

Inventory and Assessment of Marine Fishes in the Island Towns of Northern Samar, Philippines

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Abstract

The study aimed to identify the species composition of marine fishes in the island towns of Northern Samar, Philippines; determine their abundance and distribution; point out their local names; and identify the fishing gears used by fishermen. Sampling areas included the five island towns of the province; i.e. Biri, Capul, Laoang, San Antonio, and San Vicente. For three years (2016 – 2018) during summer months. Data were gathered using translated questionnaires. All fishes caught and sold were included in the study. Fishermen and fish vendors were asked about their fishing gears used, local names of fishes, abundance and distribution. There were 197 species of fish belonging to 99 genera, 35 families, 3 sub-orders, 2 orders, 2 sub-classes, and 2 classes. The most abundant in genera and species was *Asterropteryx* sp. (goby), of the Family Gobiidae; the second was *Halichoeres hoeveni* (yellow-tailed wrasse), of the Family Labridae; and the third was *Caranx ignobilis* (giant trevally), of the Family Carangidae. There were more abundant fishes in the island town of Capul compared to other island towns. The simple hook-and-line was the commonly used fishing gear.

Keywords— island town, fishing gears, marine fishes, inventory

INTRODUCTION

FISHES are cold-blooded animals, typically with backbone, gills, fins, and lungs. Best estimates from 15,000 to 17,000 recent species. There are many kinds of fishes and they come in different colors, shapes, and sizes [1].

The Coral Triangle, which includes the Philippines, is the heartland of marine biodiversity. There is relatively poor documentation for most groups other than fishes and corals. Even with fishes, there is a scarcity of information from specific locations within the Triangle [2].

In the coastal areas reside about 59% of the country's total population and this is where about 70% of the 1,525 of the municipalities in the country, including 10 of the largest cities are located. This indicates how the lives of most Filipinos are closely linked with the sea and its biodiversity [3].

Thus, this research study is pursued to add to the collective data of information for marine fishes in island towns.

I. OBJECTIVES

The objectives of this study are:

1. To identify the species composition of marine fishes in the island towns of Northern Samar, Philippines;
2. To determine the abundance and distribution of marine fishes;
3. To point out the local names of marine fishes;
4. To identify the fishing gears used in catching fishes.

II. METHODOLOGY

Northern Samar lies in the northeast portion of the island of Samar, Philippines with longitudes of 12° 15' - 12° 45' and latitudes of 124° 15' - 125° 30'. It is one of the six provinces comprising Region VIII (Eastern Visayas). The province consists of 24 municipalities, i.e. 15 coastal towns, 5 island towns, and 4 interior towns. Catarman is the capital town of the province of Northern Samar.

Sampling areas included the five island towns of the province; i.e. Biri, Capul, Laoang, San Antonio, and San Vicente during summer months for three years (2016 – 2018).

The island town of *Biri* comprises eight barangays; 4 within the main island and 4 island barangays. This island town serves as a tourist destination for both local and foreign tourists due to its beautiful and enchanted rock formations. Marine fishes are caught by fishermen anytime of the day and during the night time. The island can be reached 1.5 hours by motorboat from the mainland on a fine weather.

The island town of *Capul* consists of 7 barangays, all within the main island. The island has many springs and rivers coming from the watershed of the high mountain, Mount Seber, located at the center of the island. Small and large caves, i.e. Beto caves, are also found in the island. Capul also serves as a tourist destination for its magnificent lighthouse (*Parola*) and stone/rock Roman Catholic church, both constructed during the Spanish regime, giant foot rock mold found below the cliffs of lighthouse, pristine marine waters, white sandy beaches and a

towering coralline (called coral tower) formation east of the island. Capul has a unique dialect, called *Abaknon* (Capuleno) distinct with other Samarnon dialects. Similar with Biri island, fishermen would catch fishes anytime of the day. The island can be reached 1.5 hours by motorboat from the mainland on a fine weather.

The island town of *Laoang* consists of 12 barangays; 6 within the main island, 3 coastal barangays and 3 island barangays. The island is facing the Pacific Ocean on the east side. Merchant ships coming from Manila carry merchandise for a good business enterprise in the island. Laoang is a self-contained island town due to its high standard of living and has a thriving business and religious community. It is also a pilgrimage site for its miraculous *Our Lady of Salvation*, a chapel found in Batag island. The island town can be reached 15 minutes by motorboat from the mainland on a fine weather.

The island town of *San Antonio* consists of 6 barangays within the mainland. The island is also a tourist destination due to its fine sandy beaches; miraculous patron saint, *San Antonio*; and variety of larger marine fishes caught by fishermen. San Antonio has also a unique cultural advantage since the island people can speak both *Visayan* and *Samarnon* dialects. The island town is near Cebu, the center of Cebuano-speaking Filipinos. The island can be reached 30 minutes by motorboat from the mainland on a fine weather.

