SCIENTIFIC COMMITTEE
NINTH REGULAR SESSION

6-14 August 2013
Pohnpei, Federated States of Micronesia

Preliminary Report on the Catch of Philippine Group Seine Operations in High Seas Pocket 1-Special Management Area (HSP1-SMA)

WCPFC-SC9-2013/ ST-WP-05

Rafael V. Ramiscal, Alma C. Dickson, Isidro Tanangonan, Jeric Jara and Marlo Demoos[1]

[1] National Marine Fisheries Development Center (NMFDC), Bureau of Fisheries and Aquatic Resources, (BFAR) PCA Bldg., Elliptical Road, Quezon City, Philippines

Preliminary Report on the Catch of Philippine Group Seine Operations in High Seas Pocket 1-Special Management Area (HSP1-SMA)

Rafael V. Ramiscal, Alma C. Dickson, Isidro Tanangonan, Jeric Jara, and Marlo Demoos

National Marine Fisheries Development Center (NMFDC)
Bureau of Fisheries and Aquatic Resource (BFAR)
PCA Bldg., Elliptical Road, Quezon City, Philippines

I. Introduction

High Seas Pocket No. 1 (HSP1) was closed to purse seine fishing effective January 1, 2010 as a result of the implementation of Conservation and Management Measure 2008-01 (CMM 2008-01) adopted by the Western and Central Pacific Fisheries Commission (WCPFC). The CMM is intended to reduce fishing mortality of bigeye and yellowfin tunas. HSP1 is bounded by the exclusive economic zones or EEZs of Federal States of Micronesia, Republic of Palau,Indonesia, and Papua New Guinea.

In March 2012 during the 8th Regular Session of the WCPFC, Conservation and Management Measure 2011-01 (CMM 2011-01) for Temporary Extension of CMM 2008-01 was adopted granting Philippine traditional fresh/ice chilled fishing vessels operating as a group access to HSP1 until February 2013. The measure involves several conditions including access limit to 36 catcher fishing vessels, mandatory use of automatic location communicator (ALC) and regional observer onboard.

Consequently, Fisheries Administrative Order 245 (FAO 245) was issued by the Department of Agriculture through the Bureau of Fisheries and Aquatic Resources (BFAR) to prescribe regulations and implementing guidelines on the operations of 36 fishing vessels in HSP1. In addition, Fisheries Administrative Order 240 (FAO 240) was adopted for the implementation of the National Fisheries Observer Program (NFOP) covering high seas. Further, Fisheries Administrative Order no. 241 (FAO 241) was issued to strengthen VMS operations in the high seas.

In December 2012, the 9th Regular Session of the WCPF in Manila, Philippines adopted a new Conservation and Management Measure for skipjack, yellowfin and bigeye (CMM 2012-01). The current CMM aims to ensure fishing mortality rates do not exceed maximum sustainable yield (MSY). It also requires measures that disallow increase in the number of fishing days in the high seas. In this connection, the Philippines high seas fishing activity remains limited to 36 traditional/ice-chilled group seine vessels operating only in High Seas Pocket 1 with 100% fisheries observer coverage until the February 2014 expiration.

Group seine operations in HSP1 commenced October 2012, initially with 7 catcher vessels in the first month of operation. Due to the strict implementation of the guidelines for access to HSP1, only 16 catcher vessels out of 36 are currently operating in the HSP1 area with 100% fisheries observer coverage.

This report covers the 16 vessels based on reports by Observers for the period October 1, 2012 to May 25, 2013.

II. Methods

A. Catch Estimation

Observers total catch estimates were derived from two methods. The main procedure was made by counting and estimating the capacity of brails as fish catch was transferred from the bunt to wells or fish holds of awaiting carriers. The other method was based on capacity and fullness of wells/fish holds. Catch rate was estimated as kg/fishing day . In general, only one set was made in one fishing day. In the brail count / capacity method, total catch was estimated using the following method :

Volume (V) = π r 2 h
Brail capacity = Volume x 80%
Where;
π = 3.14
h= Brail height
r = Brail diameter (d)/ 2

The volume of fish catch was estimated at 80% of the volume of the brail to account empty/water space. By using this method, a margin of +/- 2% error was observed (dela Cruz, 2010).

