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(ERSWG Agenda item 2.2)

Commission for the Conservation of
Southern Bluefin Tuna

みなみまぐろ保存委員会

CCSBT-ERS/1703/05

Summaries from the 2016 ERSWG Data Exchange

Introduction

This paper presents summaries from the data provided for the ERSWG Data Exchange (EDE). ERSWG 10 tasked the Secretariat with providing summaries of the exchanged data to Members and to future ERSWG meetings, 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 EDE commenced in 2013 with data provided for 2010 to 2012. Since then data have been submitted in 2014, 2015, and 2016 and now include data up to and including 2015. The summaries in this paper are for all data held by the Secretariat and include an additional two years data to the summary presented at ERSWG 11, plus some revisions to previously included data.

In 2016, submissions were received from all CCSBT Members apart from the European Union (EU) and Indonesia. South Africa provided data for the first time in 2016 for 2012 to 2015. It is expected that it will provide data for earlier years at a later date but needs to sort out some issues with the data before they can be submitted. The data in these summaries are therefore taken from the submissions by Australia, Japan, Korea, New Zealand, South Africa (2012-2015), and Taiwan. Table 1 summarises the data provided by Members.

	Australia	EU	Indonesia	Japan	Korea	New Zealand	South Africa	Taiwan
2010	✓	×	×	✓	✓	✓	×	✓
2011	✓	×	×	✓	✓	✓	×	✓
2012	✓	×	×	✓	✓	✓	✓	✓
2013	✓	-	×	✓	✓	✓	✓	✓
2014	✓	-	×	✓	✓	✓	✓	✓
2015	✓	-	×	✓	✓	✓	✓	✓

Table 1 – Summary of ERSWG Data Exchange data by Members. Note that the European Union had no reported SBT catch from 2013-2015 and therefore had no data to submit for those years.

The specifications of the EDE provide 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 2).

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	*Data should be provided separately for each species*
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	*Including: Wandering, Tristan, New Zealand, Antipodean, Southern Royal, and Northern Royal*
Dark coloured albatrosses	*Including: Sooty and Light-mantled*
Other albatrosses	*Including: Black-browed, Campbell, Grey-headed, Atlantic yellow-nosed, Indian yellow-nosed, Buller's, Shy, Salvin's, Chatham and White-capped*
Giant petrels	*Including: White-chinned petrel, Grey petrel, Flesh-footed shearwater etc.*
Other seabirds	*Including: Skua etc.*

Table 2 - Minimum taxonomic level at which information should be reported for the ERS Data Exchange (providing that such taxonomic detail is available).

For reference, the CCSBT Statistical Areas are shown in Figure 1 below.

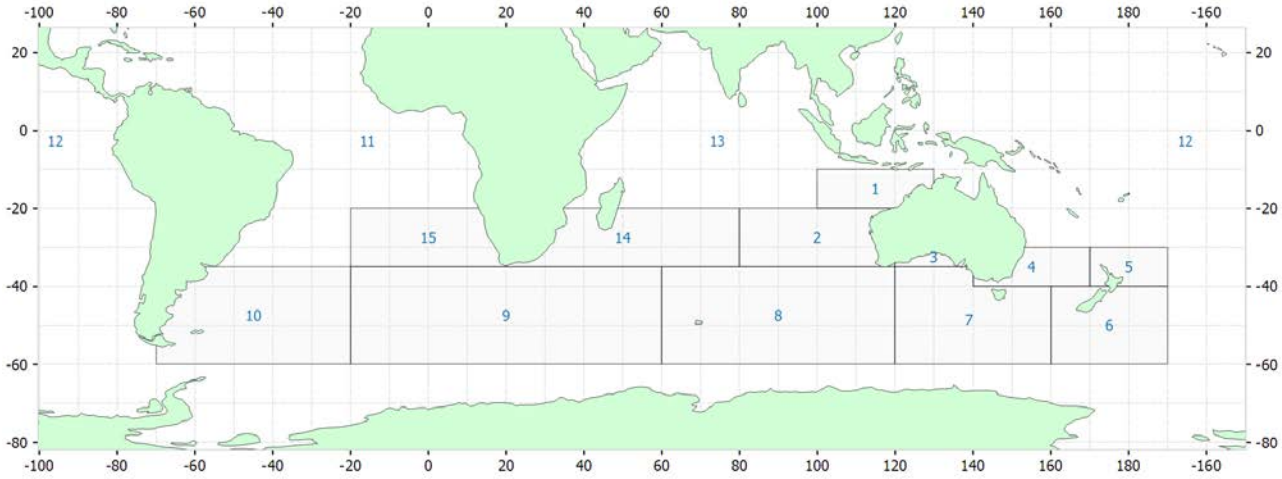


Figure 1 – CCSBT Statistical areas

Effort Summaries

As per the rules of the EDE, the fishing effort provided by Members 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 3 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. The scale is the same across years. Note that for 2013, area 6 effort does not include 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 6 year period longline observer coverage was on average 12% of total effort, but coverage varied considerably by area and year. The observer coverage from 2012 to 2015 is over 13% for each year, an improvement on 2010 and 2011 where the average coverage was less than 10%.

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	0.0%
	8	7,396	615	8.3%
	9	19,659	1,152	5.9%
	14	3,978	102	2.6%
	2010 Total	*50,884*	*4,391*	*8.6%*
2011	2	103	0	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%
	2011 Total	*26,151*	*2,528*	*9.7%*
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	11,329	1,609	14.2%
	14	1,254	479	38.2%
	15	40	0	0.0%
	2012 Total	*28,066*	*3,997*	*14.2%*
2013	2	3,704	994	26.8%
	4	2,952	200	6.8%
	5	1,364	83	6.1%
	6	450	349	77.6%
	7	3,216	227	7.1%
	8	6,184	670	10.8%
	9	12,445	1,252	10.1%
	14	7,330	1,209	16.5%
	15	100	0	0.0%
	2013 Total	*37,746*	*4,984*	*13.2%*
2014	2	6,722	1,036	15.4%
	4	2,087	251	12.0%
	5	1,123	213	18.9%
	6	1,137	589	51.8%
	7	2,759	426	15.4%
	8	9,043	976	10.8%
	9	10,394	777	7.5%
	14	5,628	1,104	19.6%
	15	122	4	3.0%
	2014 Total	*39,015*	*5,375*	*13.8%*
2015	2	6,411	633	9.9%
	4	2,387	330	13.8%
	5	1,392	209	15.0%
	6	1,086	523	48.2%
	7	2,770	434	15.7%
	8	10,655	942	8.8%
	9	9,091	1,328	14.6%
	14	5,774	917	15.9%
	15	82	0	0.0%
	2015 Total	*39,649*	*5,316*	*13.4%*
Total		**221,510**	**26,591**	**12.0%**

Table 3 – Longline effort by year and statistical area, with observer coverage

Purse seine effort summaries are shown in Table 4 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 14.5% over the 6 year period but was less than 10% in 2015.

Year	Statistical area	Total effort (sets)	Observed effort (sets)	Observer coverage
2010	3	82	21	25.6%
	2010 Total	*82*	*21*	*25.6%*
2011	3	98	17	17.3%
	7	10	0	0.0%
	2011 Total	*108*	*17*	*15.7%*
2012	3	71	10	14.1%
	7	81	7	8.6%
	2012 Total	*152*	*17*	*11.2%*
2013	3	8	0	0.0%
	7	111	14	12.6%
	2013 Total	*119*	*14*	*11.8%*
2014	7	75	17	22.7%
	2014 Total	*75*	*17*	*22.7%*
2015	7	154	14	9.1%
	2015 Total	*154*	*14*	*9.1%*
Total		**690**	**100**	**14.5%**

Table 4 – Purse seine effort by year and statistical area, with observer coverage.

