Commission for the Conservation of
Southern Bluefin Tuna

みなみまぐろ保存委員会

CCSBT-ESC/2108/04

Secretariat Review of Catches (ESC agenda item 4.2)

This paper provides an update of the reported SBT global catches, catch and effort, and exports from CCSBT Members and Cooperating Non-Members.

1) Global SBT Catch

The global catch by flag is provided at **Attachment A**. The new and updated figures were obtained from the 2021 Data Exchange. The estimated total catch for the 2020 calendar year was 16,441t, a decrease of 1,738t or 9.6% from the 2019 calendar year. The global TAC for the 2020 fishing season was 17,647t (before carry-forward adjustments). Of this, 17,335t was allocated to Members, 6t was reserved for Research Mortality Allowance and 306t was reserved to account for IUU catch by Non-Members.

The figures in **Attachment A** that differ from those in the report of the 2020 Extended Scientific Committee (ESC) meeting are italicised and shown in red.

For the Global Catch Table, the following should once again be noted:

- The column for "Retrospective unreported catch estimate scenarios" is separated into a surface fisheries catch scenario and a longline fisheries catch scenario. However, due to confidentiality that still exists in relation to these catch scenarios, the Secretariat recommends that the global catch table in the ESC report should:
    - exclude the retrospective catch estimate scenarios; and
    - contain the following explanatory text:
      "Reviews of southern bluefin tuna data presented to a Special Meeting of the Commission in 2006 suggested that the catches may have been substantially under-reported over the previous 10 to 20 years, and the data presented here do not yet include estimates for this unreported catch"

  In addition, due to confidentiality concerns, the Secretariat recommends that **Attachment A** of the present paper be excluded from the public domain.

Attachment B provides charts of global annual reported catch by flag (figure 1), by gear (figure 2) and by CCSBT statistical area and gear (figure 3 – for statistical areas where annual catch has exceeded 200mt for at least one year).

The following table provides the global TAC agreed by the CCSBT for each fishing season since adoption of the CCSBT Management Procedure together with the total reported catch of Members and Cooperating Non-Members against the TAC for those fishing seasons.

Fishing Season	TAC* (t)	TAC* + Carry-Forward[1]	Backdated Adjusted TAC*,[2]	Reported Catch (t)
2012	10,449	10,430	10,206	10,214
2013	10,949	11,173	10,957	11,433
2014	12,449	12,665	12,587	12,803
2015	14,637	14,715	14,491	14,108
2016	14,637	14,861	14,519	14,117
2017	14,637	14,979	14,213	14,102
2018	17,335	18,101	17,438	16,936
2019	17,335	17,998	17,474	16,830
2020	17,335	17,859	16,338	15,863[3]
2021	17,641	19,161	N/A	N/A

* The TAC figures exclude RMA allowance and any allowance for IUU catch by Non-Members.

Indonesia exceeded its Total Available Catch for the 2020 fishing season by 456.6t. It advised that it will repay this amount by reducing its Total Available Catch by 91.8t for each of the 2022-2026 fishing seasons (Report of the Twenty Seventh Annual Meeting of the Commission Attachment 8).

2) Catch and Effort

The table below shows the number of active vessels by flag from 2011 to 2020. A vessel is considered active if the Secretariat has received CDS data (Catch Monitoring Form or Farm Stocking Form) indicating that the vessel caught SBT.

Flag	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Australia	19	15	25	22	26	32	26	40	34	35
Indonesia	180	134	161	188	111	107	108	139	150	151
Japan	83	91	84	89	89	85	86	87	85	61
Korea	7	7	9	9	10	11	12	10	11	9
New Zealand	38	38	38	33	31	41	36	37	29	30
Philippines	1	1	1	1						
South Africa	9	8	11	11	10	17	12	22	20	20
Taiwan	56	35	73	72	71	60	75	77	72	46
Total	**393**	**329**	**402**	**425**	**348**	**353**	**355**	**412**	**401**	**352**

Maps of Catch and Effort Distribution are provided in **Attachment C.** There are three series of charts, the first presents catch and effort distribution by year from 2013 to 2020, the second presents average annual catch and effort by 5-year groups from 1981 to 2020, and the third presents average monthly catch and effort for 2018-2020.

[1] This includes over-catch payback amounts that are treated as a negative carry-forward.
[2] Carry forward amounts have been deducted from the TAC of the year carried forward from for this column. The 'Backdated Adjusted TAC' therefore redistributes the TAC across years according to the carry forward amounts. Comparing reported catch to this figure gives a more accurate indication of actual global over-catch and under-catch.
[3] For some Members, the 2020 fishing season does not finish until 31 March 2021. The reported catch for the 2020 fishing season is a preliminary estimate based on various sources of information, including the 2021 Data Exchange, Monthly Catch Reports, other reports from Members and the Catch Documentation Scheme.