B. Catch Sampling

Random procedure was carried out in sampling the catch. Samples were collected using tubs as the brail was emptied into the well or scooping the fish from fish holds/wells. Further sub-sampling procedures was conducted when necessary. Around 3-5 tubs were used as the final samples with an average of 123 individuals per set. Samples were sorted according to species whenever possible and weighed to the nearest 0.1 kg. The lengths of all tunas and mackerel scad from the sample were measured to nearest cm (fork length for tuna and large pelagic species and total length for mackerel scad).

The large size tunas, billfish and other species that were separated as brails were emptied into the wells. These were weighed and measured separately.

C. Species identification

Species identification was done by Observers based on available identification guides. Special attention was given on the distinctive characteristics of small size yellowfin and bigeye tunas.

D. Analysis

Data were analyzed using descriptive presentation of data using Microsoft Excel to illustrate a general status of operation in HSP1. These include species composition, Effort, CPUE and length frequency.

Information on the number of days the vessels stayed at HSP1 was based VMS data on time/date of entry and exit from HSP1.

III. Results

A. Catch and fishing effort

The current group seine fleet was composed of 15 purse seine and 1 ringnet catcher vessels operated by 9 fishing companies. A total of 48 Observer trips were completed during the period involving 39 Observers. The difference between the number of Observers and Observer trips denotes that 5 Observers were deployed twice and 2 were deployed thrice during that period. Replacement/shifting of observers were based on minimum of 60 days per Observer trip.

Due to the guidelines set for the access to HSP1, operations only started in October 2012 following the termination of the FADs closure in September 2012. Only 7 of 36 fishing vessels were able to operate as of October 2013 with 44 fishing days. The first 2 weeks was spent on deploying FADs. Number of fishing days was doubled in November with 2 catchers added to the fleet. Almost the same number of fishing days was observed in December with another 1 catcher added to the group. Two (2) more catchers were able to join in January. In February, 3 catchers returned to port for repairs. Another catcher arrived in HSP1 but was not able fish due to problems with logistics (no carrier vessel) and returned to port in March after consuming all its provisions.

Overall for the period covered by this report, the 16 vessels spent a total of 1,915 days in HSP1 and actual 636 fishing days or just about one (1) fishing day for every three (3) days spent by each vessel in the HSP1. This report is about 66.4% of the likely total of 2884 days spent by the 16 vessels in HSP1 by

the end of fishing season on June 30, 2013 (Table 1). FAO 245 which provides regulation and guidelines for the operation of Philippine group seine operation set the annual catch limit not to exceed an equivalent of 9,846 fishing days for the 36 vessels, or corresponding to 273.5 fishing days per vessel.

In addition, of the total 636 fishing days, only 613 sets were successful or an efficiency rate of 96%. Unsuccessful fishing days were caused by damaged gear, machinery malfunction, unfavourable sea condition and other factors.

