Ministry for Primary Industries
Manatū Ahu Matua

A review of hoki and middle-depth summer trawl surveys of the Sub-Antarctic, November December 1991–1993 and 2000–2009

Supplement D: Species codes SCO to WWA

New Zealand Fisheries Assessment Report 2013/41

ISSN 1179-5352 (online)
ISBN 978-0-478-41440-0 (online)

June 2013

New Zealand Government

Growing and Protecting New Zealand

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Swollenhead conger (*Bassanago bulbiceps*) SCO

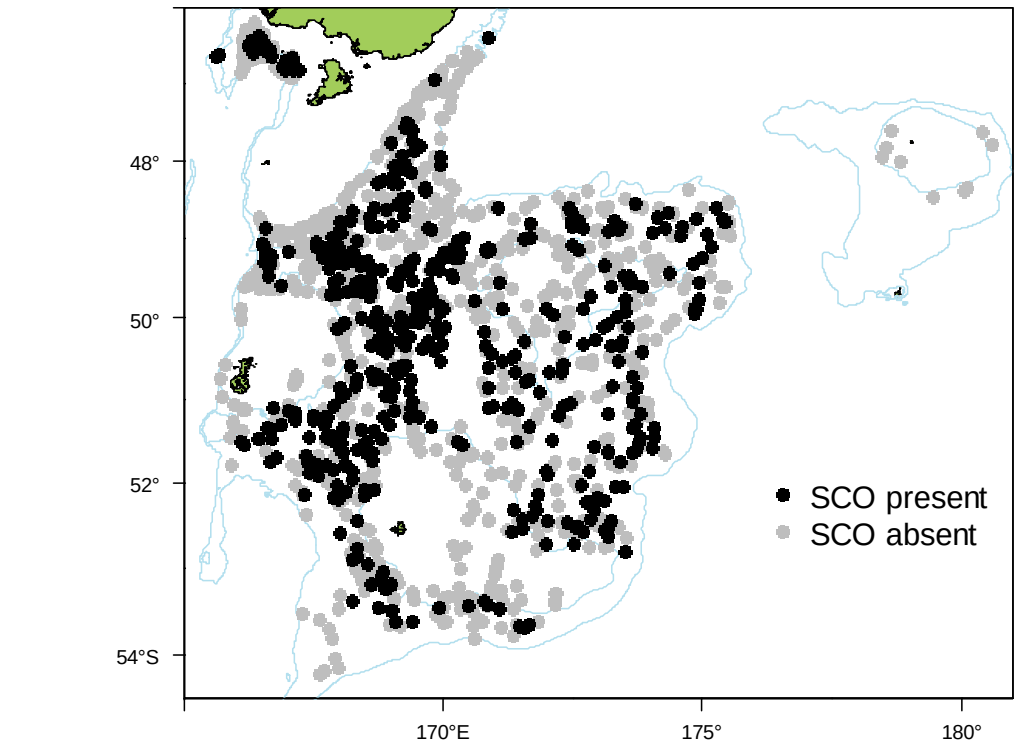
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	1 595.3
Number measured	114
Length range (mean) (cm)	45–106 (75.4)
Number weighed	103
Length-weight parameters a, b (r^2)	–

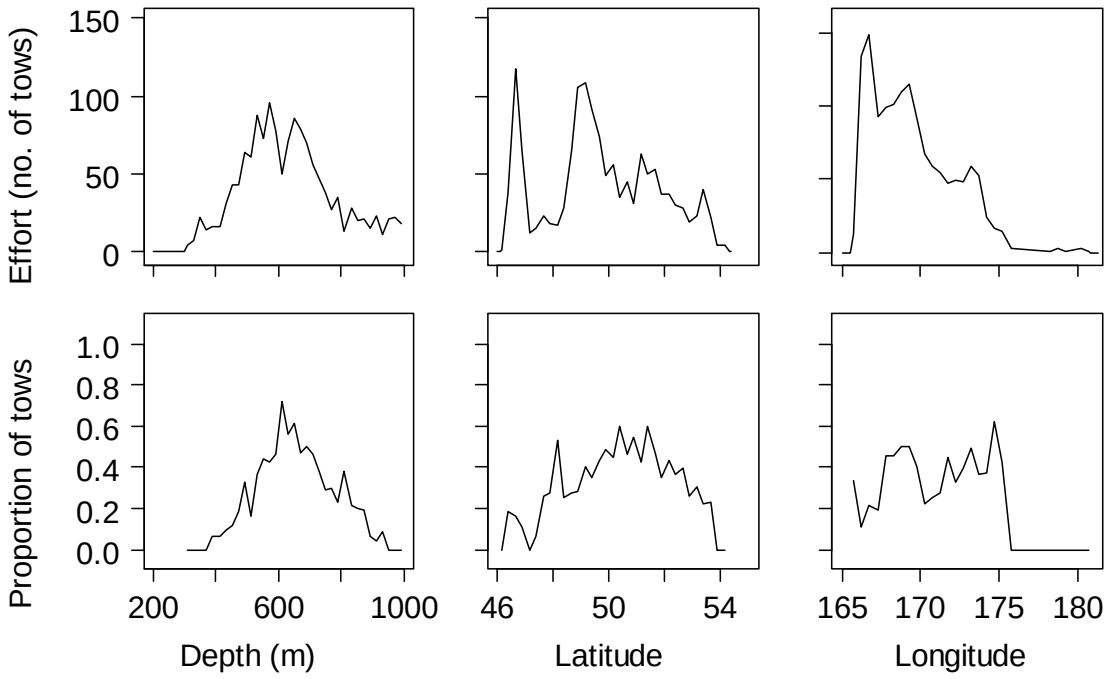
This species has been **well** identified during the time series. It is found **deeper than 800 m**. The core survey area and depth range **is** appropriate for this species. Distribution **does** occasionally extend to the areas deeper than 800 m surveyed from 2000 to 2009. It **is not** recorded from the Bounty Platform.

Biomass of this species is **well** estimated by the core survey. Biomass **shows no clear trend** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catch are taken throughout the survey area.

There is no length or gonad stage information presented.

Distribution of *Bassanago bulbiceps* from all summer surveys. Valid biomass stations only.

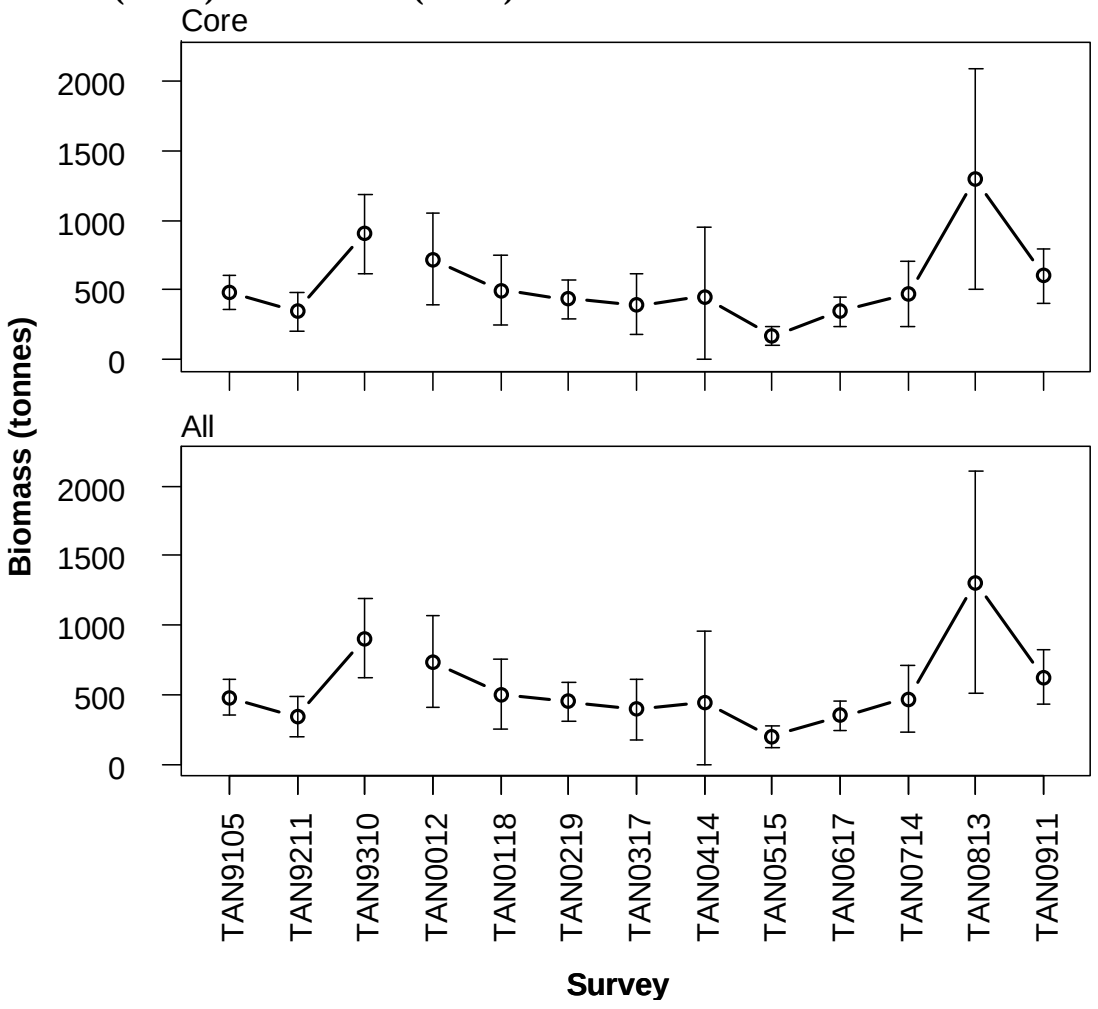




Relative biomass estimates (t) and c.v.s (%) of *Bassanago bulbiceps* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	Strata 27+28 (c.v.)	Stratum 26 biomass	Stratum 26 (c.v.)	Stratum 17 biomass	Stratum 17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	482	13	NA	NA	NA	NA	NA	NA	482	13
TAN9211	344	21	NA	NA	NA	NA	0	0	344	21
TAN9310	902	16	NA	NA	NA	NA	0	0	902	16
TAN0012	722	23	3	100	14	100	NA	NA	739	22
TAN0118	498	25	6	74	0	0	NA	NA	504	25
TAN0219	435	16	16	66	0	0	NA	NA	451	16
TAN0317	395	28	0	0	NA	NA	NA	NA	395	28
TAN0414	447	57	0	0	NA	NA	NA	NA	447	57
TAN0515	172	20	4	100	21	100	NA	NA	197	21
TAN0617	344	15	5	82	NA	NA	NA	NA	349	15
TAN0714	471	25	0	0	0	0	NA	NA	471	25
TAN0813	1302	31	6	85	0	0	NA	NA	1308	30
TAN0911	602	16	7	71	15	100	NA	NA	624	16

Trends in relative biomass estimates (± 2 standard errors) of *Bassanago bulbiceps* for core strata (above) and all strata (below).



Silver dory (*Cyttus novaezealandiae*) SDO

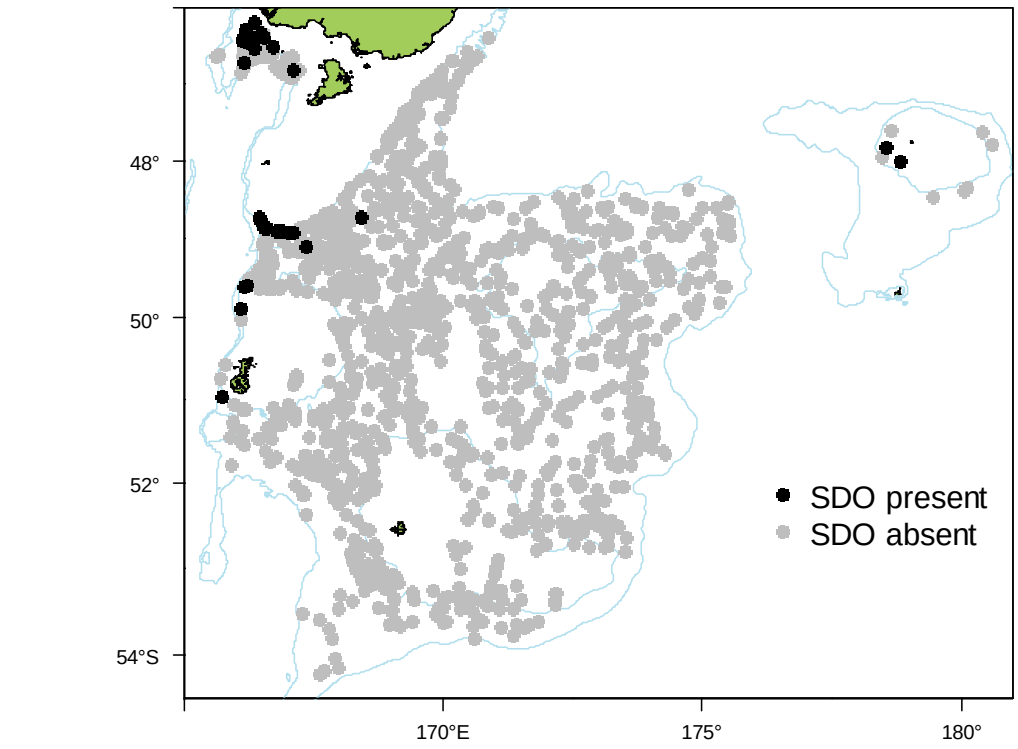
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	11
Total catch weight (kg):	2 060.8
Number measured	1 184
Length range (mean) (cm)	14–28 (20.1)
Number weighed	453
Length-weight parameters a, b (r^2)	0.0298075, 2.805783 (93.07)

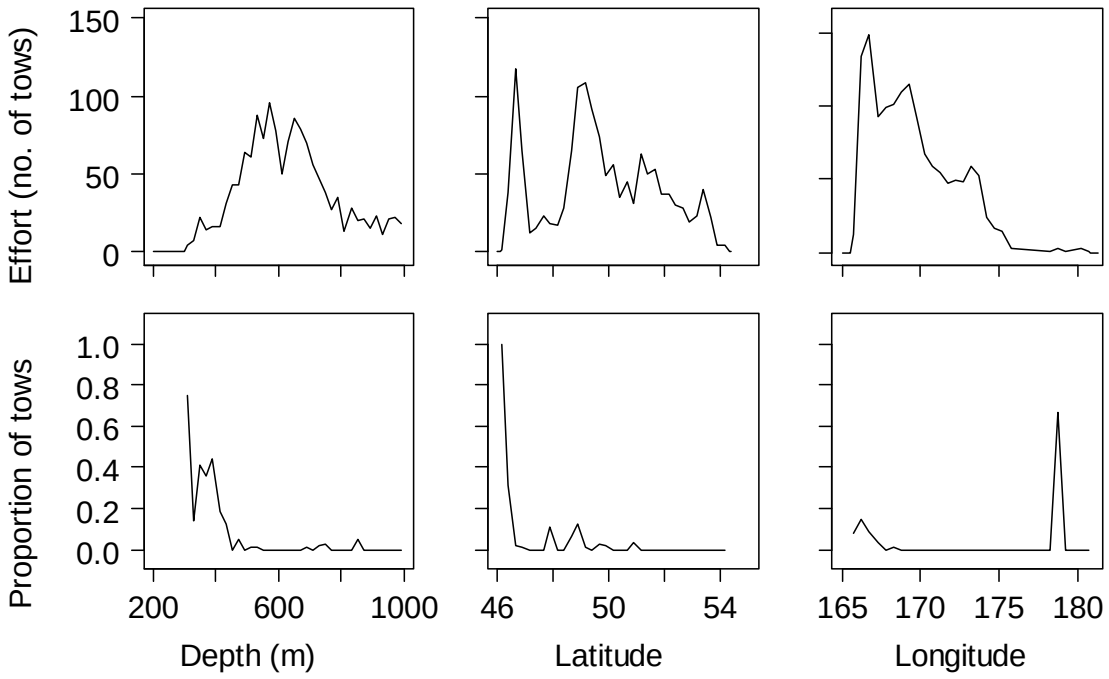
This species **has** been well identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is not** appropriate for this species. Distribution **does not extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey. Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Catches were highest in the **northwest**.at the bottom of the Stewart/Snares shelf and Puysegur.

From the few fish measured length frequencies are **unimodal. There is gonad stage information** presented.

Distribution of *Cyttus novaezealandiae* from all summer surveys. Valid biomass stations only.

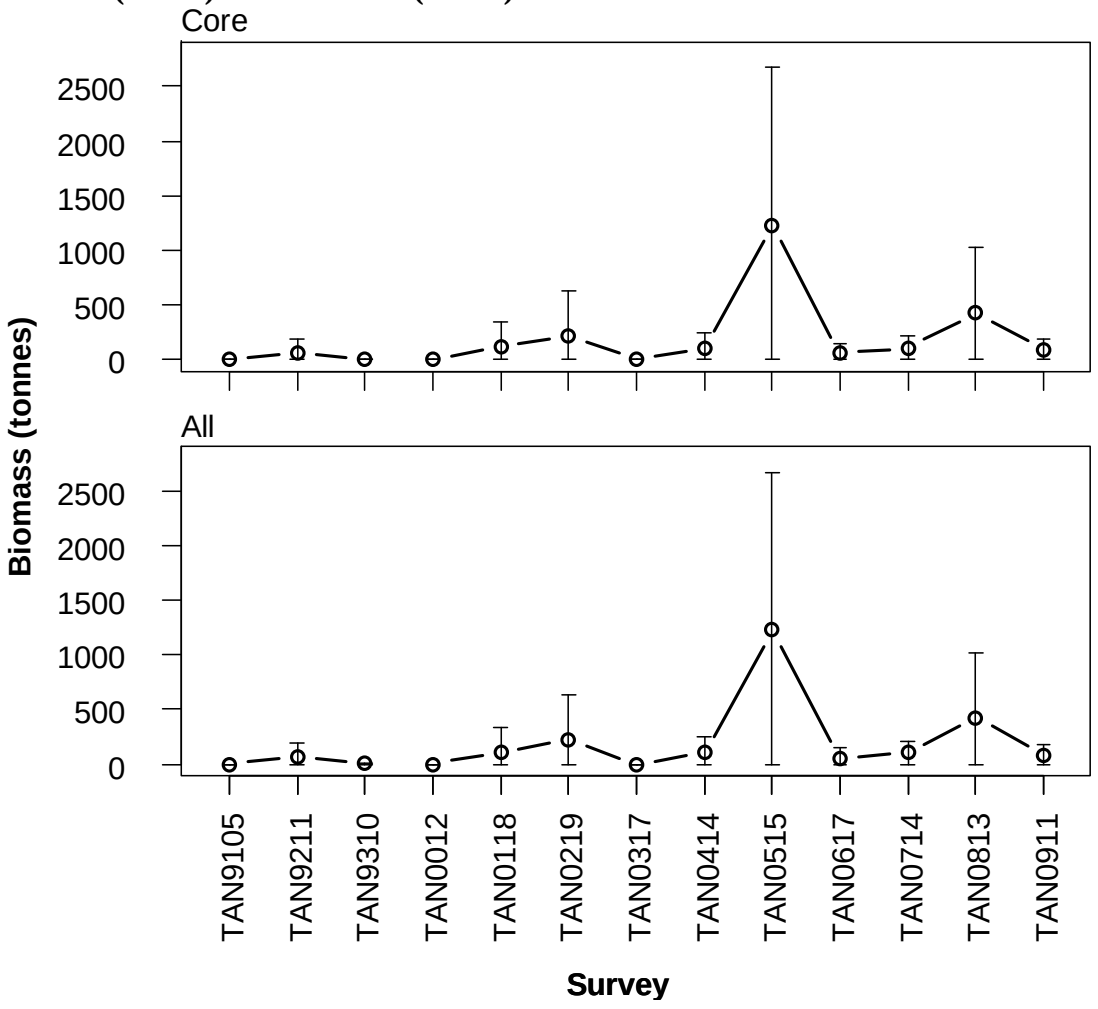




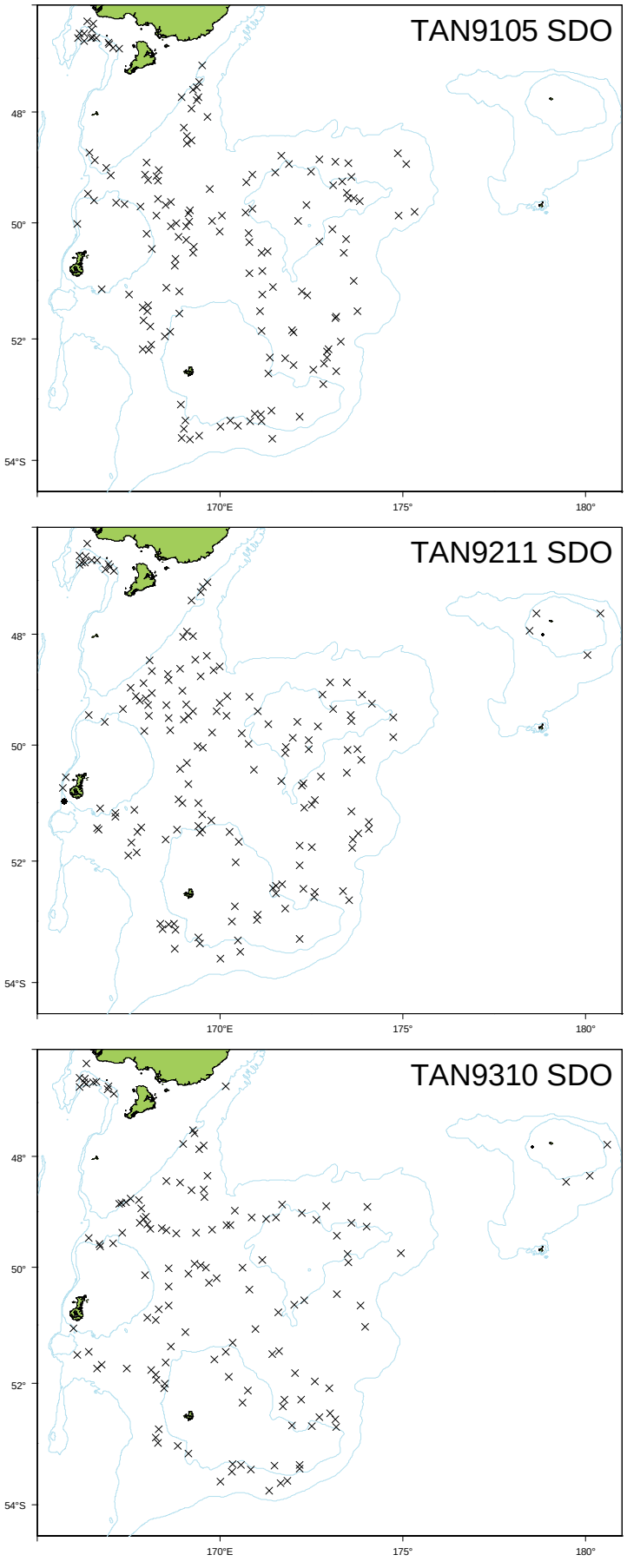
Relative biomass estimates (t) and c.v.s (%) of *Cyttus novaezealandiae* for core strata, strata outside the core area and all strata.

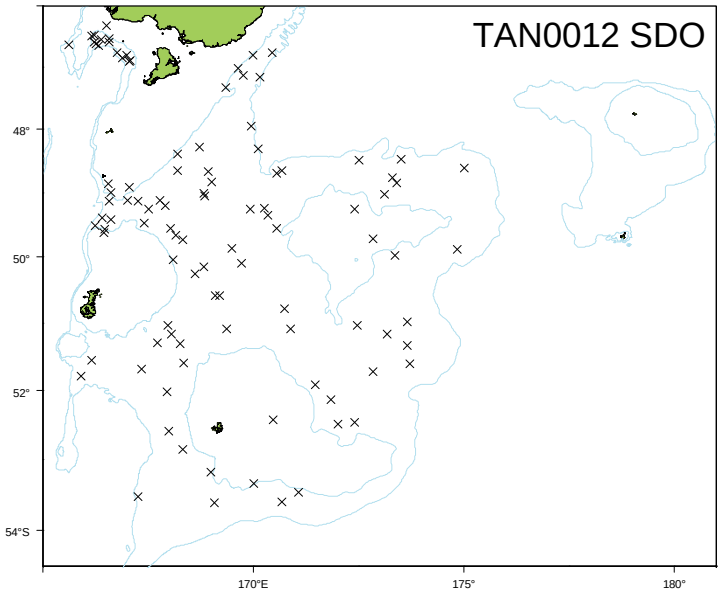
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	0	NA	NA	NA	NA	NA	NA	0	0
TAN9211	63	100	NA	NA	NA	NA	0	100	63	100
TAN9310	0	0	NA	NA	NA	NA	5	100	5	100
TAN0012	0	100	0	0	0	0	NA	NA	0	100
TAN0118	115	97	0	0	0	0	NA	NA	115	97
TAN0219	218	95	0	0	0	0	NA	NA	218	95
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	108	63	0	0	NA	NA	NA	NA	108	63
TAN0515	1229	59	0	0	0	0	NA	NA	1229	59
TAN0617	52	94	0	0	NA	NA	NA	NA	52	94
TAN0714	106	51	0	0	0	0	NA	NA	106	51
TAN0813	428	70	0	0	0	0	NA	NA	428	70
TAN0911	83	60	0	0	0	0	NA	NA	83	60

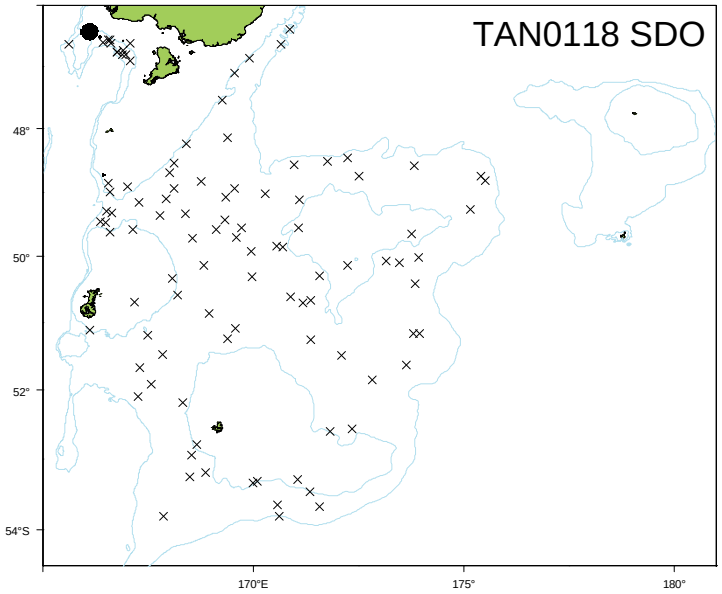
Trends in relative biomass estimates (± 2 standard errors) of *Cyttus novaezealandiae* for core strata (above) and all strata (below).

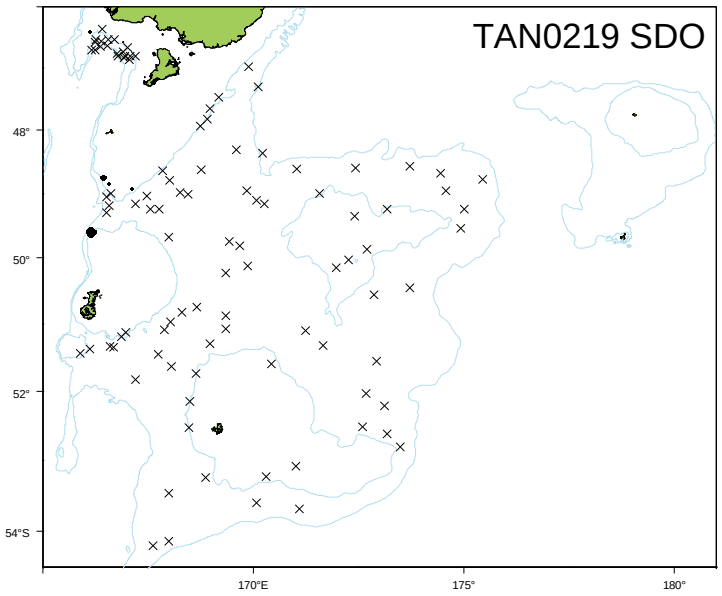


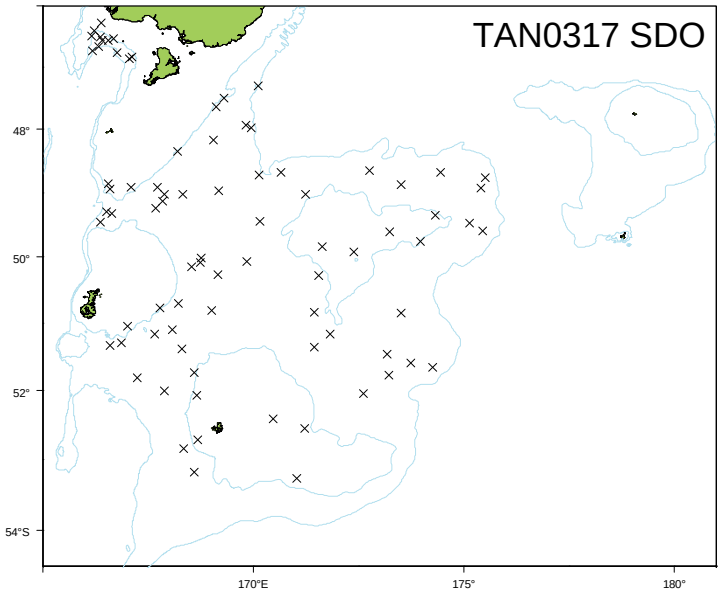
Catchrates of *Cyttus novaezealandiae*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

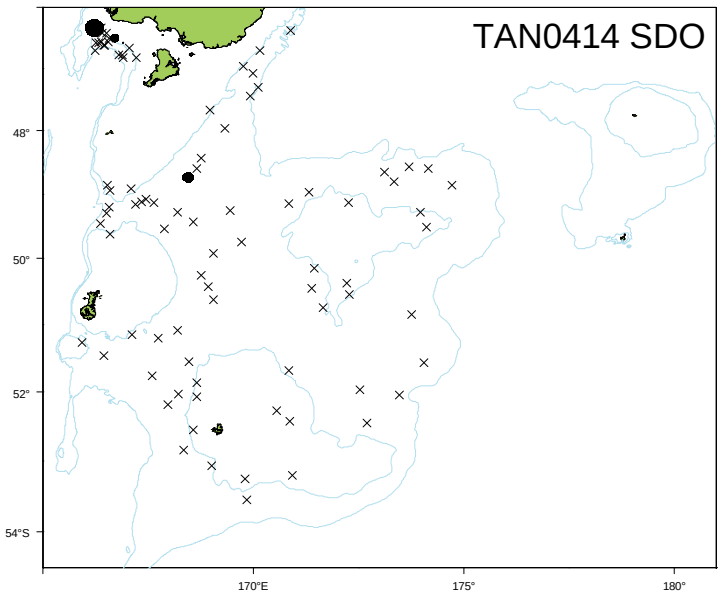


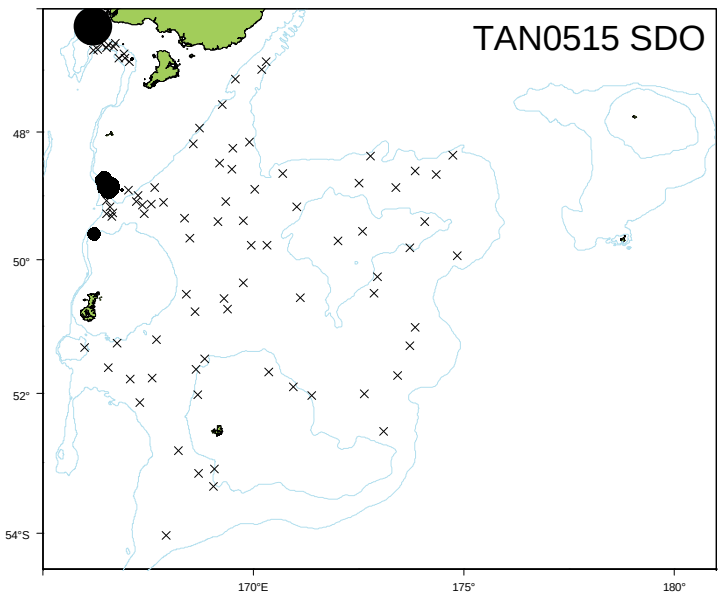

TAN0012 SDO
48°
50°
52°
54°S
170°E
175°
180°

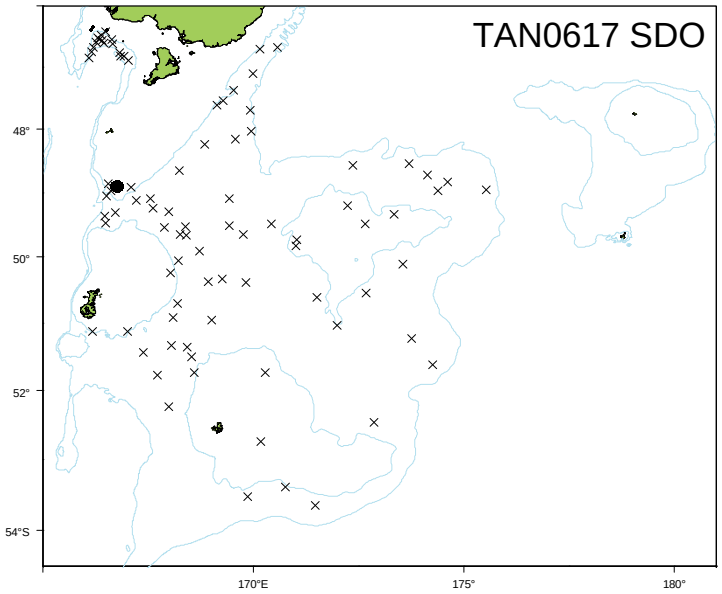

TAN0118 SDO
48°
50°
52°
54°S
170°E
175°
180°

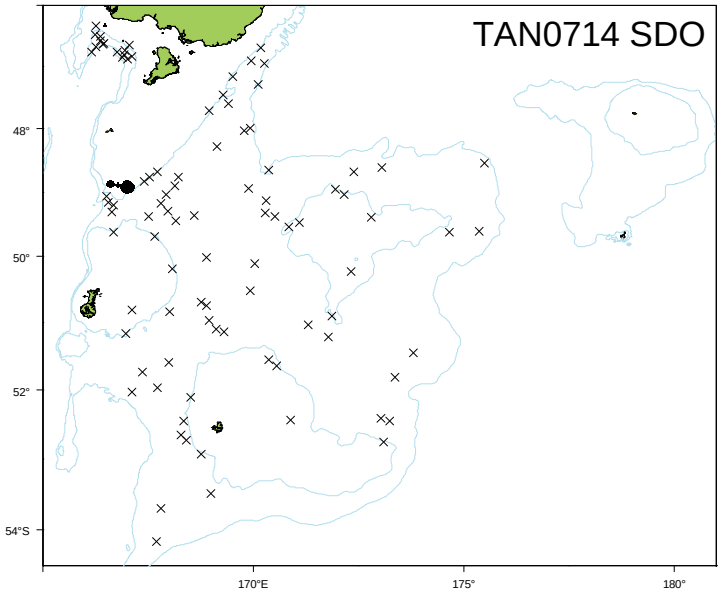

TAN0219 SDO
48°
50°
52°
54°S
170°E
175°
180°

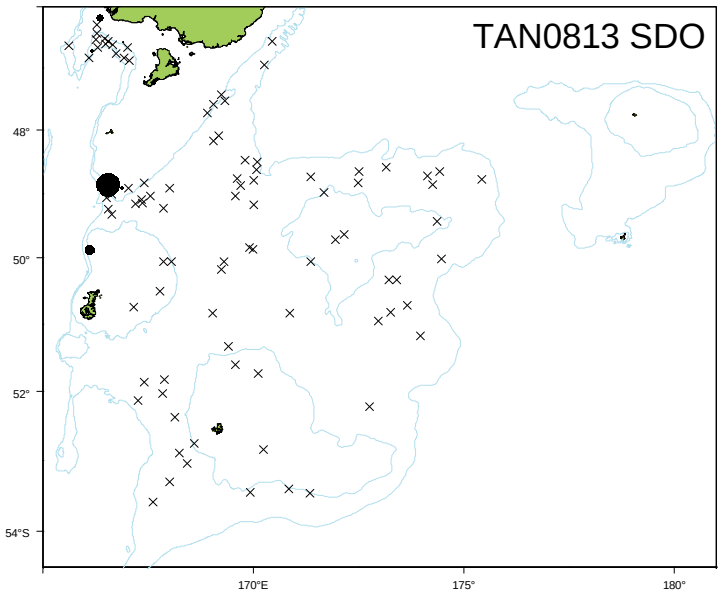

TAN0317 SDO
48°
50°
52°
54°S
170°E
175°
180°

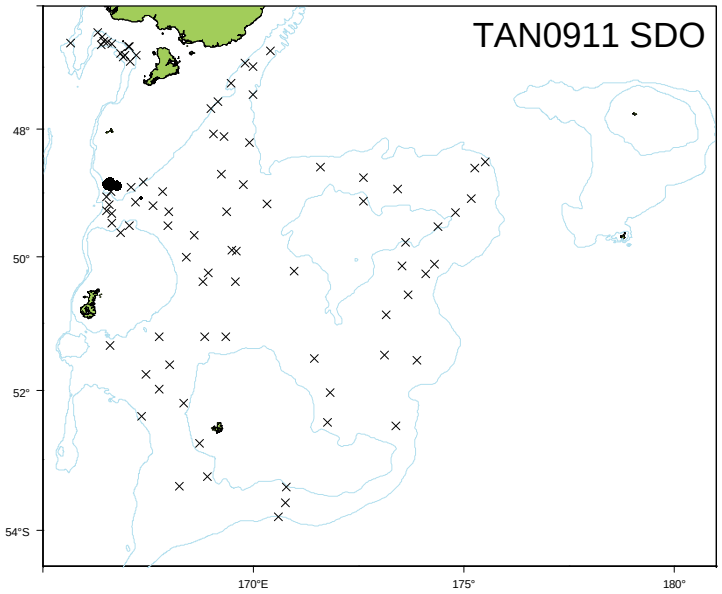

TAN0414 SDO
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 SDO
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 SDO
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 SDO
48°
50°
52°
54°S
170°E
175°
180°

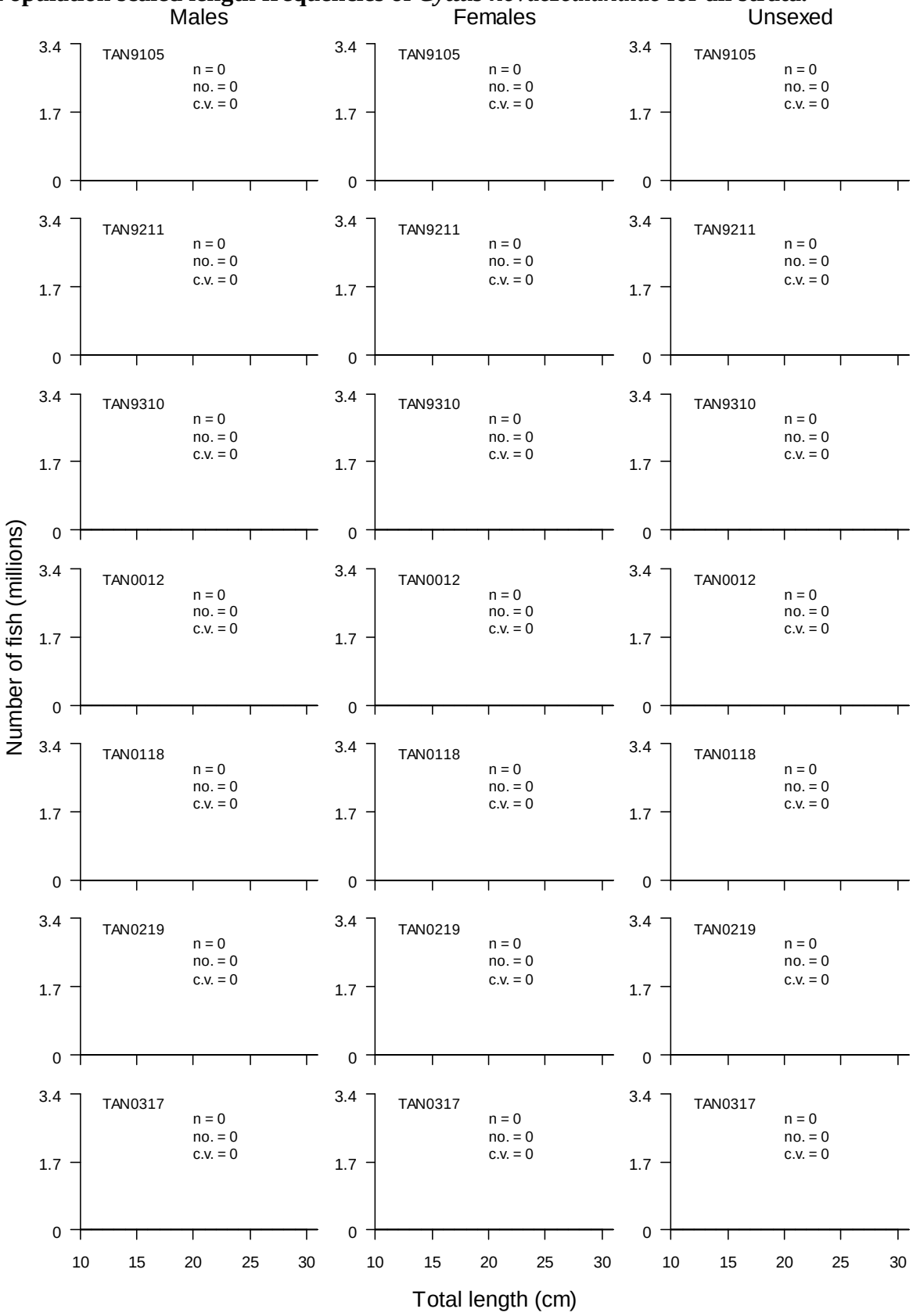

TAN0813 SDO
48°
50°
52°
54°S
170°E
175°
180°

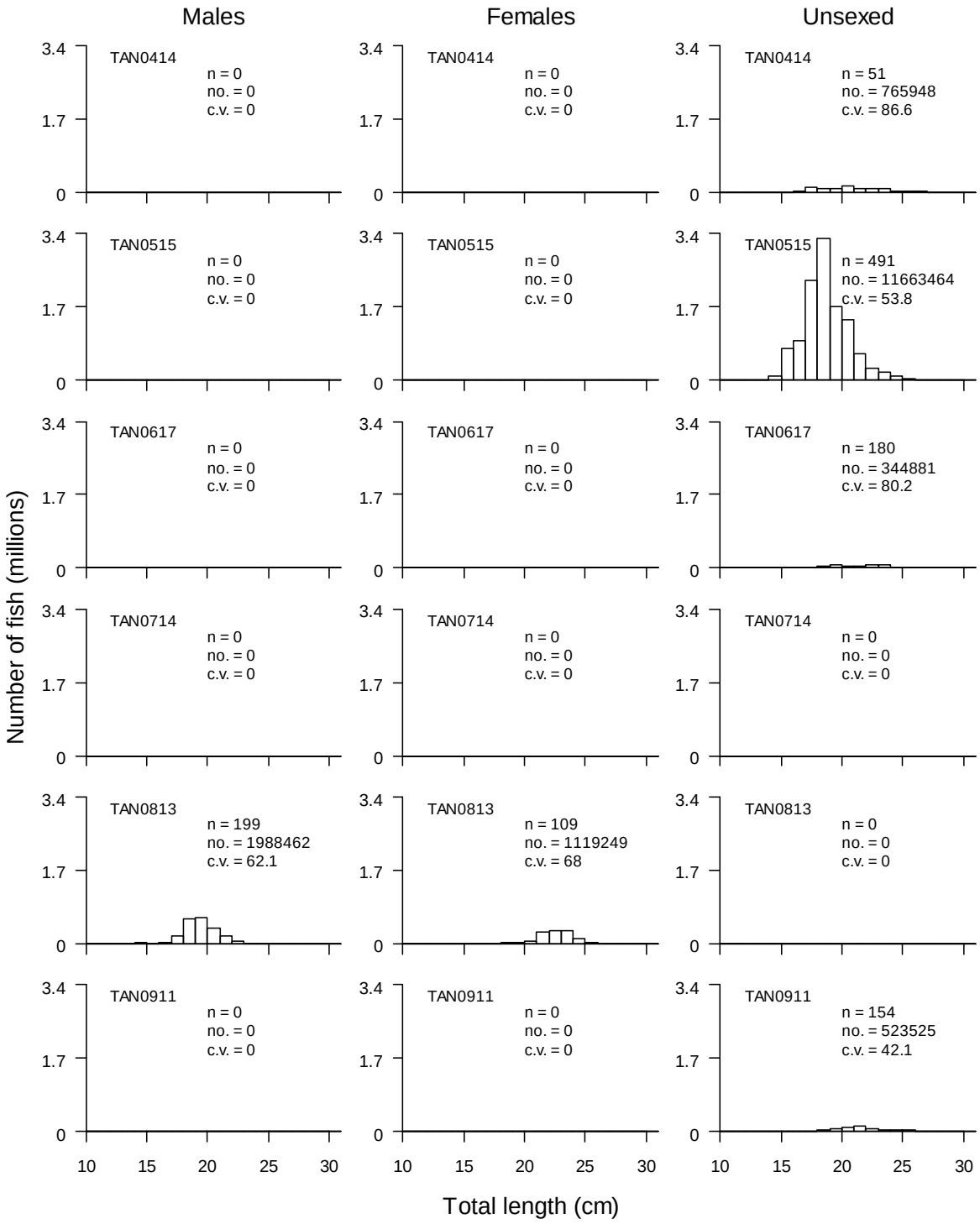


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	NA	NA	NA	0
TAN9211	NA	NA	NA	0
TAN9310	NA	NA	NA	0
TAN0012	NA	NA	NA	0
TAN0118	NA	NA	NA	0
TAN0219	NA	NA	NA	0
TAN0317	NA	NA	NA	0
TAN0414	16	26	20.1	51
TAN0515	14	28	18.7	491
TAN0617	16	25	20.7	180
TAN0714	NA	NA	NA	0
TAN0813	14	25	20.1	308
TAN0911	14	27	21.0	154

Population scaled length frequencies of *Cyttus novaezealandiae* for all strata.




Males
Females
Unsexed
TAN0414
n = 0
no. = 0
c.v. = 0
TAN0414
n = 0
no. = 0
c.v. = 0
TAN0414
n = 51
no. = 765948
c.v. = 86.6
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 491
no. = 11663464
c.v. = 53.8
TAN0617
n = 0
no. = 0
c.v. = 0
TAN0617
n = 0
no. = 0
c.v. = 0
TAN0617
n = 180
no. = 344881
c.v. = 80.2
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0813
n = 199
no. = 1988462
c.v. = 62.1
TAN0813
n = 109
no. = 1119249
c.v. = 68
TAN0813
n = 0
no. = 0
c.v. = 0
TAN0911
n = 0
no. = 0
c.v. = 0
TAN0911
n = 0
no. = 0
c.v. = 0
TAN0911
n = 154
no. = 523525
c.v. = 42.1
3.4
1.7
0
10
15
20
25
30
Number of fish (millions)
Total length (cm)

Starfish SFI

Coded as ASR

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	9
Total catch weight (kg):	76.7

Coded as BCH

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.9

Coded as BES

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	4
Total catch weight (kg):	0.5

Coded as BPI

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.3

Coded as BRG

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	2.1

Coded as CDY

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	4
Total catch weight (kg):	1.6

Coded as CJA

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	9
Total catch weight (kg):	6.4

Coded as CMP

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.2

Coded as CPA

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	7
Total catch weight (kg):	38.1

Coded as DMG

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	8
Total catch weight (kg):	48.1

Coded as DPP

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	3.4

Coded as GOR

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	7
Total catch weight (kg):	4.6

Coded as HEC

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	0.8

Coded as HTR

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	10
Total catch weight (kg):	205.0

Coded as LNV

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	9.5

Coded as MAT

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.1

Coded as MSL

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	5
Total catch weight (kg):	2.9

Coded as ODT

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	6.2

Coded as OPH

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	2
Total catch weight (kg):	0.3

Coded as PAO

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	12.9

Coded as PHM

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	2.3

Coded as PLI

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	2
Total catch weight (kg):	0.4

Coded as PLT

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	5
Total catch weight (kg):	1.3

Coded as PNE

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	1.1

Coded as PRU

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	1.2

Coded as PSI

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	9
Total catch weight (kg):	16.9

Coded as RGR

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	0.5

Coded as SFI

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	7
Total catch weight (kg):	265.3

Coded as SMO

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	2
Total catch weight (kg):	0.8

Coded as SOT

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	9
Total catch weight (kg):	15.4

Coded as ZAT

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.9

Coded as ZOR

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	9
Total catch weight (kg):	103.3

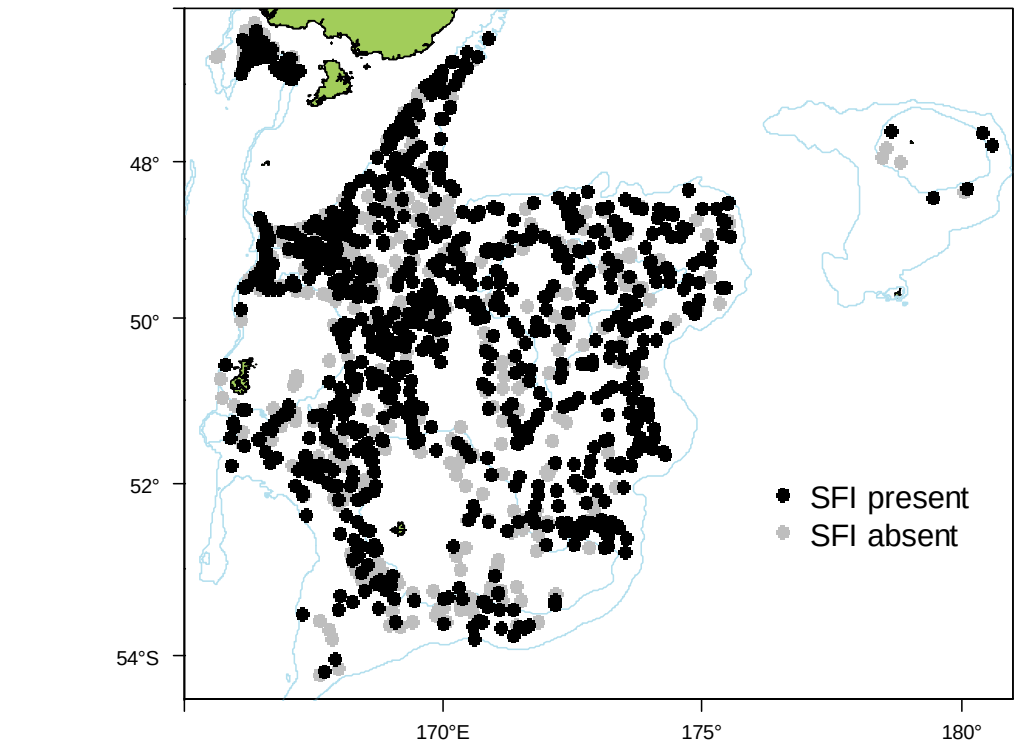
Coded as ZSU

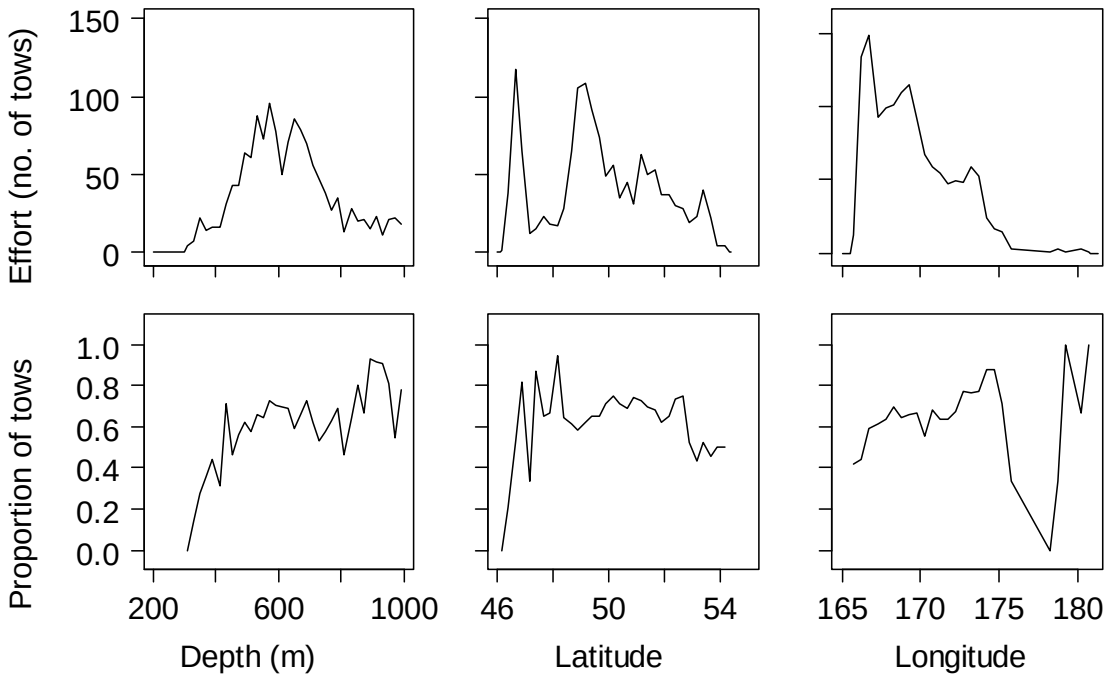
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.2

This group **has not** been well identified during the time series, particularly on early surveys. Some members of this group are found **shallower than 300 m** and **deeper than 1000 m**. The core survey area and depth range **is** appropriate for this group. Distribution **extends** to strata deeper than 800 m surveyed from 2000 to 2009. It **is** recorded from the Bounty Platform.

Biomass of this group is **well** estimated by the core survey from 1993. Biomass **shows no clear trend** since 2000. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **moderately well** estimated

Distribution of Starfish from all summer surveys. Valid biomass stations only.

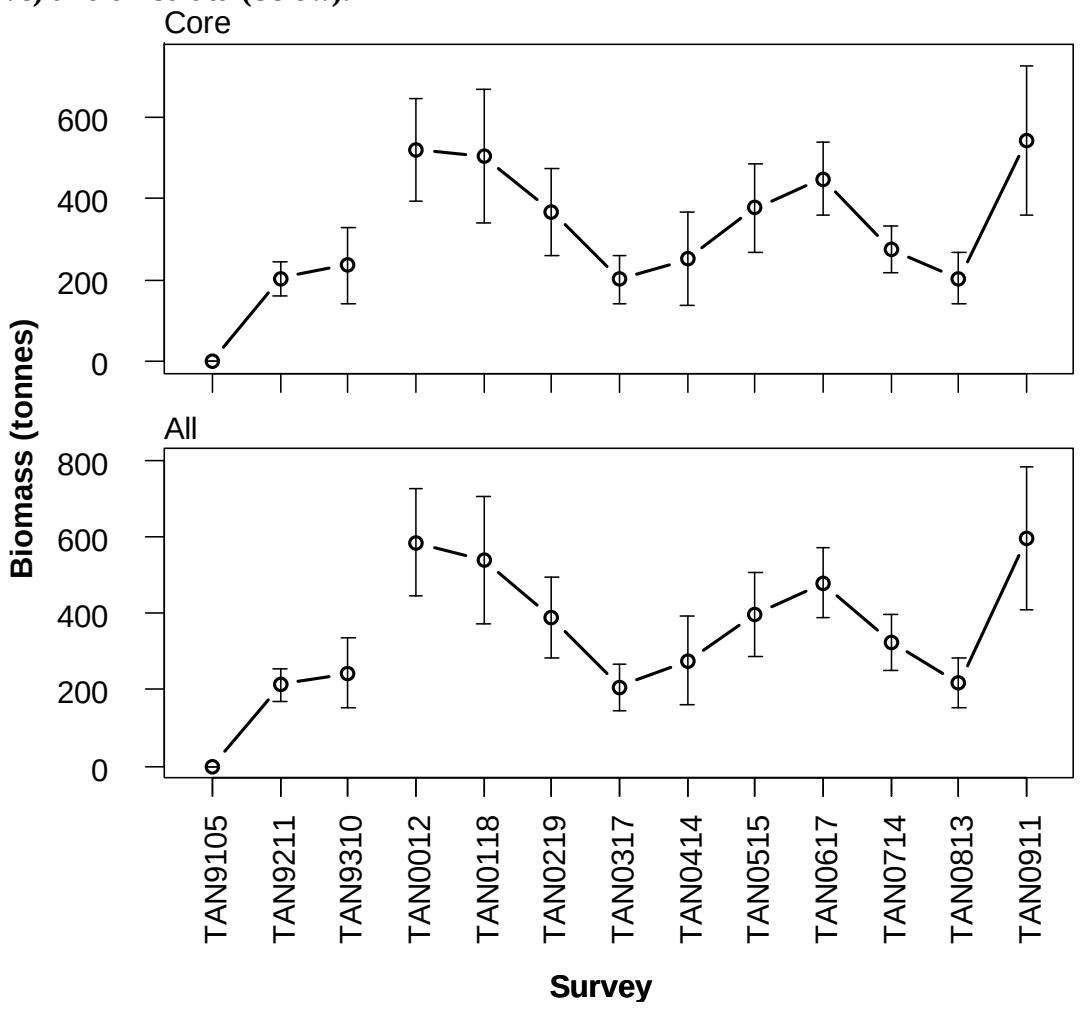




Relative biomass estimates (t) and c.v.s (%) of Starfish for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	NA	NA	NA	NA	NA	NA	NA	0	NA
TAN9211	204	10	NA	NA	NA	NA	9	78	212	11
TAN9310	236	20	NA	NA	NA	NA	7	46	244	20
TAN0012	519	12	33	39	34	80	NA	NA	586	12
TAN0118	504	17	12	31	22	45	NA	NA	538	16
TAN0219	367	15	18	31	3	100	NA	NA	389	14
TAN0317	201	15	5	42	NA	NA	NA	NA	207	15
TAN0414	251	23	24	52	NA	NA	NA	NA	277	22
TAN0515	377	15	17	34	2	100	NA	NA	397	14
TAN0617	448	10	30	34	NA	NA	NA	NA	479	10
TAN0714	275	11	24	43	23	81	NA	NA	323	11
TAN0813	203	16	10	41	3	75	NA	NA	218	15
TAN0911	543	17	21	43	32	46	NA	NA	597	16

Trends in relative biomass estimates (± 2 standard errors) of Starfish for core strata (above) and all strata (below).



Gemfish (*Rexea solandri*) SKI

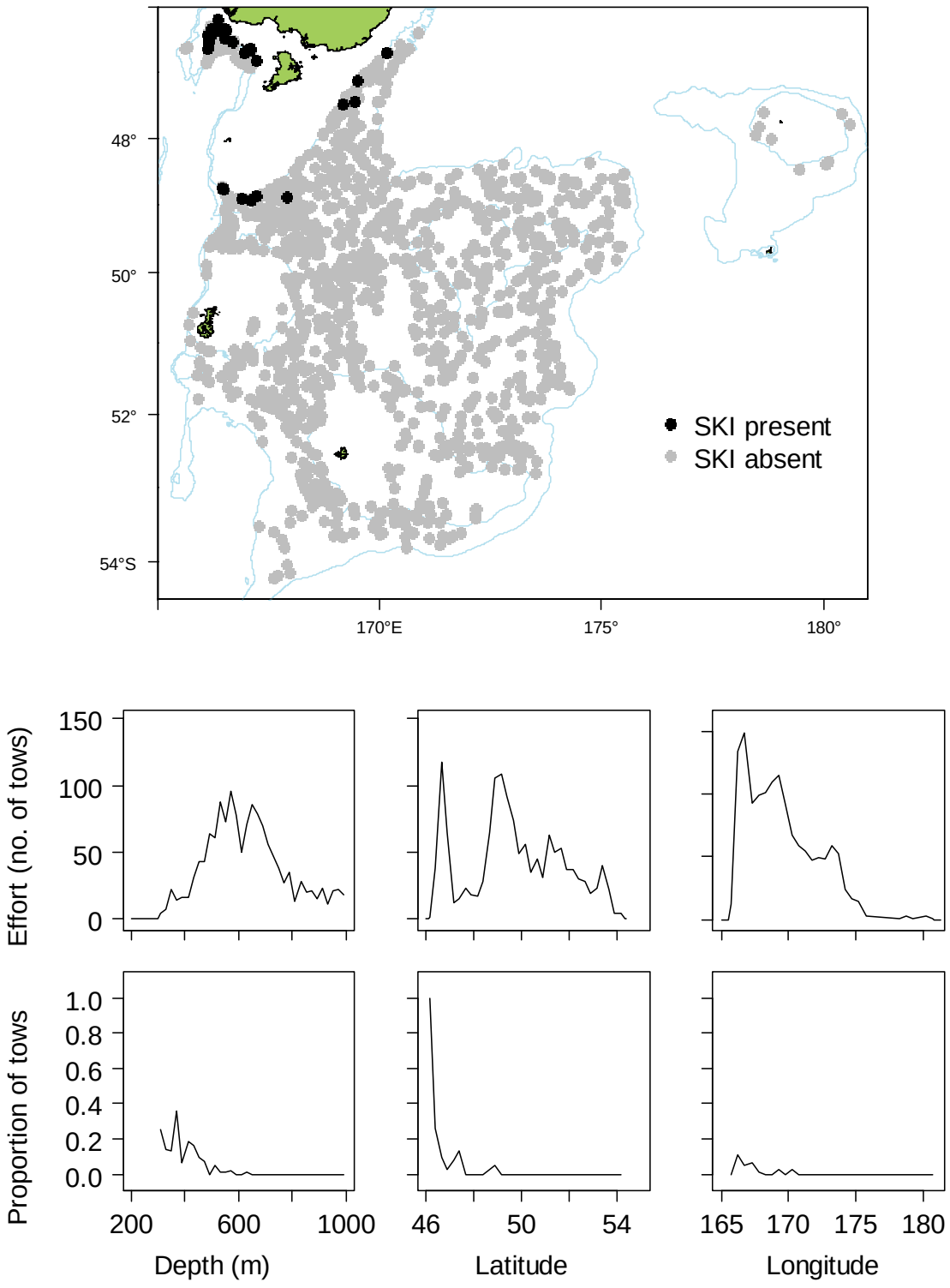
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	219.2
Number measured	66
Length range (mean) (cm)	32–103 (76.3)
Number weighed	27
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is not** appropriate for this species. Distribution **does not extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass has **decreased** since the start of the time series. Catches were highest in the **northwest**, around the Stewart/Snares shelf and at Puysegur.

Gonad stage data indicate that most fish are **resting.**

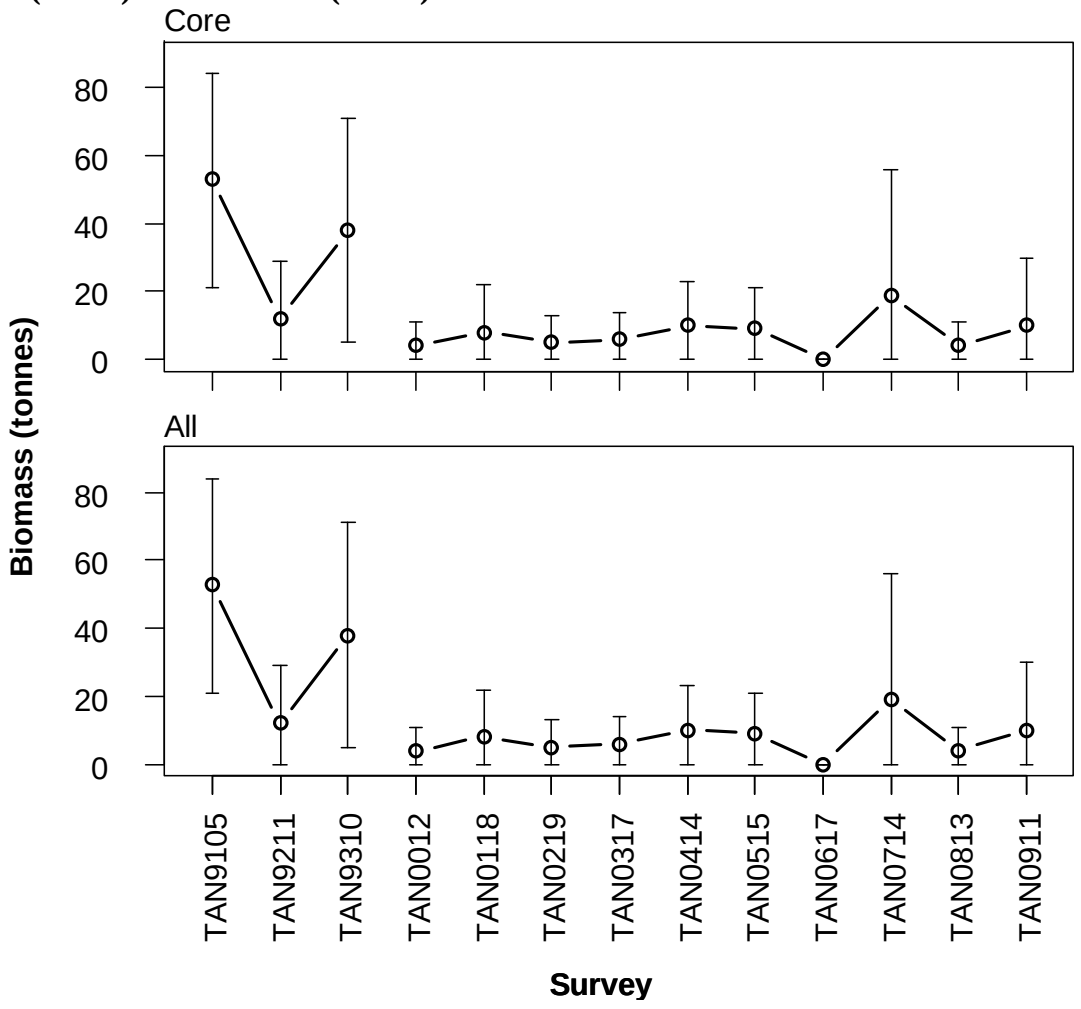
Distribution of *Rexea solandri* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Rexea solandri* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	53	30	NA	NA	NA	NA	NA	NA	53	30
TAN9211	12	73	NA	NA	NA	NA	0	0	12	73
TAN9310	38	43	NA	NA	NA	NA	0	0	38	43
TAN0012	4	100	0	0	0	0	NA	NA	4	100
TAN0118	8	94	0	0	0	0	NA	NA	8	94
TAN0219	5	69	0	0	0	0	NA	NA	5	69
TAN0317	6	61	0	0	NA	NA	NA	NA	6	61
TAN0414	10	66	0	0	NA	NA	NA	NA	10	66
TAN0515	9	63	0	0	0	0	NA	NA	9	63
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	19	100	0	0	0	0	NA	NA	19	100
TAN0813	4	100	0	0	0	0	NA	NA	4	100
TAN0911	10	100	0	0	0	0	NA	NA	10	100

Trends in relative biomass estimates (± 2 standard errors) of *Rexea solandri* for core strata (above) and all strata (below).



