

FIN FISH DATA COLLECTION AT CONCH SHELL BAY FISH MARKET (BELIZE CITY)

BY

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INTRODUCTION

- Belize's fishing industry has traditionally been an important sector in the development of the country
- The industry has contributed to employment, food security, income generation, and foreign exchange.
- The primary products of economic value are the spiny lobster (*Panulirus argus*) and queen conch (*Lobatus gigas*) and an assortment of finfish fish species.
- Fisheries data and information is fundamentally necessary for the sustainable management of any fisheries that incorporates sound policy development, better decision-making, and responsible fisheries management.

INTRODUCTION

- The UNCTAD-DOALOS Oceans Economy and Trade Strategy (OETS) project seeks to assist Belize to realize the full potential of its fisheries sector.
- The main objective is to assess the economic potential and regulatory needs for the marine fisheries (finfish) and seafood processing sectors (queen conch and spiny lobster) and to present an action plan that enables the sustainable trade fisheries sector.
- The present protocol serves **ONLY** as a general guide for the data collectors responsible to gather finfish catch landings data (example: species composition, catch/ effort, and morphometric) from fishers who land their catch at Conch Shell Bay fishery market in Belize City.

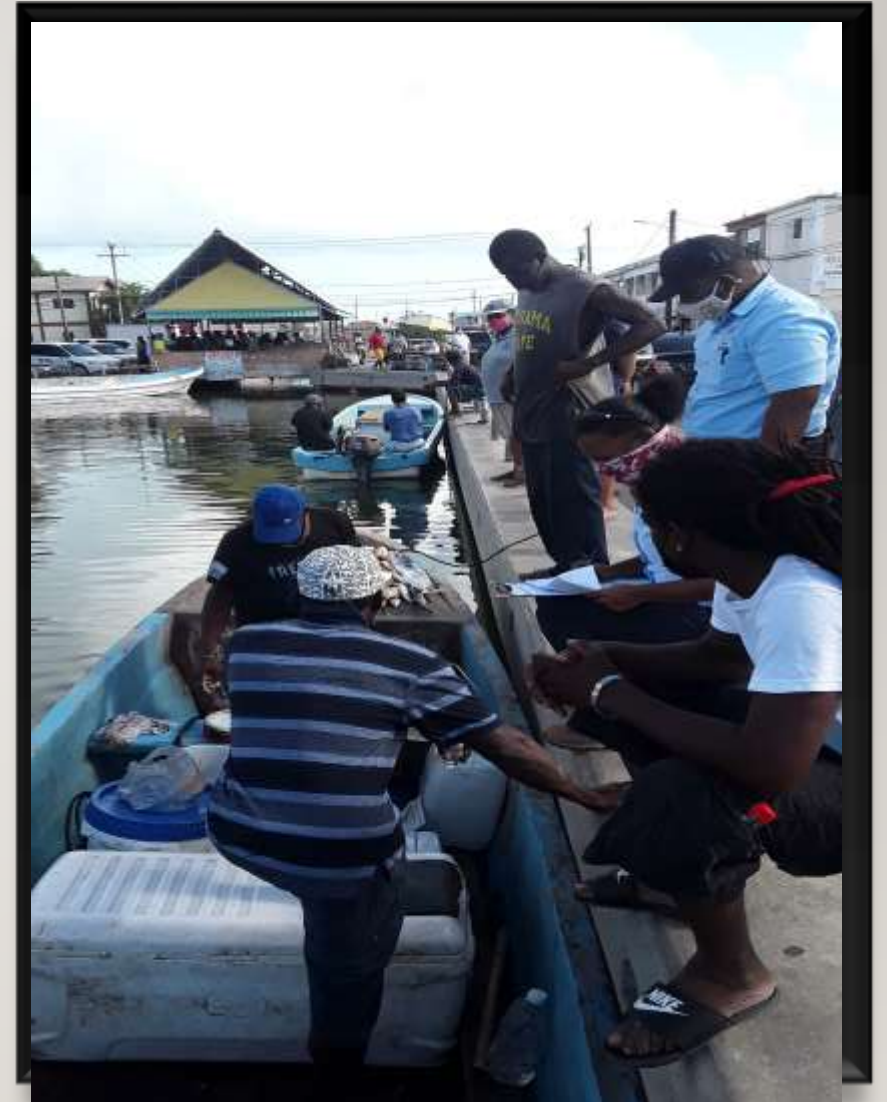
OBJECTIVES

- To determine and quantify the finfish species landed at Conch Shell Bay Fish Market for six (6) months from May – October , 2021.
- To identify the types and quantity of fishing gears used to capture the finfish landed and estimate the fishing effort applied to capture the finfish landed for six (6) months (May – October, 2021).
- Estimate the age population structure of the finfish species landed during the study period.

STUDY SITE

The Conch Shell Bay fish market is located on East Collet Canal Street in Belize City.

The fish market is one of the traditionally major fish markets in Belize, where many fishers daily land their fish products.



