

Port Honduras Marine Reserve

Annual Enforcement Report

2024



Manager's Overview

I am delighted to present the annual enforcement report for the Port Honduras Marine Reserve (PHMR) for 2024. This report encapsulates the key activities from January to December, covering enforcement, community development, education, research, communications, governance, and stakeholder engagement within the reserve. The dedicated reserve enforcement staff have upheld their commitment to ensuring successful protected area management by meeting conservation targets.

During this reporting period, the team conducted a total of 520 patrols which represents a slight decrease from the previous year. Consequently, they recorded 5 separate incidents and 9 infractions, issued 1 verbal warning, and removed 2 gill nets and 2 lobster traps from the reserve. Furthermore, the ranger team provided support to other enforcement teams at TIDE through joint patrols. In 2024, working relationships with government agencies such as the Belize Coast Guard, Belize Fisheries Department, Belize Police Department, Department of Environment, Coastal Zone Management Authority and Institute, Belize Defense Force and the Belize Forest Department have continued to improve.

We extend our heartfelt appreciation to the numerous donors who persist in supporting TIDE's effective management practices and enforcement of sustainable marine resource usage by stakeholders. TIDE deeply values their ongoing financial contributions, technical guidance, and steadfast dedication over its 27-year history. Special recognition goes to PHMR's dedicated rangers, Edwin Cabrera, Aaron Garbutt, Byron Usher, Mark Jacob, Michael Cus and Octario Ack for their unwavering commitment to conserving and safeguarding PHMR's natural ecosystems and marine biodiversity. Both Aaron and Byron departed PHMR to work at Sapodilla Caye's Marine Reserve and we wish them all the best. We also extend gratitude to all our resource users who consistently demonstrate outstanding stewardship of the reserve. A particular acknowledgment is owed to the Belize Coast Guard for their exceptional support throughout 2024, assisting in enforcing reserve regulations and ensuring the safety of our staff and resource users. It has been an honor and a rewarding experience collaborating with everyone in 2024, and we eagerly anticipate the opportunities and accomplishments of 2024.

Sincerely,



Ryan A. Moore

Protected Areas Manager

Toledo Institute for Development and Environment

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1.0 List of Abbreviations

PHMR	-	-	-	-	Port Honduras Marine Reserve
SCMR	-	-	-	-	Sapodilla Cayes Marine Reserve
PCNP	-	-	-	-	Payne's Creek National Park
TPPL	-	-	-	-	TIDE Private Protected Lands
TIDE	-	-	-	-	Toledo Institute for Development and Environment
BFD	-	-	-	-	Belize Fisheries Department
BCG	-	-	-	-	Belize Coast Guard
SMART	-	-	-	-	Spatial Monitoring and Reporting Tool
MMMC	-	-	-	-	Maya Mountain Marine Corridor
PACT	-	-	-	-	Protected Areas Conservation Trust
CIS	-	-	-	-	Conservation Investment Strategy
IUCN	-	-	-	-	International Union for Conservation of Nature
KFW	-	-	-	-	German Public Development Bank
MOU	-	-	-	-	Memorandum of Understanding
TRIGOH-	-	-	-	-	Tri-national Alliance for the Conservation of the Gulf of Honduras

2.0 Administration

2.1 Staffing for PHMR

No.	Names	Position
1	Ryan Moore	Marine Manager
2	Edwin Cabrera	Head Ranger
3	Aaron Garbutt	Ranger (Transferred to SCMR)
4	Byron Usher	Ranger (Transferred to SCMR)
5	Mark Jacob	Ranger
6	Michael Cus	Ranger
7	Octario Ack	Ranger

Table 1: Showing PHMR Enforcement Staff

No.	Names	Position
1	Anthony Rash	Marine Biologist

Table 2: Showing PHMR Research and Monitoring Staff

3.0 Background of the Port Honduras Marine Reserve

3.1 Introduction

The PHMR was declared by the Government of Belize on the 25th of January 2000. It is actively co-managed by TIDE with the governing authority being the Fisheries Department. PHMR is a semi-estuarine system that covers approximately 160 square miles and is an integral part of the 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 coastal wetlands, seabed, mangroves, lagoons, savannahs of Payne's Creek National Park and national lands within the area known as Port Honduras. The general boundaries of the reserve are the Rio Grande in the south, Monkey River in the north, the Snake Cayes in the east and the coastal wetlands in the west. There are two buffer communities that are located adjacent to the reserve which are Monkey River Village and Punta Negra Village with Punta Gorda Town lying just outside.

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 seagrass beds, hard bottom communities of coral and/or rubble, and soft bottom communities. A large portion of the reserve is covered by seagrass, which also provides essential habitat and food for juvenile fish species, sea turtles and manatees. Also, within the reserve are fringing reefs, coral patches and coral heads which provide a refuge and food for marine animals.

Residents who directly depend on the reserve for their livelihood engage in commercial fishing, tour guiding and fly-fishing guides. Of the number of fresh produce extracted from the reserve, it is quite common to advertise the product originating from Punta Gorda to as far as Corozal in the north. The most popular species include groupers, snappers, grunts, and the barracuda. Many Belizeans from Punta Gorda frequent the reserve with the most popular activities being recreational fishing, snorkeling, and swimming. The reserve hosts over 500 vessels in and around the reserve annually engaging in numerous activities. It is also quite frequent for sailing vessels from Guatemala to stop in and enjoy safe harbor in the New Haven Lagoon or the Snake Cayes on their way to and from Placencia.

