

**Coded as FMA**

Number of surveys caught 1992–2010 (out of 19):	10
Total catch weight (kg):	89.3

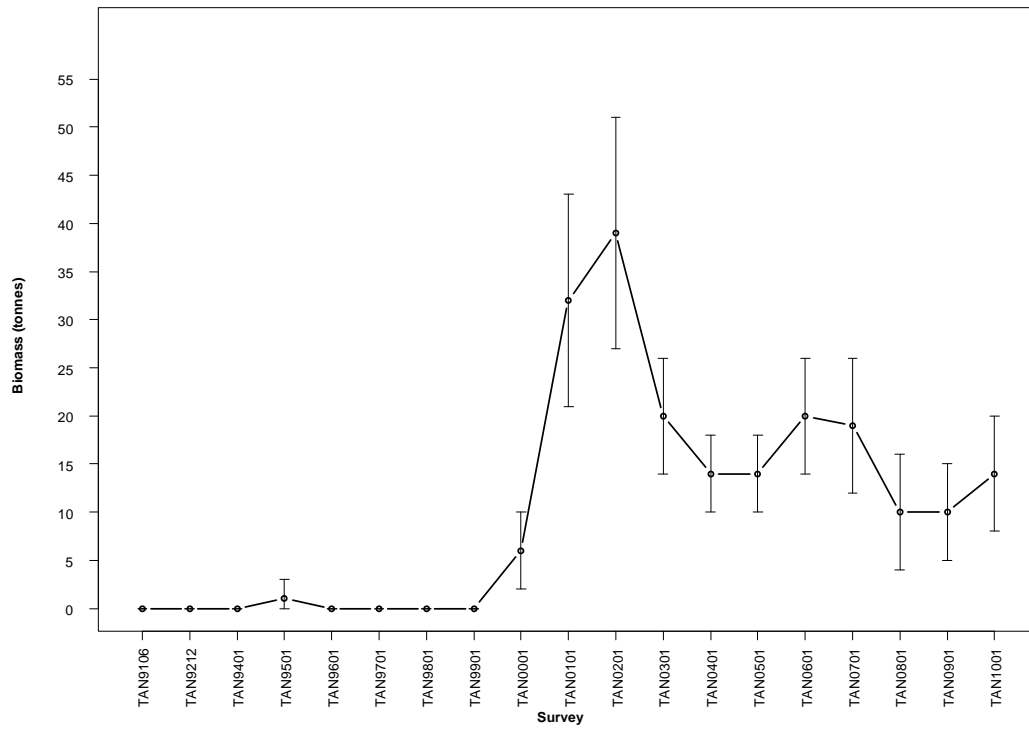
**Coded as GAS**

Number of surveys caught 1992–2010 (out of 19):	9
Total catch weight (kg):	27

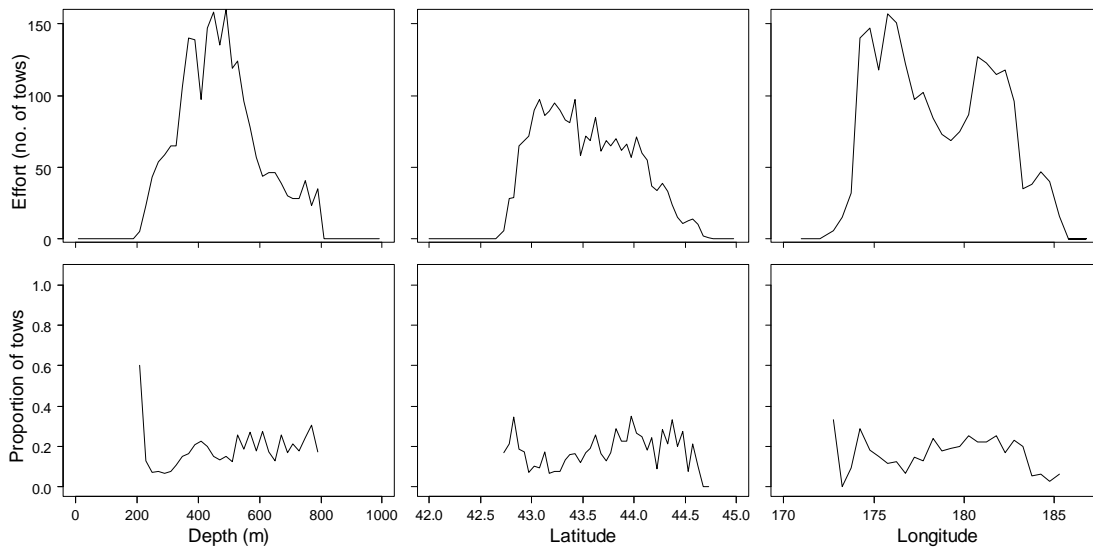
The core survey area and depth range **is not** appropriate for this group. It is found **shallower than 200 m**. Biomass of this group is **well** estimated in the core survey area. Biomass has **increased** since the start of the time series, but this may be because this group was not recorded in early surveys.

**Relative biomass estimates**

Year	Biomass (t)	cv (%)
1992	0	-
1993	0	-
1994	0	-
1995	1	100
1996	0	-
1997	0	-
1998	0	-
1999	0	-
2000	6	31
2001	32	17
2002	39	16
2003	20	15
2004	14	14
2005	14	16
2006	20	16
2007	19	18
2008	10	29
2009	10	24
2010	14	21



### Distribution



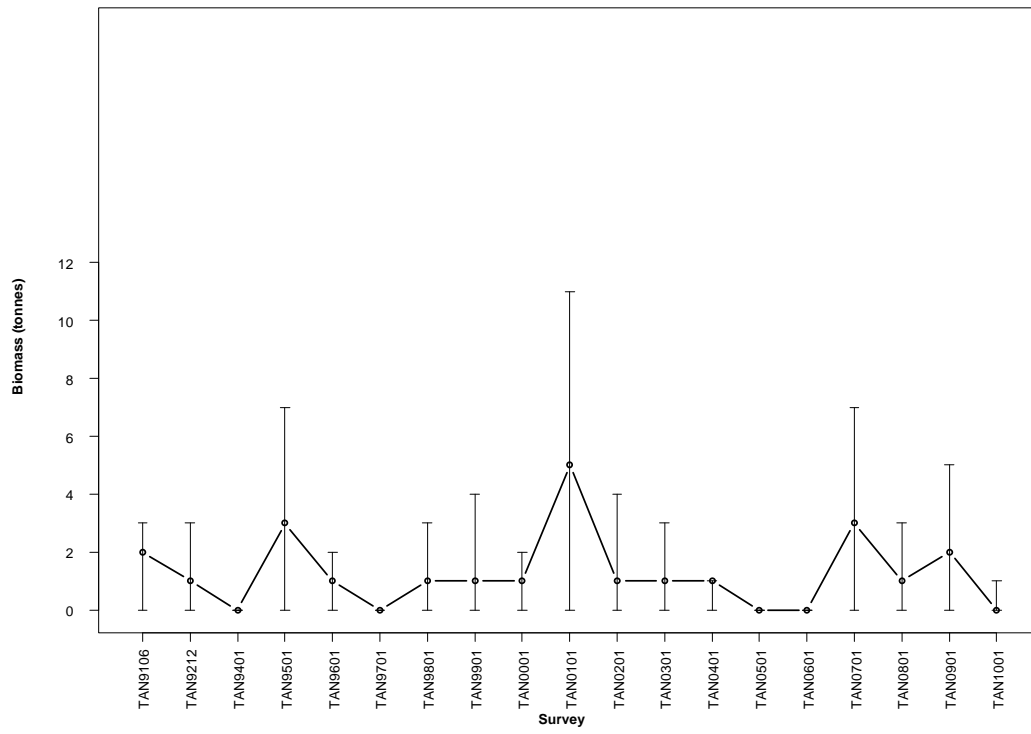


Number of surveys caught 1992–2010 (out of 19):	16
Total catch weight (kg):	26.0
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b ( $r^2$ )	–

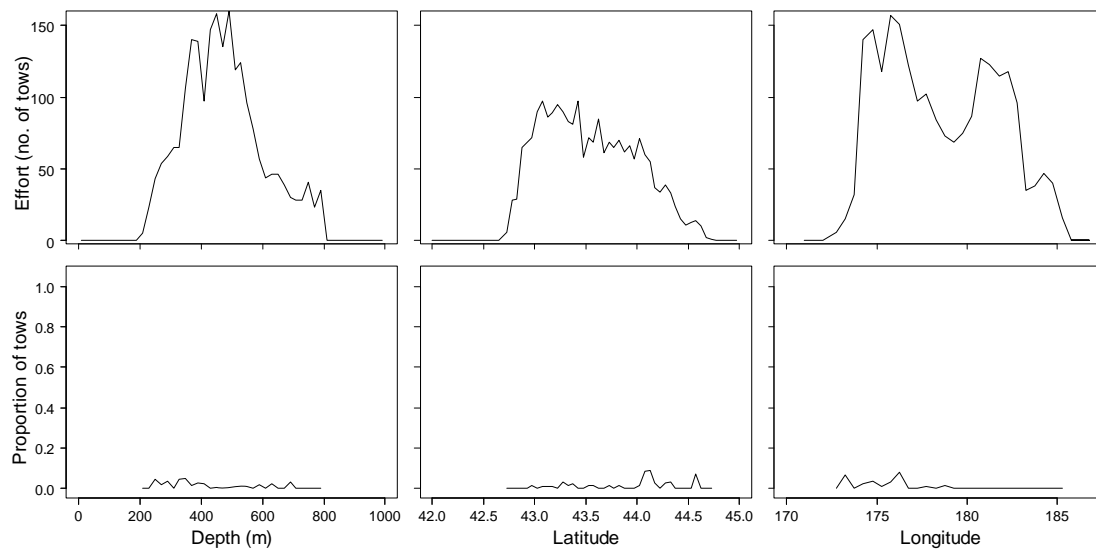
There were **too few fish caught to determine whether the core survey area is appropriate for this species**. Biomass of this species is **poorly** estimated in the core survey area. Biomass **shows no clear trend** since the start of the time series.

#### Relative biomass estimates

Year	Biomass (t)	cv (%)
1992	2	52
1993	1	77
1994	0	100
1995	3	85
1996	1	100
1997	0	-
1998	1	100
1999	1	100
2000	1	51
2001	5	60
2002	1	100
2003	1	100
2004	1	53
2005	0	-
2006	0	-
2007	3	67
2008	1	82
2009	2	100
2010	0	100



### Distribution



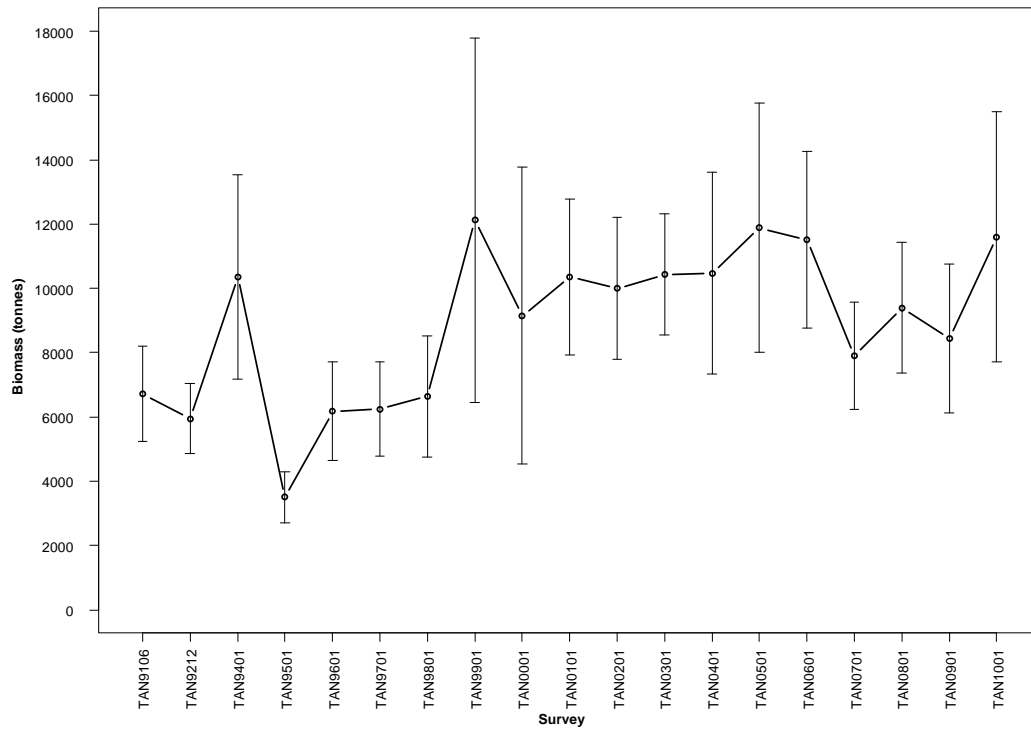


Number of surveys caught 1992–2010 (out of 19):	19
Total catch weight (kg):	134 824.7
Number measured	55 743
Length range (mean) (cm, GL)	15–99 (55.1)
Number weighed	11 975
Length-weight parameters a, b ( $r^2$ )	0.002986, 3.170546 (97.22)

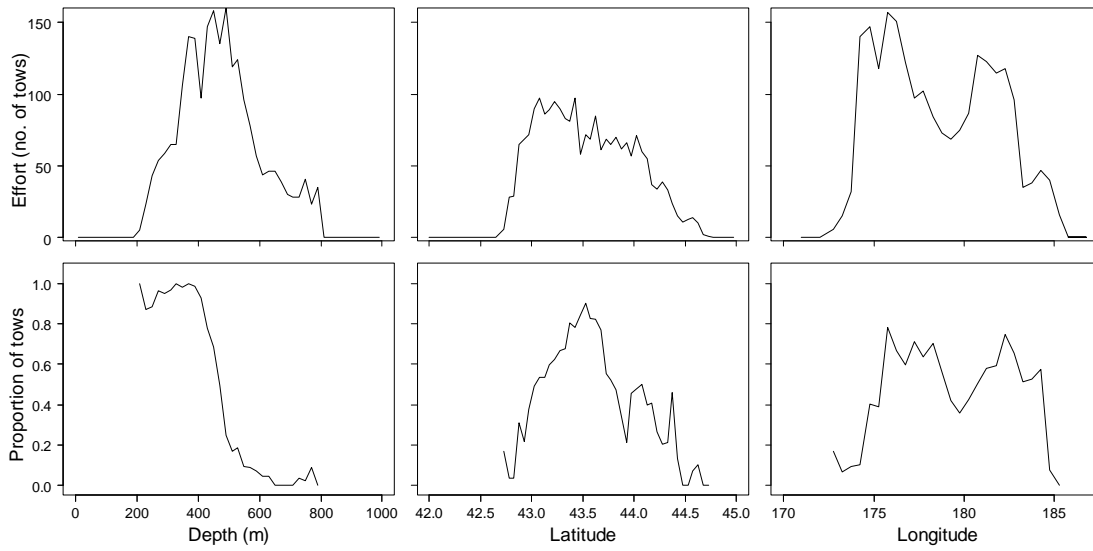
The core survey area and depth range **is not** appropriate for this species. It is found **shallower than 200 m**. Biomass of this species is **very well** estimated in the core survey area. Biomass has **increased** since the start of the time series. Catch rates are highest on the **Veryan Bank**. Length frequencies **have multiple modes which may contain information about year-class strength**. Mean length has **decreased** since the start of the time series. Gonad stage data indicate that fish of **all stages** are observed in the survey.

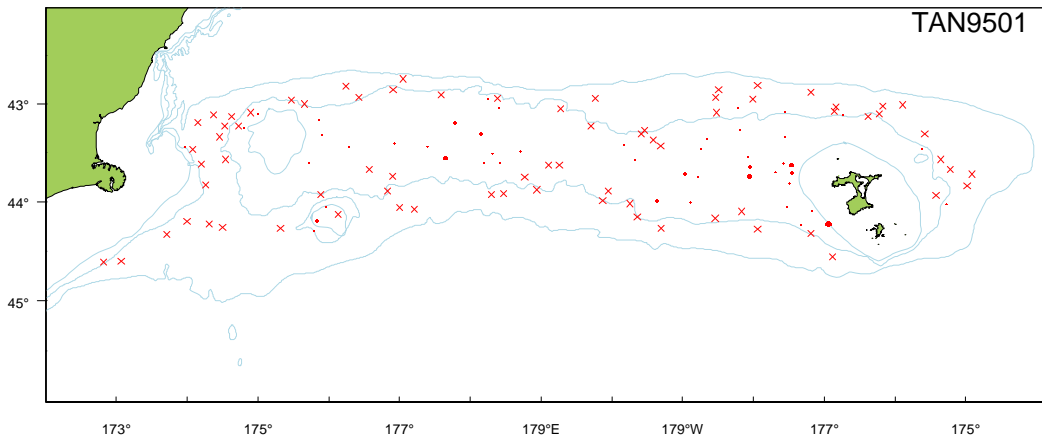
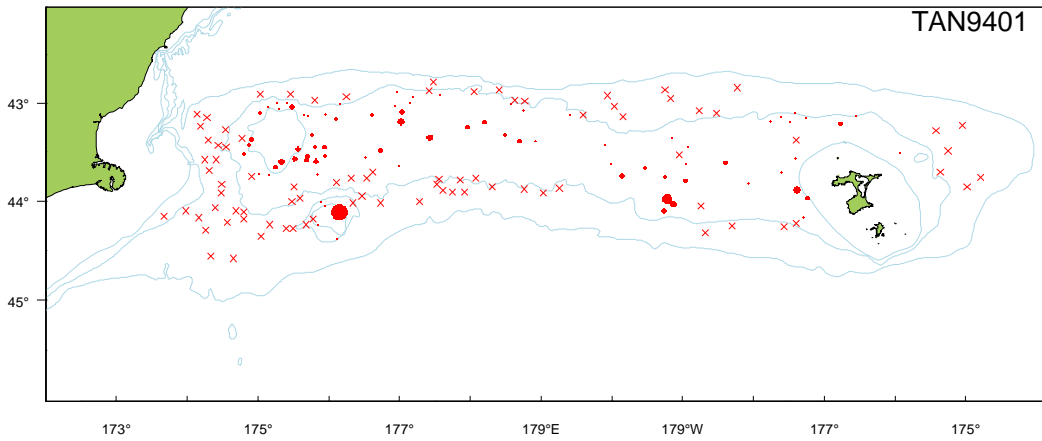
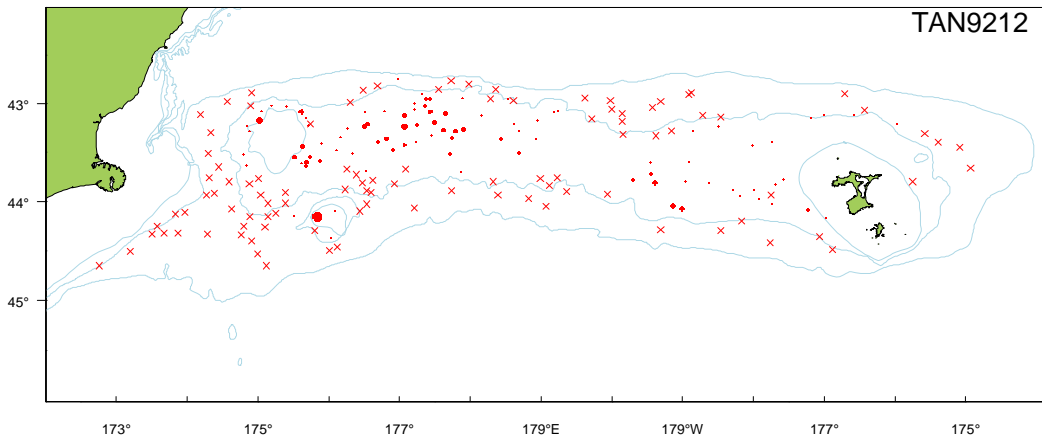
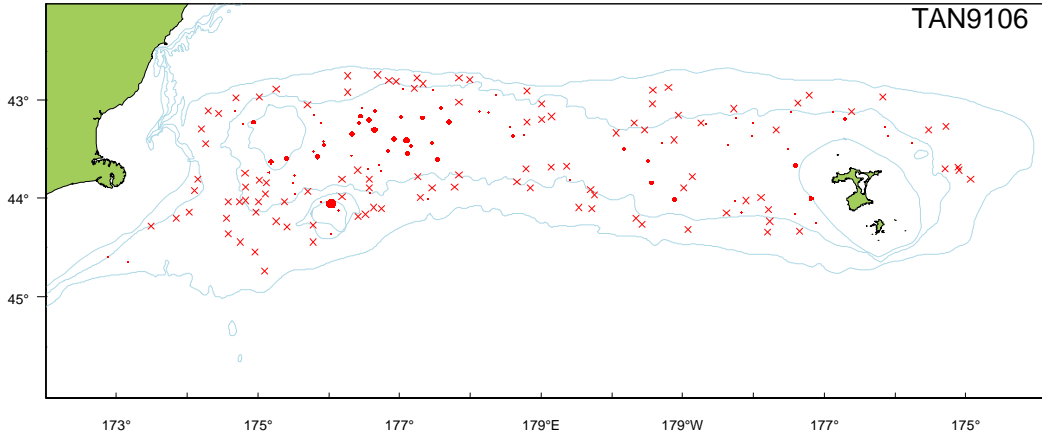
#### Relative biomass estimates and length summary

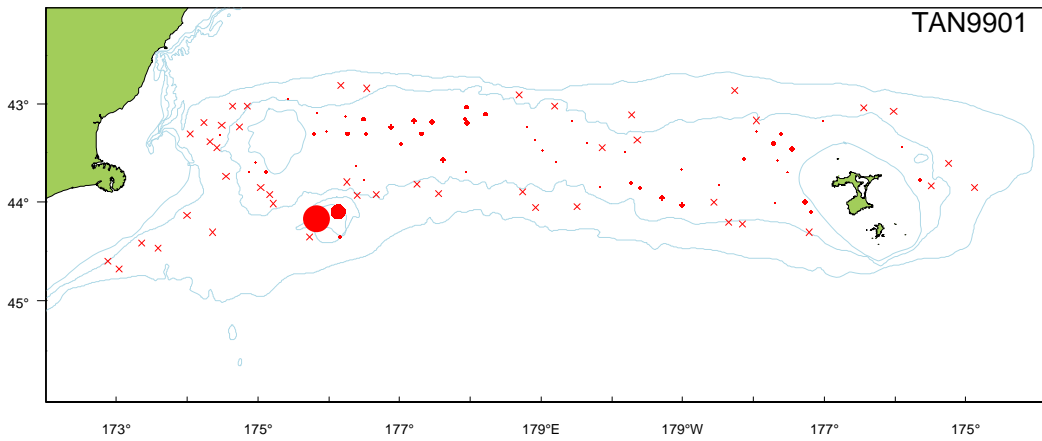
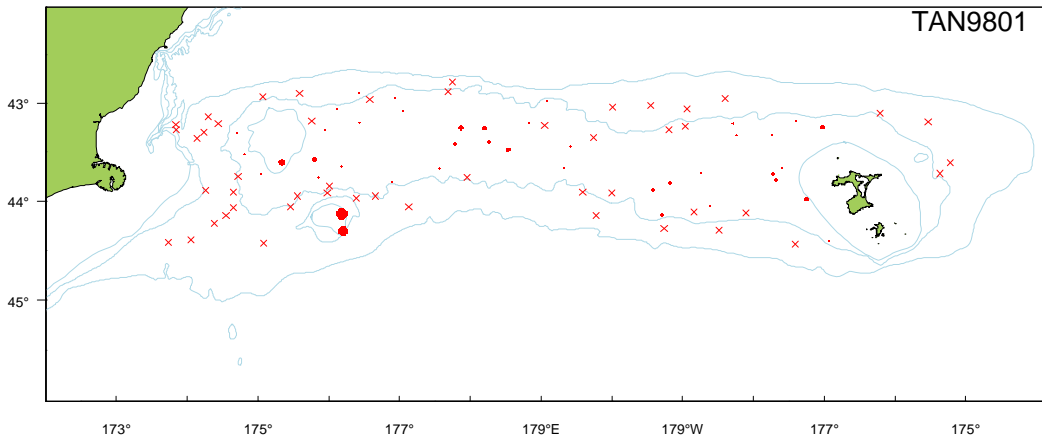
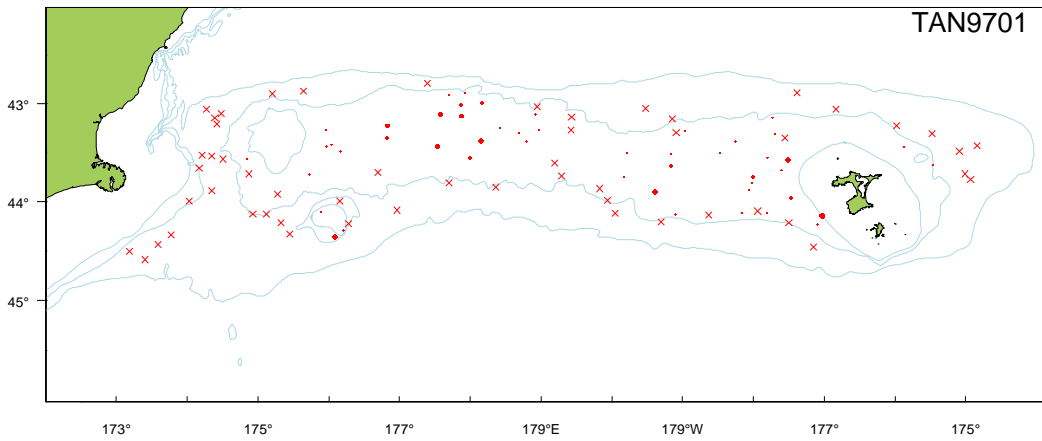
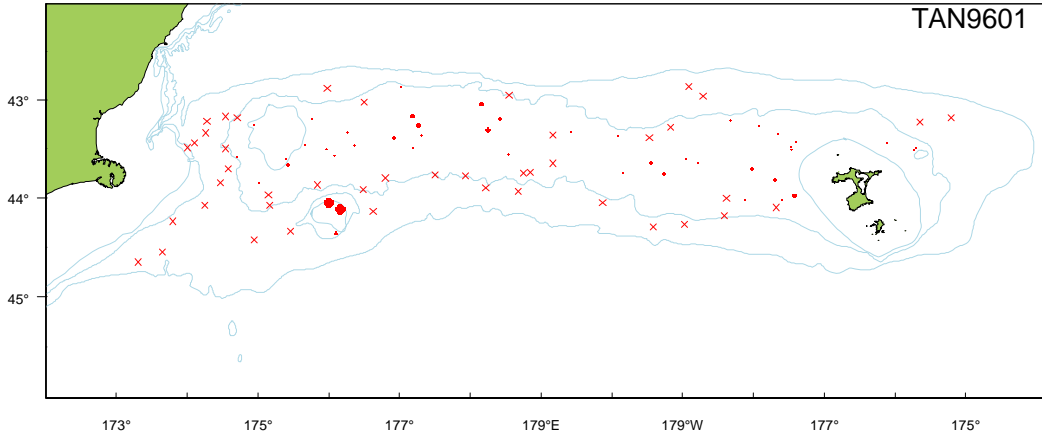
Year	Biomass (t)	cv (%)	Length (cm)			No. measured
			Min.	Max.	Mean	
1992	6 714	11	-	-	-	0
1993	5 950	9	19	76	57.0	4 159
1994	10 364	15	26	76	57.1	2 103
1995	3 502	11	23	81	57.3	1 395
1996	6 169	12	15	99	58.2	1 782
1997	6 242	12	25	78	57.3	2 097
1998	6 643	14	30	77	57.1	1 925
1999	12 125	23	28	75	56.0	3 090
2000	9 154	25	27	76	57.3	3 395
2001	10 356	12	19	72	55.7	3 833
2002	9 997	11	21	75	54.0	3 274
2003	10 431	9	25	78	54.8	5 450
2004	10 471	15	25	99	54.2	2 561
2005	11 885	16	22	75	53.8	3 304
2006	11 502	12	27	75	53.6	3 370
2007	7 904	11	23	74	53.7	3 104
2008	9 391	11	26	75	53.7	2 697
2009	8 445	14	29	89	52.9	2 897
2010	11 596	17	29	73	51.6	3 525



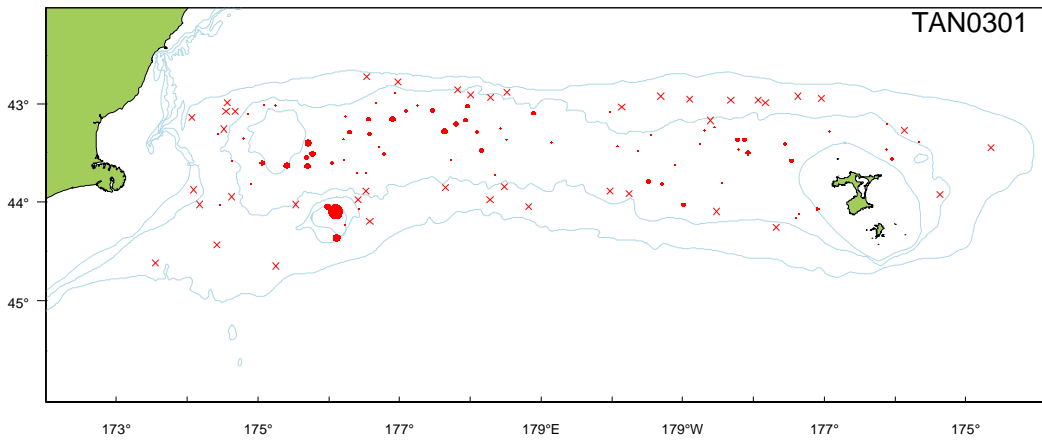
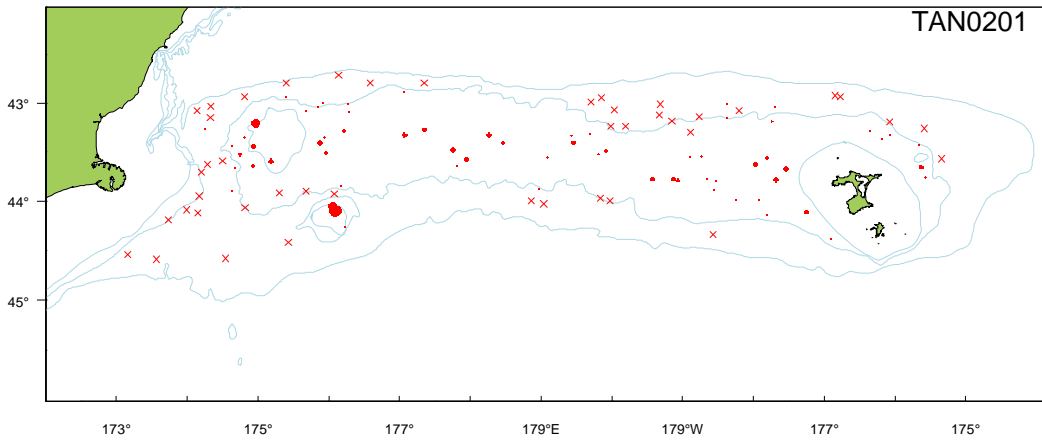
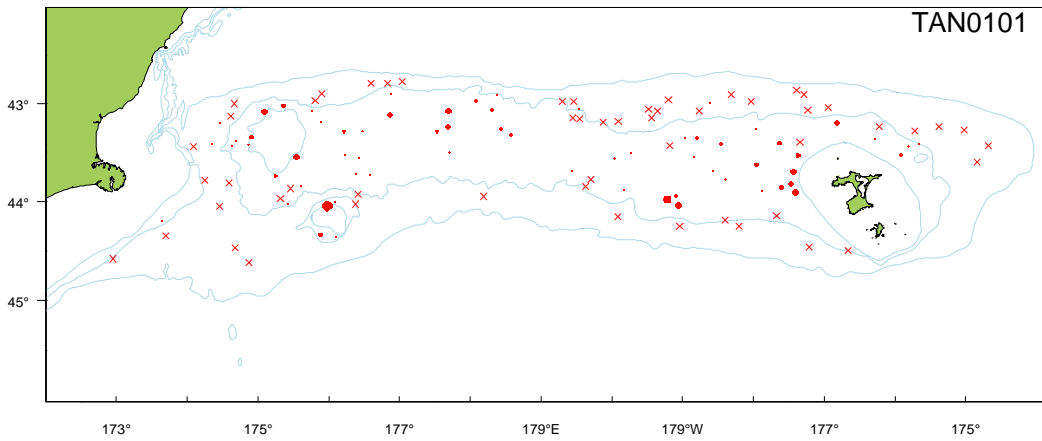
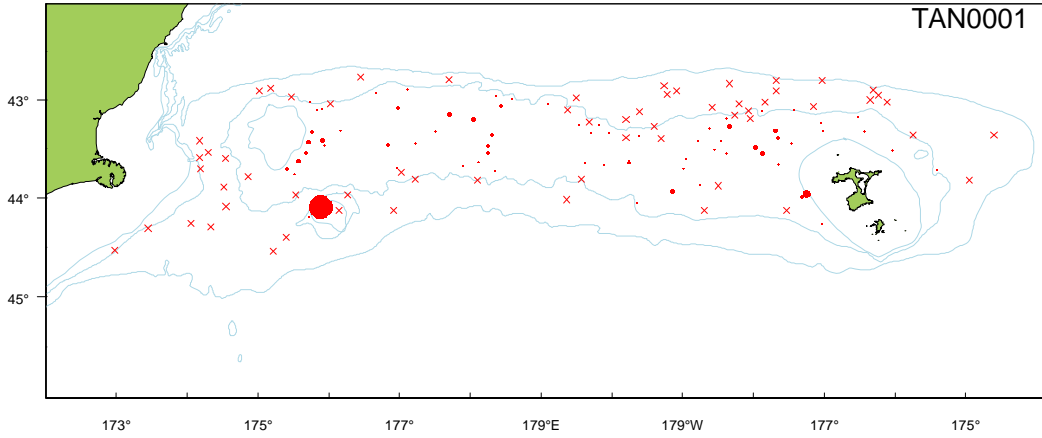
### Distribution

