



Republic of the Philippines  
Department of Environment and Natural Resources  
MIMAROPA Region  
**PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFFICE**

APR 04 2023

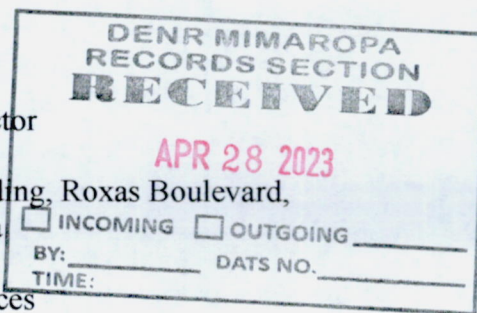
**MEMORANDUM**

**FOR** : The Regional Executive Director  
DENR MIMAROPA Region  
1515 DENR By the Bay Building, Roxas Boulevard,  
Barangay 668, Ermita, Manila

**THRU** : The ARD for Technical Services

**FROM** : The OIC, PENR Officer

**SUBJECT** : **SUBMISSION OF THE 1<sup>ST</sup> QUARTER  
ACCOMPLISHMENT REPORT FOR MAINTENANCE  
AND PROTECTION OF COASTAL AND MARINE  
ECOSYSTEMS OF APO REEF NATURAL PARK**



Forwarded is the memorandum dated March 28, 2023 of CENRO Sablayan regarding 1st Quarter Report of Apo Reef Natural Park for Maintenance and Protection of Coastal and Marine Ecosystems, an activity under the Coastal and Marine Ecosystems Management Program (CMEMP). Accomplishments for habitat surveillance of threats and damages, repair and maintenance of equipment and conduct direct activities are included in the report.

Attached herewith is the narrative report with other pertinent documents.

For information and record.

  
**ERNESTO E. TAÑADA**

TSD-CDS4/04/2023

Copy furnished:

1. Planning Section
2. File

So. Pag-asa, Brgy. Payompon, Mamburao, Occidental Mindoro  
Email: penrooccmn@denr.gov.ph



Republic of the Philippines  
Department of Environment and Natural Resources  
MIMAROPA Region  
**COMMUNITY ENVIRONMENT AND NATURAL RESOURCES OFFICE**

March 28, 2023

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**MEMORANDUM**

FOR : The Regional Executive Director  
1515 DENR By the Bay Building, Roxas Boulevard,  
Barangay 668, Ermita, Manila

THRU : The OIC, PENR Officer  
Mamburao, Occidental Mindoro

FROM : The CENR Officer

SUBJECT : SUBMISSION OF THE 1<sup>ST</sup> QUARTER ACCOMPLISHMENT  
REPORT FOR MAINTENANCE AND PROTECTION OF  
COASTAL AND MARINE ECOSYSTEMS OF APO REEF  
NATURAL PARK

Respectfully submitted is the 1<sup>st</sup> Quarter Accomplishment Report of Apo Reef Natural Park for *Maintenance and Protection of Coastal and Marine Ecosystems*, an activity under the Coastal and Marine Ecosystems Management Program (CMEMP).

For information and record.

FOR. ANASTACIO A. SANTOS, MPA

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**Department of Environment and Natural Resources**  
**MIMAROPA Region**  
**APO REEF NATURAL PARK**  
**Protected Area Management Office**



March 28, 2023

**MEMORANDUM**

**FOR :** The Regional Executive Director  
1515 DENR By the Bay Building, Roxas Boulevard,  
Barangay 668, Ermita, Manila

**THRU :** The OIC, PENR Officer  
Mamburao, Occidental Mindoro

The CENR Officer

**FROM :** The Protected Area Superintendent

**SUBJECT :** SUBMISSION OF THE 1<sup>ST</sup> QUARTER ACCOMPLISHMENT  
REPORT FOR MAINTENANCE AND PROTECTION OF  
COASTAL AND MARINE ECOSYSTEMS OF APO REEF  
NATURAL PARK

Respectfully submitted is the 1<sup>st</sup> Quarter Accomplishment Report of Apo Reef Natural Park for *Maintenance and Protection of Coastal and Marine Ecosystems*, an activity under the Coastal and Marine Ecosystems Management Program (CMEMP). Accomplishments for habitat surveillance of threats and damages, repair and maintenance of equipment, and conduct of direct activities are included in the report. Attached herewith is the narrative report with its appendices.

For your information and record.

  
**KRYSTAL DAYNE T. VILLANADA**





# **Quarterly Accomplishment Report**

## *Maintenance and Protection*

*1st Quarter of 2023*

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## **I. Introduction**

Apo Reef Natural Park (ARNP) is a 15,799.23-hectare offshore Marine Protected Area (MPA) approximately 30 kilometers away from the coast of the Municipality of Sablayan in Occidental Mindoro. The MPA covers two adjacent oceanic atolls, a fringing reef, and three limestone islands (Apo Island, Binangaan, and Tinangkapan). ARNP hosts a diverse range of flora and fauna and it is both recognized as a Key Biodiversity Area and an Important Bird Area (Mallari et al., 2001; Ambal et al., 2012).

The efficient day-to-day management and operations of ARNP are ensured by the Apo Reef Natural Park - Protected Area Management Office (ARNP-PAMO), headed by the Protected Area Superintendent (PASu). This report contains the accomplishments of the Office under *Maintenance and Protection*, an activity under the Coastal and Marine Ecosystem Management Program (CMEMP), from January 1, 2023 to March 21, 2023 with corresponding means of verification (MOVs).