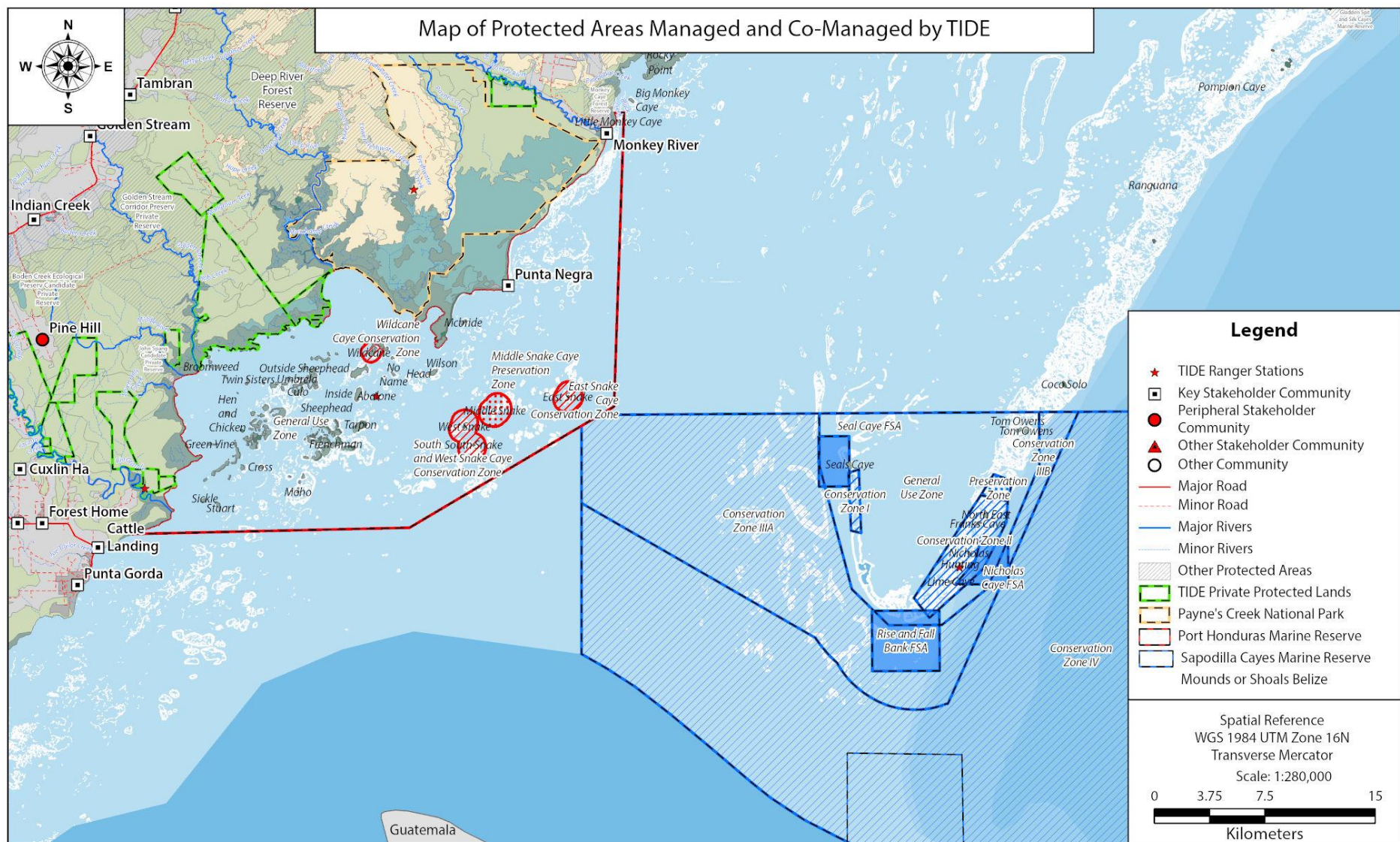


Figure 1: Map of the protected areas managed and co-managed by the TIDE

3.2 PHMR's Strategic Plan and Goals

The PHMR management strategy is based on five major goals:

1. To protect the physical and biological resources of the Port Honduras Marine Reserve
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

3.3 Zoning Plan and Regulations

Three zones were established for the purpose of the regulation and control of the reserve:

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

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

2. Conservation Zone (4% of the Reserve)

Established 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. These areas are located 0.805-kilometers (half a mile) radius around Wildcane Caye and 0.805-kilometers (half a mile) radius around East, West, and South Snake Cayes.

3. Preservation Zone (1% of the Reserve)

Established to provide areas within the marine reserve that are reserved in an entirely natural state and to protect areas of particularly fragile habitat or with threatened or rare species. Neither fishing nor recreation are permitted in this area. This area is located 0.805-kilometers (half a mile) radius around Middle Snake Caye.

4.0 Resource Management and Protection

4.1 Surveillance and Enforcement

A total of 520 patrols were conducted for the period January 2024 to December 2024. The rangers travelled ~14,823km and averaged ~1235km per month. This totaled ~882hrs at sea patrolling with an average of ~74hrs. per month. This was done by consuming ~2753 gallons which averaged ~53 gallons per week.



Figure 2: Showing Head Ranger Edwin Cabrera interacting with fishers while on boat to boat

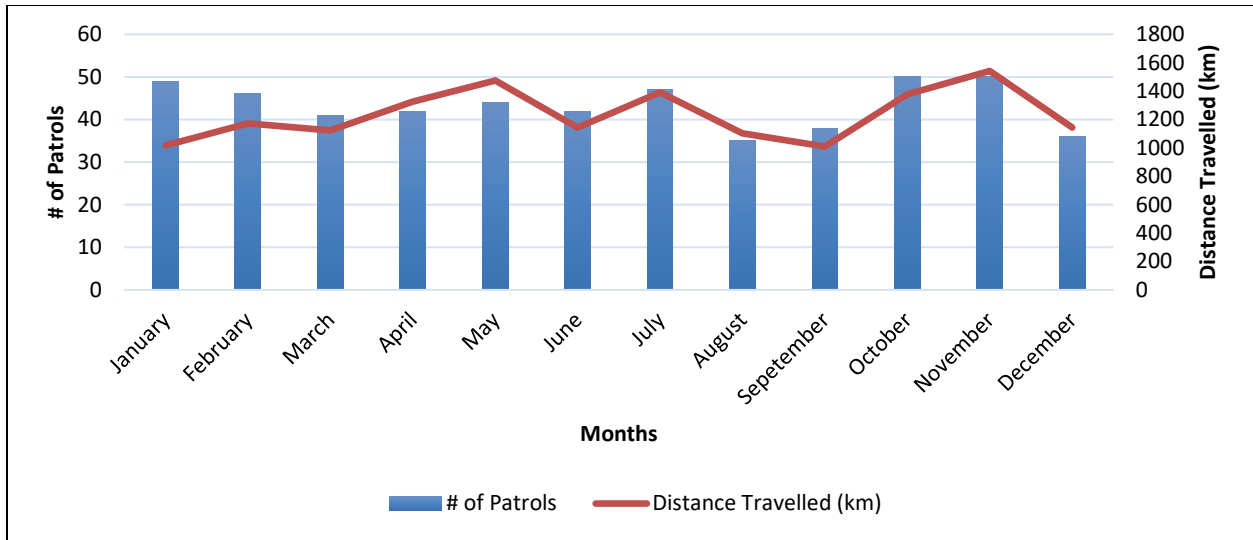


Figure 3: Showing the number of patrols and distance travelled (km) by month in 2024