The island town of *San Vicente* consists of 8 barangays, 5 within the main island and 3 island barangays. The island is a famous tourist destination for its *Pink Beach*, i.e. island with pink-colored beach sand. The island people speak *Visayan* and *Samarnon* dialects as well. Part of the island is devoted to pearl culture farming due to the pristine marine environment. Like the other island barangays, fishermen catch fishes anytime of the day. The island town can be reached 2 hours by motorboat from the mainland on a fine weather.

Data were gathered using translated questionnaires. Fishermen and fish vendors were asked about fishing gears used, local names of fishes, abundance and distribution of fishes.

IV. RESULTS AND DISCUSSION

A. Species Composition of Marine Fishes

There were 197 species of fish belonging to 99 genera, 35 families, namely: 2 orders, namely: *Beryciformes* and *Perciformes*; 2 sub-classes, namely: *Elasmobranchii* and *Actinopterygii*; and 2 classes, namely: *Chondrichthyes* and *Osteichthyes*, as shown in Table 1.

TABLE I
SPECIES COMPOSITION OF MARINE FISHES IN ISLAND TOWNS

1. Family Acanthuridae	5. Family Blenniidae
<i>Ctenochaetus binotatus</i> Randall	<i>Plagiotremus rhinorhynchus</i> Bleeker
<i>Ctenochaetus sp.</i>	<i>Plagiotremus sp.</i>
<i>Zebрасoma scopas</i> Cuvier	6. Family Caesionidae
<i>Zebрасoma sp.</i>	<i>Caesio caeruleaureus</i> Lacepede
<i>Acanthurus mata</i> Cuvier	<i>Caesio erythrogaster</i>
<i>Acanthurus sp.</i>	<i>Caesio cuning</i> Bloch
<i>Naso sp.</i>	