## **II. Accomplishments**

### **a. Habitat Monitoring**

#### *Law Enforcement*

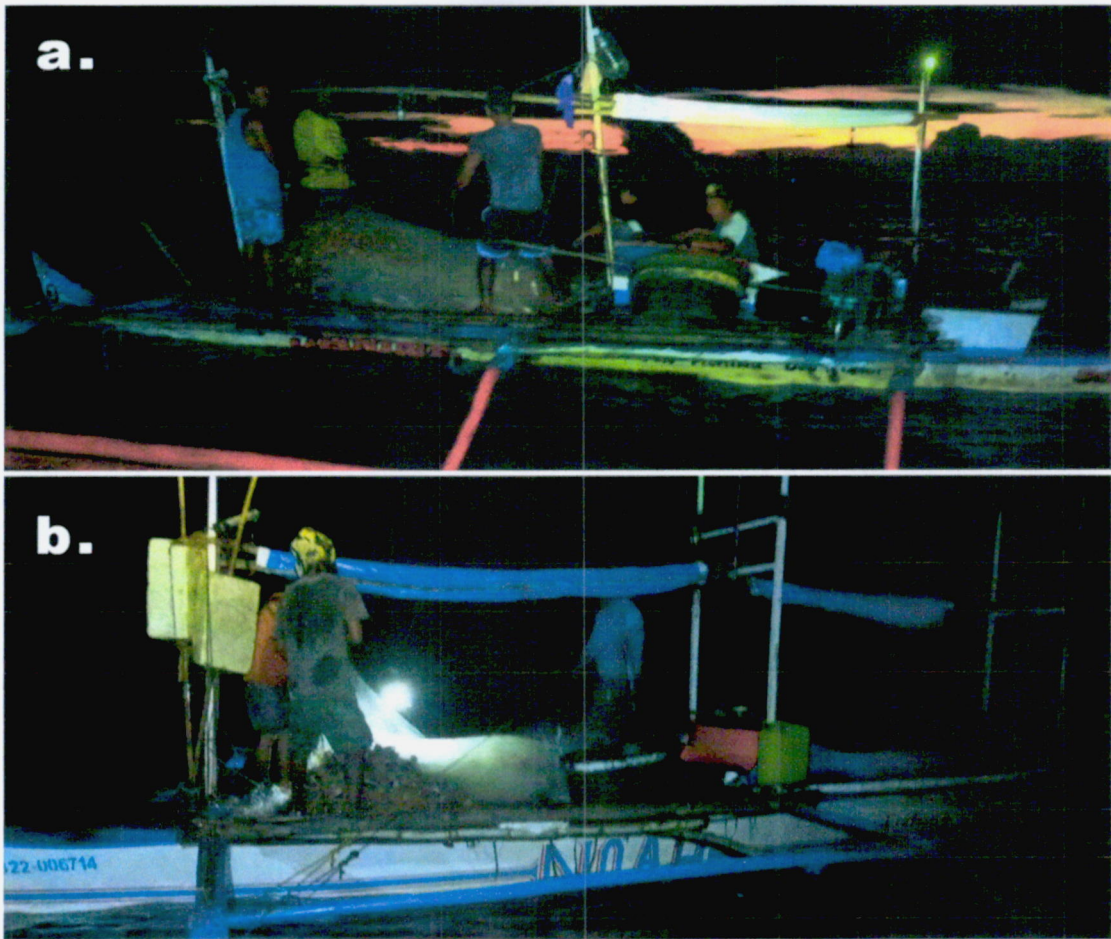
Illegal activities within the core and buffer zones of ARNP, including fishing, are combatted and prevented by an inter-agency task force known as Task Force Marine and Apo Reef Law Enforcement (TF-MARLEN). TF-MARLEN was established in 2004 and it is primarily composed of the following: DENR, LGU Sablayan, Philippine Army, Philippine National Police, Philippine Coast Guard, and WWF-Philippines (Tabaranza et al., 2014).

The park rangers of ARNP-PAMO and MENRO Sablayan (including boat captains and crew members) play an integral role in the multi-sectoral task force. Among others, they regularly patrol the core and buffer zones of ARNP with or without assistance from the military and uniformed personnel. As of March 21, 2023, they have logged at least 70.75 seaborne patrol hours and traveled 596.8 km around the reef complex. Park rangers also patrolled Apo Island on foot to monitor tourist activities and conducted surveillance from the lighthouse. During one of these patrol efforts, two groups of fisherfolks were apprehended for illegally operating within the Protected Area (Figure 1). These fisherfolks were aboard two motorized outrigger boats (Noah and Janine) and possessed approximately 66 kg of fishes and two 360 m-long gillnets, among others. Criminal charges have been filed against the nine fisherfolks. The Municipal Trial Court of Sablayan has already held arraignment and pre-trial conference last February 7, 2023, and March 7, 2023, respectively. The trial process for the criminal cases filed against the fisherfolks has begun and the initial presentation of evidence was held last March 16, 2023.

Late last year, criminal charges were also filed by ARNP-PAMO against Robert Latumbo, Jay Ar Agustin, and Roquito Dioso. These fisherfolks were apprehended on December 16, 2022, at Bahura 7, ARNP. They are now facing criminal charges for violation of Republic Act 11038 or the E-NIPAS Act of 2018. (Criminal Case No. 6597 and 6598) The arraignment and pre-trial conference were held on January 19, 2023, and February 16, 2023, respectively. These were attended by Park Ranger Temart Rebito



and PASu Krystal Dayne Villanada. The accused have fixed their bail for provisional liberty as of this writing.



**Figure 1.** M/Bca Janine (a) and Noah (b) apprehended within the MPA on January 17, 2023.

Refer to Annex A for the photo-documentation of seaborne patrols conducted from January 1 to March 21, 2023.

#### *Nesting Beach Surveys*

Apo Island, the largest of the three islands in ARNP, features a sandy beach that serves as a nesting ground for two species of sea turtles: Green Turtle (*Chelonia mydas*) and Hawksbill Turtle (*Eretmochelys imbricata*) (Viloria, 2011). To monitor the nesting activities of sea turtles in the Protected Area, nesting beach surveys are conducted in the morning and night along the approximately 3-km stretch of sandy beach covering the western and southwestern portions of the island. An area isolated from this stretch by karstic formations known as *Bora-boracay* is also surveyed but at much lower frequencies.

