CCSBT-CC/2210/05

Annual Report on Members' implementation of ERS measures and performance with respect to ERS

Introduction

Paragraph 8 of the Resolution to Align CCSBT's Ecologically Related Species (ERS) measures with those of other tuna RFMOs requires that:

> "*The Secretariat shall annually present a report to the CCSBT Compliance Committee on the implementation of the ERS Measures, for the sole purpose of the provision of information for Members and Cooperating Non-Members*".

In addition, the Report of CCSBT 25 specifies:

> *"That ERS is to remain a standing item on the Annual Meeting agenda, and the Secretariat is to provide annual reports on Members' performance with respect to ERS";*

and clarifies that:

> *"the report provided by the Secretariat would be a simple report of numbers and species by Member for the past 3 years, derived from Members annual reports and submitted ERS data, and did not require additional submission from Members."*

The two required reports are interrelated, so the Secretariat compiles the contents for both reports into this single paper. The paper is organised as follows:

(1) Implementation of ERS Measures
   a) Observer Coverage
   b) Usage of seabird mitigation measures
   c) Data submission
   d) Participation and reporting to ERSWG meetings
   e) Annual reports to the Compliance Committee and the Extended Commission

(2) Performance
   a) ERS mortality rate
   b) Total ERS mortality

Most of the information provided in this paper originates from data provided in the CCSBT's ERSWG Data Exchange (EDE). The EDE is defined to include all fishing effort by authorised vessels[1] for shots or sets where southern bluefin tuna (SBT) was either targeted or caught.

[1] Authorised vessels are vessels on the CCSBT authorised list of vessels during the relevant calendar year.

(1) Implementation of ERS Measures

a) Observer Coverage

The CCSBT Scientific Observer Program Standards specifies that the CCSBT Scientific Observer Program will cover the fishing activity of CCSBT Members and Cooperating Non-Members wherever southern bluefin tuna are targeted or are a significant bycatch. The Standards also specify that the Program will have a target observer coverage of 10% for catch and effort monitoring for each fishery and that the observer coverage should therefore be representative of different vessel-types in distinct areas and times.

The scientific observer coverage (observed hooks / total hooks expressed as a percent) by Member, gear, fleet and CCSBT Statistical Area for each of the last three calendar years is shown at **Attachment 1**. The overall observer coverage for Members in 2021 was well below the 10% target. For individual Members, it was 1% for Indonesia, 0% for Japan, 0% for Korea, 10% for New Zealand and 12% for Taiwan. Australia's and South Africa's observer coverage for 2021 is not known because these Members have not yet submitted EDE data for 2021[2]. There are no figures for the European Union (EU). This is because the EU reported that it had no vessels targeting or capturing SBT during the three years in question.

Indonesia has never reached the target observer coverage. Furthermore, Indonesia's data is for its entire longline fleet, not just shots that targeted or caught SBT. Therefore, Indonesia's data is not directly comparable with data from the other Members.

Due to the COVID-19 pandemic, neither Japan nor Korea placed scientific observers on their longline vessels targeting SBT in 2021. Korea also did not deploy scientific observers in 2020.

The CCSBT's Effectiveness of Seabird Mitigation Measures Technical Group (SMMTG) recommended that spatial-temporal representativeness is an important metric of observer program data and agreed on the method for calculating a measure of "representativeness". A column showing the representativeness of the observer coverage for each Member, fleet and year is included in **Attachment 1**. A representativeness of 100% means that the target of 10% observer coverage was achieved for all Statistical Areas that were fished, while a representativeness of 50% means that the target observer coverage was only achieved for half of the areas that were fished. No Member reported a representativeness of more than 50% during 2021.