For all maps the following should be noted:

- The data are combined catch and effort for Australia, Japan, Korea, New Zealand, South Africa, Taiwan, and do not include catch or effort for the European Union, Indonesia, or the Philippines, for which we do not have a time-series of catch and effort or raised catch data. In the European Union's case, this is because it has been reporting zero catch of SBT.
- Effort is for longline only and is shown as a heat map with dark red showing the highest concentration of effort, fading to pink and then shown as grey for the lowest effort. These data are from aggregated catch and effort data provided to the annual scientific data exchange. For some Members these data are not raised but coverage is generally high, especially for recent years. Effort data provided under the data exchange are not equal with Members using different rules for selecting data. For most map series the effort heat maps are not on a common scale and show relative effort concentration for each map. Effort is therefore presented for indicative purposes only and does not represent the best estimate of fishing effort that is targeting or catching SBT. The exception is the map series by month, which has a common effort scale for all months.
- Catch is taken from raised catch data provided to the annual scientific data exchange and is represented by circles on the maps.
- There are two separate and different catch scales on the maps, one for longline (yellow) and handline catches (blue), and another for pole-and-line (red) and purse seine catches (green). The catch scales are the same for all maps in a series.
- There are no 2020 catch and effort data for South Africa.

3) Catch Documentation Scheme statistics

At ESC12, the meeting requested that the Secretariat provide Trade Information Scheme (TIS) information for future meetings of the ESC. The Trade Information Scheme ended on 31 December 2009 and was replaced by the Catch Documentation Scheme (CDS) as of 1 January 2010. TIS data are no longer be reported in this paper and are available in paper CCSBT-ESC/1509/04. This paper only presents data that have been taken from the CDS scheme, from 2010 onwards.

The complete details of the CDS scheme are available on the CCSBT web site at: https://www.ccsbt.org/sites/ccsbt.org/files/userfiles/file/docs_english/operational_resolutions/Resolution_CDS.pdf

There are some limitations to the CDS that should be noted:

- The time lags between catch, landing, export and import for some SBT fisheries can result in lengthy delays before all catch information is available.
- The scheme involves reporting of net weights and product types on CDS documents. However, not all Members have provided conversion factors for converting these to whole weight estimates and consequently, default conversion factors must often be used.
- Catch data from farms is taken from the farm stocking forms and allocated to catch year by using the catch harvest dates on the forms. The catch harvest dates are a range that can be several months and span across years. In the case where the dates span across years the catch has been apportioned to the years using the number of days in each year, but these estimates will not always match actual catch by year and therefore may differ from the relevant Members' official catch figures.

Bearing in mind the limitations of the CDS, Table 1 of **Attachment D** provides a summary of the catch per year and flag. Table 1 uses data from both Catch Monitoring Forms (for Wild Caught SBT) and Farm Stocking Forms (for Farmed SBT) under the CDS Scheme.

Table 2 of **Attachment D** shows the conversion factors used in producing Table 1. When a conversion factor was supplied with the form then the provided conversion factor was used, if not then the factor shown in the table was used. Australian data with codes of GG, GGH, GGO, or GGT were converted using the Australian specific factors even if a conversion factor was provided. Conversion factors were provided mostly for Australian forms with processed codes of OT, LOI, and GGH, with a range of factors provided. Conversion factors were also provided for a small number of New Zealand and Indonesian forms.

Table 3 of **Attachment D** shows the net weight of SBT exported to different importing countries according to the CDS. For each year from 2010 to 2020 on average 97.6% of SBT exports were sent to Japan.

4) Non-Member Effort in SBT Catch Areas

Maps of Non-Member longline effort by year from 2012 to 2019 are provided in **Attachment E**. The maps show SBT catch distribution for each year as heat maps, taken from CCSBT raised catch data, with pies of longline effort for Non-Members South of 20°S. The pies are proportional in size to total effort in the 5x5 degree square. Effort data is from IOTC, ICCAT, and WCPFC. The purpose of these maps is to provide a visual indication of the distribution of Non-Member effort with respect to known SBT catch areas, and to show any changes in fishing area by Non-Members over time. The Indian Ocean appears to have the largest overlap of Non-Member effort with SBT catch areas, with the Chinese and Seychelles fleets[4] appearing in recent years to have more effort and larger areas of overlap in areas where SBT could be expected to be caught. In the Pacific Ocean, Vanuatu seems to be fishing closer to SBT catching areas in recent years.

Prepared by the Secretariat

[4] Potentially Malaysia as well.

