



Republic of the Philippines
Department of Environment and Natural Resources
Provincial Environment and Natural Resources Office
Sta. Monica, Puerto Princesa City, Palawan
E-mail: denrpenropalawan@gmail.com
Telfax No. (048) 433-5638

REP

January 12, 2023

MEMORANDUM

FOR : The Regional Executive Director
DENR MIMAROPA Region
1515 DENR By the Bay Building,
Roxas Blvd., Bgy. 668, Ermita, Manila

FROM : The PENR Officer
Puerto Princesa City

SUBJECT : **REPORT ON CORAL ASSESSMENT AND MONITORING OF
MALAMPAYA SOUND PROTECTED LANDSCAPE AND
SEASCAPE (MSPLS), TAYTAY-SAN VICENTE, PALAWAN**

Respectfully forwarded is the memorandum of CENRO Taytay, Palawan indorsing the 4th quarter report of MSPLS-PAMO re: Coral Reef Assessment and Monitoring – a CY 2022 target activity under Management of Coastal and Marine Resources/ Area.

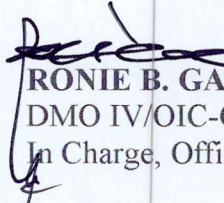
As stated in the attached report, MSPLS has a total of 246.18 hectares' coral cover, with an excellent condition. A total of 13 reef fish families were observed and recorded. The PAMO identified Malapeña Island in Bgy. San Jose as a permanent monitoring site for corals.

This report is being submitted to serve as Means of Verification for the above-mentioned target activity.

For information and record.

“For the PENRO”




RONIE B. GANDEZA
DMO IV/OIC-Chief, TSD
In Charge, Office of the PENRO

DENR-PALAWAN
PENRO-RECORDS
RELEASED
By [signature]
Date: 13 JAN 2023 CN 23-28



COMMUNITY ENVIRONMENT AND NATURAL RESOURCES OFFICE

By the National Highway, Poblacion, Taytay, Palawan 5312

Mobile: 0926-505-9335 TM 0912-171-3889 TNT

Email: cenrotaytay@denr.gov.ph

**DENR-CENRO
PALAWAN RECORDS
RECEIVED**

December 27, 2022

MEMORANDUM

BY: *[Signature]*
DATE: 01-09-2023 **CN** 23-0154

FOR : The Provincial Environment and Natural Resources Officer- Palawan
Sta. Monica, Puerto Princesa City

FROM : The Community Environment and Natural Resources Officer
This jurisdiction

SUBJECT : **REPORT ON CORAL ASSESSMENT AND MONITORING
OF MALAMPAYA SOUND PROTECTED LANDSCAPE AND
SEASCAPE (MSPLS), TAYTAY-SAN VICENTE, PALAWAN**

Respectfully forwarded is the memorandum dated December 15, 2022 of Protected Area Superintendent (PASu) Clarissa P. Pador being an accomplishment and **Means of Verification (MoV)** on the target Monitoring of Corals, Mangroves and Seagrass under 001 Management of Coastal and Marine Resources/Areas activity of Malampaya Sound Protected Landscape and Seascape (MSPLS), Taytay-San Vicente, Palawan.

For his information and record.

For and in the absence of the CENRO:

**DENR CENRO
TAYTAY, PALAWAN
RELEASED**

BY: *[Signature]*
DATE: DEC 27 2022 **CN** 3283

[Signature]
MICHAEL L. MARASIGAN
Forester I/Chief, EMS
In Charge, Office of the CENRO

Cc: PAMO-MSPLS



December 15, 2022

MEMORANDUM

FOR : The Community Environment and Natural Resources Officer
Taytay, Palawan

FROM : The In Charge, CDS/Protected Area Superintendent
Malampaya Sound Protected Landscape and Seascape (MSPLS)
Taytay-San Vicente, Palawan

SUBJECT : **REPORT ON CORAL ASSESSMENT AND MONITORING OF
MALAMPAYA SOUND PROTECTED LANDSCAPE AND
SEASCAPE (MSPLS), TAYTAY-SAN VICENTE, PALAWAN**

**DENR CENRO
TAYTAY, PALAWAN
RECEIVED**

Sub
12/15/22 7:39 AM

This pertains to the target activity on the Monitoring of Corals, Mangroves and Seagrass under 001 Management of Coastal and Marine Resources/Areas of Malampaya Sound Protected Landscape and Seascape (MSPLS), Taytay-San Vicente, Palawan.

Respectfully forwarded is the memorandum dated December 15, 2022 of CMEMP Extension Officer Maria Lilibeth E. Arojo concerning the above subject. Please be informed that, this Office together with Municipal Agriculturist Office and Malampaya Foundation, Inc. conducted the coral assessment and monitoring from October to November 2022. Based on the ground truthing conducted, the MSPLS has a total of 246.18 hectares coral cover in which the five (5) sampling stations were assessed and monitored located at Malapeña Island, Bgy. San Jose, San Jose Island, Bgy. San Jose, Tai tai Bay, Bgy. San Jose, Bancoro Reef, Bgy. Liminangcong and Barge Laot, Bgy. Tumbod, Taytay, Palawan.

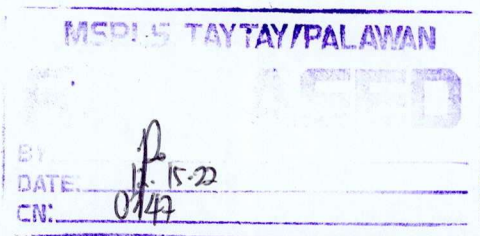
Based on the result of assessment, the coral cover of five (5) sites were in excellent condition and have a total of 1,105 reef fishes were recorded belonging to thirteen (13) families.

Be informed further that, the coral reef areas of MSPLS did not meet the criteria for the establishment of monitoring sites based on BMB TB 2019-04 site selection due to its geographic complexity consisting of sheltered bays, coves, estuaries and islands separated from the sea. However, the team conducted the activity to determine the current reef areas and the status of coral reefs in Malampaya Sound for management intervention and planning.

Hence, this Office recommends to consider the Malapeña Island, Bgy. San Jose, Taytay, Palawan as one of the permanent monitoring site due to its wider coral cover among other sites.

For his information, record and consideration.

Clarissa P. Pador
CLARISSA P. PADOR





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

PROTECTED AREA MANAGEMENT OFFICE

MALAMPAYA SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)

Taytay-San Vicente, Palawan

Barangay Old Guinlo, Taytay, Palawan

Email add: pamomspls@gmail.com/Contact #: 0938-786-3728 (SMART)



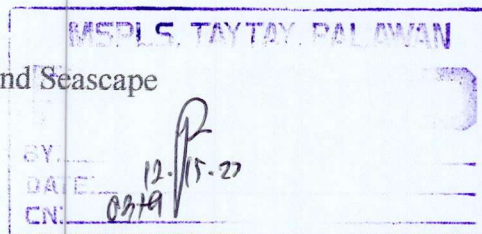
MEMORANDUM

December 15, 2022

FOR : The Protected Area Superintendent
Malampaya Sound Protected Landscape and Seascape
Taytay, Palawan

FROM : CMEMP Extension Officer
MSPLS, Taytay, Palawan

SUBJECT : **REPORT ON THE CONDUCTED ASSESSMENT AND MONITORING OF CORALS FOR MALAMPAYA SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS), TAYTAY-SAN VICENTE, PALAWAN.**



This pertains to the target activity on the Monitoring of seagrass of Coastal and Marine Ecosystems Rehabilitation Sub-Program under Management of Coastal and Marine Resources/Areas for Malampaya Sound Protected Landscape and Seascape (MSPLS), Taytay, Palawan.

Please be informed that the undersigned together with Forest Ranger Ricardo S. Tandoc, Francis Abe G. Bose and Office Support Staff of Protected Area Management Office (PAMO) of MSPLS in participation of Municipal Agriculturist Office and Malampaya Foundation Inc. conducted coral assessment/monitoring from October to November 2022 within the jurisdiction of MSPLS in accordance with Technical Bulletin No. 2019-04. Based on the ground truthing conducted the MSPLS has a total coral cover of 246.18 hectares of which 5 sampling stations were assessed and monitored. The said sampling stations is located in Malapeña Island, Bgy. San Jose, San Jose Island, Bgy. San Jose, Tai tai Bay, Bgy. San Jose, Bancoro Reef, Bgy. Liminangcong and Barge Laot, Bgy. Tumbod, Taytay, Palawan.

The coral reef areas of MSPLS did not meet the criteria for the establishment of monitoring sites based on BMB TB 2019-04 site selection of coral reefs due to its geographic complexity consisting of sheltered bays, coves, estuaries and islands separated from the sea. However, the team conducted the activity to determine the current reef areas and the status of coral reefs in Malampaya Sound for management intervention and planning.

Based on the result of assessment, the coral cover of five (5) sites were in excellent condition and have a total of 1,105 reef fishes were recorded belonging to 13 families. The dominant fish recorded are the Pomacentridae (Damsel/Palata) followed by Scaridae (Parrotfish/Mul-mol) groups. The undersigned recommends to consider the Malapeña Island, Bgy. San Jose, Taytay, Palawan as one of the permanent monitoring site due to its wider coral cover among other sites.

Attached are the maps, photos and complete corals data monitoring sheet with graphs.

For information and record.

MARIA LILIBETH E. AROJO

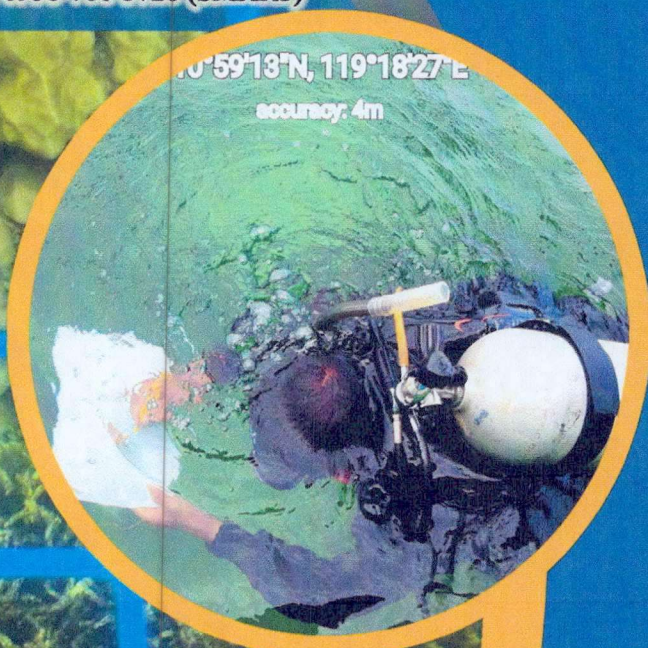


Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region
PROTECTED AREA MANAGEMENT OFFICE
MALAMPAYA SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
Taytay-San Vicente, Palawan
Barangay Old Guinlo, Taytay, Palawan
Email add: pamomspls@gmail.com/Contact #: 0938-786-3728 (SMART)



10°59'13"N, 119°18'27"E

accuracy: 4m



CORALS ASSESSMENT AND MONITORING REPORT OF MSPLS

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Executive Summary

One of the factors that affect the fishery resources in the coastal area is the integrity of coral reefs. Corals are one of the most productive components of the marine ecosystem, being ecologically significant and of the same rank with seagrass and mangroves. It serves as nursery, feeding, and breeding grounds to a variety of marine organisms. The coral assessment in Malampaya Sound Protected Landscape and Seascape (MSPLS), Taytay-San Vicente was conducted from October-November 2022. The main objectives of the activity is to map out the extent and to determine the coral reef areas and the current status of the coral reefs in the MSPLS. The total area of the corals validated/ground truthed, mapped and assessed in MSPLS is 246.18 hectares.

I. Introduction

Malampaya Sound Protected Landscape and Seascape (MSPLS) was proclaimed as protected area by virtue of Presidential Proclamation No. 342 dated July 12, 2000 which aimed to protect the whole Malampaya Sound due to its unique, distinct and scientifically significant ecological features and to enhance its biological diversity and protect against destruction from human exploitation. The sound is considered traditionally as the fish bowl of the Philippines considering its abundance on various marine resources including fishes, shells, shrimps and crabs. It is also a sources of green mussel (wild and cultured), and grouper fingerlings. The Malampaya Sound is also home to two endangered species of dolphins: the Irrawaddy dolphin that can be seen in the Inner Sound, and the bottle-nosed dolphin in the Outer Sound.

More than 156 fish species are found in its waters including commercially valuable fish such as mackerel, anchovy, crevalle, sea catfish, snapper, frigate tuna, rabbit fish and grouper. Crabs and stingray are also abundant in the sound and is also visited by dugongs and marine turtles like green sea turtles and hawksbill sea turtles. However, even with these unique characteristics the sound is not exempted from several threats. Thus this office provides programs that will monitor the current status of the habitat for planning and management intervention.

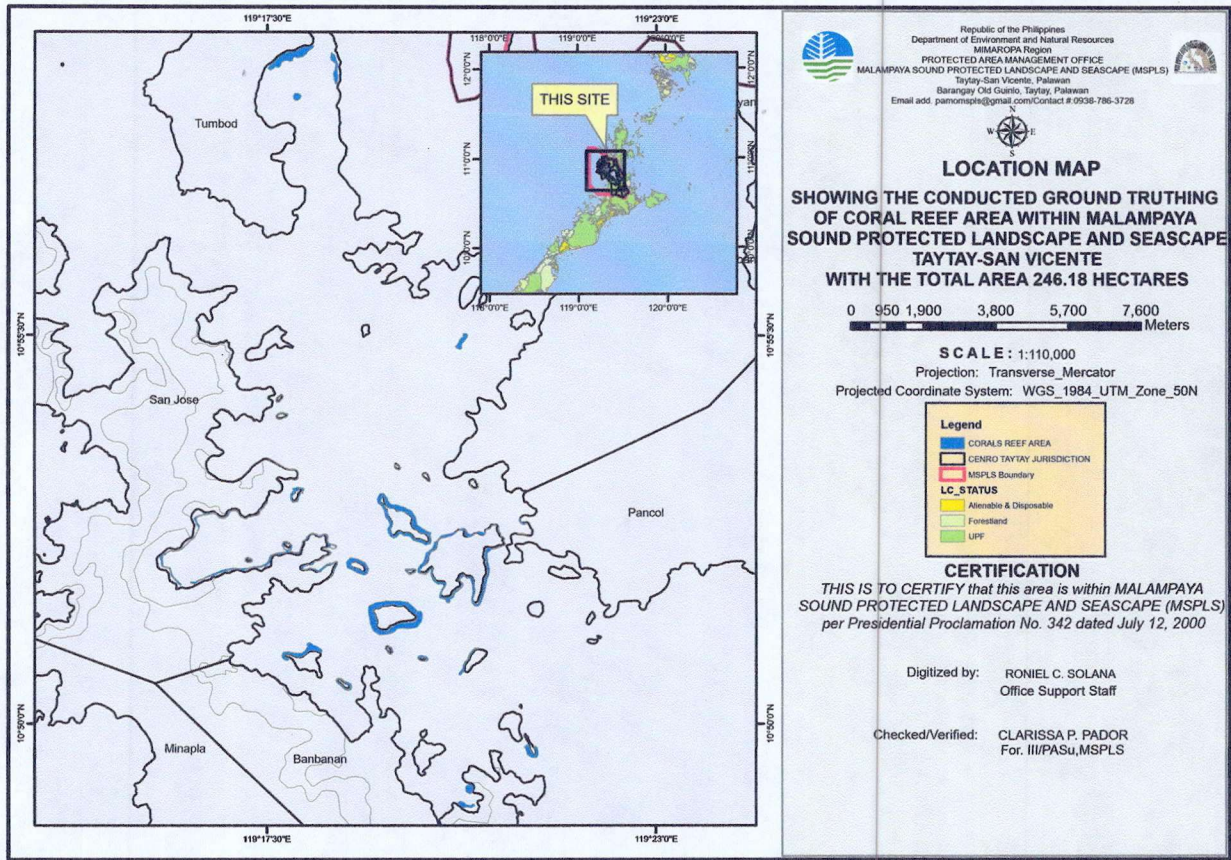
II. Methods

The methodology used was in accordance with the BMB Technical Bulletin No. 2019-04.

III. Mapping

Mapping of the coral reef areas was done on August to September 2022. The team identified the extent of the coral reef through contours and guided by the local fishermen in the area using Garmin GPS and locus map. The coordinates were projected using ArcGIS to generate map showing the description of coral reef within the protected area (Annex 1).

Figure 1. Map showing the coral reef areas within MSPLS.



IV. Assessment

The activity was conducted on October to November 2022 in Malapeña Island, Bgy. San Jose, San Jose Island, Bgy. San Jose, Tai Tai Bay, Bgy. San Jose, Bancoro Reef, Bgy. Liminangcong and Barge Laot, Bgy. Tumbod, Taytay, Palawan. The five sites were selected based on the extent of coral reef in those areas. Before the assessment proper, a meeting with different participating team members was conducted in the Ranger Station in Bgy. Tumbod on what would be the activities to be done during assessment and courtesy call to the barangay officials of Bgy. Liminangcong, Taytay, Palawan.

The 100-meter transect base were deploy following the contour of the reef, adjust to 5m depth. A 50-meter transects on the shallower side of the base transect following random numbers were also deploy. Documentation and recording of coral reef at every 1m interval using tetrapod were done for the three to five transect per station. Identification and counting of the fishes with 2.5 m interval from the transect base observed within the area were also noted.

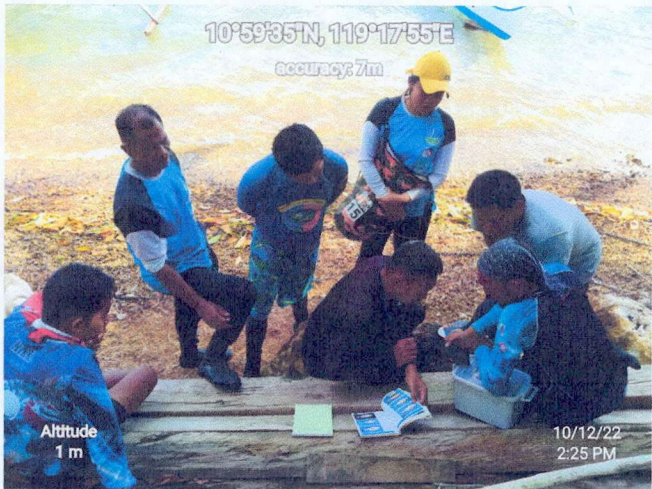


Figure 2. Brief orientation on coral assessment with different participating team



Figure 3. Courtesy call to the Officer In-Charge Kagawad Nenita D. Peña (second from the left) of the Bgy. Liminangcong, Taytay, Palawan.

