



CCSBT-ERS/1503/06

Summaries from the 2014 ERSWG Data Exchange

Introduction

This paper presents summaries from the data provided under the ERSWG Data Exchange. ERSWG 10 tasked the Secretariat with providing summaries of the exchanged data to Members and to future ERSWG meetings after the next ERS Data Exchange, noting that the data would be aggregated over Members. The summaries would include at least observed and actual effort, observer coverage rate, observed mortalities and estimated total mortalities. Summaries would be provided separately for CCSBT statistical areas and species/species groups.

The ERSWG Data Exchange commenced in 2013 with data provided for 2010 to 2012, while in 2014 data were provided for 2013 and in some cases revisions to 2012 data were submitted. The summaries in this paper are for all data held by the Secretariat.

In 2014, submissions were received from all CCSBT Members and also from the European Union (EU). However, the EU submission was not able to be used, primarily because the data submitted was not restricted to effort where SBT was targeted or caught. There were no observed mortalities of seabirds or marine turtles in the EU's report. The submission from Indonesia was also not included due to problems with the data submitted. The data in these summaries are therefore taken from the submissions by Australia, Japan, Korea, New Zealand, and Taiwan.

The definitions of the ERSWG Data Exchange (EDE) provides a template for the provision of data. The submissions received from Members followed the template very well, although there were substantial differences in the level of species detail provided. Some Members provided species specific data, while others used the "species/species groups" defined within the EDE as the 'minimum taxonomic level at which information should be reported'. The summaries in this document are aggregated over Members, so these "species/species groups" are the finest common level of detail that can be presented (the groups are shown in Table 1).

Species/Species Group	Comments
Sharks	
Blue Shark	
Shortfin Mako Shark	
Porbeagle	
Other sharks	
Turtles	For sea turtles, the number of species is small (approximately 7), so it is feasible to report data by stratum for each species.
Species specific	<i>Data should be provided separately for each species</i>
Seabirds	For seabirds, there are a large number of species and it is often difficult to separately identify species by pictures only. Reporting of seabird data by species would contain identification errors.
Large albatrosses	<i>Including: Wandering, Tristan, New Zealand, Antipodean, Southern Royal, and Northern Royal</i>
Dark coloured albatrosses	<i>Including: Sooty and Light-mantled</i>
Other albatrosses	<i>Including: Black-browed, Campbell, Grey-headed, Atlantic yellow-nosed, Indian yellow-nosed, Buller's, Shy, Salvin's, Chatham and White-capped</i>
Giant petrels	<i>Including: White-chinned petrel, Grey petrel, Flesh-footed shearwater etc.</i>
Other seabirds	<i>Including: Skua etc.</i>

Table 1 - Minimum taxonomic level at which information should be reported for the ERS Data Exchange (providing that such taxonomic detail is available).

Effort Summaries

As per the rules of the ERS Data Exchange, the fishing effort provided is defined as being effort by CCSBT authorised vessels for shots/sets where SBT was either targeted or caught.

Longline effort summaries are shown in Table 2 and as a map in Attachment A. On the map the circle area is proportional to the total number of hooks set in that area, with the yellow slice representing the proportion of hooks that were observed. Note that for 2013, area 6 effort does not include the New Zealand (NZ) domestic fleet effort. NZ did not submit figures for total or observed effort for the domestic fleet in that area and year and advised that operational issues resulted in very low observer coverage (<1%).

Over the 4 year period longline observer coverage was around 11% of total effort, but varied considerably among areas with some having an observer coverage of less than 5% for some years.

Year	Statistical area	Total effort (1000s of hooks)	Observed effort (1000s of hooks)	Observer coverage	
2010	2	12,456	1,960	15.7%	
	4	4,007	66	1.6%	
	5	1,345	88	6.5%	
	6	739	408	55.2%	
	7	1,304	-	0.0%	
	8	7,396	615	8.3%	
	9	19,659	1,152	5.9%	
	14	3,978	102	2.6%	
		<i>2010 Total</i>	<i>50,884</i>	<i>4,391</i>	<i>8.6%</i>
2011	2	103	-	0.0%	
	4	4,208	191	4.5%	
	5	2,539	170	6.7%	
	6	683	365	53.5%	
	7	1,986	147	7.4%	
	8	6,118	589	9.6%	
	9	10,515	1,066	10.1%	
		<i>2011 Total</i>	<i>26,151</i>	<i>2,528</i>	<i>9.7%</i>
	2012	2	1,944	623	32.0%
4		3,452	306	8.9%	
5		2,269	93	4.1%	
6		1,112	498	44.8%	
7		2,451	110	4.5%	
8		4,214	280	6.6%	
9		11,193	1,530	13.7%	
14		1,088	450	41.3%	
		<i>2012 Total</i>	<i>27,724</i>	<i>3,889</i>	<i>14.0%</i>
2013	2	6,474	994	15.4%	
	4	2,952	220	7.5%	
	5	1,364	83	6.1%	
	6	450	349	77.6%	
	7	3,216	227	7.1%	
	8	6,446	670	10.4%	
	9	12,807	1,238	9.7%	
	14	6,775	967	14.3%	
		<i>2013 Total</i>	<i>40,485</i>	<i>4,748</i>	<i>11.7%</i>
Total		145,243	15,556	10.7%	

Table 2 – Longline effort by year and statistical area, with observer coverage

Purse seine effort summaries are shown in Table 3 and as a map in Attachment B. On the map the circle area is proportional to the total number of sets set in that area, with the yellow slice representing the proportion of sets that were observed. Observer coverage averages 15% over the 4 year period but was less than 12% in 2012 and 2013.

Year	Statistical area	Total effort (sets)	Observed effort (sets)	Observer coverage
2010	3	82	21	25.6%
	<i>2010 Total</i>	82	21	25.6%
2011	3	98	17	17.3%
	7	10	-	0.0%
	<i>2011 Total</i>	108	17	15.7%
2012	3	71	10	14.1%
	7	81	7	8.6%
	<i>2012 Total</i>	152	17	11.2%
2013	3	8	-	0.0%
	7	111	14	12.6%
	<i>2013 Total</i>	119	14	11.8%
Total		461	69	15.0%

Table 3 – Purse seine effort by year and statistical area, with observer coverage.