2. Family Apogonidae	<i>Caesio sp.</i>
<i>Cheilodipterus quinquelineatus</i> Cuvier	<i>Pterocaesio diagramma</i> Bleeker
<i>Cheilodipterus sp.</i>	<i>Pterocaesio sp.</i>
<i>Apogon wassinki</i> Bleeker	<i>Elegatis bipinnulata</i>
<i>Apogon sp.</i>	<i>Elegatis sp.</i>
3. Family Anabantidae	7. Family Chaetodontidae
<i>Anabas testudinaeus</i>	<i>Chaetodon baronessa</i> Cuvier
<i>Anabas sp.</i>	<i>Chaetodon lunulatus</i> Quoy & Gaimard
4. Family Balistidae	<i>Chaetodon sp.</i>
<i>Sufflamen chrysopterum</i> Bloch & Scheider	<i>Coradion chrysozonus</i> Cuvier
<i>Rhinecanthus aculeatus</i>	<i>Coradion sp.</i>
<i>Rhinecanthus rectangulus</i>	<i>Chelmon rostratus</i> Linnaeus
	<i>Chelmon sp.</i>
8. Family Carangidae	16. Hemiramphidae
<i>Atule mate</i> Cuvier	<i>Hyphorhamphus quoyi</i>
<i>Alepes vari</i> Cuvier	<i>Valenciennes</i>
<i>Caranx ignobilis</i> Forsskal	17. Family Labriidae
<i>Decapterus maruadsi</i>	<i>Cheilinus fasciatus</i> Bloch
<i>Decapterus macarellus</i>	<i>Choerodon anchorago</i> Bloch
<i>Decapterus sp.</i>	<i>Coris batuensis</i> Bleeker
<i>Selaroides leptolepis</i>	<i>Cirrhilabrus lyukyensis</i>
<i>Megalaspis cordyla</i>	<i>Cirrhilabrus scottorum</i>
<i>Gymnothorax javanicus</i>	<i>Halichoeres melanochir</i>
<i>Gymnothorax favagineus</i>	<i>Halachoeres claudia</i>
<i>Megalaspis sp.</i>	<i>Oycheilinus diagramma</i>
<i>Selar boops</i>	<i>Cheilinus undulatus</i>
<i>Selar crumenophthalmus</i>	<i>Stethojulis interrupta</i> Bleeker
9. Family Carcharinidae	<i>Anampses chrysocephalus</i>
<i>Carcharinus melanopterus</i>	<i>Bodianus axillaris</i>
<i>Sphyrna lewini</i>	<i>Epibulus insidiator</i>
10. Family Coryphaenidae	<i>Bodianus bimaculatus</i>
<i>Coryphaena hippurus</i> Linnaeus	18. Family Leiognathidae
<i>Coryphaena sp.</i>	<i>Leiognathus equulus</i> Forsskal
11. Family Clupeidae	<i>Leiognathus sp.</i>
<i>Sardinella lemuru</i>	<i>Gazza minuta</i> Bloch
<i>Sardinella fimbriata</i>	<i>Gazza sp.</i>
<i>Sardinella albella</i>	19. Family Lethrinidae
<i>Sardinella hualiensis</i>	<i>Lethrinus erythropterus</i>
<i>Sardinella longiceps</i>	<i>Lethrinus laticaudis</i>
<i>Sardinella gibbosa</i> Bleeker	<i>Lethrinus obsoletus</i>
<i>Amblygaster sirm</i>	<i>Lethrinus nebulosus</i>
<i>Escualosa thoracata</i>	20. Family Lutjanidae
<i>Herklotsichthys dispilonotus</i>	<i>Lutjanus decussatus</i> Cuvier
<i>Herklotsichthys quadrimaculatus</i>	<i>Lutjanus lutjanus</i> Bloch
<i>Dussummeria acuta</i>	<i>Lutjanus fulviflamma</i> Forsskal
<i>Stolephores indicus</i>	<i>Lutjanus sebae</i>
12. Family Engraulidae	<i>Lutjanus russelli</i>
<i>Engraulida sp.</i>	<i>Lutjanus argentinaculatus</i>
13. Family Ehippididae	21. Family Muraenidae
<i>Platax pinnatus</i> Linnaeus	<i>Gymnothorax nubilus</i>
<i>Platax sp.</i>	<i>Gymnothorax moringa</i>
14. Family Gerridae	<i>Gymnothorax favagineus</i>
<i>Gerres macracanthus</i> Bleeker	<i>Centropyge vroliki</i> Bleeker
<i>Gerres shima</i> Iwatsuki, Kimura	<i>Gnathanodon sp.</i>
<i>Gerres sp.</i>	22. Family Mullidae
<i>Mugil cephalus</i> Linnaeus	<i>Parupeneus barberinus</i> Lacepede
<i>Mugil sp.</i>	<i>Parupeneus multifasciatus</i>
15. Family Gobiidae	<i>Parupeneus brbarinoides</i> Bleeker
<i>Amblygobius decussatus</i> Bleeker	<i>Parupeneus cyclostomus</i>
<i>Amblygobius sp.</i>	23. Family Nemipteridae
<i>Acentrogobius viganensis</i>	<i>Pentapodus aureofasciatus</i>
<i>Asterroptereus sp.</i>	<i>Pentapodus trivittatus</i> Bloch
<i>Acanthogobius lactipes</i>	<i>Scolopsis bilineata</i> Bloch
<i>Amblyeleotris cephalotaeniis</i>	<i>Scolopsis margaritifera</i> Cuvier

Amblyeleotris gymnocephala
Amblygobius phalaena
Aulopareia unicolor
Awaous litturatus
Bryaninops yongei
Bryaninops ridens
Brachygobius aggregatus
Benthophilus leptocephalus
Bathygobius fuscus
Bathygobius ostreicola

25. Family Pinguipedidae

Parapercis xanthozona Bleeker
Parapercis sp.

26. Family Pomacanthidae

Pygoplites diacanthus Boddaert
Pomacanthus semicirculatus
Pomacanthus sp.
Centropyge vroliki Bleeker

27. Family Pomacentridae

Abudefduf sexfasciatus Lacepede
Abudefduf vaigiensis Quoy & Gaimard
Abudefduf sp.
Chromis weberi Fowler & Bean
Chromis sp.
Chrysiptera rollandi Whitley

28. Family Pseudochromidae

Pseudochromis fuscus
Pseudochromis sp.

29. Family Sphyraedinae

Sphyraedina sp.

30. Family Synodontidae

Synodus variegatus
Synodus sp.

31. Family Scaridae

Scarus hypselopterus Bleeker
Scarus niger Forsskal
Scarus ghobban
Scarus guacamaia
Scarus sp.

32. Family Serranidae

Plectropomus leopardus
Cephalopholis cyanostigma
Cephalopholis sonnerati
Epinephelus fuscoguttatus
Cephalopholis miniatus

Scolopsis teaniopterus
Nemipterus japonicus Ishikawa
24. Family Platycephalidae
Cypselurus opisthopus Bleeker
Cymbacephalus
nematophthalmus Fowler
Congresox talabon
Congresox sp.
Trichiurus lepturus

Epinephelus fasciatus

Epinephelus tukula

Epinephelus cyanopodus

Epinephelus macrospilus

Epinephelus undulosus

Epinephelus merra

33. Family Siganidae

Siganus virgatus Valenciennes

Siganus argenteus

Siganus corallinus

Siganus spinus Linnaeus

Siganus randalli Woodland

Siganus stellatus Forsskal

Siganus canaliculatus

Siganus vermiculatus

Siganus javus

Siganus sp.