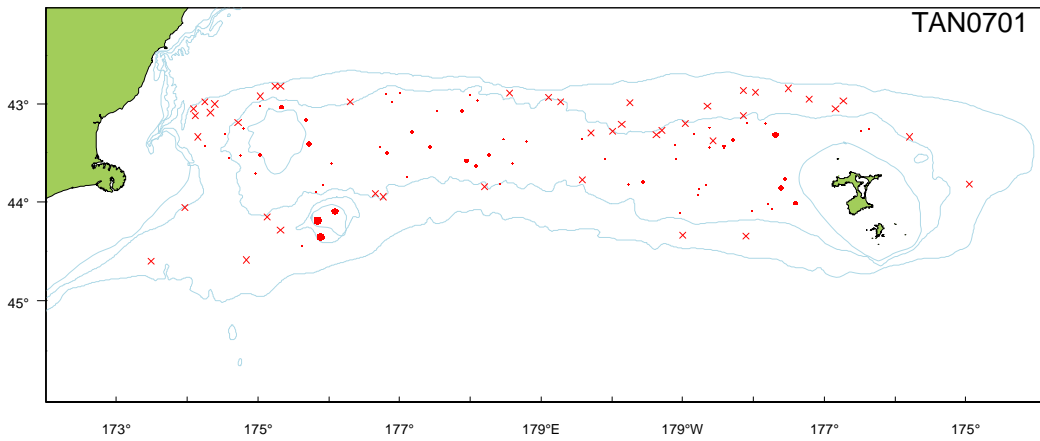
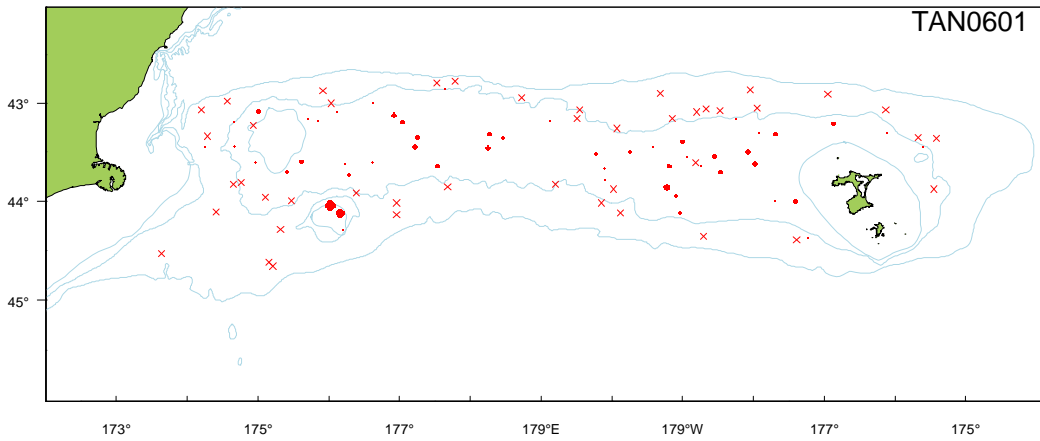
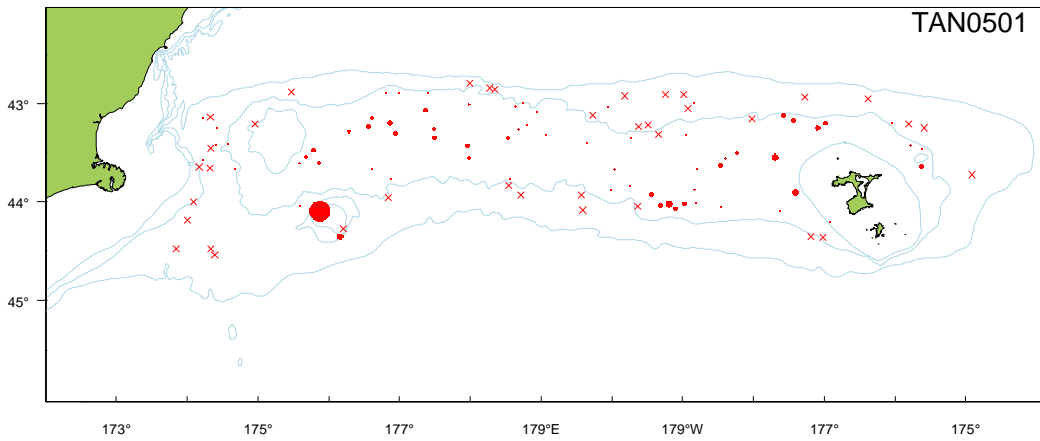
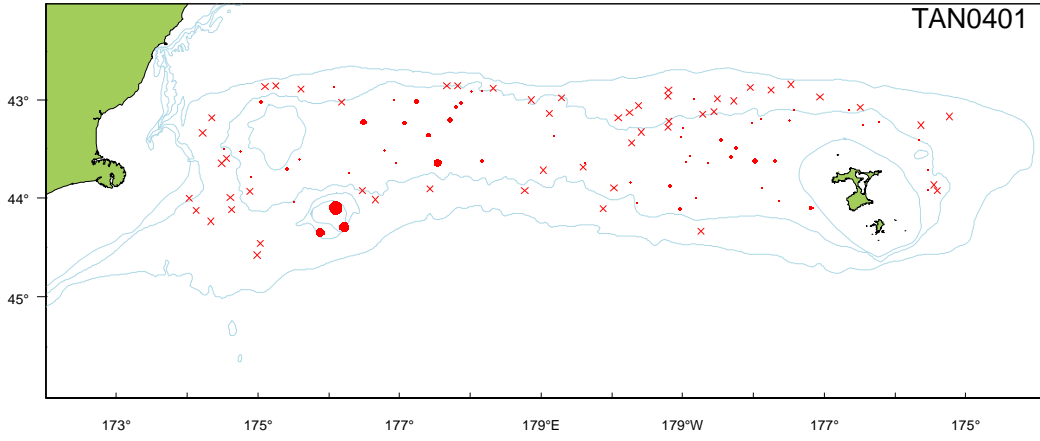


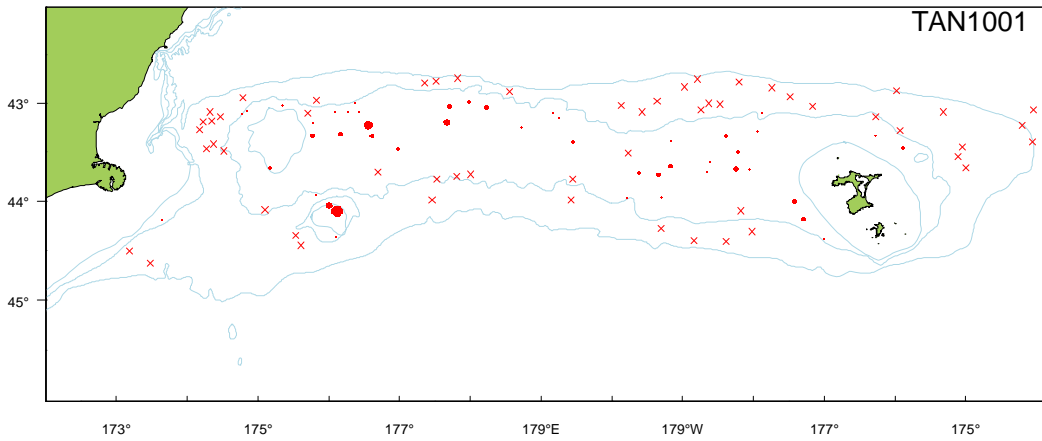
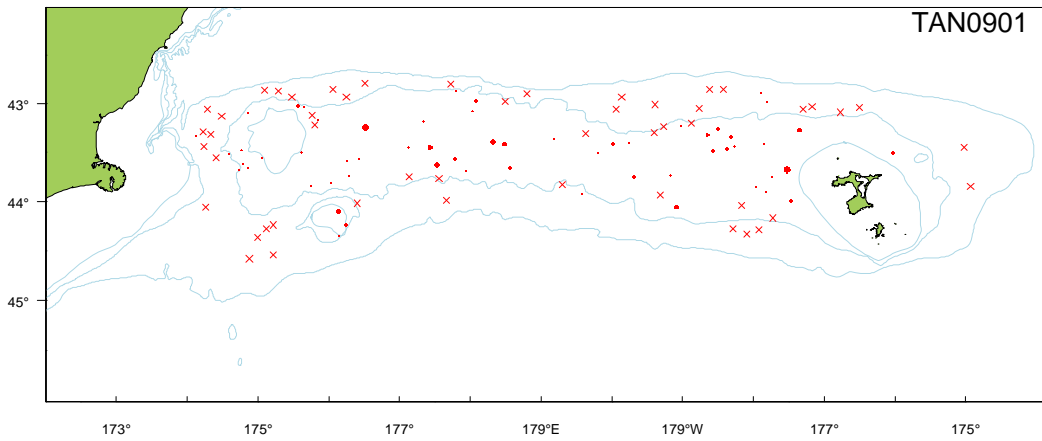
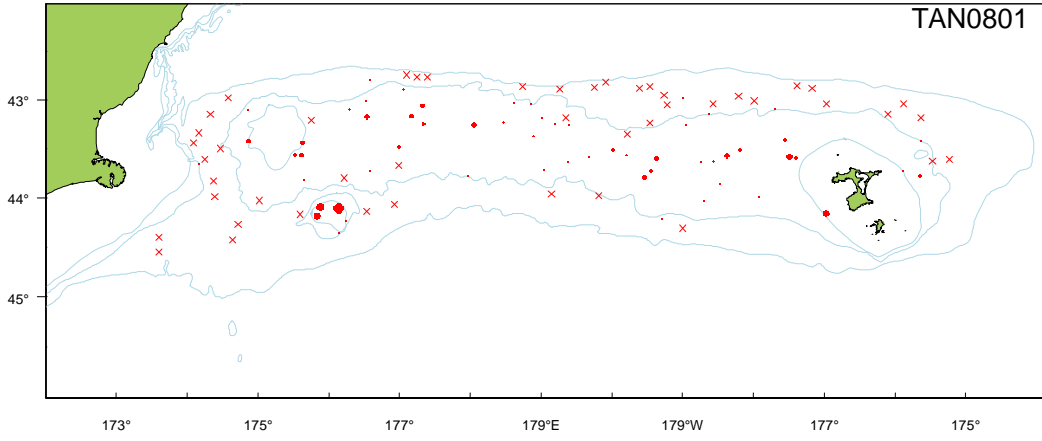




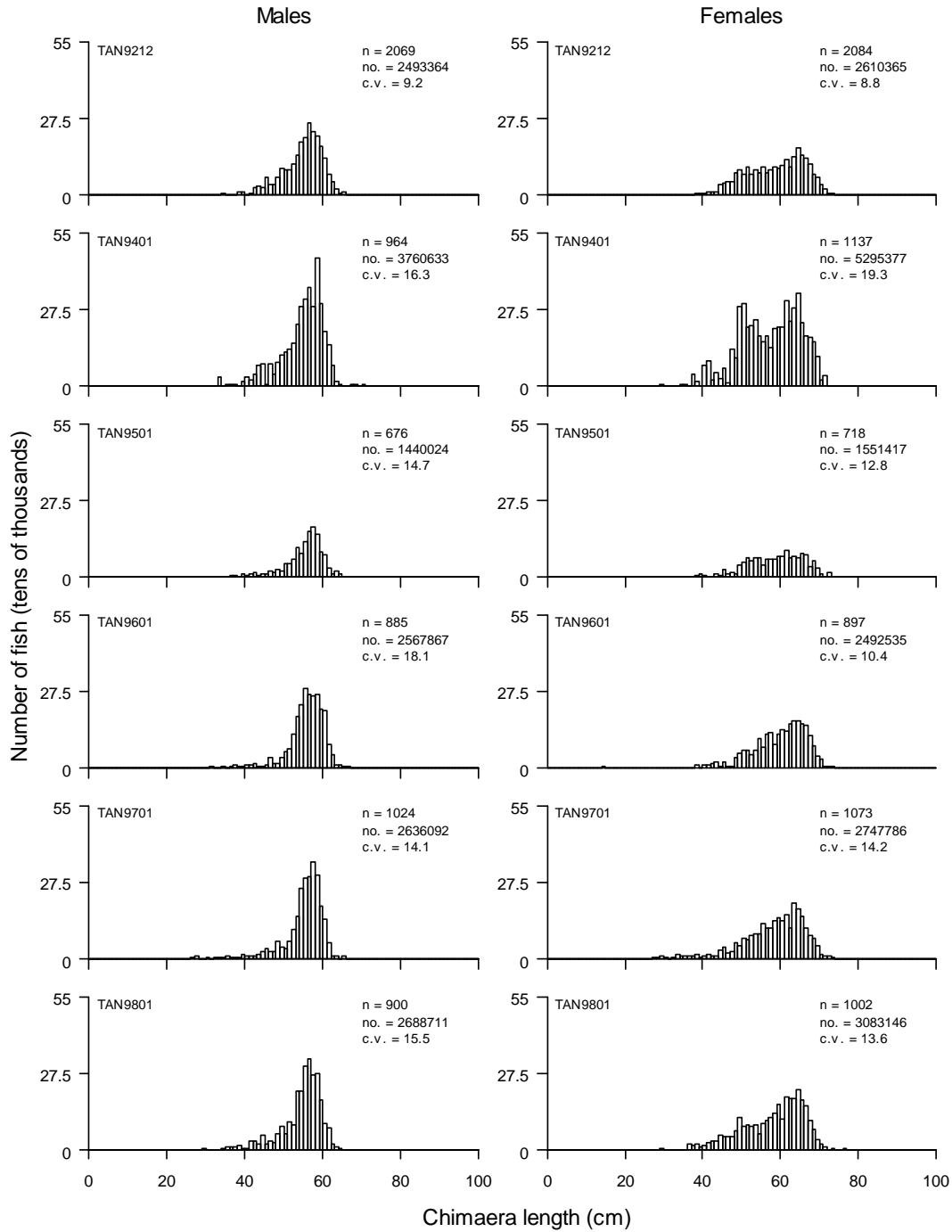


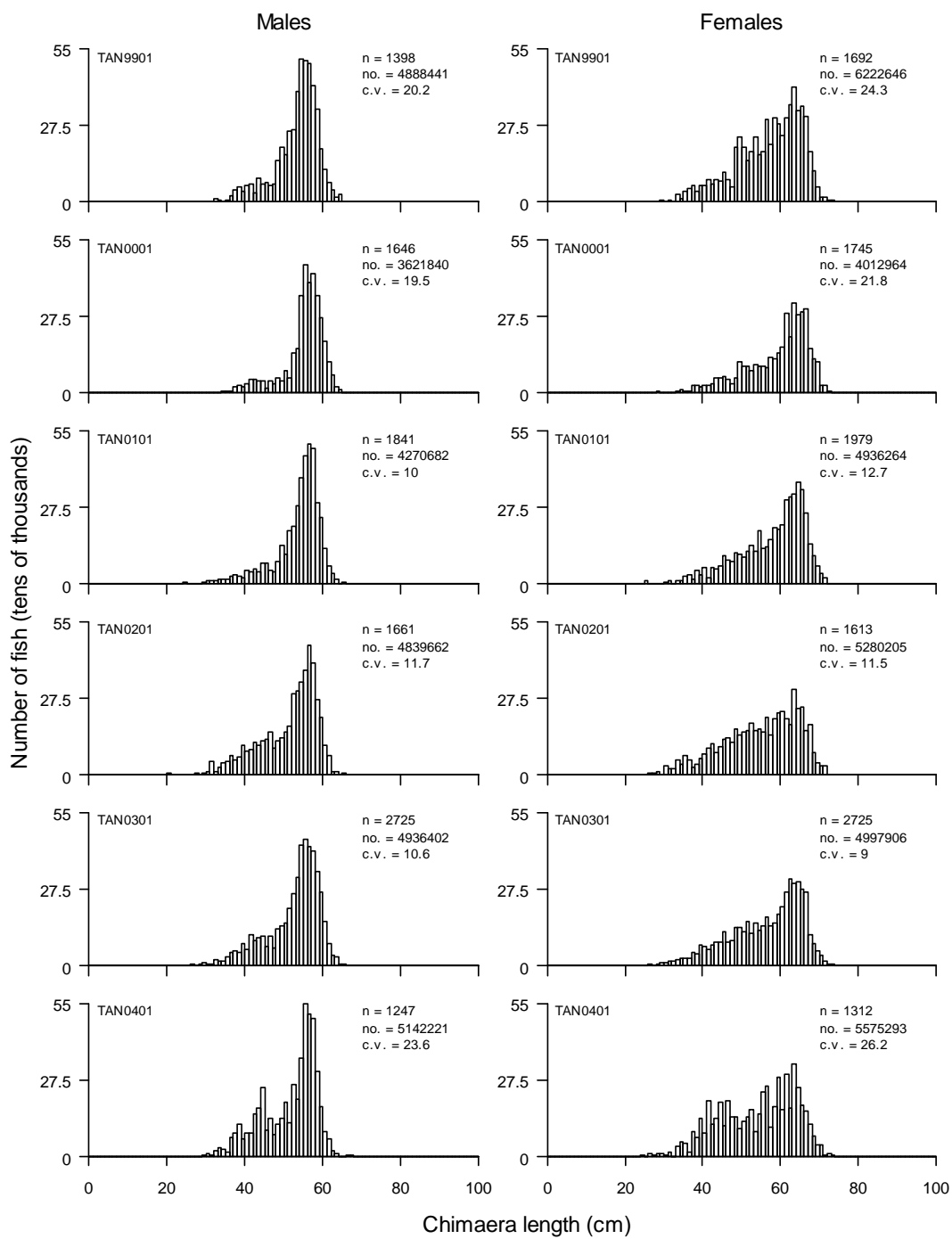


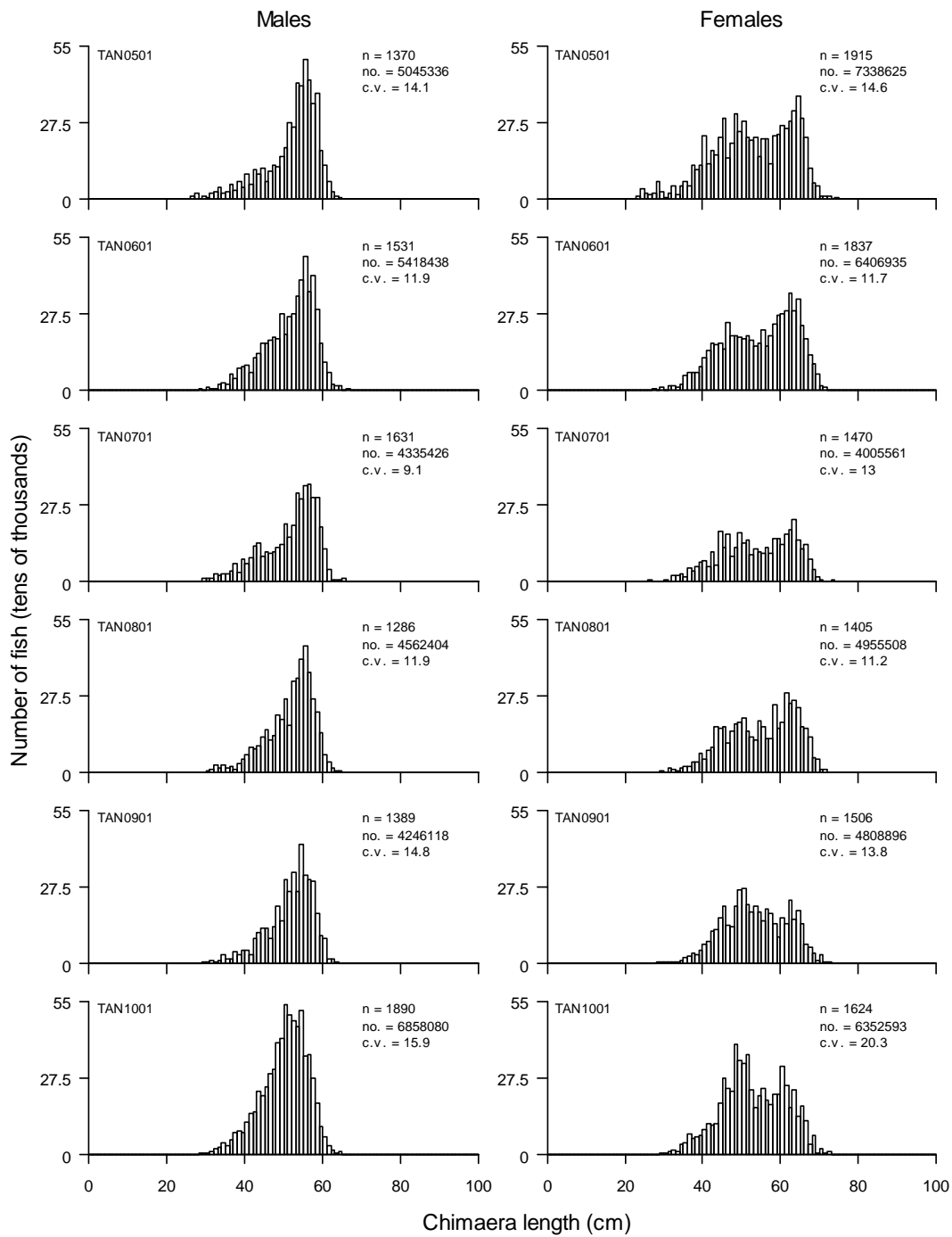




# Length Frequencies







### Gonad Stage Information (Cartilagenous)

#### Males

Year	p_M1	p_M2	p_M3	n_allM
1992	NA	NA	NA	0
1993	NA	NA	NA	0
1994	NA	NA	NA	0
1995	NA	NA	NA	0
1996	NA	NA	NA	0
1997	NA	NA	NA	0
1998	NA	NA	NA	0
1999	NA	NA	NA	0
2000	NA	NA	NA	0
2001	NA	NA	NA	0
2002	NA	NA	NA	0
2003	NA	NA	NA	0
2004	NA	NA	NA	0
2005	NA	NA	NA	0
2006	NA	NA	NA	0
2007	NA	NA	NA	0
2008	NA	NA	NA	0
2009	0.43	0.14	0.43	673
2010	0.4	0.17	0.42	764
ALL	0.42	0.16	0.43	1 437

#### Females

Year	p_F1	p_F2	p_F3	p_F4	p_F5	p_F6	n_allF
1992	NA	NA	NA	NA	NA	NA	0
1993	NA	NA	NA	NA	NA	NA	0
1994	NA	NA	NA	NA	NA	NA	0
1995	NA	NA	NA	NA	NA	NA	0
1996	NA	NA	NA	NA	NA	NA	0
1997	NA	NA	NA	NA	NA	NA	0
1998	NA	NA	NA	NA	NA	NA	0
1999	NA	NA	NA	NA	NA	NA	0
2000	NA	NA	NA	NA	NA	NA	0
2001	NA	NA	NA	NA	NA	NA	0
2002	NA	NA	NA	NA	NA	NA	0
2003	NA	NA	NA	NA	NA	NA	0
2004	NA	NA	NA	NA	NA	NA	0
2005	NA	NA	NA	NA	NA	NA	0
2006	NA	NA	NA	NA	NA	NA	0
2007	NA	NA	NA	NA	NA	NA	0
2008	NA	NA	NA	NA	NA	NA	0
2009	0.74	0.19	0.07	0	0	0	666
2010	0.48	0.29	0.16	0.07	0	0	682
ALL	0.61	0.24	0.11	0.04	0	0	1 348



Number of surveys caught 1992–2010 (out of 19):	19
Total catch weight (kg):	45 453.9
Number measured	19 640
Length range (mean) (cm, GL)	10–69.3 (66.4)
Number weighed	7 894
Length-weight parameters a, b (r <sup>2</sup> )	0.008345, 2.910726 (95.2)

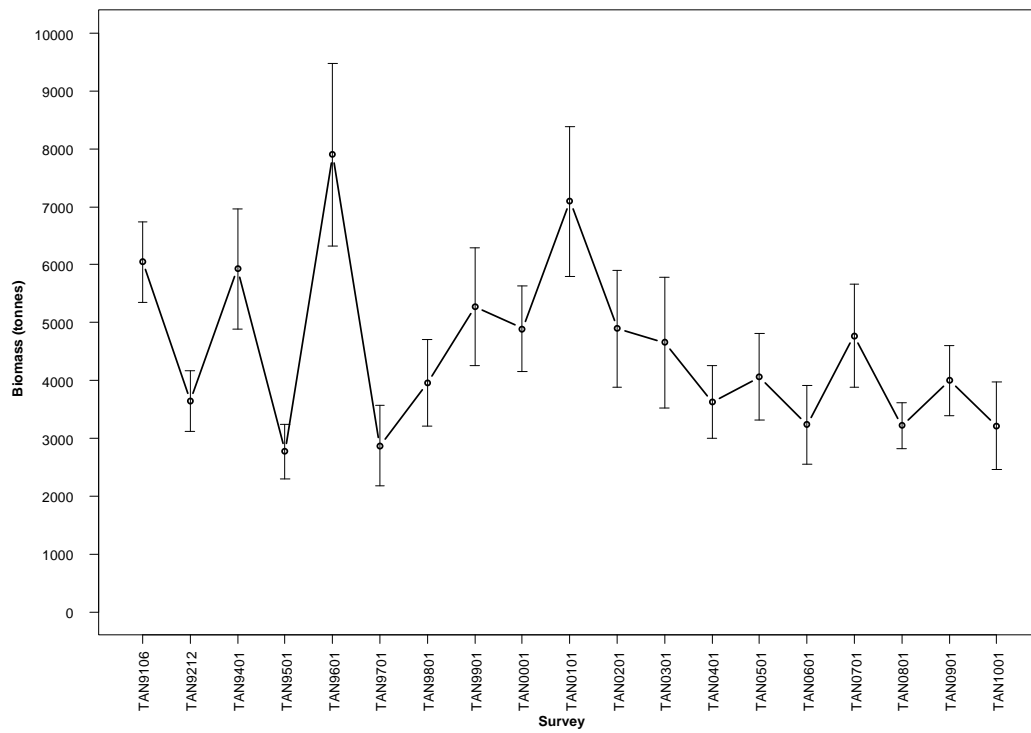
The core survey area and depth range **is not** appropriate for this species. It is found **deeper than 800 m**. Biomass of this species is **very well** estimated in the core survey area. Biomass **shows no clear trend** since the start of the time series. Catch rates are highest in the **south**. Length frequencies **have multiple modes which may contain information about year-class strength**. Mean length has **decreased** since the start of the time series. Gonad stage data indicate that fish **of all stages** are observed in the survey.

**Relative biomass estimates and length summary**

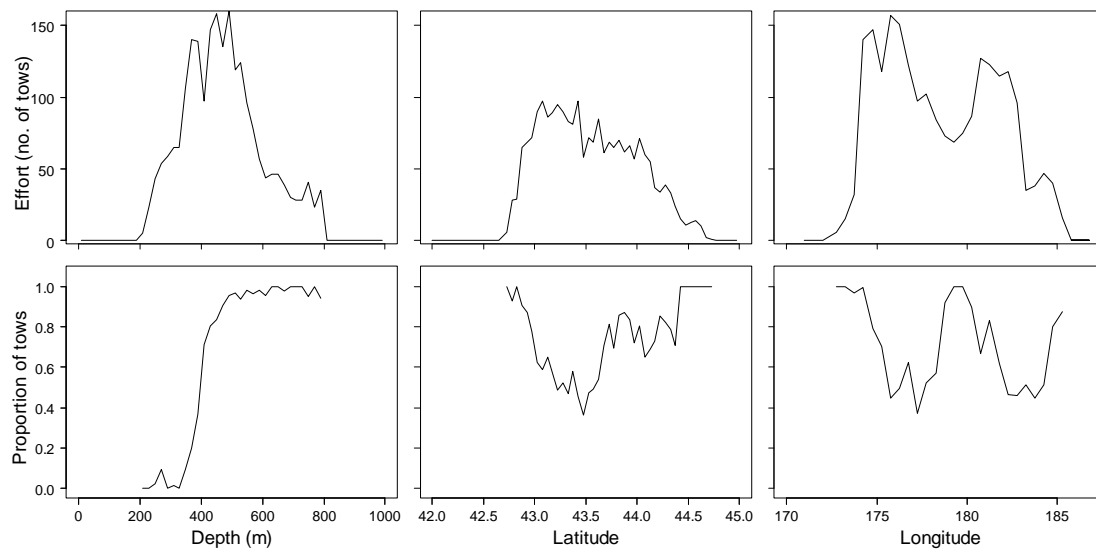
Year	Biomass (t)	cv (%)	Length (cm)			No. measure d
			Min.	Max.	Mean	
1992	6 049	6	52*	109*	90.5*	69
1993	3 643	7	26	86	67.9	1 212
1994	5 928	9	35	89	67.1	1 842
1995	2 769	9	28	86	69.1	724
1996	7 902	10	31	88	68.0	1 346
1997	2 871	12	34	89	69.1	635
1998	3 958	10	18	90	67.8	820
1999	5 272	10	25	85	67.5	1 105
2000	4 892	8	28	87	69.3	1 046
2001	7 094	9	21	94	66.8	1 488
2002	4 896	10	24	86	66.6	1 162
2003	4 653	12	29	89	65.8	1 069
2004	3 627	9	26	88	66.3	834
2005	4 061	9	26	87	64.4	916
2006	3 237	10	30	88	64.4	698
2007	4 771	9	24	88	64.9	1 006
2008	3 220	6	10	86	63.9	777
2009	3 995	8	20	86	62.8	1 016
2010	3 216	12	28	87	63.3	697

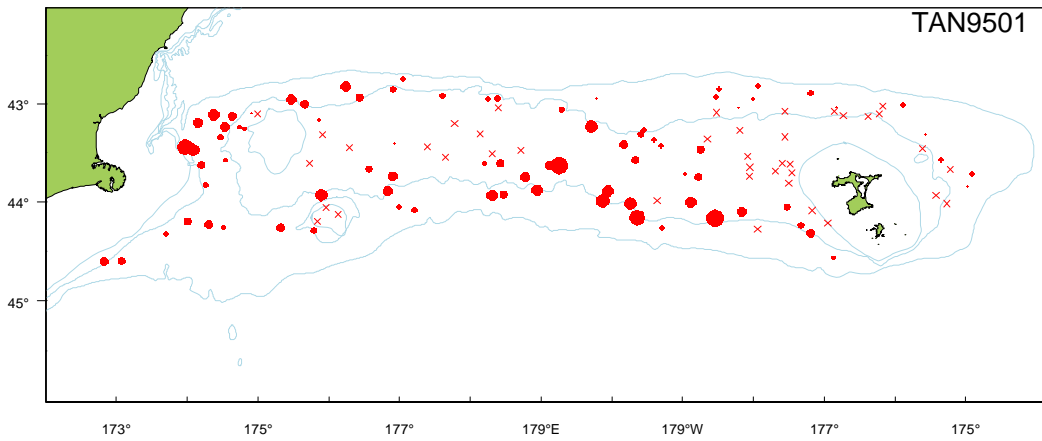
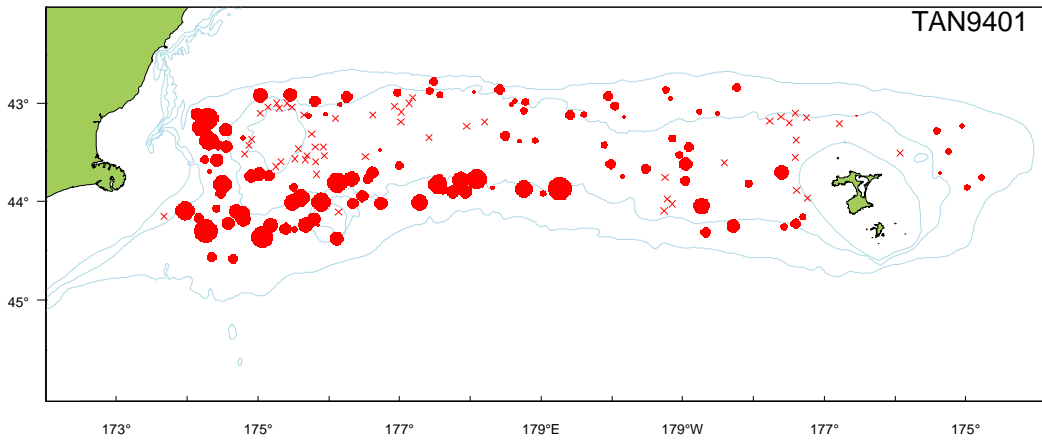
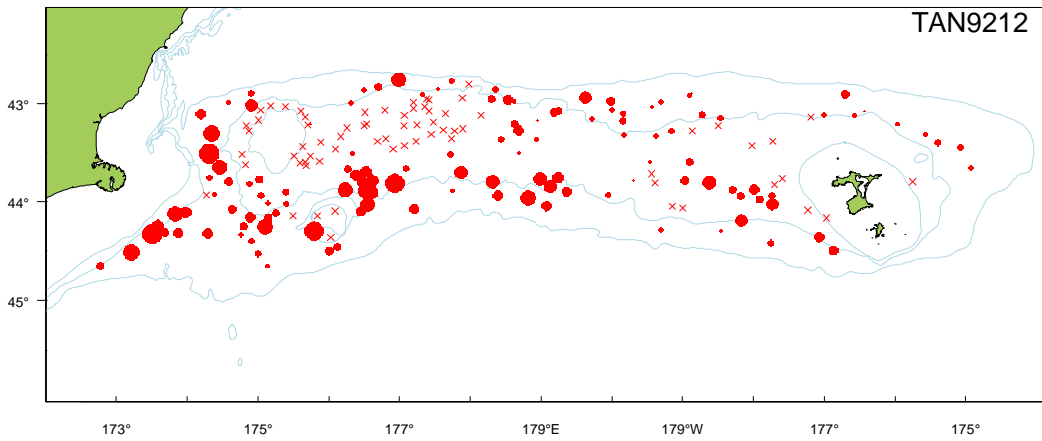
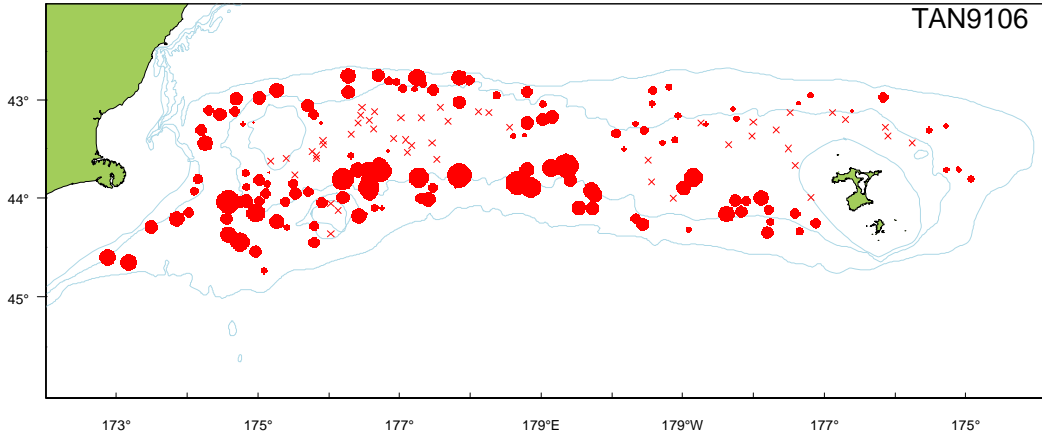
\* Measured as total length not chimaera length.