Gonad stage summaries by sex for *Rexea solandri*. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	0	100	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	100	0	0	0	0	0	0	50	50	0	0	0	0	0
TAN0414	NA	NA	NA	NA	NA	NA	NA	100	0	0	0	0	0	0
TAN0515	0	100	0	0	0	0	0	0	100	0	0	0	0	0
TAN0617	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0714	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
TAN0813	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
TAN0911	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
ALL	57	43	0	0	0	0	0	13	87	0	0	0	0	0

Small-headed cod (*Lepidion microcephalus*) SMC

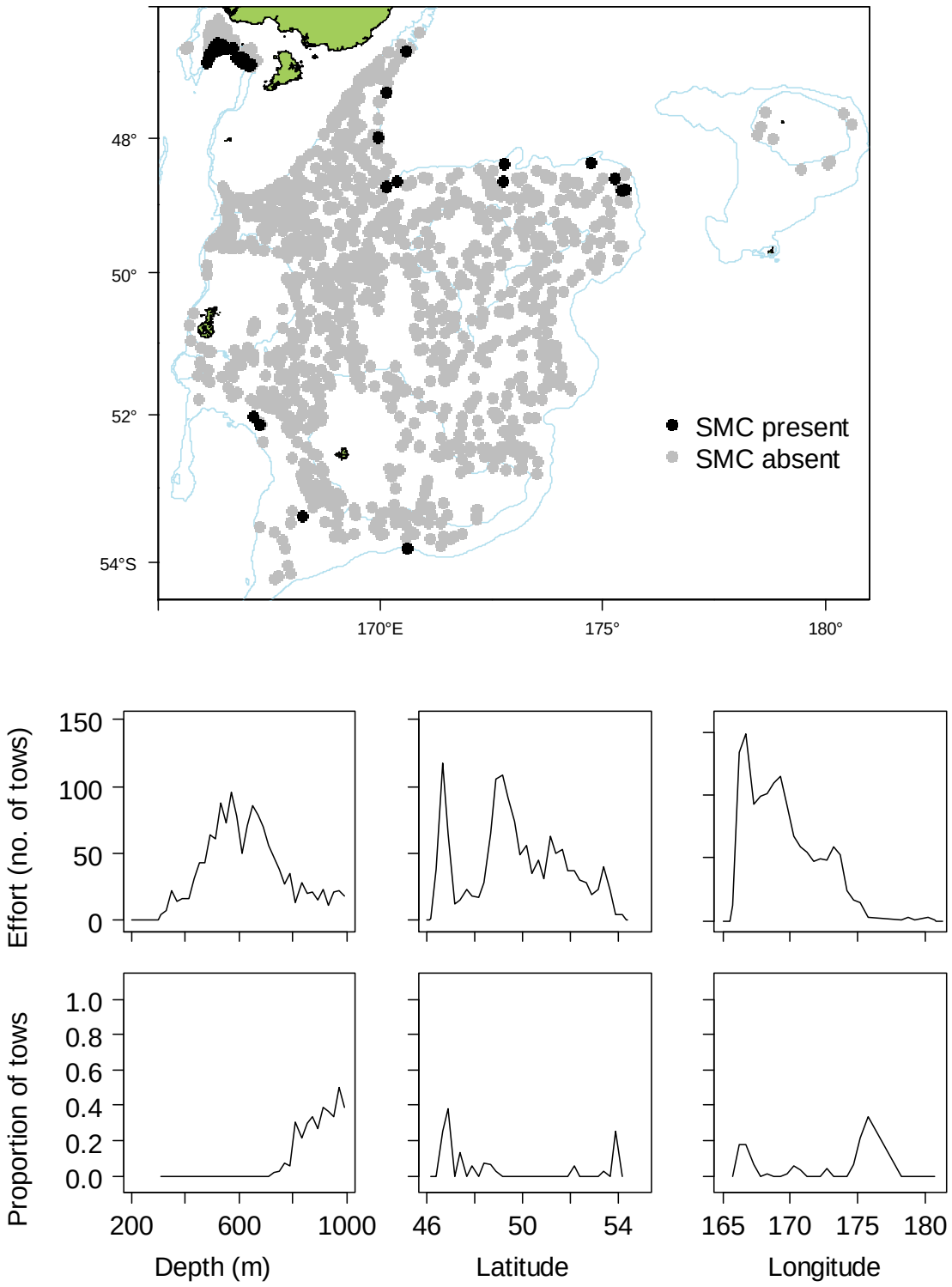
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	9
Total catch weight (kg):	124.8
Number measured	42
Length range (mean) (cm)	30–45 (37.7)
Number weighed	29
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **moderately well** estimated by the core survey area. Biomass has **increased** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

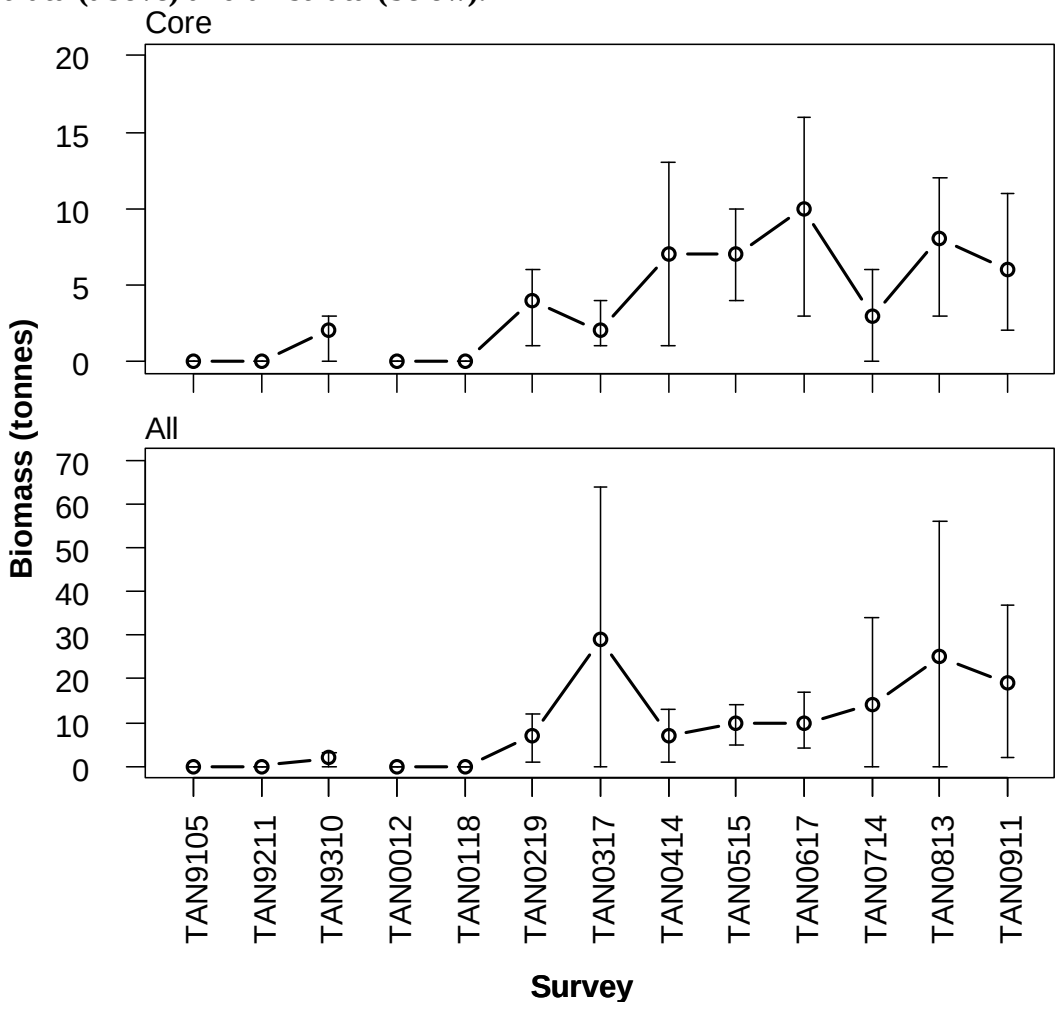
Distribution of *Lepidion microcephalus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Lepidion microcephalus* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	0	NA	NA	NA	NA	NA	NA	0	0
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	2	38	NA	NA	NA	NA	0	0	2	38
TAN0012	0	0	0	0	0	0	NA	NA	0	0
TAN0118	0	0	0	0	0	0	NA	NA	0	0
TAN0219	4	35	3	74	0	0	NA	NA	7	39
TAN0317	2	37	27	66	NA	NA	NA	NA	29	62
TAN0414	7	43	0	0	NA	NA	NA	NA	7	43
TAN0515	7	21	2	64	0	0	NA	NA	10	23
TAN0617	10	33	1	100	NA	NA	NA	NA	10	32
TAN0714	3	52	1	100	10	100	NA	NA	14	71
TAN0813	8	29	3	100	15	100	NA	NA	25	61
TAN0911	6	37	3	100	10	78	NA	NA	19	44

Trends in relative biomass estimates (± 2 standard errors) of *Lepidion microcephalus* for core strata (above) and all strata (below).



Shovelnose spiny dogfish (*Deania calcea*) SND

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	12 773.9
Number measured	3 043
Length range (mean) (cm)	28–116 (84.9)
Number weighed	1 540
Length-weight parameters a, b (r^2)	0.000960, 3.300786 (97.57)

Coded as DEQ

Number of surveys reported 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	1053.2
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

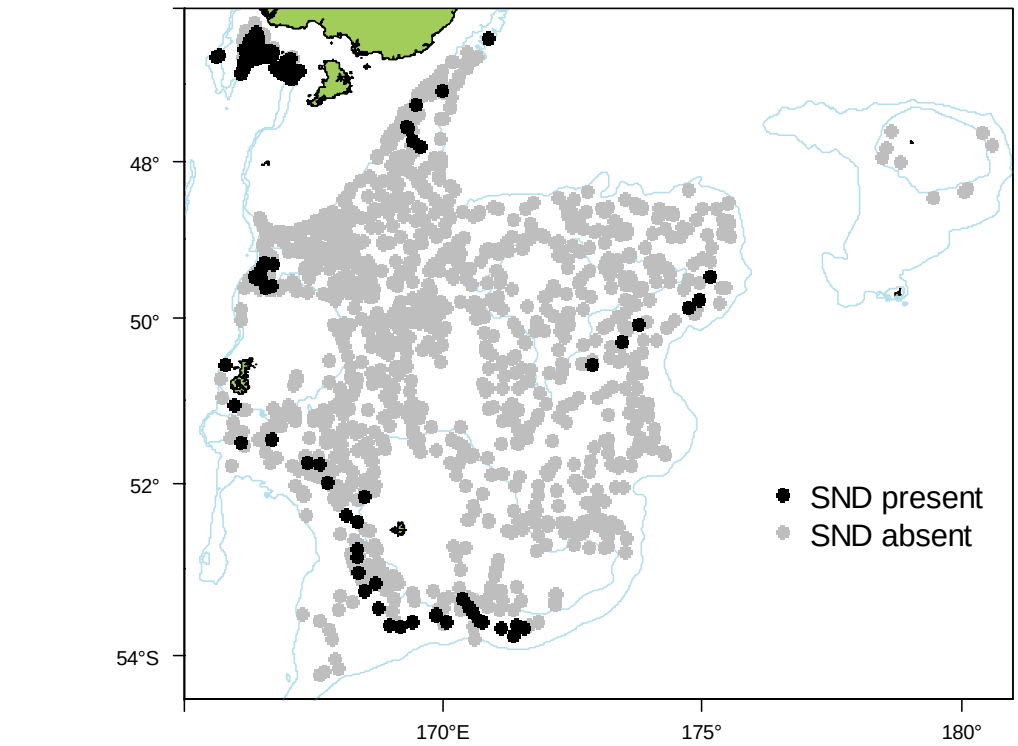
NOTE: DEQ was only recorded from tan9211. This was very unlikely as *Deania quadrispinosum* is considered rare in New Zealand waters. This species was most likely SND and the two codes have been combined.

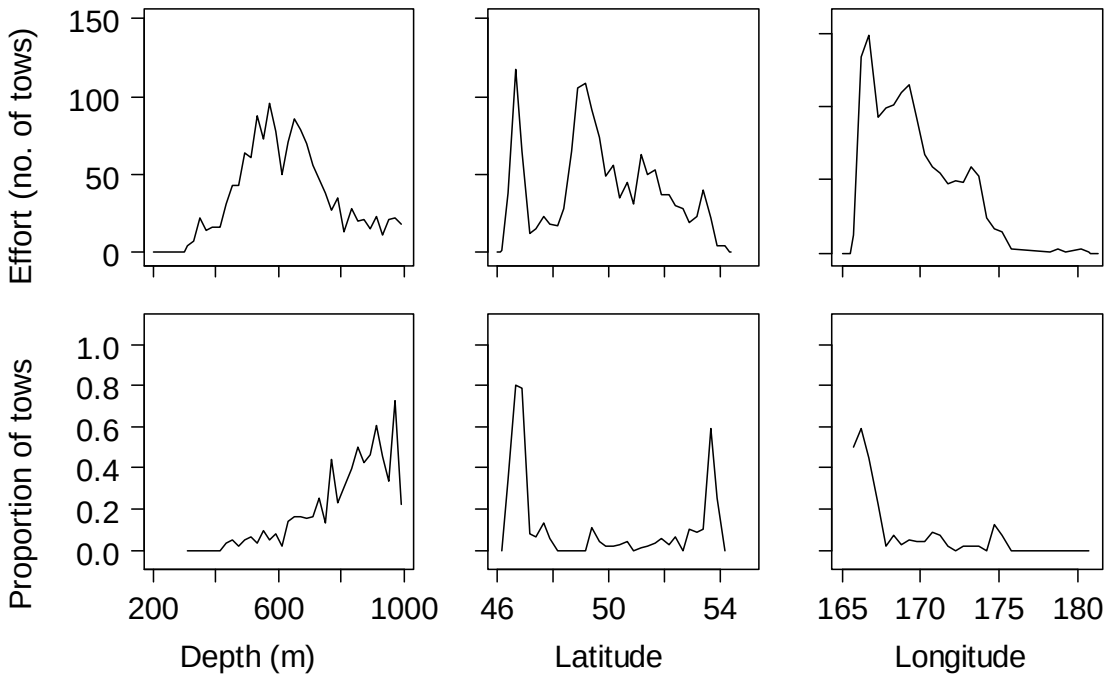
This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **well** estimated by the core survey area. Biomass has **decreased then increased** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m. Catch rates are highest in the **northwest** at Puysegur.

Length frequencies **have multiple modes which may contain information about year-class strength**. Mean length **shows no clear trend** since 2000. Gonad stage data indicate that most fish are **maturing and mature.**

Distribution of *Deania calcea* from all summer surveys. Valid biomass stations only.

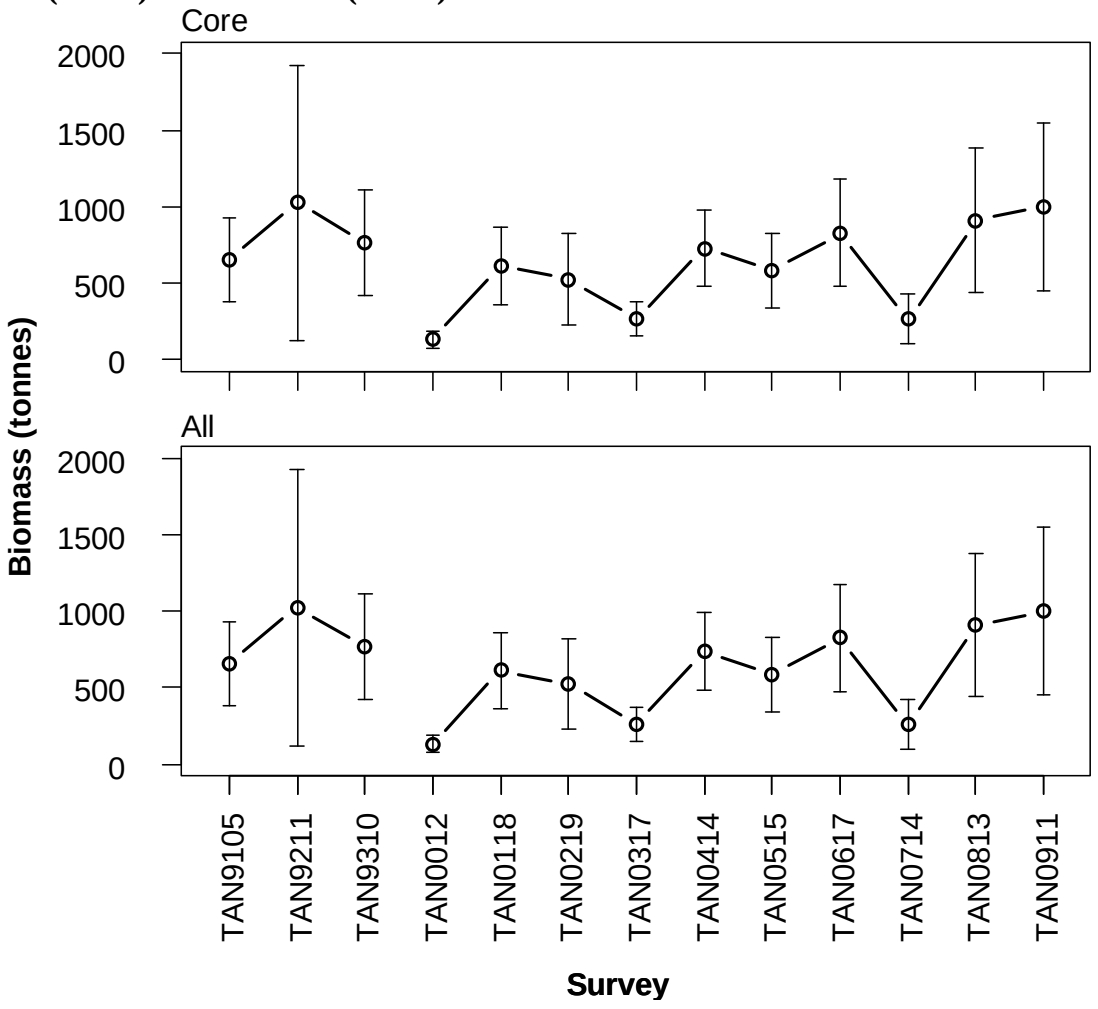




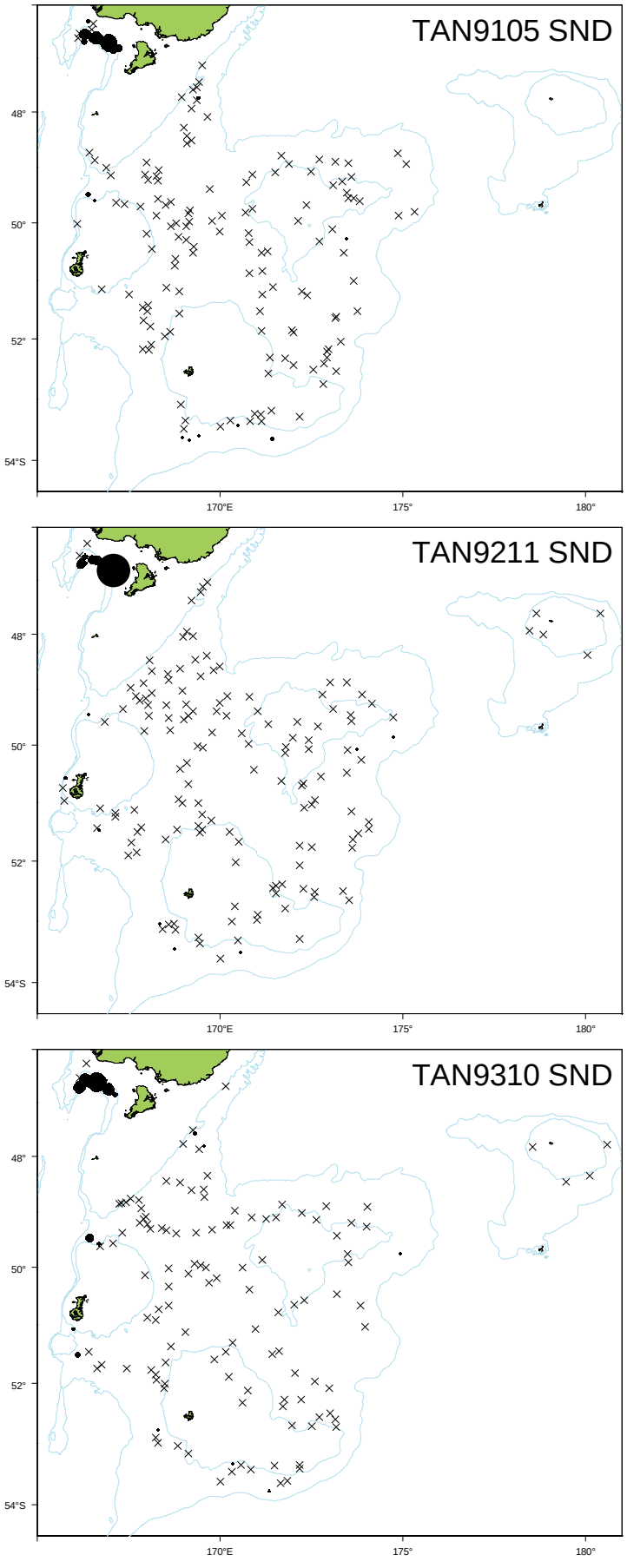
Relative biomass estimates (t) and c.v.s (%) of *Deania calcea* for core strata, strata outside the core area and all strata.

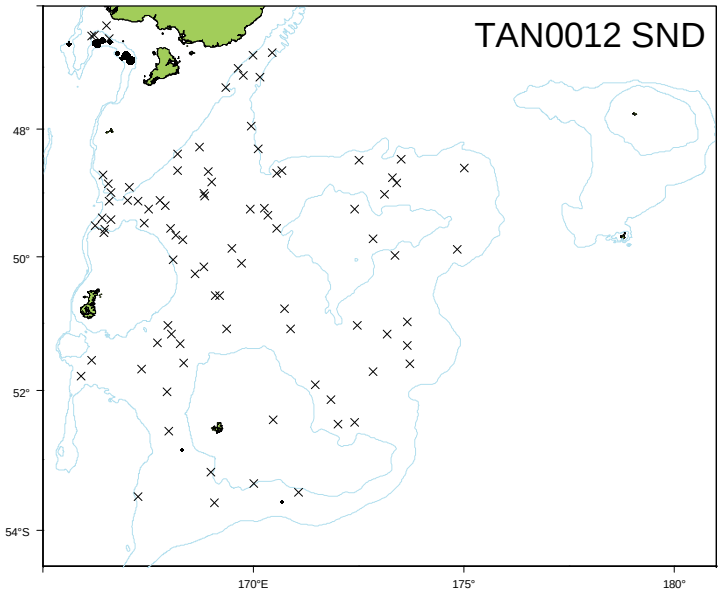
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	656	21	NA	NA	NA	NA	NA	NA	656	21
TAN9211	1025	45	NA	NA	NA	NA	0	0	1025	45
TAN9310	768	23	NA	NA	NA	NA	0	0	768	23
TAN0012	131	22	0	0	0	0	NA	NA	131	22
TAN0118	611	21	1	100	0	0	NA	NA	612	21
TAN0219	524	29	0	0	0	0	NA	NA	524	29
TAN0317	263	22	0	0	NA	NA	NA	NA	263	22
TAN0414	728	18	10	100	NA	NA	NA	NA	738	17
TAN0515	583	21	0	0	0	0	NA	NA	583	21
TAN0617	827	22	0	0	NA	NA	NA	NA	827	22
TAN0714	261	32	0	0	0	0	NA	NA	261	32
TAN0813	910	26	0	0	0	0	NA	NA	910	26
TAN0911	999	28	0	0	0	0	NA	NA	999	28

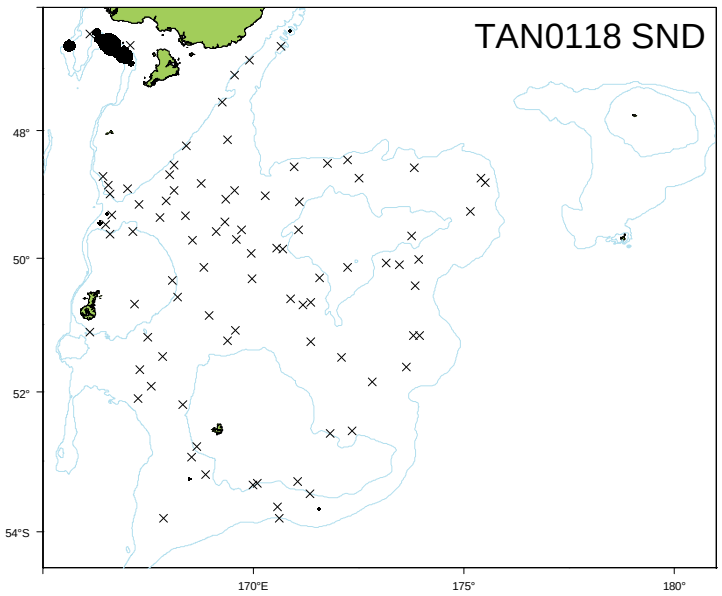
Trends in relative biomass estimates (± 2 standard errors) of *Deania calcea* for core strata (above) and all strata (below).

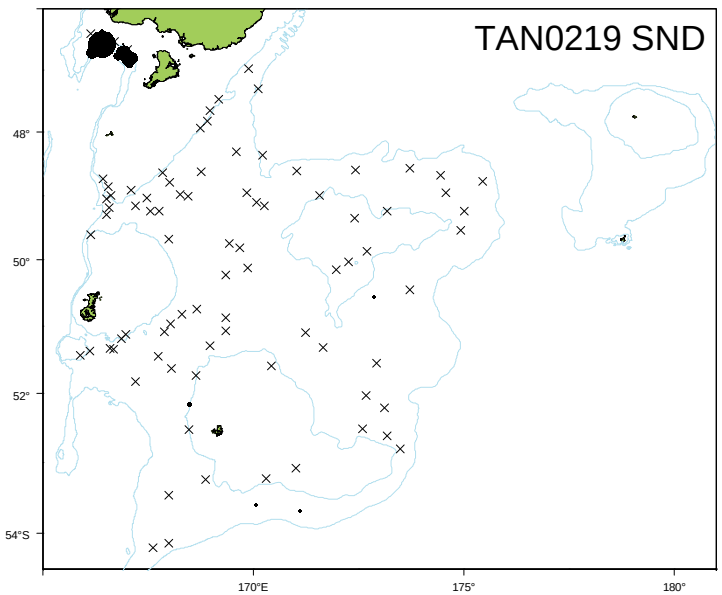


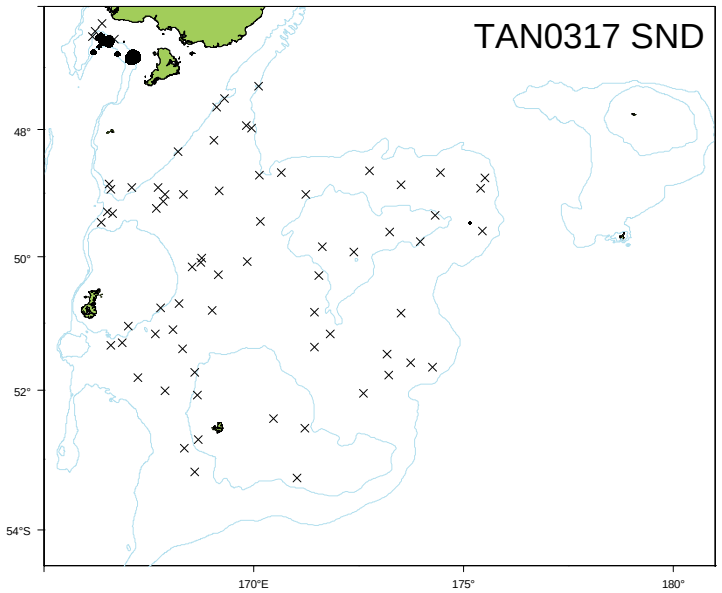
Catchrates of *Deania calcea*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

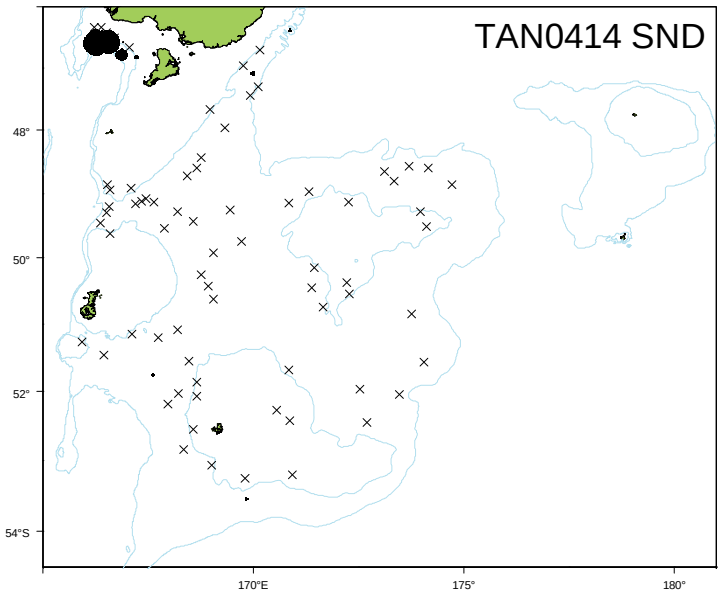


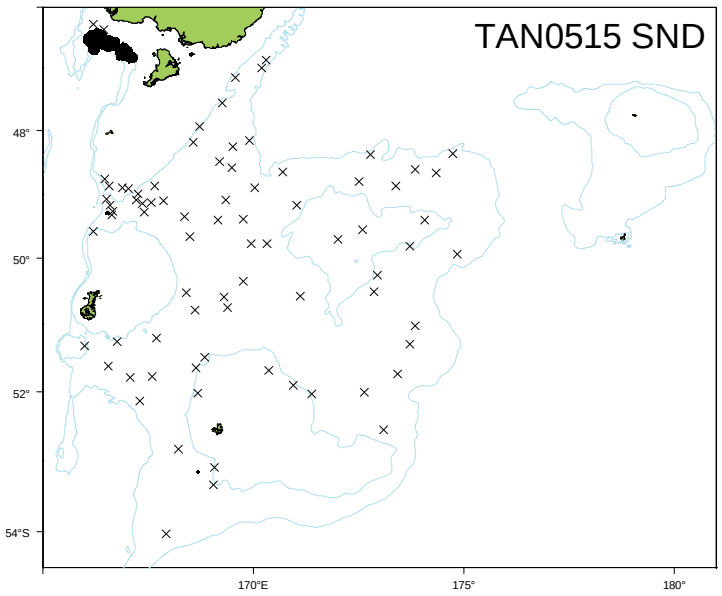

TAN0012 SND
48°
50°
52°
54°S
170°E
175°
180°

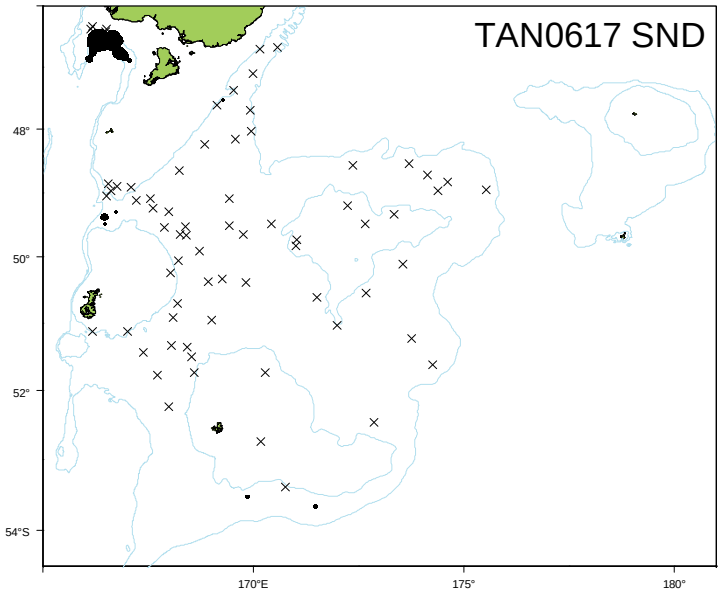

TAN0118 SND
48°
50°
52°
54°S
170°E
175°
180°

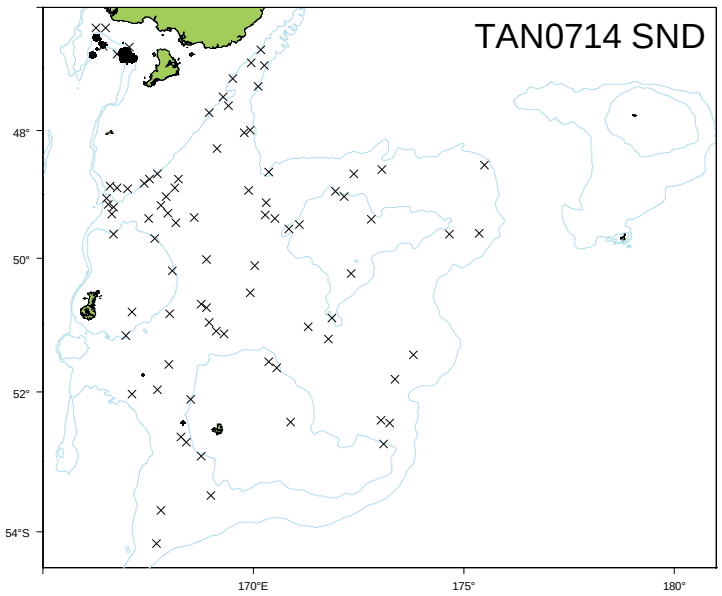

TAN0219 SND
48°
50°
52°
54°S
170°E
175°
180°

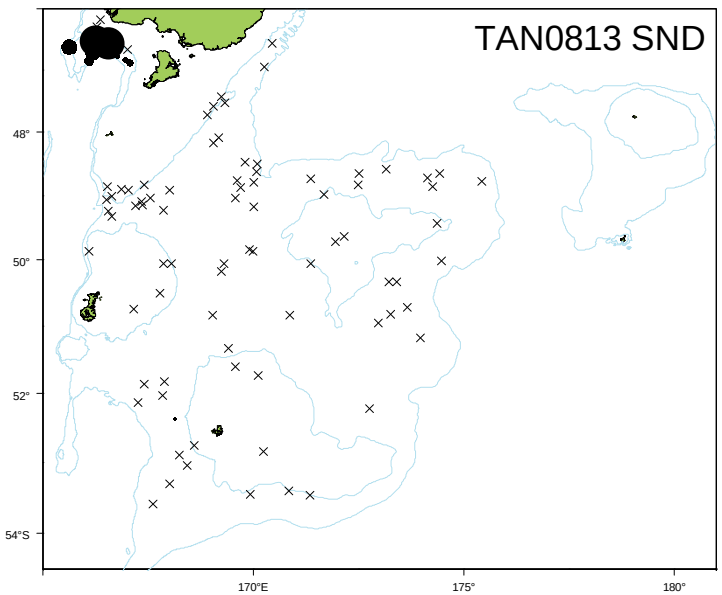

TAN0317 SND
48°
50°
52°
54°S
170°E
175°
180°

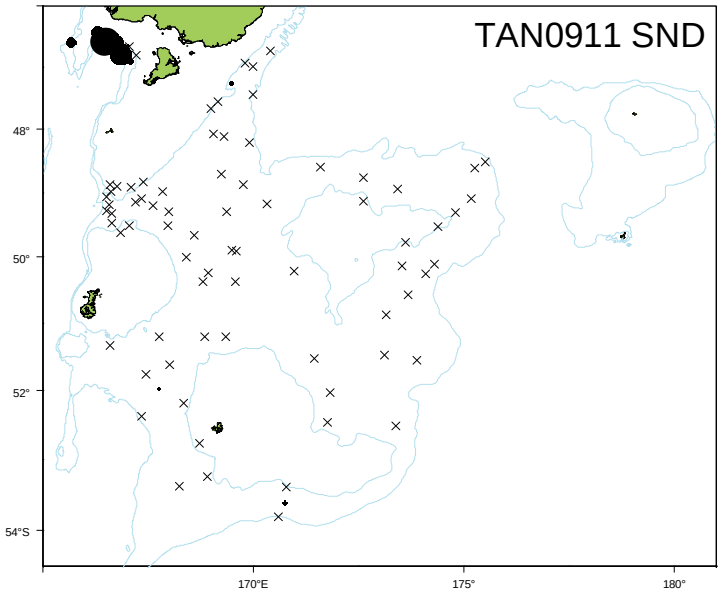

TAN0414 SND
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 SND
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 SND
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 SND
48°
50°
52°
54°S
170°E
175°
180°

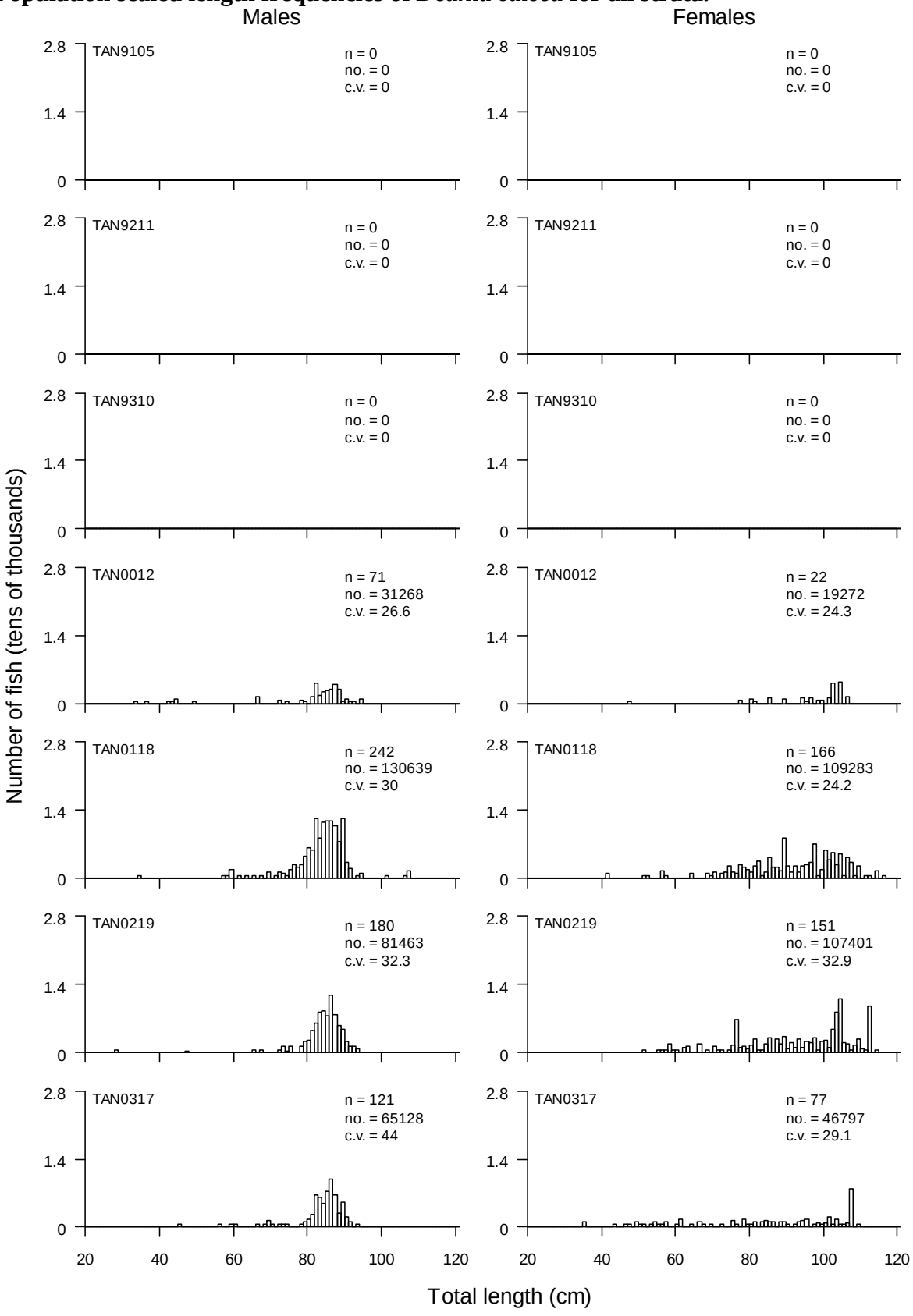

TAN0813 SND
48°
50°
52°
54°S
170°E
175°
180°

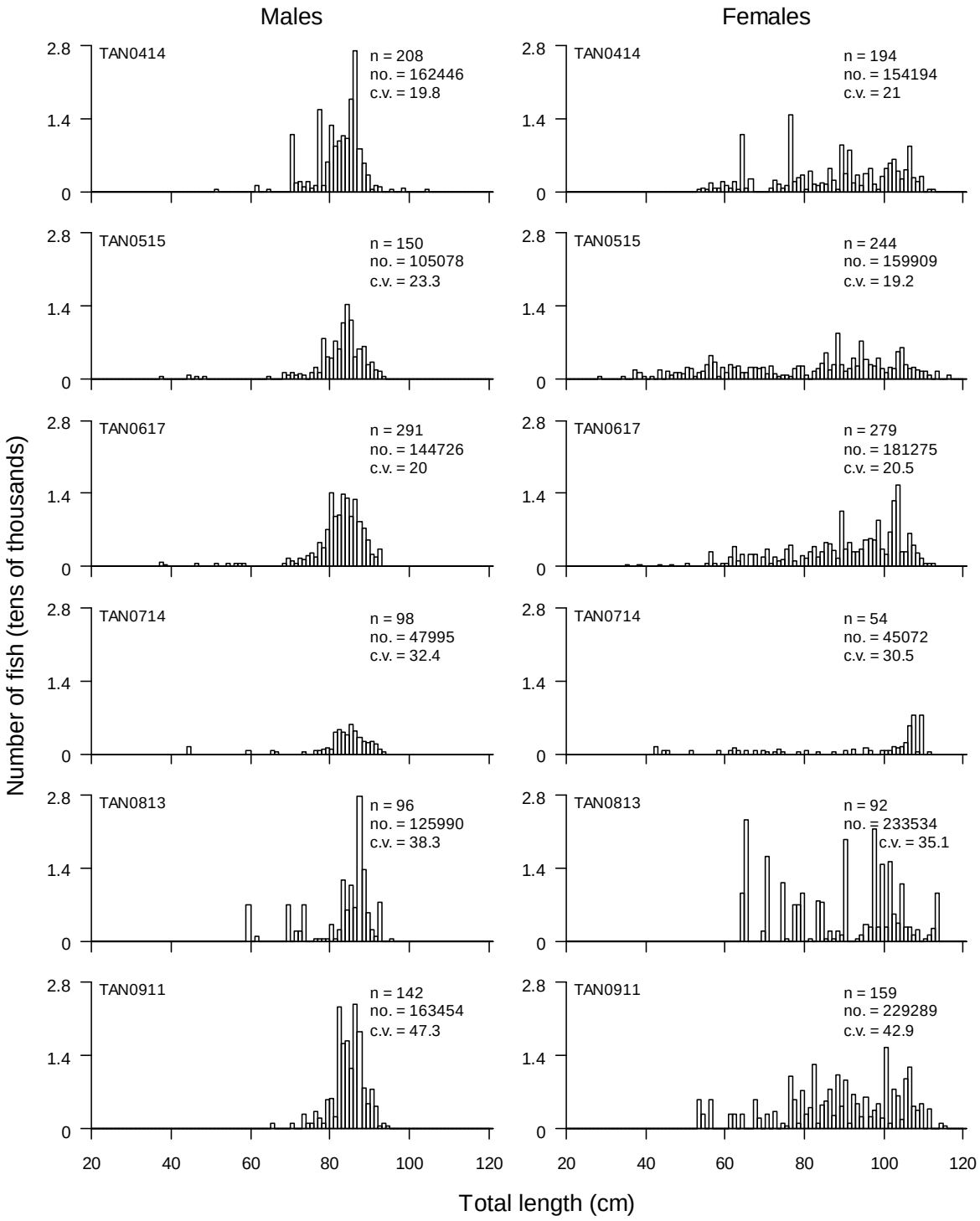


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	NA	NA	NA	0
TAN9211	NA	NA	NA	0
TAN9310	NA	NA	NA	0
TAN0012	33	106	82.8	93
TAN0118	34	116	85.7	408
TAN0219	28	114	86.8	331
TAN0317	35	109	80.9	201
TAN0414	51	112	85.7	402
TAN0515	28	116	79.8	395
TAN0617	35	116	84.8	572
TAN0714	42	111	84.8	152
TAN0813	59	113	89.7	188
TAN0911	53	115	88.1	301

Population scaled length frequencies of *Deania calcea* for all strata.




Males
Females
TAN0414
n = 208
no. = 162446
c.v. = 19.8
TAN0414
n = 194
no. = 154194
c.v. = 21
TAN0515
n = 150
no. = 105078
c.v. = 23.3
TAN0515
n = 244
no. = 159909
c.v. = 19.2
TAN0617
n = 291
no. = 144726
c.v. = 20
TAN0617
n = 279
no. = 181275
c.v. = 20.5
TAN0714
n = 98
no. = 47995
c.v. = 32.4
TAN0714
n = 54
no. = 45072
c.v. = 30.5
TAN0813
n = 96
no. = 125990
c.v. = 38.3
TAN0813
n = 92
no. = 233534
c.v. = 35.1
TAN0911
n = 142
no. = 163454
c.v. = 47.3
TAN0911
n = 159
no. = 229289
c.v. = 42.9
Number of fish (tens of thousands)
Total length (cm)
0
1.4
2.8
20
40
60
80
100
120

Gonad stage summaries by sex for *Deania calcea*. Percentage at each stage using the SS staging method.

Survey	M1	M2	M3	F1	F2	F3	F4	F5	F6
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0714	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0813	3	7	90	1	75	23	0	0	0
TAN0911	2	12	86	8	79	13	0	0	0
ALL	2	11	87	5	77	18	0	0	0

Little sleeper shark (*Somniosus rostratus*) SOM

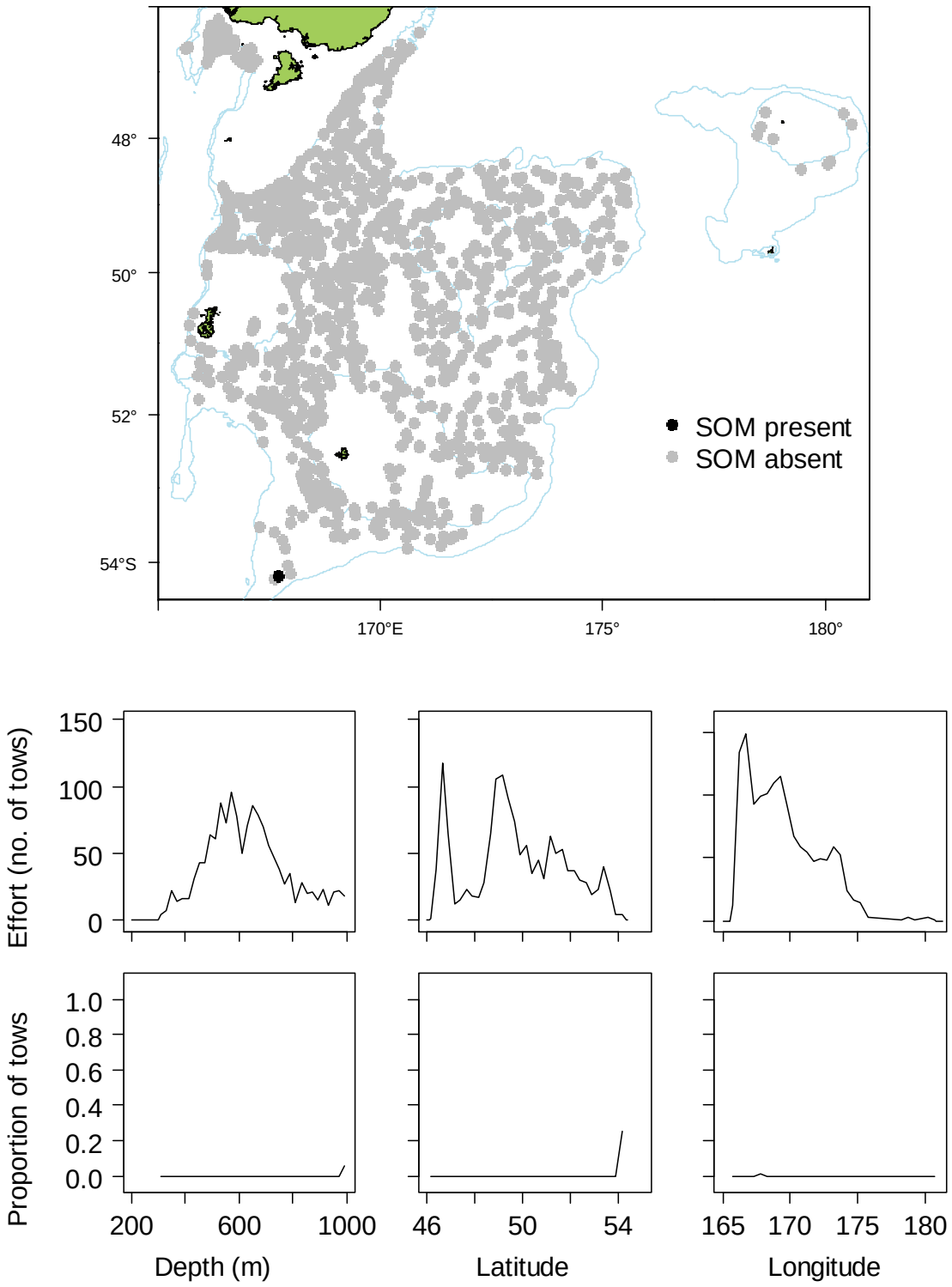
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	16.9
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

This species has been **well** identified during the time series. It is found **deeper than 800 m**. The core survey area and depth range **is not** appropriate for this species. Distribution **does** extend to the areas deeper than 800 m surveyed from 2000 to 2009. It **is not** recorded from the Bounty Platform.

Biomass of this species is poorly estimated with only one record of this species being caught. **There were too few fish caught to determine whether the core area is appropriate for this species**. The only specimen was caught south of the Campbell Islands**.**

There is no length data or gonad stage information presented.

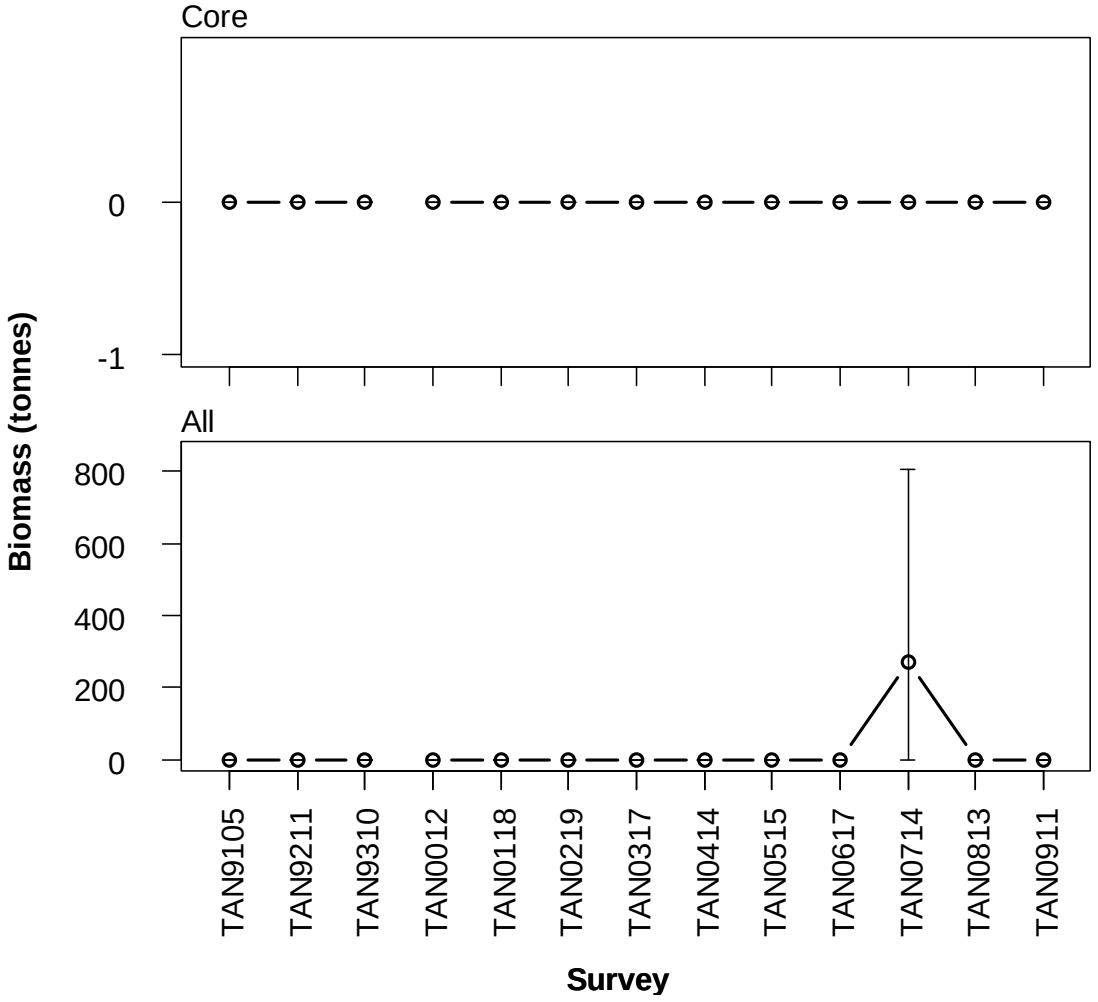
Distribution of *Somniosus rostratus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Somniosus rostratus* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	0	NA	NA	NA	NA	NA	NA	0	0
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	0	0	0	0	0	0	NA	NA	0	0
TAN0118	0	0	0	0	0	0	NA	NA	0	0
TAN0219	0	0	0	0	0	0	NA	NA	0	0
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	0	0	0	0	0	0	NA	NA	0	0
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	0	0	0	0	269	100	NA	NA	269	100
TAN0813	0	0	0	0	0	0	NA	NA	0	0
TAN0911	0	0	0	0	0	0	NA	NA	0	0

Trends in relative biomass estimates (± 2 standard errors) of *Somniosus rostratus* for core strata (above) and all strata (below).



Spiky oreo (*Neocyttus rhomboidalis*) SOR

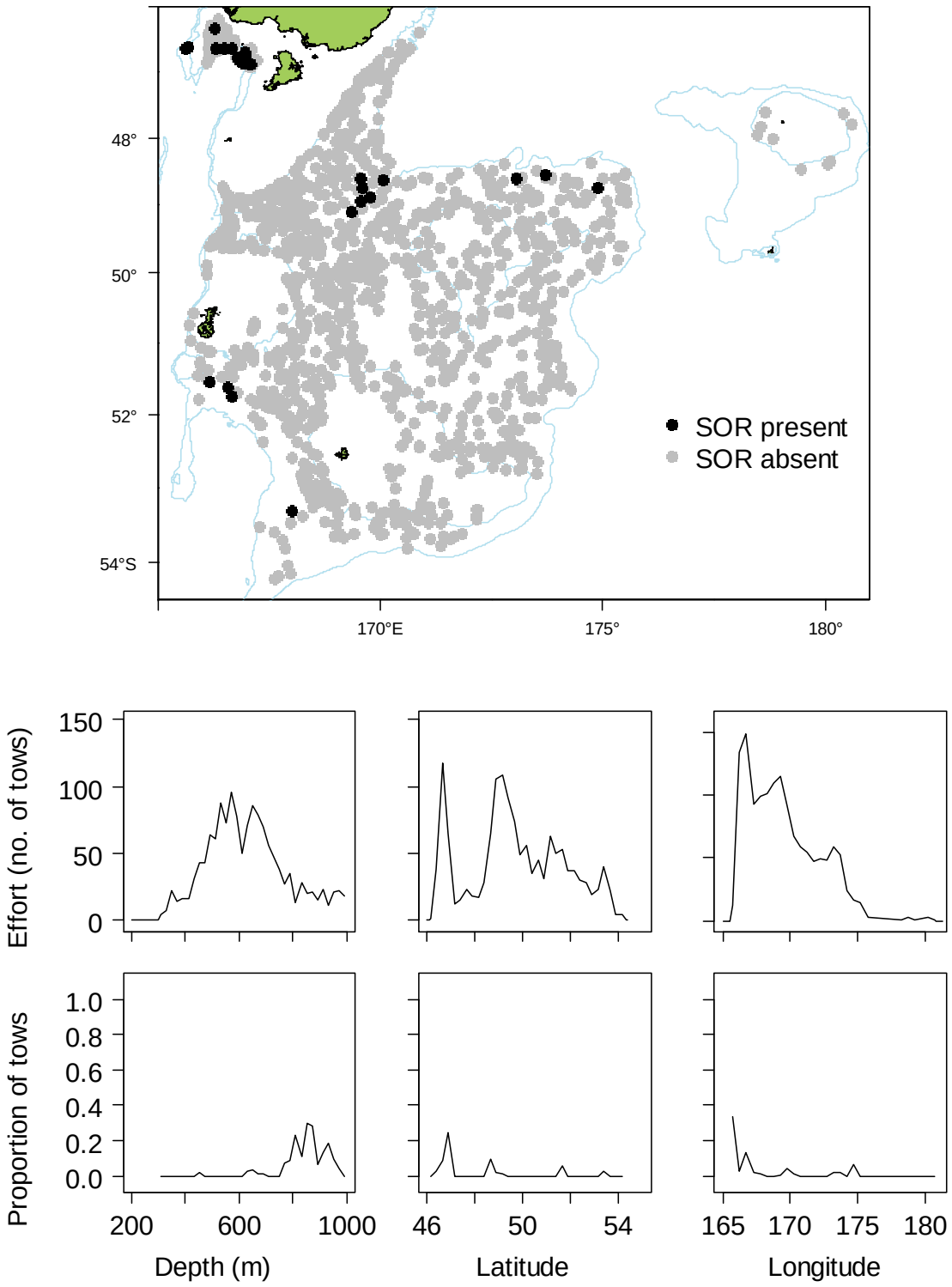
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	11
Total catch weight (kg):	484.2
Number measured	499
Length range (mean) (cm)	9–41 (26.8)
Number weighed	248
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m.

Gonad stage data indicate that most fish are **maturing and mature.**

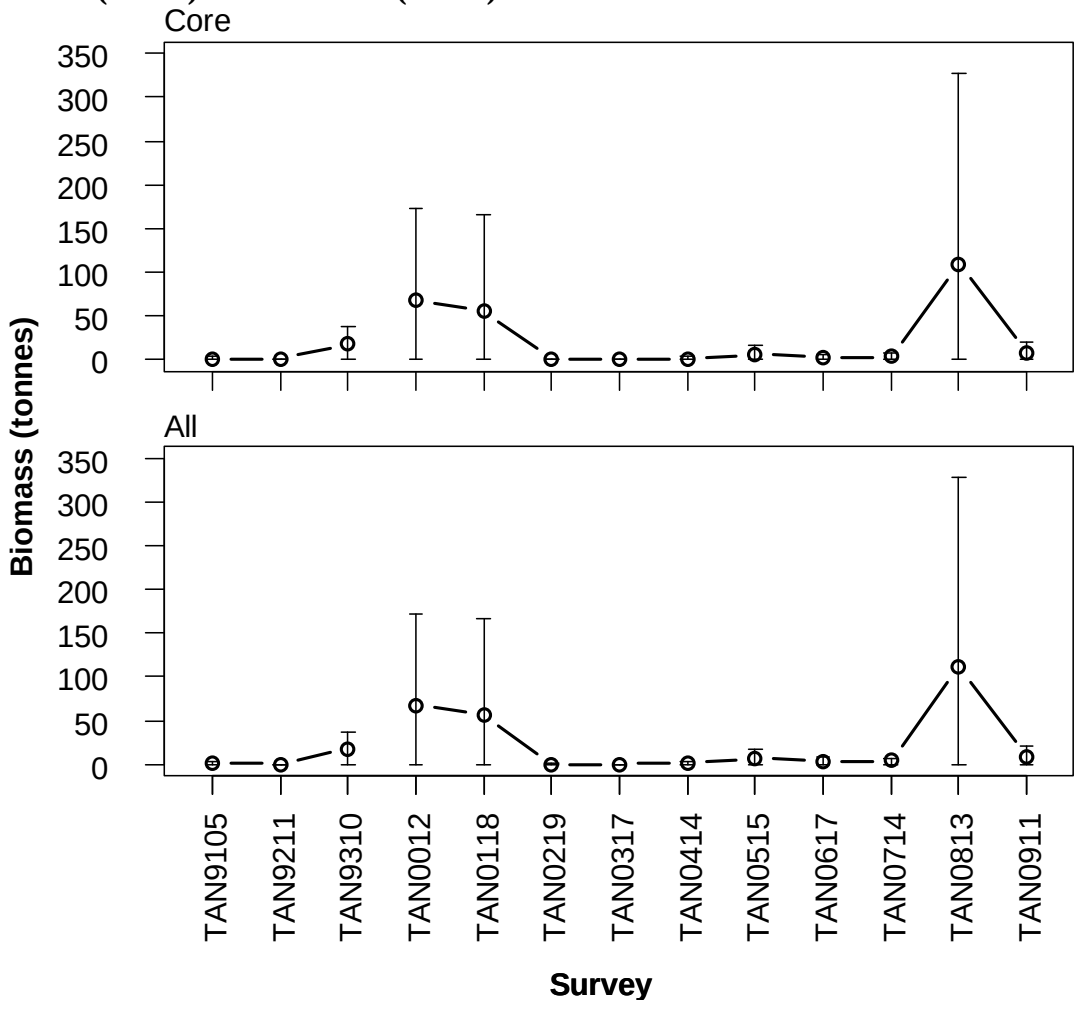
Distribution of *Neocyttus rhomboidalis* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Neocyttus rhomboidalis* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	1	100	NA	NA	NA	NA	NA	NA	1	100
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	18	52	NA	NA	NA	NA	0	0	18	52
TAN0012	67	78	0	0	0	0	NA	NA	67	78
TAN0118	55	99	2	100	0	0	NA	NA	57	96
TAN0219	0	56	0	0	0	0	NA	NA	0	56
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	1	90	0	0	NA	NA	NA	NA	1	90
TAN0515	6	89	1	100	0	0	NA	NA	7	75
TAN0617	2	83	1	100	NA	NA	NA	NA	3	64
TAN0714	3	60	1	100	0	0	NA	NA	4	52
TAN0813	109	100	0	0	1	100	NA	NA	111	98
TAN0911	8	77	1	100	0	0	NA	NA	9	68

Trends in relative biomass estimates (± 2 standard errors) of *Neocyttus rhomboidalis* for core strata (above) and all strata (below).



Gonad stage summaries by sex for *Neocyttus rhomboidalis*. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	100	0	0	0	0	0	0	100	0	0	0	0	0	0
TAN0617	NA	NA	NA	NA	NA	NA	NA	100	0	0	0	0	0	0
TAN0714	75	25	0	0	0	0	0	0	100	0	0	0	0	0
TAN0813	0	3	17	80	0	0	0	0	0	86	7	0	7	0
TAN0911	17	33	33	17	0	0	0	0	0	0	25	75	0	0
ALL	14	6	14	67	0	0	0	12	6	71	6	0	6	0

Spiny dogfish (*Squalus acanthias*) SPD

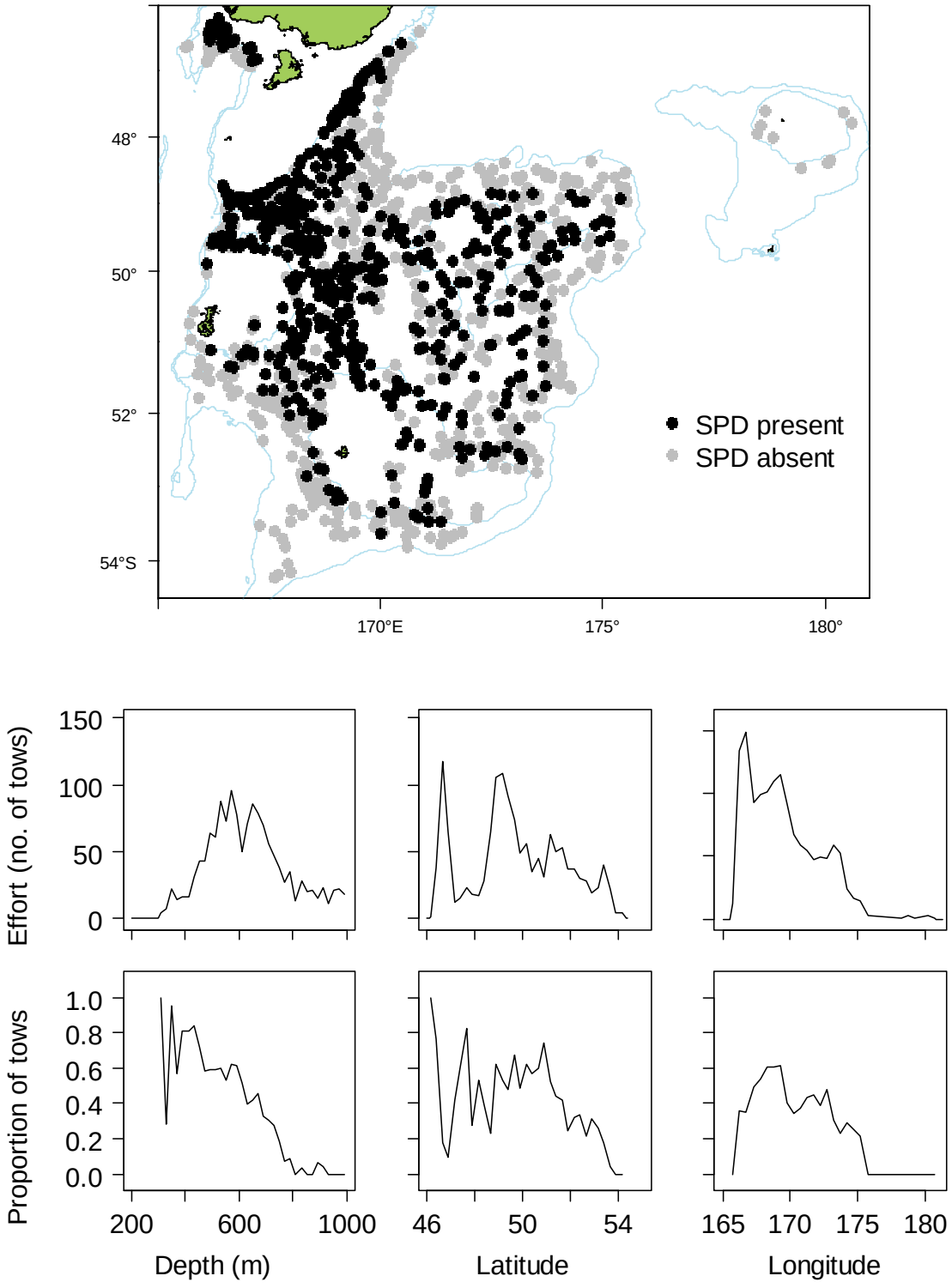
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	20 862.6
Number measured	7 772
Length range (mean) (cm)	47–104 (74.0)
Number weighed	4 740
Length-weight parameters a, b (r^2)	0.001009174, 3.335599 (94.1)

This species has been **well** identified during the time series. It is occasionally found **deeper than 800 m**. The core survey area and depth range **is** appropriate for this species. Distribution **does** extend to the areas deeper than 800 m surveyed from 2000 to 2009 on one survey. It **is not** recorded from the Bounty Platform.

