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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 A: Species codes AGR to CYL

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9. SPECIES SUMMARIES

Ribbonfish (*Agrostichthys parkeri*) AGR

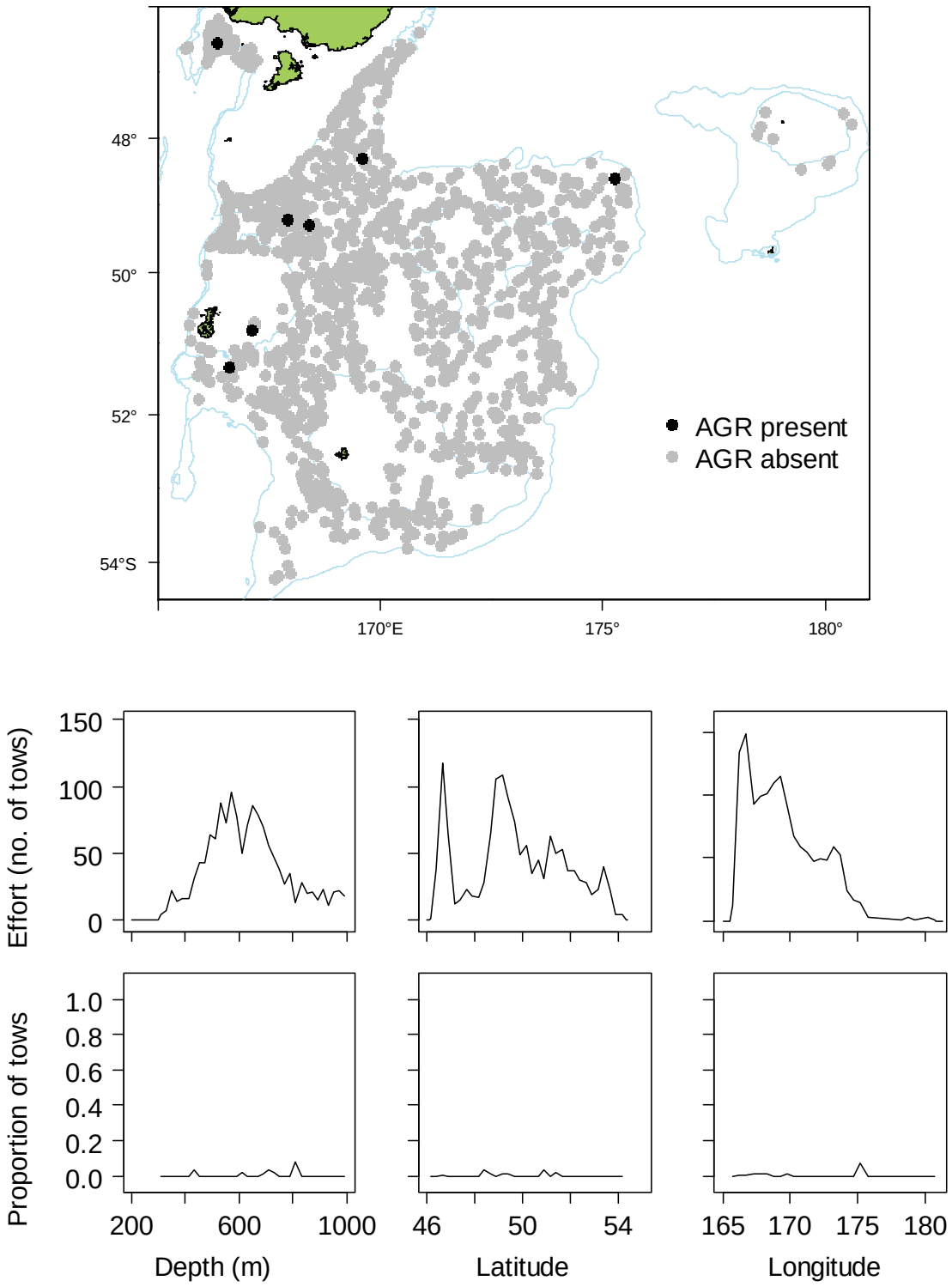
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	7
Total catch weight (kg):	17.9
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is **pelagic**. 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 **was not** recorded from the Bounty Platform.

There were **too few fish caught to determine whether the core survey area is appropriate for this species**. Biomass of this species is **poorly** estimated by the core survey. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is also **poorly** estimated.

There is no length or gonad stage information.

