3.12 White-chinned petrel captures

3.12.1 White-chinned petrel, all trawl, New Zealand EEZ

Table 26: Summary of white-chinned petrel captures in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Squid	Auckland Is.	1 925	761	39.5	47	6.18	M	87	(62 - 125)	100.0
Squid	Stewart-Snares	1 805	532	29.5	33	6.20	M	67	(47 - 98)	100.0
Hoki	Chatham Rise	3 994	569	14.2	0	0.00	M	9	(2 - 19)	100.0
Middle depth	Stewart-Snares	1 014	251	24.8	2	0.80	M	6	(2 - 14)	100.0
Jack mackerel	Stewart-Snares	83	35	42.2	3	8.57	M	4	(3 - 7)	100.0
Hoki	Stewart-Snares	805	301	37.4	0	0.00	M	3	(1 - 9)	100.0
Ling	Stewart-Snares	375	69	18.4	0	0.00	M	1	(0 - 5)	100.0
Ling	Subantarctic	120	52	43.3	0	0.00	M	0	(0 - 1)	100.0
Hoki	Subantarctic	100	72	72.0	1	1.39	M	0	(0 - 1)	100.0
2007–08										
Squid	Auckland Is.	1 265	590	46.6	21	3.56	M	50	(30 - 81)	100.0
Squid	Stewart-Snares	2 412	864	35.8	24	2.78	M	70	(44 - 107)	100.0
Hoki	Chatham Rise	4 481	751	16.8	5	0.67	M	14	(7 - 23)	100.0
Middle depth	Stewart-Snares	1 014	82	8.1	5	6.10	M	10	(5 - 17)	100.0
Jack mackerel	Stewart-Snares	14	3	21.4	0	0.00	M	0	(0 - 1)	100.0
Hoki	Stewart-Snares	743	341	45.9	3	0.88	M	4	(3 - 8)	100.0
Ling	Stewart-Snares	694	136	19.6	1	0.74	M	3	(1 - 8)	100.0
Ling	Subantarctic	205	55	26.8	2	3.64	M	2	(2 - 3)	100.0
Hoki	Subantarctic	144	72	50.0	0	0.00	M	0	(0 - 1)	100.0

Table 27: Summary of white-chinned petrel captures in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	87 213	9 791	11.2	86	0.88	M	214	(162 - 285)	43.2
2007–08	89 223	9 036	10.1	61	0.68	M	191	(136 - 268)	44.1
2006–07	103 793	7 918	7.6	30	0.38	M	108	(72 - 161)	42.7
2005–06	109 982	6 554	6.0	66	1.01	M	311	(209 - 457)	43.7
2004–05	120 476	7 710	6.4	52	0.67	M	201	(142 - 280)	44.2
2003–04	120 878	6 546	5.4	17	0.26	M	86	(50 - 140)	47.2
2002–03	130 177	6 835	5.3	12	0.18	M	108	(56 - 183)	51.2
2001–02	127 883	7 716	6.0	9	0.12	R	159	(136 - 184)	50.2
2000–01	134 243	9 114	6.8	86	0.94	R	183	(160 - 210)	50.0
1999–00	139 057	7 650	5.5	12	0.16	R	162	(131 - 197)	49.9
1998–99	153 412	7 257	4.7	30	0.41	R	239	(197 - 287)	47.5

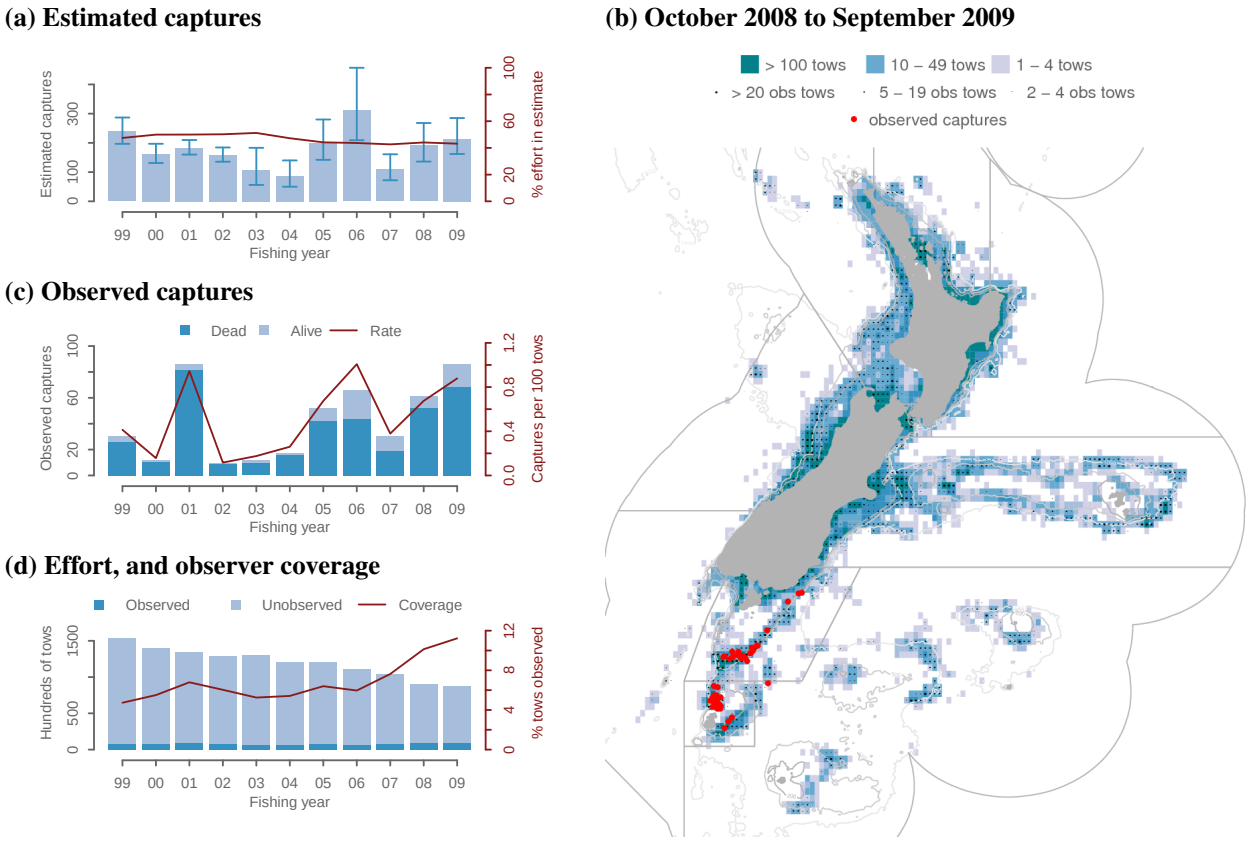

Figure 12: White-chinned petrel captures in all trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.12.2 White-chinned petrel, surface longline, New Zealand EEZ

Table 28: Summary of white-chinned petrel captures in surface longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Bigeye	Area 1	1 270 417	45 495	3.6	1	0.022	M	8	(2 - 20)	100.0
S. Bluefin	Area 3	888 430	604 930	68.1	2	0.003	M	3	(2 - 6)	100.0
S. Bluefin	Area 1	585 103	111 912	19.1	0	0.000	M	3	(0 - 8)	100.0
Bigeye	Area 4	288 910	39 004	13.5	0	0.000	M	1	(0 - 5)	100.0
Other	Area 1	16 178	0	0.0	-		M	0	(0 - 1)	100.0
Swordfish	Area 1	20 480	3 000	14.6	0	0.000	M	0	(0 - 1)	100.0
Swordfish	Area 4	13 940	3 290	23.6	0	0.000	M	0	(0 - 1)	100.0
Swordfish	Area 3	7 280	0	0.0	-		M	0	(0 - 1)	100.0
Albacore	Area 1	7 800	0	0.0	-		M	0	(0 - 1)	100.0
Bigeye	Area 3	7 490	0	0.0	-		M	0	(0 - 1)	100.0
Albacore	Area 4	0								
S. Bluefin	Area 4	0								
Other	Area 4	0								
2007–08										
Bigeye	Area 1	879 017	15 985	1.8	0	0.000	M	9	(1 - 23)	100.0
S. Bluefin	Area 3	654 625	254 208	38.8	4	0.016	M	6	(4 - 11)	100.0
S. Bluefin	Area 1	448 700	90 964	20.3	0	0.000	M	3	(0 - 10)	100.0
Bigeye	Area 4	88 812	8 360	9.4	0	0.000	M	1	(0 - 3)	100.0
Other	Area 1	31 705	0	0.0	-		M	0	(0 - 2)	100.0
Swordfish	Area 1	83 630	17 540	21.0	0	0.000	M	1	(0 - 3)	100.0
Swordfish	Area 4	35 500	3 350	9.4	0	0.000	M	0	(0 - 2)	100.0
Swordfish	Area 3	6 200	0	0.0	-		M	0	(0 - 1)	100.0
Albacore	Area 1	0								
Bigeye	Area 3	0								
Albacore	Area 4	600	0	0.0	-		M	0	(0 - 0)	100.0
S. Bluefin	Area 4	1 500	0	0.0	-		M	0	(0 - 0)	100.0
Other	Area 4	2 750	0	0.0	-		M	0	(0 - 0)	100.0

Table 29: Summary of white-chinned petrel captures in surface longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	3 106 028	807 631	26.0	3	0.004	M	16	(5 - 35)	100.0
2007–08	2 233 039	390 407	17.5	4	0.010	M	20	(8 - 46)	100.0
2006–07	3 746 672	956 819	25.5	5	0.005	M	22	(9 - 43)	100.0
2005–06	3 687 569	636 796	17.3	1	0.002	M	14	(3 - 36)	100.0
2004–05	3 676 795	703 669	19.1	3	0.004	M	19	(6 - 44)	100.0
2003–04	7 382 293	1 464 465	19.8	2	0.001	M	23	(5 - 54)	100.0
2002–03	10 781 875	1 874 448	17.4	3	0.002	M	38	(10 - 86)	100.0
2001–02	10 876 381	918 159	8.4	6	0.007	M	73	(27 - 162)	100.0
2000–01	9 761 448	1 023 868	10.5	2	0.002	M	37	(9 - 84)	99.9
1999–00	8 286 120	793 770	9.6	7	0.009	M	76	(26 - 180)	100.0
1998–99	6 845 781	1 242 610	18.2	0	0.000	M	19	(2 - 51)	99.8

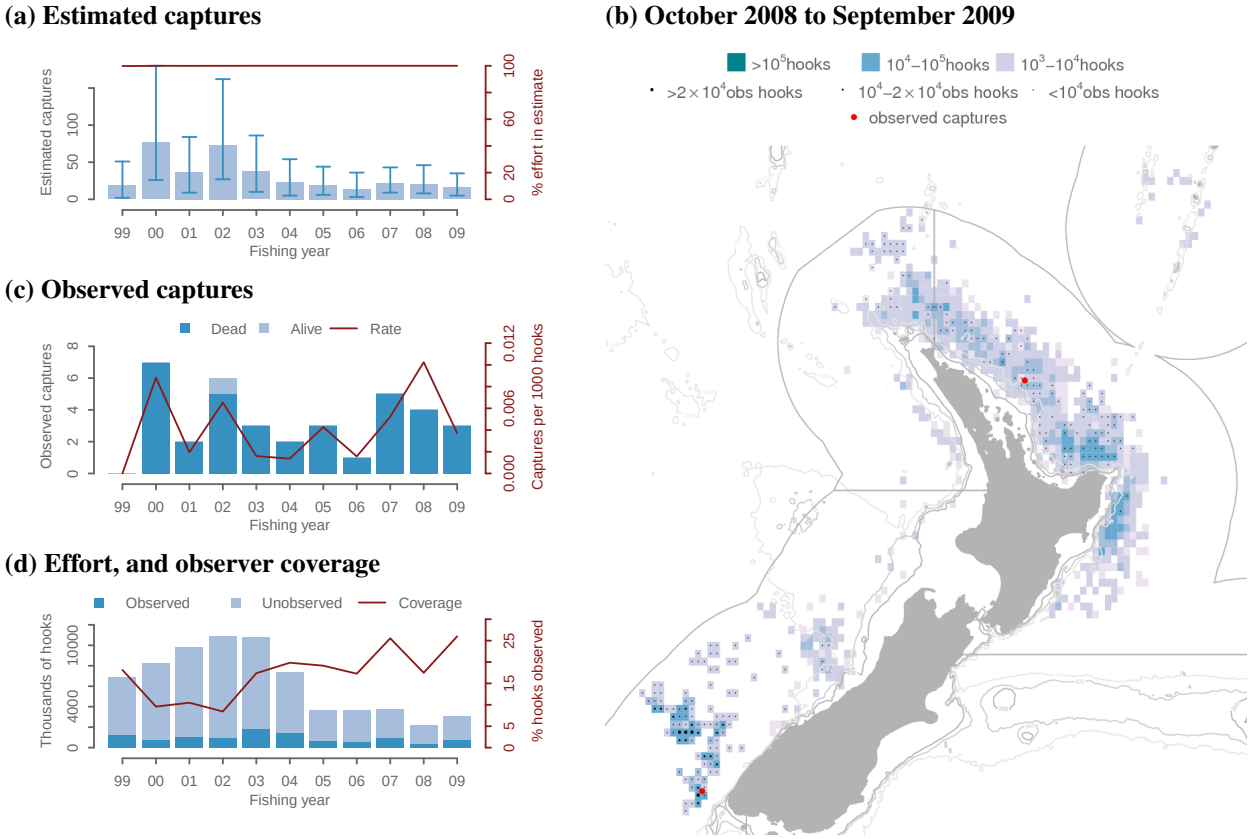

Figure 13: White-chinned petrel captures in surface longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.12.3 White-chinned petrel, bottom longline, New Zealand EEZ

Table 30: Summary of white-chinned petrel captures in bottom longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Large ling	Chatham Rise	6 382 948	1 824 408	28.6	1	0.001	M	294	(23 - 1 100)	100.0
Large ling	Subantarctic	2 786 330	1 391 250	49.9	0	0.000	M	46	(1 - 221)	100.0
Small ling	Chatham Rise	2 957 030	498 750	16.9	0	0.000	R	40	(20 - 64)	100.0
Large ling	Puysegur	249 850	0	0.0	-		M	23	(0 - 159)	100.0
Large ling	Stewart-Snares	1 323 200	0	0.0	-		M	5	(0 - 33)	100.0
Small bluenose	Chatham Rise	944 770	5 250	0.6	0	0.000	R	5	(0 - 17)	100.0
Large other	Puysegur	102 411	0	0.0	-		M	1	(0 - 10)	100.0
2007–08										
Large ling	Chatham Rise	5 612 870	1 375 300	24.5	0	0.000	M	91	(0 - 533)	100.0
Large ling	Subantarctic	3 591 200	1 381 800	38.5	6	0.004	M	79	(6 - 450)	100.0
Small ling	Chatham Rise	2 410 020	235 800	9.8	3	0.013	R	38	(20 - 59)	100.0
Large ling	Puysegur	969 053	108 455	11.2	0	0.000	M	11	(0 - 75)	100.0
Large ling	Stewart-Snares	1 194 423	114 423	9.6	0	0.000	M	23	(2 - 76)	100.0
Small bluenose	Chatham Rise	2 786 303	164 525	5.9	1	0.006	R	16	(1 - 48)	100.0
Large other	Puysegur	0								

Table 31: Summary of white-chinned petrel captures in bottom longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	37 389 649	3 804 128	10.2	1	0.000	B	417	(81 - 1 418)	69.6
2007–08	41 467 059	3 598 918	8.7	10	0.003	B	258	(61 - 1 044)	68.8
2006–07	38 389 449	2 343 955	6.1	12	0.005	B	266	(52 - 1 065)	73.8
2005–06	37 125 639	3 828 459	10.3	13	0.003	B	142	(58 - 331)	78.1
2004–05	41 840 933	2 927 928	7.0	11	0.004	B	524	(117 - 1 796)	80.9
2003–04	43 449 733	5 002 370	11.5	15	0.003	B	249	(47 - 1 191)	84.4
2002–03	37 753 336	11 308 295	30.0	130	0.011	B	235	(158 - 452)	83.8
2001–02	47 024 332	7 547 517	16.1	353	0.047	B	1 054	(624 - 2 212)	89.3
2000–01	51 024 367	5 248 902	10.3	210	0.040	B	697	(385 - 1 534)	83.9
1999–00	53 277 149	3 611 278	6.8	59	0.016	B	976	(309 - 2 779)	89.5
1998–99	55 487 193	3 097 198	5.6	5	0.002	B	1 046	(152 - 3 958)	87.7

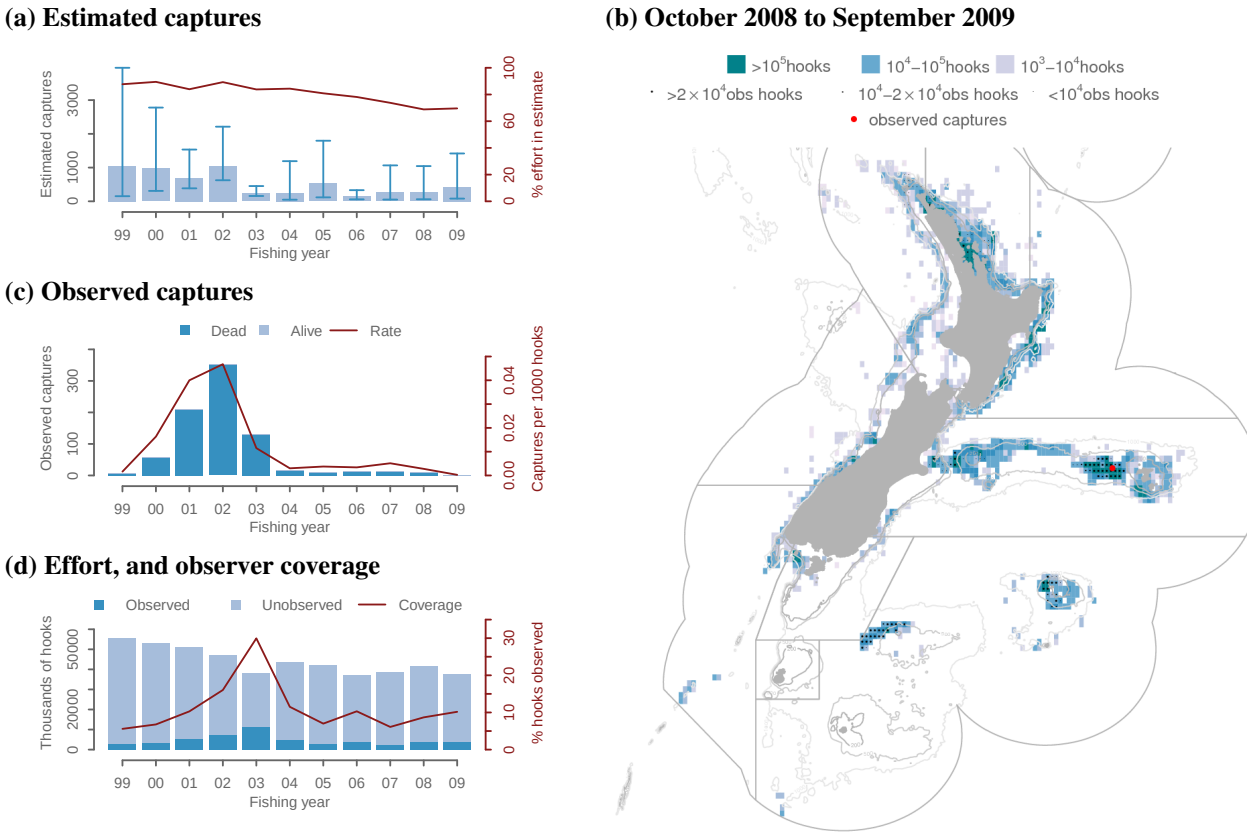

Figure 14: White-chinned petrel captures in bottom longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.13 White-capped albatross captures

3.13.1 White-capped albatross, all trawl, New Zealand EEZ

Table 32: Summary of white-capped albatross captures in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Squid	Auckland Is.	1 925	761	39.5	42	5.52	M	97	(72 - 131)	100.0
Squid	Stewart-Snares	1 805	532	29.5	11	2.07	M	58	(37 - 86)	100.0
Middle depth	Stewart-Snares	1 014	251	24.8	12	4.78	M	26	(17 - 40)	100.0
Scampi	Auckland Is.	1 457	61	4.2	1	1.64	M	17	(4 - 43)	100.0
Middle depth	Chatham Rise	2 723	248	9.1	0	0.00	M	9	(2 - 19)	100.0
Hake	Stewart-Snares	274	78	28.5	1	1.28	M	8	(2 - 18)	100.0
Inshore	West Coast SI	6 315	356	5.6	6	1.69	N			
Hoki	Chatham Rise	3 994	569	14.2	1	0.18	M	6	(2 - 13)	100.0
Hoki	Stewart-Snares	805	301	37.4	3	1.00	M	5	(2 - 12)	100.0
Hoki	Cook Strait	1 843	173	9.4	1	0.58	M	4	(1 - 10)	100.0
Middle depth	Puysegur	60	41	68.3	1	2.44	M	1	(1 - 2)	100.0
Ling	Subantarctic	120	52	43.3	0	0.00	M	0	(0 - 1)	100.0
2007–08										
Squid	Auckland Is.	1 265	590	46.6	22	3.73	M	40	(29 - 57)	100.0
Squid	Stewart-Snares	2 412	864	35.8	15	1.74	M	43	(27 - 65)	100.0
Middle depth	Stewart-Snares	1 014	82	8.1	0	0.00	M	10	(2 - 24)	100.0
Scampi	Auckland Is.	1 327	93	7.0	0	0.00	M	6	(0 - 17)	100.0
Middle depth	Chatham Rise	2 657	225	8.5	1	0.44	M	7	(2 - 15)	100.0
Hake	Stewart-Snares	157	49	31.2	0	0.00	M	2	(0 - 7)	100.0
Inshore	West Coast SI	6 353	41	0.6	0	0.00	N			
Hoki	Chatham Rise	4 481	751	16.8	2	0.27	M	7	(3 - 13)	100.0
Hoki	Stewart-Snares	743	341	45.9	0	0.00	M	1	(0 - 3)	100.0
Hoki	Cook Strait	1 759	204	11.6	0	0.00	M	1	(0 - 5)	100.0
Middle depth	Puysegur	83	0	0.0	-		M	0	(0 - 2)	100.0
Ling	Subantarctic	205	55	26.8	1	1.82	M	1	(1 - 3)	100.0