34. Family Scombridae

Scomberomorus commerson

Lacepede

Katsuwonus pelamis Linnaeus

Thunnus albacares Linnaeus

Thunnus tonggol

Thunnus affinis

Scomber australasicus

Auxis thazard

Makaira indica

Rastriliger brachysoma

Rastriliger kanagurta

35. Family Tetraodontidae

Helates sexlineatus Quoy & Gaimard

Gaimard

Arothron nigropunctatus Bloch & Schneider

Schneider

Arothron hispidus

Arothron sp.

usually small, bottom-resting fishes that depend on shelter in the form of rocks, coral or sandy burrows. The majority live in the sea on reefs.



Fig. 1. *Asterropteryx* sp. (goby) of the Family Gobiidae, is the most abundant fish family during the sampling period.

Wrasses, of the Family Labridae, are the second abundant and likewise the second largest family of reef fishes. They are rainbow-colored fishes and are the most conspicuous group inhabiting tropical coral reefs. There is an estimated 500 species worldwide. The family is extremely diverse in color, shape, behavior, and ecological preferences. Most species live over sand, rubble, weed, or coral, and rock substrate. They inhabit shallow tidal pools to 100m depths. They are both diurnal and nocturnal species.



Fig. 2. *Halichoeres hoeveni* (yellow-tailed wrasse), of the Family Labridae, is also abundant fish family during the sampling period.

Trevallies, jacks and their relatives are well represented in tropical and temperate seas with about 140 species. These powerful swimmers are usually streamlined in shape, silvery in color, have a forked tail and often possess a ridge of bony scales (scutes) along the middle of the side, particularly at the base of then tail. They are frequently encountered in schools although the larger species are sometimes seen alone. Most are associated with reefs. They feed on octopus, squids, crustaceans and other fishes.

Trevallies are one of the favorite fish food of island people, and generally Filipinos. The fish is eaten broiled, fried, raw, steamed, dried, or in soup with fresh vegetables. They are priced higher than the other species because of palatable meat especially when freshly caught.

B. Abundance and Distribution of Marine Fishes

The most abundant family in genera and species was *Asterropteryx* sp. (goby), of the Family Gobiidae; the second was *Halichoeres hoeveni* (yellow-tailed wrasse), of the Family Labridae; and the third was *Caranx ignobilis* (giant trevally) of the Family Carangidae. There were more abundant fishes in the island town of Capul compared to other island towns. The island is situated along the San Bernardino Strait, where it is considered as the navigational way of marine fishes.

Similar with the study of Allen and Erdmann on *Reef Fishes of El Nido*, gobies are the largest family of fishes in the island towns whether by number of species or number of individuals and genera.

Gobies are the largest family of marine fishes worldwide with an estimated 220 genera and about 2,000 species. They are



Fig. 3. *Caranx ignobilis* (giant trevally), of the Family Carangidae is also abundant fish family during the sampling period.



Fig. 5. *Epinephelus tukula* (potato grouper,potato cod, bass) - Family Serranidae

TABLE 2
NUMBER OF SPECIES AND GENERA OF MARINE FISHES

FAMILY	Genera	Species
1. Acanthuridae	4	7
2. Apogonidae	2	4
3. Anabantidae	1	2
4. Balistidae	2	3
5. Bleniidae	1	2
6. Caesionidae	3	8
7. Chaetodontidae	3	7
8. Carangidae	9	14
9. Carcharinidae	2	2
10. Coryphaenidae	1	2
11. Clupeidae	6	12
12. Engraulidae	1	1
13. Ehipidae	1	2
14. Gerridae	2	5
15. Gobiidae	11	16
16. Hemiramphidae	1	2
17. Labridae	8	15
18. Leiognathidae	2	4
19. Lethrinidae	1	4
20. Lutjanidae	1	6
21. Muraenidae	3	5
22. Mullidae	1	4
23. Nemipteridae	3	6
24. Platycephalidae	4	5
25. Pinguipedidae	1	2
26. Pomacanthidae	3	4
27. Pomacentridae	4	6
28. Pseudochromidae	1	2
29. Sphyraedinae	1	1
30. Synodontidae	1	2
31. Scaridae	1	5
32. Serranidae	4	11
33. Siganidae	1	10
34. Scombridae	7	10
35. Tetraodontidae	2	4
TOTAL	99	197



Fig. 6. *Lethrinus obsoletus* (orange-striped emperor) - Family Lethrinidae



Fig 7. *Gymnothorax moringa* (spotted moray) - Family Muraenidae

Other fishes:



Fig 4. *Siganus vermiculatus*. (siganid, rabbitfish, vermiculated spinefoot) - Family Siganidae



Fig. 8. *Pomacanthus semicirculatus* (semicircled angelfish) - Family Pomacanthidae



Fig. 9. *Synodus variegatus* (variegated lizardfish) -Family Synodontidae



Fig.10. *Rhinecanthus rectangulus* (reef trigger fish) - Family Balistidae`

C. Local Names of Marine Fishes

The local name identified by the fishermen were mostly based on the families and/or genera of the marine fishes. Some names are patterned from the Tagalog versions, while others are from the Cebuano version, not necessarily that of Samarnon names.

TABLE 3
LOCAL NAMES OF MARINE FISHES

SCIENTIFIC NAME	ENGLISH NAME	LOCAL NAME
1. Acanthuridae		
<i>Ctenochaetus binotatus</i> Randall	Surgeonfish	Pugot
<i>Ctenochaetus sp.</i>		
<i>Zebrasoma scopas</i> Cuvier		
<i>Zebrasoma sp.</i>		
<i>Acanthurus mata</i> Cuvier		
<i>Acanthurus sp.</i>		
<i>Naso sp.</i>		
2. Apogonidae		
<i>Cheilodipterus quinquelineatus</i>	Cardinal fish	Sagision
<i>Cheilodipterus sp.</i>		
<i>Apogon wassinki</i> Bleeker		
<i>Apogon sp.</i>		
3. Anabantidae		
<i>Anabas testudinaeus</i>		
<i>Anabas sp.</i>		
4. Balistidae		
<i>Sufflamen chrysopterym</i> Bloch & Scheider	Triggerfish	
<i>Rhinecanthus aculeatus</i>		
<i>Rhinecanthus rectangulus</i>		
5. Blenniidae		
<i>Plagiotremus rhinorhynchus</i> Bleeker		
6. Caesionidae		
<i>Caesio caeruleus</i> Lacepede		
<i>Caesio erythrogaster</i>		
<i>Caesio cunning</i> Bloch	Blue and gold fusilier	Dalagang bukid
<i>Caesio sp.</i>	Black-tipped fusilier	Dalagang bukid
<i>Pterocaesio diagraphma</i> Bleeker		
<i>Pterocaesio sp.</i>	Yellow-tailed fusilier	Dalagang bukid
<i>Elegatis bipinulata</i>		
<i>Elegatis sp.</i>		
7. Chaetodontidae		
<i>Chaetodon baronessa</i> Cuvier	Gold fusilier	Salmon
<i>Chaetodon lunulatus</i> Quoy & Gaimard		
<i>Chaetodon sp.</i>	Butterfly fish	Alibangbang
<i>Coradion chrysozonus</i> Cuvier		
<i>Coradion sp.</i>		
<i>Chelmon rostratus</i> Linnaeus		
<i>Chelmon sp.</i>		
8. Carangidae		
<i>Atule mate</i> Cuvier	Yellow-tailed scad	matang-baka
<i>Alepes vari</i> Cuvier		
<i>Decapterus maruadsi</i>	Round scad	galunggong
<i>Decapterus macarellus</i>		
<i>Decapterus sp.</i>		
<i>Selaroides leptolepis</i>	Yellowstripe scad	Salay-salay ginto
<i>Megalaspis cordyla</i>	Hard-tailed scad	oriles
<i>Megalaspis sp.</i>		
<i>Selar boops</i>	Ox-eyed scad	Matang-baka
<i>Selar crumenophthalmus</i>	Big-eyed scad	Matang-baka
<i>Caranx ignobilis</i> Forsskal	Giant trevally	mamsa
<i>Gymnothorax favagineus</i>	Golden trevally	talakitok

Gymnothorax sp.
Gymnothorax javanicus

9. Carcharinidae

Carcharinus melanopterus
Sphyrna lewini

black-tipped shark pating
hammerhead shark pating/kurusan

10. Coryphaenidae
Coryphaena hippurus Linnaeus
Coryphaena sp.

Dolphin fish lamadang

11. Clupeidae

Sardinella lemuru
Sardinella fimbriata
Sardinella albella
Sardinella hualiensis
Amblygaster sirm
Escualosa thoracata
Herklotsichthys dispilonotus
Herklotsichthys quadrimaculatus
Dussumieria acuta
Sardinella longiceps
Sardinella gibbosa Blecker
Stolephorus indicus

Bali sardinella Tamban/tunsoy
Fringescale sardinella Tamban/tunsoy
White sardinella Tamban/tunsoy
Taiwan sardinella Tamban/tunsoy
Spotted sardinella Tamban/turay
White sardine bolinaw
Blacksaddle herring dilat
Bluestripe herring dilat

Rainbow sardine Tulis/alabaybay
Indian sardine Tamban/tunsoy
Gold stripe sardinella Tamban/tunsoy
Indian anchovy Dilis/bolinaw

12. Engraulidae

Engraulida sp.