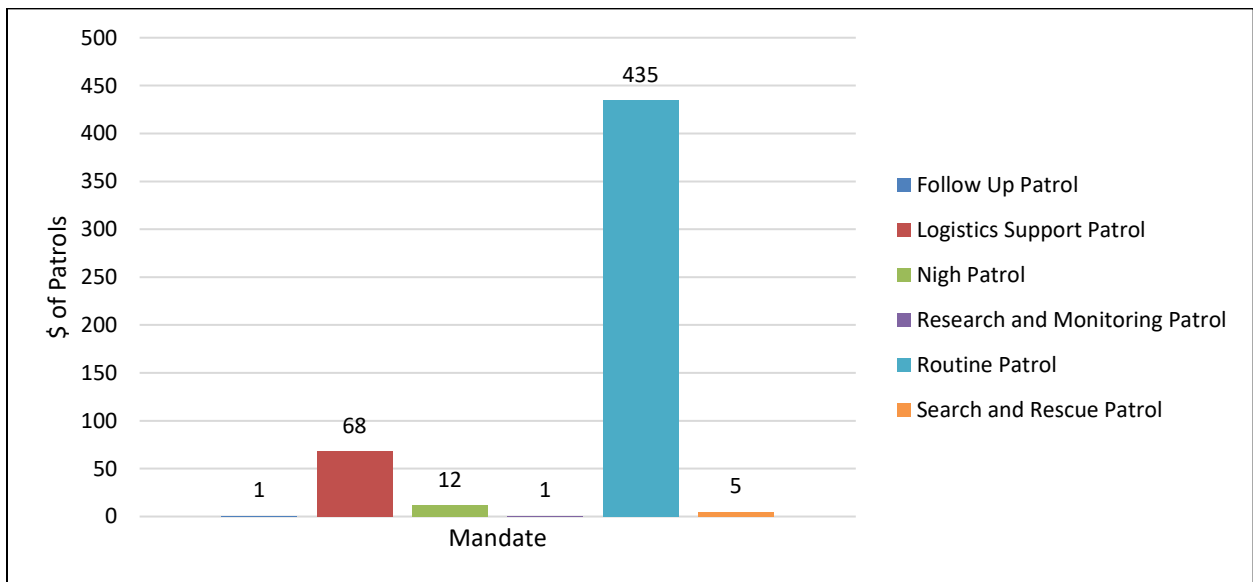


Figure 4: Showing patrols by mandate for 2024

An average of ~43 patrols were conducted each month focusing on the conservation and preservation zones around the Snake Cayes and the most eastern islands which are the primary habitats for conch and lobster. This number decreased in comparison to the previous year. Other priority areas included the coastline leading up to Monkey River Village, the river mouths which empty into PHMR and the conservation zone around Wildcane Caye.

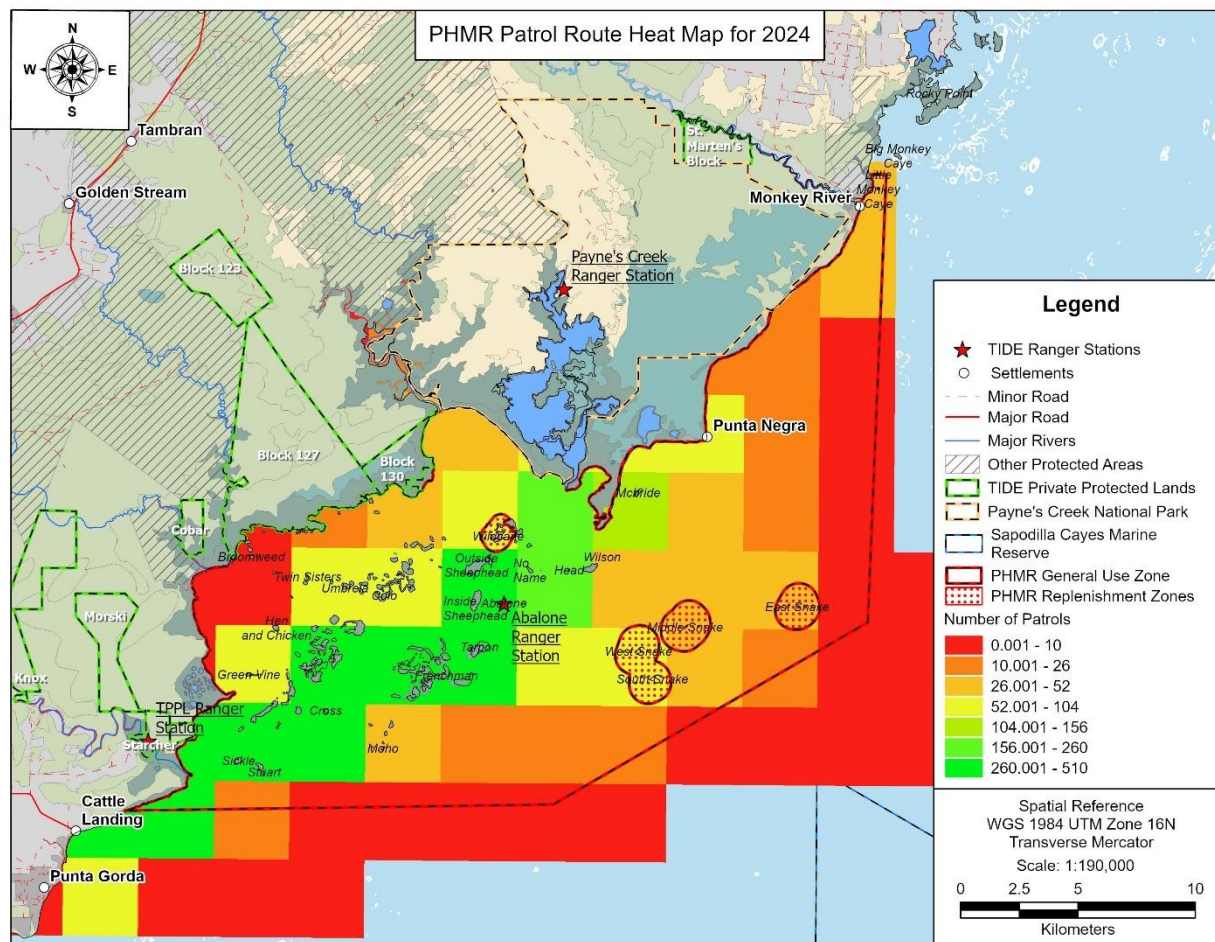


Figure 5: Showing a Patrol Heat Map showing where patrols were focused in 2024

4.2 Patrol Infractions for 2024

The patrols in PHMR yielded 1 verbal warnings, 2 gill nets and 2 out of season fish traps which were removed following the closing of the lobster season. Several infractions resulted in no arrests, or warnings issued as they were due to Guatemalan Vessels which were chased out of the reserve near south snake cay on numerous occasions. These individuals continue to present a challenge and have become more brazen as they utilize small vessels with large motors.