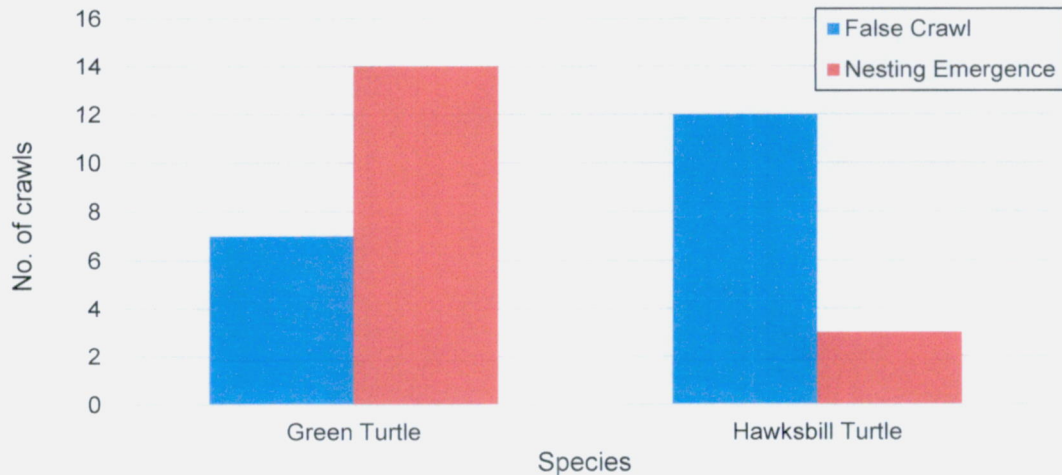
During daytime surveys, the nesting activities of sea turtles are counted using crawls (also called tracks), body pits, and nests. Nesting activities include all attempts of female sea turtles to nest, whether successful or not. The data collected for each nesting activity includes the species of sea turtle, incident type (nesting emergence or false crawl), and GPS location of the nest or false. Night-time surveys are also carried

4



out but with much less effort than daytime surveys which are done daily. Night-time surveys are conducted mainly to tag nesting individuals and collect capture-mark-recapture (CMR) data. The protocol followed in tagging sea turtles is from the Philippine Aquatic Wildlife Rescue and Response Manual Series: Marine Turtles.

As of March 15, 2023, 36 crawls have been recorded along the sandy beach (Figure 2). These crawls were from the two identified nesting species in ARNP. Crawls from Green Turtles ( $n=21$ ) were more numerous than Hawksbill Turtles ( $n=15$ ). Of the total number of crawls recorded, 17 (47.22%) were classified as nesting emergence. Most of which were also from Green Turtles ( $n=14$ ).

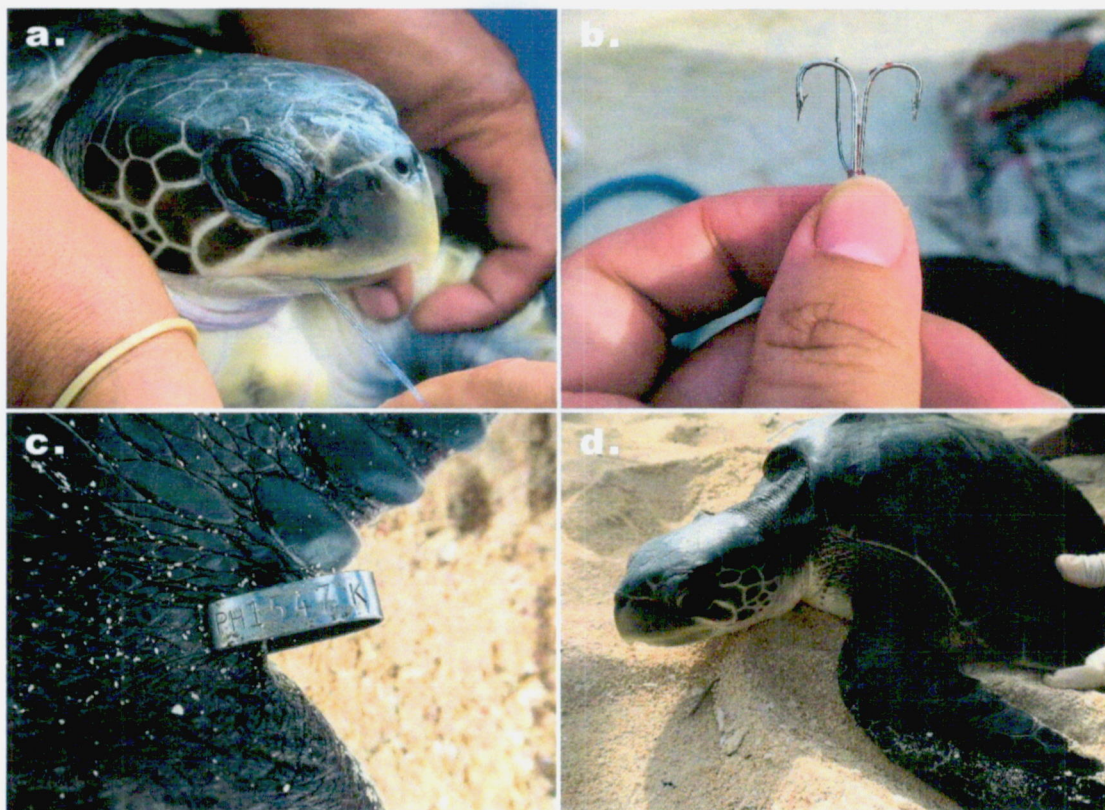


**Figure 2.** Crawls of Green Turtle and Hawksbill Turtle recorded along the sandy beach of Apo Island, ARNP from January 1 to March 15, 2023.