Observed Mortality Summaries

Table 5 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. 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. The scale is the same across years.

The number of observed bird mortalities by area varies considerably from year to year but seems to be higher in recent years, which in some areas is at least partly due to the increase in observer coverage. Note that a large proportion of mortalities are 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 but does seem to have decreased overall from 2012-2015. This may not actually be the case since a large proportion of shark catch was not given a life status, see the charts and discussion on catch rates (and Figure 1).

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	0	69	0	0	1	23	1	1
	4	251	10	0	2	0	2	0	5	0	0
	5	1,272	65	148	2	0	0	0	9	2	1
	6	2,547	18	76	28	0	0	0	47	0	0
	7	0	0	0	0	0	0	0	0	0	0
	8	429	16	42	20	0	1	3	8	0	4
	9	1,168	65	280	118	0	16	5	74	9	231
	14	51	33	0	0	0	0	0	0	0	0
	2010 Total	*6,122*	*235*	*546*	*239*	*0*	*19*	*9*	*166*	*12*	*237*
2011	2	0	0	0	0	0	0	0	0	0	0
	4	247	59	0	22	0	13	0	8	0	39
	5	1,152	172	243	16	0	9	0	4	0	1
	6	2,357	18	60	60	0	0	0	11	1	0
	7	334	23	22	6	0	1	0	44	0	31
	8	1,321	14	177	0	0	4	1	101	0	45
	9	1,927	131	115	77	0	11	3	76	0	19
	14	0	0	0	0	0	0	0	0	0	0
	2011 Total	*7,338*	*417*	*617*	*181*	*0*	*38*	*4*	*244*	*1*	*135*
2012	2	1,435	10	0	0	0	0	0	16	0	0
	4	29	90	0	7	0	3	0	3	0	4
	5	1,880	96	125	2	0	3	0	8	3	0
	6	6,254	33	141	90	0	0	0	26	0	0
	7	40	5	2	0	0	1	0	5	0	6
	8	928	3	10	2	0	0	0	0	0	0
	9	1,534	161	366	15	0	9	7	45	7	21
	14	930	73	0	0	0	0	0	10	2	0
	15	0	0	0	0	0	0	0	0	0	0
	2012 Total	*13,030*	*471*	*644*	*116*	*0*	*16*	*7*	*113*	*12*	*31*
2013	2	729	20	3	51	0	0	2	16	1	0
	4	210	30	1	4	0	4	0	1	0	2
	5	818	38	50	4	0	0	0	1	0	0
	6	3,948	45	71	92	0	0	0	2	1	0
	7	16	18	5	2	0	3	0	23	0	4
	8	464	12	26	13	0	7	1	6	0	10
	9	1,058	81	203	14	0	11	13	198	8	92
	14	558	151	0	51	0	2	5	3	2	0
	15	0	0	0	0	0	0	0	0	0	0
	2013 Total	*7,801*	*395*	*359*	*231*	*0*	*27*	*21*	*250*	*12*	*108*
2014	2	1,051	28	3	17	0	0	0	5	0	0
	4	537	141	1	51	0	25	0	18	0	17
	5	333	109	68	39	0	9	0	16	1	1
	6	2,425	51	280	142	0	0	0	20	1	0
	7	501	16	85	10	0	32	0	223	0	46
	8	1,188	44	241	94	0	2	7	31	2	2
	9	1,331	392	105	30	0	5	3	107	0	59
	14	656	96	0	185	0	0	2	7	2	1
	15	68	462	0	0	0	0	0	0	0	0
	2014 Total	*8,090*	*1,339*	*783*	*568*	*0*	*73*	*12*	*427*	*6*	*126*
2015	2	57	20	0	4	0	0	1	4	0	0
	4	302	47	26	39	0	16	1	66	0	3
	5	700	37	99	9	0	2	0	7	0	1
	6	567	27	75	73	0	1	0	11	2	0
	7	279	46	102	9	0	13	6	295	0	82
	8	563	27	108	16	0	1	1	76	0	13
	9	480	74	160	8	0	24	31	245	0	52
	14	280	102	0	9	0	0	5	8	0	0
	15	0	0	0	0	0	0	0	0	0	0
	2015 Total	*3,228*	*380*	*570*	*167*	*0*	*57*	*45*	*712*	*2*	*151*
Total		***45,609***	***3,237***	***3,519***	***1,502***	***0***	***230***	***98***	***1,912***	***45***	***788***

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

Table 6 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	0	0	0	0	0	0	0	0	0	0
	2010 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2011	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2011 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2012	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2012 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2013	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2013 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2014	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2014 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2015	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2015 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Table 6 - Observed mortalities for the SBT purse seine fishery by year, statistical area and species/species group

Observed Catch and Mortality Rate Summaries

Attachment E shows observed catch rates (numbers caught per thousand hooks) by year for each species group. The bars are divided by fate; red for observed mortalities, green for observed live releases, and grey for 'unknown life status' (for each species Members provide total numbers caught, the number of individuals observed to be dead, and the number observed to be released alive. The 'unknown life status' number is the calculated discrepancy between 'total caught' – ('observed dead' + 'observed released alive')).

Attachment F shows observed catch rates by species group, year, and statistical area.

Attachments G and H map mortality rates for birds and sharks respectively, while attachments I and J map capture rates for birds and sharks. The area of the pies are proportional to the total mortality rate (G and H) or capture rate (I and J) of all species combined, with pie slices representing the proportion of each species/species group. The scale is the same across years for each map series. Note that in attachments G and I the data for 2014 and statistical area 15 have been removed. This point had extremely high capture and mortality rates for shortfin mako and blue shark but was for less than 4000 observed hooks.

Observed catch and mortality rates for birds are similar due to the low proportion of live releases and appear to be higher in recent years for each of the albatross species groups.

Observed shark mortality rates appear to have declined from 2012 to 2015, while overall catch rates by year remain high according to Figure 1. This is possibly due to a large proportion of the observed catch not being given a life status (the middle bar in Figure 1). If a large proportion of these sharks did not survive then the mortality rates for 2015 would not be low.

Estimated Total Number of Mortalities Summaries

The ERSWG template includes a column for the estimated total number of mortalities per year/stratum. This particular column was provided for all years by four of the six 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, Members used a simple scaling of the observed number of mortalities according to the observer coverage of the stratum and rounded fractions down to the next integer (even for fractions greater than 0.5).

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 Members.

Table 7 shows estimated total mortalities by year, statistical area, and species/species group for the SBT longline fishery, while attachments K and L map the distribution of estimated total mortalities for birds and sharks respectively. As with observed mortalities, the area of the pies are proportional to the total number of estimated mortalities, with pie slices representing the proportion of each species/species group. The scale is the same across years.

In Table 7, the total shark mortalities for 2015 is estimated to be less than half the yearly average from 2012-2014, but this could be partially explained by the high proportion of sharks reported without a life status (see Figure 1). If we were to map the estimated numbers of sharks that were not ‘live releases’, then 2015 would show much higher numbers relative to the other years.

