2nd Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific Committee
13-17 March 2017, Saint Denis, La Reunion

SC-02-04 (04)

National report of Japan

Relates to agenda item: 4 Working paper ☒ info paper ☐

Delegation of Japan

Abstract

This document describes following seven items requested by the National Report Template, i.e., “Fisheries”, “Catch, effort and CPUE”, “Fisheries data collection and research activities”, “VME Thresholds”, “Biological sampling and length/age composition of catches”, “Data verification mechanisms” and “Observer program”. In the SIOFA convention area, Japan has been operating two different types of fisheries discontinuously in 40 years (1977-2016), i.e., trawl fisheries targeting splendid alfonsino and bottom longline fisheries targeting Patagonian toothfish. Based on accumulated information, the seven items are described each for trawl and bottom longline fisheries.

NATIONAL REPORT: JAPAN

AGENDA ITEM: 4 (WORKING PAPER)

FEBRUARY, 2017

ABSTRACT

This document describes following seven items requested by the National Report Template, i.e., “Fisheries”, “Catch, effort and CPUE”, “Fisheries data collection and research activities”, “VME Thresholds”, “Biological sampling and length/age composition of catches”, “Data verification mechanisms” and “Observer program”. In the SIOFA convention area, Japan has been operating two different types of fisheries discontinuously in 40 years (1977-2016), i.e., trawl fisheries targeting splendid alfonsino and bottom longline fisheries targeting Patagonian toothfish. Based on accumulated information, the seven items are described each for trawl and bottom longline fisheries.

Contents

Submitted to the 2nd Meeting of the SIOFA Scientific Committee (13-17 March 2017, Saint Denis, La Reunion)

1. DESCRIPTION OF FISHERIES

In the SIOFA convention area, Japan has been operating two different types of fisheries discontinuously in 40 years (1977-2016) (Figure 1). i.e., trawl fisheries and bottom longline fisheries. Figure 1 shows that the number of vessels (trawl and bottom longline fisheries) operated in the SIOFA area during 1997-2016 which ranges 0 to 3 boats. Table 1 shows the summary of the annual catch for trawl and bottom longline fisheries.