Biomass of this species is **well** estimated by the core survey. Biomass **shows no clear trend** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches were highest in the **northwest**, south of the Stewart/Snares shelf and at Puysegur.

Length frequencies **have multiple modes which may contain information about year-class strength**. Mean length **shows a decrease** since the start of the time series. Gonad stage data indicate that most fish are **maturing.**

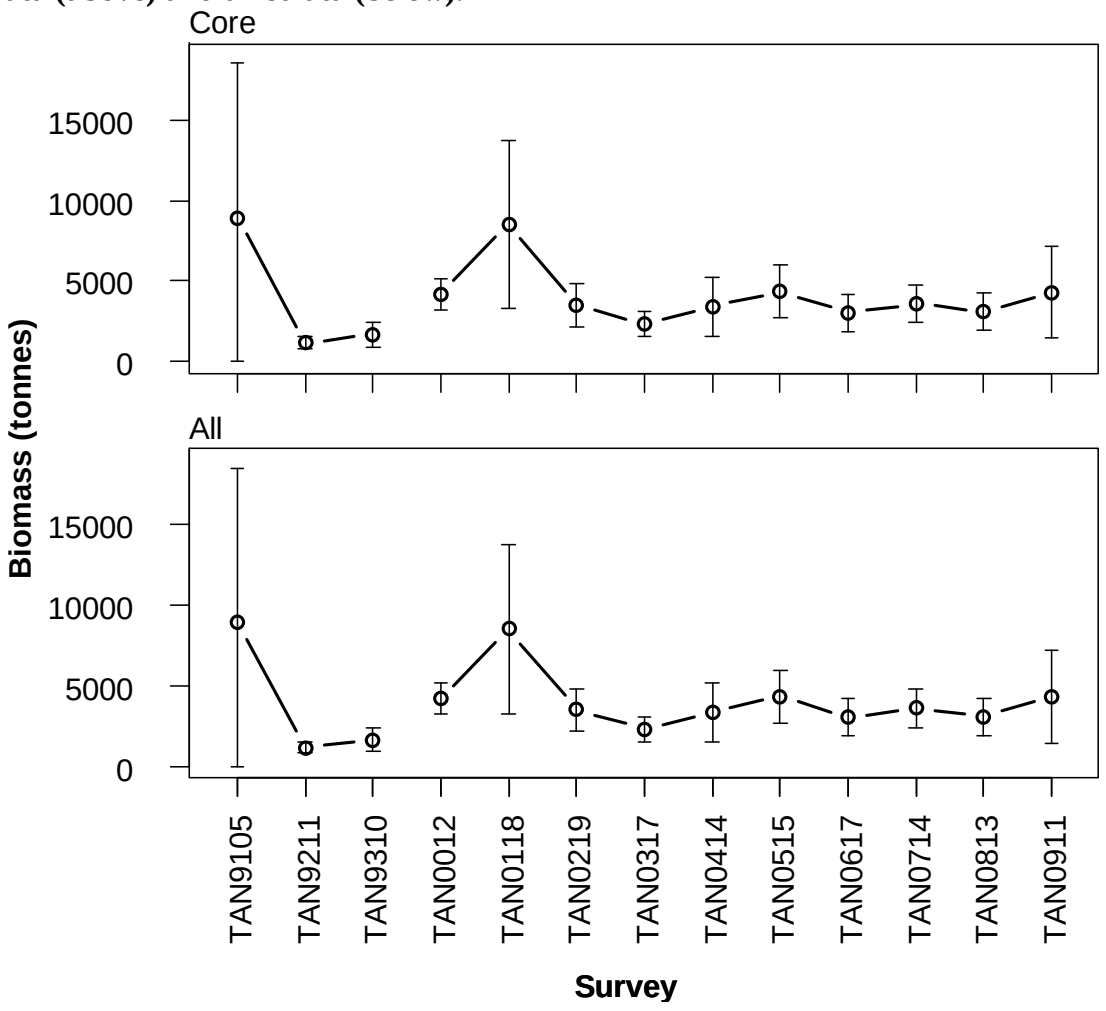
Distribution of *Squalus acanthias* from all summer surveys. Valid biomass stations only.



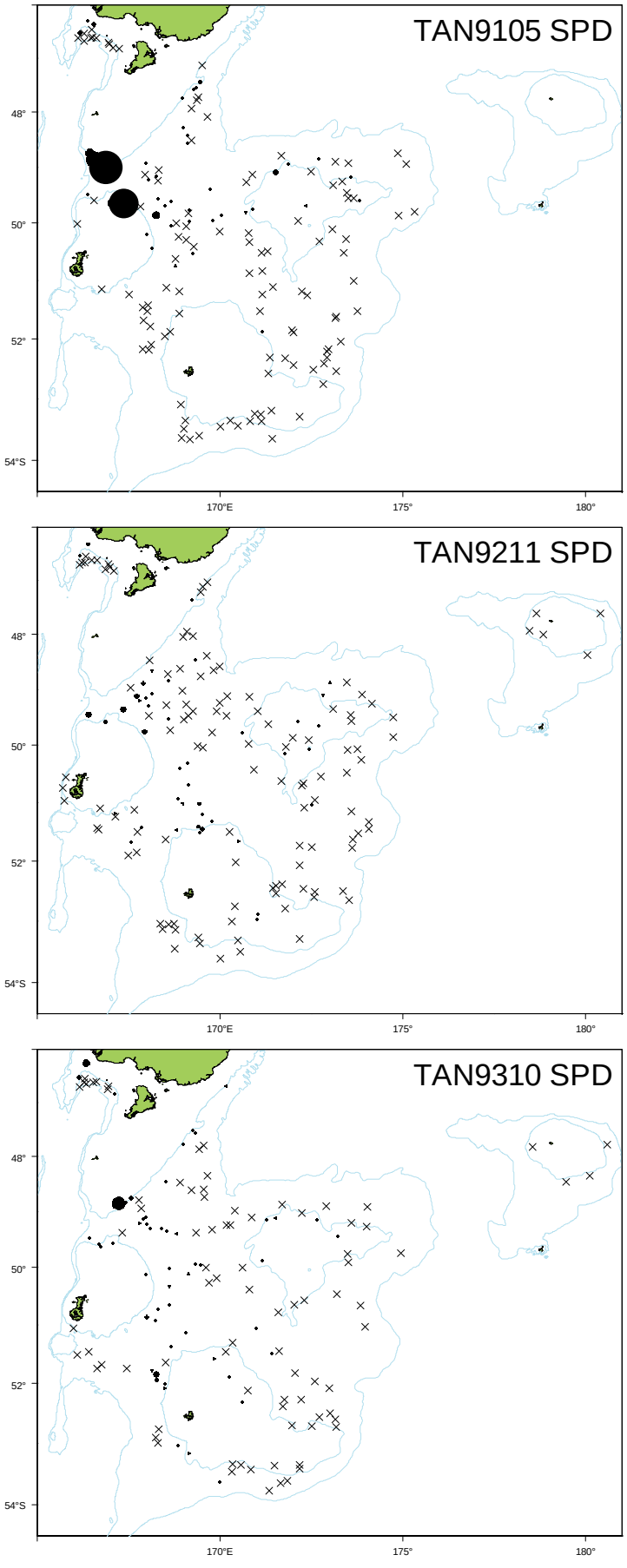
Relative biomass estimates (t) and c.v.s (%) of *Squalus acanthias* for core strata, strata outside the core area and all strata.

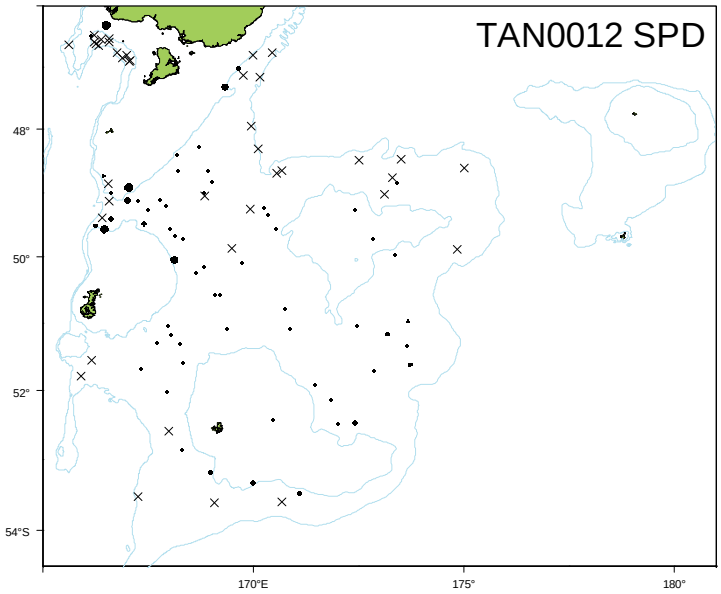
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	8908	54	NA	NA	NA	NA	NA	NA	8908	54
TAN9211	1158	16	NA	NA	NA	NA	0	0	1158	16
TAN9310	1649	22	NA	NA	NA	NA	0	0	1649	22
TAN0012	4173	12	0	0	0	0	NA	NA	4173	12
TAN0118	8528	31	0	0	0	0	NA	NA	8528	31
TAN0219	3505	19	0	0	0	0	NA	NA	3505	19
TAN0317	2317	17	0	0	NA	NA	NA	NA	2317	17
TAN0414	3378	27	0	0	NA	NA	NA	NA	3378	27
TAN0515	4344	19	0	0	0	0	NA	NA	4344	19
TAN0617	3039	19	0	0	NA	NA	NA	NA	3039	19
TAN0714	3589	17	0	0	0	0	NA	NA	3589	17
TAN0813	3080	19	4	65	0	0	NA	NA	3084	19
TAN0911	4296	34	0	0	0	0	NA	NA	4296	34

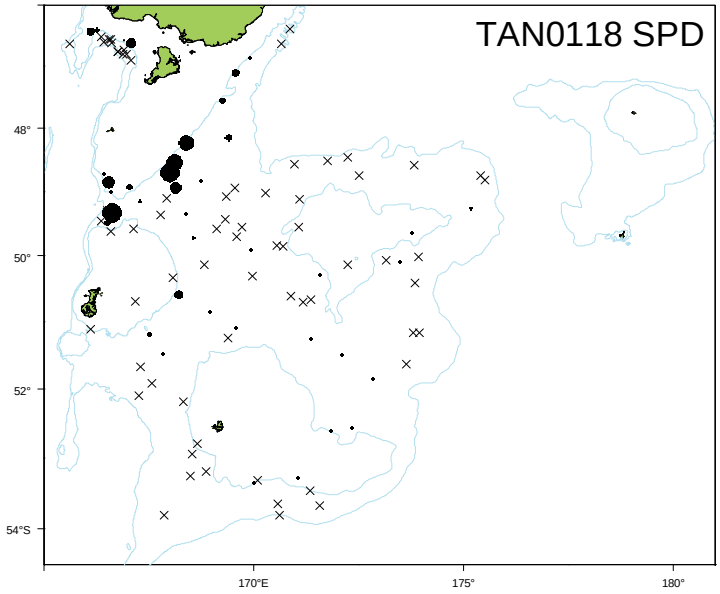
Trends in relative biomass estimates (± 2 standard errors) of *Squalus acanthias* for core strata (above) and all strata (below).

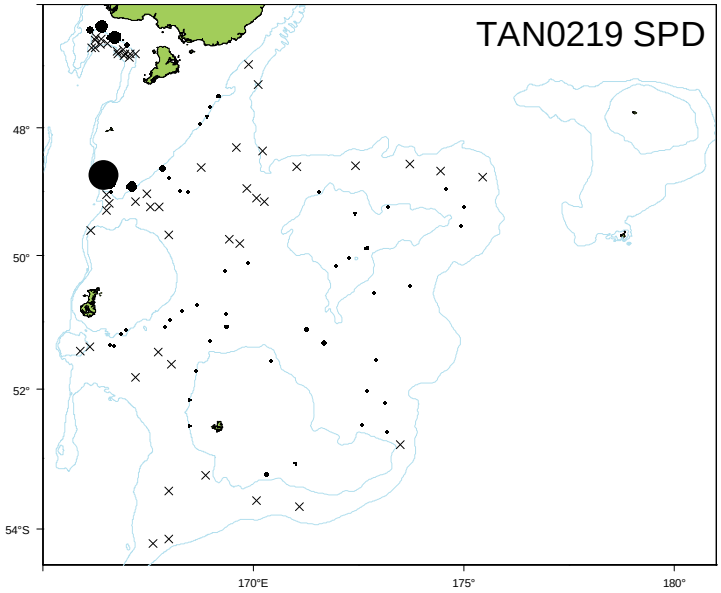


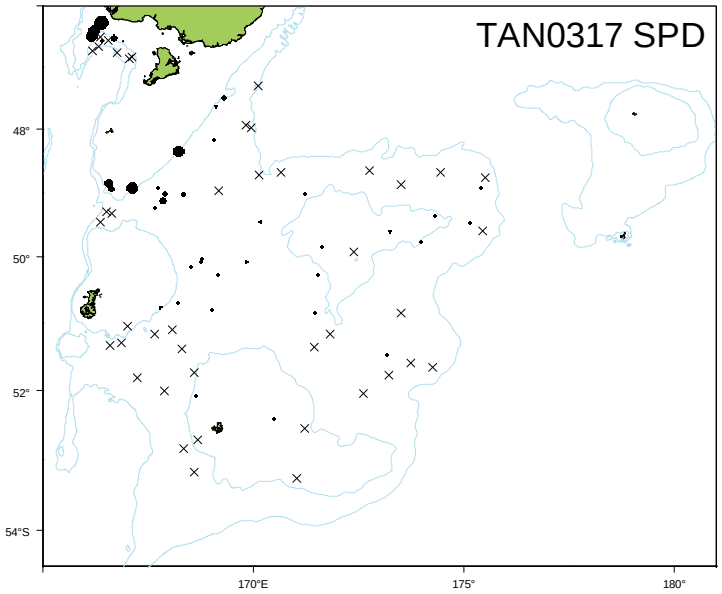
Catchrates of *Squalus acanthias*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

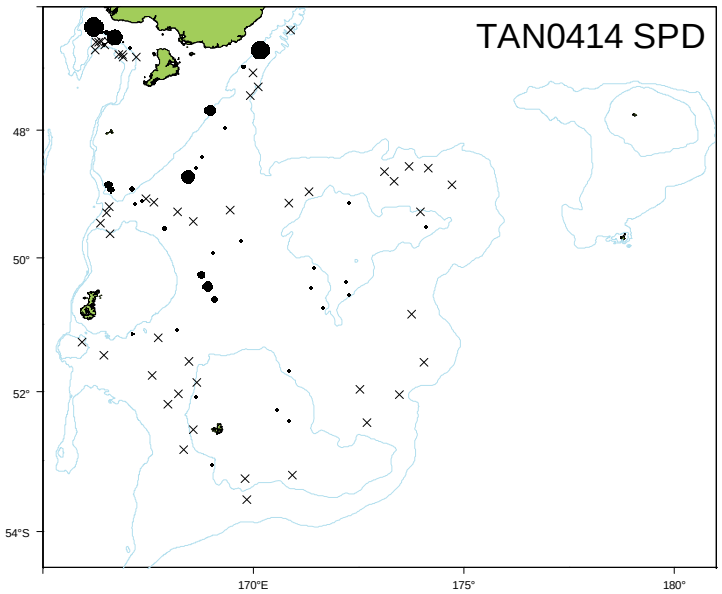


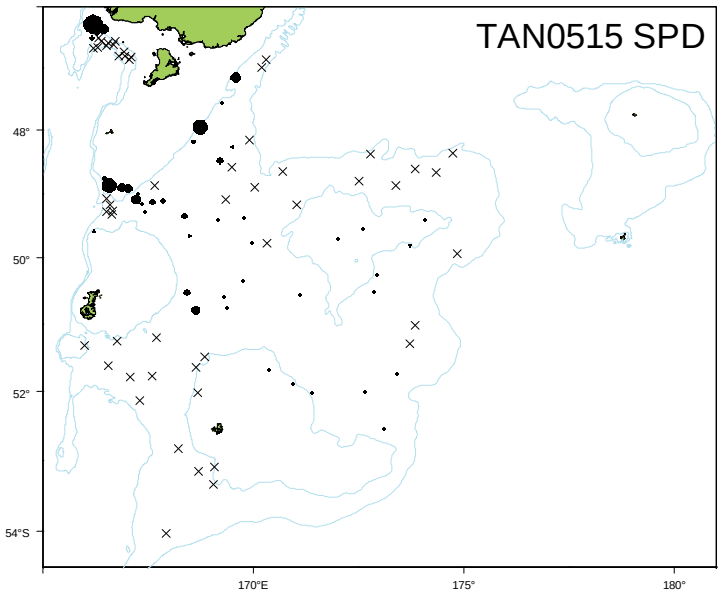

TAN0012 SPD
48°
50°
52°
54°S
170°E
175°
180°

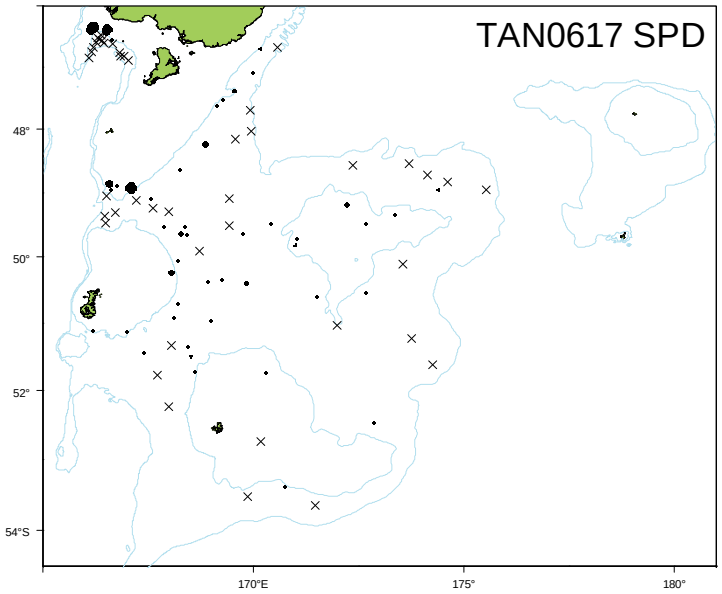

TAN0118 SPD
48°
50°
52°
54°S
170°E
175°
180°

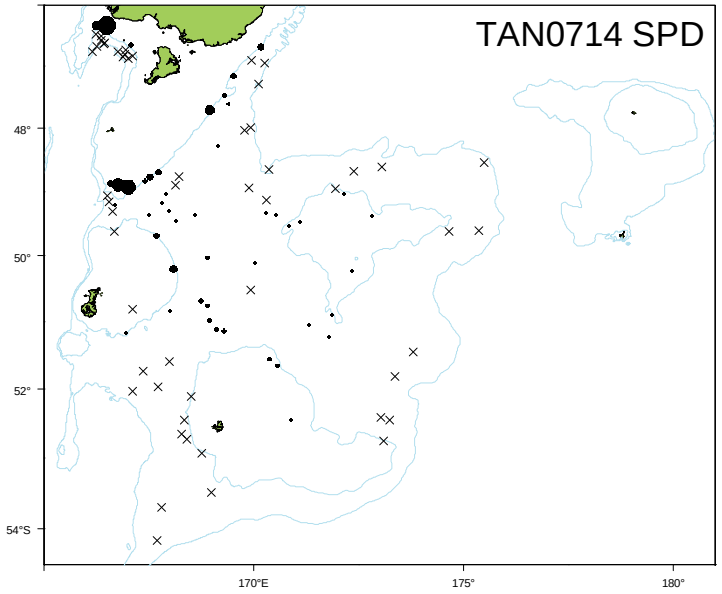

TAN0219 SPD
48°
50°
52°
54°S
170°E
175°
180°

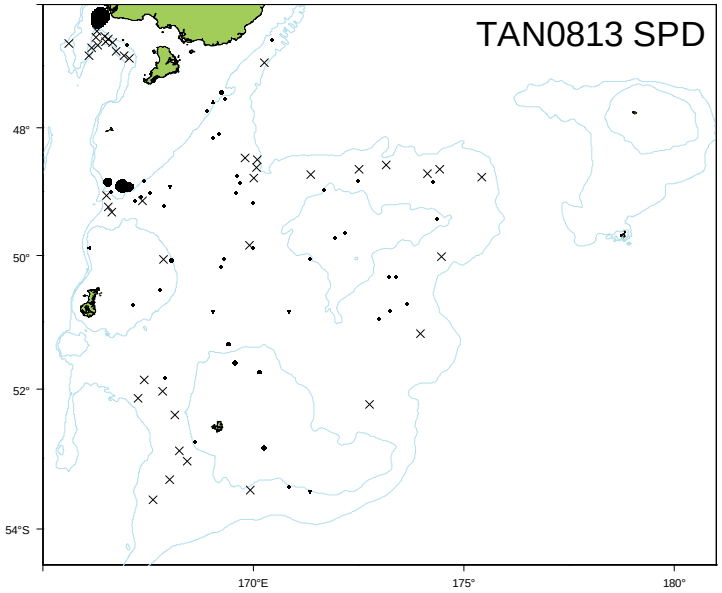

TAN0317 SPD
48°
50°
52°
54°S
170°E
175°
180°

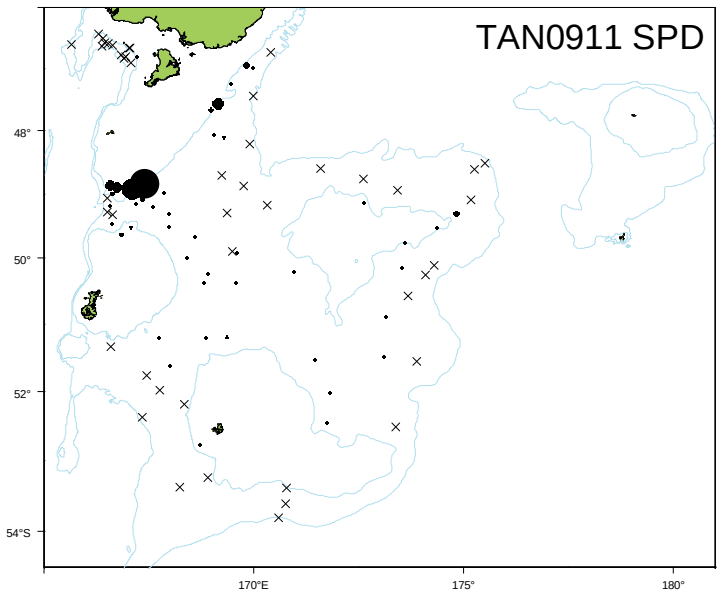

TAN0414 SPD
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 SPD
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 SPD
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 SPD
48°
50°
52°
54°S
170°E
175°
180°

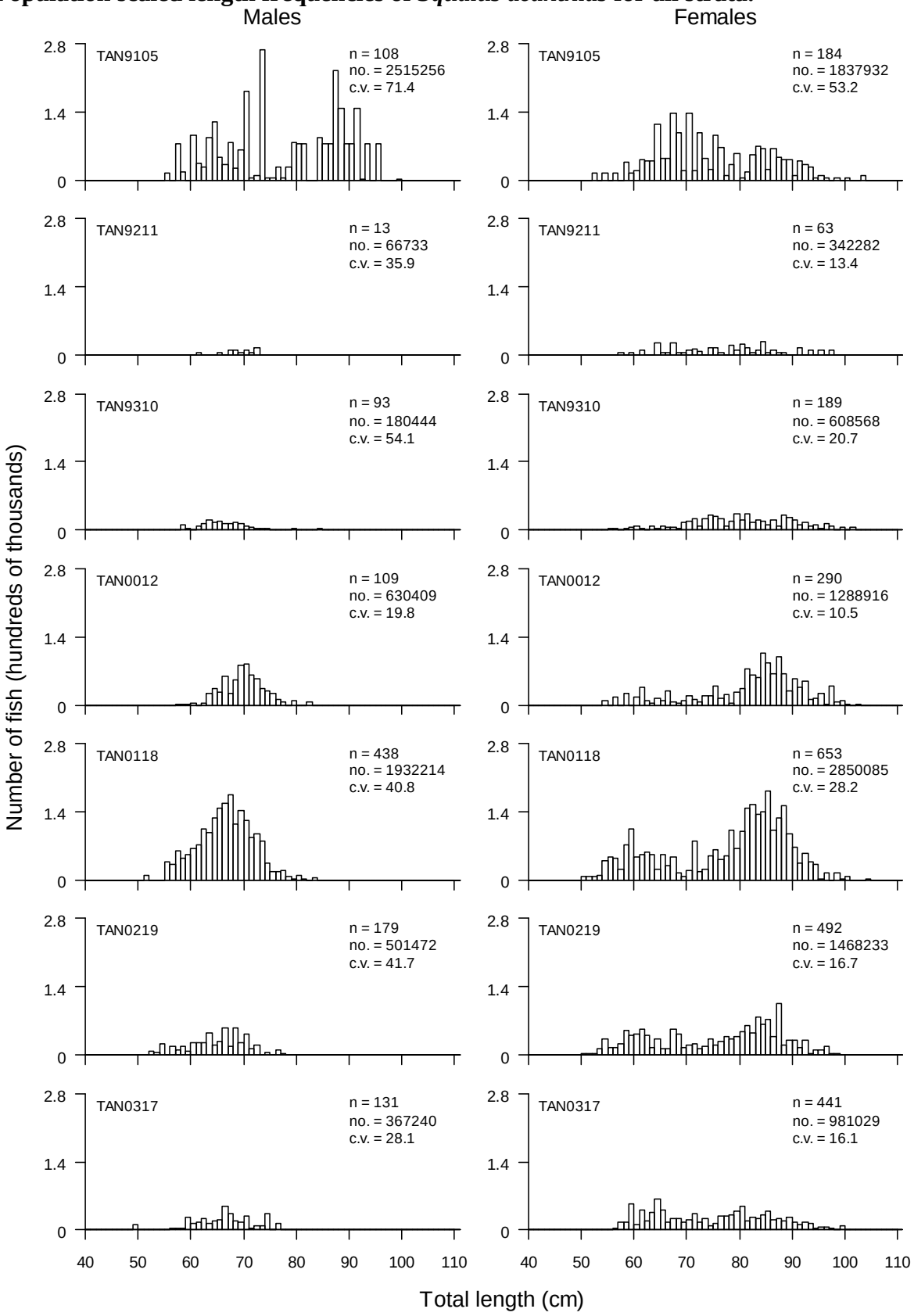

TAN0813 SPD
48°
50°
52°
54°S
170°E
175°
180°

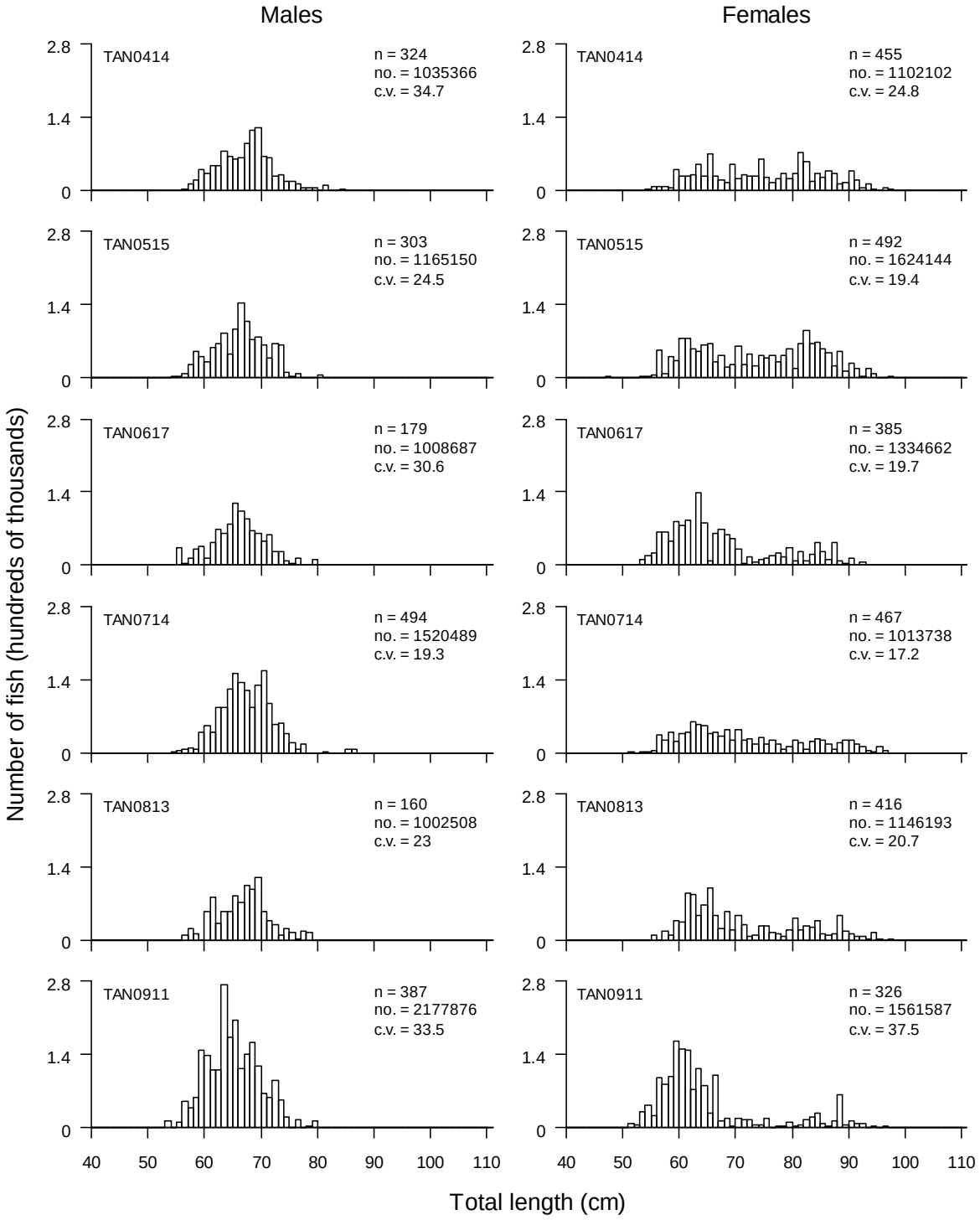


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	52	103	75.8	292
TAN9211	57	97	75.9	76
TAN9310	51	101	74.9	282
TAN0012	54	102	79.5	399
TAN0118	50	104	73.8	1091
TAN0219	49	102	73.8	671
TAN0317	49	101	76.2	572
TAN0414	54	97	72.5	780
TAN0515	47	100	71.9	795
TAN0617	53	98	73.0	564
TAN0714	51	96	69.7	961
TAN0813	55	97	74.2	576
TAN0911	51	96	65.3	713

Population scaled length frequencies of *Squalus acanthias* for all strata.




Males
Females
TAN0414
n = 324
no. = 1035366
c.v. = 34.7
TAN0414
n = 455
no. = 1102102
c.v. = 24.8
TAN0515
n = 303
no. = 1165150
c.v. = 24.5
TAN0515
n = 492
no. = 1624144
c.v. = 19.4
TAN0617
n = 179
no. = 1008687
c.v. = 30.6
TAN0617
n = 385
no. = 1334662
c.v. = 19.7
TAN0714
n = 494
no. = 1520489
c.v. = 19.3
TAN0714
n = 467
no. = 1013738
c.v. = 17.2
TAN0813
n = 160
no. = 1002508
c.v. = 23
TAN0813
n = 416
no. = 1146193
c.v. = 20.7
TAN0911
n = 387
no. = 2177876
c.v. = 33.5
TAN0911
n = 326
no. = 1561587
c.v. = 37.5
0
1.4
2.8
40
50
60
70
80
90
100
110
Number of fish (hundreds of thousands)
Total length (cm)

Gonad stage summaries by sex for *Squalus acanthias*. Percentage at each stage using the SS staging method.

Survey	M1	M2	M3	F1	F2	F3	F4	F5	F6
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0714	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0813	2	2	97	8	41	7	26	19	0
TAN0911	0	12	87	5	63	2	10	20	0
ALL	1	10	89	6	54	4	17	19	0

Sea perch (*Helicolenus* spp.) SPE

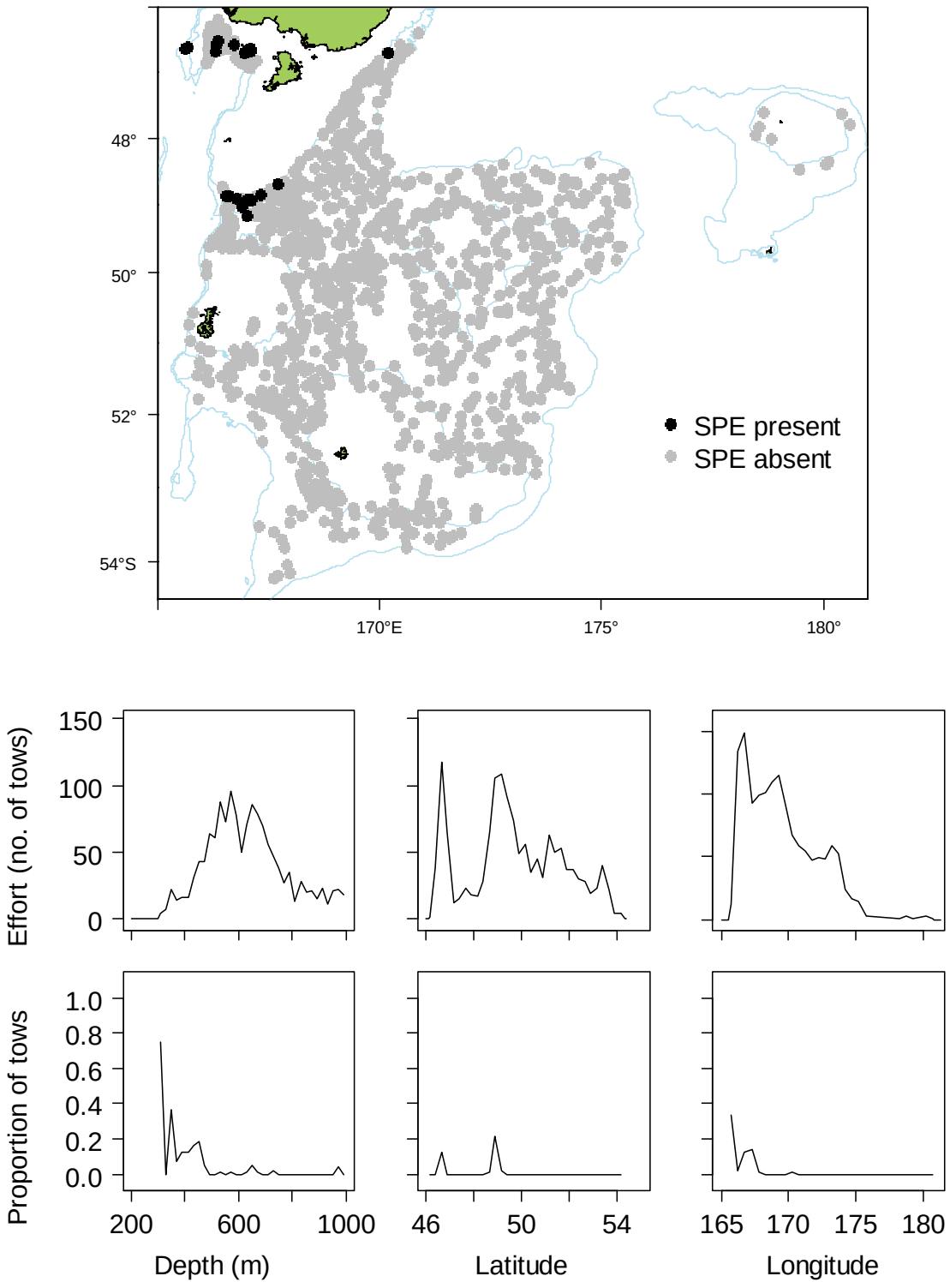
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	369.6
Number measured	225
Length range (mean) (cm)	16–54 (37.7)
Number weighed	208
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is not** appropriate for this species. Distribution **does not extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Catches were **highest in the northwest**, south of the Stewart/Snares shelf and at Puysegur.

Gonad stage data indicate that most male fish are **resting and partially spent** and females running ripe**.**

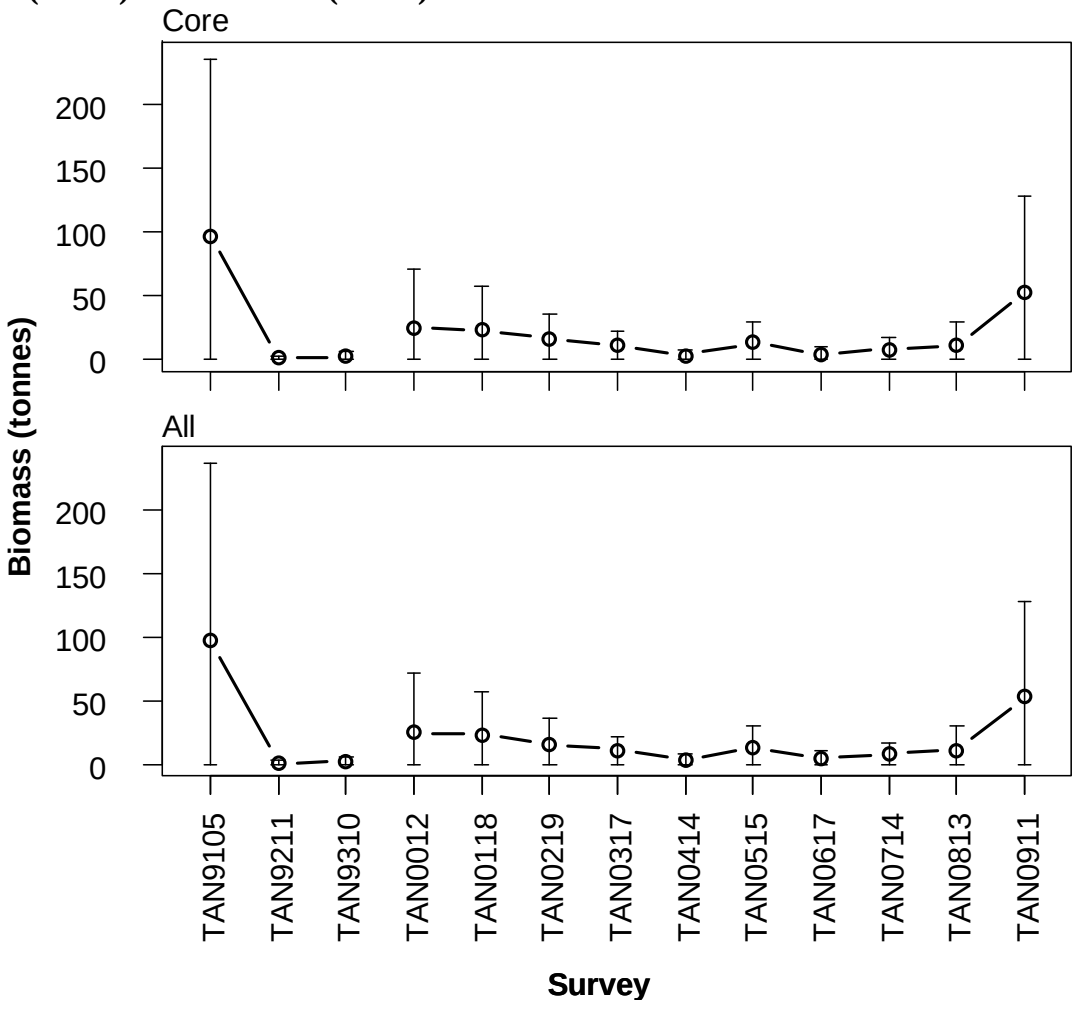
Distribution of *Helicolenus* spp. from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Helicolenus* spp. for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	97	72	NA	NA	NA	NA	NA	NA	97	72
TAN9211	1	73	NA	NA	NA	NA	0	0	1	73
TAN9310	2	100	NA	NA	NA	NA	0	0	2	100
TAN0012	25	93	0	0	0	0	NA	NA	25	93
TAN0118	23	74	0	0	0	0	NA	NA	23	74
TAN0219	16	61	0	0	0	0	NA	NA	16	61
TAN0317	11	54	0	0	NA	NA	NA	NA	11	54
TAN0414	3	95	0	0	NA	NA	NA	NA	3	95
TAN0515	13	71	0	0	0	0	NA	NA	13	71
TAN0617	4	87	0	0	NA	NA	NA	NA	4	87
TAN0714	8	57	0	0	0	0	NA	NA	8	57
TAN0813	11	83	0	0	0	0	NA	NA	11	83
TAN0911	53	71	0	0	0	0	NA	NA	53	71

Trends in relative biomass estimates (± 2 standard errors) of *Helicolenus* spp. for core strata (above) and all strata (below).



Gonad stage summaries by sex for *Helicolenus* spp.. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	0	12	0	6	0	69	12	0	10	0	0	0	0	90
TAN0118	0	100	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	0	0	0	0	0	50	50	0	0	0	0	100	0	0
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
TAN0714	0	100	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA
TAN0813	0	50	50	0	0	0	0	0	0	0	100	0	0	0
TAN0911	67	33	0	0	0	0	0	100	0	0	0	0	0	0
ALL	8	27	4	4	0	46	12	5	11	0	5	32	0	47

Coded as CHQ

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	3.0
Number measured	0
Length range (mean) (cm)	–
Number weighed	0

Coded as PSQ

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	2
Total catch weight (kg):	5.7
Number measured	0
Length range (mean) (cm)	–
Number weighed	0

Coded as RSQ

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	2
Total catch weight (kg):	45.7
Number measured	0
Length range (mean) (cm)	–
Number weighed	0

Coded as SEQ

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.1
Number measured	0
Length range (mean) (cm)	–
Number weighed	0

Coded as SQU

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.7
Number measured	1
Length range (mean) (cm)	–
Number weighed	0

Coded as SQX

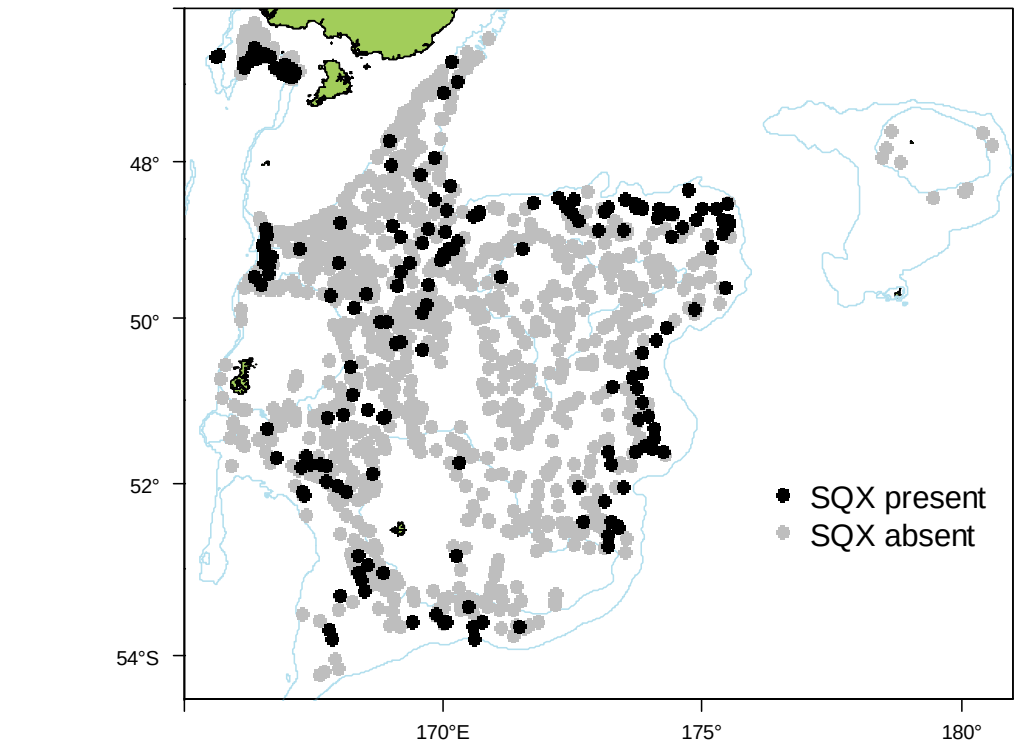
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	7
Total catch weight (kg):	7.0

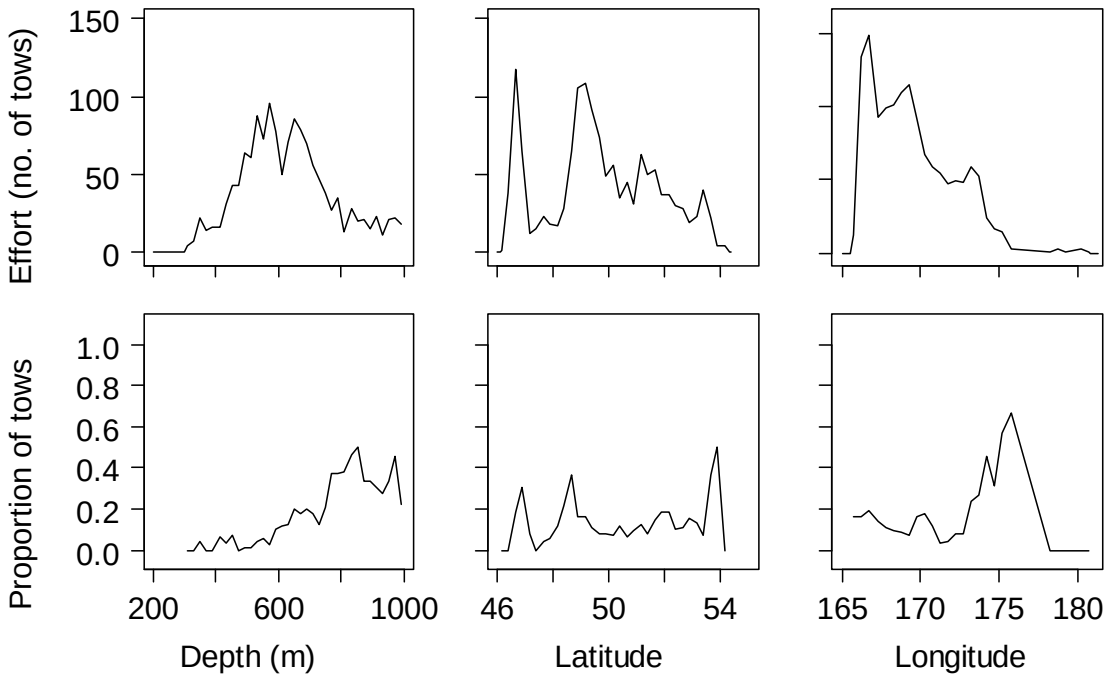
Coded as TAG	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	1.7
Number measured	1
Length mean (cm)	(40.0)
Number weighed	0
Coded as TPE	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.4
Number measured	0
Coded as TSQ	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	11
Total catch weight (kg):	555.1
Number measured	12
Length range (mean) (cm)	35–48 (41.8)
Number weighed	11

Some members of this group are found **shallower than 300 m** and **deeper than 1000 m**. The core survey area and depth range **is** appropriate for this group. Distribution **extends** to strata deeper than 800 m surveyed from 2000 to 2009. It **is not** recorded from the Bounty Platform.

Biomass of this group is **moderately well** estimated by the core survey from 1993. Biomass **shows no clear trend** since 2000. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated

Distribution of Squids from all summer surveys. Valid biomass stations only.

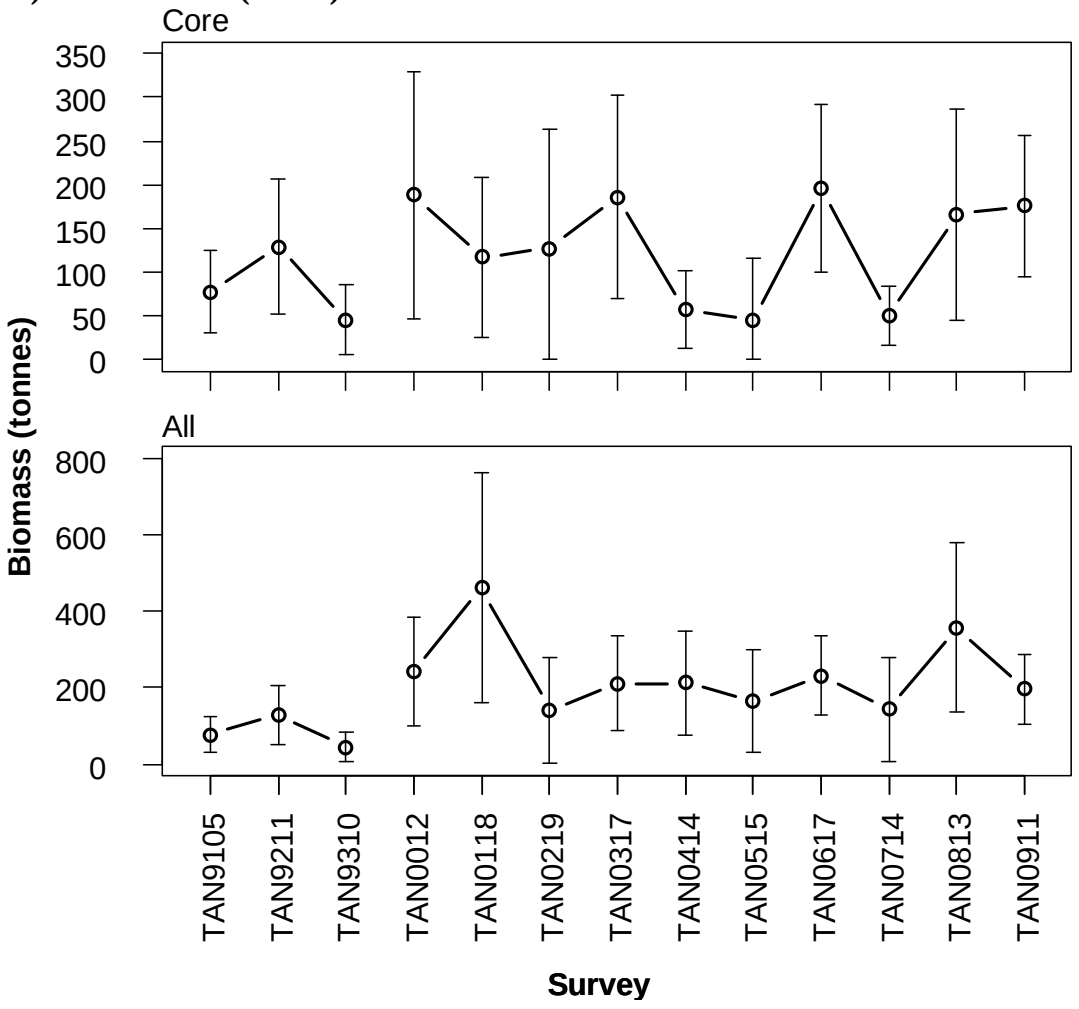




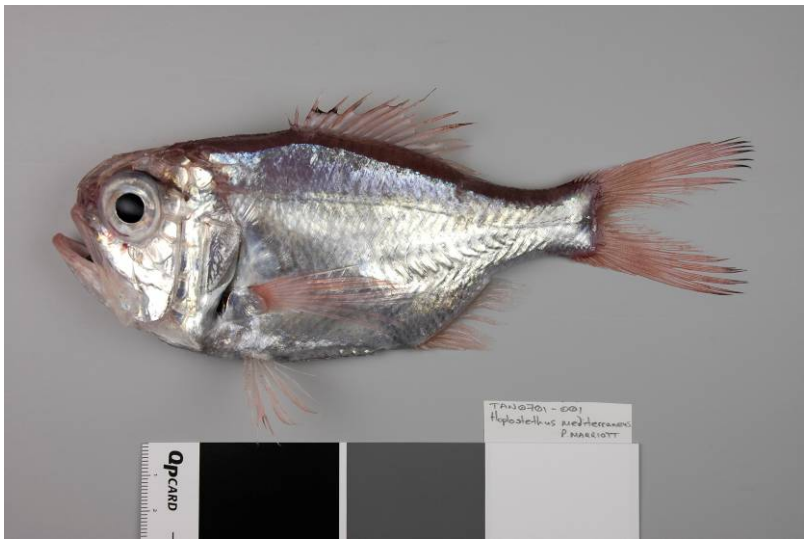
Relative biomass estimates (t) and c.v.s (%) of Squids for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	77	31	NA	NA	NA	NA	NA	NA	77	31
TAN9211	129	31	NA	NA	NA	NA	0	0	129	31
TAN9310	45	45	NA	NA	NA	NA	0	0	45	45
TAN0012	188	38	54	17	0	0	NA	NA	242	30
TAN0118	117	40	87	31	258	56	NA	NA	462	33
TAN0219	127	54	14	62	0	0	NA	NA	141	49
TAN0317	186	32	25	82	NA	NA	NA	NA	211	30
TAN0414	57	40	155	42	NA	NA	NA	NA	212	32
TAN0515	45	80	50	28	72	78	NA	NA	166	41
TAN0617	196	25	36	50	NA	NA	NA	NA	232	23
TAN0714	50	34	33	91	59	100	NA	NA	143	48
TAN0813	166	37	155	57	37	100	NA	NA	358	32
TAN0911	176	24	19	100	0	0	NA	NA	196	23

Trends in relative biomass estimates (± 2 standard errors) of Squids for core strata (above) and all strata (below).



Silver roughy (*Hoplostethus mediterraneus*) SRH



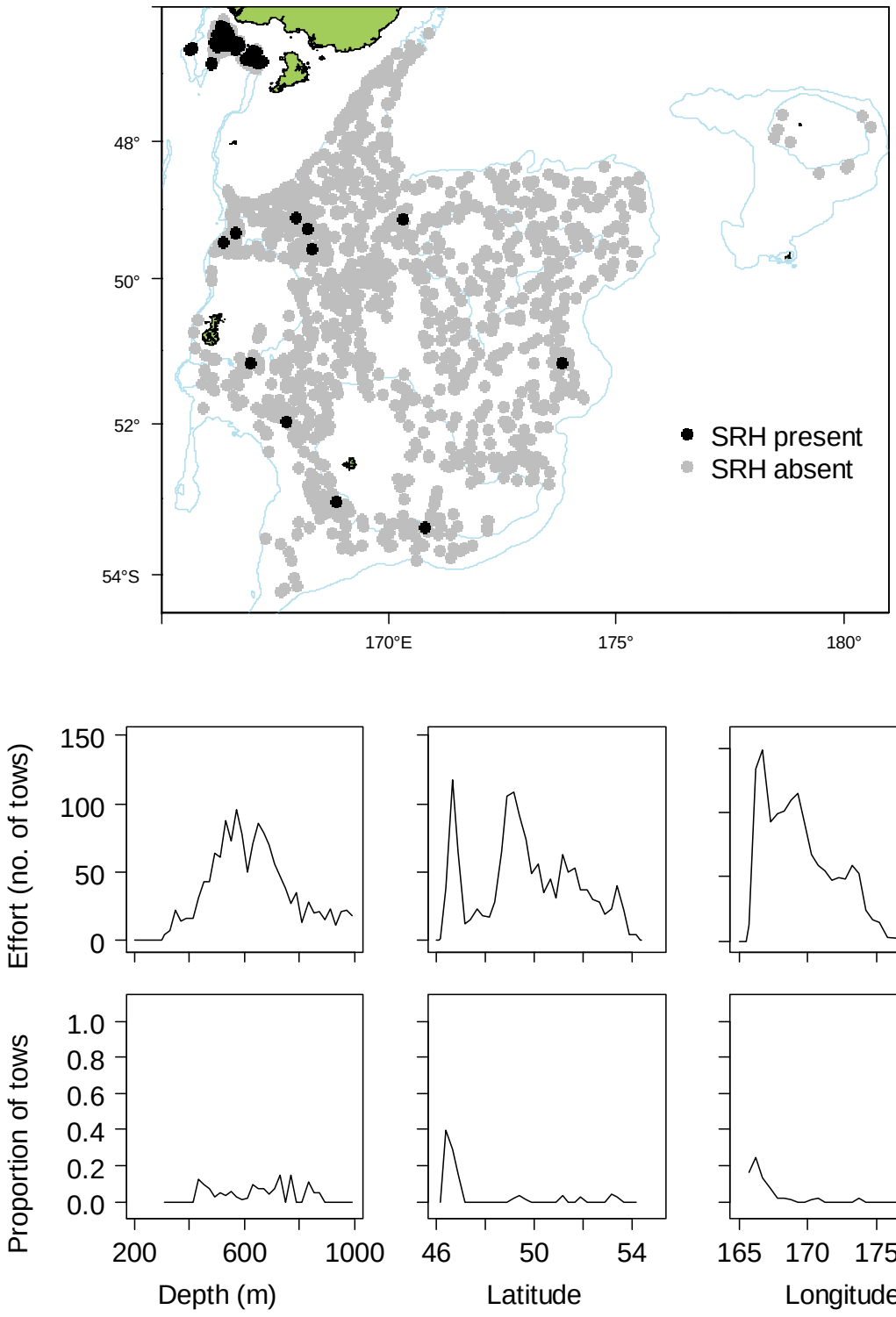
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	22.7
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

This species has been **well** identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is not** appropriate for this species. Distribution **does not** extend to the areas deeper than 800 m surveyed from 2000 to 2009. It **is not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey. Biomass **shows no clear trend** since the start of the time series. Catchrates are highest in the **northeast** at Puysegur**.**

There is no length data or gonad stage presented.

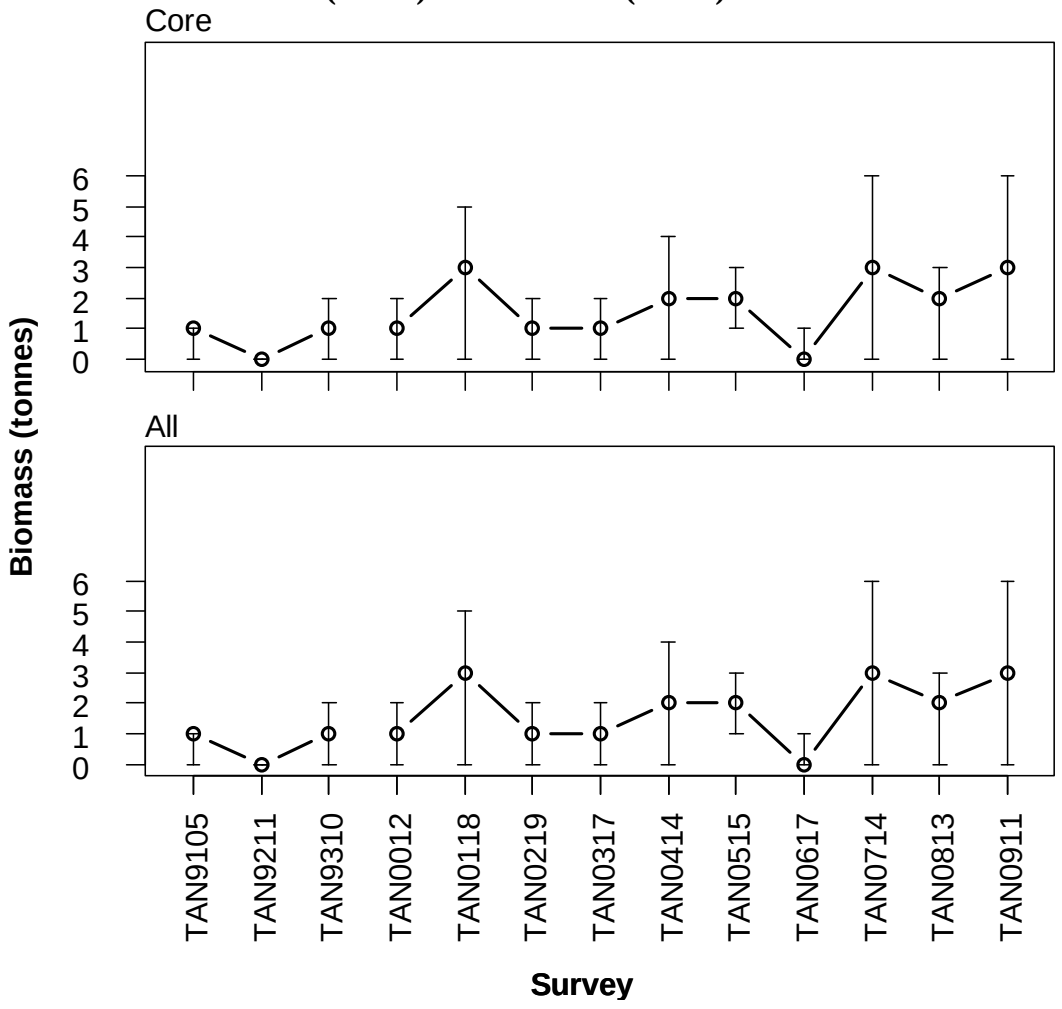
Distribution of *Hoplostethus mediterraneus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Hoplostethus mediterraneus* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	1	50	NA	NA	NA	NA	NA	NA	1	50
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	1	67	NA	NA	NA	NA	0	0	1	67
TAN0012	1	48	0	0	0	0	NA	NA	1	48
TAN0118	3	48	0	0	0	0	NA	NA	3	48
TAN0219	1	29	0	0	0	0	NA	NA	1	29
TAN0317	1	40	0	0	NA	NA	NA	NA	1	40
TAN0414	2	43	0	0	NA	NA	NA	NA	2	43
TAN0515	2	30	0	0	0	0	NA	NA	2	30
TAN0617	0	51	0	0	NA	NA	NA	NA	0	51
TAN0714	3	48	0	0	0	0	NA	NA	3	48
TAN0813	2	38	0	0	0	0	NA	NA	2	38
TAN0911	3	65	0	0	0	0	NA	NA	3	65

Trends in relative biomass estimates (± 2 standard errors) of *Hoplostethus mediterraneus* for core strata (above) and all strata (below).



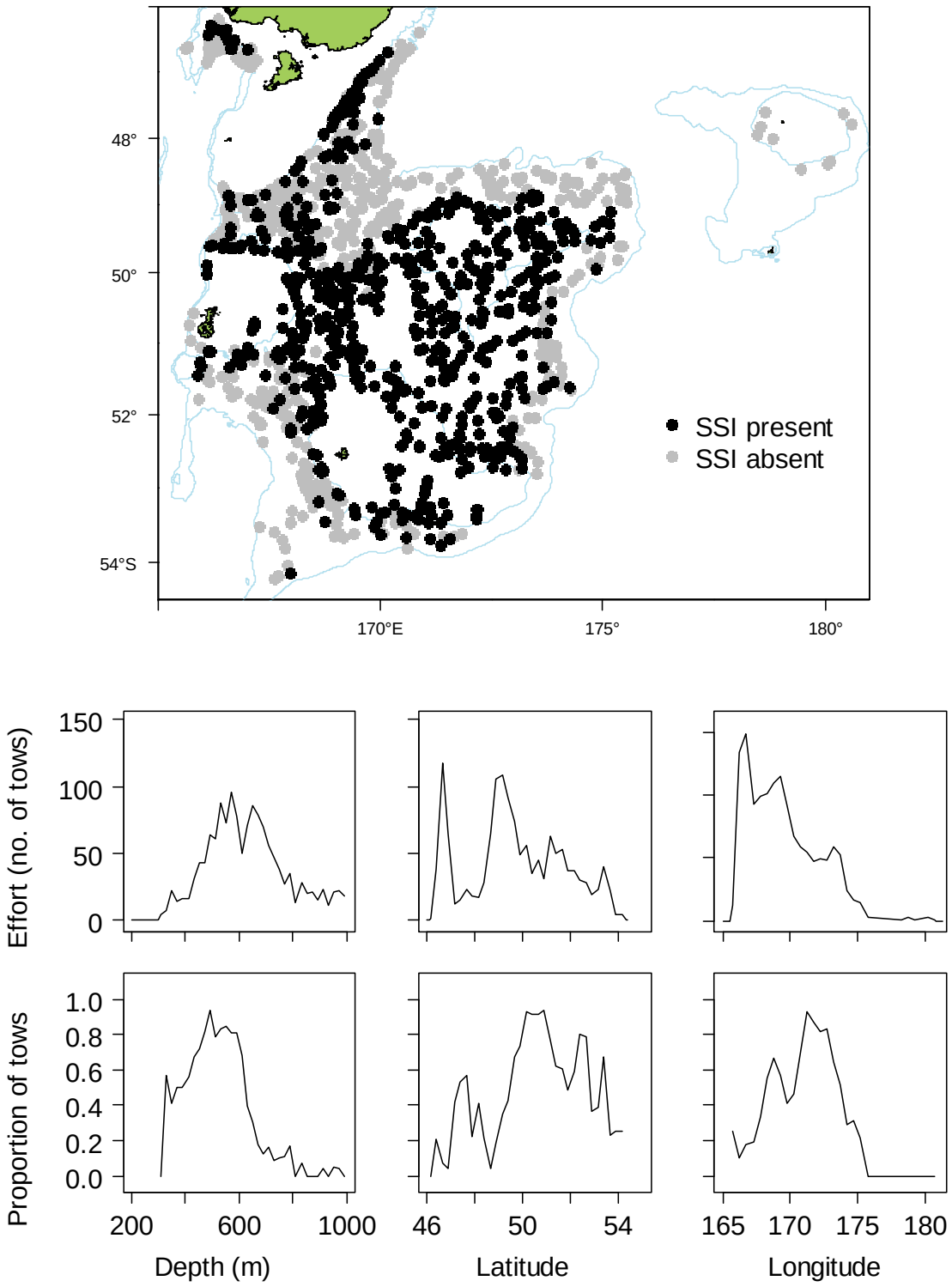
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	2522.6
Number measured	11 348
Length range (mean) (cm)	13–39 (23.8)
Number weighed	3 951
Length-weight parameters a, b (r^2)	0.0137861, 2.766738 (84.6)

This species has been **well** identified during the time series. It is occasionally found **deeper than 800 m**. The core survey area and depth range **is** appropriate for this species. Distribution **does** extend to the areas deeper than 800 m surveyed from 2000 to 2009 on one survey. It **is not** recorded from the Bounty Platform.

Biomass of this species is **moderately well** estimated by the core survey. Biomass **shows no clear trend** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Highest catch rates are widespread over the **eastern** plateau area.