This attachment is only available in the Members version of this report

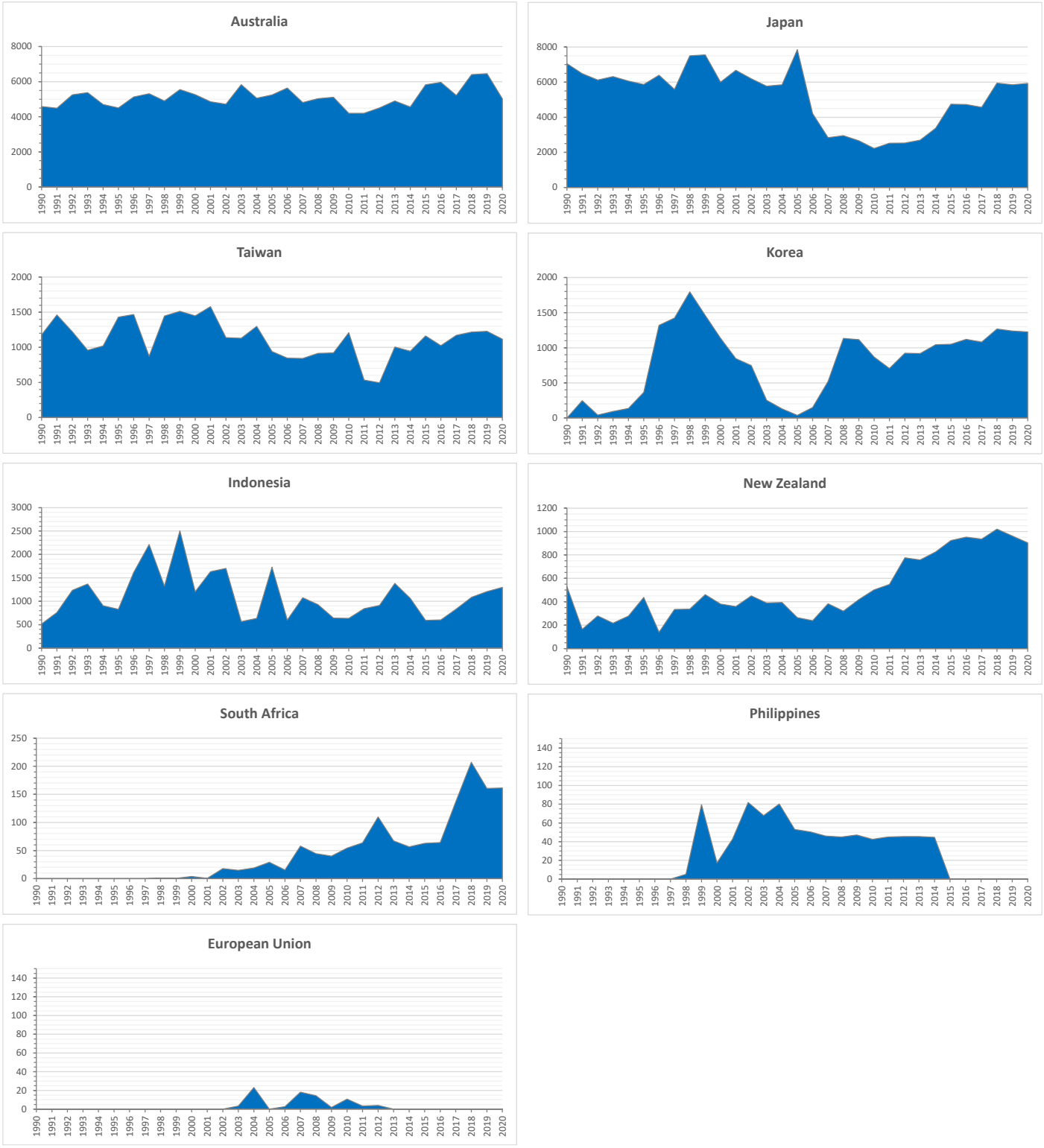


Figure 1 – Annual Global catch by Flag

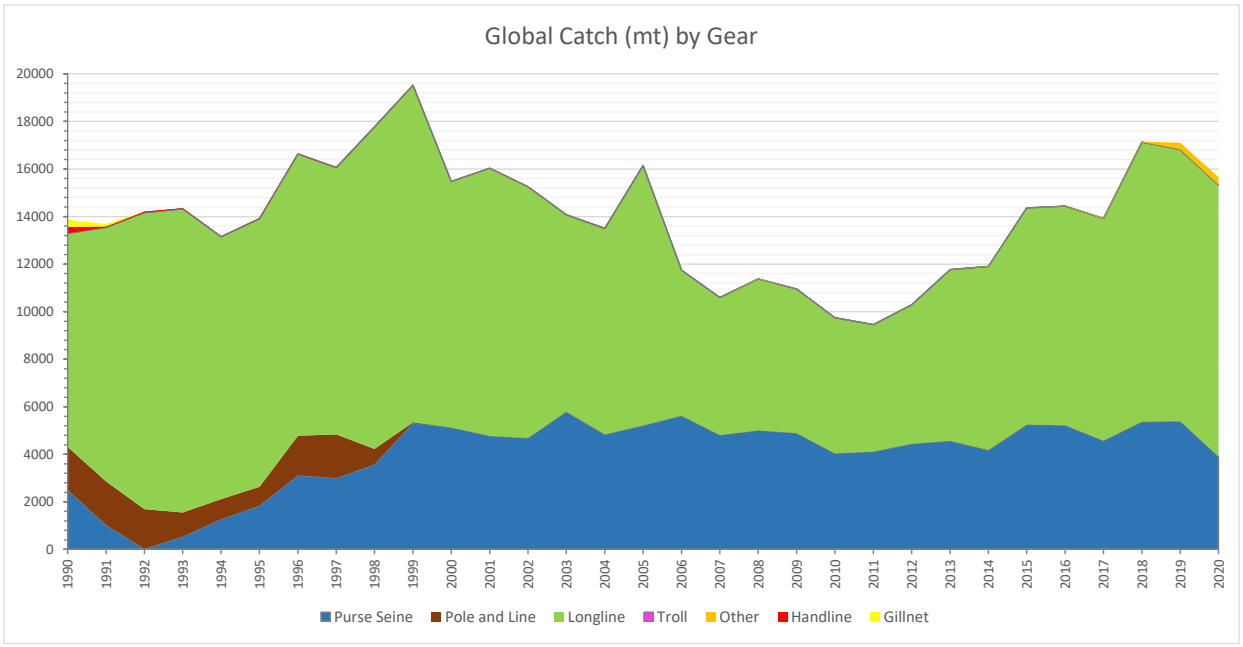