MATERIALS & METHODS

- Finfish trip data sheet (Form A1)
- Length Frequency data sheet (Form A2)
- Graduated fish board
- Clipboard
- Pen/pencil
- Hanging scale
- Fish ID Guide
- Measuring tape
- Fish basket

STRATIFICATION IN SPACE:

- The objective of the survey is to sample one specific landing site, which is the Conch Shell Bay fish market. So, sampling in space is conducted at the above-mentioned fish market from 3:00 pm to 5:00 pm during the randomly selected days.

STRATIFICATION IN TIME AND SAMPLING OVER TIME:

- Sampling over time is conducted with the use of a calendar month. For observation, a month is divided into 3 groups, each of 10 days.
- Randomly three (3) days are selected from each time strata per month, sampling is made from 3:00 pm to 5:00 pm.

TIME STRATA	Days in a Month									
	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	11	12	13	14	15	16	17	18	19	20
3	21	22	23	24	25	26	27	28	29	30

A SAMPLING OF FISHING VESSELS:

- The second stage units are fishing vessels that dock at the landing site. When the total number of vessels dock is 5 or less at 3:00 pm, the landings from all the vessels are enumerated for species-wise catch and other particulars.

Number of boats landed	Fraction to be observed
< 5	100 %
6 - 10	First 5 and the balance 50 %
11 - 15	1 in 2
16 - 20	1 in 3
21 - 25	1 in 4

INTERVIEWING

- When interviewing a fisher, the data collector (s) should try to establish a relationship that is based on trust, politeness, and mutual respect.
- Upon meeting a fisher, the data collector (s) should identify themselves, explain the purpose and objective of the survey, explain how the data will be used, and politely ask if the team can survey the catch and conduct the interview.
- Asking the questions, the way they are written on the survey form will help ensure data are collected in a repeatable and consistent manner.
- The data collectors should familiarize themselves with the questions before conducting the interview; this will help with the flow of the interview and help convey confidence.

ANNEX 1:

FORM A1: FIN FISH TRIP DATA SHEET

Log-sheet Serial No: _____

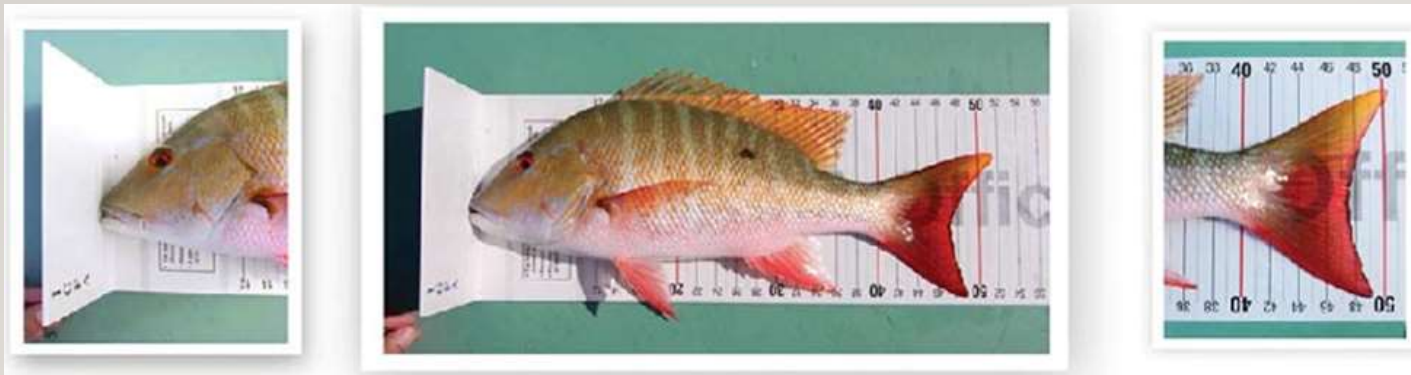
LANDING SITE No./Name:		SAMPLING DATE (dd/mm/yy):		DATA COLLECTORS NAME(S):	
LANDING SITE GPS LOCATION: 16 Q: _____ UTM: _____		CAPTAIN'S ID No.:			
VESSEL NAME:		CAPTAIN'S NAME:		AREA FISHED: Area No. (Most Important) _____ Area No. (Second Important) _____	
VESSEL ID:		CREW NO:		COST OF FOOD:	
TYPE OF VESSEL: Skiff: Sailboat:		FUEL USED (g):		No. SACK ICE USD:	
VESSEL COLOR CODE: 1. _____ 2. _____		GEAR TYPE: 1. No. Handline _____ 2. No. Fish Trap _____ 3. No. Spear gun _____ 4. Other _____		CATCH SOLD: _____ % CATCH KEPT: _____ %	
				DATE DEPARTURE (dd/mm/yy):	
				DATE RETURN (dd/mm/yy):	
				No. Days fished :	
				WHY DO YOU FISH? Outcome: Subsistence: _____ Income: _____ Other: _____	
SPECIES COMMON NAME	REEF FISH/DEEP WATER	QUANTITY (NUMBER)	TOTAL WEIGHT (lbs)	PRICE/lbs	

BIOLOGICAL SAMPLING

- The data collectors use the fish identification guide to sort the catch into species-specific groups before measuring and weighing.
- There are many ways to measure fish length. For most species, the total length is the measurement taken, but for some species, the fork length may be more appropriate, particularly for species with an exaggerated fork as the delicate fin tissue is prone to damage.
- The fish should be placed flat on its right side (snout to the left) with the mouth closed and snout pushed against the head of the measuring board.

BIOLOGICAL SAMPLING

- For small species (max size ~30cm), the length should be measured to the nearest 0.5cm below; for all other fish, they should be measured to the nearest cm below (Figure 1).



WEIGHING OF FISH SAMPLED

- After measuring, the data collector doing the measuring should line the fish up in the same order in which they were measured.
- The person weighing should weigh the fish in this order. This will allow the person who is recording the information on the datasheet to put an individual fish's weight right next to its length.
- Weight for individual fish should be measured to the nearest 0.01 kg or 1 oz using a hanging scale. Units should always be clear and consistently used (Form A2).