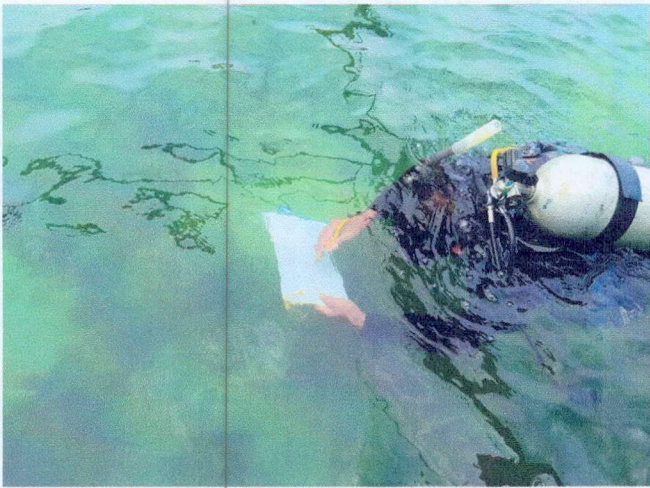
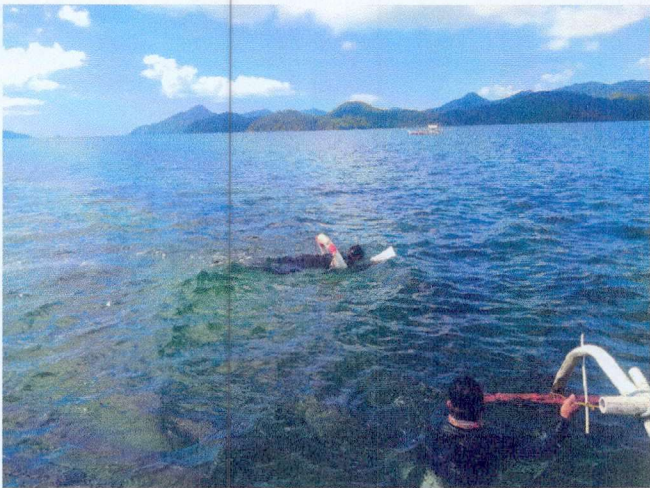


Figure 4. Assessment of coral using line intercept transect and identifying and recording of fish within the 2.5-meter left and right side of the laid transect.

V. Data Analysis

Coral Cover

Table 1. Coral cover were computed using Coral Point Count with Excel extensions (CPCe). The following are the result of tabulated and graphed coral reefs in different sampling stations within MSPLS.

	Sites	Malapeña Island Bgy. San Jose	Tai-Tai Bay, Bgy. San Jose	San Jose Isalnd, Bgy. San Jose	Bancoro reef, Bgy. Liminangcong	Barge Tabi, Bgy. Tumbod
Coral (HC)		60.05	56.90	60.07	68.83	56.21
Dead Coral (DC)		2.08	1.25	0.00	0.00	0.07
Soft Coral (SC)		1.53	1.52	0.62	3.13	2.95
Other Organisms (OO)		0.04	0.35	1.28	0.77	0.77
Algae (AL)		2.93	3.12	1.63	1.14	0.49
Abiotic Component (AB)		33.37	36.86	36.40	26.13	39.50
Tape, Water, Block (TWB)		1.02	1.85	1.15	1.66	3.14
Sum (excluding tape+shadow+wand)						

Results of the coral cover in terms of hard coral revealed that Bancoro reef Bgy. Liminangcong was obtained the highest value of 68.83 followed by San Jose Island (60.07) and Malapeña Island Bgy. San Jose, Taytay, Palawan. (60.05). The lowest hard coral cover value was obtained in Barge Tabi, Bgy. Tumbod, Taytay, Palawan.

Table 2. Hard Coral Cover (HCC) and Diversity of five reefs within MSPLS

Sites	Category	Hard Coral Diversity	% Range of Coral Cover	No. of Stations
Malapeña Island Bgy. San Jose	HCC Category A > 44% HCC	Diversity Category A > 26 coral TAUs	60.05	5
Tai-Tai Bay, Bgy. San Jose	HCC Category A > 44% HCC	Diversity Category A > 26 coral TAUs	56.90	3
San Jose Island, Bgy. San Jose	HCC Category A > 44% HCC A	Diversity Category A > 26 coral TAUs A	60.07	3
Bancoro reef, Bgy. Liminangcong	HCC Category A > 44% HCC	Diversity Category A > 26 coral TAUs A	68.83	2
Barge Laot, Bgy. Tumbod	HCC Category A > 44% HCC	Diversity Category A > 26 coral TAUs	56.21	3

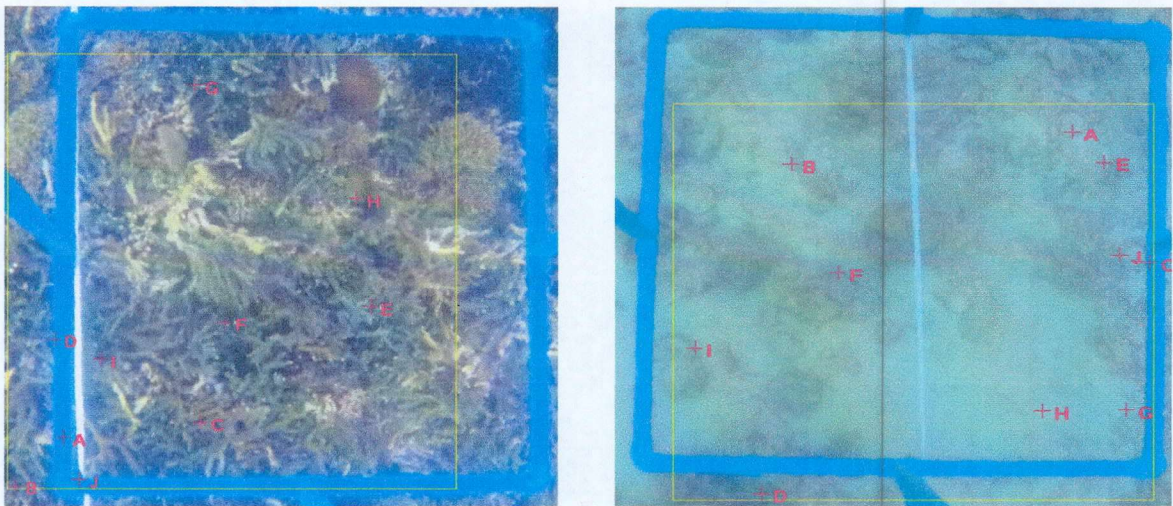
Result shows that all sites are HCC Category A and Diversity Category A. The reefs were classified as excellent condition based on (Licuanan et al. 2019). The excellent condition of all sites was attributed to the zoning policy of the PAMB declaring the area as Strict Protection Zone (SPZ), and strict protection implemented by DENR-PAMO-MSPLS, BLGU's, stakeholders and Malampaya Foundation Incorporated (MFI). Some of the sites were also part of the Marine Protected Area established by Peoples Organization (PO's) through Malampaya Foundation Inc. in partnership with the department.

Figure 5. Scoring images using CPCe

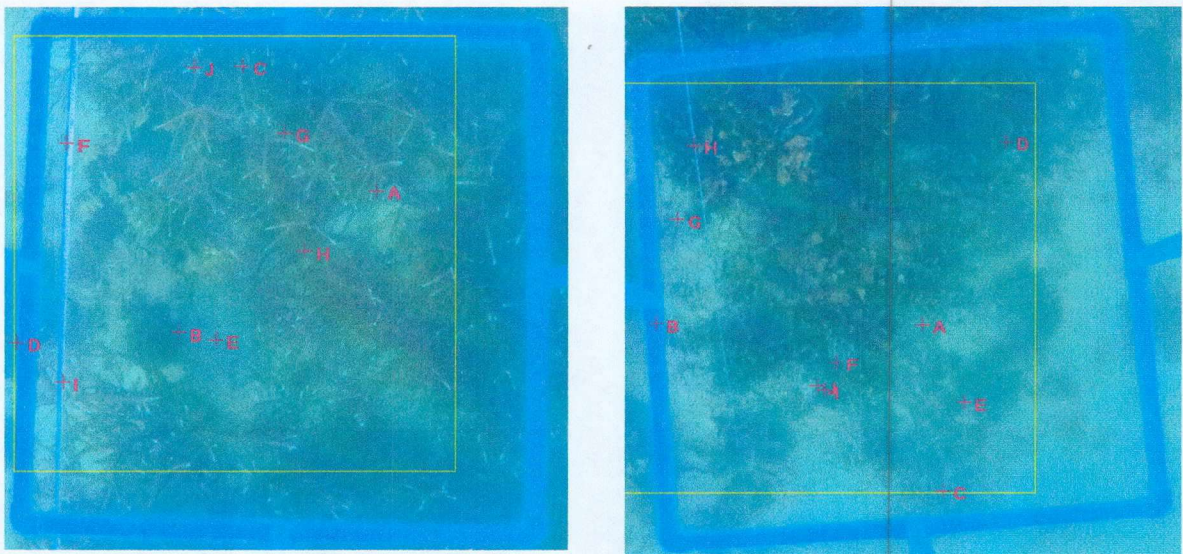
a. Malapeña Island Bgy. San Jose



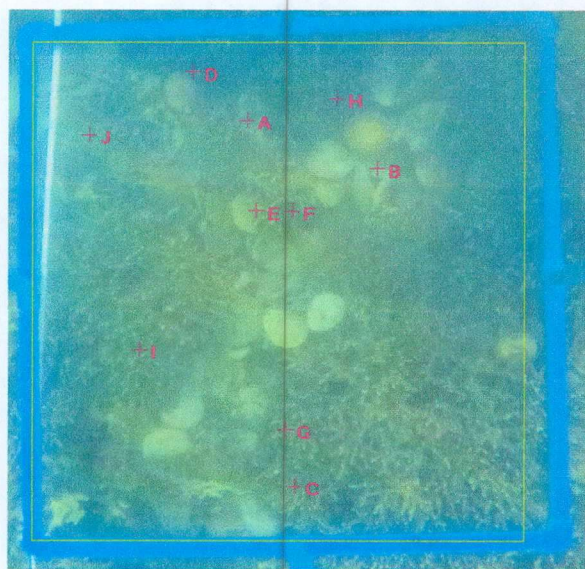
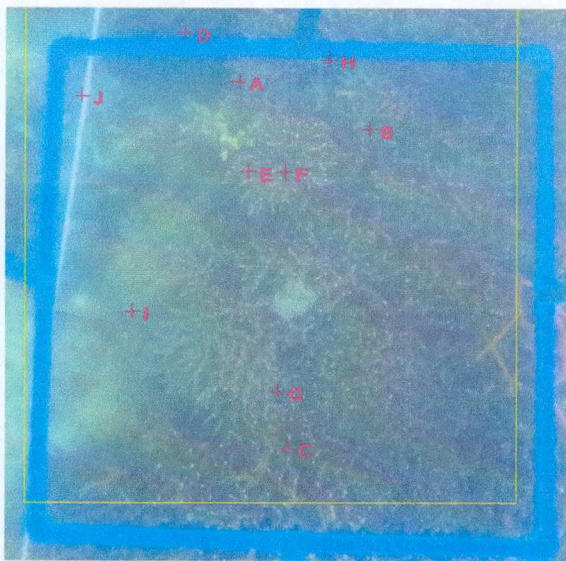
b. Tai-Tai Bay, Bgy. San Jose



c. San Jose Island, Bgy. San Jose



d. Bancoro reef, Bgy. Liminangcong



e. Barge Laot, Bgy. Tumbod

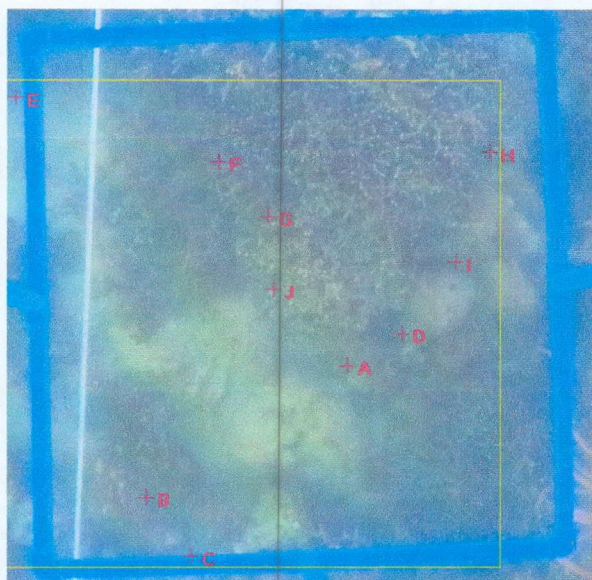
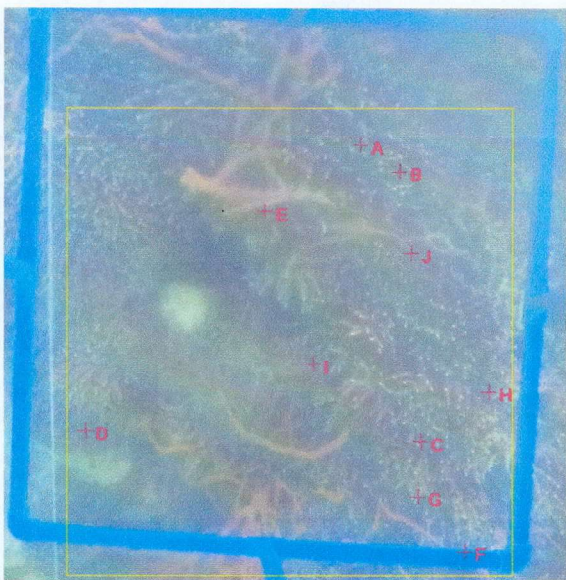
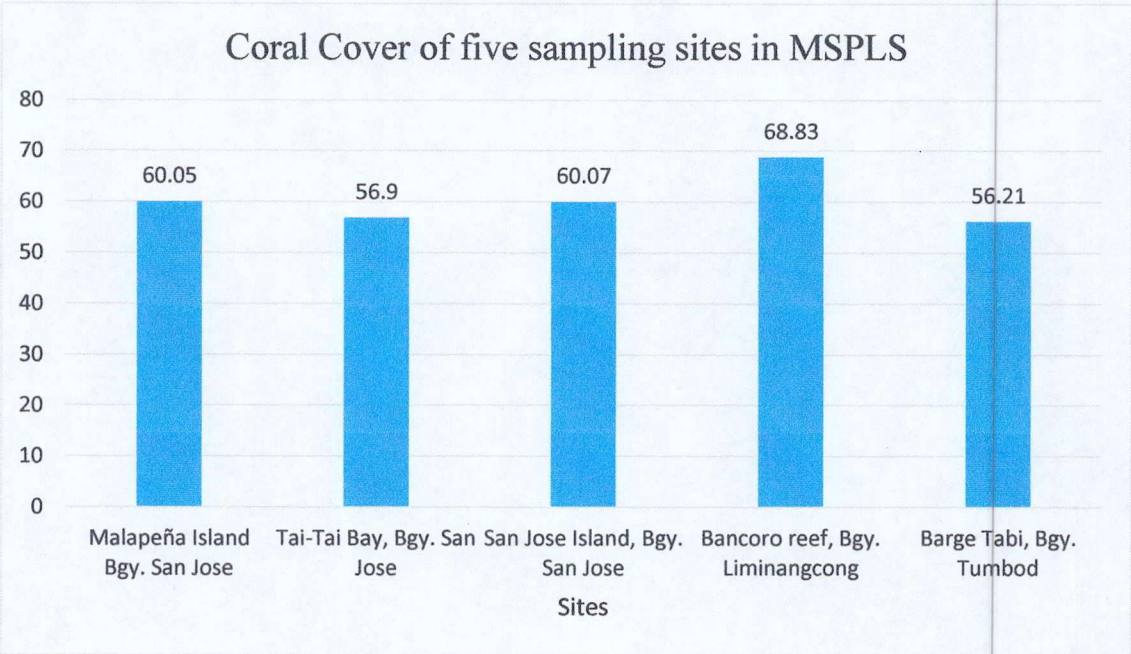


Figure 6. Coral cover of five (5) sampling sites in MSPLS.



Graph showing the hard coral cover of five sampling sites in MSPLS which Bancoro reef, Bgy. Liminangcong had the highest cover with a total of 68.83 followed by San Jose Island and Malapeña Island Bgy. San Jose, Taytay, Palawan.

Associated Reef Fishes

Fish visual census was done in five stations of coral reef assessment. Transect line were laid between 3m to 7m depths. Fishes were recorded using Line Intercept Transect (LIT) method. The length of all fishes encountered within 2.5 left and 2.5 meters right of the transect line were estimated.

Figure 7. Fish abundance/density computation of 5 sites.

