



# “ Establishment and Operation of a Regional System of **Fisheries Refugia** in the South China Sea and Gulf of Thailand”

## **PHILIPPINES**

**Regional Scientific and Technical Committee Meeting**

**11-13 September 2018**

**Centara Hotels & Resorts, Trat Province, Thailand**



# **HIGHLIGHTS OF ACTIVITIES**

## **1<sup>st</sup> & 2<sup>nd</sup> Quarter 2017**

# 1<sup>st</sup> Philippine Fisheries Refugia Project Meeting

- Discussion of 2017 Workplan
- Preparation of quarterly Activities
- Budget preparation and funding request to SEAFDEC
- Initial preparation of itinerary & activities for the Site level Inception Workshop and baseline data collection



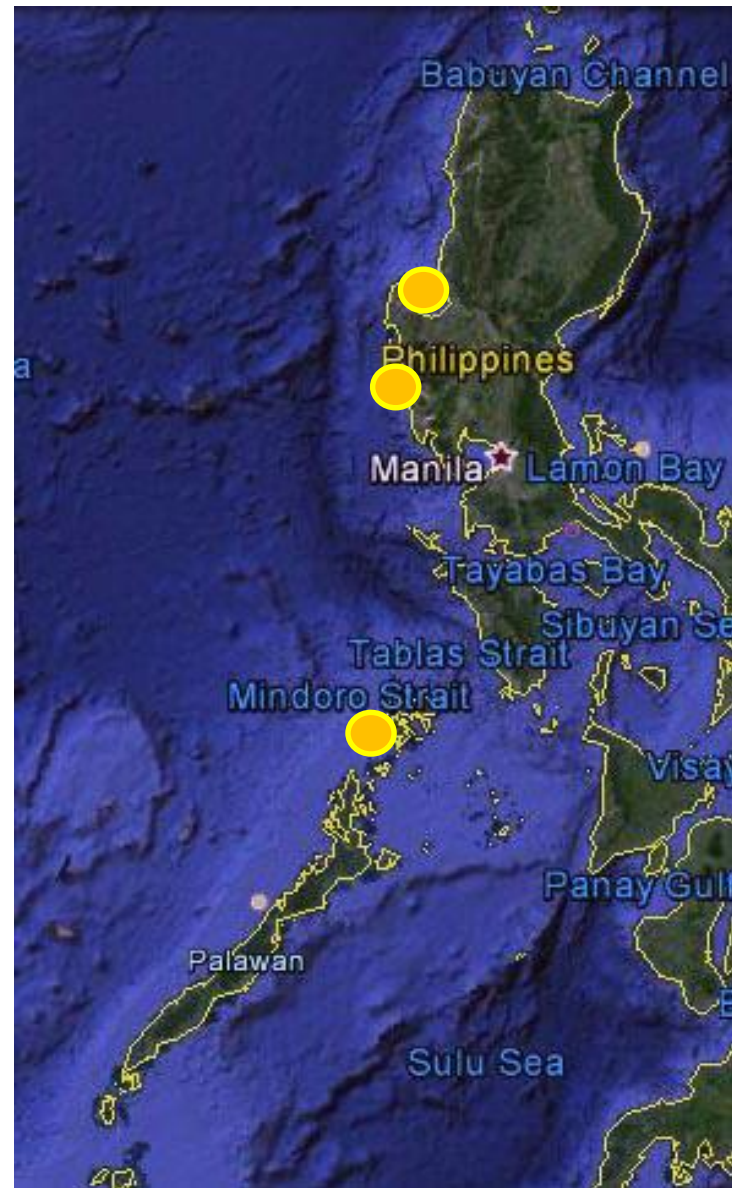
## **Fisheries Refugia Project Director Courtesy Call**



Mr. Cristoper John Patterson , Project Director of Fisheries Refugia Project & Mr. Weerasak Yingyuad, Project Technical Coordinator from SEAFDEC with Mr. Joeren Yleana, Refugia Focal Point for the Philippines during the Courtesy Call to Asst. Dir. Drusila Esther Bayate

## Fisheries Refugia Sites in the Philippines

1. Bolinao, Pangasinan
2. Masinloc, Zambales
3. Coron, Palawan



# Refugia Project Site Level Inception Workshop

- Orientation for the Strategic Action Programme for the South China Sea and the Development of Fisheries Refugia Initiative
- Overview of the Objectives of the SEAFDEC/UNEF/GEF Fisheries Refugia Project Initiative
- Discussion of Projects Management Framework including Provisional Terms of Reference for the Site Level Management Boards
- Identification of Municipal Programs and Projects relating to Sustainable Development
- Preparation of an inventory of Sectoral Policies, Operational Workplans, & Regulations/Ordinances
- Introduction of application of Aerial Visual survey technology in baseline setting and Monitoring

## **Coron Site Level Inception Workshop**

Date: March 20, 2017

Venue: Darayonan Lodge, Coron, Palawan

Participants: 20



•Courtesy call of Fisheries Refugia Management Team to the Municipal Mayor and Sangguniang Bayan Members of Coron, Palawan



## Bolinao Site Level Inception Workshop

Date: March 24, 2017

Venue: Sangguniang Bayan Session Hall

Participants: 30



Courtesy call of Fisheries Refugia Management Team to the Municipal Mayor of Bolinao, Pangasinan



Group Photo with BFAR I Regional Director Nestor Domenden & Bolinao Vice-Mayor Alfonso Celeste



# Masinloc Site Level Inception Workshop

Date: March 27, 2017

Venue: Municipal Convention Hall

Participants: 35



## **Baseline Fisheries Data Collection & Aerial Survey**

- ✓ Municipal Fisheries Ordinances
- ✓ List of Marine Protected Areas
- ✓ Fisheries Data
- ✓ FishR Data
- ✓ BoatR Data
- ✓ Fish landing Visit
- ✓ Aerial Survey

## Baseline Fisheries Data Collection & Aerial Survey

### FishR Data

	Municipality	Number of Registered Fisherfolks
1	Coron, Palawan	3,897
2	Masinloc, Zambales	3,927
3	Bolinao, Pangasinan	4,941

### BoatR Data

	Municipality	Number of Registered Boats
1	Coron, Palawan	599
2	Masinloc, Zambales	301
3	Bolinao, Pangasinan	1424

# Baseline Fisheries Data Collection & Aerial Survey

## Catch Composition of fish landed in Masinloc

List of species and catch (MT) landed in Poblacion , Masinloc (2012 – 2016)

Landing site	Gear	ScientificName	2012	2013	2014	2015	2016	Grand Total
Poblacion	Handline	<i>Abalistes stellaris</i>	0.13	0.49	0.93	1.94	0.87	4.37
		<i>Auxis rochei</i>			0.94	4.37	1.48	6.79
		<i>Auxis thazard</i>			3.21	2.43	1.98	7.62
		<i>Coryphaena equiselis</i>					0.10	0.10
		<i>Coryphaena hippurus</i>	2.70	3.25	3.96	3.45	3.37	16.74
		<i>Decapterus macrosoma</i>	0.03		0.06			0.09
		<i>Elagatis bipinnulata</i>	0.27	0.23	0.02			0.52
		<i>Euthynnus affinis</i>			0.52	0.09		0.62
		<i>Gempylus serpens</i>	0.06					0.06
		<i>Katsuwonus pelamis</i>	9.49	10.28	13.53	16.42	14.40	64.11
		<i>Scomberomorus commerson</i>			0.04		0.92	0.96
		<i>Selar crumenophthalmus</i>	0.04					0.04
		<i>Thunnus albacares</i>	26.16	27.60	29.91	24.39	22.70	130.77
		<i>Thunnus obesus</i>	0.80	0.42	2.63	2.24	0.50	6.60
Grand Total			39.69	42.28	55.74	55.33	46.32	239.37

Source: NSAP Region 3

# Baseline Fisheries Data Collection & Aerial Survey

## Catch Composition of fish landed in Masinloc

List of species and catch (MT) landed in Balogo\_Matalvis , Masinloc (2012 – 2016)

landing site	Gear	ScientificName	2012	2013	2014	2015	2016	Grand Total
Balogo_Matalvis	Purse seine	<i>Abalistes stellaris</i>		1.74		0.22		1.96
		<i>Auxis rochei</i>			2.85	8.18	19.37	30.40
		<i>Auxis thazard</i>		0.39	10.80	11.40	21.22	43.81
		<i>Decapterus macarellus</i>			77.73	89.33	183.35	350.41
		<i>Decapterus macrosoma</i>	34.36	88.34	21.17			143.87
		<i>Elagatis bipinnulata</i>			1.79			1.79
		<i>Euthynnus affinis</i>	3.28	10.64	12.89	7.02	17.23	51.06
		<i>Katsuwonus pelamis</i>	495.98	588.81	541.41	556.79	549.17	2,732.16
		<i>Sarda orientalis</i>	0.64	2.56	0.42			3.62
		<i>Thunnus albacares</i>	488.12	581.72	522.65	542.13	549.88	2,684.50
		<i>Thunnus obesus</i>	15.28	24.02	6.94	4.19	2.30	52.74
Grand Total			1,037.66	1,298.21	1,198.65	1,219.27	1,342.52	6,096.31

Source: NSAP Region 3

# Baseline Fisheries Data Collection & Aerial Survey

## Catch Composition of fish landed in Bolinao

Catch (kgs.) & Species Composition in Bolinao (2016)			
Landing Center	Rank	Scientific Name	Catch (Kg)
Luciente, Bolinao, Pangasinan	1	<i>Decapterus macarellus</i>	64,625.00
	2	<i>Katsuwonus pelamis</i>	44,600.00
	3	<i>Thunnus albacares</i>	13,240.00
	4	<i>Auxis thazard</i>	3,280.00
<b>TOTAL</b>			<b>125,745.00</b>
Arosan, Bolinao, Pangasinan	1	<i>Thunnus albacares</i>	48,085.00
	2	<i>Katsuwonus pelamis</i>	36,085.00
	3	<i>Coryphaena hippurus</i>	21,767.00
	4	<i>Istiompax indica</i>	1,081.00
	5	<i>Acanthocybium solandri</i>	519.00
<b>TOTAL</b>			<b>107,537.00</b>
Balingasay, Bolinao, Pangasinan	1	<i>Katsuwonus pelamis</i>	27,647.38
	2	<i>Thunnus albacares</i>	22,348.64
	3	<i>Decapterus macarellus</i>	6,728.00
	4	<i>Coryphaena hippurus</i>	4,395.75
	5	<i>Photololigo oualaniensis</i>	4,385.00
	6	<i>Sthenoteuthis oualaniensis</i>	2,065.09
	7	<i>Auxis thazard</i>	1,740.00
	8	<i>Istiompax indica</i>	162.75
<b>TOTAL</b>			<b>69,472.61</b>
<b>GRAND TOTAL</b>			<b>302,754.61</b>

## Baseline Fisheries Data Collection & Aerial Survey

### Catch Composition of fish landed in Bolinao

Fishing Gears & Catch (kgs.) in Bolinao (2016)		
Landing Center-Edited	Fishing Gear	Total
Luciente, Bolinao, Pangasinan	Purse Seine	125,745.00
Arosan, Bolinao, Pangasinan	Hook and Line	107,537.00
Balingasay, Bolinao, Pangasinan	Multiple Handline	24,744.65
	Single Handline	38,277.87
	Scoop Net	6,450.09
<b>TOTAL</b>		<b>302,754.61</b>

Source: NSAP Region 1

## Coron Baseline Fisheries Data Collection & Aerial Survey





## Coron Baseline Fisheries Data Collection & Aerial Survey



**Brgy. Bintuan Landing Site, Coron, Palawan**

## Bolinao Baseline Fisheries Data Collection & Aerial Survey



**Poblacion Landing Site, Bolinao, Pangasinan**

## Bolinao Baseline Fisheries Data Collection & Aerial Survey



**Commercial Landing Area & Fish Cages in Bolinao, Pangasinan**

## Bolinao Baseline Fisheries Data Collection & Aerial Survey



**Municipal Landing Area in Bolinao, Pangasinan**

## Masinloc Baseline Fisheries Data Collection & Aerial Survey




# **HIGHLIGHTS OF ACTIVITIES**

## **3<sup>rd</sup> & 4<sup>th</sup> Quarter 2017**

- ✓ Conducted 1<sup>st</sup> Meeting for the establishment of Refugia Site Management Committee (RSMC) for Bolinao Site
  - Convened at El Pescador Hotel & Resort, Bolinao Pangasinan dated July 13, 2017
  - Participated in by 25 Participants
  - Participants agreed on the committee composition and terms of reference for the RSMC
  - the group agreed that RSMC will put into a executive order to be signed by the Municipal Mayor