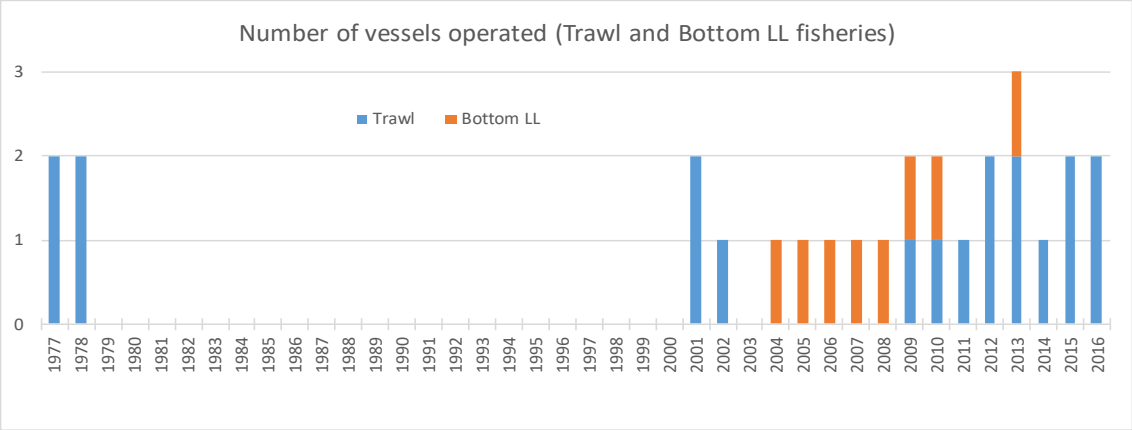


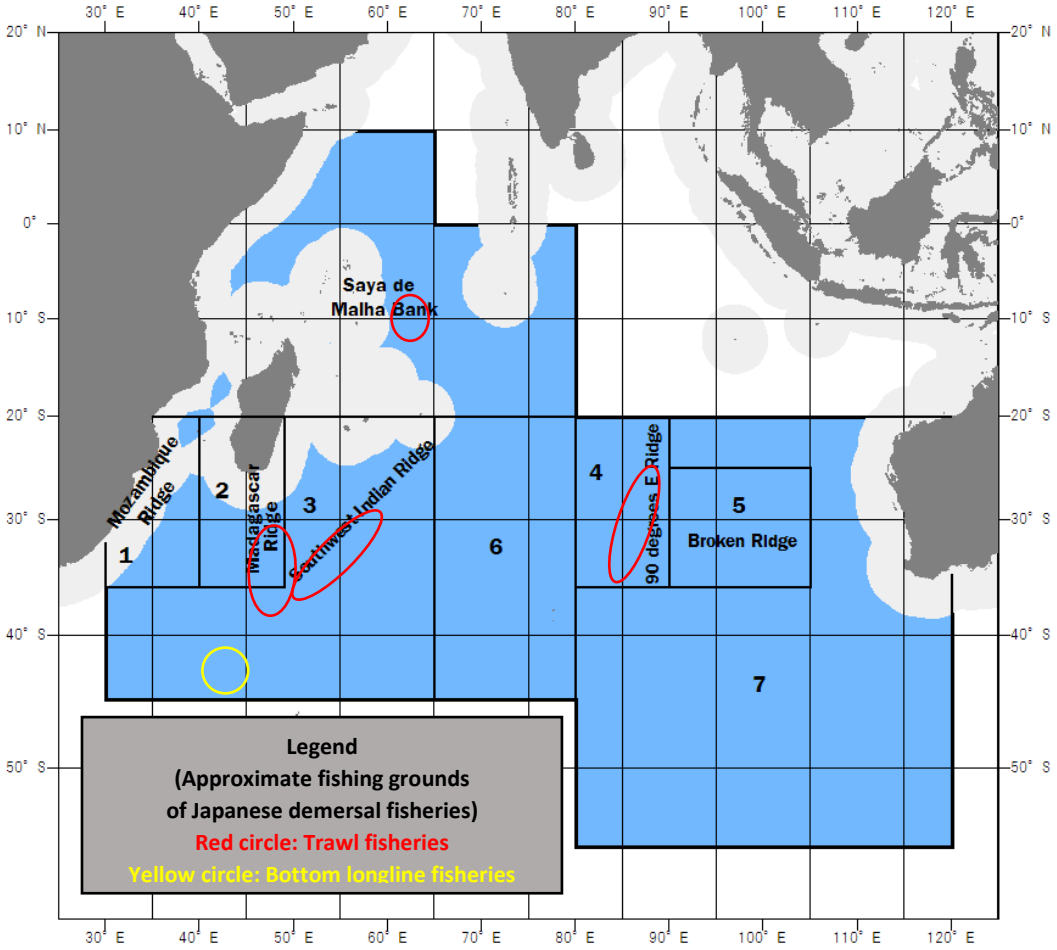
Figure 1. Number of Japanese vessels (trawl and bottom longline fisheries) operated in the SIOFA area (1977-2016).

(1) Trawl fisheries

There are 12 years of trawl fisheries operations in three separate periods, i.e. 1977-1978, 2001-2002 and 2009-2016. The total catch of trawl fisheries ranges 352-4,416 tons (1,340 tons in average) with 1-2 vessels (Table 1). There are 4 major Japanese trawl fishing grounds in the SIOFA area, i.e., Area 2 (Madagascar Ridge), Area 3 (Southwestern Indian Ridge), Area 4(90^{o} E Ridge) and Saya de Malha Bank (North-western Indian Ocean without Area number) (red circle areas in Map 1).

(2) Bottom longline fisheries

As for bottom longline fisheries, there were 8 years of operations in 2004-2010 and 2013 by the same boat. The total catch ranges 5-87 tons (28 tons in average) (Table 1). This boat mainly operates in the CCAMLR area and opportunistically operates in the SIOFA Area 3 (Southwestern Indian Ridge) adjacent to the northern part of the CCAMLR area (yellow circle area in Map 1).



Map 1 Seven areas defined in the National Report Guideline (SIOFA, 2016) (revised) and approximate locations of Japanese trawl and bottom longline fisheries (1977-2016)

Table 1 Summary of annual total catch of Japanese demersal fisheries (Trawl and Bottom longline) in the SEAFO area (1977-2016) (- no operation)

