DOCUMENT SAC-06 INF-L

National Tuna Fisheries Report in 2014

Japan

SUMMARY

Longline is the only tuna-fishing gear deployed by Japan in the EPO. The total 2014 EPO catch of tunas and tuna-like species by the Japanese longline fishery was still provisional and estimated to be about 21,000 t, and this accounts for 81% of 2013 total catch. The most dominant species was bigeye representing 54% in weight of the total tuna and tuna-like fish catch in 2014. The next dominant species was swordfish accounted for 17% and third species was yellowfin (11%). Coverage rate for the longline was estimated to 74% - 100% in recent 5 years.

Section 1. Annual fisheries information

1. Introduction

Longline is the only tuna-fishing gear deployed by Japan in the Eastern Pacific Ocean (EPO). Japanese longliner have operated broadly in entire Pacific Ocean. The Japanese government allows holders of the distant water license for longline fishery to operate in the EPO, while the government allows holders of offshore license to operate only in the Western and Central Pacific Ocean. Therefore, this paper describes recent trends in the distant water longline fishery as longline fishery in the EPO, including fleet size, catch and fishing effort statistics.

The National Research Institute of Far Seas Fisheries (NRIFSF) has been responsible for compiling catch and effort statistics for the Japanese longline fishery. The catch and effort statistics presented in this paper is based on logbook submitted by the fishermen of the fishery. Most recent statistics available are 2013 data, though the 2014 data are still preliminary.

2. Trends in fleet size

Table 1 shows the number of Japanese tuna fishing vessels by vessel size class in register gross tonnage, which actually fished in the EPO during the 2010-2014. As this number of active vessels is counted basing on logbook submitted, some vessels which actually operated but did not submit logbook were not included. The research and training vessels are not included.

The size class of the Japanese commercial longline was mostly more than 200 GRT. The total number of vessels operated in the EPO shows an increase trend from 90 vessels in 2010 to 98 in 2013. But the total number of vessels significantly decreased to 74 in 2014, accounted for 81% of average of that in the 2010-2013.

3. Trends in catch and effort

Catch in weight of tuna species (Pacific bluefin, albacore, yellowfin, and bigeye), swordfish and billfishes (striped marlin, blue marlin, black marlin, sailfish and shortbill spearfish) caught by the Japanese longline fleets in

the EPO from 2010 to 2014 are shown in Table 2. Historical changes in fishing effort and catch by species are shown in Figs. 1 and 2, respectively, for the years 1971-2014. Total effort (in number of hooks) of distant water and offshore longline fishery in all oceans which was 556 million hooks in 1981 decreased to 495 million in 1983 and increased again to 557 million in 1988 after when it has decreased steadily to less than 400 million since 1999. The fishing effort of distant water longline fleets in the EPO was a peak, 200 million hooks in 1991, decreased to less than 50 million, thereafter. In recent years, the fishing effort was 36 million hooks in 2014, which is the historical lowest (Table 2). Primary species for the longline catch is bigeye tuna, which account for more than 50 % of the total catch during this period. Bigeye catch shows an increase trend until 1986, which was a peak of 88 thousand t. The catch stay a relatively high level, 65-88 thousand t during the mid- 1980s to the early 1990s. The bigeye catch shows clear declining trend, from 56 thousand t to 14 thousand t during the mid- 1990s to the mid- 2000s. In recent five years, bigeye catch showed no apparent trend, was 11,336 t in 2014 (Table 2).

The total catch of tunas and tuna-like species by the Japanese longline fishery in 2004 in the EPO was still provisional and estimated to be 21,097 t, and this accounts for 81% of 2013 total catch (26,095 t). The most dominant species was bigeye representing 54% in weight of the total tuna and tuna-like fish catch in 2014. The next dominant species was swordfish accounted for 17% and third species was yellowfin (11%).

The average quarterly effort distribution for the longline fishery during the 2012-2014 is shown in Fig. 3. The primary fishing grounds are located in tropical area, between 10˚N and 20˚S. During the fourth quarter to the first quarter, fishing effort distributed between 10˚N and 20˚S, especially in the waters 110˚W to 135˚W and 5˚S to 15˚S. Other than those areas, there was some fishing effort in northern area, 15˚N to 30˚N and 135˚W to 150˚W. During the second quarter to the third quarter, fishing effort distributed between 10˚N and 20˚S. Other than this area, there was some effort in southeast area, 20˚S to 35˚S and 75˚W to 90˚W.

Distribution of the catch by species for this fleet is shown in Fig. 4. Primary species was bigeye in tropical area, between 10˚N and 20˚S and northern area, between 15˚N to 30˚N, while primary species was swordfish in the southeast area.