Observed Mortality Summaries

Table 4 shows observed mortalities by year, statistical area, and species/species group for the SBT longline fishery, while attachments C and D map the distribution of observed mortalities for birds and sharks respectively. The distributions are provided separately as pies and as bar charts. For the pie maps, the area of the pie is proportional to the total number of observed mortalities, with pie slices representing the proportion of each species/species group. For the bar chart maps, each bar height is proportional to the number of individuals for each species/species group. Blue shark has been removed from the shark bar chart maps since the proportion of blue shark was too high to be able to see the other species, and is represented well enough in the pie maps.

The number of observed bird mortalities by area varies considerably from year to year. There are relatively large numbers of mortalities in the ‘other albatross’ and ‘other seabirds’ categories, some of which are unidentified birds that may belong in a different category.

The number of observed shark mortalities by area also varies considerably from year to year and it is difficult to see clear visual patterns other than blue shark being caught in much larger numbers than any other shark species.

There were no observed mortalities of marine turtles in the longline fishery.

Year	Statistical area	Blue shark	Shortfin mako shark	Porbeagle	Other sharks	Turtles	Large albatross	Dark coloured albatross	Other albatross	Giant petrels	Other seabirds
2010	2	404	28	-	69	-	-	1	23	1	1
	4	251	10	-	2	-	2	-	5	-	-
	5	1,272	65	148	2	-	-	-	9	1	2
	6	2,547	18	76	28	-	-	-	47	-	-
	7	-	-	-	-	-	-	-	-	-	-
	8	429	16	42	20	-	1	3	8	-	4
	9	1,169	65	280	117	-	16	5	74	9	231
	14	51	33	-	-	-	-	-	-	-	-
	2010 Total	6,123	235	546	238	-	19	9	166	11	238
2011	2	-	-	-	-	-	-	-	-	-	-
	4	247	59	-	22	-	13	-	8	-	39
	5	1,152	172	243	16	-	9	-	4	-	1
	6	2,357	18	60	60	-	-	-	11	1	-
	7	334	23	22	6	-	1	-	44	-	31
	8	1,321	14	177	-	-	4	1	101	-	45
	9	1,927	131	115	77	-	11	3	76	-	19
	14	-	-	-	-	-	-	-	-	-	-
	2011 Total	7,338	417	617	181	-	38	4	244	1	135
2012	2	1,435	10	-	-	-	-	-	16	-	-
	4	29	90	-	7	-	3	-	3	-	4
	5	1,880	96	125	2	-	3	-	8	2	1
	6	6,254	33	141	90	-	-	-	26	-	-
	7	40	5	2	-	-	1	-	5	-	6
	8	928	3	10	2	-	-	-	-	-	-
	9	1,472	128	366	15	-	9	7	45	7	21
	14	846	7	-	-	-	-	-	10	1	1
	2012 Total	12,884	372	644	116	-	16	7	113	10	33
2013	2	729	20	3	51	-	-	2	16	1	-
	4	210	30	1	4	-	4	-	1	-	2
	5	818	38	50	4	-	-	-	1	-	-
	6	3,948	45	71	92	-	-	-	2	1	-
	7	16	18	5	2	-	3	-	23	-	4
	8	464	12	26	13	-	-	1	12	-	10
	9	1,013	45	203	10	-	11	13	196	8	94
	14	425	16	-	49	-	2	5	3	2	-
	2013 Total	7,623	224	359	225	-	20	21	254	12	110

Table 4- Observed mortalities for the SBT longline fishery by year, statistical area and species/species group

Table 5 shows observed mortalities by year, statistical area, and species/species group for the SBT purse seine fishery, and shows that there were none reported.

Year	Statistical area	Blue shark	Shortfin mako shark	Porbeagle	Other sharks	Turtles	Large albatross	Dark coloured albatross	Other albatross	Giant petrels	Other seabirds
2010	3	-	-	-	-	-	-	-	-	-	-
	2010 Total	-	-	-	-	-	-	-	-	-	-
2011	3	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-
	2011 Total	-	-	-	-	-	-	-	-	-	-
2012	3	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-
	2012 Total	-	-	-	-	-	-	-	-	-	-
2013	3	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-
	2013 Total	-	-	-	-	-	-	-	-	-	-
Total	3	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-

Table 5- Observed mortalities for the SBT purse seine fishery by year, statistical area and species/species group

Estimated Total Number of Mortalities Summaries

The ERSWG template included a column for the estimated total number of mortalities per year/stratum. This particular column was provided for all years by three of the five Members whose data are used in this report, and not provided for any years by two Members. Where the estimated total number of mortalities was provided, it appears that Members used a simple scaling of the observed number of mortalities according to the observer coverage of the stratum. In most cases Members rounded fractions down to the next integer (even for fractions greater than 0.5), but one Member rounded some numbers up for 2010 data. The template provides no guidance as to which method should be used and whether the numbers should be provided as whole numbers or with fractions.

For the summaries in this paper, the estimated total number of mortalities for the two Members that did not provide the column were calculated by scaling the number of observed mortalities by the observer coverage of the stratum and rounding down to the nearest whole number, to be consistent with the data provided by the other three Members.

Table 6 shows estimated total mortalities by year, statistical area, and species/species group for the SBT longline fishery, while attachments E and F map the distribution of estimated total mortalities for birds and sharks respectively. As with observed mortalities, the distributions are provided separately as pies and as bar charts. For the pie maps, the area of the pie is proportional to the total number of estimated mortalities, with pie slices representing the proportion of each species/species group. For the bar chart maps, each bar height is proportional to the number of individuals for each species/species group. Blue shark has been removed from the shark bar chart maps since the proportion of blue shark was too high to be able to see the other species, and is represented well enough in the pie maps.

The distribution of total estimated bird mortalities by area is not very different from the distribution of observed mortalities, and also varies considerably from year to year. There are also relatively

large numbers of birds in the ‘other albatross’ and ‘other seabirds’ categories, some of which are unidentified birds that may belong in a different category.

The distribution of total estimated shark mortalities by area is also not very different from the distribution of observed shark mortalities and also varies considerably from year to year, so the same comment applies that it is difficult to see clear visual patterns other than blue shark being caught in much larger numbers than any other shark species.

Since there were no observed mortalities of marine turtles in the longline fishery, the total estimated mortalities of turtles is zero for all areas and years.