The low or lack of scientific observer coverage in 2021 together with the non-reporting of EDE data by two CCSBT Members is such that it is not possible to comment on most Members implementation of ERS measures and performance with respect to ERS.

b) Usage of seabird mitigation measures

Attachment 2 shows the proportion of observed effort in Members' longline fleets that used specific mitigation measures for fishing from 2019-2021. This information is subdivided by groupings of Statistical Areas. Within this attachment, "n/a" means that the information is not available for one the reasons listed below:

- Australia has not provided any EDE data for 2021;
- Indonesia has not provided information on its usage of mitigation measures with its EDE data in any year, and even if it had provided such information, its observer coverage is too low to provide robust information;
- Japan had no observer coverage in 2021;
- Korea had no observer coverage in 2020 and 2021; and
- South Africa has not provided any EDE data for 2019 to 2021.

[2] Australia had issues with its database systems. South Africa has also not yet submitted its EDE data for 2019 or 2020.

The extent of unavailable information is so high that apart from New Zealand and Taiwan, it is not possible to examine changes in the use of mitigation measures from previous years to 2021.

- For New Zealand, there has been a decline in the usage of three combined mitigation measures and the combined use of night setting and weighted branch lines. This has been offset by an increase in the combined use of Tori pole and night setting. There remains a small (0.7%) use of a single mitigation measure (night setting) where two measures are required.
- For Taiwan, the usage of three mitigation measures has increased and there is no longer any observed use of just a single mitigation measure.

It should be noted that CCSBT Members are not using a common definition of night setting when reporting usage of night setting as part of the EDE. Paper CCSBT-CC/2210/08 provides the definitions used by different Members. Some of these definitions do not match the requirements of the night setting mitigation measure, so when some Members reports "night setting" to the EDE, it is not possible to confirm if these sets complied with the requirements of the night setting mitigation measure.

c) Data submission

The main ERS data that Members are required to provide to the CCSBT are the data specified in the annual ERSWG Data Exchange (EDE), which must be provided by 31 July each year. Table 1 shows Members' compliance with the EDE for the last four years.

Table 1: Members' compliance with the EDE for the last six years. "P" indicates partial compliance and "X" indicates non-compliance or no provision of the information. The last line of the table is not a mandatory requirement.

	AU	EU	ID	JP	KR	NZ	TW	ZA
Data provided as required by the EDE in 2017?	✓	n/a[3]	X	✓	✓	✓	✓	✓
Data provided as required by the EDE in 2018?	✓	n/a[3]	P[4]	✓	✓	✓	✓	✓
Data provided as required by the EDE in 2019?	✓	n/a[3]	P[5]	✓	✓	✓	✓	✓
Data provided as required by the EDE in 2020?	✓	n/a[3]	P[5]	✓	✓	✓	✓	X[6]
Data provided as required by the EDE in 2021?	✓	n/a[3]	P[5]	✓	✓[7]	✓	✓	X[6]
Data provided as required by the EDE in 2022?	X	n/a[3]	P[5]	✓[8]	✓[7]	✓	✓	X[6]
Data for 2022 provided at species level where this is not a minimum requirement of the EDE[9]?	*n/a*	*n/a[3]*	✓	-	-	✓	✓	-

South Africa has not yet provided the required EDE data for 2020-2022 and Australia has not provided EDE data for 2021. Most other Members have complied with the EDE requirements, and some have gone beyond the minimum requirements and have provided ERS data at a species level of resolution in cases where this was not a minimum requirement of the EDE.

Members are also required to submit data similar to the above in national reports to meetings of the ERSWG and to annual meetings of the Compliance Committee and the Extended Commission. However, these data are essentially the same as the EDE requirements or a subset of this information, so are not examined separately in this paper.