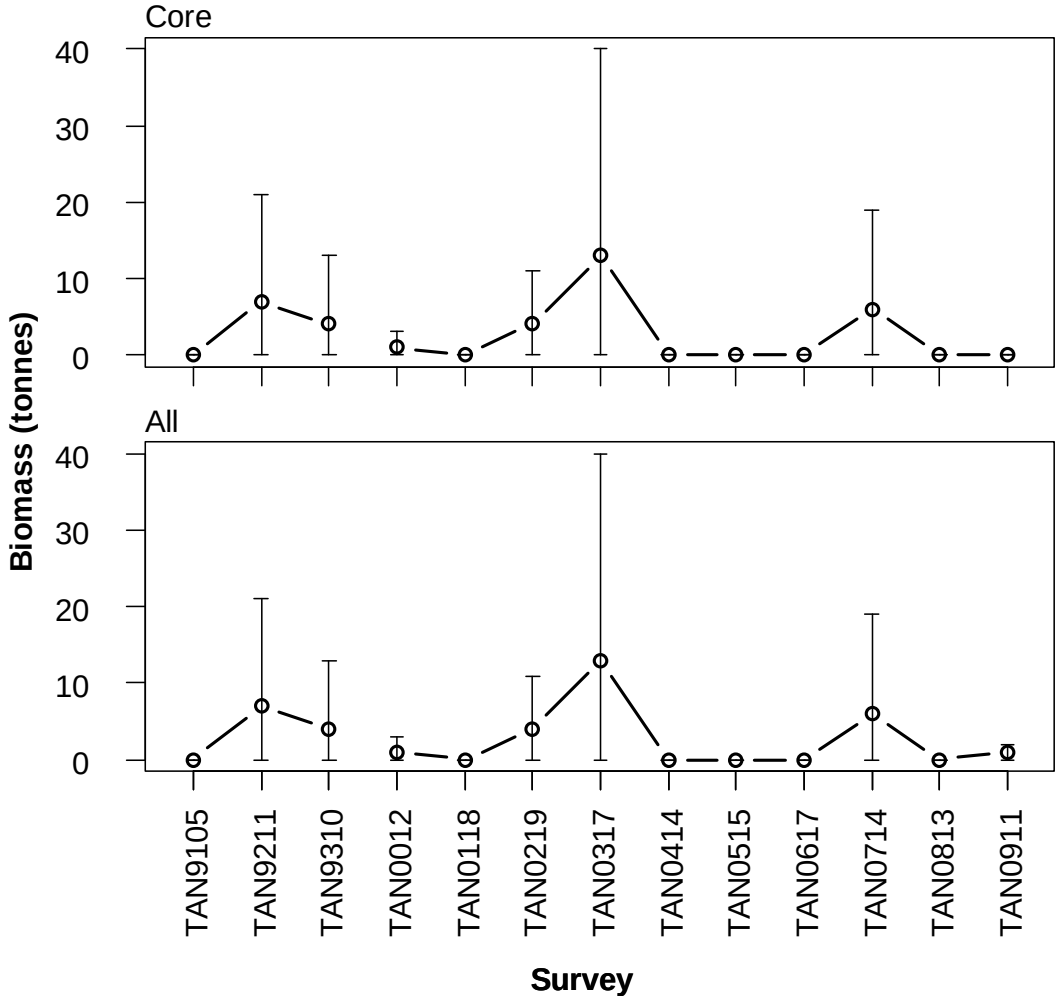
Distribution of *Agrostichthys parkeri* from all summer surveys. Valid biomass stations only.



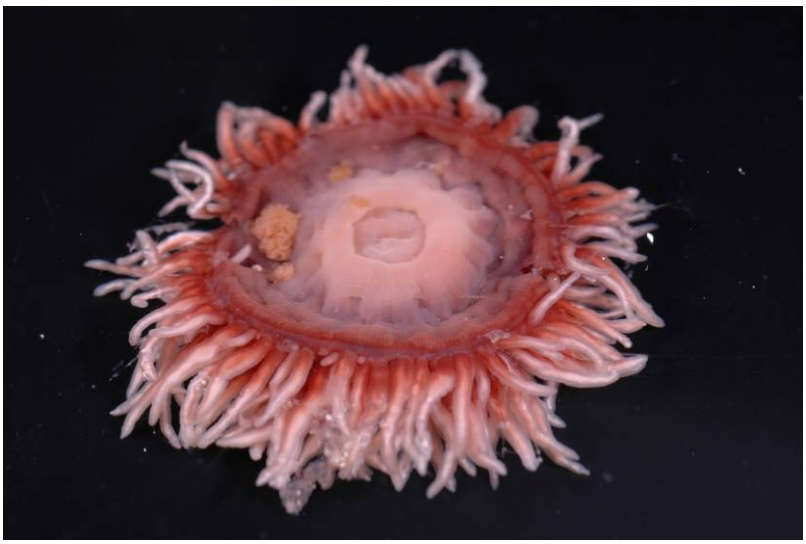
Relative biomass estimates (t) and c.v.s (%) of *Agrostichthys parkeri* for core strata, strata outside the core area and all strata.