# Municipal Executive Order for the Refugia Site Management Committee (RSMC) in Bolinao



**Office of the Municipal Mayor**  
 Telefax No.: (074) 632-5145, E-mail Add.: noliceleste01@yahoo.com.ph

**EXECUTIVE ORDER NO. 7, SERIES OF 2017  
 ORGANIZING THE REFUGIA SITE MANAGEMENT COMMITTEE OF THE  
 MUNICIPALITY OF BOLINAO, PANGASINAN AND DEFINING ITS FUNCTIONS**

**WHEREAS**, the Philippine Constitution, Article XII Section 2 (pa. 2) states that “the state shall protect the nation’s marine wealth in its archipelagic water, territorial sea, and exclusive economic zone, and reserve its use and enjoyment exclusively to Filipino citizens”;

**WHEREAS**, the General Welfare clause of the 1991 Local Government Code provides for the exercise of powers by local government units (LGUs) in order to enhance the right of the people to a balanced ecology and promote full employment among their residents;

**WHEREAS**, Republic Act No. 8550 known as The Philippine Fisheries Code of 1998, Chapter I Section 2, declares as the policy of the state, “to achieve food security as the overriding consideration in the utilization, management, development conservation and protection of fishery resources in order to provide the food needs of the population. A flexible policy towards the attainment of food security shall be adopted in response to changes in demographic trends for fish, emerging trends in the trade of fish and other aquatic products in domestic and international markets, and the law of supply and demand”;

**WHEREAS**, the fisheries and habitat components of the United Nation Environment Programme-Global Environment Facility (UNEP-GEF) South China Sea Project focus on the critical role that habitats such as mangroves, seagrass, coral reefs, and wetlands play in sustaining fisheries production in the South China Sea and Gulf of Thailand.

**WHEREAS**, to establish a Regional System of Fisheries Refugia in the South China Sea (West Philippine Sea) and Gulf of Thailand in the context of the UNEP/GEF Project, the Municipality of Bolinao, Pangasinan was identified as one among the three LGUs entire the Philippines to be provided with technical interventions, monitoring and evaluation support by the Bureau of Fisheries;

**WHEREAS**, LGU Bolinao recognizes the very objective of the Refugia Project of protecting the environmental habitat of marine life while sustaining the fishery industry which ensures the livelihood of the locality’s fisher folks;

**WHEREAS**, in order to secure the execution of the Refugia Project there is an urgent need to organize the Refugia Site Management Committee.

**NOW, THEREFORE, I, ARNOLD D. CELESTE**, Municipal Mayor, Municipality of Bolinao, Pangasinan, by virtue of powers vested in me by law, do hereby order,

**I. ORGANIZATION AND COMPOSITION**

The Refugia Site Management Committee shall be organized be composed of the following:

Chairman	Municipal Mayor	<b>ARNOLD D. CELESTE</b>
Vice-Chairman:	Mun. Vice Mayor	<b>ALFONSO F. CELESTE</b>
Members	Municipal Agriculturist	<b>CAROLINA RAMIREZ</b>

<p><b>CENRO</b></p> <p>BFAR RO1 Representative</p> <p>UP MSI Representative</p> <p>Bolinao School of Fisheries Rep.</p> <p>Philippine Coast Guard Rep.</p> <p>MFARMC Representative</p> <p>Fisherfolk Assoc. Representative</p> <p>Punong Barangays of Coastal Barangays Representative</p> <p>Municipal Administrator</p>	<p><b>MELCHOR GONZALES</b></p> <p><b>NESTOR DOMENDEN</b></p> <p><b>CECILIA CONACO</b></p> <p><b>DR. ALPON TOBIAS</b></p> <p><b>PO1 FERNAND ASPURIA</b></p> <p><b>JESEM GABATIN</b></p> <p><b>ANNABELLE ECHAVEZ</b></p> <p><b>ROMEO CELESTE</b></p> <p><b>BLESILDA R. DOMAGAS</b></p>																						
<p>alternate members shall be designated in order to ensure the immediate and</p> <p>on of refugia activities as follows:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Mun. Vice Mayor</td> <td style="width: 70%;"><b>ALFONSO F. CELESTE</b></td> </tr> <tr> <td>SBM Chairman, Committee on Environment</td> <td><b>SBM JOVEN CAASI</b></td> </tr> <tr> <td>Aquacultural Technician (Alternate of MAO)</td> <td><b>FLORANTE GARCIA</b></td> </tr> <tr> <td>Assistant CENRO (Alternate of CENRO)</td> <td><b>MARCIANO GONZALES</b></td> </tr> <tr> <td>BFAR RO1 Representative</td> <td><b>SEGUNDINA GAERLAN</b></td> </tr> <tr> <td>UP MSI Representative</td> <td><b>JULIO CURIANO, JR.</b></td> </tr> <tr> <td>Bolinao School of Fisheries Rep.</td> <td><b>MARLON TUGADE</b></td> </tr> <tr> <td>Philippine Coast Guard Rep.</td> <td><b>SN1 JOHN ISRAEL FLORES</b></td> </tr> <tr> <td>MFARMC Representative</td> <td><b>JIMMY RABANAL</b></td> </tr> <tr> <td>Fisherfolk Assoc. Representative</td> <td><b>DIOSDADO CAROLINO</b></td> </tr> <tr> <td>Punong Barangays of Coastal Barangays Representative</td> <td><b>AGUSTIN CAASI</b></td> </tr> </table> <p>principal members and/or alternate members be subjected to personnel newly assigned personnel will automatically be the principal member and/or as the case may be.</p> <p><b>FUNCTIONS:</b></p> <p>and approve reports from the Fisheries Refugia Management Team</p> <p>puts and outcomes of project activities;</p> <p>fisheries Refugia Management Team in ensuring coordination among the fisheries refugia project and other local activities undertaken during the course of the project</p>	Mun. Vice Mayor	<b>ALFONSO F. CELESTE</b>	SBM Chairman, Committee on Environment	<b>SBM JOVEN CAASI</b>	Aquacultural Technician (Alternate of MAO)	<b>FLORANTE GARCIA</b>	Assistant CENRO (Alternate of CENRO)	<b>MARCIANO GONZALES</b>	BFAR RO1 Representative	<b>SEGUNDINA GAERLAN</b>	UP MSI Representative	<b>JULIO CURIANO, JR.</b>	Bolinao School of Fisheries Rep.	<b>MARLON TUGADE</b>	Philippine Coast Guard Rep.	<b>SN1 JOHN ISRAEL FLORES</b>	MFARMC Representative	<b>JIMMY RABANAL</b>	Fisherfolk Assoc. Representative	<b>DIOSDADO CAROLINO</b>	Punong Barangays of Coastal Barangays Representative	<b>AGUSTIN CAASI</b>	<p>capacity to strengthen the integration of fisheries and habitat</p> <p>vement in project activities and take action where necessary to appropriate levels of government, Civil Society Organization (CSO),</p> <p>een the recommendations for action at the fisheries refugia site</p> <p>es for fisheries and coastal habitat management</p> <p>the site level, progress in implementation of the project, and</p> <p>ement to the Fisheries Refugia Management Team and National</p> <p>ress reports for transmission to the meetings of the National</p> <p>and implementation by the competent municipal authority,</p> <p>ses of action developed during the course of project execution;</p> <p>ia Management Team in leveraging required project co-financing</p> <p>by be required from time to time;</p> <p>is Refugia Management Team in identifying best practices for</p> <p>well as the mainstreaming of the fisheries refugia approaches at</p> <p>ng:</p> <p>nd terms of reference of the committee</p> <p>ther of conducting business as may be considered necessary by the</p> <p>tions.</p> <p>est on a monthly basis during the project inception period and on a</p> <p>guide the timely execution of activities. In addition the Chair may</p> <p>en necessary in order to establish and operate fisheries refugia.</p> <p>shall provide counterpart funding to refugia PPAs. The fund may be</p> <p>RM-CCA, GAD and Social Services fund allocation through</p> <p>shall take effect immediately.</p> <p>August 2017 at Bolinao, Pangasinan.</p>
Mun. Vice Mayor	<b>ALFONSO F. CELESTE</b>																						
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**ARNOLD D. CELESTE**  
 Municipal Mayor





## Office of the Municipal Mayor

Telefax No.: (074) 632-5145, E-mail Add.: noliceleste01@yahoo.com.ph

### EXECUTIVE ORDER NO. 7, SERIES OF 2017 ORGANIZING THE REFUGIA SITE MANAGEMENT COMMITTEE OF THE MUNICIPALITY OF BOLINAO, PANGASINAN AND DEFINING ITS FUNCTIONS

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Members	:	Municipal Agriculturist	<b>CAROLINA RAMIREZ</b>

#### CENRO

BFAR RO1 Representative	MELCHOR GONZALES
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MFARMC Representative	PO1 FERNAND ASPURIA
Fisherfolk Assoc. Representative	JESEM GABATIN
Punong Barangays of Coastal Barangays Representative	ANNABELLE ECHAVEZ
	ROMEO CELESTE

LGU Secretariat: Municipal Administrator BLESILDA R. DOMAGAS

In addition, alternate members shall be designated in order to ensure the immediate and continuous execution of refugia activities as follows:

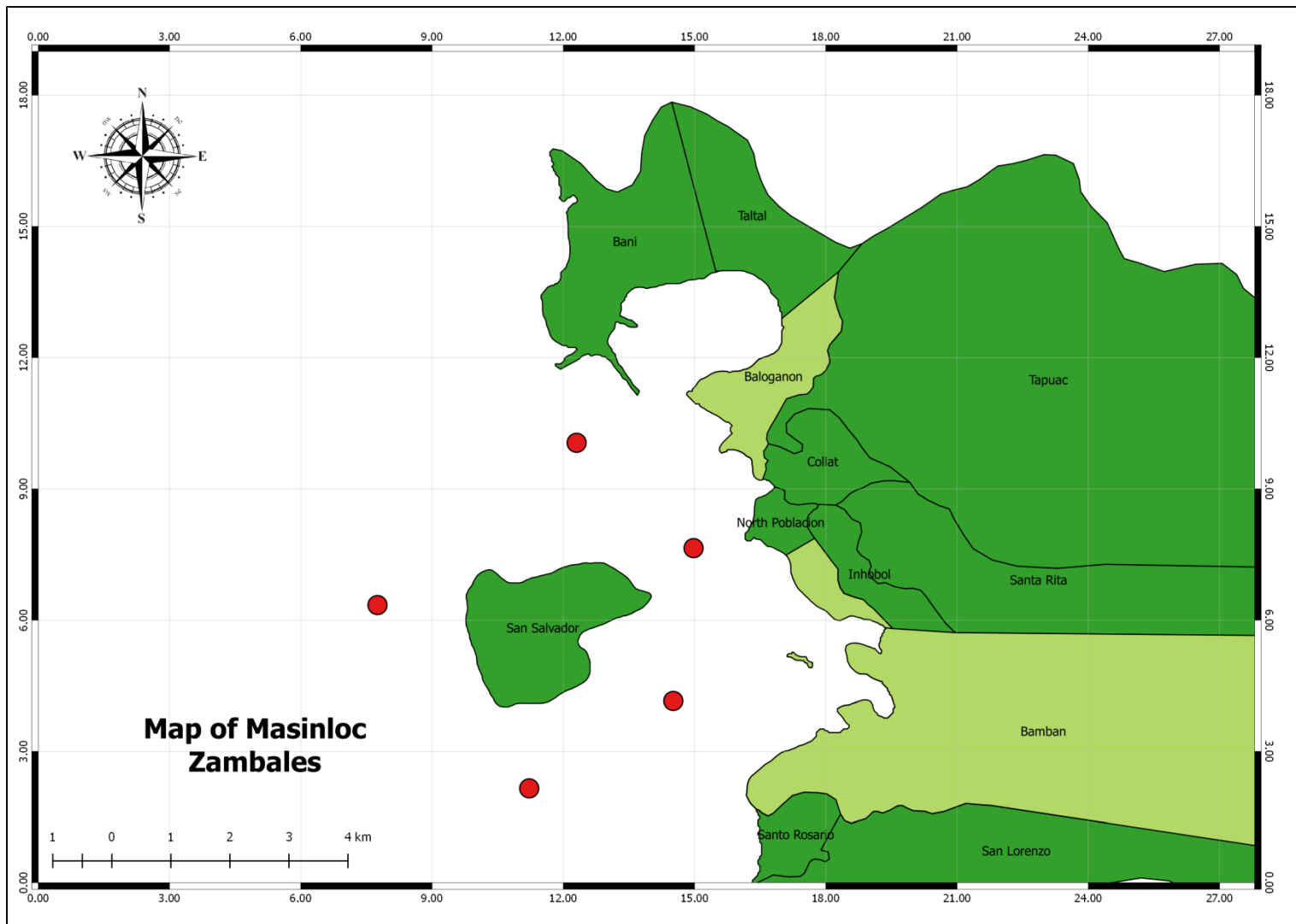
Alternate Chairman	:	Mun. Vice Mayor	<b>ALFONSO F. CELESTE</b>
Alternate Vice-Chairman:		SBM Chairman, Committee on Environment	<b>SBM JOVEN CAASI</b>
Alternate Members	:	Aquacultural Technician (Alternate of MAO)	<b>FLORANTE GARCIA</b>
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		Fisherfolk Assoc. Representative	<b>DIOSDADO CAROLINO</b>
		Punong Barangays of Coastal Barangays Representative	<b>AGUSTIN CAASI</b>