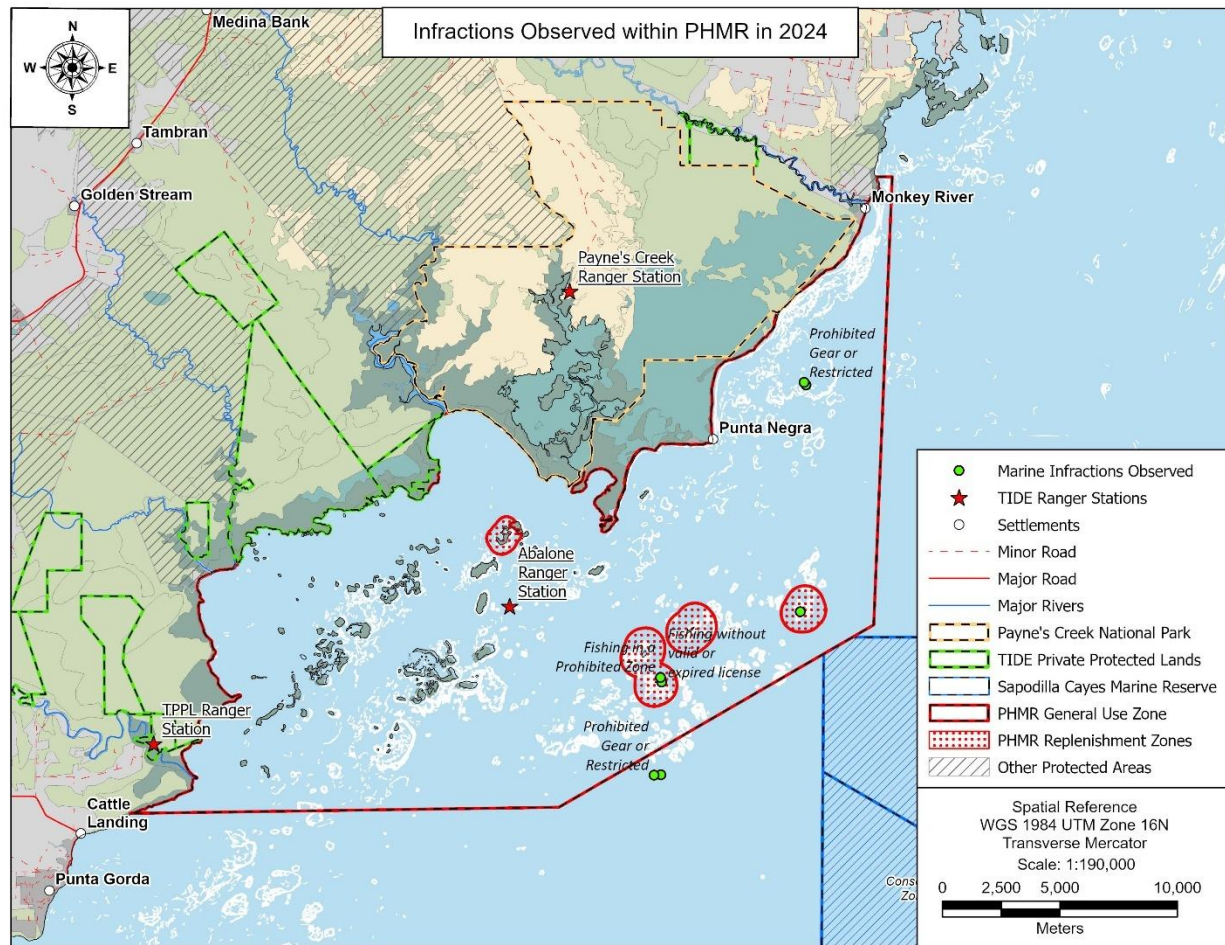


Figure 6: Showing infractions within PHMR for 2024

4.3 Management Effectiveness

TIDE conducted a Management Effectiveness Assessment through the support of the IUCN lead KFW project titled, "Linking the Central American Landscape." In this exercise, numerous stakeholders were identified who contribute directly or indirectly to the management of the PHMR. The overall score attained was 65.3% which is classified as "Good" in the indicator scale. Throughout the lifetime of this project, TIDE has set the goal of being listed within the internationally renowned Green List. To achieve this TIDE will be engaging in numerous activities funded through this project targeting weaknesses identified through Management Effectiveness Assessments. TIDE was able to sign an MOU in the first quarter of 2024 and will now begin to implement this project which includes the revision of the PHMR Management Plan which expired in 2021.



Figure 7: Showing PHMR Managers and Stakeholders engaging in the MEE Assessment

4.4 PHMR Management Plan 2025 – 2030

Through support from an IUCN project, TIDE engaged consultant Zoe Walker to lead the revision of the Port Honduras Marine Reserve (PHMR) Management Plan. A key component of this process is community consultation, which ensures that the voices and perspectives of local stakeholders are incorporated into decision-making. This inclusive approach helps foster community support, encourages local ownership, and contributes to more effective and sustainable management of the protected area. Residents from the communities of Monkey River, Punta Negra, Punta Gorda, and Barranco are actively participating in defining the goals and objectives of the updated plan. As part of the consultation process, the consultant and the PHMR team conducted a site visit to the reserve in 2024. To date, several consultation sessions have been held, and a draft of the updated plan will be shared with participants for further feedback. The finalized management plan is scheduled for completion in April 2025 and will cover the period from 2025 to 2030.



Figure 8: Showing the MGMT Plan Consultant, Zoe Walker, on site visit within PHMR

5.0 Infrastructure and Equipment Maintenance

5.1 Maintenance of the patrol vessel

The upkeep of the patrol equipment such as the regular cleaning of the patrol vessel, and regular servicing of the outboard engine (engine oil, oil filter change, gear oil change, freshwater wash, and re-greasing) were done by rangers; major repairs and any technical problems were done by a mechanic in Punta Gorda Town. The vessel itself needs major fiberglass repairs, which is being planned as a part of the PACT CIS 2.0 project. Daily, the vessel is cleaned and rinsed with freshwater, and at least twice a month the bottom of the boat is scrubbed clean of any buildup.