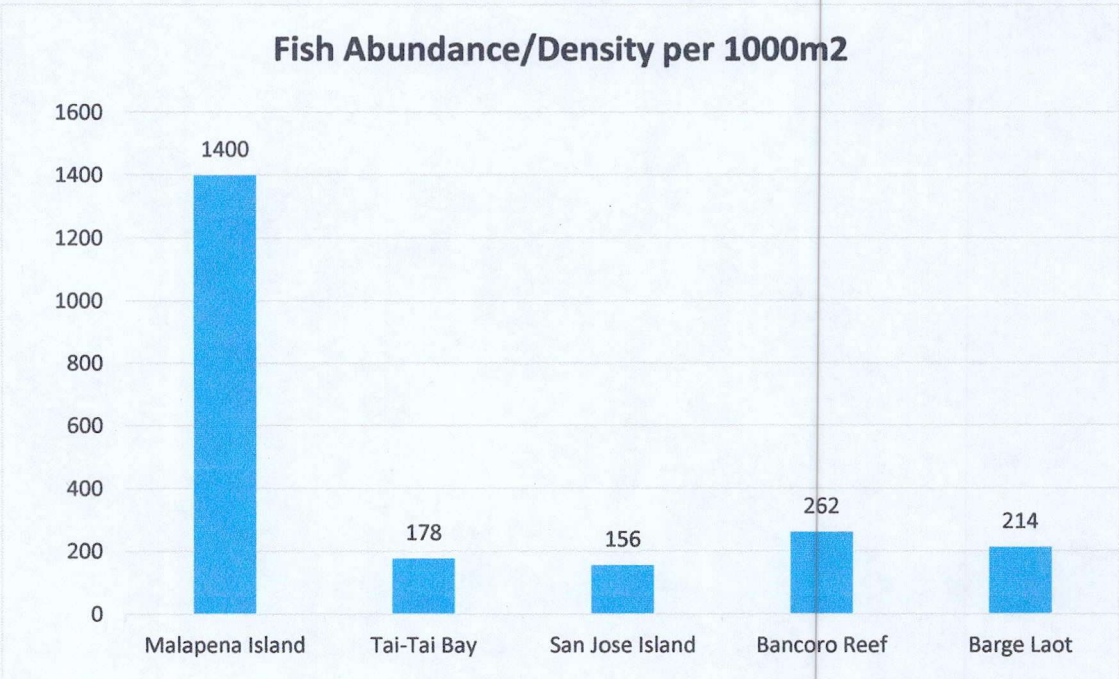
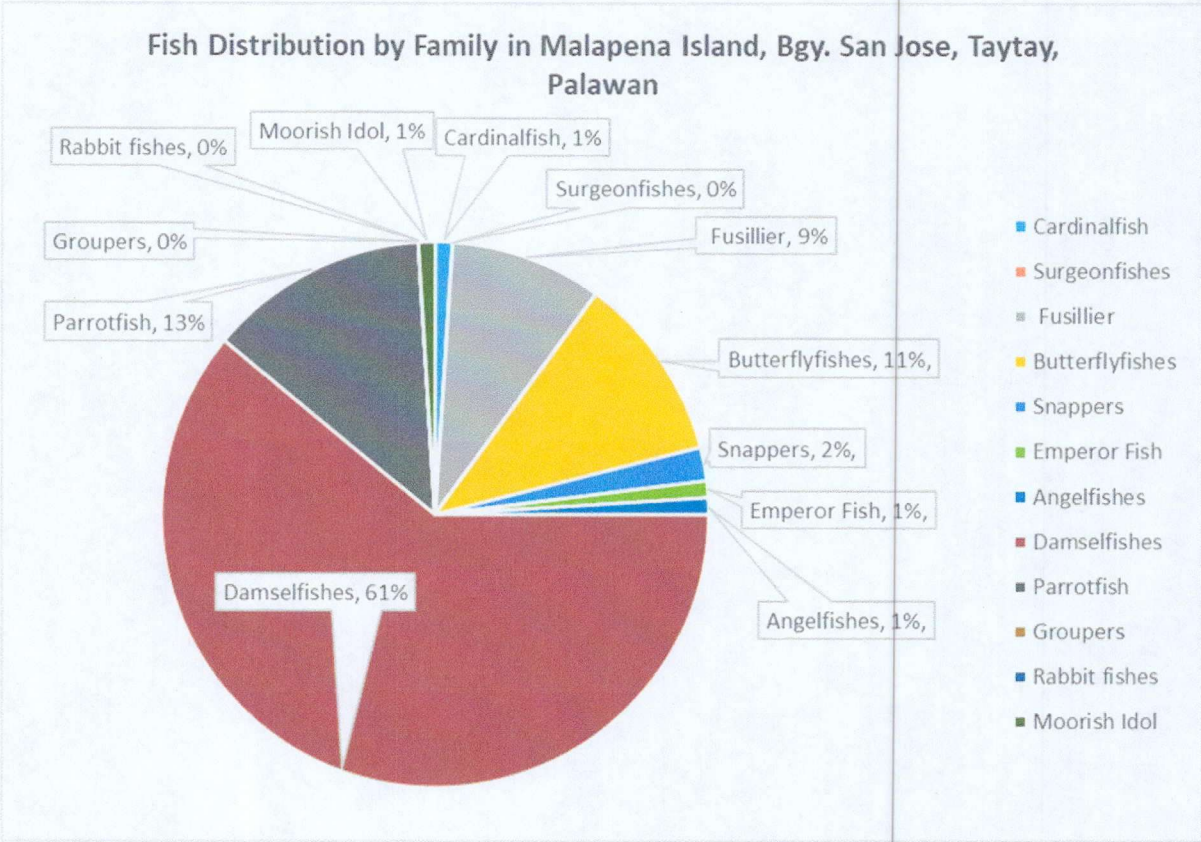
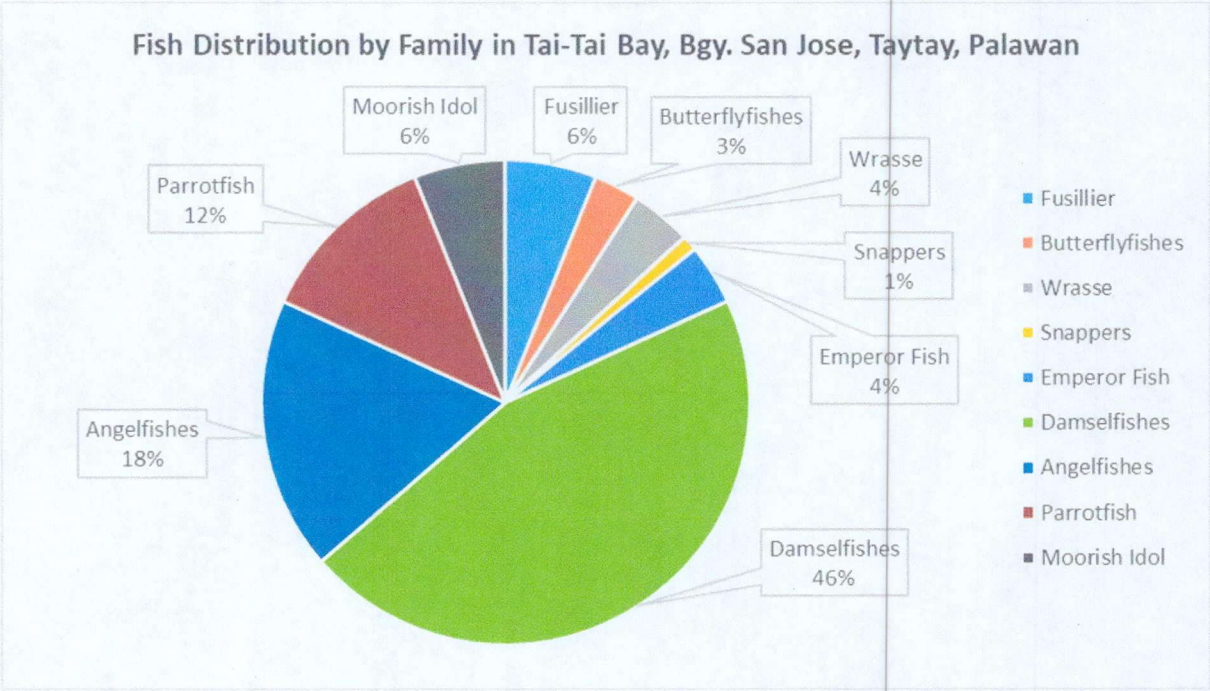


Figure shows the fish abundance/density per 1000m2 of five (5) sampling sites of which Malapeña Island had the highest value of 1,400 m2 falling under moderate category followed by Bancoro Reef (262m2) and Barge Laot (214) under poor category. The Tai-tai bay (178) and San Jose Island (156) had the least value falls under very poor category based on Hilomen et al.,

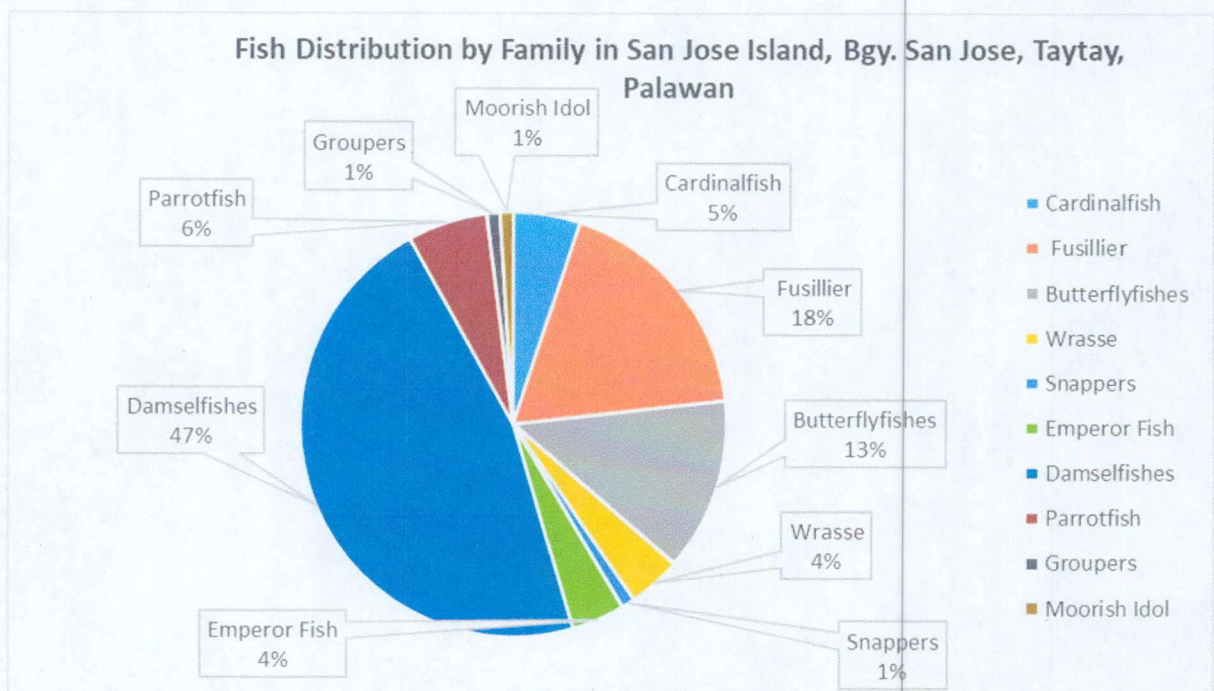
Figure 8. Pie graph of fish distribution per family in five (5) sampling sites.



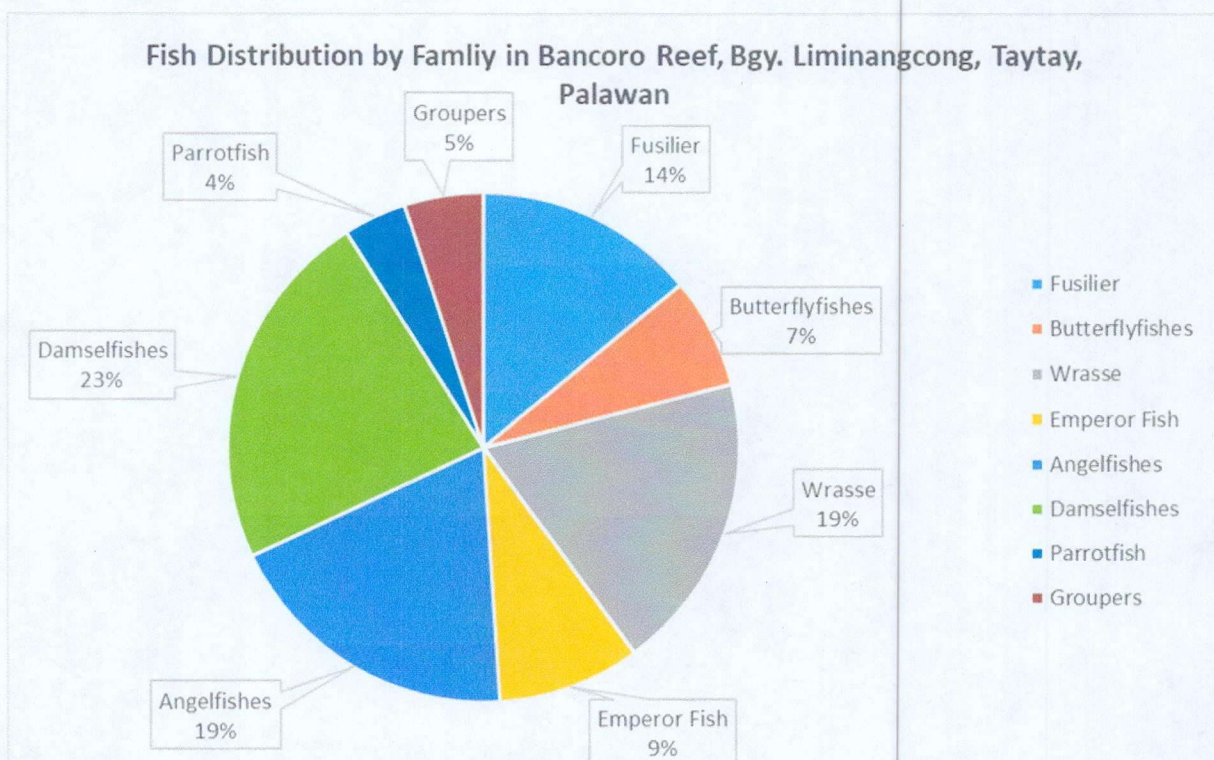
Pie graph showing the fish distribution by family in Malapena Island, Bgy. San Jose, Taytay, Palawan. A total of twelve (12) families were identified and recorded of which Damsel fishes (Pomacentridae) had the highest value of 61% compared to other species.



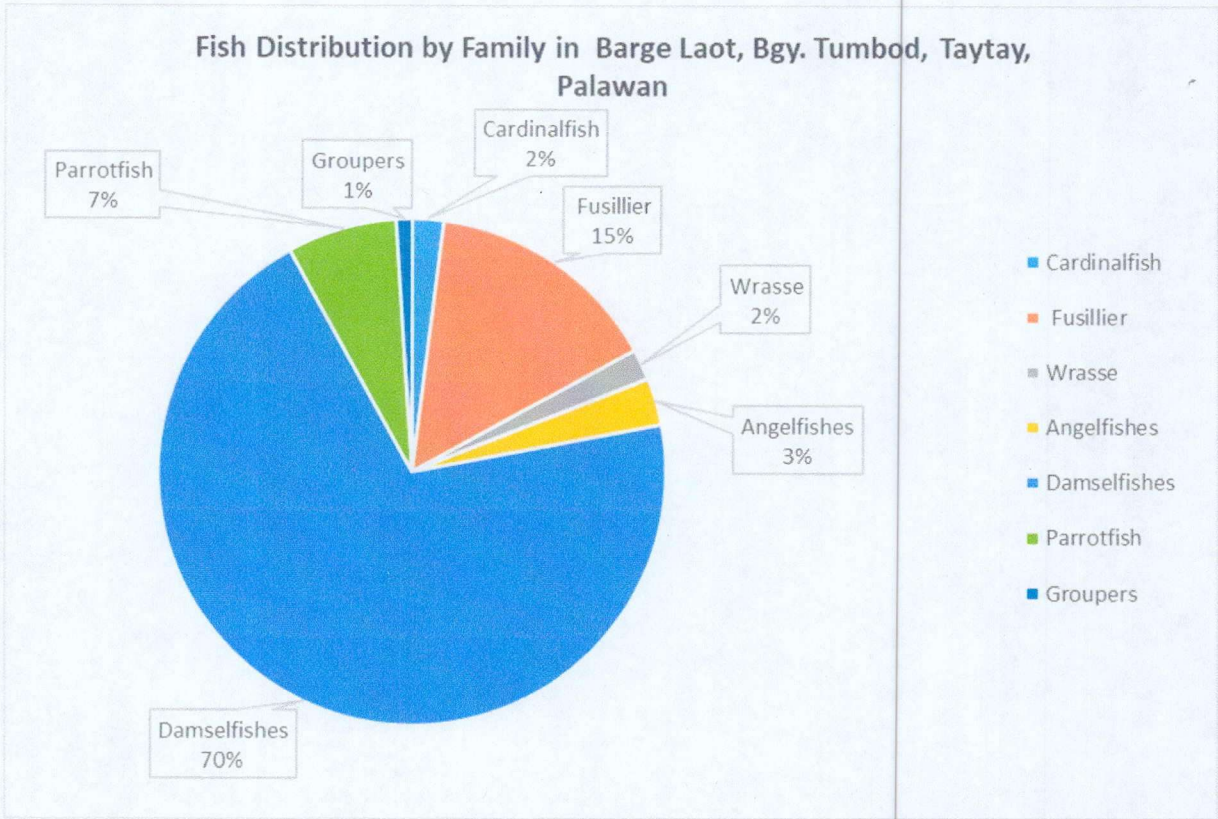
Pie graph showing the fish distribution by family in Tai-tai Bay, Bgy. San Jose, Taytay, Palawan. A total of nine (9) families were identified and recorded of which Damsel (Pomacentridae) had the highest value of 45% followed by Angelfish (Pomacanthidae) as compared to other species.



Pie graph showing the fish distribution by family in San Jose Island, Bgy. San Jose, Taytay, Palawan. A total of ten (10) families were identified and recorded of which Damsel (Pomacentridae) had the highest value of 47% followed by Fusilier (Caesionidae).



Pie graph showing the fish distribution by family in Bancoro Reef, Bgy. Liminangcong, Taytay, Palawan. A total of eight (8) families were identified and recorded of which Damsel (Pomacentridae) had the highest value of 23% followed by Angelfish (Pomacanthidae) 19% and Wrasse (Labridae) 19%.



Pie graph showing the fish distribution by family in Barge Laot, Bgy. Tumbod, Taytay, Palawan. A total of seven (7) families were identified and recorded of which Damsel (Pomacentridae) had the highest value of 70% compared to other families.

Table 3. Fish biomass (MT/km2) in the five sites.

Sites	Biomass (MT/km2)	Category
Malapeña Island, Bgy. San Jose	19.7696	Medium
Tai-Tai Bay, Bgy. San Jose	7.3133	Low
San Jose Island, Bgy. San Jose	2.6997	Very Low
Bancoro reef, Bgy. Liminangcong	6.2869	Low
Barge Laot, Bgy. Tumbod	8.4386	Low

The highest biomass was recorded in Malapeña Island Bgy. San Jose with 19.7696 MT/km2 belonging to medium category dominated by the Pomacentridae (Damsel) followed by Scaridae (Parrotfish). The San Jose Island have the least biomass with 2.6997 MT/km2 falling under very low category based on Nanola et al., 2006 fish visual census categories.

VI. Conclusion and Recommendation

Since the coral cover within the assessment sites were categorized as excellent reef condition, the undersigned recommends the following.

1. The PAMO-MSPLS to collaborate with PAMB members, Local Government Units, scientist and local communities to integrate scientific data into policy and adaptation measures;
2. Include in the Communication Education and Public Awareness (CEPA) campaign of MSPLS the role of corals in the marine ecosystem and their significant contribution to fisheries production as well as their ecological functions and provide a platform to promote reef conservation and greater awareness of the importance of reefs through workshops, campaigns and information displays;
3. Policy formulation for the inclusion of areas with poor coral cover and low biomass as Strict Protection Zone (SPZ) for rehabilitation;
4. Intensify law enforcement activity;
5. To allocate more funds for diving materials and other resources to be used in coral protection activity; and
6. To established the Malapeña Island, Bgy. San Jose, as the permanent monitoring plot due to its higher species diversity;

VII. References

JBecira Consultancy Services. Coral Reefs and Fishes in the outer part of Malampaya Sound, Taytay, Palawan, Philippines: 2014

Benjamin J. Gonzales, Ph.D. The fishing gears and methods of the Malampaya Sound Philippines. An approach to Fisheries and Ecosystems Management.

