

2nd Meeting of the Scientific Committee

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SC-02-23

**A summary of current SPRFMO bycatch records
(including Seabird and Oceanic shark captures)**

Secretariat

Introduction

At its second meeting in 2014, the SPRFMO Commission developed a *Roadmap for the Scientific Committee* which includes a request that the SC review the standards for data collection and reporting and for observer coverage to ensure a full understanding of the nature and extent of bycatch interactions across all fisheries. *In particular*, the roadmap stipulates the need to revise the section on observer data in the Conservation and Management Measure on Standards for the Collection, Reporting, Verification and Exchange of Data (CMM 2.02) in order to cover the collection of data on incidental catches of oceanic sharks included in Annex I of the UN Convention on the Law of the Sea (UNCLOS). Oceanic sharks included in UNCLOS are (see Appendix 1 for more detail):

Hexanchus griseus (HEG), Bluntnose Sixgill shark,
Cetorhinus maximus (BSK), Basking shark,
Rhincodon typus (RHN), Whale shark,
Family Alopiidae (THR), Thresher sharks nei,
Family Carcharhinidae (RSK), Requiem sharks nei,
Family Sphyrnidae (SPY), Hammerhead sharks, etc. nei,
Family Lamnidae (MSK), Mackerel Sharks, Porbeagles nei (replacing Isurida).

Paragraph 9 of the SPRFMO CMM 2.04 (on minimising bycatch of seabirds) directs the SC to report annually on the number and location of seabird interactions with fisheries. *In addition*, CMM 2.04 Paragraph 14 directs the SC to evaluate, at its 2014 meeting, all information from observer programmes on seabird data and interactions specifically with trawl fishing and advise the Commission on the need to implement mitigation measures as described in Annex 2 or other measures.

The objective of this paper is to provide the bycatch information extracted by the Secretariat from fishing activity and observer reports received since 2008. It also contains a summary showing SPRFMO observer coverage for 2013 and finally comments on the practical implications of CMM 2.02 (Data standards).

Observer coverage

Currently, 10% observer coverage in the SPRFMO Area applies to vessels fishing for Jack mackerel (CMM 2.01, para 22), 100% observer coverage is required for vessels engaged in bottom trawling and 10% observer coverage is stipulated for bottom fishing with other gear types (CMM 2.03, Para 8e). There is no recommended observer coverage rate for other SPRFMO fisheries.

The Observer coverage rates by Members and CNCPs are shown in Table 1. This summary was produced using information contained in the current Annual reports presented at this meeting, and fishing activity/observer data submitted to the Secretariat.

Participant	Fishery	Vessels	Vessel days	Total Catch (t)	Observer Coverage (by trip, unless stated)
Chile	Jack mackerel	10	12	6 160	9.1%
China	Jack mackerel	2	177	8 329	0%
European Union	Jack mackerel	1	140	10 390	11.6% (by days)
Korea	Jack mackerel	1	140	5 378	100%
Peru	Jack mackerel	1	70	2 724	“almost full coverage”
Vanuatu	Jack mackerel	2	241	14 809	100%
Australia	Lining - bottom	2	95	133	46%
New Zealand	Lining - bottom	3	80	124	100%
Australia	Trawl - bottom	1	60	139	100%
New Zealand	Trawl - bottom	5	189	1 261	100%
New Zealand	Trawl – midwater	1	47	145	66%

Table 1: 2013 Observer coverage in the SPRFMO Area

CMM 2.02 species data recording variations

The Secretariat conducted an analysis of the Observer standards in CMM 2.02. It was noted that the type of information which is expected to be collected and provided does differ depending upon the species being recorded. Currently various groups can be identified and the effect of these groupings is shown in Table 2:

Species Grouping	Variations in type of information recorded	Additional information specific to this group	Relative observer priority
Primary target species	Discarded amounts of <100kg do not need to be recorded		1
Seabirds, mammals, and reptiles	Individual number is recorded instead of live weight	Adult vs juvenile and life status (vigorous, alive, lethargic, dead)	2
Other "top 5 species"	Discarded amounts of <100kg do not need to be recorded		3
All other species (sensitive benthic)		Volume	4
All other species (Oceanic sharks)	Discarded amounts of <100kg do not need to be recorded		4