[3] The European Union has reported no targeting or catch of SBT in the last three years, so there is no relevant data for it to submit to the EDE.
[4] Indonesia was not able to provide the proportions of observed effort with specific mitigation measures.
[5] Indonesia was not able to provide the proportions of observed effort with specific mitigation measures. Furthermore, Indonesia's total and observed effort were calculated from its entire longline fishery operating in the Indian Ocean instead of just for shots that targeted or caught SBT.
[6] South Africa has not yet provided any data for the 2020, 2021, or 2022 EDEs.
[7] However, Korea did not submit any observer data because it had zero observer coverage in 2020 and 2021.
[8] However, Japan did not submit any observer data because it had zero observer coverage in 2021.
[9] The EDE specifies the minimum taxonomic level at which information should be reported. The EDE also states that information should be provided to species level where this is practical.

d) Participation and reporting to ERSWG meetings

The last three ERSWG meetings were in 2017, 2019 and 2022. Members are encouraged to attend meetings and are required to provide annual reports to these meetings. Table 2 provides information on participation and reporting to these meetings by Members.

Table 2: Participation and reporting to recent ERSWG meetings by Members. "P" indicates partial compliance with the annual report template, and "X" indicates either no participation at the meeting or no annual report submitted.

	AU	EU	ID	JP	KR	NZ	TW	ZA
2017 ERSWG meeting								
Participated at meeting	✓	X	X	✓	✓	✓	✓	X
Submitted annual report to meeting	✓	X	✓	✓	✓	✓	✓	✓
Completeness of annual report	✓	n/a	P	P	P	P	P	P
2019 ERSWG meeting								
Participated at meeting	✓	X[10]	X[10]	✓	✓	✓	✓	X
Submitted annual report to meeting	✓	X	✓	✓	✓	✓	✓	✓
Completeness of annual report	✓	n/a	P	P	P	✓	P	P
2022 ERSWG meeting								
Participated at meeting	✓	X	✓	✓	✓	✓	✓	X
Submitted annual report to meeting	✓	X	✓	✓	✓	✓	✓	X
Completeness of annual report	✓	n/a	P	P	P	✓	P	n/a

The partial compliance of most Members with respect to the annual report is mostly due to the ERSWG annual report template not being fully completed, such as not providing any information on collection of data or incidental catches from non-observed sources (e.g. from log books), or not providing certain information on compliance monitoring or the level of compliance.

e) Annual reports to the Compliance Committee and the Extended Commission

Members' annual reports to the Compliance Committee and the Extended Commission (Annual CC/EC Report) are required to include information on: Whether the IPOA-seabirds[11], IPOA-sharks[12] and the FAO Guidelines to reduce sea turtle mortality have been implemented; Whether all current binding and recommendatory measures of ICCAT, IOTC and WCPFC aimed at the protection of ERS from fishing are being complied with; Whether data is being collected and reported on ecologically related species in accordance with the requirements of ICCAT, IOTC and WCPFC; and a Description of the methods used to monitor compliance with bycatch mitigation measures, including the level of coverage and the type of information collected[13].

A summary of the above information reported by Members is provided in Table 3 and **Attachment 3**. The table and Attachment were compiled from the 2021 Annual CC/EC Report because the reports for the 2022 meeting were not available at the time of preparing this paper. The information provided by some Members in the 2021 Annual CC/EC Report was ambiguous, and this has been reflected in the footnotes to items in Table 3.

[10] Both the EU and Indonesia advised that they would not be able to attend the ERSWG meeting on the proposed dates but agreed for the meeting to proceed in their absence so that an ERSWG meeting could be held during 2019.
[11] International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries.
[12] International Plan of Action for the Conservation and Management of Sharks.
[13] Other ERS information is also required in the Annual CC/EC Report, but this information is also provided elsewhere and is not shown here as it is covered in other parts of this paper.

Table 3: Summary of required information reported by Members in their 2021 Annual CC/EC Reports. "P" indicates partial compliance with the measure and/or report template, "X" indicates non-compliance with the measure and/or report template and "?" indicates that insufficient information was provided to determine compliance.