Gerald R. Allen and Mark V. Erdmann, Reef Fishes of El Nido.

VIII. Appendices

Appendix 1. Fish Families in five sampling sites of outer MSPLS.

Apogonidae
Acanthuridae
Caesionidae
Chaetodontidae
Labridae
Lutjanidae
Lethinidae
Pomacanthidae
Pomacentridae
Scaridae
Serranidae
Siganidae
Zanclidae

Appendix 2. Reef fished and associated fish species in six sites of five sapling sites of outer MSPLS.

Abudefduf vaigiensis

Apogon sp.

Caesio cuning

Cephalopholis boenak

Chaetodon octofasciatus

Chaetodontoplus mesoleucus

Chlorurus bleekeri

Dascyllus trimaculatus

Lethrinus nebulosus

Lutjanus decussatus

Naso lituratus

Siganus argenteus

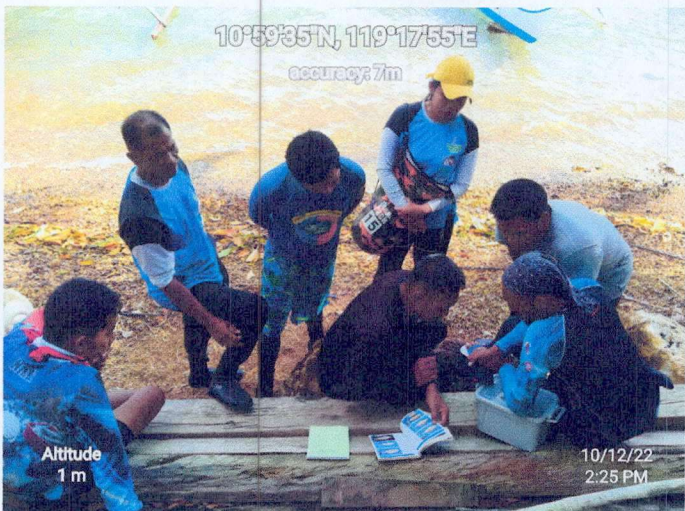
Thalassoma unare

Zanclus cornutus

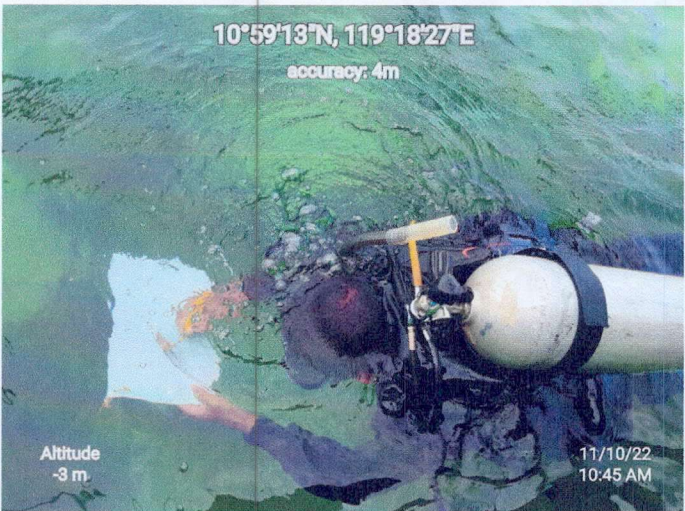
Appendix 3. Photo Documentation during the conduct of the activity



Photo opts after courtesy call with the Officer In-Charge Barangay Kagawad, Nenita D. Peña

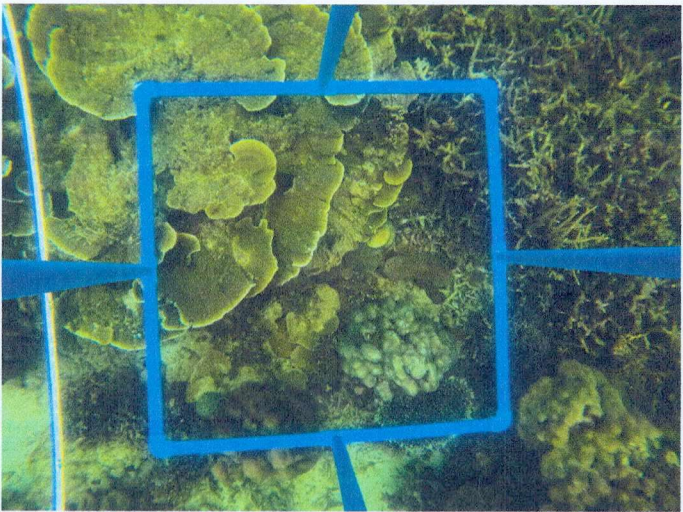
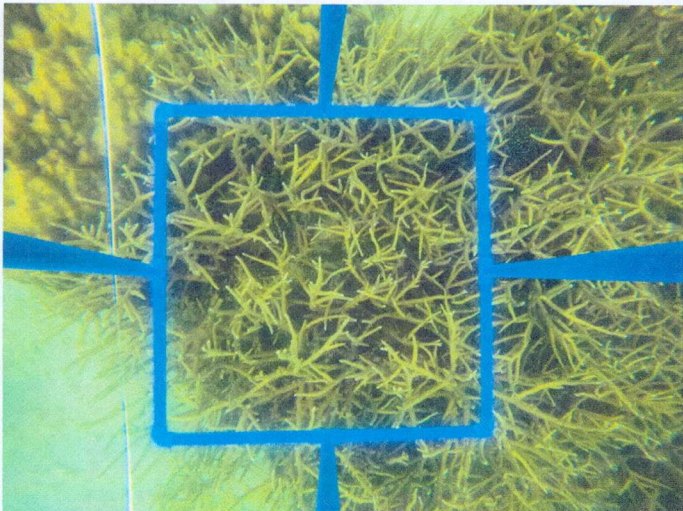


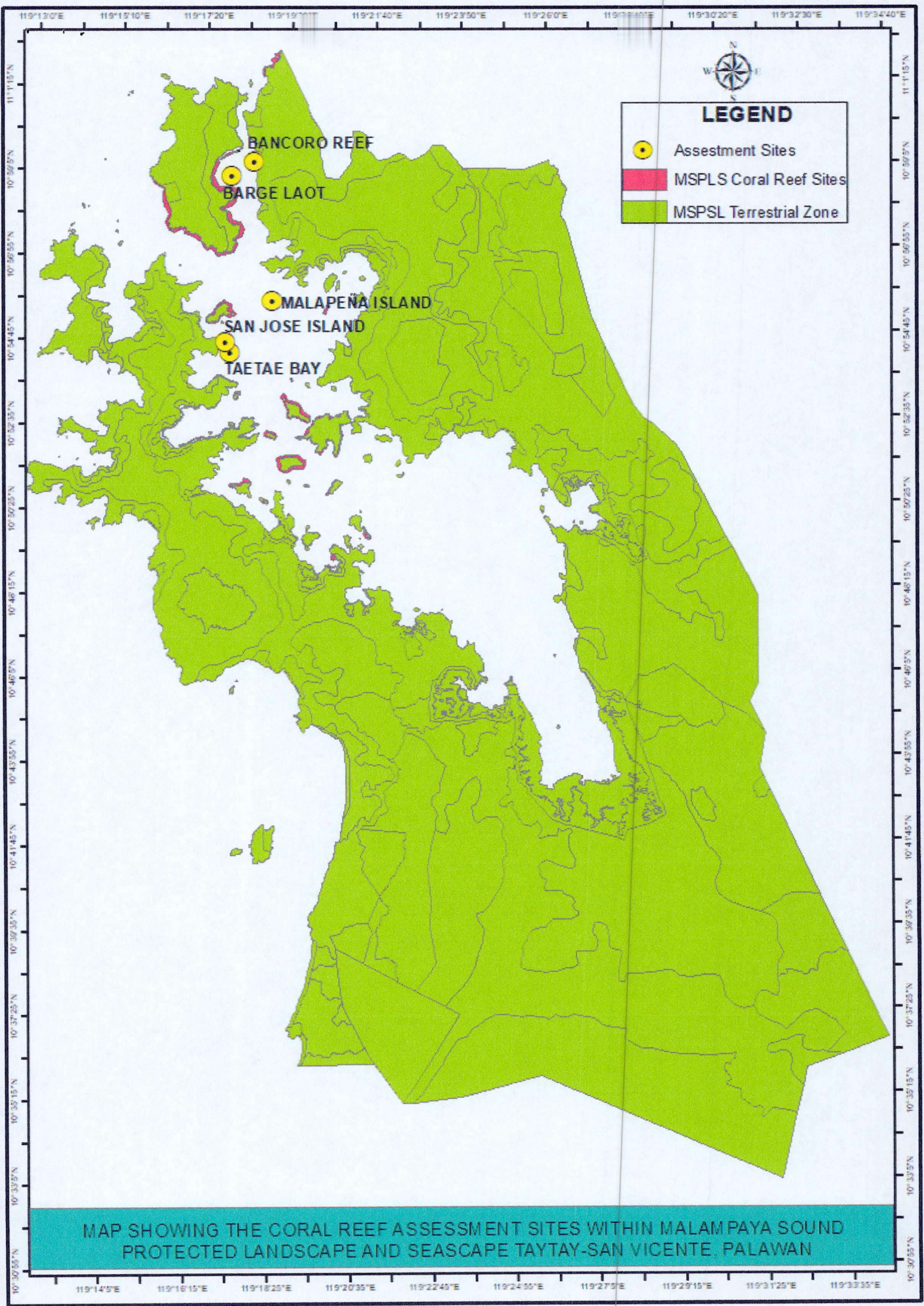
Orientation of different participating teams on what will be done during assessment.



Preparation of diving gears, paraphernalia and actual photos during the conduct of the activity.

Appendix 4. Some photos of coral reefs during the conduct of assessment and monitoring in five sampling sites.

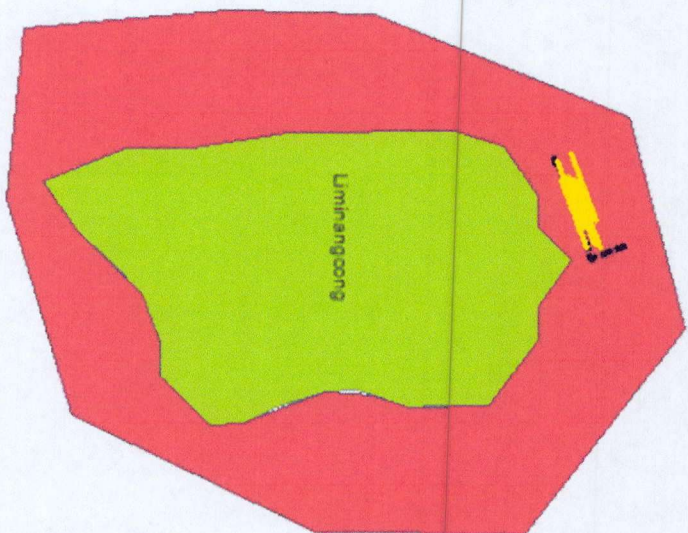




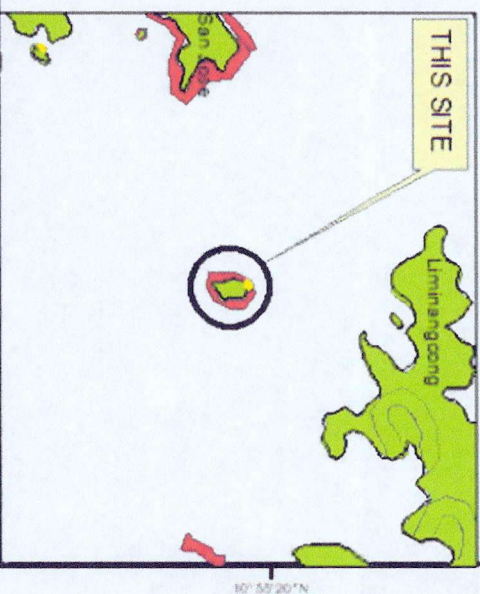
MAP SHOWING THE CORAL REEF ASSESSMENT SITES WITHIN MALAMPAYA SOUND
PROTECTED LANDSCAPE AND SEASCAPE TAYTAY-SAN VICENTE, PALAWAN

119°18'50"E

119°19'0"E



NAME	LONGITUDE	LATITUDE
T1	119°18'53.017"E	10°55'39.29"N
T2	119°18'52.589"E	10°55'39.209"N
T3	119°18'52.925"E	10°55'39.431"N
T4	119°18'53.011"E	10°55'39.567"N
T5	119°18'52.406"E	10°55'39.492"N



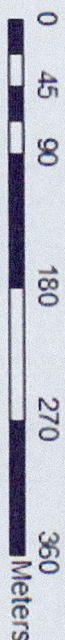
Republic of the Philippines
Department of Environment and Natural Resources
MARAPPA REGION
PROTECTED AREA MANAGEMENT OFFICE
MALAMPAYA SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
Barangay Old Quinsu, Taytay, Palawan
BAYBAYAN, VIQUELA, PALAW
Email: dnr.pam@depr.gov.ph; dnr.pam@depr.gov.ph; 0938-796-3728



LOCATION MAP

SHOWING THE CORAL REEF ASSESSMENT SITE
LOCATED AT MALAPPA ISLAND, BARANGAY
LIMNANGCONG, TAYTAY, PALAWAN.
WITHIN MALAMPAYA SOUND PROTECTED LANDSCAPE
AND SEASCAPE MARINE AREA S.

SCALE: 1:5,000



Projection: Transverse_Mercator

Projected Coordinate System: WGS_1984_UTM_Zone_50N

LEGEND

- TRANSECT LINE
- MSPS CORAL REEF SITES
- POLITICAL BOUNDARY

CERTIFICATION

THIS IS TO CERTIFY that this area is within MALAMPAYA
SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
per Presidential Proclamation No. 342 dated July 12, 2000

Digitized by:

RODOLFO C. SOLANA
Office Support Staff

Checked/Verified:

CLARISSA P. PADOR
For: III/PAS, MSPLS



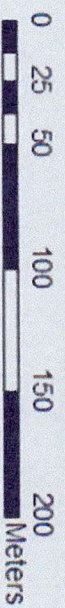
Republic of the Philippines
Department of Environment and Natural Resources
MALABON REGION
PROTECTED AREA MANAGEMENT OFFICE
MALAMPAYA SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
Taytay, San Vicente, Palawan
Barangay Old Guard, Taytay, Palawan
Email: dnr.dsm@dnr.doe.gov.ph; dnm@dnr.doe.gov.ph; 0939-766-3729



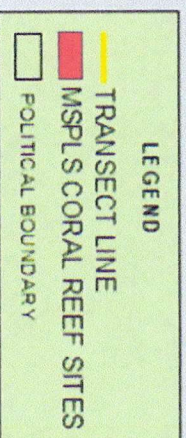
LOCATION MAP

SHOWING THE CORAL REEF ASSESSMENT SITE
LOCATED AT TAITAI BAY, BARANGAY
SAN JOSE, TAYTAY, PALAWAN.
WITHIN MALAMPAYA SOUND PROTECTED LANDSCAPE
AND SEASCAPE MARINE AREAS.

SCALE : 1:3,000



Projection: Transverse_Mercator
Projected Coordinate System: WGS_1984_UTM_Zone_50N



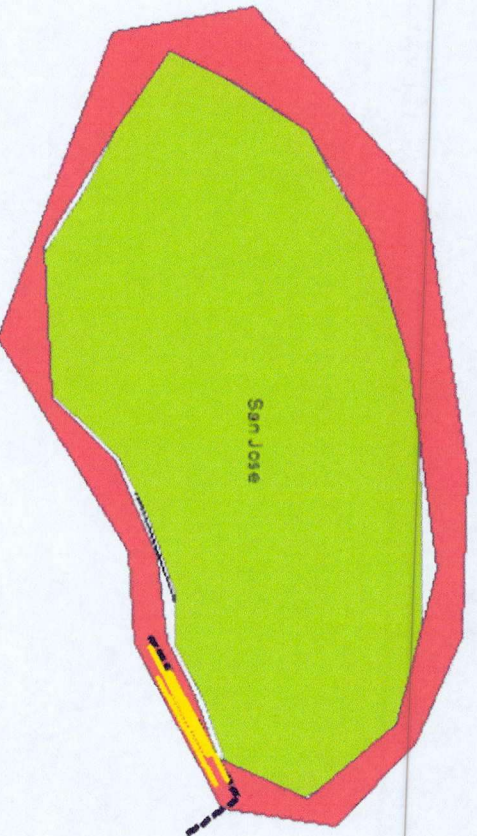
CERTIFICATION

THIS IS TO CERTIFY that this area is within MALAMPAYA
SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
per Presidential Proclamation No. 342 dated July 12, 2000

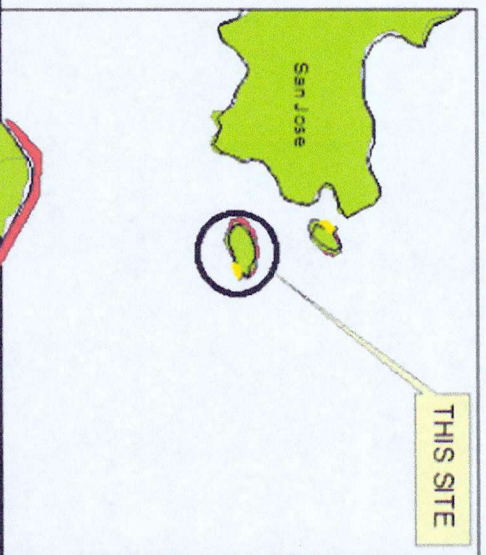
Digitized by:
Rommel Soriano
ROMMEL SORIANO
Office Support Staff

Checked/Verified:

Clarissa Pador
CLARISSA PADOR
for: III/PASU MSPLS



NAME	LATITUDE	LONGITUDE
T1	119°17'46.338"E	10°54'21.002"N
T2	119°17'45.996"E	10°54'20.752"N
T3	119°17'46.403"E	10°54'20.853"N





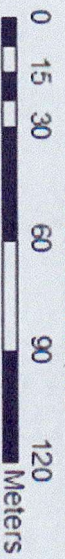
Republic of the Philippines
Department of Environment and Natural Resources
MALABON CITY
PROTECTED AREA MANAGEMENT OFFICE
MALAMPAYA SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
Bldg. 5, San Vicente, Palawan
Bureau of Ocean Management, Palawan
Email: dnr@denr.gov.ph, dnr@denr.gov.ph, dnr@denr.gov.ph
Tel: (09) 336-796-3729



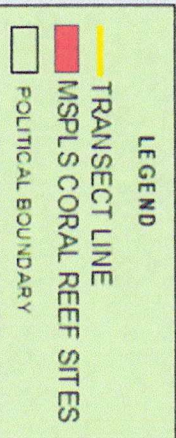
LOCATION MAP

SHOWING THE CORAL REEF ASSESSMENT SITE
LOCATED AT SAN JOSE ISLAND, BARANGAY
SAN JOSE, TAYTAY, PALAWAN.
WITHIN MALAMPAYA SOUND PROTECTED LANDSCAPE
AND SEASCAPE MARINE AREAS.