Section 2. Research and statistics

4. Logbook data collection and coverage

The owners of longline fishing vessels are required to submit the log sheet on their operations and catch information to the Japanese government. They distant water longliners are required to submit it every ten days. In the log sheet of longline, set by set data on catch number and weight in each species, and other information data such as fishing date and location, fishing effort (the number of basket and hooks used), water temperature are included. Catch weight information was not included in the logbook till 1993. The number of hooks per basket is important information as it suggests the depth of the gear and target species. As tuna and tuna-like fishes, six tunas (Pacific bluefin, southern bluefin, albacore, bigeye, yellowfin and skipjack), and six billfishes (swordfish, striped marlin, blue marlin, black marlin, sailfish and shortbill spearfish) are separately recorded in the logsheets. Additionally, information on the cruise (date and port of departure and arrival of the cruise), vessel (name, size, license number and call sign), number of crew and the configurations of the fishing gear (material of main line and branch line) are asked to fill on the top part of the sheet by each cruise.

Submitted logsheets are processed into electronic data. Various error checks, such as date, location, range of weight, CPUE, are conducted before these data are finalized. Vessel characteristics (call sign, name, license number, etc.) are verified with a register.

Because the coverage rate of logsheets is not 100% for longline fishery, it is necessary to raise the sample values to represent 100 %. For the longline fisheries, coverage rate has been about 74 - 100% of total number of operations in recent years (Table 3). Coverage rate for the most recent year (2014) was 74%, which was significantly low value, since longline trip for some of vessels started in 2014 still continue and logbook for such trip has been not finalized.

Information on the total number of operations by sub-areas and month provided by the fishermen's association (Federation of Japan Tuna Fisheries Co-operative Association) had been used to raise the logsheet data to the total catch. Since 2008, Vessel Monitoring System (VMS) information has been utilized to raise the logsheet data.

Table 1.   Number of fishing vessels engaged in tuna fisheries in the EPO by size of vessel in register gross tonnage. Figures in parentheses indicate provisional data.

	100-200 ton	200- ton	Total
2010	1	89	90
2011	0	94	94
2012	0	97	97
2013	0	98	98
2014	(1)	(76)	(77)

Table 2.   Fishing effort (in 1000 hooks) and catch (MT) in the EPO by species for the Japanese longline fisheries. By 2012, catches of silky shark, hammerhead sharks and whale shark are included in other shark. Figures in the parentheses indicate provisional data.

PBF: Pacific Bluefin tuna,   ALB: Albacore,   BET: Bigeye tuna,   YFT: Yellowfin tuna,   SWO: Swordfish,
MLS: Striped marlin,   BUM: Blue marlin,   BLM: Black marlin,   SFA: Sail fish,   SSP: Shortbill spearfish,
BSH: Blue shark,   LMD: Salmon shark,   POR: Porbeagle shark,   SMA: Shortfin mako shark,
OCS: Oceanic white-chip shark,   THR: Thresher sharks nei,   FAL: Silky sharks,
SPN: Hammerhead sharks nei,   RHN: Whale shark,   O-shk: other sharks

	#hooks	PBF	ALB	BET	YFT	SWO	MLS	BUM	BLM	SFA	SSP	SKJ
2010	47,807	0	1,471	15,847	3,639	3,100	438	809	26	11	398	60
2011	52,194	0	2,852	13,399	2,373	3,702	632	457	26	5	349	59
2012	55,587	0	2,217	16,323	3,600	3,866	665	740	19	5	459	74
2013	48,825	0	1,651	14,258	3,117	3,637	548	866	20	5	802	70
2014	(35,687)	(0)	(896)	(11,336)	(2,229)	(3,585)	(457)	(730)	(13)	(4)	(587)	(64)

	BSH	LMD	POR	SMA	OCS	THR	FAL	SPN	RHN	O-shk	Total
2010	1,218	0	6	223	49	345				218	27,797
2011	1,653	2	19	273	49	243				219	26,253
2012	1,327	0	13	141	0	179				88	29,640
2013	949	2	17	101	0	78	0	0	0	43	26,095
2014	(920)	(11)	(41)	(113)	(0)	(121)	(0)	(0)	(0)	(54)	(21,097)

Table 3.   Coverage rate of logbook for the Japanese longline fishery (distant water license only, 3 Oceans).