Length frequencies **are unimodal**. Mean length shows **no clear trend** from the early surveys in the 1990s. Gonad stage data indicate that most fish are **immature, resting and mature.**

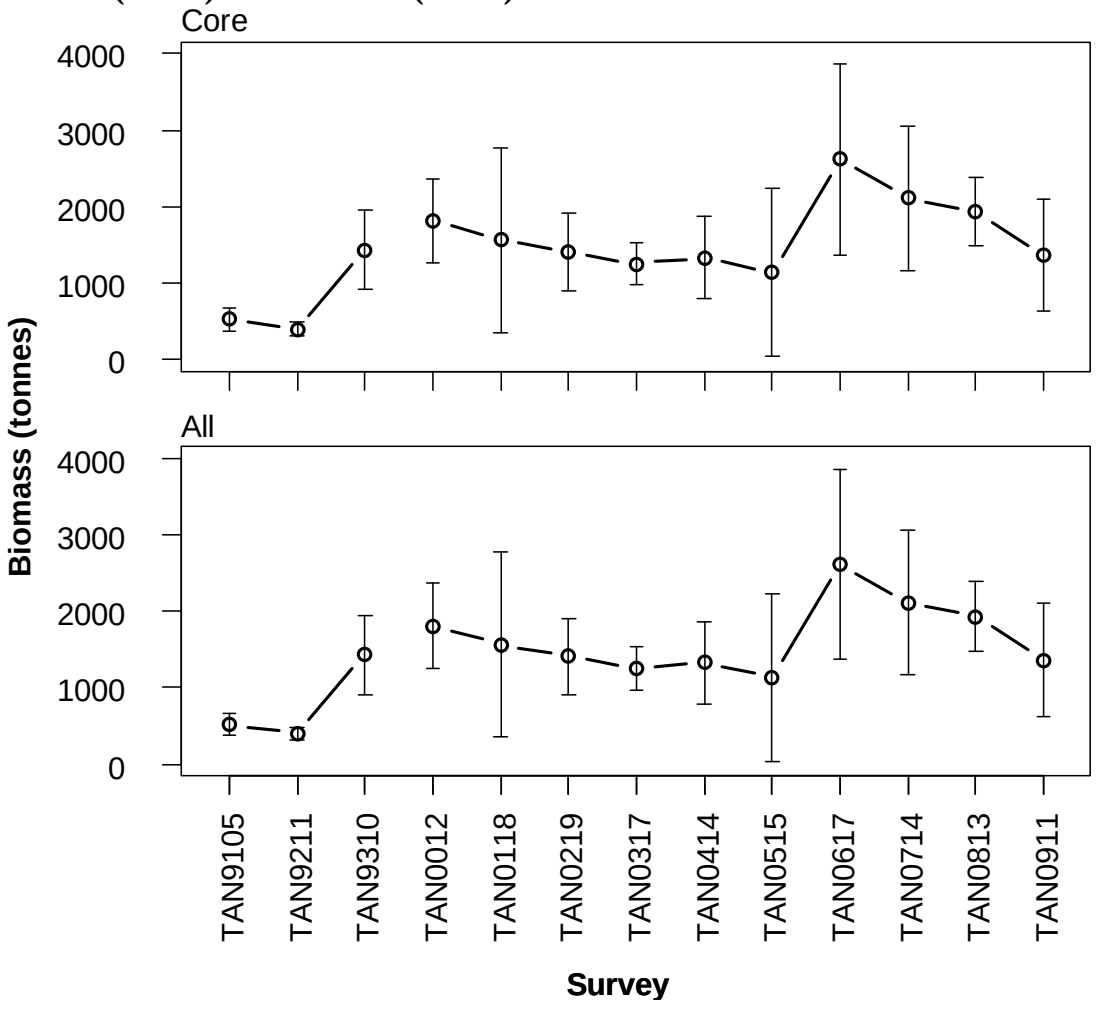
Distribution of *Argentina elongata* from all summer surveys. Valid biomass stations only.



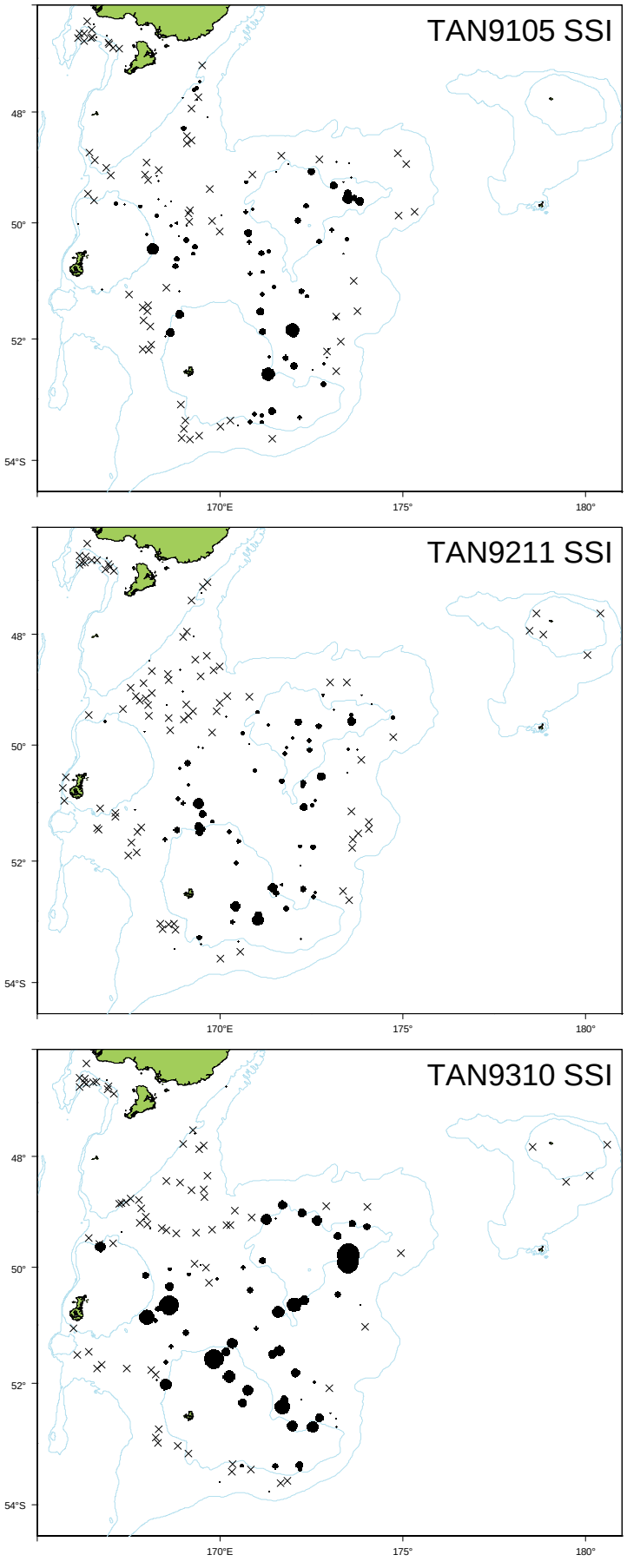
Relative biomass estimates (t) and c.v.s (%) of *Argentina elongata* for core strata, strata outside the core area and all strata.

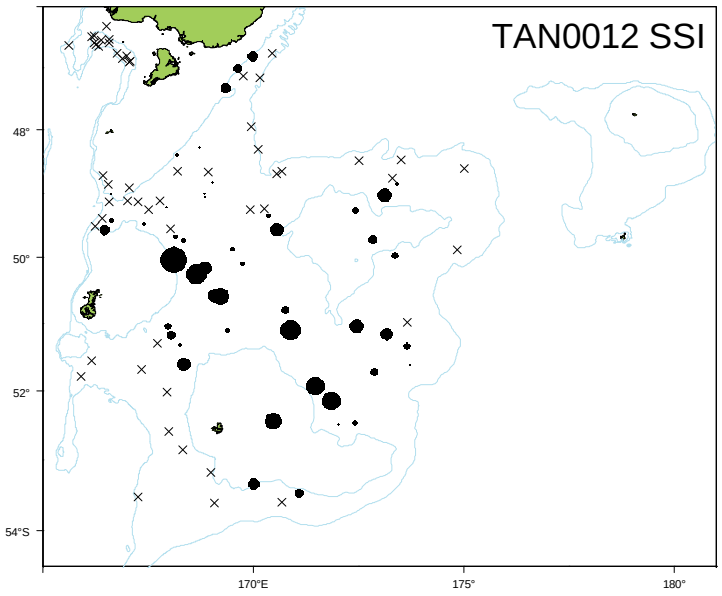
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	522	14	NA	NA	NA	NA	NA	NA	522	14
TAN9211	396	11	NA	NA	NA	NA	0	0	396	11
TAN9310	1430	18	NA	NA	NA	NA	0	0	1430	18
TAN0012	1810	15	0	0	0	0	NA	NA	1810	15
TAN0118	1563	39	0	0	2	100	NA	NA	1565	39
TAN0219	1404	18	0	0	3	100	NA	NA	1407	18
TAN0317	1252	11	0	0	NA	NA	NA	NA	1252	11
TAN0414	1330	20	0	0	NA	NA	NA	NA	1330	20
TAN0515	1136	48	0	0	0	0	NA	NA	1136	48
TAN0617	2615	24	1	100	NA	NA	NA	NA	2616	24
TAN0714	2114	22	0	0	0	0	NA	NA	2114	22
TAN0813	1932	12	0	0	0	0	NA	NA	1932	12
TAN0911	1360	27	0	0	0	0	NA	NA	1360	27

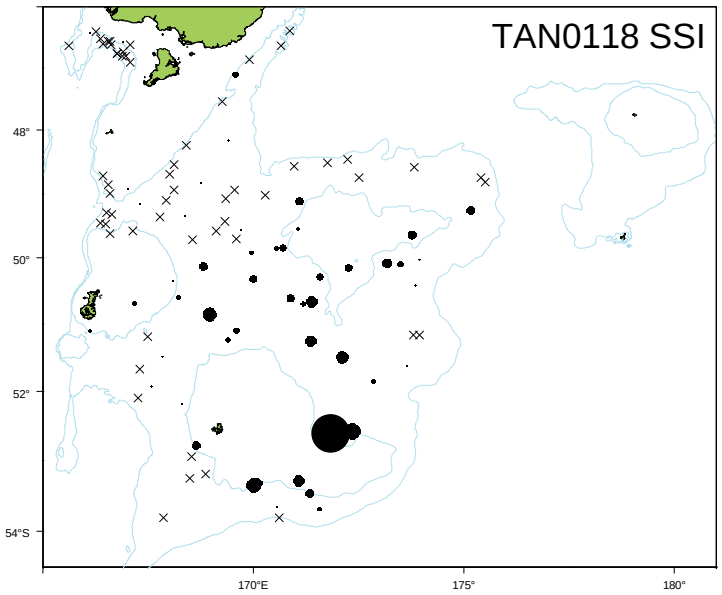
Trends in relative biomass estimates (± 2 standard errors) of *Argentina elongata* for core strata (above) and all strata (below).

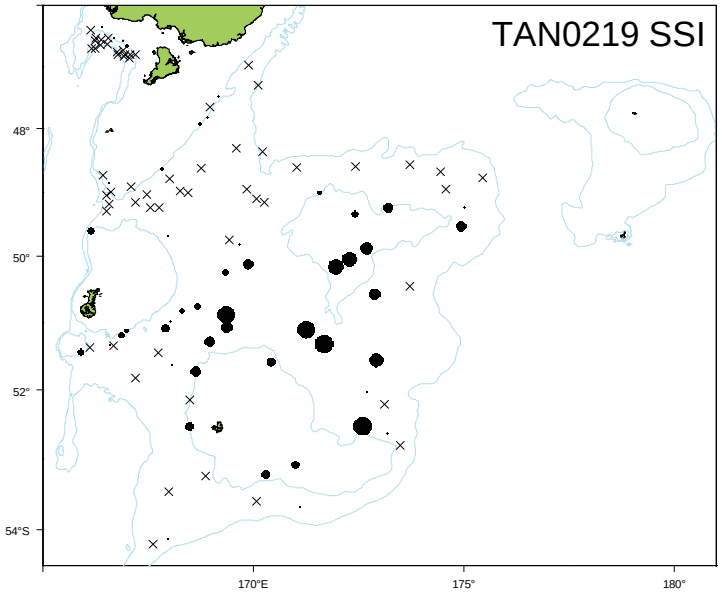


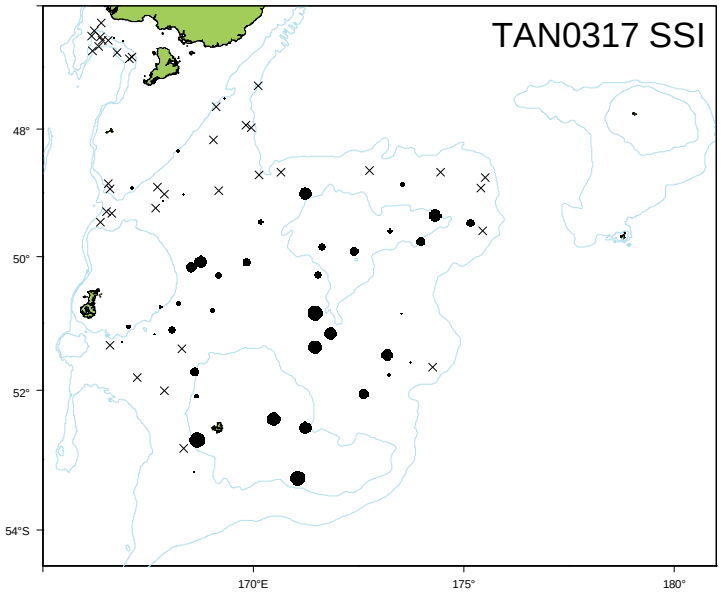
Catchrates of *Argentina elongata*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

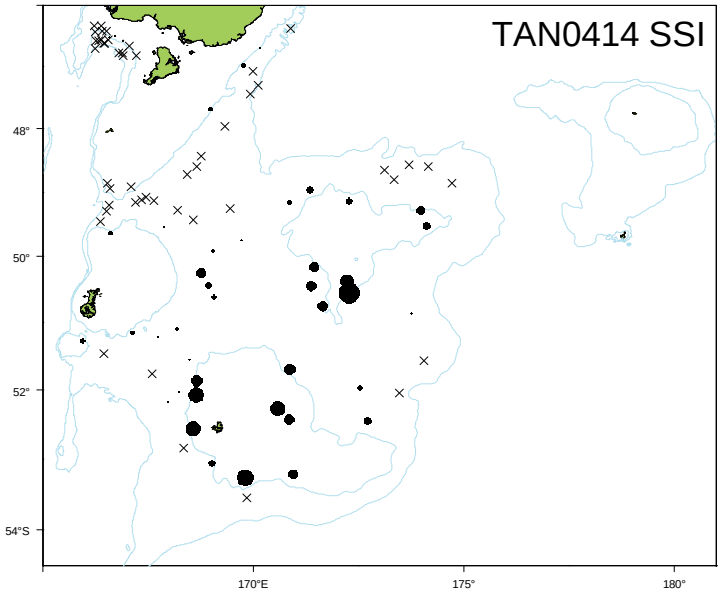


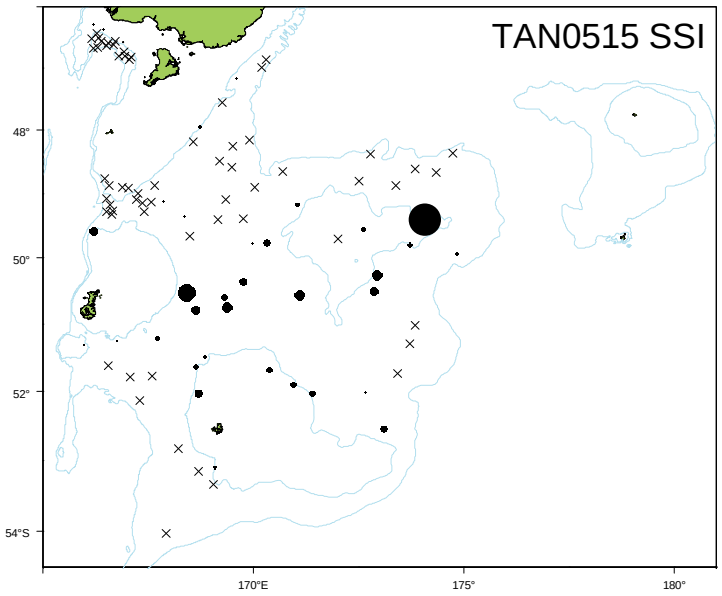

TAN0012 SSI
48°
50°
52°
54°S
170°E
175°
180°

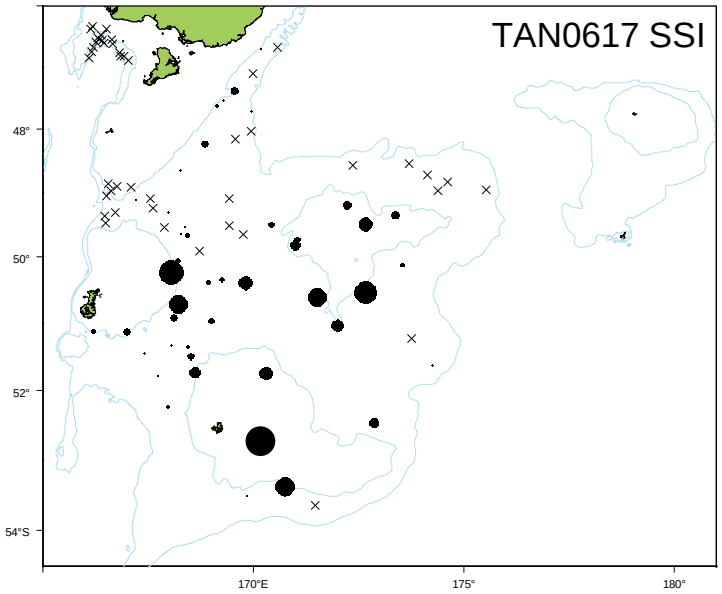

TAN0118 SSI
48°
50°
52°
54°S
170°E
175°
180°

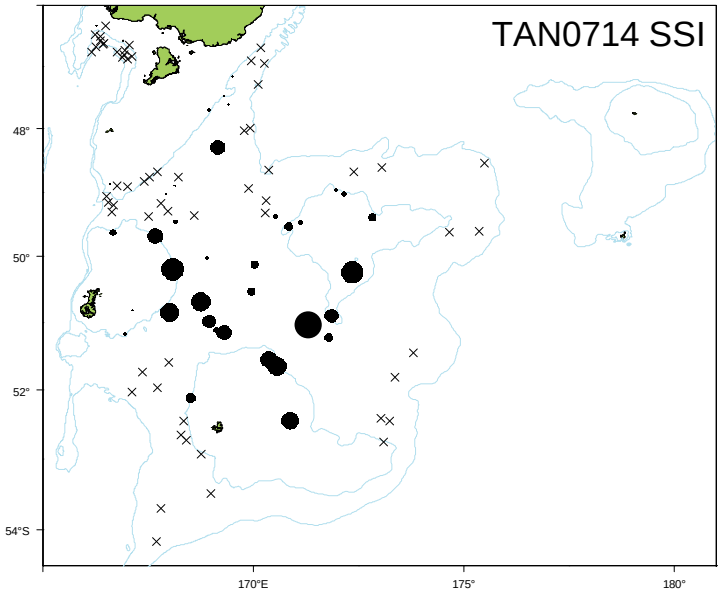

TAN0219 SSI
48°
50°
52°
54°S
170°E
175°
180°

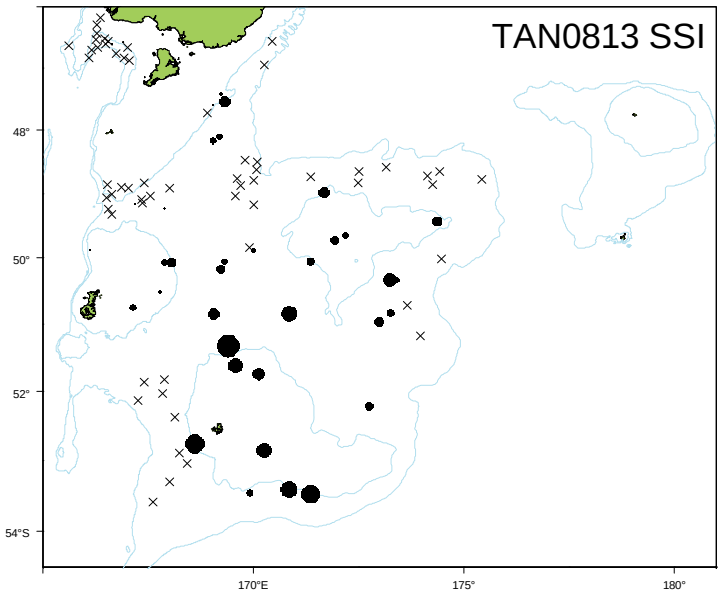

TAN0317 SSI
48°
50°
52°
54°S
170°E
175°
180°

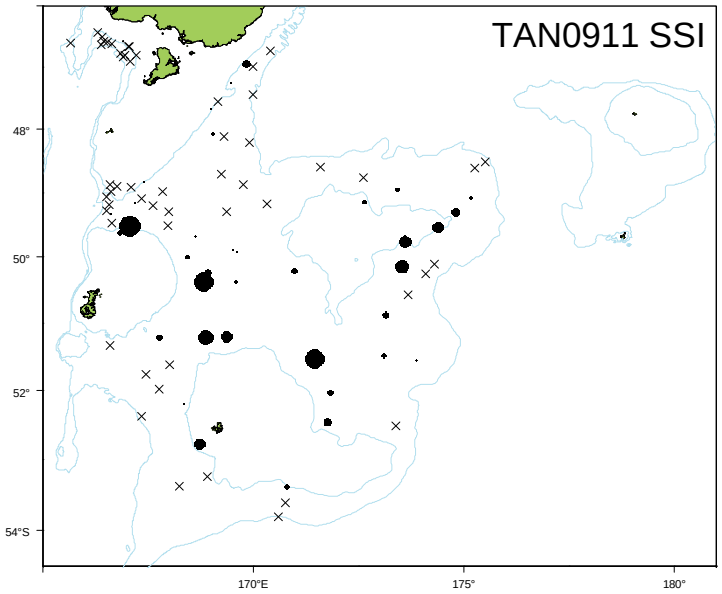

TAN0414 SSI
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 SSI
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 SSI
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 SSI
48°
50°
52°
54°S
170°E
175°
180°

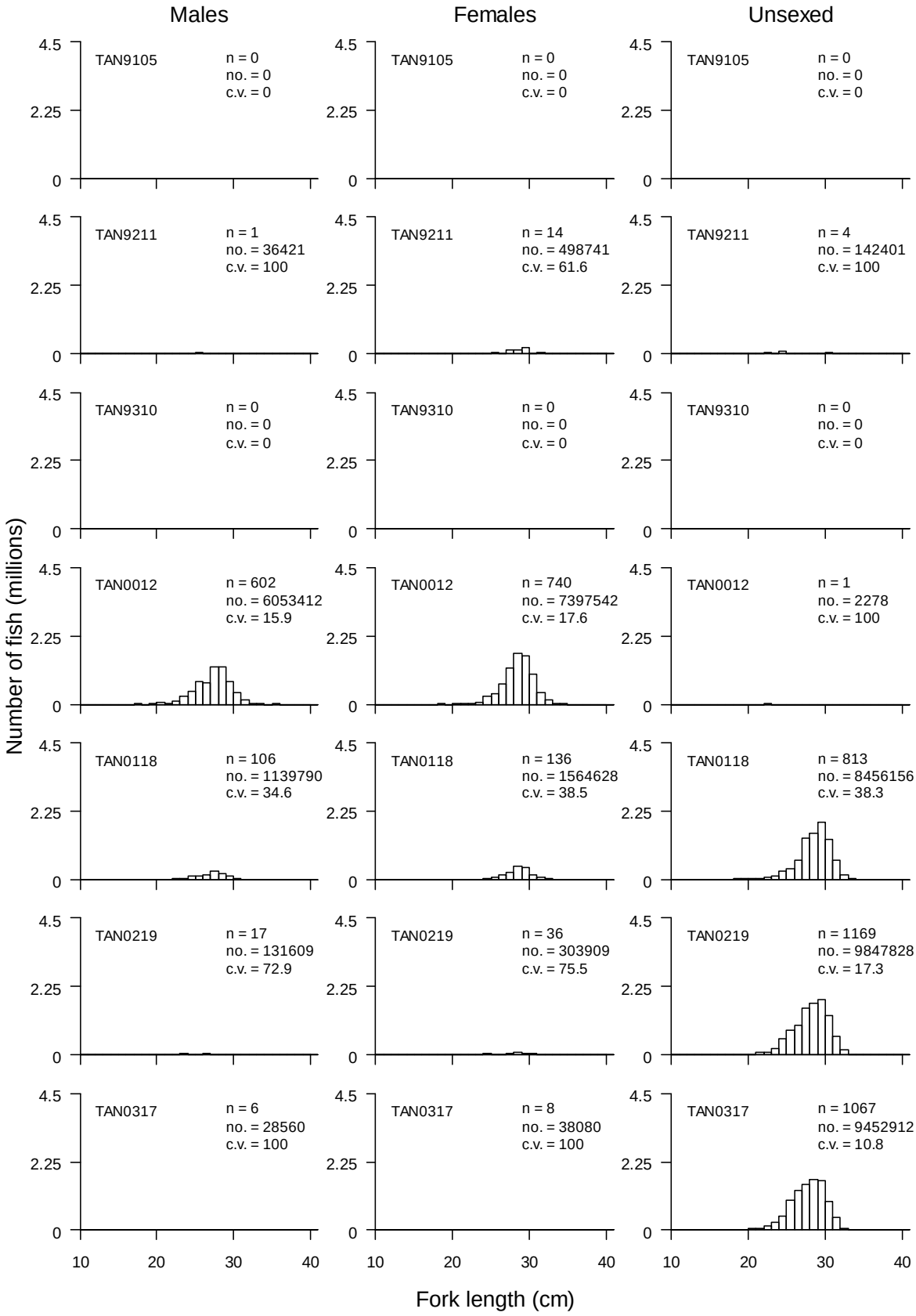

TAN0813 SSI
48°
50°
52°
54°S
170°E
175°
180°

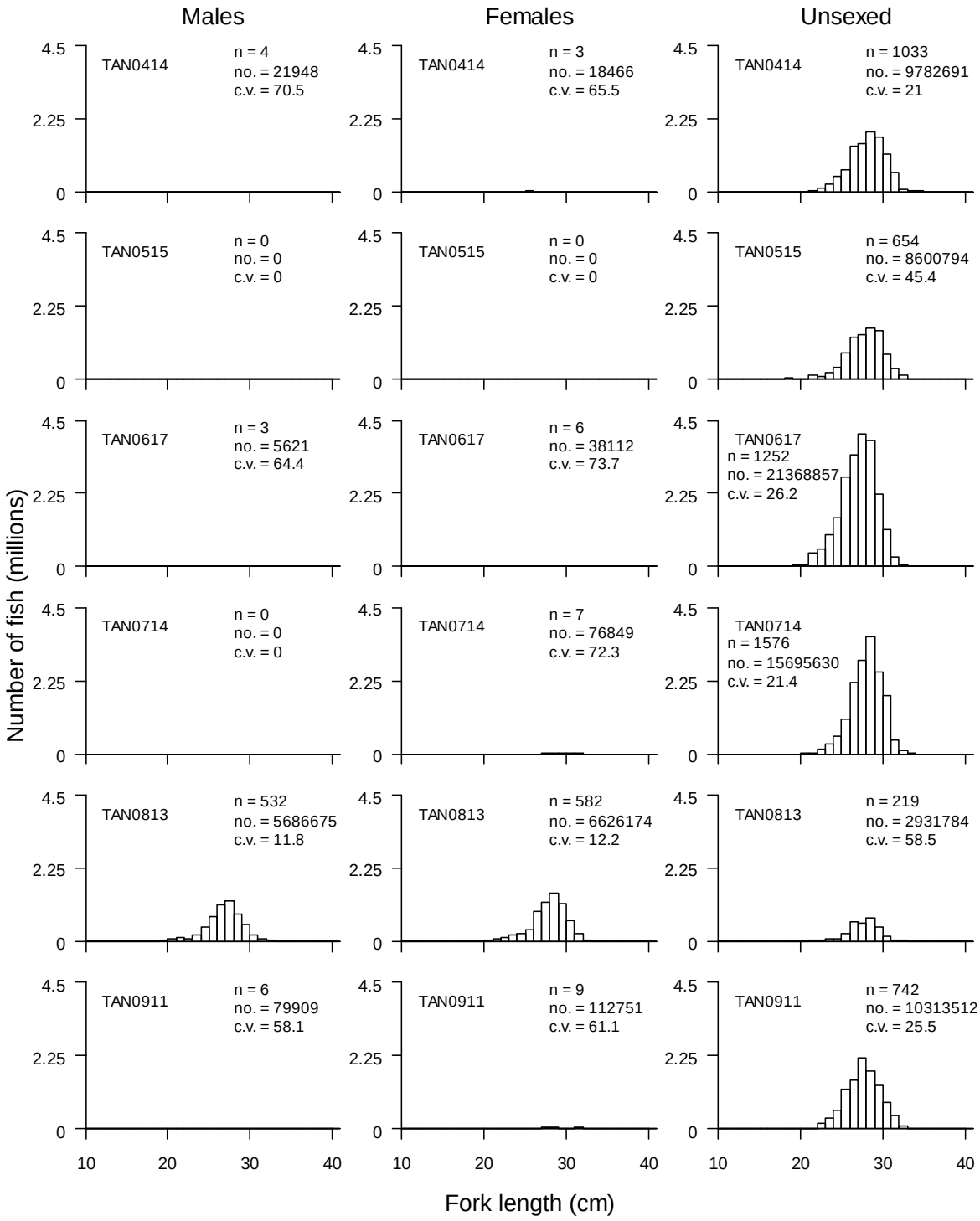


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	NA	NA	NA	0
TAN9211	22	31	27.4	19
TAN9310	NA	NA	NA	0
TAN0012	17	35	27.5	1343
TAN0118	17	36	27.7	1055
TAN0219	18	36	27.5	1222
TAN0317	13	38	27.2	1081
TAN0414	20	34	27.7	1040
TAN0515	18	33	27.3	654
TAN0617	16	33	26.6	1260
TAN0714	20	33	27.3	1583
TAN0813	18	33	26.8	1333
TAN0911	22	32	26.9	757

Population scaled length frequencies of *Argentina elongata* for all strata.

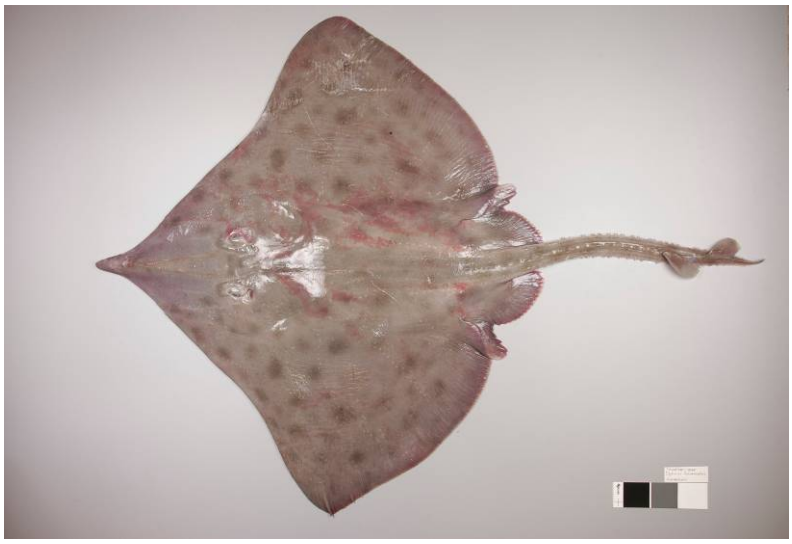



Males
Females
Unsexed
Number of fish (millions)
Fork length (cm)
TAN0414
n = 4
no. = 21948
c.v. = 70.5
TAN0414
n = 3
no. = 18466
c.v. = 65.5
TAN0414
n = 1033
no. = 9782691
c.v. = 21
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 654
no. = 8600794
c.v. = 45.4
TAN0617
n = 3
no. = 5621
c.v. = 64.4
TAN0617
n = 6
no. = 38112
c.v. = 73.7
TAN0617
n = 1252
no. = 21368857
c.v. = 26.2
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 7
no. = 76849
c.v. = 72.3
TAN0714
n = 1576
no. = 15695630
c.v. = 21.4
TAN0813
n = 532
no. = 5686675
c.v. = 11.8
TAN0813
n = 582
no. = 6626174
c.v. = 12.2
TAN0813
n = 219
no. = 2931784
c.v. = 58.5
TAN0911
n = 6
no. = 79909
c.v. = 58.1
TAN0911
n = 9
no. = 112751
c.v. = 61.1
TAN0911
n = 742
no. = 10313512
c.v. = 25.5
0
2.25
4.5
10
20
30
40

Gonad stage summaries by sex for *Argentina elongata*. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	0	100	0	0	0	0	0	0	0	100	0	0	0	0
TAN0714	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0813	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0911	40	20	40	0	0	0	0	50	50	0	0	0	0	0
ALL	33	33	33	0	0	0	0	44	44	11	0	0	0	0

Smooth skate (*Dipturus innominatus*) SSK



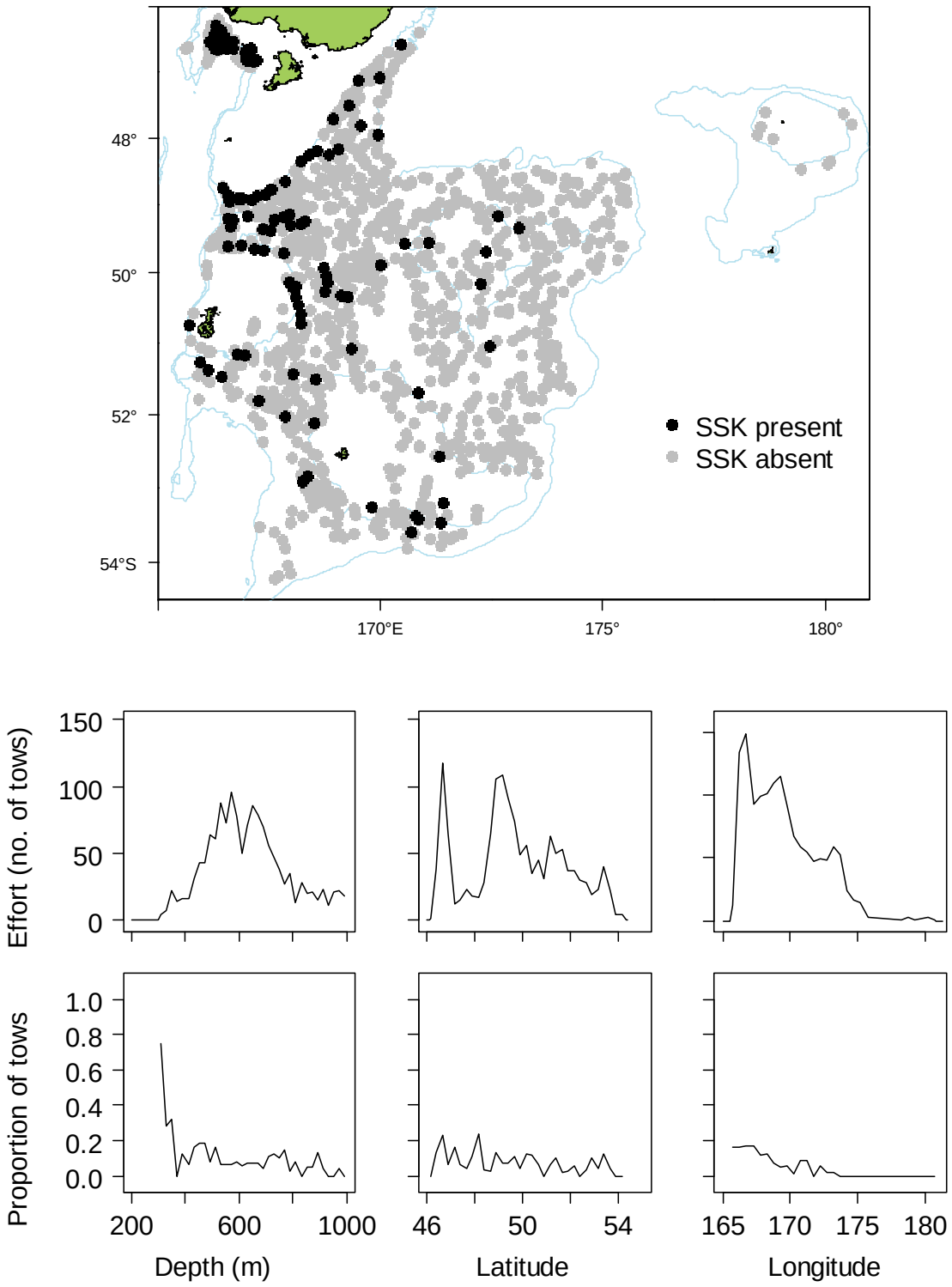
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	1 659.4
Number measured	96
Length range (mean) (cm)	39–132 (80.2)
Number weighed	90
Length-weight parameters a, b (r^2)	–

This species has been **well** identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is** appropriate for this species. Distribution **does not** extend to the areas deeper than 800 m surveyed from 2000 to 2009. It **is not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey. Biomass **shows no clear trend** since the start of the time series. Catchrates are highest in shallower depths around the Auckland Islands, Stewart/Snares shelf and at Puysegur**.**

There is no length data presented. Gonad stage data indicate that most fish are **immature and maturing** .

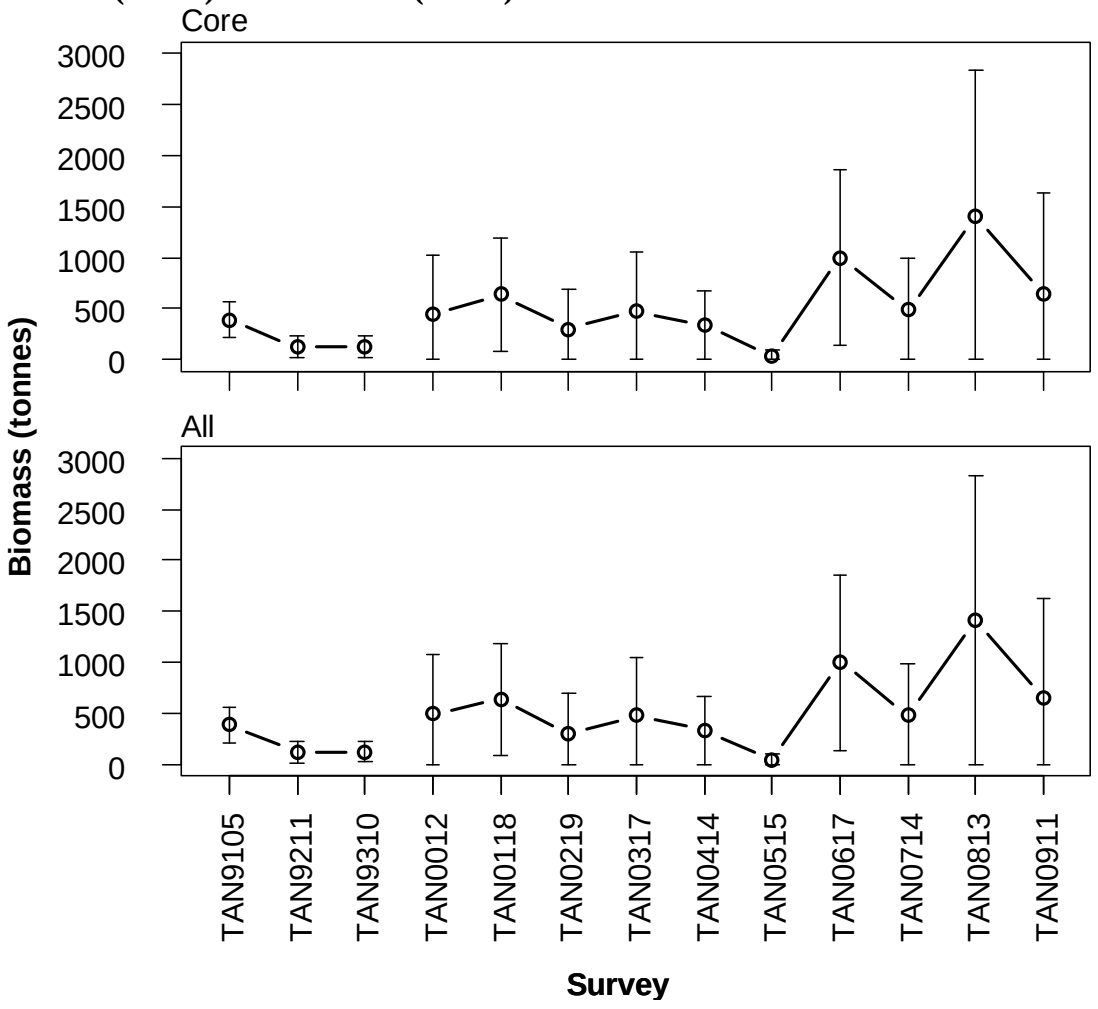
Distribution of *Dipturus innominatus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Dipturus innominatus* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	386	23	NA	NA	NA	NA	NA	NA	386	23
TAN9211	119	45	NA	NA	NA	NA	0	0	119	45
TAN9310	123	42	NA	NA	NA	NA	0	0	123	42
TAN0012	446	64	49	100	0	0	NA	NA	495	59
TAN0118	636	43	0	0	0	0	NA	NA	636	43
TAN0219	299	65	0	0	0	0	NA	NA	299	65
TAN0317	475	60	0	0	NA	NA	NA	NA	475	60
TAN0414	331	52	0	0	NA	NA	NA	NA	331	52
TAN0515	37	79	0	0	0	0	NA	NA	37	79
TAN0617	999	43	0	0	NA	NA	NA	NA	999	43
TAN0714	483	52	0	0	0	0	NA	NA	483	52
TAN0813	1406	51	0	0	0	0	NA	NA	1406	51
TAN0911	648	76	0	0	0	0	NA	NA	648	76

Trends in relative biomass estimates (± 2 standard errors) of *Dipturus innominatus* for core strata (above) and all strata (below).



Gonad stage summaries by sex for *Dipturus innominatus*. Percentage at each stage using the SS staging method.

Survey	M1	M2	M3	F1	F2	F3	F4	F5	F6
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	0	100	0	0	0	0
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0714	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0813	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0911	75	0	25	25	75	0	0	0	0
ALL	75	0	25	20	80	0	0	0	0

Smallscaled brown slickhead, (*Alepocephalus antipodianus*) SSM

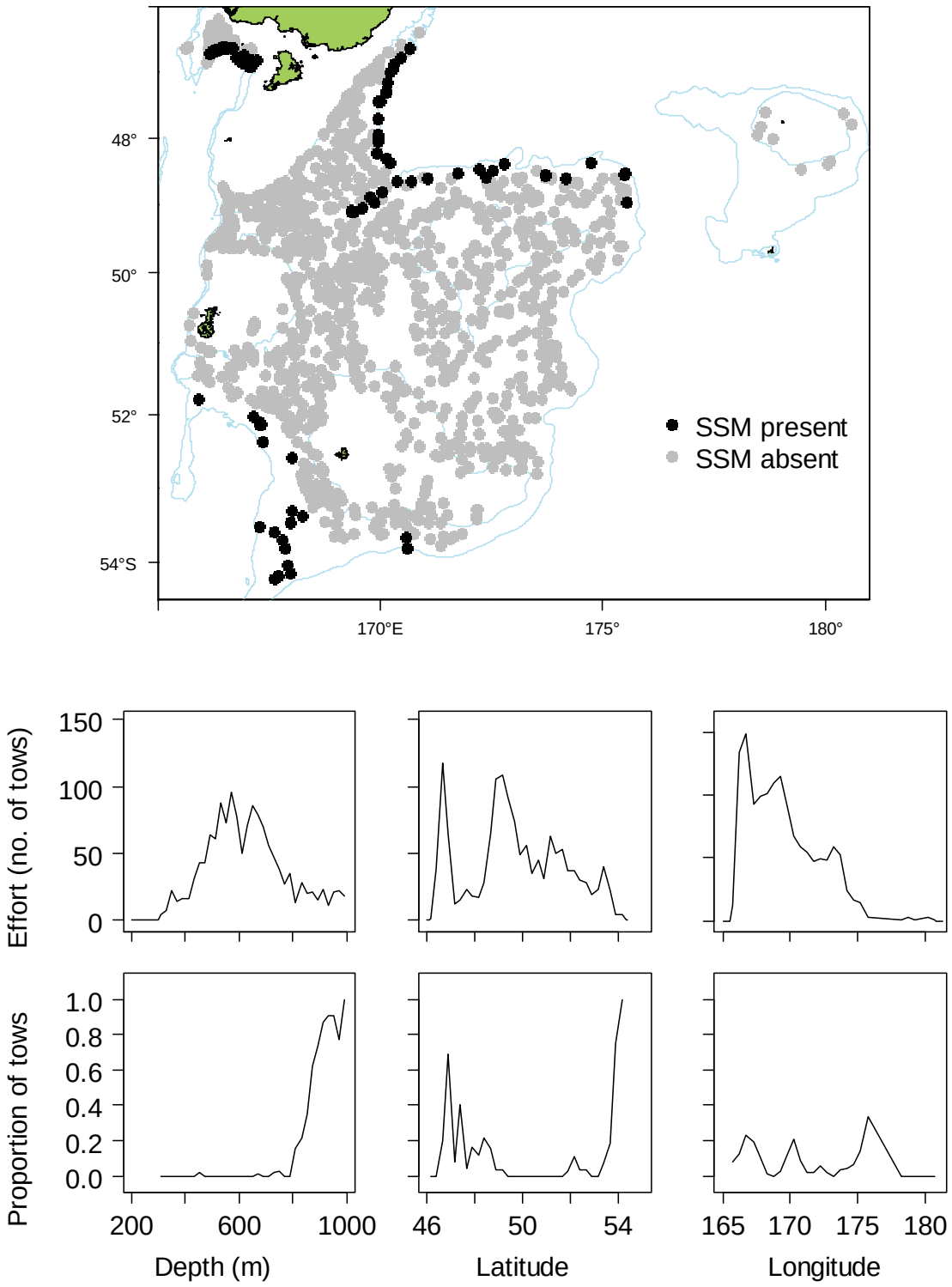
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	11
Total catch weight (kg):	5 389.1
Number measured	2 739
Length range (mean) (cm)	16–94 (49.9)
Number weighed	1 631
Length-weight parameters a, b (r^2)	0.0049221, 3.153448 (97.6)

This species has been **well** identified during the time series. It is found **deeper than 800 m**. The core survey area and depth range **is not** appropriate for this species. Distribution **does** extend to the areas deeper than 800 m surveyed from 2000 to 2009. It **is not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey. Biomass **shows an increase** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated, although stratum 26 c.v.s tend to be low. Catches are recorded from areas close to and deeper than 800 m. Higher catchrates are taken in the **northwest** and **south** of the the survey area.

Length frequencies **have multiple modes which may contain information about year-class strength**. Mean length **shows no clear trend**. Gonad stage data indicate that most male fish are **mature** and female fish **ripe.**

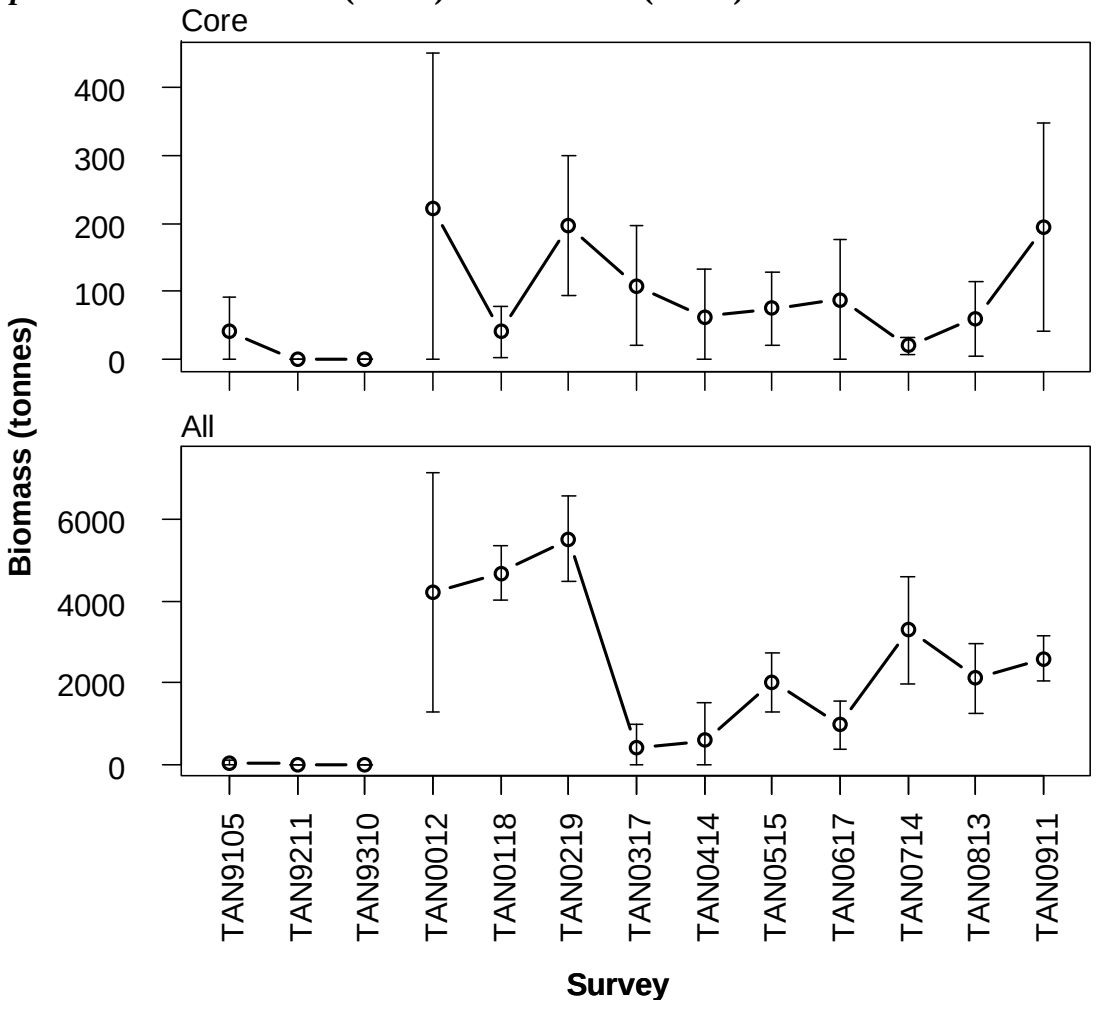
Distribution of *Alepocephalus antipodianus* from all summer surveys. Valid biomass stations only.



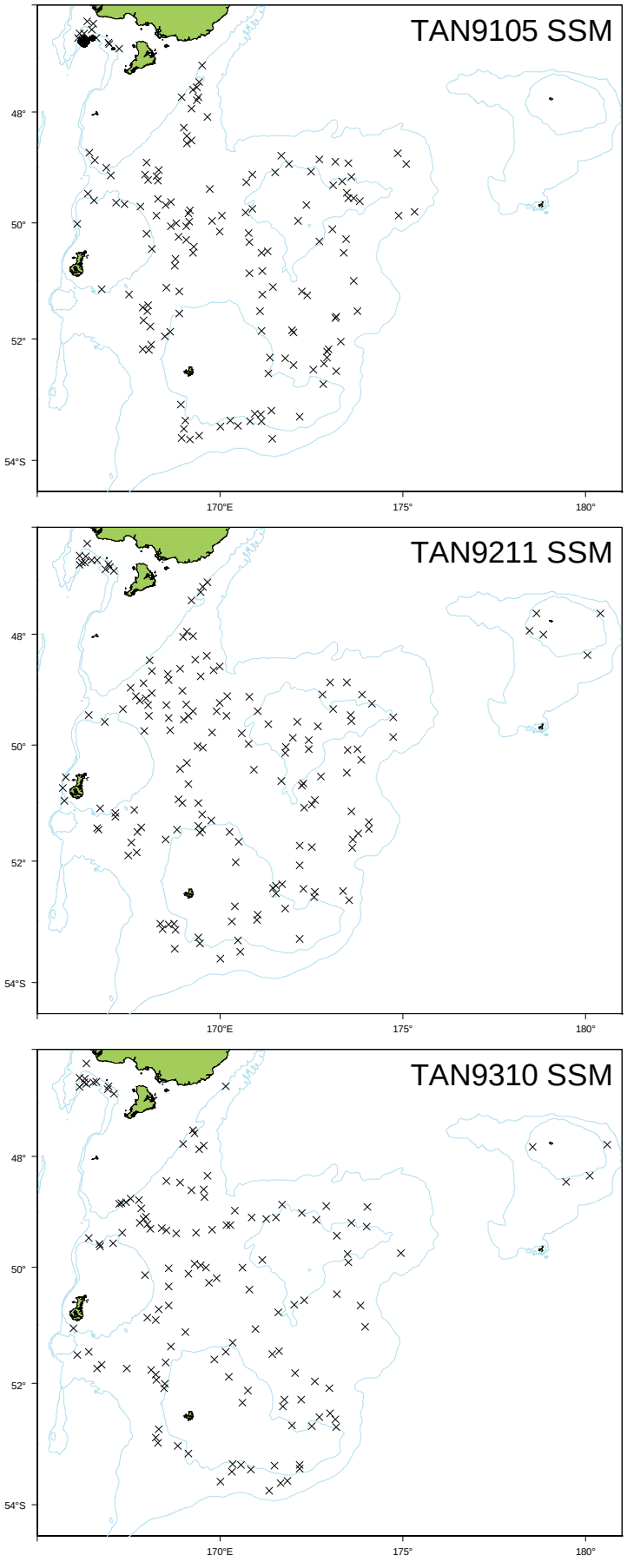
Relative biomass estimates (t) and c.v.s (%) of *Alepocephalus antipodianus* for core strata, strata outside the core area and all strata.

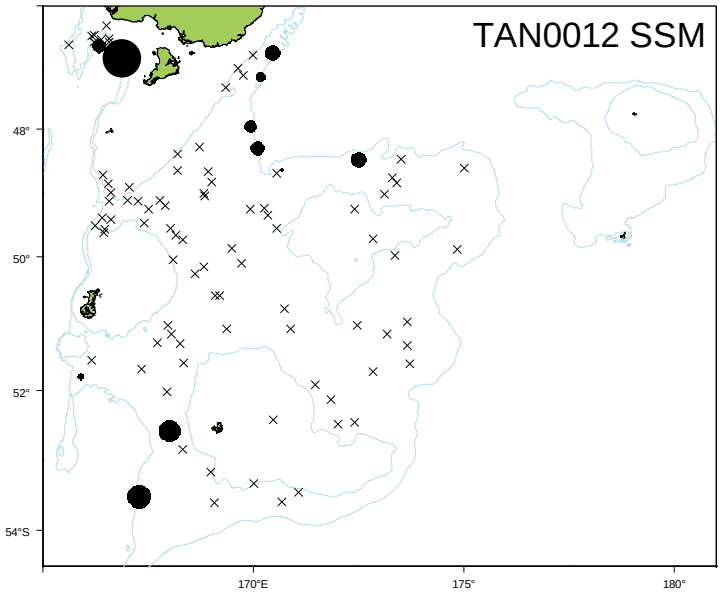
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	41	60	NA	NA	NA	NA	NA	NA	41	60
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	222	52	623	33	3375	43	NA	NA	4221	35
TAN0118	41	47	174	63	4477	7	NA	NA	4692	7
TAN0219	197	26	1018	46	4309	6	NA	NA	5524	10
TAN0317	108	41	308	92	NA	NA	NA	NA	416	69
TAN0414	62	57	519	90	NA	NA	NA	NA	581	81
TAN0515	75	35	641	46	1296	16	NA	NA	2012	18
TAN0617	88	50	885	33	NA	NA	NA	NA	972	30
TAN0714	20	31	921	71	2354	2	NA	NA	3295	20
TAN0813	60	46	273	69	1782	22	NA	NA	2115	20
TAN0911	195	39	168	75	2224	10	NA	NA	2587	11

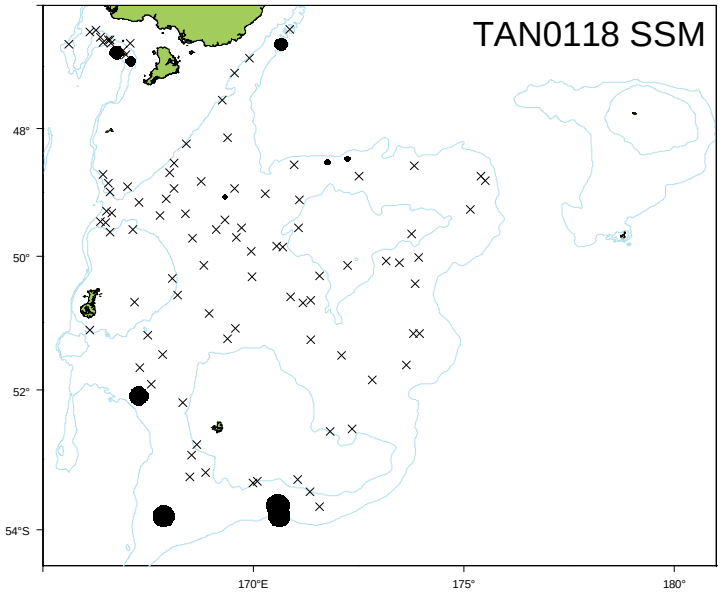
Trends in relative biomass estimates (± 2 standard errors) of *Alepocephalus antipodianus* for core strata (above) and all strata (below).

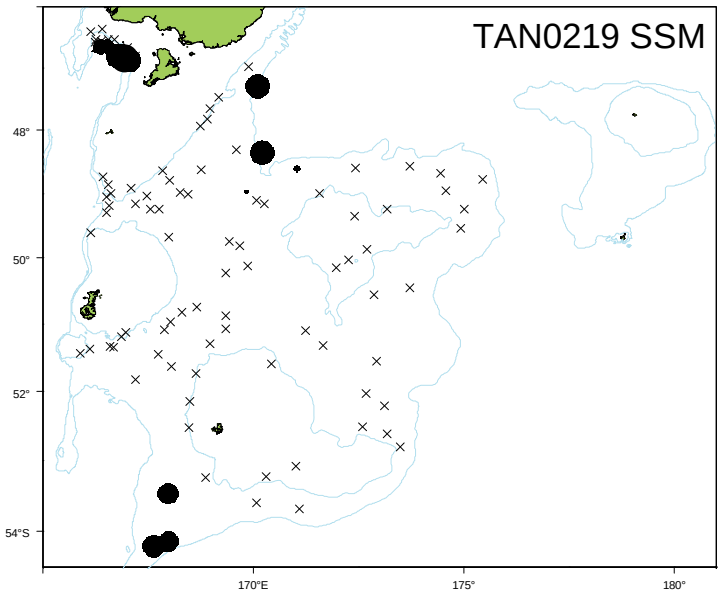


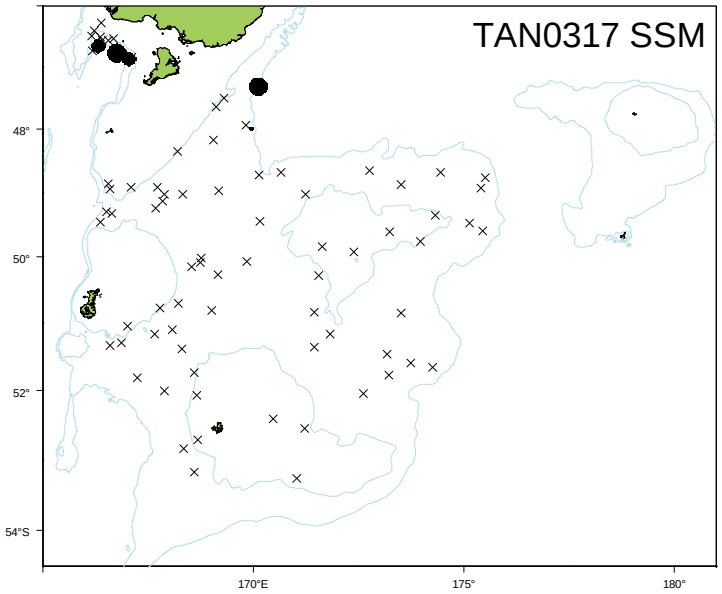
Catchrates of *Alepocephalus antipodianus*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

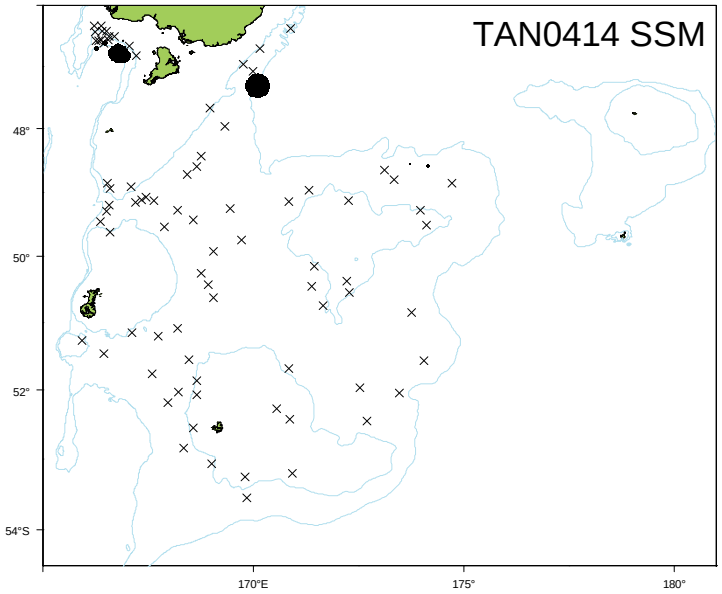


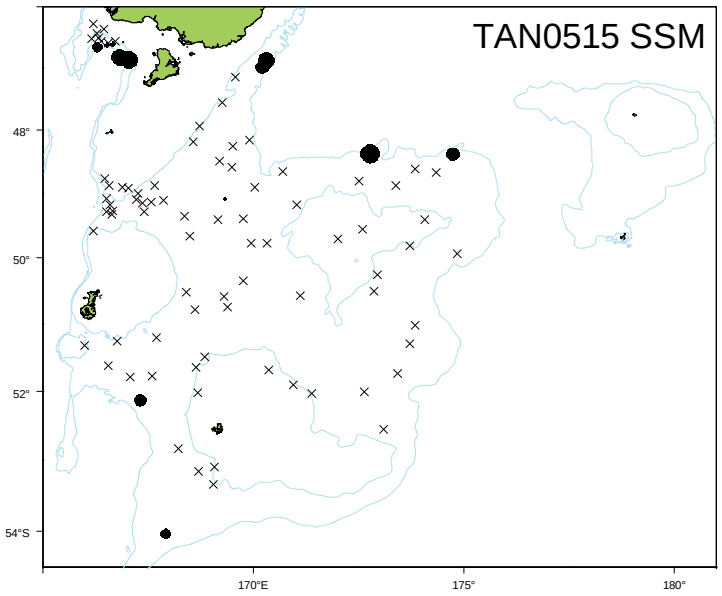

TAN0012 SSM
48°
50°
52°
54°S
170°E
175°
180°

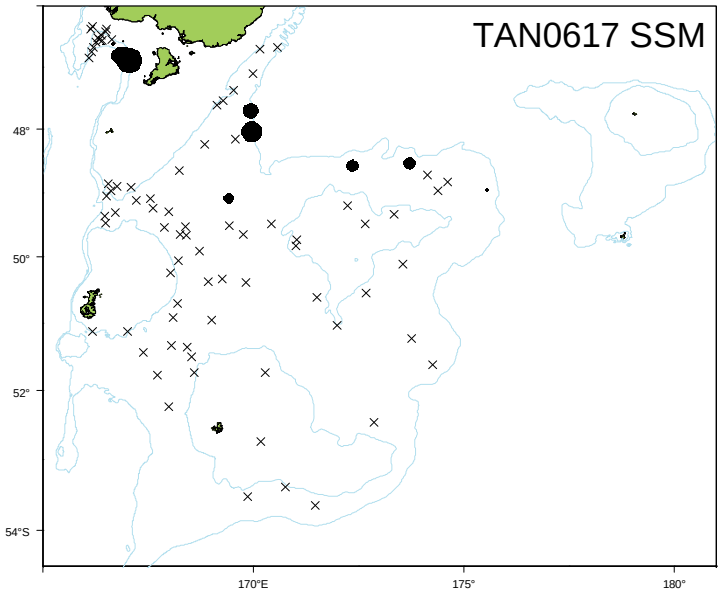

TAN0118 SSM
48°
50°
52°
54°S
170°E
175°
180°

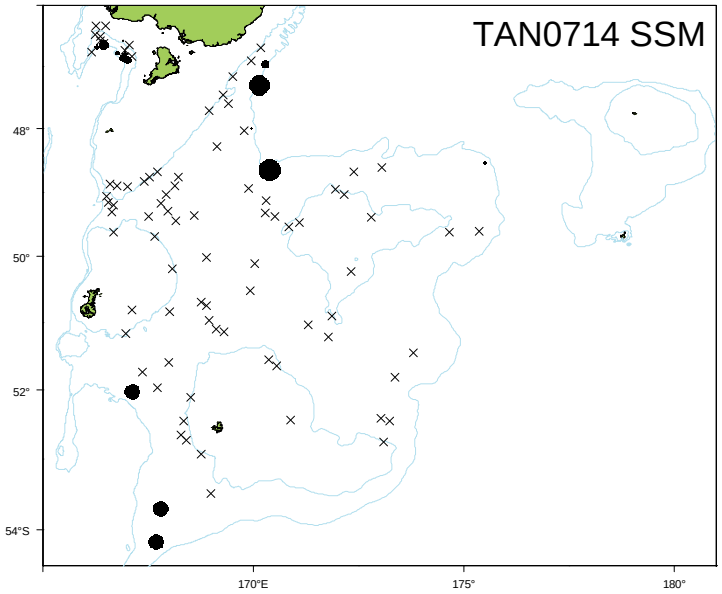

TAN0219 SSM
48°
50°
52°
54°S
170°E
175°
180°

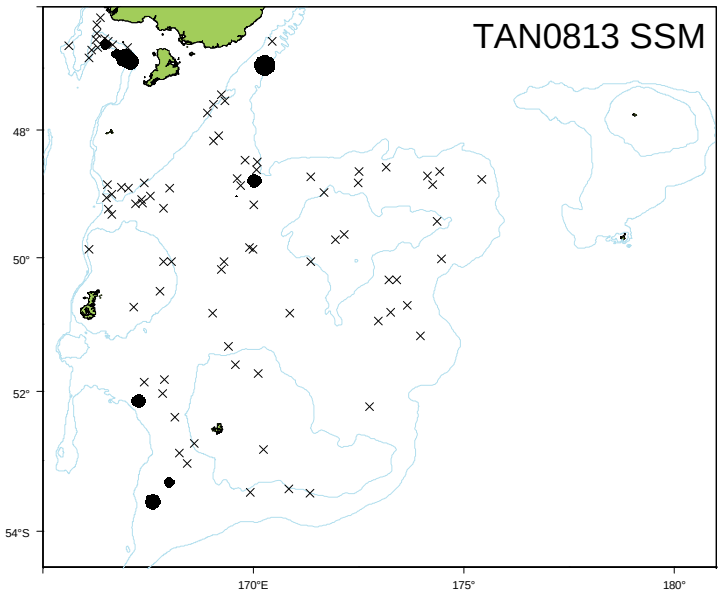

TAN0317 SSM
48°
50°
52°
54°S
170°E
175°
180°

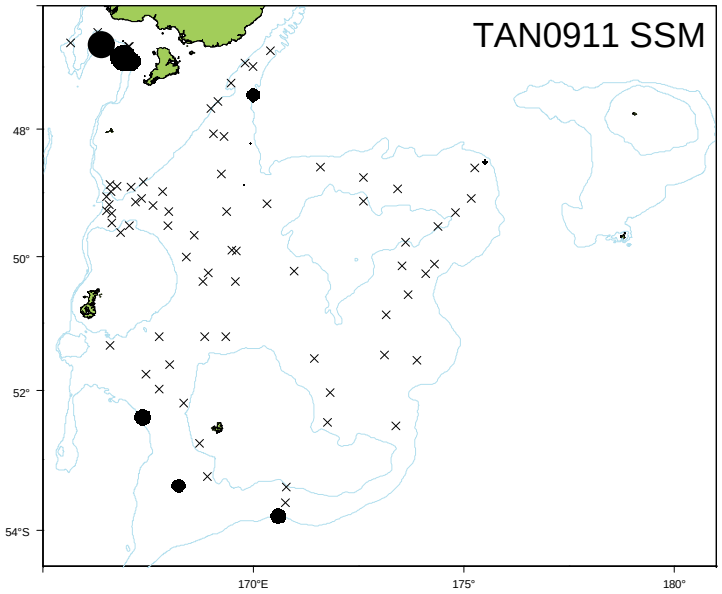

TAN0414 SSM
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 SSM
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 SSM
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 SSM
48°
50°
52°
54°S
170°E
175°
180°

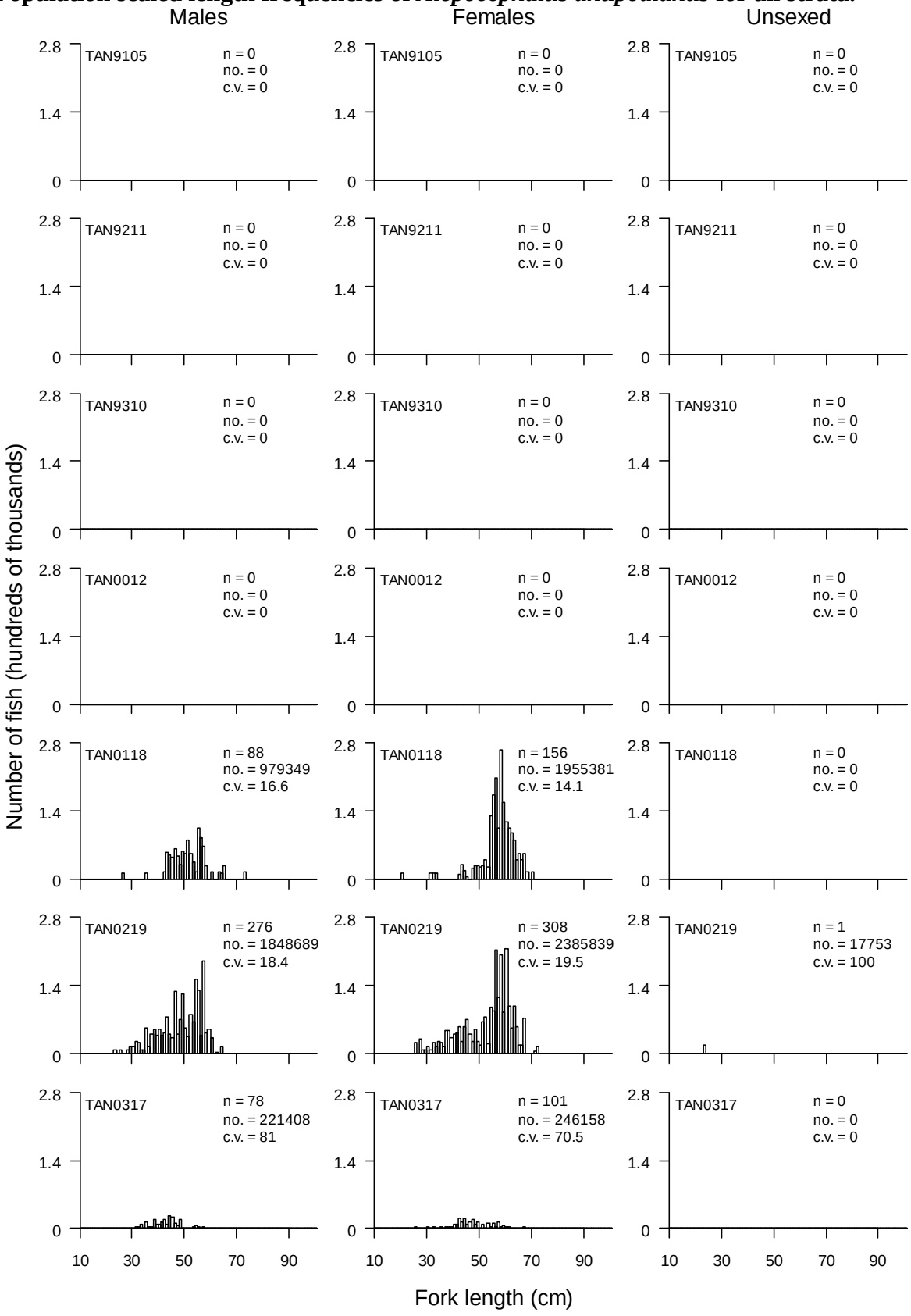

TAN0813 SSM
48°
50°
52°
54°S
170°E
175°
180°

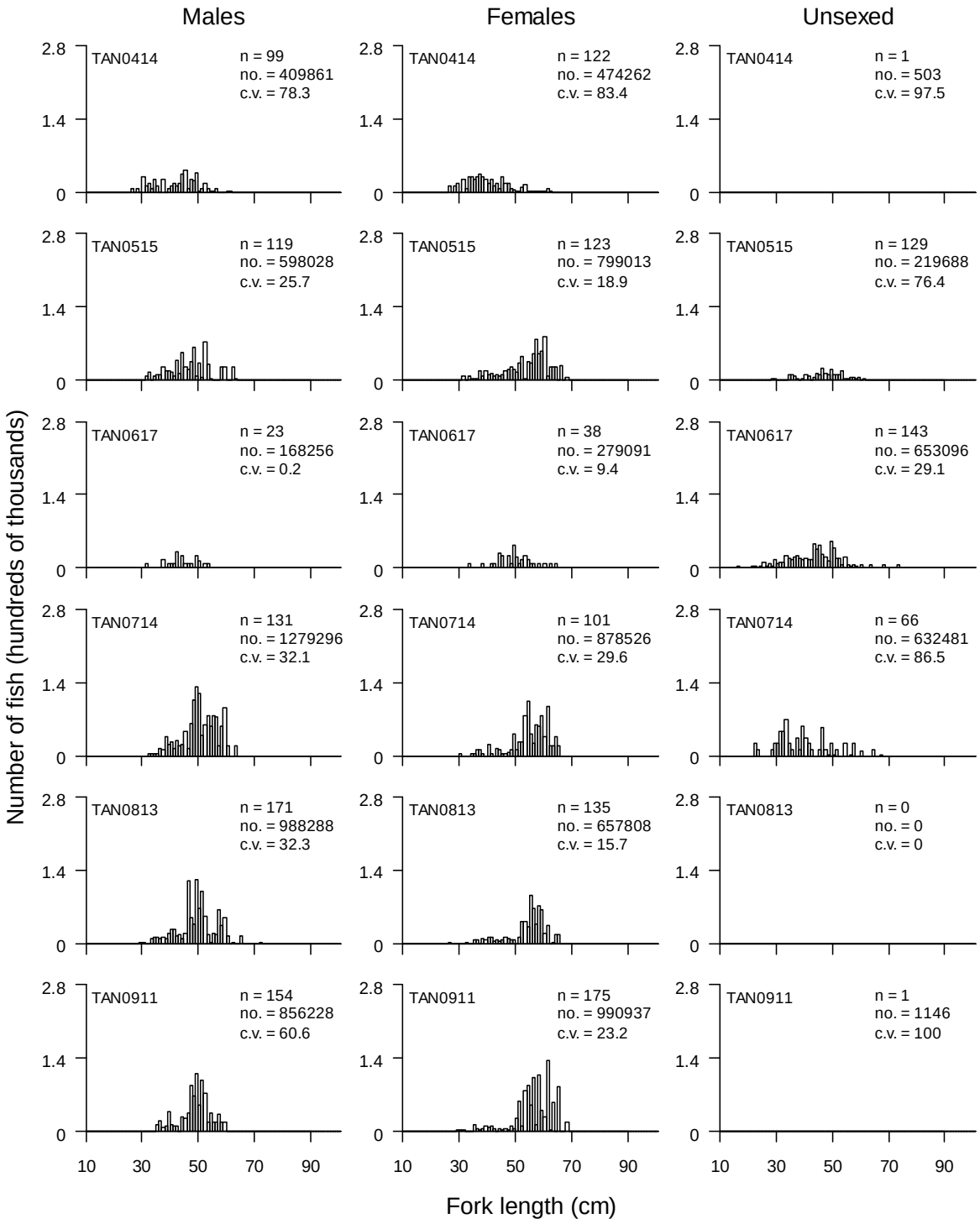


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	NA	NA	NA	0
TAN9211	NA	NA	NA	0
TAN9310	NA	NA	NA	0
TAN0012	NA	NA	NA	0
TAN0118	20	73	54.2	244
TAN0219	23	94	51.2	585
TAN0317	25	69	49.5	179
TAN0414	26	62	45.3	222
TAN0515	28	68	47.8	371
TAN0617	16	73	43.4	204
TAN0714	22	67	47.3	298
TAN0813	26	72	47.8	306
TAN0911	29	68	50.7	330

Population scaled length frequencies of *Alepocephalus antipodianus* for all strata.