SCALE: 1:2,000



Projection: Transverse_Mercator
Projected Coordinate System: WGS_1984_UTM_Zone_50N



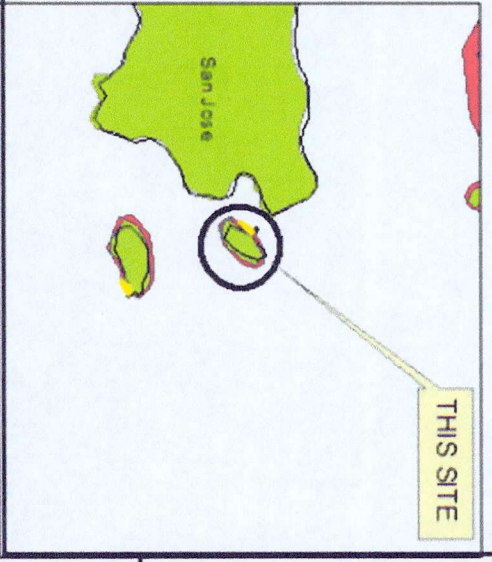
CERTIFICATION

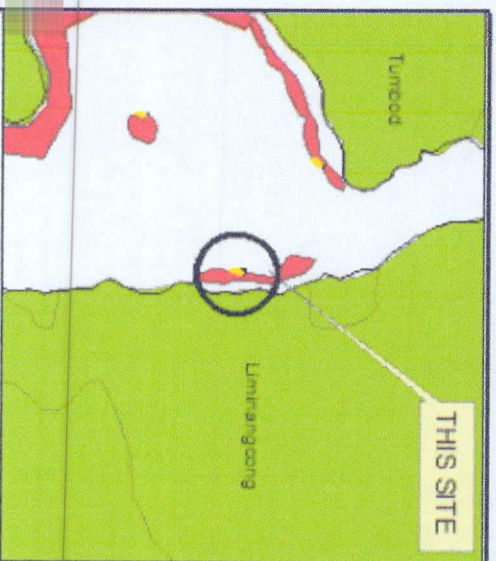
THIS IS TO CERTIFY that this area is within MALAMPAYA
SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
per Presidential Proclamation No. 342 dated July 12, 2000

Digitized by:
[Signature]
RONIEL C. SOLANA
Office Support Staff

Checked/Verified:
[Signature]
CLARISSA P. PADOR
For: III/PA Su MSPLS

NAME	LATITUDE	LONGITUDE
T1	119°17'38.728"E	10°54'36.928"N
T2	119°17'38.436"E	10°54'36.613"N
T3	119°17'38.575"E	10°54'36.993"N





NAME	LATITUDE	LONGITUDE
T1	119°18'27.345"E	10°59'12.828"N
T2	119°18'27.258"E	10°59'12.405"N



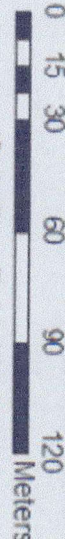
Department of Environment and Natural Resources
MALABON CITY
PROTECTED AREA MANAGEMENT OFFICE
MALABON SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
Batasan, Malabon City, Metro Manila
Batasan Old Bldg., 3rd Floor, Pasig
Email: dnm@denr.gov.ph, dnm@denr.gov.ph, 786-5722



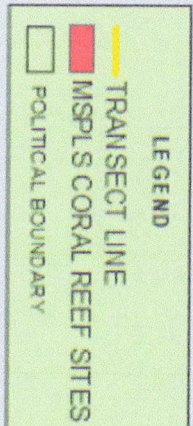
LOCATION MAP

SHOWING THE CORAL REEF ASSESSMENT SITE
LOCATED AT BANCORO REEF, BARANGAY
LIMNANGCONG, TAYTAY, PALAWAN.
WITHIN MALAMPAYA SOUND PROTECTED LANDSCAPE
AND SEASCAPE MARINE AREA.S.

SCALE: 1:2000



Projection: Transverse_Mercator
Projected Coordinate System: WGS_1984_UTM_Zone_50N



CERTIFICATION

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SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
per Presidential Proclamation No. 342 dated July 12, 2000

Digitized by:
Roxiel C. Solana
Office Support Staff

Checked/Verified:
Clarissa Pador
CLARISSA PADOR
For IIR/PAS/MSPLS



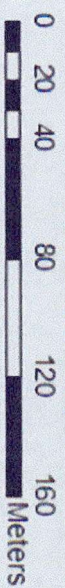
Republic of the Philippines
Department of Environment and Natural Resources
MALAMPAYA SOUND
PROTECTED AREA MANAGEMENT OFFICE
MALAMPAYA SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
Bureau of Wildlife Conservation, Palawan
Bureau of Old Growth, Taytay, Palawan
Email: dnr.pam@dnr.gov.ph; dnr.pam@dnr.gov.ph; 0938-796-3728



LOCATION MAP

SHOWING THE CORAL REEF ASSESSMENT SITE
LOCATED AT BARGE LAOT, BARANGAY
TUMBOD, TAYTAY, PALAWAN.
WITHIN MALAMPAYA SOUND PROTECTED LANDSCAPE
AND SEASCAPE MARINE AREAS.

SCALE: 1:2,500



Projection: Transverse_Mercator

Projected Coordinate System: WGS_1984_UTM_Zone_50N

LEGEND

- TRANSECT LINE
- MSPLS CORAL REEF SITES
- POLITICAL BOUNDARY

CERTIFICATION

THIS IS TO CERTIFY that this area is within MALAMPAYA
SOUND PROTECTED LANDSCAPE AND SEASCAPE (MSPLS)
per Presidential Proclamation No. 342 dated July 12, 2000

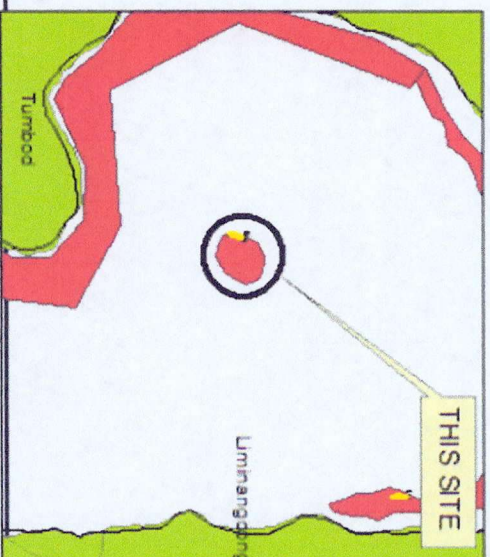
Digitized by:

RONIEL C. SOLANA
Office Support Staff

Checked/Verified:

CLARISSA P. PADOR
For: III/PASU, MSPLS

NAME	LATITUDE	LONGITUDE
T1	119°17'52.408"E	10°58'51.666"N
T2	119°17'52.229"E	10°58'51.274"N
T3	119°17'52.239"E	10°58'51.673"N



Raw data of Fish Visual Census in Malapena Island, Bgy. San Jose, Taytay, Palawan

Scientific name	English name	Size (cm)	Total Count	a	b	wt	T. Biomass
<i>Abudefduf vaigiensis</i>	Seargent Major	7	48	0.03	2.8	6.9726163	334.6856
<i>Abudefduf vaigiensis</i>	Seargent Major	21	13	0.03	2.8	151.12464	1964.6203
<i>Abudefduf vaigiensis</i>	Seargent Major	9	3	0.03	2.8	14.092897	42.2787
<i>Abudefduf vaigiensis</i>	Seargent Major	15	25	0.03	2.8	58.908339	1472.7085
<i>Apogon sp.</i>	Cardinalfish	6	10	0.017	2.95	3.3573383	33.5734
<i>Caesio cuning</i>	Red-bellied Fusillier	12	50	0.01487	3.121	34.708483	1735.4242
<i>Caesio cuning</i>	Red-bellied Fusillier	22	7	0.01487	3.121	230.15062	1611.0544
<i>Caesio cuning</i>	Red-bellied Fusillier	10	3	0.01487	3.121	19.647666	58.9430
<i>Caesio cuning</i>	Red-bellied Fusillier	10	3	0.01487	3.121	19.647666	58.9430
<i>Cephalopholis boenak</i>	Brown-banded Grouper	14	1	0.0106	3.1	37.870651	37.8707
<i>Cephalopholis boenak</i>	Brown-banded Grouper	9	1	0.0106	3.1	9.6262613	9.6263
<i>Chaetodontoplus mesoleucus</i>	Vermiculaed Angel Fish	3	4	0.0601	2.692	1.1568709	4.6275
<i>Chaetodontoplus mesoleucus</i>	Vermiculaed Angel Fish	5	2	0.0601	2.692	4.5761655	9.1523
<i>Chaetodontoplus mesoleucus</i>	Vermiculaed Angel Fish	12	2	0.0601	2.692	48.30926	96.6185
<i>Chaetodon octofasciatus</i>	Eight-banded Butterflyfishes	5	38	0.038	2.921	4.1828759	158.9493
<i>Chaetodon octofasciatus</i>	Eight-banded Butterflyfishes	4	9	0.038	2.921	2.1797206	19.6175
<i>Chaetodon octofasciatus</i>	Eight-banded Butterflyfishes	5	4	0.038	2.921	4.1828759	16.7315
<i>Chaetodon octofasciatus</i>	Eight-banded Butterflyfishes	4	13	0.038	2.921	2.1797206	28.3364
<i>Chaetodon octofasciatus</i>	Eight-banded Butterflyfishes	6	13	0.038	2.921	7.1246478	92.6204
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	8	20	0.0169	3.049	9.580939	191.6188
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	15	5	0.0169	3.049	65.131181	325.6559
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	12	12	0.0169	3.049	32.984532	395.8144
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	21	16	0.0169	3.049	181.69097	2907.0555
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	10	36	0.0169	3.049	18.9185	681.0660
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus (Damsel)	5	87	0.108	2.75	9.0279941	785.4355
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus (Damsel)	4	36	0.108	2.75	4.8875221	175.9508
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus (Damsel)	5	37	0.108	2.75	9.0279941	334.0358
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus (Damsel)	6	63	0.108	2.75	14.905265	939.0317
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus (Damsel)	7	113	0.108	2.75	22.774212	2573.4860
<i>Lutjanus decussatus</i>	Checkered Snapper	8	7	0.0239	2.906	10.064157	70.4491
<i>Lutjanus decussatus</i>	Checkered Snapper	6	6	0.0239	2.906	4.3621986	26.1732
<i>Naso lituratus</i>	Stripe-face unicornfish	10	1	0.0216	2.988	21.01134	21.0113
<i>Lethrinus nebulosus</i>	Spangled Emperor Fish	13	2	0.01871	2.996	40.686288	81.3726
<i>Lethrinus nebulosus</i>	Spangled Emperor Fish	21	3	0.01871	2.996	171.17597	513.5279
<i>Siganus argenteus</i>	Forktail Rabbitfish	27	3	0.025	2.883	334.62759	1003.8828
<i>Zanclus cornutus</i>	Moorish Idol	10	1	0.0172	3.171	25.499311	25.4993
<i>Zanclus cornutus</i>	Moorish Idol	22	3	0.0172	3.171	310.70681	932.1204
Sum			700				19769.5682
							19.7696

Raw data of Fish Visual Census in Tai-Tai Bay, Bgy. San Jose, Taytay, Palawan

Scientific name	English name	Size (cm)	Total Count	a	b	wt	T. Biomass
<i>Caesio cuning</i>	Red-bellied Fusillier	15	5	0.0149	3.121	69.645296	348.2265
<i>Chaetodontoplus mesoleucus</i>	Vermiculaed Angel Fish	3	5	0.0601	2.692	1.1568709	5.7844
<i>Chaetodontoplus mesoleucus</i>	Vermiculaed Angel Fish	5	4	0.0601	2.692	4.5761655	18.3047
<i>Chaetodontoplus mesoleucus</i>	Vermiculaed Angel Fish	21	7	0.0601	2.692	217.91585	1525.4109
<i>Chaetodon octofasciatus</i>	Eight-banded Butterflyfishes	12	3	0.038	2.921	53.960009	161.8800
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	22	3	0.0169	3.049	209.37916	628.1375
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	21	8	0.0169	3.049	181.69097	1453.5277
<i>Dascyllus trimaculatos</i>	Three-spot Dascyllus	5	13	0.108	2.75	9.0279941	117.3639
<i>Dascyllus trimaculatos</i>	Three-spot Dascyllus	7	22	0.108	2.75	22.774212	501.0327
<i>Dascyllus trimaculatos</i>	Three-spot Dascyllus	3	5	0.108	2.75	2.2156809	11.0784
<i>Lethrinus nebulosus</i>	Spangled Emperor Fish	22	4	0.0187	2.996	196.77601	787.1040
<i>Lutjanus decussatus</i>	Checkered Snapper	6	1	0.0239	2.906	4.3621986	4.3622
<i>Thalassoma unare</i>	Moon Wrasse	21	4	0.0238	2.749	102.64973	410.5989
<i>Zanclus cornutus</i>	Moorish Idol	21	5	0.0172	3.171	268.09322	1340.4661
Sum			89				7313.27789
							7.3133

Raw data of Fish Visual Census in San Jose Island, Bgy. San Jose, Taytay, Palawan

Scientific name	English name	Size (cm)	Total Count	a	b	wt	T. Biomass
<i>Abudefduf vaigiensis</i>	Seargent Major	8	8	0.03	2.8	10.133821	81.0706
<i>Abudefduf vaigiensis</i>	Seargent Major	6	1	0.03	2.8	4.5283997	4.5284
<i>Apogon sp.</i>	Cardinalfish	5	4	0.017	2.95	1.9606968	7.8428
<i>Caesio cuning</i>	Red-bellied Fusillier	10	5	0.01487	3.121	19.647666	98.2383
<i>Caesio cuning</i>	Red-bellied Fusillier	8	9	0.01487	3.121	9.791626	88.1246
<i>Cephalopholis boenak</i>	Brown-banded Grouper	21	1	0.0106	3.1	133.10234	133.1023
<i>Chaetodon octofasciatus</i>	Eight-banded Butterflyfishes	4	4	0.038	2.921	2.1797206	8.7189
<i>Chaetodon octofasciatus</i>	Eight-banded Butterflyfishes	6	6	0.038	2.921	7.1246478	42.7479
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	16	2	0.0169	3.049	79.295498	158.5910
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	22	3	0.0169	3.049	209.37916	628.1375
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus	3	9	0.108	2.75	2.2156809	19.9411
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus	5	7	0.108	2.75	9.0279941	63.1960
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus	6	11	0.108	2.75	14.905265	163.9579
<i>Lethrinus nebulosus</i>	Spangled Emperor Fish	22	3	0.01871	2.996	196.77601	590.3280
<i>Lutjanus decussatus</i>	Checkered Snapper	20	1	0.0239	2.906	144.275	144.2750
<i>Thalassoma unare</i>	Moon Wrasse	12	2	0.0238	2.749	22.041757	44.0835
<i>Thalassoma unare</i>	Moon Wrasse	10	1	0.0238	2.749	13.352942	13.3529
<i>Zanclus cornutus</i>	Moorish Idol	24	1	0.0172	3.171	409.42871	409.4287
SUM			78				2699.6655
							2.6997

Raw data of Fish Visual Census in Barge Laot, Bgy. Tumbod, Taytay, Palawan

Scientific name	English name	Size (cm)	Total Count	a	b	wt	T. Biomass
<i>Apogon sp.</i>	Cardinalfish	4	2	0.017	2.95	1.0151399	2.0303
<i>Abudefduf vaigiensis</i>	Seargent Major	3	1	0.03	2.8	0.6502207	0.6502
<i>Abudefduf vaigiensis</i>	Seargent Major	5	1	0.03	2.8	2.7179237	2.7179
<i>Thalassoma unare</i>	Moon Wrasse	22	3	0.0238	2.749	116.65327	349.9598
<i>Caesio cuning</i>	Red-bellied Fusillier	21	1	0.01487	3.121	199.0478	199.0478
<i>Caesio cuning</i>	Red-bellied Fusillier	22	6	0.01487	3.121	230.15062	1380.9037
<i>Caesio cuning</i>	Red-bellied Fusillier	22	13	0.01487	3.121	230.15062	2991.9581
<i>Cephalopholis boenak</i>	Brown-banded Grouper	23	1	0.0106	3.1	176.46645	176.4665
<i>Chaetodontoplus mesoleucus</i>	Vermiculaed Angel Fish	4	1	0.0601	2.692	2.5096894	2.5097
<i>Chaetodontoplus mesoleucus</i>	Vermiculaed Angel Fish	21	3	0.0601	2.692	217.91585	653.7475
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	22	6	0.0169	3.049	209.37916	1256.2750
<i>Chlorurus bleekeri</i>	Bleeker's Parrotfish	21	3	0.0169	3.049	181.69097	545.0729
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus	5	25	0.108	2.75	9.0279941	225.6999
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus	3	25	0.108	2.75	2.2156809	55.3920
<i>Dascyllus trimaculatus</i>	Three-spot Dascyllus	6	40	0.108	2.75	14.905265	596.2106
SUM			131				8438.6419
							8.4386

