



Republic of the Philippines
Department of Environment and Natural Resources
Provincial Environment and Natural Resources Office
MIMAROPA Region

Bgy. Sta. Monica, Puerto Princesa City, Palawan

E-mail: penropalawan@denr.gov.ph

Telfax No. (048) 433-5638 / (048) 433-5638

Region

August 26, 2022

MEMORANDUM

FOR : The Regional Executive Director
DENR MIMAROPA
1515 L&S Bldg., Roxas Blvd.
Ermita, Manila

FROM : The Provincial Environment and
Natural Resources Officer

SUBJECT : **2ND QUARTER ACCOMPLISHMENT REPORT OF
TUBBATAHA REEFS NATURAL PARK (TRNP) FOR
COASTAL AND MARINE ECOSYSTEMS MANAGEMENT
PROGRAM (CMEMP) FY 2022**

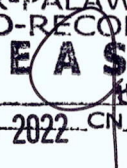


Forwarded is the accomplishment report of Tubbataha Management Office for the 2nd quarter for Coastal and Marine Ecosystems Management Program (CMEMP) that serves as **Means of Verification (MOV)** to the target activity under Management of Coastal and Marine Resources/Areas.

For information and record.


FELIZARDO B. CAYATOC



DENR-PALAWAN
PENRO-RECORDS
RELEASED
By 
Date: 31 AUG 2022 CN 42-2209



Tubbataha Management Office

Tubbataha Reefs Natural Park & World Heritage Site



26 August 2022


PENRO FELIZARDO B. CAYATOC
DENR-PENRO Palawan
Sta. Monica, Puerto Princesa City

Dear PENRO Cayatoc,

We are pleased to submit the TRNP CMEMP Report for the support of DENR for 2022.

Thank you for your support.