The distribution of total estimated bird mortalities by area is similar to 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 quite similar to 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	0	432	0	0	6	142	6	6
	4	3,448	664	0	132	0	255	0	637	0	0
	5	14,326	732	1,666	22	0	0	0	100	22	11
	6	11,157	102	313	34	0	0	0	498	0	0
	7	0	0	0	0	0	0	0	0	0	0
	8	4,584	131	449	185	0	10	24	80	0	40
	9	14,774	861	2,995	1,791	0	189	145	807	422	3,070
	14	1,987	1,286	0	0	0	0	0	0	0	0
	2010 Total	*52,809*	*3,951*	*5,423*	*2,596*	*0*	*454*	*175*	*2,264*	*450*	*3,127*
2011	2	0	0	0	0	0	0	0	0	0	0
	4	5,681	1,248	0	539	0	331	0	204	0	973
	5	12,361	2,108	2,461	273	0	172	0	60	0	20
	6	3,204	24	81	81	0	0	0	14	1	0
	7	4,526	311	298	81	0	13	0	596	0	420
	8	6,281	66	841	0	0	19	4	480	0	213
	9	20,966	1,702	846	566	0	80	22	559	0	138
	14	0	0	0	0	0	0	0	0	0	0
	2011 Total	*53,019*	*5,459*	*4,527*	*1,540*	*0*	*615*	*26*	*1,913*	*1*	*1,764*
2012	2	4,423	30	0	0	0	0	0	48	0	0
	4	363	892	0	77	0	37	0	37	0	49
	5	20,936	1,109	1,393	22	0	33	0	88	33	0
	6	28,514	183	1,311	106	0	0	0	42	0	0
	7	890	111	44	0	0	22	0	111	0	132
	8	8,351	26	89	17	0	0	0	0	0	0
	9	12,977	956	3,824	135	0	74	73	424	35	216
	14	2,241	168	0	0	0	0	0	23	4	0
	2012 Total	*78,695*	*3,475*	*6,661*	*357*	*0*	*166*	*73*	*773*	*72*	*397*
2013	2	2,784	76	3	192	0	0	7	59	3	0
	4	931	501	4	17	0	79	0	19	0	39
	5	10,652	435	703	60	0	0	0	15	0	0
	6	5,090	58	92	119	0	0	0	2	1	0
	7	226	255	70	28	0	42	0	326	0	56
	8	5,911	163	330	149	0	77	11	39	0	110
	9	12,621	624	1,207	130	0	94	118	1,821	98	837
	14	3,231	274	0	356	0	14	36	21	14	0
	2013 Total	*41,446*	*2,386*	*2,409*	*1,051*	*0*	*306*	*172*	*2,302*	*116*	*1,042*
2014	2	9,311	273	18	103	0	0	0	30	0	0
	4	4,253	1,117	7	366	0	195	0	140	0	132
	5	2,913	812	635	169	0	34	0	77	9	12
	6	4,232	388	2,097	270	0	0	0	86	67	0
	7	3,248	103	551	64	0	207	0	1,445	0	298
	8	13,863	616	2,982	839	0	22	28	408	8	37
	9	10,139	2,502	627	1,018	0	29	17	638	0	352
	14	3,164	115	0	981	0	0	10	36	10	5
	15	2,246	15,262	0	0	0	0	0	0	0	0
	2014 Total	*53,369*	*21,188*	*6,917*	*3,810*	*0*	*487*	*55*	*2,860*	*94*	*836*
2015	2	552	193	0	38	0	0	9	37	0	0
	4	2,049	345	173	265	0	106	6	444	0	19
	5	8,208	406	1,161	106	0	9	0	82	0	4
	6	2,356	267	878	174	0	22	0	97	23	0
	7	1,780	293	651	57	0	82	38	1,882	0	522
	8	6,425	303	1,245	185	0	8	11	874	0	150
	9	2,533	350	782	41	0	116	151	1,206	0	254
	14	1,476	244	0	61	0	0	34	54	0	0
	15	0	0	0	0	0	0	0	0	0	0
	2015 Total	*25,379*	*2,401*	*4,890*	*927*	*0*	*343*	*249*	*4,676*	*23*	*949*

Table 7 – Estimated total mortalities for the SBT longline fishery by year, statistical area, and species/species group

Table 8 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	0	0	0	0	0	0	0	0	0	0
	2010 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2011	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2011 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2012	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2012 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2013	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2013 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2014	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2014 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2015	3	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0
	2015 Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Table 8 - Estimated total mortalities for the SBT purse seine fishery by year, statistical area and species/species group

Summaries of Observed Effort with Specific Mitigation Measures

After ERSWG11, Members were required to provide the proportion of effort with specific mitigation measures. These have been aggregated over all data and are summarised in Table 9 below for 2014 and 2015, with the data not available for earlier years. The column for 'Other' includes effort where only one mitigation measure was used and for 2015 also includes some effort where two measures were used at all times but switched from night setting/tori pole to tori pole/branch lines after dawn, so cannot be allocated to one of the existing categories.

	Tori pole + Night setting	Tori pole + weighted branchline	Night setting + weighted branchline	Tori pole + night setting + weighted branchline	None	Other
2014	18.4%	46.0%	0.0%	24.6%	0.0%	11.1%
2015	30.4%	23.1%	2.1%	23.8%	0.0%	20.5%
Total	**24.2%**	**34.9%**	**1.0%**	**24.2%**	**0.0%**	**15.7%**

Table 9 - Proportions of observed effort with specific mitigation measures by year.

Table 10 summarises the proportion of observed effort with specific mitigation measures by year and statistical area.

