose of this exercise was to get staff to take more ownership of the organization and evaluate where they are and where they want to go as well as how they would like the organization to improve.

On 23<sup>rd</sup> October 2006, Acting Head Ranger Marlon Williams and Payne's Creek National Park Manager, Mario Muschamp, attended a DAN Oxygen Provider training course offered by SeaSports Belize in Belize City. The Belize Spawning Aggregation (SPAGs) working group organized this course as a part of their safety related issues during the SPAGs monitoring.

On Monday, 16<sup>th</sup> October 2006, PHMR Manager and Marine Biologist, along with other Protected Area Managers, attended a one-day Time Management training at the Belize Institute of Management in Belize City. The main purpose of this training was to assist managers in managing their working time more efficiently and effectively.

All TIDE Rangers participated in a four-day Law Enforcement training conducted by Magistrate Clive Lino. The training included both theory and practical exercises where the staff was given the opportunity to conduct a mock patrol and arrest and a mock court session. They were also shown how to prepare a report. The session included a presentation from the Forest Department on the regulations of National Parks.

In addition to the training, workshops and meetings attended, the Port Honduras Marine Reserve staff were also given their employment evaluation during the month of July 2006. The main reason of the staff evaluation is to find ways to strengthen weaknesses in the work area of the staff. In addition to this, weekly department meetings and monthly staff meetings were held to provide updates on the activities occurring within the Port Honduras Marine Reserve.

## *Meetings and Workshops attended for 2006*

### **Research**

On January 10<sup>th</sup>, February 7<sup>th</sup>, March 9<sup>th</sup>, May 4<sup>th</sup>, & September 12<sup>th</sup>, Mr. Chub attended Spawning Aggregation working group meetings in Belize City at the CZMAI office. The main purpose of these meetings was to get updates on the new database & newsletter, discuss dive safety information, discuss monitoring protocols and revisions by Kevin Rhodes, discuss proposals from TIDE on SPAGs, discuss SPAGs research permit, share monitoring results for the past month, and make monitoring plans for the next month.

On February 7, 2006, Mr. Chub also attended a MBRS Synoptic Monitoring program meeting in Belize City Fisheries department conference room to discuss the status of the monitoring program and come up with new dates for the monitoring to be more effective. As a result, new dates were selected for conducting seagrass and mangrove surveys and coral and fish monitoring. A seagrass, mangrove and water quality workshop/training was also planned during the meeting for February 22 to February 25 2006, but was delayed until further notice.

On May 26, 2006, Science and Stewardship Director and Marine Biologist met with two Scientist from the University of Rhode Island. These scientists along with 5 others will be conducting a study within PHMR and several other reserves within the region, which focus on understanding the linkages among governance factors of linked social and ecological ecosystems. The main purpose if the meeting was to discuss logistics of this research that will be conducted in PHMR.

On 17<sup>th</sup> October 2006, the Science and Stewardship Director, the PHMR Manager and the Marine Biologist attended a meeting with Mr. Castillo and the Earthwatch staff to discuss plans for 2007 as it relates to research assistance.

### **Other related workshops and meetings**

On January 18, 2006, TIDE's PHMR Manager, Marine Biologist, Science and Stewardship Director and the Executive Director attended a meeting with the Fisheries Department in Belize City to discuss collaborative efforts. Another meeting with the Fisheries Department was held on January 30, 2006 in the TIDE conference room to discuss patrols and come up with a schedule for joint patrols.

On January 17, 2006, the same group attended a meeting with Earthwatch personnel to discuss issues relating to the creation and running of TIDE monitoring teams for June and July 2006.

On February 3, 2006 Dennis Garbutt and Wil Maheia attended a meeting with TASTE to discuss collaboration efforts between the two organizations. Topics discussed included joint patrols, joint community meetings, TASTE members to attend TIDE radio show, and the garbage disposal dumpsite problem in Punta Gorda Town.

On February 7, 2006, PHMR held its first Advisory Board meeting for 2006 at the TIDE conference room. The main purpose of this meeting was to inform the PHMR Advisory Board on our accomplishments for 2005 and to update them on the PHMR workplan for 2006.

On February 10, 2006 Dennis Garbutt and Juan Chub held a meeting with Nicanor Requena from TNC MAR Programme to discuss the TIDE/TNC agreement for the SPAGs working group. As a result of this meeting TNC developed a separate agreement that TIDE would sign in order to obtain funds from TNC to support the SPAGs working group. Funds used for the working group meetings and SPAGs monitoring in January and March would be channeled through TIDE.