DENR PENRO
PALAWAN RECORDS
RECEIVED

BY: 
DATE: 08-26-2022 22:7729

Sincerely,


ANGELIQUE M. SONGCO
PASU, TRNP

Protected Area Profile on Coastal and Marine Ecosystems

Protected Area: Tubbataha Reefs Natural Park and World Heritage Site

HABITAT ASSESSMENT/ MONITORING RESULTS

A. Coral Reef Assessment (including Fish Visual Census)

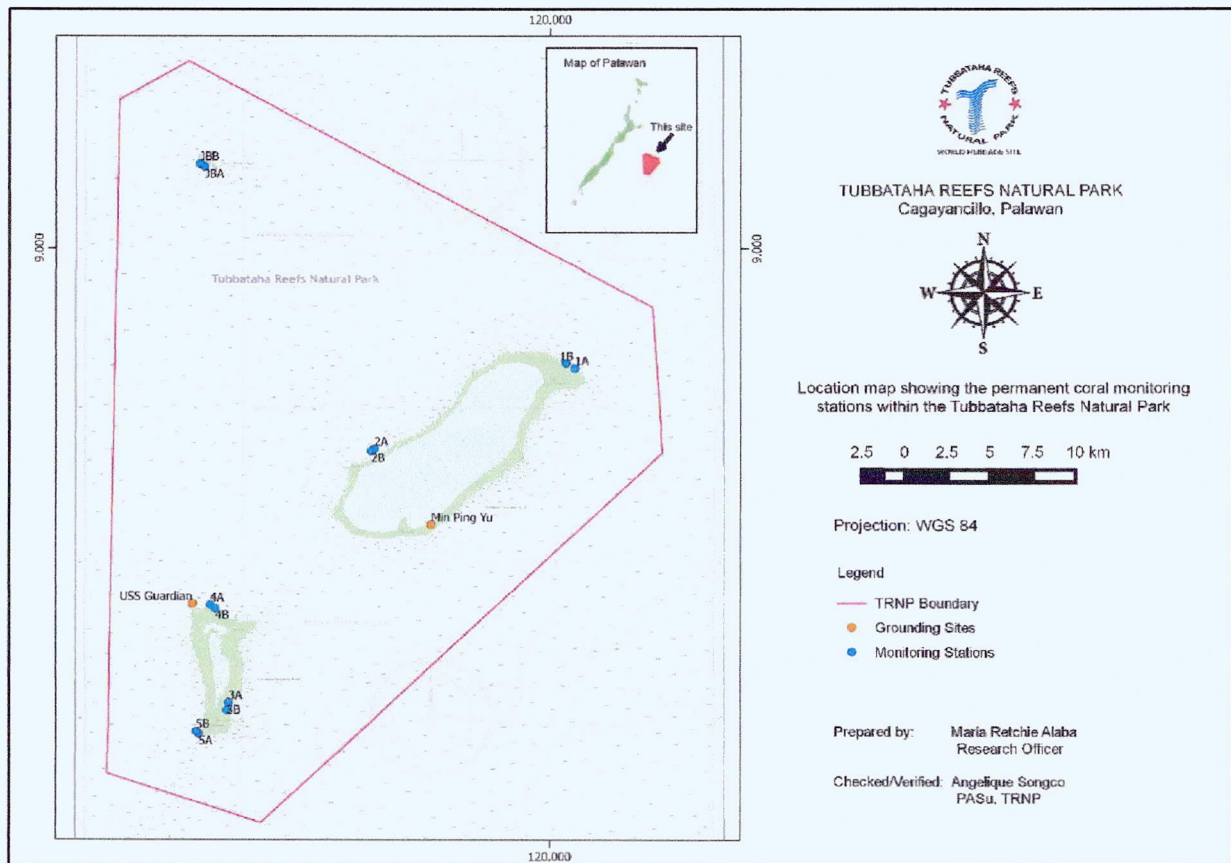


Figure 1. Map showing the permanent coral and fish monitoring stations in TRNP.

Number of Hectares (Habitat Extent): 5500 hectares (2003 habitat map)

Total Hectares Assessed: 2.35 hectares (coral monitoring)

Brief narrative (maximum of 3 paragraphs) on the coral reef assessment conducted.

- **Methodology**

Coral monitoring in TRNP followed the methods described in DENR-BMB Technical Bulletin Nos. 2017-05 and 2019-04. The shallow area of the monitoring stations was located on the upper reef slope at a depth range of 2 to 6 meters, within the 75 x 25-meter area. The deepest limit of each station was demarcated by a 75-meter belt transect following the reef contour. Four 50-meter transects were then deployed at least 1 meter apart from the preceding transect and parallel to one another. In the deep area of the monitoring stations, four 20-meter transects were deployed five meters apart at the depth range of 6 to 10m. Photographs are taken every one meter on the shallow side of each transect.

- **Results of the assessment**

Data are still being processed and analyzed. The coral monitoring report will be submitted by the end of the year as part of the TRNP Ecosystem Research and Monitoring Report.

Fish Visual Census

Brief narrative (maximum of 3 paragraphs) on the fish assessment conducted.

- **Methodology**

Three 50-meter replicate transects separated by a 10-meter buffer were laid in deep (~10 meters) and shallow (~5 meters) areas of each station. Each transect has an imaginary 5-meter coverage on both sides, establishing a 10 x 50-meter corridor. The transects were segmented into 5-meter stops along its length and surveyed one segment after another. Daytime Fish Visual Census (FVC) described by English et al. (1997) was employed to determine biomass, density, and species richness.

- **Results of the assessment**

Data are still being processed and analyzed. The fish monitoring report will be submitted by the end of the year as part of the TRNP Ecosystem Research and Monitoring Report.