	AU	EU	ID	JP	KR	NZ	TW	ZA
Implemented IPOA-Seabirds	✓	✓	?[14]	✓	✓	✓	✓	✓
Implemented IPOA-Sharks	✓	✓	✓	✓	✓	✓	✓	✓
Implemented FAO-Sea Turtles	✓	✓	✓	✓	✓	✓	✓	✓
Complied with ICCAT ERS Measures	n/a	✓	✓	✓	✓	n/a	✓	✓
Complied with IOTC ERS Measures	✓	✓	✓	✓	✓	n/a	✓	✓
Complied with WCPFC ERS Measures	✓	✓	✓	✓	✓	✓	✓	n/a
ERS Data collected and reported as required by ICCAT	n/a	✓	?[16]	✓	✓	n/a	✓	✓
ERS Data collected and reported as required by IOTC	P[15]	✓	✓	✓	✓	n/a	✓	✓
ERS Data collected and reported as required by WCPFC	✓	✓	?[16]	✓	✓	✓	✓	n/a

Attachment 3 shows the information provided by Members on methods used to monitor compliance with bycatch mitigation measures, including the level of coverage and the type of information collected. Most Members have reported the required information with the exception that the level of coverage by the different methods has generally not been well specified by Members.

(2) Performance

The mortality rates and raised total mortality estimates of ERS for each of the species groups defined in the EDE for each Member are provided in **Attachment 4**. It should be noted that some of the shark mortalities are retained as commercial catch and are not all unwanted mortalities.

The 14th meeting of the ERSWG (ERSWG 14) met from 21-25 March 2022. ERSWG 14 confirmed its previously agreed advice for all shark species caught in SBT fisheries, that there were currently no specific concerns about shark bycatch that warranted additional mitigation requirements. In addition, ERSWG 14 did not seek to amend its previous advice that the level of interaction between seabirds and SBT fisheries is still a significant level of concern. Consequently, the remainder of this section focuses on seabirds, which is the main incidental catch of concern from SBT fisheries.

This section excludes seabird mortality figures for Indonesia because these figures are not meaningful due to Indonesia's low observer coverage (1% or less) and because Indonesia's observer data were not restricted to the SBT fishery. In addition, no information is provided for the EU because the EU reported that it did not target or catch SBT during the years presented.

a) ERS mortality rate

Table 4 provides the observed mortality rate of seabirds for each Member from 2016 to 2021.

Table 4: Observed mortality rate of seabirds (kills per 1,000 hooks) for each Member from 2016 to 2021.

	AU	JP	KR	NZ	TW	ZA
2016	0.000	0.509	0.222	0.387	0.006	0.000
2017	0.039	0.048	0.002	0.119	0.005	0.004
2018	0.015	0.291	0.051	0.312	0.016	0.000
2019	0.000	0.540	0.049	0.319	0.011	Not available
2020	0.000	0.157	Not available	0.022	0.010	Not available
2021	Not available	Not available	Not available	0.236	0.009	Not available

[14] It was only noted that "During 2020, there were two interactions of common seabird (flesh-footed shearwater) during scientific observations. Indonesia has conducted a workshop related to by-catch mitigation especially in longline fishery".
[15] Australia noted that for a variety of practical reasons, it is not able to provide size frequency data for sharks.
[16] The response given in the Annual CC/EC Report was "None" and therefore there was no indication as whether the required measures were being complied with or whether the required data was provided.

Due to the lack of observer coverage or non-reporting of EDE data in 2021, no seabird mortality rate information is available for Australia, Japan, Korea or South Africa for 2021. These are also the reasons for no seabird mortality rates in Korea during 2020 and South Africa in 2019 & 2020.

There is a large magnitude of difference each year between those Members with low rates of seabird mortalities and those with high rates of seabird mortalities. Japan and New Zealand have tended to have the highest seabird mortality rate of CCSBT Members.

There is not a clear annual trend in the rate of seabird mortalities over the six-year period, but there is substantial missing information for the last of these six years.

b) Total ERS mortality

Table 5 provides the raised number of seabirds killed for each Member from 2016 to 2021.