In cases wherein principal members and/or alternate members be subjected to personnel re-assignment the newly assigned personnel will automatically be the principal member and/or alternate member as the case may be.

#### II. POWERS AND FUNCTIONS:

1. Receive, review and approve reports from the Fisheries *Refugia* Management Team regarding the outputs and outcomes of project activities;
2. Assist the Fisheries *Refugia* Management Team in ensuring coordination among the fisheries *refugia* project and other local activities undertaken during the course of the project

# Initial Ichthyoplankton Survey in Masinloc Zambales



● Sampling Stations

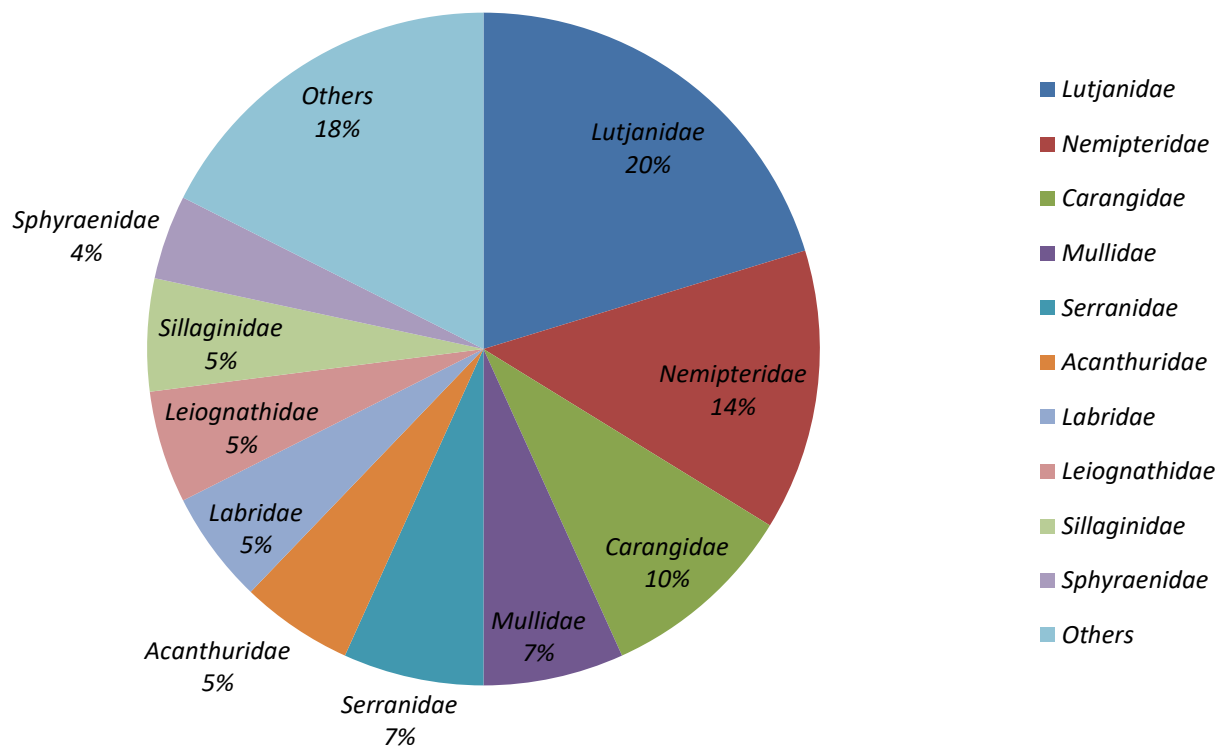
## Initial Ichthyoplankton Survey in Masinloc Zambales



Actual survey at Masinloc Bay, Masinloc Zambales

# Initial Ichthyoplankton Survey in Masinloc Zambales

## Fish Family Composition in Masinloc Bay

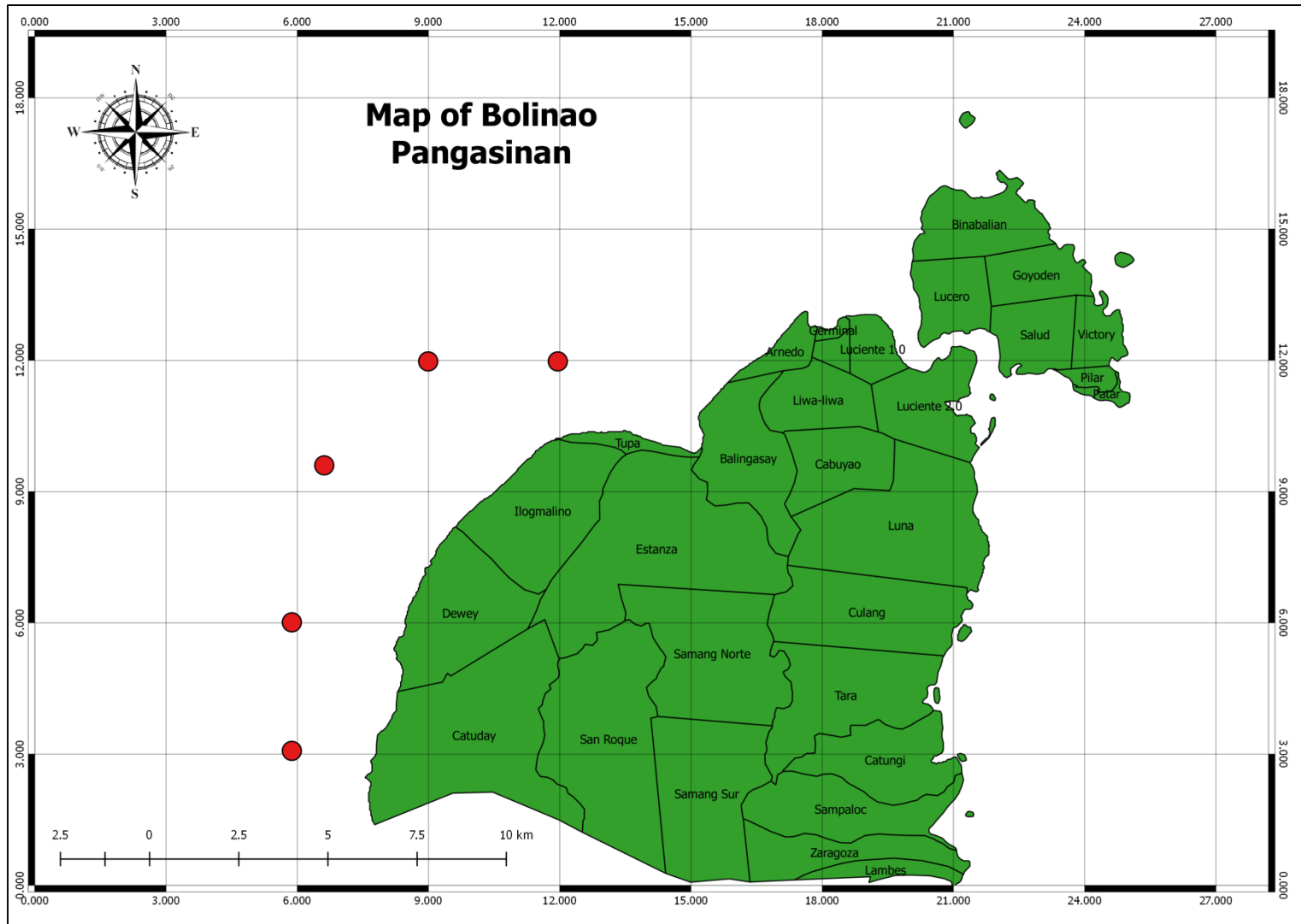


## Initial Ichthyoplankton Survey in Bolinao, Pangasinan



Actual survey at Bolinao, Pangasinan

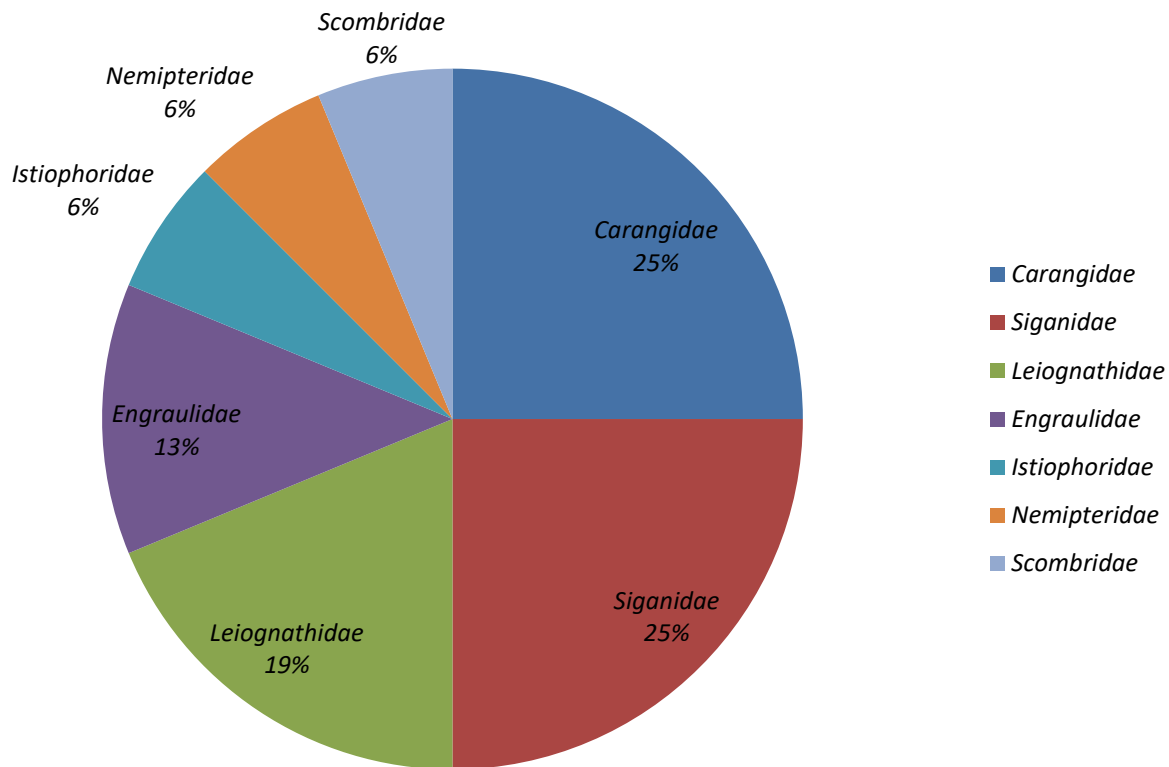
# Initial Ichthyoplankton Survey in Bolinao, Pangasinan