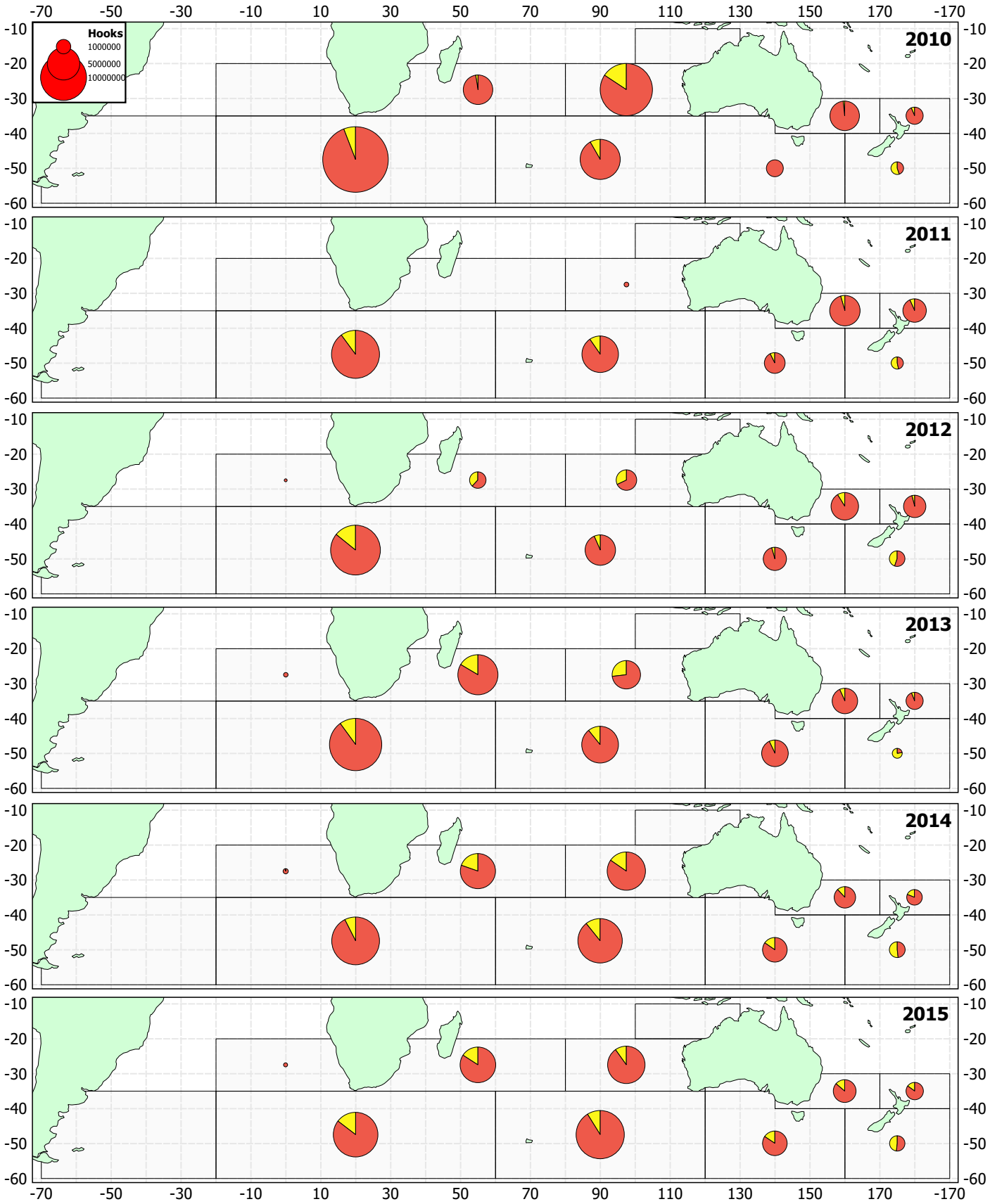
Year	Statistical Area	Tori pole + Night setting	Tori pole + weighted branchline	Night setting + weighted branchline	Tori pole + night setting + weighted branchline	None	Other
2014	2	21.1%	78.9%	0%	0%	0%	0%
	4	6.2%	5.2%	0%	0.4%	0%	88.3%
	5	5.8%	60.6%	0%	0%	0%	33.6%
	6	99.7%	0%	0%	0%	0%	0.3%
	7	17.3%	0%	0%	0%	0%	82.7%
	8	29.7%	70.1%	0%	0%	0%	0.2%
	9	3.6%	51.2%	0%	33.8%	0%	11.4%
	14	0%	92.8%	0%	7.2%	0%	0%
	15	0%	0%	0%	100.0%	0%	0%
	2014 total	22.8%	57.0%	0%	6.5%	0%	13.7%
2015	2	59.0%	25.6%	7.5%	7.8%	0%	0%
	4	1.6%	68.1%	0%	3.5%	0%	26.8%
	5	8.6%	74.2%	0%	0%	0%	17.2%
	6	99.5%	0%	0%	0%	0%	0.5%
	7	0.3%	31.5%	0%	0%	0%	68.2%
	8	42.7%	15.2%	0%	10.3%	0%	31.8%
	9	14.1%	39.9%	0%	3.5%	0%	42.5%
	14	43.6%	10.6%	9.0%	36.8%	0%	0%
	15	0%	0%	0%	0%	0%	0%
	2015 Total	35.9%	27.3%	2.5%	10.2%	0%	24.2%

Table 10 - Proportions of observed effort with specific mitigation measures by year and CCSBT statistical area.

Prepared by the Secretariat

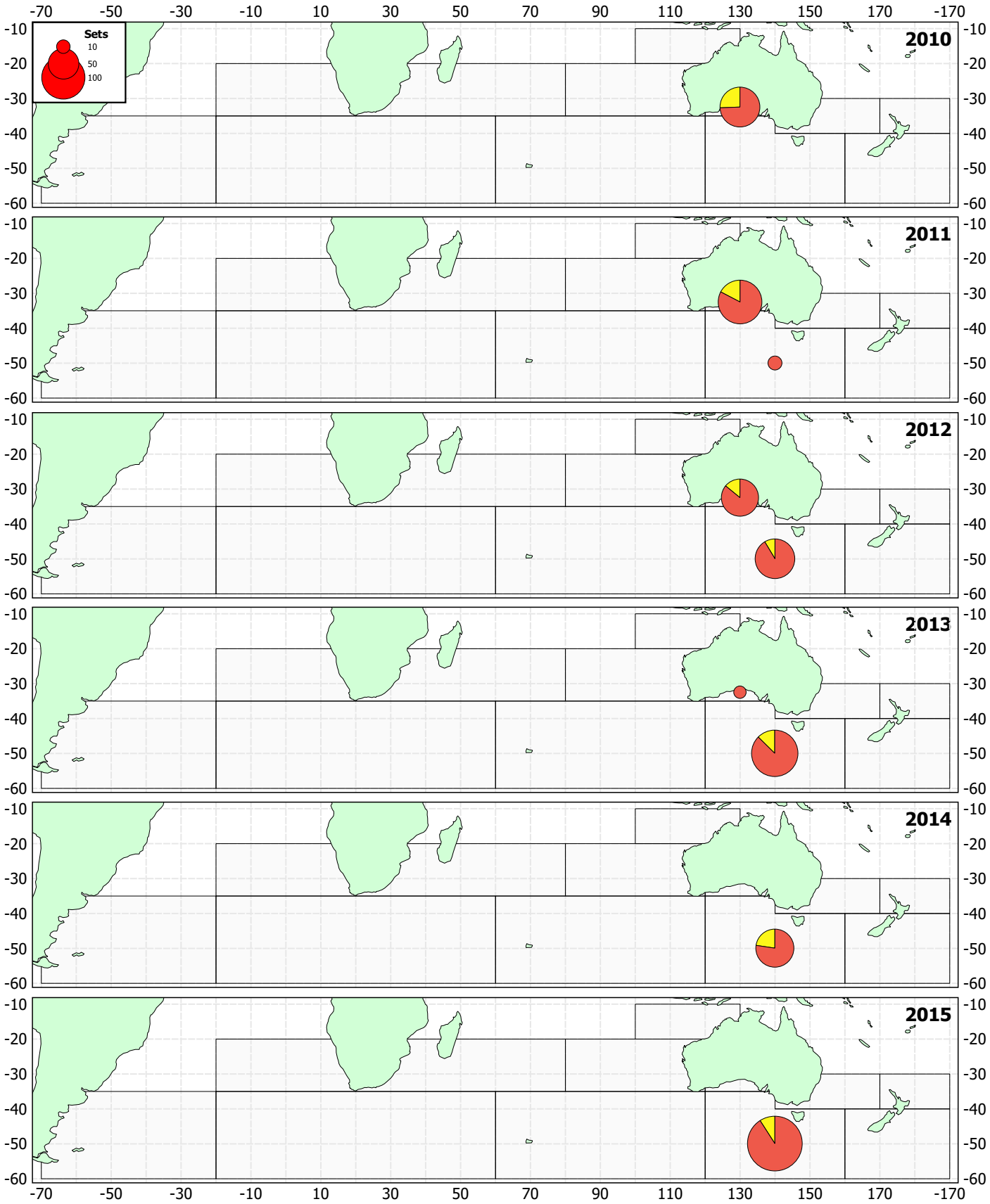
Attachment A

Longline SBT effort showing observer coverage (yellow)