Table 5: Raised mortality of seabirds (in numbers of seabirds) for each Member from 2016 to 2021.

	AU	JP	KR	NZ	TW	ZA
2016	0	10,132	712	437	91	0
2017	14	656	6	150	74	1
2018	9	5,216	139	427	233	0
2019	0	6,573	119	435	175	Not available
2020	0	1,620	Not available	30	161	Not available
2021	Not available	Not available	Not available	184	63	Not available

As with the previous table and for the same reasons, no raised number of seabird mortalities are available for Australia, Japan, Korea or South Africa for 2021.

The change in the raised number of seabird mortalities each year should be interpreted with caution. The May 2019 meeting of the ERSWG advised that the data for 2017 show a lower total number of reported seabird mortalities and the ERSWG noted that this was most likely to have resulted from inadequate and unrepresentative sampling and not from improved mitigation. Therefore, the ERSWG advised that the 2017 data should be treated with caution and that the 2018 data may require the same caution to be applied.

As with seabird mortality rates, there is not yet a clear trend in the raised number of seabird mortalities over the six-year period, but again, there is substantial missing information for the last of these six years.

Prepared by the Secretariat

Attachment 1

Observer coverage (observed hooks / total hooks expressed as a percent) by flag, gear, fleet, year and CCSBT Statistical Area[17]. Representativeness is the proportion of Statistical Areas fished that reached the target of 10% observer coverage as per the SMMTG Recommendations. Cells shaded in green have achieved at least 10% coverage (or 100% representativeness). Cells shaded in grey are strata with low effort (<25,000 hooks for longline and <5 sets for purse seine).

				Statistical area											
Member code	Gear code	Fleet code	Year	1	2	3	4	5	6	7	8	9	14	Total	Representativeness
AU	LL	AUD	2019				12%			0%				12%	50%
			2020		0%		8%			7%				8%	0%
			2021											?	?
	PS	AUD	2019			0%				13%				13%	50%
			2020							11%				11%	100%
			2021											?	?
ID	LL	IDD	2019	1%	1%									1%	0%
			2020	0%	0%									0%	0%
			2021	1%	1%									1%	0%
JP	LL	JPD	2019				15%	16%		24%	13%	26%		22%	100%
			2020				0%	18%	5%	5%	3%	11%		7%	33%
			2021				0%	0%	0%	0%	0%	0%		0%	0%
KR	LL	KRD	2019									22%		22%	100%
			2020								0%	0%		0%	0%
			2021								0%	0%		0%	0%
NZ	LL	NZD	2019					8%	10%					9%	50%
			2020					9%	10%					9%	0%
			2021				0%	6%	14%					10%	33%
TW	LL	TWD	2019		26%						18%	5%	10%	17%	50%
			2020		22%						10%	10%	10%	13%	75%
			2021		18%						15%	2%	8%	12%	50%
ZA	LL	ZAD	2019											?	?
			2020											?	?
			2021											?	?

[17] The coverage for Australia's longline fleet is based on e-monitoring, not human scientific observers.

Table 1: Proportion of observed effort in Members' long line fleets that used specific mitigation measures in Statistical Areas 3-10. These are the Statistical Areas that require 2 out of 3 mitigation measures to be used in the ICCAT, IOTC and WCPFC Convention Areas.