Table 2: The effect of species on information collection and observer priorities as contained within SPRFMO CMM 2.02

Note that that Table 2 does not take into consideration Member and CNCP specific tasking which may influence the more general observer priorities currently described in CMM 2.02

Observed Seabird, mammal, reptile and oceanic shark captures as submitted to SPRFMO Secretariat

The Secretariat has observer information beginning in 2008 and fishing activity information beginning in 2007. Both sets of information were examined for seabird, mammal, reptile and oceanic shark captures. Those results are presented in Tables 3 & 4.

Fishery	FAO code	Species	Common name	Total weight (kg)	Number of events	Year of captures
Bottom Long line	ALV	<i>Alopias vulpinus</i>	Thresher	238	3	2009, 2011, 2013
Bottom Long line	BRO	<i>Carcharhinus brachyurus</i>	Copper shark	59	3	2013
Bottom Long line	BSH	<i>Prionace glauca</i>	Blue shark	180	7	2009, 2011, 2013
Bottom Long line	CCE	<i>Carcharhinus leucas</i>	Bull shark	35	3	2008
Bottom Long line	SMA	<i>Isurus oxyrinchus</i>	Shortfin mako	220	5	2013
Bottom Long line	TIG	<i>Galeocerdo cuvier</i>	Tiger shark	68	3	2008,2010
Bottom Long line	TRB	<i>Triaenodon obesus</i>	Whitetip reef shark	671	11	2013
Bottom Trawl	ALV	<i>Alopias vulpinus</i>	Thresher	70	1	2011
Bottom Trawl	CCE	<i>Carcharhinus leucas</i>	Bull shark	100	1	2012

Table 3: Summary of captures of seabird, mammal, reptile and oceanic sharks from SPRFMO Fishing Activity submissions

Fishery	FAO code	Species	Common name	Total weight (kg)	Number of events	Year of captures
Bottom Long line	AML	<i>Carcharhinus amblyrhynchos</i>	Grey reef shark	63	4	2009
Bottom Long line	CLD	<i>Loxodon macrorhinus</i>	Sliteye shark	395	3	2008
Bottom Long line	PFC	<i>Puffinus carneipes</i>	Flesh-footed shearwater	2 (Individuals)	1	2008
Bottom Long line	SMA	<i>Isurus oxyrinchus</i>	Shortfin mako	1	2	2010
Bottom Long line	SPN	<i>Sphyrna spp</i>	Hammerhead sharks nei	20	1	2009
Bottom Long line	TIG	<i>Galeocerdo cuvier</i>	Tiger shark	50	2	2009
Bottom Long line	TRB	<i>Triaenodon obesus</i>	Whitetip reef shark	1130	25	2009
Bottom Trawl	BTH	<i>Alopias superciliosus</i>	Bigeye thresher	80	1	2011

Table 4: Summary of captures of seabird, mammal, reptile and oceanic sharks from SPRFMO Observer submissions

It is worthwhile noting that pelagic trawl invariably reports capturing 1-3 fish species (only). Squid jigging fishing activity reports only contain information on one species. Neither of those fisheries have reported capturing any seabird, mammals, reptiles nor oceanic sharks.

The Secretariat has provided this information to assist the Scientific Committee in its review of the standards for data collection and reporting and for observer coverage contained in CMM 2.02.