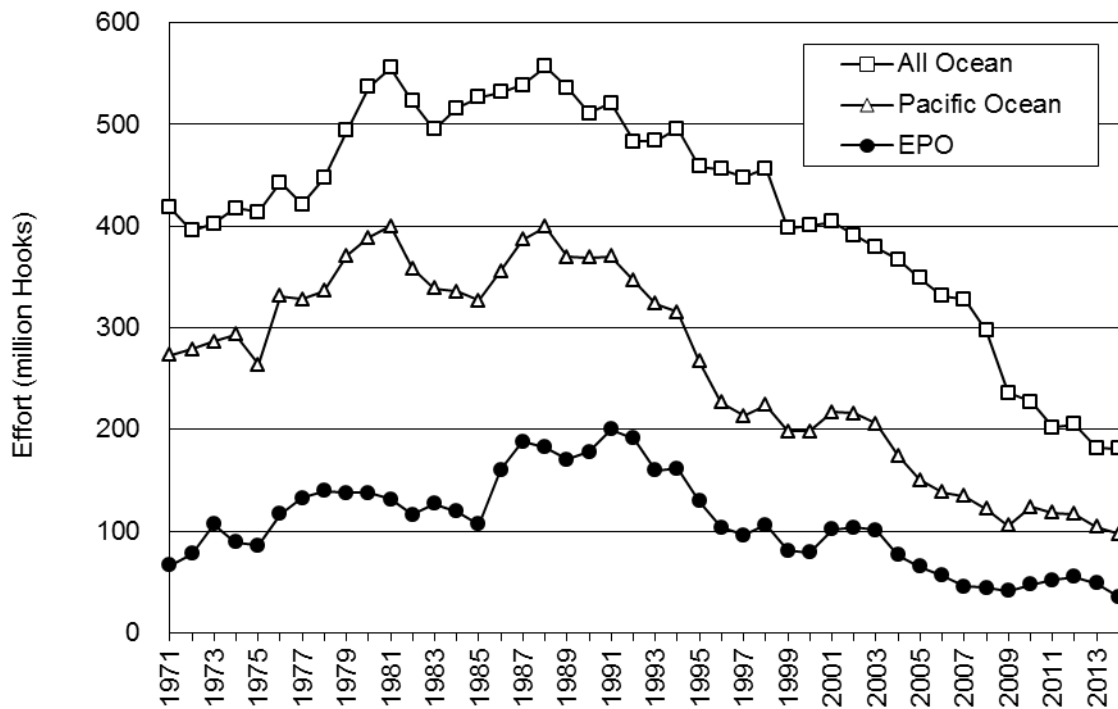|	Coverage Rate (%)
2010	100
2011	100
2012	100
2013	100
2014	74

Fig. 1. Historical change in fishing effort of the Japanese longline fishery in the EPO. Values in 2014 are provisional. All Ocean and Pacific Ocean includes the fishing effort for not only distant water longline but offshore longline.
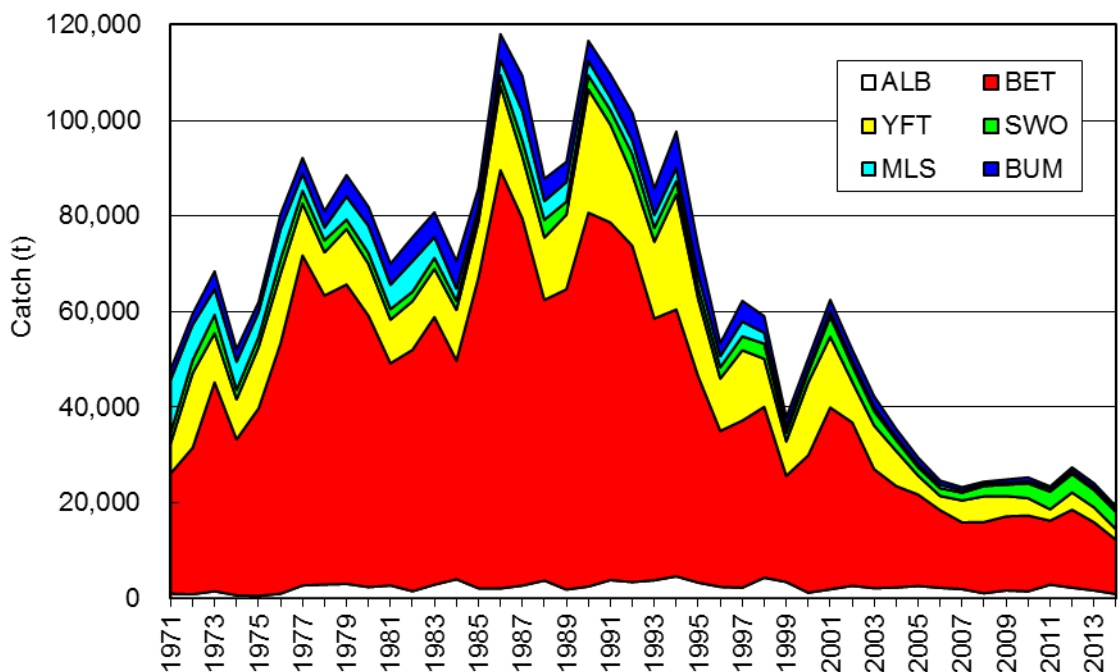