On April 4, 2006 an advisory board meeting was held for PHMR. The main purpose of this meeting was to keep the board informed of ongoing activity in the Reserve and to discuss collaboration efforts with the different partners such as SCMR and Fisheries.

From May 30 to June 1, 2006, Dennis Garbutt attended a meeting in Antigua, Guatemala concerning a Mesoamerican Barrier Reef Eco-regional Assessment workshop that was facilitated by The Nature Conservancy.

On July 4, a PHMR Advisory Board Meeting was held at the TIDE office. Mr. Garbutt gave a presentation in which he stated that one of the major setbacks at PHMR is insufficient permanent staff, but that the situation was presently being worked on.

On July 13, Dennis Garbutt along with a GEF/SGP staff attended a meeting in Monkey River with the Monkey River Fishermen Association. The purpose of the meeting was for the Association to give an update on the progress of the lobster shade project. The president of the Association gave a presentation, which included their accomplishments and setbacks as it relates to the project.

On August 24, Dennis Garbutt attended the Payne's Creek National Park Management Committee Meeting to share his experiences in relation to the ticketing system being used at PHMR since the meeting was about implementation of an entrance fee system for the Park.

From September 5 – 7, 2006 the Dennis Garbutt attended the 2<sup>nd</sup> Mesoamerican Barrier Reef Eco-regional assessment workshop in San Pedro Sula, Honduras.

On October 18, 2006, Dennis Garbutt attended a presentation and luncheon on the vision for collaboration of TNC's Belize Marine Program.

On 24<sup>th</sup> to 26<sup>th</sup> October 2006, Dennis Garbutt attended the Third Mesoamerican Reef Eco-regional Assessment Workshop in Belize City.

## **Infrastructure Development**

This year was very fortunate for the Port Honduras Marine Reserve since two new boat engines were purchased. A new 23 foot boat with a new 50 Yamaha engine was purchased for patrols around the Snake Cayes. A new 115 Yamaha was also purchased for the use in research, monitoring and general patrols. TIDE also raised the funds to build a new Monkey River Tour Guide Association building.



*Eloy Cuevas welcomes first visitors to new Tour Guide building*

## **Visitors to PHMR**

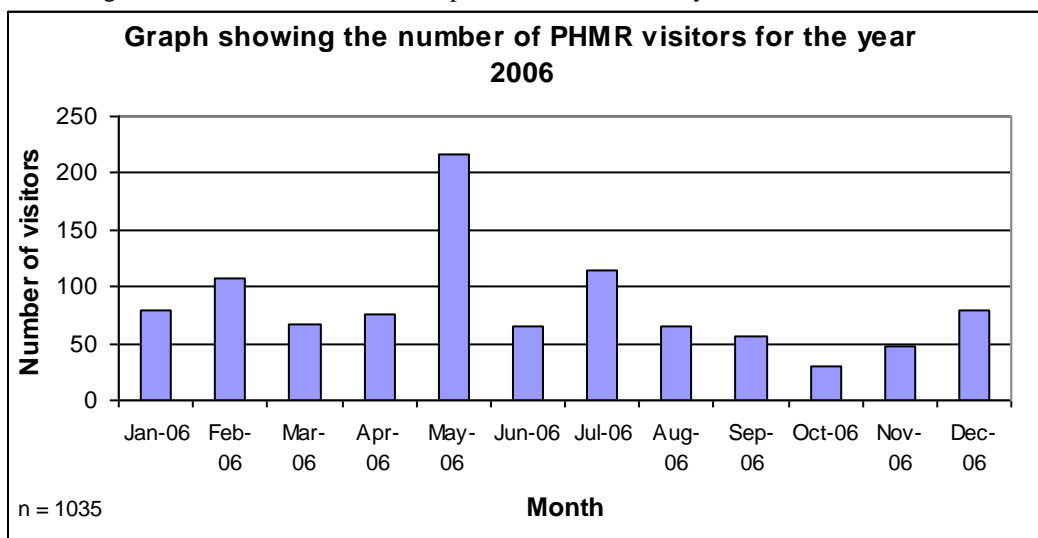
A total of 1,035 visitors signed the PHMR guest book for the year 2006. These are visitors that actually visit TIDE's ranger station. Visitors that come to the Port Honduras Marine Reserve but do not visit the ranger station are not recorded. The majority of the visitors are Belizeans, followed by Americans. These two nationalities make up the highest percentage of visitors. All visitors were given a presentation on the activities occurring within the Port Honduras Marine Reserve, the laws governing the reserve, zoning rules, etc. The table below shows the total number of visitors according to nationality per month for the year 2006.