Year	Japanese year		Trawl fisheries		Bottom longline fisheries	
			No. of vessels operated	Total catch (tons)	No. of vessels operated	Total catch (tons)
1977	Showa	52	2	721	-	-
1978		53	2	352	-	-
1979		54	-	-	-	-
1980		55	-	-	-	-
1981		56	-	-	-	-
1982		57	-	-	-	-
1983		58	-	-	-	-
1984		59	-	-	-	-
1985		60	-	-	-	-
1986		61	-	-	-	-
1987		62	-	-	-	-
1988		63	-	-	-	-
1989	Heisei	1	-	-	-	-
1990		2	-	-	-	-
1991		3	-	-	-	-
1992		4	-	-	-	-
1993		5	-	-	-	-
1994		6	-	-	-	-
1995		7	-	-	-	-
1996		8	-	-	-	-
1997		9	-	-	-	-
1998		10	-	-	-	-
1999		11	-	-	-	-
2000		12	-	-	-	-
2001		13	2	4,416	-	-
2002		14	1	412	-	-
2003		15	-	-	-	-
2004		16	-	-	1	87
2005		17	-	-	1	39
2006		18	-	-	1	5
2007		19	-	-	1	5
2008		20	-	-	1	46
2009		21	1	1,409	1	9
2010		22	1	1,233	1	23
2011		23	1	717	-	-
2012		24	2	360	-	-
2013		25	2	1,667	1	6
2014		26	1	508	-	-
2015		27	2	2,947	-	-
2016		28	2	(in process)	-	-

2. CATCH, EFFORT AND CPUE SUMMARIES

(1) Trawl fisheries

Table 2 shows annual catch (tons) by species. Target species during 2001-2016 is splendid alfonsino (296-2,987 tons) operated in Area 2 (Madagascar Ridge), Area 3 (Southwestern Indian Ridge) or Area 4(90° E Ridge) (Map 1). However, target species during 1977 and 1978 are horse mackerels and lizardfish (snakefish), where fishing operations were conducted in the shallower waters (depth less than 200m) in Saya de Malha Bank (Map 1) or Madagascar Bank. Other catches are mainly composed of other demersal species and other snappers. In 2001, 600 tons of orange roughy catch is exploited in a single year, while nil catch in other years. Small amount of pelagic armorhead has been exploited (0-69 tons). Figure 2 shows historical trends of fishing efforts (1977-2015) (hours trawled). In 2015, the fishing effort remarkably increased.

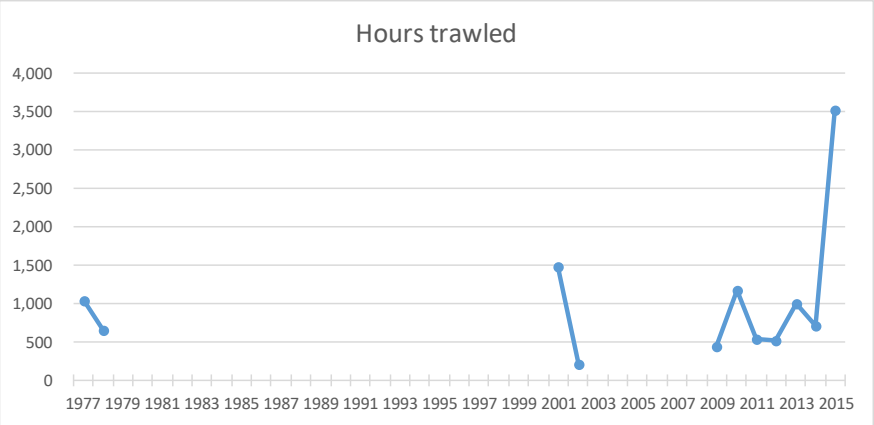


Figure 2 Trends of fishing efforts (hours trawled) of the Japanese trawl fisheries (1977-2015)

(Note): Fishing operations in 1977-1978 were conducted in the shallower waters (depth less than 200m) in Saya de Malha Bank or Madagascar Bank.

Boxes 1-2 show historical trends of nominal catch and CPUE for splendid alfonsino and pelagic armorhead respectively. The average catch of splendid alfonsino is about 1,200 tons. There were high splendid alfonsino catches in 2001 (3,000 tons) (2.5 times higher than the average) and 2015 (2,400 tons) (2 times higher). Historical nominal CPUE of splendid alfonsino shows the decreasing trend.

The average catch of pelagic armorhead is about 23 tons. There was a high pelagic armorhead catch and nominal CPUE in 2009 (69 tons) and 154 kg/hour respectively.

(2) Bottom longline fisheries

Table 3 shows annual catch by species exploited by Japanese bottom longline fisheries in the SIOFA area (2004-2016). The annual average fishing effort is 0.26 million hooks and the number in 2004 was quite high (1.05 million hooks) due to the intensive trial operations in the virgin fishing grounds. Table 3 indicates that Patagonian toothfish is the target species and its catch ranges 4-72 tons.