Males
Females
Unsexed
Number of fish (hundreds of thousands)
Fork length (cm)
TAN0414
n = 99
no. = 409861
c.v. = 78.3
TAN0414
n = 122
no. = 474262
c.v. = 83.4
TAN0414
n = 1
no. = 503
c.v. = 97.5
TAN0515
n = 119
no. = 598028
c.v. = 25.7
TAN0515
n = 123
no. = 799013
c.v. = 18.9
TAN0515
n = 129
no. = 219688
c.v. = 76.4
TAN0617
n = 23
no. = 168256
c.v. = 0.2
TAN0617
n = 38
no. = 279091
c.v. = 9.4
TAN0617
n = 143
no. = 653096
c.v. = 29.1
TAN0714
n = 131
no. = 1279296
c.v. = 32.1
TAN0714
n = 101
no. = 878526
c.v. = 29.6
TAN0714
n = 66
no. = 632481
c.v. = 86.5
TAN0813
n = 171
no. = 988288
c.v. = 32.3
TAN0813
n = 135
no. = 657808
c.v. = 15.7
TAN0813
n = 0
no. = 0
c.v. = 0
TAN0911
n = 154
no. = 856228
c.v. = 60.6
TAN0911
n = 175
no. = 990937
c.v. = 23.2
TAN0911
n = 1
no. = 1146
c.v. = 100
0
1.4
2.8
10
30
50
70
90

Gonad stage summaries by sex for Alepocephalus antipodianus. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0714	0	33	67	0	0	0	0	0	0	0	100	0	0	0
TAN0813	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0911	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL	0	33	67	0	0	0	0	0	0	0	100	0	0	0

Smooth oreo (*Pseudocyttus maculatus*) SSO

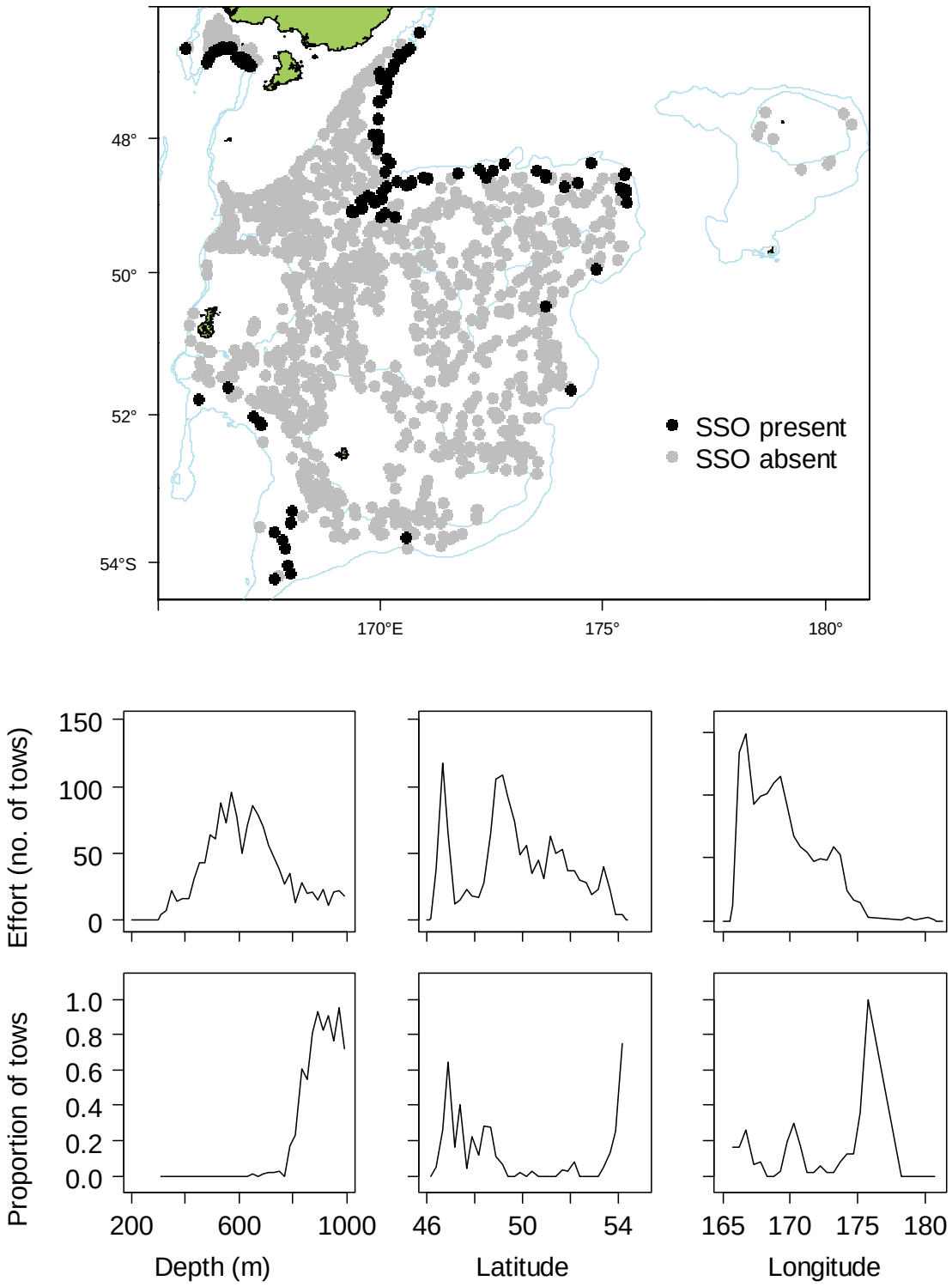
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	10 674.9
Number measured	6 658
Length range (mean) (cm)	14–51 (26.3)
Number weighed	3 451
Length-weight parameters a, b (r^2)	0.02861948, 2.918151 (97.88)

This species has been **well** identified during the time series. It is found **deeper than 800 m**. The core survey area and depth range **is not** appropriate for this species. Distribution **does** extend to the areas deeper than 800 m surveyed from 2000 to 2009. It **is not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey. Biomass **shows an increase** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Highest catchrates were taken in the **north**. Catches are recorded from areas close to and deeper than 800 m.

Length frequencies **have multiple modes** and show that most fish caught are juveniles. Mean length **has increased** since the start of the time series. Gonad stage data indicate that most fish are **immature.**

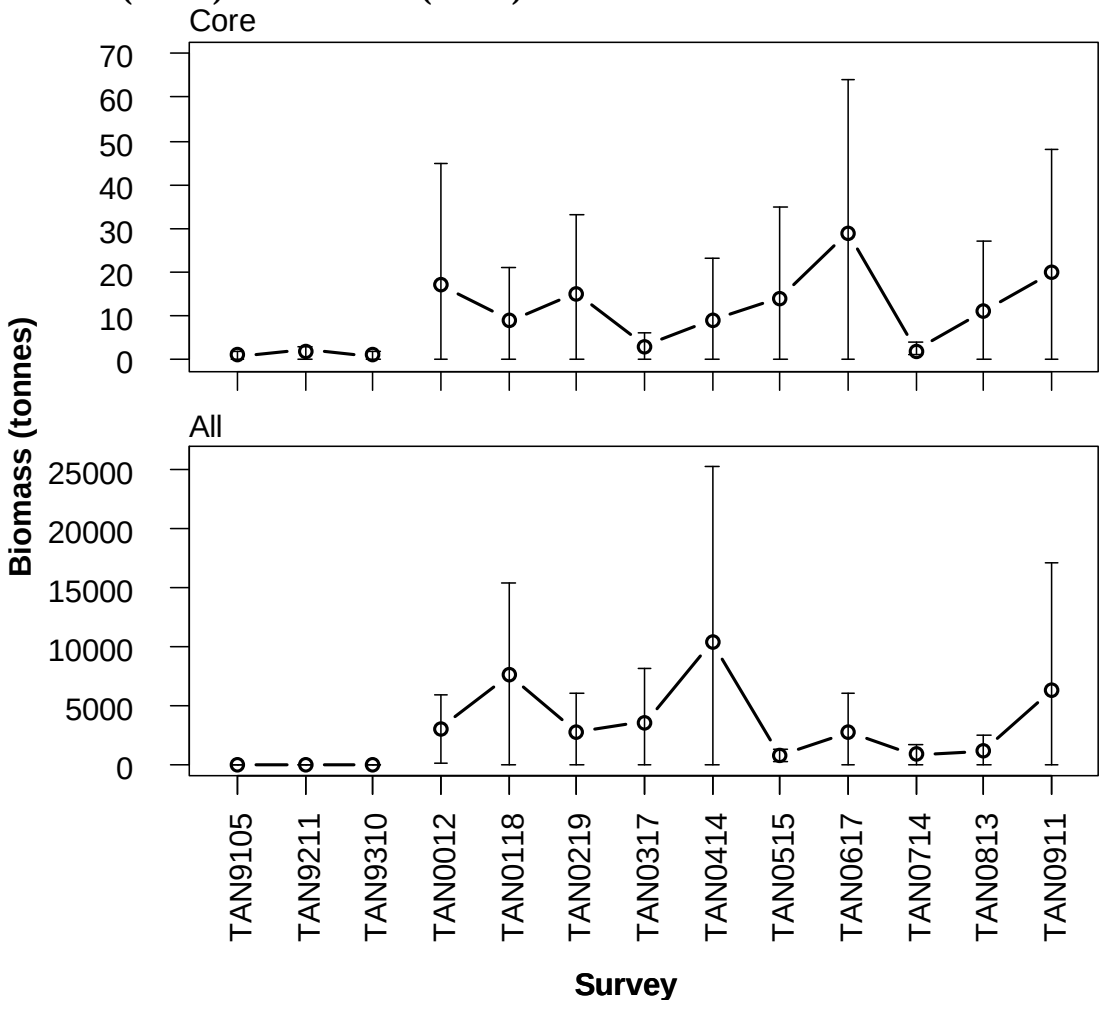
Distribution of *Pseudocyttus maculatus* from all summer surveys. Valid biomass stations only.



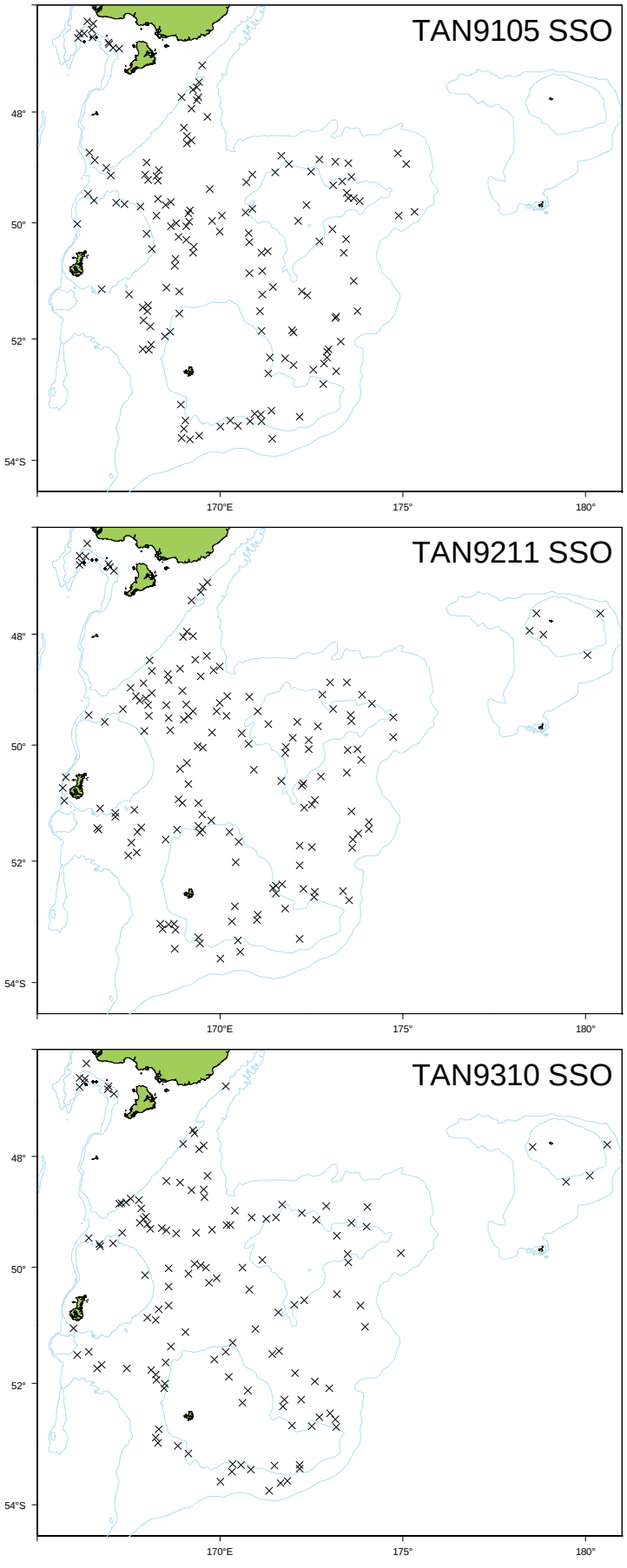
Relative biomass estimates (t) and c.v.s (%) of *Pseudocyttus maculatus* for core strata, strata outside the core area and all strata.

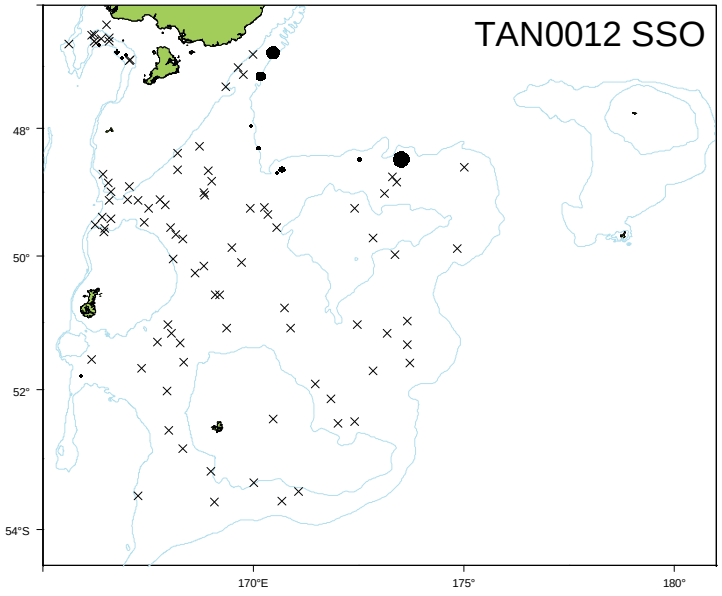
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	1	54	NA	NA	NA	NA	NA	NA	1	54
TAN9211	2	45	NA	NA	NA	NA	0	0	2	45
TAN9310	1	54	NA	NA	NA	NA	0	0	1	54
TAN0012	17	82	2937	50	49	100	NA	NA	3004	49
TAN0118	9	71	7385	53	180	66	NA	NA	7573	52
TAN0219	15	57	2664	60	105	85	NA	NA	2784	58
TAN0317	3	65	3561	65	NA	NA	NA	NA	3563	65
TAN0414	9	72	10342	73	NA	NA	NA	NA	10351	73
TAN0515	14	74	675	38	60	59	NA	NA	748	35
TAN0617	29	62	2634	64	NA	NA	NA	NA	2663	63
TAN0714	2	38	821	52	38	94	NA	NA	862	50
TAN0813	11	73	1094	61	44	90	NA	NA	1150	58
TAN0911	20	68	6303	86	0	0	NA	NA	6324	86

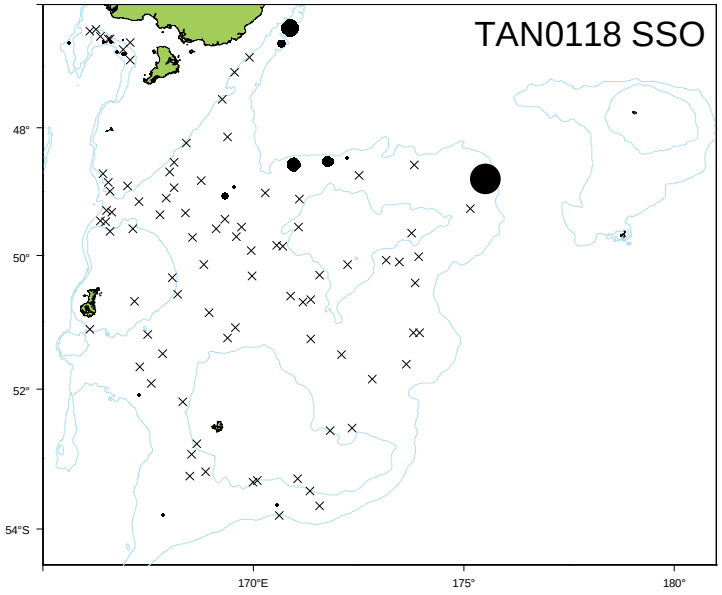
Trends in relative biomass estimates (± 2 standard errors) of *Pseudocyttus maculatus* for core strata (above) and all strata (below).

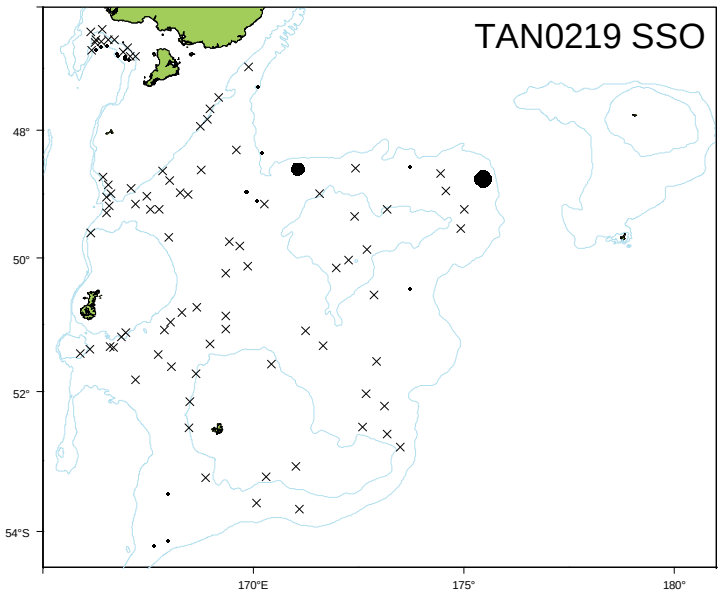


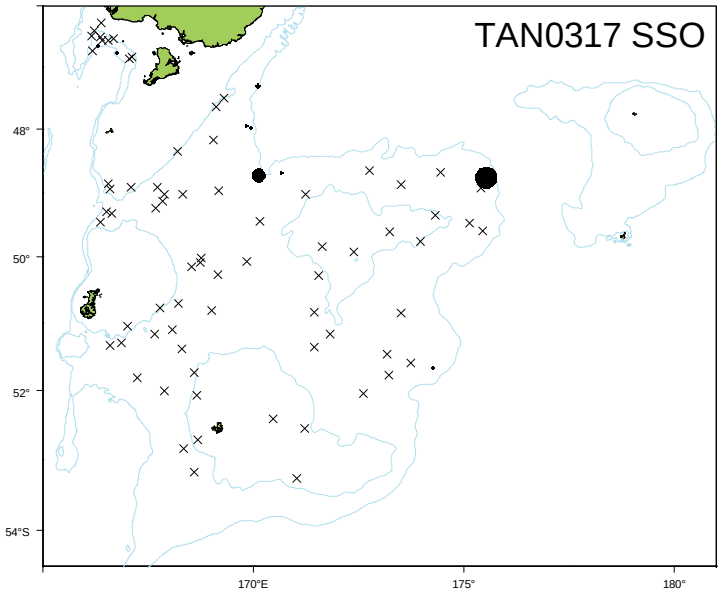
Catchrates of *Pseudocyttus maculatus*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

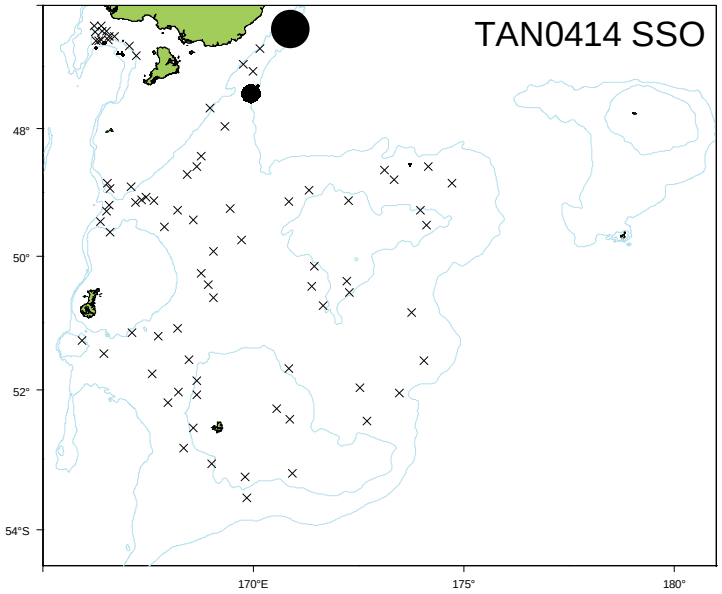


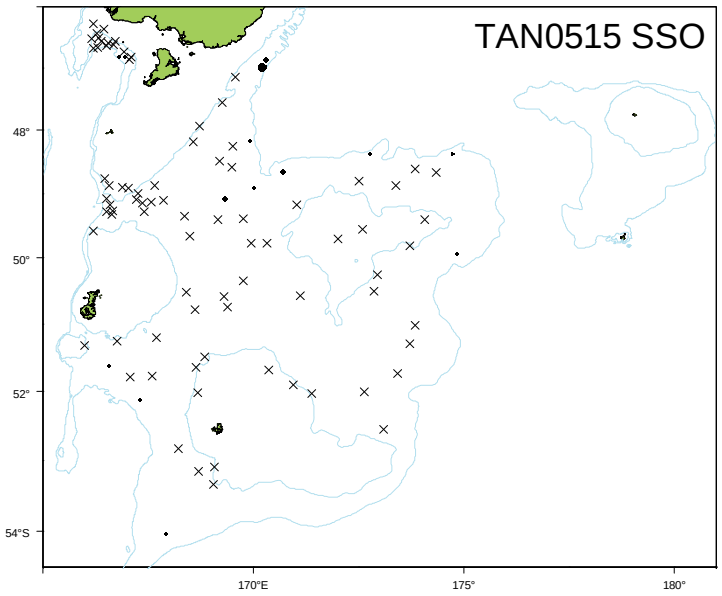

TAN0012 SSO
48°
50°
52°
54°S
170°E
175°
180°

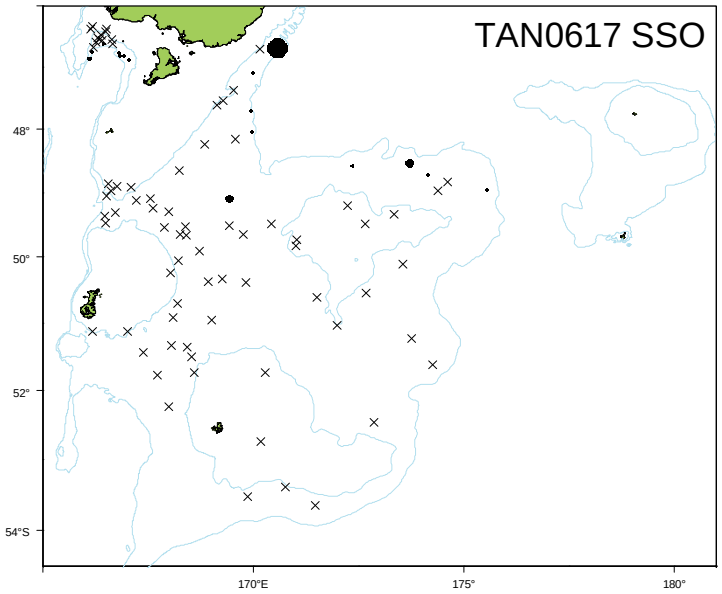

TAN0118 SSO
48°
50°
52°
54°S
170°E
175°
180°

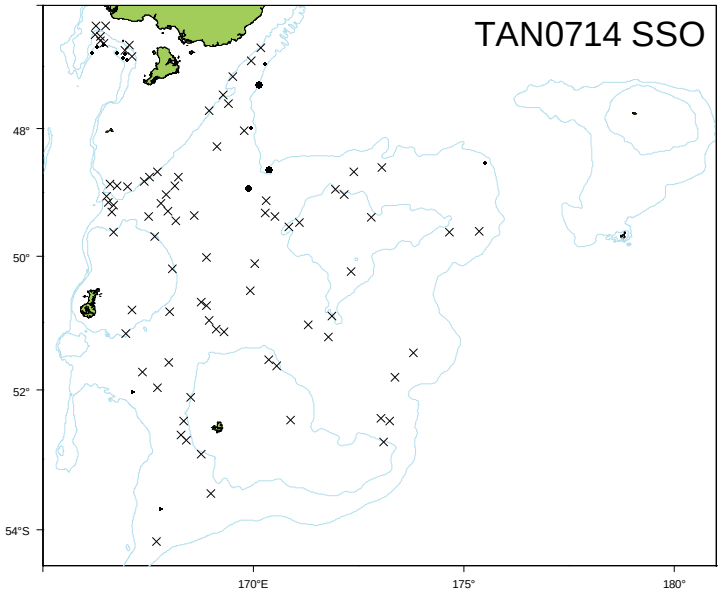

TAN0219 SSO
48°
50°
52°
54°S
170°E
175°
180°

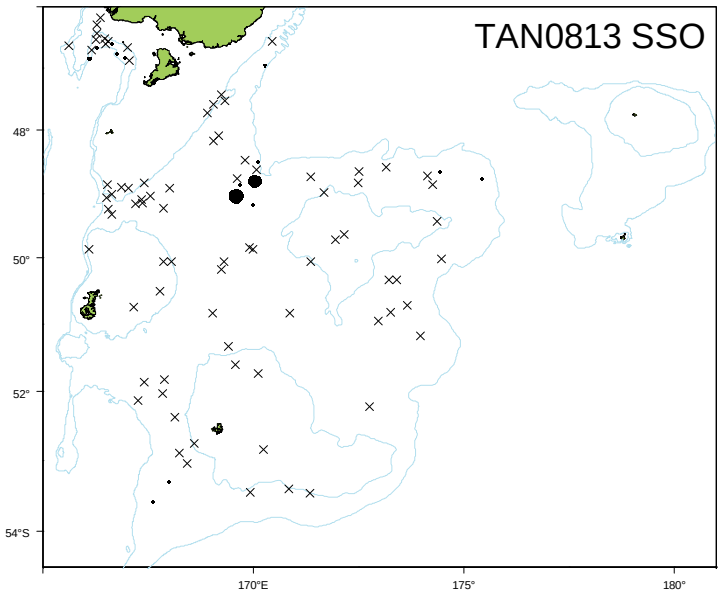

TAN0317 SSO
48°
50°
52°
54°S
170°E
175°
180°

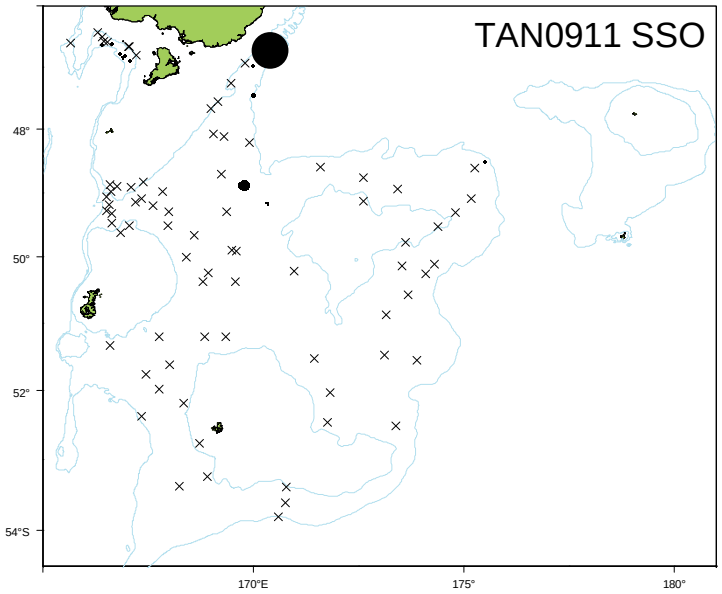

TAN0414 SSO
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 SSO
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 SSO
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 SSO
48°
50°
52°
54°S
170°E
175°
180°

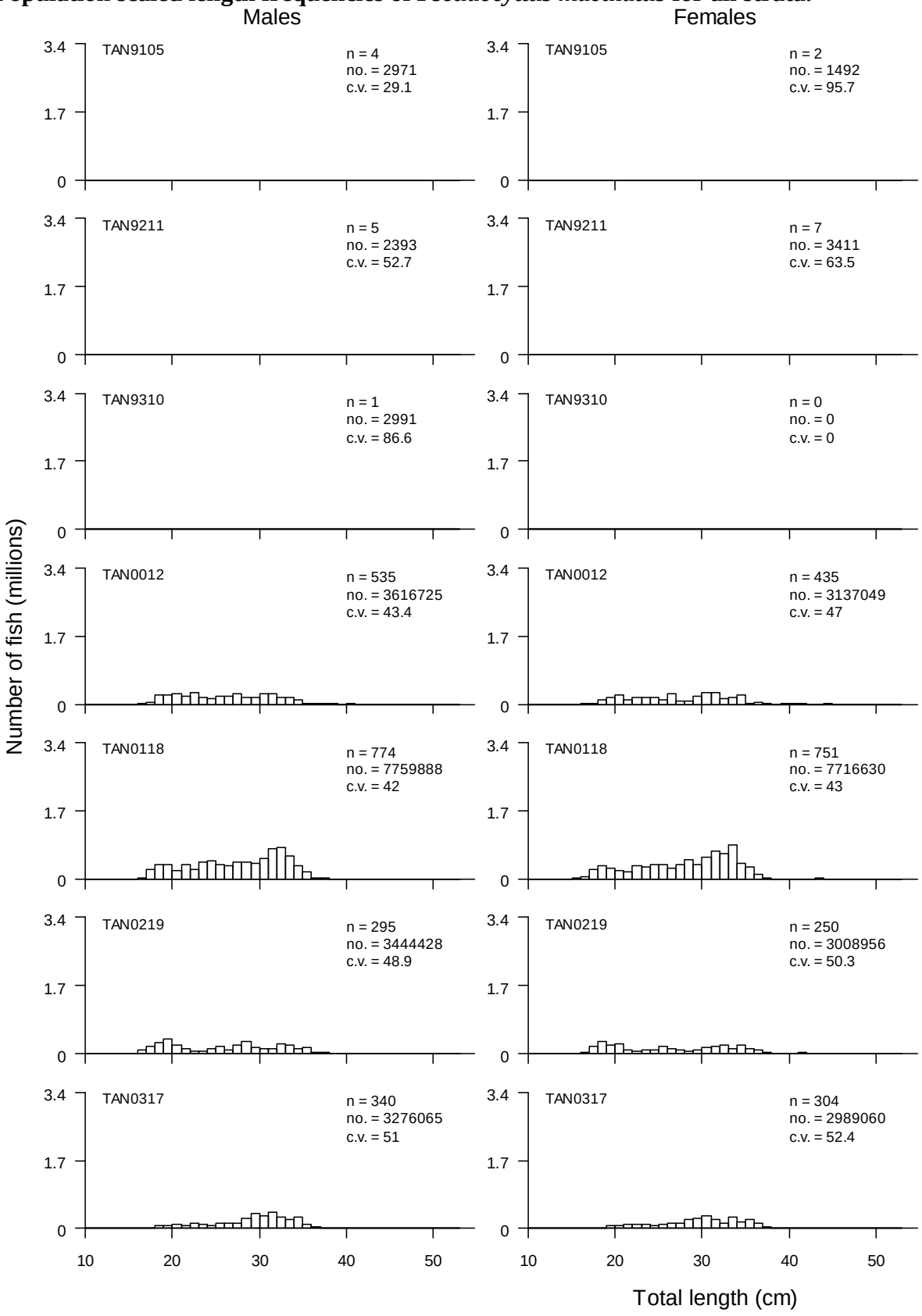

TAN0813 SSO
48°
50°
52°
54°S
170°E
175°
180°

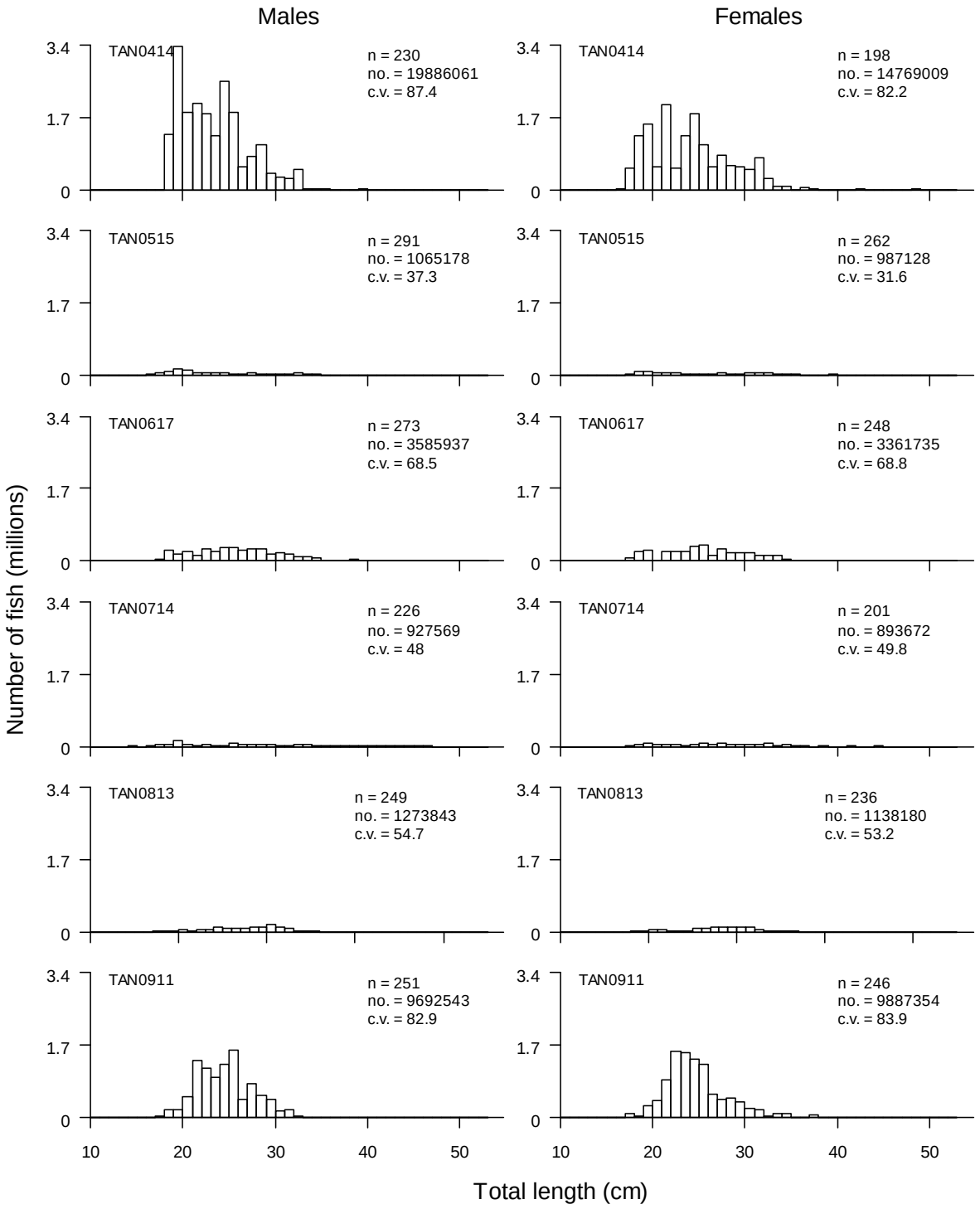


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	18	21	19.5	6
TAN9211	17	28	19.1	21
TAN9310	23	22	23.0	1
TAN0012	16	44	26.0	973
TAN0118	15	45	26.4	1525
TAN0219	15	41	24.6	545
TAN0317	16	48	28.3	644
TAN0414	16	48	25.3	428
TAN0515	15	45	24.3	553
TAN0617	16	49	25.8	545
TAN0714	14	47	26.0	434
TAN0813	15	51	27.2	485
TAN0911	16	40	24.6	498

Population scaled length frequencies of *Pseudocyttus maculatus* for all strata.




Males
Females
TAN0414
n = 230
no. = 19886061
c.v. = 87.4
TAN0414
n = 198
no. = 14769009
c.v. = 82.2
TAN0515
n = 291
no. = 1065178
c.v. = 37.3
TAN0515
n = 262
no. = 987128
c.v. = 31.6
TAN0617
n = 273
no. = 3585937
c.v. = 68.5
TAN0617
n = 248
no. = 3361735
c.v. = 68.8
TAN0714
n = 226
no. = 927569
c.v. = 48
TAN0714
n = 201
no. = 893672
c.v. = 49.8
TAN0813
n = 249
no. = 1273843
c.v. = 54.7
TAN0813
n = 236
no. = 1138180
c.v. = 53.2
TAN0911
n = 251
no. = 9692543
c.v. = 82.9
TAN0911
n = 246
no. = 9887354
c.v. = 83.9
Number of fish (millions)
Total length (cm)
0
1.7
3.4
10
20
30
40
50

Gonad stage summaries by sex for *Pseudocyttus maculatus*. Percentage at each stage using the DW staging method.

Survey	M1	M2	M3	M4	M5	M8	F1	F2	F3	F4	F5	F6	F8
TAN9105	100	0	0	0	0	0	100	0	0	0	0	0	0
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	55	0	25	20	0	0	100	0	0	0	0	0	0
TAN0219	25	50	0	13	13	0	100	0	0	0	0	0	0
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	100	0	0	0	0	0	100	0	0	0	0	0	0
TAN0617	79	7	3	5	5	1	93	4	1	1	0	1	0
TAN0714	70	8	3	11	6	1	82	15	1	1	0	0	0
TAN0813	73	0	14	11	2	0	90	3	2	2	1	0	2
TAN0911	89	9	1	0	0	0	99	0	0	1	0	0	0

Combined DW and MD stages

Giant stargazer (*Kathetostoma giganteum*) STA

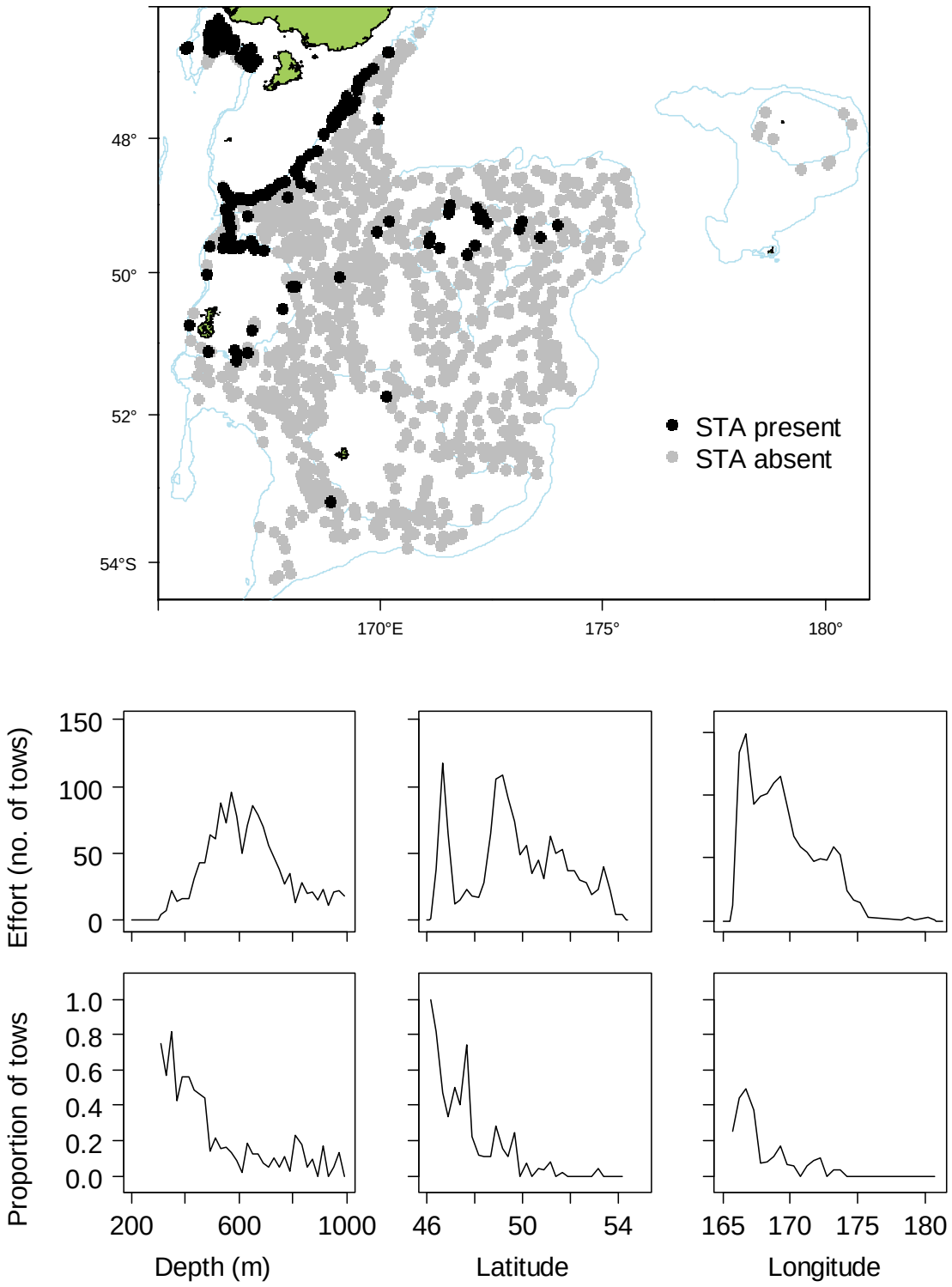
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	3 827.9
Number measured	1 077
Length range (mean) (cm)	12–79 (56.1)
Number weighed	734
Length-weight parameters a, b (r^2)	0.007114244, 3.215438 (96.59)

This species **has** been well identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009 on one survey. It **was not** recorded from the Bounty Platform.

Biomass of this species is **well** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Catchrates were highest in the **northwest** at Puysegur.

Length frequencies **have multiple modes which may contain information about year-class strength**. Mean length **shows no clear trend** since the start of the times series. Gonad stage data indicate that most fish are **resting to mature.**

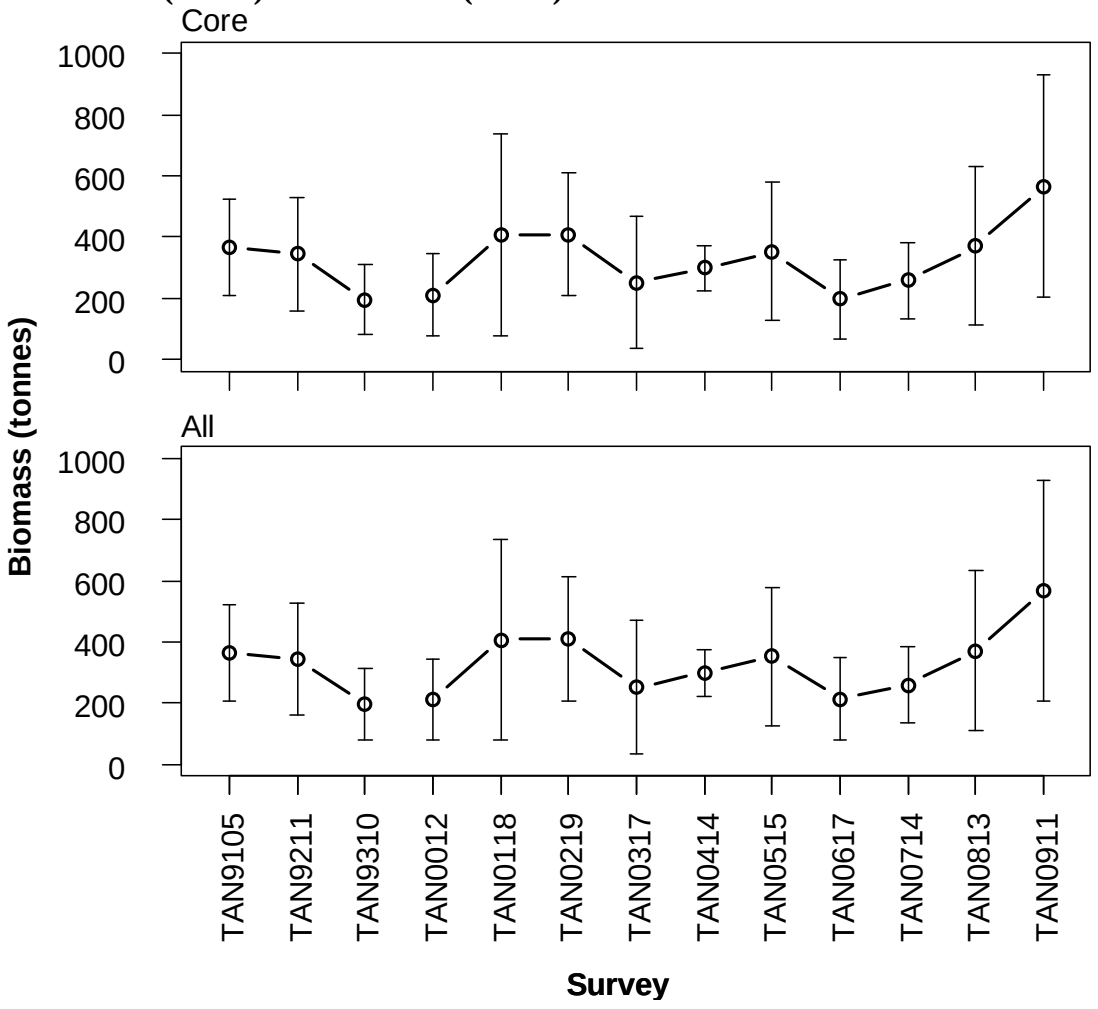
Distribution of *Kathetostoma giganteum* from all summer surveys. Valid biomass stations only.



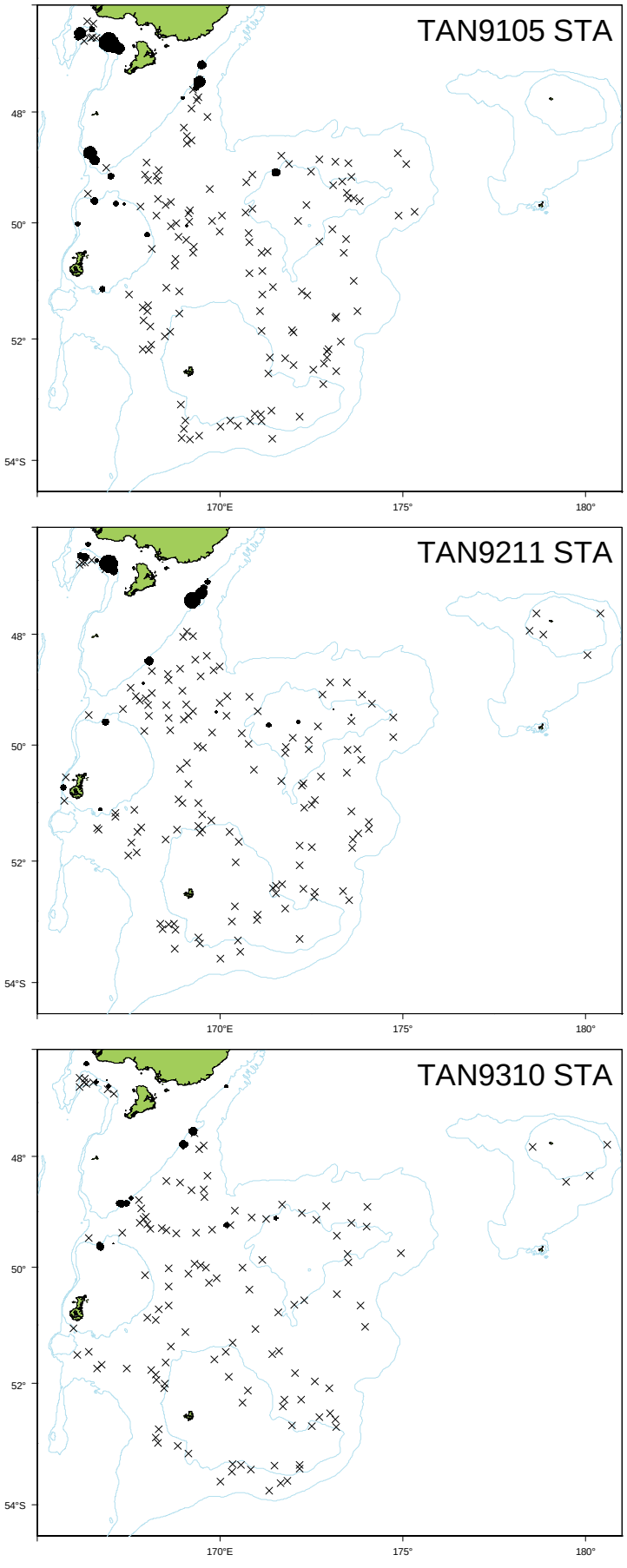
Relative biomass estimates (t) and c.v.s (%) of *Kathetostoma giganteum* for core strata, strata outside the core area and all strata.

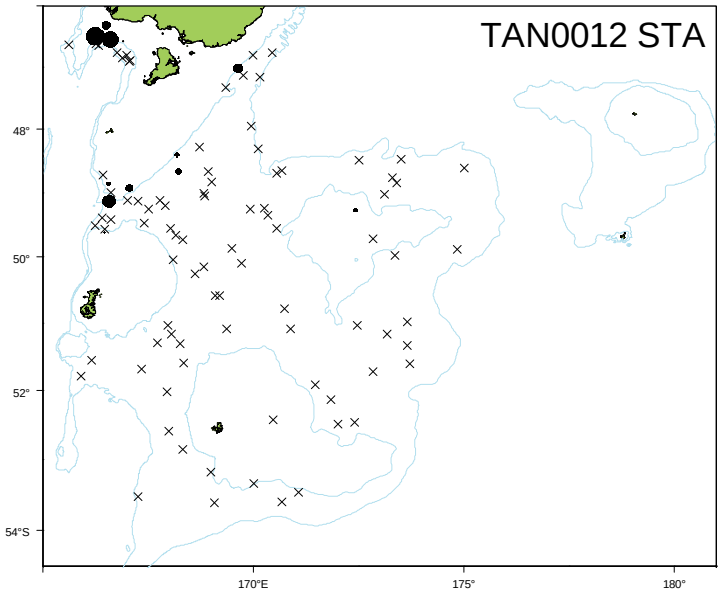
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	365	22	NA	NA	NA	NA	NA	NA	365	22
TAN9211	344	27	NA	NA	NA	NA	0	0	344	27
TAN9310	196	29	NA	NA	NA	NA	0	0	196	29
TAN0012	211	32	0	0	0	0	NA	NA	211	32
TAN0118	407	40	0	0	0	0	NA	NA	407	40
TAN0219	409	25	0	0	0	0	NA	NA	409	25
TAN0317	252	43	0	0	NA	NA	NA	NA	252	43
TAN0414	298	13	0	0	NA	NA	NA	NA	298	13
TAN0515	352	32	0	0	0	0	NA	NA	352	32
TAN0617	197	33	17	100	NA	NA	NA	NA	214	31
TAN0714	259	24	0	0	0	0	NA	NA	259	24
TAN0813	371	35	0	0	0	0	NA	NA	371	35
TAN0911	567	32	0	0	0	0	NA	NA	567	32

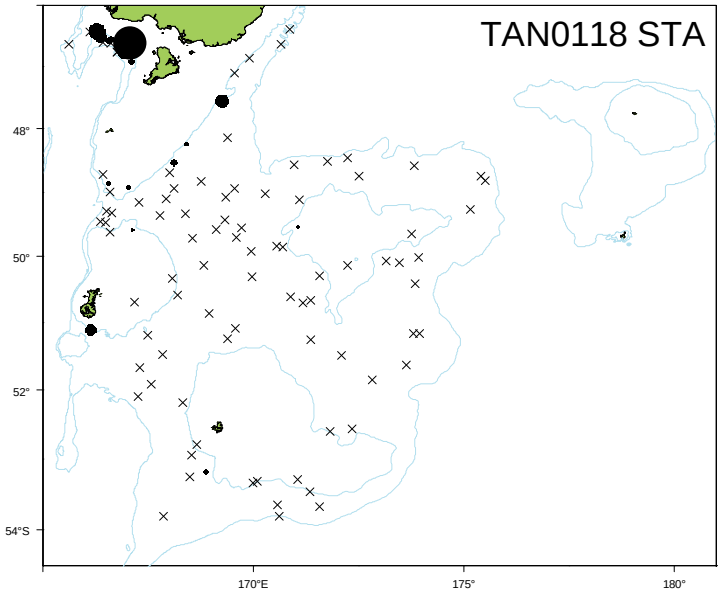
Trends in relative biomass estimates (± 2 standard errors) of *Kathetostoma giganteum* for core strata (above) and all strata (below).