5.2 Infrastructure Maintenance



Figure 9: Rangers and the Belize Coast Guard personnel working to set up and install a new shower

The upkeep of the ranger station was done by the rangers and personnel from the Belize Coast Guard (BCG) stationed at PHMR. Capacity Building

6.0 Capacity Building

6.1 Capacity Building

TIDE Rangers participated in a First Air/First Responders training at TIDE headquarters where they renewed their certifications in July, 2024. They had practical and theoretical training in resuscitation from drowning for both adults and children, how to prepare a tourniquet for broken bones and bandage basic injuries.



Figure 10: Showing PHMR enforcement team in attendance at the First Aid Training.



Figure 11: Showing PHMR and SCMR Enforcement on fisheries regulations practical training with members from the Belize Fisheries Department

The Belize Fisheries Department conducted an intensive training from June 19 to June 21, focusing on key areas essential for effective marine resource enforcement. The program covered a range of topics, including powers of arrest, standard operating procedures for boarding, access management, case file preparation, and a comprehensive review of fisheries laws and regulations. By strengthening the skills and knowledge of participating rangers and managers, the training aims to enhance the effectiveness of their duties, leading to improved regulatory enforcement, more efficient resource management, and greater protection of Belize's marine ecosystems.

6.2 Training needs for PHMR enforcement staff

	Needed Trainings	Plans
1.	Engine Maintenance Training	Continuous
2.	SMART Training	Continuous
3.	Fisheries Regulations Training (continuous)	Continuous
4.	PADI Scuba Diver Training	Dive Instructor Training for Head Ranger scheduled for 2025
5.	Conflict Resolution Training	Scheduled for 2025

Table 3: Showing training needs for PHMR Management Staff

Although numerous trainings were undertaken in 2024, it is important for the rangers to be continuously trained to ensure that they are operating at the highest levels and their capacities are continuously enhanced.

7.0 Networking

7.1 Fishers meeting with Fisheries Department in relation to the use of Fish Traps with PHMR



Figure 12: Showing Dennis Garbutt highlighting the deep-sea fishing area fishers would like amended to allow for commercial fishing within SCMR

The fisheries department was able to hold a meeting in November 2024 along with Fishers of both Port Honduras and Sapodilla Cayes Marine Reserve. Topics of discussion included the use of fish traps in PHMR, special licenses to fish Rise and Fall Bank Spawning Aggregation, deep sea fishing within conservation zone IV of SCMR and a special zone for conservation in the lower reaches of Rio Grande.

Regarding the use of fish traps within PHMR, the fisheries along with the fisheries department agreed for the establishment of a task force to set a design, number of fish traps, area in which fish traps will be allowed to be set and the users who would be allowed to set fish trap within PHMR. In 2025, TIDE and the fisheries department will then assist fishers in licensing their use within PHMR. Overall the meeting was a success with many planned compromises on the table.

7.2 National Enforcement Workshop for Belize's Blue Space



Figure 13: Showing PHMR Protected Areas Manager in attendance at the National Enforcement Workshop for Belize's Blue Space

PHMR Protected Areas Manager, Ryan Moore, attended a two-day National Enforcement Workshop for Belize's Blue Space on August 6th and 7th, 2024. The workshop gathered key national stakeholders from government, non-government organizations, fisheries associations, and academia. The goal was to identify gaps, needs, and opportunities to enhance the efficiency and effectiveness of fisheries enforcement and conservation monitoring. Mr. Moore, along with other participants worked together to pinpoint priority enforcement and monitoring strategies and actions, which will inform the development of the national strategy and action plan for Belize's blue space.

7.3 Fisher Forum for fishers from Southern Belize



Figure 14: Showing TIDE's Executive Director Asad Magana engaging with fishers

In the first quarter of 2024, the Tri-national Alliance for the Conservation of the Gulf of Honduras (TRIGOH), under IUCN's Biodiversity Program, hosted a Fisher Forum in Seine Bight Village, Stann Creek District. Over 45 fisherfolk from the Stann Creek and Toledo Districts attended. The forum, led by TIDE—TRIGOH's new president—focused on current fisheries challenges, economic alternatives, and collaboration opportunities. Community representatives were also selected to participate in the upcoming Tri-national Fisher Forum in Puerto Barrios, Guatemala.

8.0 Punta Ycacos Ranger Station



Figure 15: Proposed Punta Ycacos Ranger Station and Abalone Caye Ranger Station in the background

In 2023, the owners of a prominent property located at the point of Punta Ycacos contacted Mr. Magana, expressing appreciation for the presence of TIDE rangers during their family vacation in the Port Honduras Marine Reserve (PHMR). They conveyed interest in donating the property to TIDE for use as a ranger station. With support from a legal team and the Government of Belize, TIDE successfully completed the property transfer in late 2024.

To ensure that the renovation of the property aligns with Belize's building regulations, TIDE applied for approval from the Central Building Authority. An engineer was contracted to design the renovation plans, which are necessary for an IUCN-funded project aimed at refurbishing the structure and constructing a boardwalk and dock to enable 24/7 access. Additional funding was secured from the Overbrook Foundation to support these upgrades. TIDE also envisions broader uses for the site and has initiated research into establishing a sea turtle holding facility to protect relocated eggs or temporarily house stranded marine wildlife.

As part of the project's implementation phase, TIDE, with funding from IUCN, will engage Mr. Nuani Cayetano, the engineer, to serve as the Supervisor of Works. He will be responsible for overseeing construction activities and ensuring they adhere to the approved plans and project specifications.

9.0 Sea Turtle Nest Monitoring

Research and monitoring remain essential components in ensuring the effective management of the Port Honduras Marine Reserve (PHMR). In 2024, monitoring efforts included surveys focused on lobster, queen conch, sea cucumbers, coral health, reef fish populations, reef benthic habitats, and coral bleaching. Comprehensive analyses of these activities are available in the 2024 PHMR Biological Reports.

TIDE reinstated the Sea Turtle Nest Monitoring Program in 2020, with field operations led by Mario Muschamp and rangers from the Payne's Creek National Park (PCNP) and the TIDE Private Protected Lands (TPPL) teams. Monitoring is carried out along the Punta Ycacos coastline, extending to Monkey River, with frequent checks conducted during routine patrols.

During the 2024 nesting season, approximately 7,130 sea turtle eggs were recorded across 58 nest sites. Of these, around 5,150 hatchlings successfully emerged, reflecting a hatching success rate of 72.2%. Roughly 1,076 eggs were infertile, while about 427 were damaged by root intrusion. Four nests experienced partial inundation, resulting in limited success, and one nest was completely lost. Additionally, four nests were entirely predated, and two were partially predated. Predators included grey foxes, which affected five nest sites, and raccoons, responsible for predation at one site.