Four individuals have been tagged to date. Three of which were nesting Green Turtles encountered during the daytime ( $n=2$ ) and night-time surveys ( $n=1$ ). Notably, the other tagged individual was a juvenile Olive Ridley Turtle (*Lepidochelys olivacea*) (Figure 3). This individual was encountered along *Parolang Putol* during a field survey for the Asian Waterbird Census. It was struggling to swim after it ingested three sets of fishing hooks that were each attached to a styrofoam buoy by nylon wire. The fishing gears are locally known as *pataw-pataw* and they are used to catch needlefish among others. The injured Olive Ridley Turtle was transported to Apo Island and inspected. Upon visual inspection, the fishing hooks may not be removed because they were deep into the gastrointestinal tract of the individual. Hence, the fishing lines were only cut at the shortest possible length and the individual was tagged and then released. This is the first known record of Olive Ridley Turtle in ARNP.

2





**Figure 3.** Juvenile Olive Ridley Turtle encountered last January 15, 2023. A) Three fishing lines inside the mouth of the individual, B) hooks from a *pataw-pataw* setup, C) Inconel tag attached to the individual, and D) rescued individual prior to release.

Refer to Annex B for the photo-documentation of the nesting beach surveys.

#### **b. Direct Activities**

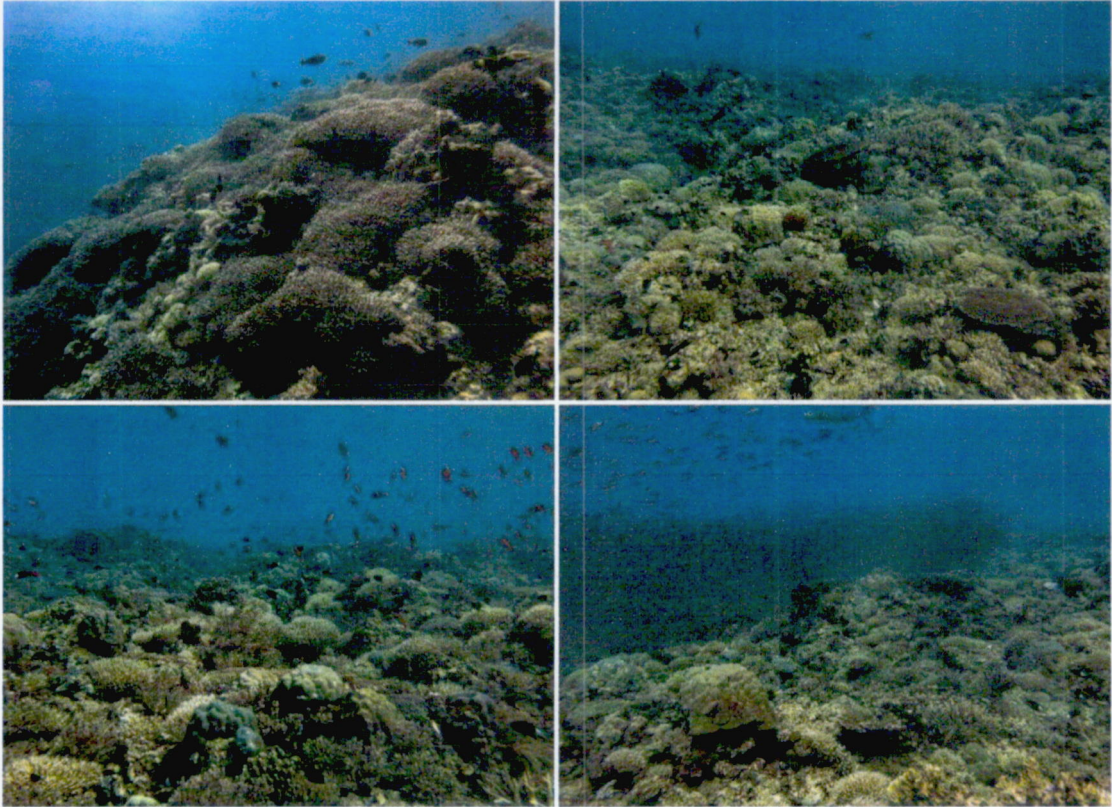
##### *Coral Bleaching Monitoring*

Coral bleaching is the process in which corals expel symbionts from their tissues in response to stress and turn white. Under the rapidly changing climate, corals are more prone to bleaching due to increased ocean temperature. The early detection and monitoring of monitoring coral bleaching events are essential to better inform management among others.

South Corner, a popular dive site southeast of Apo Island, was monitored for coral bleaching occurrence on March 17, 2023. This site has the highest coral cover among the 15 coral reef monitoring sites in ARNP (Ticzon et al., 2022). No coral bleaching was observed in the site upon visual assessment of corals. This agrees with the *No Stress* bleaching alert from the U.S. National Oceanic and Atmospheric Administration (NOAA) during the survey date. Landscape photos of the coral reef were taken (Figure 4) and submitted to the Philippine Coral Bleaching Watch (PCBW) for cross-checking.



It is recommended that the NOAA Coral Reef Watch be visited regularly and survey effort be increased especially in coral reef monitoring stations with relatively higher coral cover if the stress level is raised to Alert Level 1 or higher.



