



CCSBT-ERS/2203/BGD 01
(previously CCSBT-CC/2110/05)

**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 vessels¹ for shots or sets where southern bluefin tuna (SBT) was either targeted or caught. Since last year's paper (CCSBT-CC/2010/05), all Members except South Africa have submitted ERS data for the 2020 calendar year. Two Members (New Zealand and Taiwan) also submitted revised ERS data for 2019 and one Member (Indonesia) submitted revised ERS data for 2010 to 2020.

All data submitted this year (including the revised data) were provided in the new format, which involved 5*5 degree resolution by quarter and observer type (human, electronic), instead of Statistical Area and year.

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

Due to the COVID-19 pandemic, Korea placed no observers on its longline vessels targeting SBT in 2020 and submitted capture data recorded by its fishing vessels. Only blue shark was recorded, but since the ERSWG Data Exchange specifies that observed captures be provided, these data were not used.

(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**. Only one Member (Taiwan) reported achieving or exceeding the overall target scientific observer coverage of 10% for all its SBT fleets last year (2020). Australia also exceeded a 10% observer coverage for its purse seine fleet in 2020, but not its longline fleet.

Indonesia has never reached the target and had an observer coverage of close to 0% in 2020. 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. There are no figures for the European Union (EU) in **Attachment 1**. This is because the EU reported that it had no vessels targeting or capturing SBT during the three years in question. There are no figures for South Africa in 2019 or 2020 because South Africa has yet to provide its EDE data for these years².

The overall observer coverage for other Members in 2020 was 0% for Korea, 7% for Japan, 8% for Australia's longline fleet (noting that this was based on e-monitoring, not scientific observers) and 9% for New Zealand.

In summary, the overall observer coverage by Members in 2020 has declined from that in previous years and in most cases, it is now not meeting the 10% target coverage agreed by the CCSBT.

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.

² However, South Africa's 2021 annual report to the Compliance Committee and Extended Commission indicates that South Africa had above 10% total observer coverage for its domestic longline fleet in 2019 and 2020 and in its charter fleet in 2019.

Attachment 1 contains 23 representativeness figures (one figure for each of the 9 fleets for each of the 3 years³). Of these, there were only 7 fleet/year combinations with full (100%) representativeness of observer coverage. In addition, there were 13 fleet/year combinations with a representativeness of 50% or less. These figures include strata with low effort (<25,000 hooks for longline and <5 sets for purse seine). If these low effort strata are excluded from the calculations, the representativeness figures improve to 12 fleet/year combinations with full (100%) representativeness and 9 fleet/year combinations with a representativeness of 50% or less.

b) Usage of seabird mitigation measures

This section contains no information for Indonesia because Indonesia has not provided information on its usage of mitigation measures with its EDE data. No information is shown for South Africa in 2019 and 2020 because South Africa has not submitted any EDE data for these two years. Also, no information for 2020 is shown for Korea because Korea did not deploy any observers in 2020.

Table 1 of **Attachment 2** shows, the proportion of observed effort in Members' long line fleets that used specific mitigation measures for fishing from 2018-2020 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 Areas⁴. With the exception of Japan, New Zealand and Taiwan, all observed vessels that fished for or caught SBT in these Areas used at least the 2 required mitigation measures. During 2018 and 2019, over two thirds of observed Japanese effort only used a single mitigation measure. There was an improvement in 2020, but despite the improvement, 50.3% of observed Japanese effort still used only a single mitigation measure. The use of a single mitigation measures for observed New Zealand effort decreased from 4.2% in 2018 to 1% in 2019 and 0% in 2020. Similarly, for Taiwan, the use of a single mitigation measure for its observed effort decreased from 8.6% in 2019 to 0% in 2020.

Table 2 of **Attachment 2** shows the same information as Table 1, except this is restricted to fishing 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. South Africa and Taiwan were the only Members to have vessels observed in this Area. All South Africa's observed vessels used 3 mitigation measures in 2018. Between 0.7% and 6.3% of Taiwan's observed effort did not use 2 or more mitigation measures each year (and this effort was in Areas that required at least 2 mitigation measures).

Table 3 of **Attachment 2** shows the same information as Tables 1 and 2, except this is restricted to fishing in Statistical Areas 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. South Africa and Taiwan were the only Members to have vessels observed in this Area and all observed effort used either 2 or 3 mitigation measures (which included tori lines).