Appendix 1: Detailed list of FAO species codes used when searching for "Oceanic Sharks"

FAO Code	Scientific_name	English_name	Family	Order	Group code
BSK	<i>Cetorhinus maximus</i>	Basking shark	Cetorhinidae	LAMNIFORMES	BSK
HEG	<i>Heterodontus galeatus</i>	Crested bullhead shark	Heterodontidae	HETERODONTIFORMES	HEG
LMA	<i>Isurus paucus</i>	Longfin mako	Lamnidae	LAMNIFORMES	MSK
LMD	<i>Lamna ditropis</i>	Salmon shark	Lamnidae	LAMNIFORMES	MSK
MAK	<i>Isurus spp</i>	Mako sharks	Lamnidae	LAMNIFORMES	MSK
MSK	Lamnidae	Mackerel sharks, porbeagles, etc.	Lamnidae	LAMNIFORMES	MSK
POR	<i>Lamna nasus</i>	Porbeagle	Lamnidae	LAMNIFORMES	MSK
SMA	<i>Isurus oxyrinchus</i>	Shortfin mako	Lamnidae	LAMNIFORMES	MSK
WSH	<i>Carcharodon carcharias</i>	Great white shark	Lamnidae	LAMNIFORMES	MSK
RHN	<i>Rhincodon typus</i>	Whale shark	Rhincodontidae	ORECTOLOBIFORMES	RHN
ALS	<i>Carcharhinus albimarginatus</i>	Silvertip shark	Carcharhinidae	CARCHARHINIFORMES	RSK
AML	<i>Carcharhinus amblyrhynchos</i>	Grey reef shark	Carcharhinidae	CARCHARHINIFORMES	RSK
BLR	<i>Carcharhinus melanopterus</i>	Blacktip reef shark	Carcharhinidae	CARCHARHINIFORMES	RSK
BRO	<i>Carcharhinus brachyurus</i>	Copper shark	Carcharhinidae	CARCHARHINIFORMES	RSK
BSH	<i>Prionace glauca</i>	Blue shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCA	<i>Carcharhinus altimus</i>	Bignose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCB	<i>Carcharhinus brevipinna</i>	Spinner shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCC	<i>Carcharhinus cautus</i>	Nervous shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCD	<i>Carcharhinus dussumieri</i>	Whitecheek shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCE	<i>Carcharhinus leucas</i>	Bull shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCF	<i>Carcharhinus amboinensis</i>	Pigeye shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCG	<i>Carcharhinus galapagensis</i>	Galapagos shark	Carcharhinidae	CARCHARHINIFORMES	RSK

CCI	<i>Carcharhinus sealei</i>	Blackspot shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCJ	<i>Carcharhinus leiodon</i>		Carcharhinidae	CARCHARHINIFORMES	RSK
CCK	<i>Carcharhinus hemiodon</i>	Pondicherry shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCL	<i>Carcharhinus limbatus</i>	Blacktip shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCM	<i>Carcharhinus macroti</i>	Hardnose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCN	<i>Carcharhinus acronotus</i>	Blacknose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCO	<i>Carcharhinus isodon</i>	Finetooth shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCP	<i>Carcharhinus plumbeus</i>	Sandbar shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCQ	<i>Carcharhinus sorrah</i>	Spot-tail shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCR	<i>Carcharhinus porosus</i>	Smalltail shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCS	<i>Carcharhinus signatus</i>	Night shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCU	<i>Carcharhinus tilstoni</i>	Australian blacktip shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCV	<i>Carcharhinus perezi</i>	Caribbean reef shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCW	<i>Carcharhinus wheeleri</i>	Blacktail reef shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCX	<i>Carcharhinus borneensis</i>	Borneo shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCY	<i>Carcharhinus amblyrhynchoides</i>	Graceful shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CCZ	<i>Carcharhinus fitzroyensis</i>	Creek whaler	Carcharhinidae	CARCHARHINIFORMES	RSK
CGA	<i>Glyphis gangeticus</i>	Ganges shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CGG	<i>Glyphis glyphis</i>	Speartooth shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CIO	<i>Isogomphodon oxyrinchus</i>	Daggernose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CLD	<i>Loxodon macrorhinus</i>	Sliteye shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CNX	<i>Nasolamia velox</i>	Whitenose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
CWZ	<i>Carcharhinus spp</i>	Carcharhinus sharks nei	Carcharhinidae	CARCHARHINIFORMES	RSK