Table 33: Summary of white-capped albatross captures in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	87 213	9 791	11.2	79	0.81	M	263	(205 - 343)	43.2
2007–08	89 223	9 036	10.1	41	0.45	M	137	(96 - 194)	44.1
2006–07	103 793	7 918	7.6	56	0.71	M	217	(156 - 296)	42.7
2005–06	109 982	6 554	6.0	68	1.04	M	343	(244 - 480)	43.7
2004–05	120 476	7 710	6.4	236	3.06	M	930	(741 - 1 174)	44.2
2003–04	120 878	6 546	5.4	144	2.20	M	645	(478 - 860)	47.2
2002–03	130 177	6 835	5.3	79	1.16	M	505	(353 - 709)	51.2
2001–02	127 883	7 716	6.0	153	1.98	R	578	(527 - 636)	50.2
2000–01	134 243	9 114	6.8	229	2.51	R	501	(446 - 567)	50.0
1999–00	139 057	7 650	5.5	54	0.71	R	418	(363 - 480)	49.9
1998–99	153 412	7 257	4.7	77	1.06	R	572	(514 - 642)	47.5

[s] All observed captures by species: white-capped albatross (1191), shy albatross (25)

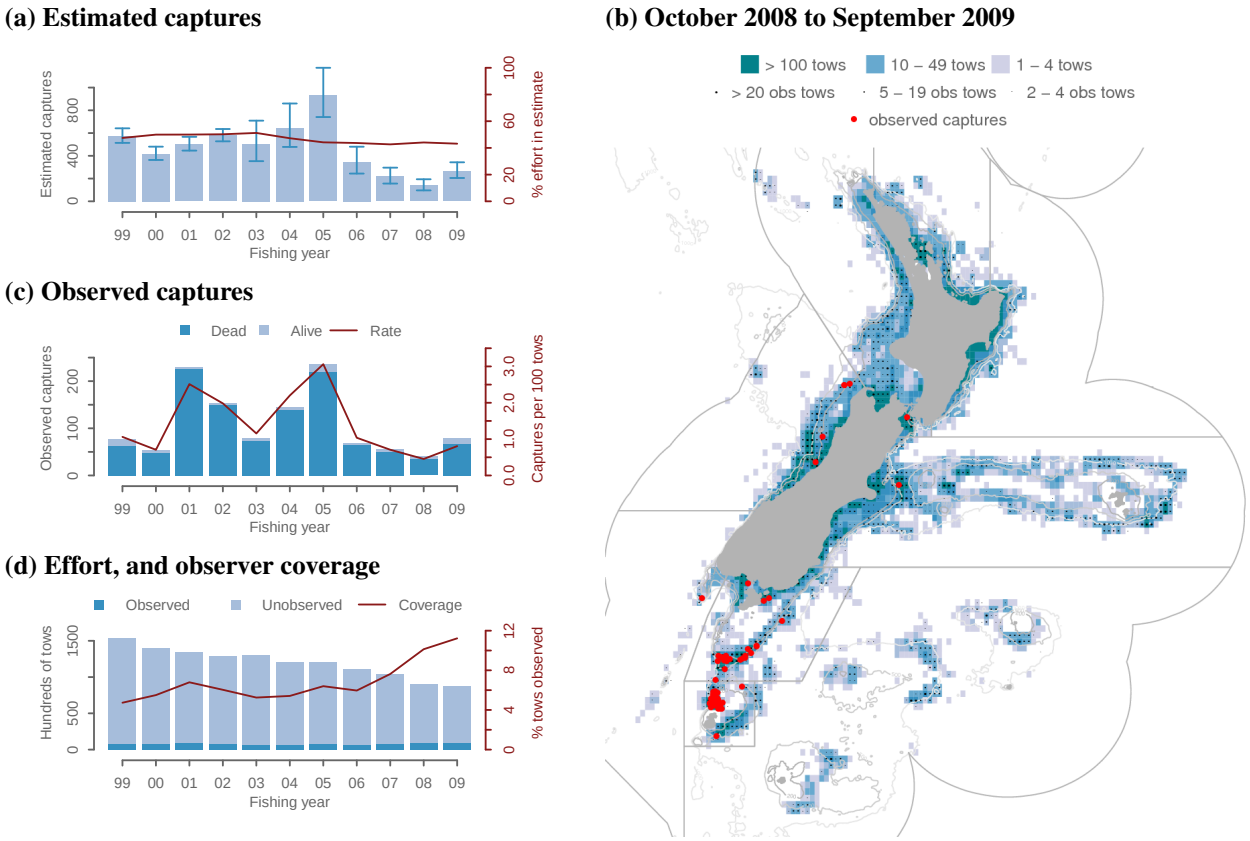

Figure 15: White-capped albatross captures in all trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.13.2 White-capped albatross, surface longline, New Zealand EEZ

Table 34: Summary of white-capped albatross captures in surface longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
S. Bluefin	Area 3	888 430	604 930	68.1	3	0.005	M	5	(3 - 15)	100.0
S. Bluefin	Area 1	585 103	111 912	19.1	0	0.000	M	3	(0 - 10)	100.0
Swordfish	Area 1	20 480	3 000	14.6	0	0.000	M	1	(0 - 8)	100.0
Swordfish	Area 3	7 280	0	0.0	-		M	1	(0 - 7)	100.0
Swordfish	Area 4	13 940	3 290	23.6	0	0.000	M	0	(0 - 1)	100.0
Bigeye	Area 1	1 270 417	45 495	3.6	0	0.000	M	0	(0 - 1)	100.0
Bigeye	Area 4	288 910	39 004	13.5	0	0.000	M	0	(0 - 0)	100.0
Albacore	Area 1	7 800	0	0.0	-		M	0	(0 - 0)	100.0
Other	Area 1	16 178	0	0.0	-		M	0	(0 - 0)	100.0
Bigeye	Area 3	7 490	0	0.0	-		M	0	(0 - 0)	100.0
Albacore	Area 4	0								
S. Bluefin	Area 4	0								
Other	Area 4	0								
2007–08										
S. Bluefin	Area 3	654 625	254 208	38.8	3	0.012	M	6	(3 - 14)	100.0
S. Bluefin	Area 1	448 700	90 964	20.3	0	0.000	M	1	(0 - 6)	100.0
Swordfish	Area 1	83 630	17 540	21.0	0	0.000	M	4	(0 - 22)	100.0
Swordfish	Area 3	6 200	0	0.0	-		M	1	(0 - 5)	100.0
Swordfish	Area 4	35 500	3 350	9.4	0	0.000	M	1	(0 - 4)	100.0
Bigeye	Area 1	879 017	15 985	1.8	0	0.000	M	0	(0 - 1)	100.0
Bigeye	Area 4	88 812	8 360	9.4	0	0.000	M	0	(0 - 0)	100.0
Albacore	Area 1	0								
Other	Area 1	31 705	0	0.0	-		M	0	(0 - 0)	100.0
Bigeye	Area 3	0								
Albacore	Area 4	600	0	0.0	-		M	0	(0 - 0)	100.0
S. Bluefin	Area 4	1 500	0	0.0	-		M	0	(0 - 0)	100.0
Other	Area 4	2 750	0	0.0	-		M	0	(0 - 0)	100.0

Table 35: Summary of white-capped albatross captures in surface longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	3 106 028	807 631	26.0	3	0.004	M	10	(3 - 29)	100.0
2007–08	2 233 039	390 407	17.5	3	0.008	M	13	(4 - 36)	100.0
2006–07	3 746 672	956 819	25.5	28	0.029	M	41	(25 - 90)	100.0
2005–06	3 687 569	636 796	17.3	2	0.003	M	19	(3 - 79)	100.0
2004–05	3 676 795	703 669	19.1	3	0.004	M	14	(4 - 44)	100.0
2003–04	7 382 293	1 464 465	19.8	17	0.012	M	49	(20 - 134)	100.0
2002–03	10 781 875	1 874 448	17.4	2	0.001	M	75	(11 - 232)	100.0
2001–02	10 876 381	918 159	8.4	13	0.014	M	81	(22 - 231)	100.0
2000–01	9 761 448	1 023 868	10.5	3	0.003	M	41	(7 - 141)	99.9
1999–00	8 286 120	793 770	9.6	6	0.008	M	34	(10 - 95)	100.0
1998–99	6 845 781	1 242 610	18.2	8	0.006	M	17	(8 - 46)	99.8

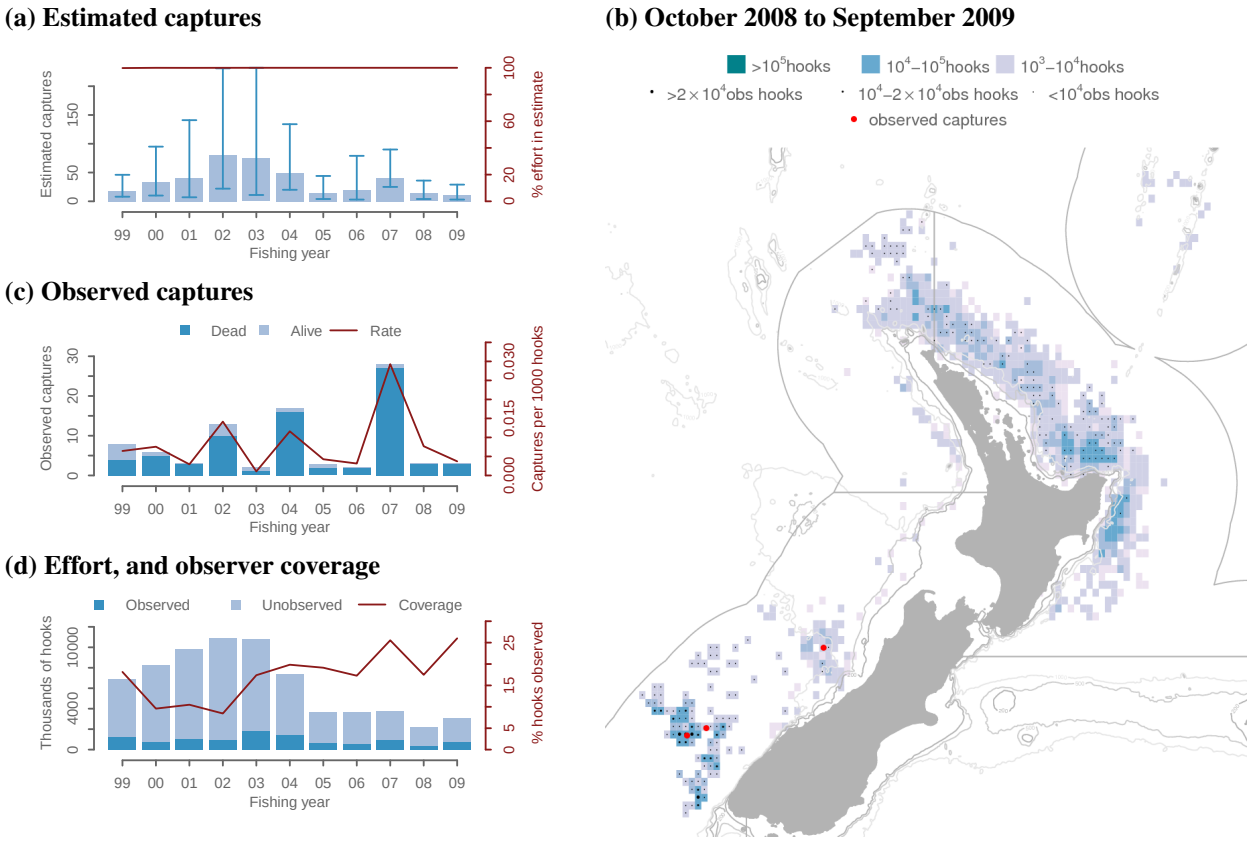

Figure 16: White-capped albatross captures in surface longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.14 Other albatross captures

3.14.1 Other albatrosses, all trawl, New Zealand EEZ

Table 36: Summary of other albatross captures in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Middle depth	Chatham Rise	2 723	248	9.1	8	3.23	M	59	(33 - 95)	100.0
Hoki	Chatham Rise	3 994	569	14.2	3	0.53	M	57	(31 - 94)	100.0
Scampi	Chatham Rise	1 306	204	15.6	14	6.86	M	49	(29 - 80)	100.0
Squid	Stewart-Snares	1 805	532	29.5	8	1.50	M	21	(12 - 34)	100.0
Middle depth	Stewart-Snares	1 014	251	24.8	11	4.38	M	18	(12 - 26)	100.0
Squid	Auckland Is.	1 925	761	39.5	7	0.92	M	17	(10 - 27)	100.0
Hake	Chatham Rise	502	63	12.5	1	1.59	M	13	(4 - 28)	100.0
Inshore	Chatham Rise	8 951	476	5.3	11	2.31	N			
Middle depth	West Coast SI	997	40	4.0	2	5.00	M	9	(4 - 18)	100.0
Deepwater	Chatham Rise	2 966	1 403	47.3	3	0.21	M	6	(3 - 11)	100.0
Hoki	West Coast SI	1 170	501	42.8	2	0.40	M	6	(2 - 11)	100.0
Hoki	Stewart-Snares	805	301	37.4	1	0.33	M	5	(2 - 10)	100.0
Inshore	West Coast SI	6 315	356	5.6	4	1.12	N			
Hake	Stewart-Snares	274	78	28.5	1	1.28	M	3	(1 - 7)	100.0
SBW	Subantarctic	1 184	296	25.0	0	0.00	M	1	(0 - 5)	100.0
Hoki	Subantarctic	100	72	72.0	2	2.78	M	1	(1 - 3)	100.0
Ling	Subantarctic	120	52	43.3	0	0.00	M	1	(0 - 3)	100.0
Jack mackerel	Chatham Rise	68	1	1.5	0	0.00	M	0	(0 - 1)	100.0
2007–08										
Middle depth	Chatham Rise	2 657	225	8.5	1	0.44	M	31	(15 - 56)	100.0
Hoki	Chatham Rise	4 481	751	16.8	2	0.27	M	35	(18 - 58)	100.0
Scampi	Chatham Rise	2 014	185	9.2	4	2.16	M	37	(18 - 64)	100.0
Squid	Stewart-Snares	2 412	864	35.8	5	0.58	M	14	(8 - 23)	100.0
Middle depth	Stewart-Snares	1 014	82	8.1	2	2.44	M	7	(3 - 13)	100.0
Squid	Auckland Is.	1 265	590	46.6	1	0.17	M	4	(1 - 9)	100.0
Hake	Chatham Rise	318	26	8.2	0	0.00	M	5	(0 - 13)	100.0
Inshore	Chatham Rise	7 923	8	0.1	1	12.50	N			
Middle depth	West Coast SI	1 340	54	4.0	0	0.00	M	5	(1 - 12)	100.0
Deepwater	Chatham Rise	3 244	1 320	40.7	1	0.08	M	3	(1 - 7)	100.0
Hoki	West Coast SI	1 388	462	33.3	10	2.16	M	13	(10 - 17)	100.0
Hoki	Stewart-Snares	743	341	45.9	1	0.29	M	2	(1 - 5)	100.0
Inshore	West Coast SI	6 353	41	0.6	0	0.00	N			
Hake	Stewart-Snares	157	49	31.2	0	0.00	M	1	(0 - 3)	100.0
SBW	Subantarctic	816	331	40.6	2	0.60	M	2	(2 - 4)	100.0
Hoki	Subantarctic	144	72	50.0	0	0.00	M	0	(0 - 2)	100.0
Ling	Subantarctic	205	55	26.8	2	3.64	M	3	(2 - 5)	100.0
Jack mackerel	Chatham Rise	177	21	11.9	1	4.76	M	1	(1 - 3)	100.0

Table 37: Summary of other albatross captures in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	87 213	9 791	11.2	78	0.80	M	360	(261 - 482)	43.2
2007–08	89 223	9 036	10.1	33	0.37	M	221	(150 - 314)	44.1
2006–07	103 793	7 918	7.6	21	0.27	M	165	(100 - 257)	42.7
2005–06	109 982	6 554	6.0	25	0.38	M	242	(157 - 351)	43.7
2004–05	120 476	7 710	6.4	67	0.87	M	468	(338 - 639)	44.2
2003–04	120 878	6 546	5.4	27	0.41	M	258	(172 - 369)	47.2
2002–03	130 177	6 835	5.3	38	0.56	M	350	(245 - 487)	51.2
2001–02	127 883	7 716	6.0	37	0.48	R	420	(360 - 483)	50.2
2000–01	134 243	9 114	6.8	54	0.59	R	467	(392 - 551)	50.0
1999–00	139 057	7 650	5.5	48	0.63	R	490	(415 - 571)	49.9
1998–99	153 412	7 257	4.7	59	0.81	R	521	(447 - 602)	47.5

[s] All observed captures by species: Salvin's albatross (171), Buller's albatross (142), albatrosses (unidentified) (88), black-browed albatross (unidentified) (27), Campbell albatross (13), southern royal albatross (10), southern black-browed albatross (9), Chatham albatross (7), smaller albatrosses (5), Pacific albatross (5), grey-headed albatross (3), wandering albatross (unidentified) (2), northern royal albatross (2), Gibson's albatross (1), great albatrosses (1), antipodean albatross (1)

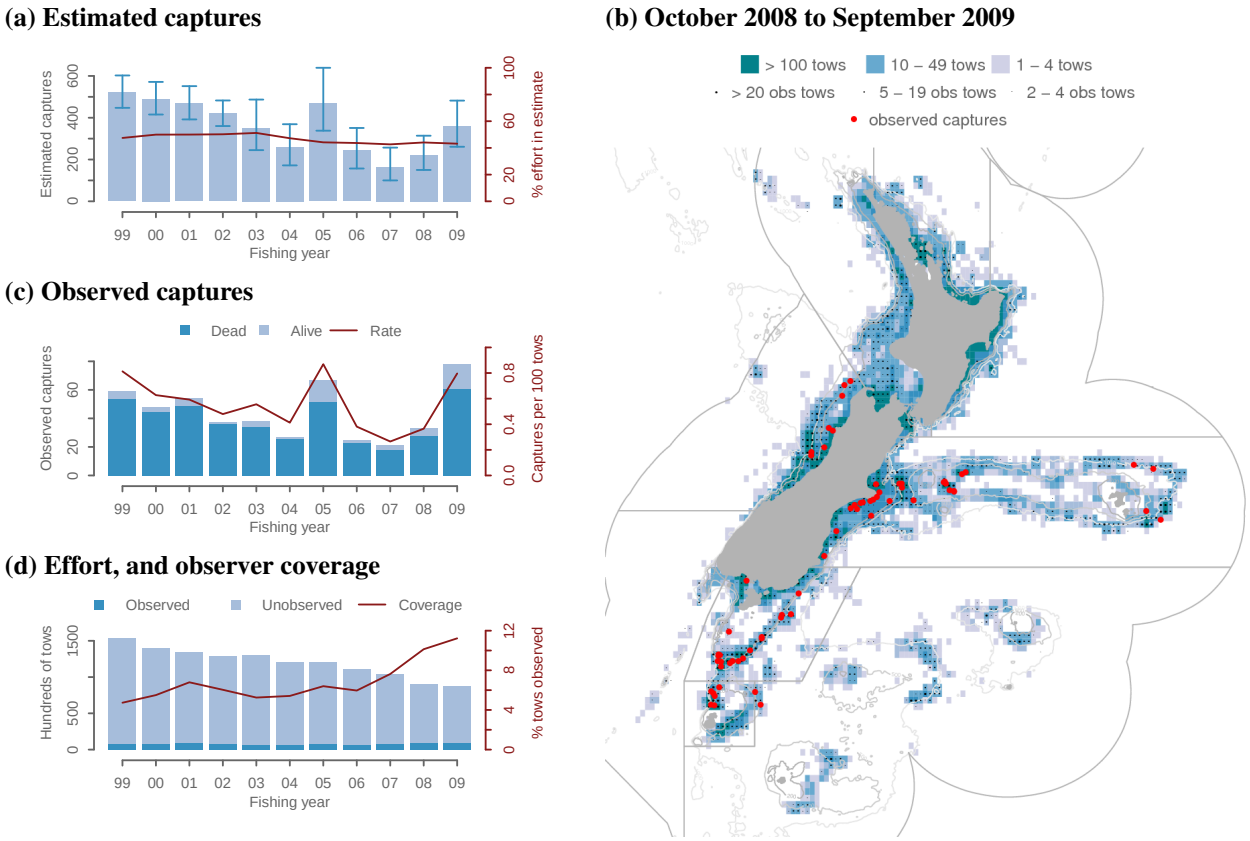

Figure 17: Other albatross captures in all trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.14.2 Other albatrosses, surface longline, New Zealand EEZ