B. Water Quality Monitoring

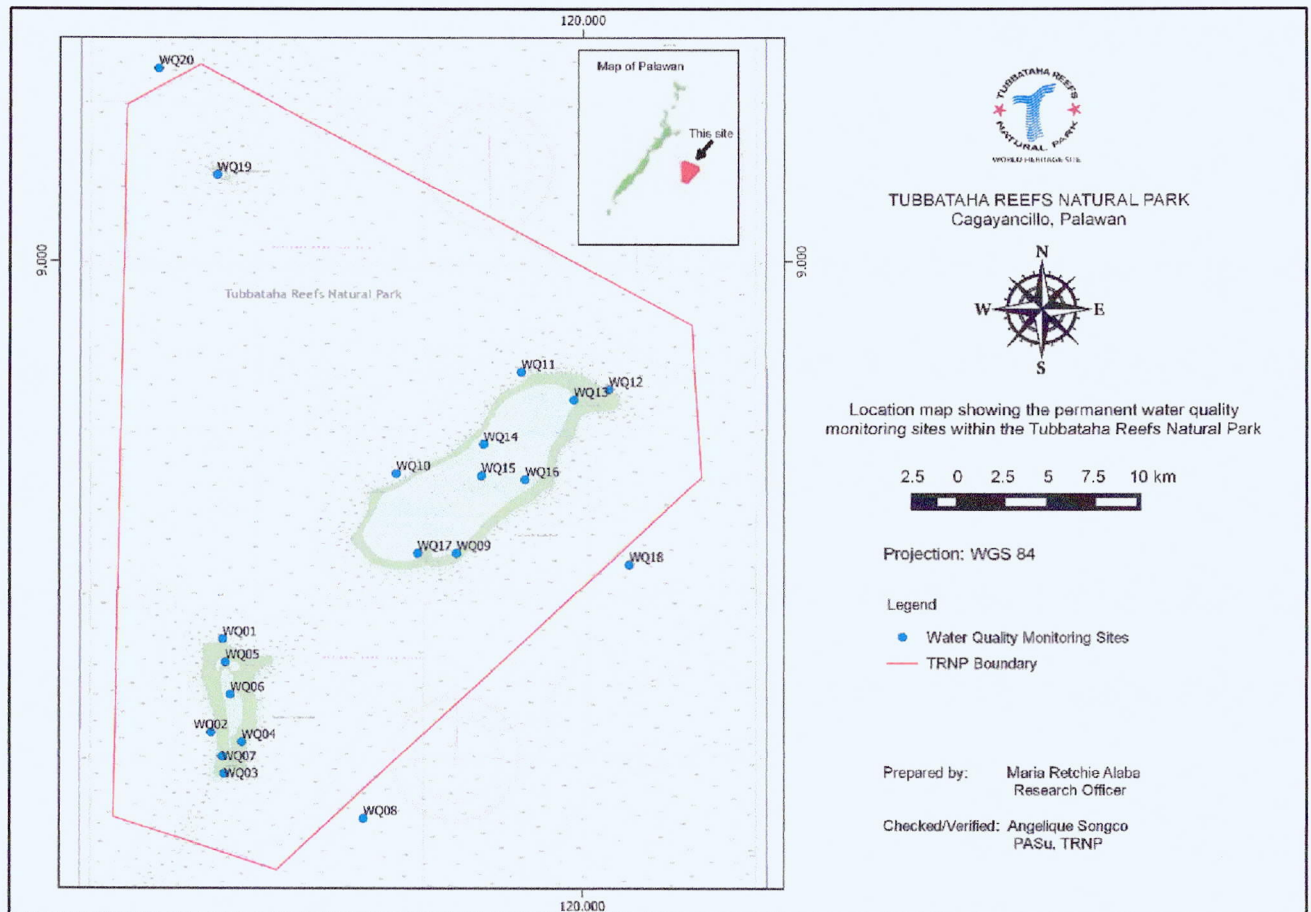


Figure 2. Water quality monitoring sites in TRNP.

Table 1. Water quality guidelines

Table 3. Water Quality Guidelines for Primary Parameters										
Parameter	Unit	Water Body Classification								
		AA	A	B	C	D	SA	SB	SC	SD
BOD	mg/L	1	3	5	7	15	n/a	n/a	n/a	n/a
Chloride	mg/L	250	250	250	350	400	n/a	n/a	n/a	n/a
Color	TCU	5	50	50	75	150	5	50	75	150
Dissolved Oxygen ^(a) (Minimum)	mg/L	5	5	5	5	2	6	6	5	2
Fecal Coliform	MPN/100mL	<1.1	<1.1	100	200	400	<1.1	100	200	400
Nitrate as NO ₃ -N	mg/L	7	7	7	7	15	10	10	10	15
pH (Range)		6.5-8.5	6.5-8.5	6.5-8.5	6.5-9.0	6.0-9.0	7.0-8.5	7.0-8.5	6.5-8.5	6.0-9.0
Phosphate	mg/L	<0.003	0.5	0.5	0.5	5	0.1	0.5	0.5	5
Temperature ^(b)	°C	26-30	26-30	26-30	25-31	25-32	26-30	26-30	25-31	25-32
Total Suspended Solids	mg/L	25	50	65	80	110	25	50	80	110

Table 2. Water quality monitoring results in TRNP in 2022.