● Sampling Stations

# Initial Ichthyoplankton Survey in Bolinao, Pangasinan

## Fish Family Composition in Bolinao Bay



# **HIGHLIGHTS OF ACTIVITIES**

## **1<sup>st</sup> & 2<sup>nd</sup> Quarter 2018**



# MONITORING OF SAMPLING ACTIVITIES

**Courtesy call at the BFAR  
Provincial Fisheries Office  
Northern Palawan**



**Monitoring of sampling  
activities at Brgy. Tagumpay  
Fish Landing Site**

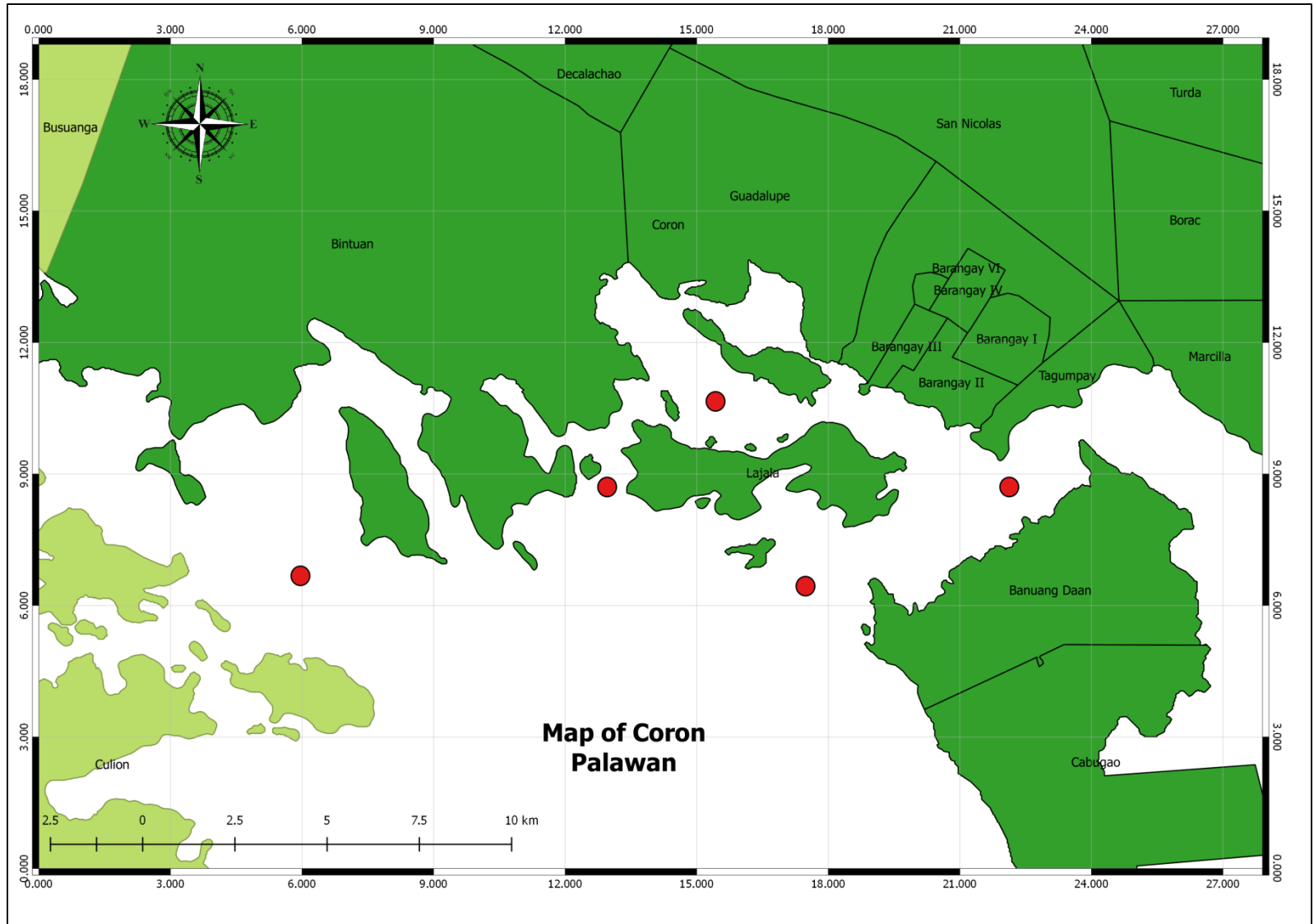


# MONITORING OF SAMPLING ACTIVITIES



Monitoring of sampling activities at Coron Market Fish Landing Site

# Initial Ichthyoplankton Survey in Coron, Palawan



● Sampling Stations

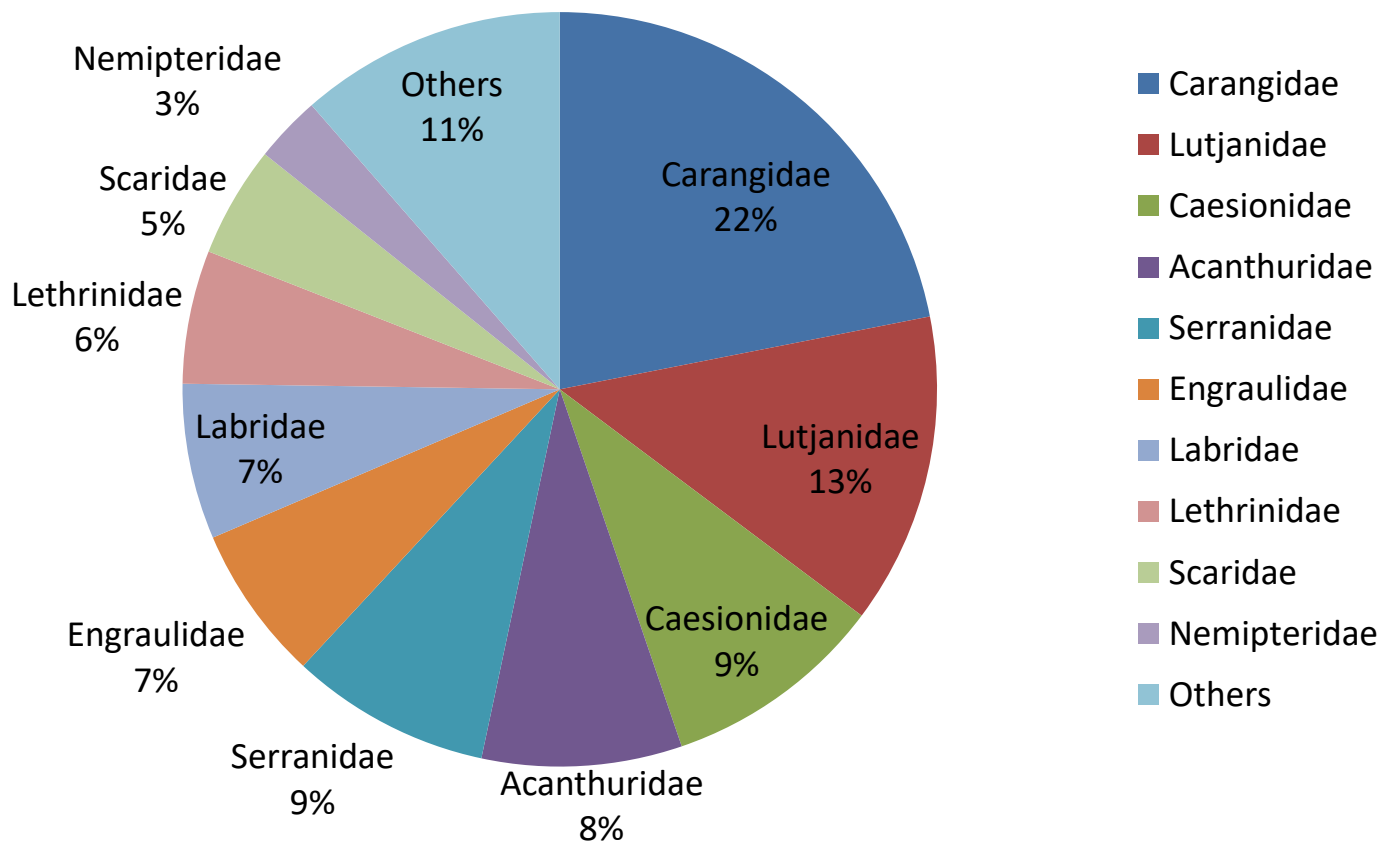
## Initial Ichthyoplankton Survey in Coron, Palawan



Actual survey at Coron Bay, Coron , Palawan

# Initial Ichthyoplankton Survey in Coron, Palawan

## Fish Family Composition in Coron Bay



# MONITORING OF SAMPLING ACTIVITIES



Courtesy call to the Administrator of LGU Bolinao

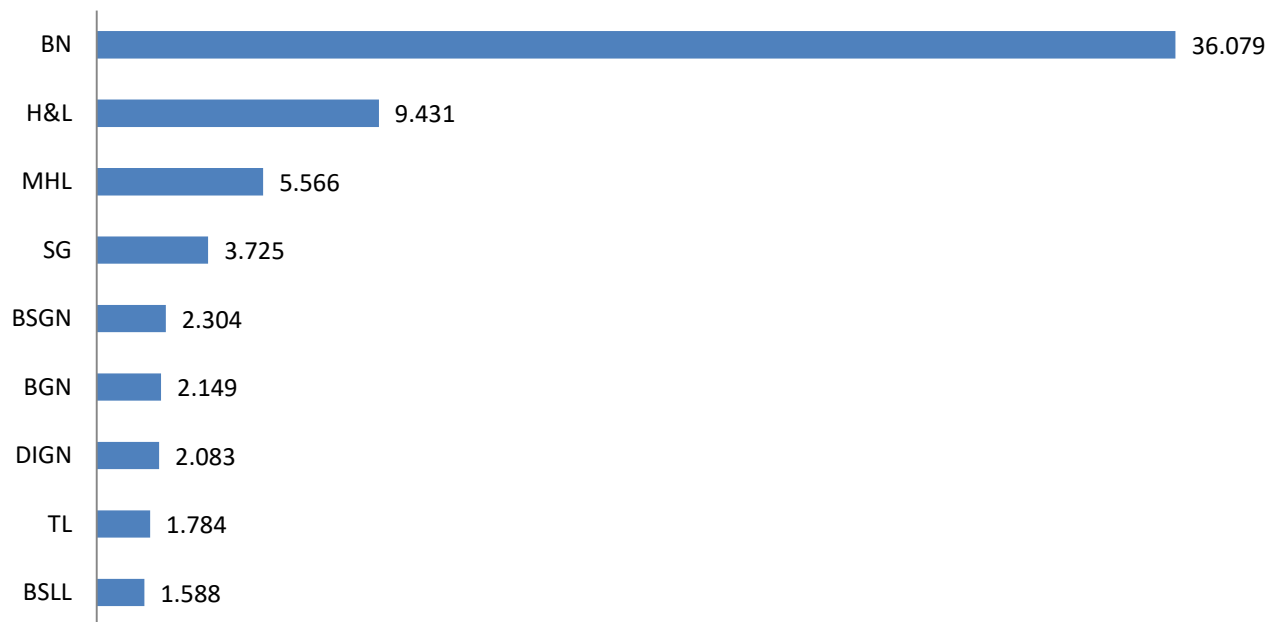
Actual fish landing at Binabalian Landing Site, Bolinao, Pangasinan