Table 38: Summary of other albatross captures in surface longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Bigeye	Area 1	1 270 417	45 495	3.6	5	0.110	M	148	(61 - 309)	100.0
S. Bluefin	Area 3	888 430	604 930	68.1	38	0.063	M	47	(39 - 62)	100.0
S. Bluefin	Area 1	585 103	111 912	19.1	7	0.063	M	39	(17 - 77)	100.0
Bigeye	Area 4	288 910	39 004	13.5	0	0.000	M	14	(3 - 35)	100.0
Other	Area 1	16 178	0	0.0	-		M	3	(0 - 11)	100.0
Swordfish	Area 1	20 480	3 000	14.6	0	0.000	M	2	(0 - 9)	100.0
Swordfish	Area 4	13 940	3 290	23.6	0	0.000	M	1	(0 - 5)	100.0
Albacore	Area 1	7 800	0	0.0	-		M	1	(0 - 3)	100.0
Swordfish	Area 3	7 280	0	0.0	-		M	0	(0 - 3)	100.0
Bigeye	Area 3	7 490	0	0.0	-		M	0	(0 - 3)	100.0
Albacore	Area 4	0								
S. Bluefin	Area 4	0								
Other	Area 4	0								
2007–08										
Bigeye	Area 1	879 017	15 985	1.8	4	0.250	M	93	(35 - 218)	100.0
S. Bluefin	Area 3	654 625	254 208	38.8	17	0.067	M	45	(22 - 97)	100.0
S. Bluefin	Area 1	448 700	90 964	20.3	5	0.055	M	26	(12 - 54)	100.0
Bigeye	Area 4	88 812	8 360	9.4	0	0.000	M	7	(0 - 21)	100.0
Other	Area 1	31 705	0	0.0	-		M	5	(0 - 16)	100.0
Swordfish	Area 1	83 630	17 540	21.0	0	0.000	M	7	(1 - 20)	100.0
Swordfish	Area 4	35 500	3 350	9.4	0	0.000	M	3	(0 - 12)	100.0
Albacore	Area 1	0								
Swordfish	Area 3	6 200	0	0.0	-		M	1	(0 - 6)	100.0
Bigeye	Area 3	0								
Albacore	Area 4	600	0	0.0	-		M	0	(0 - 3)	100.0
S. Bluefin	Area 4	1 500	0	0.0	-		M	0	(0 - 1)	100.0
Other	Area 4	2 750	0	0.0	-		M	0	(0 - 4)	100.0

Table 39: Summary of other albatross captures in surface longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	3 106 028	807 631	26.0	50	0.062	M	256	(135 - 467)	100.0
2007–08	2 233 039	390 407	17.5	26	0.067	M	187	(89 - 360)	100.0
2006–07	3 746 672	956 819	25.5	123	0.129	M	715	(371 - 1 372)	100.0
2005–06	3 687 569	636 796	17.3	23	0.036	M	310	(139 - 605)	100.0
2004–05	3 676 795	703 669	19.1	30	0.043	M	200	(94 - 392)	100.0
2003–04	7 382 293	1 464 465	19.8	42	0.029	M	274	(123 - 549)	100.0
2002–03	10 781 875	1 874 448	17.4	73	0.039	M	513	(226 - 1 061)	100.0
2001–02	10 876 381	918 159	8.4	71	0.077	M	810	(417 - 1 529)	100.0
2000–01	9 761 448	1 023 868	10.5	13	0.013	M	191	(78 - 408)	99.9
1999–00	8 286 120	793 770	9.6	29	0.037	M	492	(185 - 1 020)	100.0
1998–99	6 845 781	1 242 610	18.2	53	0.043	M	445	(197 - 951)	99.8

[s] All observed captures by species: Buller's albatross (351), Campbell albatross (38), albatrosses (unidentified) (36), wandering albatross (unidentified) (34), Gibson's albatross (21), antipodean albatross (14), Salvin's albatross (12), black-browed albatross (unidentified) (9), southern black-browed albatross (6), southern royal albatross (6), light-mantled sooty albatross (2), grey-headed albatross (2), Pacific albatross (1), northern royal albatross (1)

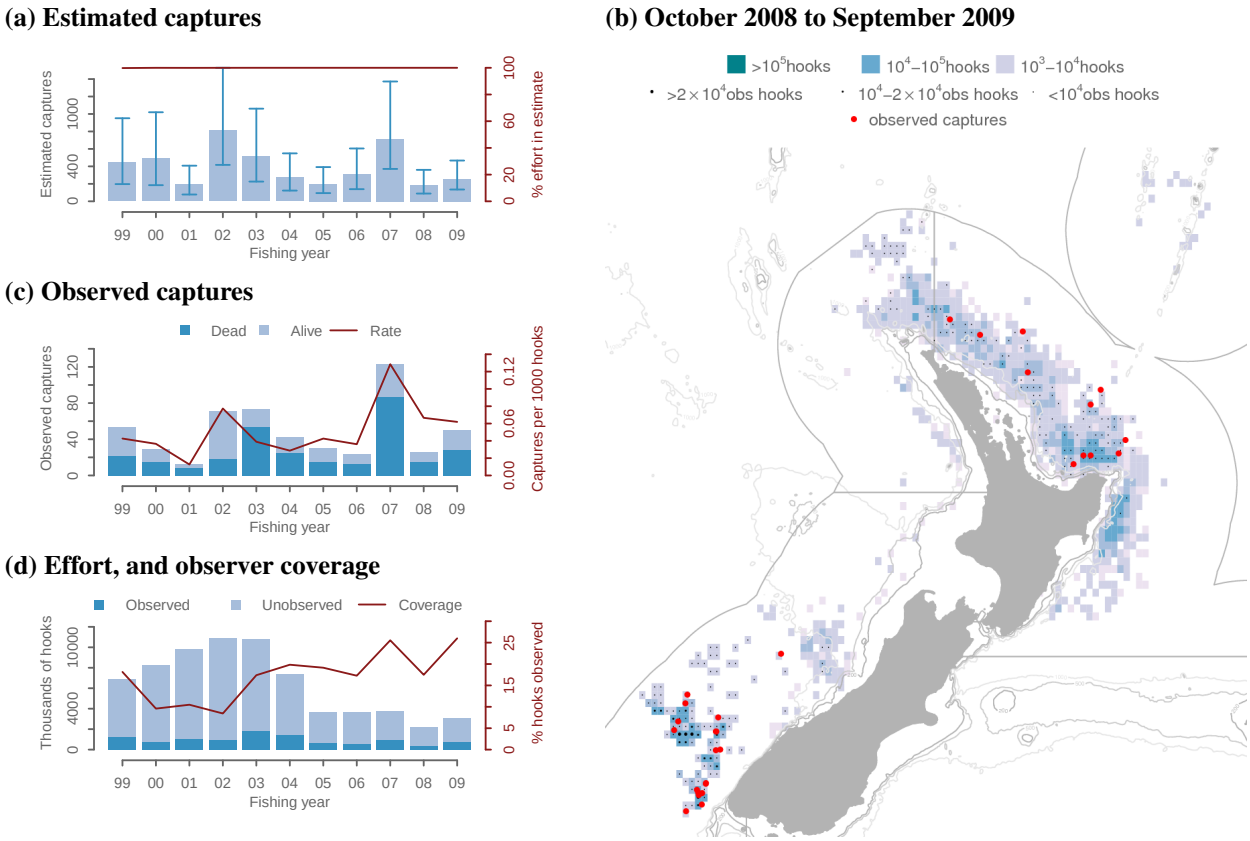

Figure 18: Other albatross captures in surface longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.14.3 Other albatrosses, bottom longline, New Zealand EEZ

Table 40: Summary of other albatross captures in bottom longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Small ling	Chatham Rise	2 957 030	498 750	16.9	0	0.000	R	86	(23 - 170)	100.0
Small bluenose	Chatham Rise	944 770	5 250	0.6	0	0.000	R	16	(0 - 37)	100.0
Large ling	Chatham Rise	6 382 948	1 824 408	28.6	2	0.001	M	14	(3 - 36)	100.0
Small other	North East	847 422	11 776	1.4	0	0.000	R	6	(0 - 19)	100.0
Large ling	Subantarctic	2 786 330	1 391 250	49.9	0	0.000	M	2	(0 - 10)	100.0
Small bluenose	North East	1 569 102	0	0.0	-		N			
2007–08										
Small ling	Chatham Rise	2 410 020	235 800	9.8	0	0.000	R	76	(21 - 151)	100.0
Small bluenose	Chatham Rise	2 786 303	164 525	5.9	3	0.018	R	48	(3 - 105)	100.0
Large ling	Chatham Rise	5 612 870	1 375 300	24.5	3	0.002	M	11	(3 - 28)	100.0
Small other	North East	1 006 656	73 000	7.3	1	0.014	R	7	(1 - 22)	100.0
Large ling	Subantarctic	3 591 200	1 381 800	38.5	0	0.000	M	3	(0 - 15)	100.0
Small bluenose	North East	1 604 904	42 550	2.7	3	0.071	N			

Table 41: Summary of other albatross captures in bottom longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	37 389 649	3 804 128	10.2	2	0.001	B	125	(56 - 212)	69.6
2007–08	41 467 059	3 598 918	8.7	10	0.003	B	150	(74 - 242)	68.8
2006–07	38 389 449	2 343 955	6.1	36	0.015	B	170	(99 - 258)	73.8
2005–06	37 125 639	3 828 459	10.3	6	0.002	B	85	(41 - 138)	78.1
2004–05	41 840 933	2 927 928	7.0	1	0.000	B	155	(71 - 259)	80.9
2003–04	43 449 733	5 002 370	11.5	9	0.002	B	100	(50 - 163)	84.4
2002–03	37 753 336	11 308 295	30.0	18	0.002	B	70	(41 - 108)	83.8
2001–02	47 024 332	7 547 517	16.1	21	0.003	B	148	(76 - 233)	89.3
2000–01	51 024 367	5 248 902	10.3	93	0.018	B	221	(150 - 311)	83.9
1999–00	53 277 149	3 611 278	6.8	45	0.012	B	230	(122 - 369)	89.5
1998–99	55 487 193	3 097 198	5.6	1	0.000	B	197	(89 - 330)	87.7

[s] All observed captures by species: Salvin's albatross (179), Chatham albatross (23), albatrosses (unidentified) (17), Buller's albatross (8), wandering albatross (unidentified) (6), Campbell albatross (3), southern black-browed albatross (2), Indian yellow-nosed albatross (1), black-browed albatross (unidentified) (1), Pacific albatross (1), southern royal albatross (1)

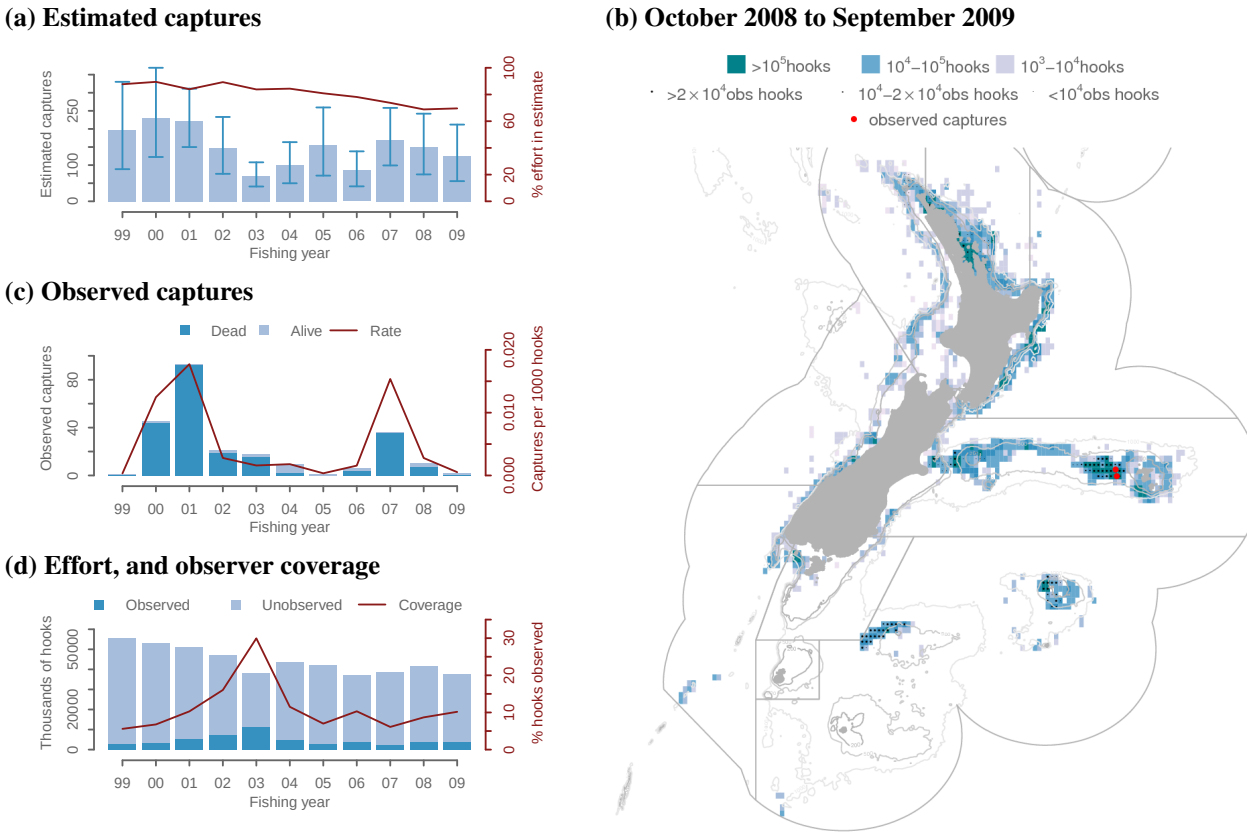

Figure 19: Other albatross captures in bottom longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.15 Other bird captures

3.15.1 Other birds, all trawl, New Zealand EEZ

Table 42: Summary of other bird captures in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Squid	Stewart-Snares	1 805	532	29.5	23	4.32	M	35	(26 - 50)	100.0
Inshore	Chatham Rise	8 951	476	5.3	33	6.93	N			
Scampi	North East	804	91	11.3	2	2.20	M	30	(6 - 86)	100.0
Squid	Auckland Is.	1 925	761	39.5	14	1.84	M	28	(17 - 45)	100.0
Hoki	Chatham Rise	3 994	569	14.2	1	0.18	M	15	(5 - 30)	100.0
Deepwater	Chatham Rise	2 966	1 403	47.3	2	0.14	M	9	(3 - 19)	100.0
Scampi	Chatham Rise	1 306	204	15.6	2	0.98	M	8	(2 - 20)	100.0
Middle depth	Stewart-Snares	1 014	251	24.8	5	1.99	M	7	(5 - 12)	100.0
Middle depth	Chatham Rise	2 723	248	9.1	1	0.40	M	6	(1 - 16)	100.0
Hoki	West Coast SI	1 170	501	42.8	2	0.40	M	6	(2 - 14)	100.0
Hake	West Coast SI	1 003	209	20.8	0	0.00	M	6	(0 - 17)	100.0
Jack mackerel	West Coast NI	1 800	680	37.8	2	0.29	M	6	(2 - 13)	100.0
Hoki	Cook Strait	1 843	173	9.4	2	1.16	M	6	(2 - 13)	100.0
SBW	Subantarctic	1 184	296	25.0	0	0.00	M	4	(0 - 14)	100.0
Middle depth	West Coast SI	997	40	4.0	0	0.00	M	4	(0 - 11)	100.0
Hoki	Stewart-Snares	805	301	37.4	1	0.33	M	3	(1 - 9)	100.0
Middle depth	North East	161	37	23.0	1	2.70	M	2	(1 - 9)	100.0
Inshore	Stewart-Snares	6 557	333	5.1	2	0.60	N			
Jack mackerel	West Coast SI	221	98	44.3	1	1.02	M	1	(1 - 3)	100.0
Deepwater	Stewart-Snares	143	72	50.3	1	1.39	M	1	(1 - 2)	100.0
Ling	Stewart-Snares	375	69	18.4	0	0.00	M	1	(0 - 4)	100.0
Deepwater	Subantarctic	1 417	496	35.0	0	0.00	M	1	(0 - 3)	100.0
Ling	Subantarctic	120	52	43.3	0	0.00	M	0	(0 - 1)	100.0
Inshore	West Coast SI	6 315	356	5.6	0	0.00	N			
2007–08										
Squid	Stewart-Snares	2 412	864	35.8	2	0.23	M	9	(3 - 20)	100.0
Inshore	Chatham Rise	7 923	8	0.1	0	0.00	N			
Scampi	North East	843	145	17.2	5	3.45	M	17	(6 - 43)	100.0
Squid	Auckland Is.	1 265	590	46.6	7	1.19	M	11	(7 - 18)	100.0
Hoki	Chatham Rise	4 481	751	16.8	3	0.40	M	11	(4 - 21)	100.0
Deepwater	Chatham Rise	3 244	1 320	40.7	3	0.23	M	6	(3 - 12)	100.0
Scampi	Chatham Rise	2 014	185	9.2	0	0.00	M	5	(0 - 14)	100.0
Middle depth	Stewart-Snares	1 014	82	8.1	0	0.00	M	1	(0 - 5)	100.0
Middle depth	Chatham Rise	2 657	225	8.5	0	0.00	M	3	(0 - 7)	100.0
Hoki	West Coast SI	1 388	462	33.3	1	0.22	M	4	(1 - 9)	100.0
Hake	West Coast SI	1 084	320	29.5	1	0.31	M	3	(1 - 9)	100.0
Jack mackerel	West Coast NI	2 195	710	32.3	0	0.00	M	2	(0 - 7)	100.0
Hoki	Cook Strait	1 759	204	11.6	0	0.00	M	2	(0 - 5)	100.0
SBW	Subantarctic	816	331	40.6	1	0.30	M	2	(1 - 7)	100.0
Middle depth	West Coast SI	1 340	54	4.0	1	1.85	M	3	(1 - 8)	100.0
Hoki	Stewart-Snares	743	341	45.9	0	0.00	M	1	(0 - 4)	100.0
Middle depth	North East	194	18	9.3	0	0.00	M	1	(0 - 6)	100.0
Inshore	Stewart-Snares	7 287	0	0.0	-		N			
Jack mackerel	West Coast SI	255	80	31.4	0	0.00	M	0	(0 - 2)	100.0
Deepwater	Stewart-Snares	131	61	46.6	0	0.00	M	0	(0 - 1)	100.0
Ling	Stewart-Snares	694	136	19.6	1	0.74	M	2	(1 - 4)	100.0
Deepwater	Subantarctic	1 434	839	58.5	2	0.24	M	2	(2 - 3)	100.0
Ling	Subantarctic	205	55	26.8	1	1.82	M	1	(1 - 3)	100.0
Inshore	West Coast SI	6 353	41	0.6	1	2.44	N			

Table 43: Summary of other bird captures in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	87 213	9 791	11.2	95	0.97	M	249	(180 - 347)	43.2
2007–08	89 223	9 036	10.1	29	0.32	M	107	(70 - 160)	44.1
2006–07	103 793	7 918	7.6	22	0.28	M	78	(43 - 132)	42.7
2005–06	109 982	6 554	6.0	26	0.40	M	144	(88 - 221)	43.7
2004–05	120 476	7 710	6.4	52	0.67	M	313	(202 - 472)	44.2
2003–04	120 878	6 546	5.4	21	0.32	M	155	(93 - 246)	47.2
2002–03	130 177	6 835	5.3	22	0.32	M	174	(102 - 273)	51.2
2001–02	127 883	7 716	6.0	11	0.14	R	297	(238 - 362)	50.2
2000–01	134 243	9 114	6.8	79	0.87	R	362	(301 - 430)	50.0
1999–00	139 057	7 650	5.5	26	0.34	R	309	(251 - 373)	49.9
1998–99	153 412	7 257	4.7	59	0.81	R	324	(273 - 378)	47.5

[s] All observed captures by species: petrel (unidentified) (76), Cape petrels (67), seabird – small (60), short-tailed shearwater (33), spotted shag (32), seabird – large (31), flesh-footed shearwater (28), grey petrel (19), prions (unidentified) (14), common diving petrel (11), prions and shearwaters (10), northern giant petrel (10), fairy prion (9), antarctic prion (7), seabird (unspecified) (7), Westland petrel (6), black petrel (4), giant petrels (unidentified) (4), storm petrels (4), black-bellied storm petrel (2), other species (8)

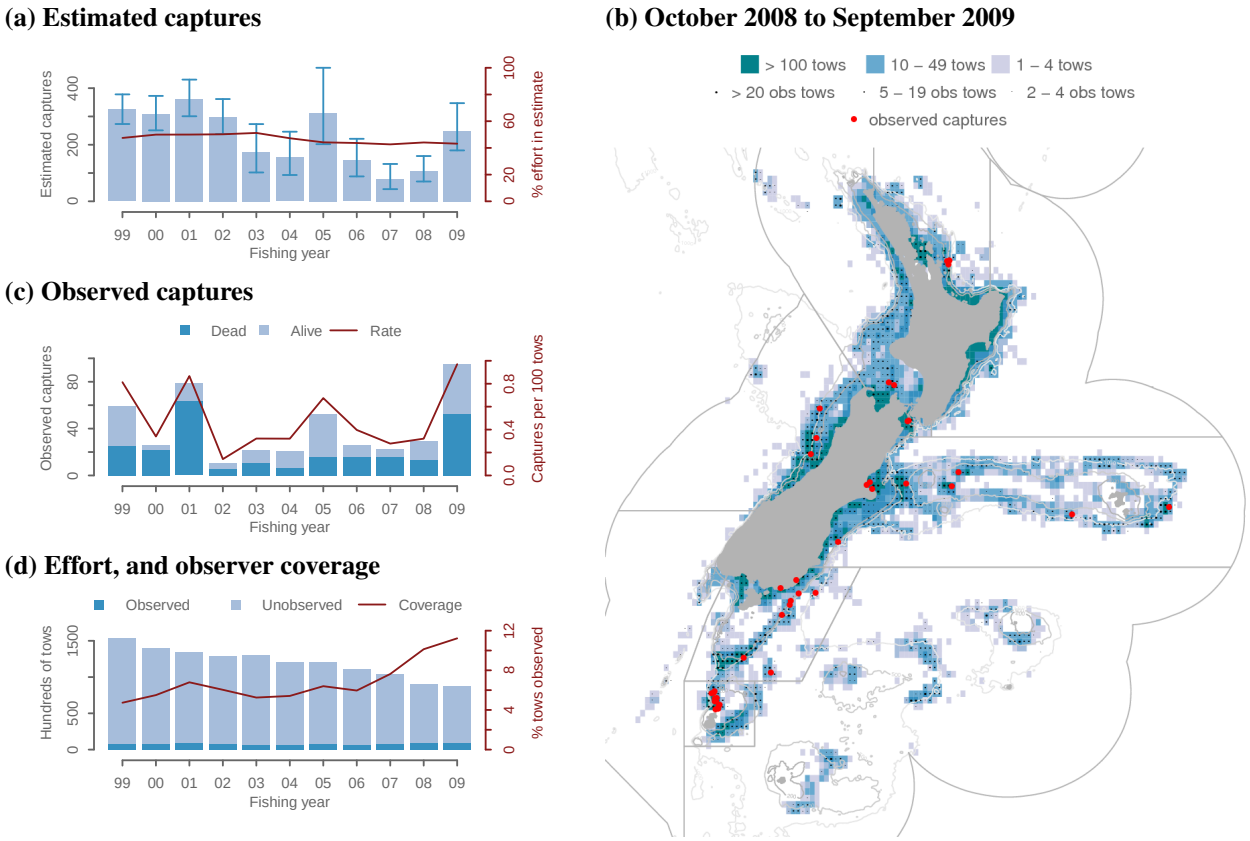

Figure 20: Other bird captures in all trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.15.2 Other birds, surface longline, New Zealand EEZ