Raw data of Fish Abundance in Malapena Island, Bgy. San Jose, Taytay, Palawan

FAMILY	SPECIES			FISH COUNT				
	SCIENTIFIC NAME	COMMON NAME	LOCAL NAME	1-10CM	11-20CM	>20CM	total	%
Apogonidae	Cardinalfishes	Buslit		10			10	1%
	Apogon sp.	Cardinalfish						
Acanthuridae	Surgeonfishes	Labahita		1			1	0%
	Naso lituratus	Stripe-face unicornfish						
Caesionidae	Fusiliers	Dalagang bukid		6	57		63	9%
	Caesio cuning	Red-bellied Fusillier						
Chaetodontidae	Butterflyfishes	Paruparo		55	22		77	11%
	Chaetodon octofasciatus	Eight-banded Butterflyfishes						
Lutjanidae	Snappers	Maya-maya		7	6		13	2%
	Lutjanus decussatus	Checkered Snapper						
Lethrinidae	Emperors	Kanuping			2	3	5	1%
	Lethrinus nebulosus	Spangled Emperor Fish						
Pomacanthidae	Angelfishes	Alibangbang		4	4		8	1%
	Chaetodon mesoleucus	Vermiculated Angel Fish						
Pomacentridae	Damselfishes	Palata		286	131	8	425	61%
	Abudefduf vaigiensis	Seargent Major		56	25	8		
	Dascyllus trimaculatus	Three-spot Dascyllus		230	106			
Scaridae	Parrotfish	Mul-mol		46	26	17	89	13%
	Chlorurus bleekeri	Bleeker's Parrotfish						
Serranidae	Groupers	Lapu-lapu			2		2	0%
	Cephalopholis boenak	Brown-banded Grouper						
Siganidae	Rabbit fishes	Samaral				3	3	0%
	Siganus argenteus	Forktail Rabbitfish						
Zanclidae	Zanclus cornutus	Moorish Idol		1		3	4	1%
TOTAL				416	250	34	700	100%
Percentage Ratio				59%	36%	5%		
Species Diversity								
Number of Species				10	9	5		
Number of Families				9	8	5		

FAMILY	ENGLISH NAME	COMMON/LOCAL NAME	%	FISH COUNT		
				Count(fish/ 500m2)	Count (fish/1000m2)	Rank
Apogonidae	Cardinalfish	Buslit	1%	10	20	6
Acanthuridae	Surgeonfishes	Labahita	0%	1	2	12
Caesionidae	Fusillier	Dalagang bukid	9%	63	126	4
Chaetodontidae	Butterflyfishes	Paruparo	11%	77	154	3
Lutjanidae	Snappers	Maya-maya	2%	13	26	5
Lethrinidae	Emperor Fish	Kanuping	1%	5	10	8
Pomacanthidae	Angelfishes	Alibangbang	1%	8	16	7
Pomacentridae	Damselfishes	Palata	61%	425	850	1
Scaridae	Parrotfish	Mul-mol	13%	89	178	2
Serranidae	Groupers	Lapu-lapu	0%	2	4	11
Siganidae	Rabbit fishes	Samaral	0%	3	6	10
Zanclidae	Moorish Idol		1%	4	8	9
TOTAL FISH DENSITY				700	1400	

Fish Group	
Target Species	176
Coral Indicator Speci	77
Major Species	447
Total	700

Raw data of Fish Abundance in Tai-Tai, Bgy. San Jose, Taytay, Palawan

FAMILY	SPECIES				FISH COUNT			
	SCIENTIFIC NAME	COMMON NAME	LOCAL NAME	1-10CM	11-20CM	>20CM	total	%
Caesionidae	Fusiliers	Dalagang bukid			5		5	6%
	Caesio cuning	Red-bellied Fusillier						
Chaetodontidae	Butterflyfishes	Paruparo			3		3	3%
	Chaetodon octofasciatus	Eight-banded Butterflyfishes						
Labridae	Wrasse	Mameng				4	4	4%
	Thalassoma lunare	Moon Wrasse						
Lutjanidae	Snappers	Maya-maya		1			1	1%
	Lutjanus decussatus	Checkered Snapper						
Lethrinidae	Emperors	Kanuping				4	4	4%
	Lethrinus nebulosus	Spangled Emperor Fish						
Pomacentridae	Damselfishes	Palata		34	4	2	40	45%
	Dascyllus trimaculatus	Three-spot Dascyllus						
Pomacanthidae	Angelfishes	Alibangbang		7	2	7	16	18%
	Chaetodon mesoleucus	Vermiculated Angel Fish						
Scaridae	Parrotfishes	Mul-mol		4		7	11	12%
	Chlorurus bleekeri	Bleeker's Parrotfish						
Zanclidae	Zanclus cornutus	Moorish Idol			1	4	5	6%
TOTAL				46	15	28	89	100%
Percentage Ratio				52%	17%	31%		
Species Diversity								
Number of Species				4	5	6		
Number of Families				4	5	6		

FAMILY	ENGLISH NAME	COMMON/LOCAL NAME	%	Count(fish /500m2)	Count (fish/1000m2)	Rank
Caesionidae	Fusillier	Dalagang bukid	6%	5	10	4
Chaetodontidae	Butterflyfishes	Paruparo	3%	3	6	6
Labridae	Wrasse	Mameng	4%	4	8	5
Lutjanidae	Snappers	Maya-maya	1%	1	2	7
Lethrinidae	Emperor Fish	Kanuping	4%	4	8	3
Pomacentridae	Damselfishes	Palata	45%	40	80	1
Pomacanthidae	Angelfishes	Alibangbang	18%	16	32	2
Scaridae	Parrotfish	Mul-mol	12%	11	22	3
Zanclidae	Moorish Idol		6%	5	10	4
TOTAL FISH DENSITY				89	178	

Fish Group	
Target Species	21
Coral Indicator Sp.	3
Major Species	65
Total	89

Raw data of Fish Abundance in San Jose Island, Bgy. San Jose, Taytay, Palawan

FAMILY	SPECIES			FISH COUNT				
	SCIENTIFIC NAME	COMMON NAME	LOCAL NAME	1-10CM	11-20CM	>20CM	total	%
Apogonidae	Cardinalfishes	Buslit		4			4	5%
	Apogon sp.	Cardinalfish						
Caesionidae	Fusiliers	Dalagang bukid		9	5		14	18%
	Caesio cuning	Red-bellied Fusillier						
Chaetodontidae	Butterflyfishes	Paruparo		8	2		10	13%
	Chaetodon octofasciatus	Eight-banded Butterflyfishes						
Labridae	Wrasse	Mameng			3		3	4%
	Thalassoma lunare	Moon Wrasse						
Lutjanidae	Snappers	Maya-maya				1	1	1%
	Lutjanus decussatus	Checkered Snapper						
Lethrinidae	Emperors	Kanuping				3	3	4%
	Lethrinus nebulosus	Spangled Emperor Fish						
Pomacentridae	Damselfishes	Palata		34	2		36	46%
	Abudefduf vaigiensis	Seargent Major		9				
	Dascyllus trimaculatus	Three-spot Dascyllus		25				
Scaridae	Parrotfishes	Mul-mol			2	3	5	6%
	Chlorurus bleekeri	Bleeker's Parrotfish						
Serranidae	Groupers	Lapu-lapu				1	1	1%
	Cephalopholis boenak	Brown-banded Grouper						
Zanclidae	Zanclus cornutus	Moorish Idol				1	1	1%
TOTAL				55	14	9	78	100%
Percentage Ratio				71%	18%	12%		
Species Diversity								
Number of Species				5	5	5		
Number of Families				4	5	5		

FAMILY	ENGLISH NAME	COMMON/LOCAL NAME	%	FISH COUNT		
				Count(fish /500m2)	Count (fish/1000 m2)	Rank
Apogonidae	Cardinalfish	Buslit	5%	4	8	5
Caesionidae	Fusillier	Dalagang bukid	18%	14	28	2
Chaetodontidae	Butterflyfishes	Paruparo	13%	10	20	3
Labridae	Wrasse	Mameng	4%	3	6	6
Lutjanidae	Snappers	Maya-maya	1%	1	2	7
Lethrinidae	Emperor Fish	Kanuping	4%	3	6	3
Pomacentridae	Damselfishes	Palata	46%	36	72	1
Scaridae	Parrotfish	Mul-mol	6%	5	10	4
Serranidae	Groupers	Lapu-lapu	1%	1	2	7
Zanclidae	Moorish Idol		1%	1	2	7
TOTAL FISH DENSITY				78	156	

Fish Group	
Target Species	24
Coral Indicator Species	10
Major Species	44
Total	78

Raw data of Fish Abundance in Bancoro, Bgy. Liminangcong, Taytay, Palawan

FAMILY	SPECIES				FISH COUNT			
	SCIENTIFIC NAME	COMMON NAME	LOCAL NAME	1-10CM	11-20CM	>20CM	total	%
Caesionidae	Fusiliers	Dalagang bukid		4		11	15	14%
	Caesio cuning	Red-bellied Fusillier						
Chaetodontidae	Butterflyfishes	Paruparo		6	2		8	7%
	Chaetodon octofasciatus	Eight-banded Butterflyfishes						
Labridae	Wrasse	Mameng		8		12	20	19%
	Thalassoma lunare	Moon Wrasse						
Lethrinidae	Emperors	Kanuping				10	10	9%
	Lethrinus nebulosus	Spangled Emperor Fish						
Pomacanthidae	Angelfishes	Alibangbang		10	10		20	19%
	Chaetodon mesoleucus	Vermiculated Angel Fish						
Pomacentridae	Damselfishes	Palata		20	5		25	23%
	Dascyllus trimaculatus	Three-spot Dascyllus						
Scaridae	Parrotfishes	Mul-mol		2	2		4	4%
	Chlorurus bleekeri	Bleeker's Parrotfish						
Serranidae	Groupers	Lapu-lapu				5	5	5%
	Cephalopholis boenak	Brown-banded Grouper						
TOTAL				50	19	38	107	100%
Percentage Ratio				47%	18%	36%		
Species Diversity								
Number of Species				6	4	4		
Number of Families				6	4	4		

FAMILY	ENGLISH NAME	COMMON/LOCAL NAME	%	Count(fish /500m2)	Count (fish/1000m2)	Rank
Caesionidae	Fusilier	Dalagang bukid	14%	15	30	3
Chaetodontidae	Butterflyfishes	Paruparo	7%	8	16	5
Labridae	Wrasse	Mameng	19%	20	40	2
Lethrinidae	Emperor Fish	Kanuping	9%	10	20	4
Pomacanthidae	Angelfishes	Alibangbang	19%	20	40	2
Pomacentridae	Damselfishes	Palata	23%	25	50	1
Scaridae	Parrotfish	Mul-mol	4%	4	8	7
Serranidae	Groupers	Lapu-lapu	5%	5	10	6
TOTAL FISH DENSITY				107	214	

Fish Group	
Target Species	34
Coral Indicator Sp.	8
Major Species	65
Total	107

Raw data of Fish Abundance in Barge Laot, Bgy. Tumbod, Taytay, Palawan

FAMILY	SPECIES			FISH COUNT				
	SCIENTIFIC NAME	COMMON NAME	LOCAL NAME	1-10CM	11-20CM	>20CM	total	%
Apogonidae	Cardinalfishes	Buslit		2			2	2%
	Apogon sp.	Cardinalfish						
Caesionidae	Fusiliers	Dalagang bukid				20	20	15%
	Caesio cuning	Red-bellied Fusillier						
Labridae	Wrasse	Mameng				3	3	2%
	Thalassoma lunare	Moon Wrasse						
Pomacanthidae	Angelfishes	Alibangbang		1		3	4	3%
	Chaetodon mesoleucus	Vermiculated Angel Fish						
Pomacentridae	Damselfishes	Palata		92			92	70%
	Abudefduf vaigiensis	Seargent Major		2				
	Dascyllus trimaculatus	Three-spot Dascyllus		90				
Scaridae	Parrotfishes	Mul-mol				9	9	7%
	Chlorurus bleekeri	Bleeker's Parrotfish						
Serranidae	Groupers	Lapu-lapu				1	1	1%
	Cephalopholis boenak	Brown-banded Grouper						
TOTAL				95	0	36	131	100%
Percentage Ratio				73%	0%	27%		
Species Diversity								
Number of Species				4	0	5		
Number of Families				3	0	5		

FAMILY	ENGLISH NAME	COMMON/LOCAL NAME	%	Count(fish /500m2)	Count (fish/1000m2)	Rank
Apogonidae	Cardinalfish	Buslit	2%	2	4	6
Caesionidae	Fusillier	Dalagang bukid	15%	20	40	2
Labridae	Wrasse	Mameng	2%	3	6	5
Pomacanthidae	Angelfishes	Alibangbang	3%	4	8	4
Pomacentridae	Damselfishes	Palata	70%	92	184	1
Scaridae	Parrotfish	Mul-mol	7%	9	18	3
Serranidae	Groupers	Lapu-lapu	1%	1	2	7
TOTAL FISH DENSITY				131	262	

Fish Group	
Target Species	30
Coral Indicator Species	0
Major Species	101
Total	131

RAW DATA OF CORALS IN MALAPENA ISLAND USING CPCe

TRANSECT NAME	transect 1	transect 2	transect 3	transect 4	transect 5					
Number of frames	37	49	47	49	45					
Total points	370	490	470	490	450					
Total points (minus tape+wand+shadow)	366	487	464	486	444					
MAJOR CATEGORY (% of transect)						MEAN	STD. DEV.	STD. ERROR		
CORAL (HC)	36.07	63.86	76.72	67.28	56.31	60.05	15.28	15.28		
DEAD CORAL (DC)	4.64	0.21	0.43	3.29	1.80	2.08	1.89	1.89		
SOFT CORAL (SC)	2.19	2.46	0.86	1.23	0.90	1.53	0.75	0.75		
OTHER ORGANISMS (OO)	0.00	0.21	0.00	0.00	0.00	0.04	0.09	0.09		
ALGAE (AL)	1.91	1.23	4.31	4.73	2.48	2.93	1.52	1.52		
ABIOTIC COMPONENT (AB)	55.19	32.03	17.67	23.46	38.51	33.37	14.57	14.57		
TAPE, WATER, BLOCK (TWB)	1.08	0.61	1.28	0.82	1.33	1.02	0.31	0.31		
Sum (excluding tape+shadow+wand)	100.00	100.00	100.00	100.00	100.00					
SUBCATEGORIES (% of transect)						MEAN	STD. DEV.	STD. ERROR		
CORAL (HC)										
Acropora branching (ACB)	12.84	33.06	46.77	22.63	16.44	26.35	13.75	13.75		
Acropora digitate (ACD)	0.00	0.00	0.00	0.00	0.23	0.05	0.10	0.10		
Acropora submassive (ACS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Acropora tabulate (ACT)	0.00	0.62	3.02	2.06	2.03	1.54	1.22	1.22		
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Heliopora (CHL)	0.00	0.41	3.23	1.23	3.83	1.74	1.71	1.71		
Millepora (CME)	0.00	0.00	3.88	0.62	1.13	1.12	1.61	1.61		
Mushroom coral (CMR)	0.00	0.00	0.86	0.62	0.23	0.34	0.39	0.39		
Other branching corals (CB)	1.37	5.95	4.74	3.91	3.15	3.82	1.72	1.72		
Other encrusting corals (CE)	19.13	20.74	13.15	28.60	6.31	17.58	8.38	8.38		
Other foliose corals (CF)	0.27	0.00	0.43	0.00	1.35	0.41	0.56	0.56		
Other massive corals (CM)	0.82	0.00	0.43	3.50	16.22	4.19	6.86	6.86		
Other submassive corals (CS)	1.64	3.08	0.22	4.12	5.41	2.89	2.04	2.04		
DEAD CORAL (DC)										
Dead Coral (DC)	4.10	0.00	0.00	0.82	1.35	1.25	1.69	1.69		
Dead coral with algae (DCA)	0.55	0.21	0.43	2.47	0.45	0.82	0.93	0.93		
SOFT CORAL (SC)										
Soft coral (SC)	2.19	2.46	0.86	1.23	0.90	1.53	0.75	0.75		
OTHER ORGANISMS (OO)										
Other animals (OT)	0.00	0.21	0.00	0.00	0.00	0.04	0.09	0.09		
Sponge (SP)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
ALGAE (AL)										
Algal assemblages (AA)	0.00	0.00	0.43	0.00	0.00	0.09	0.19	0.19		
Coralline algae (CA)	1.91	1.23	3.88	4.73	2.48	2.85	1.44	1.44		
Halimeda (HA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Macroalgae (MA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
ABIOTIC COMPONENT (AB)										
Rubble (R)	4.64	8.01	7.11	7.20	19.59	9.31	5.88	5.88		
Sand (S)	0.55	0.00	0.00	2.06	0.00	0.52	0.89	0.89		
Silt (SI)	50.00	24.02	10.56	14.20	18.92	23.54	15.63	15.63		
TAPE, WATER, BLOCK (TWB)										
Tape, Water, Block (TWB)	1.08	0.61	1.28	0.82	1.33	1.02	0.31	0.31		
NOTES (% of transect)						MEAN	STD. DEV.	STD. ERROR		
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NOTES (% of coral)										
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MAJOR CATEGORY (occurring in transect)						SUMS	MEAN	STD. DEV.	STD. ERR	SW INDI SIMPSON (1-D)
CORAL (HC)	132	311	356	327	250	1376	275.20	88.93	88.93	1.57 0.71
DEAD CORAL (DC)	17	1	2	16	8	44	8.80	7.53	7.53	0.68 0.49
SOFT CORAL (SC)	8	12	4	6	4	34	6.80	3.35	3.35	0.34 0.94
OTHER ORGANISMS (OO)	0	1	0	0	0	1	0.20	0.45	0.45	0.00 1.00
ALGAE (AL)	7	6	20	23	11	67	13.40	7.70	7.70	0.13 0.06
ABIOTIC COMPONENT (AB)	202	156	82	114	171	725	145.00	47.37	47.37	0.68 0.44
TAPE, WATER, BLOCK (TWB)	4	3	6	4	6	23	4.60	1.34	1.34	
TOTAL TRANSECT POINTS	370	490	470	490	450	2270	454	157	157	