Year	Statistical area	Blue shark	Shortfin mako shark	Porbeagle	Other Sharks	Turtles	Large albatross	Dark coloured albatross	Other albatross	Giant petrels	Other seabirds
2010	2	2,533	175	-	432	-	-	6	142	6	6
	4	3,448	664	-	132	-	255	-	637	-	-
	5	14,326	732	1,666	22	-	-	-	100	11	22
	6	11,157	102	313	34	-	-	-	498	-	-
	7	-	-	-	-	-	-	-	-	-	-
	8	4,584	131	449	185	-	10	24	80	-	40
	9	14,778	861	2,995	1,787	-	189	145	807	422	3,070
	14	1,987	1,286	-	-	-	-	-	-	-	-
	2010 Total	52,813	3,951	5,423	2,592	-	454	175	2,264	439	3,138
2011	2	-	-	-	-	-	-	-	-	-	-
	4	5,681	1,248	-	539	-	331	-	204	-	973
	5	12,361	2,108	2,461	273	-	172	-	60	-	20
	6	3,204	24	81	81	-	-	-	14	1	-
	7	4,526	311	298	81	-	13	-	596	-	420
	8	6,281	66	841	-	-	19	4	480	-	213
	9	20,966	1,702	846	566	-	80	22	559	-	138
	14	-	-	-	-	-	-	-	-	-	-
	2011 Total	53,019	5,459	4,527	1,540	-	615	26	1,913	1	1,764
2012	2	4,423	30	-	-	-	-	-	48	-	-
	4	363	892	-	77	-	37	-	37	-	49
	5	20,936	1,109	1,393	22	-	33	-	88	22	11
	6	28,514	183	1,311	106	-	-	-	42	-	-
	7	890	111	44	-	-	22	-	111	-	132
	8	8,351	26	89	17	-	-	-	-	-	-
	9	12,907	919	3,824	135	-	74	73	424	35	216
	14	2,047	16	-	-	-	-	-	23	2	2
	2012 Total	78,431	3,286	6,661	357	-	166	73	773	59	410
2013	2	4,886	134	3	336	-	-	13	106	6	-
	4	706	495	3	13	-	79	-	19	-	39
	5	10,652	433	701	60	-	-	-	15	-	-
	6	5,090	58	91	117	-	-	-	2	1	-
	7	226	255	70	28	-	42	-	326	-	56
	8	6,419	168	330	178	-	-	13	126	-	137
	9	13,066	617	1,207	132	-	94	118	1,822	103	844
	14	2,976	112	-	343	-	14	35	21	14	-
	2013 Total	44,021	2,272	2,405	1,207	-	229	179	2,437	124	1,076

Table 6 – Estimated total mortalities for the SBT longline fishery by year, statistical area, and species/species group

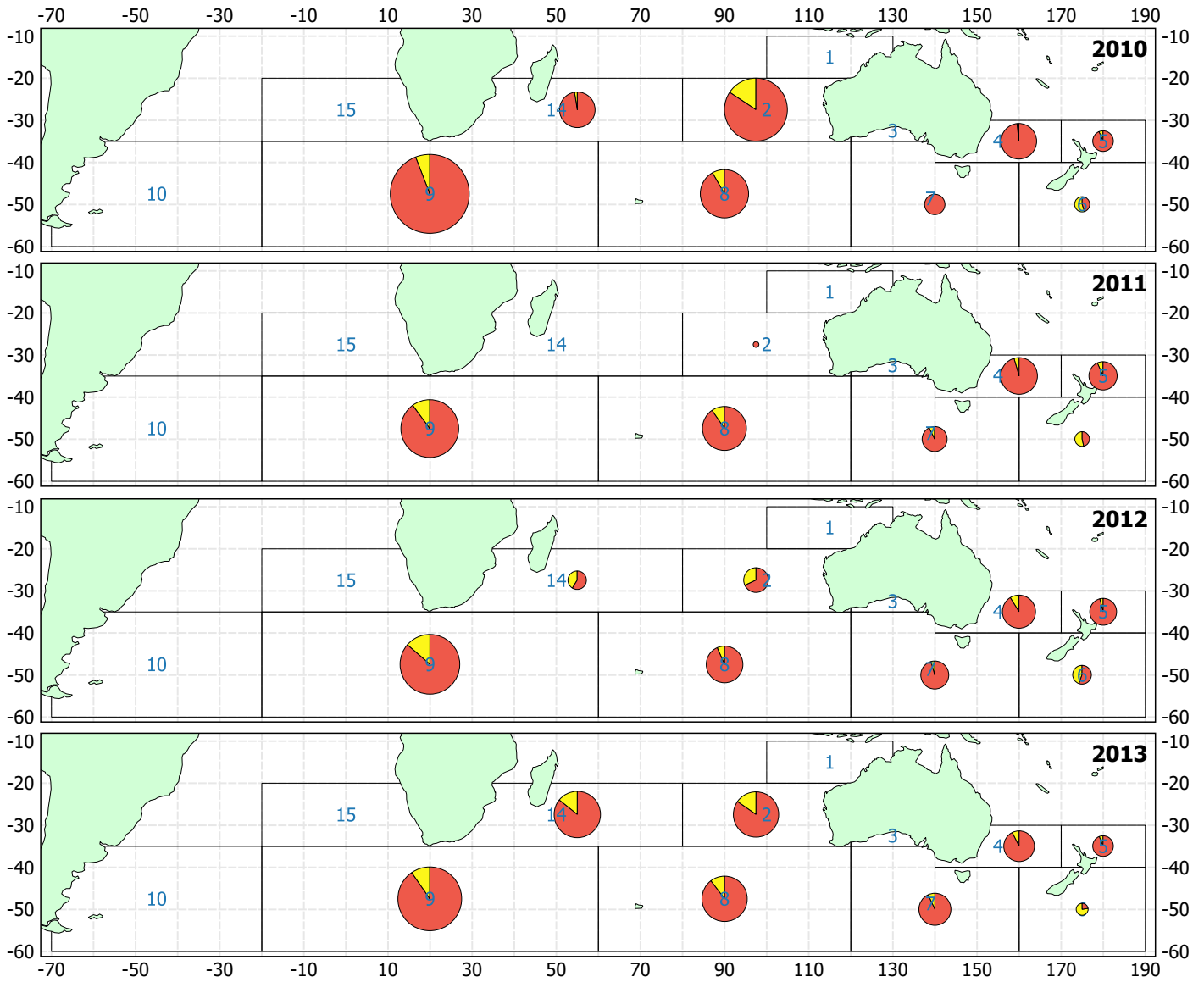
Table 7 shows estimated total mortalities by year, statistical area, and species/species group for the SBT purse seine fishery. Since there were no observed mortalities, the total estimated mortalities are also zero for this fishery.