Table 44: Summary of other bird captures in surface longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Bigeye	Area 1	1 270 417	45 495	3.6	3	0.066	M	240	(87 - 567)	100.0
Bigeye	Area 4	288 910	39 004	13.5	0	0.000	M	30	(5 - 83)	100.0
S. Bluefin	Area 1	585 103	111 912	19.1	6	0.054	M	26	(11 - 56)	100.0
Other	Area 1	16 178	0	0.0	-		M	5	(0 - 19)	100.0
Swordfish	Area 1	20 480	3 000	14.6	0	0.000	M	3	(0 - 13)	100.0
S. Bluefin	Area 3	888 430	604 930	68.1	1	0.002	M	1	(1 - 3)	100.0
Swordfish	Area 4	13 940	3 290	23.6	0	0.000	M	1	(0 - 4)	100.0
Albacore	Area 1	7 800	0	0.0	-		M	1	(0 - 6)	100.0
Swordfish	Area 3	7 280	0	0.0	-		M	0	(0 - 0)	100.0
Bigeye	Area 3	7 490	0	0.0	-		M	0	(0 - 0)	100.0
Albacore	Area 4	0								
S. Bluefin	Area 4	0								
Other	Area 4	0								
2007–08										
Bigeye	Area 1	879 017	15 985	1.8	2	0.125	M	165	(38 - 508)	100.0
Bigeye	Area 4	88 812	8 360	9.4	0	0.000	M	7	(0 - 23)	100.0
S. Bluefin	Area 1	448 700	90 964	20.3	1	0.011	M	14	(3 - 34)	100.0
Other	Area 1	31 705	0	0.0	-		M	6	(0 - 22)	100.0
Swordfish	Area 1	83 630	17 540	21.0	1	0.057	M	7	(1 - 25)	100.0
S. Bluefin	Area 3	654 625	254 208	38.8	0	0.000	M	0	(0 - 2)	100.0
Swordfish	Area 4	35 500	3 350	9.4	0	0.000	M	1	(0 - 7)	100.0
Albacore	Area 1	0								
Swordfish	Area 3	6 200	0	0.0	-		M	0	(0 - 0)	100.0
Bigeye	Area 3	0								
Albacore	Area 4	600	0	0.0	-		M	1	(0 - 4)	100.0
S. Bluefin	Area 4	1 500	0	0.0	-		M	0	(0 - 1)	100.0
Other	Area 4	2 750	0	0.0	-		M	0	(0 - 3)	100.0

Table 45: Summary of other bird captures in surface longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	3 106 028	807 631	26.0	10	0.012	M	307	(120 - 693)	100.0
2007–08	2 233 039	390 407	17.5	4	0.010	M	202	(57 - 589)	100.0
2006–07	3 746 672	956 819	25.5	29	0.030	M	421	(205 - 843)	100.0
2005–06	3 687 569	636 796	17.3	11	0.017	M	508	(221 - 1 083)	100.0
2004–05	3 676 795	703 669	19.1	5	0.007	M	243	(66 - 572)	100.0
2003–04	7 382 293	1 464 465	19.8	7	0.005	M	727	(256 - 1 523)	100.0
2002–03	10 781 875	1 874 448	17.4	27	0.014	M	1 251	(426 - 2 636)	100.0
2001–02	10 876 381	918 159	8.4	77	0.084	M	2 016	(1 032 - 3 917)	100.0
2000–01	9 761 448	1 023 868	10.5	33	0.032	M	1 033	(485 - 1 876)	99.9
1999–00	8 286 120	793 770	9.6	32	0.040	M	1 867	(878 - 3 956)	100.0
1998–99	6 845 781	1 242 610	18.2	22	0.018	M	1 334	(507 - 3 281)	99.8

[s] All observed captures by species: flesh-footed shearwater (139), grey petrel (52), black petrel (22), great-winged petrel (19), Cape petrels (6), petrel (unidentified) (5), Westland petrel (5), seabird – large (4), southern giant petrel (2), white-headed petrel (2), seabird (unspecified) (1)

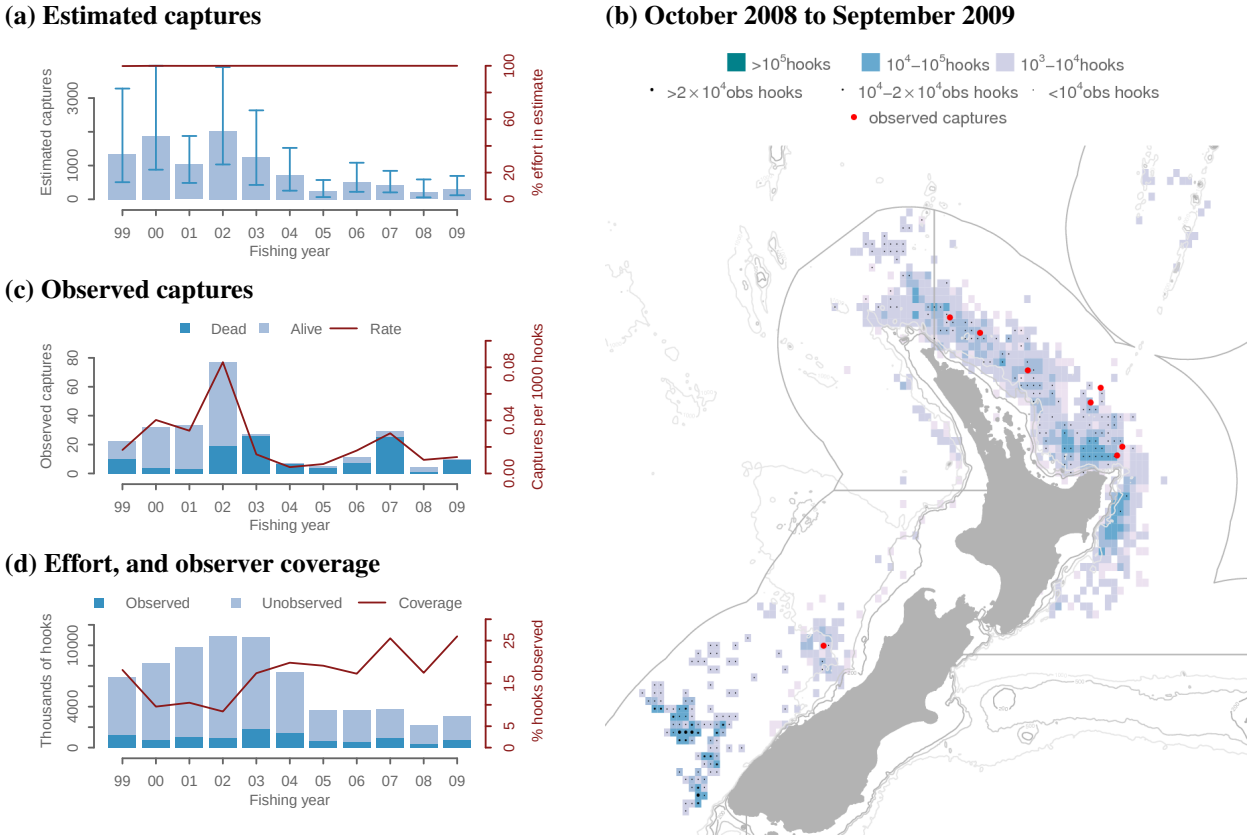

Figure 21: Other bird captures in surface longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.15.3 Other birds, bottom longline, New Zealand EEZ

Table 46: Summary of other bird captures in bottom longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Small snapper	North East	8 730 326	46 424	0.5	21	0.452	M	673	(375 - 1 173)	100.0
Small other	North East	847 422	11 776	1.4	1	0.085	R	56	(6 - 133)	100.0
Small ling	Chatham Rise	2 957 030	498 750	16.9	4	0.008	R	17	(8 - 27)	100.0
Large ling	Chatham Rise	6 382 948	1 824 408	28.6	0	0.000	M	8	(0 - 33)	100.0
Large ling	Subantarctic	2 786 330	1 391 250	49.9	2	0.001	M	4	(2 - 12)	100.0
Small other	West Coast NI	1 011 095	5 770	0.6	3	0.520	N			
Large ling	Puysegur	249 850	0	0.0	-		M	1	(0 - 4)	100.0
2007–08										
Small snapper	North East	8 910 037	0	0.0	-		M	644	(293 - 1 253)	100.0
Small other	North East	1 006 656	73 000	7.3	9	0.123	R	71	(15 - 156)	100.0
Small ling	Chatham Rise	2 410 020	235 800	9.8	0	0.000	R	12	(3 - 21)	100.0
Large ling	Chatham Rise	5 612 870	1 375 300	24.5	5	0.004	M	42	(15 - 90)	100.0
Large ling	Subantarctic	3 591 200	1 381 800	38.5	0	0.000	M	31	(6 - 82)	100.0
Small other	West Coast NI	902 025	5 000	0.6	0	0.000	N			
Large ling	Puysegur	969 053	108 455	11.2	0	0.000	M	1	(0 - 7)	100.0

Table 47: Summary of other bird captures in bottom longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	37 389 649	3 804 128	10.2	31	0.008	B	763	(454 - 1 267)	69.6
2007–08	41 467 059	3 598 918	8.7	14	0.004	B	802	(430 - 1 411)	68.8
2006–07	38 389 449	2 343 955	6.1	9	0.004	B	791	(391 - 1 478)	73.8
2005–06	37 125 639	3 828 459	10.3	18	0.005	B	883	(484 - 1 553)	78.1
2004–05	41 840 933	2 927 928	7.0	15	0.005	B	899	(505 - 1 551)	80.9
2003–04	43 449 733	5 002 370	11.5	12	0.002	B	1 117	(613 - 1 918)	84.4
2002–03	37 753 336	11 308 295	30.0	94	0.008	B	1 332	(732 - 2 425)	83.8
2001–02	47 024 332	7 547 517	16.1	36	0.005	B	1 557	(1 060 - 2 179)	89.3
2000–01	51 024 367	5 248 902	10.3	218	0.042	B	1 968	(1 402 - 2 643)	83.9
1999–00	53 277 149	3 611 278	6.8	87	0.024	B	2 350	(1 639 - 3 307)	89.5
1998–99	55 487 193	3 097 198	5.6	86	0.028	B	1 888	(1 303 - 2 627)	87.7

[s] All observed captures by species: grey petrel (420), Cape petrels (50), flesh-footed shearwater (37), petrel (unidentified) (30), black petrel (20), northern giant petrel (8), Buller's shearwater (7), common diving petrel (7), great-winged petrel (6), southern giant petrel (5), giant petrels (unidentified) (4), seabird – small (4), storm petrels (3), Australasian gannet (2), penguins (2), prions (unidentified) (2), seabird (unspecified) (2), fluttering shearwater (2), seagull (2), broad-billed prion (1), other species (6)

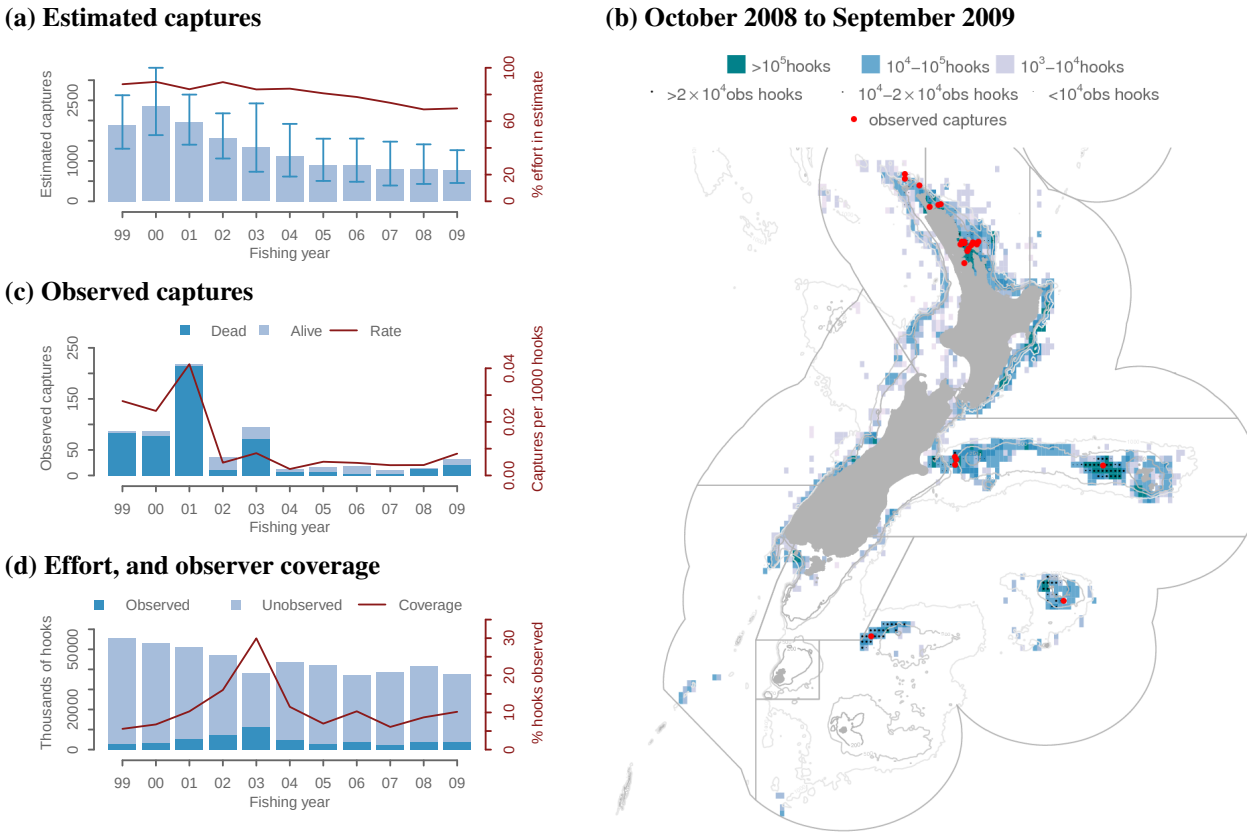

Figure 22: Other bird captures in bottom longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.16 New Zealand sea lion interactions

3.16.1 New Zealand sea lions, all trawl, New Zealand EEZ

Table 48: Summary of New Zealand sea lion interactions in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated interactions with 95% confidence intervals, and percentage of tows included in the estimate. The estimated number of interactions may be interpreted as the number of animals that would have been caught if no SLEDs were used in squid trawl fisheries. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Tows	No. obs	% obs	Capt.	Rate	Type	Est. interactions		% inc.
2008–09										
Squid	Auckland Is.	1 925	761	39.5	2	0.26	M	57	(15 - 129)	100.0
Scampi	Auckland Is.	1 457	61	4.2	1	1.64	R	15	(6 - 24)	100.0
Squid	Stewart-Snares	1 805	532	29.5	0	0.00	R	1	(1 - 2)	100.0
SBW	Subantarctic	1 184	296	25.0	0	0.00	M	1	(0 - 6)	100.0
Middle depth	Stewart-Snares	1 014	251	24.8	0	0.00	R	1	(0 - 2)	100.0
Hoki	Stewart-Snares	805	301	37.4	0	0.00	R	0	(0 - 1)	100.0
2007–08										
Squid	Auckland Is.	1 265	590	46.6	5	0.85	M	64	(24 - 130)	100.0
Scampi	Auckland Is.	1 327	93	7.0	0	0.00	R	12	(5 - 20)	100.0
Squid	Stewart-Snares	2 412	864	35.8	0	0.00	R	1	(1 - 2)	100.0
SBW	Subantarctic	816	331	40.6	5	1.51	M	7	(5 - 13)	100.0
Middle depth	Stewart-Snares	1 014	82	8.1	0	0.00	R	1	(0 - 2)	100.0
Hoki	Stewart-Snares	743	341	45.9	1	0.29	R	1	(1 - 2)	100.0

Table 49: Summary of New Zealand sea lion interactions in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated interactions with 95% confidence intervals, and percentage of tows included in the estimate. The estimated number of interactions may be interpreted as the number of animals that would have been caught if no SLEDs were used in squid trawl fisheries. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. interactions		% inc.
2008–09	87 213	9 791	11.2	3	0.03	B	74	(31 - 147)	41.0
2007–08	89 223	9 036	10.1	11	0.12	B	87	(45 - 154)	41.9
2006–07	103 793	7 918	7.6	12	0.15	B	106	(60 - 177)	40.9
2005–06	109 982	6 554	6.0	15	0.23	B	176	(93 - 311)	42.2
2004–05	120 476	7 710	6.4	14	0.18	B	175	(93 - 307)	42.6
2003–04	120 878	6 546	5.4	21	0.32	B	205	(114 - 350)	45.2
2002–03	130 177	6 835	5.3	12	0.18	B	67	(42 - 102)	49.3
2001–02	127 883	7 716	6.0	23	0.30	B	99	(66 - 145)	50.2
2000–01	134 243	9 114	6.8	47	0.52	B	86	(63 - 111)	50.0
1999–00	139 057	7 650	5.5	28	0.37	B	92	(63 - 133)	49.9
1998–99	153 412	7 257	4.7	6	0.08	B	40	(26 - 58)	47.5

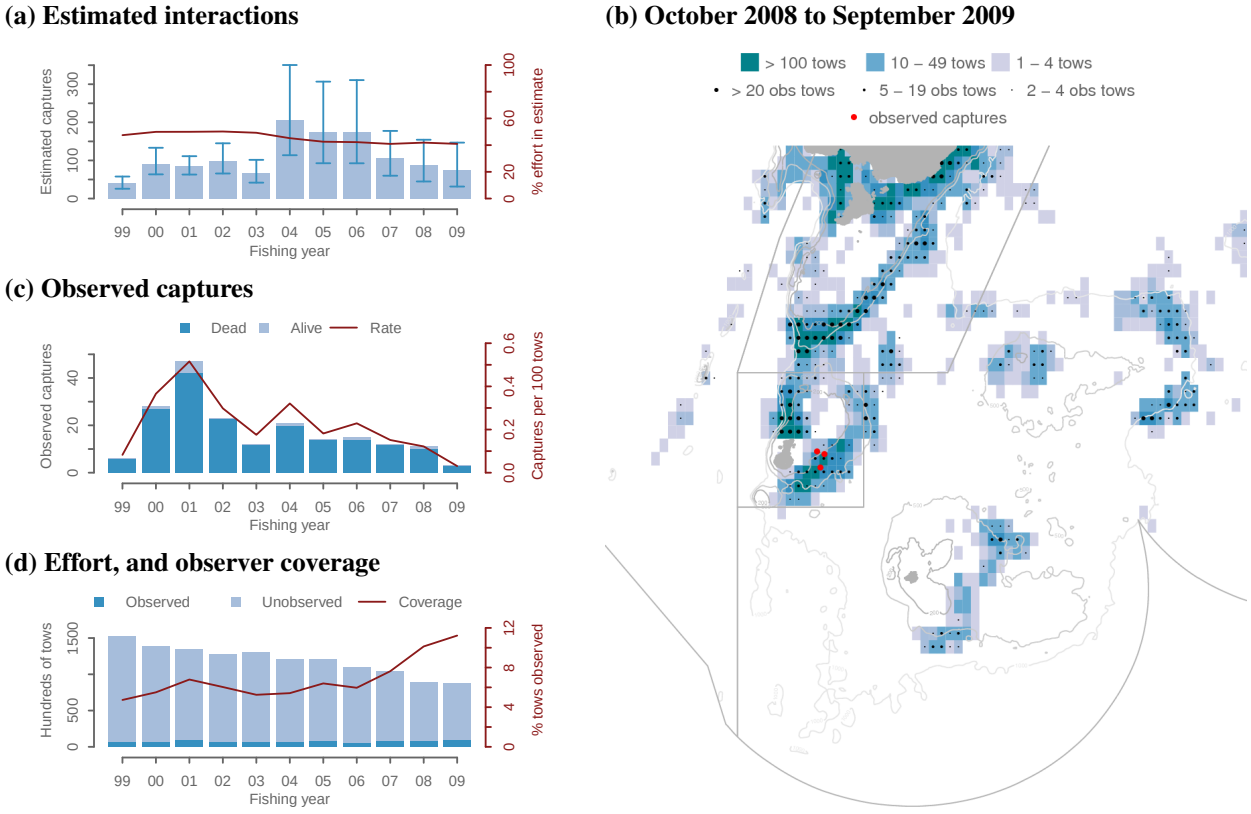

Figure 23: New Zealand sea lion interactions in all trawl fisheries. (a) Estimated interactions, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.17 New Zealand fur seal captures

3.17.1 New Zealand fur seals, all trawl, New Zealand EEZ

Table 50: Summary of New Zealand fur seal captures in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