Member	Fleet	Year	Tori pole + Night setting only	Tori pole + weighted branchline only	Night setting + weighted branchline only	Tori pole + night setting + weighted branchline	Night setting only	Tori pole only	Weighted branchline only	Other
AU	AUD	2019	-	44.0%	-	56.0%	-	-	-	-
		2020	-	36.4%	-	63.6%	-	-	-	-
		2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
ID	IDD	2019	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2020	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
JP	JPD	2019	12.7%	10.2%	0.3%	3.0%	1.0%	66.7%	0.9%	2.9%
		2020	32.9%	17.9%	1.3%	14.0%	0.1%	29.2%	4.7%	-
		2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
KR	KRD	2019	-	100.0%	-	-	-	-	-	-
		2020	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
NZ	NZD	2019	31.7%	2.0%	0.6%	64.7%	0.5%	0.5%	-	-
		2020	20.1%	1.3%	13.1%	64.9%	-	0.6%	-	-
		2021	46.1%	1.8%	-	51.4%	0.7%	-	-	-
TW	TWD	2019	58.2%	25.6%	7.6%	-	-	8.6%	-	-
		2020	99.1%	0.9%	-	-	-	-	-	-
		2021	67.9%	-	-	32.1%	-	-	-	-
ZA	ZAD	2019	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2020	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 2: Proportion of observed effort in Members' long line fleets that used specific mitigation measures in Statistical Areas 2 and 14. These Statistical Areas are in the Indian Ocean with latitudes ranging from 20°-35°S. Two out of three mitigation measures are required to be used below 25°S in the Indian Ocean.

Member	Fleet	Year	Tori pole + Night setting only	Tori pole + weighted branchline only	Night setting + weighted branchline only	Tori pole + night setting + weighted branchline	Night setting only	Tori pole only	Weighted branchline only	Other
ID	IDD	2019	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2020	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
TW	TWD	2019	64.6%	22.7%	2.7%	3.7%	-	6.3%	-	-
		2020	75.7%	11.6%	-	6.6%	-	6.1%	-	-
		2021	84.0%	-	-	16.0%	-	-	-	-
ZA	ZAD	2019	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2020	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 3: Proportion of observed effort in Members' long line fleets that used specific mitigation measures in Statistical Area 15. This Statistical Area is in the Atlantic Ocean with latitudes ranging from 20°-35°S. In this Area, tori lines are required from 20°-25°S and 2 out of 3 mitigation measures are required for the remainder of this Area.

Member	Fleet	Year	Tori pole + Night setting only	Tori pole + weighted branchline only	Night setting + weighted branchline only	Tori pole + night setting + weighted branchline	Night setting only	Tori pole only	Weighted branchline only	Other
ZA	ZAD	2019	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2020	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Attachment 3

Information provided by Members on methods used to monitor compliance with bycatch mitigation measures, including the level of coverage and the type of information collected.

	Methods being used to monitor compliance with bycatch mitigation measures, including coverage level	**Type of information collected**
Australia	Australia uses a number of methods to monitor compliance, including compliance with bycatch mitigation measures. These methods include electronic monitoring, observer reports, vessel monitoring system, aerial surveillance, at sea inspections and port inspections. Australian fisheries officers conduct inspections of landings at key SBT ports, as well as at sea boarding's and inspections of boats taking SBT in the longline and farm sectors. In 2019/20 Australian fisheries officers conducted 31 SBT inspections, 10 at sea and 21 in port.	The information collected on mitigation measures includes; • whether bycatch mitigation, such as tori lines, is being carried on board the vessel, • whether bycatch mitigation has been deployed appropriately • whether the bycatch mitigation complies with specifications.
EU	*No information (not applicable).*	*No information (not applicable)*
Indonesia	Inspection by surveillance officer, report from observer on board, port sampling program.	Species identification, length, weight, geographical location, condition when caught and release, and sex.
Japan	Inspection of Japanese fishing vessels registered with the CCSBT through vessel radio communication and visual confirmation relevant to bycatch mitigation measures had been conducted by monitoring and control vessel (MCV). During the 2020/2021 fishing season, no inspection of Japanese fishing vessels registered with the CCSBT was conducted, because MCV was not dispatched to the Southern hemisphere for more urgent monitoring and inspection needs within Japan's EEZ.	Fishers have been mandated to write down seabird bycatch mitigation measures applied to their operations in the logbook since 2014.
Korea	Bycatch mitigation measures used are observed and monitored through the scientific observer program and the electronic reporting system.	The information includes sea bird mitigation measures used for reducing its bycatch and data on ERS interaction.