Year	Statistical area	Blue shark	Shortfin mako shark	Porbeagle	Other sharks	Turtles	Large albatross	Dark coloured albatross	Other albatross	Giant petrels	Other seabirds
2010	3	-	-	-	-	-	-	-	-	-	-
	<i>2010 Total</i>	-	-	-	-	-	-	-	-	-	-
2011	3	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-
	<i>2011 Total</i>	-	-	-	-	-	-	-	-	-	-
2012	3	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-
	<i>2012 Total</i>	-	-	-	-	-	-	-	-	-	-
2013	3	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-
	<i>2013 Total</i>	-	-	-	-	-	-	-	-	-	-
Total	3	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-
	<i>Total</i>	-	-	-	-	-	-	-	-	-	-

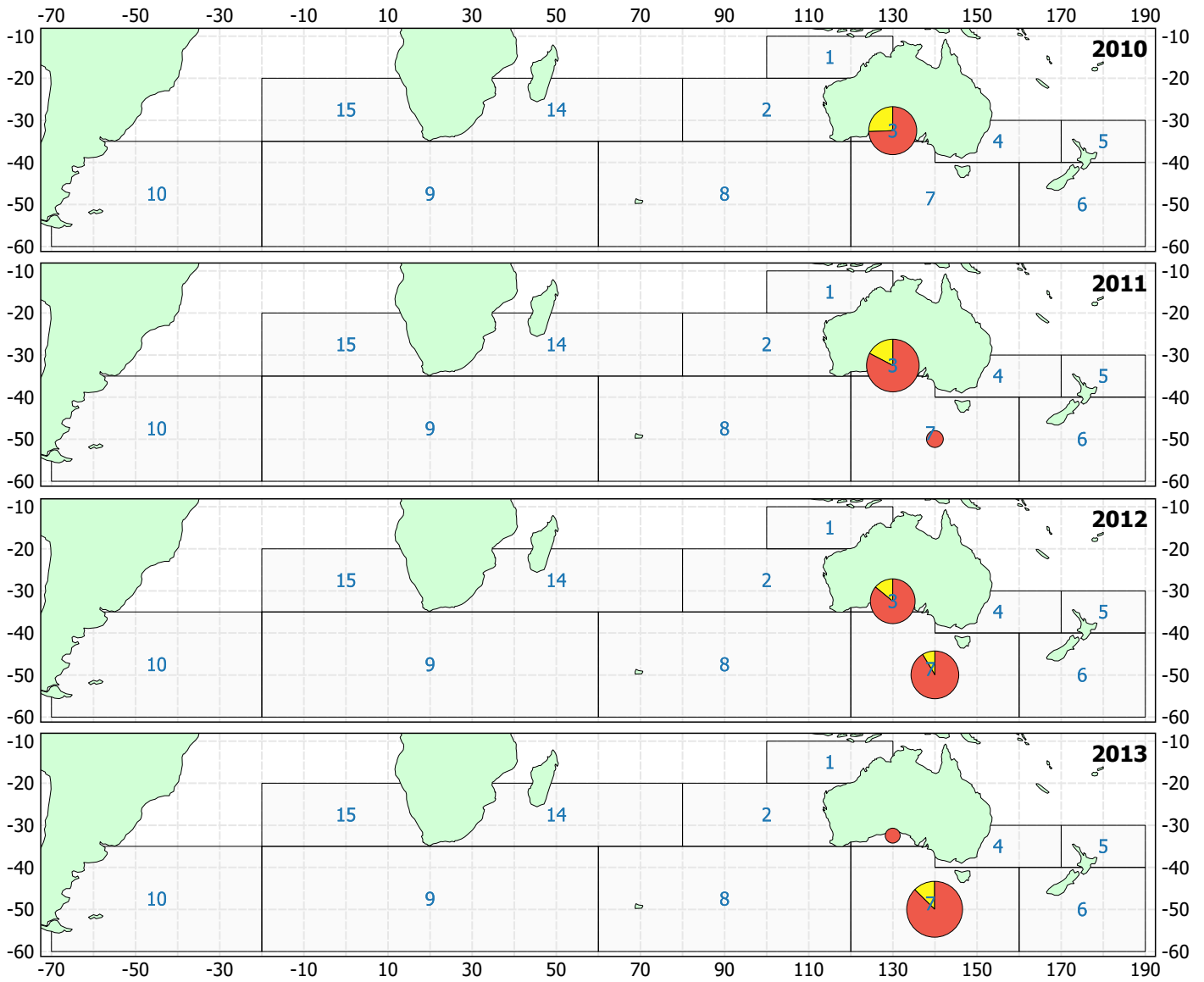
Table 7- Estimated total mortalities for the SBT purse seine fishery by year, statistical area and species/species group