13. Ephippidae

Platax pinnatus Linnaeus
Platax sp.

14. Gerridae
Gerres macracanthus Blecker
Gerres shima Iwatsuki, Kimura & Yeshimo
Gerres sp.

Long spine silver biddy lumuan
Banded silver biddy latab

Mugil cephalus Linnaeus
Mugil sp.

Flat head mullet Balanak

15. Gobiidae

Amblygobius decussatus Bleeker
Amblygobius sp.
Acentrogobius viganensis
Asterropteres sp.
Acanthogobius lactipes
Amblyeleotris cephalotaenius
Amblyeleotris gymnocephala
Amblygobius phalaena
Aulopareia unicolor
Awaous litturatus
Bryaninops yongei
Bryaninops ridens

Gobies Sagision

Brachygobius aggregatus
Benthophilus aggregatus
Benthophilus leptoccephalus
Bathygobius fuscus
Bathygobius ostreicola

16. Hemiramphidae

Hyporhamphus quoyi
Valenciennes

Quoy's garfish balo

17. Labriidae

Cheilinus fasciatus Bloch
Cheilinus undulatus
Choerodon anchorago Bloch
Coris batuensis Bleeker
Coris sp.
Cirrhilabrus lyukyuensis
Ishikawa
Cirrhilabrus scottorum
Cirrhilabrus sp.

Scarlet-breasted wrasse Isda sa bato
Anchor tuskfish Isda sa bato
Variegated wrasse Isda sa bato
Ryukyu wrasse Isda sa bato