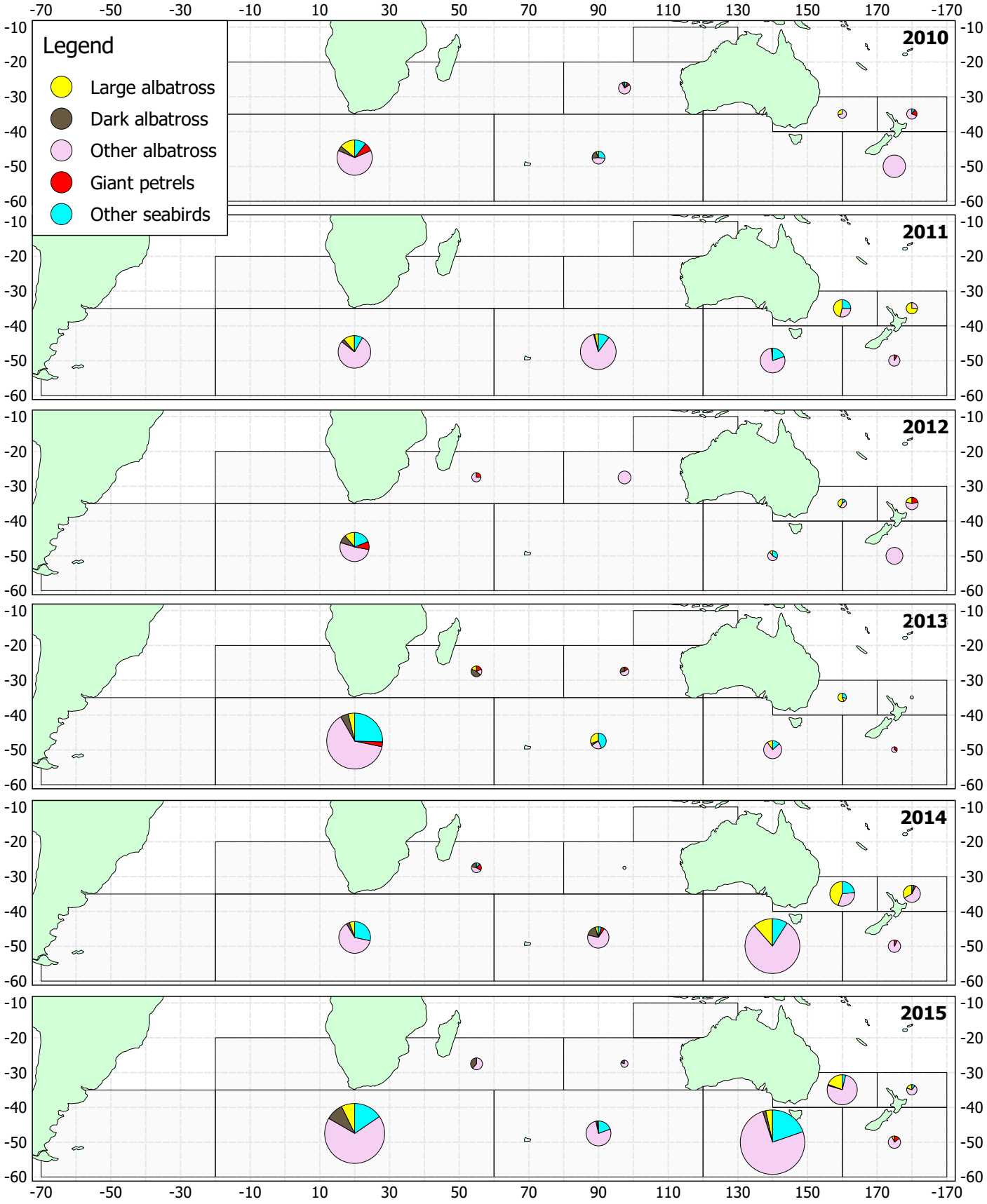


Attachment B

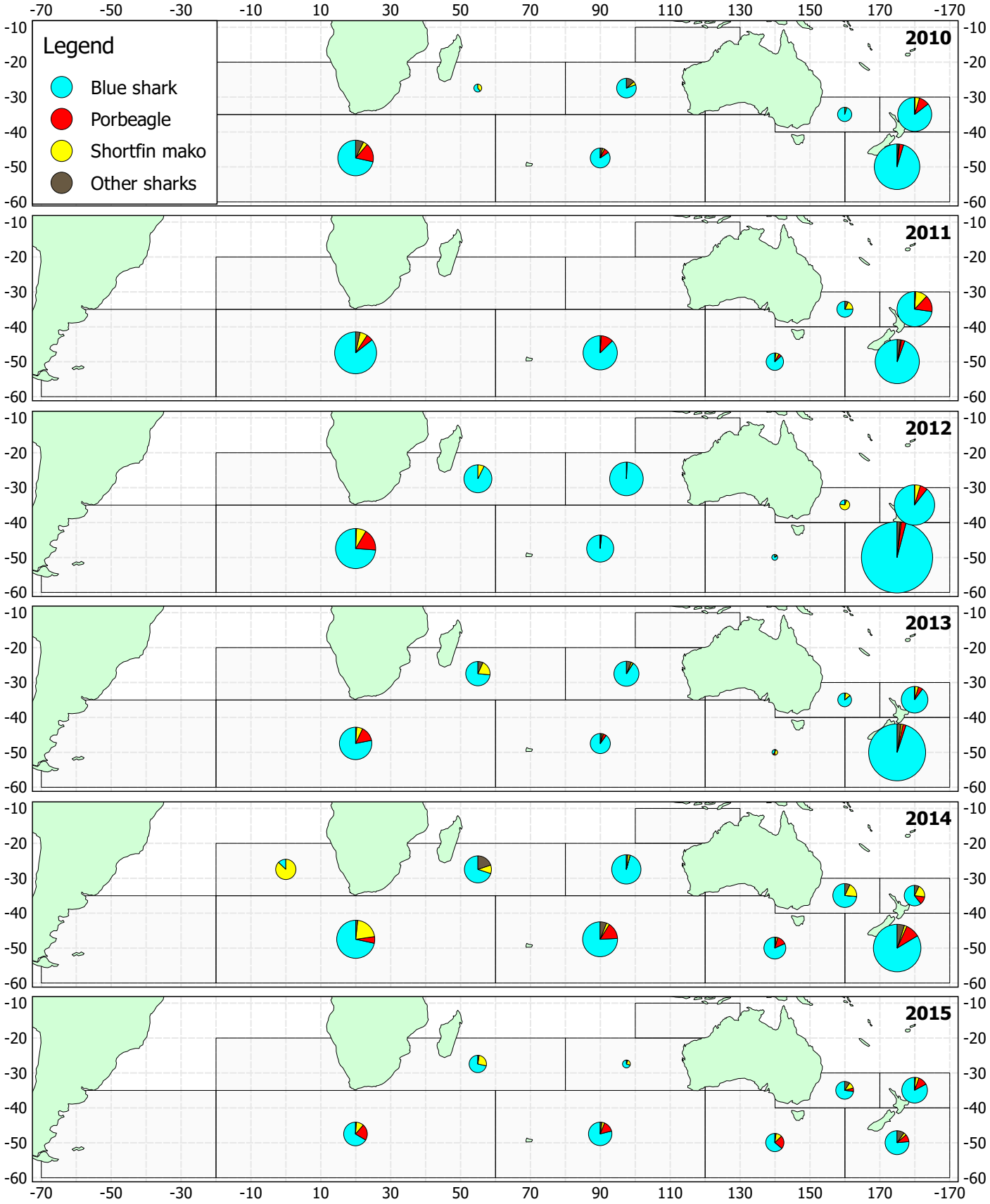
Purse seine SBT effort, showing observer coverage (yellow)