Figure 2 – Annual Global catch by Gear

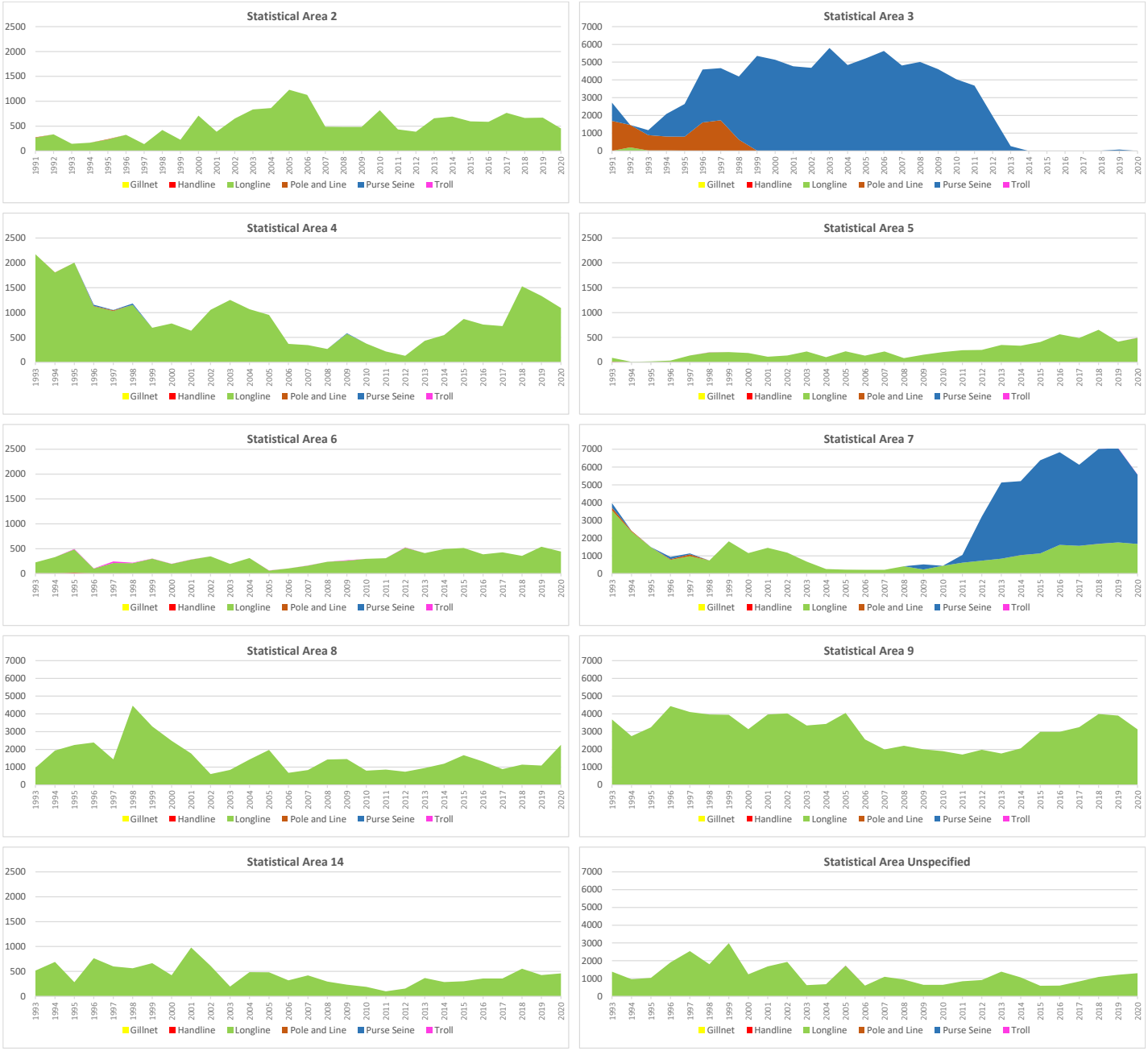