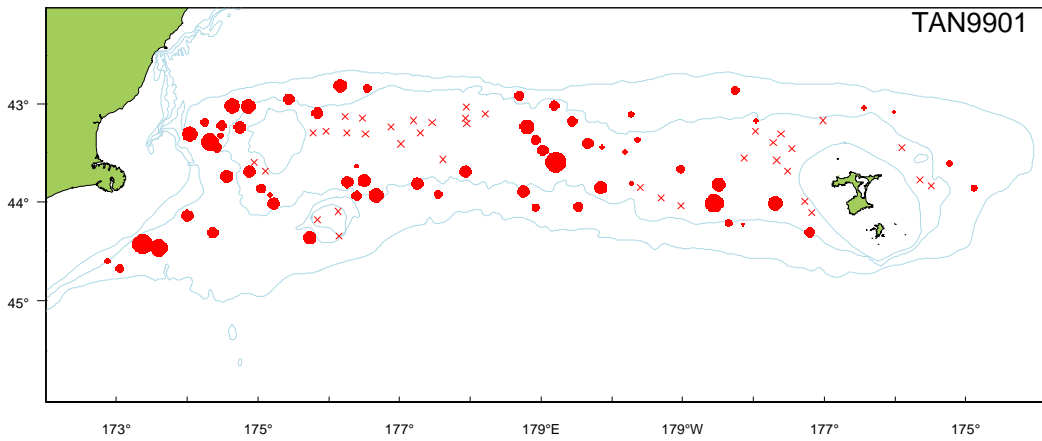
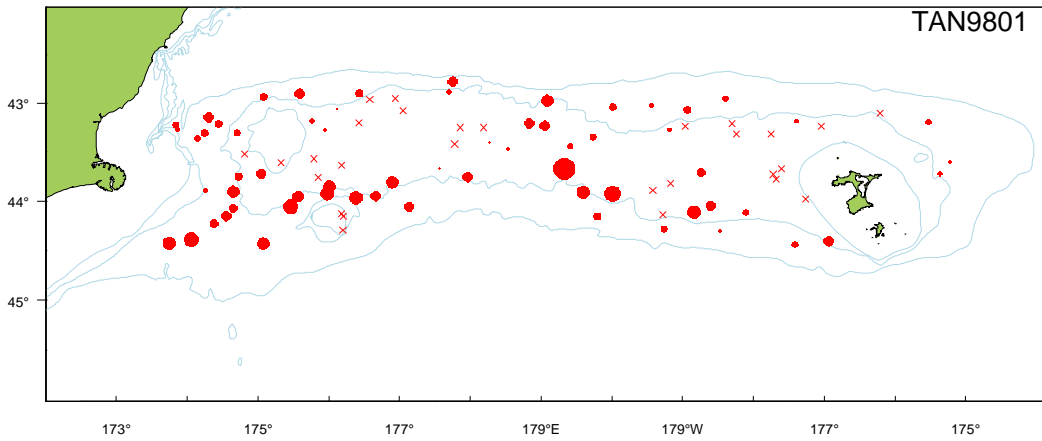
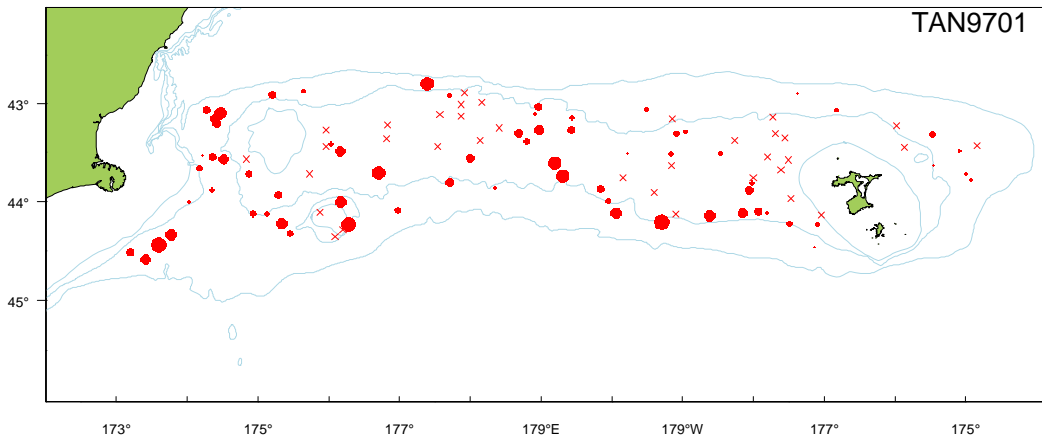
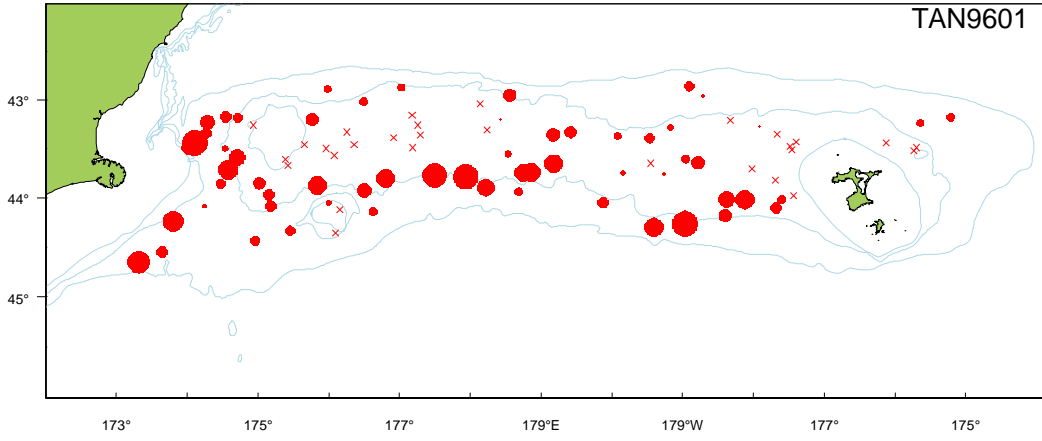


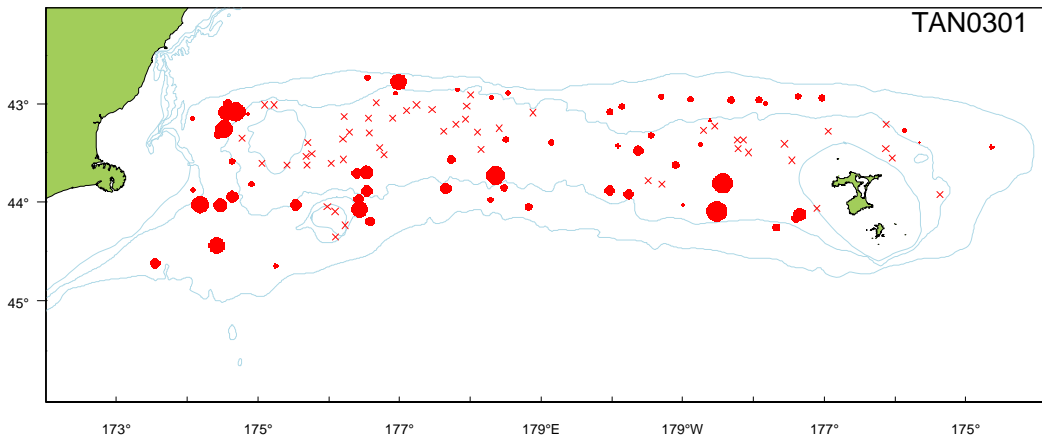
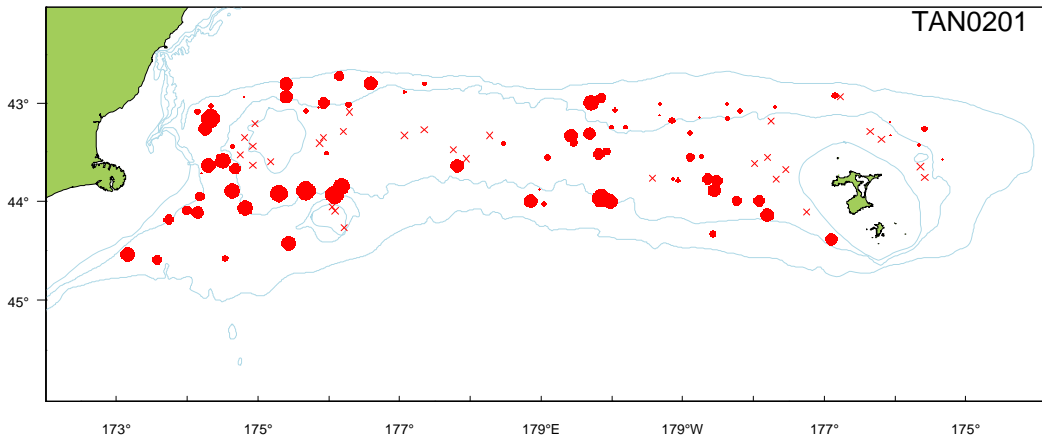
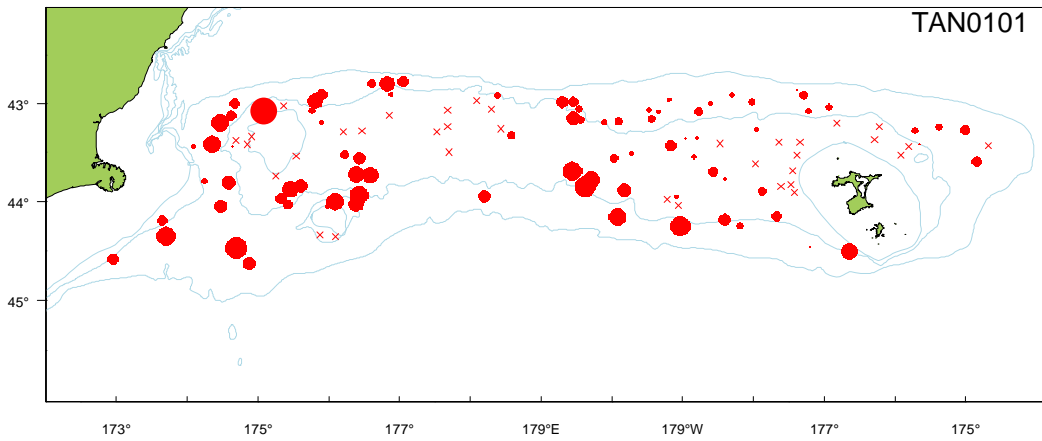
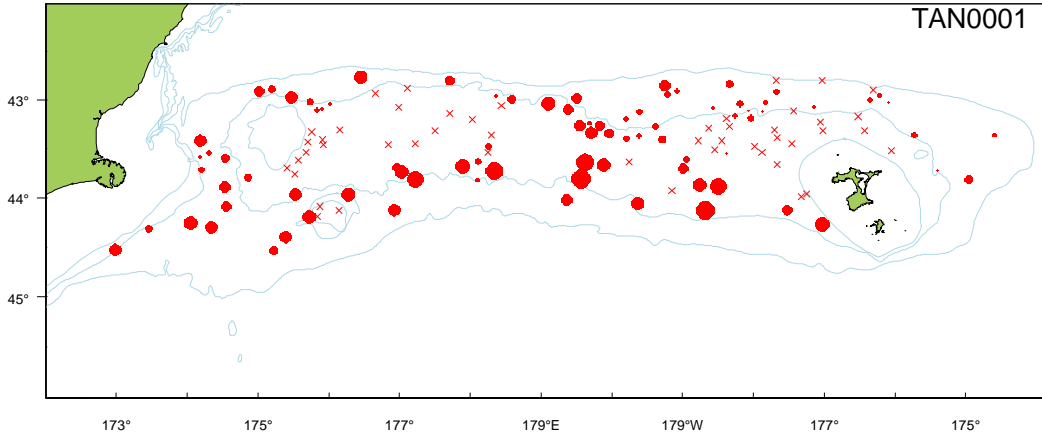


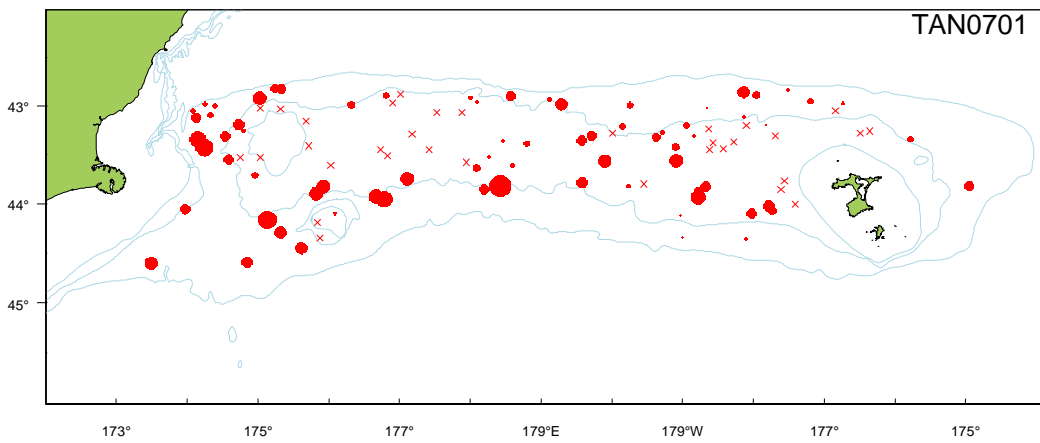
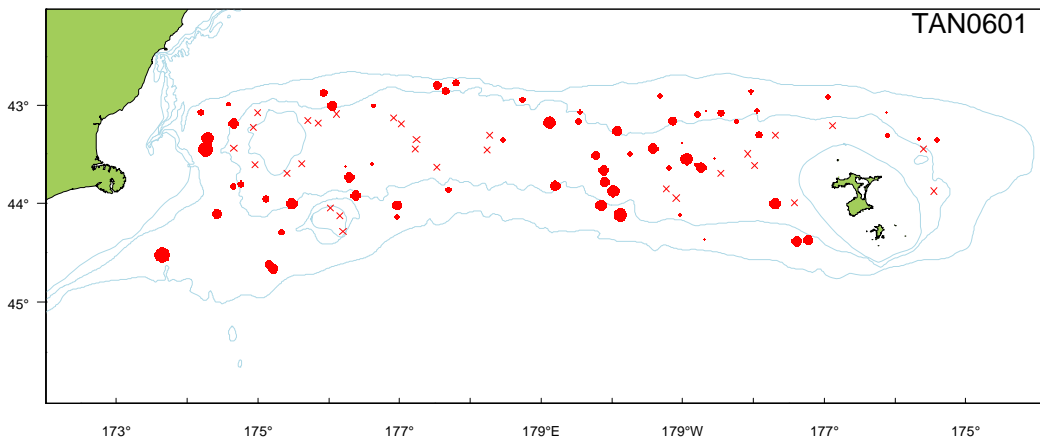
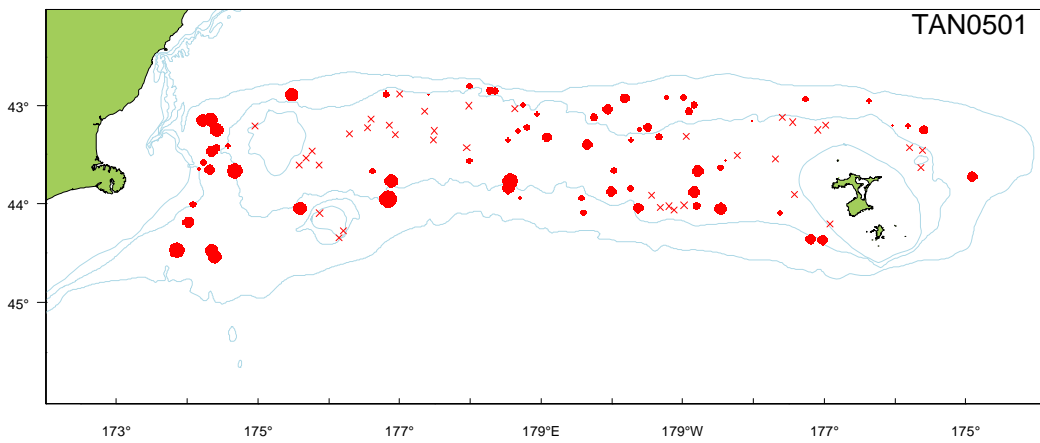
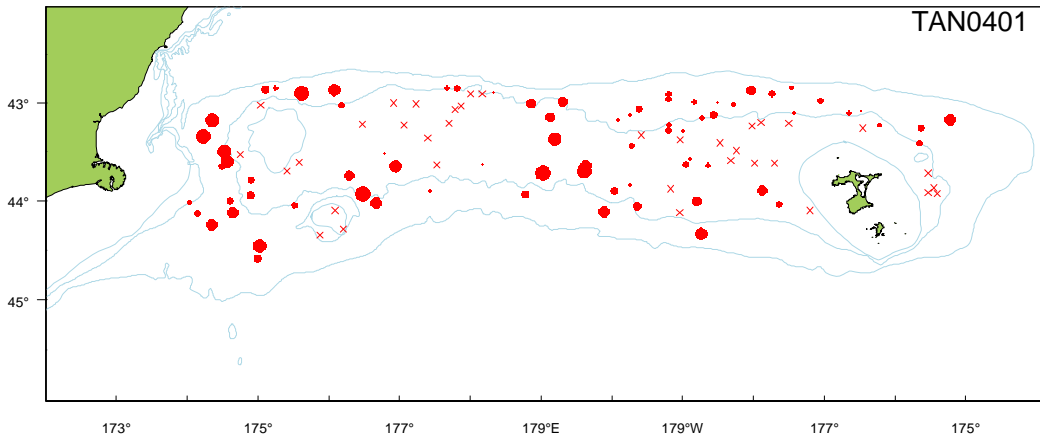
### Distribution

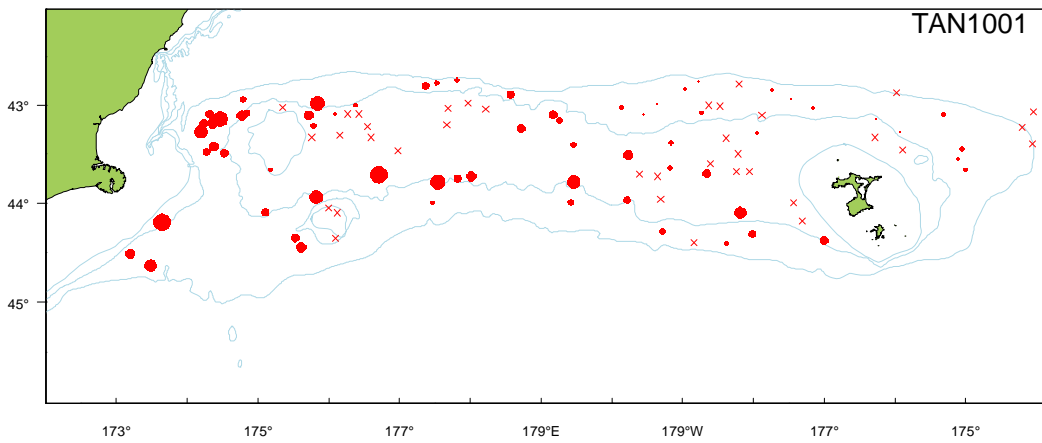
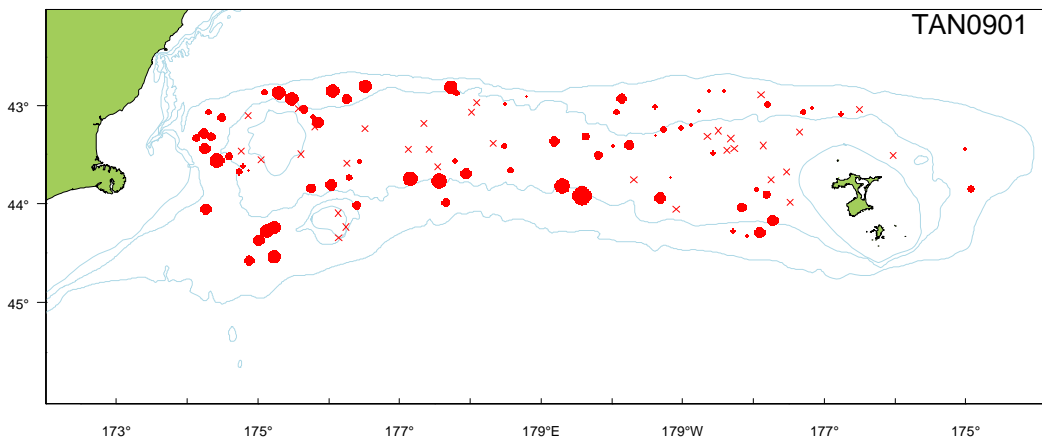
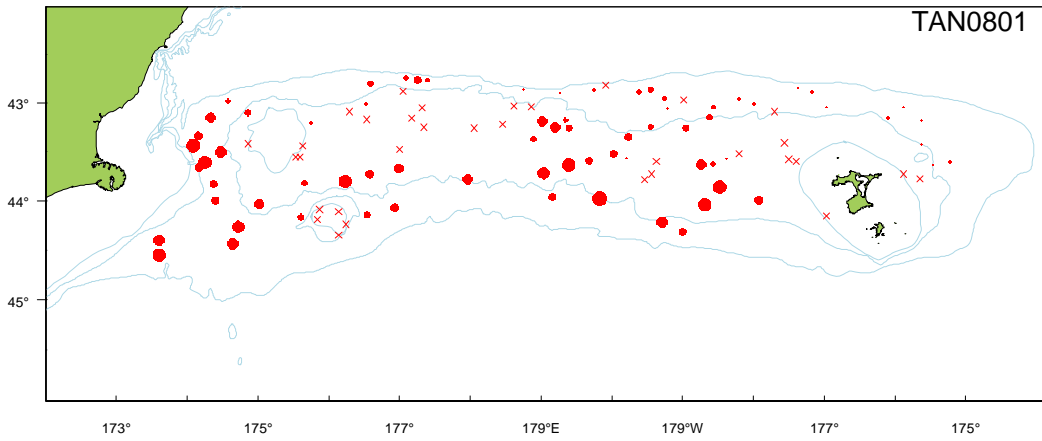