	Methods being used to monitor compliance with bycatch mitigation measures, including coverage level	Type of information collected
New Zealand	Compliance with these measures is monitored through at-sea and in-port inspections by Fisheries Officers, aerial surveillance from military aircraft, and the placement of observers on board vessels. Observer reports indicating problems with use of mitigation equipment are prioritised for follow-up with vessel operators. These are then followed up by Fishery Officers. Additionally, new electronic reporting requirements that will come into effect in 2021 will require additional reporting for the surface longline (SLL) fleet on seabird mitigation measures and line weighting regimes. During the 2020 calendar year, inspections of vessels in port found incidents where breaches of seabird mitigation regulations occurred. The majority of these breaches were in relation to tori lines not meeting specifications as per domestic law. A graduated enforcement was applied to this noncompliance, ranging from commercial advice and aiding fishers to bring seabird mitigation up to specification, through to conviction of one vessel for failure to deploy seabird mitigation.	Fisheries Officers collect information about tori line, line-weighting and hook shielding devices that are present on vessels. For each vessel that uses a tori line, a 'tori line details' form is filled out which records information on: • Tori line total length • Attachment point • Aerial extent • Number of streamers • Spacing of streamers • Streamer length • Streamer material Observer reports provide information about mitigation gear usage, gear descriptions, and fisher attitudes toward seabird mitigation.
South Africa	All Large Pelagic Longline vessels are subjected to port inspection in line with Port State Measures and as per attached Annexure 5 of the Large Pelagic Longline permit conditions. This port inspection is carried out by the Fishery Compliance Officers in conjunction with the Observers. This includes the Tori line measurements, checking the availability of the de-hooking devices as well as line cutters. In addition, Patrol vessels are from time to time tasked to randomly board the large pelagic longline vessels for the inspection of the above	Through section B and C of the attached Annexure 5 of the Large Pelagic Longline permit conditions, an Observer is required to confirm the deployment of Tori line every day as well as weighted lines.
Taiwan	We dispatch observer to monitor compliance with bycatch mitigation measures. The observer coverage rate is about 19% (efforts) by vessel in 2019/2020 fishing season. Besides, all SBT authorized vessels operating at south of 25°S shall report the usage of bycatch mitigation measures by fishers by logbook and e-logbook since 2017/18 fishing season. For alternative way, fishers shall report their seabirds-mitigation measure every week through Taiwan Tuna Association (TTA). Any conditions for not compliance identified during review by the FA officials shall trigger further investigations and enforcement of sanctions.	Fishers shall report the measures adopted by its vessels to the FA every day by E-logbook. Besides, observers shall record the mitigation measures adopted by the vessel on the observer's logbook since 2014.

Attachment 4

Observer coverage, mortality rate and raised total mortality for each of the species groups defined in the EDE for each Member. The observer coverage has been calculated as the percentage of fishing effort that was observed for all strata (year * Statistical Area * Member) where the species was captured regardless of whether a mortality of that species occurred. Mortality rates are kills per 1,000 hooks. Raised mortalities have not been provided where the overall observer coverage is less than 5%. Blank cells mean there were no encounters of the species, "n/a" means we don't have the data.