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	7	100	NA	NA	NA	NA	0	0	7	100
TAN9310	4	100	NA	NA	NA	NA	0	0	4	100
TAN0012	1	100	0	0	0	0	NA	NA	1	100
TAN0118	0	0	0	0	0	0	NA	NA	0	0
TAN0219	4	100	0	0	0	0	NA	NA	4	100
TAN0317	13	100	0	0	NA	NA	NA	NA	13	100
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	6	100	0	0	0	0	NA	NA	6	100
TAN0813	0	0	0	0	0	0	NA	NA	0	0
TAN0911	0	0	1	100	0	0	NA	NA	1	100

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



Anenomes ANT



Coded as ACS

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	8
Total catch weight (kg):	172.1

Coded as ANT

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	729.8

Coded as BOC

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	5
Total catch weight (kg):	4.9

Coded as HMT

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	8
Total catch weight (kg):	61.1

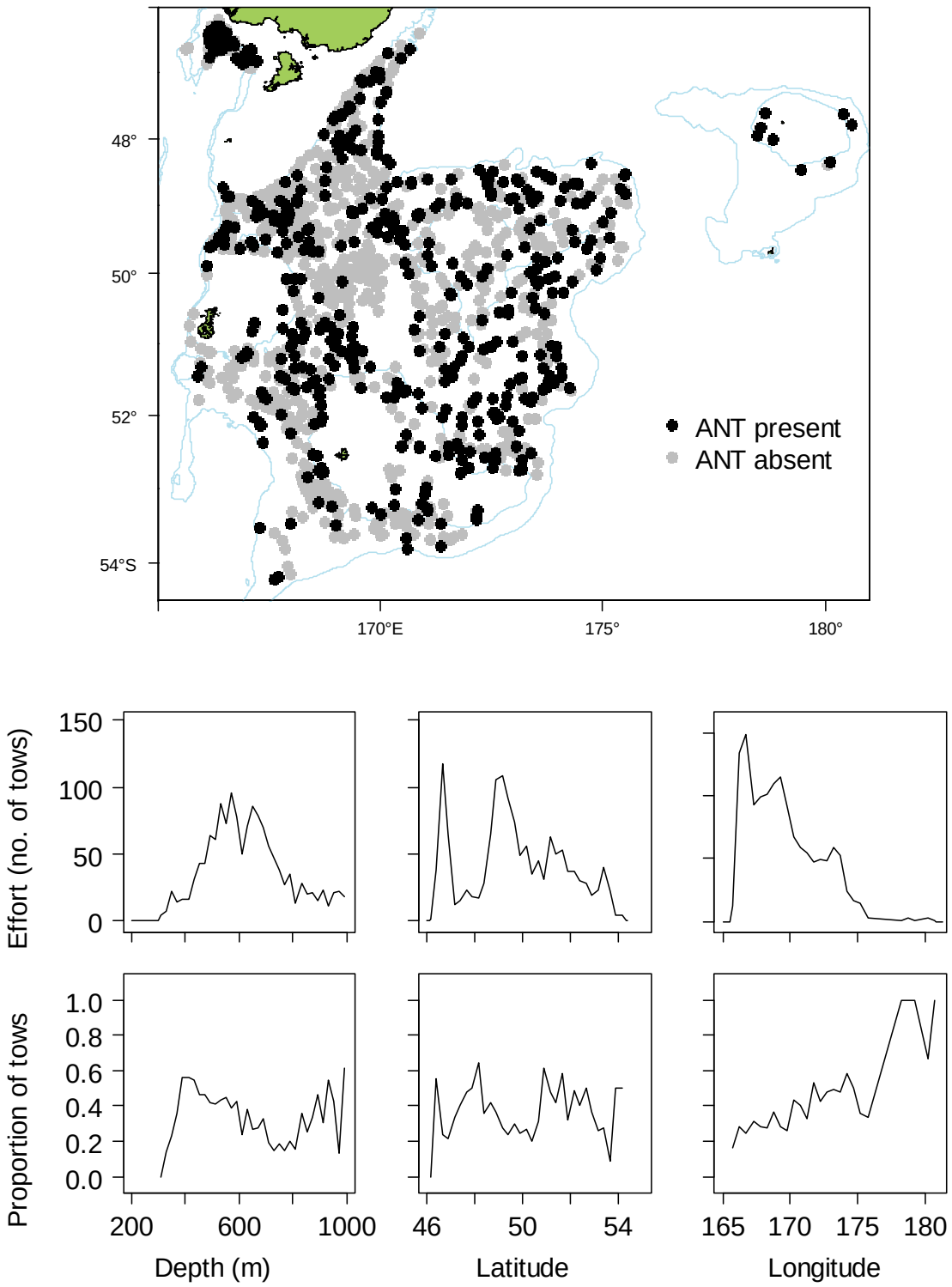
Coded as LIP

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	4
Total catch weight (kg):	3.4

This group **has not** been well identified during the time series, particularly on early surveys in 1991 and 1992. 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 species is **moderately well** estimated by the core survey from 1993. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Biomass **shows no clear trend** since 1992.