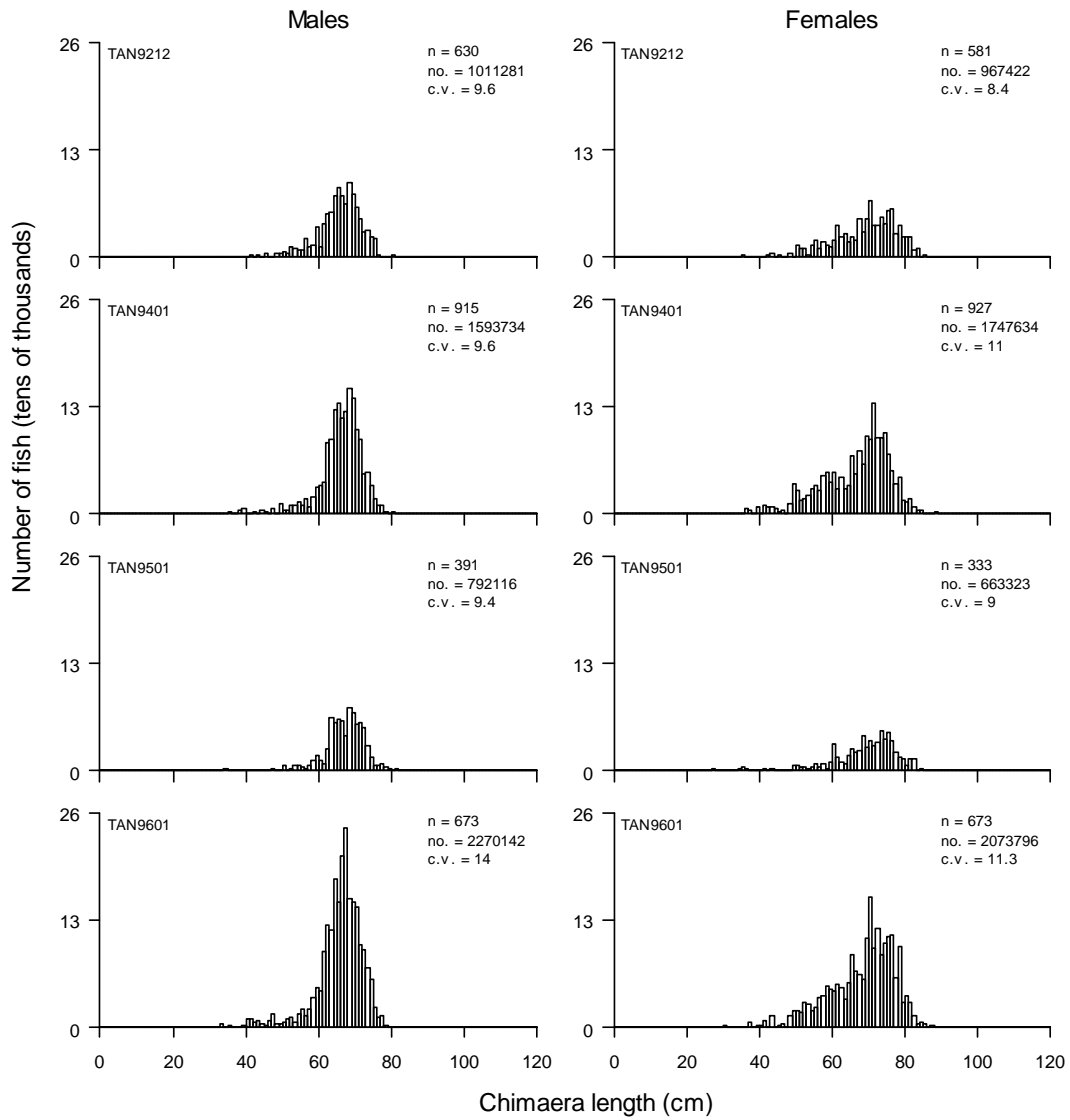


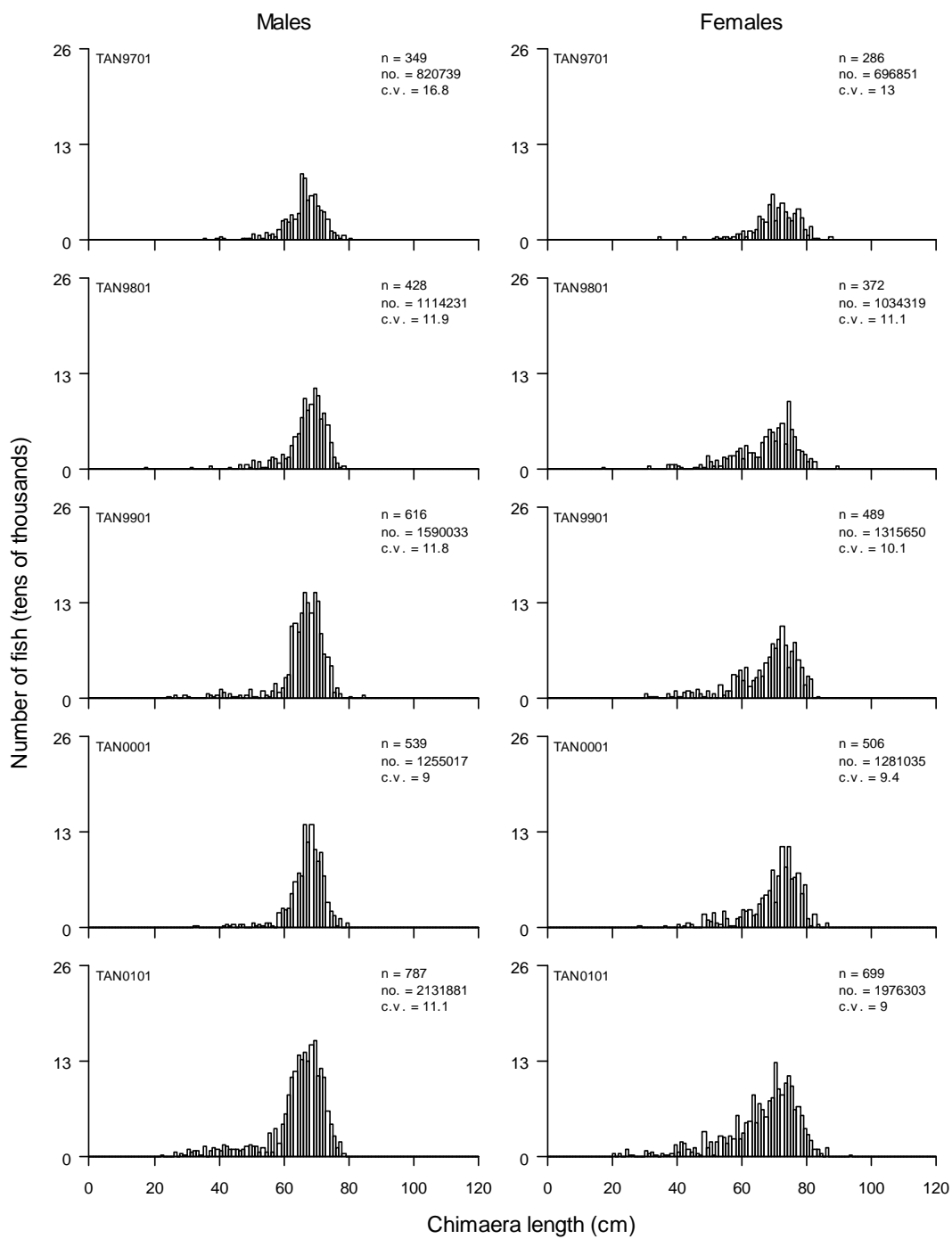




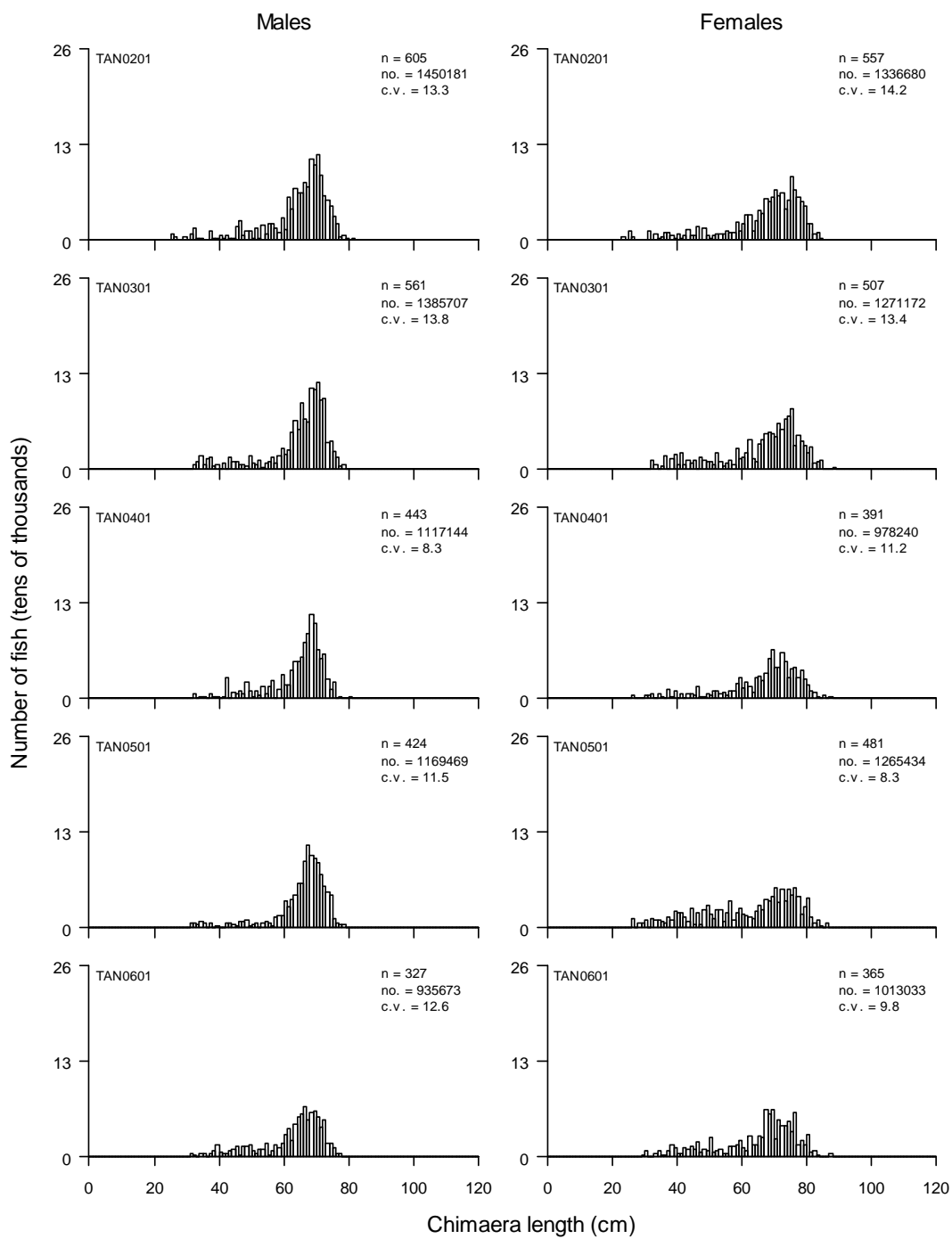


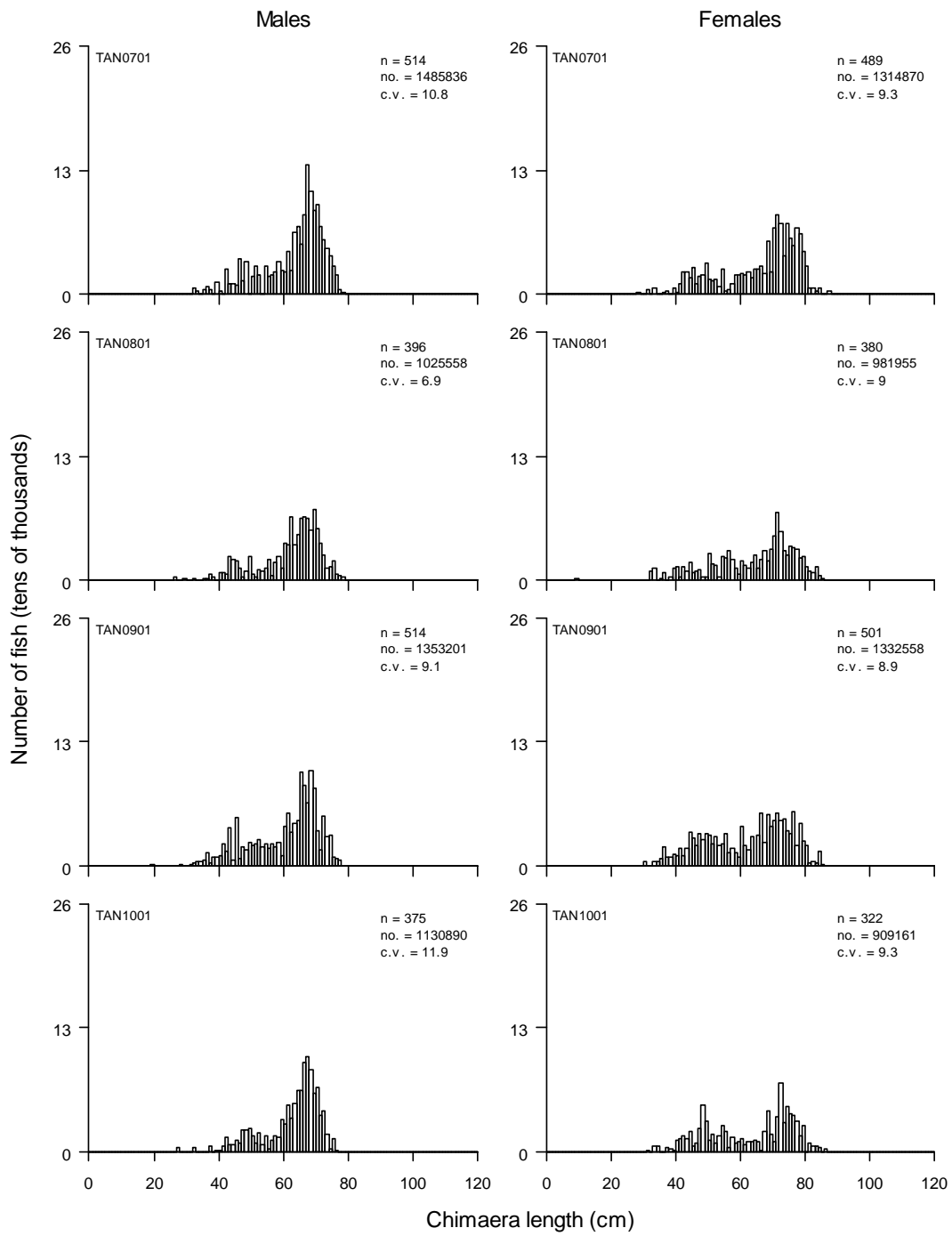
## Length Frequencies











### Gonad Stage Information (Cartilagenous)

#### Males

Year	p_M1	p_M2	p_M3	n_allM
1992	NA	NA	NA	0
1993	NA	NA	NA	0
1994	NA	NA	NA	0
1995	NA	NA	NA	0
1996	NA	NA	NA	0
1997	NA	NA	NA	0
1998	NA	NA	NA	0
1999	NA	NA	NA	0
2000	NA	NA	NA	0
2001	NA	NA	NA	0
2002	NA	NA	NA	0
2003	NA	NA	NA	0
2004	NA	NA	NA	0
2005	NA	NA	NA	0
2006	NA	NA	NA	0
2007	NA	NA	NA	0
2008	NA	NA	NA	0
2009	0.38	0.03	0.59	221
2010	0.26	0.07	0.66	276
ALL	0.32	0.05	0.63	497

#### Females

Year	p_F1	p_F2	p_F3	p_F4	p_F5	p_F6	n_allF
1992	NA	NA	NA	NA	NA	NA	0
1993	NA	NA	NA	NA	NA	NA	0
1994	NA	NA	NA	NA	NA	NA	0
1995	NA	NA	NA	NA	NA	NA	0
1996	NA	NA	NA	NA	NA	NA	0
1997	NA	NA	NA	NA	NA	NA	0
1998	NA	NA	NA	NA	NA	NA	0
1999	NA	NA	NA	NA	NA	NA	0
2000	NA	NA	NA	NA	NA	NA	0
2001	NA	NA	NA	NA	NA	NA	0
2002	NA	NA	NA	NA	NA	NA	0
2003	NA	NA	NA	NA	NA	NA	0
2004	NA	NA	NA	NA	NA	NA	0
2005	NA	NA	NA	NA	NA	NA	0
2006	NA	NA	NA	NA	NA	NA	0
2007	NA	NA	NA	NA	NA	NA	0
2008	NA	NA	NA	NA	NA	NA	0
2009	0.49	0.21	0.29	0	0	0	205
2010	0.42	0.15	0.41	0.03	0	0	232
ALL	0.45	0.18	0.35	0.02	0	0	437

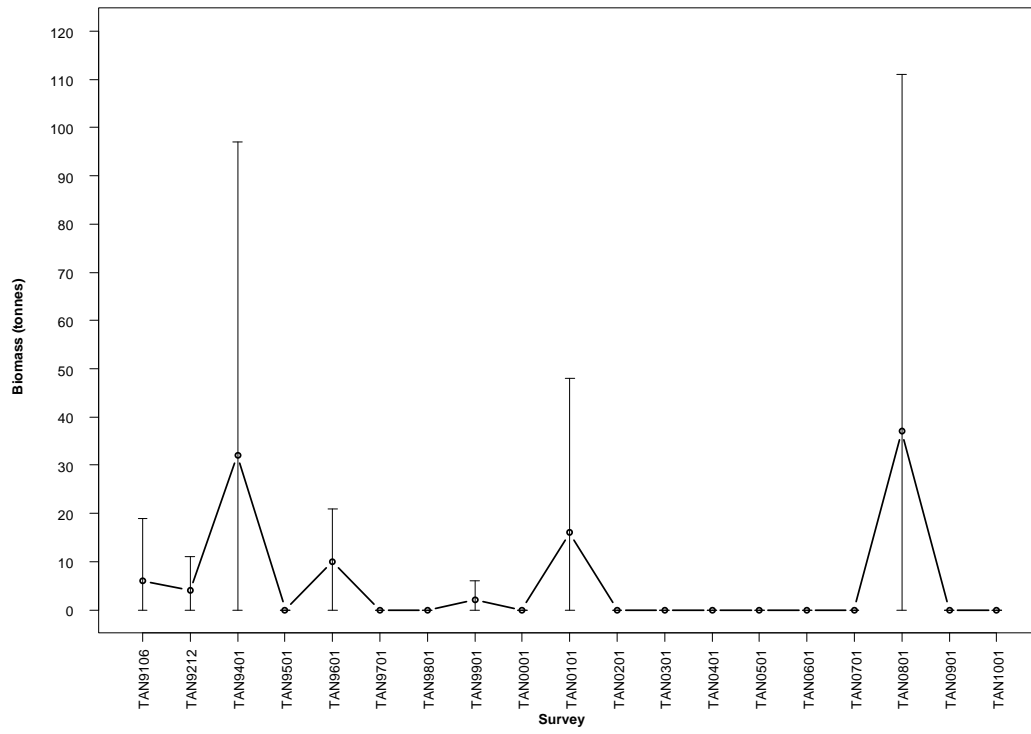


Number of surveys caught 1992–2010 (out of 19):	7
Total catch weight (kg):	57.5
Number measured	56
Length range (mean) (cm, TL)	39–52 (45.4)
Number weighed	–
Length-weight parameters a, b ( $r^2$ )	–

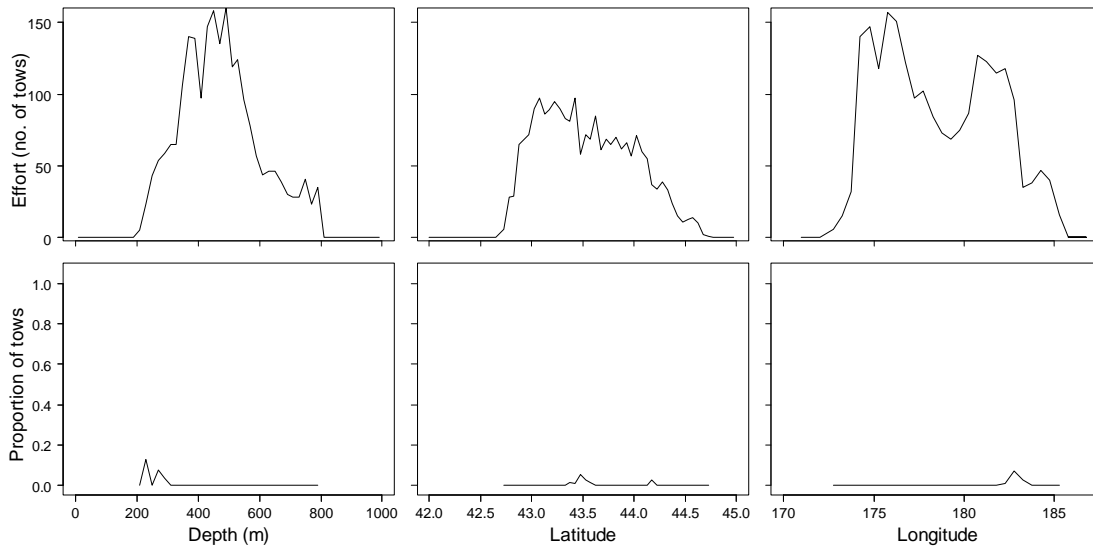
The core survey area and depth range **is not** appropriate for this species. It is found **shallower than 200 m**. Biomass of this species is **poorly** estimated in the core survey area. Biomass has **decreased** since the start of the time series.

#### Relative biomass estimates

Year	Biomass (t)	cv (%)
1992	6	100
1993	4	100
1994	32	100
1995	0	-
1996	10	59
1997	0	-
1998	0	-
1999	2	100
2000	0	-
2001	16	100
2002	0	-
2003	0	-
2004	0	-
2005	0	-
2006	0	-
2007	0	-
2008	37	100
2009	0	-
2010	0	-



### Distribution



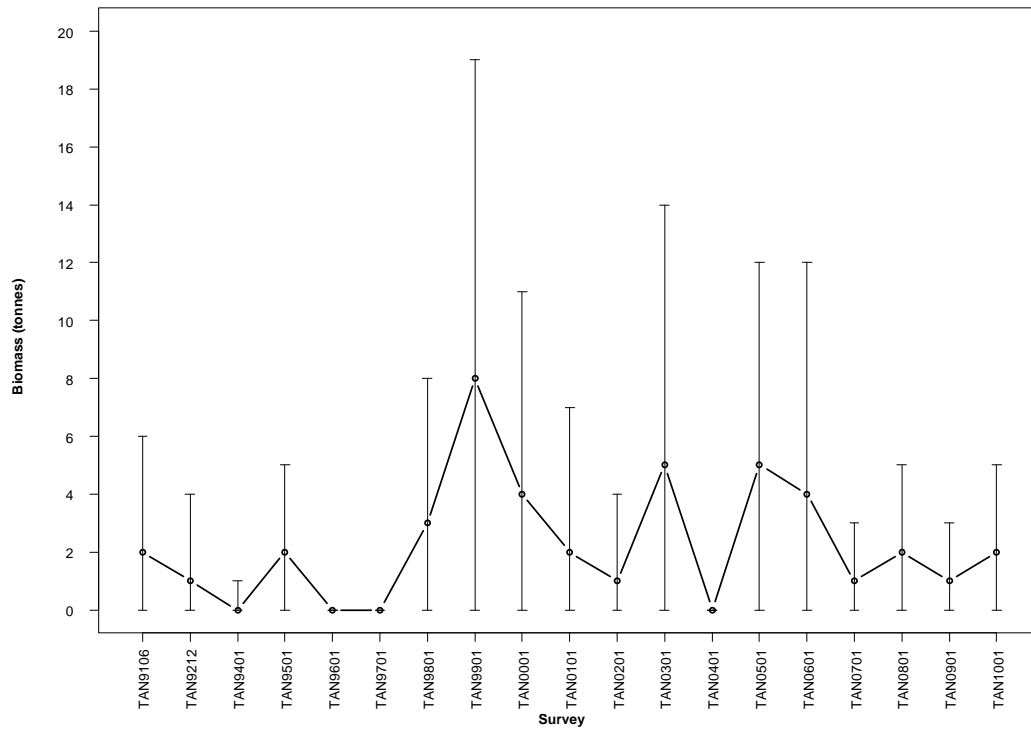


Number of surveys caught 1992–2010 (out of 19):	16
Total catch weight (kg):	33.6
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b ( $r^2$ )	–

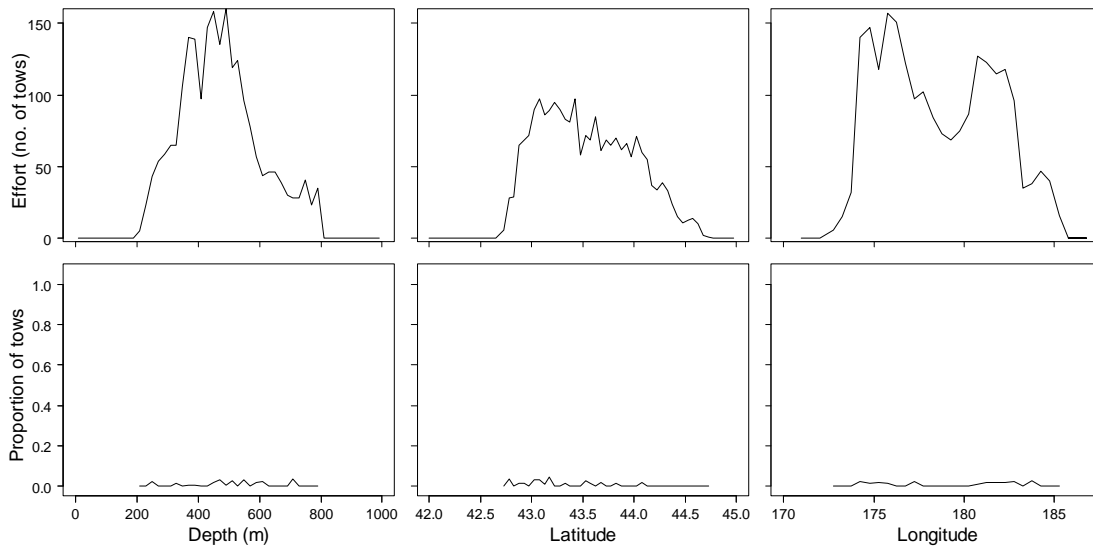
There were **too few fish caught to determine whether the core survey area is appropriate for this species**. Biomass of this species is **poorly** estimated in the core survey area. Biomass **has increased and then decreased** since the start of the time series.

#### Relative biomass estimates

Year	Biomass (t)	cv (%)
1992	2	76
1993	1	100
1994	0	100
1995	2	100
1996	0	-
1997	0	-
1998	3	100
1999	8	77
2000	4	100
2001	2	100
2002	1	100
2003	5	100
2004	0	-
2005	5	72
2006	4	100
2007	1	100
2008	2	100
2009	1	71
2010	2	100



### Distribution





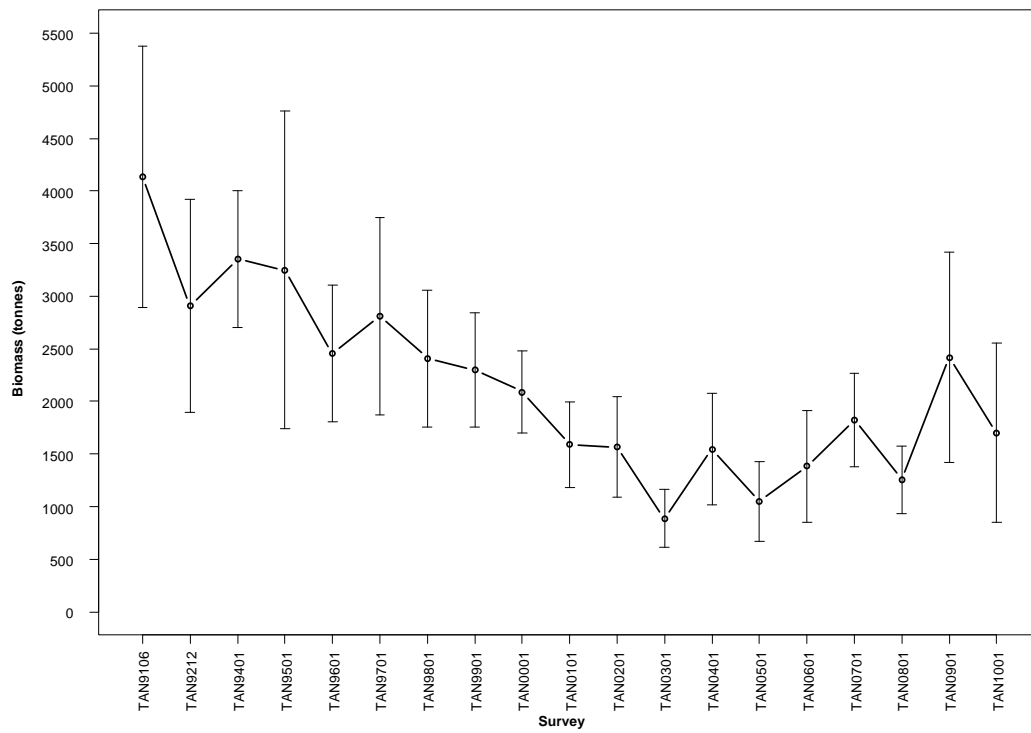
Number of surveys caught 1992–2010 (out of 19):	19
Total catch weight (kg):	27 193
Number measured	6 493
Length range (mean) (cm, TL)	21–132 (77.9)
Number weighed	5 913
Length-weight parameters a, b ( $r^2$ )	0.001954, 3.293127 (98.44)

The core survey area and depth range **is** appropriate for this species. Biomass of this species is **very well** estimated in the core survey area. Biomass has **decreased** since the start of the time series. Catch rates are highest in the **north**. Length frequencies **have multiple modes which contain information about year-class strength**. Mean length **shows no clear trend** since the start of the time series. Age frequencies show a pulse of good recruitment in the early 1990s and 2000s. Gonad stage data indicate that fish **of all stages** are observed in the survey.

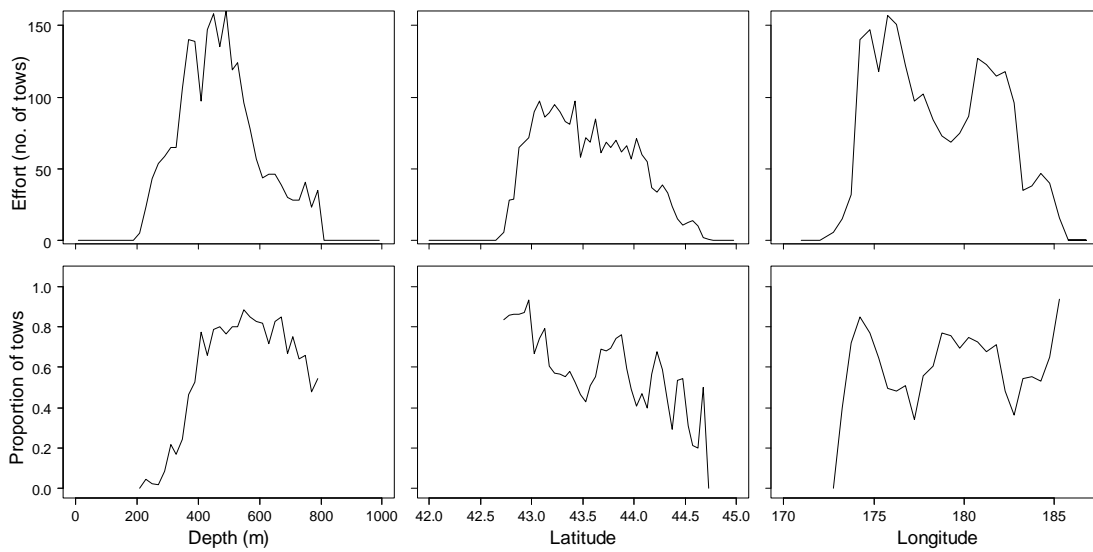
#### Relative biomass estimates and length summary

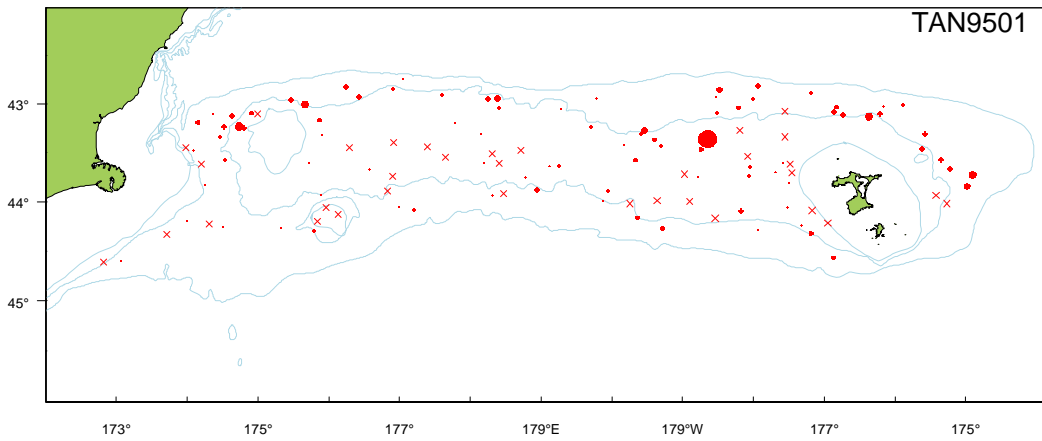
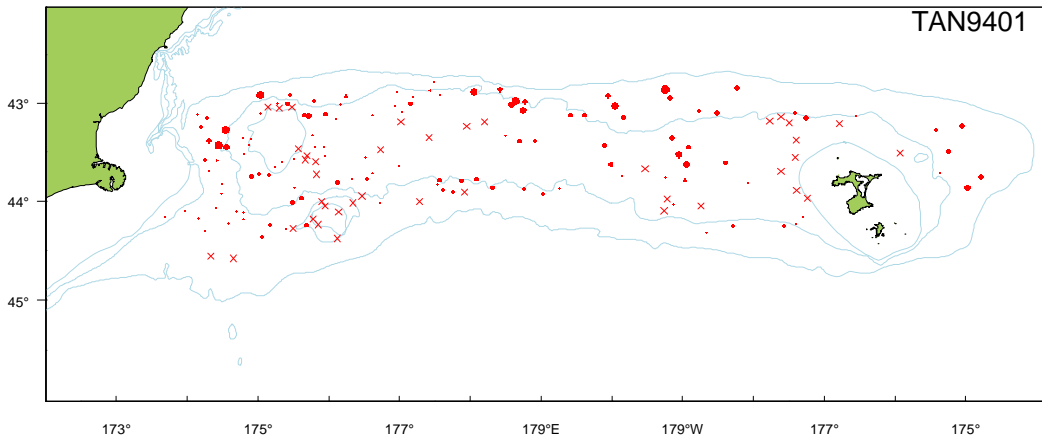
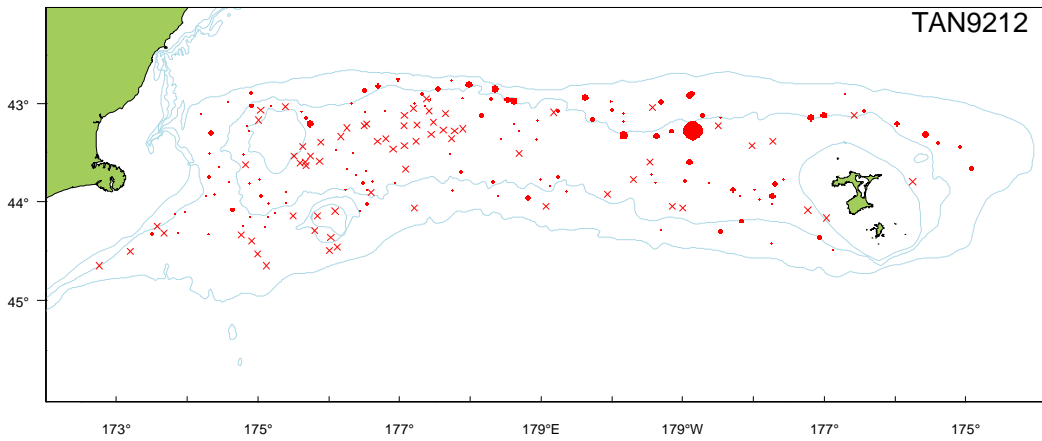
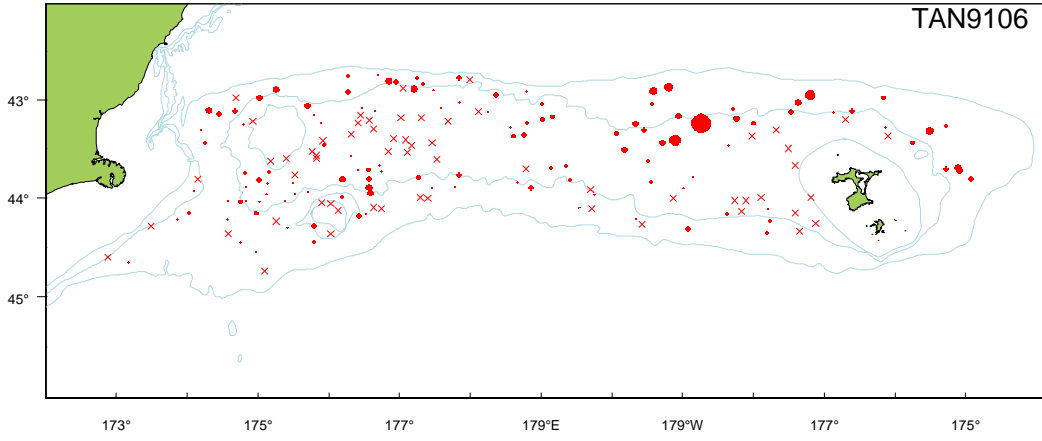
Year	Biomass (t)	cv (%)	Length (cm)			No. measured
			Min.	Max.	Mean	
1992	4 138	15	43	128	86.1	627
1993	2 908	17	35	130	77.8	519
1994	3 355	10	39	125	71.2	648
1995	3 246	23	46	128	78.8	432
1996	2 457	13	35	123	71.4	349
1997	2 811	17	43	126	74.2	308
1998	2 408	14	42	130	78.1	280
1999	2 302	12	42	122	78.1	236
2000	2 090	9	26	125	78.7	355
2001	1 589	13	42	124	79.3	252
2002	1 567	15	44	126	79.9	225
2003	888	16	21	121	82.0	102
2004	1 547	17	32	126	77.6	204
2005	1 048	18	38	124	64.3	222
2006	1 384	19	37	132	73.0	235
2007	1 824	12	46	124	76.8	269
2008	1 257	13	40	123	82.7	145
2009	2 419	21	42	130	84.4	460
2010	1 701	25	54	128	84.5	219