DUS	<i>Carcharhinus obscurus</i>	Dusky shark	Carcharhinidae	CARCHARHINIFORMES	RSK
FAL	<i>Carcharhinus falciformis</i>	Silky shark	Carcharhinidae	CARCHARHINIFORMES	RSK
LMT	<i>Lamiopsis temmincki</i>	Broadfin shark	Carcharhinidae	CARCHARHINIFORMES	RSK
NGA	<i>Negaprion acutidens</i>	Sicklefin lemon shark	Carcharhinidae	CARCHARHINIFORMES	RSK
NGB	<i>Negaprion brevirostris</i>	Lemon shark	Carcharhinidae	CARCHARHINIFORMES	RSK
OCS	<i>Carcharhinus longimanus</i>	Oceanic whitetip shark	Carcharhinidae	CARCHARHINIFORMES	RSK
RHA	<i>Rhizoprionodon acutus</i>	Milk shark	Carcharhinidae	CARCHARHINIFORMES	RSK
RHL	<i>Rhizoprionodon lalandii</i>	Brazilian sharpnose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
RHR	<i>Rhizoprionodon porosus</i>	Caribbean sharpnose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
RHT	<i>Rhizoprionodon terraenovae</i>	Atlantic sharpnose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
RHU	<i>Rhizoprionodon longurio</i>	Pacific sharpnose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
RHX	<i>Rhizoprionodon oligolinx</i>	Grey sharpnose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
RHY	<i>Rhizoprionodon taylori</i>	Australian sharpnose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
RHZ	<i>Rhizoprionodon spp</i>	Sharpnose sharks nei	Carcharhinidae	CARCHARHINIFORMES	RSK
RSK	Carcharhinidae	Requiem sharks nei	Carcharhinidae	CARCHARHINIFORMES	RSK
SLA	<i>Scoliodon laticaudus</i>	Spadenose shark	Carcharhinidae	CARCHARHINIFORMES	RSK
TIG	<i>Galeocerdo cuvier</i>	Tiger shark	Carcharhinidae	CARCHARHINIFORMES	RSK
TRB	<i>Triaenodon obesus</i>	Whitetip reef shark	Carcharhinidae	CARCHARHINIFORMES	RSK
EUB	<i>Eusphyra blochii</i>	Winghead shark	Sphyrnidae	CARCHARHINIFORMES	SPY
SPE	<i>Sphyrna media</i>	Scoophead	Sphyrnidae	CARCHARHINIFORMES	SPY

SPJ	<i>Sphyrna tiburo</i>	Bonnethead	Sphyrnidae	CARCHARHINIFORMES	SPY
SPK	<i>Sphyrna mokarran</i>	Great hammerhead	Sphyrnidae	CARCHARHINIFORMES	SPY
SPL	<i>Sphyrna lewini</i>	Scalloped hammerhead	Sphyrnidae	CARCHARHINIFORMES	SPY
SPN	<i>Sphyrna spp</i>	Hammerhead sharks nei	Sphyrnidae	CARCHARHINIFORMES	SPY
SPQ	<i>Sphyrna tudes</i>	Smalleye hammerhead	Sphyrnidae	CARCHARHINIFORMES	SPY
SPV	<i>Sphyrna couardi</i>	Whitefin hammerhead	Sphyrnidae	CARCHARHINIFORMES	SPY
SPY	Sphyrnidae	Hammerhead sharks, etc. nei	Sphyrnidae	CARCHARHINIFORMES	SPY
SPZ	<i>Sphyrna zygaena</i>	Smooth hammerhead	Sphyrnidae	CARCHARHINIFORMES	SPY
SSN	<i>Sphyrna corona</i>	Scalloped bonnethead	Sphyrnidae	CARCHARHINIFORMES	SPY
ALV	<i>Alopias vulpinus</i>	Thresher	Alopiidae	LAMNIFORMES	THR
BTH	<i>Alopias superciliosus</i>	Bigeye thresher	Alopiidae	LAMNIFORMES	THR
PTH	<i>Alopias pelagicus</i>	Pelagic thresher	Alopiidae	LAMNIFORMES	THR
THR	<i>Alopias spp</i>	Thresher sharks nei	Alopiidae	LAMNIFORMES	THR