Table 1. Summary of catch and effort by catcher vessel

Vessel	Period Covered	Actual # of days at HSP1	Actual # fishing days	Total Catch (t)	Catch/fishing day (t)	Presumed # of days at HSP1 until June 30, 2013
VESSEL 1	3 Dec 12 to 28 Mar 13	114	71	745.28	10.50	206
VESSEL 2	1 Oct 12 to 20 Jan 13 4 Mar 13 to 14 Apr 13	152	53	558.23	10.53	229
VESSEL 3	24 Dec 12 to 25 Jan 13 05 Feb 13 to 23 Mar 13	78	22	159.05	7.23	178
VESSEL 4	15 Oct 13 to 19 Mar 13	154	53	501.48	9.46	258
VESSEL 5	3 Oct 12 to 13 May 13	221	79	548.91	6.95	261
VESSEL 6	2 Nov 12 to 23 Jan 13 25 Feb 13 to 18 May 13	165	33	177.37	5.37	165
VESSEL 7	20 Oct 12 to 22 Jan 13 27 Feb to 13 Apr 13	138	45	531.48	11.81	214
VESSEL 8	26 Nov 12 to 20 Mar 13	114	57	836.00	14.67	201
VESSEL 9	25 Oct 12 to 28 Mar 13	154	36	304.45	8.46	247
VESSEL 10	2 Oct 12 to 15 May 13	225	76	697.03	9.17	225
VESSEL 11	3 Oct 12 to 13 May 13	222	59	487.15	8.26	222
VESSEL 12	25 Jan 13 to 5 Mar 13	38	12	128.63	10.72	156
VESSEL 13	7 Feb 13 to 9 Mar 13 9 Apr 13 to 21 may 13	72	19	157.62	8.30	113

VESSEL 14	25 Mar to 21 May 13	56	15	199.28	13.29	97
VESSEL 15	13 May 13 to 25 May 13	11	6	14.45	2.41	47
VESSEL 16	25 Apr 13 -					67
Total		1915	636	6046.38	9.51	2884

B. Catch and species composition

A total of 6,046 tons of fish was recorded during the covered period, translating to a catch-per-unit effort of 9.51 tons/vessel/fishing day or 3.02 tons/vessel/day in HSP1. The bulk of the catch was composed of skipjack (75.23%) and yellowfin (16.23%). Bigeye was at 3.63% while the remaining 4.84% was comprised of other species including mackerel scad, kawakawa, frigate and bullet tuna, bigeyed scad, dolphin fish and triggerfish (Fig.1, Table 2).

Sharks and other species of special interest were also occasionally caught during the operation, with a total of 126 kilograms or 22 tails composed of 6 silky sharks, 5 copper sharks, 4 mako, 1 oceanic whitetip, 1 blueshark, 4 stingrays and 1 spinner and 2 commmon dolphins.

Table 2. Catch of major species by month

Month	Total Catch (t)	SKJ(t)	YFT(t)	BET(t)	Others(t)
October	493.85	349.04	111.98	10.63	22.19
November	709.15	551.57	104.24	21.16	32.18
December	845.51	655.69	105.86	37.87	46.09
Total for 2012	**2048.51**	**1556.30**	**322.09**	**69.66**	**100.46**
Percent		75.97%	15.72%	3.40%	4.90%
January	1390.08	1094.41	196.39	39.77	59.51
February	714.63	534.53	111.07	51.56	17.48
March	1100.80	833.65	198.46	20.84	47.85
April	526.41	383.51	100.28	15.34	27.28
May	265.96	146.43	56.95	22.60	39.98
Total for 2013	**3997.87**	**2992.53**	**663.14**	**150.12**	**192.09**
%		74.85%	16.59%	3.75%	4.80%
Grand Total	**6046.38**	**4548.83**	**985.23**	**219.78**	**292.55**
%		75.23%	16.29%	3.63%	4.84%