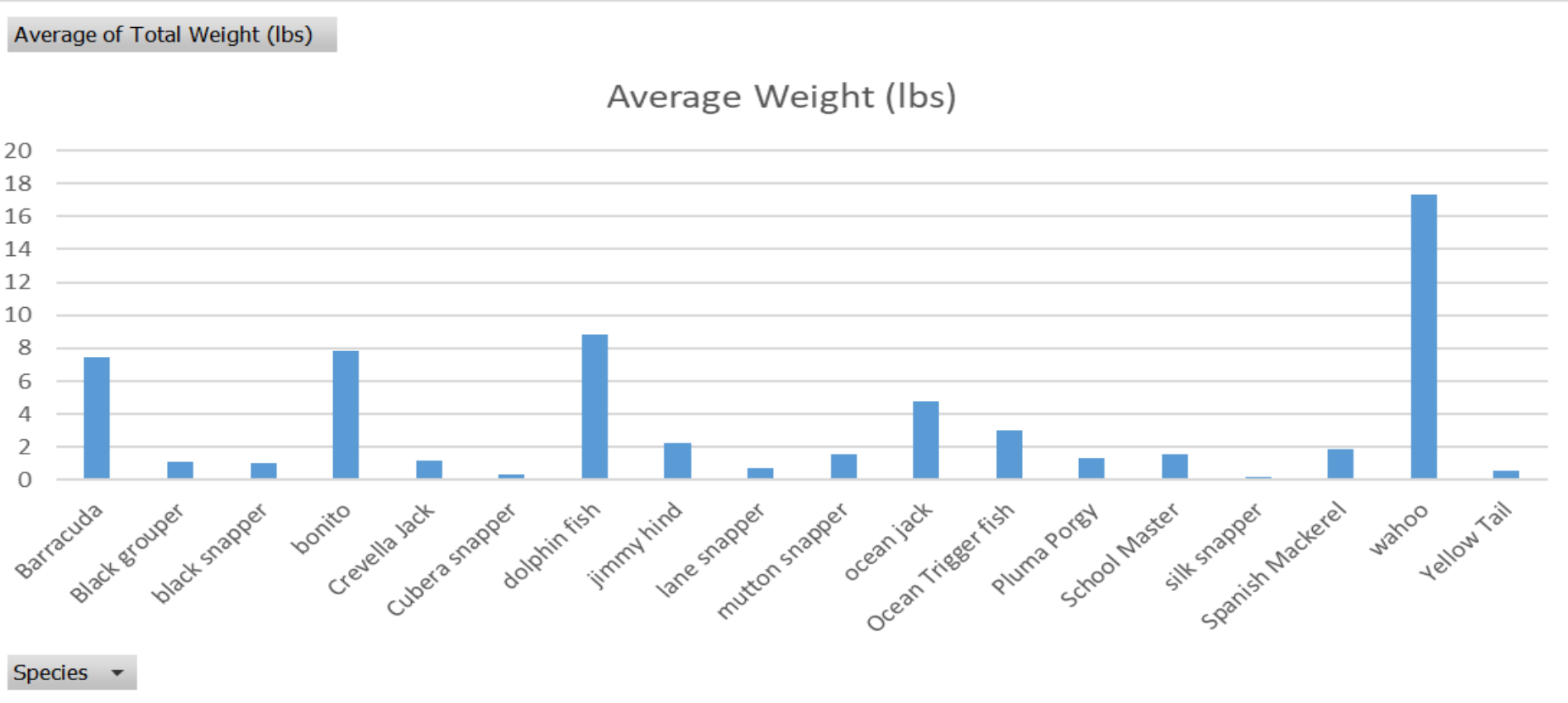
DATA MANAGEMENT

- Carry a small notebook with you. Use the notebook to write down any extra information that is picked up during the day. However, do not use the notebook to record data. (See 'Do not re-write data').
- The header details are filled in and the page number is up-to-date.
- All data fields on any forms that have been used are filled.
- The data forms are clean and presentable.
- The completed form should be turned in to the consultant as soon as possible.
- Data is digitized and store using MS Access database.