Prepared by the Secretariat

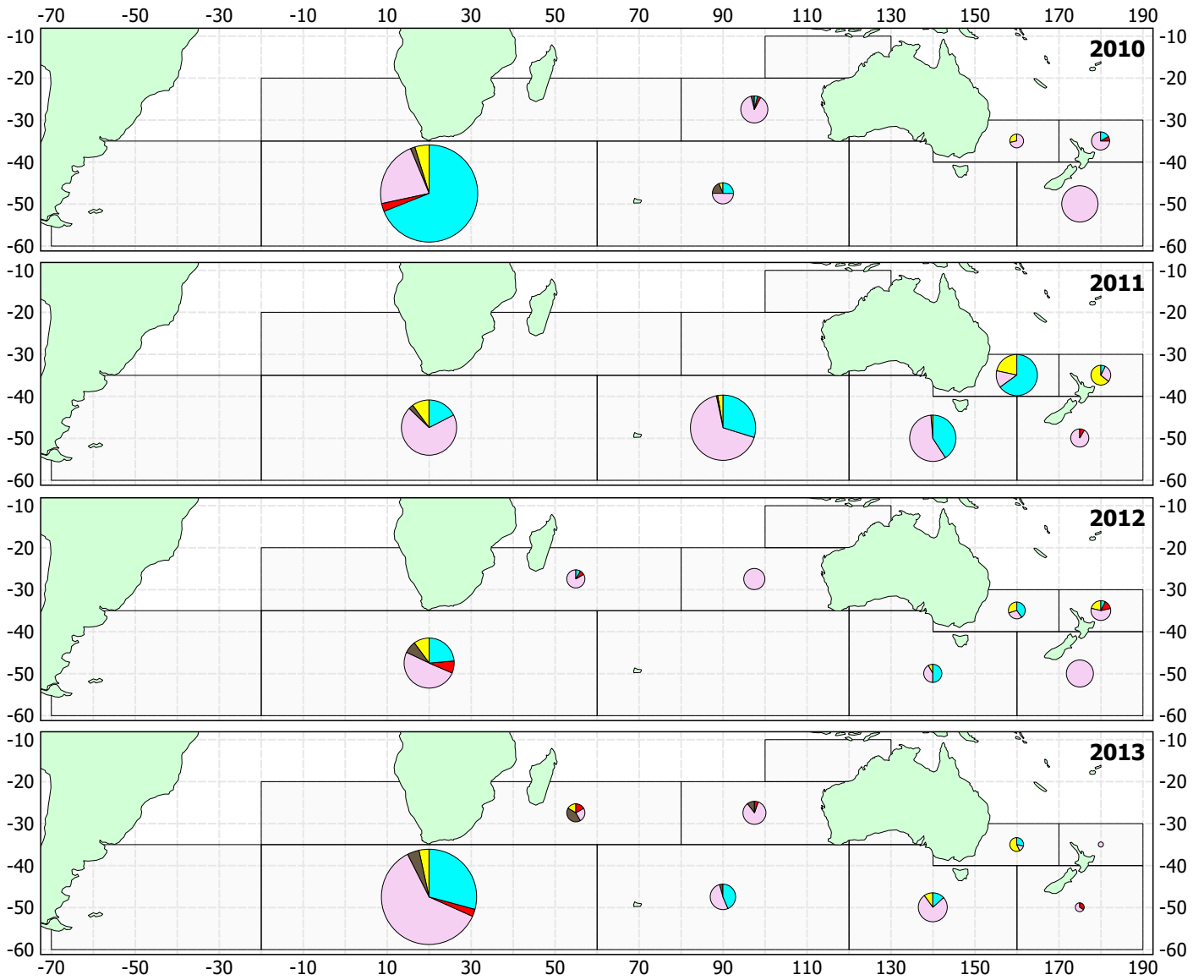
Longline SBT effort showing observer coverage (yellow)



Purse seine SBT effort, showing observer coverage (yellow)



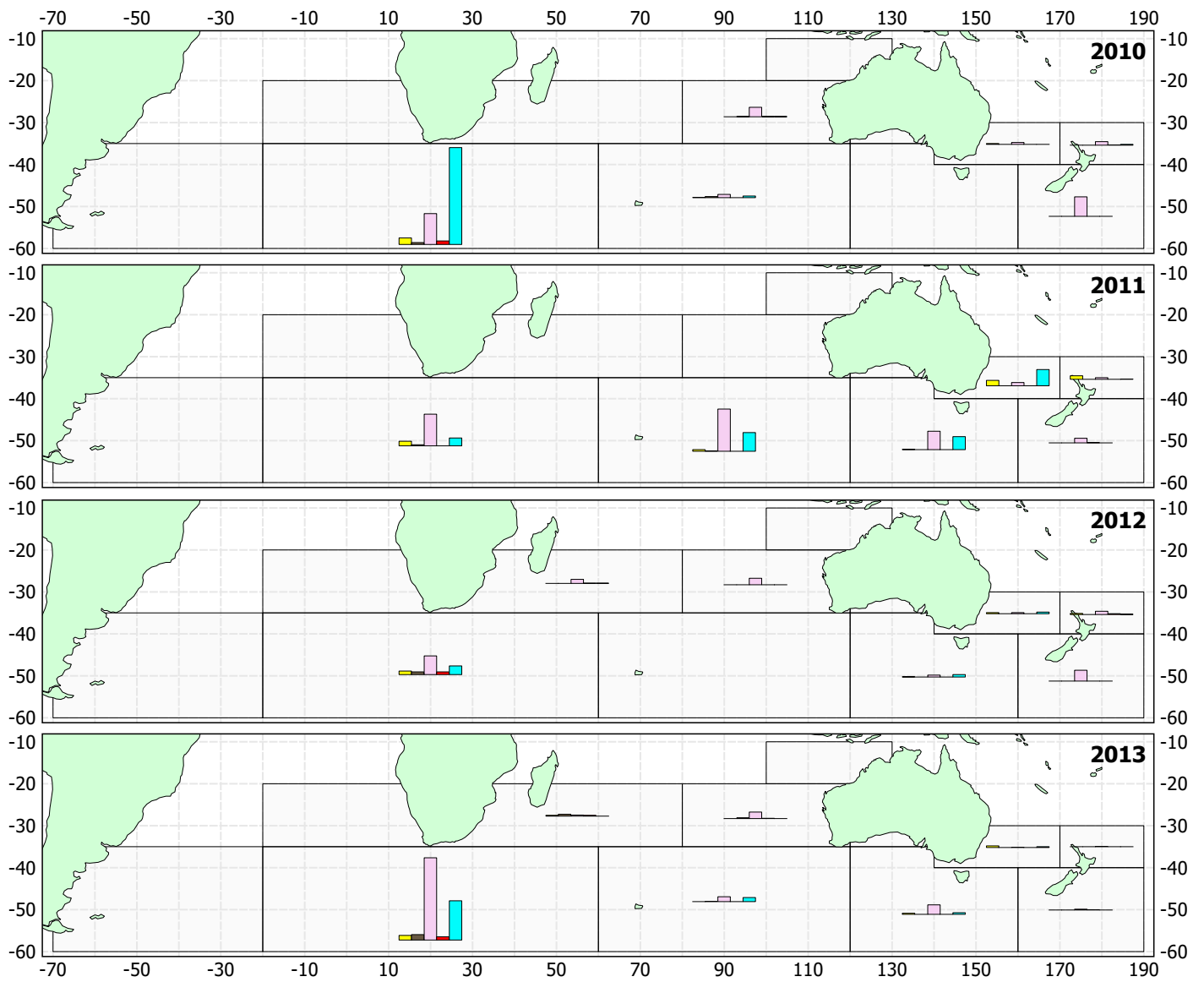
Observed bird mortalities for the SBT longline fishery