Halichoeres melanochir Fowler & Bean

Purple wrasse Isda sa bato

Halichoeres claudia
Halichoeres hoeveni
Halichoeres melanochir Fowler & Bean

Halichoeres sp.
Oxycheilinus digramma
Lacepede
Stethojulis interrupta Bleeker

Cheek-lined wrasse Isda sa bato
Isda sa bato

18. Leiognathidae

Leiognathus equulus Forsskal
Gazza minuta Bloch

Common pony fish Sap-sap
Toothed pony fish Sap-sap

<i>Gazza sp.</i>			<i>Cephalopholis sonnerati</i>	Tomato grouper	Baraka
<i>Eubleekeria jonesi</i> James			Valenciennes		
19. Lethrinidae			<i>Epinephelus fuscoguttatus</i>	Brown-marbled grouper	Lapu-lapu
<i>Lethrinus erythropterus</i>	Longfin emperor	Maya-maya	Forskalk		
Valenciennes			<i>Epinephelus fasciatus</i>	Black-tipped grouper	lapulapu
<i>Lethrinus laticaudis</i>			<i>Epinephelus tukula</i>		
<i>Lethrinus obsoletus</i>			<i>Epinephelus cyanopodus</i>		
<i>Lethrinus nebulosus</i>			<i>Epinephelus macrospilus</i>		
20. Lutjanidae			<i>Epinephelus undulosus</i>		
<i>Lutjanus decussatus</i> Cuvier	Checked snapper	Maya-maya	<i>Epinephelus merra</i>		
<i>Lutjanus lutjanus</i> Bloch	Yellow-lined snapper	Maya-maya	<i>Cephalopholis miniatus</i>	Coral trout	Lapu-lapu
<i>Lutjanus fulviflamma</i> Forsskal		Maya-maya			
<i>Lutjanus sebae</i>	Red emperor	Maya-maya			
<i>Lutjanus russelli</i>	Russell's snapper	Maya-maya			
<i>Lethrinus nebulosus</i>	Spangled emperor	Katambak/bitilya			
21. Muraenidae			33. Siganidae		
<i>Gymnothorax nubilus</i>			<i>Siganus virgatus</i> Valenciennes	Virgate rabbitfish	danggit
<i>Gymnothorax moringa</i>			<i>Siganus argenteus</i>	Forktail rabbitfish	danggit
<i>Gymnothorax favagineus</i>			<i>Siganus sp.</i>		
<i>Centropyge vroliki</i> Bleeker			<i>Siganus spinus</i> Linnaeus		danggit
<i>Gnathodon sp.</i>			<i>Siganus randalli</i> Woodland		danggit
22. Mullidae			<i>Siganus stellatus</i> Forsskal		danggit
<i>Parupeneus barberinus</i>	Dash-dot goatfish	Dorado	<i>Siganus canaliculatus</i>	White-dotted rabbitfish	Danggit/samaral
Lacepede			<i>Siganus corallines</i>		
			<i>Siganus vermiculatus</i>		
<i>Parupeneus multifasciatus</i>	Banded goatfish	dorado	<i>Siganus javus</i>		
Quoy & Gaimard			34. Scombridae		
<i>Parupeneus brbarinoides</i>			<i>Scomberomorus commerson</i>	Narrow-barred Spanish mackerel	tangigi
Bleeker			Lacepede		
<i>Parupeneus cyclostomus</i>	Gold-saddled goatfish	dorado	<i>Katsuwonus pelamis</i> Linnaeus	skipjack	Turingan/gulyasan
<i>Coryphaena hippurus</i>	Dolphin fish	Dorado	<i>Thunnus albacares</i> Linnaeus	Yellow fin tuna	tambakol
			<i>Thunnus tonggol</i>	Long-tail tuna	barilis
23. Nemipteridae			<i>Scomber australasicus</i>	Japanese mackerel	Alumahan/mataan
<i>Pentapodus aureofasciatus</i>	Yellow-striped whiptail	Sagision/bisugo	<i>Auxis thazard</i>	Frigate mackerel	tulingan
Russell			<i>Rastrelliger brachysoma</i>	Short-bodied mackerel	Hasa-hasa
<i>Pentapodus trivittatus</i> Bloch	Three-striped whiptail	Sagision/bisugo	<i>Rastrelliger kanagurta</i>	Indian mackerel	alumahan
<i>Chanos chanos</i>	milkfish	bangus	<i>Euthynnus affinis</i>	Eastern little tuna	Tulingan/katsorita
<i>Scolopsis bilineata</i> Bloch					
<i>Scolopsis margaritifera</i> Cuvier	Pearly monacle bream	Sagision/bisugo	<i>Makaira indica</i>	Blue marlin	Marlin/malasugi
<i>Nemipterus japonicus</i> Ishikawa	Japanese threadfin bream	Sagision/bisugo	35. Tetraodontidae		
<i>Scolopsis taeniopterus</i>	Lattice monacle bream	Silay/tagisang lawin	<i>Helates sexlineatus</i> Quoy & Gaimard		rahildahil
			<i>Arothron nigropunctatus</i> Bloch & Schneider	Black-spotted pufferfish	butete
24. Platycephalidae			<i>Arothron hispidus</i>	White-spotted pufferfish	butete
<i>Cypselurus opisthopus</i> Bleeker	Black-finned flying fish	iliw	<i>Arothron sp.</i>		
<i>Cymbacephalus</i>	Fringe-eyed flathead	Usu-os			
<i>nematophthalmus</i> Fowler	grubfish				
<i>Congresox talabon</i>	Yellow pike conger	Obod/ogdok			
<i>Trichiurus lepturus</i>	Largehead hirtail	Balila/espada			
25. Pinguipedidae					
<i>Parapercis xanthozona</i> Bleeker	Whitestripe sandperch	balo			
<i>Parapercis sp.</i>					
26. Pomacanthidae					
<i>Pygoplites diacanthus</i> Boddaert	Regal angelfish	alibangbang			
<i>Centropyge vroliki</i> Bleeker	Pearl-scaled angelfish	Alibangbang			
<i>Pomacanthus semicirculatus</i>	Semicircled angelfish	Alibangbang			
<i>Pomacanthus sp.</i>	butterflyfish	alibangbang			
27. Pomacentridae					
<i>Abudefduf sexfasciatus</i>	Six-barred sergeant major	Isda sa bato			
Lacepede					
<i>Abudefduf vaigiensis</i> Quoy & Gaimard	Sergeant major	Isda sa bato			
<i>Abudefduf sp.</i>					
<i>Chromis weberi</i> Fowler & Bean	Weber's chromis	Isda sa bato			
<i>Chromis sp.</i>					
<i>Chrysiptera rollandi</i> Whitley	Roland's demoiselle	Isda sa bato			
28. Pseudochromidae					
<i>Pseudochromis fuscus</i> Muller & Troschel	Brown dottyback	Isda sa bato			
<i>Pseudochromis sp.</i>					
29. Sphyraedinae					
<i>Sphyraedina sp.</i>					
30. Synodontidae					
<i>Synodus variegatus</i>					
<i>Synodus sp.</i>					
31. Scaridae					
<i>Scarus hypselopterus</i> Bleeker	East indies parrotfish	Loro/molmol			
<i>Scarus niger</i> Forsskal	Swarthy parrotfish				
<i>Scarus ghobban</i>	Blue-barred parrotfish	Loro/molmol			
<i>Scarus guacamaia</i>	Rainbow parrotfish	Loro/molmol			
<i>Scarus sp.</i>					
32. Serranidae					
<i>Plectropomus leopardus</i>	Coral grouper/ Leopard cod	Lapu-lapu			
Lacepede					
<i>Cephalopholis cyanostigma</i>	Blue-spotted grouper	Lapu-lapu			
Valenciennes					