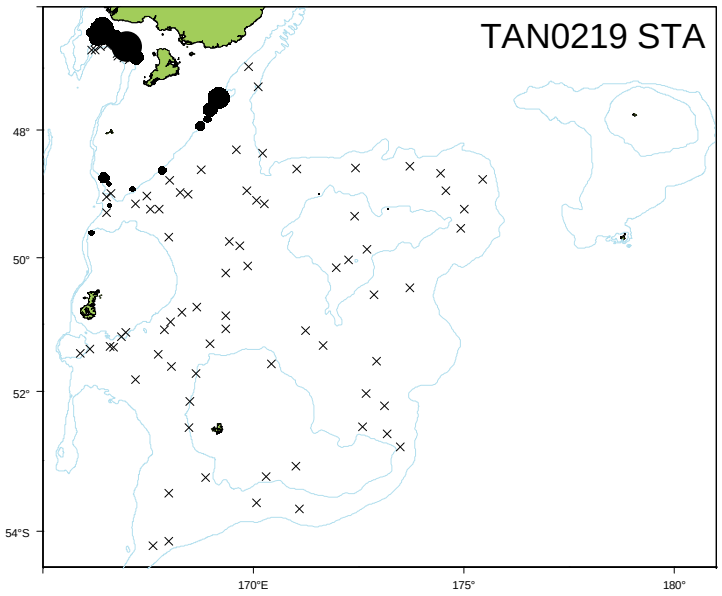


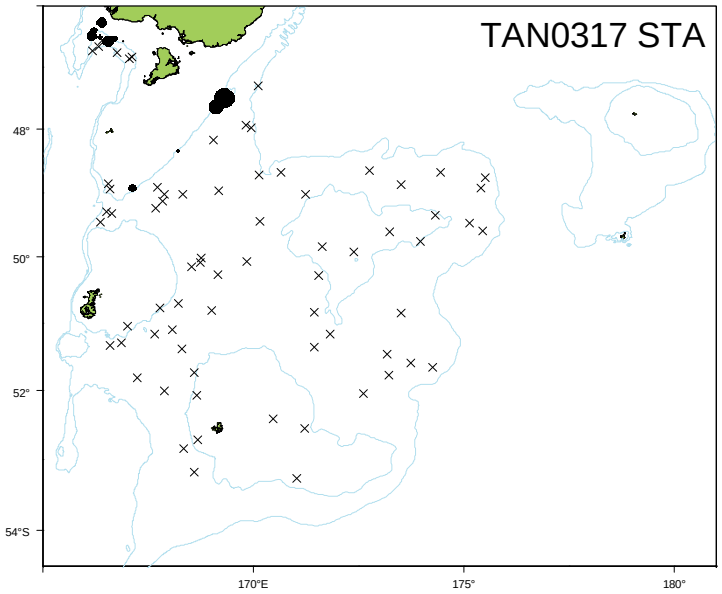
Catchrates of *Kathetostoma giganteum*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

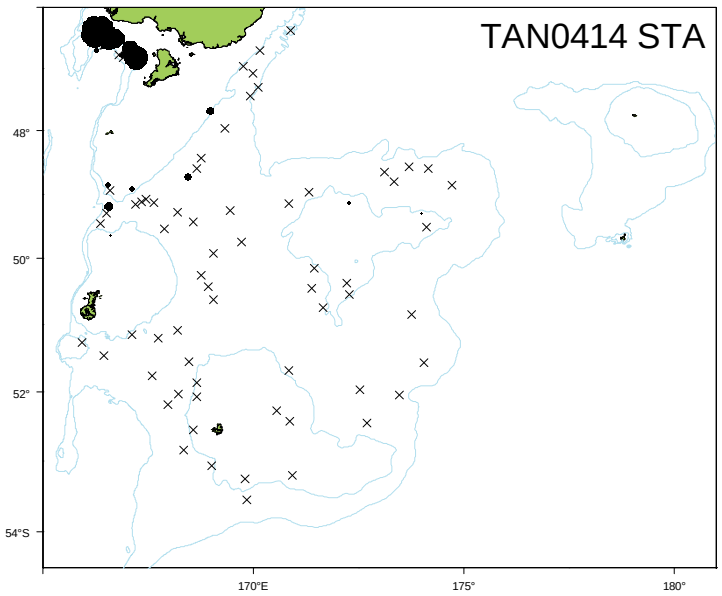


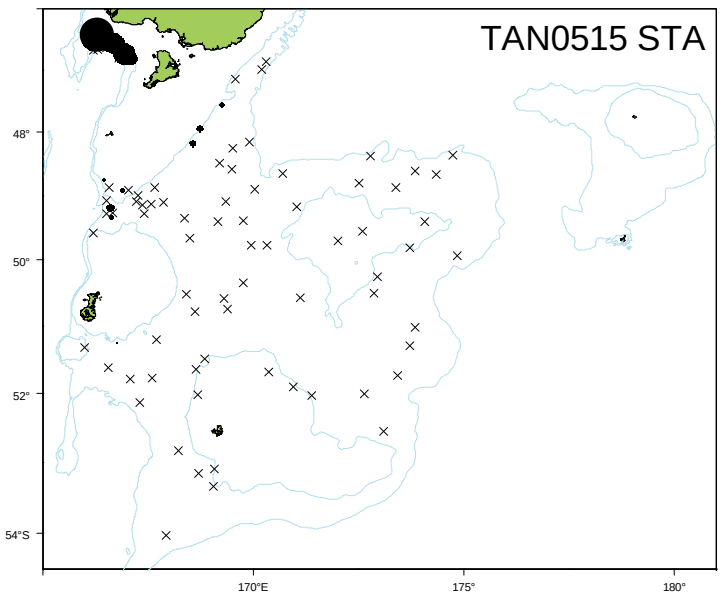

TAN0012 STA
48°
50°
52°
54°S
170°E
175°
180°

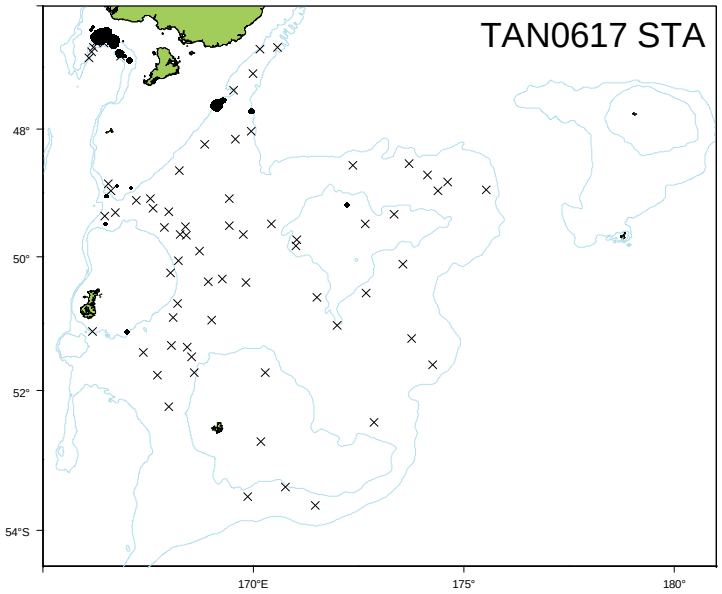

TAN0118 STA
48°
50°
52°
54°S
170°E
175°
180°

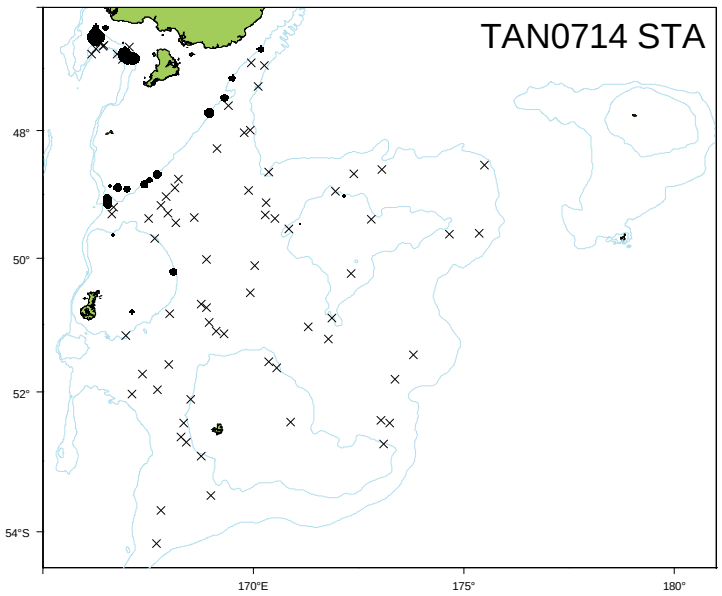

TAN0219 STA
48°
50°
52°
54°S
170°E
175°
180°

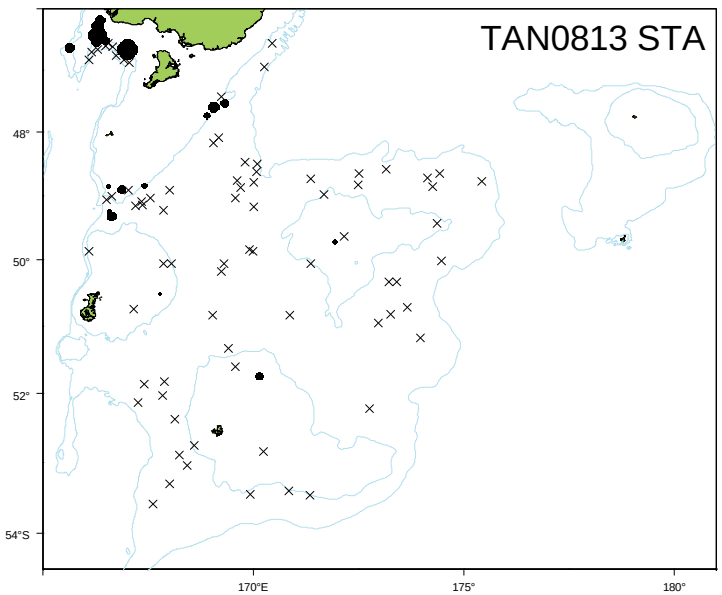

TAN0317 STA
48°
50°
52°
54°S
170°E
175°
180°

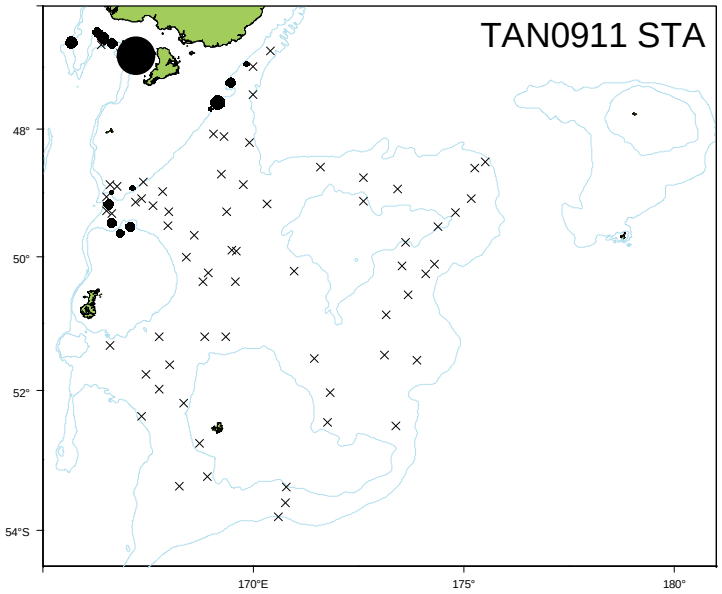

TAN0414 STA
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 STA
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 STA
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 STA
48°
50°
52°
54°S
170°E
175°
180°

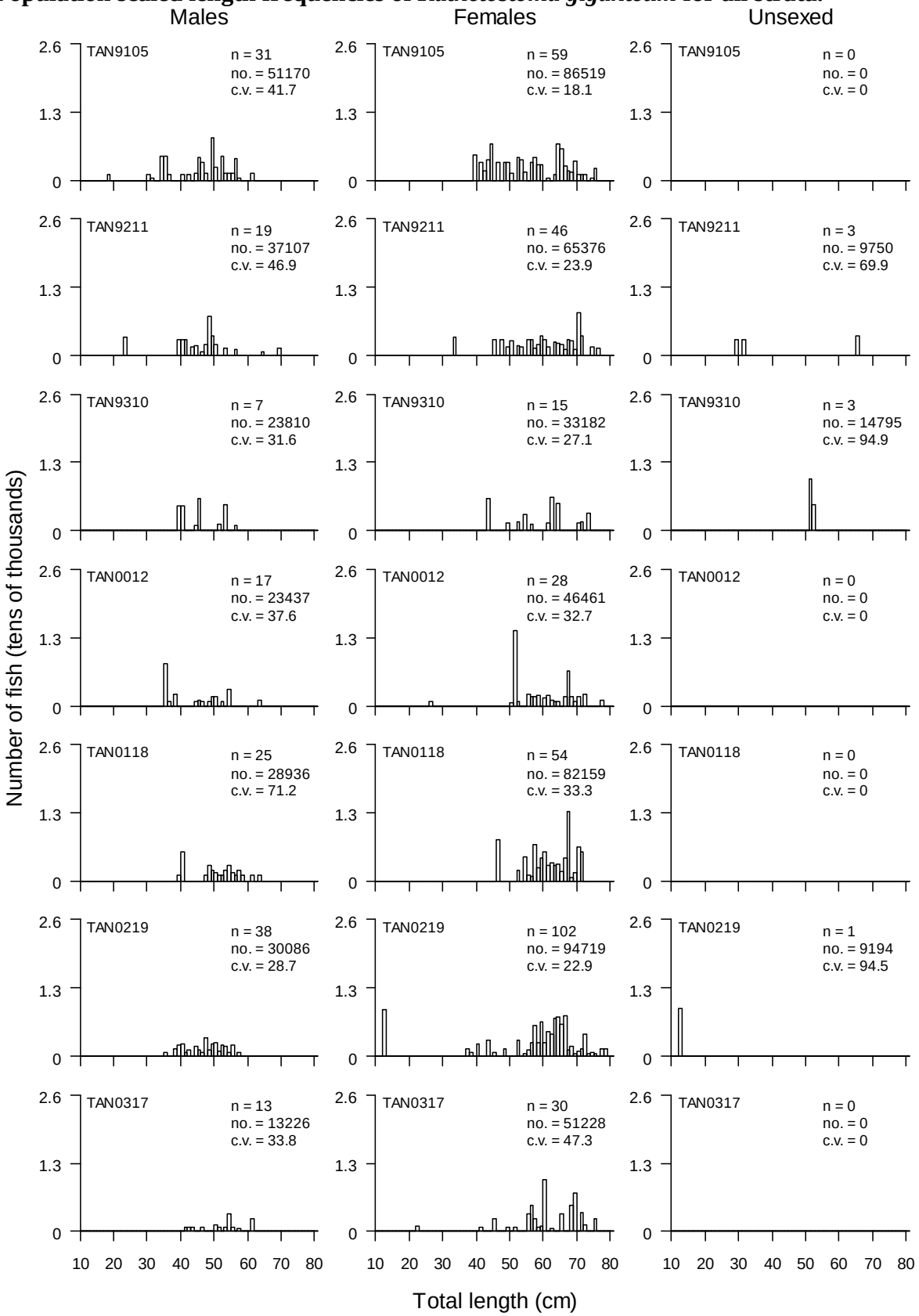

TAN0813 STA
48°
50°
52°
54°S
170°E
175°
180°

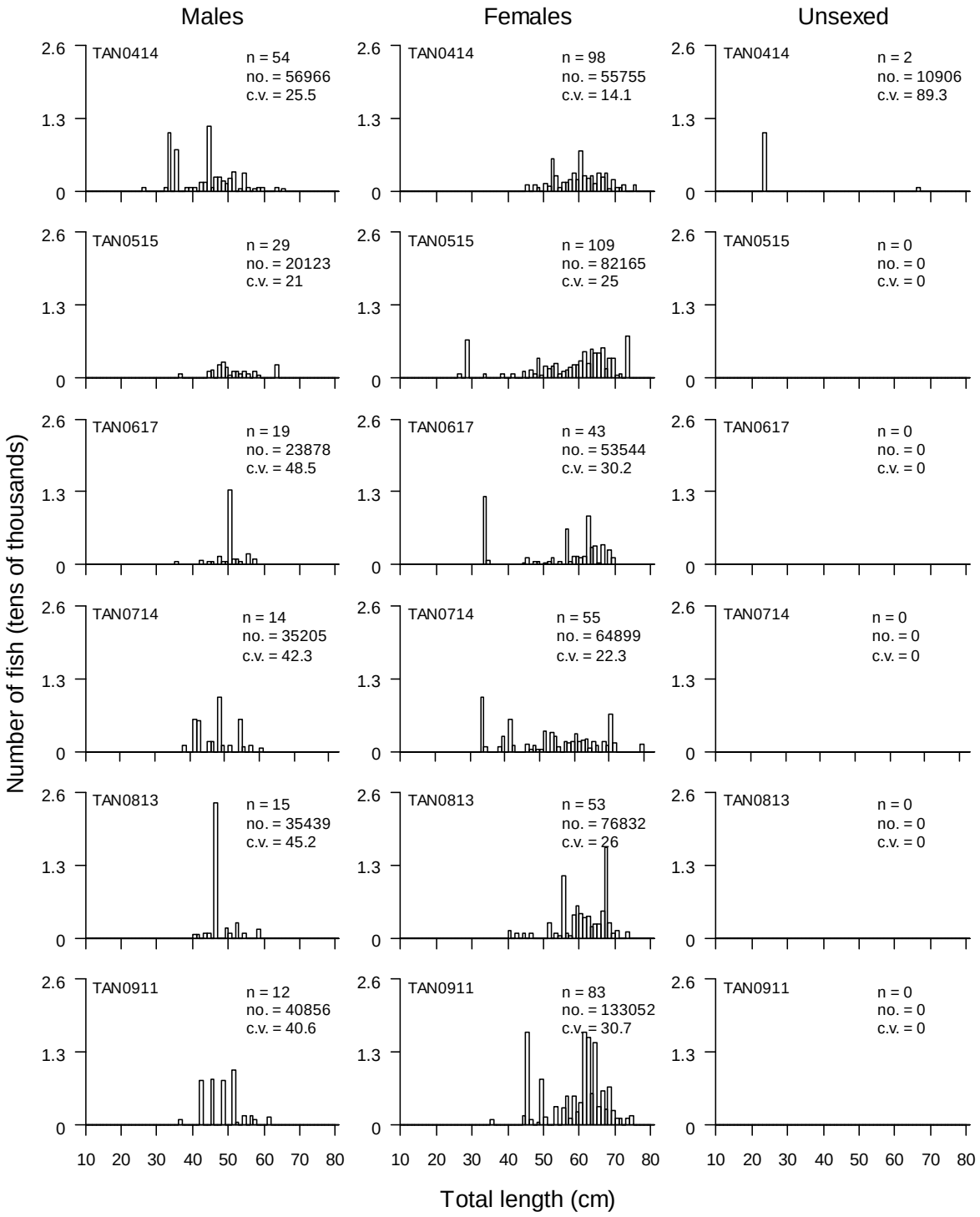


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	18	75	54.9	90
TAN9211	23	76	56.9	68
TAN9310	39	73	55.6	25
TAN0012	26	77	56.1	45
TAN0118	39	71	58.2	79
TAN0219	12	78	56.8	141
TAN0317	22	75	57.1	43
TAN0414	23	75	55.3	154
TAN0515	26	73	56.8	138
TAN0617	33	69	54.7	62
TAN0714	33	79	55.0	69
TAN0813	40	73	57.2	68
TAN0911	35	74	59.3	95

Population scaled length frequencies of *Kathetostoma giganteum* for all strata.




Males
Females
Unsexed
Number of fish (tens of thousands)
Total length (cm)
TAN0414
n = 54
no. = 56966
c.v. = 25.5
TAN0414
n = 98
no. = 55755
c.v. = 14.1
TAN0414
n = 2
no. = 10906
c.v. = 89.3
TAN0515
n = 29
no. = 20123
c.v. = 21
TAN0515
n = 109
no. = 82165
c.v. = 25
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0617
n = 19
no. = 23878
c.v. = 48.5
TAN0617
n = 43
no. = 53544
c.v. = 30.2
TAN0617
n = 0
no. = 0
c.v. = 0
TAN0714
n = 14
no. = 35205
c.v. = 42.3
TAN0714
n = 55
no. = 64899
c.v. = 22.3
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0813
n = 15
no. = 35439
c.v. = 45.2
TAN0813
n = 53
no. = 76832
c.v. = 26
TAN0813
n = 0
no. = 0
c.v. = 0
TAN0911
n = 12
no. = 40856
c.v. = 40.6
TAN0911
n = 83
no. = 133052
c.v. = 30.7
TAN0911
n = 0
no. = 0
c.v. = 0
0
1.3
2.6
10 20 30 40 50 60 70 80

Gonad stage summaries by sex for Kathetostoma giganteum. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0	0	100
TAN0118	NA	NA	NA	NA	NA	NA	NA	0	25	0	50	25	0	0
TAN0219	0	100	0	0	0	0	0	33	33	33	0	0	0	0
TAN0317	0	100	0	0	0	0	0	7	43	29	0	0	14	7
TAN0414	0	100	0	0	0	0	0	0	42	39	0	0	3	17
TAN0515	0	100	0	0	0	0	0	4	83	8	0	0	0	4
TAN0617	6	88	0	0	0	0	6	7	55	14	2	0	2	19
TAN0714	9	91	0	0	0	0	0	5	67	19	5	0	2	2
TAN0813	29	57	14	0	0	0	0	7	46	41	2	0	2	2
TAN0911	17	83	0	0	0	0	0	0	50	47	0	0	0	3
ALL	12	83	3	0	0	0	2	4	53	30	2	0	2	8

Silver warehou (*Seriolella punctata*) SWA

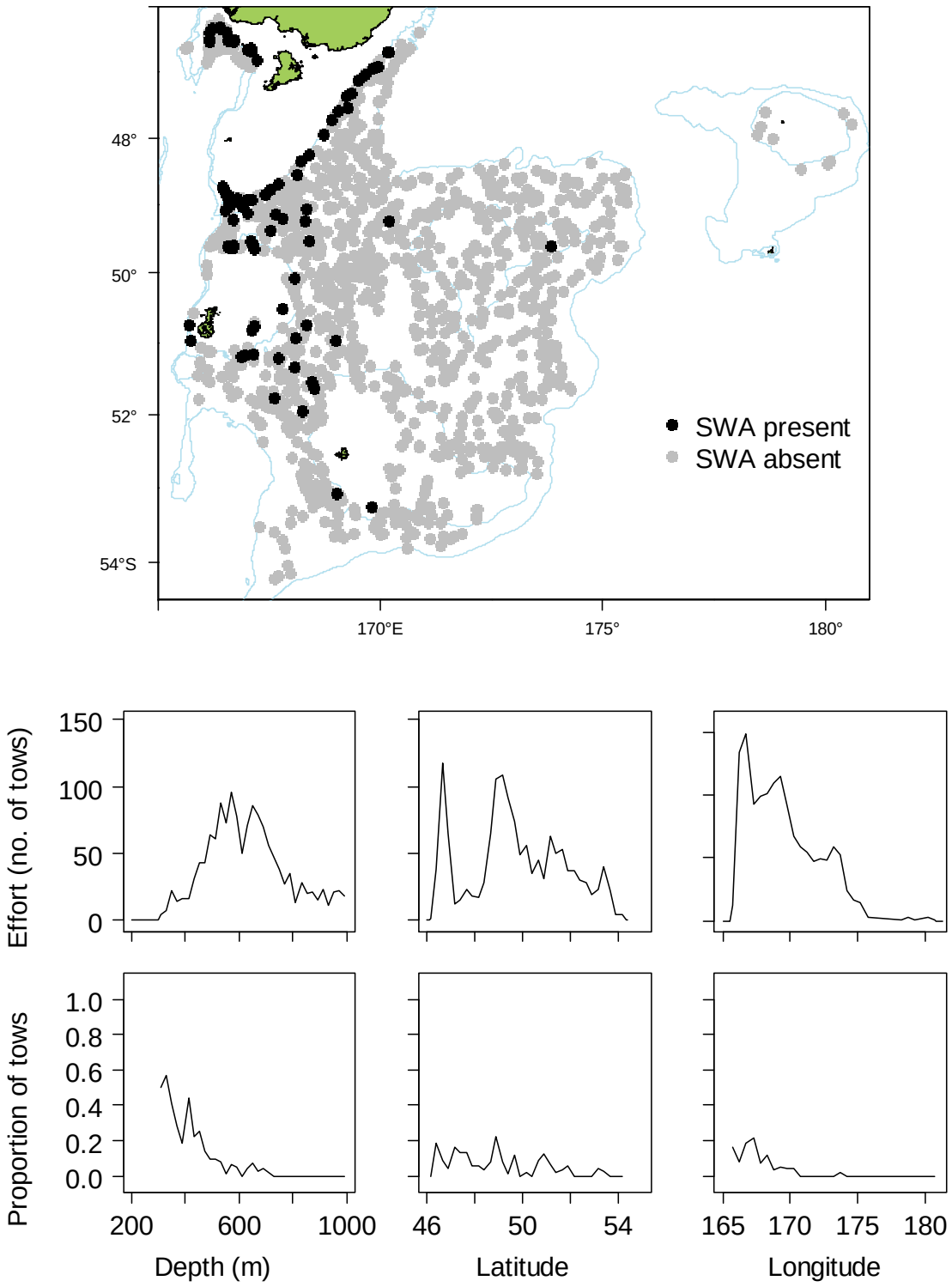
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	10 719.2
Number measured	1 775
Length range (mean) (cm)	28–58 (48.4)
Number weighed	652
Length-weight parameters a, b (r^2)	0.02599216, 2.910546 (85.07)

This species **has** been well identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is** appropriate for this species. Distribution **does not extend** to strata deeper than 800 m.. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows a decrease then increase** since the start of the time series. Catchrates were highest in the **west.**

Length frequencies **are usually unimodal**. Mean length **shows no clear trend** since the start of the times series. Gonad stage data indicate that most fish are **resting.**

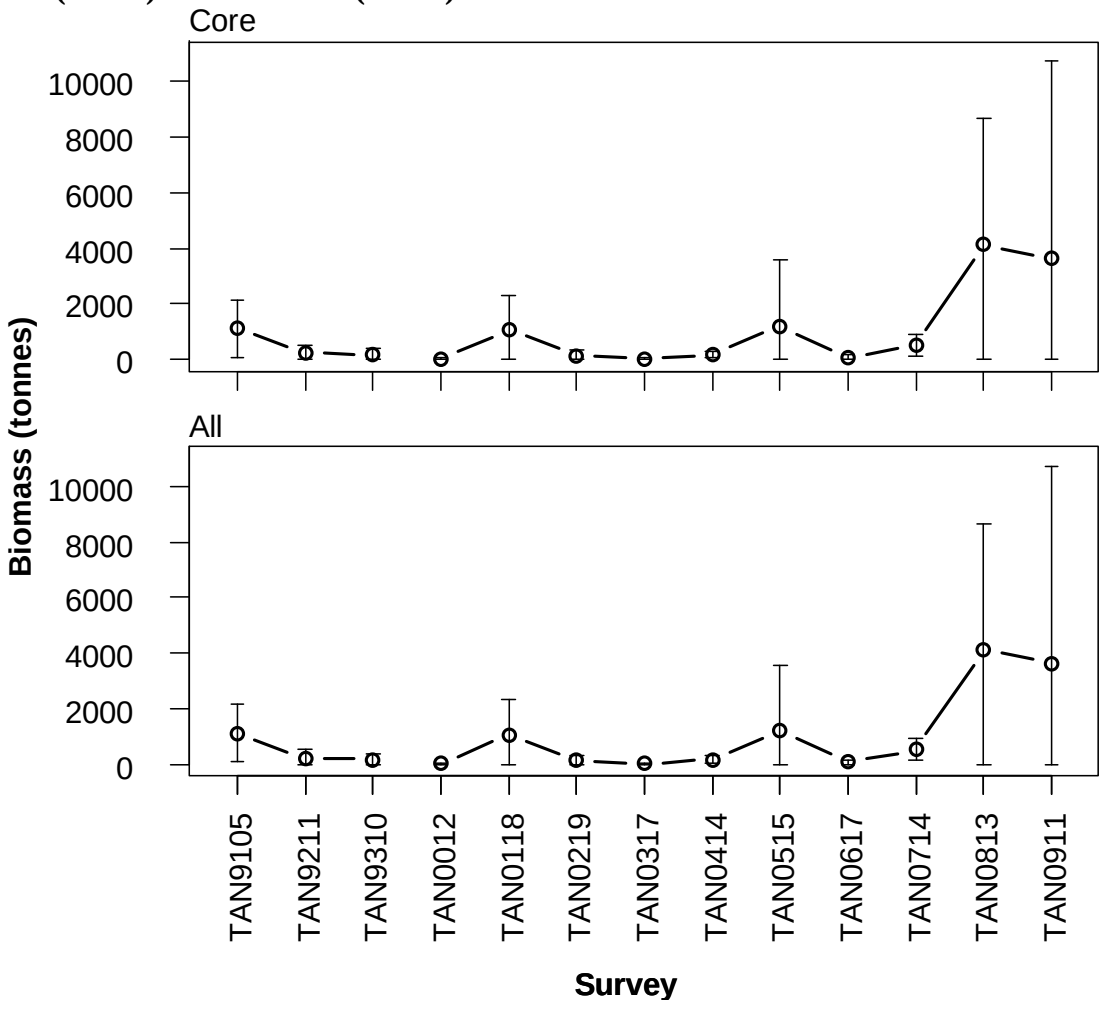
Distribution of *Seriolella punctata* from all summer surveys. Valid biomass stations only.



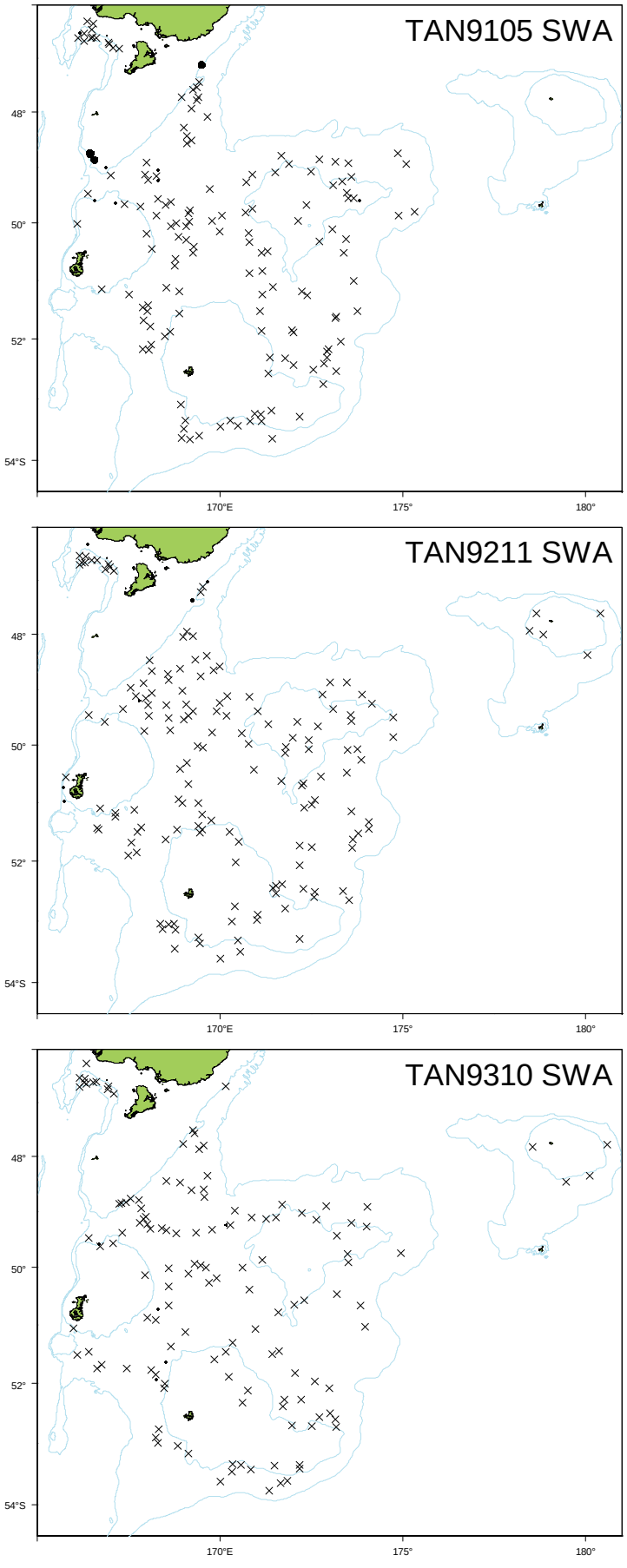
Relative biomass estimates (t) and c.v.s (%) of *Seriolella punctata* for core strata, strata outside the core area and all strata.

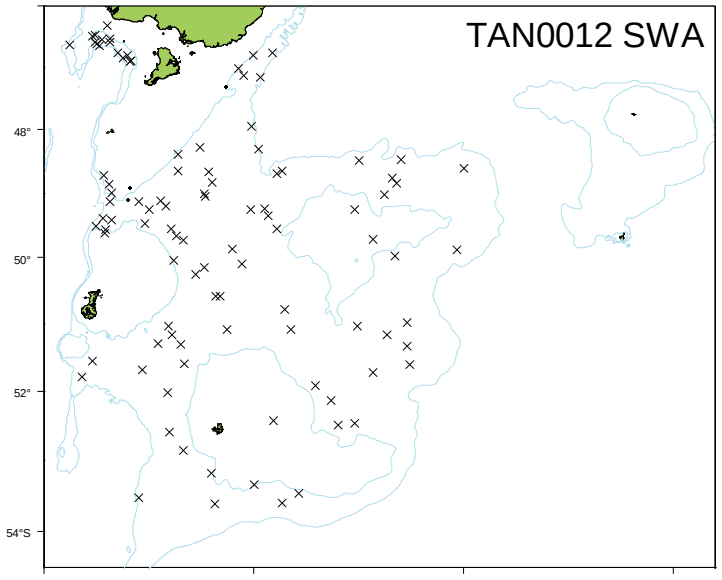
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	1113	47	NA	NA	NA	NA	NA	NA	1113	47
TAN9211	225	64	NA	NA	NA	NA	0	0	225	64
TAN9310	164	63	NA	NA	NA	NA	0	0	164	63
TAN0012	21	65	0	0	0	0	NA	NA	21	65
TAN0118	1069	58	0	0	0	0	NA	NA	1069	58
TAN0219	141	62	0	0	0	0	NA	NA	141	62
TAN0317	22	72	0	0	NA	NA	NA	NA	22	72
TAN0414	171	34	0	0	NA	NA	NA	NA	171	34
TAN0515	1198	99	0	0	0	0	NA	NA	1198	99
TAN0617	71	56	0	0	NA	NA	NA	NA	71	56
TAN0714	514	38	0	0	0	0	NA	NA	514	38
TAN0813	4122	55	0	0	0	0	NA	NA	4122	55
TAN0911	3620	98	0	0	0	0	NA	NA	3620	98

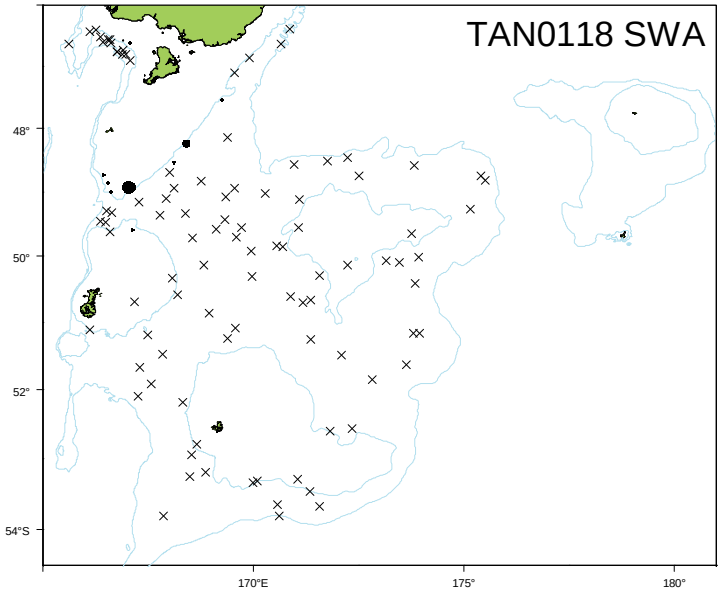
Trends in relative biomass estimates (± 2 standard errors) of *Seriolella punctata* for core strata (above) and all strata (below).

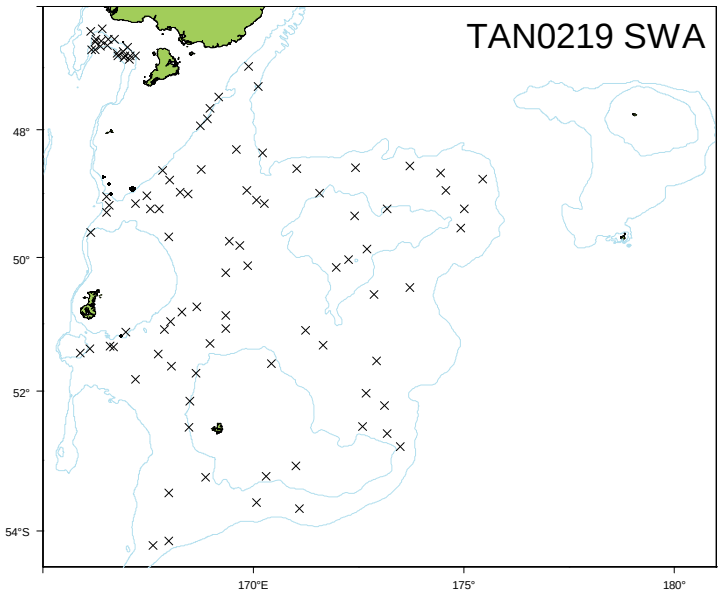


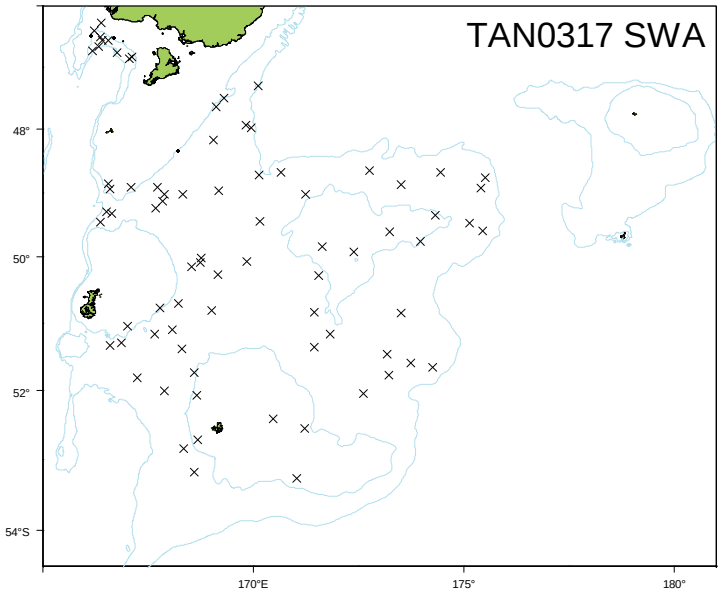
Catchrates of *Seriolella punctata*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

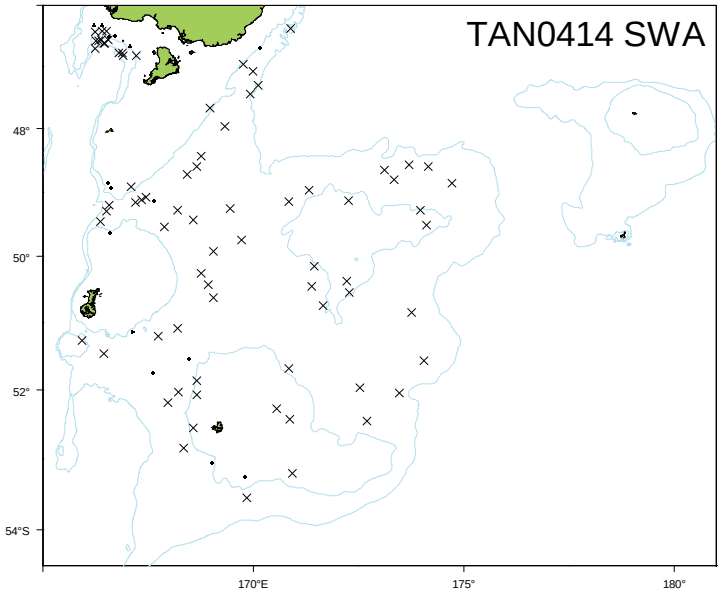


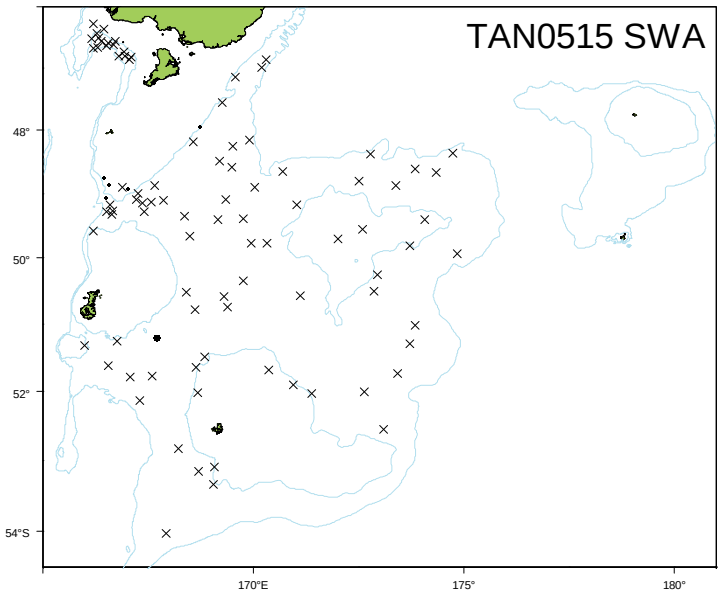

TAN0012 SWA
48°
50°
52°
54°S

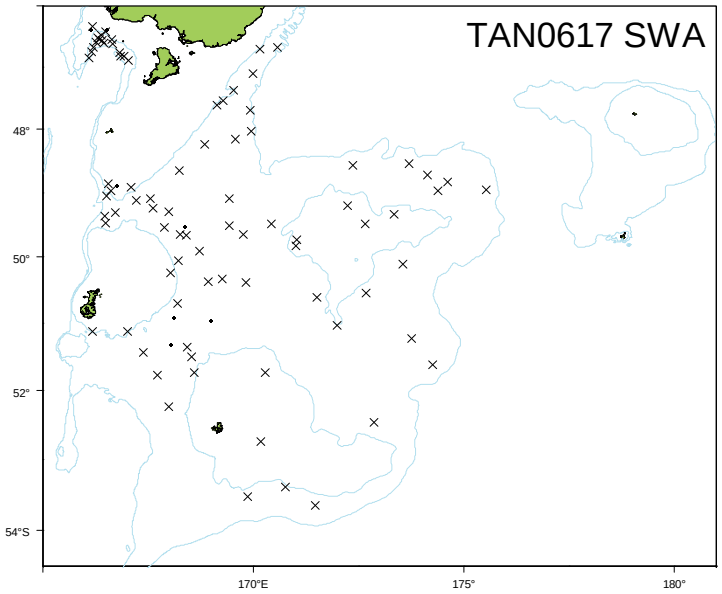

TAN0118 SWA
48°
50°
52°
54°S
170°E
175°
180°

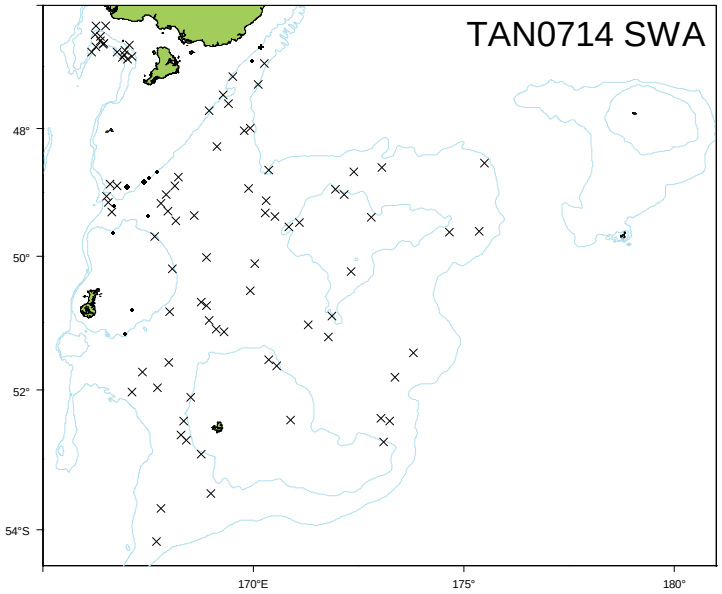

TAN0219 SWA
48°
50°
52°
54°S
170°E
175°
180°

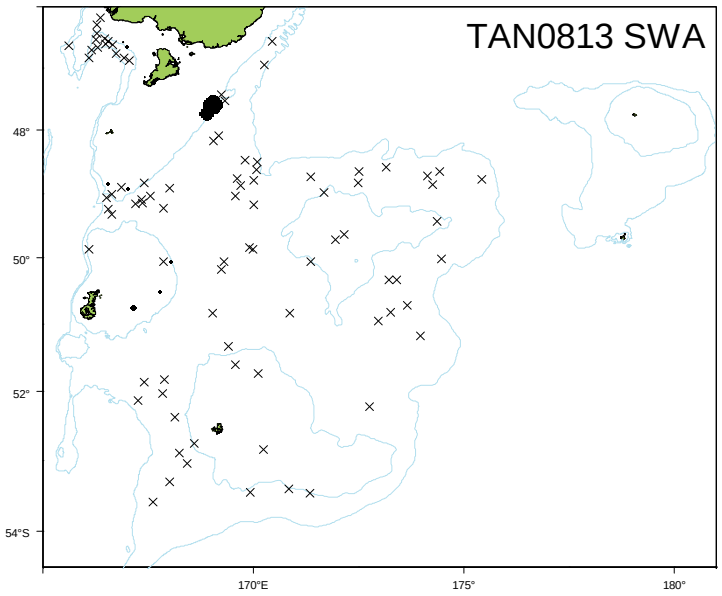

TAN0317 SWA
48°
50°
52°
54°S
170°E
175°
180°

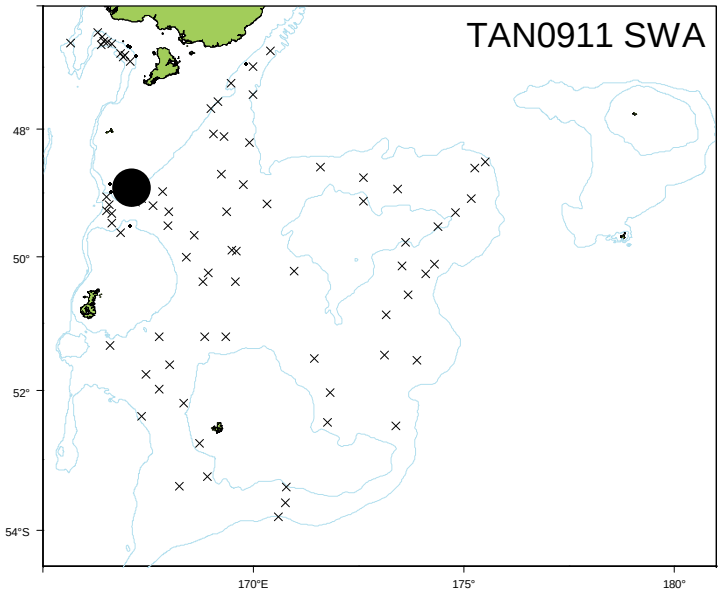

TAN0414 SWA
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 SWA
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 SWA
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 SWA
48°
50°
52°
54°S
170°E
175°
180°

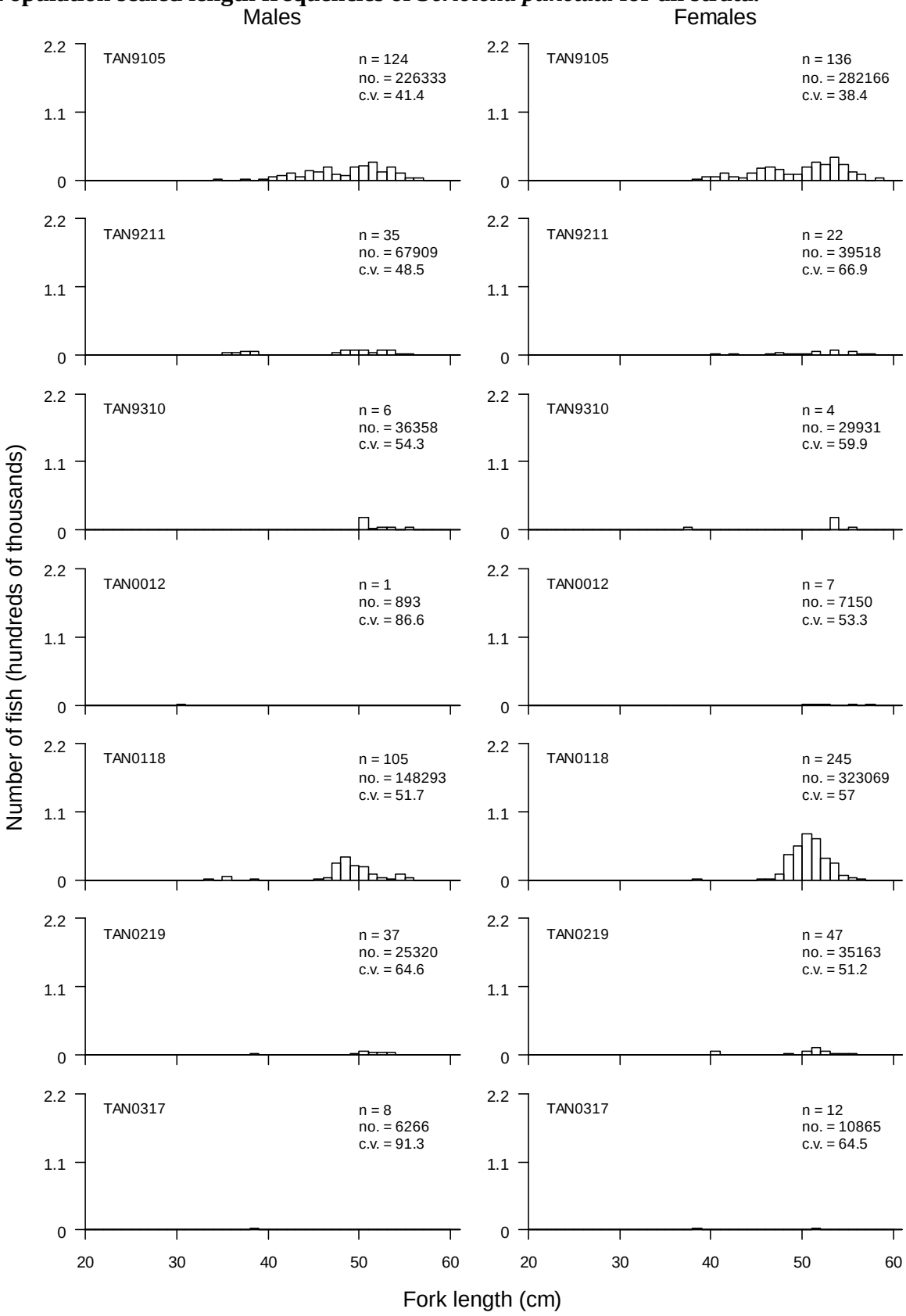

TAN0813 SWA
48°
50°
52°
54°S
170°E
175°
180°

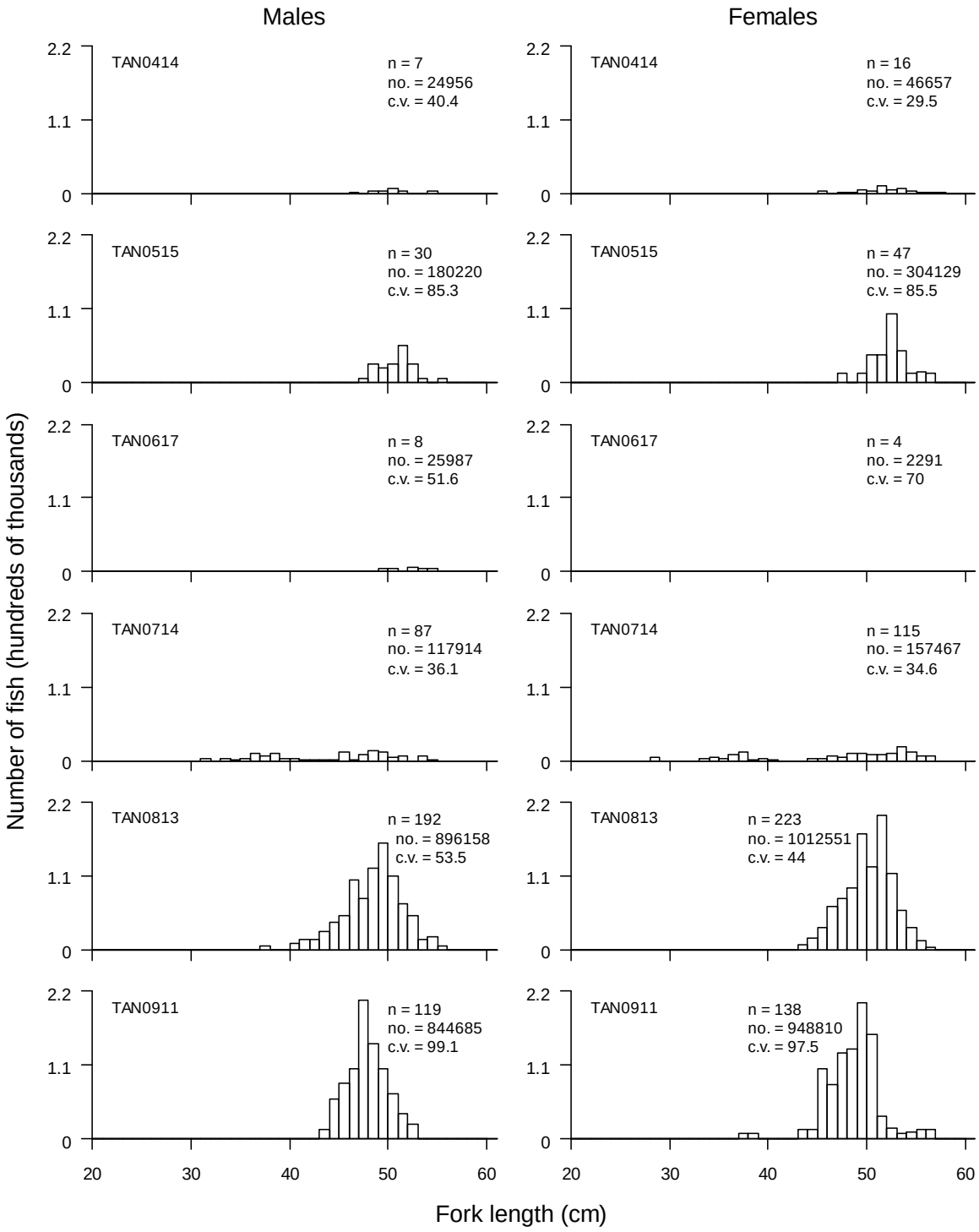


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	34	58	47.9	260
TAN9211	35	57	49.1	57
TAN9310	37	55	50.9	10
TAN0012	30	57	50.9	8
TAN0118	33	56	49.7	350
TAN0219	38	56	50.7	84
TAN0317	35	51	39.9	20
TAN0414	41	57	50.4	23
TAN0515	43	56	51.1	77
TAN0617	37	56	50.7	12
TAN0714	28	56	45.3	202
TAN0813	37	56	48.8	415
TAN0911	37	56	47.8	257

Population scaled length frequencies of *Seriolella punctata* for all strata.




Males
Females
TAN0414
n = 7
no. = 24956
c.v. = 40.4
TAN0414
n = 16
no. = 46657
c.v. = 29.5
TAN0515
n = 30
no. = 180220
c.v. = 85.3
TAN0515
n = 47
no. = 304129
c.v. = 85.5
TAN0617
n = 8
no. = 25987
c.v. = 51.6
TAN0617
n = 4
no. = 2291
c.v. = 70
TAN0714
n = 87
no. = 117914
c.v. = 36.1
TAN0714
n = 115
no. = 157467
c.v. = 34.6
TAN0813
n = 192
no. = 896158
c.v. = 53.5
TAN0813
n = 223
no. = 1012551
c.v. = 44
TAN0911
n = 119
no. = 844685
c.v. = 99.1
TAN0911
n = 138
no. = 948810
c.v. = 97.5
Number of fish (hundreds of thousands)
Fork length (cm)
0
1.1
2.2
20
30
40
50
60

Gonad stage summaries by sex for *Seriolella punctata*. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
TAN0012	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
TAN0118	100	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA
TAN0219	8	92	0	0	0	0	0	7	93	0	0	0	0	0
TAN0317	0	100	0	0	0	0	0	0	100	0	0	0	0	0
TAN0414	0	100	0	0	0	0	0	0	100	0	0	0	0	0
TAN0515	0	62	0	0	0	0	38	0	93	0	0	0	0	7
TAN0617	12	88	0	0	0	0	0	0	75	25	0	0	0	0
TAN0714	25	68	1	1	0	0	5	1	97	1	0	0	1	1
TAN0813	0	76	24	0	0	0	0	0	98	2	0	0	0	0
TAN0911	0	84	0	0	0	1	15	0	100	0	0	0	0	0
ALL	8	78	5	0	0	0	8	1	98	1	0	0	0	1

Tarakihi (*Nemadactylus macropterus*) TAR

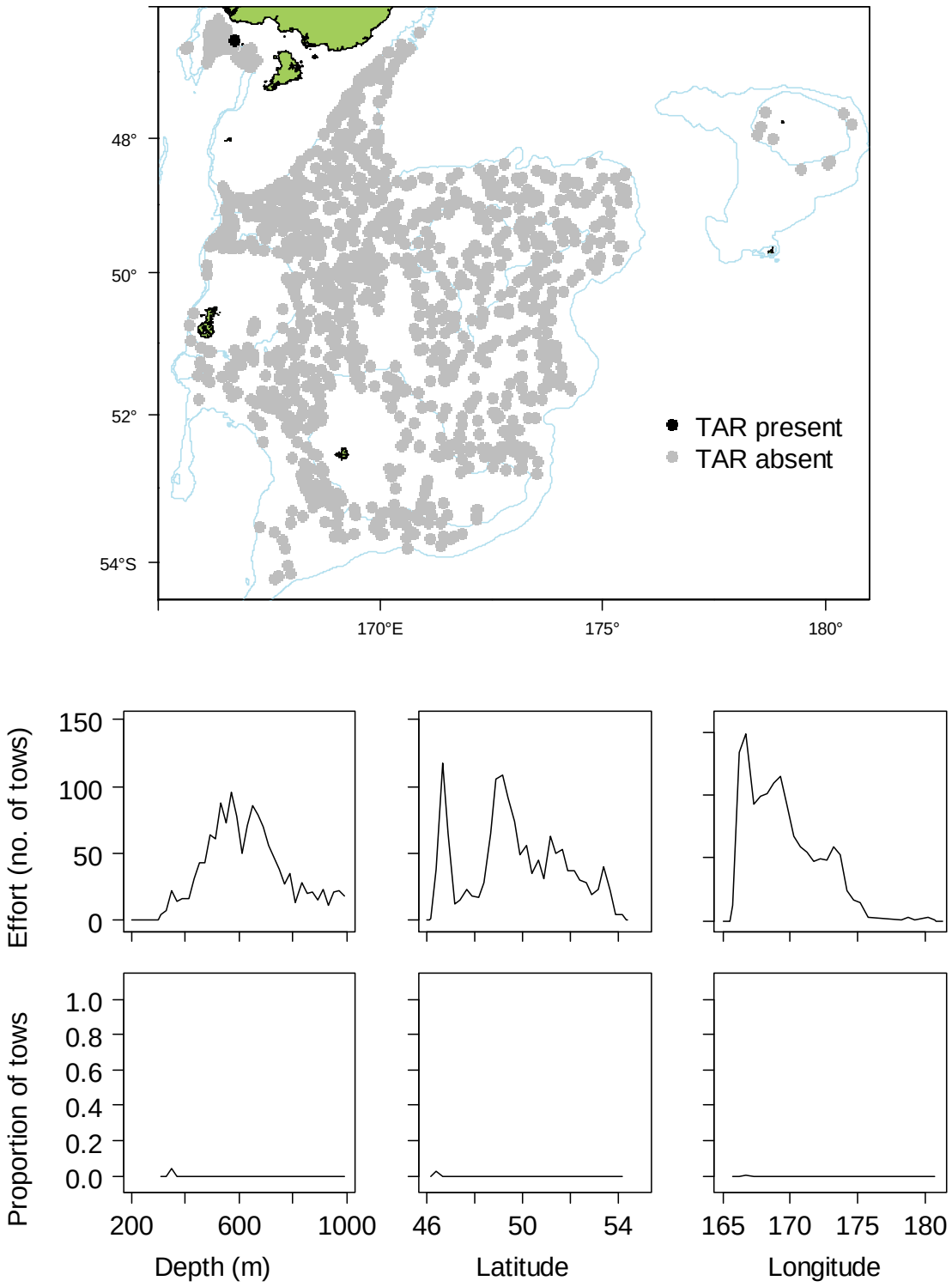
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	17.2
Number measured	10
Length range (mean) (cm)	38–47 (41.2)
Number weighed	0
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is not** appropriate for this species. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Only one survey caught this species, with the catch taken at Puysegur.

Gonad stage data indicate that most fish are **resting to ripe.**

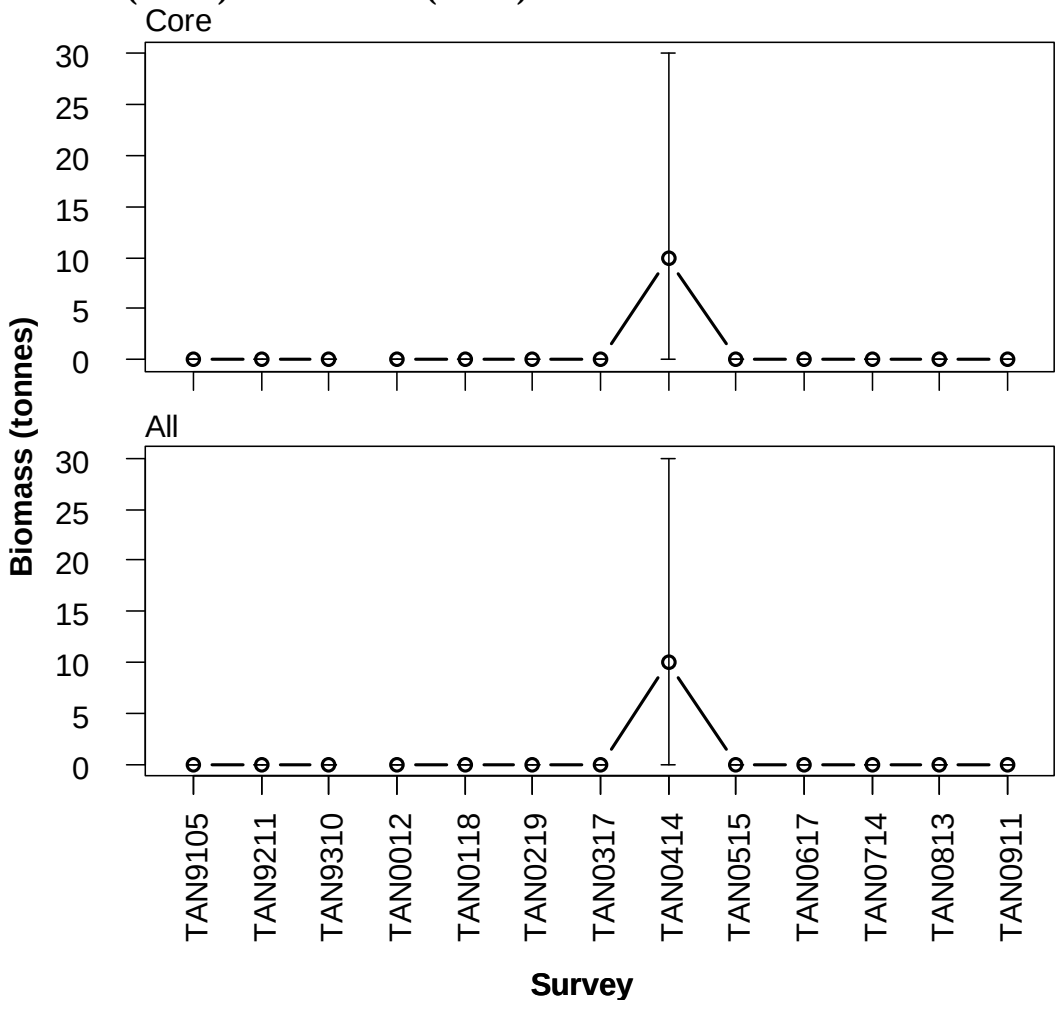
Distribution of *Nemadactylus macropterus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Nemadactylus macropterus* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	0	NA	NA	NA	NA	NA	NA	0	0
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	0	0	0	0	0	0	NA	NA	0	0
TAN0118	0	0	0	0	0	0	NA	NA	0	0
TAN0219	0	0	0	0	0	0	NA	NA	0	0
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	10	100	0	0	NA	NA	NA	NA	10	100
TAN0515	0	0	0	0	0	0	NA	NA	0	0
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	0	0	0	0	0	0	NA	NA	0	0
TAN0813	0	0	0	0	0	0	NA	NA	0	0
TAN0911	0	0	0	0	0	0	NA	NA	0	0

Trends in relative biomass estimates (± 2 standard errors) of *Nemadactylus macropterus* for core strata (above) and all strata (below).



Gonad stage summaries by sex for *Nemadactylus macropterus*. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	0	50	17	33	0	0	0	0	75	25	0	0	0	0
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0714	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0813	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0911	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL	0	50	17	33	0	0	0	0	75	25	0	0	0	0

Dark toadfish (*Neophrynichthys latus*) TOD

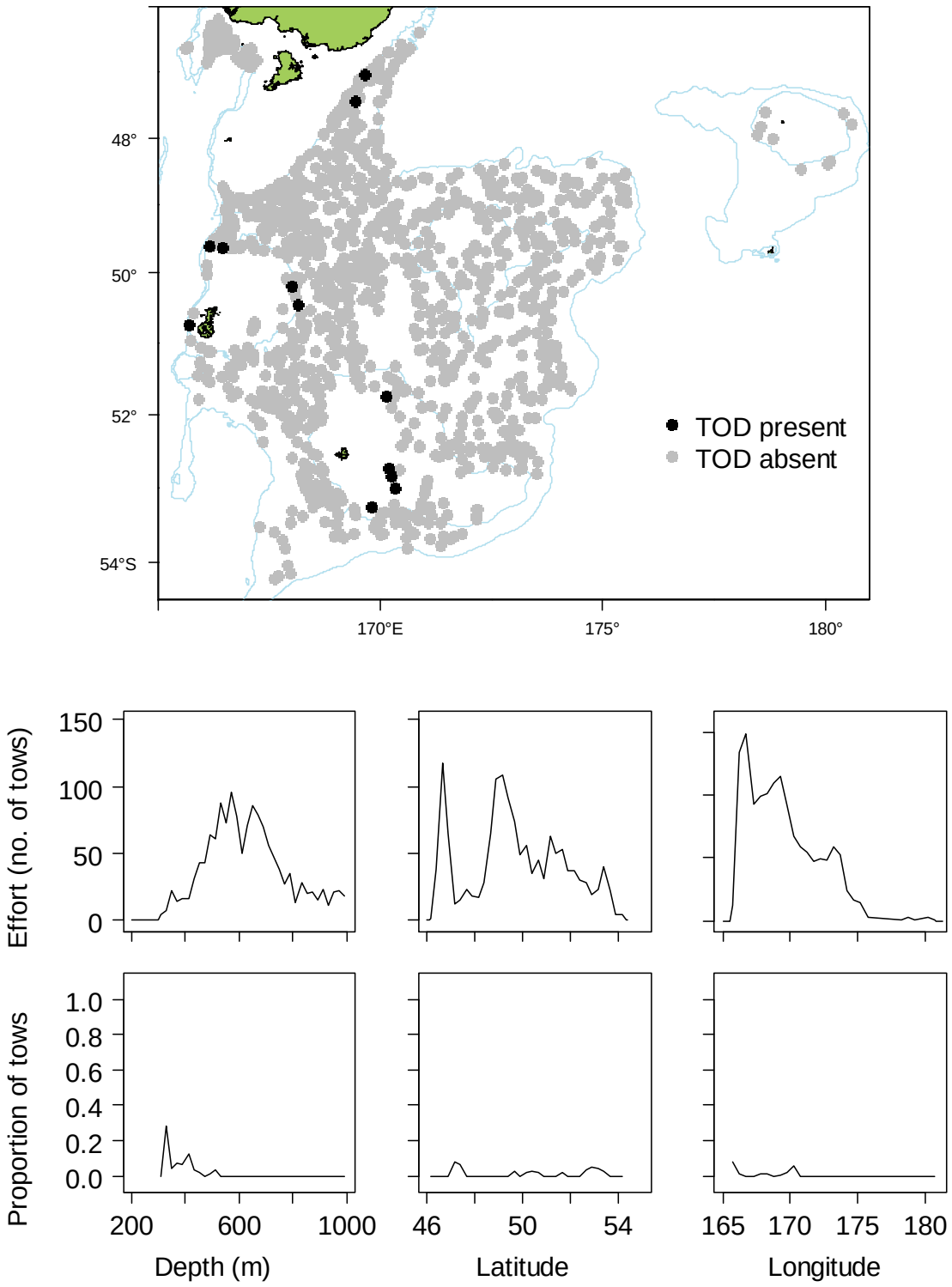
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	7
Total catch weight (kg):	15.8
Number measured	0
Length range (mean) (cm)	–
Number weighed	0

This species **has** been well identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is not** appropriate for this species. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Catches were recorded around the Sub-Antarctic Island shelves close to 300 m and east of Stewart Island.

There is no length or gonad stage information presented.

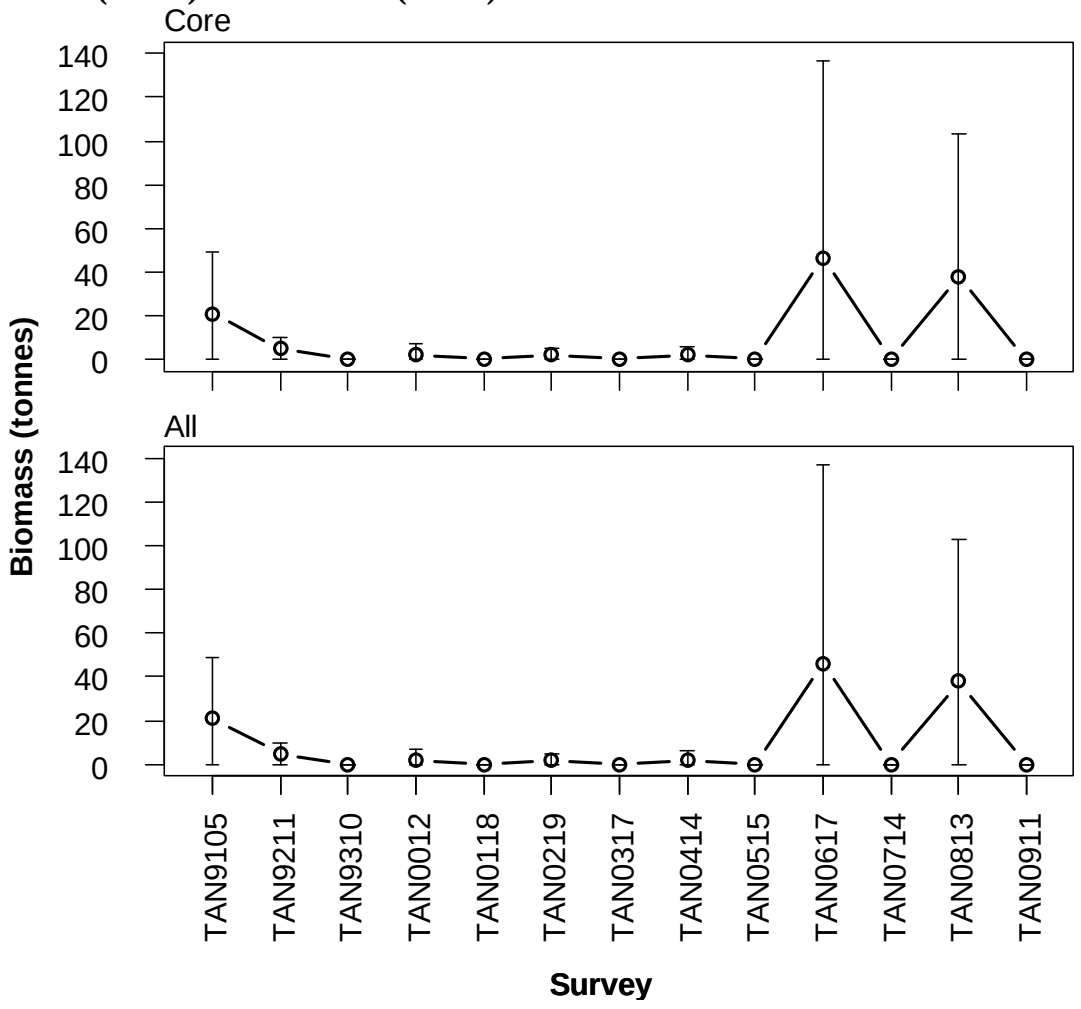
Distribution of *Neophrynichthys latus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Neophrynichthys latus* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	21	68	NA	NA	NA	NA	NA	NA	21	68
TAN9211	5	59	NA	NA	NA	NA	0	0	5	59
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	2	100	0	0	0	0	NA	NA	2	100
TAN0118	0	0	0	0	0	0	NA	NA	0	0
TAN0219	2	100	0	0	0	0	NA	NA	2	100
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	2	100	0	0	NA	NA	NA	NA	2	100
TAN0515	0	0	0	0	0	0	NA	NA	0	0
TAN0617	46	100	0	0	NA	NA	NA	NA	46	100
TAN0714	0	0	0	0	0	0	NA	NA	0	0
TAN0813	38	86	0	0	0	0	NA	NA	38	86
TAN0911	0	0	0	0	0	0	NA	NA	0	0

Trends in relative biomass estimates (± 2 standard errors) of *Neophrynichthys latus* for core strata (above) and all strata (below).