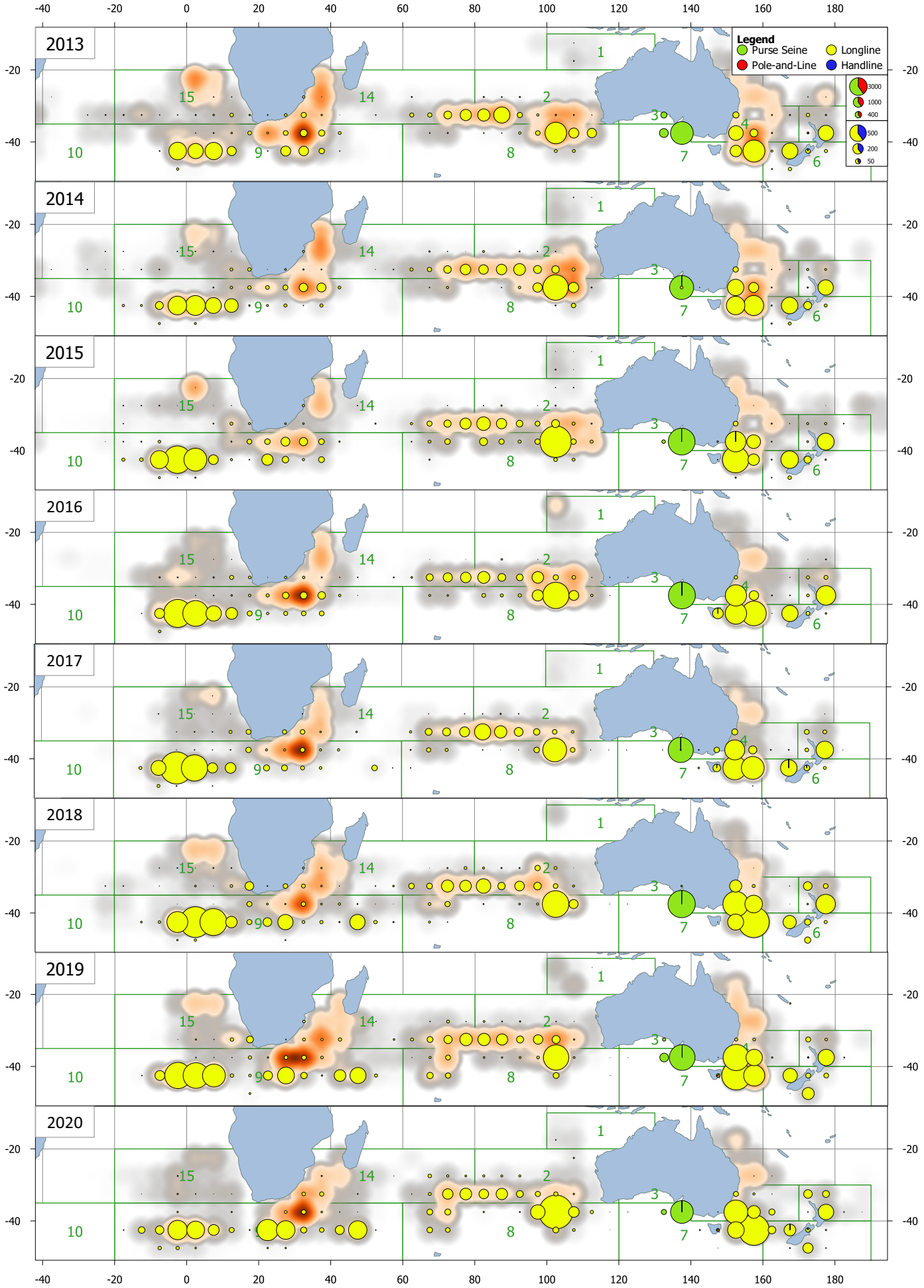
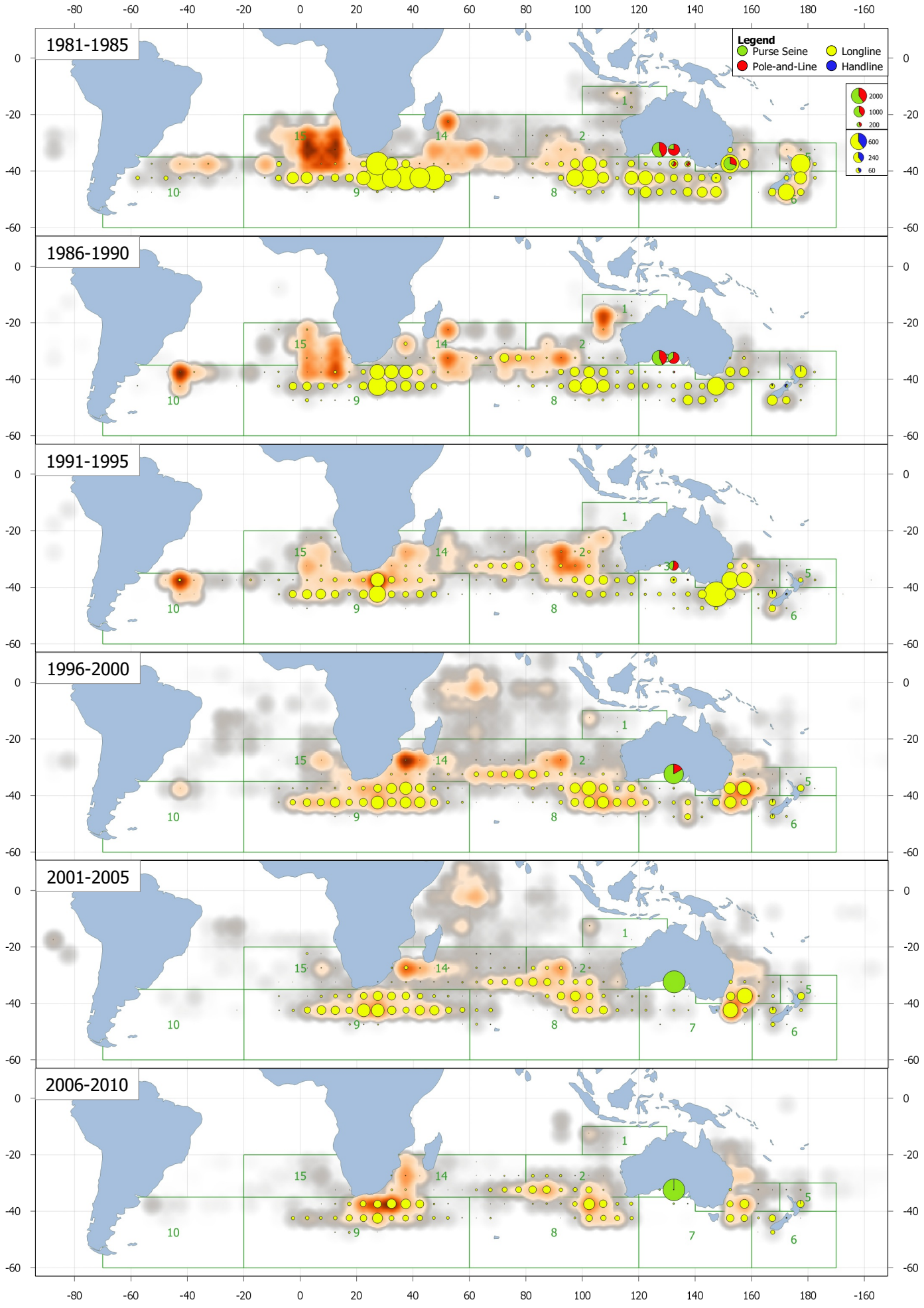