Observed bird mortalities for the SBT longline fishery

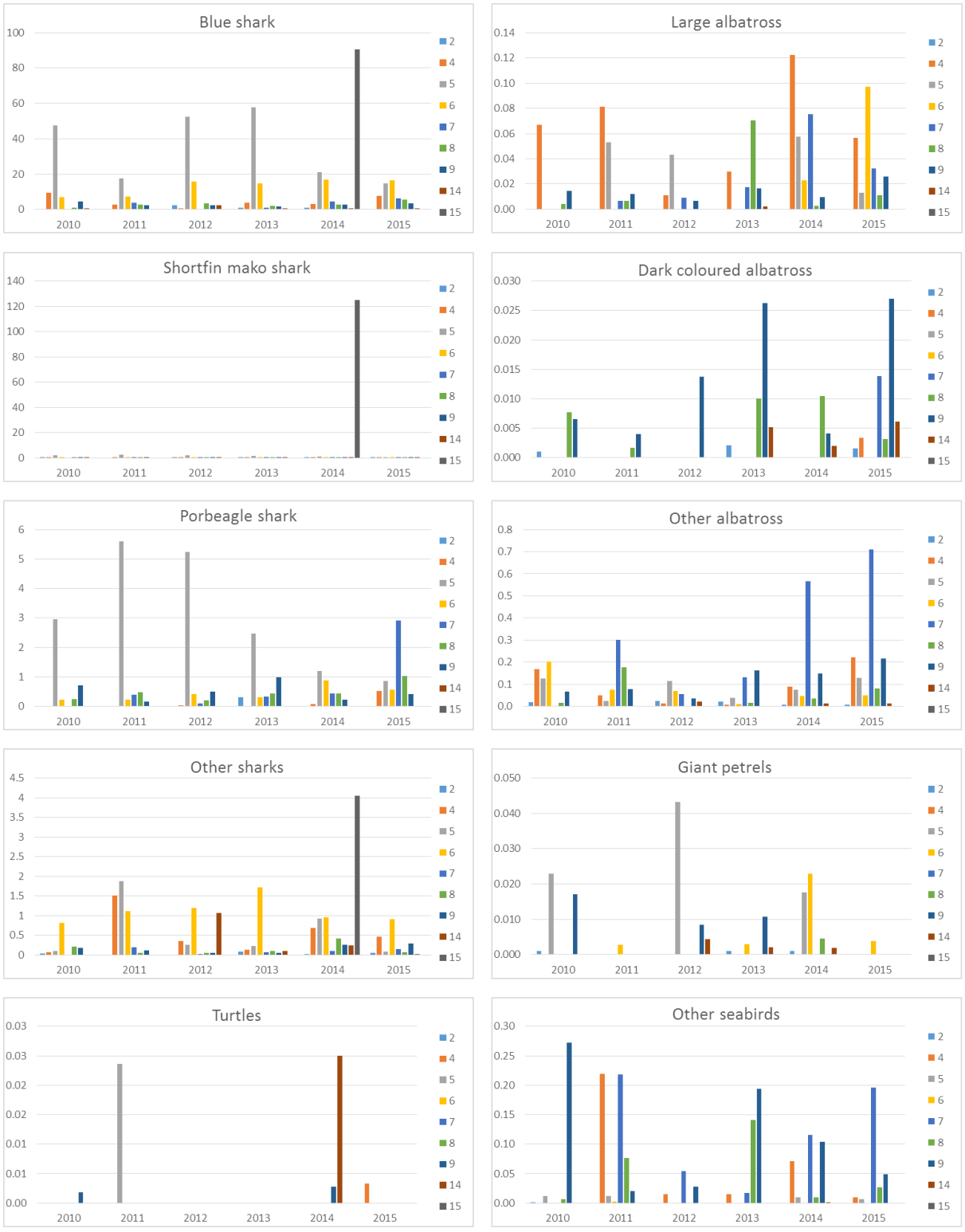


Observed shark mortalities for the SBT longline fishery



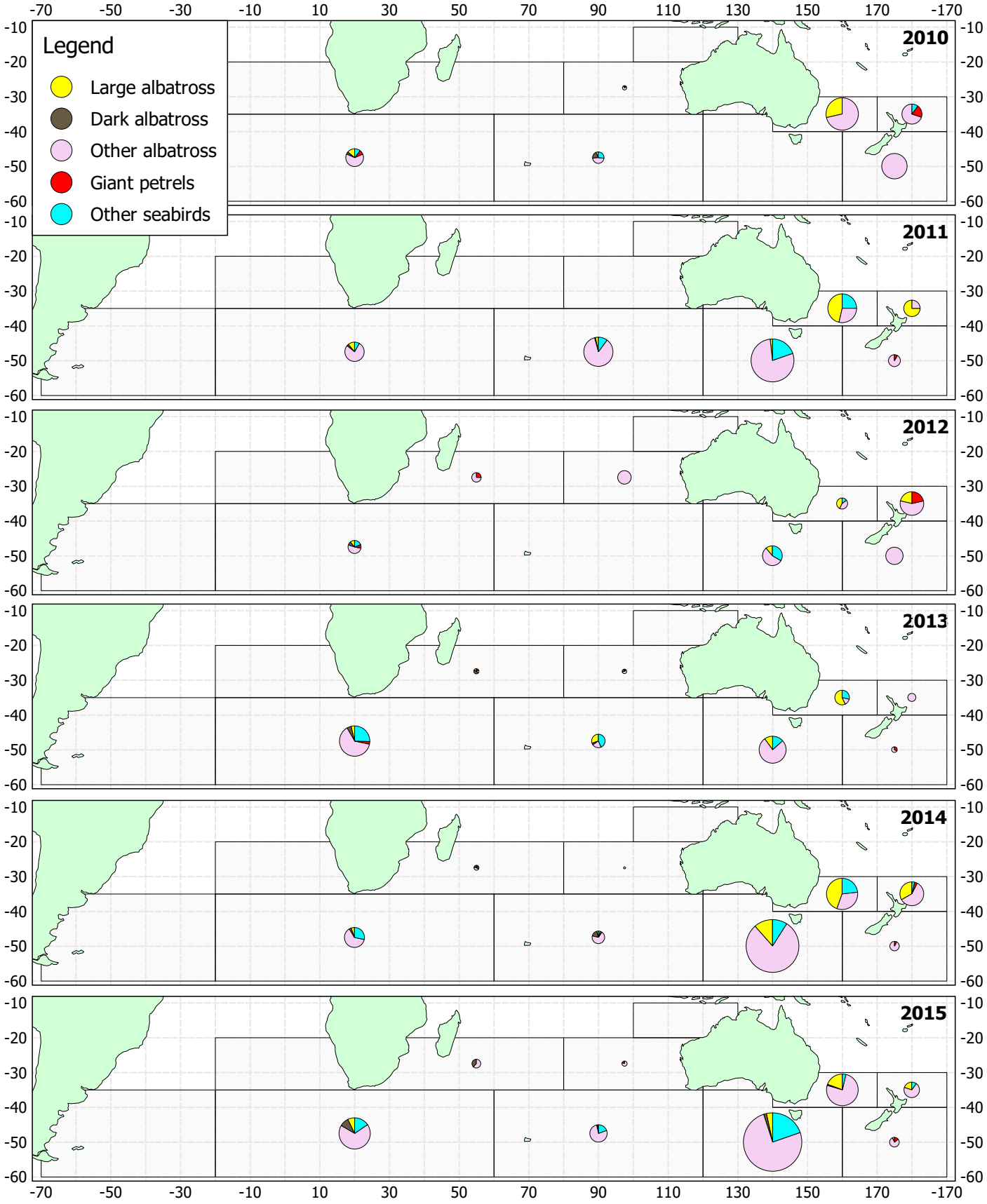
Attachment E

Observed capture rates (numbers per 1000 hooks) with proportions of observed mortalities (red), observed live releases (green) and unspecified life status (grey) for the SBT longline fishery by year and species/species group