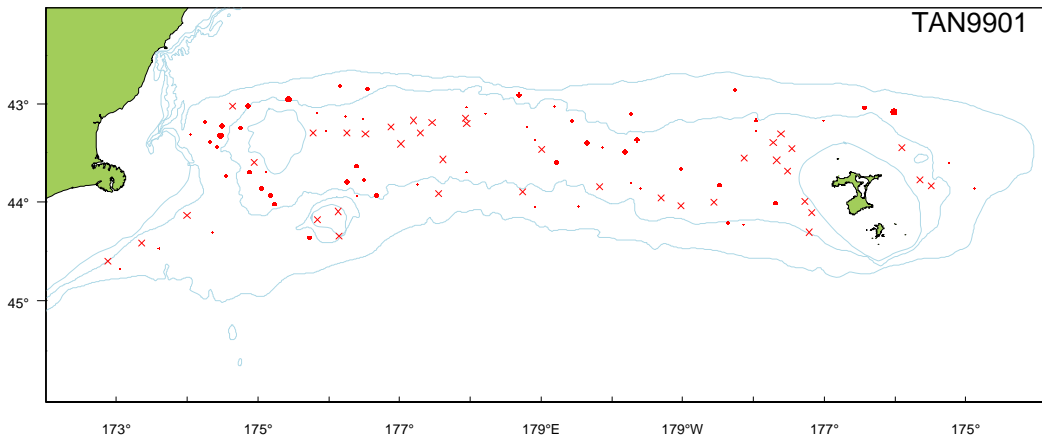
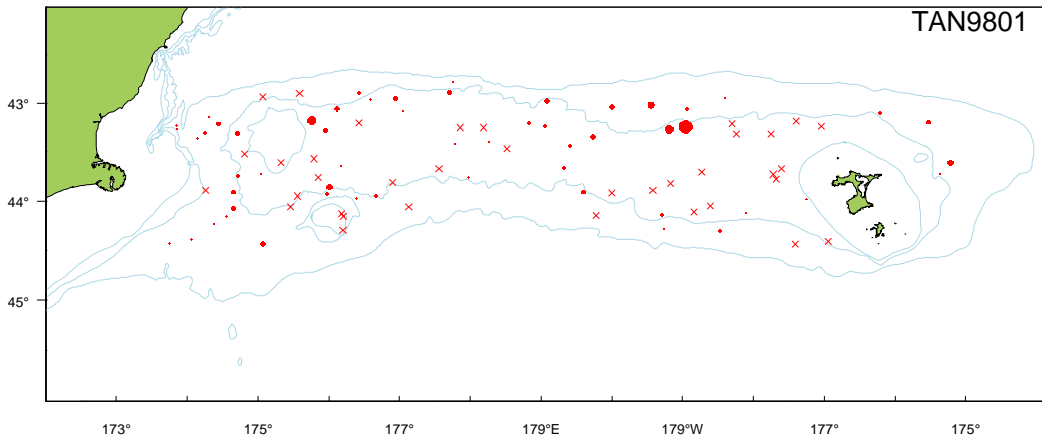
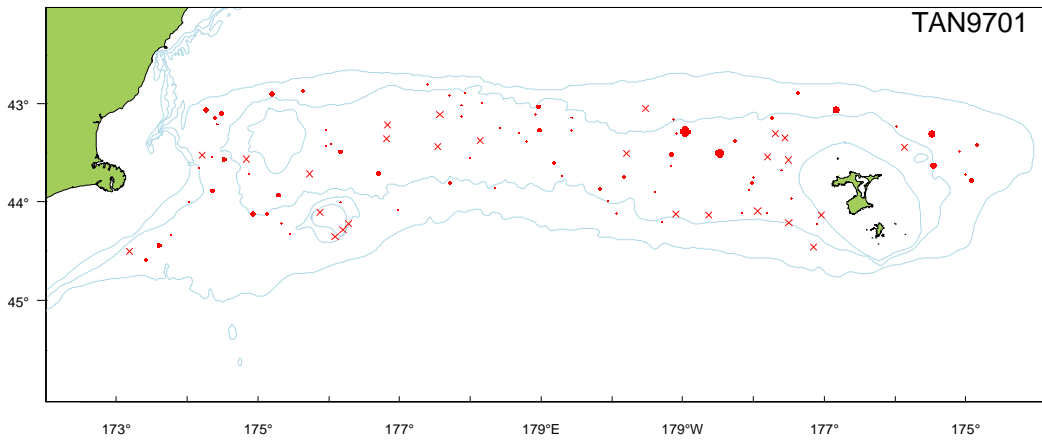
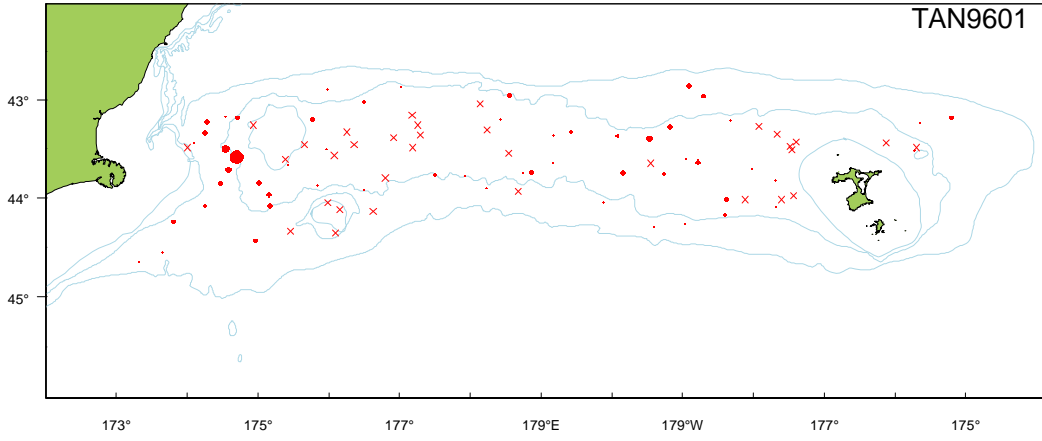


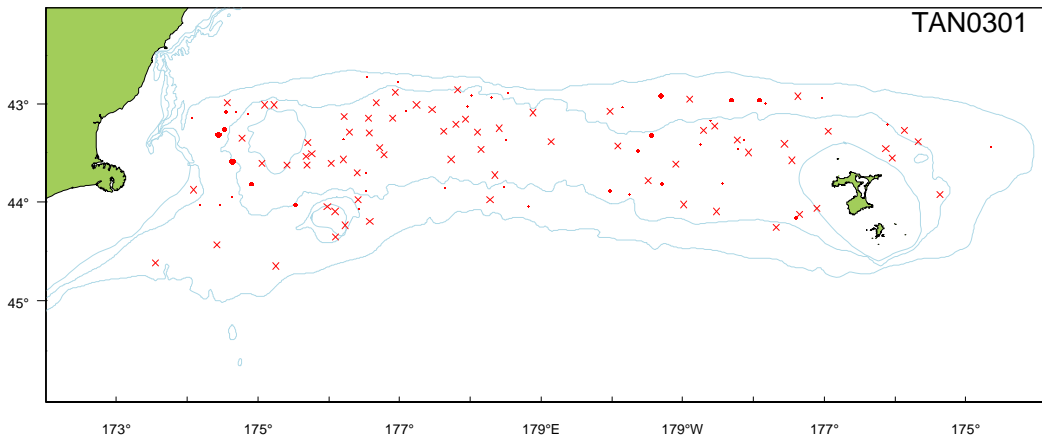
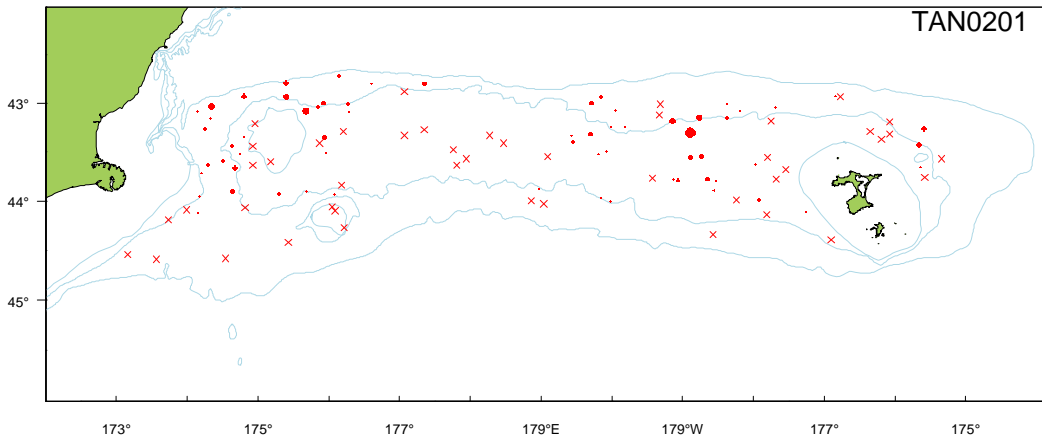
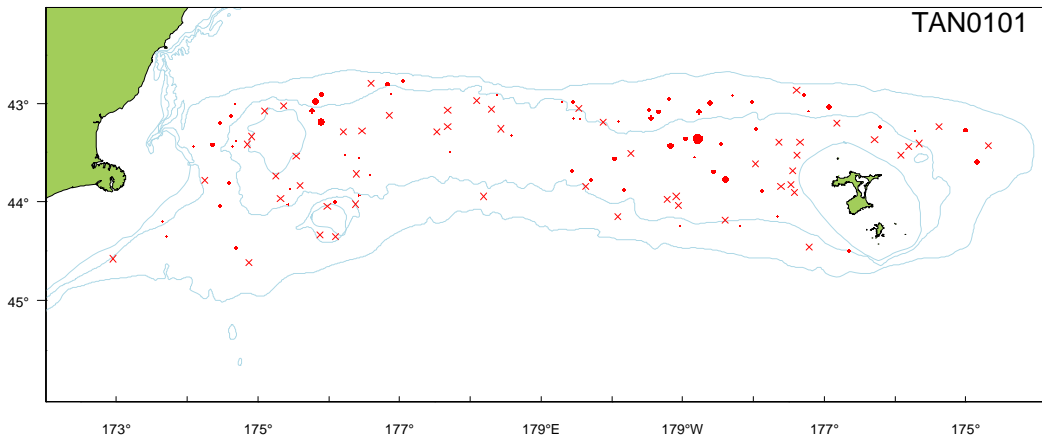
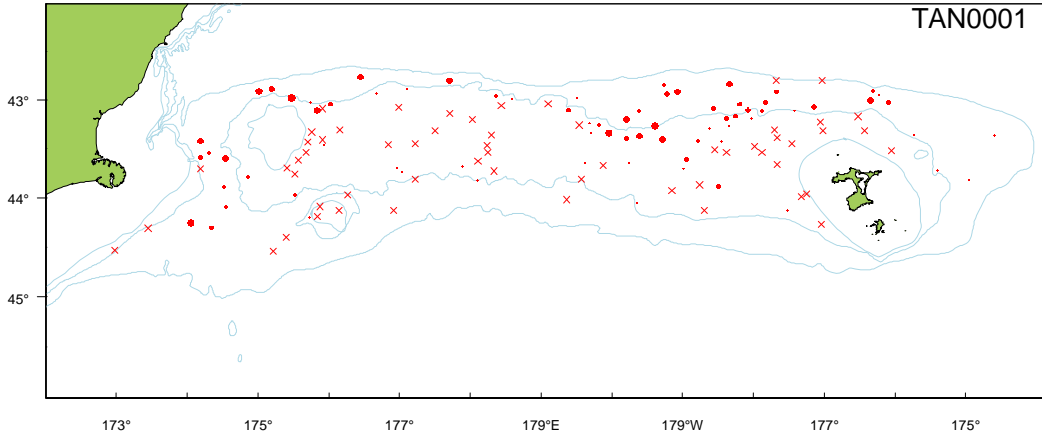


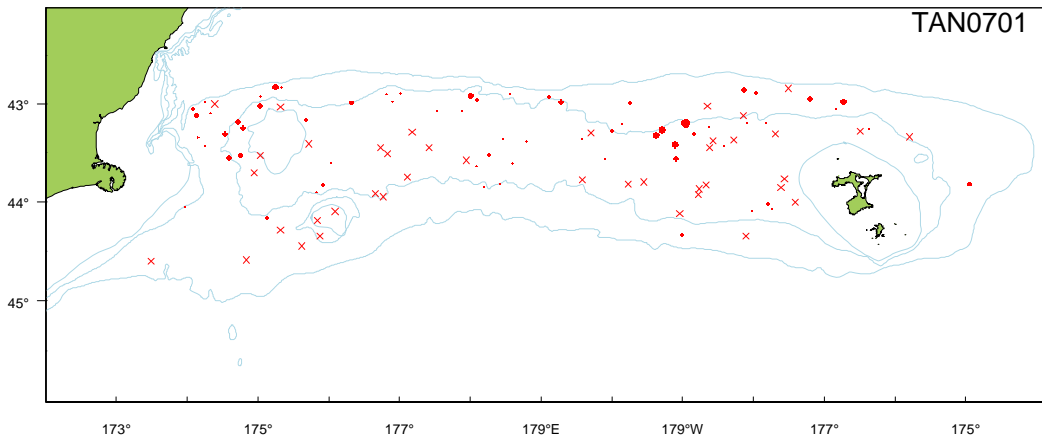
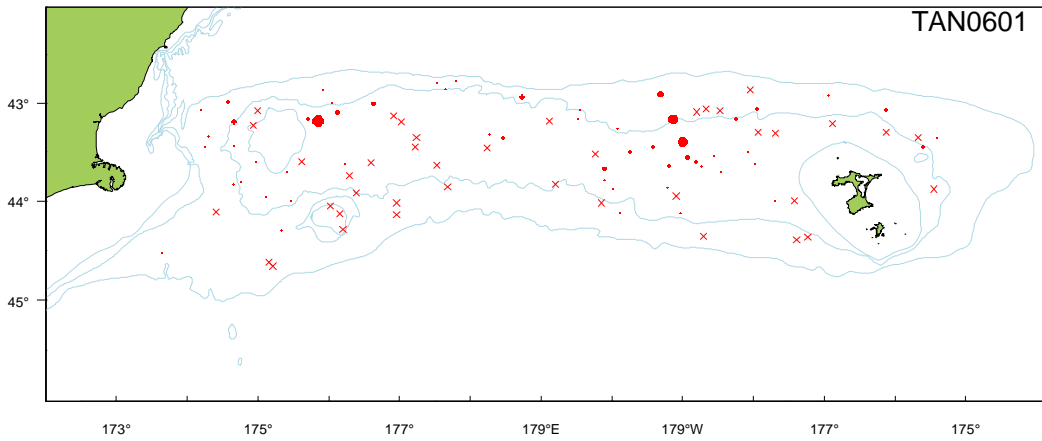
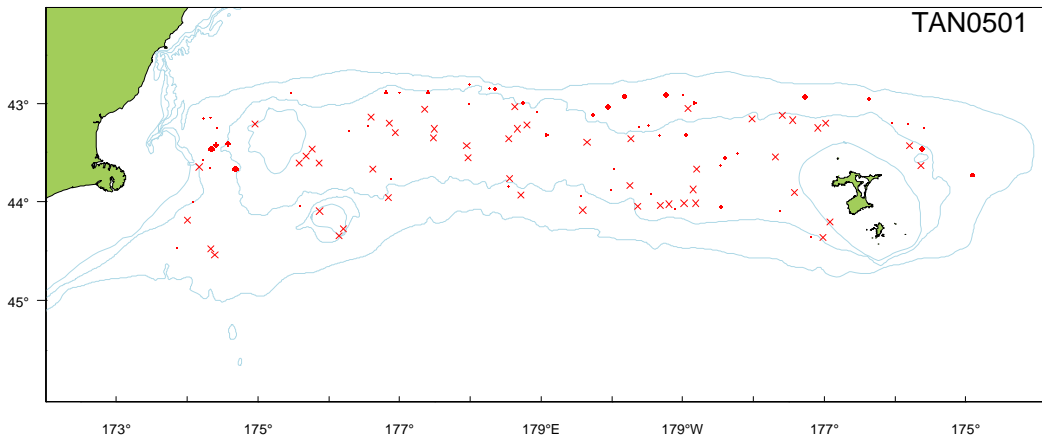
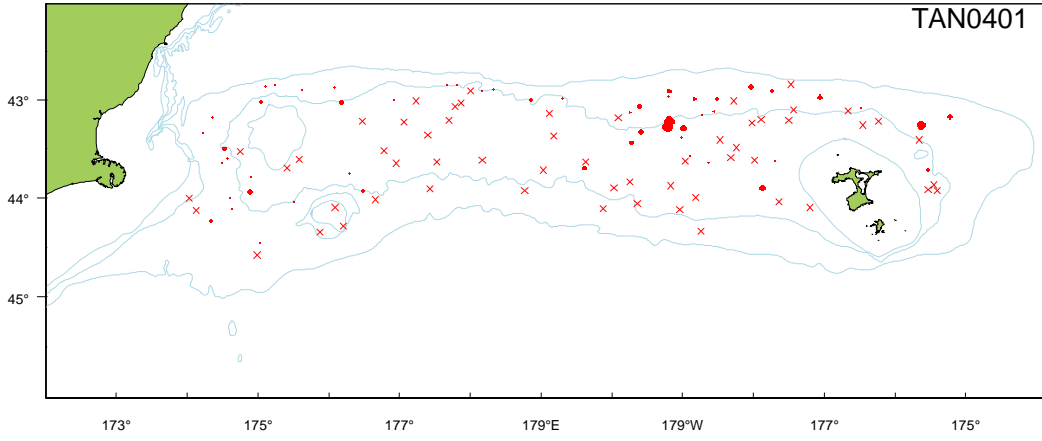
### Distribution

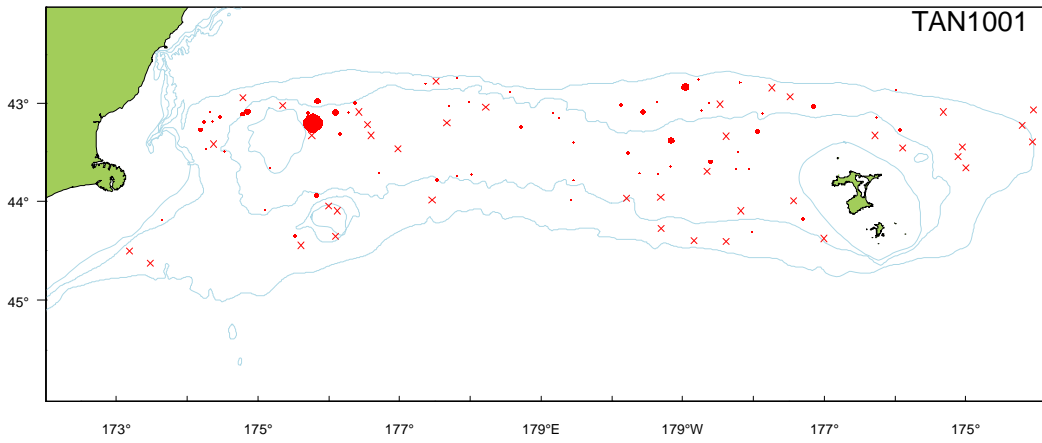
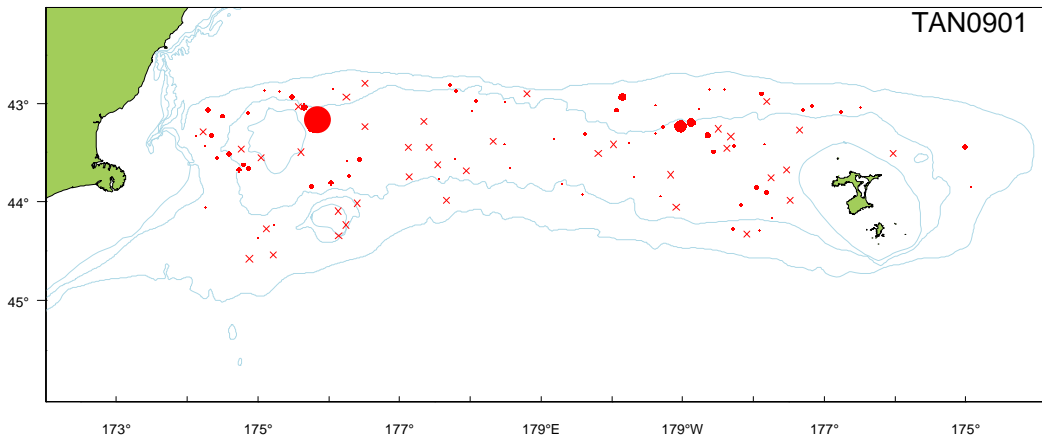
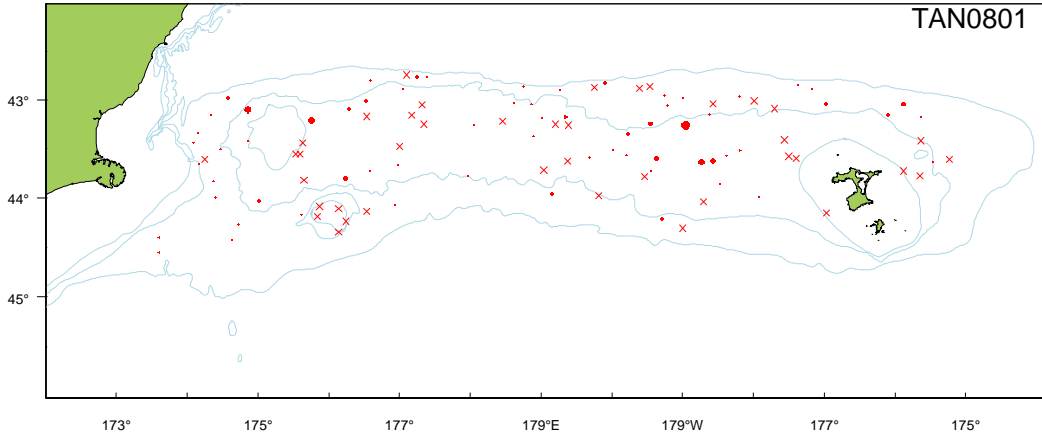