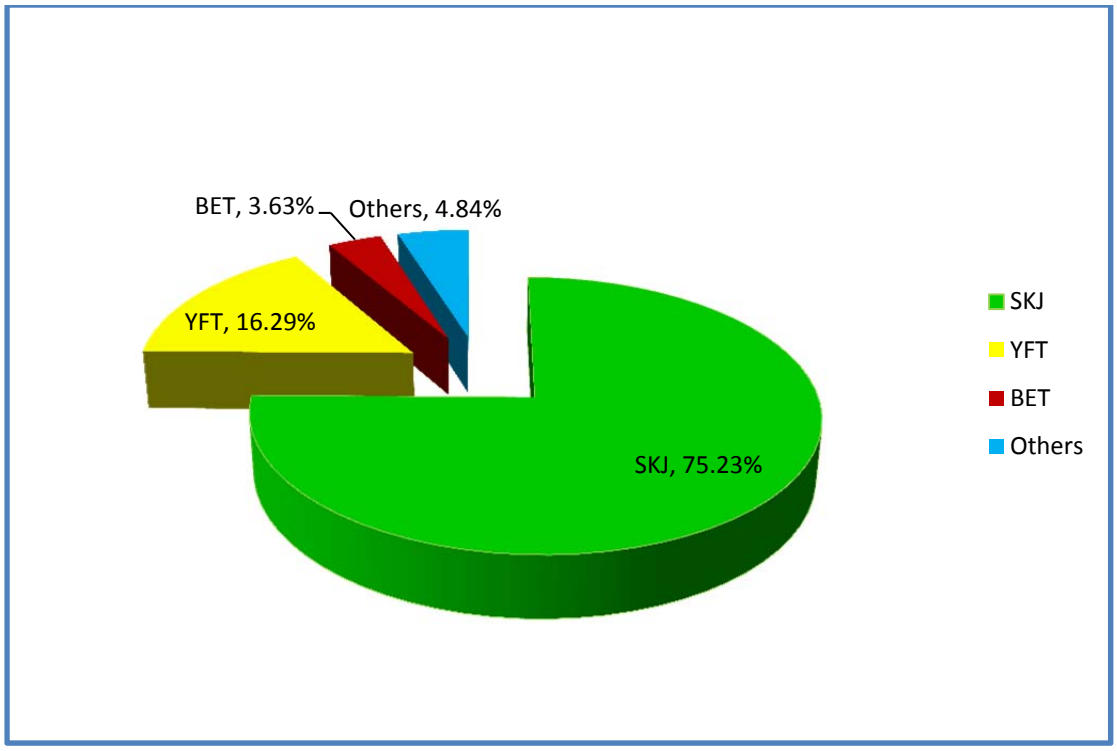


Figure 1. Composition of fish caught by group seiners, HSP1, October 2012-May 2013