Table 2: Number of visitors to PHMR according to nationality for January 2006 to December 2006.

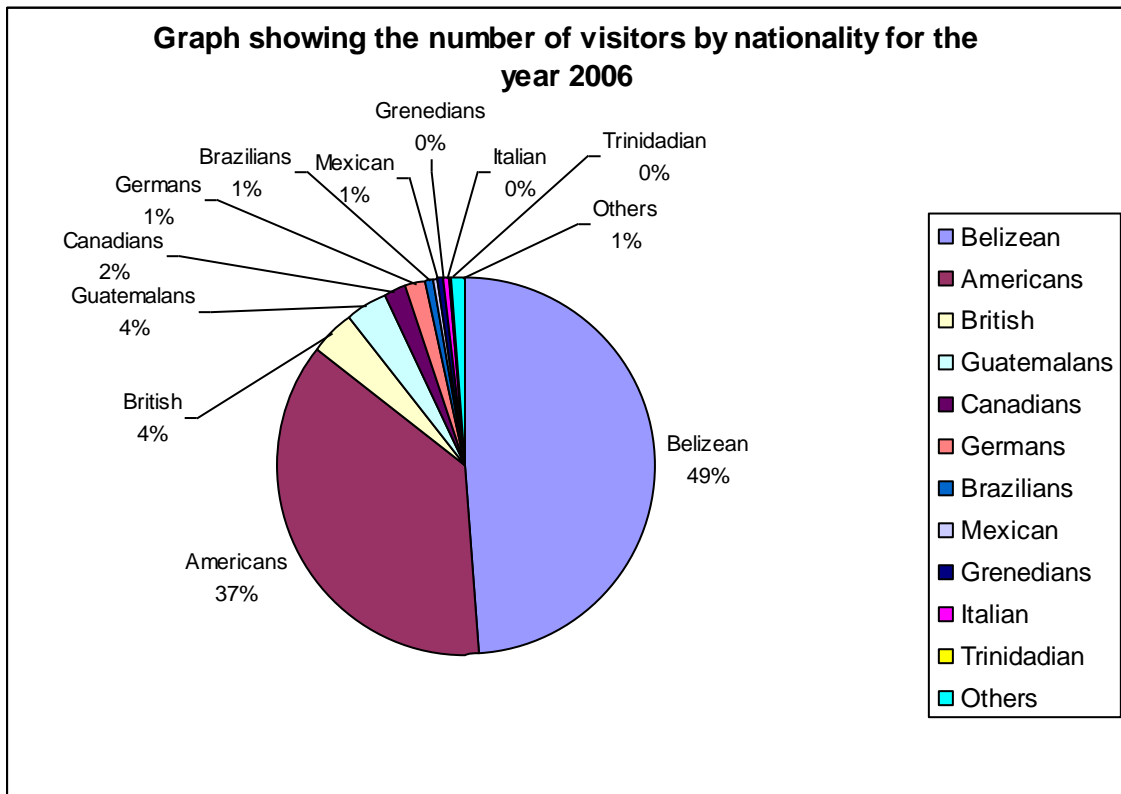
Nationality	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	TOTAL
Belizean	17	35	20	17	147	40	58	31	53	4	35	33	490
Americans	45	36	39	41	53	6	48	33	3	19	5	43	371
British		25		7		1	3	1		1			38
Guatemalans	9	1		5	14	3				4			36
Canadians	1	6	2	2	2	4	1			1		2	21
Germans	8	4				3							15
Brazilians											7		7
Mexican						5				1			6
Grenedians			4										4
Italian		1		2									3
Trinidadian						3							3
UK			2										2
Bermudians							2						2
French								1					1
Bahamian							1						1
Scottish							1						1
Spaniard				1									1
Costa Ricans											1		1
Australian												1	1
Dutch						1							1
TOTAL	80	108	67	75	216	66	114	66	56	30	48	79	1035

The graph below shows the total number of visitors per month for the year 2006. The most visitors came in May 2006 (216 visitors), followed by July 2006 (114 visitors). The fewest came in October 2006 (30 visitors).

Figure 1: Total number of visitors per month from January 2006 to December 2006.