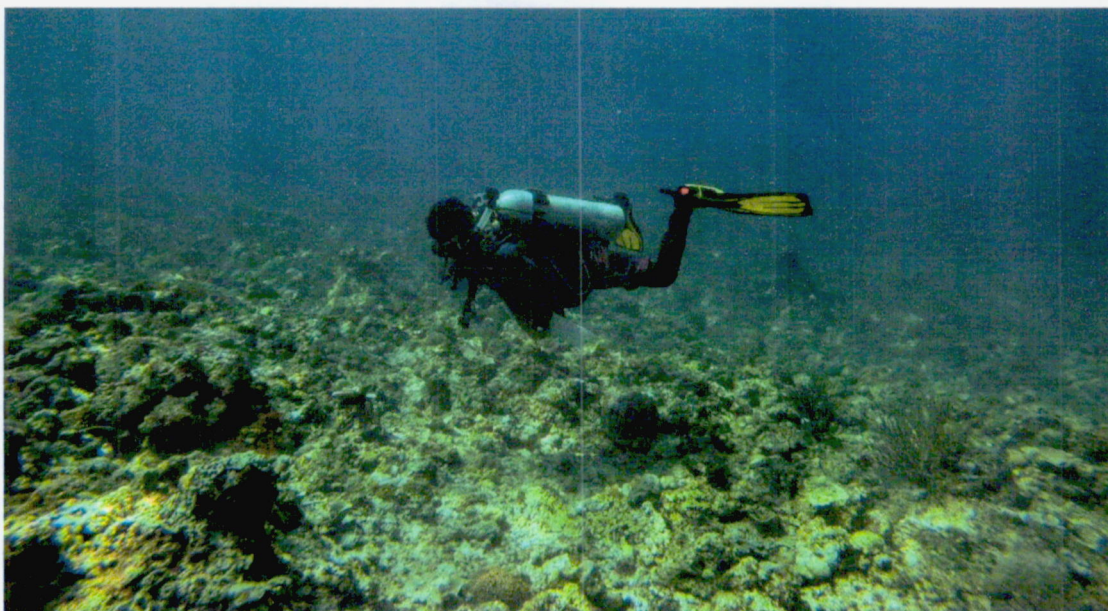
**Figure 4.** Reefscape photographs from South Corner taken on March 17, 2023 by Roberto Beringuela.

#### *Crown-of-Thorns Starfish Surveillance and Control*

Crown-of-thorns starfish (CoTS; *Acanthaster spp.*) is a corallivorous starfish with venomous spines. It has four known species and an individual can have up to 23 arms and grow to over half a meter in diameter. CoTS naturally occur in coral reefs in low densities but populations of this organism can reach very high densities and cause significant damage to reefs. Large CoTS outbreaks in ARNP occurred in 2018 and 2019 with 2,099 and 10,680 individuals culled, respectively.

Five sites were surveyed for the presence of CoTS: Aladin, South Corner, Ego wall, and Binanggaan (2). Ego Wall and Binanggaan were surveyed on March 22, 2023 while Aladin and South Corner were surveyed on March 17, 2023. Among all sites, the presence of CoTS was only recorded in Ego Wall. The lone individual recorded in Ego Wall was only a juvenile with an estimated diameter of 3 in.





**Figure 5.** Mark Dennis M. Barretto searching for CoTS in Binanggaan.

#### *Coastal Clean-up Activities*

Marine litter are regularly collected from the shoreline of Apo Island, ARNP. From January 1 to March 15, 2023, 59 sacks of mixed marine litter were collected (Table 1). These were all transported back to mainland Sablayan for proper disposal. The ARNP-PAMO has also participated in three clean-up activities in mainland Sablayan to celebrate the following: World Wetlands Day (February 2), Coast Guard District Southern Tagalog (February 22), and World Water Day (March 22).

**Table 1.** Marine litter collected within Apo Island from January 1 to March 15, 2023.

Month	Type	Quantity
January	Mixed	27 sacks
February	Mixed	18 sacks
	Derelict Fishing Gears	6 <i>pataw-pataw</i> fishing gears
March	Mixed	14 sacks

In the following quarter, Clean Swell, a trash collection mobile application by The Ocean Conservancy, will be used in collecting data during clean-up activities in ARNP. This shall lead to a more accurate quantification of wastes collected and allow us to contribute to a global database on marine litter.

Refer to Annex C for the photo-documentation of the coastal clean-up activities conducted from January to March 2022.