D. Fishing Gears Used by Fishermen

The fishing gears used by fishermen in catching the fishes during the time of sampling were: simple hook & line (*kawil*), which was commonly used, multiple hand line (*lagolo*), bottom set gill net (*patitig*), bottom set long line (*kitang*), spear with light (*panulo/sarapang*), spear gun (*pana*), plastic bottle (*plastik na bote*), and round haul seine (*lawagan*).

1. Simple Hook and Line (*kawil*)

The most traditional form of fishing gear is the simple hook and line, which is basically made with one or two hooks. This kind of fishing gear is the most common since it can be used in both shallow and offshore waters. A basic hook and line is made of a hook suspended to an extended mainline averaging 100m in length, usually reeled to a homemade bamboo or wooden cylinder. It is the cheapest form of all the cited fishing gears.

2. Multiple Hand Line (*lagolo*)

This type of handline uses multiple hooks suspended with equal distance to a mainline. Artificial bait made of silk thread and bird feathers are used. The basic operation of the gear involves tugging the line in a regular up and down motion. The time of operation typically falls within dusk and dawn periods where a slight portion of the sun lights the sea surface. During

these periods, the artificial bait is said to be the most attractive to pelagic fish. This fishing gear is used second to simple hook and line.

3. Bottom Set Gill Net (*patitig*)

This type of fishing gear is specifically designed to catch demersal fishes. It is generally constructed at 1-5m in depth. Built with at least 1-10 panels, the gear may be set at depths of 2-10m. Each panel is constructed with an average of 1m in length. The gear is normally employed in an overnight use to a maximum of 24 hours. It can also be operated an hour before the net is hauled and relocated to another area for its next use.

4. Bottom Set Long Line (*kitang*)

This is a fishing line that uses at least 40–100 hooks suspended along the length of a mainline primarily to catch demersal fish species. This gear is usually setting the line from shallow to deep waters. A typical outfit is usually installed and kept in a box, and the hooks are placed individually in gaps along the frame of the box to ease the laying of baits. In some fishing grounds, the fishermen cannot wait until hauling to avoid loss of gear due to theft.

5. Spear with Light (*panulo*)

This is also another traditional fishing practice used by the fishermen. The fishermen use a gas/petroleum/gas-fuelled lamp as a source of lighting and a spear to gather fishes. The spear is basically made of a wooden pole with sharp steel tips at one end. It is normally used in a shallow area to catch inactive fishes during night time.

6. Spear Gun (*pana*)

The spear gun consists of a homemade wooden gun with a rubber sling. The gear is singularly pointed usually with a suspended nylon rope long enough to keep the device retrievable. This gear is complemented with diving implements like makeshift goggles (*silip*) and flippers (*panyapak*) to assist the diver during the deep fishing pursuit.

7. Plastic Bottle (*plastic na bote*)

This simple gear is designed specifically to attract and catch smaller fishes at the coastal reef areas. The gear is made of large plastic bottles of softdrinks. The bottle is punched with sharp edges pointing the insides of the bottle. Fish bait is placed to lure the fish into getting inside the bottle. Fishes that go inside the bottle cannot get out anymore.



Fig. 11. Plastic bottle gear

8. Round Haul Seine (*lawagan*)

This practice of using round haul seine as a fishing gear is used by a group of fishermen in a coastal area. The gear generally consists of a conical lift net with 5-7m in length. A fine-meshed net is usually adopted for the gear, which catches primarily small varieties of fishes like anchovies, scads, etc. The net is suspended with rope support at each side leading to the vessel. Operation of the gear involves a large mechanized boat. The group of fishermen is headed by a master fisher (*manulong*) and the mechanic (*makinista*). Each vessel (*lawagan*) is complemented with a regular 10-12 crew men (*bugador*). The vessel has big lights that require 2-3 hours for accumulating a school of fish before the harvest (*pagkalat*) is initiated.

III. CONCLUSION

There is an ample number of marine fishes in the island towns because of the pristine waters, as well as the geographical location of the islands. Island people can readily do business selling their catch due to less time and accessible navigation to the mainland. The simple method of catching fishes used by the fishermen will enable the fishes to regain their population and therefore, can sustain fish food for the island people.

IV. RECOMMENDATIONS

1. Further studies about seasonal variation and behavior of marine fishes is recommended.
2. Freshwater fishes should also be included since there are many large rivers in the province.

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