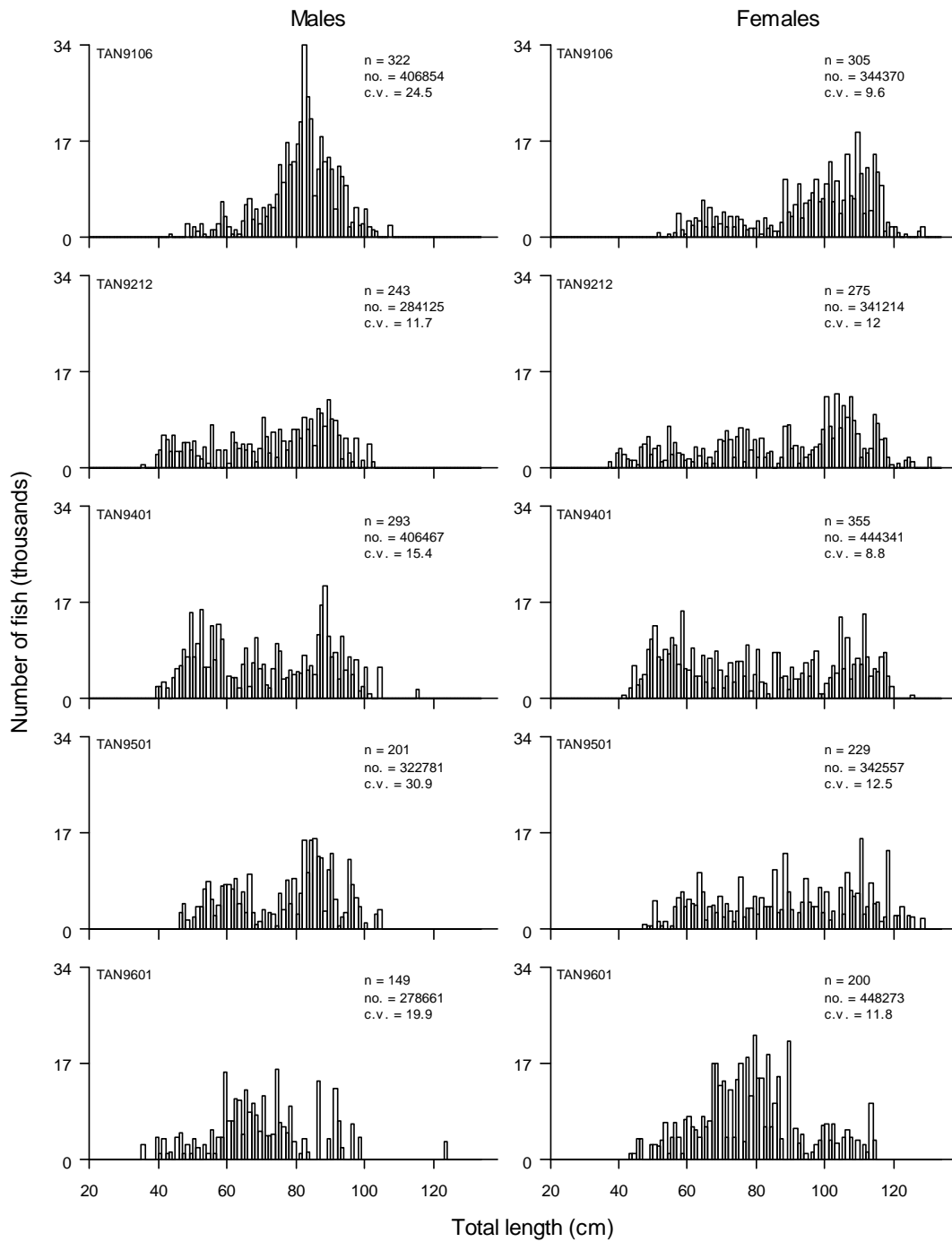


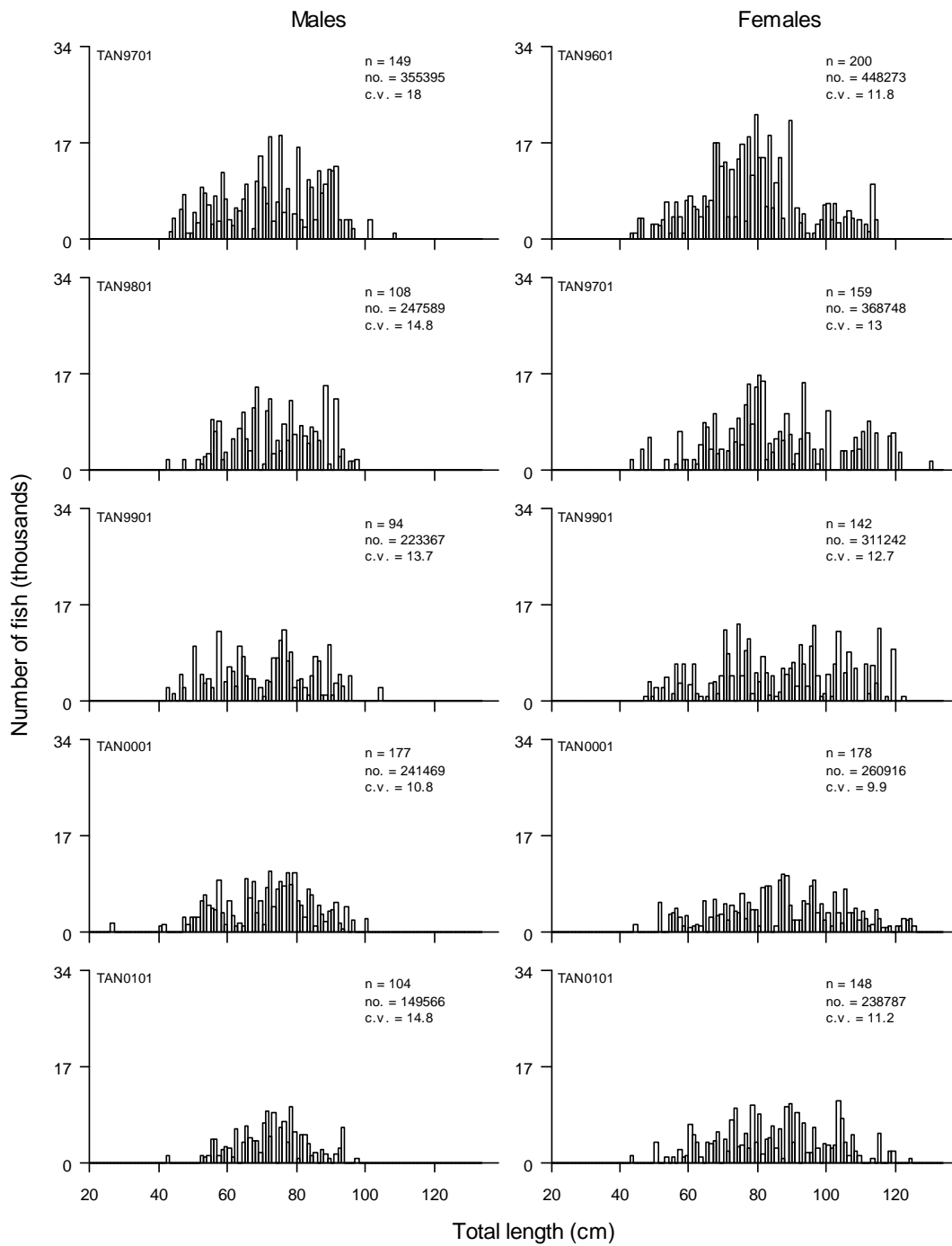




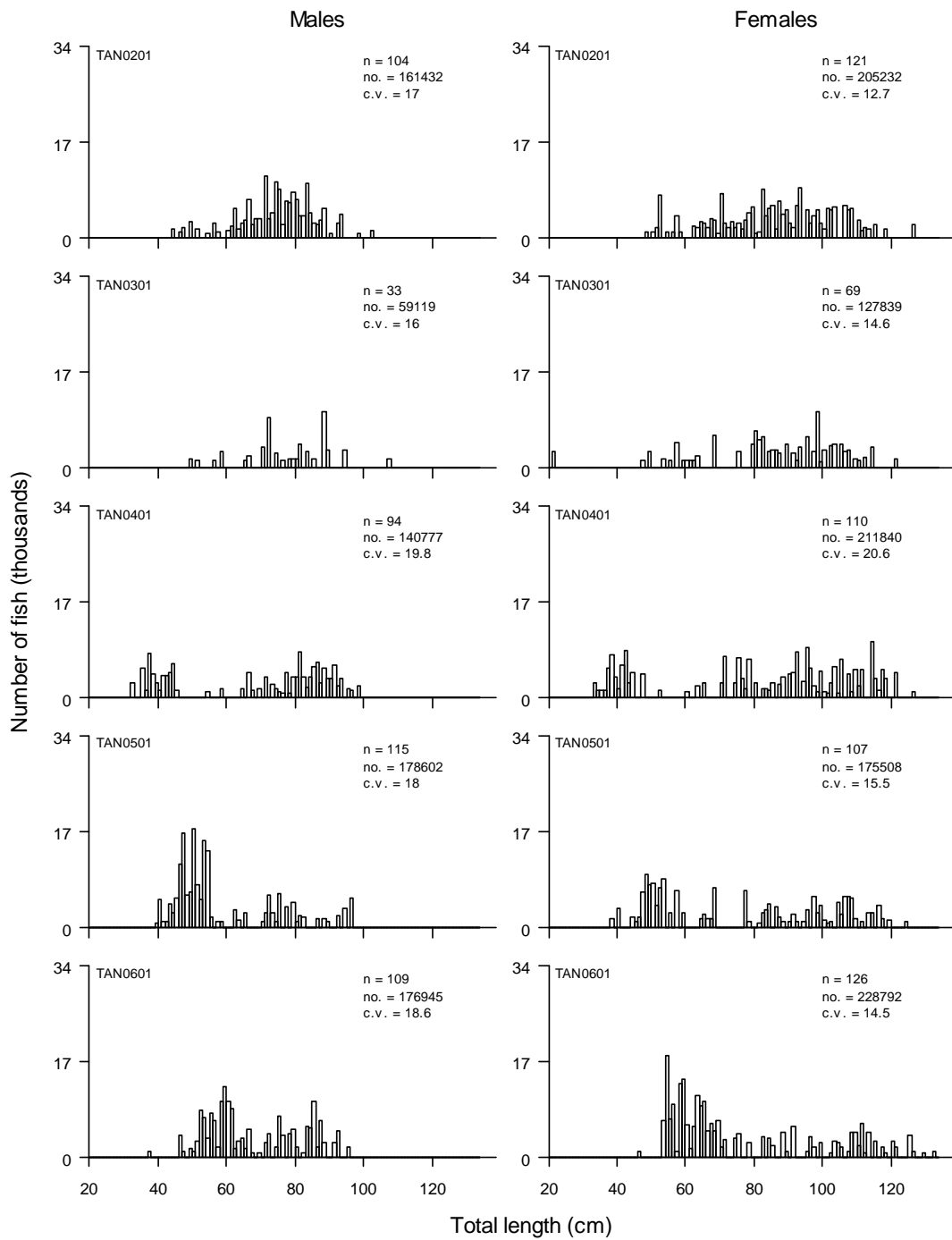


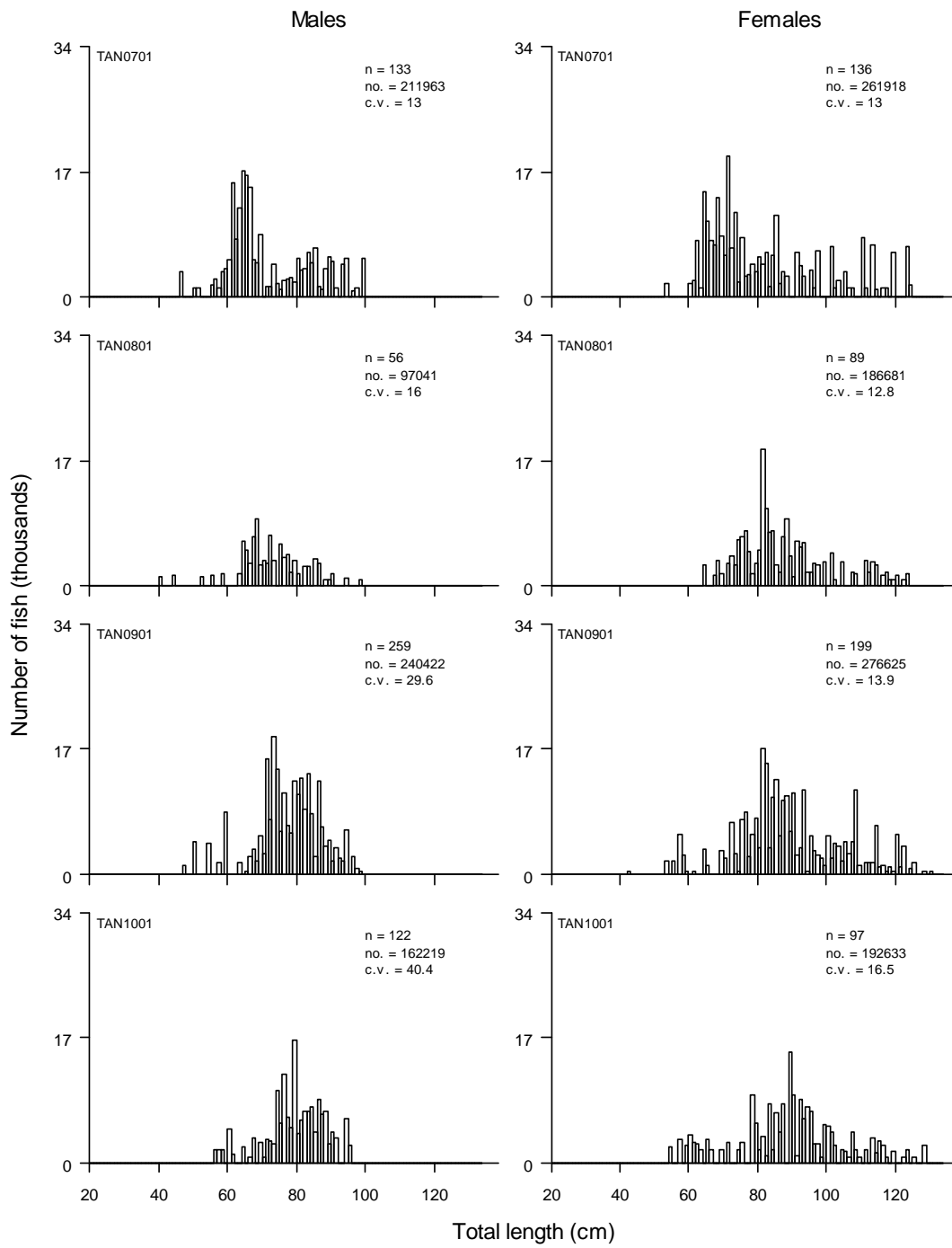
# Length Frequencies



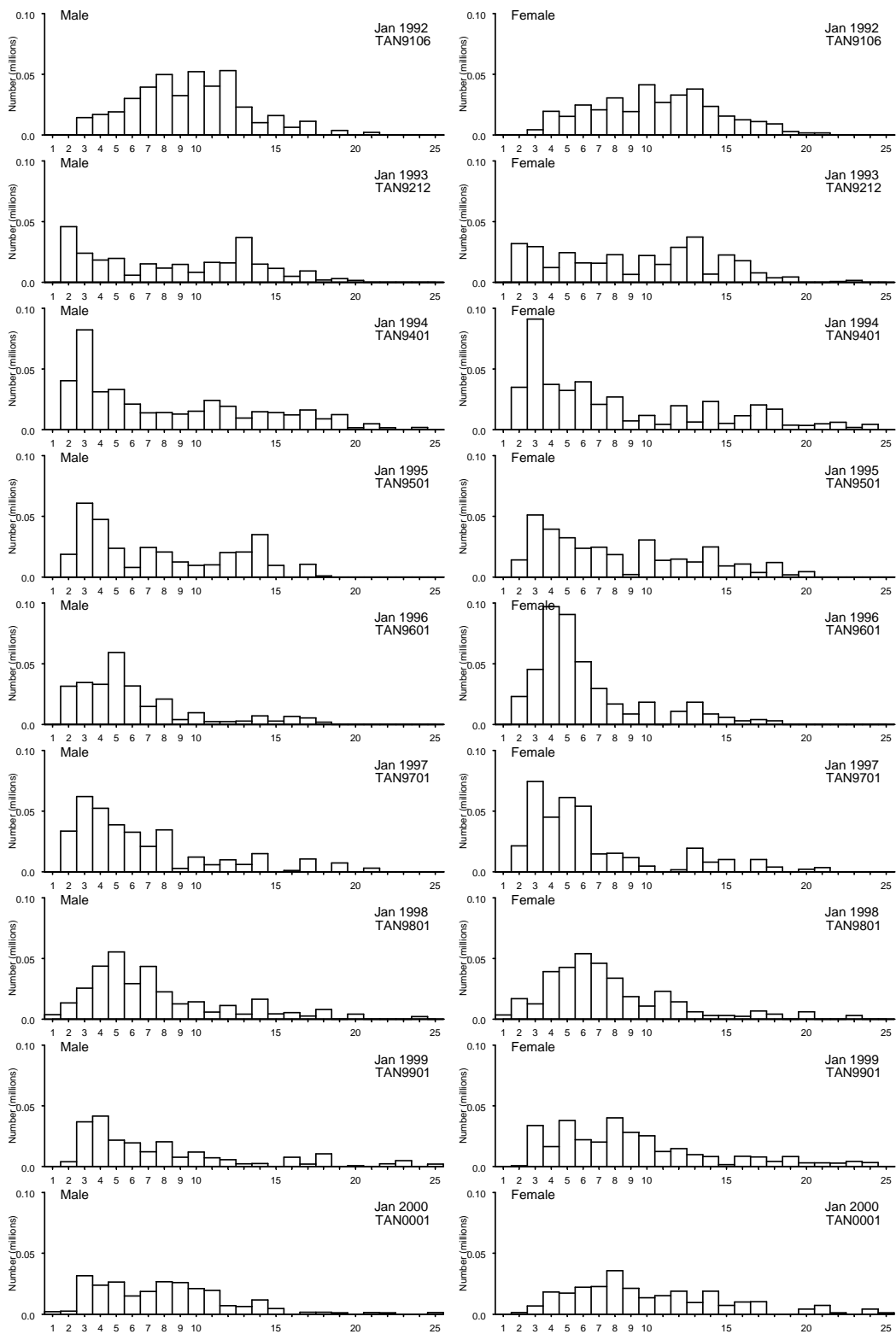


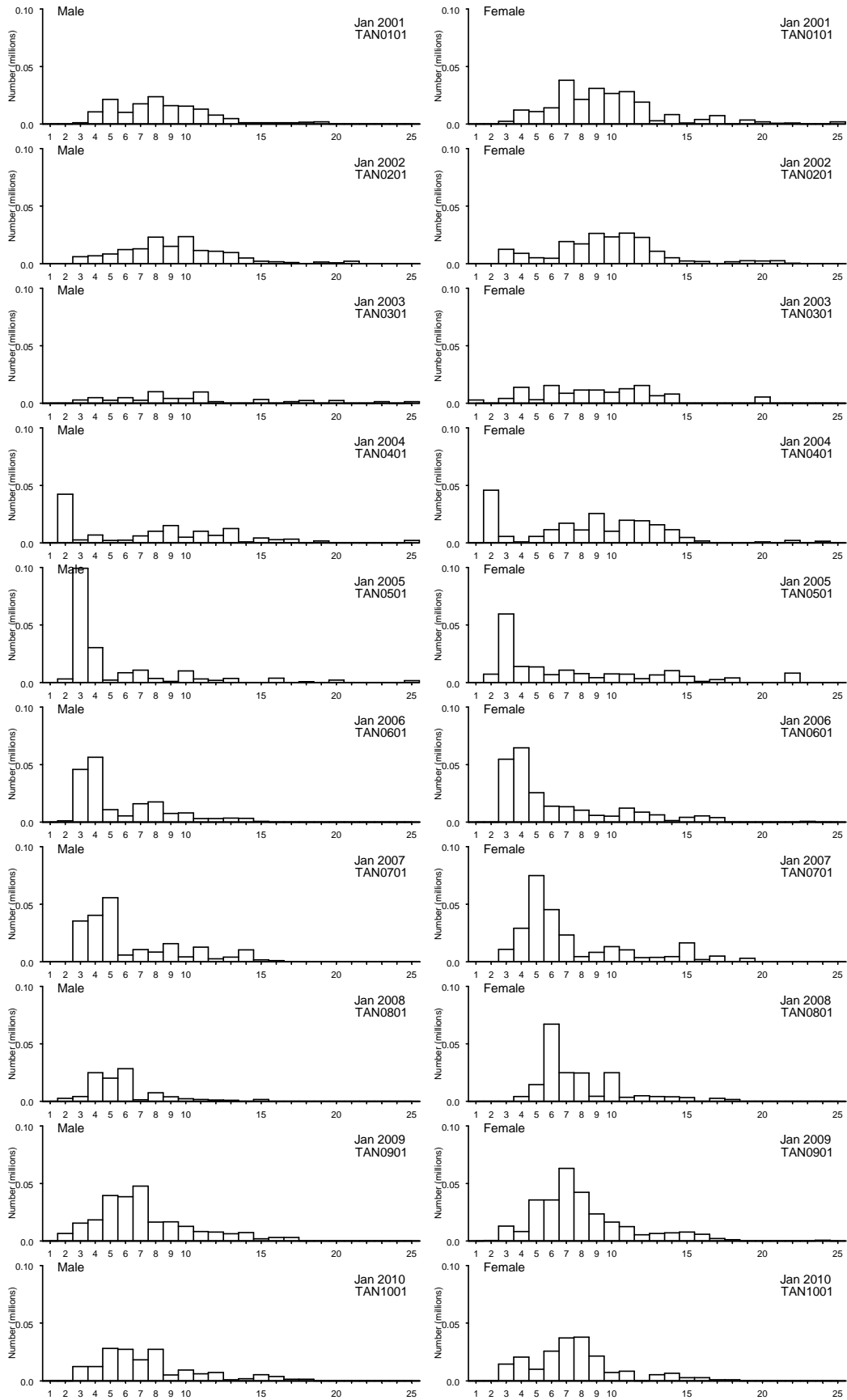






# Age Frequencies





## Gonad Stage Information

### Males

Year	p_M1	p_M2	p_M3	p_M4	p_M5	p_M6	p_M7	n_allM
1992	0.09	0.17	0.09	0.08	0.29	0.28	0	246
1993	0.37	0.11	0.03	0.09	0.1	0.24	0.06	194
1994	0.26	0.29	0.05	0.04	0.08	0.22	0.06	205
1995	0.41	0.21	0.11	0.11	0.1	0.05	0.01	185
1996	0.61	0.18	0.06	0.07	0.07	0	0.01	141
1997	0.41	0.21	0.05	0.03	0.25	0.04	0.01	145
1998	0.08	0.28	0.12	0.34	0.17	0	0.01	136
1999	0.41	0.13	0.09	0.19	0.17	0.01	0	90
2000	0.34	0.12	0.02	0.06	0.23	0.19	0.04	177
2001	0.22	0.22	0.06	0.16	0.31	0.03	0	104
2002	0.05	0.29	0.1	0.1	0.41	0.06	0	104
2003	0.17	0.21	0.03	0.14	0.41	0.03	0	29
2004	0.18	0.08	0.04	0.11	0.57	0.02	0	84
2005	0.72	0.07	0.03	0.05	0.1	0.02	0.01	112
2006	0.41	0.19	0.06	0.06	0.19	0.06	0.03	108
2007	0.09	0.5	0	0.19	0.17	0.03	0.02	133
2008	0.14	0.29	0.07	0.07	0.32	0.07	0.04	56
2009	0.05	0.06	0.08	0.26	0.38	0.14	0.03	258
2010	0.08	0.04	0.04	0.16	0.29	0.29	0.1	122
ALL	0.26	0.19	0.06	0.12	0.23	0.12	0.03	2 629

### Females

Year	p_F1	p_F2	p_F3	p_F4	p_F5	p_F6	p_F7	n_allF
1992	0.04	0.42	0.27	0.04	0.02	0.14	0.06	256
1993	0.3	0.3	0.26	0.02	0.01	0.02	0.09	226
1994	0.11	0.53	0.13	0.04	0.01	0.02	0.16	241
1995	0.25	0.5	0.18	0.01	0	0.03	0.02	209
1996	0.43	0.4	0.12	0.01	0	0.01	0.03	182
1997	0.23	0.49	0.22	0.01	0	0.03	0.02	153
1998	0.09	0.53	0.27	0.04	0.01	0.01	0.05	142
1999	0.34	0.37	0.22	0.02	0	0.04	0.01	139
2000	0.07	0.42	0.35	0.02	0	0.03	0.11	178
2001	0.18	0.31	0.44	0.01	0.01	0.01	0.03	148
2002	0.03	0.45	0.34	0.03	0.02	0.04	0.08	121
2003	0.11	0.42	0.34	0.05	0.02	0.03	0.03	62
2004	0.17	0.29	0.49	0.03	0	0	0.02	94
2005	0.44	0.27	0.23	0.02	0	0.02	0.02	106
2006	0.41	0.34	0.22	0.01	0	0.02	0	116
2007	0.2	0.46	0.29	0.01	0	0.01	0.02	136
2008	0.11	0.39	0.4	0.01	0	0	0.08	89
2009	0.04	0.22	0.5	0.11	0.02	0.05	0.08	197
2010	0.08	0.36	0.4	0.04	0.01	0.06	0.04	97
ALL	0.19	0.4	0.28	0.03	0.01	0.04	0.06	2 892

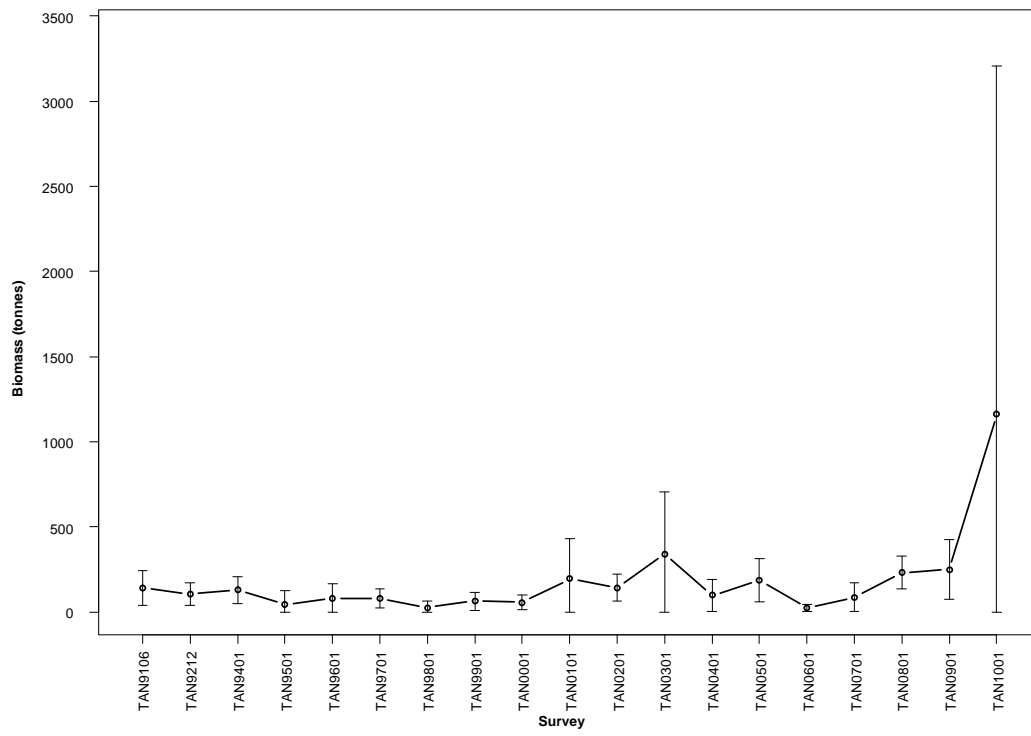


Number of surveys caught 1992–2010 (out of 19):	19
Total catch weight (kg):	2 108.4
Number measured	369
Length range (mean) (cm, TL)	51–102 (71.6)
Number weighed	249
Length-weight parameters a, b ( $r^2$ )	–

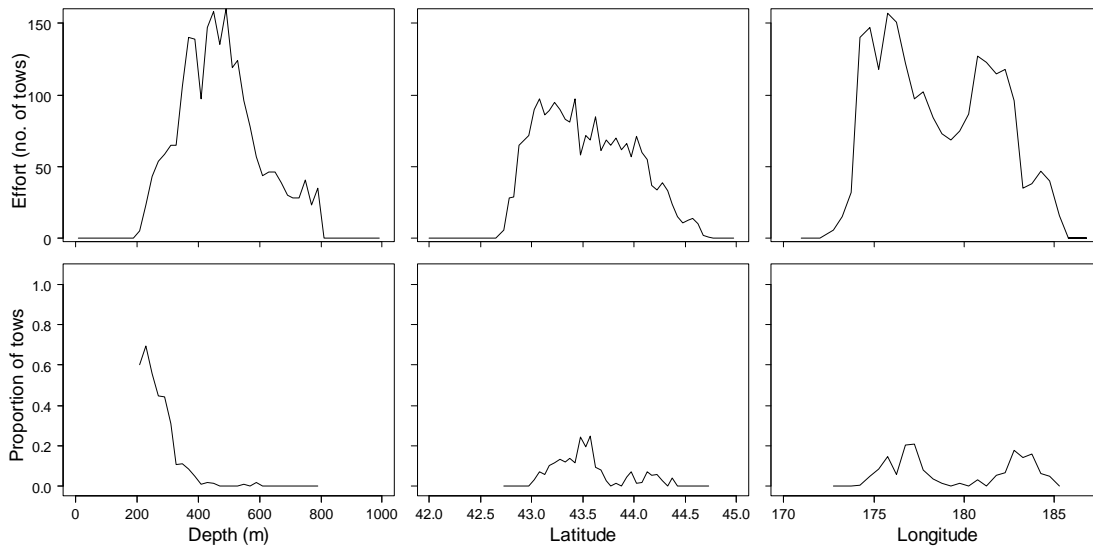
The core survey area and depth range **is not** appropriate for this species. It is found **shallower than 200 m**. Biomass of this species is **poorly** estimated in the core survey area. Biomass **shows no clear trend** since the start of the time series. Catch rates are highest in the **north**. Gonad stage data indicate that most fish are **resting**.

#### Relative biomass estimates

Year	Biomass (t)	cv (%)
1992	140	37
1993	105	32
1994	128	31
1995	45	88
1996	79	53
1997	79	36
1998	25	74
1999	63	43
2000	56	39
2001	195	60
2002	142	27
2003	340	54
2004	97	49
2005	186	34
2006	24	41
2007	86	49
2008	231	21
2009	248	35
2010	1 162	88



### Distribution



## Gonad Stage Information

### Males

Year	p_M1	p_M2	p_M3	p_M4	p_M5	p_M6	p_M7	n_allM
1992	NA	NA	NA	NA	NA	NA	NA	0
1993	NA	NA	NA	NA	NA	NA	NA	0
1994	NA	NA	NA	NA	NA	NA	NA	0
1995	NA	NA	NA	NA	NA	NA	NA	0
1996	0	1	0	0	0	0	0	1
1997	0	1	0	0	0	0	0	1
1998	0	0	0	1	0	0	0	1
1999	NA	NA	NA	NA	NA	NA	NA	0
2000	NA	NA	NA	NA	NA	NA	NA	0
2001	0.15	0.85	0	0	0	0	0	13
2002	NA	NA	NA	NA	NA	NA	NA	0
2003	0.75	0.25	0	0	0	0	0	4
2004	NA	NA	NA	NA	NA	NA	NA	0
2005	0.2	0.8	0	0	0	0	0	5
2006	NA	NA	NA	NA	NA	NA	NA	0
2007	0	1	0	0	0	0	0	1
2008	NA	NA	NA	NA	NA	NA	NA	0
2009	0	1	0	0	0	0	0	1
2010	0.1	0.88	0.02	0	0	0	0	49
ALL	0.14	0.83	0.01	0.01	0	0	0	76

### Females

Year	p_F1	p_F2	p_F3	p_F4	p_F5	p_F6	p_F7	n_allF
1992	NA	NA	NA	NA	NA	NA	NA	0
1993	NA	NA	NA	NA	NA	NA	NA	0
1994	NA	NA	NA	NA	NA	NA	NA	0
1995	NA	NA	NA	NA	NA	NA	NA	0
1996	NA	NA	NA	NA	NA	NA	NA	0
1997	NA	NA	NA	NA	NA	NA	NA	0
1998	NA	NA	NA	NA	NA	NA	NA	0
1999	NA	NA	NA	NA	NA	NA	NA	0
2000	NA	NA	NA	NA	NA	NA	NA	0
2001	0	1	0	0	0	0	0	11
2002	0	1	0	0	0	0	0	3
2003	0.11	0.78	0	0.11	0	0	0	9
2004	0	1	0	0	0	0	0	1
2005	0.38	0.62	0	0	0	0	0	8
2006	1	0	0	0	0	0	0	1
2007	0	1	0	0	0	0	0	2
2008	NA	NA	NA	NA	NA	NA	NA	0
2009	0	1	0	0	0	0	0	7
2010	0.48	0.52	0	0	0	0	0	42
ALL	0.3	0.69	0	0.01	0	0	0	84



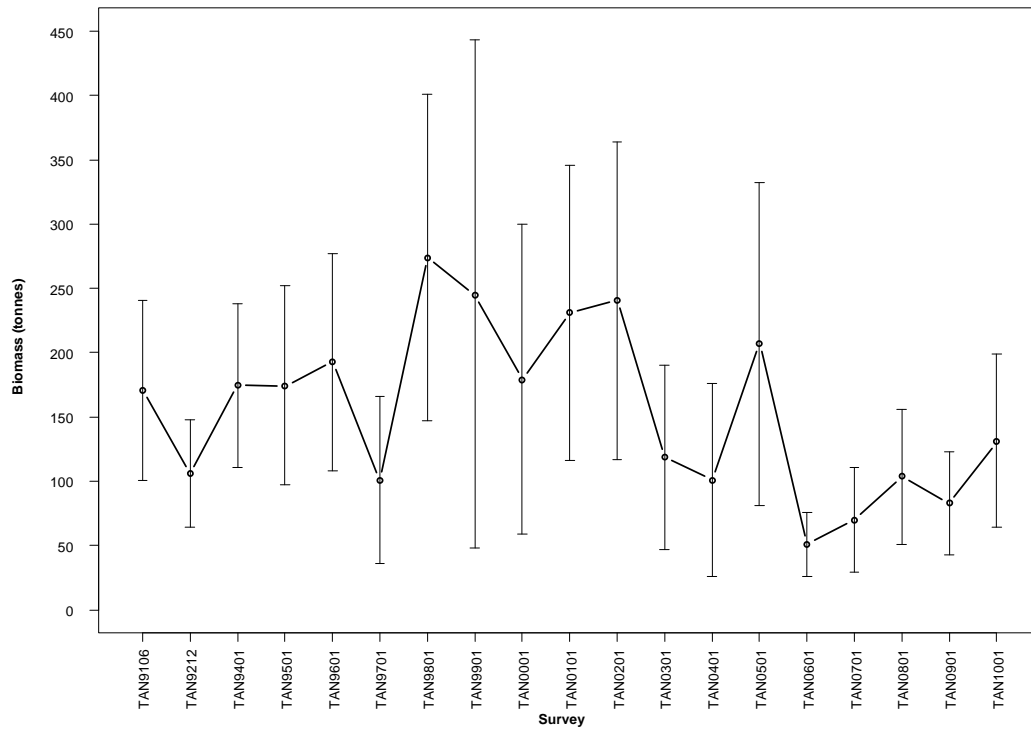


Number of surveys caught 1992–2010 (out of 19):	19
Total catch weight (kg):	1 496.7
Number measured	18
Length range (mean) (cm, TL)	65–96 (82)
Number weighed	4
Length-weight parameters a, b ( $r^2$ )	–

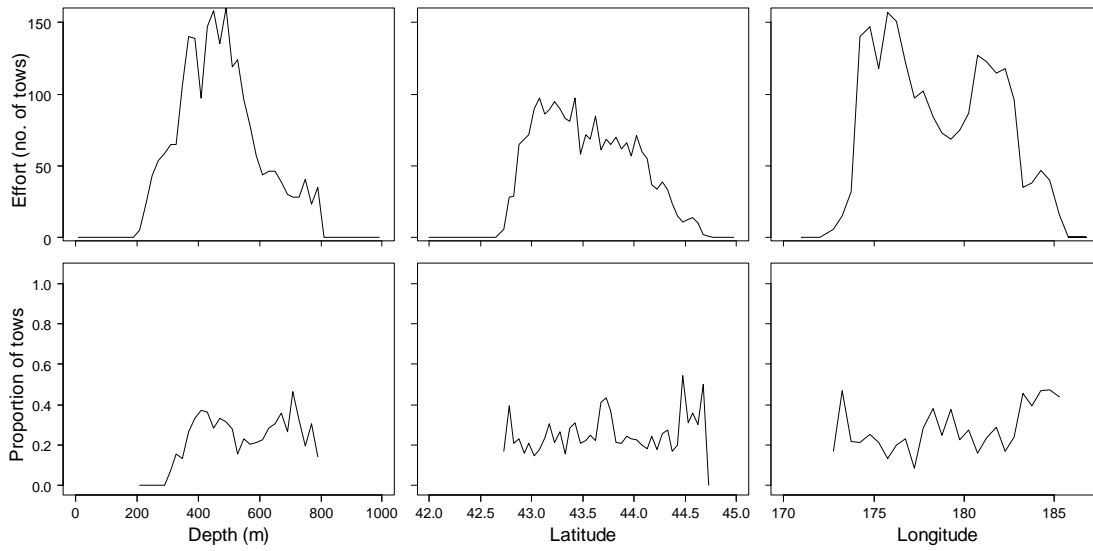
The core survey area and depth range **is** appropriate for this species. Biomass of this species is **well** estimated in the core survey area. Biomass has **increased and then decreased** since the start of the time series.

#### Relative biomass estimates

Year	Biomass (t)	cv (%)
1992	171	20
1993	106	20
1994	175	18
1995	174	22
1996	193	22
1997	101	32
1998	274	23
1999	245	40
2000	179	34
2001	231	25
2002	241	26
2003	119	30
2004	101	37
2005	207	30
2006	51	25
2007	70	30
2008	104	25
2009	83	24
2010	131	26



### Distribution



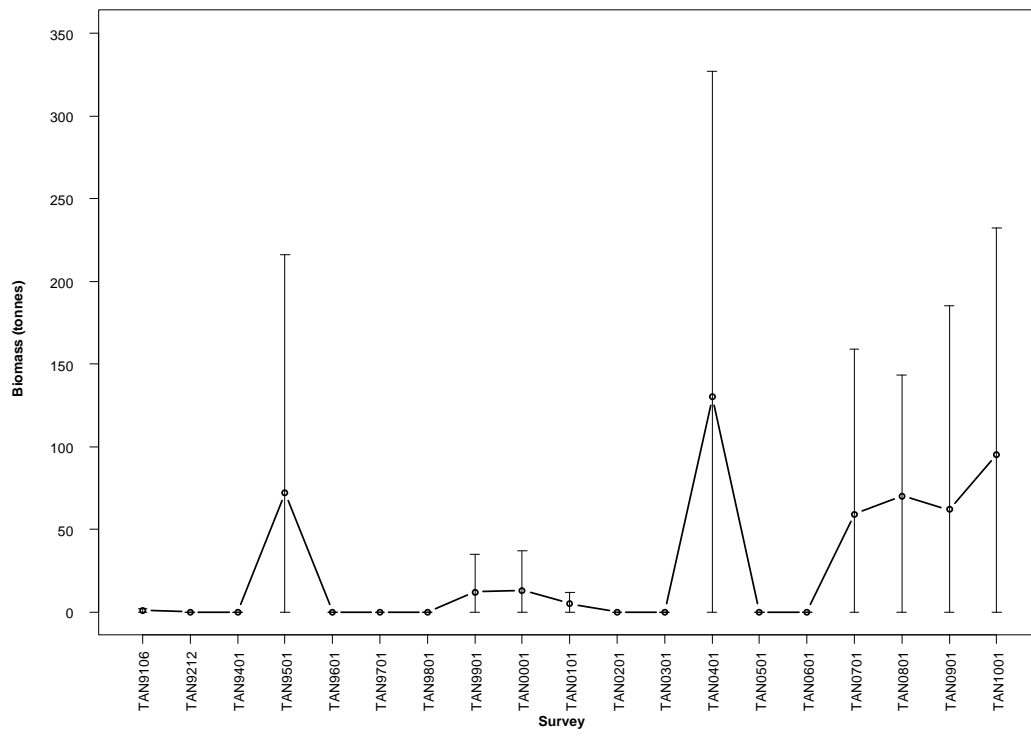


Number of surveys caught 1992–2010 (out of 19):	10
Total catch weight (kg):	280.2
Number measured	2
Length range (mean) (cm, TL)	125–128 (126.5)
Number weighed	2
Length-weight parameters a, b ( $r^2$ )	–

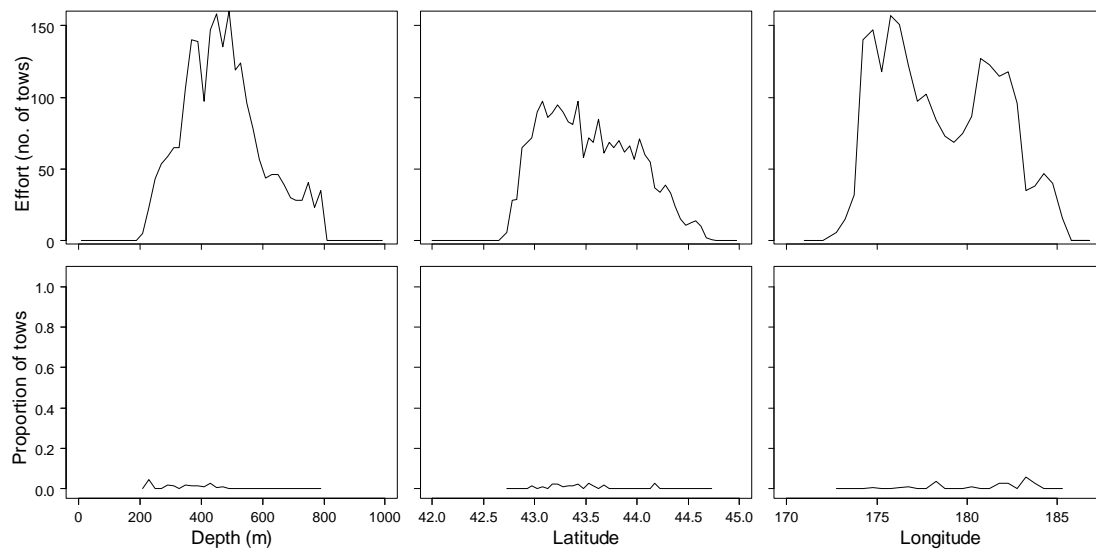
There were **too few fish caught to determine whether the core survey area is appropriate for this species**. Biomass of this species is **poorly** estimated in the core survey area. Biomass **has increased** since the start of the time series.