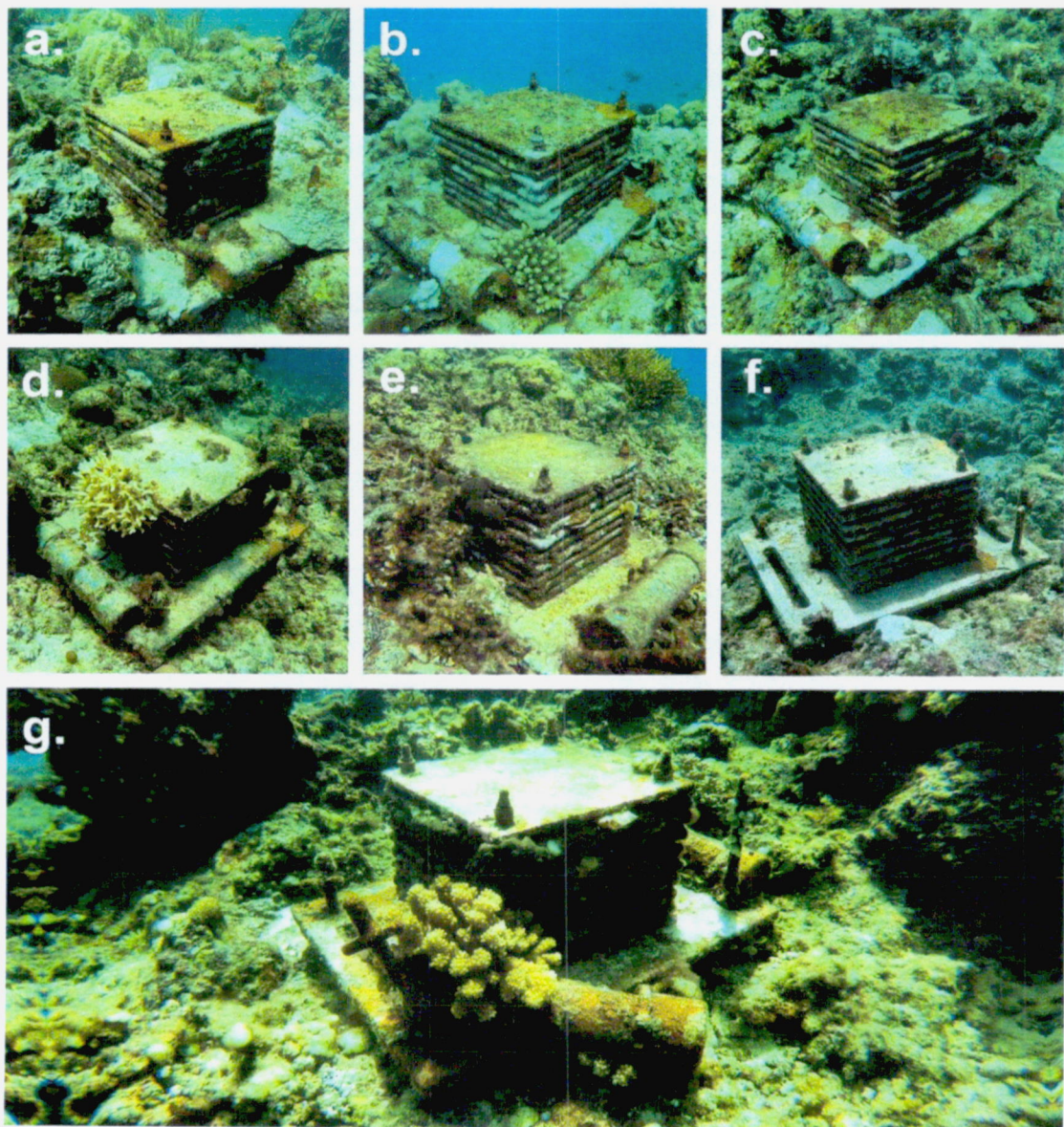


### *ARMS Monitoring*

Nine units of Autonomous Reef Monitoring Structures (ARMS) were deployed in Apo Reef Natural Park in 2017. The deployment was a part of the research collaboration between the DENR-BMB and Smithsonian Institution which aims to utilize ARMS in assessing reef cryptobenthic diversity in the Philippines across different geographical and anthropogenic impact gradients.

The ARNP-PAMO has been monitoring these structures every quarter since its deployment. For this quarter, the ARNP-PAMO conducted the monitoring activity on March 22, 2023. During the monitoring activity, seven units of ARMS were found to be intact in their original locations: Ego Wall (n=1) and Binanggaan (n=6) (Figure 6). One of the three ARMS units that were deployed in Ego Wall has been lost likely due to strong wave action strong wave action in the area. Meanwhile, the other one has been dislodged in the previous years and it was re-installed in front of the Ranger's Kiosk.

Refer to Annex D for the photos of the monitoring activity conducted on March 9, 2023.



**Figure 6.** Seven intact ARMS in Binanggaan (a-f) and Ego Wall (g).

4



**c. Maintenance of Equipment and Facilities**

Two of the four watercraft of ARNP-PAMO are nonfunctioning: the 24-footer hi-speed watercraft and outrigger boat (M/Bca Jerlyn) (Table 1). However, the latter has been undergoing repair since the last quarter of last year and it is expected to be fully functional by April of this year. Several parts have been repaired since the start of the year including the prow, sternpost, and outriggers. The boat hull was also laminated with putty and painted. The remaining repair activities are the construction of motor mount and the installation of the constructed boat seats and ladder.

**Table 2.** Parts of watercraft that were repaired from January 1 to March 21, 2023.

Watercraft	Parts Repaired	Current Status
MBca Jerlyn	Prow/bow, sternpost/stern, keel, boat hull (encapsulation, lamination, and painting of outer part), outriggers	For repair (construction of motor mount, installation of boat seats and ladder)
26-footer Hi-speed Watercraft	None	For repair (replacement of steering cable, repainting of boat hull, and repair of engine)
30-footer Hi-speed Watercraft	None	Serviceable
Spotter Boat	None	Serviceable

The other items being maintained are mostly in good condition (Table 3). However, most diving gears are for replacement. Although these gears are still functional, they should be replaced to ensure the safety of divers.

**Table 3.** Status of other equipment of ARNP-PAMO as of March 21, 2023.


Equipment	Quantity	Status
Kenwood TM-271A Base Radio	1	Good condition
Kenwood TM-281A Base Radio	1	Good condition
Diving Tanks	30	Good condition
Dive Gears	10	5 in good working condition; 5 functional but needs replacement

Refer to Annexes E for the photo-documentation of the maintenance activities conducted from January to March 2023.

Prepared by:

  
**HUGO IGNACIO G. SALVADOR**  
CMEMP Extension Officer

Reviewed and submitted by:

  
**KRYSTAL DAYNE T. VILLANADA**  
Protected Area Superintendent



III. Appendices

Appendix A. Photo-documentation of the patrol operations conducted from January 1 to March 21, 2023.