The graph below shows the total percentage of visitors according to nationality for the year 2006. A total of 49% of the visitors recorded for the year were Belizeans. 37% of the total number of PHMR visitors were Americans. Together, Belizeans and Americans make up 86% of the total. The remaining 14 percent consist of Guatemalans (4%), British (4%), Canadians (2%), Germans (1%), Brazilians (1%), Mexicans (1%), and others: (>1%). Grenadines, Italians, Trinidadians. Others (1%) consists of Bermudians, French, Scottish, Spaniards, Australian, Dutch, Costa Rican and Bahamian.





## RESEARCH AND MONITORING

Research and monitoring continues to be an integral part in the management effectiveness of PHMR. Monitoring for the year 2006 included lobster surveys, conch surveys, seagrass, mangrove, reef fish and reef benthic surveys water quality and sea turtle monitoring. A more detailed analysis can be found in the PHMR Biological report for 2006. (*Report will be available upon request after March 31, 2007*).

### \* **Lobster Surveys**

Lobsters surveys were conducted during the closed season between February and June. Surveys were conducted at eleven sites within the reserve. One other site, South Snake Caye Bank (SSC Bank), was added in March 2006 and one previously selected site (Bank 1) was dropped.

Six of the sites were selected using anecdotal knowledge of traditional fishermen. These were selected based on the prediction that the sites had the highest number of lobster counts. The other five sites are within the conservation zones. There is an increase in the number and size of lobsters recorded at the conservation zones.

Site	June 2005	June 2006
East Snake Caye	13	15
West Snake Caye	1	5
South Snake Caye	2	10
South Snake Caye Bank*	NA	30

\*New site added in 2006

Sites within the general use zone had the lowest lobster counts.

### \* **Conch Surveys**

Conch surveys are conducted during the closed season between July and September to obtain density. A total of twelve sites within the Port Honduras Marine Reserve were selected and surveyed for Queen Conch population density in 2006. Eleven of these sites were also monitored during a national survey in 2005 and 2004 using the same methodology.

A total area of 1,500 m<sup>2</sup> was surveyed at each site in 2006. This covered a total area of 18,000 m<sup>2</sup> surveyed within the Port Honduras Marine Reserve. Out of the twelve sites surveyed, maximum counts (31) were recorded at Abalone. No conch were observed within the transect line at Moho Caye bank, North of South Snake Caye Bank, Brion bank, and East Snake Caye Bank 2.

A total of 87 Queen conchs were recorded at the sites surveyed at PHMR. Punta Ycacos had the second highest number of conch recorded (18). The site at Punta Ycacos together with Abalone makes up 56% of the total number of conch recorded in PHMR for 2006.

Based on the data collected Punta Ycacos had the most Juvenile conch recorded.

Although it may seem that the conch population at certain areas within the reserve is minimal, there are several factors that can be attributed to this. Firstly, it could be due to the location where transects were placed. Few areas which had 0 records of conch were inappropriate habitats for conch. However since these sites were already chosen as monitoring sites in 2004, they were monitored again to see changes in density at the sites. A second assumption is the out of season extraction of conch within the Reserve. In 2004 a total area of 19,000 m<sup>2</sup> was surveyed within PHMR and only 67 Queen conchs were recorded at the same monitoring sites. Still the numbers do not show signs of high improvement overall; however certain areas such as Abalone and Punta Ycacos shows great improvement in density.

#### \* **Sea-grass**

Methods for the seagrass biomass and community composition were adapted from the MBRS synoptic monitoring manual and the Port Honduras Marine Reserve (PHMR) Biological Monitoring manual. Three permanent monitoring sites within the reserve are being monitored. These include Stuart Caye, Frenchman Lagoon and West Snake Caye. Two monitoring sites were established in 2003, one at Frenchman's Lagoon and the other at Stuart's Caye. These sites were selected based on their representation of the area. Stuart Caye was established because it is representative of the entire Port Honduras Marine Reserve. Frenchman was established since it appeared to have healthy looking seagrass and what was judged to be a high productivity area. West Snake Caye was established in 2004 as a representative area for the conservation zones within PHMR. It is recommended that seagrass community composition and core samples for seagrass biomass be done biannually during June and December, however due to the commitment to monitor other biological resources during the same time, it was done biannually during February and from June through August.