(a) All captures by fishery

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09									
Hoki	8 172	1 658	20.3	37	2.23	M	191	(112 - 306)	99.2
Middle depth	7 234	735	10.2	2	0.27	M	150	(57 - 307)	99.2
SBW	1 187	299	25.2	17	5.69	M	106	(47 - 207)	100.0
Ling	1 407	146	10.4	0	0.00	M	29	(10 - 61)	87.3
Hake	1 779	350	19.7	5	1.43	M	28	(12 - 51)	100.0
Squid	3 864	1 297	33.6	1	0.08	M	20	(8 - 43)	99.9
Jack mackerel	2 172	814	37.5	8	0.98	M	18	(10 - 33)	100.0
Scampi	3 975	396	10.0	1	0.25	M	6	(1 - 16)	100.0
Deepwater	6 130	2 373	38.7	0	0.00	M	4	(0 - 12)	100.0
Inshore	51 293	1 723	3.4	1	0.06	N			
2007–08									
Hoki	8 773	1 869	21.3	58	3.10	M	290	(180 - 463)	99.2
Middle depth	7 397	435	5.9	9	2.07	M	173	(89 - 312)	99.9
SBW	816	331	40.6	24	7.25	M	76	(37 - 164)	100.0
Ling	2 207	241	10.9	4	1.66	M	45	(22 - 78)	94.7
Hake	1 559	395	25.3	28	7.09	M	53	(38 - 74)	100.0
Squid	4 236	1 456	34.4	6	0.41	M	28	(15 - 49)	100.0
Jack mackerel	2 646	817	30.9	7	0.86	M	29	(13 - 56)	99.8
Scampi	4 807	524	10.9	1	0.19	M	10	(2 - 26)	100.0
Deepwater	6 730	2 810	41.8	4	0.14	M	8	(4 - 18)	100.0
Inshore	50 052	158	0.3	0	0.00	N			

(b) All captures by area

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09									
Cook Strait	3 854	173	4.5	19	10.98	M	195	(89 - 366)	68.1
Subantarctic	2 889	922	31.9	17	1.84	M	109	(51 - 218)	97.9
Chatham Rise	20 866	2 986	14.3	8	0.27	M	100	(53 - 179)	59.4
West Coast SI	10 041	1 271	12.7	19	1.49	M	80	(47 - 125)	40.7
Stewart-Snares	11 058	1 671	15.1	5	0.30	M	38	(19 - 66)	43.7
Auckland Is.	3 505	882	25.2	1	0.11	M	10	(3 - 22)	100.0
West Coast NI	13 064	1 183	9.1	3	0.25	M	10	(4 - 20)	23.9
Puysegur	377	66	17.5	0	0.00	M	8	(1 - 25)	84.1
East of NI	11 445	106	0.9	0	0.00	M	4	(0 - 13)	18.0
North East	10 114	531	5.3	0	0.00	M	0	(0 - 0)	15.5
Kermadec Is.	0								
2007–08									
Cook Strait	3 229	208	6.4	24	11.54	M	212	(101 - 384)	70.4
Subantarctic	2 624	1 310	49.9	30	2.29	M	87	(46 - 168)	99.5
Chatham Rise	21 912	2 559	11.7	15	0.59	M	152	(88 - 251)	63.9
West Coast SI	10 738	957	8.9	57	5.96	M	158	(108 - 228)	41.2
Stewart-Snares	12 453	1 536	12.3	13	0.85	M	64	(37 - 103)	41.5
Auckland Is.	2 743	753	27.5	1	0.13	M	11	(4 - 25)	100.0
West Coast NI	13 635	929	6.8	1	0.11	M	15	(4 - 34)	25.9
Puysegur	765	71	9.3	0	0.00	M	12	(2 - 33)	91.2
East of NI	11 569	218	1.9	0	0.00	M	11	(1 - 32)	19.2
North East	9 555	495	5.2	0	0.00	M	0	(0 - 0)	15.3
Kermadec Is.	0								

Table 51: Summary of New Zealand fur seal captures in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	87 213	9 791	11.2	72	0.74	M	550	(338 - 826)	42.8
2007–08	89 223	9 036	10.1	141	1.56	M	710	(489 - 996)	43.9
2006–07	103 793	7 918	7.6	72	0.91	M	501	(304 - 764)	42.4
2005–06	109 982	6 554	6.0	144	2.20	M	881	(591 - 1 320)	43.5
2004–05	120 476	7 710	6.4	200	2.59	M	1 273	(829 - 1 974)	44.1
2003–04	120 878	6 546	5.4	84	1.28	M	971	(611 - 1 578)	47.1
2002–03	130 177	6 835	5.3	67	0.98	M	807	(494 - 1 238)	51.1
2001–02	127 883	7 716	6.0	157	2.03	R	1 273	(1 164 - 1 394)	50.2
2000–01	134 243	9 114	6.8	170	1.87	R	1 490	(1 348 - 1 649)	50.0
1999–00	139 057	7 650	5.5	203	2.65	R	1 539	(1 400 - 1 693)	49.9
1998–99	153 412	7 257	4.7	190	2.62	R	1 591	(1 454 - 1 744)	47.5

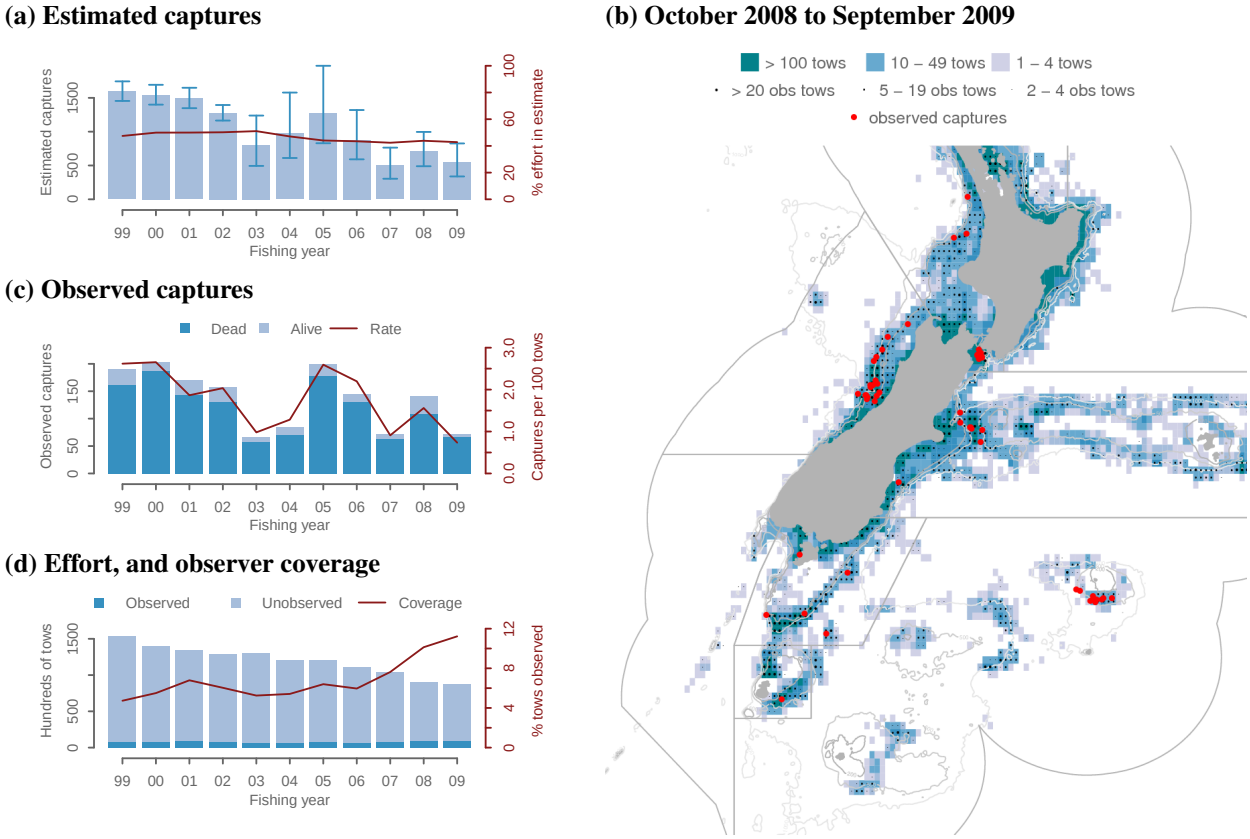

Figure 24: New Zealand fur seal captures in all trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.17.2 New Zealand fur seals, surface longline, New Zealand EEZ

Table 52: Summary of New Zealand fur seal captures in surface longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
S. Bluefin	Area 3	888 430	604 930	68.1	13	0.021	R	27	(25 - 28)	100.0
S. Bluefin	Area 1	585 103	111 912	19.1	9	0.080	R	20	(15 - 26)	100.0
Bigeye	Area 4	288 910	39 004	13.5	0	0.000	R	2	(0 - 5)	100.0
Swordfish	Area 1	20 480	3 000	14.6	0	0.000	R	0	(0 - 1)	100.0
Bigeye	Area 1	1 270 417	45 495	3.6	0	0.000	R	0	(0 - 0)	100.0
Other	Area 1	16 178	0	0.0	-		R	0	(0 - 0)	100.0
Swordfish	Area 4	13 940	3 290	23.6	0	0.000	N			
Albacore	Area 1	7 800	0	0.0	-		R	0	(0 - 0)	100.0
Bigeye	Area 3	7 490	0	0.0	-		N			
Swordfish	Area 3	7 280	0	0.0	-		N			
Albacore	Area 4	0								
S. Bluefin	Area 4	0								
Other	Area 4	0								
2007–08										
S. Bluefin	Area 3	654 625	254 208	38.8	6	0.024	R	25	(23 - 28)	100.0
S. Bluefin	Area 1	448 700	90 964	20.3	2	0.022	R	10	(6 - 15)	100.0
Bigeye	Area 4	88 812	8 360	9.4	2	0.239	R	3	(2 - 4)	100.0
Swordfish	Area 1	83 630	17 540	21.0	0	0.000	R	2	(0 - 5)	100.0
Bigeye	Area 1	879 017	15 985	1.8	0	0.000	R	0	(0 - 0)	100.0
Other	Area 1	31 705	0	0.0	-		R	0	(0 - 0)	100.0
Swordfish	Area 4	35 500	3 350	9.4	0	0.000	N			
Albacore	Area 1	0								
Bigeye	Area 3	0								
Swordfish	Area 3	6 200	0	0.0	-		N			
Albacore	Area 4	600	0	0.0	-		R	0	(0 - 0)	100.0
S. Bluefin	Area 4	1 500	0	0.0	-		R	0	(0 - 0)	100.0
Other	Area 4	2 750	0	0.0	-		N			

Table 53: Summary of New Zealand fur seal captures in surface longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	3 106 028	807 631	26.0	22	0.027	R	49	(43 - 56)	99.2
2007–08	2 233 039	390 407	17.5	10	0.026	R	40	(35 - 46)	98.2
2006–07	3 746 672	956 819	25.5	10	0.010	R	54	(45 - 65)	99.4
2005–06	3 687 569	636 796	17.3	12	0.019	R	43	(32 - 56)	98.8
2004–05	3 676 795	703 669	19.1	20	0.028	R	51	(40 - 64)	98.6
2003–04	7 382 293	1 464 465	19.8	40	0.027	R	100	(85 - 119)	98.7
2002–03	10 781 875	1 874 448	17.4	56	0.030	R	125	(99 - 156)	98.9
2001–02	10 876 381	918 159	8.4	44	0.048	R	110	(90 - 134)	96.7
2000–01	9 761 448	1 023 868	10.5	43	0.042	R	82	(65 - 104)	98.2
1999–00	8 286 120	793 770	9.6	42	0.053	R	81	(69 - 97)	98.8
1998–99	6 845 781	1 242 610	18.2	102	0.082	R	129	(121 - 140)	96.9

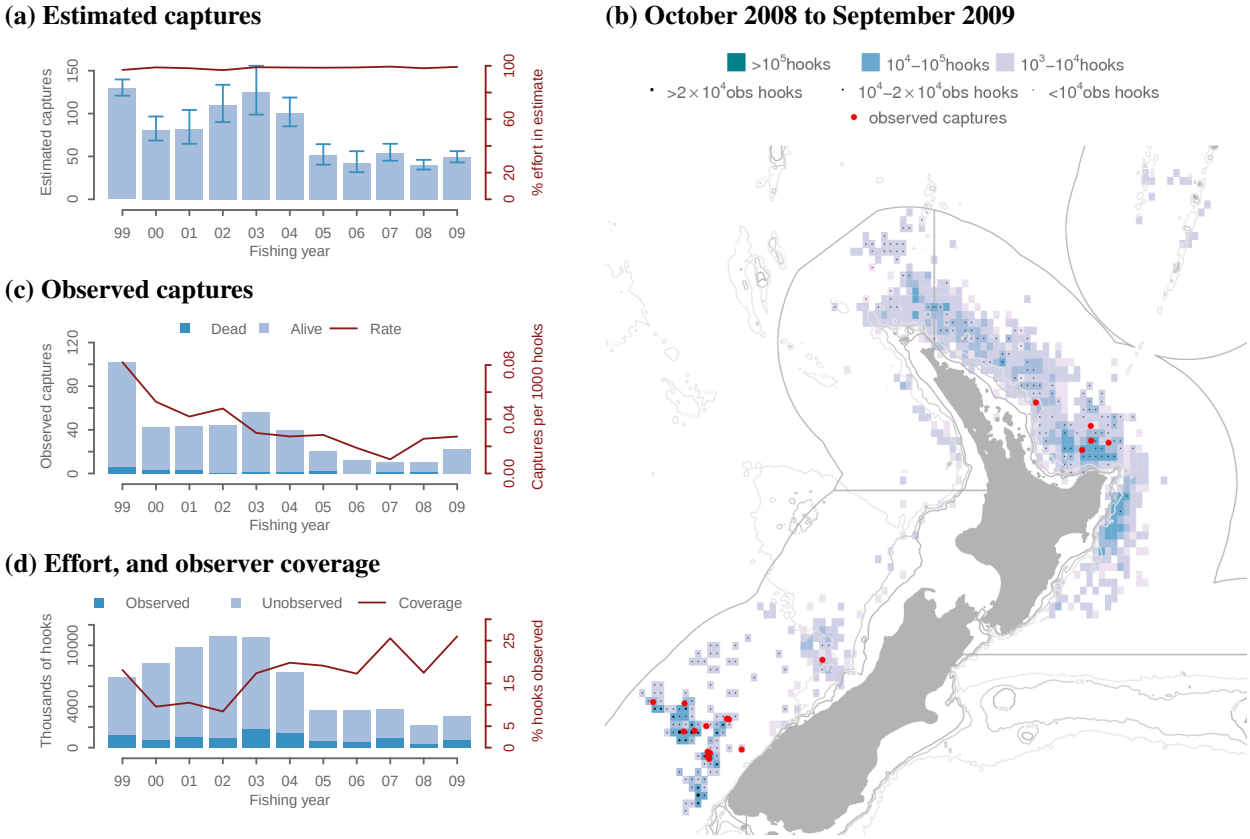

Figure 25: New Zealand fur seal captures in surface longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.18 Other seal captures

3.18.1 Other seals, all trawl, New Zealand EEZ

Table 54: Summary of other seals captures in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Middle depth	Stewart-Snares	1 014	251	24.8	1	0.40	R	2	(1 - 3)	100.0
Scampi	Auckland Is.	1 457	61	4.2	0	0.00	R	1	(0 - 4)	100.0
Hoki	Chatham Rise	3 994	569	14.2	0	0.00	R	0	(0 - 1)	100.0
2007–08										
Middle depth	Stewart-Snares	1 014	82	8.1	0	0.00	R	1	(0 - 2)	100.0
Scampi	Auckland Is.	1 327	93	7.0	0	0.00	R	1	(0 - 4)	100.0
Hoki	Chatham Rise	4 481	751	16.8	1	0.13	R	1	(1 - 2)	100.0

Table 55: Summary of other seals captures in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	87 213	9 791	11.2	1	0.01	R	4	(1 - 7)	41.0
2007–08	89 223	9 036	10.1	1	0.01	R	3	(1 - 7)	41.9
2006–07	103 793	7 918	7.6	0	0.00	R	3	(0 - 6)	40.9
2005–06	109 982	6 554	6.0	0	0.00	R	2	(0 - 6)	42.2
2004–05	120 476	7 710	6.4	1	0.01	R	4	(1 - 7)	42.6
2003–04	120 878	6 546	5.4	0	0.00	R	3	(0 - 6)	45.2
2002–03	130 177	6 835	5.3	1	0.01	R	4	(1 - 8)	49.3
2001–02	127 883	7 716	6.0	0	0.00	R	3	(0 - 7)	50.2
2000–01	134 243	9 114	6.8	0	0.00	R	3	(0 - 7)	50.0
1999–00	139 057	7 650	5.5	0	0.00	R	3	(0 - 7)	49.9
1998–99	153 412	7 257	4.7	0	0.00	R	3	(0 - 8)	47.5

[s] All observed captures by species: seals and sealions (2), leopard seal (1), elephant seal (1)

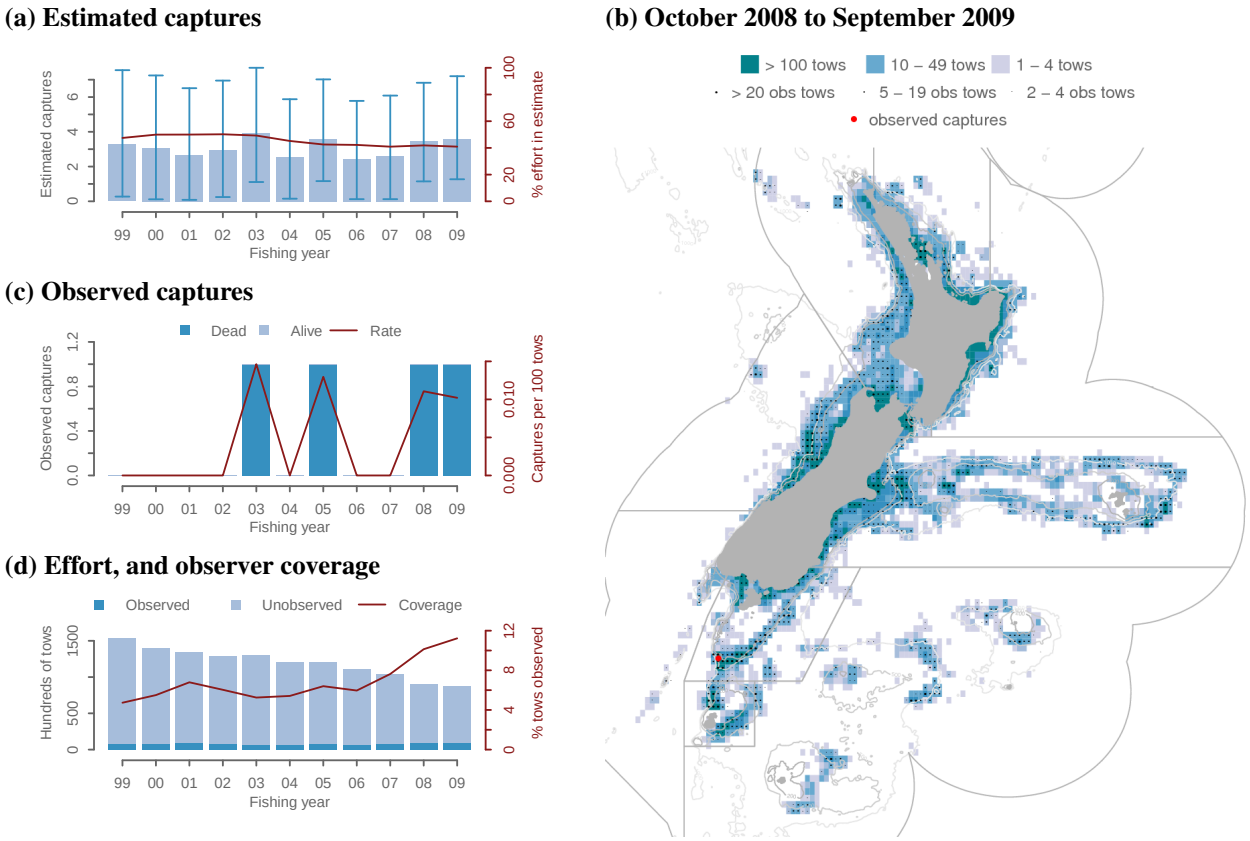

Figure 26: Other seals captures in all trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.19 Dolphin and whale captures

3.19.1 Dolphins and pilot whales, all trawl, New Zealand EEZ

Table 56: Summary of dolphin and pilot whale captures in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Jack mackerel	West Coast NI	1 800	680	37.8	13	1.91	B	32	(17 - 56)	100.0
Middle depth	West Coast NI	765	70	9.2	7	10.00	R	21	(7 - 41)	100.0
Middle depth	West Coast SI	997	40	4.0	0	0.00	R	3	(0 - 10)	100.0
Inshore	West Coast NI	10 205	263	2.6	2	0.76	N			
Jack mackerel	Chatham Rise	68	1	1.5	0	0.00	R	0	(0 - 1)	100.0
Inshore	North East	8 697	295	3.4	0	0.00	N			
2007–08										
Jack mackerel	West Coast NI	2 195	710	32.3	20	2.82	B	49	(28 - 82)	100.0
Middle depth	West Coast NI	970	25	2.6	0	0.00	R	19	(0 - 46)	100.0
Middle depth	West Coast SI	1 340	54	4.0	0	0.00	R	4	(0 - 13)	100.0
Inshore	West Coast NI	10 170	64	0.6	0	0.00	N			
Jack mackerel	Chatham Rise	177	21	11.9	0	0.00	R	1	(0 - 2)	100.0
Inshore	North East	7 991	44	0.6	1	2.27	N			