Park Ranger Temart E. Rebito surveying the core zone of ARNP from the lighthouse using a binocular



PMF Roberto Beringuela informing a fisherfolk of the rules and regulations within ARNP



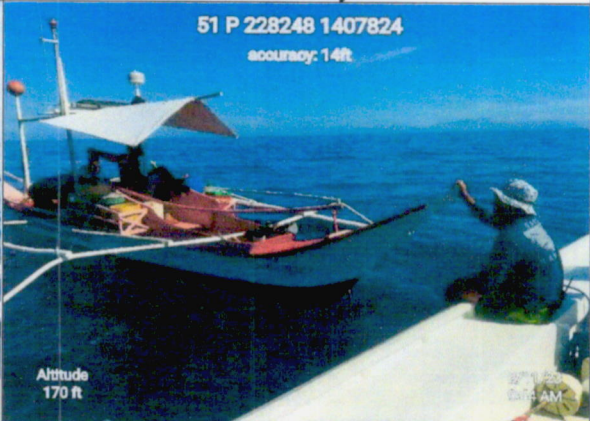
Park Rangers and two of the apprehended fisherfolks en route to mainland Sablayan on January 17, 2023



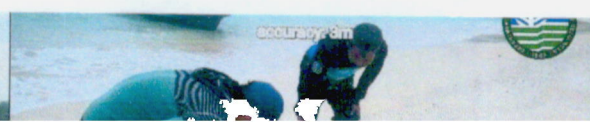
Apprehended fisherfolks aboard MBca Janine removing the fishes from the gill nets for inventory



Boat Crew Jaysrael Urieta and PMF Roberto Beringuela aboard the speedboat to patrol the core zone of ARNP



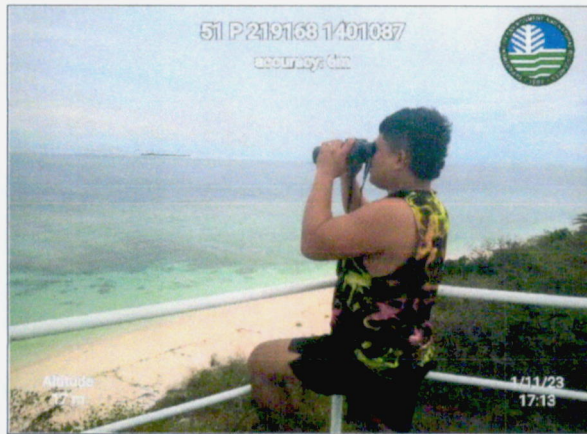
PMF Roberto P. Beringuela (right) speaking with the fisherfolks while their catch is being inspected





### III. Appendices

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Park Rangers and two of the apprehended fisherfolks en route to mainland Sablayan on January 17, 2023



Apprehended fisherfolks aboard MBca Janine removing the fishes from the gill nets for inventory



Boat Crew Jaysrael Urieta and PMF Roberto Beringuela aboard the speedboat to patrol the core zone of ARNP



PMF Roberto P. Beringuela (right) speaking with the fisherfolks while their catch is being inspected

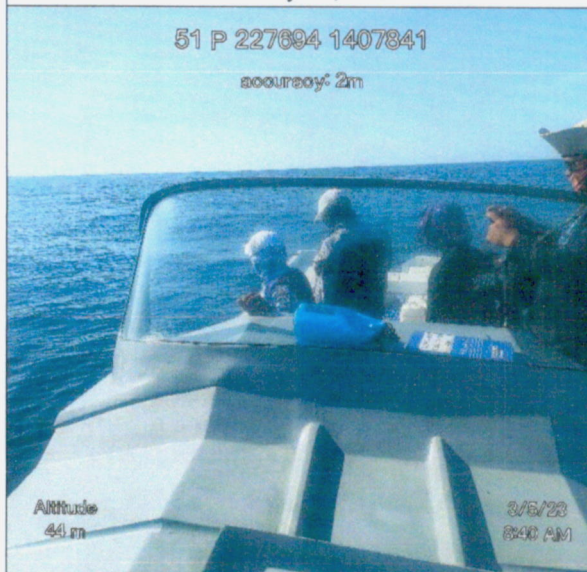




Park Rangers Sherwin Benzoza (left) and Temart Rebuto conducting surveillance from the lighthouse on February 20, 2023



Park Maintenance Foreman Roberto Beringuela (center) inspecting the catch of fisherfolks encountered within the ARNP



Park Rangers from Team *Pating* conducting a seaborne patrol within ARNP on March 5, 2023



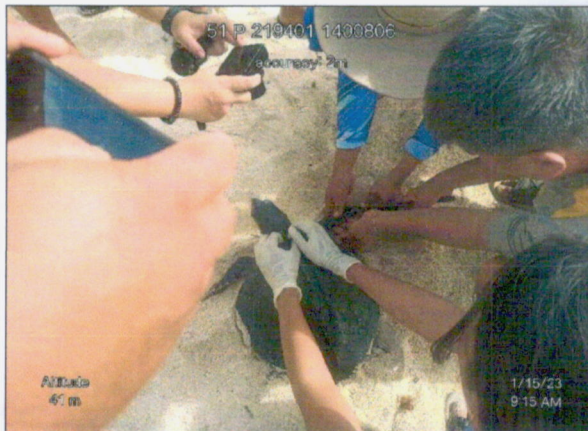
One of the fisherfolks encountered during the patrol operations



**Appendix B.** Photo-documentation of the nesting beach surveys conducted from January 1 to March 15, 2023.

	
<p>Former Park Ranger Michael D. Dagdag measuring the curved carapace length of a stranded Green Turtle on January 5, 2023</p>	<p>Former Park Ranger Michael D. Dagdag measuring the track width left by the rescued Green Turtle</p>
	
<p>Park Ranger Ludygario Matira assisting the Green Turtle stuck among the branches on January 10, 2023</p>	<p>Park Ranger Sherwin R. Benoza (right) putting the Inconel Tag on the Green Turtle</p>
	
<p>Nesting Green Turtle recorded in Bora-boracay on January 14, 2023</p>	<p>CMEMP Extension Officer Hugo Salvador (middle) measuring the track of the nesting Green Turtle</p>





Park Maintenance Foreman Roberto P. Beringuela tagging the Olive Ridley Turtle rescued from ingesting fishing gear



Park Ranger Sherwin R. Benoza assisting in the nesting beach survey on January 23, 2023