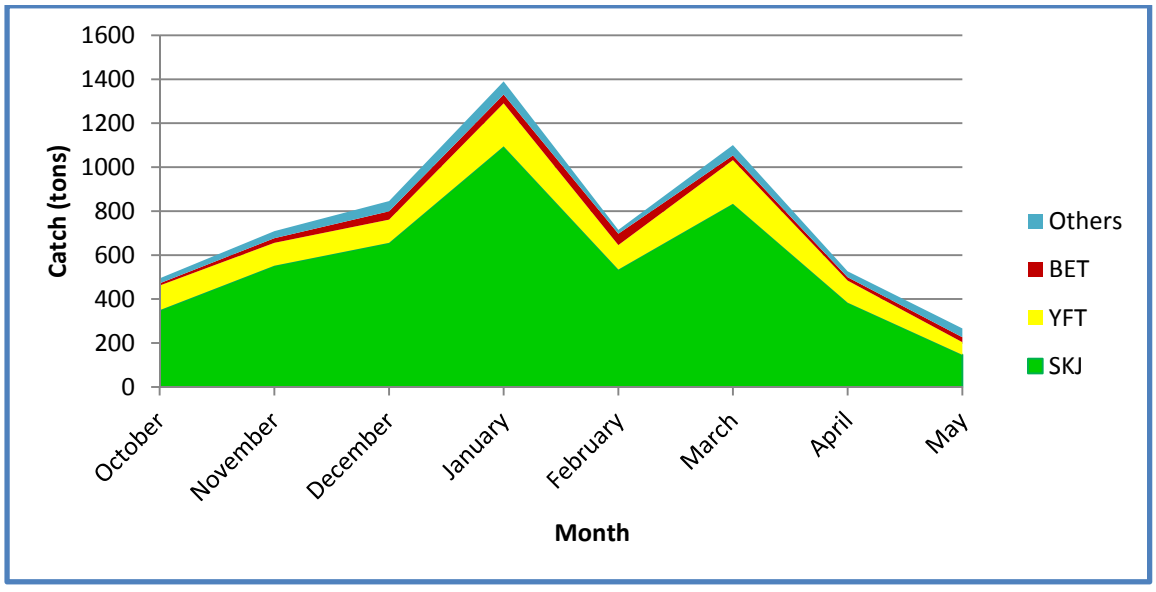


Figure 2. Catch by species by month

The catch species and by month is illustrated in Fig. 2. The catch from October to January obviously increased as the number of vessels given access was adding up. However, the catch declined in February as 3 fishing boats returned

General Santos port in late January for net repairs and boat maintenance and managed to return only in the 3rd week of February and 1st week of March. Catch for March, April and May were partial as full reports were only expected for submission upon completion of Observer trips towards the end of the fishing season in June 30, 2013.

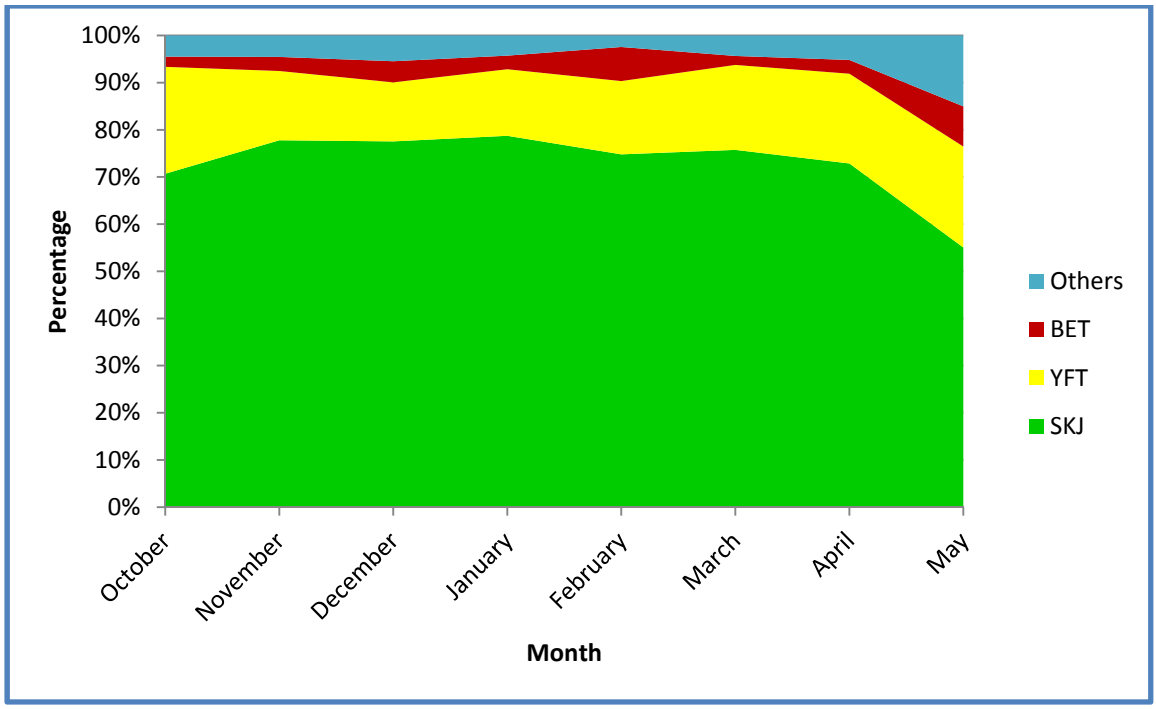


Figure 3. Monthly relative composition of species caught

Figure 3 depicts the monthly relative composition of species, indicating a low proportion of skipjack in October and February, April and May. Yellowfin was relatively highest in October and May when it comprised about 23% and 21% of the catch respectively. The catch of yellowfin was in the range of about 13-19% during the other months. Bigeye tuna was relatively highest in February and May at 7% and 8 % and the proportion ranged from 2% - 4% in other months. (Fig. 2 and 3).