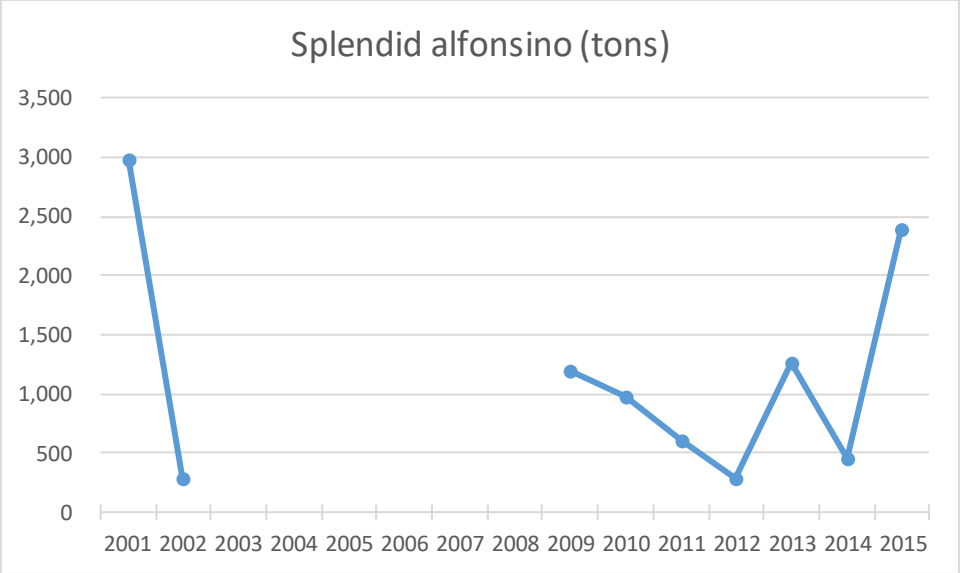
Box 3 depicts the annual fishing efforts, nominal catch and CPUE of Patagonian toothfish. Average nominal catch and CPUE are 23 tons and 139 kg/1,000 hooks respectively. Catch in 2004 was quite high (72 tons) by the above-mentioned reason. Nominal CPUE shows the decreasing trends after 2007. There are bycatches including rattail (0-15 tons) and blue antimora (deep sea cod) (0-2 tons).

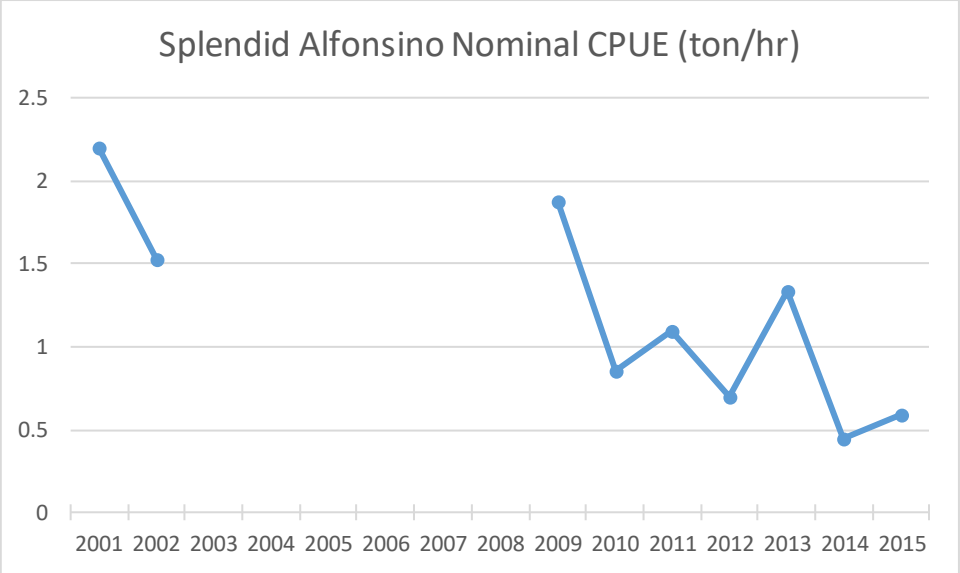
Table 2 Annual catch of Japanese trawl fisheries by species in the SIOFA area (1977-2016) (ton) (global version) (- no operations)