Figure 16: Showing a screenshot of the dashboard used to present data to the public

For more information please visit the dashboard located at the URL below:

<https://tide-belize.maps.arcgis.com/apps/dashboards/1e5d6ac2189e456e85f2747e1f2c2165>

10.0 Commercial Fishing, Recreational Fishing and Tourism in PHMR

9.1 Vessels in PHMR

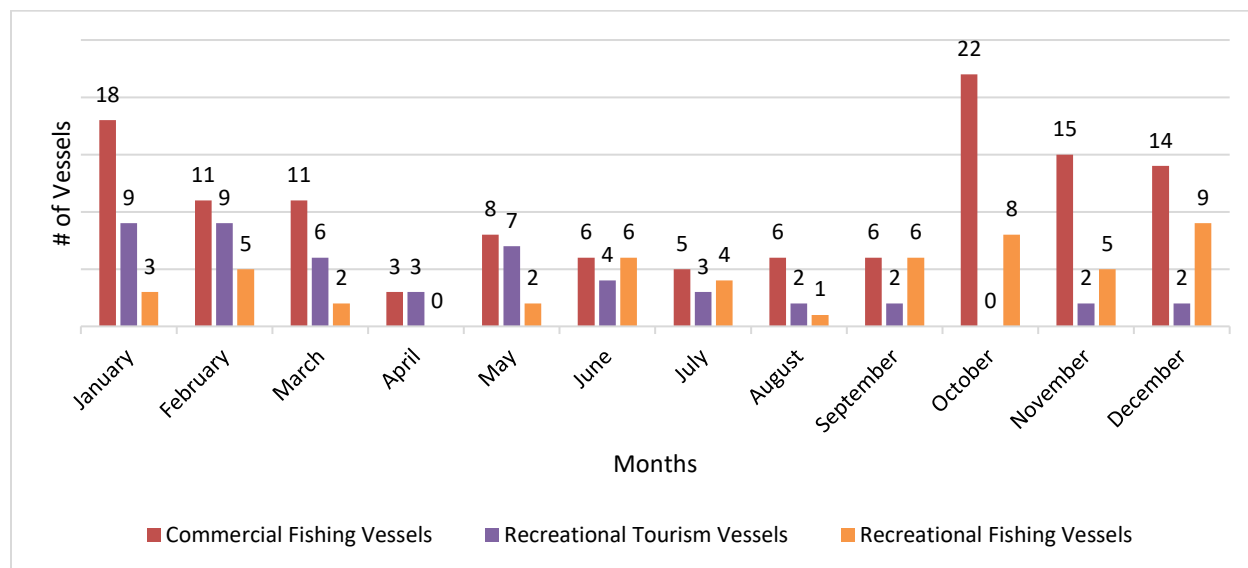


Figure 17: Showing vessels sighted in PHMR for 2024

In 2024 the rangers through the Spatial Monitoring and Reporting Tool (SMART) logged over 234 vessels in the reserve a significant decrease from the previous year. Of these vessels, 125 were commercial fishing vessels, 49 were recreational tourism vessels and 51 were recreational fishing vessels or other vessels either transiting the area or conducting other activities.

9.2 Commercial, Recreational and Tourism Users in PHMR

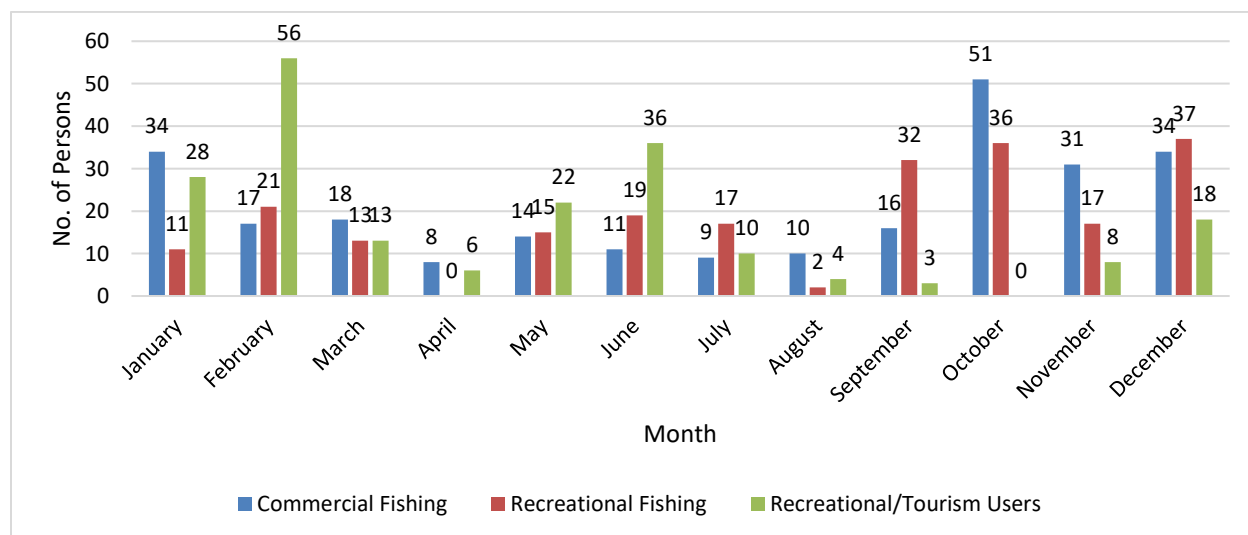


Figure 18: Showing the resource users observed by month for 2024

In 2024 TIDE Port Honduras Marine Reserve enforcement team, through SMART, logged 253 commercial fishers, 220 recreational fishers and 204 tourism users in the reserve (not counting the locals on the tourism vessels). Overall there was a sharp decrease in the number of vessels and users observed in the reserve. This figure is correlated with the number of patrols carried out throughout the reserve which also saw a decrease.