C. Size composition

Figure 4 illustrates the length distribution of SKJ, YFT and BET indicating modal lengths at 36-40 cm, 41-45 cm and 41-50 cm and average length of 35.9 cm, 39.2, and 42.7 respectively. Yellowfin tuna showed 2 different modal peaks at 26-30 and 41-45 cm (Fig 4, table 3). In contrast with fish caught in Philippine EEZ in the same period, the lengths for the above species were relatively much smaller with modal length of 26-30 cm for the 3 tuna species and average length of 28.6 cm, 27.4 cm and 24.4 cm respectively (Fig 5, Table 4).

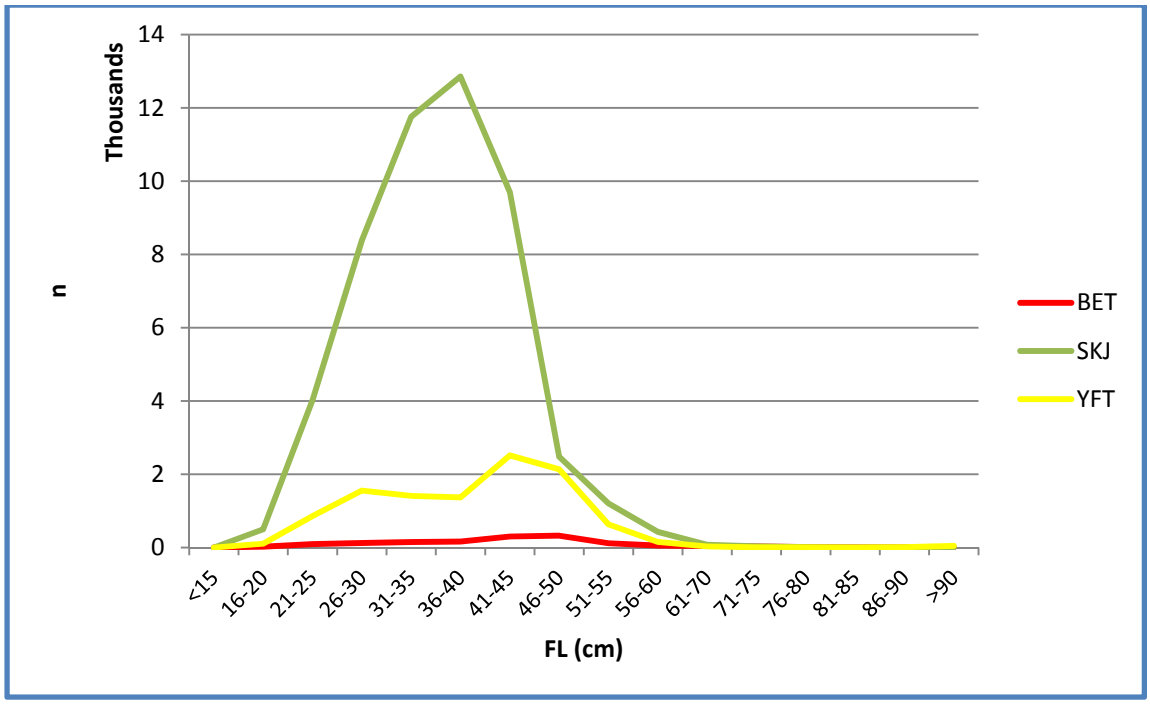


Figure 4. Size composition of skipjack, yellowfin and bigeye caught in HSP1, October 2012-May 2013

Table 3. Average length of skipjack, yellowfin and bigeye caught in HSP1, October 2012-May 2013