Table 57: Summary of dolphin and pilot whale captures in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	87 213	9 791	11.2	22	0.22	B	59	(35 - 91)	41.0
2007–08	89 223	9 036	10.1	21	0.23	B	75	(42 - 117)	41.9
2006–07	103 793	7 918	7.6	11	0.14	B	81	(41 - 137)	40.9
2005–06	109 982	6 554	6.0	5	0.08	B	42	(18 - 74)	42.2
2004–05	120 476	7 710	6.4	28	0.36	B	143	(83 - 219)	42.6
2003–04	120 878	6 546	5.4	17	0.26	B	154	(78 - 260)	45.2
2002–03	130 177	6 835	5.3	21	0.31	B	239	(107 - 437)	49.3
2001–02	127 883	7 716	6.0	1	0.01	B	84	(28 - 170)	50.2
2000–01	134 243	9 114	6.8	4	0.04	B	65	(18 - 126)	50.0
1999–00	139 057	7 650	5.5	4	0.05	B	57	(16 - 112)	49.9
1998–99	153 412	7 257	4.7	0	0.00	B	44	(11 - 88)	47.5

[s] All observed captures by species: common dolphin (118), pilot whale (11), dusky dolphin (4), bottlenose dolphin (1)

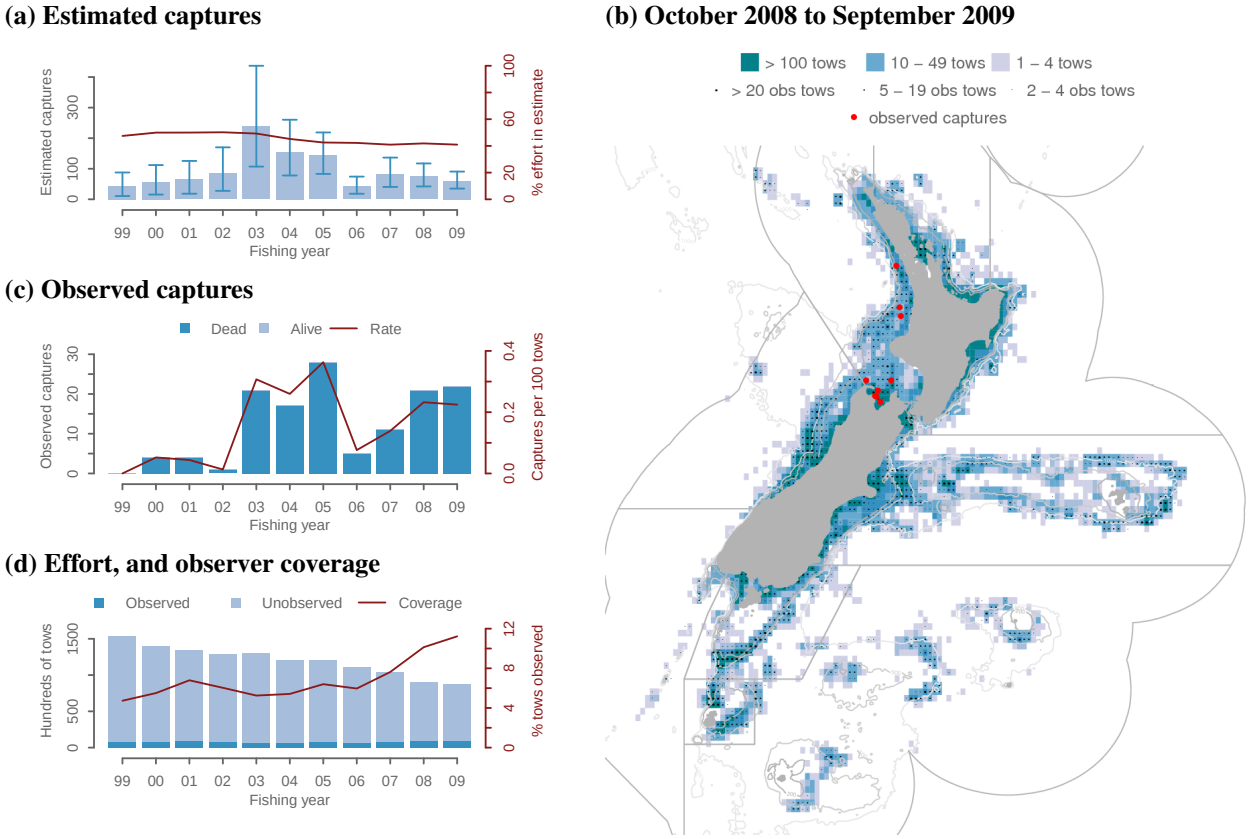

Figure 27: Dolphin and pilot whale captures in all trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.19.2 Whales, surface longline, New Zealand EEZ

Table 58: Summary of whale captures in surface longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
S. Bluefin	Area 1	585 103	111 912	19.1	0	0.000	R	1	(0 - 3)	100.0
Bigeye	Area 4	288 910	39 004	13.5	0	0.000	R	1	(0 - 3)	100.0
S. Bluefin	Area 3	888 430	604 930	68.1	0	0.000	R	0	(0 - 0)	100.0
Bigeye	Area 1	1 270 417	45 495	3.6	0	0.000	R	0	(0 - 0)	100.0
Swordfish	Area 1	20 480	3 000	14.6	0	0.000	R	0	(0 - 0)	100.0
Other	Area 1	16 178	0	0.0	-		R	0	(0 - 0)	100.0
Swordfish	Area 4	13 940	3 290	23.6	0	0.000	N			
Albacore	Area 1	7 800	0	0.0	-		R	0	(0 - 0)	100.0
Bigeye	Area 3	7 490	0	0.0	-		N			
Swordfish	Area 3	7 280	0	0.0	-		N			
Albacore	Area 4	0								
S. Bluefin	Area 4	0								
Other	Area 4	0								
2007–08										
S. Bluefin	Area 1	448 700	90 964	20.3	1	0.011	R	2	(1 - 3)	100.0
Bigeye	Area 4	88 812	8 360	9.4	0	0.000	R	0	(0 - 1)	100.0
S. Bluefin	Area 3	654 625	254 208	38.8	0	0.000	R	0	(0 - 0)	100.0
Bigeye	Area 1	879 017	15 985	1.8	0	0.000	R	0	(0 - 0)	100.0
Swordfish	Area 1	83 630	17 540	21.0	0	0.000	R	0	(0 - 0)	100.0
Other	Area 1	31 705	0	0.0	-		R	0	(0 - 0)	100.0
Swordfish	Area 4	35 500	3 350	9.4	0	0.000	N			
Albacore	Area 1	0								
Bigeye	Area 3	0								
Swordfish	Area 3	6 200	0	0.0	-		N			
Albacore	Area 4	600	0	0.0	-		R	0	(0 - 0)	100.0
S. Bluefin	Area 4	1 500	0	0.0	-		R	0	(0 - 0)	100.0
Other	Area 4	2 750	0	0.0	-		N			

Table 59: Summary of whale captures in surface longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	3 106 028	807 631	26.0	0	0.000	R	2	(0 - 5)	99.2
2007–08	2 233 039	390 407	17.5	1	0.003	R	2	(1 - 4)	98.2
2006–07	3 746 672	956 819	25.5	0	0.000	R	2	(0 - 5)	99.4
2005–06	3 687 569	636 796	17.3	0	0.000	R	2	(0 - 5)	98.8
2004–05	3 676 795	703 669	19.1	1	0.001	R	5	(1 - 9)	98.6
2003–04	7 382 293	1 464 465	19.8	2	0.001	R	7	(2 - 14)	98.7
2002–03	10 781 875	1 874 448	17.4	0	0.000	R	9	(0 - 20)	98.9
2001–02	10 876 381	918 159	8.4	0	0.000	R	8	(0 - 19)	96.7
2000–01	9 761 448	1 023 868	10.5	1	0.001	R	9	(1 - 23)	98.2
1999–00	8 286 120	793 770	9.6	0	0.000	R	6	(0 - 15)	98.8
1998–99	6 845 781	1 242 610	18.2	1	0.001	R	5	(1 - 11)	96.9

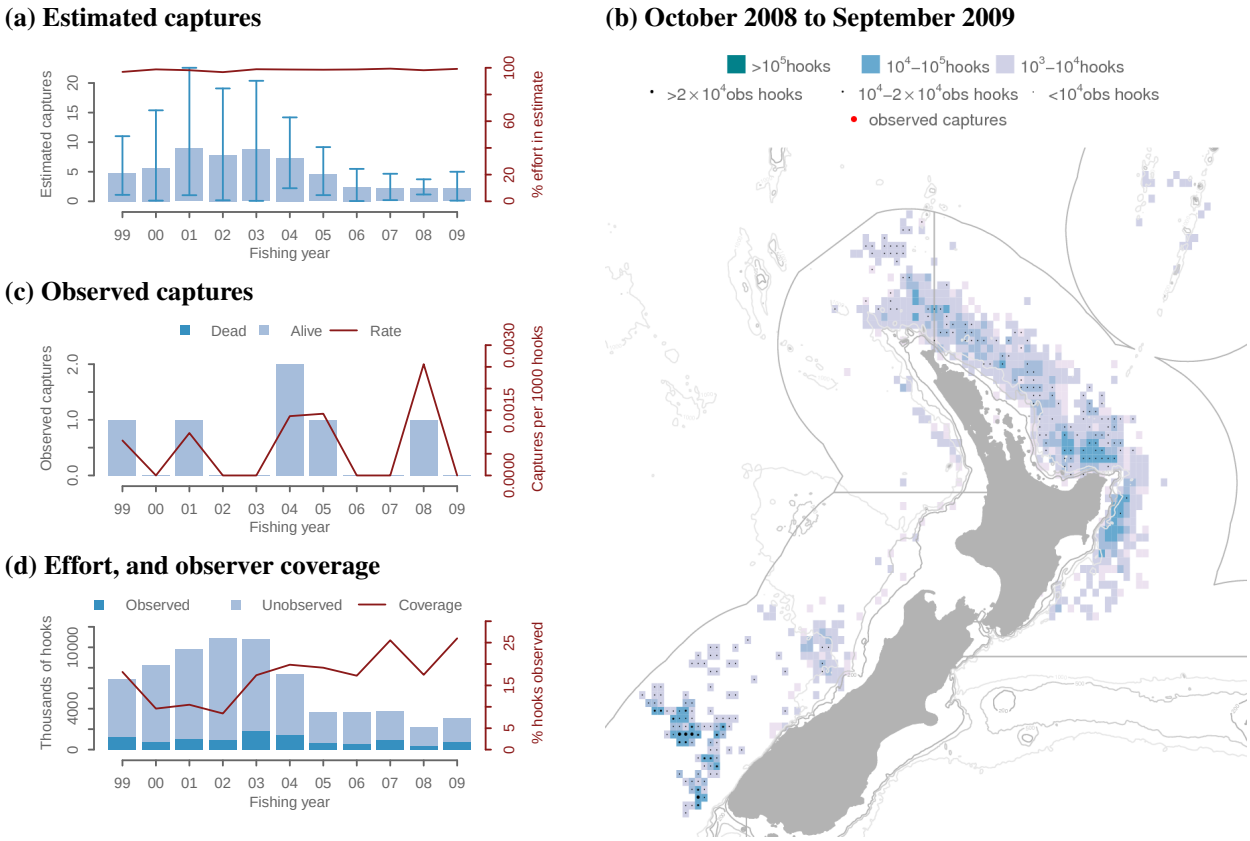

Figure 28: Whale captures in surface longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.20 Turtle captures

3.20.1 Turtles, all trawl, New Zealand EEZ

Table 60: Summary of turtle captures in all trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated		
		Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures	% inc.
2008–09									
Inshore	North East	8 697	295	3.4	1	0.34	N		
2007–08									
Inshore	North East	7 991	44	0.6	0	0.00	N		

Table 61: Summary of turtle captures in all trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	87 213	9 791	11.2	1	0.01	R	1	(1 - 1)	41.0
2007–08	89 223	9 036	10.1	0	0.00	R	0	(0 - 0)	41.9
2006–07	103 793	7 918	7.6	0	0.00	R	0	(0 - 0)	40.9
2005–06	109 982	6 554	6.0	0	0.00	R	0	(0 - 0)	42.2
2004–05	120 476	7 710	6.4	0	0.00	R	0	(0 - 0)	42.6
2003–04	120 878	6 546	5.4	0	0.00	R	0	(0 - 0)	45.2
2002–03	130 177	6 835	5.3	0	0.00	R	0	(0 - 0)	49.3
2001–02	127 883	7 716	6.0	0	0.00	R	0	(0 - 0)	50.2
2000–01	134 243	9 114	6.8	0	0.00	R	0	(0 - 0)	50.0
1999–00	139 057	7 650	5.5	0	0.00	R	0	(0 - 0)	49.9
1998–99	153 412	7 257	4.7	0	0.00	R	0	(0 - 0)	47.5

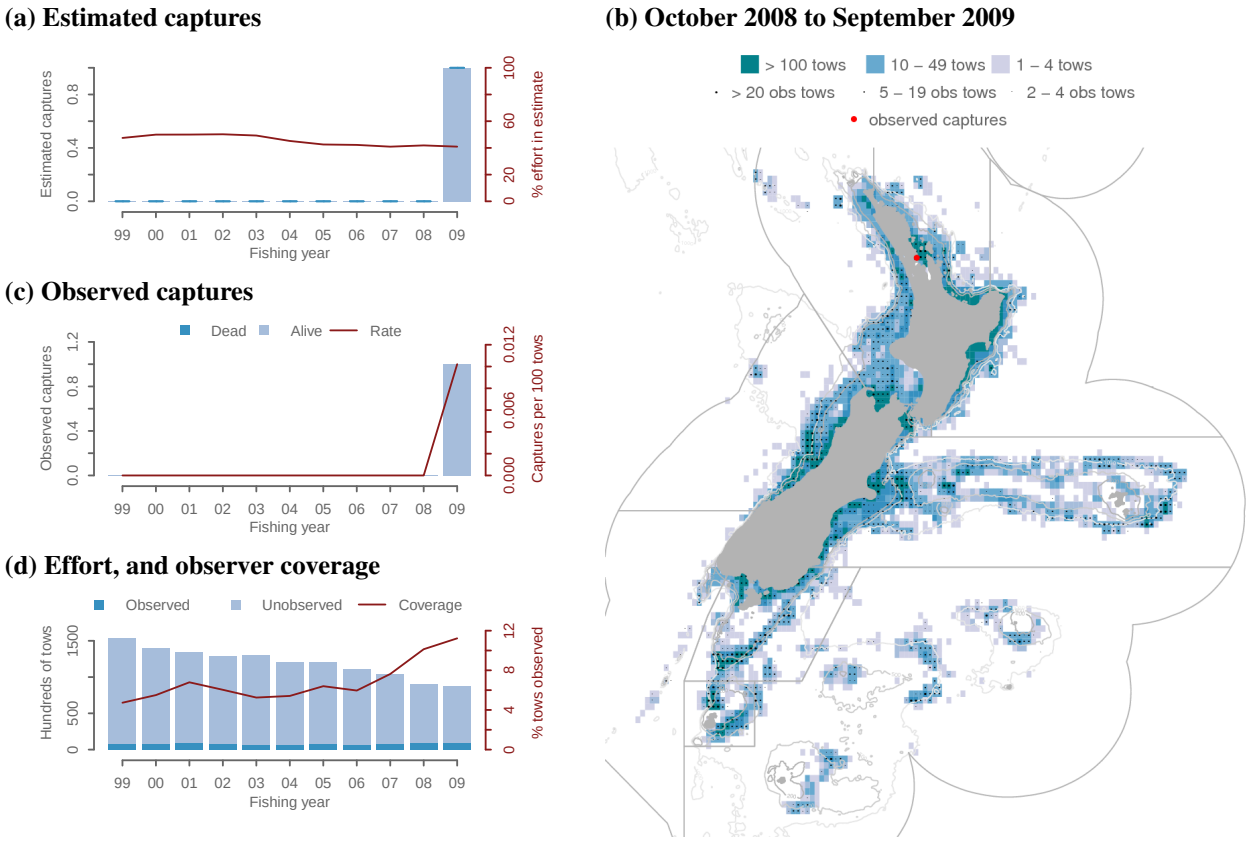

Figure 29: Turtle captures in all trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.20.2 Turtles, surface longline, New Zealand EEZ

Table 62: Summary of turtle captures in surface longline fisheries, broken down by fishing areas, with the number of hooks, number of hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

			Observed				Estimated			
		Hooks	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09										
Bigeye	Area 1	1 270 417	45 495	3.6	0	0.000	R	16	(7 - 27)	100.0
Bigeye	Area 4	288 910	39 004	13.5	2	0.051	R	5	(2 - 9)	100.0
S. Bluefin	Area 1	585 103	111 912	19.1	0	0.000	R	1	(0 - 2)	100.0
Swordfish	Area 1	20 480	3 000	14.6	0	0.000	R	0	(0 - 1)	100.0
S. Bluefin	Area 3	888 430	604 930	68.1	0	0.000	R	0	(0 - 0)	100.0
Other	Area 1	16 178	0	0.0	-		R	0	(0 - 0)	100.0
Swordfish	Area 4	13 940	3 290	23.6	0	0.000	N			
Albacore	Area 1	7 800	0	0.0	-		R	0	(0 - 0)	100.0
Bigeye	Area 3	7 490	0	0.0	-		N			
Swordfish	Area 3	7 280	0	0.0	-		N			
Albacore	Area 4	0								
S. Bluefin	Area 4	0								
Other	Area 4	0								
2007–08										
Bigeye	Area 1	879 017	15 985	1.8	0	0.000	R	11	(5 - 19)	100.0
Bigeye	Area 4	88 812	8 360	9.4	0	0.000	R	1	(0 - 2)	100.0
S. Bluefin	Area 1	448 700	90 964	20.3	0	0.000	R	0	(0 - 1)	100.0
Swordfish	Area 1	83 630	17 540	21.0	1	0.057	R	3	(1 - 6)	100.0
S. Bluefin	Area 3	654 625	254 208	38.8	0	0.000	R	0	(0 - 0)	100.0
Other	Area 1	31 705	0	0.0	-		R	0	(0 - 0)	100.0
Swordfish	Area 4	35 500	3 350	9.4	0	0.000	N			
Albacore	Area 1	0								
Bigeye	Area 3	0								
Swordfish	Area 3	6 200	0	0.0	-		N			
Albacore	Area 4	600	0	0.0	-		R	0	(0 - 0)	100.0
S. Bluefin	Area 4	1 500	0	0.0	-		R	0	(0 - 0)	100.0
Other	Area 4	2 750	0	0.0	-		N			

Table 63: Summary of turtle captures in surface longline fisheries, with the number of hooks, hooks observed, percentage of hooks observed, number of observed captures, capture rate per thousand hooks, total estimated captures with 95% confidence intervals, and percentage of hooks included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Hooks	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	3 106 028	807 631	26.0	2	0.002	R	22	(12 - 34)	99.2
2007–08	2 233 039	390 407	17.5	1	0.003	R	16	(8 - 24)	98.2
2006–07	3 746 672	956 819	25.5	2	0.002	R	26	(14 - 40)	99.4
2005–06	3 687 569	636 796	17.3	1	0.002	R	31	(16 - 48)	98.8
2004–05	3 676 795	703 669	19.1	2	0.003	R	26	(14 - 39)	98.6
2003–04	7 382 293	1 464 465	19.8	1	0.001	R	46	(22 - 74)	98.7
2002–03	10 781 875	1 874 448	17.4	0	0.000	R	68	(32 - 109)	98.9
2001–02	10 876 381	918 159	8.4	3	0.003	R	90	(43 - 143)	96.7
2000–01	9 761 448	1 023 868	10.5	3	0.003	R	91	(44 - 145)	98.2
1999–00	8 286 120	793 770	9.6	0	0.000	R	74	(34 - 120)	98.8
1998–99	6 845 781	1 242 610	18.2	1	0.001	R	55	(26 - 88)	96.9

[s] All observed captures by species: marine turtles (8), leatherback turtle (8)

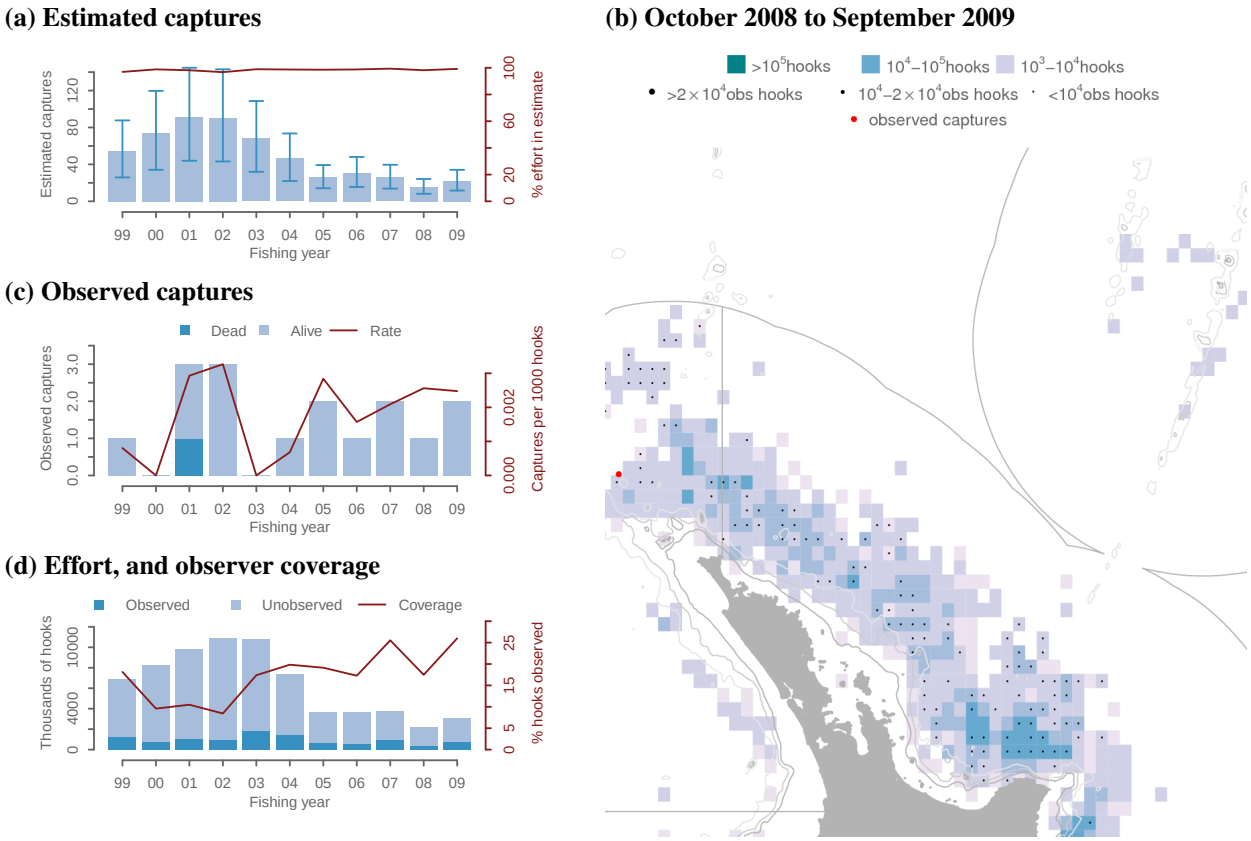

Figure 30: Turtle captures in surface longline fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.21 Squid trawl fisheries