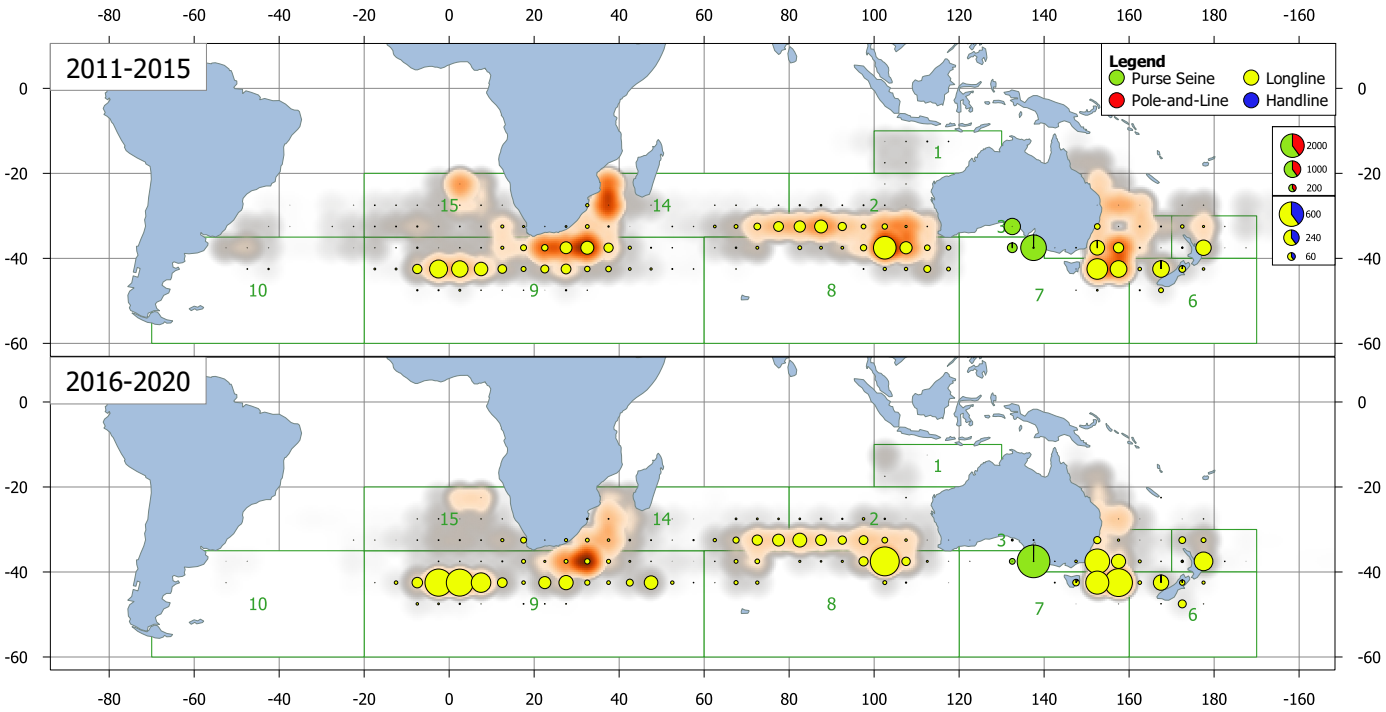
Figure 3 – Annual Global catch by Statistical Area and Gear