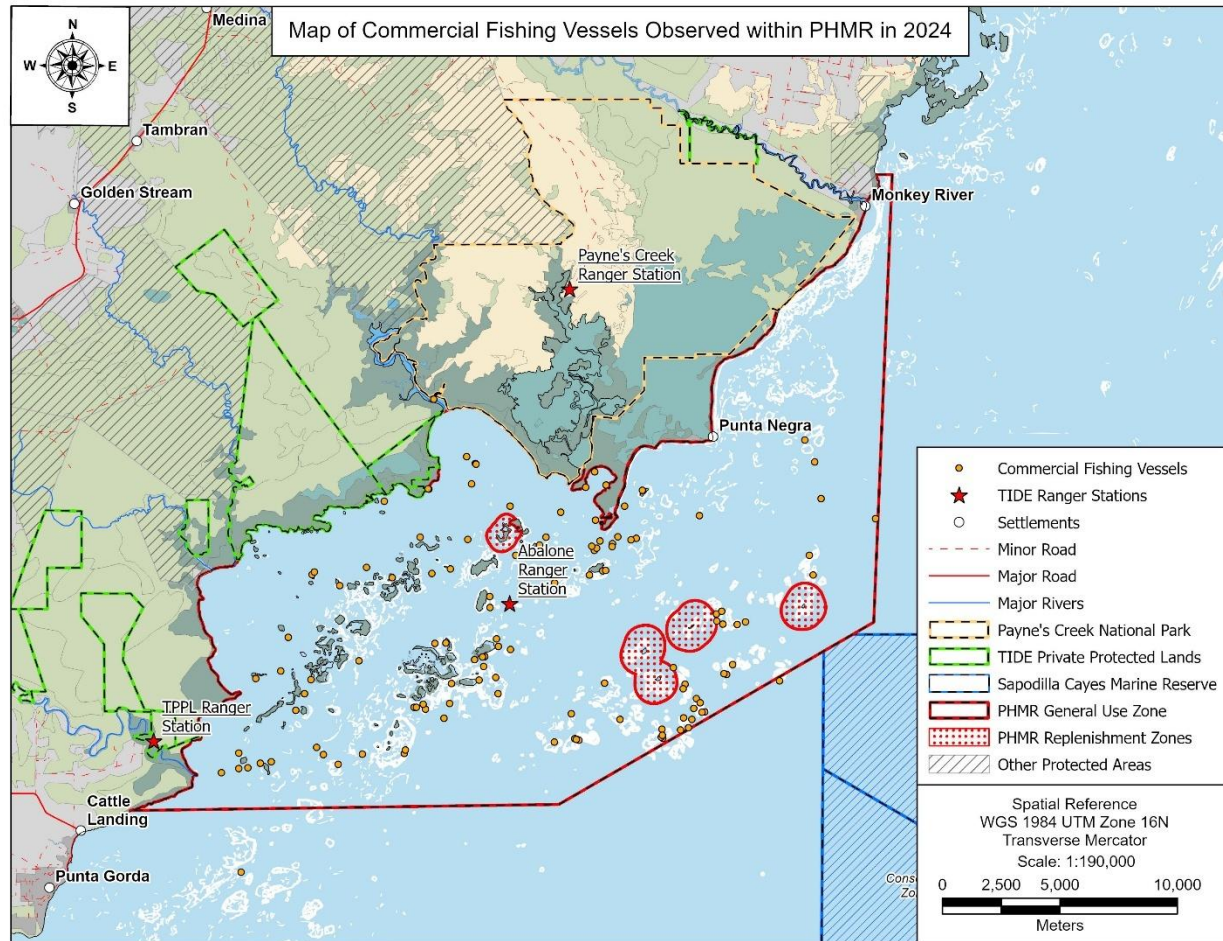


Figure 19: Showing Commercial fishing vessels in PHMR for 2024

The map above shows the approximate location of commercial fishers within PHMR (*The GPS coordinates are taken at the location of the patrol vessel unless the rangers are directly interacting with the commercial fishers*).

The table below is a list of names of commercial fishers who have been observed and logged using SMART within PHMR sometime in 2024.

Akeem Williams	Guillermo Casimiro	Nevile Smith
Alberto Villafranco	Humphry Cofias	Oliver Garbutt
Alex Garbutt	Imer Perez	Oliver Rojas
Alex Leonardo	Jack Alford	Oscar Lira
Alex Williams	Javier Johnston	Oswaldo Rax
Allan Bochub	Jayson Garbutt	Pedro Coc
Alonzo Reymundo	Jesus Medina	Ray Arzu
Angel Pais	Joash Ramirez	Ray Jacobs
Armando Ramirez	Joel Casimiro	Revaun Ramirez
Byron Edwards	Jonas Pau	Roberto Cabrera
Carlos Alvarado	Jonathan Alford	Roy Ramirez
Carlos Ramirez	Jose Perez	Ruben Paiz
David Bahadur	Joseph Romero	Ryan Villafranco
David Palma	Kent Arzu	Stephan Myvett
Dennis Usher	Leonel Sanchez	Tommy Johnston
Elon Young	Leslie Williams	Victor Jacobs
Ezri Mangar	Lincoln Pascassio	Wilfred Mutrie
Felix Arzu	Mario Medina	Winsly Garbutt
George Alford	Minor Perez	Winston Thompson
George Ramirez	Narciso Martinez	

Table 4: Showing commercial fishers using PHMR for 2024

11.0 Recreational Tourist Visitation to PHMR

Overall, the Port Honduras Marine Reserve saw ~2472 foreign visitors in 2024, this number was derived through ticket sales. This represents a slight decrease over the previous years which is directly correlated to the number of guests brought in by TIDE Tours which saw a decrease in 2024.