# **Initial Results of Fisheries Data Collection 2017**

# Initial Results of Fisheries Data Collection

## Coron Fisheries Data for 2017

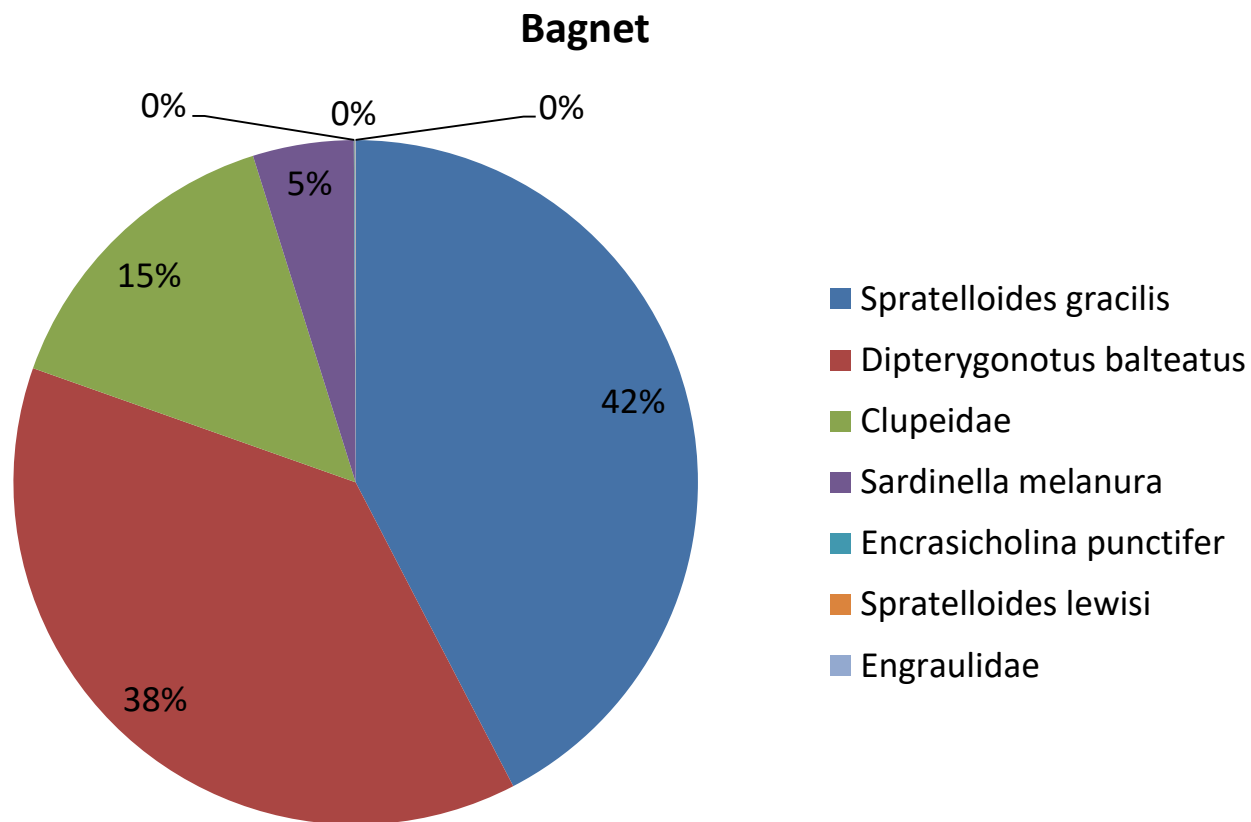
### Catch per Gear, Coron, Palawan (Jun-Dec 2017)





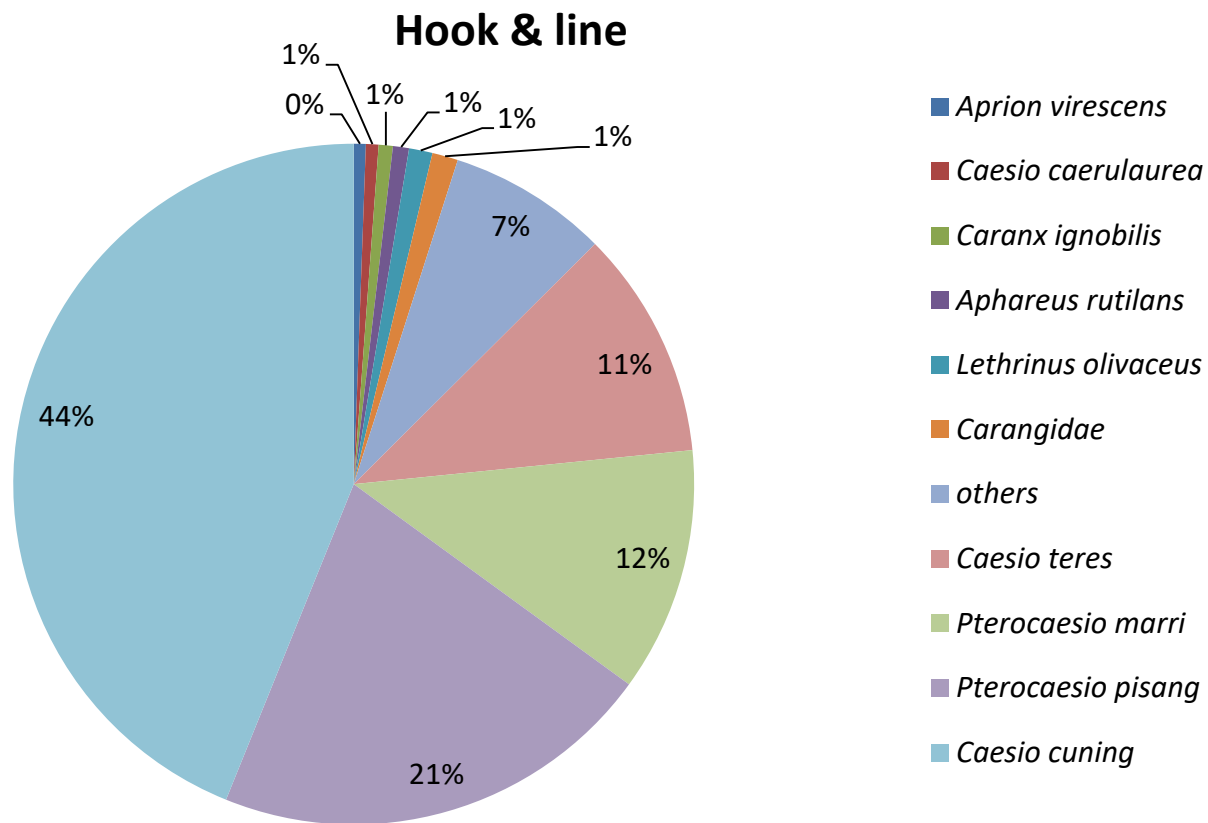
## Initial Results of Fisheries Data Collection