Pale toadfish (*Ambophthalmos angustus*) TOP

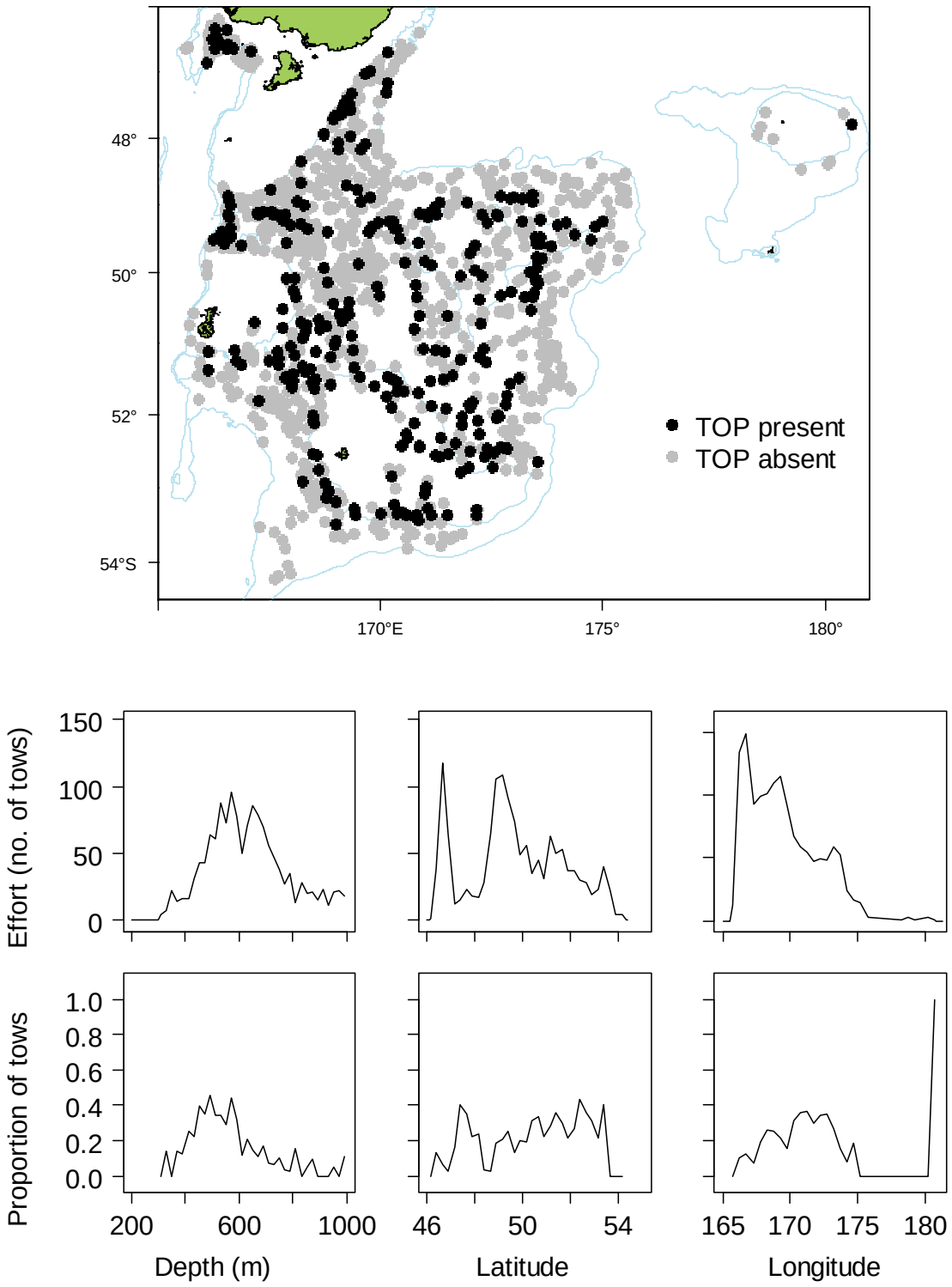
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	829.3
Number measured	2
Length range (mean) (cm)	28–44 (36.0)
Number weighed	1

This species **has** been well identified during the time series. A recently described species, the marbled toadfish (*Ambophthalmos angustus)* is also reported from the survey area. This has been recorded as TOA. The pale toadfish is found **deeper than 800 m**. The core survey area and depth range **is** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009 on one survey. It **was** recorded from the Bounty Platform.

Biomass of this species is **well** estimated by the core survey area. Biomass **shows a decrease** since the start of the time series. Catches were recorded throughout the survey area.

There is no length or gonad stage information presented.

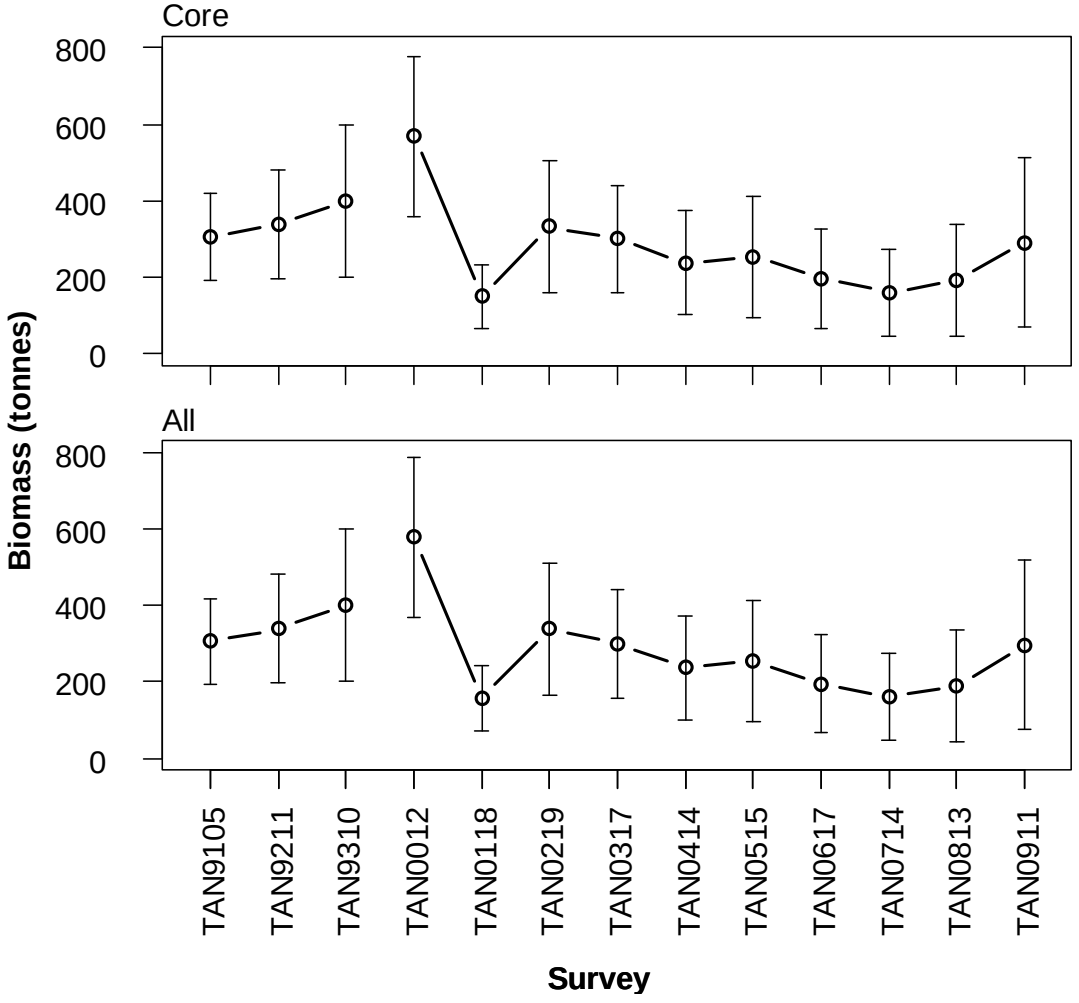
Distribution of *Ambophthalmos angustus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Ambophthalmos angustus* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	306	18	NA	NA	NA	NA	NA	NA	306	18
TAN9211	338	21	NA	NA	NA	NA	0	0	338	21
TAN9310	400	25	NA	NA	NA	NA	1	100	401	25
TAN0012	569	18	8	100	0	0	NA	NA	578	18
TAN0118	149	28	9	100	0	0	NA	NA	158	27
TAN0219	332	26	6	100	0	0	NA	NA	338	26
TAN0317	300	24	0	0	NA	NA	NA	NA	300	24
TAN0414	237	29	0	0	NA	NA	NA	NA	237	29
TAN0515	254	31	0	0	0	0	NA	NA	254	31
TAN0617	195	33	0	0	NA	NA	NA	NA	195	33
TAN0714	160	35	0	0	0	0	NA	NA	160	35
TAN0813	191	38	0	0	0	0	NA	NA	191	38
TAN0911	291	38	6	100	0	0	NA	NA	297	37

Trends in relative biomass estimates (± 2 standard errors) of *Ambophthalmos angustus* for core strata (above) and all strata (below).



Deepsea scorpionfish (*Trachyscorpia capensis*) TRS

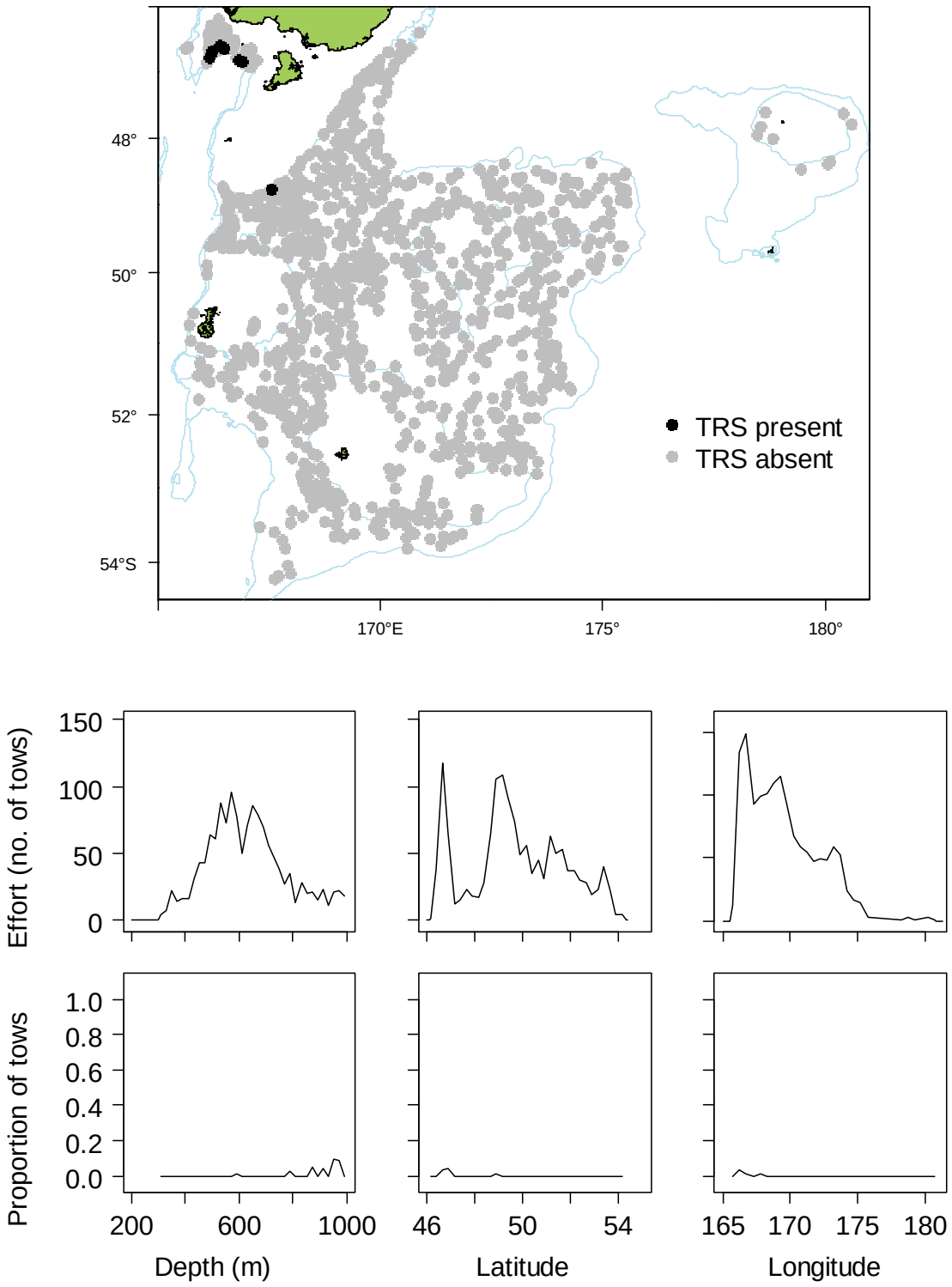
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	18.4
Number measured	1
Length mean (cm)	(42.0)
Number weighed	1

This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is not** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **not well** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series.. Catches are recorded in the **northwest** at Puysegur**.**

There is no length or gonad stage information presented.

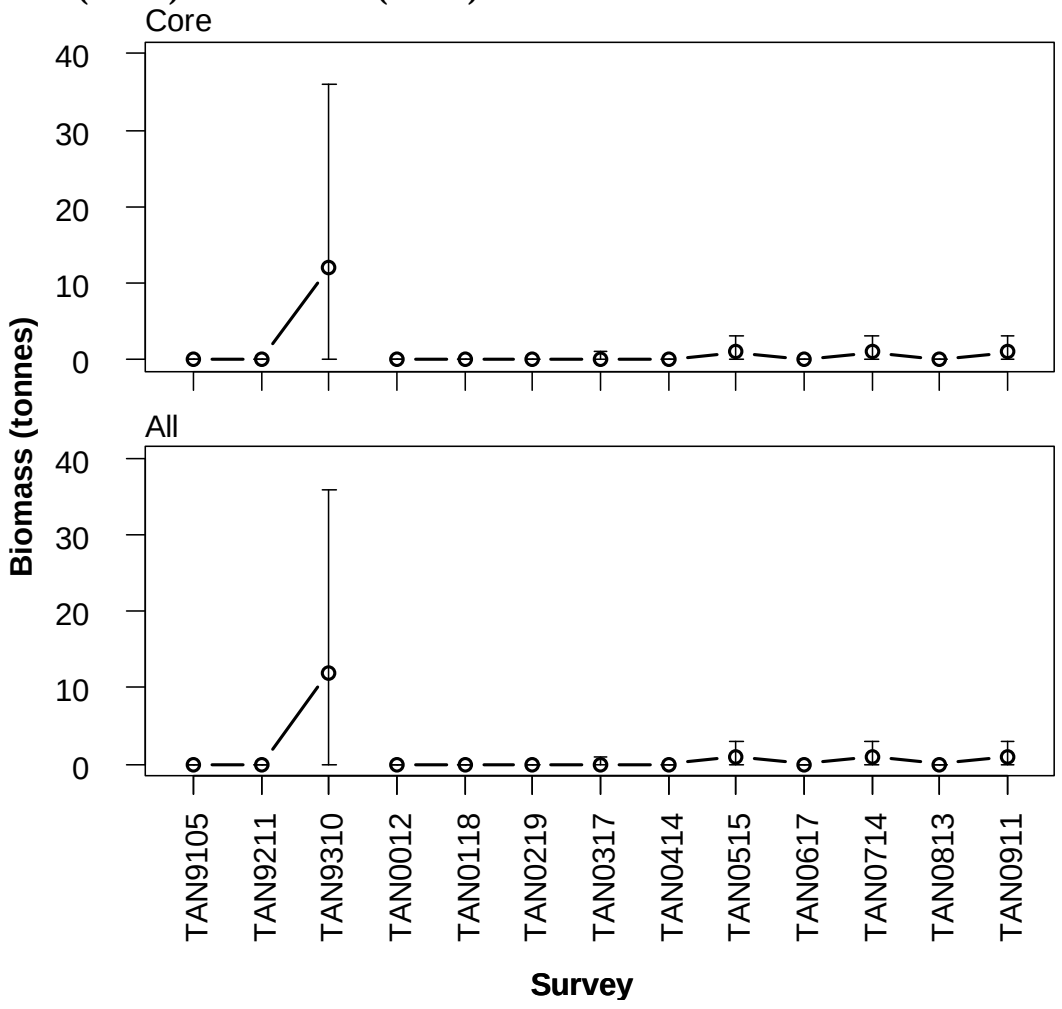
Distribution of *Trachyscorpia capensis* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Trachyscorpia capensis* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	100	NA	NA	NA	NA	NA	NA	0	100
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	12	100	NA	NA	NA	NA	0	0	12	100
TAN0012	0	0	0	0	0	0	NA	NA	0	0
TAN0118	0	0	0	0	0	0	NA	NA	0	0
TAN0219	0	0	0	0	0	0	NA	NA	0	0
TAN0317	0	100	0	0	NA	NA	NA	NA	0	100
TAN0414	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	1	65	0	0	0	0	NA	NA	1	65
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	1	84	0	0	0	0	NA	NA	1	84
TAN0813	0	0	0	0	0	0	NA	NA	0	0
TAN0911	1	100	0	0	0	0	NA	NA	1	100

Trends in relative biomass estimates (± 2 standard errors) of *Trachyscorpia capensis* for core strata (above) and all strata (below).



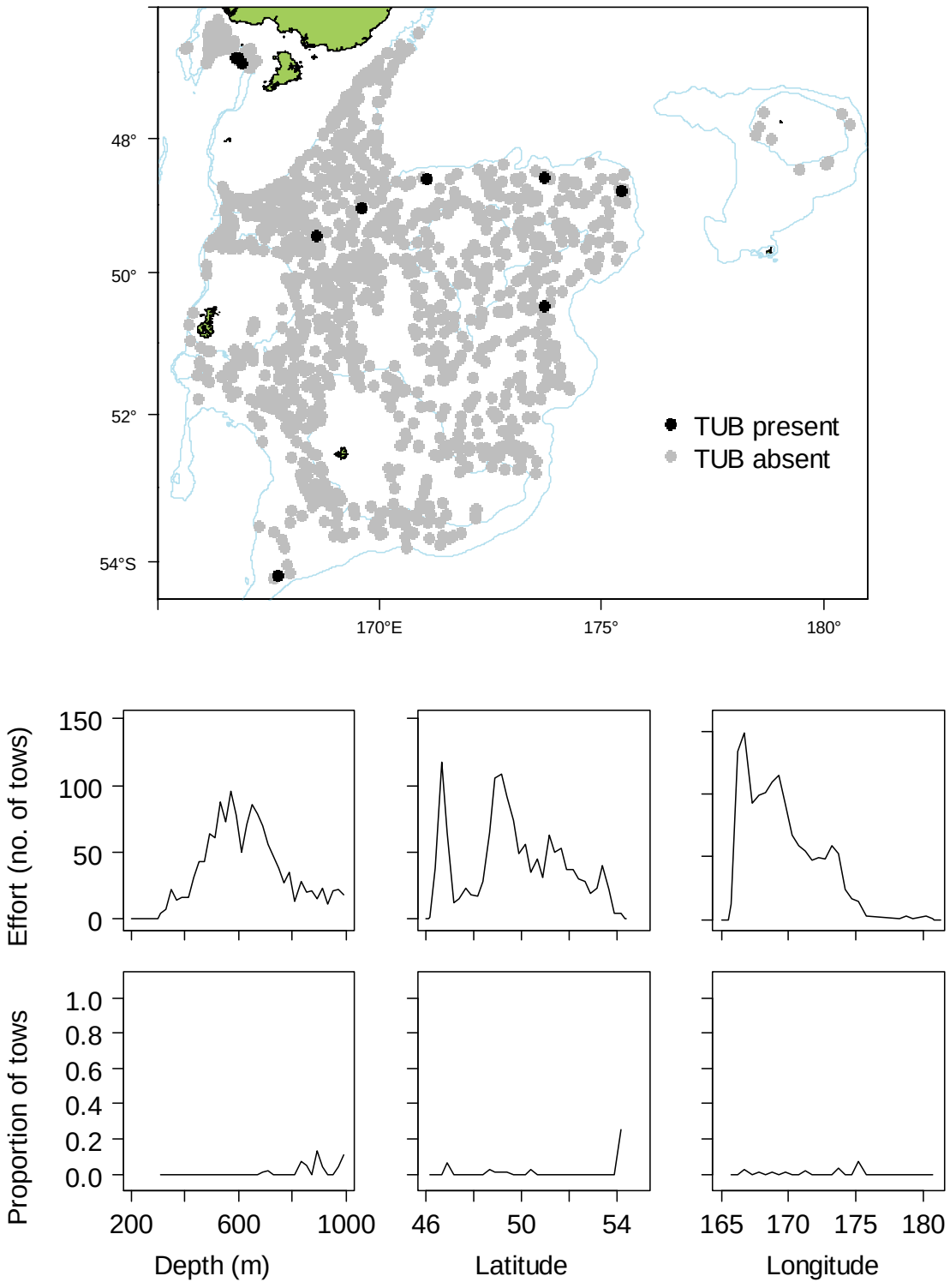
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	5
Total catch weight (kg):	22.4
Number measured	3
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is not** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

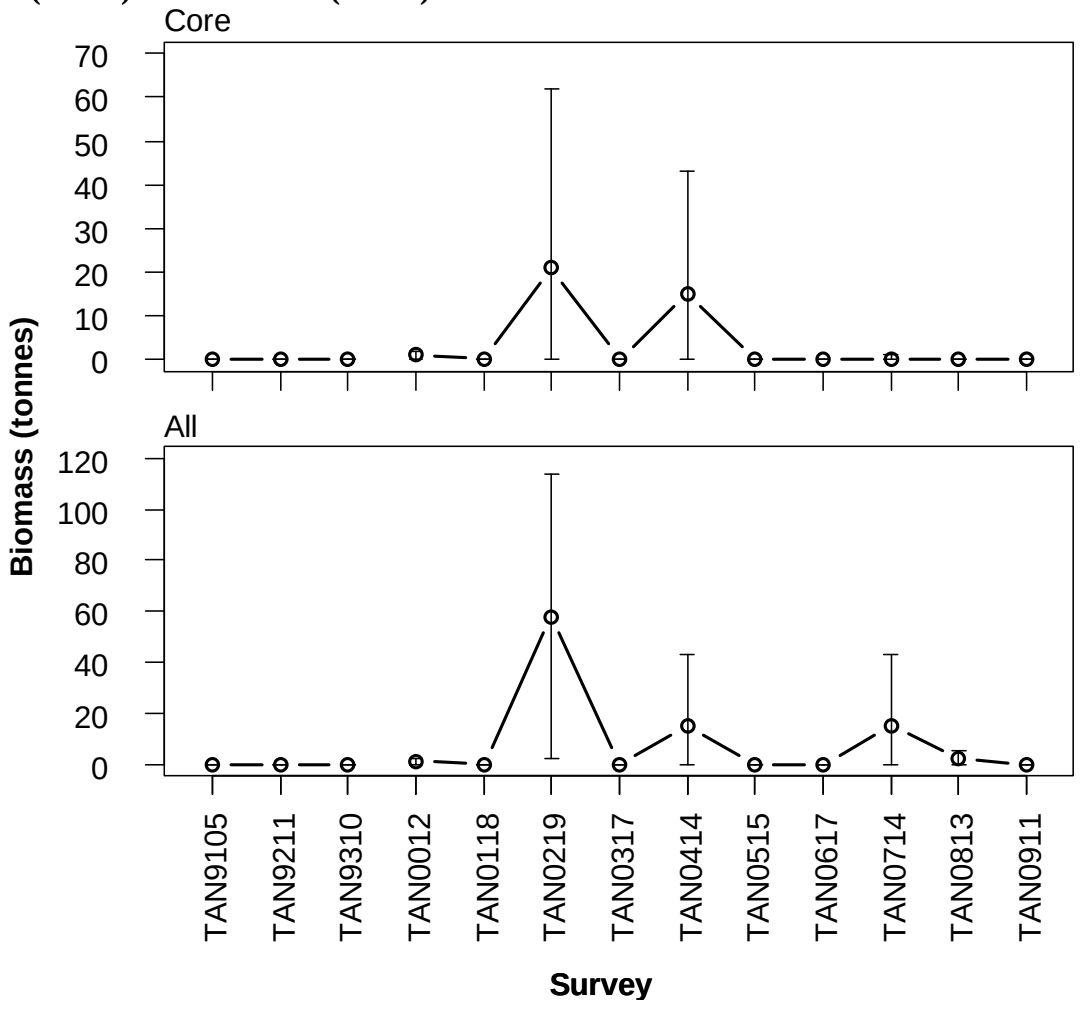
Distribution of *Tubbia tasmanica* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Tubbia tasmanica* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	0	NA	NA	NA	NA	NA	NA	0	0
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	1	71	0	0	0	0	NA	NA	1	71
TAN0118	0	0	0	0	0	0	NA	NA	0	0
TAN0219	21	100	37	51	0	0	NA	NA	58	48
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	15	93	0	0	NA	NA	NA	NA	15	93
TAN0515	0	0	0	0	0	0	NA	NA	0	0
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	0	100	0	0	14	100	NA	NA	15	97
TAN0813	0	0	2	100	0	0	NA	NA	2	100
TAN0911	0	0	0	0	0	0	NA	NA	0	0

Trends in relative biomass estimates (± 2 standard errors) of *Tubbia tasmanica* for core strata (above) and all strata (below).



Violet cod (*Antimora rostrata*) VCO

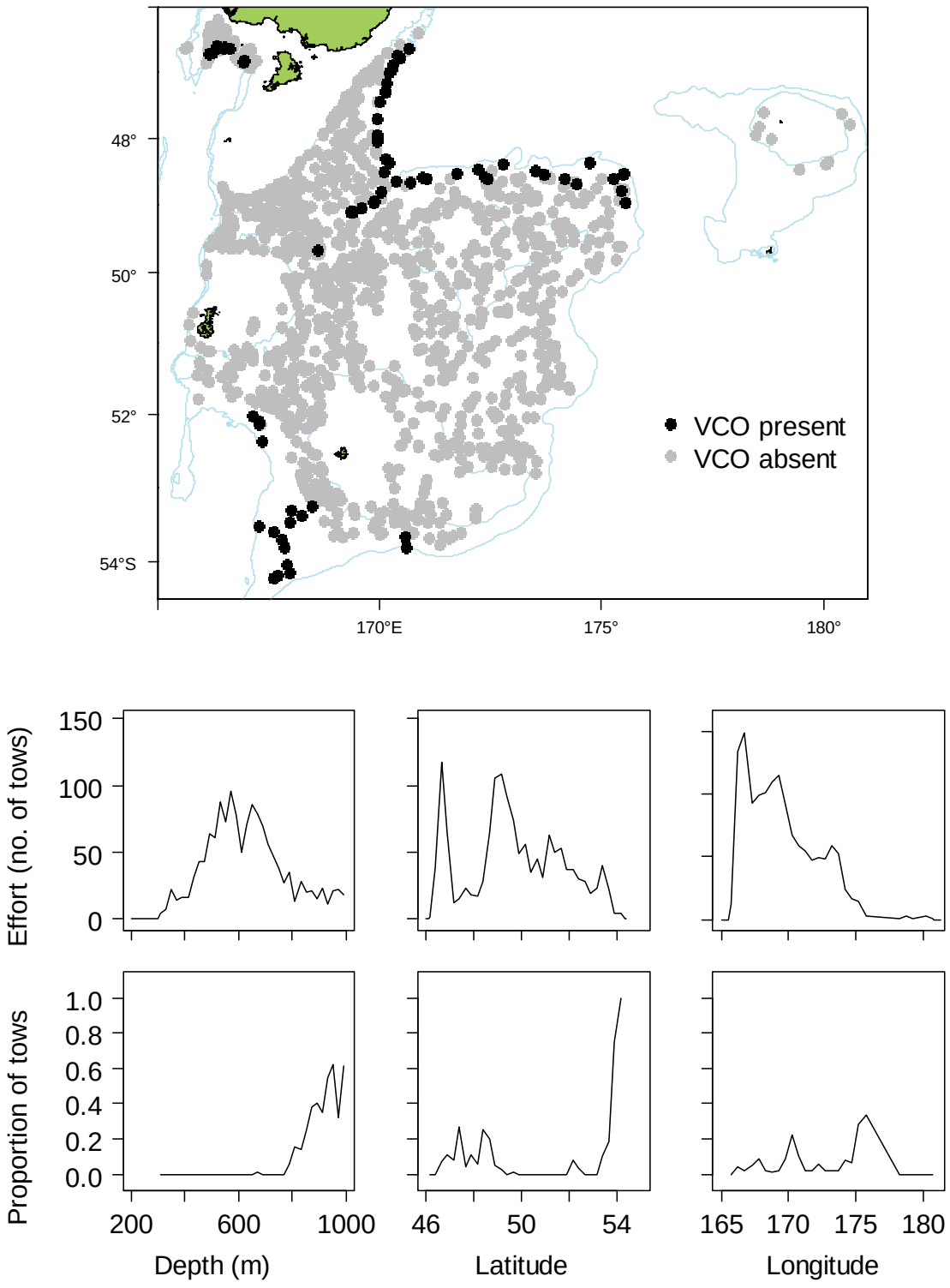
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	10
Total catch weight (kg):	128.8
Number measured	176
Length mean (cm)	18–40 (31.8)
Number weighed	123

This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is not** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend since** the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

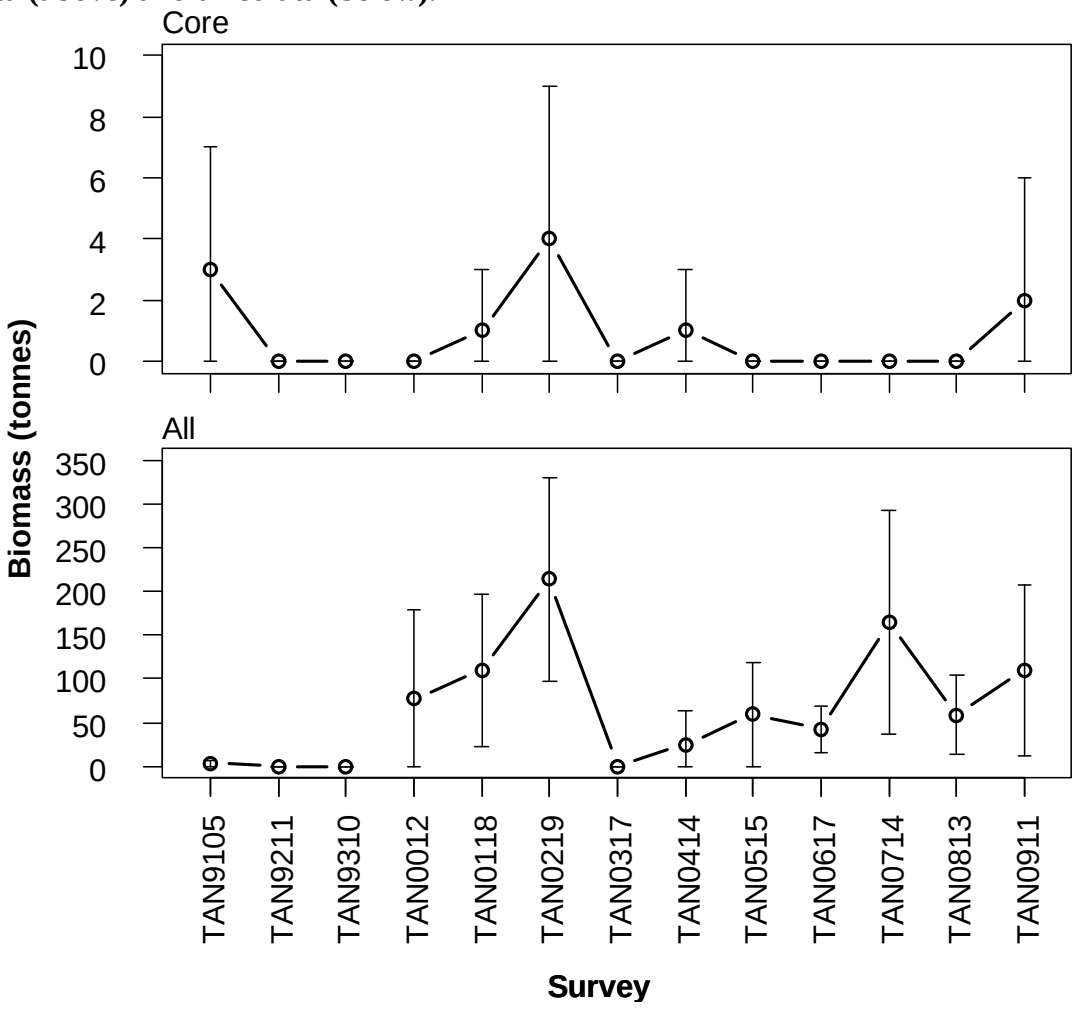
Distribution of *Antimora rostrata* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Antimora rostrata* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	3	56	NA	NA	NA	NA	NA	NA	3	56
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	0	0	26	20	51	100	NA	NA	77	66
TAN0118	1	100	25	42	84	50	NA	NA	110	40
TAN0219	4	69	46	32	164	34	NA	NA	214	27
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	1	54	23	81	NA	NA	NA	NA	25	77
TAN0515	0	0	35	49	24	100	NA	NA	60	50
TAN0617	0	0	42	32	NA	NA	NA	NA	42	32
TAN0714	0	0	46	49	119	51	NA	NA	164	39
TAN0813	0	0	8	52	50	44	NA	NA	58	39
TAN0911	2	100	38	83	70	53	NA	NA	110	44

Trends in relative biomass estimates (± 2 standard errors) of *Antimora rostrata* for core strata (above) and all strata (below).



Blackspot rattail (*Lucigadus nigromaculatus*) VNI

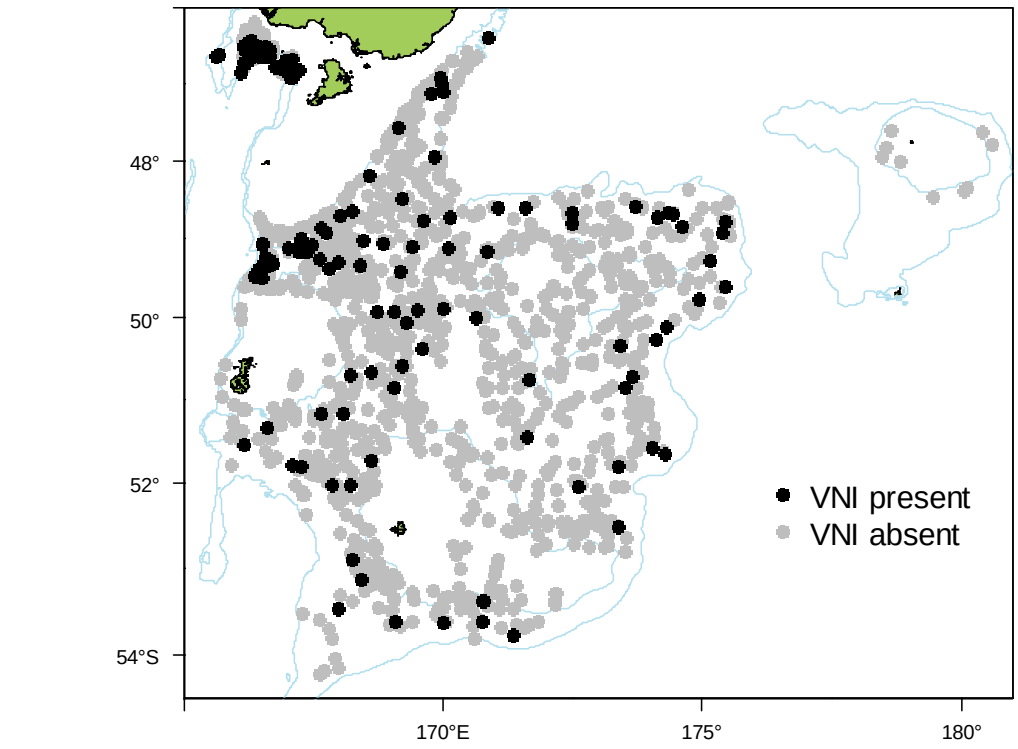
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	55.7
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

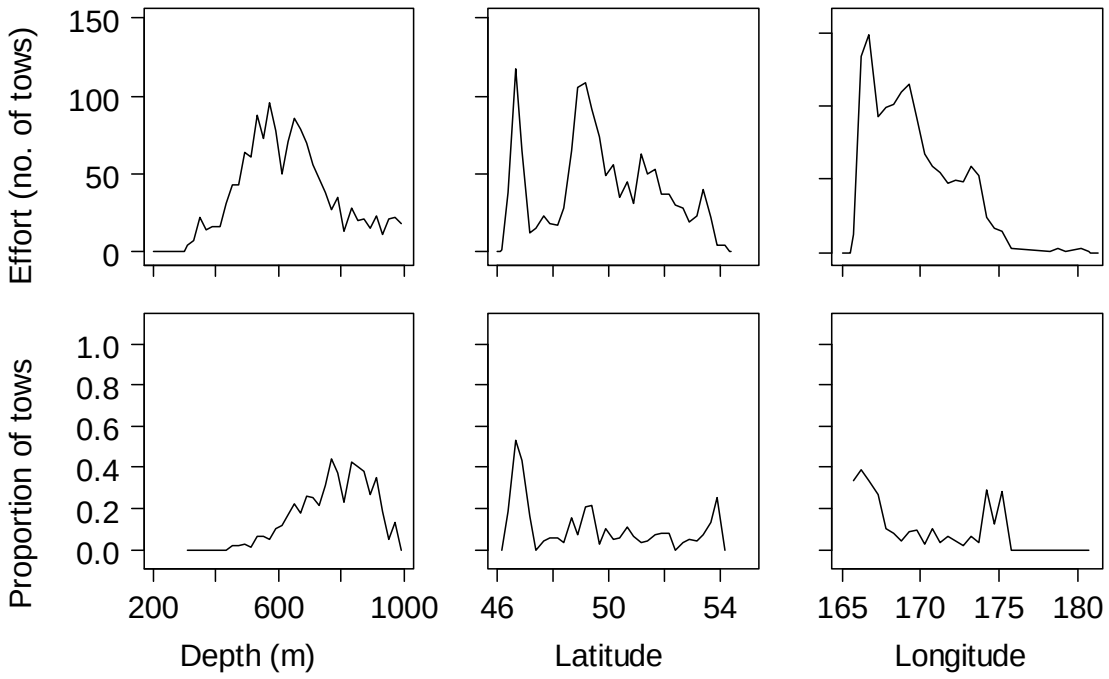
This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass since 2000 **shows an increase** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

Distribution of *Lucigadus nigromaculatus* from all summer surveys. Valid biomass stations only.

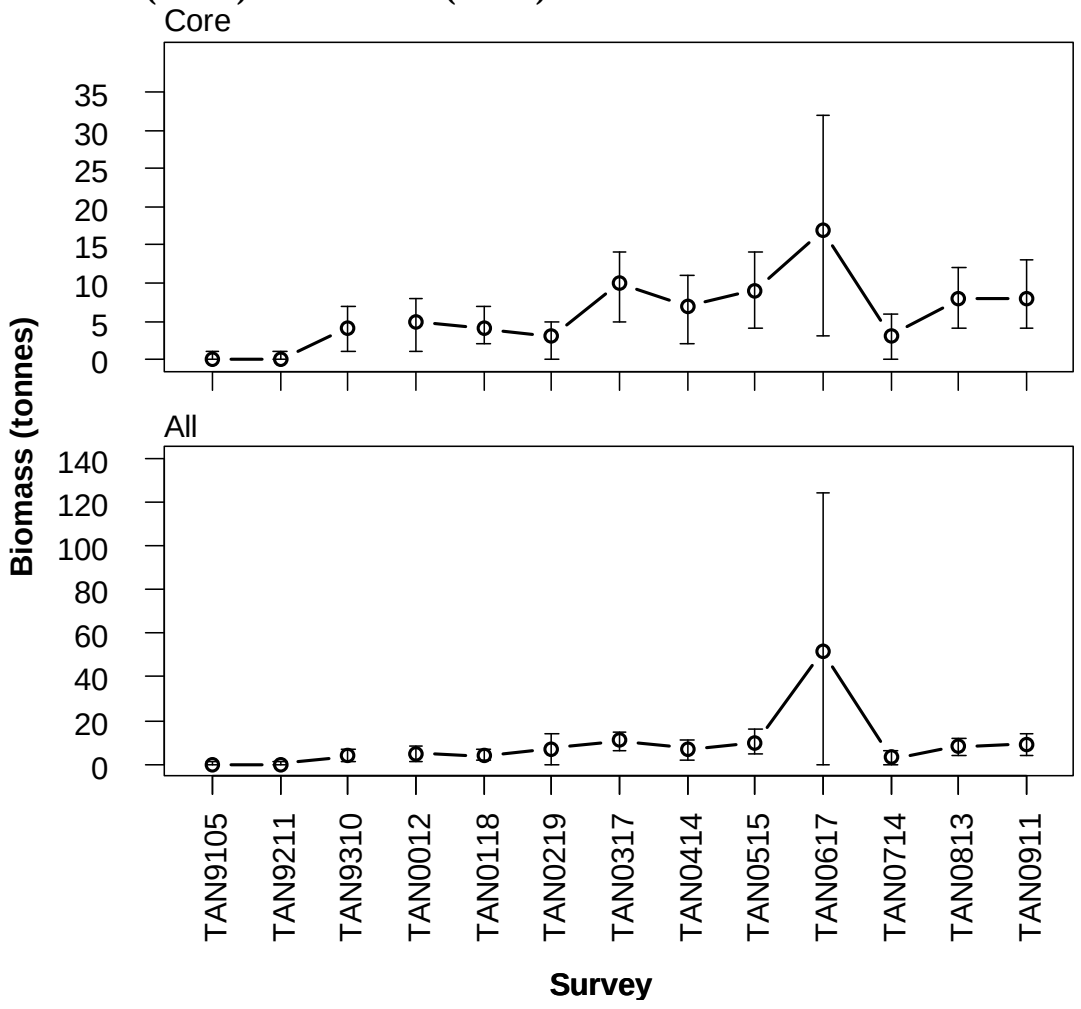




Relative biomass estimates (t) and c.v.s (%) of *Lucigadus nigromaculatus* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	61	NA	NA	NA	NA	NA	NA	0	61
TAN9211	0	100	NA	NA	NA	NA	0	0	0	100
TAN9310	4	36	NA	NA	NA	NA	0	0	4	36
TAN0012	5	35	0	0	0	0	NA	NA	5	35
TAN0118	4	31	0	0	0	0	NA	NA	4	30
TAN0219	3	41	2	48	3	100	NA	NA	7	47
TAN0317	10	23	1	61	NA	NA	NA	NA	11	21
TAN0414	7	33	0	0	NA	NA	NA	NA	7	33
TAN0515	9	27	1	100	0	0	NA	NA	10	26
TAN0617	17	42	35	100	NA	NA	NA	NA	52	68
TAN0714	3	66	0	0	0	0	NA	NA	3	66
TAN0813	8	26	0	0	0	0	NA	NA	8	26
TAN0911	8	28	1	100	0	0	NA	NA	9	27

Trends in relative biomass estimates (± 2 standard errors) of *Lucigadus nigromaculatus* for core strata (above) and all strata (below).



Violet squid (*Histioteuthis* spp.) VSQ

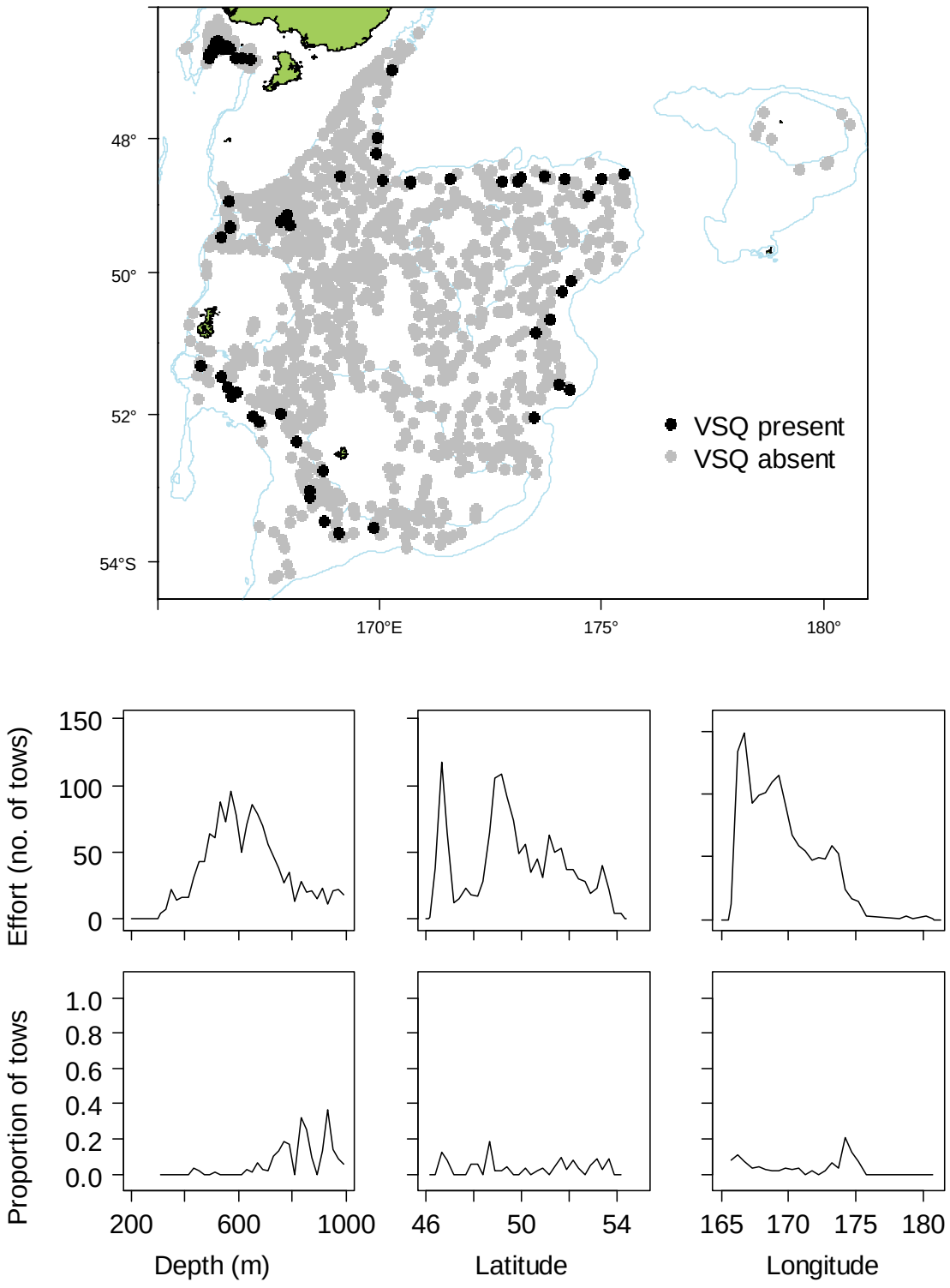
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	22.9
Number measured	0
Length mean (cm)	–
Number weighed	0

This group **has** been well identified during the time series. It is found **deeper** than 1000 m and is probably pelagic. The core survey area and depth range **is not** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this group is **poorly** estimated by the core survey area. Biomass since 2000 **shows no clear trend** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

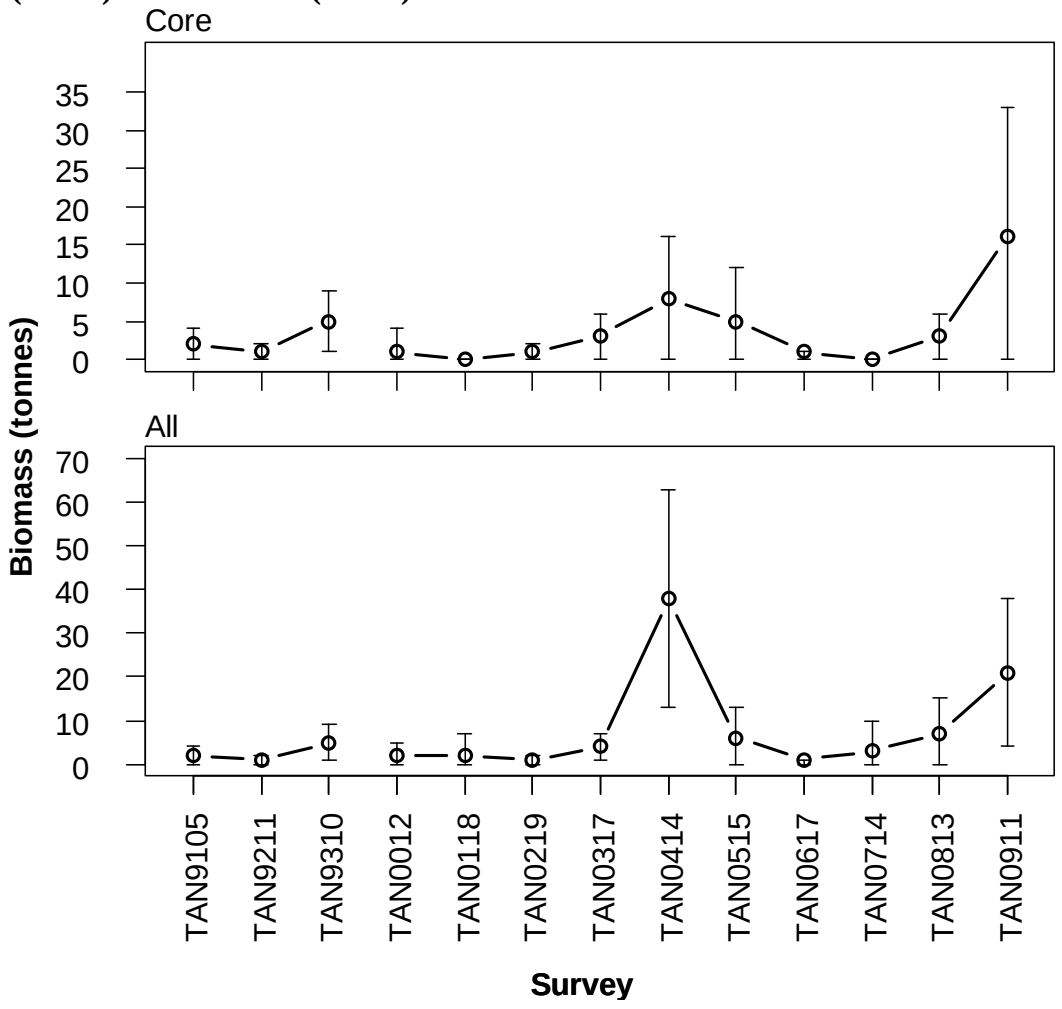
Distribution of *Histioteuthis* spp. from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Histioteuthis* spp. for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	2	65	NA	NA	NA	NA	NA	NA	2	65
TAN9211	1	67	NA	NA	NA	NA	0	0	1	67
TAN9310	5	42	NA	NA	NA	NA	0	0	5	42
TAN0012	1	100	1	61	0	0	NA	NA	2	66
TAN0118	0	0	0	0	2	100	NA	NA	2	100
TAN0219	1	86	0	0	0	0	NA	NA	1	86
TAN0317	3	46	0	0	NA	NA	NA	NA	4	40
TAN0414	8	56	31	38	NA	NA	NA	NA	38	32
TAN0515	5	68	1	100	0	0	NA	NA	6	61
TAN0617	1	44	0	0	NA	NA	NA	NA	1	44
TAN0714	0	66	0	0	3	100	NA	NA	3	98
TAN0813	3	47	5	81	0	0	NA	NA	7	52
TAN0911	16	51	5	45	0	0	NA	NA	21	41

Trends in relative biomass estimates (± 2 standard errors) of *Histioteuthis* spp. for core strata (above) and all strata (below).



Blue warehou (*Seriolella brama*) WAR

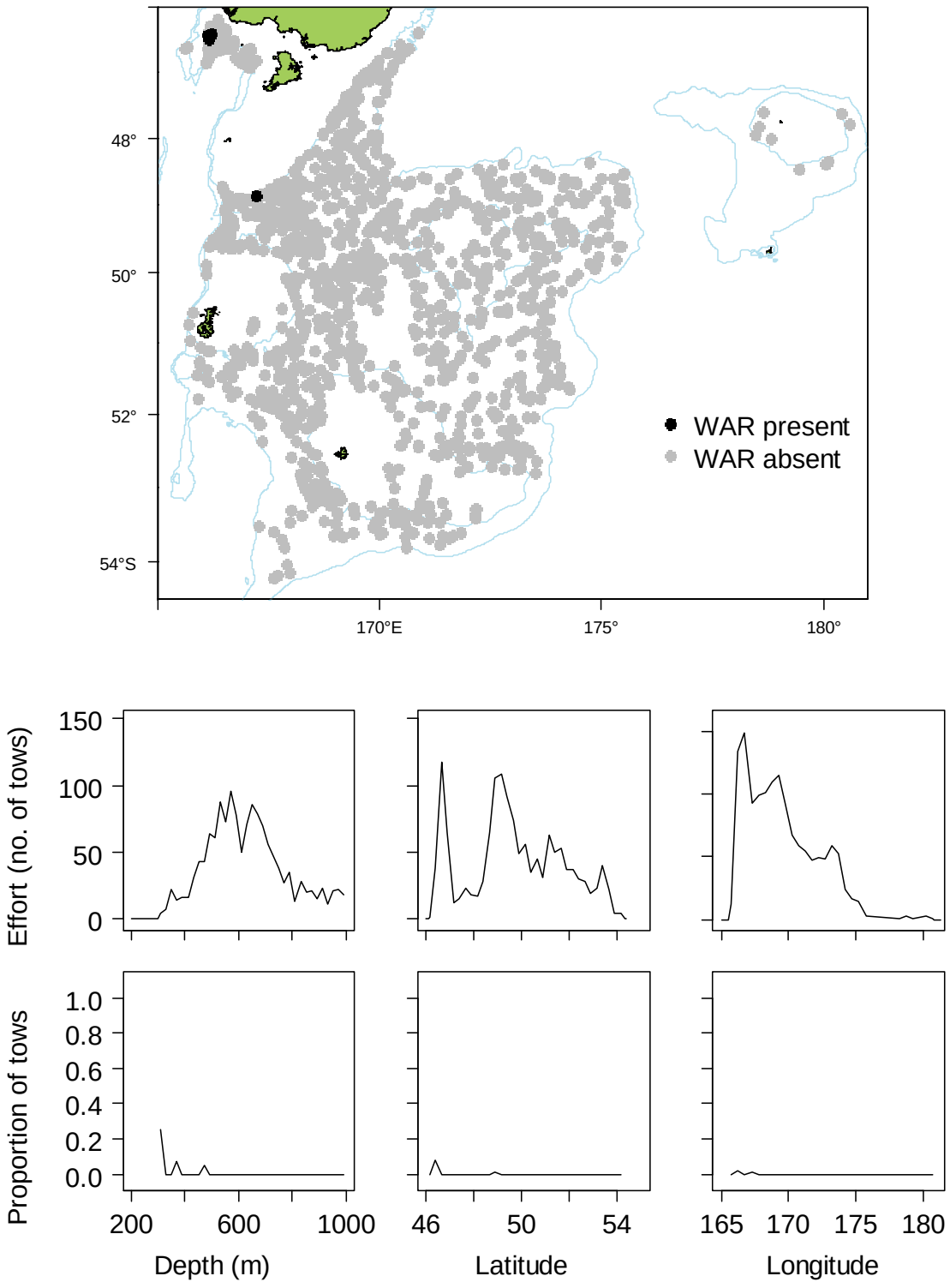
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	1633.5
Number measured	175
Length mean (cm)	53–68 (60.4)
Number weighed	16

This species **has** been well identified during the time series. It is found **shallower than 300 m**. The core survey area and depth range **is not** appropriate for this species. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. The highest catchrates were taken in the **northwest** at Puysegur.

Gonad stage data indicate that most fish are **ripe.**

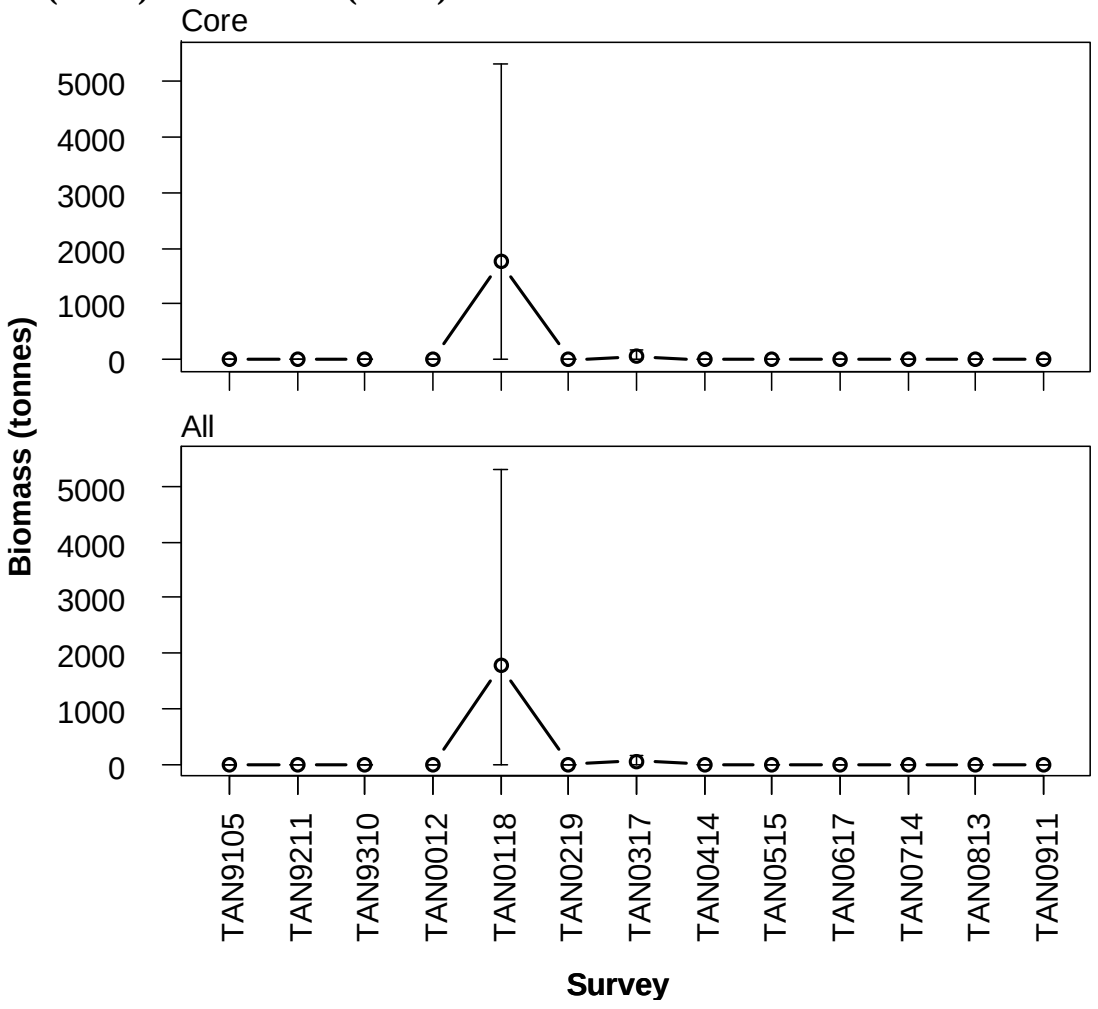
Distribution of *Seriolella brama* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Seriolella brama* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	0	0	NA	NA	NA	NA	NA	NA	0	0
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	1	100	NA	NA	NA	NA	0	0	1	100
TAN0012	0	0	0	0	0	0	NA	NA	0	0
TAN0118	1770	100	0	0	0	0	NA	NA	1770	100
TAN0219	0	0	0	0	0	0	NA	NA	0	0
TAN0317	56	92	0	0	NA	NA	NA	NA	56	92
TAN0414	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	0	0	0	0	0	0	NA	NA	0	0
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	0	0	0	0	0	0	NA	NA	0	0
TAN0813	0	0	0	0	0	0	NA	NA	0	0
TAN0911	0	0	0	0	0	0	NA	NA	0	0

Trends in relative biomass estimates (± 2 standard errors) of *Seriolella brama* for core strata (above) and all strata (below).



Gonad stage summaries by sex for *Seriolella brama*. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	0	0	3	55	29	9	4	0	4	47	9	0	36	4
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	0	0	0	0	0	100	0	0	0	25	0	0	50	25
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0714	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0813	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0911	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL	0	0	3	53	28	12	3	0	3	42	7	0	39	8

Unicorn rattail (*Trachyrincus longirostris*) WHR

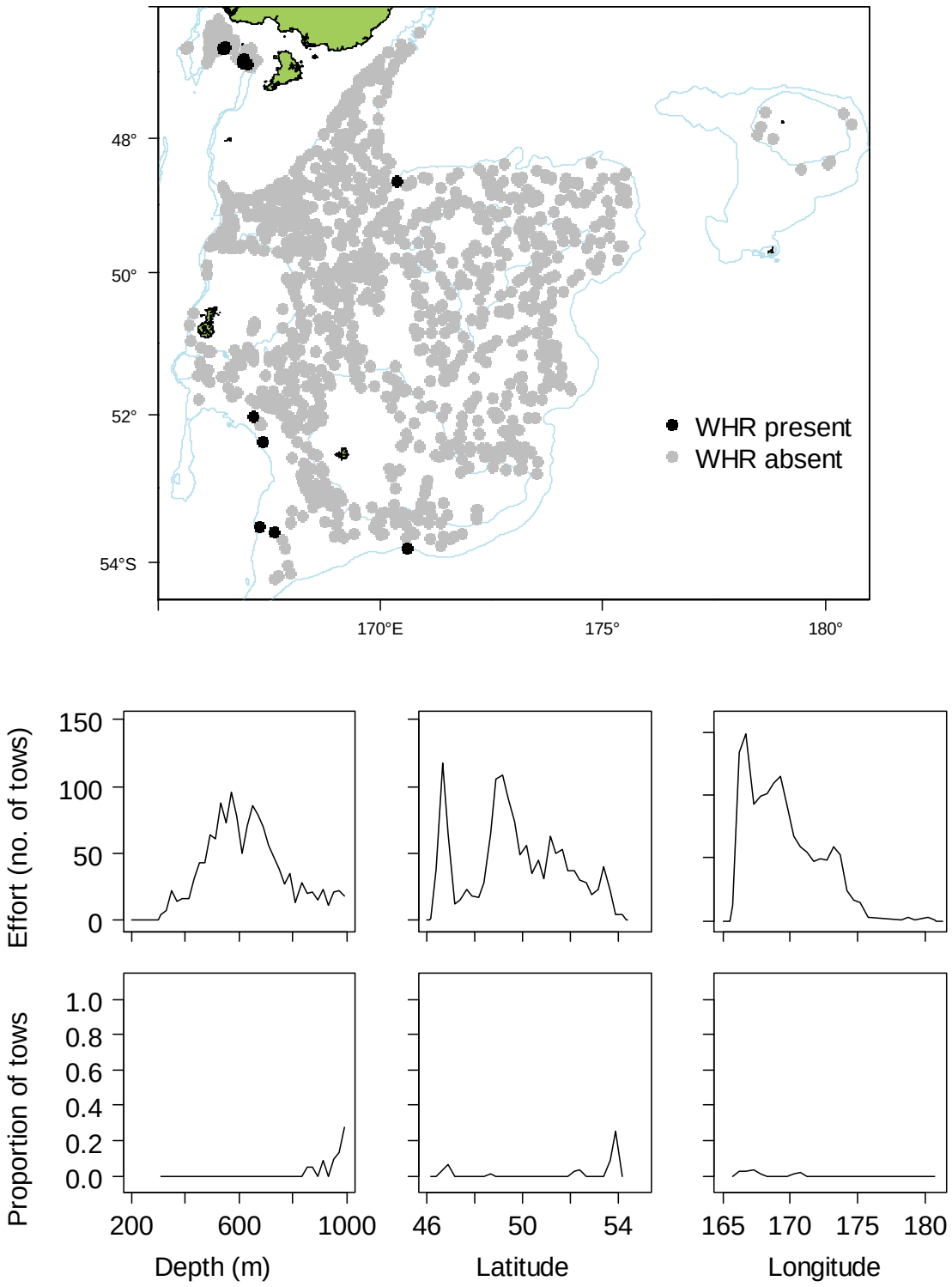
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	78.7
Number measured	35
Length mean (cm)	35–66 (48.0)
Number weighed	24

This species **has** been well identified during the time series although there can be some confusion with the white rattail (*Trachyrincus aphyodes)*. It is found **deeper** than 1000 m. The core survey area and depth range **is not** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

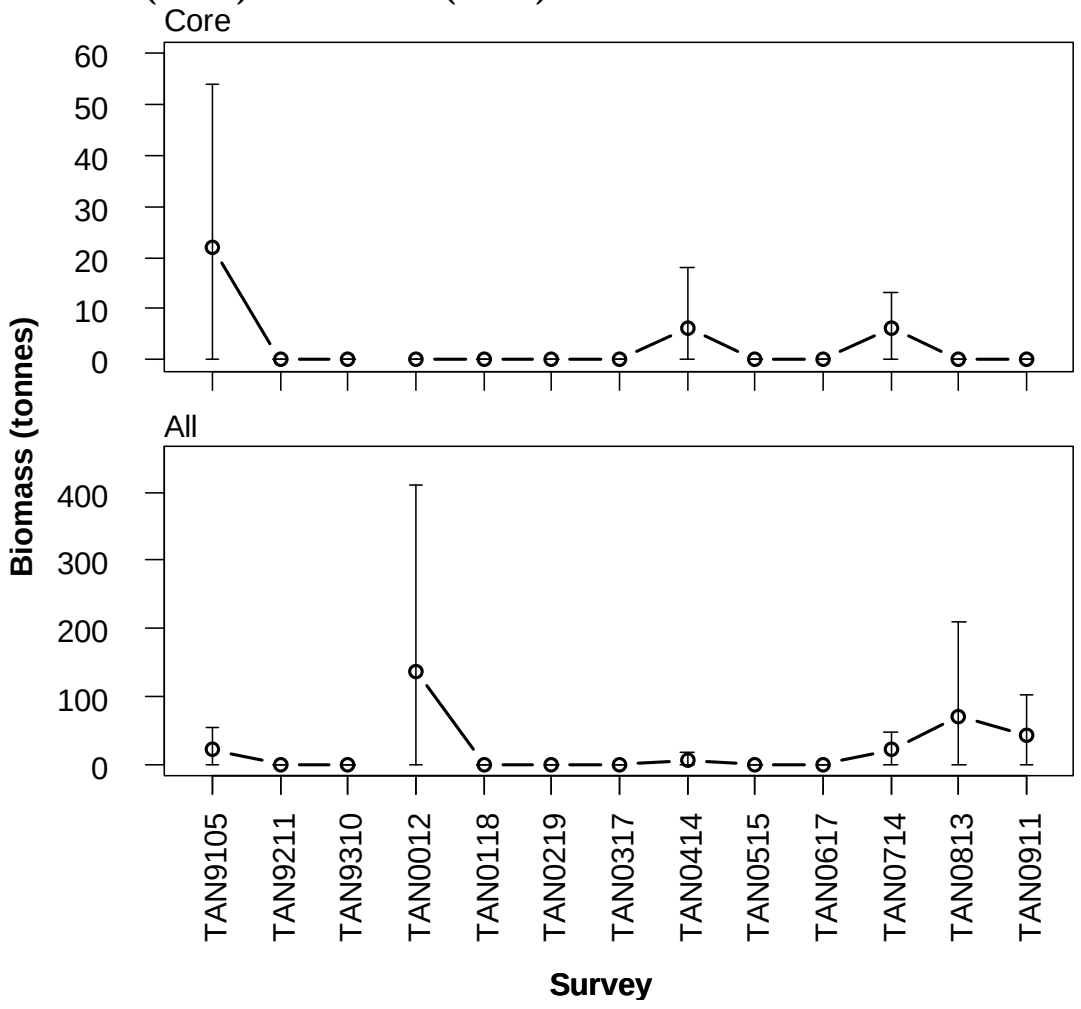
Distribution of *Trachyrincus longirostris* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Trachyrincus longirostris* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	22	71	NA	NA	NA	NA	NA	NA	22	71
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	0	0	0	0	137	100	NA	NA	137	100
TAN0118	0	0	0	0	0	0	NA	NA	0	0
TAN0219	0	0	0	0	0	0	NA	NA	0	0
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	6	100	0	0	NA	NA	NA	NA	6	100
TAN0515	0	0	0	0	0	0	NA	NA	0	0
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	6	52	3	100	13	100	NA	NA	22	62
TAN0813	0	0	0	0	70	100	NA	NA	70	100
TAN0911	0	0	0	0	42	69	NA	NA	42	69

Trends in relative biomass estimates (± 2 standard errors) of *Trachyrincus longirostris* for core strata (above) and all strata (below).