3.21.1 Squid trawl, all birds, New Zealand EEZ

Table 64: Summary of all bird captures in squid trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09									
Auckland Is.	1 925	761	39.5						
White-capped albatrosses				42	5.52	M	97	(72 - 131)	100.0
White-chinned petrels				47	6.18	M	87	(62 - 125)	100.0
Sooty shearwaters				31	4.07	M	80	(50 - 129)	100.0
Other albatrosses[a]				7	0.92	M	17	(10 - 27)	100.0
Other birds[b]				14	1.84	M	28	(17 - 45)	100.0
Stewart-Snares	1 805	532	29.5						
White-capped albatrosses				11	2.07	M	58	(37 - 86)	100.0
White-chinned petrels				33	6.20	M	67	(47 - 98)	100.0
Sooty shearwaters				43	8.08	M	112	(66 - 219)	100.0
Other albatrosses[c]				8	1.50	M	21	(12 - 34)	100.0
Other birds[d]				23	4.32	M	35	(26 - 50)	100.0
Chatham Rise	122	3	2.5						
White-capped albatrosses				0	0.00	M	1	(0 - 4)	100.0
White-chinned petrels				0	0.00	M	1	(0 - 3)	100.0
Sooty shearwaters				0	0.00	M	18	(0 - 91)	100.0
Other albatrosses				0	0.00	M	2	(0 - 9)	100.0
Other birds				0	0.00	M	1	(0 - 6)	100.0
2007–08									
Auckland Is.	1 265	590	46.6						
White-capped albatrosses				22	3.73	M	40	(29 - 57)	100.0
White-chinned petrels				21	3.56	M	50	(30 - 81)	100.0
Sooty shearwaters				13	2.20	M	55	(26 - 113)	100.0
Other albatrosses (albatrosses (unidentified))				1	0.17	M	4	(1 - 9)	100.0
Other birds[e]				7	1.19	M	11	(7 - 18)	100.0
Stewart-Snares	2 412	864	35.8						
White-capped albatrosses				15	1.74	M	43	(27 - 65)	100.0
White-chinned petrels				24	2.78	M	70	(44 - 107)	100.0
Sooty shearwaters				55	6.37	M	170	(93 - 325)	100.0
Other albatrosses[f]				5	0.58	M	14	(8 - 23)	100.0
Other birds[g]				2	0.23	M	9	(3 - 20)	100.0
Chatham Rise	539	0	0.0						
White-capped albatrosses				0		M	3	(0 - 8)	100.0
White-chinned petrels				0		M	5	(0 - 14)	100.0
Sooty shearwaters				0		M	39	(6 - 122)	100.0
Other albatrosses				0		M	6	(1 - 15)	100.0
Other birds				0		M	2	(0 - 8)	100.0

[a] Albatrosses (unidentified) (3), smaller albatrosses (2), Buller's albatross (1), great albatrosses (1)
[b] Petrels, prions and shearwaters (7), petrel (unidentified) (5), Antarctic prion (1), seabird – large (1)
[c] Buller's albatross (3), smaller albatrosses (2), albatrosses (unidentified) (2), Salvin's albatross (1)
[d] Petrel (unidentified) (22), petrels, prions and shearwaters (1)
[e] Petrel (unidentified) (6), black petrel (1)
[f] Buller's albatross (3), wandering albatross (unidentified) (1), southern royal albatross (1)
[g] Seabird – small (1), petrel (unidentified) (1)

Table 65: Summary of all bird captures in squid trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	3 864	1 297	33.6	259	19.97	M	625	(522 - 776)	100.0
2007–08	4 236	1 456	34.4	165	11.33	M	521	(389 - 737)	100.0
2006–07	5 910	1 289	21.8	127	9.85	M	583	(427 - 828)	100.0
2005–06	8 582	1 103	12.9	200	18.13	M	1 011	(792 - 1 310)	100.0
2004–05	10 490	2 511	23.9	382	15.21	M	1 466	(1 240 - 1 746)	100.0
2003–04	8 336	1 769	21.2	204	11.53	M	853	(673 - 1 093)	100.0
2002–03	8 410	1 308	15.6	160	12.23	M	1 037	(748 - 1 518)	100.0
2001–02	7 475	1 455	19.5	225	15.46	R	1 089	(936 - 1 264)	95.5
2000–01	8 075	3 001	37.2	376	12.53	R	1 263	(957 - 1 623)	92.8
1999–00	5 651	917	16.2	53	5.78	R	829	(641 - 1 050)	93.8
1998–99	8 012	995	12.4	104	10.45	R	1 196	(1 031 - 1 382)	99.0

[s] All observed captures by species: white-capped albatross (960), sooty shearwater (683), white-chinned petrel (360), petrel (unidentified) (52), Buller's albatross (42), albatrosses (unidentified) (30), Salvin's albatross (20), seabird – small (19), seabird – large (16), shy albatross (14), prions and shearwaters (8), antarctic prion (7), southern royal albatross (6), black-browed albatross (unidentified) (5), smaller albatrosses (4), common diving petrel (3), storm petrels (3), seabird (unspecified) (3), black petrel (2), southern black-browed albatross (2), other species (16)

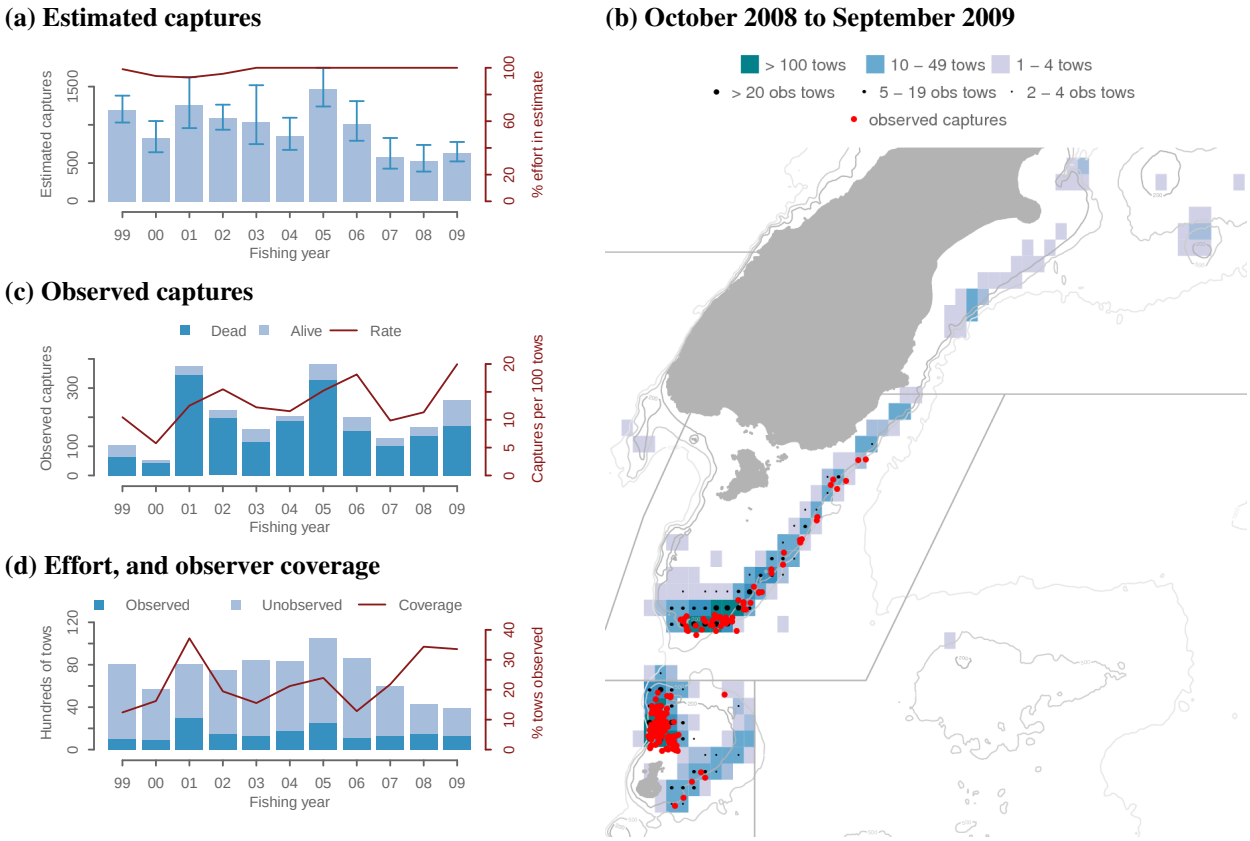

Figure 31: All bird captures in squid trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.21.2 Squid trawl, New Zealand sea lions, New Zealand EEZ

Table 66: Summary of New Zealand sea lion interactions in squid trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated interactions with 95% confidence intervals, and percentage of tows included in the estimate. The estimated number of interactions may be interpreted as the number of animals that would have been caught if no SLEDs were used. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. interactions		% inc.
2008–09									
Auckland Is.	1 925	761	39.5	2	0.26	M	57	(15 - 129)	100.0
Stewart-Snares	1 805	532	29.5	0	0.00	R	1	(1 - 2)	100.0
Chatham Rise	122	3	2.5	0	0.00	R	0	(0 - 0)	100.0
North East	5	0	0.0	0		N			
Puysegur	4	1	25.0	0	0.00	R	0	(0 - 0)	100.0
West Coast SI	2	0	0.0	0		N			
Subantarctic	1	0	0.0	0		N			
West Coast NI	0								
2007–08									
Auckland Is.	1 265	590	46.6	5	0.85	M	64	(24 - 130)	100.0
Stewart-Snares	2 412	864	35.8	0	0.00	R	1	(1 - 2)	100.0
Chatham Rise	539	0	0.0	0		R	0	(0 - 0)	100.0
North East	2	0	0.0	0		N			
Puysegur	15	0	0.0	0		R	0	(0 - 0)	100.0
West Coast SI	0								
Subantarctic	2	2	100.0	0	0.00	N			
West Coast NI	1	0	0.0	0		N			

Table 67: Summary of New Zealand sea lion interactions in squid trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated interactions with 95% confidence intervals, and percentage of tows included in the estimate. The estimated number of interactions may be interpreted as the number of animals that would have been caught if no SLEDs were used. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. interactions		% inc.
2008–09	3 864	1 297	33.6	2	0.15	B	58	(16 - 130)	99.8
2007–08	4 236	1 456	34.4	5	0.34	B	65	(25 - 132)	99.9
2006–07	5 910	1 289	21.8	8	0.62	B	79	(34 - 150)	97.5
2005–06	8 582	1 103	12.9	11	1.00	B	155	(72 - 290)	99.3
2004–05	10 490	2 511	23.9	12	0.48	B	155	(74 - 285)	98.8
2003–04	8 336	1 769	21.2	17	0.96	B	185	(94 - 330)	95.7
2002–03	8 410	1 308	15.6	11	0.84	B	49	(25 - 82)	94.5
2001–02	7 475	1 455	19.5	21	1.44	B	75	(44 - 119)	95.5
2000–01	8 075	3 001	37.2	42	1.40	B	62	(42 - 86)	92.8
1999–00	5 651	917	16.2	25	2.73	B	69	(43 - 108)	93.8
1998–99	8 012	995	12.4	5	0.50	B	19	(9 - 35)	99.0

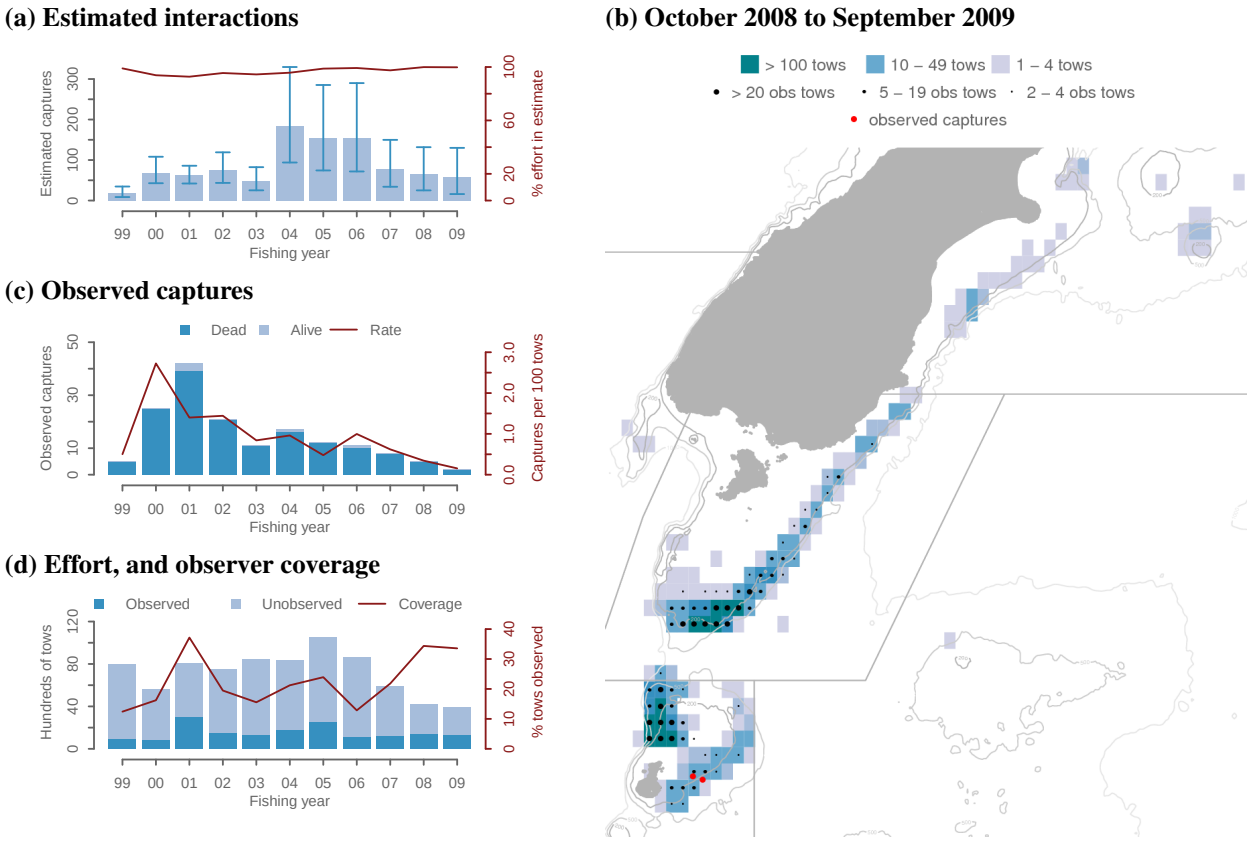

Figure 32: New Zealand sea lion interactions in squid trawl fisheries. (a) Estimated interactions, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.21.3 Squid trawl, New Zealand fur seals, New Zealand EEZ

Table 68: Summary of New Zealand fur seal captures in squid trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09									
Auckland Is.	1 925	761	39.5	0	0.00	M	6	(1 - 14)	100.0
Stewart-Snares	1 805	532	29.5	1	0.19	M	11	(3 - 24)	100.0
Chatham Rise	122	3	2.5	0	0.00	M	4	(0 - 12)	100.0
North East	5	0	0.0	0		N			
Puysegur	4	1	25.0	0	0.00	M	0	(0 - 2)	100.0
West Coast SI	2	0	0.0	0		M	0	(0 - 1)	100.0
Subantarctic	1	0	0.0	0		M	0	(0 - 0)	100.0
West Coast NI	0								
2007–08									
Auckland Is.	1 265	590	46.6	0	0.00	M	2	(0 - 7)	100.0
Stewart-Snares	2 412	864	35.8	6	0.69	M	16	(9 - 27)	100.0
Chatham Rise	539	0	0.0	0		M	9	(1 - 24)	100.0
North East	2	0	0.0	0		N			
Puysegur	15	0	0.0	0		M	0	(0 - 2)	100.0
West Coast SI	0								
Subantarctic	2	2	100.0	0	0.00	M	0	(0 - 0)	100.0
West Coast NI	1	0	0.0	0		M	0	(0 - 0)	100.0

Table 69: Summary of New Zealand fur seal captures in squid trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	3 864	1 297	33.6	1	0.08	M	20	(8 - 43)	99.9
2007–08	4 236	1 456	34.4	6	0.41	M	28	(15 - 49)	100.0
2006–07	5 910	1 289	21.8	8	0.62	M	40	(21 - 67)	99.9
2005–06	8 582	1 103	12.9	4	0.36	M	96	(47 - 176)	99.8
2004–05	10 490	2 511	23.9	16	0.64	M	145	(82 - 247)	100.0
2003–04	8 336	1 769	21.2	17	0.96	M	83	(50 - 135)	99.9
2002–03	8 410	1 308	15.6	8	0.61	M	64	(33 - 111)	99.9
2001–02	7 475	1 455	19.5	23	1.58	R	94	(72 - 120)	95.5
2000–01	8 075	3 001	37.2	31	1.03	R	107	(67 - 158)	92.8
1999–00	5 651	917	16.2	12	1.31	R	73	(48 - 104)	93.8
1998–99	8 012	995	12.4	36	3.62	R	134	(110 - 162)	99.0

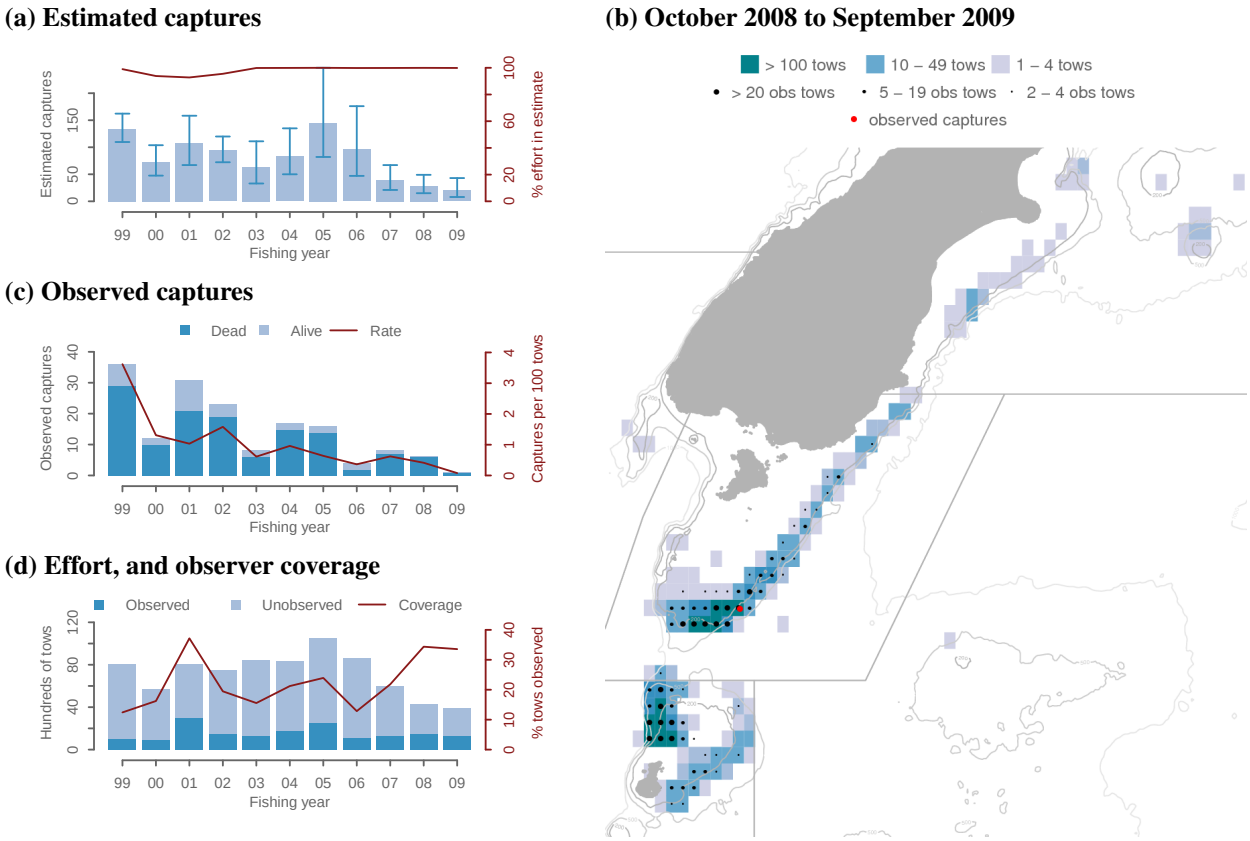

Figure 33: New Zealand fur seal captures in squid trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.22 Hoki trawl fisheries