SUBCATEGORIES (occurring in transect)			SUMS MEAN STD. DEV. STD. ERR SW INDI SIMPSON (1-D)									
CORAL (HC)			1.57 0.71									
Acropora branching (ACB)	47	101	217	110	73	608	121.60	68.40	00.10	0.36	0.20	
Acropora digitate (ACD)	0	0	0	0	1	1	0.20	0.45	0.45	0.01	0.00	
Acropora submassive (ACS)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	
Acropora tabulate (ACT)	0	3	14	10	9	36	7.20	5.63	5.63	0.10	0.00	
Bleached coral (BLEC)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	
Heliopora (CHL)	0	2	15	6	17	40	8.00	7.65	7.65	0.10	0.00	
Millepora (CME)	0	0	18	3	5	26	5.20	7.46	7.46	0.07	0.00	
Mushroom coral (CMR)	0	0	4	3	1	8	1.60	1.82	1.82	0.03	0.00	
Other branching corals (CB)	5	29	22	19	14	89	17.80	8.98	8.98	0.18	0.00	
Other encrusting corals (CE)	70	101	61	139	28	399	79.80	42.09	42.09	0.36	0.08	
Other foliose corals (CF)	1	0	2	0	6	9	1.80	2.49	2.49	0.03	0.00	
Other massive corals (CM)	3	0	2	17	72	94	18.80	30.49	30.49	0.18	0.00	
Other submassive corals (CS)	6	15	1	20	24	66	13.20	9.58	9.58	0.15	0.00	
DEAD CORAL (DC)			0.68 0.49									
Dead Coral (DC)	15	0	0	4	6	25	5.00	6.16	6.16	0.32	0.32	
Dead coral with algae (DCA)	2	1	2	12	2	19	3.80	4.60	4.60	0.36	0.19	
SOFT CORAL (SC)			0.34 0.94									
Soft coral (SC)	8	12	4	6	4	8	6.80	3.35	3.35	0.34	0.06	
OTHER ORGANISMS (OO)			0.00 1.00									
Other animals (OT)	0	1	0	0	0	0	0.20	0.45	0.45	0.00	0.00	
Sponge (SP)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	
Zoanthids (ZO)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	
ALGAE (AL)			0.13 0.06									
Algal assemblages (AA)	0	0	2	0	0	2	0.40	0.89	0.89	0.10	0.00	
Coralline algae (CA)	7	6	18	23	11	65	13.00	7.31	7.31	0.03	0.94	
Halimeda (HA)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	
Macroalgae (MA)	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	
ABIOTIC COMPONENT (AB)			0.68 0.44									
Rubble (R)	17	39	33	35	87	211	42.20	26.40	26.40	0.36	0.08	
Sand (S)	2	0	0	10	0	12	2.40	4.34	4.34	0.07	0.00	
Silt (SI)	183	117	49	69	84	502	100.40	52.43	52.43	0.25	0.48	
TAPE, WATER, BLOCK (TWB)												
Tape, Water, Block (TWB)	4	3	6	4	6	23	4.60	1.34	1.34		1.00	
NOTES (occurring in transect)			SUMS MEAN STD. DEV. STD. ERROR									
Bleached coral (BLEC)	0	0	0	0	0	0	0.00	0.00	0.00			
NOTES (occurring in coral)												
Bleached coral (BLEC)	0	0	0	0	0	0	0.00	0.00	0.00			
Shannon-Weaver Index			1.00	0.82	0.71	0.92	0.90					
CORAL (HC)	0.37	0.29	0.20	0.27	0.32							
DEAD CORAL (DC)	0.14	0.01	0.02	0.11	0.07							
SOFT CORAL (SC)	0.08	0.09	0.04	0.05	0.04							
OTHER ORGANISMS (OO)	0.00	0.01	0.00	0.00	0.00							
ALGAE (AL)	0.08	0.05	0.14	0.14	0.09							
ABIOTIC COMPONENT (AB)	0.33	0.36	0.31	0.34	0.37							
TAPE, WATER, BLOCK (TWB)												
Simpson Index of Diversity (1-D)			0.56	0.49	0.38	0.49	0.53					
CORAL (HC)	0.13	0.41	0.59	0.45	0.32							
DEAD CORAL (DC)	0.00	0.00	0.00	0.00	0.00							
SOFT CORAL (SC)	0.00	0.00	0.00	0.00	0.00							
OTHER ORGANISMS (OO)	0.00	0.00	0.00	0.00	0.00							
ALGAE (AL)	0.00	0.00	0.00	0.00	0.00							
ABIOTIC COMPONENT (AB)	0.30	0.10	0.03	0.06	0.15							
TAPE, WATER, BLOCK (TWB)												

RAW DATA OF CORALS IN TAI-TAI BAY USING Ce

TRANSECT NAME	T1	T2	T3					
Number of frames	70	45	49					
Total points	699	450	490					
Total points (minus tape+wand+shadow)	690	440	480					
MAJOR CATEGORY (% of transect)				MEAN	STD. DEV.	STD. ERROR		
CORAL (HC)	40.72	69.77	60.21	56.90	14.80	14.80		
DEAD CORAL (DC)	0.00	0.00	3.75	1.25	2.17	2.17		
SOFT CORAL (SC)	1.45	2.50	0.63	1.52	0.94	0.94		
OTHER ORGANISMS (OO)	0.14	0.91	0.00	0.35	0.49	0.49		
ALGAE (AL)	1.88	2.05	5.42	3.12	1.99	1.99		
ABIOTIC COMPONENT (AB)	55.80	24.77	30.00	36.86	16.61	16.61		
TAPE, WATER, BLOCK (TWB)	1.29	2.22	2.04	1.85	0.50	0.50		
Sum (excluding tape+shadow+wand)	100.00	100.00	100.00					
SUBCATEGORIES (% of transect)				MEAN	STD. DEV.	STD. ERROR		
CORAL (HC)								
Acropora branching (ACB)	23.04	42.95	40.42	35.47	10.84	10.84		
Acropora digitate (ACD)	0.00	5.45	0.83	2.10	2.94	2.94		
Acropora submassive (ACS)	0.00	0.00	0.00	0.00	0.00	0.00		
Acropora tabulate (ACT)	0.00	0.00	0.00	0.00	0.00	0.00		
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00		
Heliopora (CHL)	0.00	0.00	0.00	0.00	0.00	0.00		
Millepora (CME)	0.00	0.00	0.00	0.00	0.00	0.00		
Mushroom coral (CMR)	3.77	1.36	2.08	2.41	1.23	1.23		
Other branching corals (CB)	5.94	7.73	12.29	8.65	3.27	3.27		
Other encrusting corals (CE)	1.45	1.14	0.83	1.14	0.31	0.31		
Other foliose corals (CF)	0.00	0.00	2.71	0.90	1.56	1.56		
Other massive corals (CM)	0.58	1.82	0.42	0.94	0.77	0.77		
Other submassive corals (CS)	5.94	9.32	0.63	5.30	4.38	4.38		
DEAD CORAL (DC)								
Dead Coral (DC)	0.00	0.00	2.08	0.69	1.20	1.20		
Dead coral with algae (DCA)	0.00	0.00	1.67	0.56	0.96	0.96		
SOFT CORAL (SC)								
Soft coral (SC)	1.45	2.50	0.63	1.52	0.94	0.94		
OTHER ORGANISMS (OO)								
Other animals (OT)	0.00	0.68	0.00	0.23	0.39	0.39		
Sponge (SP)	0.00	0.00	0.00	0.00	0.00	0.00		
Zoanthids (ZO)	0.14	0.23	0.00	0.12	0.12	0.12		
ALGAE (AL)								
Algal assemblages (AA)	0.29	0.00	0.00	0.10	0.17	0.17		
Coralline algae (CA)	1.59	2.05	5.42	3.02	2.09	2.09		
Halimeda (HA)	0.00	0.00	0.00	0.00	0.00	0.00		
Macroalgae (MA)	0.00	0.00	0.00	0.00	0.00	0.00		
ABIOTIC COMPONENT (AB)								
Rubble (R)	18.70	8.18	12.71	13.20	5.27	5.27		
Sand (S)	0.00	0.45	0.00	0.15	0.26	0.26		
Silt (SI)	37.10	16.14	17.29	23.51	11.78	11.78		
TAPE, WATER, BLOCK (TWB)								
Tape, Water, Block (TWB)	1.29	2.22	2.04	1.85	0.50	0.50		
NOTES (% of transect)				MEAN	STD. DEV.	STD. ERROR		
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00		
NOTES (% of coral)								
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00		
MAJOR CATEGORY (occurring in transect)				SUMS	MEAN	STD. DEV.	STD. ERROR	SW INDEX
								SIMPSON (1-D)
CORAL (HC)	281	307	289	877	292.33	13.32	13.32	1.28
DEAD CORAL (DC)	0	0	18	18	6.00	10.39	10.39	0.69
SOFT CORAL (SC)	10	11	3	24	8.00	4.36	4.36	0.36
OTHER ORGANISMS (OO)	1	4	0	5	1.67	2.08	2.08	0.32
ALGAE (AL)	13	9	26	48	16.00	8.89	8.89	0.17
ABIOTIC COMPONENT (AB)	385	109	144	638	212.67	150.27	150.27	0.67
TAPE, WATER, BLOCK (TWB)	9	10	10	29	9.67	0.58	0.58	
TOTAL TRANSECT POINTS	699	450	490	1639	546	190	190	
SUBCATEGORIES (occurring in transect)				SUMS	MEAN	STD. DEV.	STD. ERROR	SW INDEX
								SIMPSON (1-D)
CORAL (HC)								1.28
Acropora branching (ACB)	159	189	194	542	180.67	18.93	18.93	0.30
Acropora digitate (ACD)	0	24	4	28	9.33	12.86	12.86	0.11
Acropora submassive (ACS)	0	0	0	0	0.00	0.00	0.00	0.00
Acropora tabulate (ACT)	0	0	0	0	0.00	0.00	0.00	0.00
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00	0.00
Heliopora (CHL)	0	0	0	0	0.00	0.00	0.00	0.00
Millepora (CME)	0	0	0	0	0.00	0.00	0.00	0.00
Mushroom coral (CMR)	26	6	10	42	14.00	10.58	10.58	0.15
Other branching corals (CB)	41	34	59	134	44.67	12.90	12.90	0.29
Other encrusting corals (CE)	10	5	4	19	6.33	3.21	3.21	0.08
Other foliose corals (CF)	0	0	13	13	4.33	7.51	7.51	0.06
Other massive corals (CM)	4	8	2	14	4.67	3.06	3.06	0.07
Other submassive corals (CS)	41	41	3	85	28.33	21.94	21.94	0.23
DEAD CORAL (DC)								0.69
Dead Coral (DC)	0	0	10	10	3.33	5.77	5.77	0.33
Dead coral with algae (DCA)	0	0	8	8	2.67	4.62	4.62	0.36
SOFT CORAL (SC)								0.36
Soft coral (SC)	10	11	3	10	8.00	4.36	4.36	0.36

OTHER ORGANISMS (OO)							0.32	0.96
Other animals (OT)	0	0	0	1.00	1.73	1.73	0.00	0.00
Sponge (SP)	0	0	0	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO)	1	1	0	1	0.67	0.58	0.58	0.32
ALGAE (AL)							0.17	0.08
Algal assemblages (AA)	2	0	0	2	0.67	1.15	1.15	0.13
Coralline algae (CA)	11	9	26	46	15.33	9.29	9.29	0.04
Halimeda (HA)	0	0	0	0	0.00	0.00	0.00	0.00
Macroalgae (MA)	0	0	0	0	0.00	0.00	0.00	0.00
ABIOTIC COMPONENT (AB)							0.67	0.46
Rubble (R)	129	36	61	226	75.33	48.13	48.13	0.37
Sand (S)	0	2	0	2	0.67	1.15	1.15	0.02
Silt (SI)	256	71	83	410	136.67	103.52	103.52	0.28
TAPE, WATER, BLOCK (TWB)								
Tape, Water, Block (TWB)	9	10	10	29	9.67	0.58	0.58	1.00
NOTES (occurring in transect)				SUMS	MEAN	STD. DEV.	STD. ERROR	
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00	
NOTES (occurring in coral)								
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00	
Shannon-Weaver Index								
CORAL (HC)	0.37	0.25	0.31					
DEAD CORAL (DC)	0.00	0.00	0.12					
SOFT CORAL (SC)	0.06	0.09	0.03					
OTHER ORGANISMS (OO)	0.01	0.04	0.00					
ALGAE (AL)	0.07	0.08	0.16					
ABIOTIC COMPONENT (AB)	0.33	0.35	0.36					
TAPE, WATER, BLOCK (TWB)								
Simpson Index of Diversity (1-D)								
CORAL (HC)	0.17	0.49	0.36					
DEAD CORAL (DC)	0.00	0.00	0.00					
SOFT CORAL (SC)	0.00	0.00	0.00					
OTHER ORGANISMS (OO)	0.00	0.00	0.00					
ALGAE (AL)	0.00	0.00	0.00					
ABIOTIC COMPONENT (AB)	0.31	0.06	0.09					
TAPE, WATER, BLOCK (TWB)								

RAW DATA OF CORALS IN SAN JOSE ISLAND USING CPCe

TRANSECT NAME	T1		T3						
Number of frames	50	50	50						
Total points	490	499	500						
Total points (minus tape+wand+shadow)	480	496	496						
MAJOR CATEGORY (% of transect)				MEAN	STD. DEV.	STD. ERROR			
CORAL (HC)	67.92	58.87	53.43	60.07	7.32	7.32			
DEAD CORAL (DC)	0.00	0.00	0.00	0.00	0.00	0.00			
SOFT CORAL (SC)	1.04	0.20	0.60	0.62	0.42	0.42			
OTHER ORGANISMS (OO)	0.21	0.20	3.43	1.28	1.86	1.86			
ALGAE (AL)	1.88	2.02	1.01	1.63	0.55	0.55			
ABIOTIC COMPONENT (AB)	28.96	38.71	41.53	36.40	6.60	6.60			
TAPE, WATER, BLOCK (TWB)	2.04	0.60	0.80	1.15	0.78	0.78			
Sum (excluding tape+shadow+wand)	100.00	100.00	100.00						
SUBCATEGORIES (% of transect)				MEAN	STD. DEV.	STD. ERROR			
CORAL (HC)									
Acropora branching (ACB)	40.21	32.46	24.40	32.35	7.91	7.91			
Acropora digitate (ACD)	1.88	0.60	0.20	0.89	0.87	0.87			
Acropora submassive (ACS)	0.00	0.00	0.00	0.00	0.00	0.00			
Acropora tabulate (ACT)	1.04	0.00	0.00	0.35	0.60	0.60			
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00			
Heliopora (CHL)	0.00	0.00	0.00	0.00	0.00	0.00			
Millepora (CME)	0.00	0.00	0.00	0.00	0.00	0.00			
Mushroom coral (CMR)	3.96	2.02	1.21	2.39	1.41	1.41			
Other branching corals (CB)	3.75	12.30	6.25	7.43	4.40	4.40			
Other encrusting corals (CE)	1.04	0.40	0.40	0.62	0.37	0.37			
Other foliose corals (CF)	2.50	4.23	1.41	2.72	1.42	1.42			
Other massive corals (CM)	7.29	1.41	10.48	6.40	4.60	4.60			
Other submassive corals (CS)	6.25	5.44	9.07	6.92	1.91	1.91			
DEAD CORAL (DC)									
Dead Coral (DC)	0.00	0.00	0.00	0.00	0.00	0.00			
Dead coral with algae (DCA)	0.00	0.00	0.00	0.00	0.00	0.00			
SOFT CORAL (SC)									
Soft coral (SC)	1.04	0.20	0.60	0.62	0.42	0.42			
OTHER ORGANISMS (OO)									
Other animals (OT)	0.21	0.00	3.43	1.21	1.92	1.92			
Sponge (SP)	0.00	0.20	0.00	0.07	0.12	0.12			
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00	0.00			
ALGAE (AL)									
Algal assemblages (AA)	0.00	0.00	0.00	0.00	0.00	0.00			
Coralline algae (CA)	1.88	2.02	1.01	1.63	0.55	0.55			
Halimeda (HA)	0.00	0.00	0.00	0.00	0.00	0.00			
Macroalgae (MA)	0.00	0.00	0.00	0.00	0.00	0.00			
ABIOTIC COMPONENT (AB)									
Rubble (R)	5.63	6.65	3.63	5.30	1.54	1.54			
Sand (S)	0.00	0.20	0.00	0.07	0.12	0.12			
Silt (SI)	23.33	31.85	37.90	31.03	7.32	7.32			
TAPE, WATER, BLOCK (TWB)									
Tape, Water, Block (TWB)	2.04	0.60	0.80	1.15	0.78	0.78			
NOTES (% of transect)				MEAN	STD. DEV.	STD. ERROR			
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00			
NOTES (% of coral)									
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00			
MAJOR CATEGORY (occurring in transect)				SUMS	MEAN	STD. DEV.	STD. ERROR	SW INDEX	SIMPSON (1-D)
CORAL (HC)	326	292	265	883	294.33	30.57	30.57	1.49	0.67
DEAD CORAL (DC)	0	0	0	0	0.00	0.00	0.00	0.00	1.00
SOFT CORAL (SC)	5	1	3	9	3.00	2.00	2.00	0.33	0.69
OTHER ORGANISMS (OO)	1	1	17	19	6.33	9.24	9.24	0.15	1.00
ALGAE (AL)	9	10	5	24	8.00	2.65	2.65	0.00	0.00
ABIOTIC COMPONENT (AB)	139	192	206	537	179.00	35.34	35.34	0.43	0.25
TAPE, WATER, BLOCK (TWB)	10	3	4	17	5.67	3.79	3.79		
TOTAL TRANSECT POINTS	490	499	500	1489	496	84	84		
SUBCATEGORIES (occurring in transect)				SUMS	MEAN	STD. DEV.	STD. ERROR	SW INDEX	SIMPSON (1-D)
CORAL (HC)								1.49	0.67
Acropora branching (ACB)	193	161	121	475	158.33	36.07	36.07	0.33	0.29
Acropora digitate (ACD)	9	3	1	13	4.33	4.16	4.16	0.06	0.00
Acropora submassive (ACS)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Acropora tabulate (ACT)	5	0	0	5	1.67	2.89	2.89	0.03	0.00
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Heliopora (CHL)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Millepora (CME)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Mushroom coral (CMR)	19	10	6	35	11.67	6.66	6.66	0.13	0.00
Other branching corals (CB)	18	61	31	110	36.67	22.05	22.05	0.26	0.02
Other encrusting corals (CE)	5	2	2	9	3.00	1.73	1.73	0.05	0.00
Other foliose corals (CF)	12	21	7	40	13.33	7.09	7.09	0.14	0.00
Other massive corals (CM)	35	7	52	94	31.33	22.72	22.72	0.24	0.01
Other submassive corals (CS)	30	27	45	102	34.00	9.64	9.64	0.25	0.01
DEAD CORAL (DC)								0.00	1.00
Dead Coral (DC)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Dead coral with algae (DCA)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
SOFT CORAL (SC)								0.33	0.69
Soft coral (SC)	5	1	3	5	3.00	2.00	2.00	0.33	0.31