### Catch Composition per Gear



# Initial Results of Fisheries Data Collection

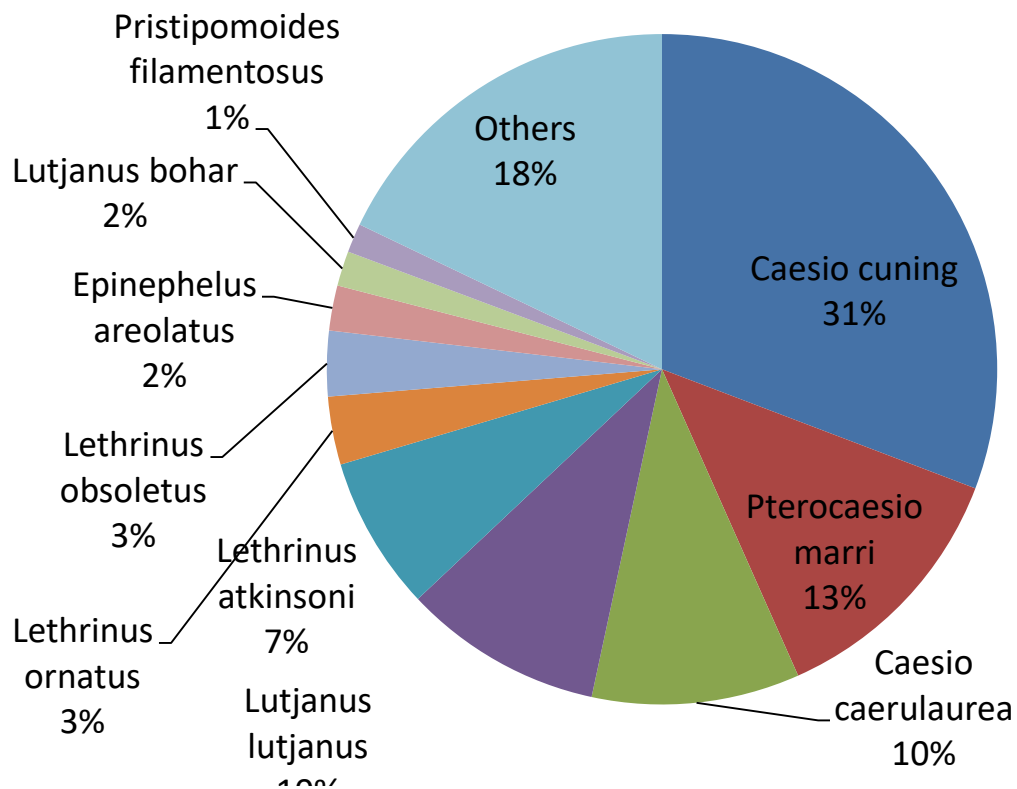
## Catch Composition per Gear



# Initial Results of Fisheries Data Collection

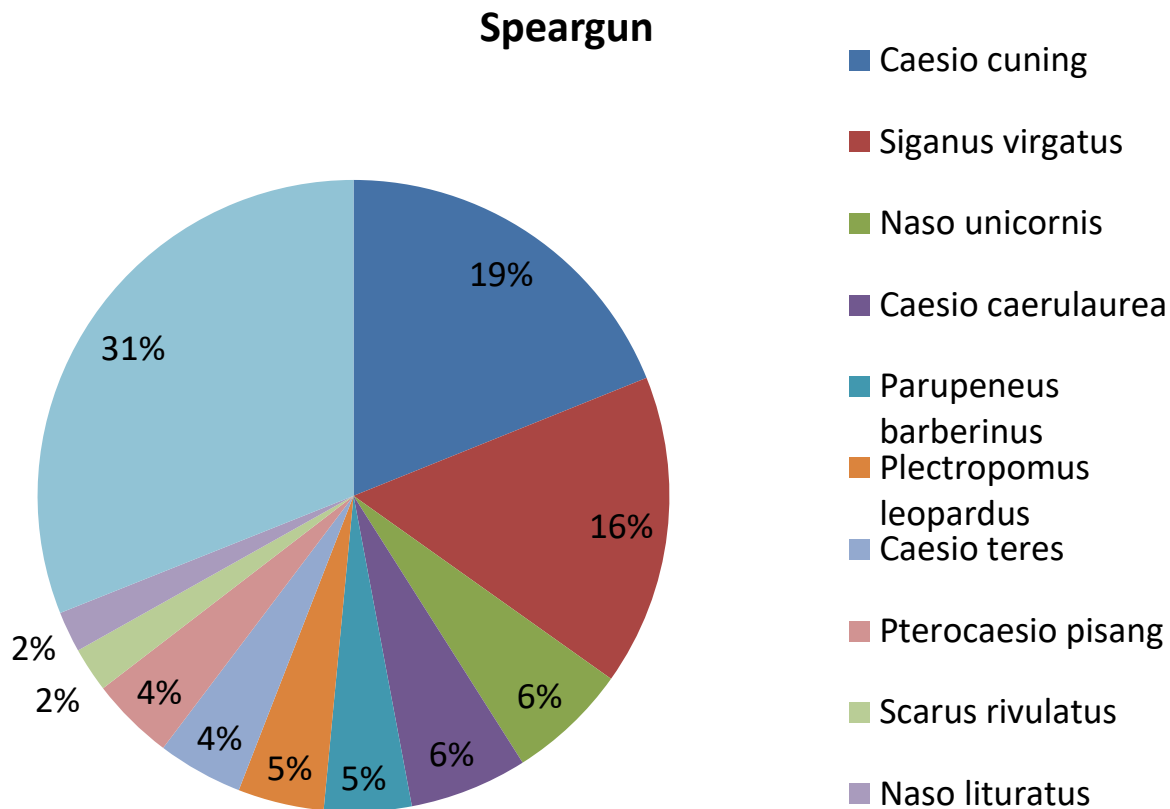
## Catch Composition per Gear

### Multiple hook & line



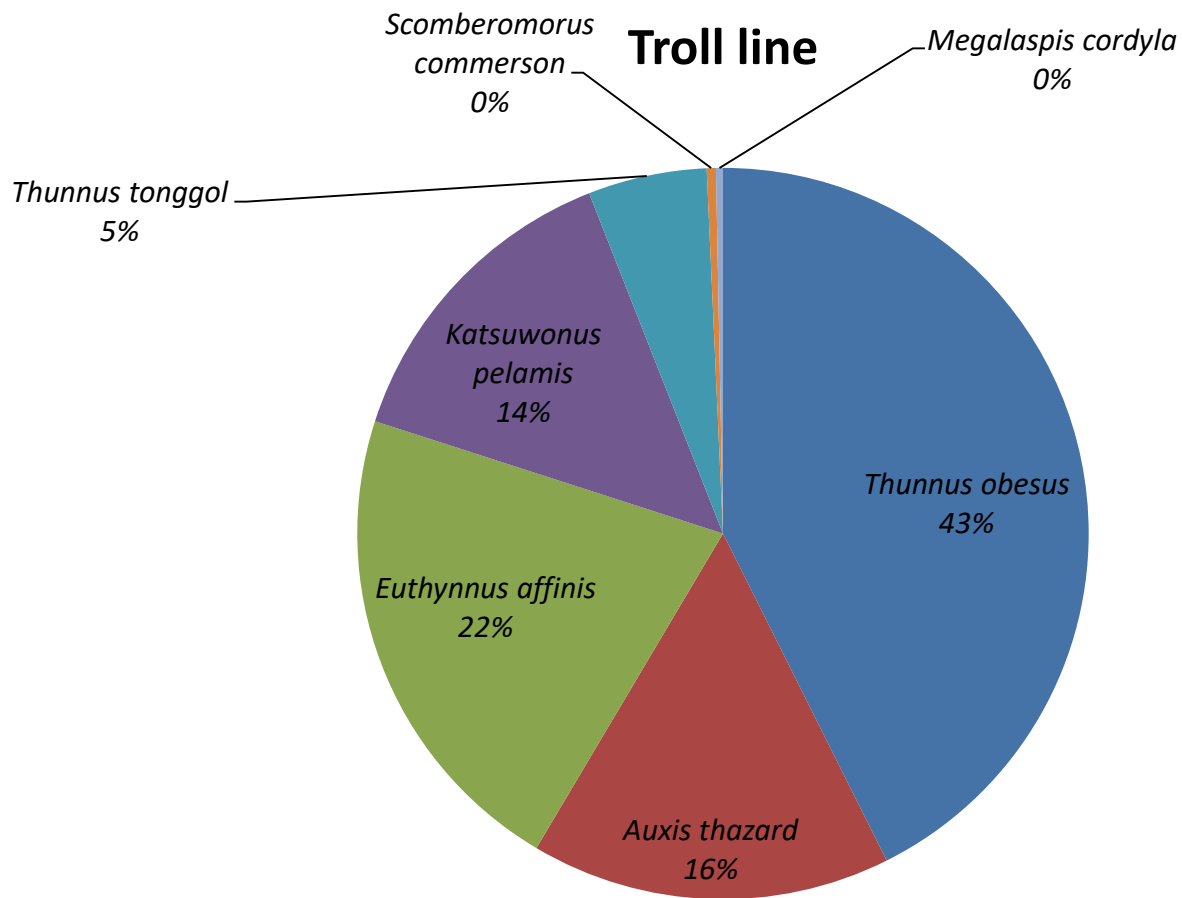
## Initial Results of Fisheries Data Collection