#### Relative biomass estimates

Year	Biomass (t)	cv (%)
1992	1	100
1993	0	-
1994	0	-
1995	72	100
1996	0	-
1997	0	-
1998	0	-
1999	12	100
2000	13	90
2001	5	74
2002	0	-
2003	0	-
2004	130	76
2005	0	-
2006	0	-
2007	59	86
2008	70	52
2009	62	100
2010	95	72



### Distribution



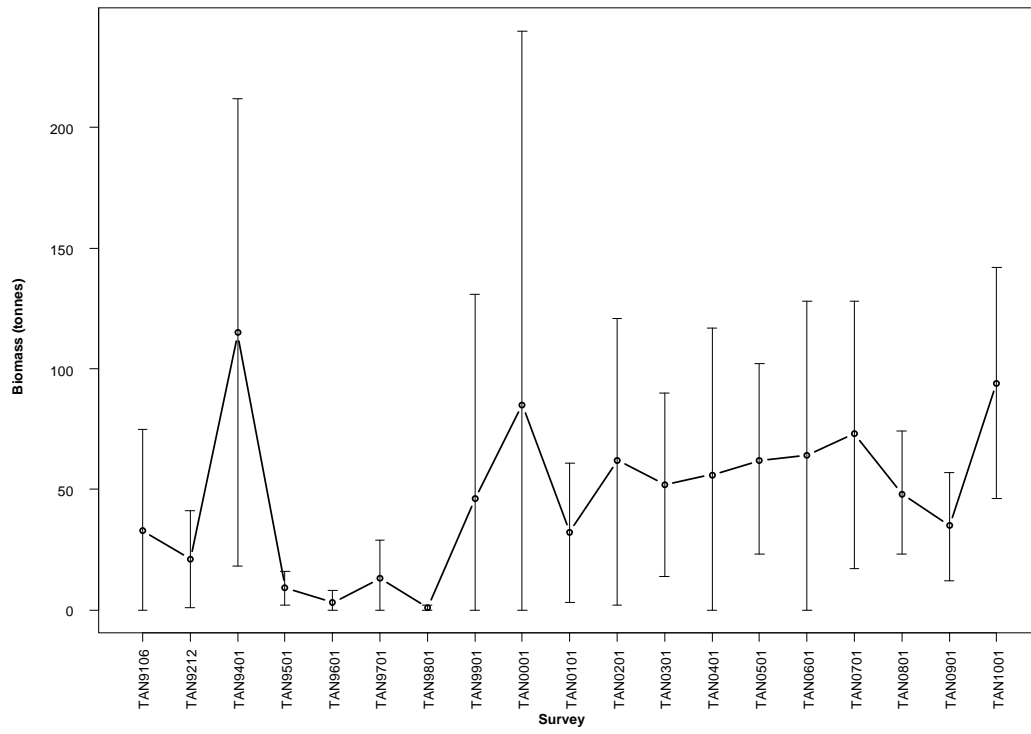


Number of surveys caught 1992–2010 (out of 19):	19
Total catch weight (kg):	1 127.8
Number measured	1 030
Length range (mean) (cm, TL)	17–39 (30.1)
Number weighed	556
Length-weight parameters a, b ( $r^2$ )	–

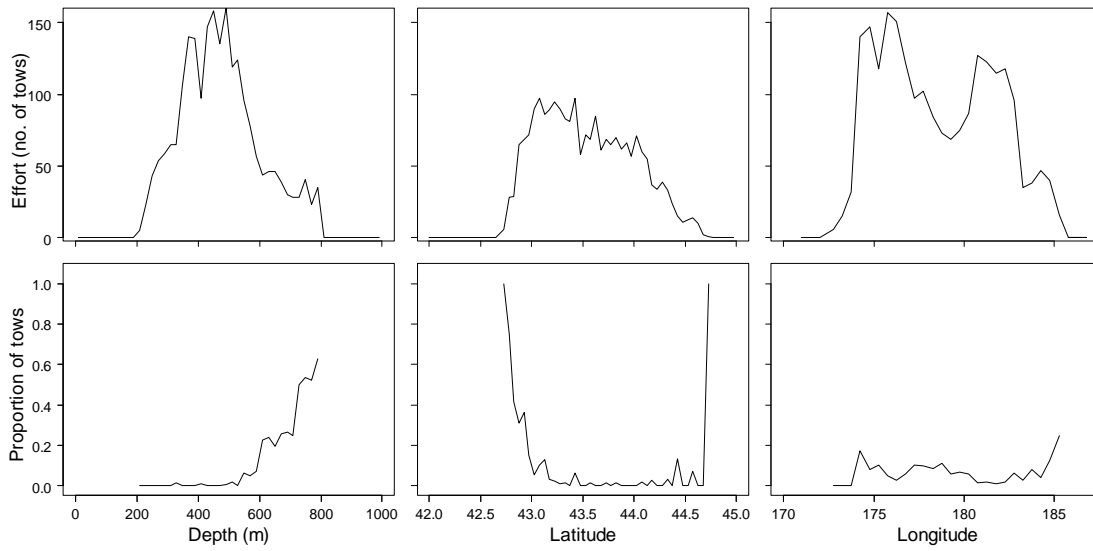
The core survey area and depth range **is not** appropriate for this species. It is found **deeper than 800 m**. Biomass of this species is **poorly** estimated in the core survey area. Biomass has **increased** since the start of the time series.

#### Relative biomass estimates

Year	Biomass (t)	cv (%)
1992	33	64
1993	21	48
1994	115	42
1995	9	38
1996	3	100
1997	13	64
1998	1	60
1999	46	92
2000	85	91
2001	32	45
2002	62	48
2003	52	37
2004	56	54
2005	62	32
2006	64	50
2007	73	38
2008	48	26
2009	35	32
2010	94	26



### Distribution



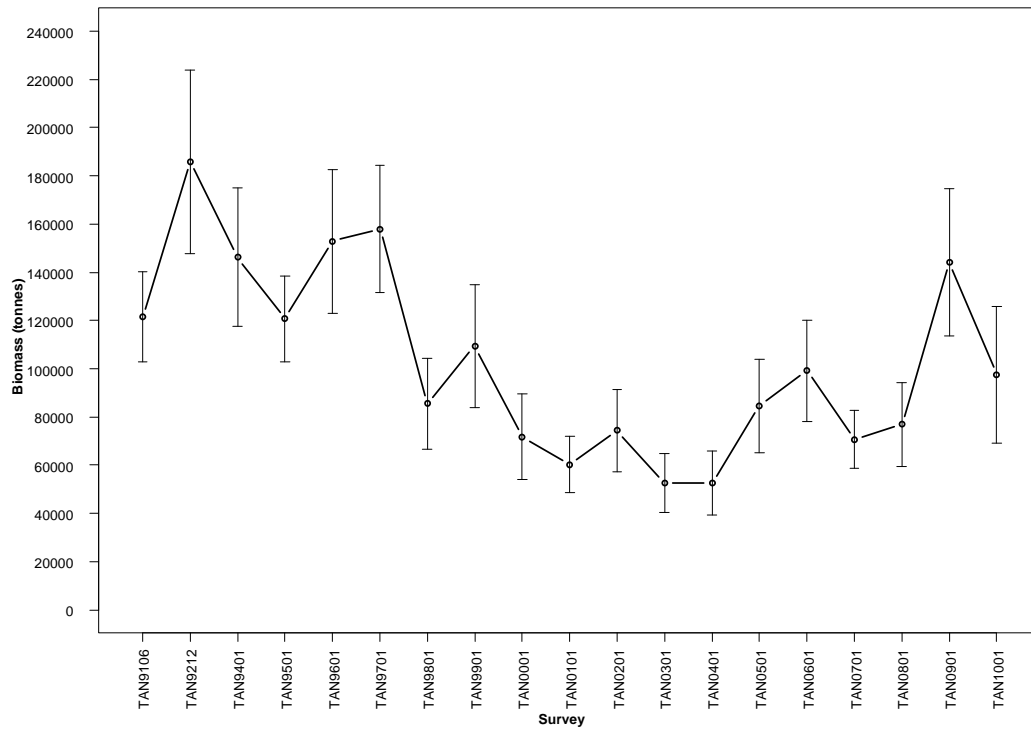


Number of surveys caught 1992–2010 (out of 19):	19
Total catch weight (kg):	1 400 270.6
Number measured	402 886
Length range (mean) (cm, TL)	23–119 (60.2)
Number weighed	32 890
Length-weight parameters a, b ( $r^2$ )	0.003729, 2.944748 (98.33)

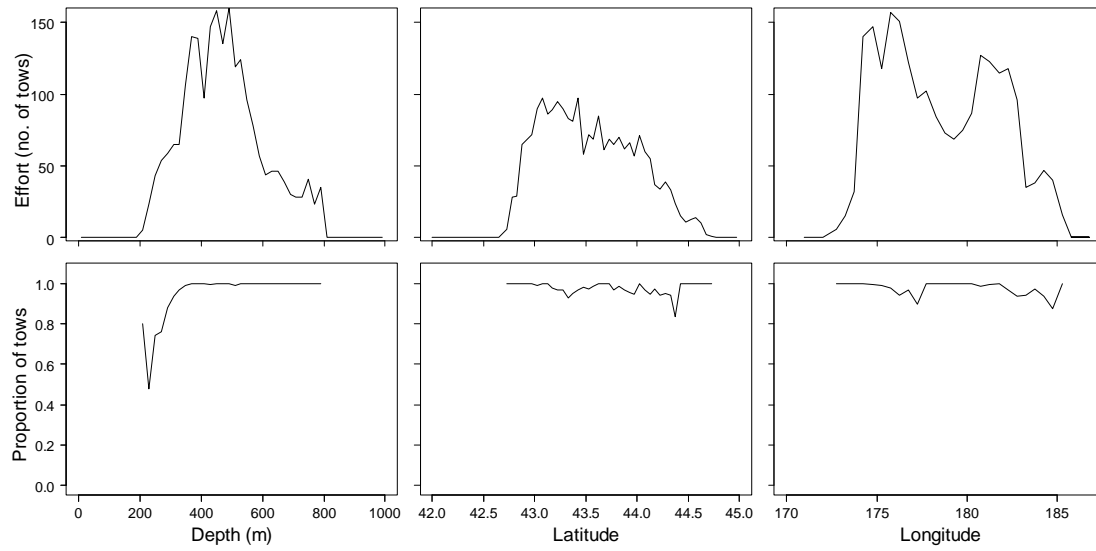
The core survey area and depth range is appropriate for this species. Biomass of this species is **very well** estimated in the core survey area. Biomass has **decreased and then increased** since the start of the time series. Catch rates are highest in the **west**. Length frequencies **have multiple modes which contain information about year-class strength**. Mean length **shows no clear trend** since the start of the time series. Age frequencies show **variable recruitment**. Gonad stage data indicate that most fish are **immature or resting**.

#### Relative biomass estimates and length summary

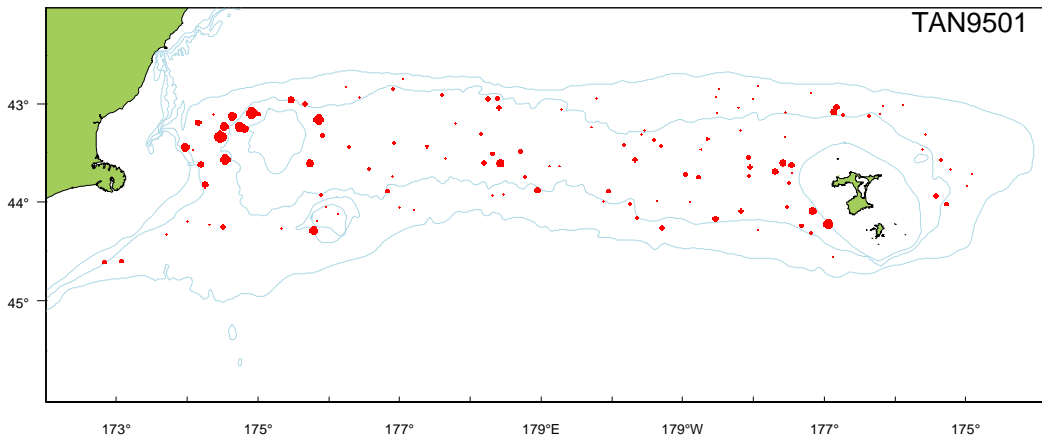
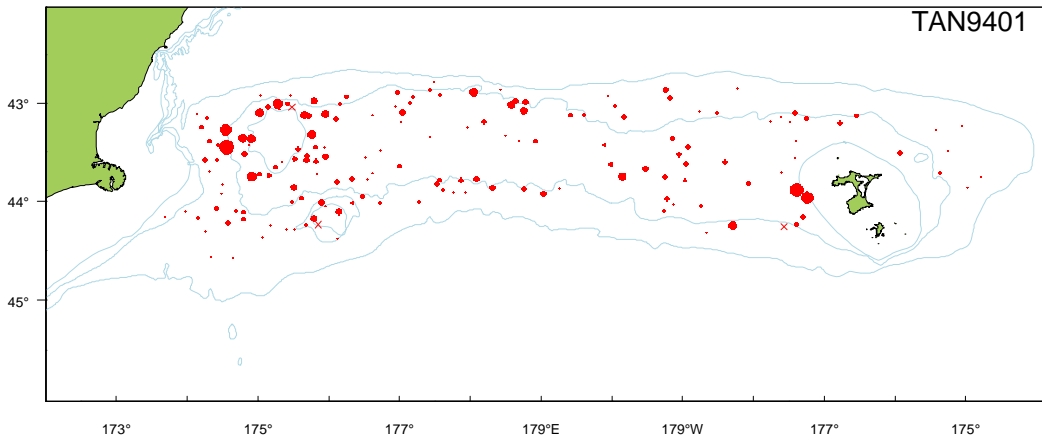
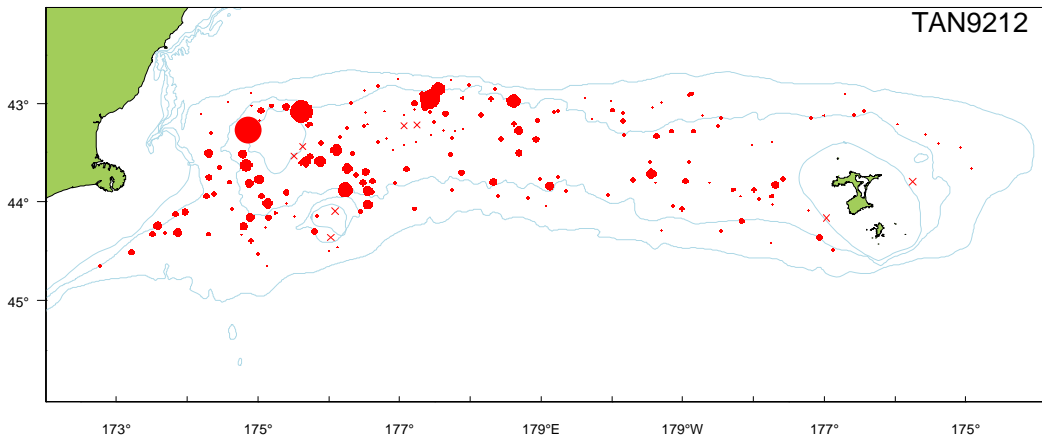
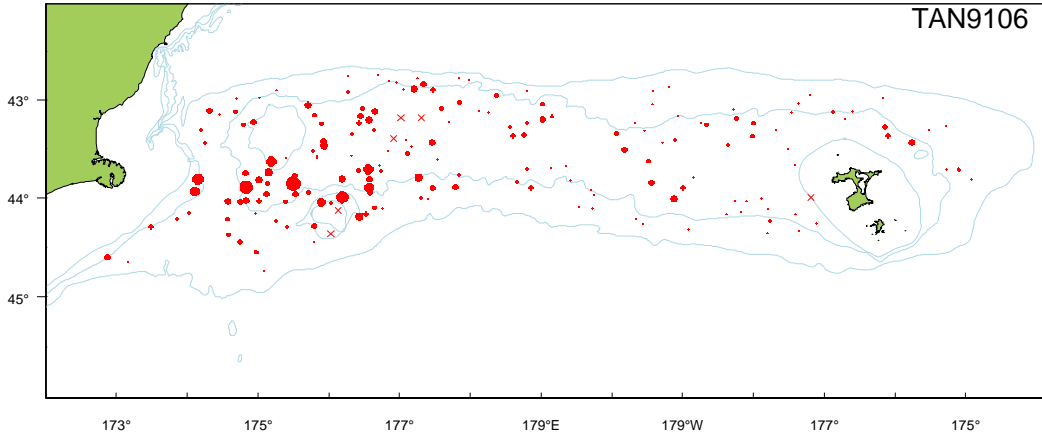
Year	Biomass (t)	cv (%)	Length (cm)			No. measure d
			Min.	Max.	Mean	
1992	121 591	8	34	116	63.7	29 233
1993	185 920	10	29	118	63.4	35 383
1994	146 340	10	28	105	58.1	30 213
1995	120 650	7	27	118	60.9	21 922
1996	152 813	10	26	109	56.4	16 758
1997	157 974	8	34	109	58.7	19 714
1998	85 480	11	32	108	60.4	16 450
1999	109 336	12	30	117	60.2	20 384
2000	71 740	12	33	113	58.9	21 601
2001	60 330	10	35	113	62.5	19 172
2002	74 351	11	30	109	59.9	16 026
2003	52 531	12	23	118	60.2	16 320
2004	52 687	13	33	113	62.4	13 482
2005	84 594	12	34	115	59.1	18 189
2006	99 208	11	32	112	58.1	15 942
2007	70 743	8	30	119	59.0	17 126
2008	76 859	11	31	112	59.5	17 298
2009	144 088	11	33	116	60.5	19 848
2010	97 503	15	32	112	58.2	15 314

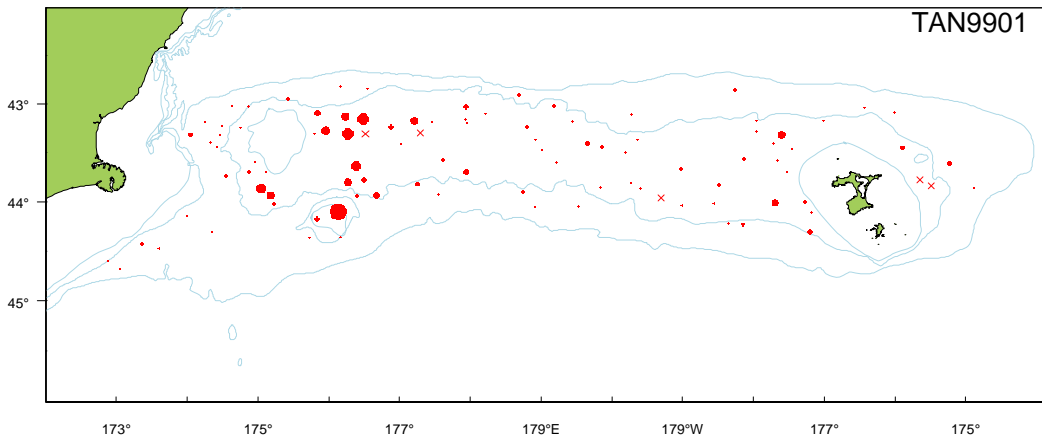
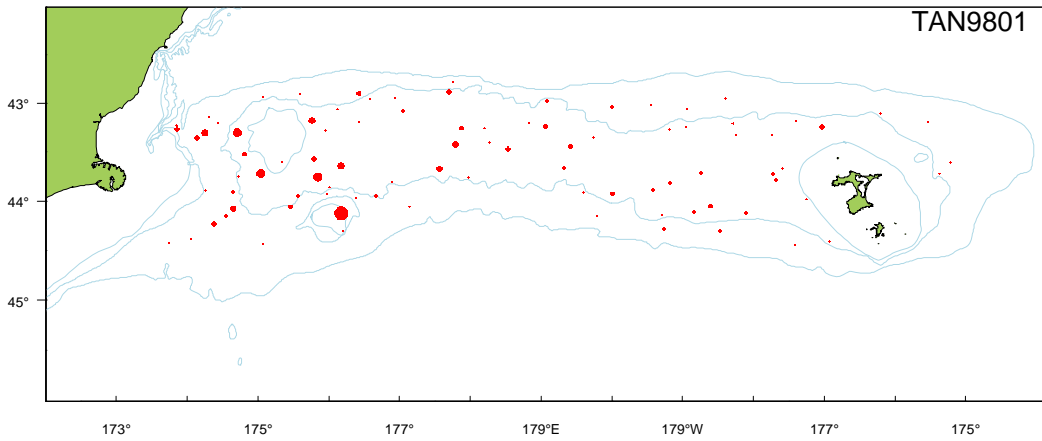
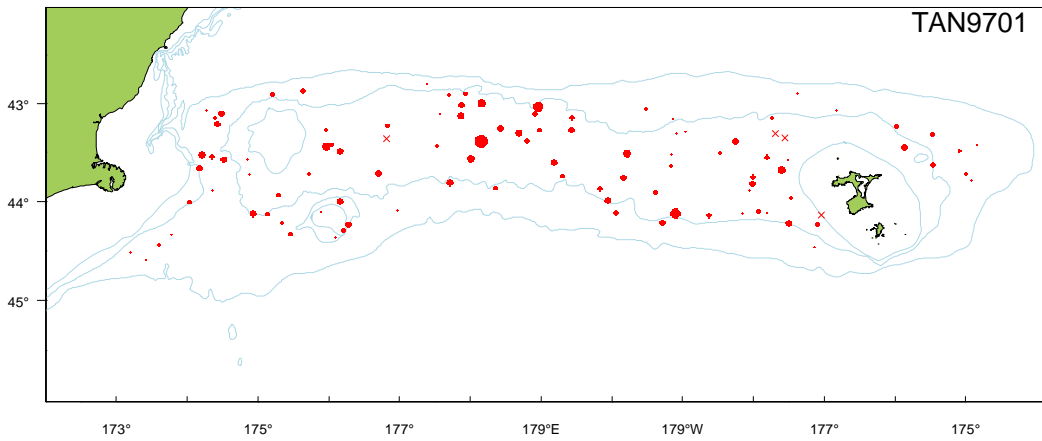
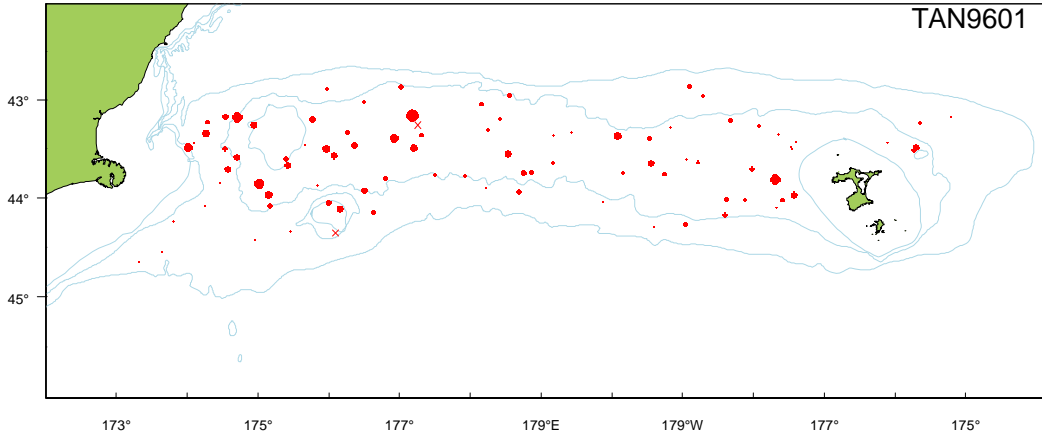


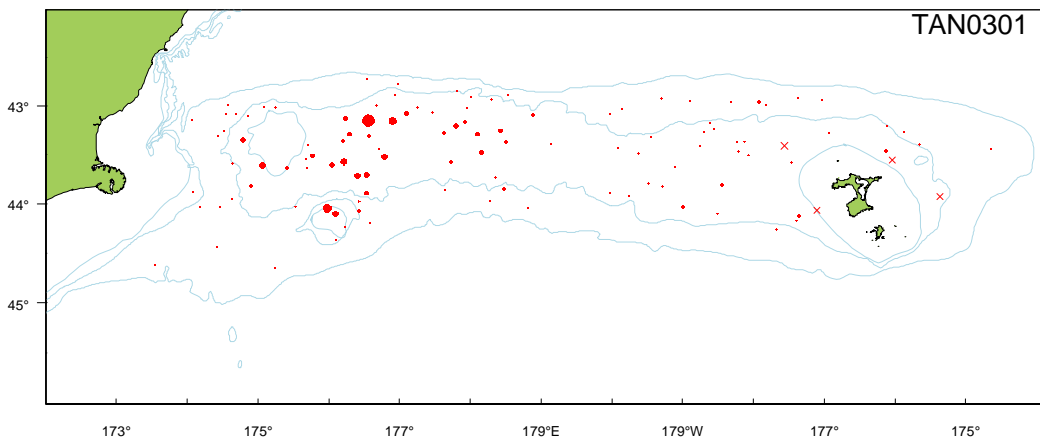
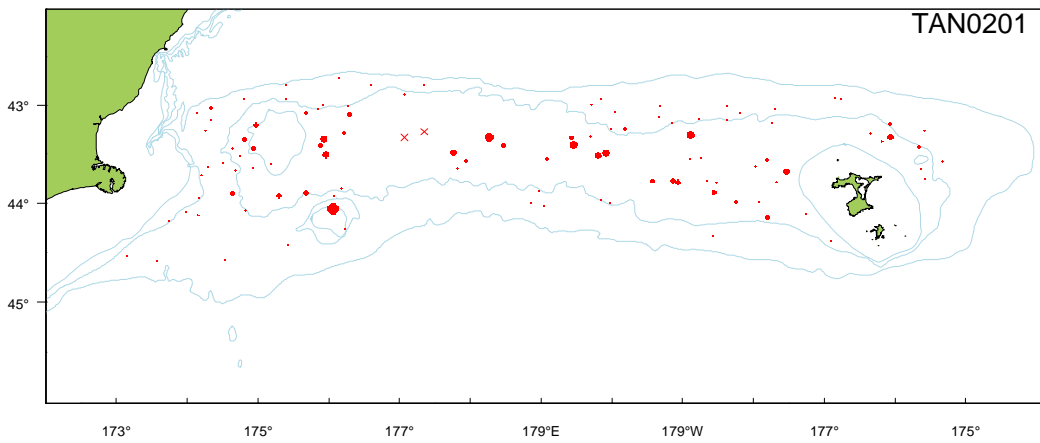
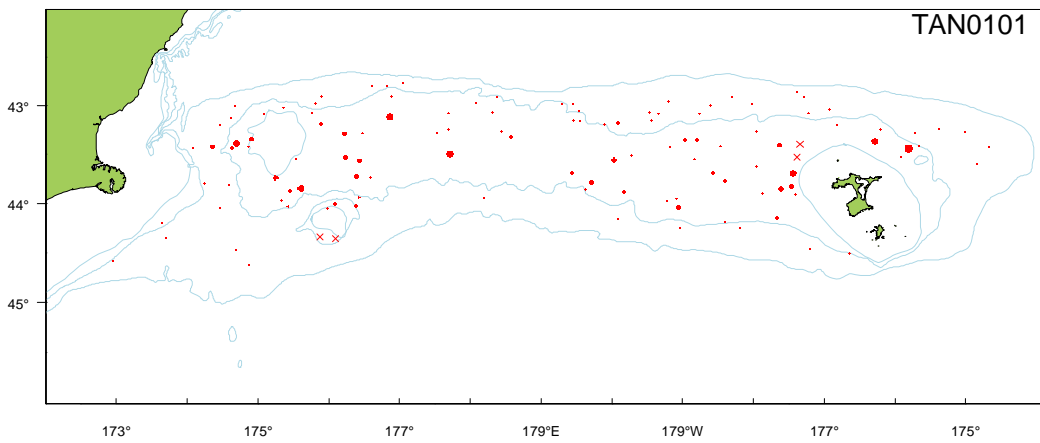
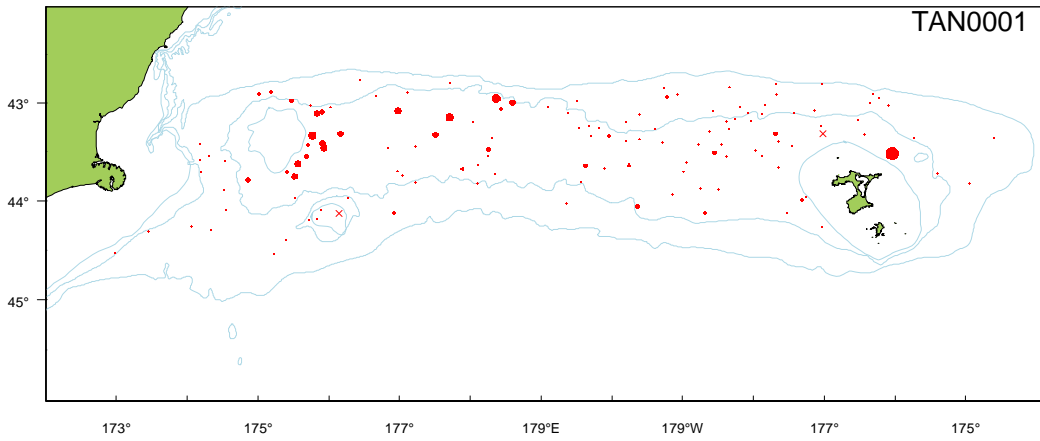
### Distribution

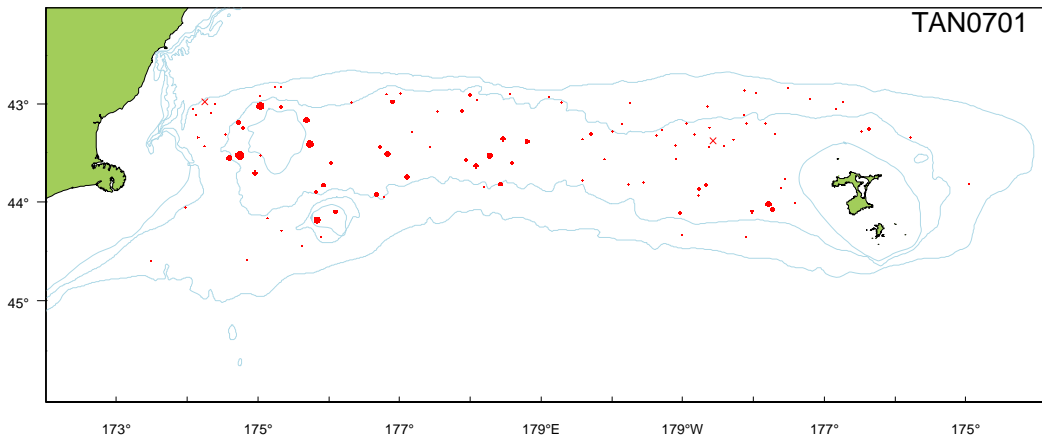
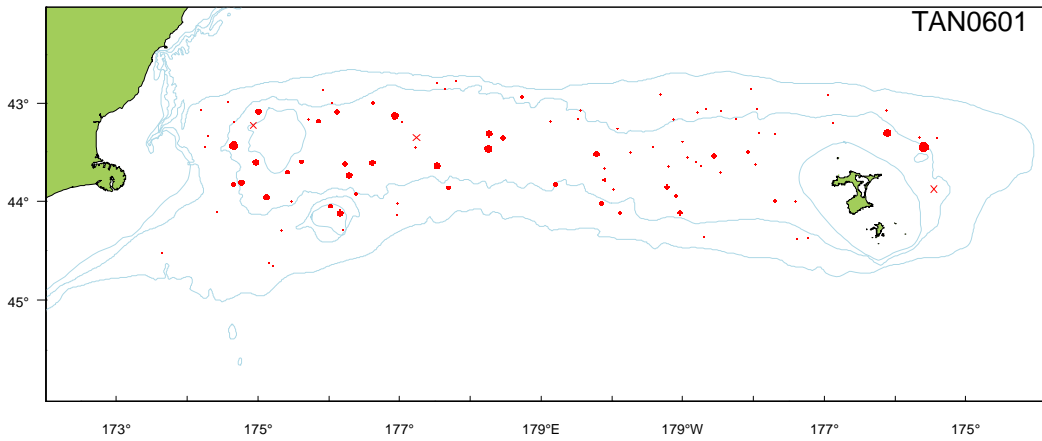
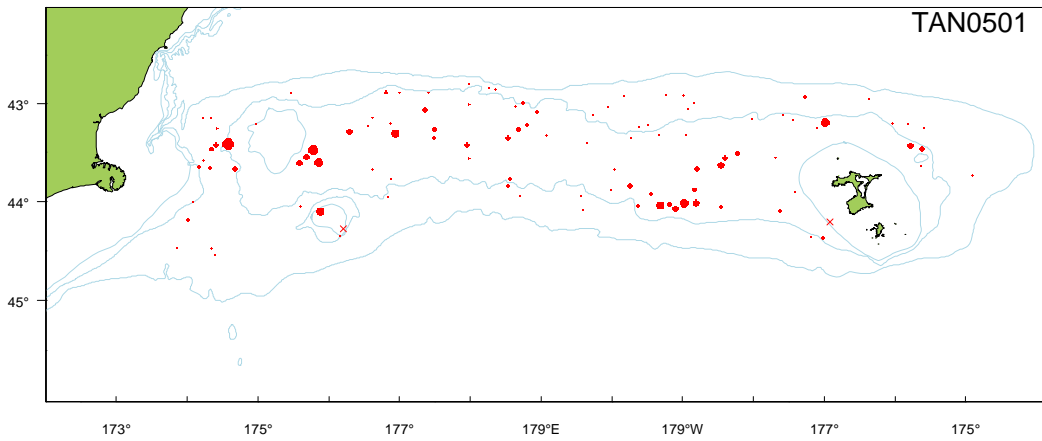
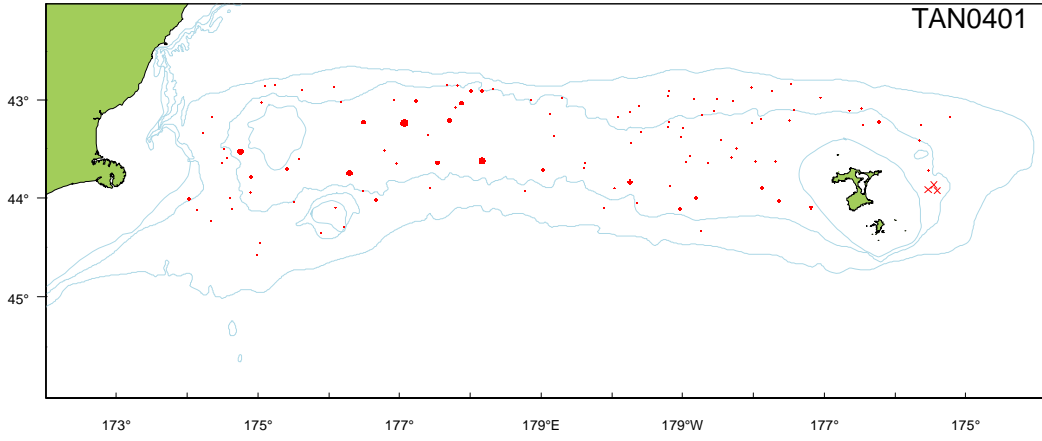