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.

³ Minus the two South African fleets for 2019 and 2020, for which data has yet to be provided.

⁴ Note that the requirements of ICCAT, IOTC and WCPFC to use 2 out of 3 mitigation measures did not become mandatory on CCSBT authorised vessels from a CCSBT perspective until after CCSBT 25 in October 2018.

Table 1: Members’ compliance with the EDE for the last four 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 ⁵	X	✓	✓	✓	✓	✓
Data provided as required by the EDE in 2018?	✓	n/a ⁵	P ⁶	✓	✓	✓	✓	✓
Data provided as required by the EDE in 2019?	✓	n/a ⁵	P ⁷	✓	✓	✓	✓	✓
Data provided as required by the EDE in 2020?	✓	n/a ⁵	P ⁷	✓	✓	✓	✓	X ⁸
Data provided as required by the EDE in 2021?	✓	n/a ⁵	P ⁷	✓	✓ ⁹	✓	✓	X ¹⁰
<i>Data for 2021 provided at species level where this is not a minimum requirement of the EDE¹¹?</i>	P ¹²	n/a ⁵	✓	X	X	✓	✓	-

South Africa has not yet provided the required EDE data in 2020 and 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.

d) Participation and reporting to ERSWG meetings

The ERSWG met in 2017 and 2019. 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 (which is unchanged from last year’s version of this paper).

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 ¹³	X ¹³	✓	✓	✓	✓	X
Submitted annual report to meeting	✓	X	✓	✓	✓	✓	✓	✓
Completeness of annual report	✓	n/a	P	P	P	✓	P	P

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.

⁵ 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.

⁶ Indonesia was not able to provide the proportions of observed effort with specific mitigation measures.

⁷ 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.

⁸ South Africa has not yet provided any data for the 2020 EDE.

⁹ However, Korea did not submit any observer data because it had zero observer coverage in 2021.

¹⁰ South Africa has not yet provided any data for the 2021 EDE.

¹¹ 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.

¹² Australia’s data contains a mixture of species and group level reporting.

¹³ 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.

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-seabirds¹⁴, IPOA-sharks¹⁵ 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 collected¹⁶.

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 2020 Annual CC/EC Report because the reports for the 2021 meeting were not available at the time of preparing this paper. The information provided by some Members in the 2020 Annual CC/EC Report was ambiguous, and this has been reflected in the footnotes to items in Table 3.

Table 3: Summary of required information reported by Members in their 2020 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	✓	✓	? ¹⁷	✓	✓	✓	✓	✓
Implemented IPOA-Sharks	✓	✓	✓	✓	✓	✓	✓	✓
Implemented FAO-Sea Turtles	✓	✓	✓	✓	✓	✓	✓	✓
Complied with ICCAT ERS Measures	n/a	✓	n/a	✓	✓	n/a	✓	P ¹⁸
Complied with IOTC ERS Measures	✓	✓	✓	✓	✓	n/a	✓	P ¹⁸
Complied with WCPFC ERS Measures	✓	✓	✓	✓	✓	✓	✓	n/a
ERS Data collected and reported as required by ICCAT	n/a	✓	n/a	✓	✓	n/a	✓	P ¹⁸
ERS Data collected and reported as required by IOTC	P ¹⁹	✓	X ²⁰	✓	✓	n/a	✓	P ¹⁸
ERS Data collected and reported as required by WCPFC	✓	✓	X ²¹	✓	✓	✓	✓	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.

¹⁴ International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries.

¹⁵ International Plan of Action for the Conservation and Management of Sharks.

¹⁶ 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.

¹⁷ It was only noted that “During 2019, there was no interaction between longliner and seabird in observed longline fisheries”.

¹⁸ It was difficult to determine whether all current binding and recommendatory ERS measures of the relevant RFMOs are being complied with from the response given in the Annual CC/EC Report.

¹⁹ Australia noted that for a variety of practical reasons, it is not able to provide size frequency data for sharks.

²⁰ Indonesia stated that it has not yet complied with Resolution IOTC 2011/04 and that progress being made is to enhance personal capacity of observer and increase coverage level of observer program, as well as strengthening collaboration with Indonesia Tuna Association.

²¹ 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.

(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.

ERSWG 13 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 13 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 2018 to 2020.