### Catch Composition per Gear



# Initial Results of Fisheries Data Collection

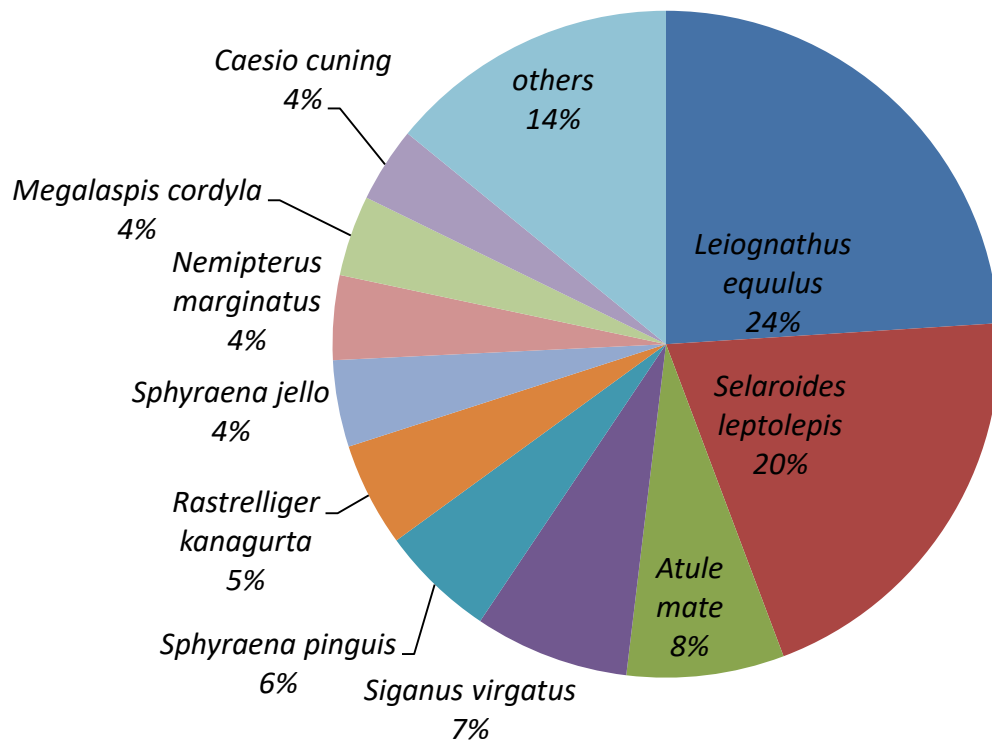
## Catch Composition per Gear



# Initial Results of Fisheries Data Collection

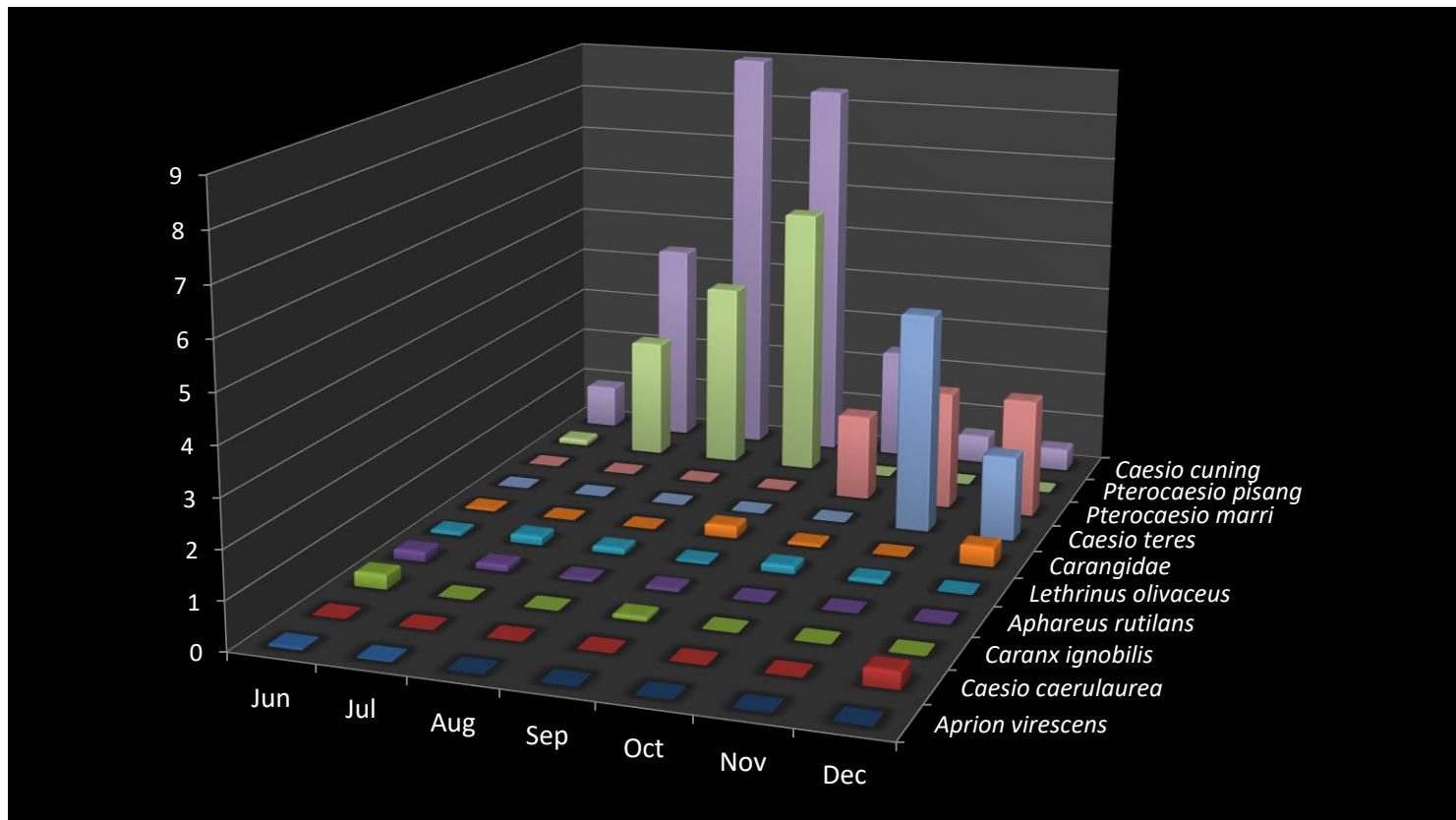
## Catch Composition per Gear

### Bottom gillnet



# Initial Results of Fisheries Data Collection

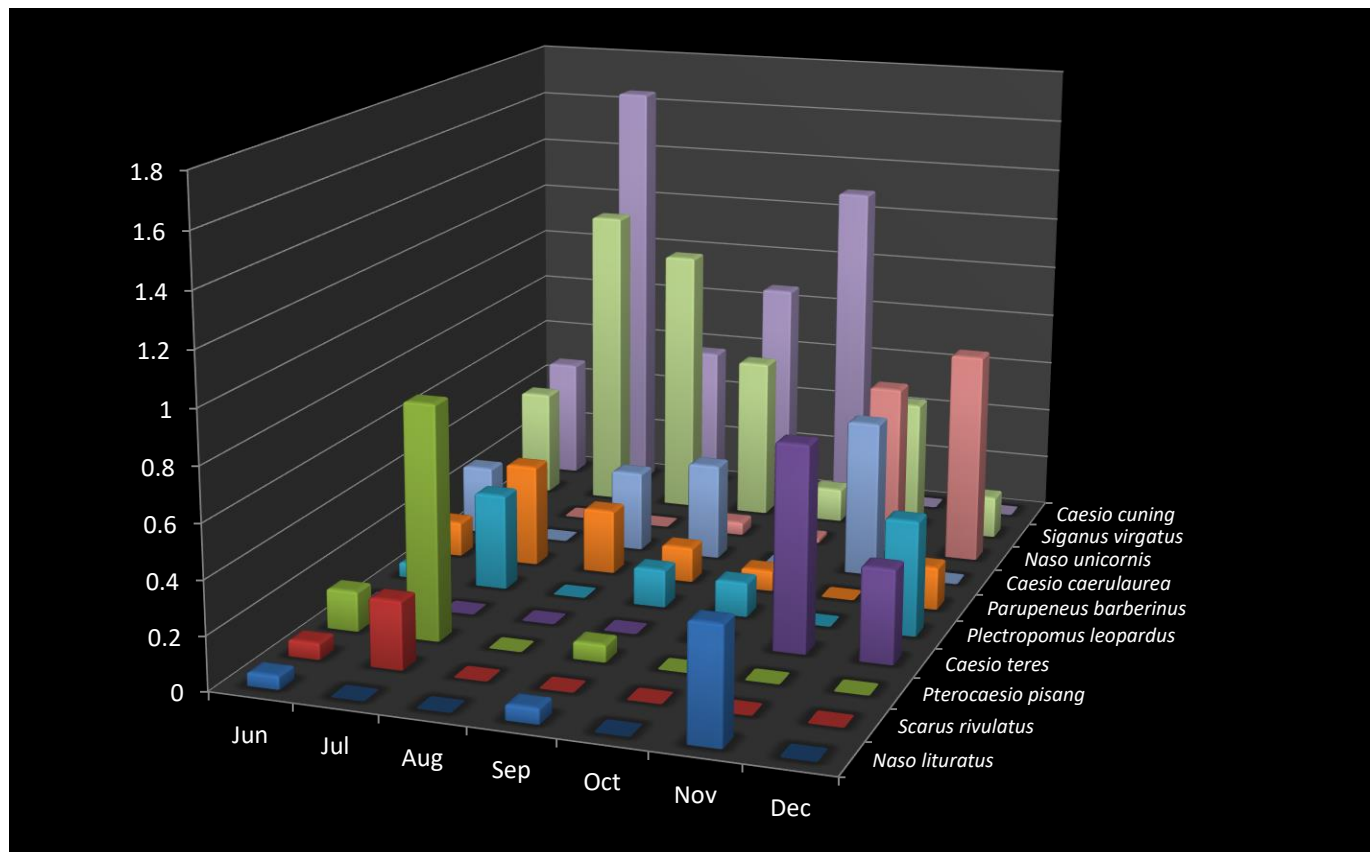
## Seasonality and Catch Composition per Gear