Species	SKJ	YFT	BET
Average (cm)	**35.9**	**39.2**	**42.7**
n	51455	10835	1446
Min (cm)	12	17	18
Max (cm)	76	117	110

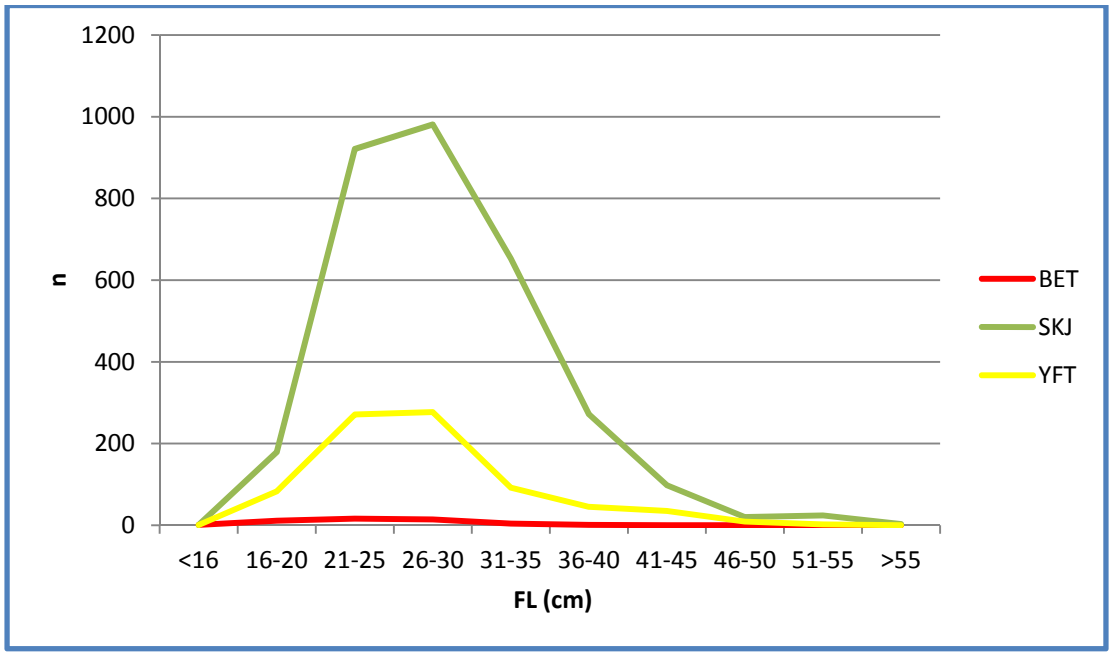
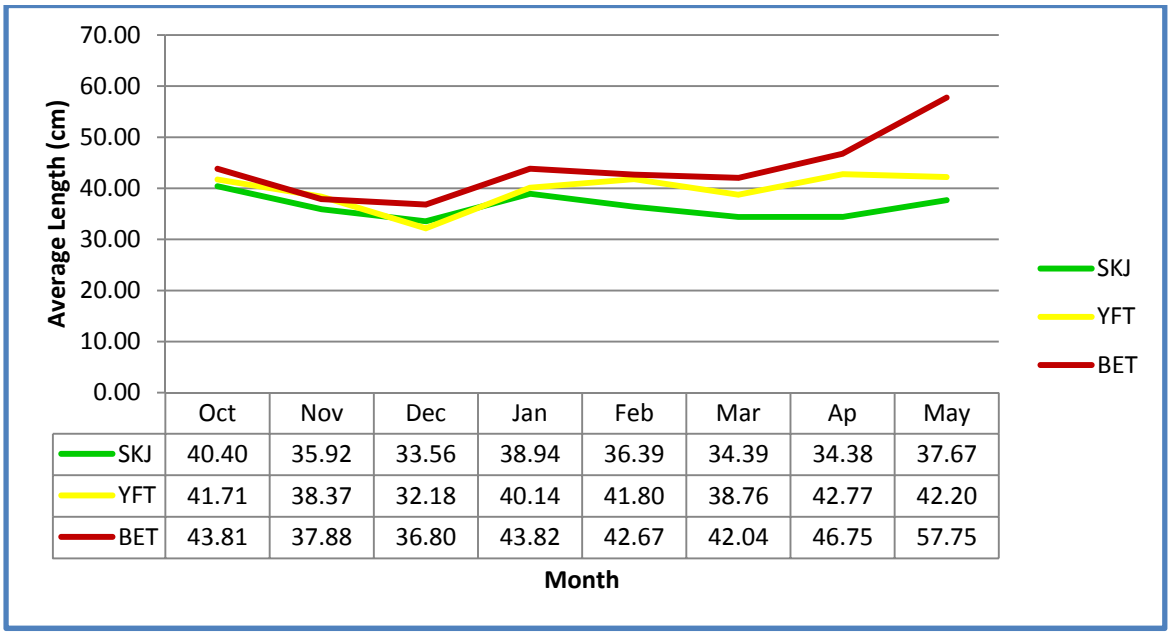