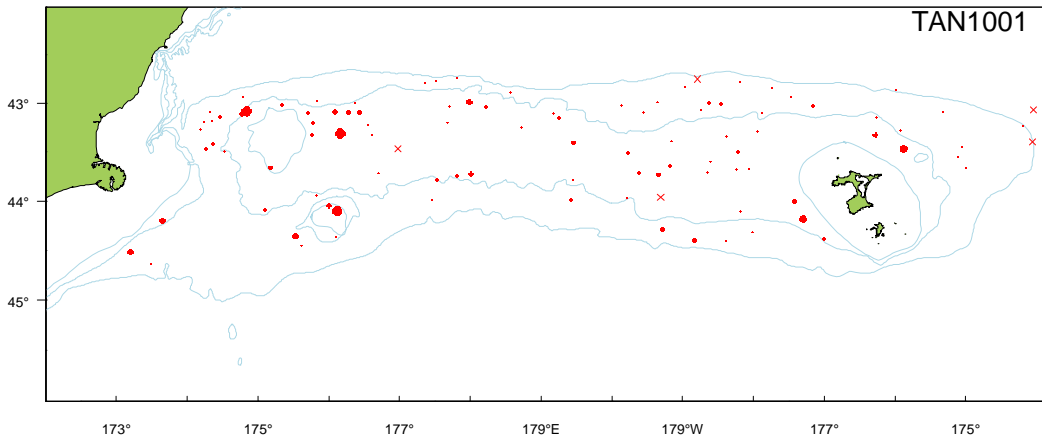
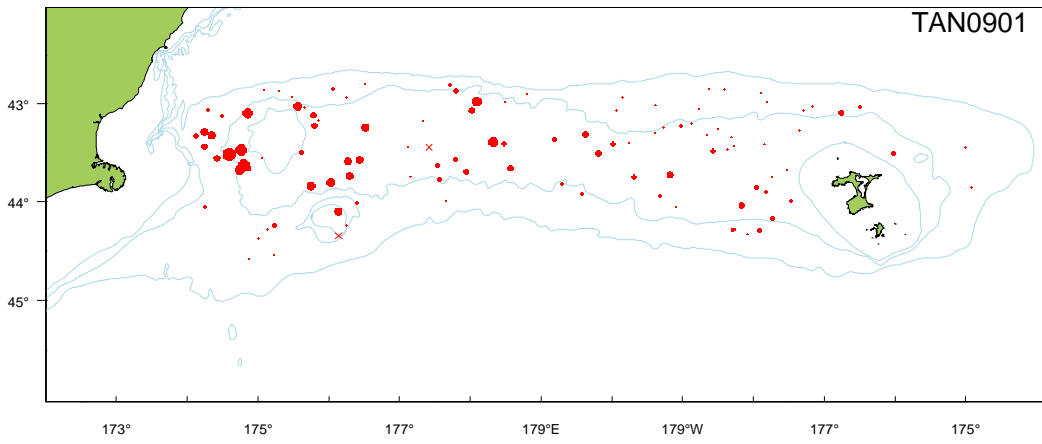
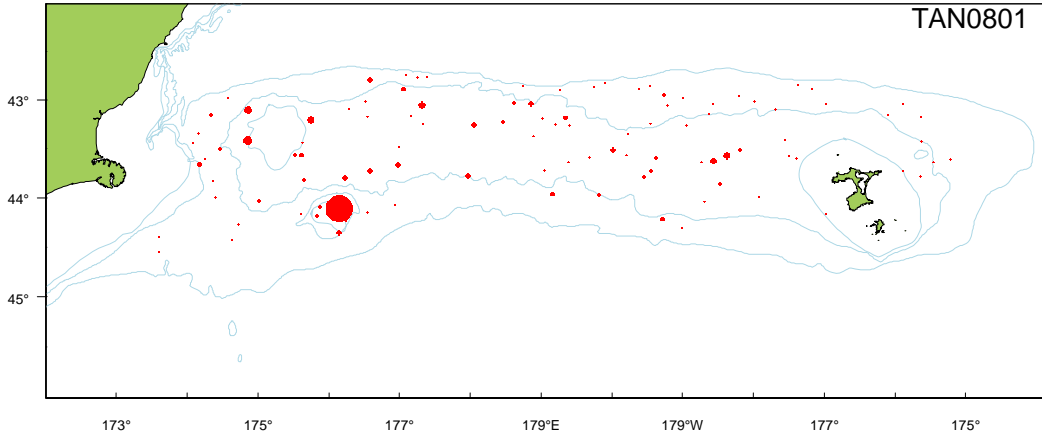




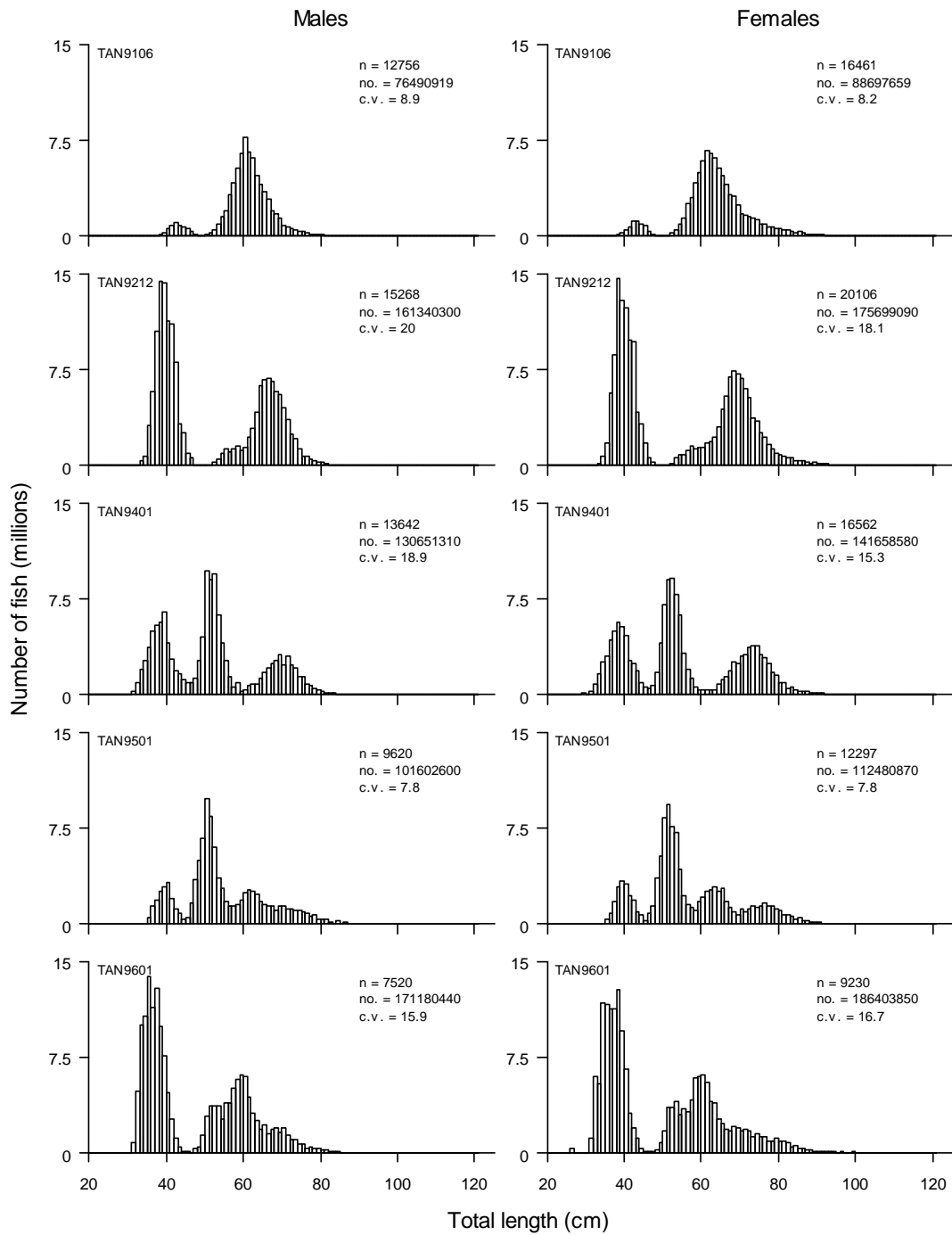


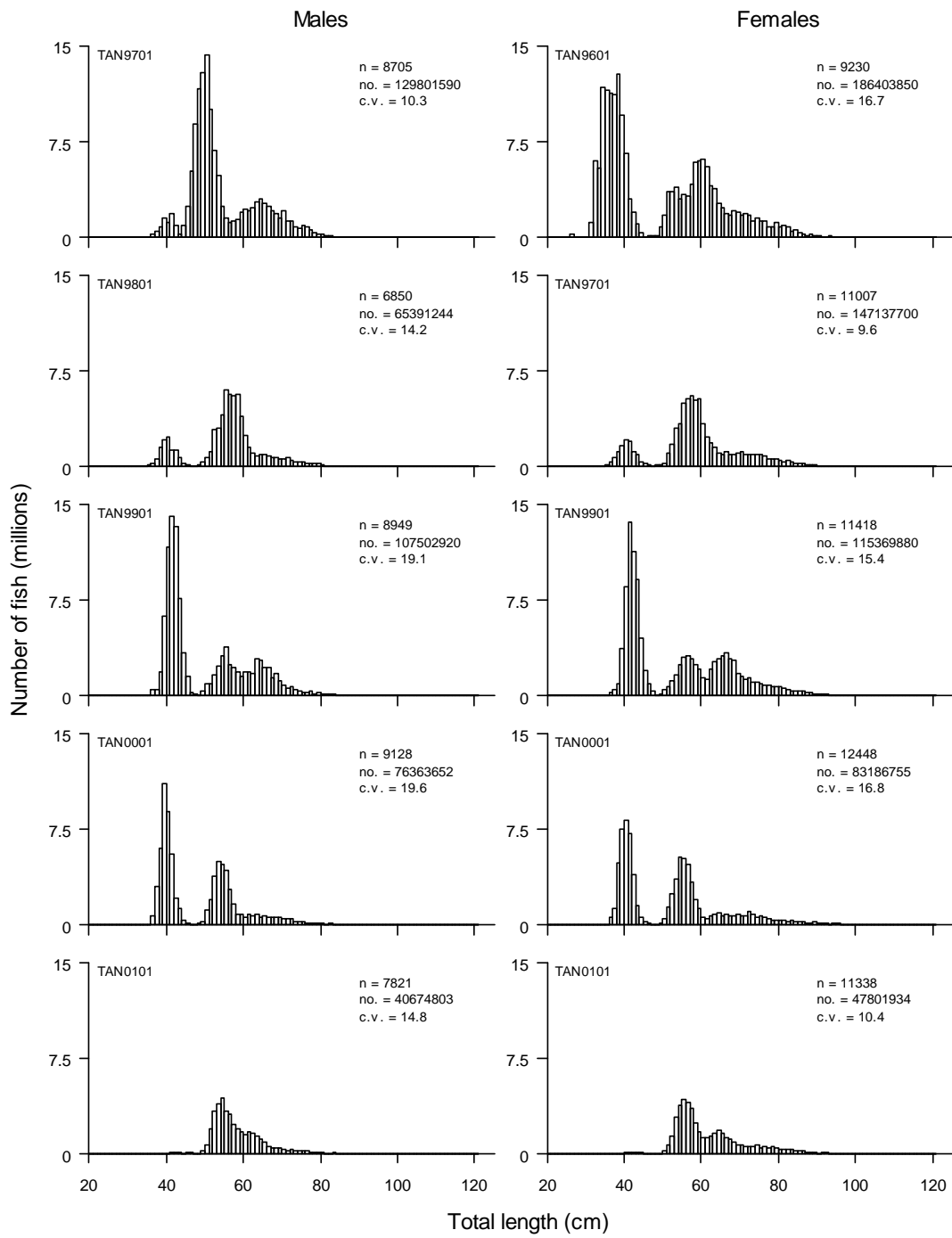


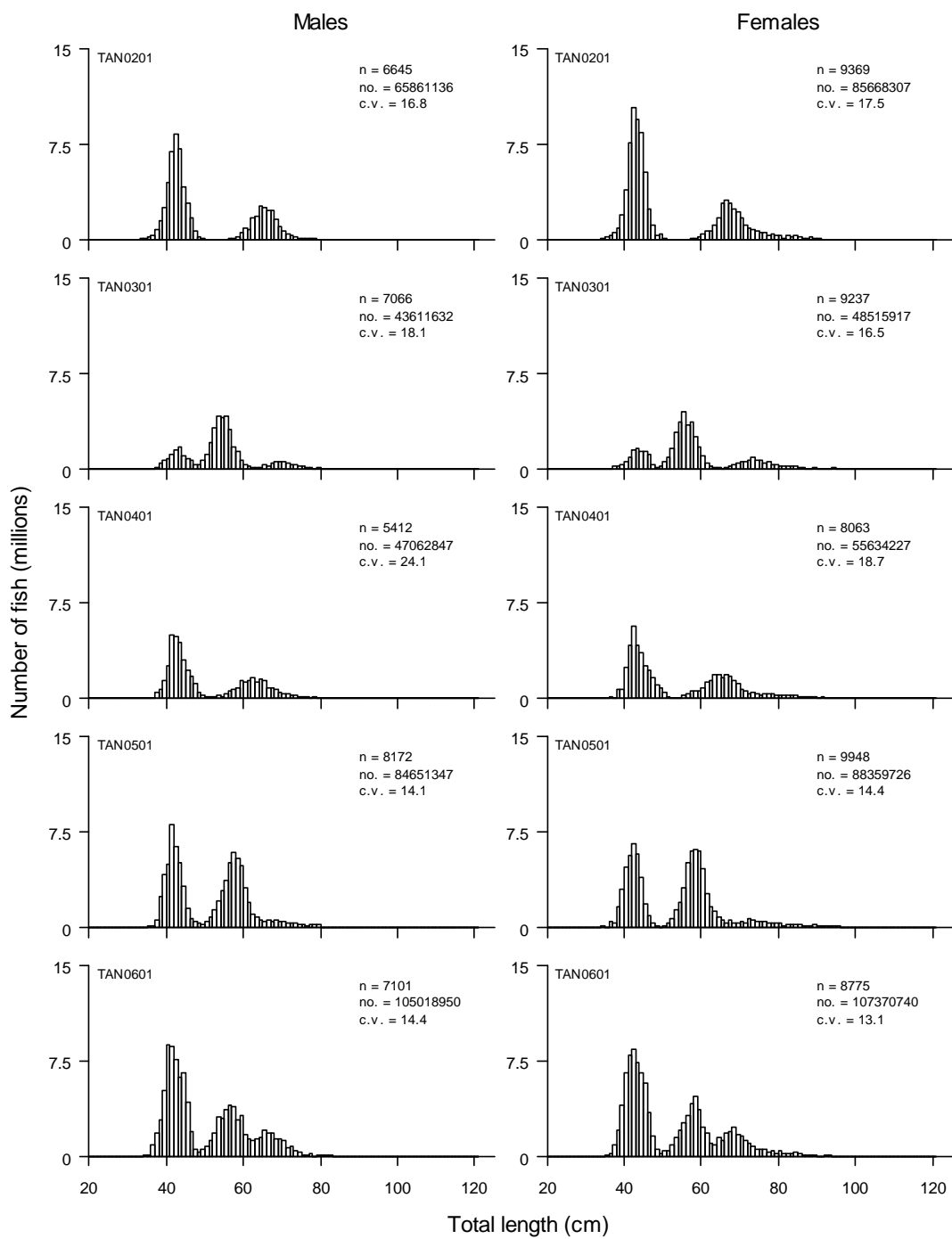




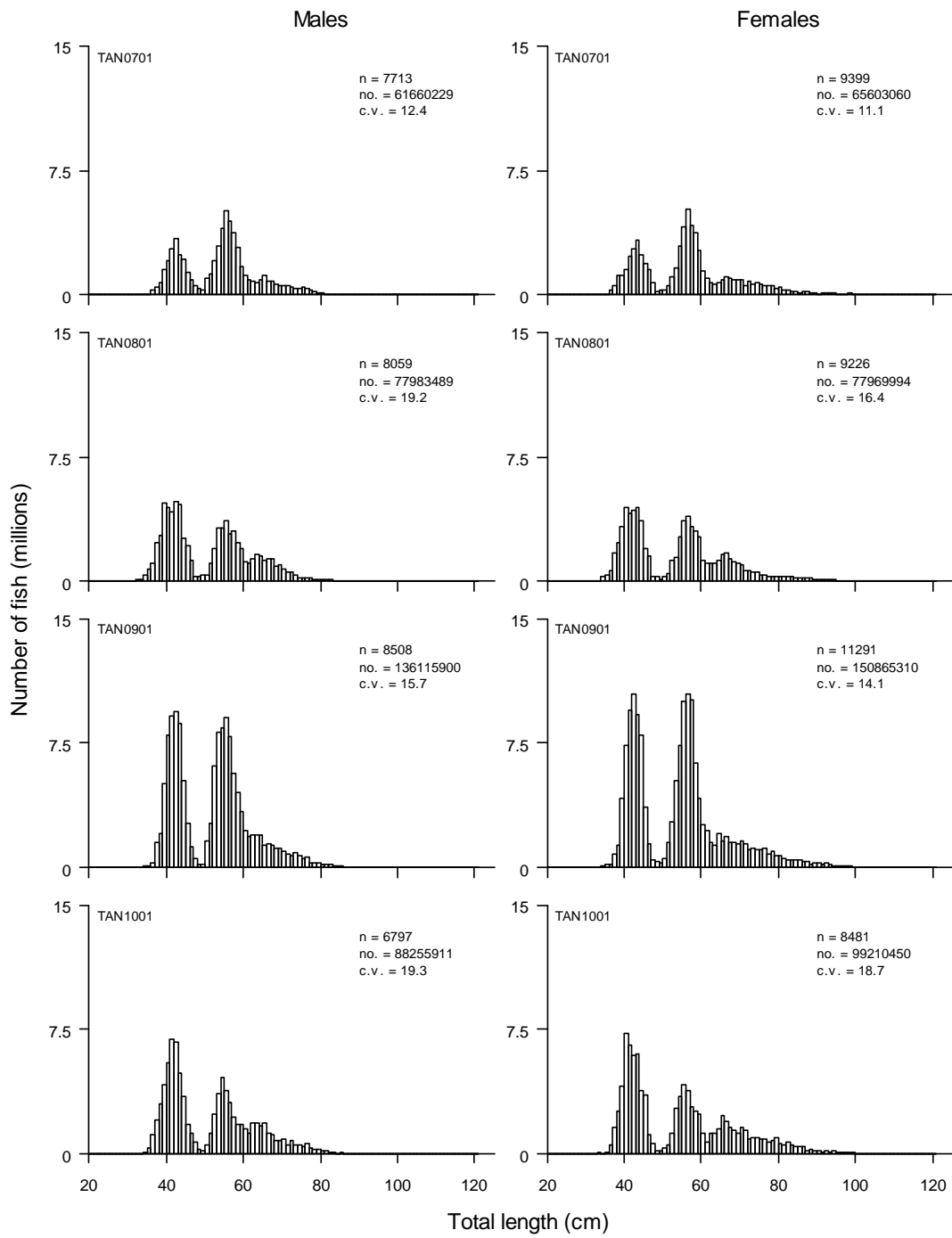
# Length Frequencies



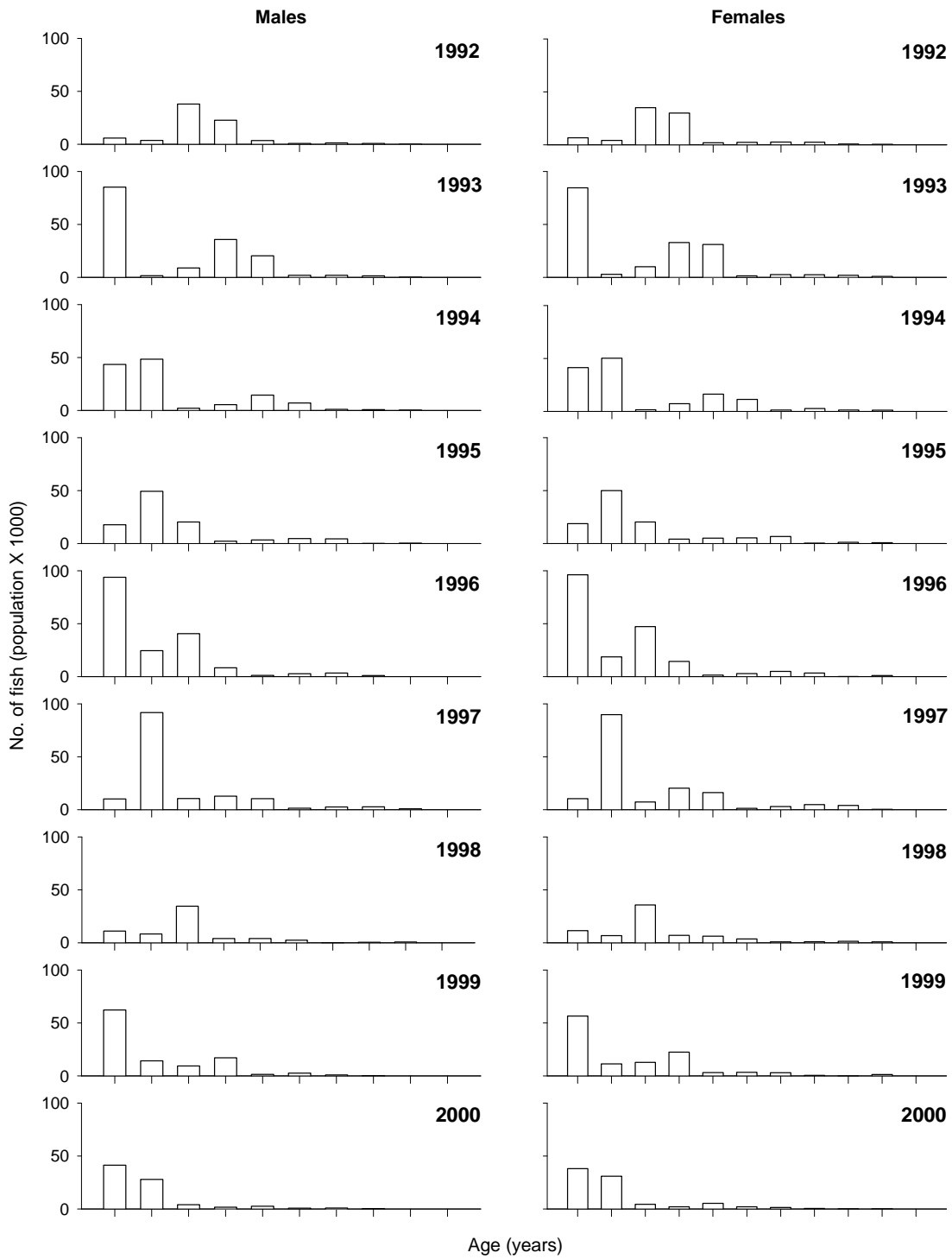


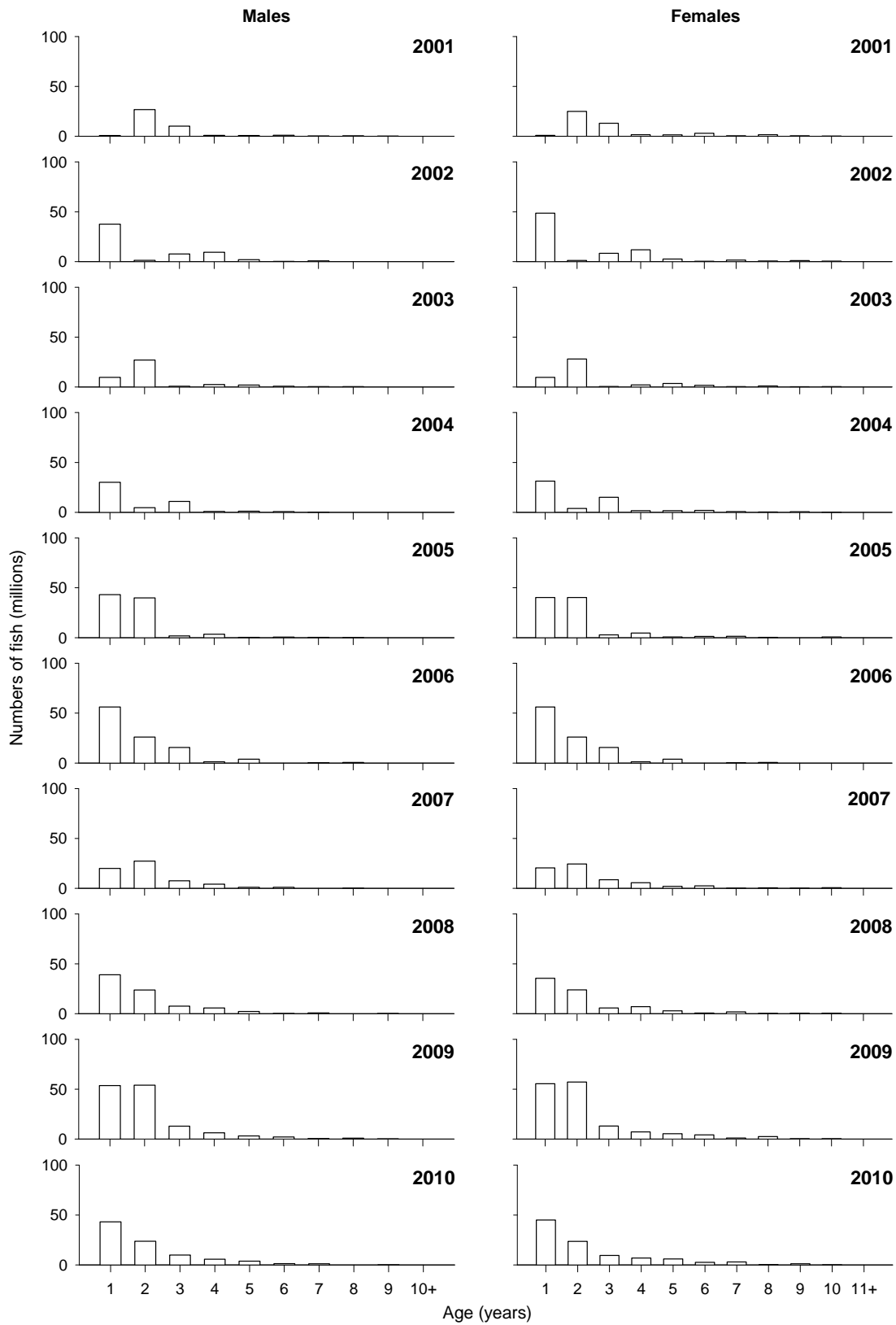






## Age Frequencies





## Gonad Stage Information

### Males

Year	p_M1	p_M2	p_M3	p_M4	p_M5	p_M6	p_M7	n_allM
1992	0.3	0.7	0	0	0	0	0	550
1993	0.42	0.58	0	0	0	0	0	450
1994	0.42	0.58	0	0	0	0	0	401
1995	0.45	0.55	0	0	0	0	0	341
1996	0.6	0.4	0	0	0	0	0	623
1997	0.43	0.57	0	0	0	0	0	275
1998	0.44	0.56	0	0	0	0	0	392
1999	0.4	0.6	0	0	0	0	0	714
2000	0.43	0.56	0	0	0	0	0	832
2001	0.25	0.74	0	0	0	0	0	7 426
2002	0.17	0.77	0.07	0	0	0	0	642
2003	0.6	0.38	0.01	0	0	0.01	0.01	334
2004	0.25	0.73	0	0.01	0	0	0	495
2005	0.6	0.37	0.02	0	0	0	0	670
2006	0.61	0.37	0.01	0	0	0.01	0	790
2007	0.55	0.45	0	0	0	0	0	817
2008	0.45	0.55	0	0	0	0	0	3 879
2009	0.64	0.36	0	0	0	0	0	8 492
2010	0.75	0.24	0	0	0	0	0	6 758
ALL	0.51	0.48	0	0	0	0	0	34 881

### Females

Year	p_F1	p_F2	p_F3	p_F4	p_F5	p_F6	p_F7	n_allF
1992	0.15	0.85	0	0	0	0	0	775
1993	0.12	0.88	0	0	0	0	0	752
1994	0.19	0.8	0	0	0	0	0	602
1995	0.28	0.72	0	0	0	0	0	545
1996	0.38	0.62	0	0	0	0	0	884
1997	0.3	0.7	0	0	0	0	0	507
1998	0.3	0.7	0	0	0	0	0	614
1999	0.3	0.7	0	0	0	0	0	1 051
2000	0.26	0.74	0	0	0	0	0	1 364
2001	0.03	0.96	0.01	0	0	0	0	10 383
2002	0.08	0.92	0	0	0	0	0	1 103
2003	0.29	0.7	0	0	0	0	0.01	544
2004	0.1	0.89	0	0	0	0	0	916
2005	0.32	0.67	0	0	0	0	0	1 065
2006	0.36	0.64	0	0	0	0	0	1 225
2007	0.41	0.58	0	0	0	0	0	1 247
2008	0.42	0.58	0	0	0	0	0	5 160
2009	0.63	0.37	0	0	0	0	0	11 249
2010	0.69	0.31	0	0	0	0	0	8 357
ALL	0.39	0.61	0	0	0	0	0	48 343

## Sea cucumbers (Holothurians)

HTH

**Coded as BAM**

Number of surveys caught 1992–2010 (out of 19):	6
Total catch weight (kg):	20

**Coded as HTH**

Number of surveys caught 1992–2010 (out of 19):	8
Total catch weight (kg):	89.8

**Coded as LAG**

Number of surveys caught 1992–2010 (out of 19):	6
Total catch weight (kg):	13

**Coded as PMO**

Number of surveys caught 1992–2010 (out of 19):	4
Total catch weight (kg):	94.1

**Coded as SCC**

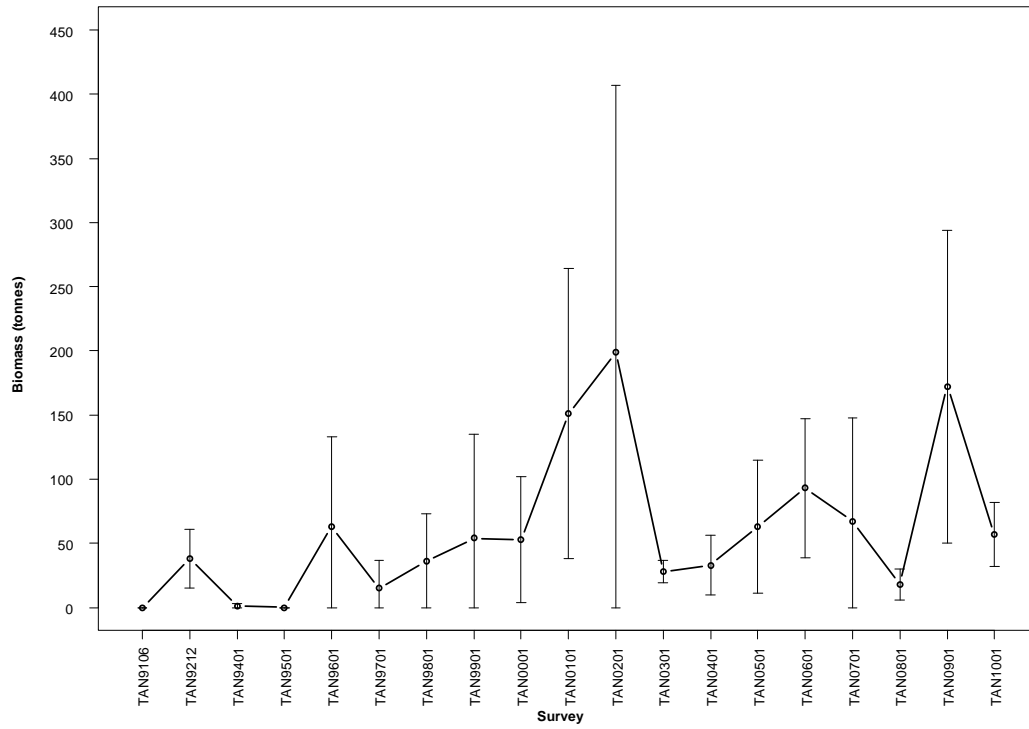
Number of surveys caught 1992–2010 (out of 19):	11
Total catch weight (kg):	212.7

The core survey area and depth range **is not** appropriate for this group. It is found **deeper than 800 m**. Biomass of this group is **poorly** estimated in the core survey area. Biomass has **increased** since the start of the time series, but this may be due to the group not being recorded in early surveys. Catch rates are highest in the **south and west**.

**Relative biomass estimates**

Year	Biomass (t)	cv (%)
1992	0	-
1993	38	31
1994	1	100
1995	0	-
1996	63	57
1997	15	75
1998	36	52
1999	54	77
2000	53	47
2001	151	38
2002	199	53

2003	28	16
2004	33	36
2005	63	42
2006	93	30
2007	67	62
2008	18	33
2009	172	36
2010	57	22



### Distribution