Hook and Line

# Initial Results of Fisheries Data Collection

## Seasonality and Catch Composition per Gear

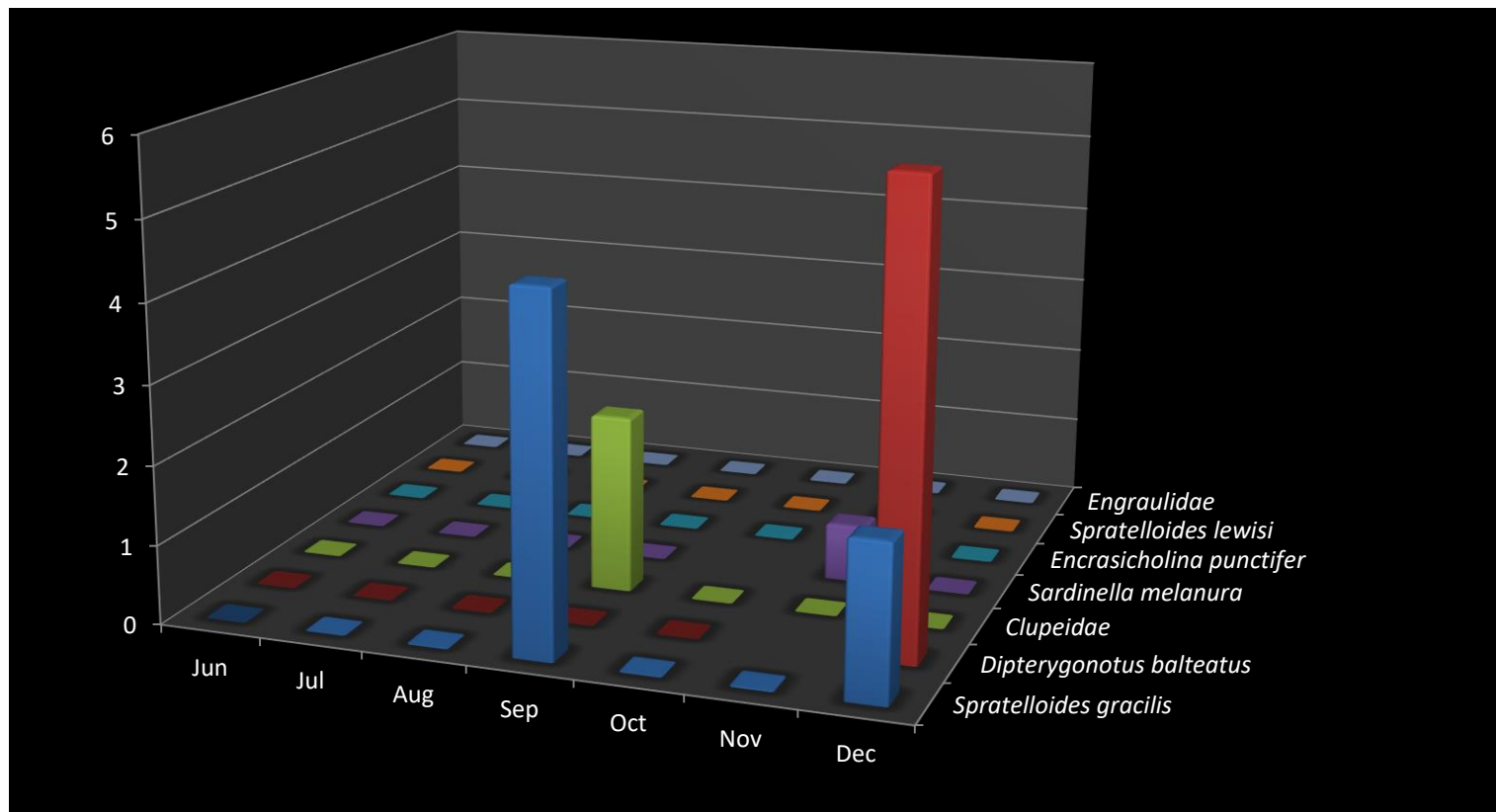


**SPEARGUN**



# Initial Results of Fisheries Data Collection

## Seasonality and Catch Composition per Gear

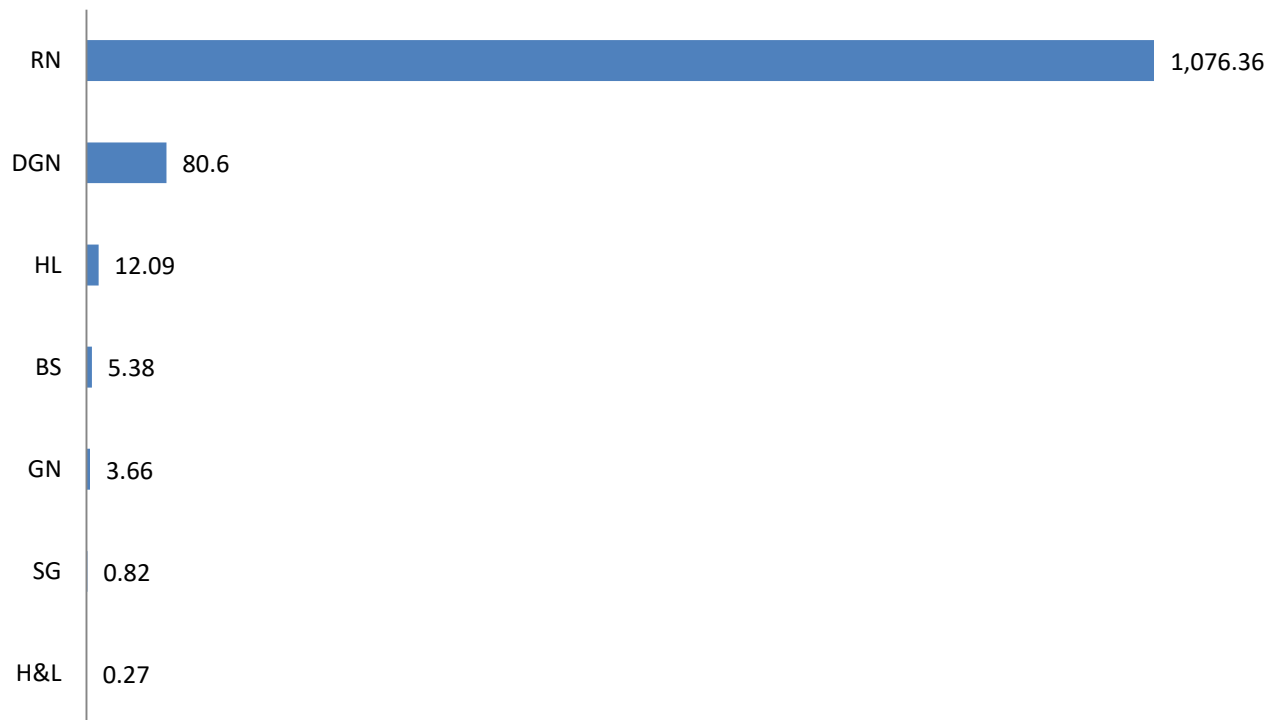


**Bagnet**

## Initial Results of Fisheries Data Collection

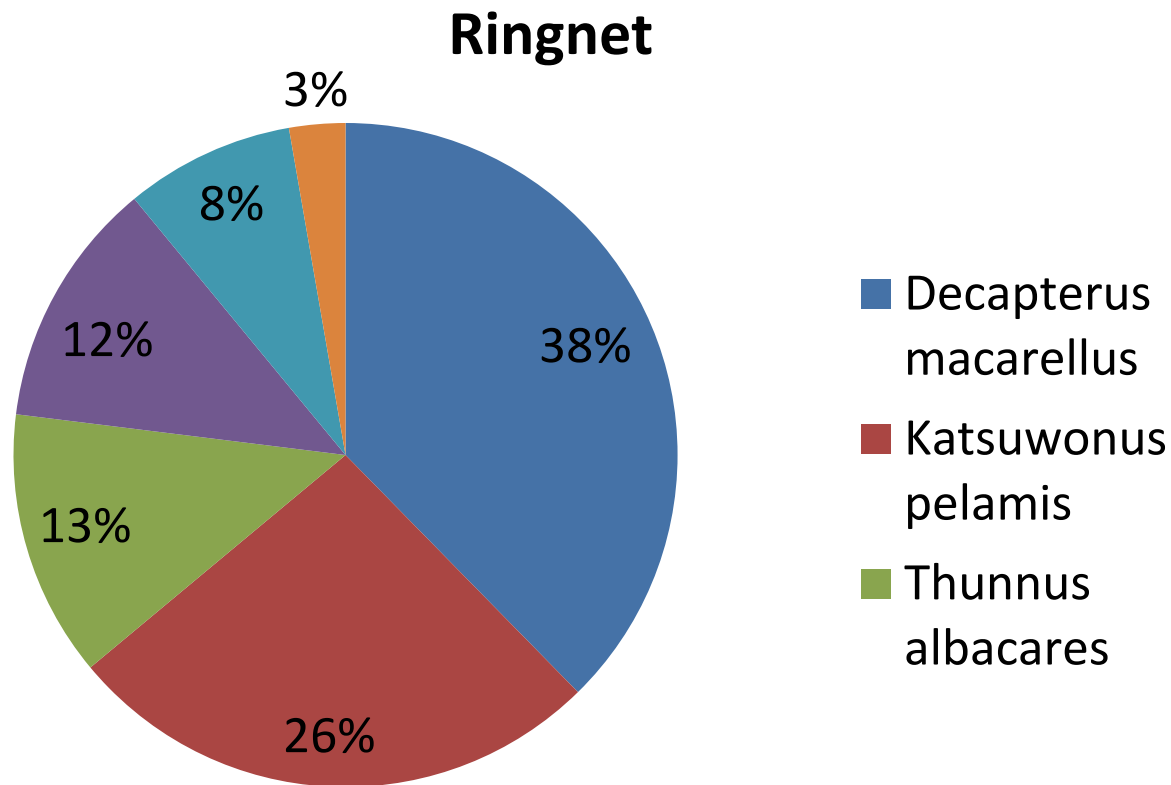
### Masinloc Fisheries Data for 2017

#### Catch per gear, Masinloc, Zambales Site, Jun to Dec 2017



## Initial Results of Fisheries Data Collection

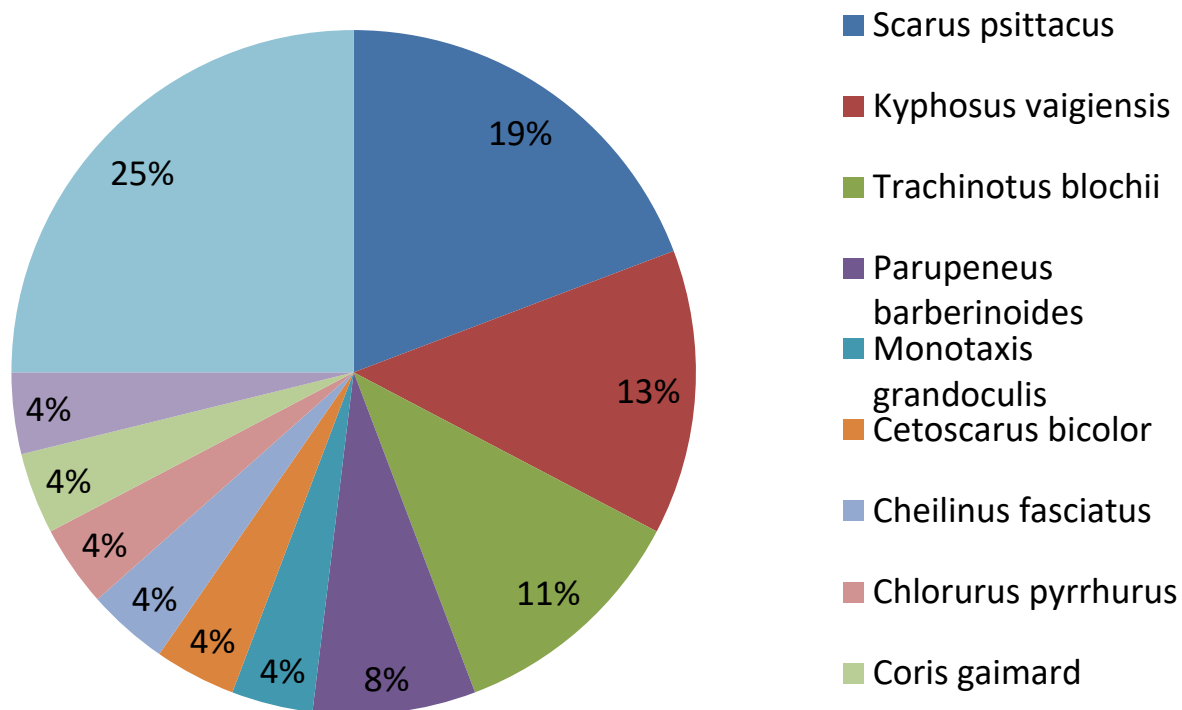
### Catch Composition per Gear



## Initial Results of Fisheries Data Collection

### Catch Composition per Gear

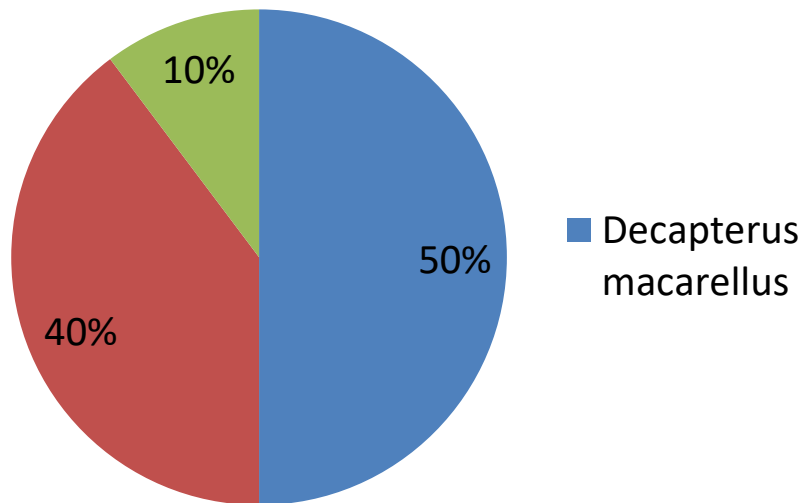
#### Drift gillnet



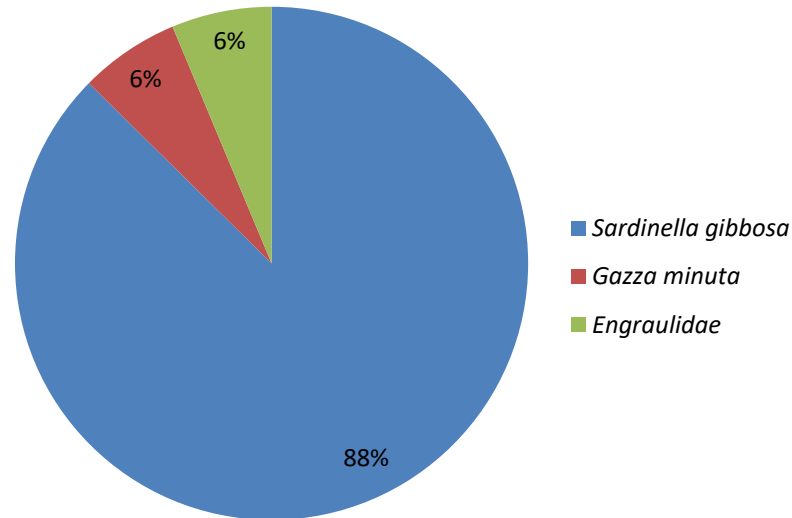
## Initial Results of Fisheries Data Collection

### Catch Composition per Gear

#### Handline

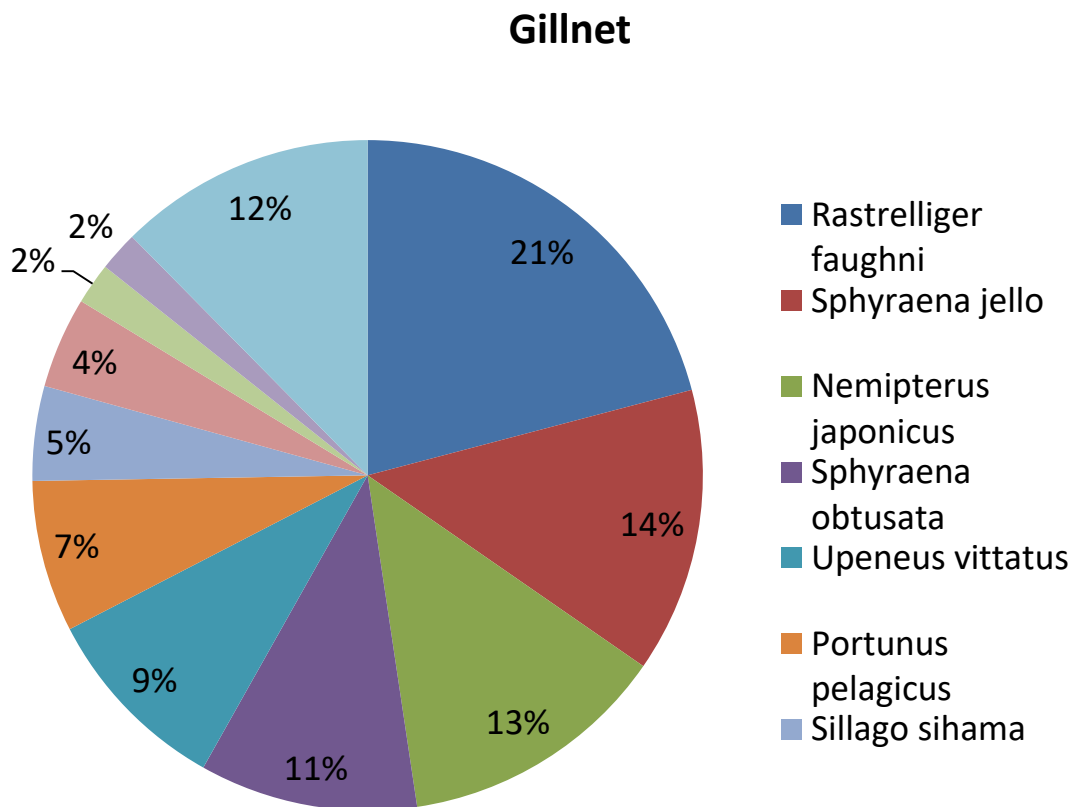


#### Beach Seine



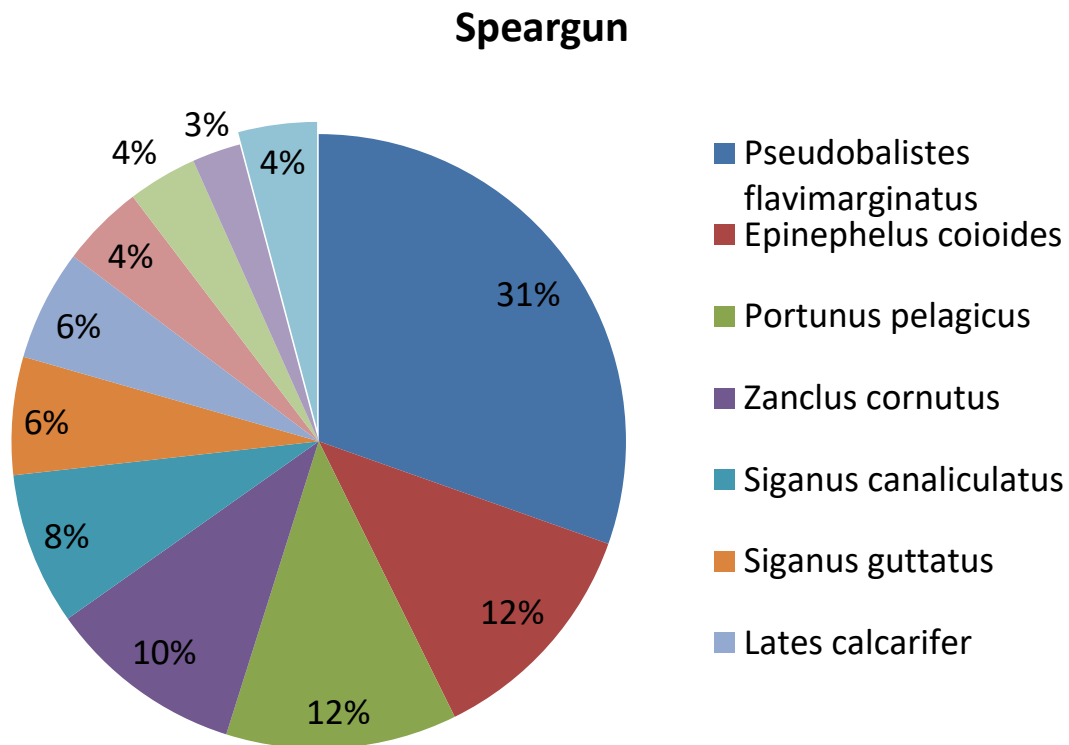
## Initial Results of Fisheries Data Collection

### Catch Composition per Gear



## Initial Results of Fisheries Data Collection

### Catch Composition per Gear



## **Future Activities:**

- ✓ Fisheries Refugia Stakeholders Consultation Workshop for 3 Refugia Sites
- ✓ Continue fisheries data collection on landed catch for 3 Refugia Sites
- ✓ Site Monitoring for site level activities
- ✓ Establishment of Refugia Site Management Board in Coron & Masiloc Site
- ✓ Continue Ichthyoplankton Survey for 3 Refugia Sites





*Thank you*