Figure 5. Size composition of skipjack yellowfin and bigeye caught in Philippine EEZ, Oct 2012-May 2013.

Table 4. Average length of skipjack, yellowfin and bigeye caught in Philippine EEZ.

Species	SKJ	YFT	BET
Average (cm)	**28.6**	**27.4**	**24.4**
n	3156	817	47
Min (cm)	13	14	13
Max (cm	60	52	40



	Oct	Nov	Dec	Jan	Feb	Mar	Ap	May
SKJ	40.40	35.92	33.56	38.94	36.39	34.39	34.38	37.67
YFT	41.71	38.37	32.18	40.14	41.80	38.76	42.77	42.20
BET	43.81	37.88	36.80	43.82	42.67	42.04	46.75	57.75

Figure 6. Average length of major species caught in HSP1

Decreasing trend on the average length of SKJ tuna can be noticed from October-December 2012and January- April 2013 but increased in May. YFT on the other hand showed an abrupt decrease in December but increased again in January. Similar pattern can be noticed on the average length of YFT and BET, decreasing from October to December, increased in January and February. Highest average length of BET was in May at 57.75 cm (Fig 5).

IV. Summary / Recommendations

1. Based on the initial analysis on the catch of 16 catcher vessels given access in HSP1, operations resulted to a total catch of 6046 t, comprising of 75.2% SKJ, 16.3% YFT, 3.6% BET, 2.6% mackerel scad and 2.2% other species. Total days these vessels spent in HSP1 was 1915 including a total of 636 fishing days, 613 of which were considered successful.

2. The average catch was 9.5t/boat/fishing day or about 3 tons/boat/day in HSP1.

3. The average length of SKJ, YFT and BET caught were 35.9 cm, 39.2, and 42.7 respectively, sizes that are relatively bigger than tunas caught from Philippine EEZ.

4. Observer report can best serve its purpose to document catch and monitoring operations of the vessels in HSP1 SMA. It is more detailed and substantial compared to other catch documentation & monitoring schemes. However it is also necessary to improve current reporting frequency especially on long Observer trips. In addition, there is also a need to study the relationships with other schemes.

V. References

Dela Cruz William. Observer Trip Report. 2010

FAO 240.Rules and Regulations in the Implementation of Fisheries Observer in the High Seas

FAO 241.Regulations and Implementation of the Vessel Monitoring System in the High Seas

FAO 245.Regulations and Implementing Guidelines on Group Tuna Purse Seine Operation in High Seas Pocket 1 as a Special Management Area

Observer Program Operations Manual for Ringnet/Purse Seine

WCPFC CMM 2011-01.Conservation and Management Measure for Temporary Extension of CMM 2008-01

WCPFC CMM 2012-01.Conservation and Management Measure Bigeye , Yellowfin and Skipjack Tuna in the Western and Central Pacific Ocean.