Year	Japanese year		Number of vessles operated	Japanses name	オレンジラフィー	キンメダイ	ミナミクサカリツボダイ (ツボダイ)	ミナミクロメダイ (メダイ)	ナンキョクメダイ ミナミメダイ)	クロビシカマス	オオヤセムツ	アルゼンチン オオハタ	ツノマトウダイ (オオメマトウダイ)	ナンヨウキンメ (ヒラキンメ)	アジ類	エソ類	その他	Total
				English name	Orange roughy	Splendid alfonsino	Pelagic armorhead	Violet warehou	Bluenose warehou	Roudi escolar	Black cardinal fish	Wreckfish	Spiky oreo	Alfonsino	Horse mackerels	Lizardfish (Snakefish)	Others	
				Scientific name	*Hoplostethus atlanticus*	*Beryx splendens*	*Pentaceros richardsoni*	*Schedophilus velaini*	*Hypeloglyphe antarctica*	*Promethichthys prometheus*	*Epigonus telescoups*	*Polyprion americanus*	*Neocyttus rhomboidalis*	*Beryx decadactylus*	Caranginae	Synodontidae		
				FAO-ASFIS* Code	ORY	BYS	EDR	SEY	BWA	PRP	EPI	WRF	ONV	BXD				
1977	Showa	52	2		0	0	0	0	0	13	0	0	0	0	418	203	88	721
1978		53	2		0	0	0	0	0	2	0	0	0	0	229	53	69	352
1979		54	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1980		55	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1981		56	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982		57	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983		58	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984		59	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985		60	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986		61	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1987		62	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1988		63	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	Heisei	1	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1990		2	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1991		3	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1992		4	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993		5	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1994		6	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995		7	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996		8	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1997		9	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1998		10	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1999		11	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000		12	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001		13	2		600	2,987	17	0	0	0	0	0	0	0	0	0	813	4,416
2002		14	1		1	286	6	0	0	0	0	0	0	0	0	0	119	412
2003		15	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004		16	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005		17	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2006		18	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007		19	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2008		20	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2009		21	1		0	1,204	69	40	21	35	36	0	0	0	0	0	4	1,409
2010		22	1		0	977	32	27	7	26	3	1	0	0	0	0	160	1,233
2011		23	1		0	612	0	0	0	0	0	0	0	0	0	0	104	717
2012		24	2		0	296	24	2	0	0	3	1	0	0	0	0	35	360
2013		25	2		0	1,265	14	0	1	0	0	0	0	0	0	0	387	1,667
2014		26	1		0	452	9	16	21	0	4	2	2	0	0	0	1	508
2015		27	2		1	2,396	33	401	22	0	35	5	2	0	0	0	54	2,948
2016		28	2		(data under processing)													

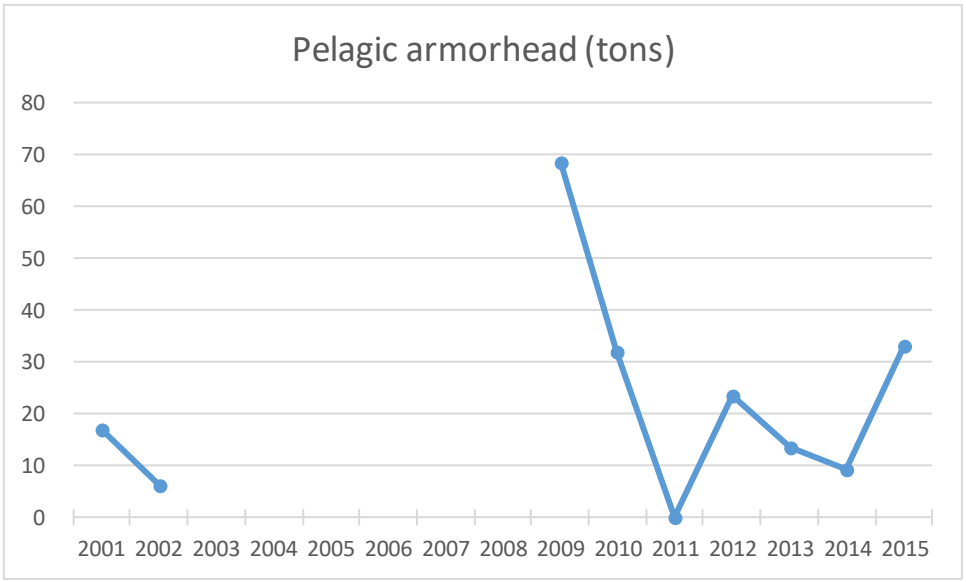
(*) ASFIS: Aquatic Sciences and Fisheries Information System