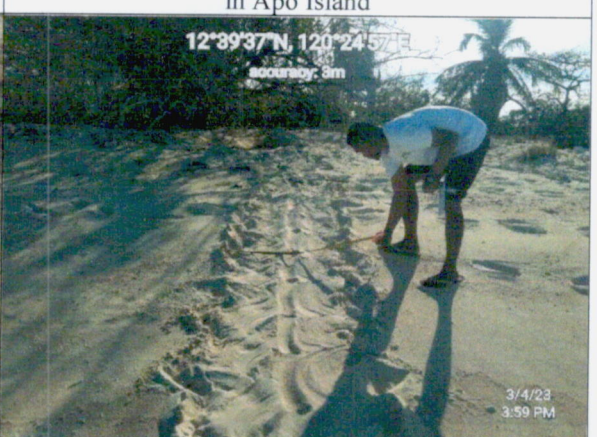
Park Ranger Temart Rebato (right) measuring the curved carapace width of a Green Turtle prior to tagging



Park Maintenance Foreman Roberto P. Beringuela (left) and Park Ranger Kelvin John Zubiri conducting a nest inventory on one of the Hawksbill Turtle nests in Apo Island



A "boil" of Hawksbill Turtles recorded by Park Ranger Ricky Dantayana and Boat Crew Raymart Dangeros



Park Rangers and Coast Guards unloading the suspected rocket debris at Sablayan Pier on November 11, 2022



**Appendix C.** Photo-documentation of coastal clean-up activities conducted from January to March 21, 2023.

<p>Park Ranger Ricky Dantayana collecting a plastic bottle from the beach in Apo Island, ARNP</p>	<p>Park Ranger Sherwin Benoza collecting an old discarded buoy from the shore</p>
<p>Park Rangers participating in the coastal clean-up activity in celebration of the 40<sup>th</sup> Founding Anniversary of Coast Guard District Southern Tagalog</p>	<p>Park Rangers from Team <i>Pating</i> conducting a coastal clean-up activity in Apo Island on March 7, 2023</p>
<p>Park Rangers removing a drifted log from the shore</p>	<p>Park Rangers and MENRO staff collecting marine litter trapped amongst the mangroves in Apo Island on March 17, 2023</p>



**Appendix D.** Photo-documentation of the ARMS and CoTS monitoring activity conducted on March 9, 2023.



Boat Crew Jaysrael Urieta (right) operating the speedboat during the CoTS surveillance and ARMS monitoring activity



Boat Captain Mark Dennis Barretto snorkeling and searching for the ARMS in Binanggaan



Park Maintenance Foreman Roberto Beringuela inspecting one of the ARMS in Binanggaan



Boat Captain Mark Dennis Barretto near another ARMS unit in Binanggaan



Boat Captain Mark Dennis Barretto searching for CoTS in Binanggaan



Park Maintenance Foreman Roberto Beringuela inspecting crevices in Ego Wall for CoTS



**Appendix E.** Photo-documentation of the maintenance activities conducted from January 1 to March 21, 2023.



Park Rangers Federico de Jesus (right) and Temart Rebito and MENRO staff Jerry Noval constructing a dining table within the Picnic Ground



Boat Captain Mark Dennis Barretto and Park Maintenance Foreman Roberto Beringuela changing the oil of the 30-footer hi-speed watercraft



Members of the inspection team from PENRO Occidental Mindoro verifying the reported progress of the repair of M/Bca Jerlyn



Forest Technician Vasha Fulgencio (middle) inspecting the inside of the boat hull on February 16, 2023



Construction of the sternpost or *pamarong* of M/Bca Jerlyn



Boat Crew Jaysrael Urieta (right) and Park Ranger Jerry Noval preparing buoys to be attached to the sinkers in Aladin, South Corner, and Barracuda Point.

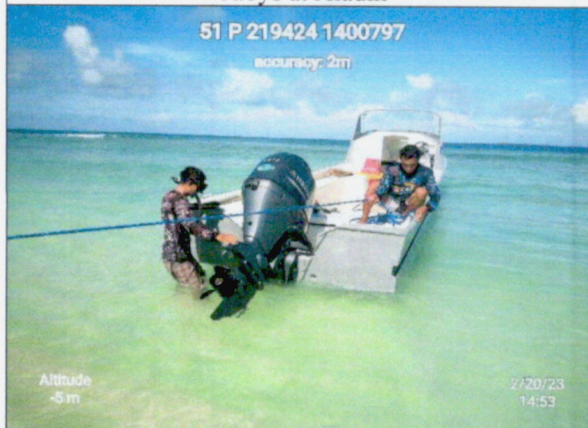




Park Maintenance Foreman Roberto Beringuela (left) and Boat Captain Mark Dennis Barretto (right) preparing their SCUBA gears before the attachment of buoys at Aladin



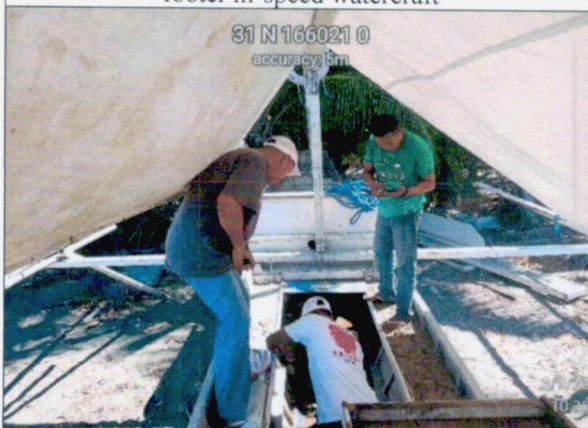
Park Rangers carrying a confiscated boat onto the dry boat storage area in Apo Island, ARNP



Boat Captain Romel M. Pacaul (left) and Boat Crew Raymart Dangeros cleaning the boat hull of the 30-footer hi-speed watercraft



Park Ranger Federico de Jesus assisting MENRO staff Rendel Tulaylay in repairing the boardwalk at the northern portion of Apo Island



Park Rangers monitoring the repair of M/Bca Jerlyn



M/Bca Jerlyn with newly painted hull and outriggers