Fig. 2. Historical change of catches for major species for the Japanese longline fishery in the EPO. ALB: albacore, BET: bigeye, YFT: yellowfin, SWO: sword fish, MLS: striped marlin, BUM: blue marlin. Values in 2014 are provisional.
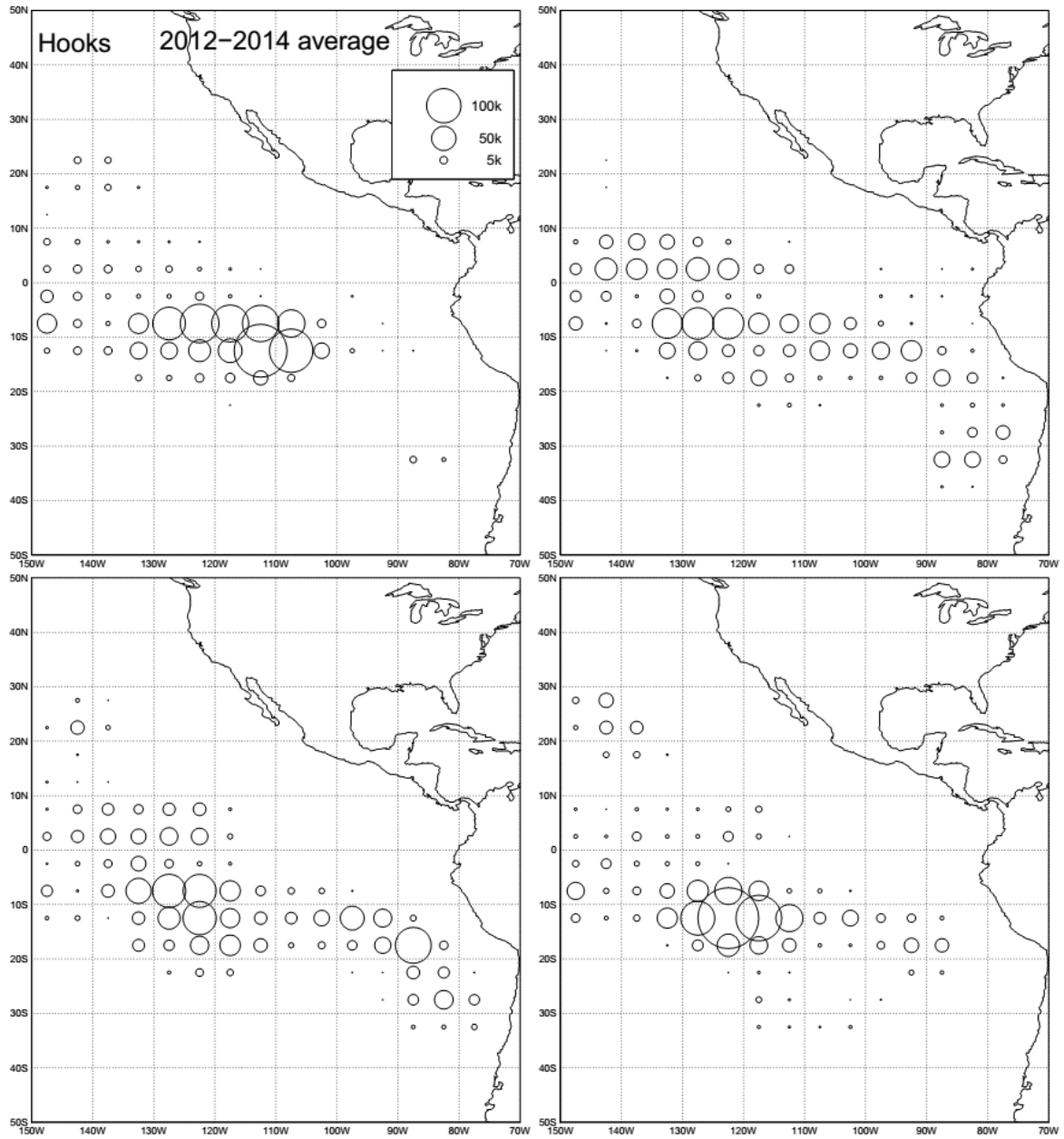
Fig. 3.   Quarterly distribution of fishing effort for the Japanese