Box 1 Historical trends of nominal catch and CPUE: Splendid alfonsino





Box 2 Historical trends of nominal catch and CPUE: Pelagic armorhead



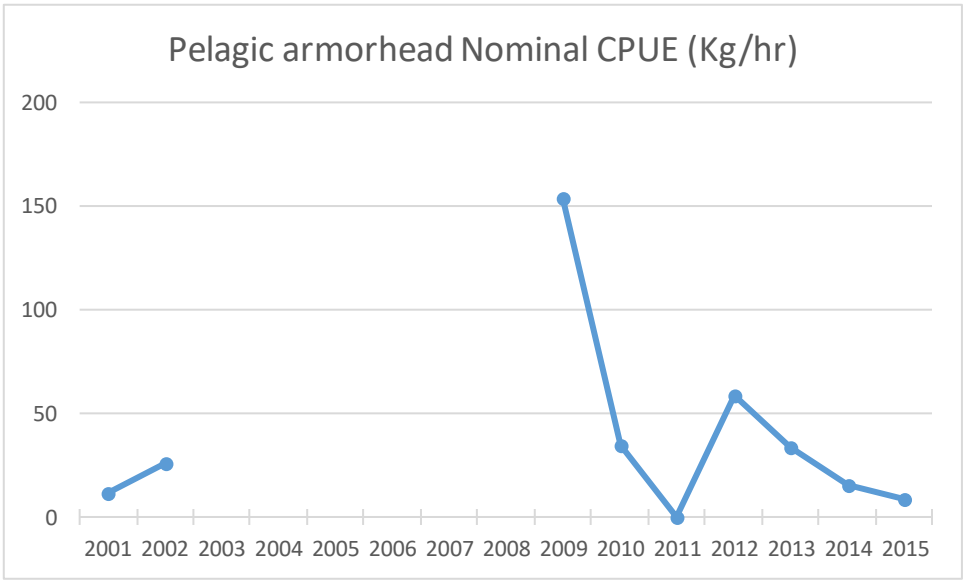


Table 3(a) Annual catch of Japanese bottom longline fisheries by species in the SIOFA area (2004-2016) (tons) **(- no operations)**

Year	Japanses year (Heisei)	Number of vessel operated	Japanses name	メロ(マジェランアイナメ)	ラットテール	チゴダラ(トガリカナダダラ)	その他	Total
			English name	Patagonian toothfish	Rattails (Grenadiers)	Blue antimora (deep sea cod)	Others	
			Scientific name	*Dissostichus eleginoides*	*Macrourus spp.*	*Antimora rostrata*		
			FAO-ASFIS* Code	TOP	GRV	ANT		
2004	16	1		72	15	0	0	87
2005	17	1		33	6	0	0	39
2006	18	1		4	1	0	0	5
2007	19	1		4	0	0	0	5
2008	20	1		40	3	2	0	46
2009	21	1		7	1	1	0	9
2010	22	1		19	4	1	0	23
2011	23	-		-	-	-	-	-
2012	24	-		-	-	-	-	-
2013	25	1		5	1	0	0	6
2014	26	-		-	-	-	-	-
2015	27	-		-	-	-	-	-
2016	28	-		-	-	-	-	-

(*) ASFIS: Aquatic Sciences and Fisheries Information System

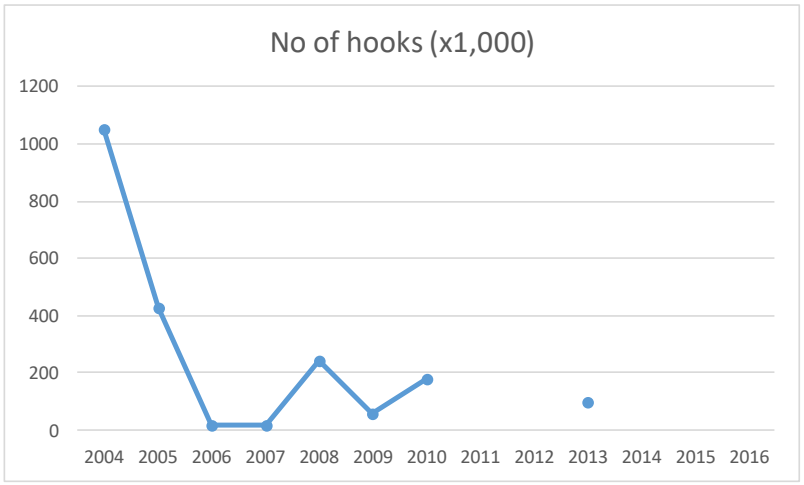
Table 3(b) Annual catch of Japanese bottom longline fisheries by species in the SIOFA area (2004-2016) (kg) **(- no operations)**