OTHER ORGANISMS (OO)								0.15	1.00
Other animals (OT)	1		17	1	6.00	9.54	9.54	1.15	0.00
Sponge (SP)	0		0	0	0.33	0.58	0.58	0.00	0.00
Zoanthids (ZO)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
ALGAE (AL)								0.00	0.00
Algal assemblages (AA)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Coralline algae (CA)	9	10	5	24	8.00	2.65	2.65	0.00	1.00
Halimeda (HA)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Macroalgae (MA)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
ABIOTIC COMPONENT (AB)								0.43	0.25
Rubble (R)	27	33	18	78	26.00	7.55	7.55	0.28	0.02
Sand (S)	0	1	0	1	0.33	0.58	0.58	0.01	0.00
Silt (SI)	112	158	188	458	152.67	38.28	38.28	0.14	0.73
TAPE, WATER, BLOCK (TWB)									
Tape, Water, Block (TWB)	10	3	4	17	5.67	3.79	3.79		1.00
NOTES (occurring in transect)					SUMS	MEAN	STD. DEV.	STD. ERROR	
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00		
NOTES (occurring in coral)									
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00		
Shannon-Weaver Index					0.76	0.78	0.89		
CORAL (HC)	0.26	0.31	0.33						
DEAD CORAL (DC)	0.00	0.00	0.00						
SOFT CORAL (SC)	0.05	0.01	0.03						
OTHER ORGANISMS (OO)	0.01	0.01	0.12						
ALGAE (AL)	0.07	0.08	0.05						
ABIOTIC COMPONENT (AB)	0.36	0.37	0.36						
TAPE, WATER, BLOCK (TWB)									
Simpson Index of Diversity (1-D)					0.45	0.50	0.54		
CORAL (HC)	0.46	0.35	0.29						
DEAD CORAL (DC)	0.00	0.00	0.00						
SOFT CORAL (SC)	0.00	0.00	0.00						
OTHER ORGANISMS (OO)	0.00	0.00	0.00						
ALGAE (AL)	0.00	0.00	0.00						
ABIOTIC COMPONENT (AB)	0.08	0.15	0.17						
TAPE, WATER, BLOCK (TWB)									

RAW DATA OF CORALS IN BANCORO REEF US CPCe								
TRANSECT NAME	T1	T2						
Number of frames	48	59						
Total points	480	590						
Total points (minus tape+wand+shadow)	473	579						
MAJOR CATEGORY (% of transect)			MEAN	STD. DEV.	STD. ERROR			
CORAL (HC)	50.95	86.70	68.83	25.28	25.28			
DEAD CORAL (DC)	0.00	0.00	0.00	0.00	0.00			
SOFT CORAL (SC)	4.02	2.25	3.13	1.25	1.25			
OTHER ORGANISMS (OO)	0.85	0.69	0.77	0.11	0.11			
ALGAE (AL)	2.11	0.17	1.14	1.37	1.37			
ABIOTIC COMPONENT (AB)	42.07	10.19	26.13	22.54	22.54			
TAPE, WATER, BLOCK (TWB)	1.46	1.86	1.66	0.29	0.29			
Sum (excluding tape+shadow+wand)	100.00	100.00						
SUBCATEGORIES (% of transect)			MEAN	STD. DEV.	STD. ERROR			
CORAL (HC)								
Acropora branching (ACB)	39.53	74.27	56.90	24.56	24.56			
Acropora digitate (ACD)	0.00	0.17	0.09	0.12	0.12			
Acropora submassive (ACS)	0.00	0.00	0.00	0.00	0.00			
Acropora tabulate (ACT)	0.00	0.00	0.00	0.00	0.00			
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00			
Heliopora (CHL)	0.00	0.00	0.00	0.00	0.00			
Millepora (CME)	0.00	0.00	0.00	0.00	0.00			
Mushroom coral (CMR)	1.48	2.42	1.95	0.66	0.66			
Other branching corals (CB)	2.96	6.39	4.68	2.43	2.43			
Other encrusting corals (CE)	0.42	0.00	0.21	0.30	0.30			
Other foliose corals (CF)	0.21	0.52	0.36	0.22	0.22			
Other massive corals (CM)	0.00	0.00	0.00	0.00	0.00			
Other submassive corals (CS)	6.34	2.94	4.64	2.41	2.41			
DEAD CORAL (DC)								
Dead Coral (DC)	0.00	0.00	0.00	0.00	0.00			
Dead coral with algae (DCA)	0.00	0.00	0.00	0.00	0.00			
SOFT CORAL (SC)								
Soft coral (SC)	4.02	2.25	3.13	1.25	1.25			
OTHER ORGANISMS (OO)								
Other animals (OT)	0.00	0.00	0.00	0.00	0.00			
Sponge (SP)	0.85	0.69	0.77	0.11	0.11			
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00			
ALGAE (AL)								
Algal assemblages (AA)	0.00	0.00	0.00	0.00	0.00			
Coralline algae (CA)	2.11	0.17	1.14	1.37	1.37			
Halimeda (HA)	0.00	0.00	0.00	0.00	0.00			
Macroalgae (MA)	0.00	0.00	0.00	0.00	0.00			
ABIOTIC COMPONENT (AB)								
Rubble (R)	15.64	6.56	11.10	6.42	6.42			
Sand (S)	0.00	0.00	0.00	0.00	0.00			
Silt (SI)	26.43	3.63	15.03	16.12	16.12			
TAPE, WATER, BLOCK (TWB)								
Tape, Water, Block (TWB)	1.46	1.86	1.66	0.29	0.29			
NOTES (% of transect)			MEAN	STD. DEV.	STD. ERROR			
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00			
NOTES (% of coral)								
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00			
MAJOR CATEGORY (occurring in transect)		SUMS	MEAN	STD. DEV.	STD. ERROR	SW INDEX	SIMPSON (1-D)	
CORAL (HC)	241	502	743	371.50	184.55	184.55	0.67	0.30
DEAD CORAL (DC)	0	0	0	0.00	0.00	0.00	0.00	1.00
SOFT CORAL (SC)	19	13	32	16.00	4.24	4.24	0.31	0.65
OTHER ORGANISMS (OO)	4	4	8	4.00	0.00	0.00	0.35	0.75
ALGAE (AL)	10	1	11	5.50	6.36	6.36	0.00	0.00
ABIOTIC COMPONENT (AB)	199	59	258	129.00	98.99	98.99	0.68	0.49
TAPE, WATER, BLOCK (TWB)	7	11	18	9.00	2.83	2.83		
TOTAL TRANSECT POINTS	480	590	1070	535	297	297		

SUBCATEGORIES (occurring in transect)			SUMS	MEAN	STD. DEV.	STD. ERROR	SW II	SIMPSON (1-D)
CORAL (HC)							0.67	0.30
Acropora branching (ACB)	187	430	617	308.50	171.83	171.83	0.15	0.69
Acropora digitate (ACD)	0	1	1	0.50	0.71	0.71	0.01	0.00
Acropora submassive (ACS)	0	0	0	0.00	0.00	0.00	0.00	0.00
Acropora tabulate (ACT)	0	0	0	0.00	0.00	0.00	0.00	0.00
Bleached coral (BLEC)	0	0	0	0.00	0.00	0.00	0.00	0.00
Heliopora (CHL)	0	0	0	0.00	0.00	0.00	0.00	0.00
Millepora (CME)	0	0	0	0.00	0.00	0.00	0.00	0.00
Mushroom coral (CMR)	7	14	21	10.50	4.95	4.95	0.10	0.00
Other branching corals (CB)	14	37	51	25.50	16.26	16.26	0.18	0.00
Other encrusting corals (CE)	2	0	2	1.00	1.41	1.41	0.02	0.00
Other foliose corals (CF)	1	3	4	2.00	1.41	1.41	0.03	0.00
Other massive corals (CM)	0	0	0	0.00	0.00	0.00	0.00	0.00
Other submassive corals (CS)	30	17	47	23.50	9.19	9.19	0.17	0.00
DEAD CORAL (DC)							0.00	1.00
Dead Coral (DC)	0	0	0	0.00	0.00	0.00	0.00	0.00
Dead coral with algae (DCA)	0	0	0	0.00	0.00	0.00	0.00	0.00
SOFT CORAL (SC)							0.31	0.65
Soft coral (SC)	19	13	19	16.00	4.24	4.24	0.31	0.35
OTHER ORGANISMS (OO)							0.35	0.75
Other animals (OT)	0	0	0	0.00	0.00	0.00	0.00	0.00
Sponge (SP)	4	4	4	4.00	0.00	0.00	0.35	0.25
Zoanthids (ZO)	0	0	0	0.00	0.00	0.00	0.00	0.00
ALGAE (AL)							0.00	0.00
Algal assemblages (AA)	0	0	0	0.00	0.00	0.00	0.00	0.00
Coralline algae (CA)	10	1	11	5.50	6.36	6.36	0.00	1.00
Halimeda (HA)	0	0	0	0.00	0.00	0.00	0.00	0.00
Macroalgae (MA)	0	0	0	0.00	0.00	0.00	0.00	0.00
ABIOTIC COMPONENT (AB)							0.68	0.49
Rubble (R)	74	38	112	56.00	25.46	25.46	0.36	0.19
Sand (S)	0	0	0	0.00	0.00	0.00	0.00	0.00
Silt (SI)	125	21	146	73.00	73.54	73.54	0.32	0.32
TAPE, WATER, BLOCK (TWB)								
Tape, Water, Block (TWB)	7	11	18	9.00	2.83	2.83		1.00
NOTES (occurring in transect)			SUMS	MEAN	STD. DEV.	STD. ERROR		
Bleached coral (BLEC)	0	0	0	0.00	0.00	0.00		
NOTES (occurring in coral)								
Bleached coral (BLEC)	0	0	0	0.00	0.00	0.00		
Shannon-Weaver Index			0.96	0.49				
CORAL (HC)	0.34	0.12						
DEAD CORAL (DC)	0.00	0.00						
SOFT CORAL (SC)	0.13	0.09						
OTHER ORGANISMS (OO)	0.04	0.03						
ALGAE (AL)	0.08	0.01						
ABIOTIC COMPONENT (AB)	0.36	0.23						
TAPE, WATER, BLOCK (TWB)								
Simpson Index of Diversity (1-D)			0.56	0.24				
CORAL (HC)	0.26	0.75						
DEAD CORAL (DC)	0.00	0.00						
SOFT CORAL (SC)	0.00	0.00						
OTHER ORGANISMS (OO)	0.00	0.00						
ALGAE (AL)	0.00	0.00						
ABIOTIC COMPONENT (AB)	0.18	0.01						
TAPE, WATER, BLOCK (TWB)								

RAW DATA OF CORALS IN BARGE LAOT USING PCe

TRANSECT NAME	transect 1	transect 2	transect 3						
Number of frames	49	49	49						
Total points	489	489	489						
Total points (minus tape+wand+shadow)	477	472	472						
MAJOR CATEGORY (% of transect)				MEAN	STD. DEV.	STD. ERROR			
CORAL (HC)	60.59	51.69	56.36	56.21	4.45	4.45			
DEAD CORAL (DC)	0.21	0.00	0.00	0.07	0.12	0.12			
SOFT CORAL (SC)	3.77	4.24	0.85	2.95	1.84	1.84			
OTHER ORGANISMS (OO)	2.10	0.21	0.00	0.77	1.15	1.15			
ALGAE (AL)	0.21	0.85	0.42	0.49	0.32	0.32			
ABIOTIC COMPONENT (AB)	33.12	43.01	42.37	39.50	5.53	5.53			
TAPE, WATER, BLOCK (TWB)	2.45	3.48	3.48	3.14	0.59	0.59			
Sum (excluding tape+shadow+wand)	100.00	100.00	100.00						
SUBCATEGORIES (% of transect)				MEAN	STD. DEV.	STD. ERROR			
CORAL (HC)									
Acropora branching (ACB)	42.56	24.36	35.59	34.17	9.18	9.18			
Acropora digitate (ACD)	0.42	0.42	0.64	0.49	0.12	0.12			
Acropora submassive (ACS)	0.00	0.00	0.00	0.00	0.00	0.00			
Acropora tabulate (ACT)	0.00	0.00	0.00	0.00	0.00	0.00			
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00			
Heliopora (CHL)	1.26	0.00	0.00	0.42	0.73	0.73			
Millepora (CME)	0.00	0.00	0.21	0.07	0.12	0.12			
Mushroom coral (CMR)	1.26	0.42	0.00	0.56	0.64	0.64			
Other branching corals (CB)	7.13	8.69	5.30	7.04	1.70	1.70			
Other encrusting corals (CE)	1.47	5.51	1.69	2.89	2.27	2.27			
Other foliose corals (CF)	0.21	0.21	0.64	0.35	0.25	0.25			
Other massive corals (CM)	0.84	1.91	2.54	1.76	0.86	0.86			
Other submassive corals (CS)	5.45	10.17	9.75	8.46	2.61	2.61			
DEAD CORAL (DC)									
Dead Coral (DC)	0.21	0.00	0.00	0.07	0.12	0.12			
Dead coral with algae (DCA)	0.00	0.00	0.00	0.00	0.00	0.00			
SOFT CORAL (SC)									
Soft coral (SC)	3.77	4.24	0.85	2.95	1.84	1.84			
OTHER ORGANISMS (OO)									
Other animals (OT)	0.00	0.00	0.00	0.00	0.00	0.00			
Sponge (SP)	2.10	0.21	0.00	0.77	1.15	1.15			
Zoanthids (ZO)	0.00	0.00	0.00	0.00	0.00	0.00			
ALGAE (AL)									
Algal assemblages (AA)	0.00	0.00	0.00	0.00	0.00	0.00			
Coralline algae (CA)	0.21	0.85	0.42	0.49	0.32	0.32			
Halimeda (HA)	0.00	0.00	0.00	0.00	0.00	0.00			
Macroalgae (MA)	0.00	0.00	0.00	0.00	0.00	0.00			
ABIOTIC COMPONENT (AB)									
Rubble (R)	12.16	9.32	6.99	9.49	2.59	2.59			
Sand (S)	0.00	0.00	0.64	0.21	0.37	0.37			
Silt (SI)	20.96	33.69	34.75	29.80	7.67	7.67			
TAPE, WATER, BLOCK (TWB)									
Tape, Water, Block (TWB)	2.45	3.48	3.48	3.14	0.59	0.59			
NOTES (% of transect)				MEAN	STD. DEV.	STD. ERROR			
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00			
NOTES (% of coral)									
Bleached coral (BLEC)	0.00	0.00	0.00	0.00	0.00	0.00			
MAJOR CATEGORY (occurring in transect)				SUMS	MEAN	STD. DEV.	STD. ERROR	SW INDEX	SIMPSON (1-D)
CORAL (HC)	289	244	266	799	266.33	22.50	22.50	1.27	0.59
DEAD CORAL (DC)	1	0	0	1	0.33	0.58	0.58	0.00	0.00
SOFT CORAL (SC)	18	20	4	42	14.00	8.72	8.72	0.36	0.82
OTHER ORGANISMS (OO)	10	1	0	11	3.67	5.51	5.51	0.09	0.17
ALGAE (AL)	1	4	2	7	2.33	1.53	1.53	0.00	0.00
ABIOTIC COMPONENT (AB)	158	203	200	561	187.00	25.16	25.16	0.58	0.37
TAPE, WATER, BLOCK (TWB)	12	17	17	46	15.33	2.89	2.89		
TOTAL TRANSECT POINTS	489	489	489	1467	489	67	67		
SUBCATEGORIES (occurring in transect)				SUMS	MEAN	STD. DEV.	STD. ERROR	SW INDEX	SIMPSON (1-D)
CORAL (HC)								1.27	0.59
Acropora branching (ACB)	203	115	168	486	162.00	44.31	44.31	0.30	0.37
Acropora digitate (ACD)	2	2	3	7	2.33	0.58	0.58	0.04	0.00
Acropora submassive (ACS)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Acropora tabulate (ACT)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Heliopora (CHL)	6	0	0	6	2.00	3.46	3.46	0.04	0.00
Millepora (CME)	0	0	1	1	0.33	0.58	0.58	0.01	0.00
Mushroom coral (CMR)	6	2	0	8	2.67	3.06	3.06	0.05	0.00
Other branching corals (CB)	34	41	25	100	33.33	8.02	8.02	0.26	0.02
Other encrusting corals (CE)	7	26	8	41	13.67	10.69	10.69	0.15	0.00
Other foliose corals (CF)	1	1	3	5	1.67	1.15	1.15	0.03	0.00
Other massive corals (CM)	4	9	12	25	8.33	4.04	4.04	0.11	0.00
Other submassive corals (CS)	26	48	46	120	40.00	12.17	12.17	0.28	0.02
DEAD CORAL (DC)								0.00	0.00
Dead Coral (DC)	1	0	0	1	0.33	0.58	0.58	0.00	1.00
Dead coral with algae (DCA)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
SOFT CORAL (SC)								0.36	0.82
Soft coral (SC)	18	20	4	18	14.00	8.72	8.72	0.36	0.18
OTHER ORGANISMS (OO)								0.09	0.17
Other animals (OT)	0	0	0	0	0.00	0.00	0.00	0.00	0.00

Sponge (SP)	10	1	0	10	3.67	5.51	5.51	0.09	0.83
Zoanthids (ZO)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
ALGAE (AL)							0.00	0.00	
Algal assemblages (AA)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Coralline algae (CA)	1	4	2	7	2.33	1.53	1.53	0.00	1.00
Halimeda (HA)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Macroalgae (MA)	0	0	0	0	0.00	0.00	0.00	0.00	0.00
ABIOTIC COMPONENT (AB)							0.58	0.37	
Rubble (R)	58	44	33	135	45.00	12.53	12.53	0.34	0.06
Sand (S)	0	0	3	3	1.00	1.73	1.73	0.03	0.00
Silt (SI)	100	159	164	423	141.00	35.59	35.59	0.21	0.57
TAPE, WATER, BLOCK (TWB)									
Tape, Water, Block (TWB)	12	17	17	46	15.33	2.89	2.89		1.00
NOTES (occurring in transect)				SUMS	MEAN	STD. DEV.	STD. ERROR		
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00		
NOTES (occurring in coral)									
Bleached coral (BLEC)	0	0	0	0	0.00	0.00	0.00		
Shannon-Weaver Index	0.90	0.89	0.75						
CORAL (HC)	0.30	0.34	0.32						
DEAD CORAL (DC)	0.01	0.00	0.00						
SOFT CORAL (SC)	0.12	0.13	0.04						
OTHER ORGANISMS (OO)	0.08	0.01	0.00						
ALGAE (AL)	0.01	0.04	0.02						
ABIOTIC COMPONENT (AB)	0.37	0.36	0.36						
TAPE, WATER, BLOCK (TWB)									
Simpson Index of Diversity (1-D)	0.52	0.55	0.50						
CORAL (HC)	0.37	0.27	0.32						
DEAD CORAL (DC)	0.00	0.00	0.00						
SOFT CORAL (SC)	0.00	0.00	0.00						
OTHER ORGANISMS (OO)	0.00	0.00	0.00						
ALGAE (AL)	0.00	0.00	0.00						
ABIOTIC COMPONENT (AB)	0.11	0.18	0.18						
TAPE, WATER, BLOCK (TWB)									