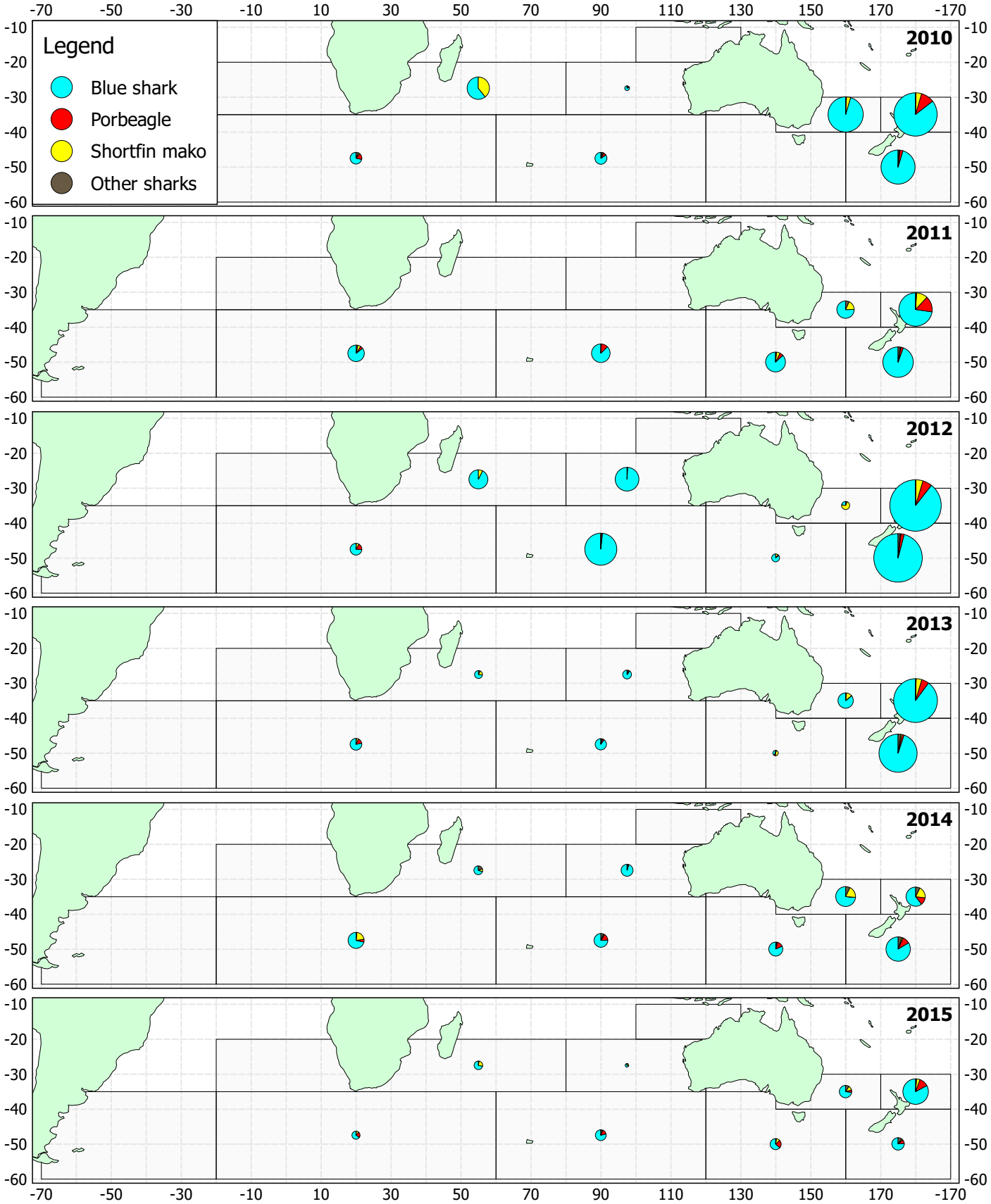


Observed catch rates for the SBT longline fishery by year, statistical area and species/species group

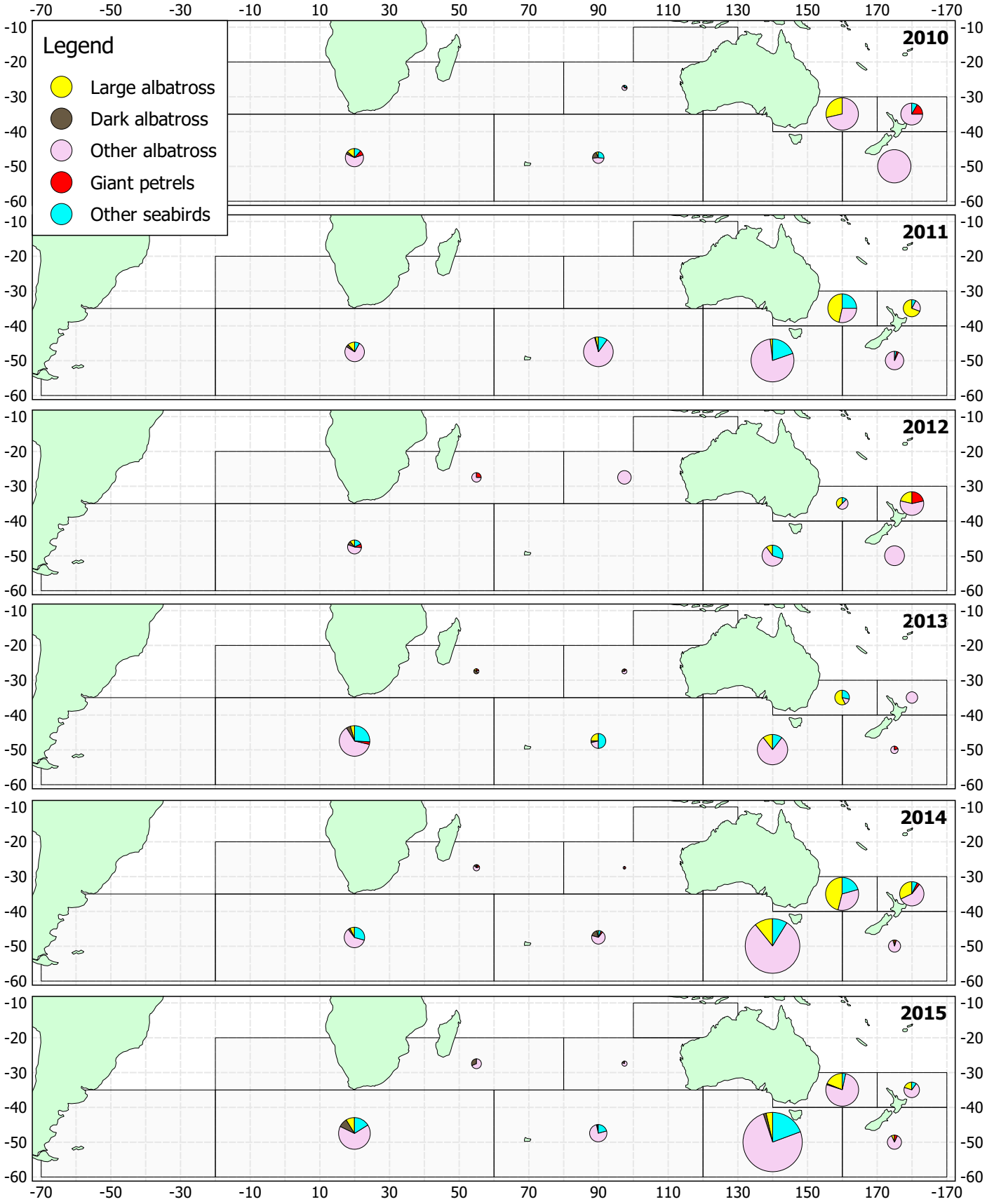
Observed bird mortality rates for the SBT longline fishery