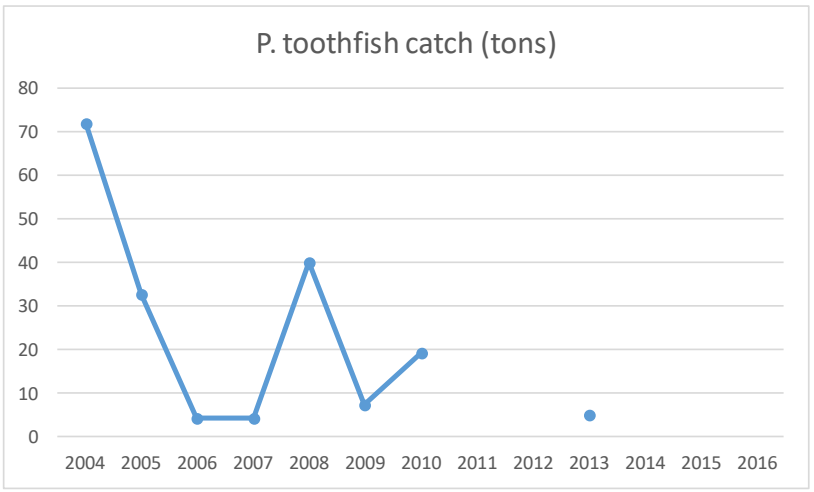
Year	Japanses year (Heisei)	Number of vessel operated	Japanses name	メロ(マジェランアイナメ)	ラットテール	チゴダラ(トガリカナダダラ)	その他	Total
			English name	Patagonian toothfish	Rattails (Grenadiers)	Blue antimora (deep sea cod)	Others	
			Scientific name	*Dissostichus eleginoides*	*Macrourus spp.*	*Antimora rostrata*		
			FAO-ASFIS* Code	TOP	GRV	ANT		
2004	16	1		72,099	14,801	0	0	86,900
2005	17	1		32,602	6,173	0	0	38,775
2006	18	1		4,183	514	15	0	4,711
2007	19	1		4,347	402	56	6	4,812
2008	20	1		39,957	3,449	2,402	38	45,846
2009	21	1		7,407	759	944	12	9,122
2010	22	1		19,114	3,637	630	0	23,381
2011	23	-		-	-	-	-	-
2012	24	-		-	-	-	-	-
2013	25	1		4,917	1,314	257	0	6,488
2014	26	-		-	-	-	-	-
2015	27	-		-	-	-	-	-
2016	28	-		-	-	-	-	-

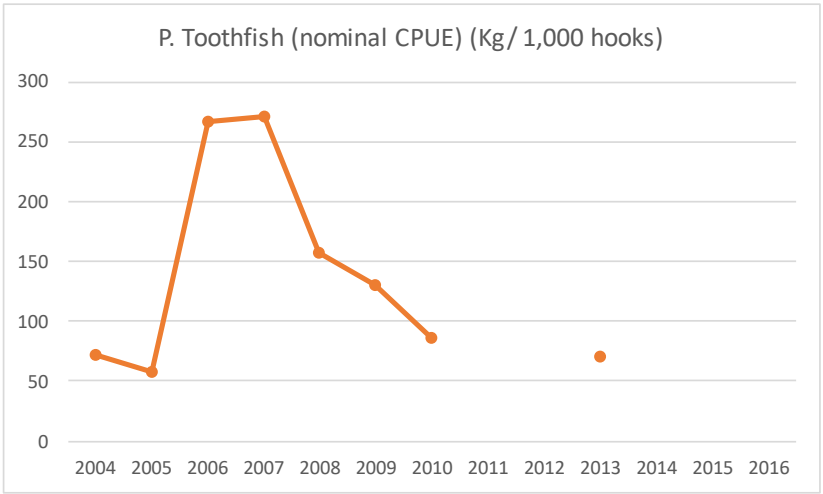
(*) ASFIS: Aquatic Sciences and Fisheries Information System

Box 3 Annual fishing efforts (above),

Patagonian toothfish catch (middle) and nominal CPUE (below)







3. FISHERIES DATA COLLECTION AND RESEARCH ACTIVITIES

Fishing vessels for both trawl and bottom longline fisheries have been collecting fisheries data for each operation including dates, locations, depth, catch/effort data and other relevant information. This information is recorded in logbooks and submitted to Fisheries Agency of Japan. Followings are research activities by fisheries.

(1) Trawl fisheries

In the past, there are several exploratory fishings in the SIOFA area, which collect both fisheries and scientific data such as information of operations (fishing effort, catch/ bycatch by species) and biological information including size data. The observer program just started in January, 2017 to collect scientific information listed in Annex B, CMM 2016/02. Stock assessment of Splendid alfonsino is planned to be conducted in the near future.