In summary, the seagrass beds of the Port Honduras Marine Reserve appear to be in good condition and serve as a key component, along with the coral reef and mangrove ecosystems, in providing important nursery and foraging grounds for many commercially important fish and invertebrate species. Based on the results obtained on the seagrass communities, there is no major change over the past three years.

#### \* **Mangroves**

In 2006, mangrove leaf litter collection - to estimate monthly and daily productivity - was done over four months (March, April, May and July). Community composition for mangroves was analyzed in May 2006. Results show that highest productivity peak occurred in July 2006, however, lowest recorded productivity occurred in May 2006 (81.24 g/m<sup>2</sup>). This is because only 21 days of leaf litter collection was done for the month of May. Daily productivity for May is however higher, hence lowest monthly productivity remains unchanged as in previous years. For the forest structure, a total of 71 trees were measured during surveys done in 2003. In 2006, 45 trees were measured within these plots. Several trees were dead in all three plots.

#### \* **Water Quality**

Water quality monitoring was done over eight months in 2006. Equipment malfunction and failure was the major reason why some months were not covered. Parameters collected in the

field included; salinity, temperature, pH, turbidity, total dissolved substance, dissolved oxygen percentage, dissolved oxygen and chlorophyll. Samples were taken from each site and were tested for nitrate and phosphate content in the lab. Core parameters such as date, time, collector, weather conditions and sea state were also recorded in the field.

\* **Reef Benthic and Fish surveys**

Reef benthic and fish surveys were conducted in April 2006 and October 2006. Not all eight sites were completed in April 2006, however all sites were completed in October 2006. Both surveys are being done during the same time since permanent sites have already been established to conduct these surveys. Surveys for reef benthic included coral health and linear point intercept for estimating coral cover and coral diversity. Fish included belt transect technique and the rover diver method. Methods for the fish and coral surveys were adapted from the PHMR manual for biological monitoring and MBRS synoptic monitoring manual.

This year few corals were identified as bleaching. There was no major disease found to be common at the sites being monitored. Competition with macroalgae and palythoa is common at all sites. Least coral cover is observed at Wilson Caye.

\* **Sea turtle monitoring**

The PHMR is home to three marine sea turtles: loggerhead turtle (*Carretta caretta*), Green turtle (*Chelonia mydas*) and Hawksbill turtle (*Eretmochyles imbricata*), which are generally threatened worldwide. In an effort to more effectively conserve these endangered species within PHMR, TIDE established a monitoring program this year. The beaches south of Punta Negra and several Cayes are nesting grounds for the hawksbill turtle. Six nesting beaches were identified, while nine potential feeding grounds were assessed by means of underwater surveys. Details on the data gathered can be reflected in the report, "Development of a Sea Turtle Monitoring Program" - Roy Polonio. (Available through TIDE, [marinebiologist@tidebelize.org](mailto:marinebiologist@tidebelize.org))

**Whelks survey**

The West Indian Topshell (*Cittarium pica*), locally known as Whelks, was surveyed on January 18 and 19, 2006 at the Port Honduras Marine Reserve. This was part of a national survey that is being led by the Fisheries Department (Capture Fisheries Unit). Three sites within the Port Honduras Marine Reserve were surveyed. At each of these sites, two 30 meter transect tapes were placed on the fringing reef. These sites include Wilson Caye, Middle Snake Caye and West Snake Caye. All data was presented to the Fisheries Department for analysis.

## Users of the reserve and vessel names for 2006

Hugo Delcid	Tishane	Nery Parez	
John Young	Permit	Jewel Casemero	Iriea
Conrado Perez	Mrza	Ray Arzue	
Ashlean Sareles	Silence	Larry Arena	
Mathew Nicholas		Leo Harry	
Peter Lino		Leslie Willams	Paaz
Leslie Willams		Jewel Casemero	Iriea
Carlos Parham	Isamar	Sheldon Lambey	
Walton Parham		Filton Gentle	
Carl Gonzalez		Ian Cuevas	Opportunity
Emerson Ramclm		Victor Cuevas	
Gorge Ramirez	Ocean Girl	Victor Cuevas Jr.	
Jack alford		Alwin Muschamp	
Roy Ramirez	Lupita	Daniel Castellano	Martha
Edwardo Buchub		Persaval Gordon	Columbus
Lione Delcid	Gilda	George Gordon	
Anna Ramirez		Rayman Gorden	
Kenworth Martin	Tight Line	Devon Castro	Queen of Harts
Michael Cayetano	Josh	Jason Garbutt	
Lionel Martin	B Dreamer	Winston Garbutt	Tina
Wilder Parham	Paola	Brian Garbutt	
Salvador Ramirez		Boni Avila	Andrea
Fredy Perez	Mullet	Juan Makin	
		Jose Elia	
		George Garbutt	Mystic