Stations	2022													
	pH	Temp	Color	TSS	DO	Nitrates	Phosphates	Oil and Grease	Fecal Coliform	Total Coliform	Salinity	TDS	Turbidity, NTU	Conductivity
		°C	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	MPN/100 ml	MPN/100 ml	%	g/L	NTU	US/cm
1	8.5	29.4	<5	<1	7.23	1.2429	0.1097	<1	<1.8	<1.8	31.6	29.6	0	48.6
2	8.39	29.25	<5	4	7.51	1.7791	0.1082	<1	<1.8	4.5	29.6	27.7	0.4	49.7
3	8.45	29.44	<5	<1	7.29	1.4926	0.1219	<1	<1.8	<1.8	31.8	29.7	0	48.7
4	8.48	29.39	<5	<1	7.01	1.642	0.0983	<1	<1.8	<1.8	32.4	30.2	0	49.5
5	8.41	29.38	<5	<1	8.4	1.5155	0.1091	<1	<1.8	<1.8	31	29.1	0	47.6
6	8.42	29.76	<5	9	7.88	2.0003	0.1082	<1	<1.8	2	30.7	28.9	0	47.4
7	8.39	29.25	<5	2	7.51	1.8011	0.1183	<1	<1.8	4.5	29.6	27.7	0.4	49.7
8	8.46	29.48	<5	<1	6.62	2.037	0.2369	<1	<1.8	6.8	30.9	29	0	47.6
9	8.52	29.43	<5	6	7.1	2.2451	0.154	<1	<1.8	<1.8	30.8	28.7	0.1	47.3
10	8.57	29.46	<5	4	7.97	2.2206	0.1206	<1	<1.8	<1.8	31.8	29.7	0	38.7
11	8.65	30.05	<5	2	8.87	1.7309	1.7309	<1	<1.8	<1.8	31	29	0	47.6
12	8.65	29.57	<5	<1	7.2	1.4885	1.4885	<1	<1.8	2	31.7	29.6	0	48.5
13	8.76	33.05	<5	5	9.92	2.4312	0.1638	<1	<1.8	<1.8	23.7	21.5	5.6	37.4
14	8.57	31.37	<5	<1	6.31	1.8338	0.1108	<1	<1.8	<1.8	32.2	30.1	0	49.3
15	8.55	30.81	<5	<1	6.19	2.1178	0.1186	<1	<1.8	<1.8	30.7	28.8	0	47.2
16	8.65	30.54	<5	10	7.39	2.4997	0.3401	<1	<1.8	<1.8	31	28.9	0	47.6
17	8.32	29.17	<5	14	7.65	2.3561	0.1227	<1	<1.8	<1.8	31.8	29.7	0	35.7
18	8.65	30.65	<5	12	6.07	2.3332	0.1189	<1	<1.8	<1.8	31.6	29.6	0	48.5
19	8.6	29.3	<5	5	7.98	2.6882	0.152	<1	<1.8	<1.8	31.5	29.5	0	48.3
20	8.61	29.53	<5	3	6.71	2.4581	0.254	<1	<1.8	<1.8	31.9	29.8	0	48.9

Brief narrative discussion

Data are still being processed and analyzed. The water quality monitoring report will be submitted by the end of the year as part of the TRNP Ecosystem Research and Monitoring Report.

C. Maintenance and protection activities conducted within the PA

1. Patrolling

AREAS PATROLLED Municipality/ Barangay / General location within PA	FREQUENCY	NUMBER OF HECTARES COVERED
Jessie Beazley Reef	Once every two weeks	97,030 hectares
North Atoll	Once a week	
South Atoll	Once a week	