3.22.1 Hoki trawl, all birds, New Zealand EEZ

Table 70: Summary of all bird captures in hoki trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09									
Chatham Rise	3 994	569	14.2						
White-capped albatrosses				1	0.18	M	6	(2 - 13)	100.0
White-chinned petrels				0	0.00	M	9	(2 - 19)	100.0
Sooty shearwaters				15	2.64	M	72	(30 - 179)	100.0
Other albatrosses[a]				3	0.53	M	57	(31 - 94)	100.0
Other birds[b]				1	0.18	M	15	(5 - 30)	100.0
Cook Strait	1 843	173	9.4						
White-capped albatrosses				1	0.58	M	4	(1 - 10)	100.0
Other birds[c]				2	1.16	M	6	(2 - 13)	100.0
West Coast SI	1 170	501	42.8						
Other albatrosses (Buller's albatross)				2	0.40	M	6	(2 - 11)	100.0
Other birds[d]				2	0.40	M	6	(2 - 14)	100.0
Stewart-Snares	805	301	37.4						
White-capped albatrosses				3	1.00	M	5	(2 - 12)	100.0
White-chinned petrels				0	0.00	M	3	(1 - 9)	100.0
Sooty shearwaters				2	0.66	M	8	(2 - 27)	100.0
Other albatrosses (Buller's albatross)				1	0.33	M	5	(2 - 10)	100.0
Other birds (black-bellied storm petrel)				1	0.33	M	3	(1 - 9)	100.0
Subantarctic	100	72	72.0						
White-chinned petrels				1	1.39	M	0	(0 - 1)	100.0
Other albatrosses[e]				2	2.78	M	1	(1 - 3)	100.0
2007–08									
Chatham Rise	4 481	751	16.8						
White-capped albatrosses				2	0.27	M	7	(3 - 13)	100.0
White-chinned petrels				5	0.67	M	14	(7 - 23)	100.0
Sooty shearwaters				2	0.27	M	40	(12 - 96)	100.0
Other albatrosses (Buller's albatross)				2	0.27	M	35	(18 - 58)	100.0
Other birds[f]				3	0.40	M	11	(4 - 21)	100.0
Cook Strait	1 759	204	11.6						
White-capped albatrosses				0	0.00	M	1	(0 - 5)	100.0
Other birds				0	0.00	M	2	(0 - 5)	100.0
West Coast SI	1 388	462	33.3						
Other albatrosses (Buller's albatross)				10	2.16	M	13	(10 - 17)	100.0
Other birds (seabird – small)				1	0.22	M	4	(1 - 9)	100.0
Stewart-Snares	743	341	45.9						
White-capped albatrosses				0	0.00	M	1	(0 - 3)	100.0
White-chinned petrels				3	0.88	M	4	(3 - 8)	100.0
Sooty shearwaters				1	0.29	M	2	(1 - 7)	100.0
Other albatrosses (Buller's albatross)				1	0.29	M	2	(1 - 5)	100.0
Other birds				0	0.00	M	1	(0 - 4)	100.0
Subantarctic	144	72	50.0						
White-chinned petrels				0	0.00	M	0	(0 - 1)	100.0
Other albatrosses				0	0.00	M	0	(0 - 2)	100.0

[a] Salvin's albatross (2), albatrosses (unidentified) (1)
[b] Petrels, prions and shearwaters (1)
[c] Cape petrels (1), Cape petrel (1)
[d] Westland petrel (1), Cape petrel (1)
[e] Salvin's albatross (1), albatrosses (unidentified) (1)
[f] Flesh-footed shearwater (1), petrel (unidentified) (1), grey petrel (1)

Table 71: Summary of all bird captures in hoki trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.[s]	Rate	Type	Est. captures		% inc.
2008–09	8 172	1 658	20.3	37	2.23	M	232	(163 - 345)	100.0
2007–08	8 773	1 869	21.3	30	1.61	M	152	(107 - 222)	100.0
2006–07	10 626	1 757	16.5	23	1.31	M	228	(125 - 447)	100.0
2005–06	11 591	1 777	15.3	54	3.04	M	323	(220 - 512)	100.0
2004–05	14 529	2 133	14.7	46	2.16	M	334	(251 - 446)	100.0
2003–04	22 516	2 347	10.4	33	1.41	M	330	(234 - 469)	100.0
2002–03	27 776	2 592	9.3	84	3.24	M	1 143	(689 - 2 023)	100.0
2001–02	27 224	3 274	12.0	50	1.53	R	811	(721 - 908)	98.1
2000–01	32 018	3 549	11.1	296	8.34	R	1 207	(1 099 - 1 324)	97.6
1999–00	33 061	3 273	9.9	91	2.78	R	1 082	(963 - 1 214)	97.5
1998–99	32 242	3 558	11.0	133	3.74	R	1 106	(983 - 1 244)	97.1

[s] All observed captures by species: sooty shearwater (346), white-capped albatross (104), Salvin's albatross (86), Buller's albatross (67), white-chinned petrel (52), Cape petrels (39), seabird – small (34), short-tailed shearwater (33), albatrosses (unidentified) (27), petrel (unidentified) (10), Campbell albatross (9), prions (unidentified) (9), seabird – large (8), northern giant petrel (7), grey petrel (6), black-browed albatross (unidentified) (6), southern black-browed albatross (5), shy albatross (5), fairy prion (4), Westland petrel (3), other species (17)

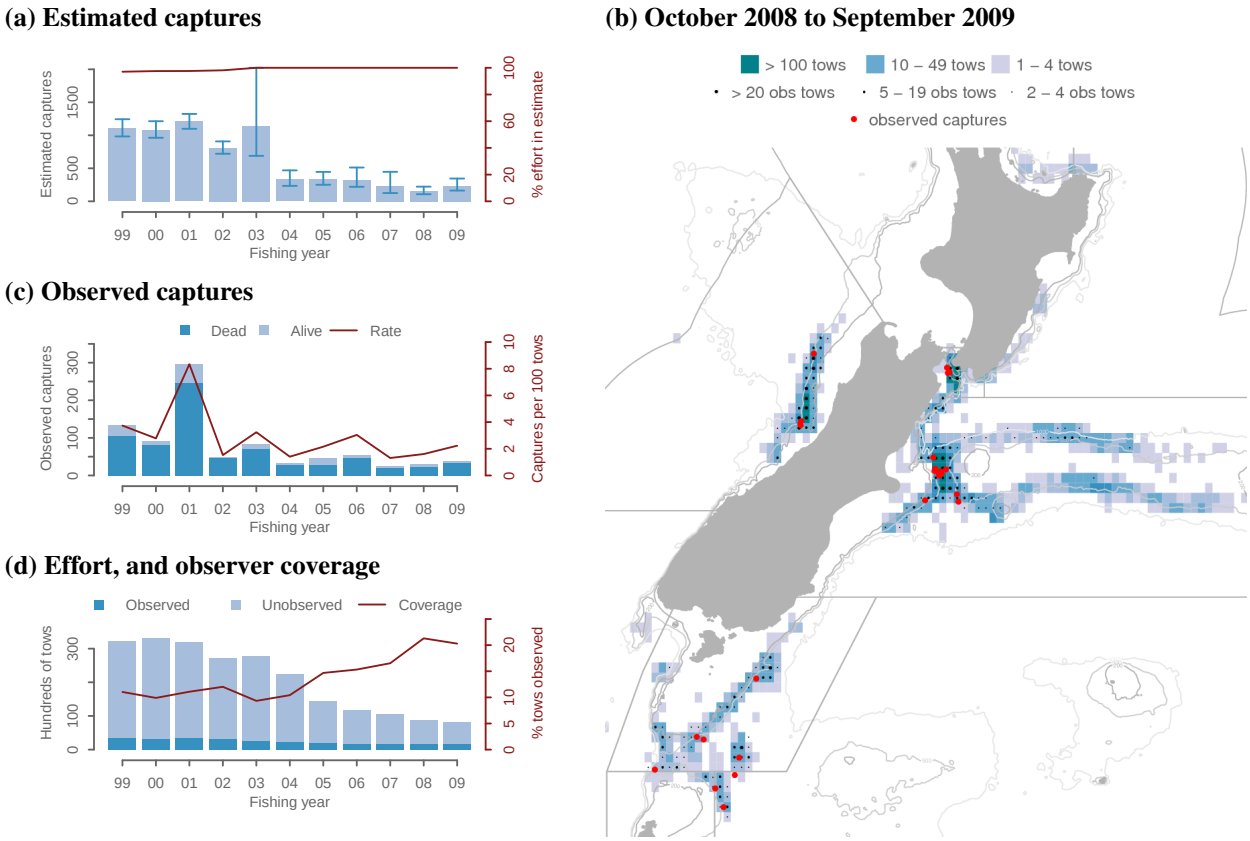

Figure 34: All bird captures in hoki trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.22.2 Hoki trawl, New Zealand sea lions, New Zealand EEZ

Table 72: Summary of New Zealand sea lion captures in hoki trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. interactions		% inc.
2008–09									
Chatham Rise	3 994	569	14.2	0	0.00	R	0	(0 - 0)	100.0
Cook Strait	1 843	173	9.4	0	0.00	R	0	(0 - 0)	100.0
West Coast SI	1 170	501	42.8	0	0.00	R	0	(0 - 0)	100.0
Stewart-Snares	805	301	37.4	0	0.00	R	0	(0 - 1)	100.0
East of NI	121	0	0.0	0		N			
Subantarctic	100	72	72.0	0	0.00	R	0	(0 - 0)	100.0
North East	67	0	0.0	0		N			
Auckland Is.	57	40	70.2	0	0.00	R	0	(0 - 0)	100.0
Puysegur	12	1	8.3	0	0.00	R	0	(0 - 0)	100.0
West Coast NI	3	1	33.3	0	0.00	N			
2007–08									
Chatham Rise	4 481	751	16.8	0	0.00	R	0	(0 - 0)	100.0
Cook Strait	1 759	204	11.6	0	0.00	R	0	(0 - 0)	100.0
West Coast SI	1 388	462	33.3	0	0.00	R	0	(0 - 0)	100.0
Stewart-Snares	743	341	45.9	1	0.29	R	1	(1 - 2)	100.0
East of NI	117	0	0.0	0		N			
Subantarctic	144	72	50.0	0	0.00	R	0	(0 - 0)	100.0
North East	69	0	0.0	0		N			
Auckland Is.	60	39	65.0	0	0.00	R	0	(0 - 0)	100.0
Puysegur	10	0	0.0	0		R	0	(0 - 0)	100.0
West Coast NI	2	0	0.0	0		N			

Table 73: Summary of New Zealand sea lion captures in hoki trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. interactions		% inc.
2008–09	8 172	1 658	20.3	0	0.00	R	0	(0 - 1)	97.7
2007–08	8 773	1 869	21.3	1	0.05	R	1	(1 - 2)	97.9
2006–07	10 626	1 757	16.5	0	0.00	R	1	(0 - 1)	97.6
2005–06	11 591	1 777	15.3	0	0.00	R	0	(0 - 1)	97.8
2004–05	14 529	2 133	14.7	0	0.00	R	1	(0 - 3)	97.3
2003–04	22 516	2 347	10.4	0	0.00	R	2	(0 - 5)	97.3
2002–03	27 776	2 592	9.3	1	0.04	R	4	(2 - 9)	97.9
2001–02	27 224	3 274	12.0	0	0.00	R	5	(1 - 10)	98.1
2000–01	32 018	3 549	11.1	1	0.03	R	5	(2 - 10)	97.6
1999–00	33 061	3 273	9.9	1	0.03	R	5	(2 - 11)	97.5
1998–99	32 242	3 558	11.0	0	0.00	R	2	(0 - 5)	97.1

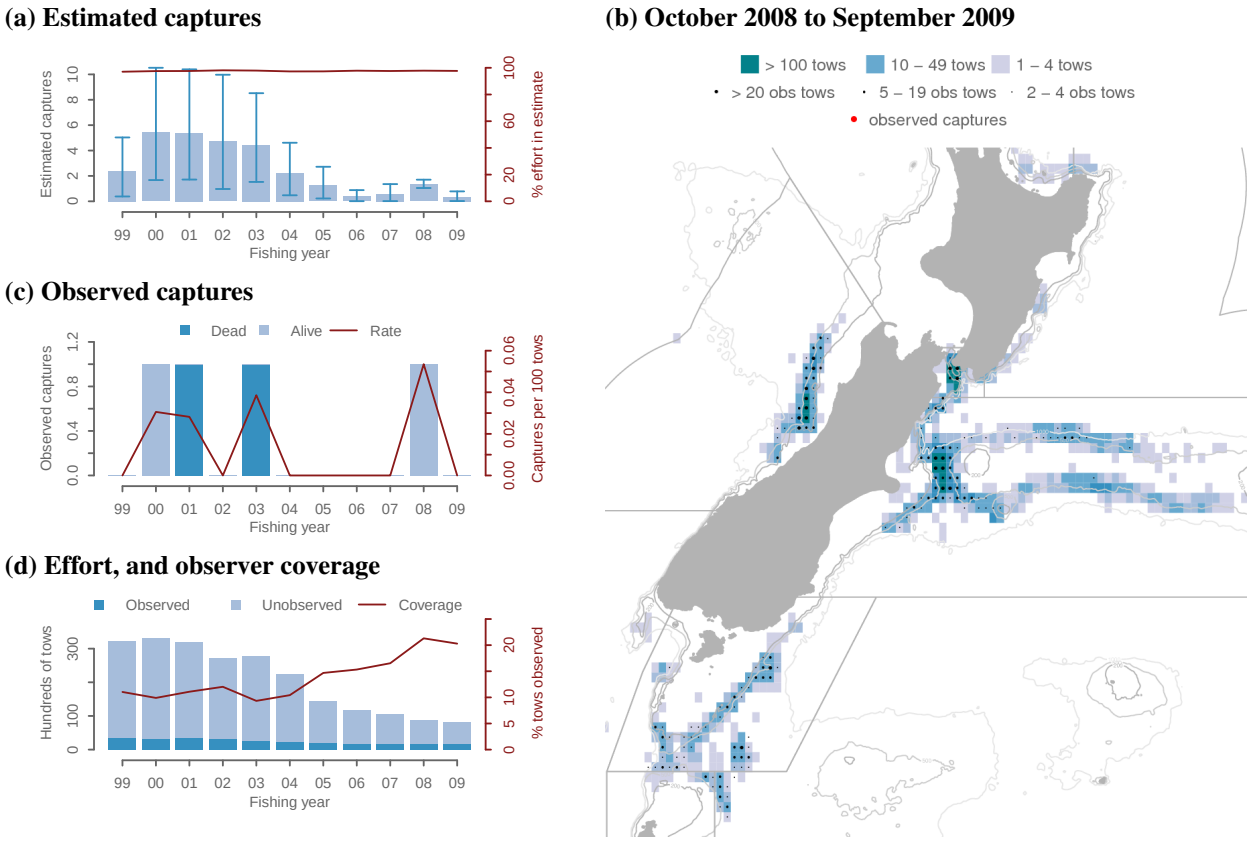

Figure 35: New Zealand sea lion captures in hoki trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.

3.22.3 Hoki trawl, New Zealand fur seals, New Zealand EEZ

Table 74: Summary of New Zealand fur seal captures in hoki trawl fisheries, broken down by fishing areas, with the number of tows, number of tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09									
Chatham Rise	3 994	569	14.2	4	0.70	M	31	(13 - 59)	100.0
Cook Strait	1 843	173	9.4	19	10.98	M	128	(63 - 231)	100.0
West Coast SI	1 170	501	42.8	11	2.20	M	23	(14 - 37)	100.0
Stewart-Snares	805	301	37.4	3	1.00	M	8	(3 - 18)	100.0
East of NI	121	0	0.0	0		M	1	(0 - 4)	100.0
Subantarctic	100	72	72.0	0	0.00	M	0	(0 - 0)	100.0
North East	67	0	0.0	0		N			
Auckland Is.	57	40	70.2	0	0.00	M	0	(0 - 1)	100.0
Puysegur	12	1	8.3	0	0.00	M	0	(0 - 3)	100.0
West Coast NI	3	1	33.3	0	0.00	M	0	(0 - 0)	100.0
2007–08									
Chatham Rise	4 481	751	16.8	7	0.93	M	61	(29 - 114)	100.0
Cook Strait	1 759	204	11.6	24	11.76	M	170	(79 - 324)	100.0
West Coast SI	1 388	462	33.3	23	4.98	M	47	(31 - 70)	100.0
Stewart-Snares	743	341	45.9	3	0.88	M	9	(3 - 20)	100.0
East of NI	117	0	0.0	0		M	3	(0 - 13)	100.0
Subantarctic	144	72	50.0	1	1.39	M	0	(0 - 0)	100.0
North East	69	0	0.0	0		N			
Auckland Is.	60	39	65.0	0	0.00	M	2	(1 - 4)	100.0
Puysegur	10	0	0.0	0		M	1	(0 - 5)	100.0
West Coast NI	2	0	0.0	0		M	0	(0 - 0)	100.0

Table 75: Summary of New Zealand fur seal captures in hoki trawl fisheries, with the number of tows, tows observed, percentage of tows observed, number of observed captures, capture rate per hundred tows, total estimated captures with 95% confidence intervals, and percentage of tows included in the estimate. Estimated type: M - modelled; R - ratio estimated; B - both methods; N - not estimated.

		Observed				Estimated			
	Tows	No. obs	% obs	Capt.	Rate	Type	Est. captures		% inc.
2008–09	8 172	1 658	20.3	37	2.23	M	191	(112 - 306)	99.2
2007–08	8 773	1 869	21.3	58	3.10	M	290	(180 - 463)	99.2
2006–07	10 626	1 757	16.5	29	1.65	M	216	(118 - 370)	98.8
2005–06	11 591	1 777	15.3	62	3.49	M	390	(244 - 627)	99.2
2004–05	14 529	2 133	14.7	120	5.63	M	658	(417 - 1 020)	99.4
2003–04	22 516	2 347	10.4	49	2.09	M	637	(392 - 1 043)	99.3
2002–03	27 776	2 592	9.3	44	1.70	M	538	(332 - 849)	99.7
2001–02	27 224	3 274	12.0	110	3.36	R	770	(713 - 827)	98.1
2000–01	32 018	3 549	11.1	66	1.86	R	946	(865 - 1 028)	97.6
1999–00	33 061	3 273	9.9	102	3.12	R	1 003	(915 - 1 092)	97.5
1998–99	32 242	3 558	11.0	84	2.36	R	951	(866 - 1 037)	97.1

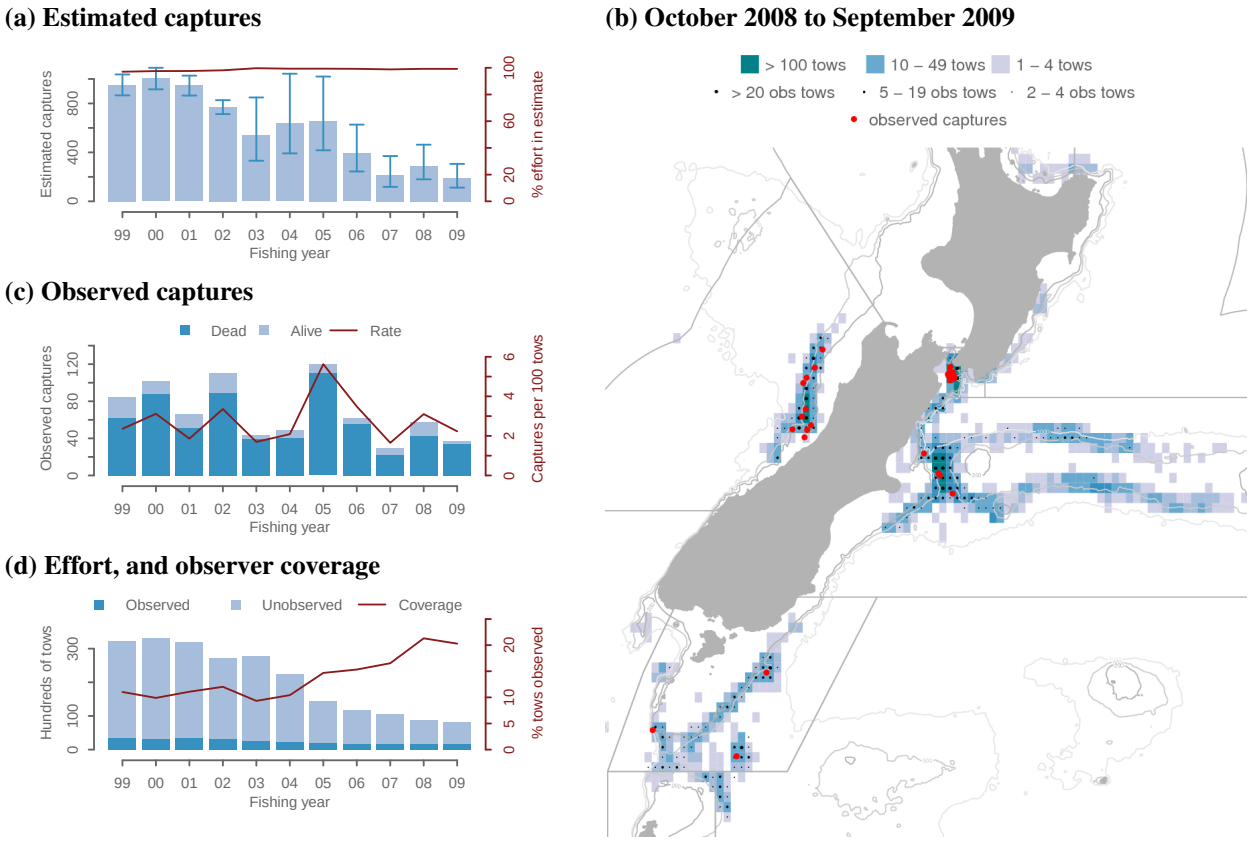

Figure 36: New Zealand fur seal captures in hoki trawl fisheries. (a) Estimated captures, with 95% confidence intervals, (b) Mapped effort and captures from 2008–09, (c) Observed captures, (d) Effort and observed effort. For a fuller explanation of the figure, see Section 3.5.