		Observer Coverage			Mortality Rate			Raised Mortalities		
Member	**ERS Species Group**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**
Australia	Blue shark	13%	8%	n/a	0.060	0.032	n/a	25	13	n/a
	Shortfin mako	14%	15%	n/a	0.110	0.194	n/a	42	26	n/a
	Other sharks	14%	8%	n/a	0.000	0.032	n/a	-	13	n/a
Indonesia	Blue shark	n/a	n/a	n/a	0.775	1.828	0.775	n/a	n/a	n/a
	Shortfin mako	n/a	n/a	n/a	0.151	0.071	0.055	n/a	n/a	n/a
	Other sharks	n/a	n/a	n/a	0.655	0.476	0.512	n/a	n/a	n/a
	Turtles	n/a	n/a	n/a	0.045	-	0.017	n/a	n/a	n/a
	Other albatrosses	n/a	n/a	n/a	-	-	0.069	n/a	n/a	n/a
	Other seabirds	n/a	n/a	n/a	0.229	0.096	0.053	n/a	n/a	n/a
Japan	Blue shark	24%	10%	0%	1.436	2.815	n/a	19,627	32,128	n/a
	Shortfin mako	24%	10%	0%	0.051	0.031	n/a	674	403	n/a
	Porbeagle shark	24%	9%	0%	0.229	0.626	n/a	2,892	5,557	n/a
	Other sharks	24%	10%	0%	0.015	0.058	n/a	188	488	n/a
	Turtles	23%		0%	0.000		n/a	-		n/a
	Dark coloured albatrosses	25%	16%	0%	0.059	0.052	n/a	355	190	n/a
	Large albatrosses	25%	13%	0%	0.040	0.024	n/a	360	148	n/a
	Other albatrosses	24%	12%	0%	0.358	0.090	n/a	4,168	632	n/a
	Unidentified albatrosses	30%		0%	0.004		n/a	43		n/a
	Giant petrels	24%	11%	0%	0.149	0.081	n/a	1,628	596	n/a
	Other seabirds	30%	14%	0%	0.007	0.014	n/a	19	54	n/a
	Unidentified seabirds	23%		0%	0.000		n/a	-		n/a
Korea	Blue shark	22%	0%	0%	1.229	n/a	n/a	2,983	n/a	n/a
	Shortfin mako	22%	0%	0%	0.227	n/a	n/a	544	n/a	n/a
	Porbeagle shark	21%	0%	0%	0.029	n/a	n/a	50	n/a	n/a
	Other sharks	22%	0%	0%	0.026	n/a	n/a	50	n/a	n/a
	Dark coloured albatrosses	18%	0%	0%	0.014	n/a	n/a	14	n/a	n/a
	Large albatrosses	23%	0%	0%	0.011	n/a	n/a	9	n/a	n/a
	Other albatrosses	20%	0%	0%	0.044	n/a	n/a	96	n/a	n/a
New Zealand	Blue shark	13%	12%	13%	6.807	2.933	3.296	10,372	4,383	3,968
	Shortfin mako	13%	12%	13%	0.196	0.116	0.229	305	160	376
	Porbeagle shark	13%	11%	16%	1.247	0.487	1.686	1,806	709	1,269
	Other sharks	17%	12%	13%	0.041	0.099	0.072	61	142	88
	Turtles		14%	9%		0.070	0.000		12	-
	Other albatrosses	18%	13%	22%	0.438	0.020	0.225	314	10	110
	Unidentified albatrosses	15%		22%	0.018		0.030	10		15
	Giant petrels	15%	16%	22%	0.099	0.029	0.120	101	20	59
	Other seabirds	20%		10%	0.025		0.000	10		-
	Whales		17%			0.000			-	
Taiwan	Blue shark	17%	13%	13%	0.288	0.305	0.157	6,241	4,630	1,650
	Shortfin mako	20%	14%	14%	0.039	0.064	0.048	684	992	389
	Porbeagle shark	23%	23%		0.035	0.026		284	100	
	Other sharks	19%	19%	14%	0.049	0.109	0.012	416	1,000	73
	Turtles	14%			0.000			-		
	Dark coloured albatrosses	32%	29%		0.013	0.006		9	5	
	Large albatrosses	17%	28%		0.004	0.009		6	10	
	Other albatrosses	22%	16%	19%	0.011	0.027	0.024	78	117	43
	Unidentified albatrosses	15%			0.006			10		
	Giant petrels	20%		13%	0.008		0.043	32		20
	Other seabirds	15%	26%		0.018	0.021		39	30	