Table 4: Observed mortality rate of seabirds (kills per 1,000 hooks) for each Member from 2018 to 2020.

	AU	JP	KR	NZ	TW	ZA
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

No seabird mortality rate information is available for Korea in 2020²² or for South Africa in 2019 and 2020²³.

There is a large magnitude of difference each year between those Members with low rates of seabird kills and those with high rates of seabird kills.

Japan and New Zealand had the highest or second highest rate of seabird mortality each year from 2018 to 2020, but both had a substantial decline in their mortality rates from 2019 to 2020 with 2020 being their lowest mortality rate for the three years shown.

b) Total ERS mortality

Table 5 provides the raised number of seabirds killed for each Member from 2017 to 2020.

Table 5: Raised mortality of seabirds (in numbers of seabirds) for each Member from 2018 to 2020.

	AU	JP	KR	NZ	TW	ZA
2018	9	5,216	139	242	209	0
2019	0	6,636	128	240	347	Not available
2020	0	1,402	Not available	15	128	Not available

As with the previous table, no raised number of seabird kills is available for Korea in 2020²² or for South Africa in 2019 and 2020²³.

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

²² Due to no observer coverage.

²³ Because these data have not been submitted.

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. There does however appear to be a substantial decline in seabird kills from 2019 to 2020 for Japan, New Zealand and Taiwan. In addition, there were no recorded seabird kills for Australia.

Attachment 1

Observer coverage (observed hooks / total hooks expressed as a percent) by flag, gear, fleet, year and CCSBT Statistical Area²⁴. 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).

Member code	Gear code	Fleet code	Year	Statistical area											Total	Representativeness	
				1	2	3	4	5	6	7	8	9	14	15			
AU	LL	AUD	2018		0%		12%				35%					12%	67%
			2019				12%			0%						12%	50%
			2020		0%		8%			7%						8%	0%
	PS	AUD	2018			0%					20%					20%	50%
			2019			0%					13%					13%	50%
			2020								11%					11%	100%
ID	LL	IDD	2018	1%	0%							0%			1%	0%	
			2019	1%	1%										1%	0%	
			2020	0%	0%										0%	0%	
JP	LL	JPD	2018				8%	0%		2%	14%	6%			6%	20%	
			2019				15%	16%		24%	13%	26%			22%	100%	
			2020				0%	18%	5%	5%	3%	11%			7%	33%	
KR	LL	KRD	2018										21%		21%	100%	
			2019										22%		22%	100%	
			2020								0%	0%			0%	0%	
NZ	LL	NZD	2018				0%	14%	17%						15%	67%	
			2019					8%	10%						9%	50%	
			2020					9%	10%						9%	50%	
TW	LL	TWD	2018		15%							18%	20%	14%	28%	15%	100%
			2019		26%							18%	5%	10%		17%	50%
			2020		22%							10%	10%	10%		13%	75%
ZA	LL	ZAC	2018									100%	100%		100%	100%	
		ZAD	2018										11%	16%	16%	15%	100%

²⁴ 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 3-10²⁵.

Member	Fleet	Year	Tori pole + Night setting only	Tori pole + weighted branchline only	Night setting + weighted branchline only	Tori pole + night setting + weighted branchline	None	Single Measure (unspecified)	Night setting only	Tori pole only	Weighted branchline only	Other
AU	AUD	2018	-	29.9%	-	70.1%	-	-	-	-	-	-
		2019	-	44.0%	-	56.0%	-	-	-	-	-	-
		2020	-	36.4%	-	63.6%	-	-	-	-	-	-
JP	JPD	2018	21.3%	-	-	-	-	78.7%	-	-	-	-
		2019	12.7%	10.2%	0.3%	3.0%	-	-	1.0%	66.7%	0.9%	2.9%
		2020	34.9%	8.2%	0.0%	6.5%	-	-	0.7%	44.4%	-	5.2%
KR	KRD	2018	-	100.0%	-	-	-	-	-	-	-	-
		2019	-	100.0%	-	-	-	-	-	-	-	-
		2020	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
NZ	NZD	2018	67.4%	0.8%	-	27.5%	-	-	3.0%	1.2%	-	-
		2019	31.7%	2.0%	0.6%	64.7%	-	-	0.5%	0.5%	-	-
		2020	45.3%	-	13.1%	41.6%	-	-	-	-	-	-
TW	TWD	2018	83.2%	0.2%	-	16.5%	-	-	-	-	-	-
		2019	58.2%	25.6%	7.6%	-	-	-	-	8.6%	-	-
		2020	99.1%	0.9%	-	-	-	-	-	-	-	-
ZA	ZAC	2018	-	-	-	100.0%	-	-	-	-	-	-
	ZAD	2018	-	-	-	100.0%	-	-	-	-	-	-

Table 2: Proportion of observed effort in Members' long line fleets that used specific mitigation measures in Statistical Areas 2 and 14.