(2) Bottom longline fisheries

One bottom longline fishing vessel has been operating since 2004. The observer on board has used the CCAMLR observer forms and has been collecting various scientific information such as size, weight, otolith, sex, gonads, tagging, tissues and etc.

4. VME THRESHOLDS

Following Article 11 CMM 2016/01, Japan temporally establishes threshold levels for encounters with VMEs and move-on protocols. For trawl fisheries, as they operate in the mid-water, no threshold levels have been established. The threshold levels will be established when the observer recognizes that the operation is likely to come in contact with the seafloor or benthic organisms. As for the bottom longline fisheries, Japan applies those used in CCAMLR.

5. BIOLOGICAL SAMPLING AND LENGTH/AGE COMPOSITION OF CATCHES

5.1 Overview summary of the coverage of biological and size-frequency sampling conducted.

(1) Trawl fisheries

Biological sampling and length/age composition of catches are collected by exploratory fishings in the past. In addition, from January 2017, the newly launched observe program started collecting biological and size data. Biological and size data collected by exploratory fishings and the observe program will be reported in the next SC03 (2018) meeting.

(2) Bottom longline fisheries

One bottom longline fishing vessel has been operating since 2004. The observer on board has been collecting various biological information including the size data through the CCAMLR observer data forms. Such information will be processed and the summary will be reported in the next SC03 (2018).

5.2 Simple summary table or figure showing length and/or age-frequency distribution of the target species by gear, and how this has changed over the past five years.

Summary tables of size for trawl and bottom longline fisheries will be reported in the next SC03 (2018).

6. DESCRIPTION OF DATA VERIFICATION MECHANISMS

(1) Trawl fisheries data

Commercial fisheries data (logbook) have been verified by Japan Overseas Fishing Association (JOFA) and Fishery Agency of Japan. Fisheries Agency of Japan also verifies locations of vessels through the Vessel Monitoring System (VMS). The observer data starting this year will be verified by Fisheries Agency of Japan and National Research Institute of Far Seas Fisheries (NFIFSF). The exploratory fishing data has been verified by

Japan Marine Fishery Resources Research Centre (JAMARC) (new name is Marine Fisheries Research and Development Centre with the same abbreviation).

(2) Bottom longline fisheries

Both fisheries logbook and observer data have been verified by Fishery Agency of Japan. Fisheries Agency of Japan also verifies locations of vessels through the Vessel Monitoring System (VMS).

7. SUMMARY OF OBSERVER AND PORT SAMPLING PROGRAMS

7.1 Brief description of observer and port sampling programs conducted, and how these have changed or been improved over the past year.

(1) . Trawl fisheries

Following Article 30, CMM 2016/01, Japan started the observer program from January, 2017. Observers collect items listed in Annex B, CMM 2016/02. The observer training course was held twice in 2016 for three candidates of scientific observers to implement 100 % on-board scientific observer coverage required. Regarding size frequency data, observers measure fork lengths for two important species (Splendid alfonsino and pelagic armorhead). In addition, body heights are also measured. Measurements are conducted for one haul a day. Splendid alfonsino and pelagic armorhead are randomly sampled from one haul.

For further details of the Japanese observer program, refer to the document submitted to this meeting, i.e., “On-board scientific observer program of Japanese trawl vessels” (SIOFA-2017-SC02-__).

(2) Bottom longline fisheries

One vessel operating mainly in the CCAMLR area, occasionally moves up to the SIOFA area. Hence, the same observer collects scientific data in both CCAMLR and SIOFA areas. Under such situation, it is not efficient to use different observer data collection forms in

two areas. Thus the observer uses the CCAMLR data collection forms (in excel) also for the new SIOFA observer program started in January 2017.

7.2 Information on coverage rates achieved by observer programs, or sampling coverage achieved by port sampling programs, over the past year.

7.3 Information on the level of observer coverage focused on recording bycatch of seabirds, marine mammals, reptiles and other species of concern.

7.4 Reporting of observed bycatch by species and fishery for all seabirds, marine mammals, reptiles and other species of concern.

Japan deploys observers to all fishing vessels (100% of the coverage rates), i.e., 2 observers for 2 trawl fishing vessels and 1 observer for 1 bottom longline vessel. Observers will collect and report information on bycatch of seabirds, marine mammals, reptiles and other species of concern.

8. RELEVANT SOCIAL AND ECONOMIC INFORMATION (OPTIONAL)

No particular information is reported for this time.