White rattail (*Trachyrincus aphyodes*) WHX

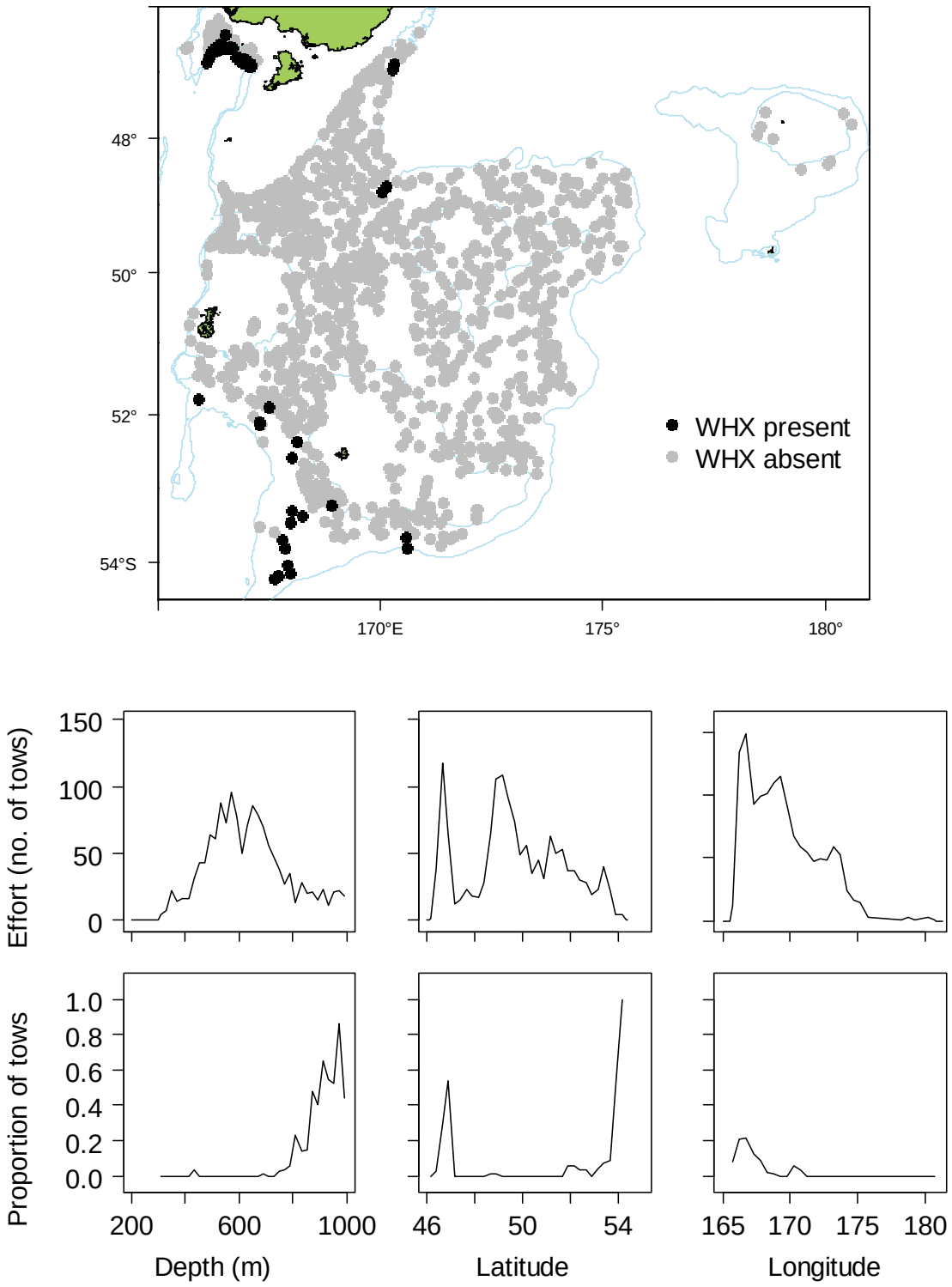
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	921.8
Number measured	307
Length range (mean) (cm)	31–91 (58.1)
Number weighed	229
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows an increase** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from areas close to and deeper than 800 m.

There is no length information presented. Gonad stage data indicate that most fish are **resting.**

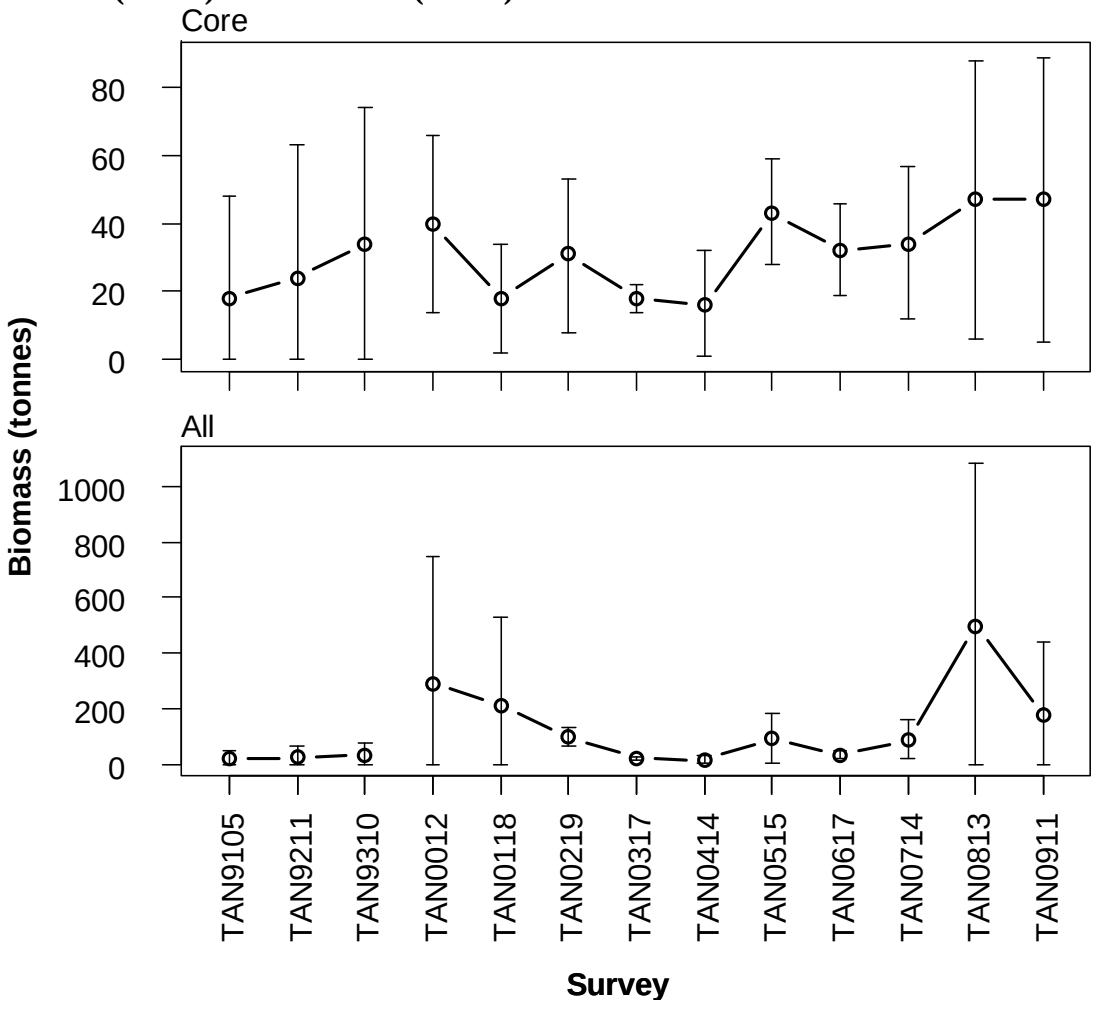
Distribution of *Trachyrincus aphyodes* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Trachyrincus aphyodes* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	18	80	NA	NA	NA	NA	NA	NA	18	80
TAN9211	24	82	NA	NA	NA	NA	0	0	24	82
TAN9310	34	60	NA	NA	NA	NA	0	0	34	60
TAN0012	40	32	0	0	250	91	NA	NA	290	78
TAN0118	18	43	0	0	193	83	NA	NA	211	75
TAN0219	31	37	0	0	67	18	NA	NA	97	17
TAN0317	18	11	3	100	NA	NA	NA	NA	21	18
TAN0414	16	46	0	0	NA	NA	NA	NA	16	46
TAN0515	43	18	6	100	44	100	NA	NA	93	48
TAN0617	32	21	0	0	NA	NA	NA	NA	32	21
TAN0714	34	33	0	0	54	62	NA	NA	88	40
TAN0813	47	44	7	64	443	66	NA	NA	496	59
TAN0911	47	44	0	0	129	100	NA	NA	176	74

Trends in relative biomass estimates (± 2 standard errors) of *Trachyrincus aphyodes* for core strata (above) and all strata (below).



Gonad stage summaries by sex for *Trachyrincus aphyodes*. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0617	39	48	14	0	0	0	0	7	67	7	0	0	7	13
TAN0714	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0813	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0911	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
ALL	39	48	14	0	0	0	0	6	69	6	0	0	6	12

Witch (*Arnoglossus scapha*) WIT

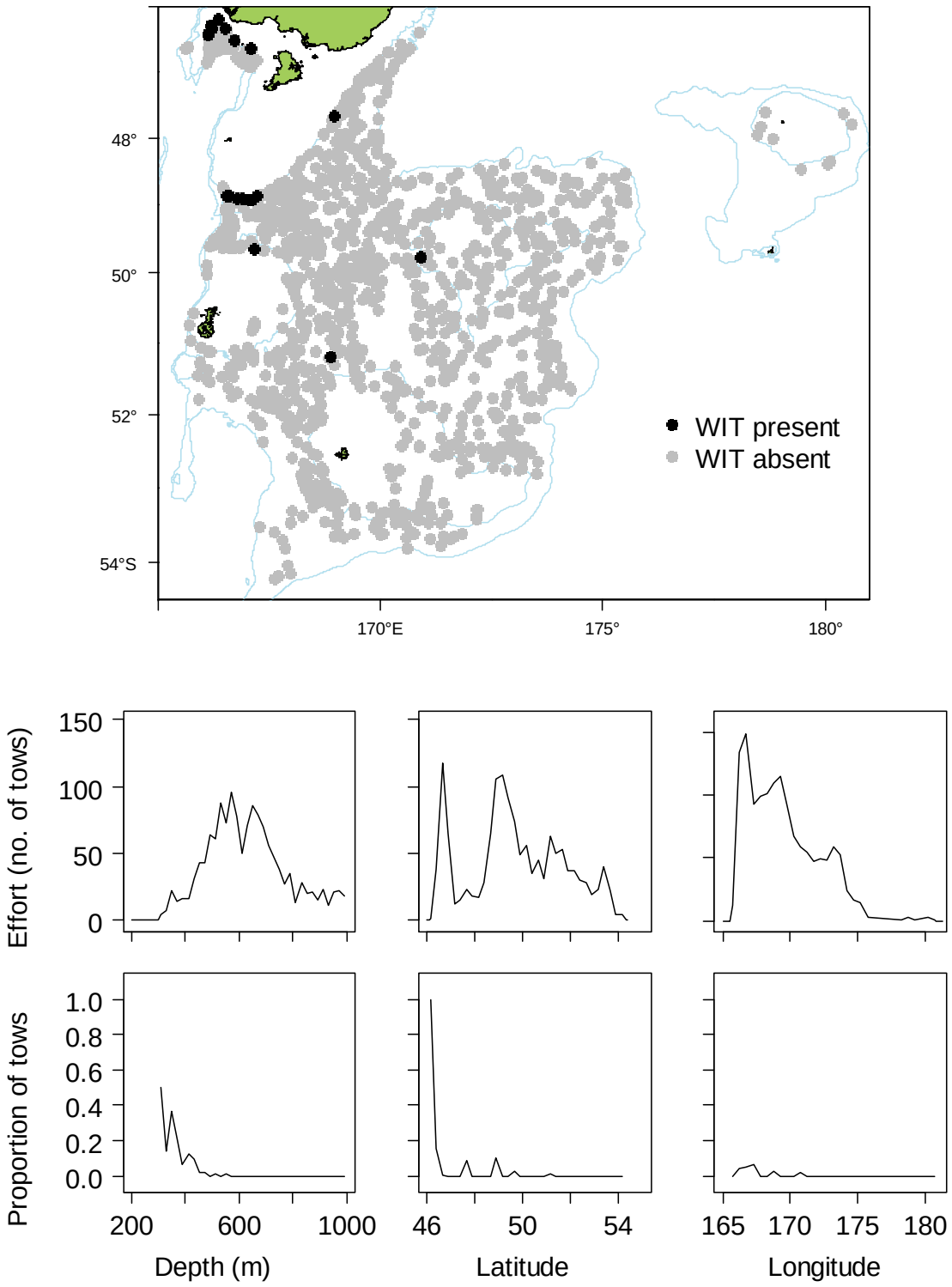
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	11
Total catch weight (kg):	12.1
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is found **shallower** than 300 m. The core survey area and depth range **is not** appropriate for this species. Distribution **does not extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Catches are recorded from areas close to 300 m.

There is no length or gonad stage information presented.

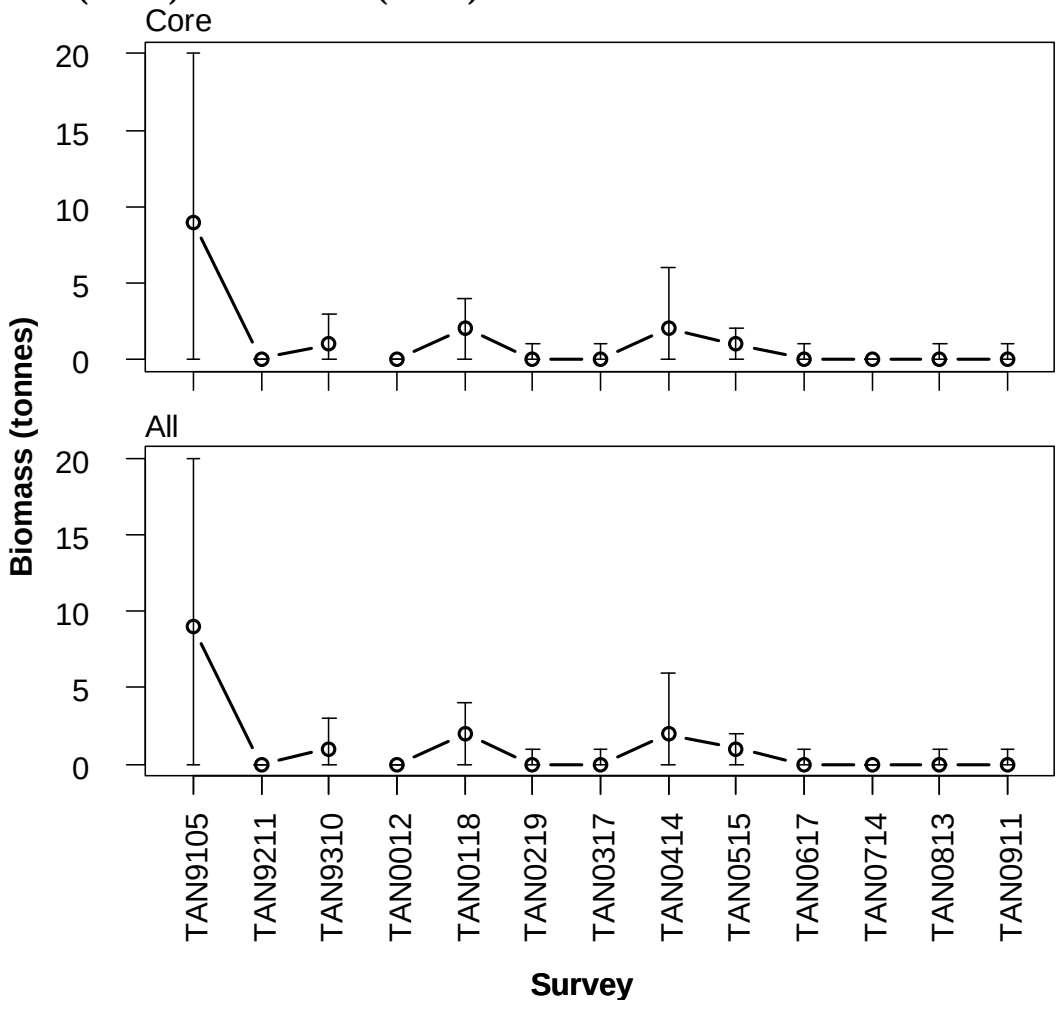
Distribution of *Arnoglossus scapha* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Arnoglossus scapha* for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	9	61	NA	NA	NA	NA	NA	NA	9	61
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	1	100	NA	NA	NA	NA	0	0	1	100
TAN0012	0	100	0	0	0	0	NA	NA	0	100
TAN0118	2	70	0	0	0	0	NA	NA	2	70
TAN0219	0	66	0	0	0	0	NA	NA	0	66
TAN0317	0	100	0	0	NA	NA	NA	NA	0	100
TAN0414	2	74	0	0	NA	NA	NA	NA	2	74
TAN0515	1	51	0	0	0	0	NA	NA	1	51
TAN0617	0	85	0	0	NA	NA	NA	NA	0	85
TAN0714	0	0	0	0	0	0	NA	NA	0	0
TAN0813	0	75	0	0	0	0	NA	NA	0	75
TAN0911	0	100	0	0	0	0	NA	NA	0	100

Trends in relative biomass estimates (± 2 standard errors) of *Arnoglossus scapha* for core strata (above) and all strata (below).



Warty squids (*Onyika* spp.) WSQ

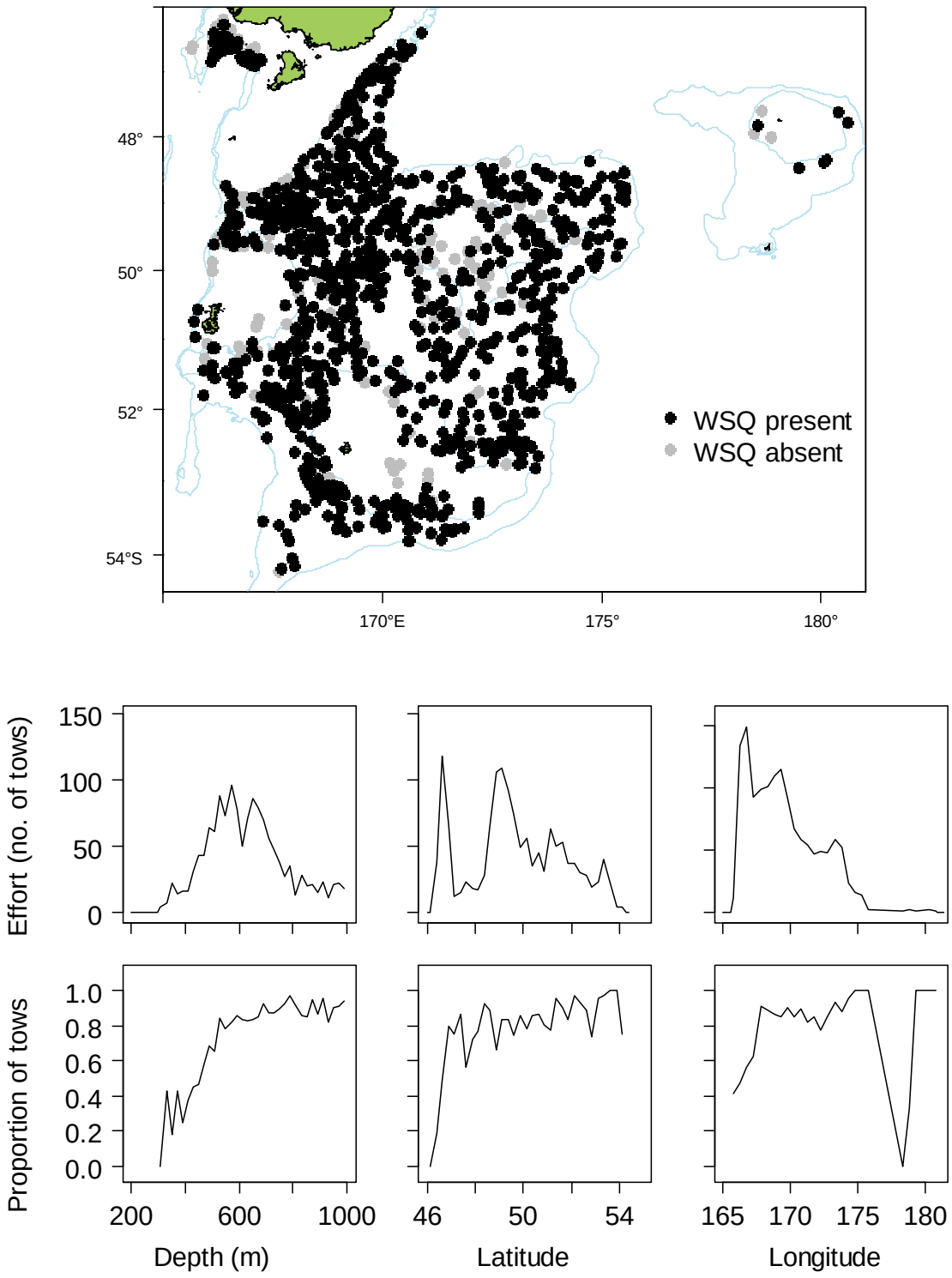
MIQ Onyika ingens	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	4 578.1
Number measured	235
Length range (mean) (cm)	10–85 (29.2)
Number weighed	105
MRQ Onyika robsoni	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	572.9
Number measured	4
Length range (mean) (cm)	59–90 (68.5)
Number weighed	4
WSQ Onyika spp.	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	701.3
Number measured	0
Length range (mean) (cm)	–
Number weighed	0

This group **has** been well identified during the time series, although the generic code for warty squid (WSQ) was used in the 1990s. Catches comprise mostly of *Onyika ingens*. It is found **deeper** than 800 m. The core survey area and depth range **is** appropriate for this group. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. They were recorded from the Bounty Platform.

Biomass of this group is **very well** estimated by the core survey area. Biomass **shows a decrease** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **well** estimated. Catches are recorded from areas close to 300 m.

There is no length or gonad stage information presented.

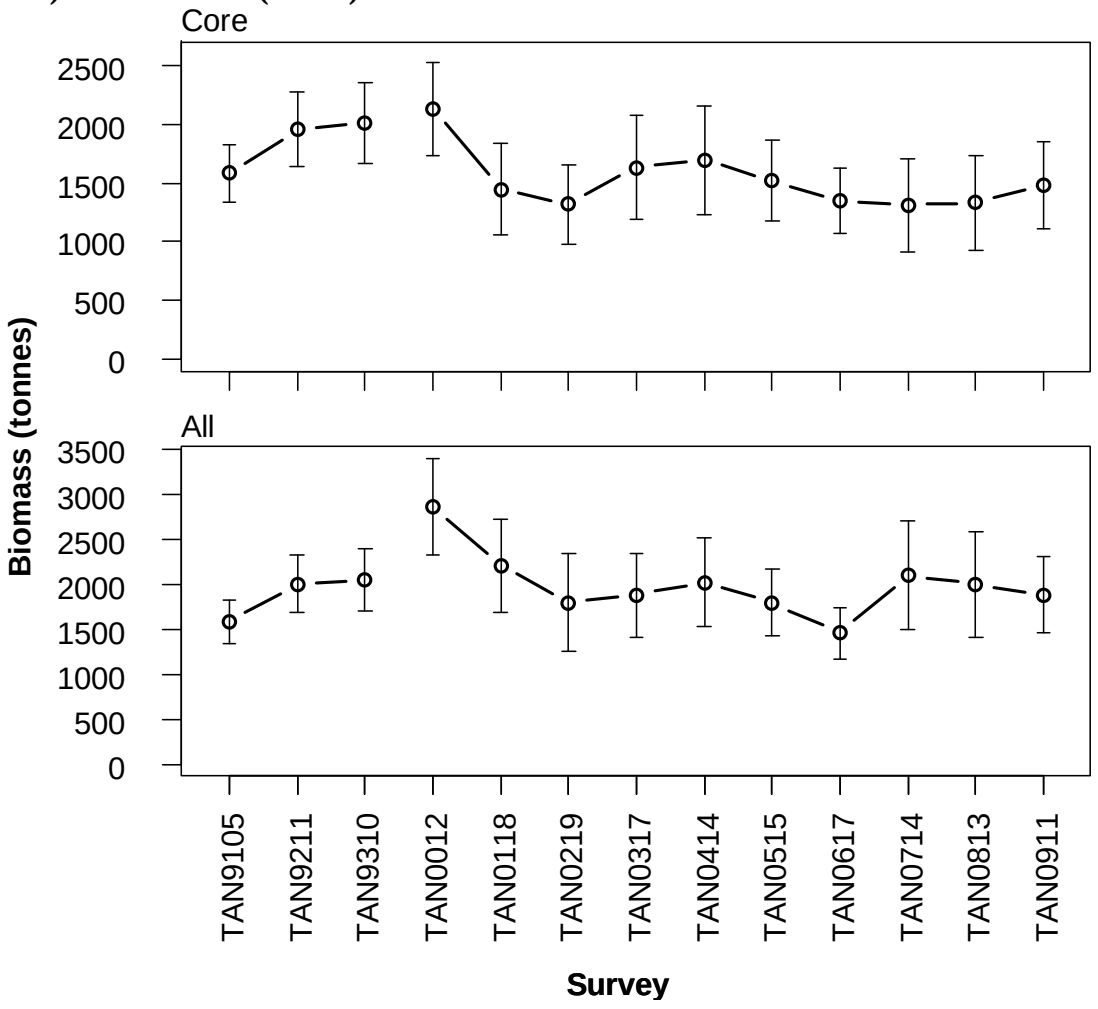
Distribution of *Onyika* spp. from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Onyika* spp. for core strata, strata outside the core area and all strata.

Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	1582	8	NA	NA	NA	NA	NA	NA	1582	8
TAN9211	1956	8	NA	NA	NA	NA	48	70	2003	8
TAN9310	2011	9	NA	NA	NA	NA	36	19	2047	9
TAN0012	2129	10	351	22	377	45	NA	NA	2856	10
TAN0118	1448	14	317	27	446	35	NA	NA	2211	12
TAN0219	1322	13	193	31	284	74	NA	NA	1799	15
TAN0317	1631	14	254	28	NA	NA	NA	NA	1885	13
TAN0414	1696	14	326	28	NA	NA	NA	NA	2022	13
TAN0515	1521	12	200	31	75	15	NA	NA	1796	11
TAN0617	1346	11	113	34	NA	NA	NA	NA	1459	10
TAN0714	1312	15	272	23	516	43	NA	NA	2100	15
TAN0813	1336	15	304	21	363	57	NA	NA	2003	15
TAN0911	1481	13	242	16	161	58	NA	NA	1885	11

Trends in relative biomass estimates (± 2 standard errors) of *Onyika* spp. for core strata (above) and all strata (below).



White warehou (*Seriolella caerulea*) WWA

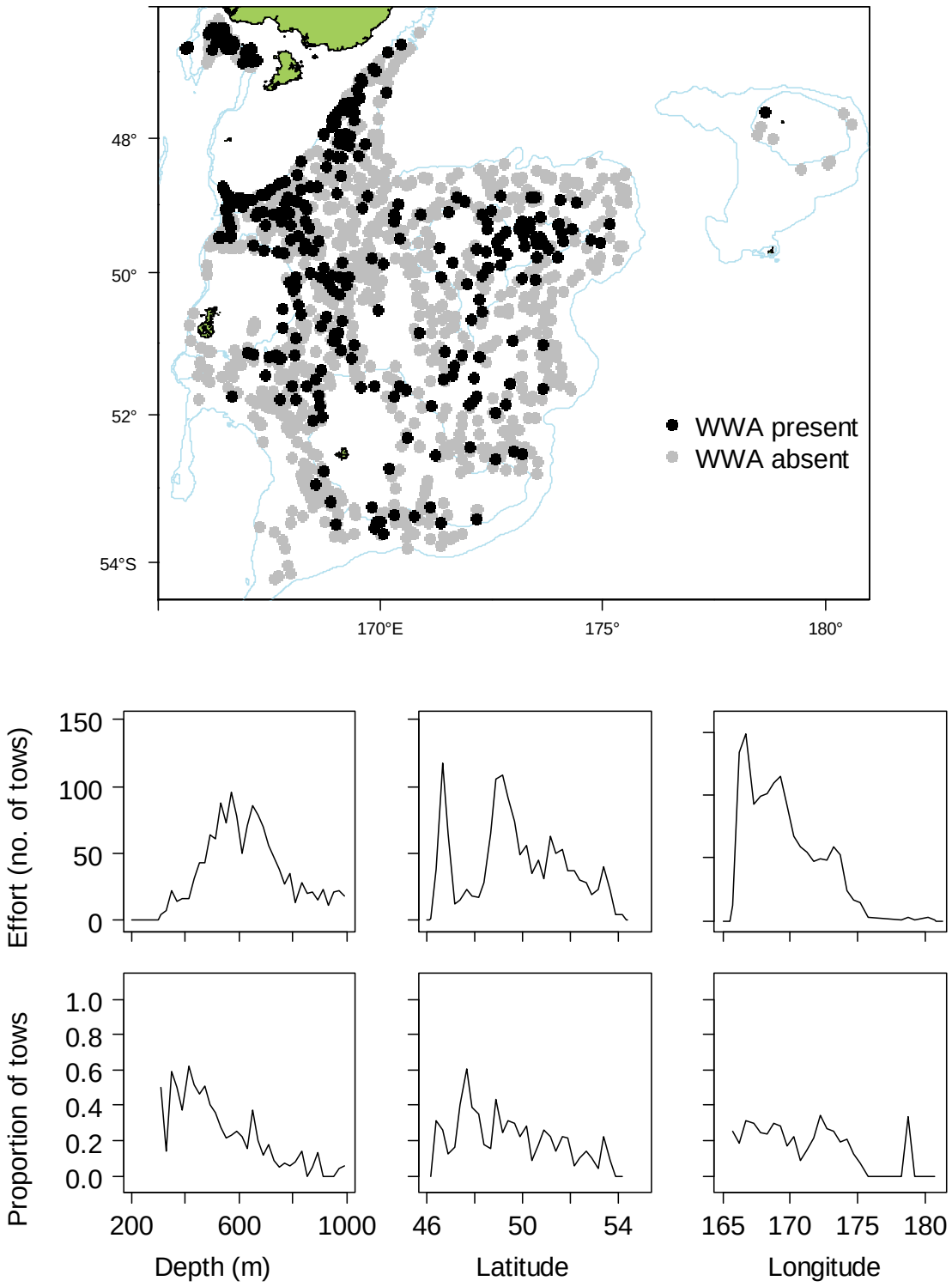
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	9 467.3
Number measured	3 457
Length range (mean) (cm)	22–64 (43.8)
Number weighed	1 916
Length-weight parameters a, b (r^2)	0.02322545, 2.972842 (98.46)

This species has been **well** identified during the time series. It is occasionally found **deeper than 800 m**. The core survey area and depth range **is** appropriate for this species. Distribution **does** extend to the areas deeper than 800 m surveyed from 2000 to 2009. It **is** recorded from the Bounty Platform.

Biomass of this species is **moderately well** estimated by the core survey. Biomass **shows no clear trend** since the start of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Highest catchrates are recorded in the **northwest** from Puysegur and the southern Stewart/Snares shelf.

Length frequencies **have multiple modes which may contain information about year-class strength**. Mean length **shows a decrease then an increase**. Gonad stage data indicate that most fish are **resting.**

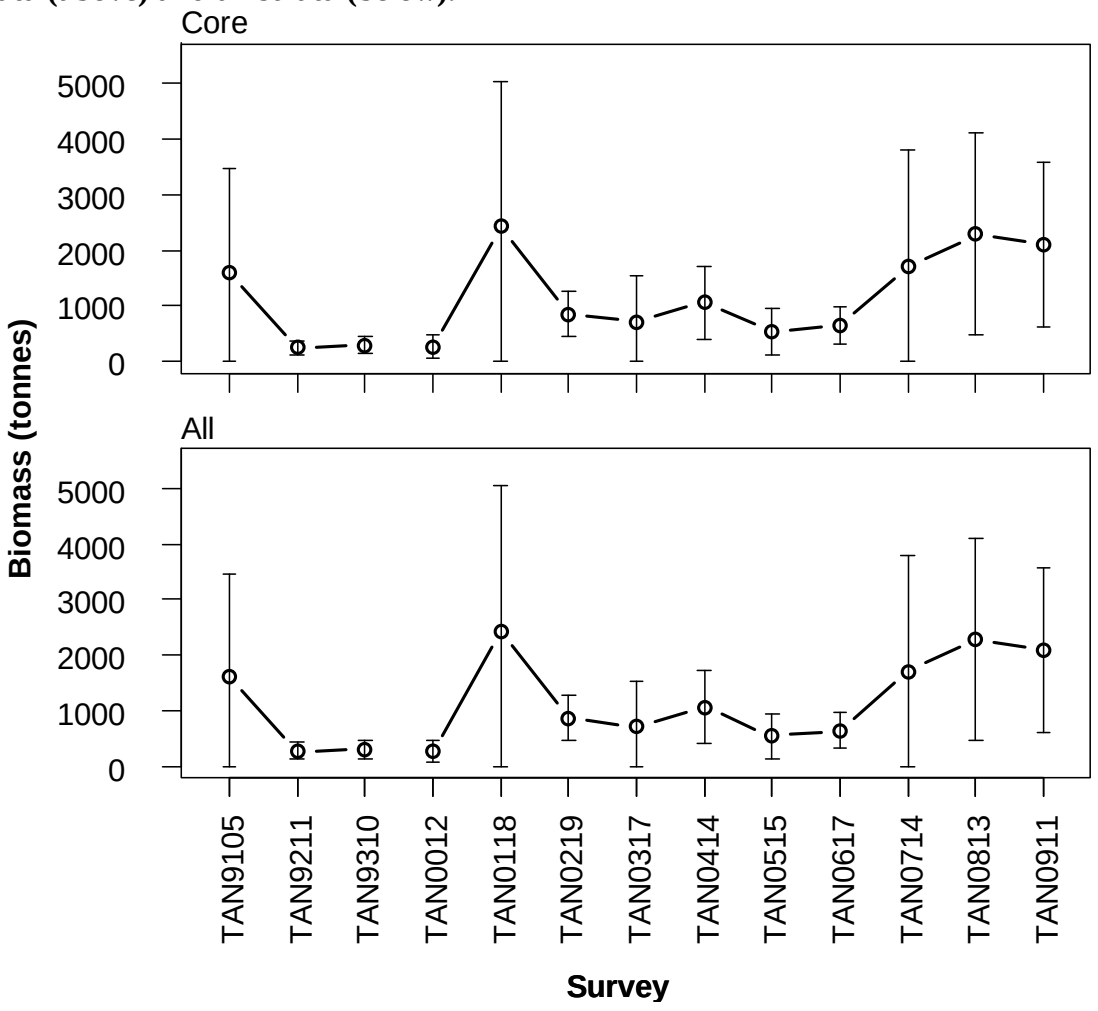
Distribution of *Seriolella caerulea* from all summer surveys. Valid biomass stations only.



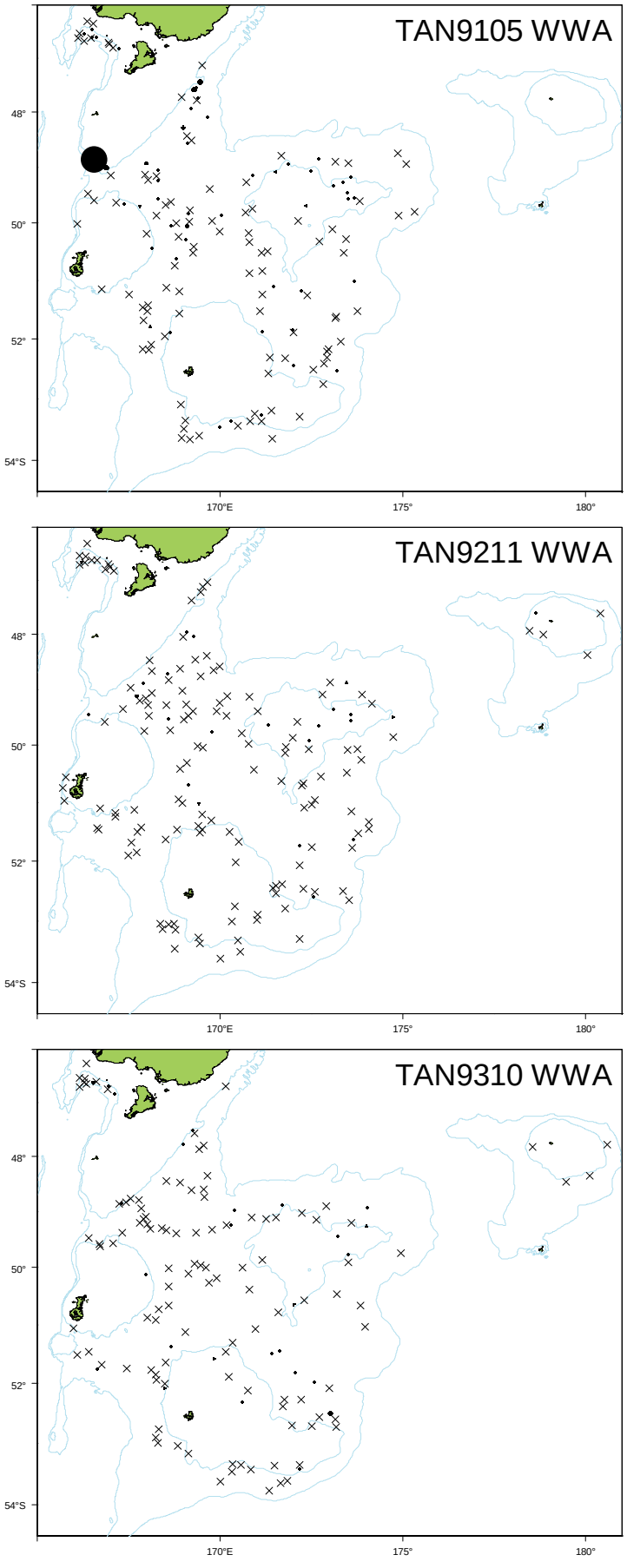
Relative biomass estimates (t) and c.v.s (%) of *Seriolella caerulea* for core strata, strata outside the core area and all strata.

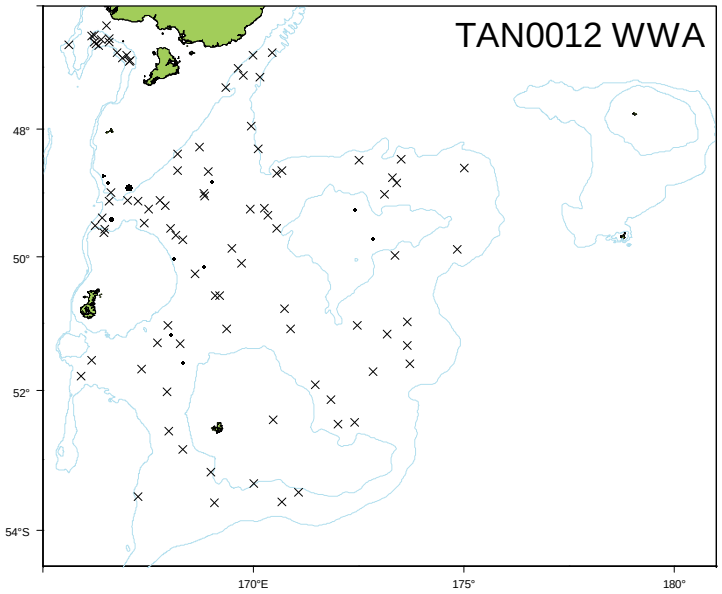
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	1605	58	NA	NA	NA	NA	NA	NA	1605	58
TAN9211	243	26	NA	NA	NA	NA	36	100	279	26
TAN9310	293	28	NA	NA	NA	NA	0	0	293	28
TAN0012	266	39	0	0	0	0	NA	NA	266	39
TAN0118	2433	54	0	0	0	0	NA	NA	2433	54
TAN0219	853	24	10	100	0	0	NA	NA	863	24
TAN0317	709	58	0	0	NA	NA	NA	NA	709	58
TAN0414	1061	31	0	0	NA	NA	NA	NA	1061	31
TAN0515	538	38	0	0	0	0	NA	NA	538	38
TAN0617	646	26	0	0	NA	NA	NA	NA	646	26
TAN0714	1707	61	0	0	0	0	NA	NA	1707	61
TAN0813	2283	40	10	63	0	0	NA	NA	2293	40
TAN0911	2093	35	0	0	0	0	NA	NA	2093	35

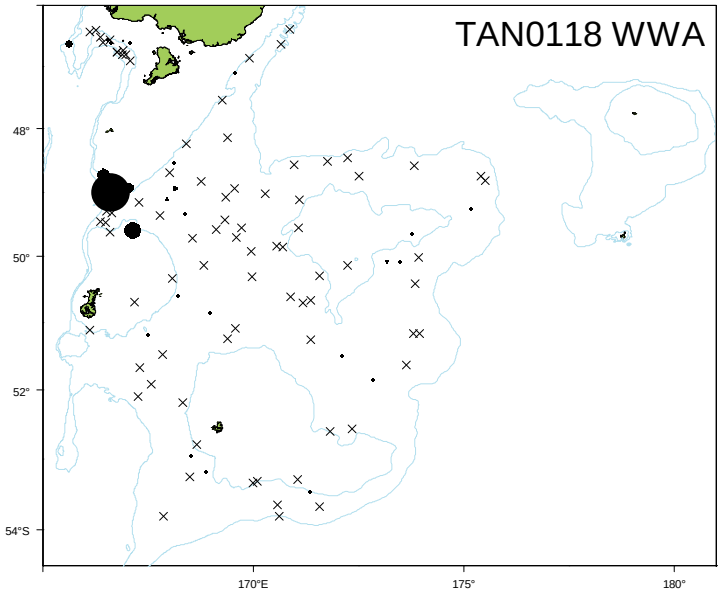
Trends in relative biomass estimates (± 2 standard errors) of *Seriolella caerulea* for core strata (above) and all strata (below).

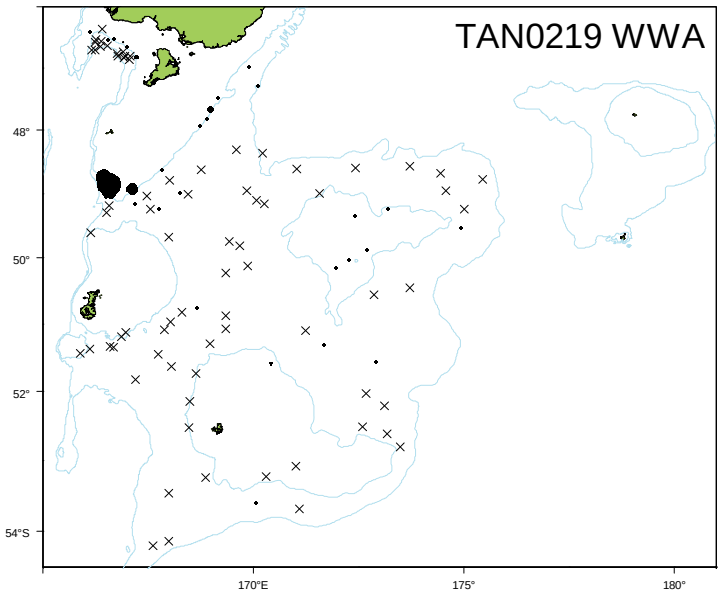


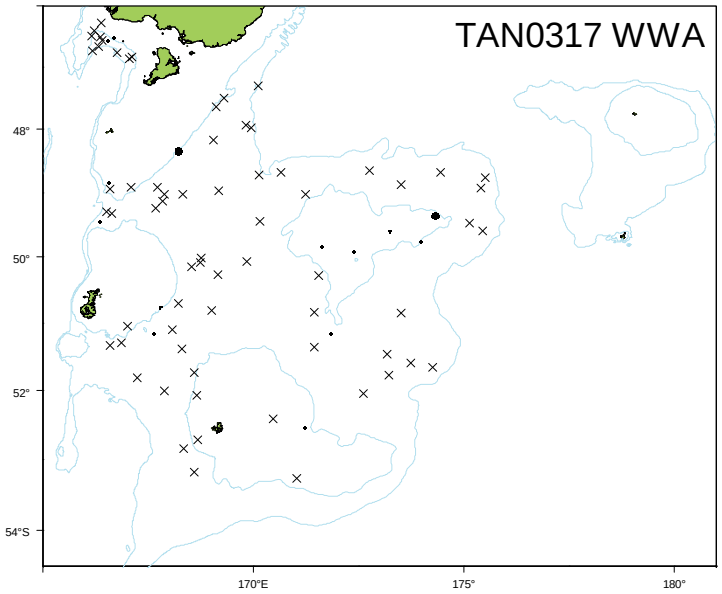
Catchrates of *Seriolella caerulea*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

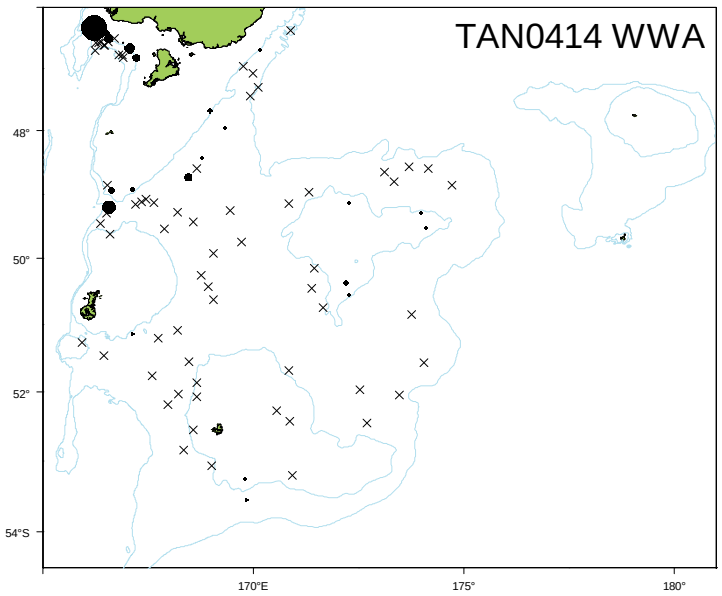


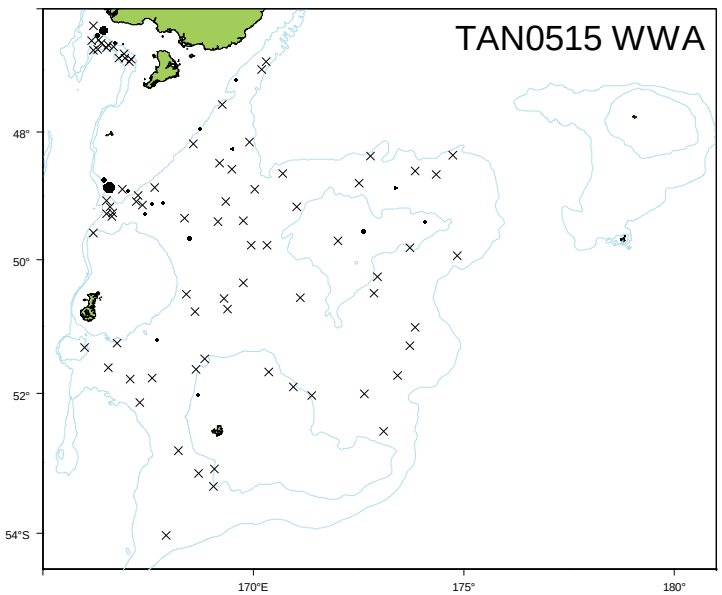

TAN0012 WWA
48°
50°
52°
54°S
170°E
175°
180°

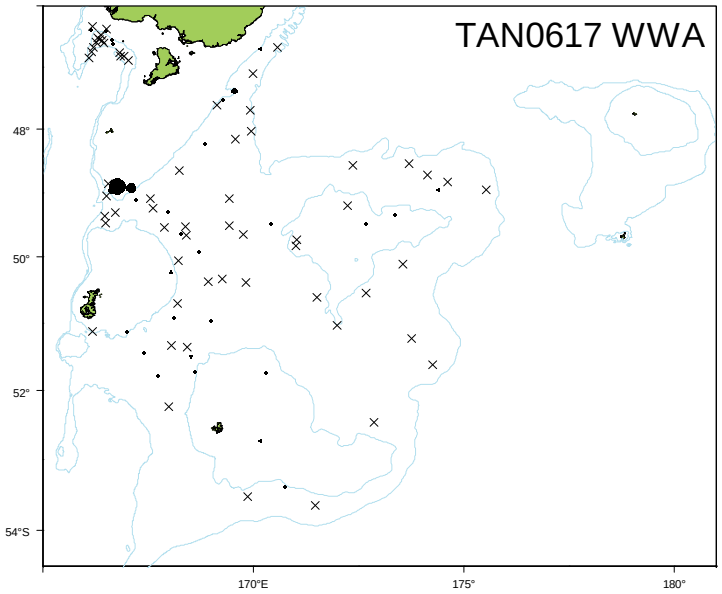

TAN0118 WWA
48°
50°
52°
54°S
170°E
175°
180°

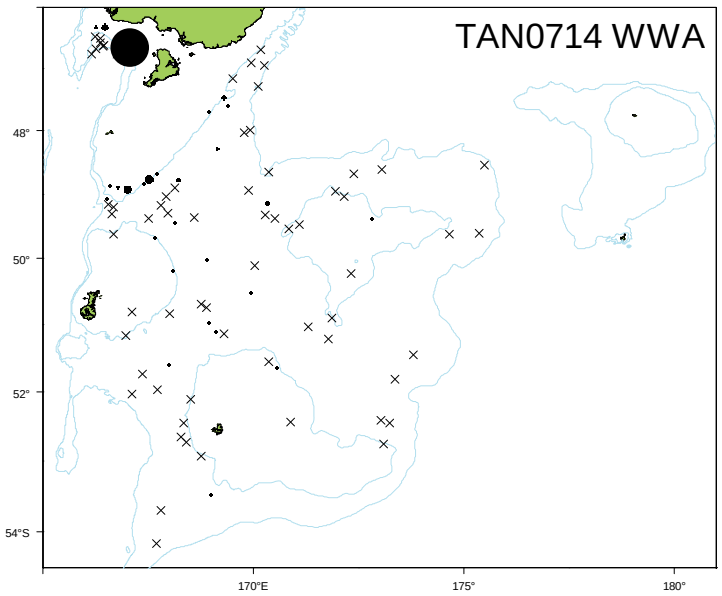

TAN0219 WWA
48°
50°
52°
54°S
170°E
175°
180°

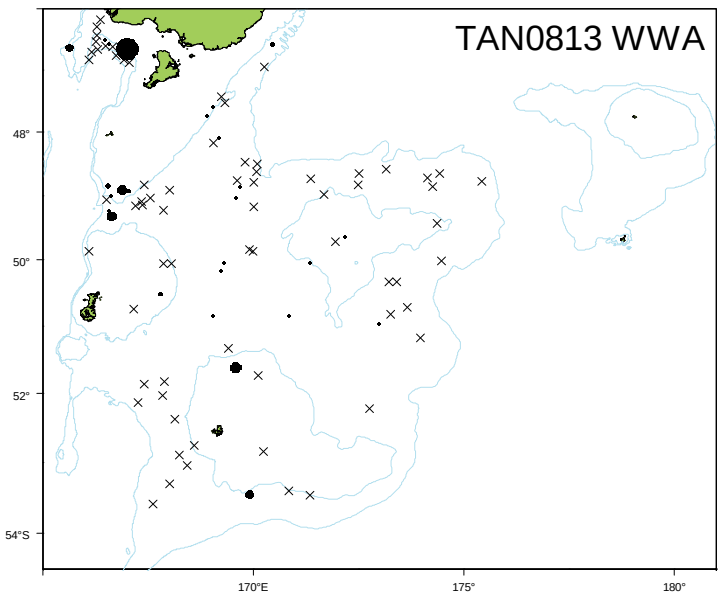

TAN0317 WWA
48°
50°
52°
54°S
170°E
175°
180°

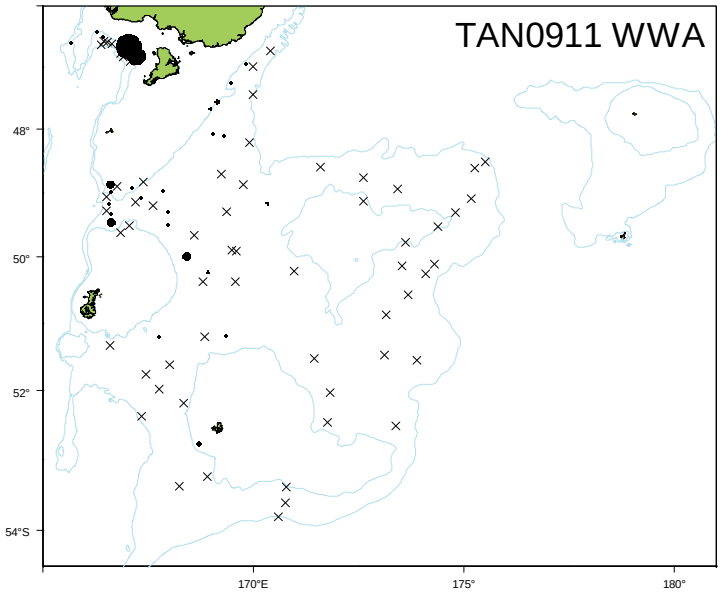

TAN0414 WWA
48°
50°
52°
54°S
170°E
175°
180°


TAN0515 WWA
48°
50°
52°
54°S
170°E
175°
180°


TAN0617 WWA
48°
50°
52°
54°S
170°E
175°
180°


TAN0714 WWA
48°
50°
52°
54°S
170°E
175°
180°

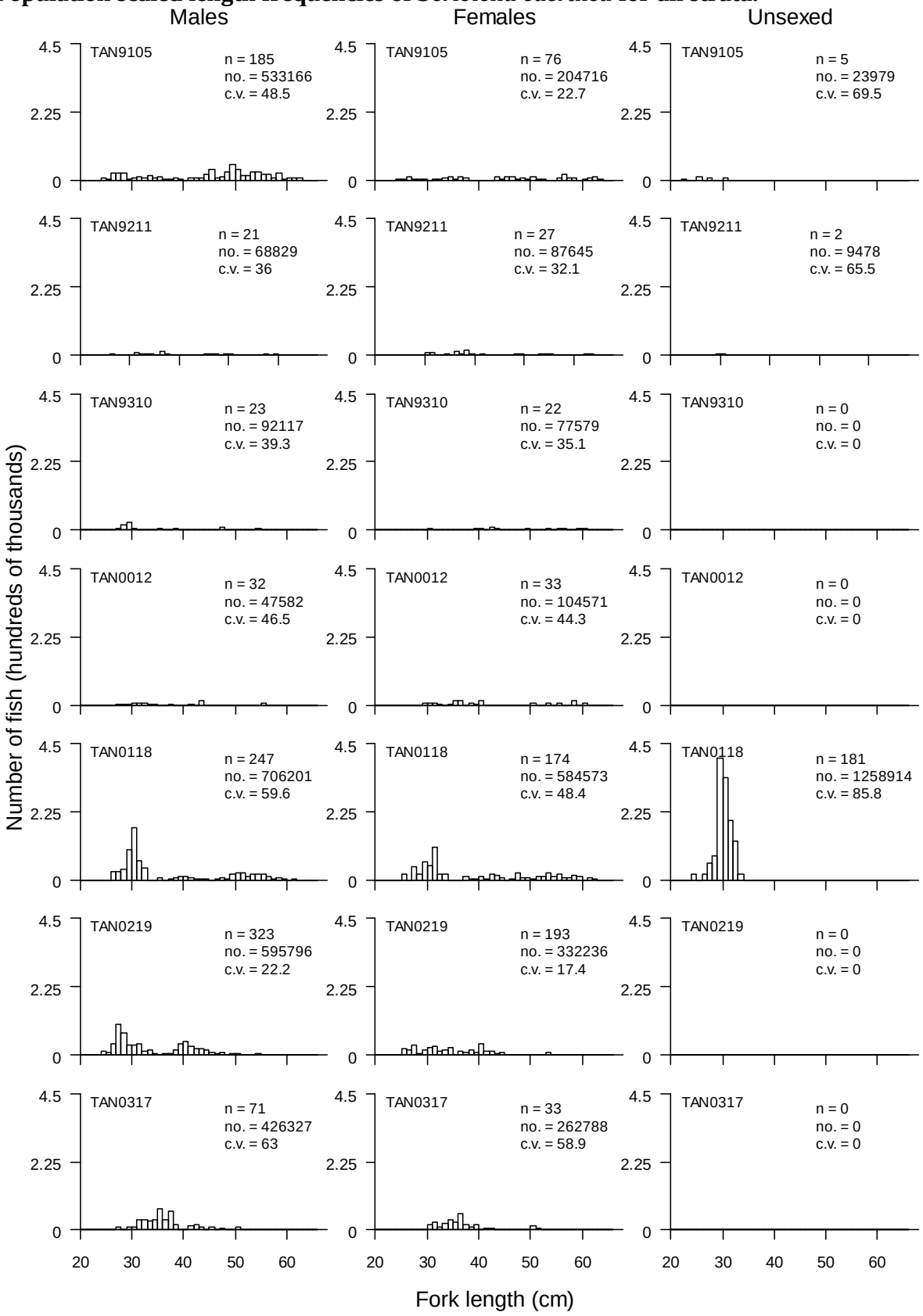

TAN0813 WWA
48°
50°
52°
54°S
170°E
175°
180°

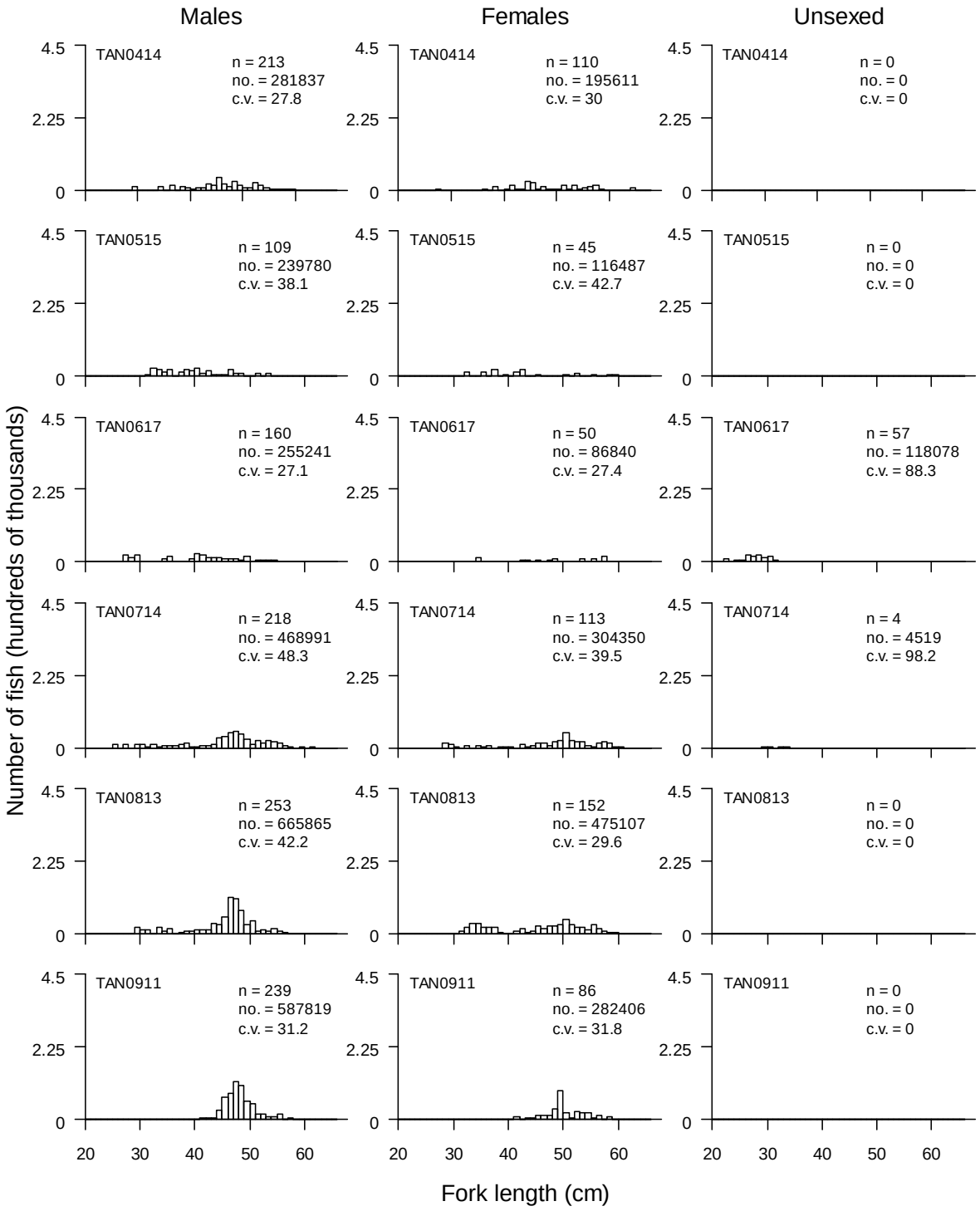


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	22	63	40.2	266
TAN9211	26	64	43.7	50
TAN9310	27	60	43.2	45
TAN0012	27	60	34.5	65
TAN0118	24	62	39.7	602
TAN0219	24	60	36.2	516
TAN0317	27	58	37.8	104
TAN0414	27	64	47.1	323
TAN0515	30	59	42.8	154
TAN0617	22	57	40.6	267
TAN0714	25	61	46.2	335
TAN0813	29	60	47.3	405
TAN0911	33	60	47.7	325

Population scaled length frequencies of *Seriolella caerulea* for all strata.




Males
Females
Unsexed
Number of fish (hundreds of thousands)
Fork length (cm)
TAN0414
n = 213
no. = 281837
c.v. = 27.8
TAN0414
n = 110
no. = 195611
c.v. = 30
TAN0414
n = 0
no. = 0
c.v. = 0
TAN0515
n = 109
no. = 239780
c.v. = 38.1
TAN0515
n = 45
no. = 116487
c.v. = 42.7
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0617
n = 160
no. = 255241
c.v. = 27.1
TAN0617
n = 50
no. = 86840
c.v. = 27.4
TAN0617
n = 57
no. = 118078
c.v. = 88.3
TAN0714
n = 218
no. = 468991
c.v. = 48.3
TAN0714
n = 113
no. = 304350
c.v. = 39.5
TAN0714
n = 4
no. = 4519
c.v. = 98.2
TAN0813
n = 253
no. = 665865
c.v. = 42.2
TAN0813
n = 152
no. = 475107
c.v. = 29.6
TAN0813
n = 0
no. = 0
c.v. = 0
TAN0911
n = 239
no. = 587819
c.v. = 31.2
TAN0911
n = 86
no. = 282406
c.v. = 31.8
TAN0911
n = 0
no. = 0
c.v. = 0
0
2.25
4.5
20
30
40
50
60

Gonad stage summaries by sex for *Seriolella caerulea*. Percentage at each stage using the MD staging method.

Survey	M1	M2	M3	M4	M5	M6	M7	F1	F2	F3	F4	F5	F6	F7
TAN9105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	0	50	0	0	0	0	50	0	67	22	0	0	0	11
TAN0118	4	96	0	0	0	0	0	0	93	3	0	0	0	3
TAN0219	100	0	0	0	0	0	0	97	0	3	0	0	0	0
TAN0317	56	37	0	0	0	0	7	63	33	4	0	0	0	0
TAN0414	6	92	0	0	0	0	2	9	88	0	0	0	0	3
TAN0515	80	0	20	0	0	0	0	50	50	0	0	0	0	0
TAN0617	8	87	6	0	0	0	0	10	72	12	0	0	0	5
TAN0714	6	83	0	1	0	0	11	12	79	8	0	0	1	0
TAN0813	9	39	50	2	0	0	0	0	62	32	0	0	0	6
TAN0911	0	89	1	0	0	0	9	0	67	32	1	0	0	0
ALL	11	76	7	0	0	0	5	15	67	15	0	0	0	2