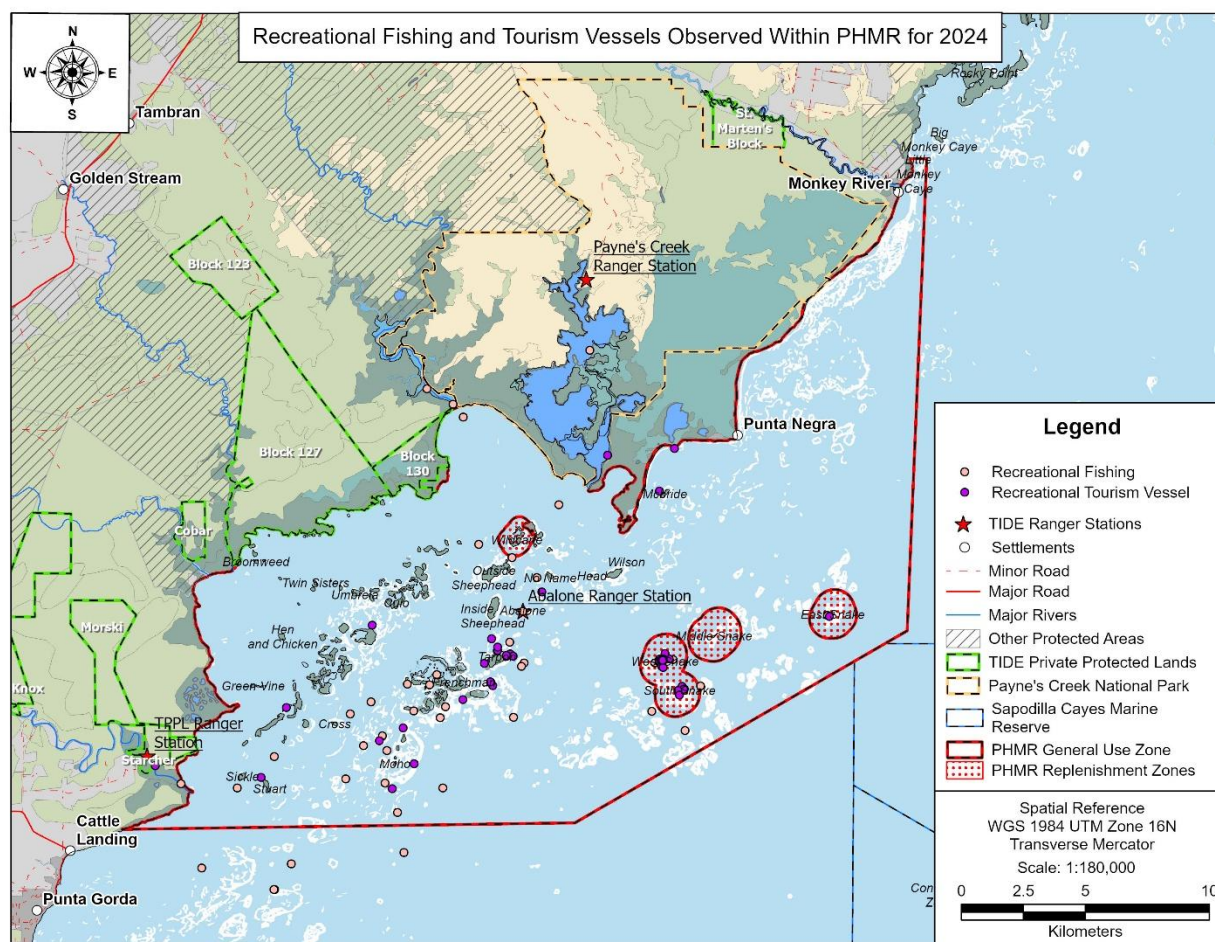


Figure 20: Map Showing Recreational and Tourism vessels sighted in the reserve by Rangers and logged using SMART

The map above shows that most of the reserve is being used for both recreational fishing and tourism related activities. Areas north of the reserve show little to no activity for these types of vessels, although it must be noted that there are fewer patrols in these areas and many of these vessels come from PG and it would not be economically feasible to travel that far. From the map, it can be shown that multiple recreational fishing vessels can be seen around the snake cayes in the conservation zone although no fishing is allowed. It must be noted that although these vessels are primarily conducting recreational fishing, it is customary for the individuals to also stop by at the cayes to either have lunch, snorkel and/or swim as a part of their daily visit.

12.0 The TIDE Team

11.1 Board of Directors

Mr. Jeremy Enriquez (Chairman)	National & International Relations
Ms. Nancy JudyAnn Gomez	Business Representative
Dr. Jay Coombs	Academia
Ms. Eloydia Cuevas	PCNP Advisory Council Representative
Mr. Alex Leonardo	PHMR Advisory Council Representative
Mr. Roy Polonio	University of Belize, Toledo Campus Administrator
Mr. Felis Sho	Ministry of Education
Mr. Leonardo Chavarria	Executive Director (Ex-Officio)

11.2 TIDE Office Staff

11.2.1 Management Staff

Leonardo Chavarria	Executive Director
Stephene Supaul	Operations Director
Caroline Oliver	Program Director
Ryan Moore	Protected Areas Manager
Mario Muschamp	Terrestrial Manager
Federico Caal	Environmental Education Officer/ Community Development Officer
Florencio Coc	SCMR Project Manager
Paul Etienne	Communications Officer (Part Time)
Seferina Miss	Program Officer
Kimberly Lawrence	Financial Administrator
Evander Paquiul	SCMR Site Manager

11.2.2 Administrative Staff

Darius Avila	Accountant
Alaine Noralez	Accounts Clerk
Ishiamae Gomez	Front Desk

11.3 PHMR Advisory Committee

Mr. Alex Leonardo	Association of Tour Guides in Toledo
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Mr. Armando Ramirez	Rio Grande Fisherman Cooperative
Hon. Osmond Martinez	Area Representative
Mrs. Paula Jacobs	Chairperson Punta Negra Village Council
Mr. Roy Polonio	University of Belize-Toledo Campus
Mr. Lyndon Rodney/Victor Vasquez	Fisheries Department-PG
Mr. Carlos Galvez	PG Town Council
Mr. Eloydia Cuevas	Monkey River Village Council
Mr. Leonardo Chavarria	Executive Director
Mr. Mario Muschamp	Terrestrial Manager
Mr. Ryan Moore	Protected Areas Manager

11.4 TIDE Private Protected Lands Staff

Reymundo Chen	Head Ranger
Lenard Teul	Ranger
George Teul	Ranger
Nigel Salam	Ranger

11.5 Payne's Creek National Park Staff

Mario Muschamp	Terrestrial Manager
Leonard Williams	Head Ranger
Augustin Sho	Ranger
Octavio Caal	Ranger

11.6 Sapodilla Cayes Marine Reserve

Evander Paquiul	Site Manager
Renon Baizar	Head Ranger
Alex Young	Ranger
Florencio Choc	Ranger
Erwin Noralez	Ranger
Aaron Garbutt	Ranger
Harrison Palacio	Ranger
Byron Usher	Ranger

13.0 Conclusion and Recommendations:

In 2024, PHMR experienced a successful year, conducting 520 patrols or achieving 87% of planned patrols. This marked a slight decrease from the previous year's 610 patrols. To enhance efficiency, the team continued to optimize fuel consumption, averaging approximately 53 gallons per week. Notably, coverage of the reserve remained robust, with at least 70% of the area receiving at least one patrol per week.

TIDE and the team at Port Honduras Marine Reserve remain committed to ensuring that the ecosystems and the services provided to the numerous stakeholders are maintained for years to come. We would like to express our deepest gratitude to all those who have made the management of PHMR a success in 2024.

14.0 Annex