Member	Fleet	Year	Tori pole + Night setting only	Tori pole + weighted branchline only	Night setting + weighted branchline only	Tori pole + night setting + weighted branchline	None	Single Measure (unspecified)	Night setting only	Tori pole only	Weighted branchline only	Other
TW	TWD	2018	87.4%	1.9%	0.3%	9.8%	0.1%	-	0.5%	0.1%	-	-
TW	TWD	2019	64.6%	22.7%	2.7%	3.7%	-	-	-	6.3%	-	-
TW	TWD	2020	75.7%	11.6%	-	6.6%	-	-	-	6.1%	-	-
ZA	ZAC	2018	-	-	-	100.0%	-	-	-	-	-	-
ZA	ZAD	2018	-	-	-	100.0%	-	-	-	-	-	-

Table 3: Proportion of observed effort in Members' long line fleets that used specific mitigation measures in Statistical Area 15.

Member	Fleet	Year	Tori pole + Night setting only	Tori pole + weighted branchline only	Night setting + weighted branchline only	Tori pole + night setting + weighted branchline	None	Single Measure (unspecified)	Night setting only	Tori pole only	Weighted branchline only	Other
TW	TWD	2018	100.0%	-	-	-	-	-	-	-	-	-
ZA	ZAD	2018	-	-	-	100.0%	-	-	-	-	-	-

²⁵ For 2017 and 2018 data, the ERS Data Exchange template did not include specific single mitigation measures. So, for these year, single mitigation measures were recorded as "unspecified". For the 2019 data onwards (and any revised earlier data), the template required specification of those single mitigation measures. Therefore, some years in this table have single mitigation measures shown as unspecified and other years have the actual mitigation measures listed.

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	<p>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.</p> <p>Australian fisheries officers conduct inspections of landings at key SBT ports, as well as at sea boardings and inspections of boats taking SBT in the longline and farm sectors. In 2018/19 Australian fisheries officers conducted 19 inspections of SBT/ETBF boats, 9 inspections at sea and 10 inspections in port.</p>	<p>The information collected on mitigation measures includes:</p> <ul style="list-style-type: none"> • whether bycatch mitigation, such as tori lines, is being carried on board the vessel; • whether bycatch mitigation has been deployed appropriately; and • whether the bycatch mitigation complies with specifications.
EU	<i>No information (not applicable).</i>	<i>No information (not applicable)</i>
Indonesia	Inspection by surveillance officer, report from observer on board, port sampling program.	Catch composition including by-catch and ERS.
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 2019/2020 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.
New Zealand	<p>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.</p> <p>During the 2019 calendar year, inspections found no incidents where breaches of seabird mitigation regulations may have occurred across the New Zealand surface longline fleet.</p>	<p>Fisheries Officers collect information about tori line, line-weighting and hook shielding devices that are present on vessels.</p> <p>Observer reports provide information about mitigation gear usage, gear descriptions, and fisher attitudes toward seabird mitigation.</p>

	Methods being used to monitor compliance with bycatch mitigation measures, including coverage level	Type of information collected
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 16% (efforts) by vessel in 2018/2019 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.

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.