## ***Sport Fishing/tour guides and their vessel names***

Thomas Garbutt	Unity
Oliver Garbutt	Sea Life
Roberto Echavaria	Wild thing
Eworth Garbutt	Destiny
Victor Jacobs	Imagine
John young	Permit
Alex Leonardo	C glazer
George Coleman	Baby Eisha
Eloy Cuevas	Fugitive
George Garbutt	Mystic
Ian Cuevas	Opportunity
Daniel Castellano Jr.	
Bobby Polonio	Princess



## **TIDE Board of Directors**

Alistair King - Chairman - Local Businessman (Texaco & Fabrigas)  
Celia Mahung – Treasurer – Professor (University of Belize, Toledo Campus)  
Wilfredo Galvez – Secretary - Director of Operations, TIDE  
Robert Polonio – Local Fisherman and Tour Guide in Punta Gorda  
Eloy Cuevas –Fly-Fisherman and Local Tour Guide  
Sebastian Choco – Milpa Farmer  
Lyndon Bardalez - Local Businessman (Dick’s Service Station)  
Elizabeth Enriquez – Manager (Punta Gorda Hospital)  
Gabriel Roches – Public Servant at the Ministry of Labor  
William Maheia - Executive Director, TIDE

## **TIDE Staff**

TIDE has grown significantly from 19 staff members in 2003 to 28 full-time staff members this year.

### ***Management Staff***

Executive Director: William Maheia, Msc  
Operations Director: Wilfredo Galvez, Bsc  
Science and Stewardship Director: Dr. Robin Coleman, PhD  
Development Director: Jonathan Labozzetta, Bsc  
Education and Outreach Coordinator: Norman Budna  
Communications Coordinator: George Emmanuel

## ***Programmatic Staff***

### **Port Honduras Marine Reserve**

Manager: Dennis Garbutt  
Marine Biologist: Juan Chub, Bsc  
Acting Head Ranger: Marlon Williams  
Ranger: George Sambula  
Ranger: Janelle Borland

### **Paynes Creek National Park**

Manager: Mr. Mario Muschamp  
Head Ranger: Leonard Williams  
Ranger: Susette Jacobs  
Ranger: Wilfred Muschamp

### **Private Lands Initiative**

Forest Management Specialist: Eugenio Ah  
Ranger: Carlos Bardalez  
Ranger: Anselmo Chavaria

### **Freshwater Initiative**

Freshwater Coordinator: Joseph Villafranco

### **Administrative Staff**

Office Manager: Stephene Supaul  
Receptionist: Patsy Rodriguez  
IT Officer: Serjio Briceno  
Driver/Mechanic: Ernest Caliz

### **Part Time Staff**

Scholarship Program: Delonie Foreman

### **TIDE Tours**

Pablo Ack

## **PHMR Advisory Committee**

William Maheia, Chairperson, TIDE  
Alex Nolberto, Fisheries Department  
Ray Jacobs, Punta Negra Village  
Thomas Garbutt, Fisherman Association  
George Coleman, Tour Guide Association  
Phillip Gabriel, Rio Grande Fisherman Cooperative  
Leanora Requena, Belize Tourism Industry Association  
Ovel Leonardo Sr, Fisherman Cooperative  
Michael Espat, Toledo East Representative  
David Linarez, Monkey River Village  
Carlos Galvez, Punta Gorda Town Council  
Celia Mahung, Ministry of Education Representative  
Dennis Garbutt, PHMR Manager

## **Scholarship Students, Interns and Volunteers**

Germaine Williams  
Analia Rash  
Sheria Parham

## **PHMR Donors**

The OAK Foundation

AVINA

Caribbean Regional Environmental Programme (CREP)

National Oceanic and Atmospheric Administration (NOAA)

National Fish and Wildlife Foundation

United Nations Development Programme – Global Environment Facility/Small Grants Programme (GEF/SGP)

Mesoamerican Barrier Reef Systems Project (MBRS)

Earthwatch Institute

The Nature Conservancy (TNC)

The Wallace Foundation

Foundation for Environmental Solutions

Summit Foundation

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## **TIDE/PHMR CONTACT INFORMATION**

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