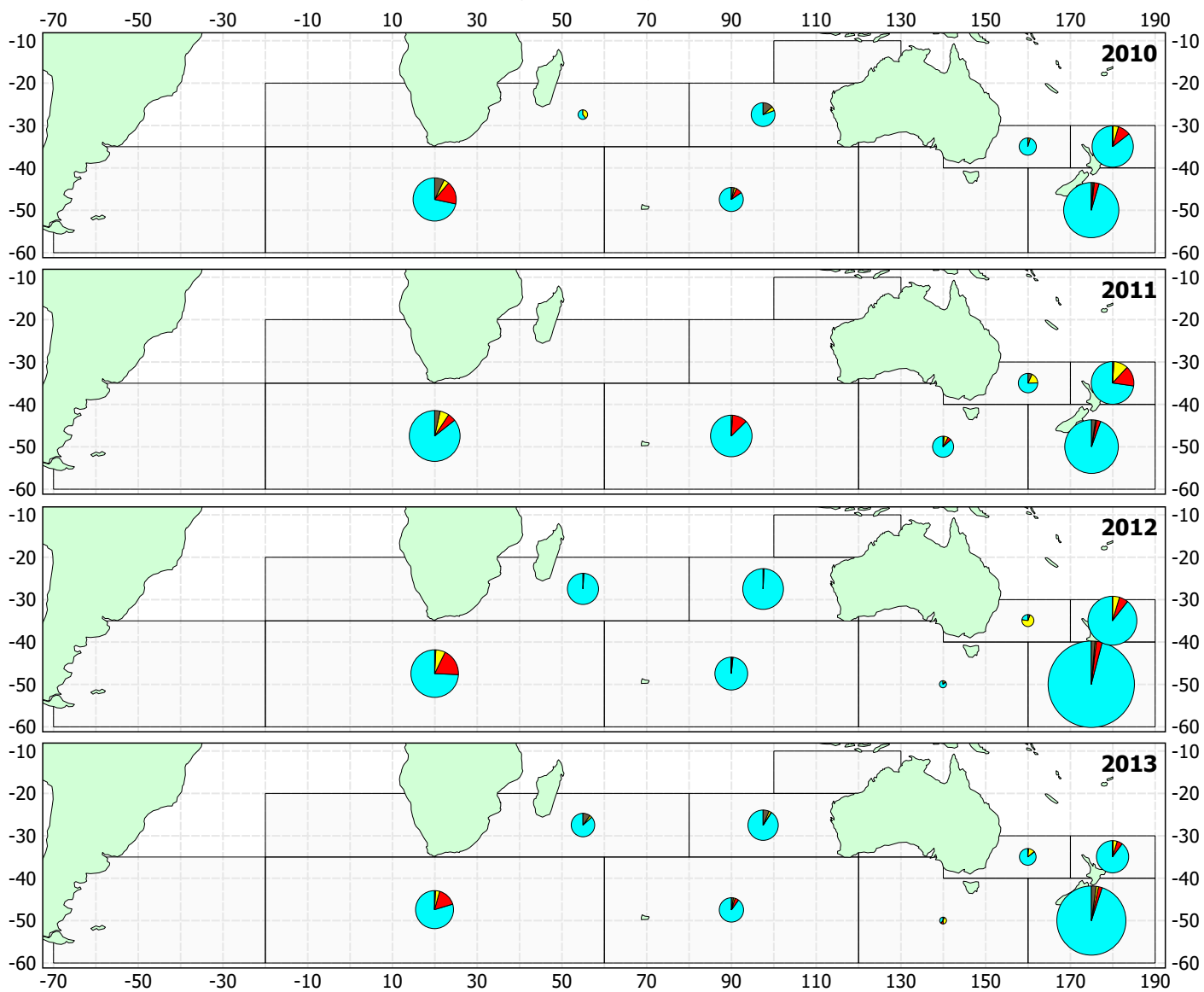
Legend

- Large albatross
- Dark albatross
- Other albatross
- Great petrels
- Other seabirds

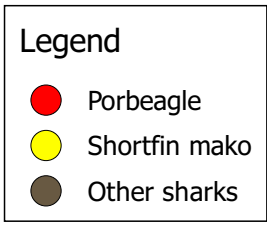
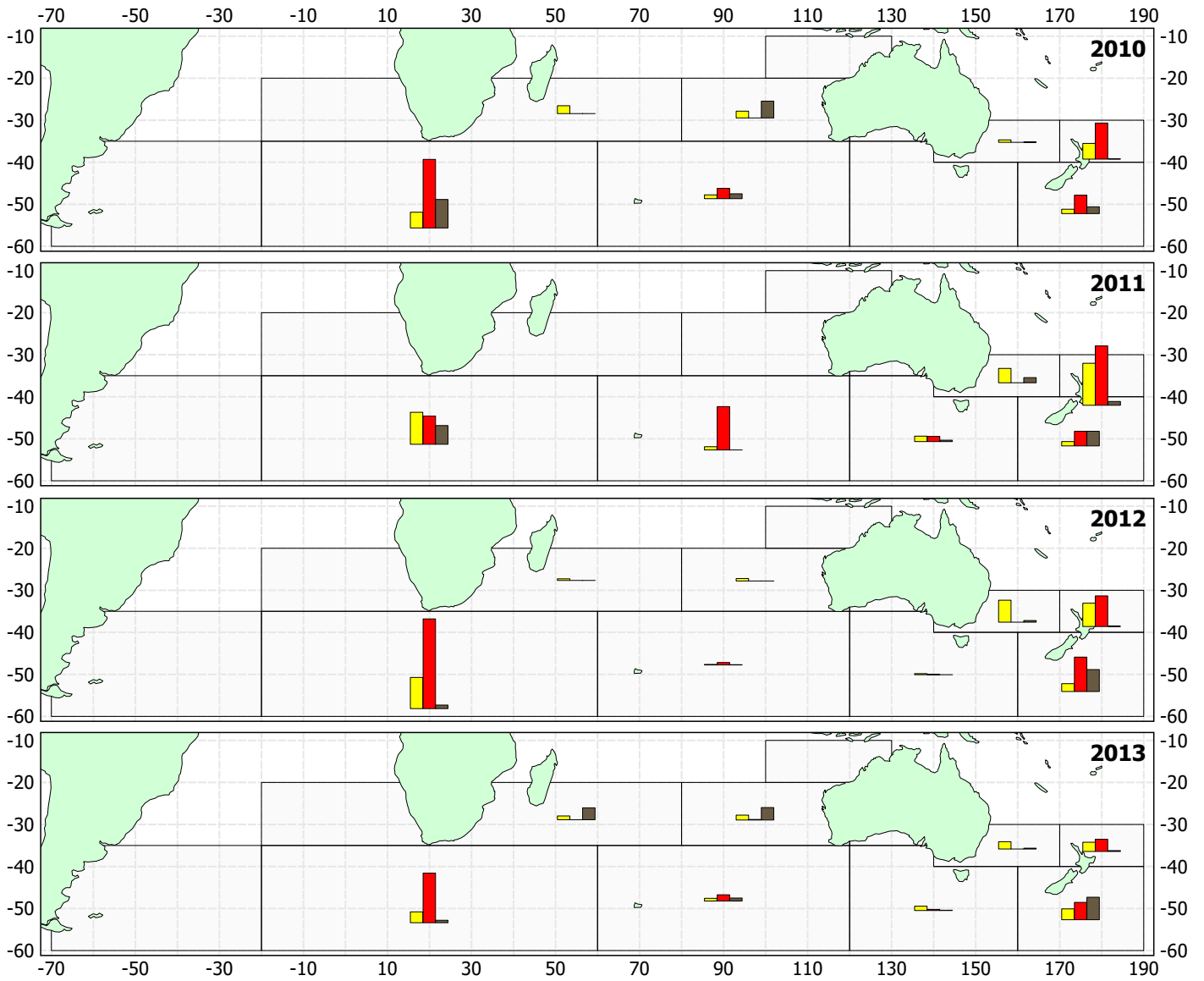
Observed bird mortalities for the SBT longline fishery