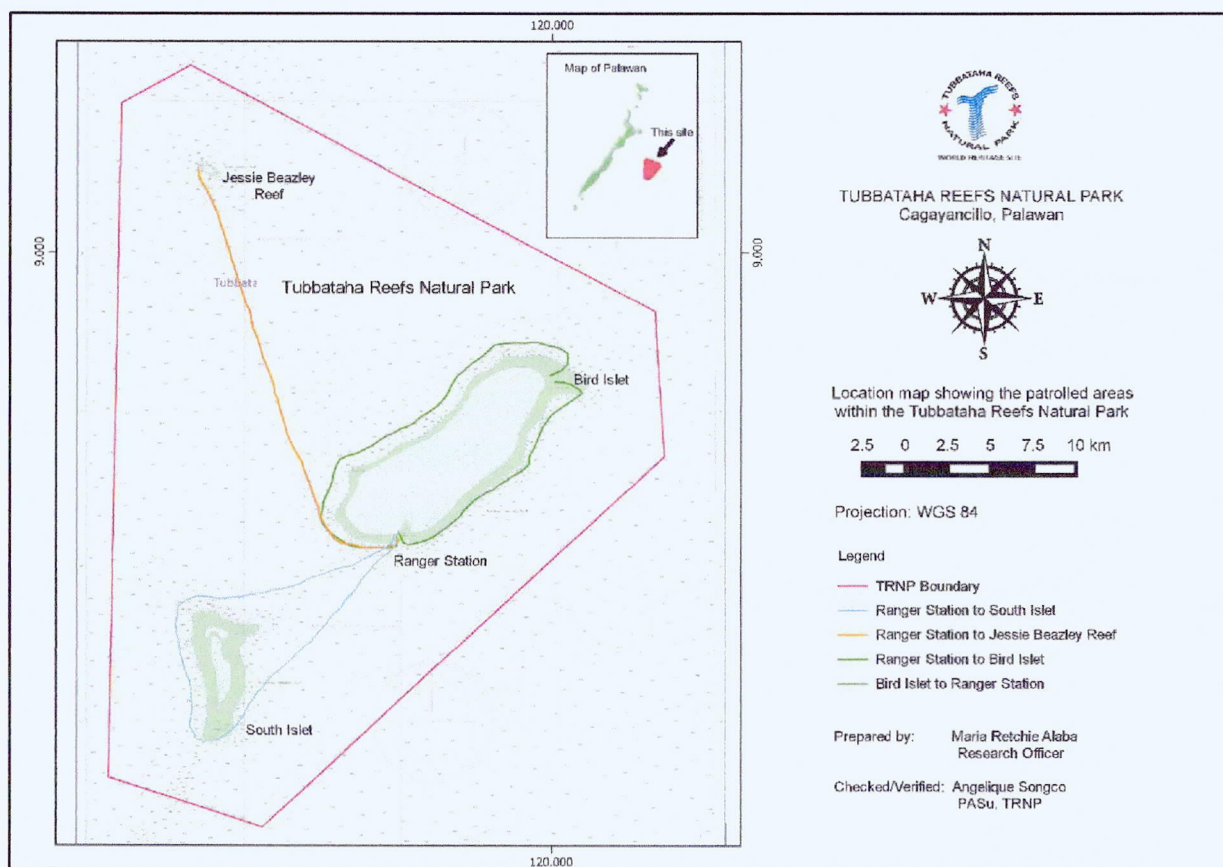


Figure 3. Map of TRNP showing the areas covered during patrolling.

- **Brief narrative** (maximum of 2 paragraphs) on the issues identified during patrolling activities as well as recommendations/ actions to be undertaken to address these.

Weather condition is the main limitation in the conduct of seaborne patrols by marine park rangers. The conduct of 120 patrols per year is the minimum requirement for the number of patrols. These are generally exceeded, especially during the calm season.

Marine debris is also a problem when doing seaborne patrols. Debris like sacks and nets get entangled in the propeller causing delays and sometimes damage.

2. Response Plan

Narrative on the status of response plan and list of activities identified to be included

A radar and Automatic Identification System (AIS) are installed at the ranger station for surveillance and detection. These enables marine park rangers to conduct targeted patrols and take preventive measures against potential violations. TRNP was declared as an Area to be Avoided (ATBA) by the International Maritime Organization in 2017. The radar and AIS help detect possible incursions into the park by giving rangers time to establish radio contact and advise ship captains to navigate away from park boundaries.

While doing the regular patrols, marine park rangers also conduct surface and coastal clean-up to lessen the volume of marine debris in TRNP.

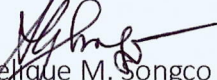
3. Threats Observations (From Habitat surveys activities)

PA	ACTIVITIES CONDUCTED				
	PATROLLING	RESPONSE PLAN	THREATS OBSERVED	DIRECT ACTIVITIES CONDUCTED	EQUIPMENT MAINTAINED
TRNP	<ul style="list-style-type: none"> - Bad weather conditions - Marine Debris 	<ul style="list-style-type: none"> -Frequent monitoring of Automatic Identification System (AIS) and radar -Conduct frequent surface and coastal clean-up 	<ul style="list-style-type: none"> -Typhoon - Marine Debris - Coral Bleaching 	<ul style="list-style-type: none"> -Assessment of damages caused by typhoon Odette -Surface and coastal clean-up -Monitoring reefs for coral bleaching 	<ul style="list-style-type: none"> -2 patrol boats, 30' -1 dinghy, 17' -Radar -AIS -Scuba gear -Snorkeling gear -Marine band radio -Single sideband radio -Desalinator

Prepared by:


Maria Retchie P. Alaba
Research Officer

Noted by:


Angelique M. Songco
PASu, TRNP