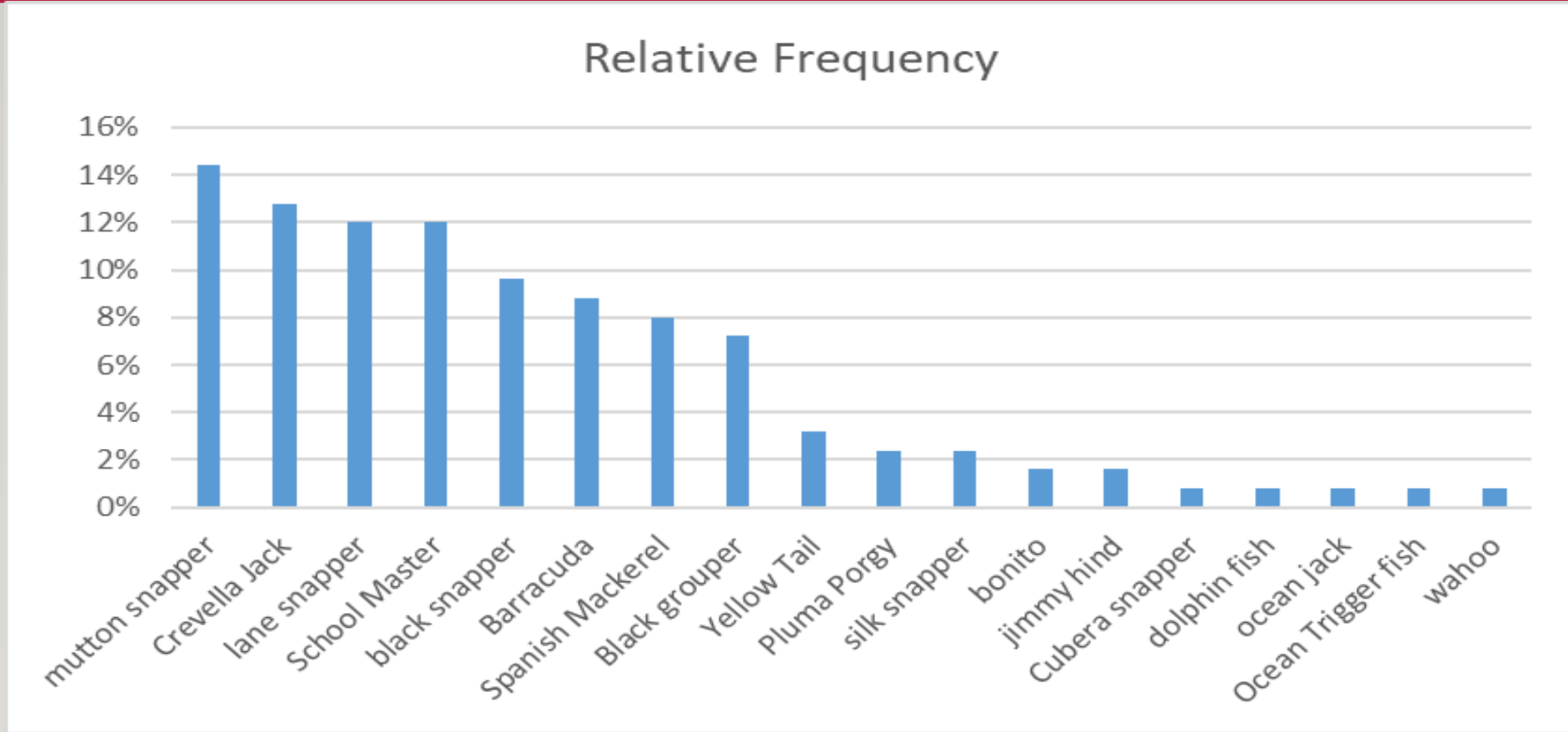
PRELIMINARY RESULTS

Variable	Average
Area most fished	2, 6 & 7
Fishing vessel	Fiberglass skiff, less than 25 feet
Average days fished	2.5 days
No. Crew	Average 3 persons
Fishing Gear	Handline
Fuel consumption	Average 25 G
No. Ice bags	4
Food cost	Average \$ 85
Average Total Catch per vessel	75 lbs

PRELIMINARY RESULTS



PRELIMINARY RESULTS



THANK YOU