Distribution of longline effort (heat map of hooks from Catch and Effort data) and proportional pies of raised catch for all available flags combined by year (see text for more details - 2020 has no South Africa data).
Note - The scale for Purse Seine/Pole-and-Line is not the same as the Longline/Handline scale, but the two scales are the same for all of the maps below.

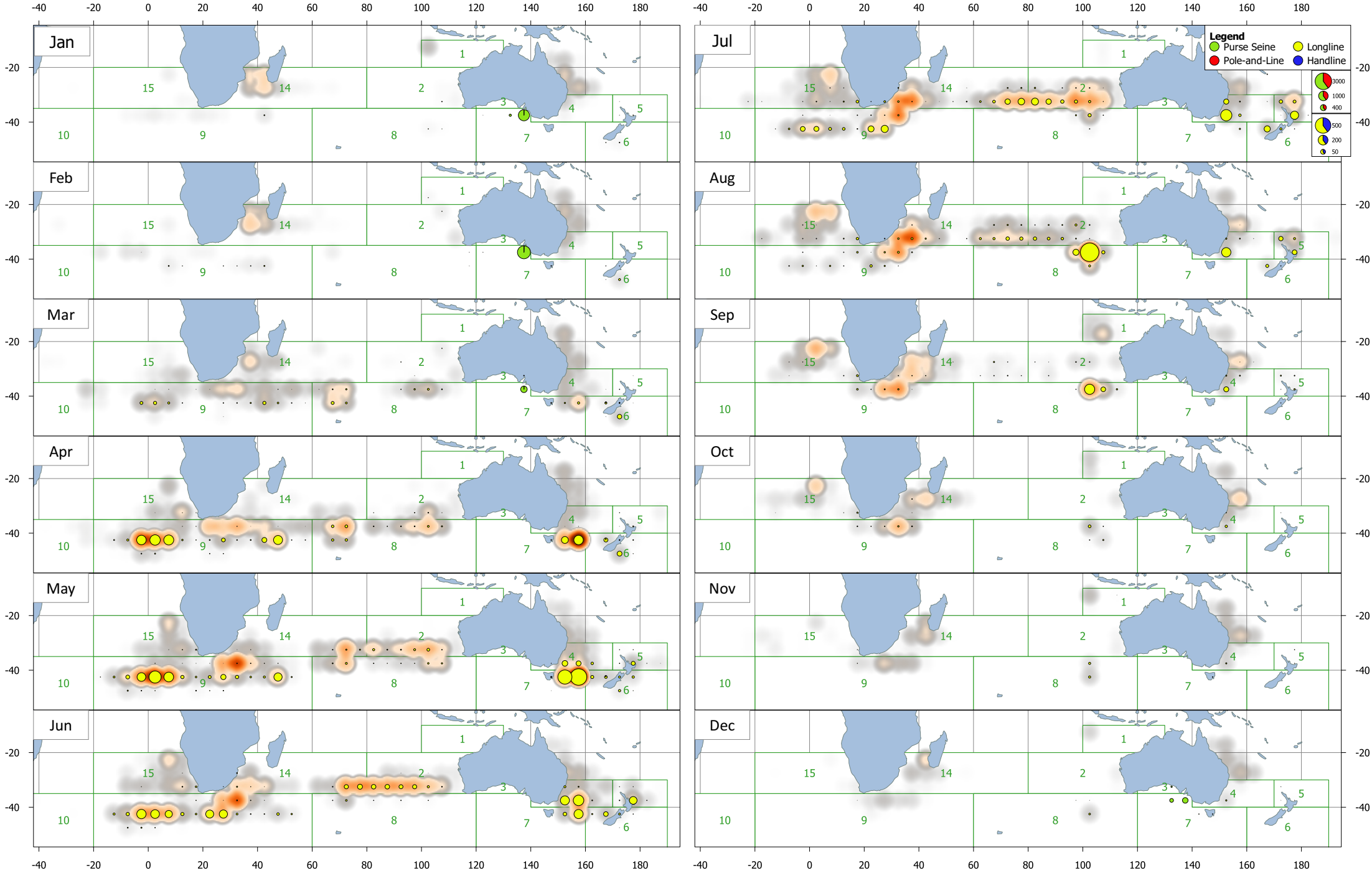


Distribution of longline effort (heat map of hooks from Catch and Effort data) and proportional pies of average annual raised catch for all available flags by 5 year period (see text for more details).
Note - The scale for Purse Seine/Pole-and-Line is not the same as the Longline/Handline scale, but scales are standard for all maps.




2011-2015
2016-2020
Legend
Purse Seine
Longline
Pole-and-Line
Handline
2000
1000
200
600
240
60
-80
-60
-40
-20
0
20
40
60
80
100
120
140
160
180
-160
0
-20
-40
-60
1
2
3
6
7
8
9
10
14
15

Distribution of average monthly longline effort (heat map of hooks from Catch and Effort data) and proportional pies of average monthly raised catch for all available flags combined by month for 2018-2020 (see text for more details - 2020 has no South Africa data).
Note - The scale for Purse Seine/Pole-and-Line is not the same as the Longline/Handline scale, but the same scale applies across the maps for each month.



Summary Statistics from the CCSBT Trade Information Scheme and Catch Documentation Scheme

Table 1: Catch estimates from CDS Documents (2010-2020). The conversion factors shown in Table 2 were used to convert processed weights into whole weight estimates. Data for 2020 may be incomplete due to time lags in the CDS. No correction is made for missing documents. Highlighted cells show cases where CDS estimates are higher than nationally reported catch by more than 2.5%, which is unexpected.

	Estimated **Whole Weight** of Catch (tonnes) from CDS									
Catch Year[(i)]	Australia (farms)[(ii)]	Australia (capture)	Japan	New Zealand	Korea	Taiwan[(iii)]	Indonesia	Philippines	South Africa	Other
2010	3,990	162	2,167	501	867	1,227	613	43	29	0
2011	4,119	86	2,428	556	713	550	732	45	53	0
2012	4,557	58	2,485	776	922	492	846	46	77	0
2013	4,618	343	2,578	749	918	995	1,372	46	62	0
2014	3,967	396	3,365	817	1,044	971	1,052	45	47	0
2015	5,613	572	4,746	907	1,069	1,193	586	0	58	0
2016	4,942	747	4,609	955	1,157	1,030	596	0	64	0
2017	4,572	653	4,570	898	1,111	1,183	835	0	150	0
2018	5,126	1,048	5,950	990	1,286	1,224	1,087	0	292	0
2019	5,218	821	5,847	955	1,249	1,244	1,206	0	222	0
2020	4,013	867	4,530	844	1,243	899	1,287	0	163	0

[(i)] Catch Year is taken from the Harvest Data provided on the Catch Monitoring Form or Farm Stocking Form (for Farms)

[(ii)] Catch data from Farms is taken from the Farm Stocking Forms. The catch harvest dates are used to apportion catch to years. When the catch harvest dates span across years, the catch has been apportioned to each year based on the number of days of harvest in each year since no detailed catch information is on the farm stocking forms. These estimates by year will therefore not always match actual catch.

[(iii)] Taiwan advised that the cases where its reported catch was lower than the CDS estimate was due to weights for the CDS being measured at sea, which is not as accurate as its landed weight measurements (which were lower). According to Taiwan's regulations, fishers are requested to report landed weight after the sale of the catch relating to each document. Taiwan advised that the landed whole weight was not higher than its reported catch.

Distribution of SBT catch (heat map of catch in weight from raised catch data) and proportional pies of longline effort for Non-Members by year from ICCAT, IOTC, and WCPFC catch and effort data (see text for more details).