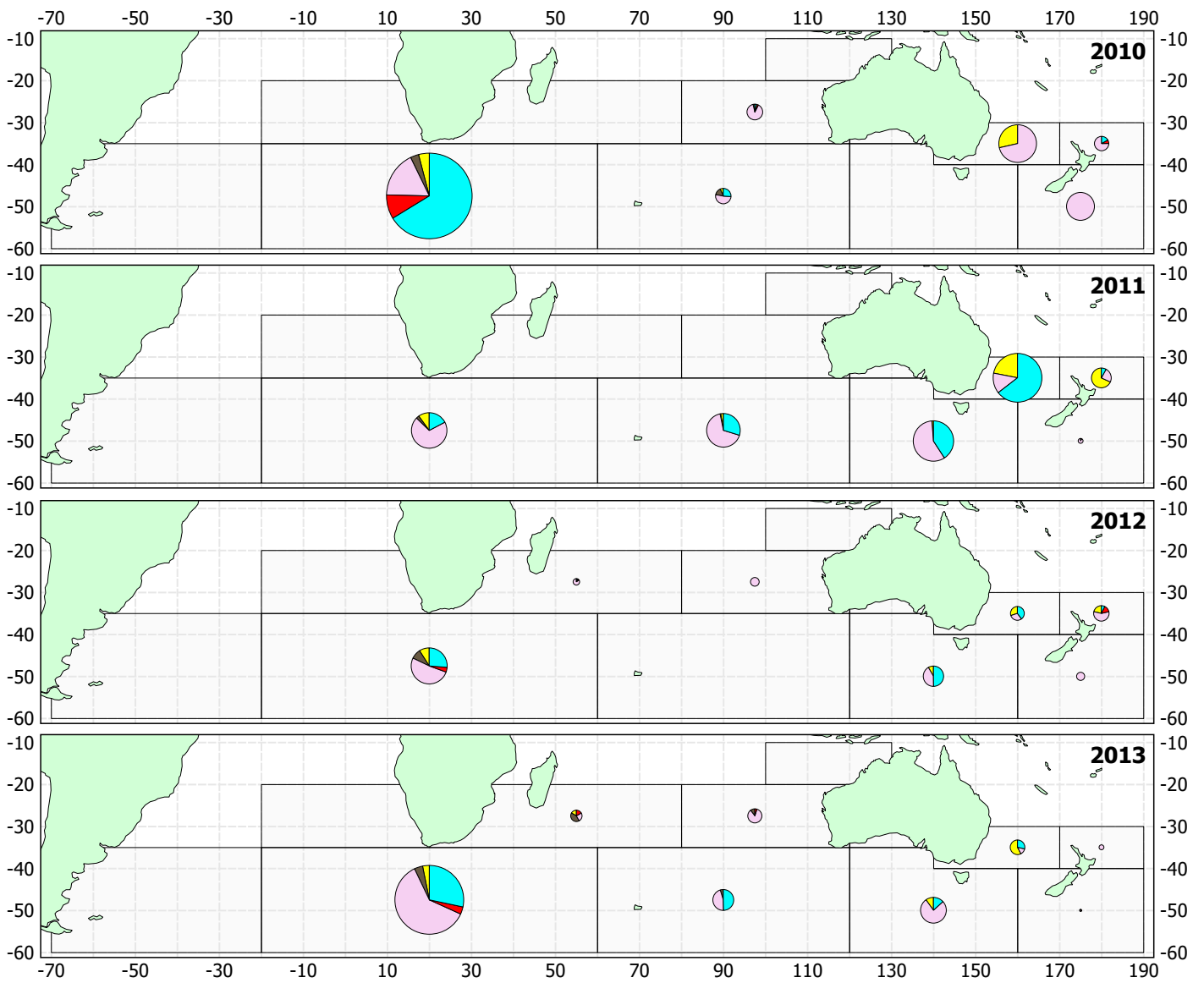
Observed shark mortalities for the SBT longline fishery