Member	ERS Species Group	Observer Coverage			Mortality Rate			Raised Mortalities		
		2018	2019	2020	2018	2019	2020	2018	2019	2020
Australia	Blue shark	12%	13%	8%	0.103	0.060	0.032	60	20	16
	Shortfin mako	12%	14%	15%	0.194	0.110	0.194	111	33	14
	Other sharks	12%	14%	8%	0.044	0.000	0.032	26	-	16
	Other albatrosses	12%			0.015			9		
Indonesia	Blue shark	n/a	n/a	n/a	1.148	0.775	1.828	n/a	n/a	n/a
	Shortfin mako	n/a	n/a	n/a	0.079	0.151	0.071	n/a	n/a	n/a
	Porbeagle shark	n/a	n/a	n/a	0.034			n/a	n/a	n/a
	Other sharks	n/a	n/a	n/a	0.778	0.655	0.476	n/a	n/a	n/a
	Turtles	n/a	n/a	n/a	0.053	0.045		n/a	n/a	n/a
	Other seabirds	n/a	n/a	n/a	0.070	0.229	0.096	n/a	n/a	n/a
Japan	Blue shark	7%	24%	10%	2.619	1.436	2.815	36,727	19,092	21,238
	Shortfin mako	7%	24%	10%	0.019	0.051	0.031	241	588	289
	Porbeagle shark	7%	24%	9%	0.298	0.229	0.626	4,071	2,568	3,389
	Other sharks	7%	24%	10%	0.064	0.015	0.058	1,020	140	355
	Turtles		23%			0.000			-	
	Dark coloured albatrosses	6%	25%	16%	0.048	0.059	0.052	323	378	110
	Large albatrosses	7%	25%	13%	0.006	0.040	0.024	80	359	85
	Other albatrosses	7%	24%	12%	0.195	0.358	0.090	3,451	3,944	472
	Unidentified albatrosses	9%	30%		0.007	0.004		76	14	
	Giant petrels	7%	24%	11%	0.059	0.149	0.081	1,071	1,924	700
	Other seabirds	6%	30%	14%	0.011	0.007	0.014	77	17	35
Unidentified seabirds	14%	23%		0.002	0.000		7	-		
Korea	Blue shark	21%	22%	0%	1.220	1.229	n/a	3,340	3,027	n/a
	Shortfin mako	21%	22%	0%	0.077	0.227	n/a	210	659	n/a
	Porbeagle shark	21%	21%	0%	0.412	0.029	n/a	1,128	56	n/a
	Other sharks	21%	22%	0%	0.181	0.026	n/a	497	52	n/a
	Dark coloured albatrosses	21%	18%	0%	0.009	0.014	n/a	24	17	n/a
	Large albatrosses	21%	23%	0%	0.002	0.011	n/a	5	9	n/a
	Other albatrosses	21%	20%	0%	0.040	0.044	n/a	110	102	n/a
New Zealand	Blue shark	17%	13%	12%	4.382	6.807	3.238	6,747	5,058	4,167
	Shortfin mako	17%	13%	12%	0.314	0.196	0.138	347	149	117
	Porbeagle shark	17%	13%	12%	0.732	1.247	0.524	916	1,035	501
	Other sharks	20%	17%	12%	0.146	0.041	0.084	242	48	73
	Turtles	8%		14%	0.000		0.070	-		7
	Large albatrosses	51%			0.027			2		
	Other albatrosses	28%	18%	18%	0.362	0.438	0.042	206	158	6
	Unidentified albatrosses	23%	15%	12%	0.027	0.018	0.000	4	5	-
	Giant petrels	28%	15%	16%	0.053	0.099	0.029	30	72	10
	Other seabirds	8%	20%		0.000	0.025		-	5	
Taiwan	Blue shark	16%	17%	13%	0.383	0.288	0.305	6,424	6,243	3,915
	Shortfin mako	16%	20%	14%	0.040	0.039	0.064	607	652	1,009
	Porbeagle shark		23%	23%		0.035	0.026		221	59
	Other sharks	16%	19%	19%	0.018	0.049	0.109	250	318	506
	Turtles		14%			0.000			-	
	Dark coloured albatrosses	16%	32%	29%	0.011	0.013	0.006	49	7	3
	Large albatrosses	17%	17%	28%	0.015	0.004	0.009	38	6	4
	Other albatrosses	20%	22%	16%	0.025	0.011	0.027	34	76	109
	Unidentified albatrosses		15%			0.006			7	
	Giant petrels	21%	20%		0.018	0.008		88	93	
Other seabirds		15%	26%		0.018	0.021		158	13	
South Africa	Blue shark	30%	n/a	n/a	7.767			10,832	n/a	n/a
	Shortfin mako	30%	n/a	n/a	3.147			3,847	n/a	n/a
	Other sharks	31%	n/a	n/a	0.054			11	n/a	n/a
	Turtles	16%	n/a	n/a	0.000			-	n/a	n/a