longline fishery in the EPO in average of 2012-2014.
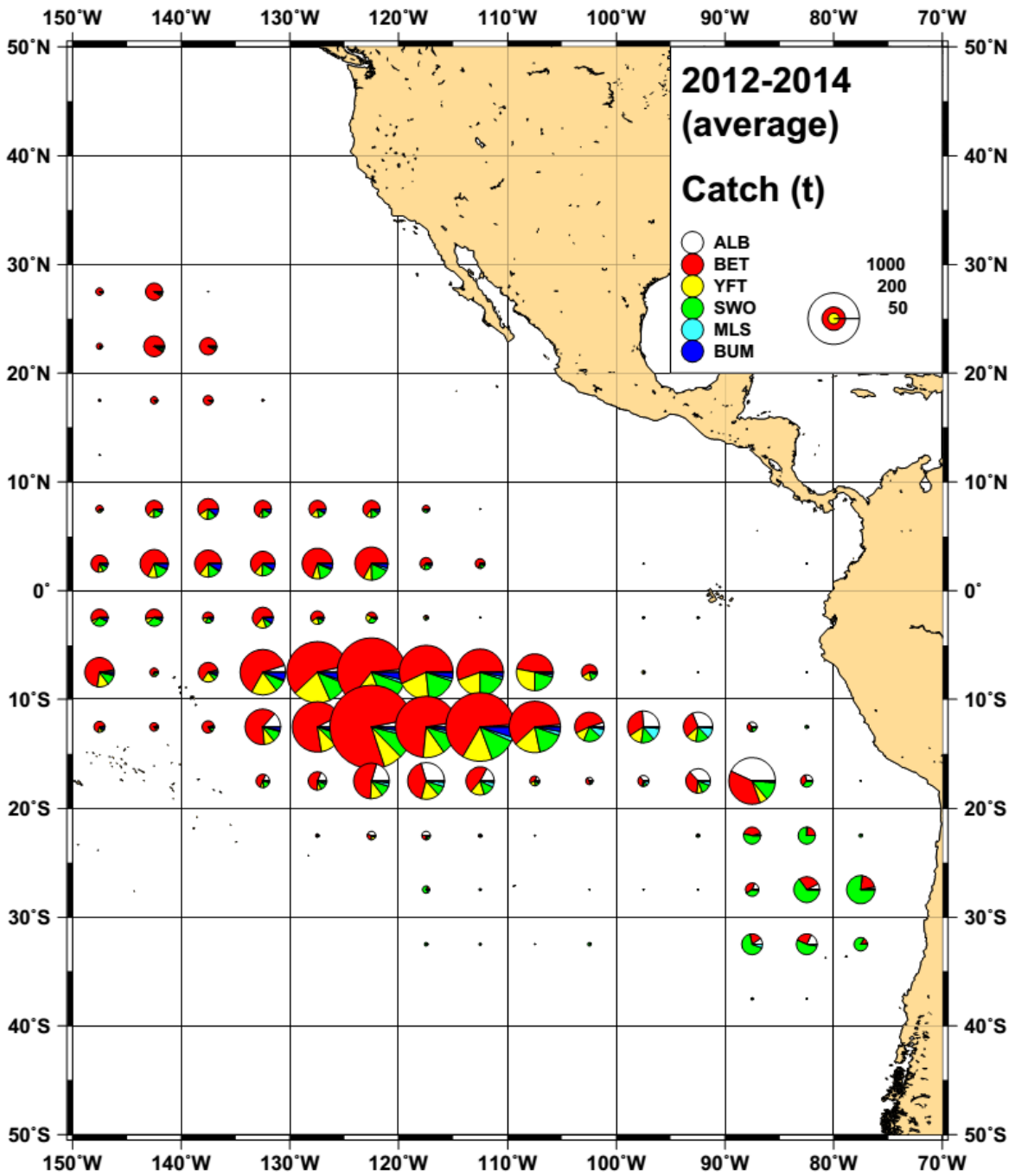
Fig. 4. Distributions of catch (in weight) by species by the Japanese longline fishery in average of 2012-2014 for six species (ALB: albacore, BET: bigeye tuna, YFT: yellowfin tuna, SWO: swordfish, MLS: striped marlin and BUM: blue marlin).