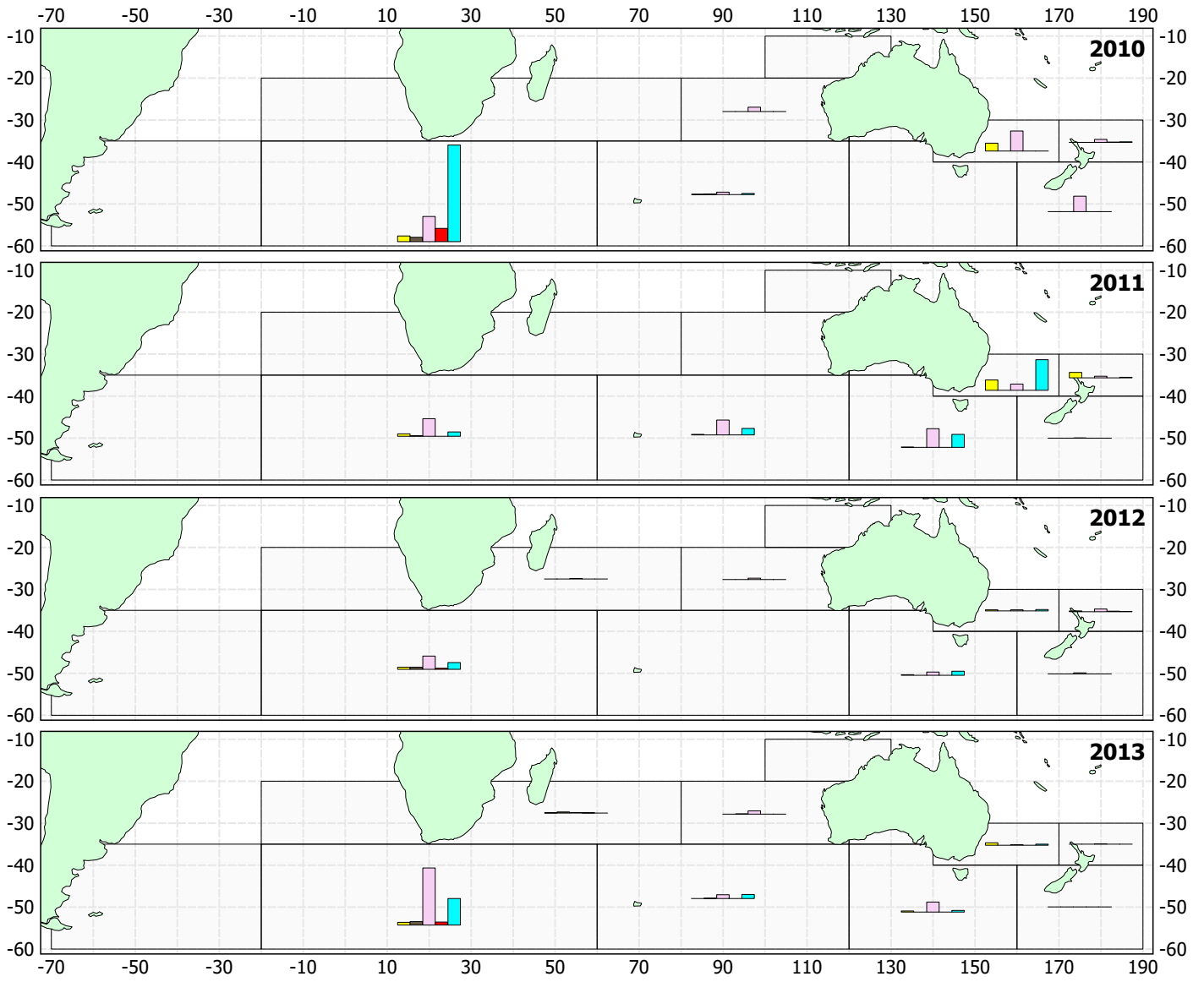
Observed shark mortalities for the SBT longline fishery (excluding blue shark)



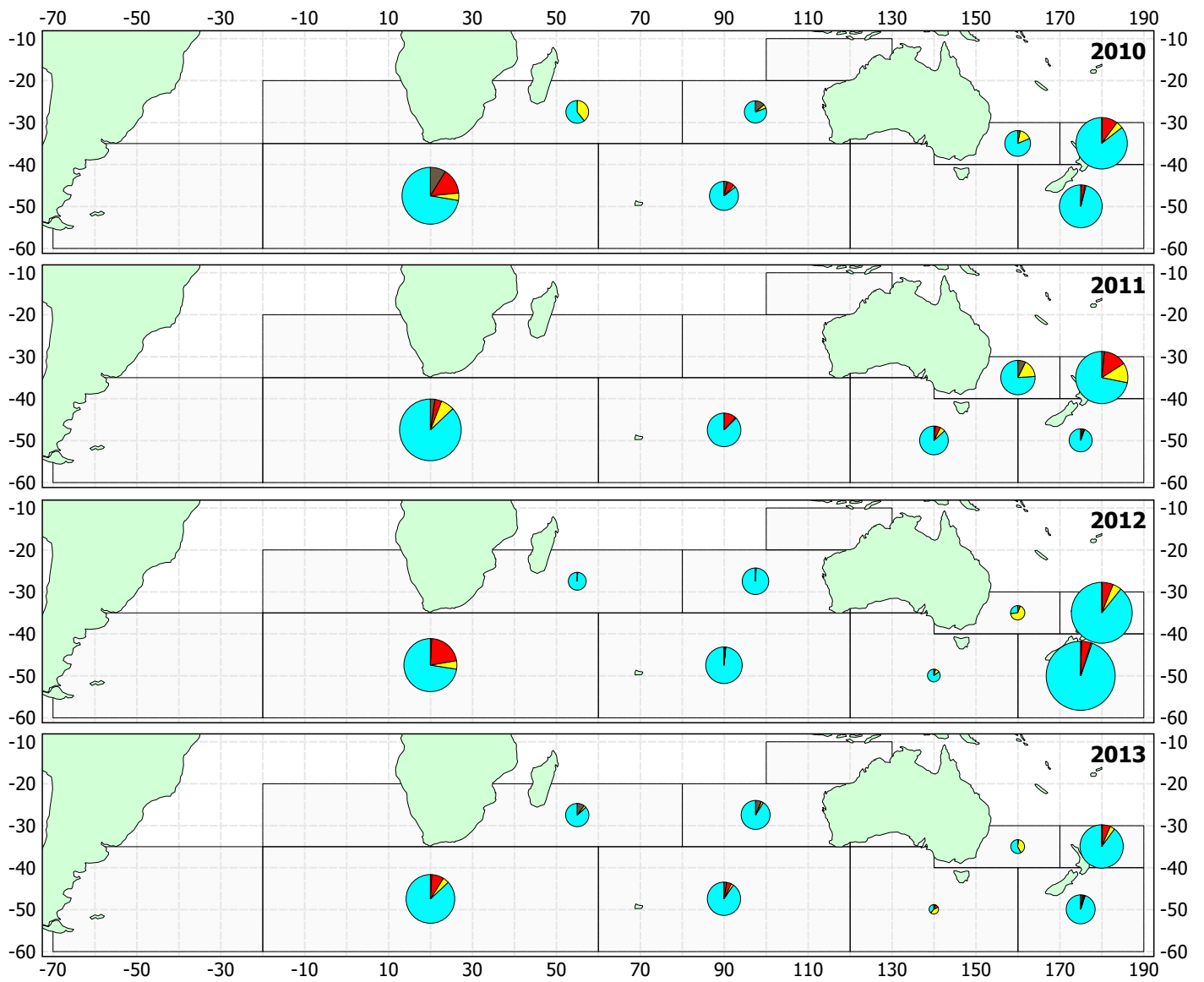
Estimated total bird mortalities for the SBT longline fishery



Estimated total bird mortalities for the SBT longline fishery



Estimated total shark mortalities for the SBT longline fishery



Estimated total shark mortalities for the SBT longline fishery (excluding blue shark)