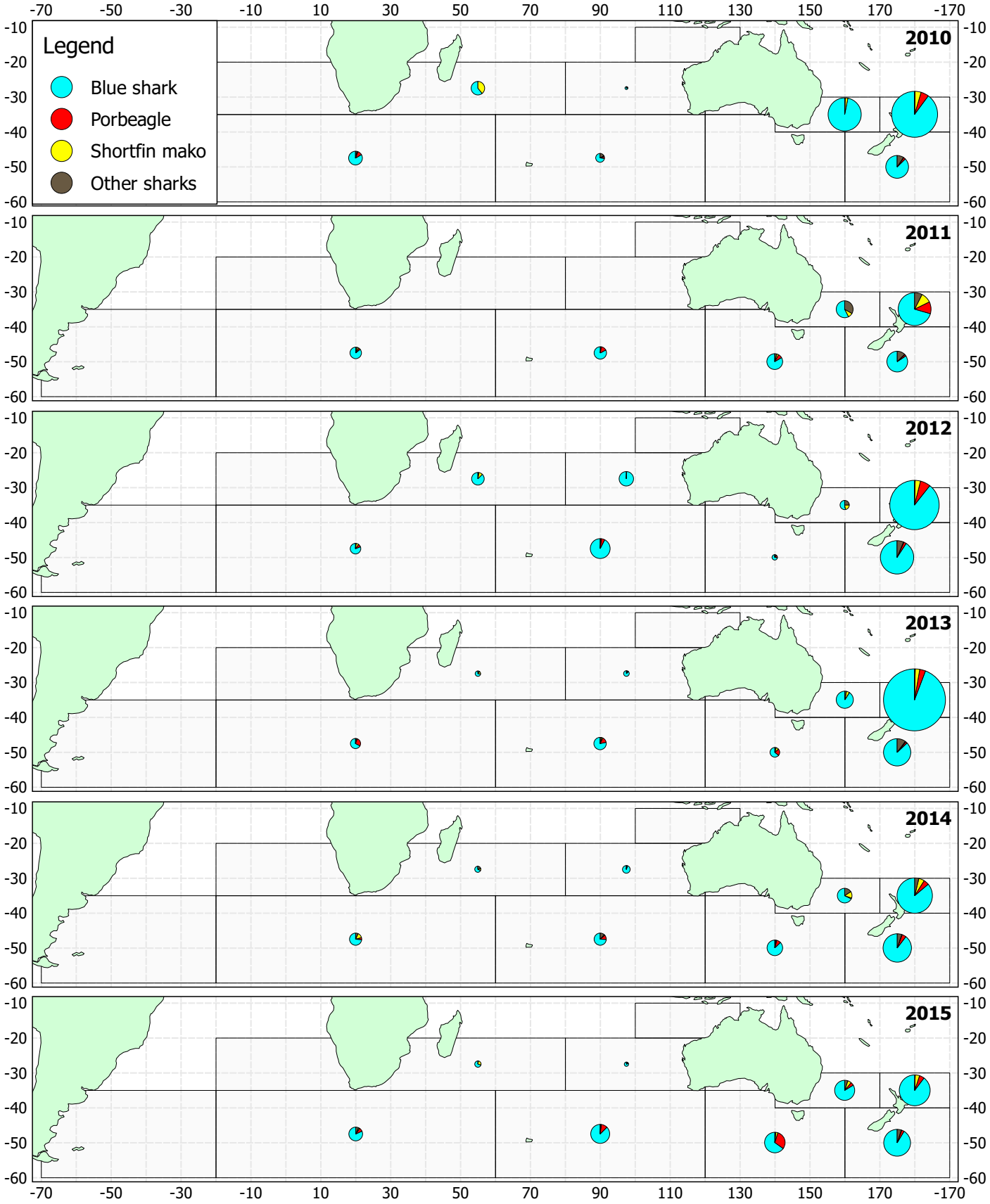
Observed shark mortality rates for the SBT longline fishery



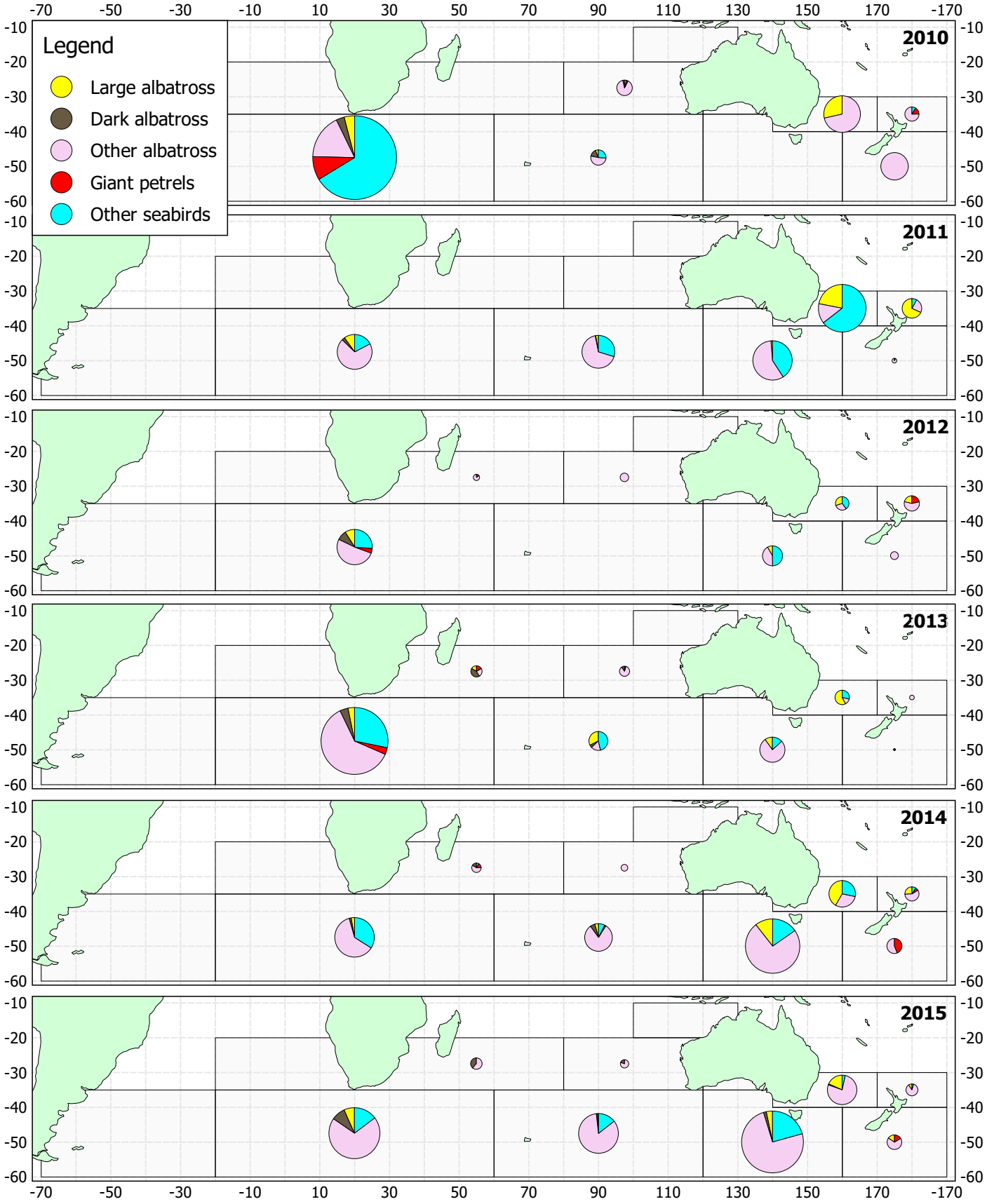
Observed bird capture rates for the SBT longline fishery



Observed shark capture rates for the SBT longline fishery



Estimated total bird mortalities for the SBT longline fishery



Estimated total shark mortalities for the SBT longline fishery