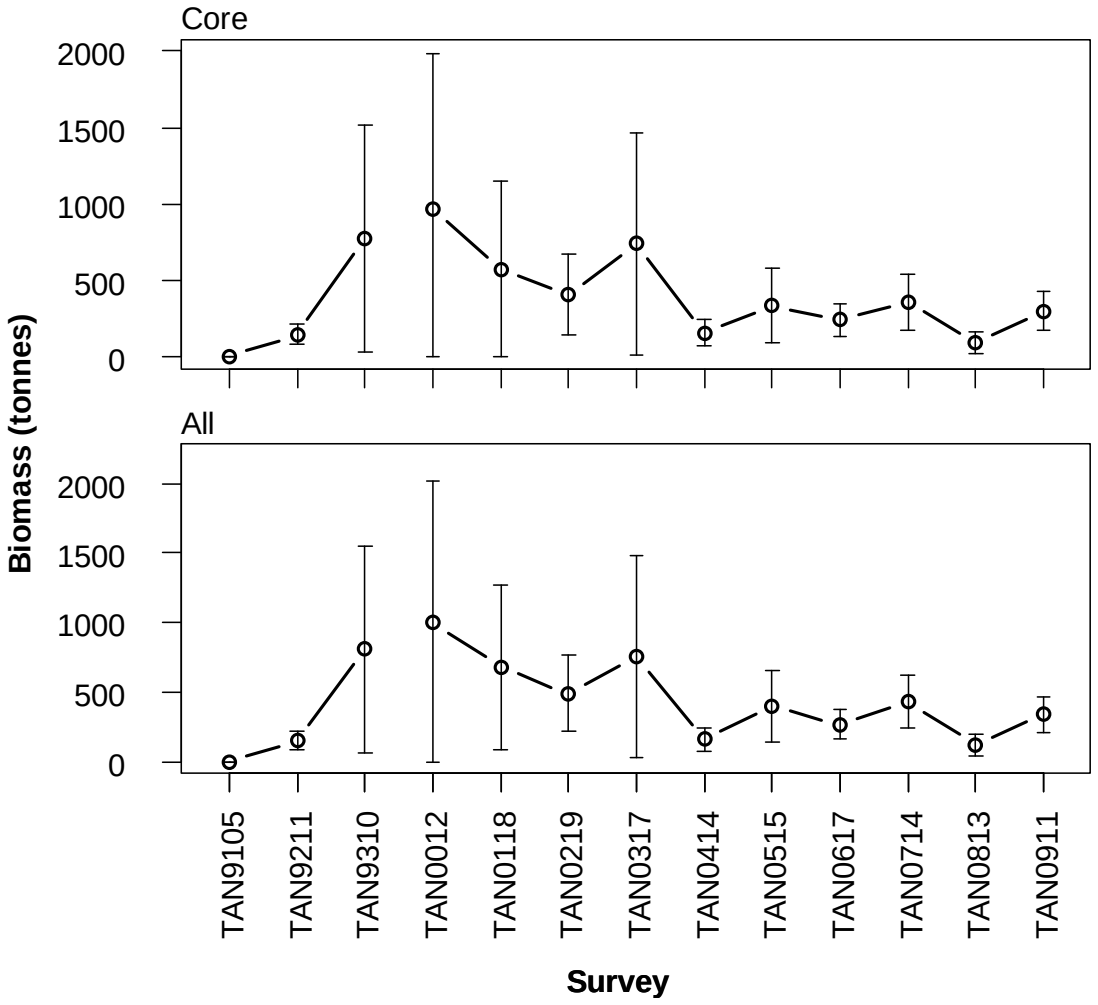
Distribution of Anenomes from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of Anenomes 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	NA
TAN9211	145	23	NA	NA	NA	NA	7	53	151	22
TAN9310	775	49	NA	NA	NA	NA	31	71	807	47
TAN0012	965	54	27	34	9	100	NA	NA	1001	52
TAN0118	567	53	16	38	98	36	NA	NA	681	44
TAN0219	410	33	32	50	47	56	NA	NA	489	29
TAN0317	739	50	14	60	NA	NA	NA	NA	753	49
TAN0414	156	29	4	71	NA	NA	NA	NA	160	28
TAN0515	336	37	26	36	36	100	NA	NA	398	33
TAN0617	242	22	24	31	NA	NA	NA	NA	266	21
TAN0714	360	26	48	41	21	50	NA	NA	430	23
TAN0813	94	37	7	71	18	100	NA	NA	120	33
TAN0911	297	22	30	46	10	100	NA	NA	338	20

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



Catshark (*Apristurus* spp.) APR

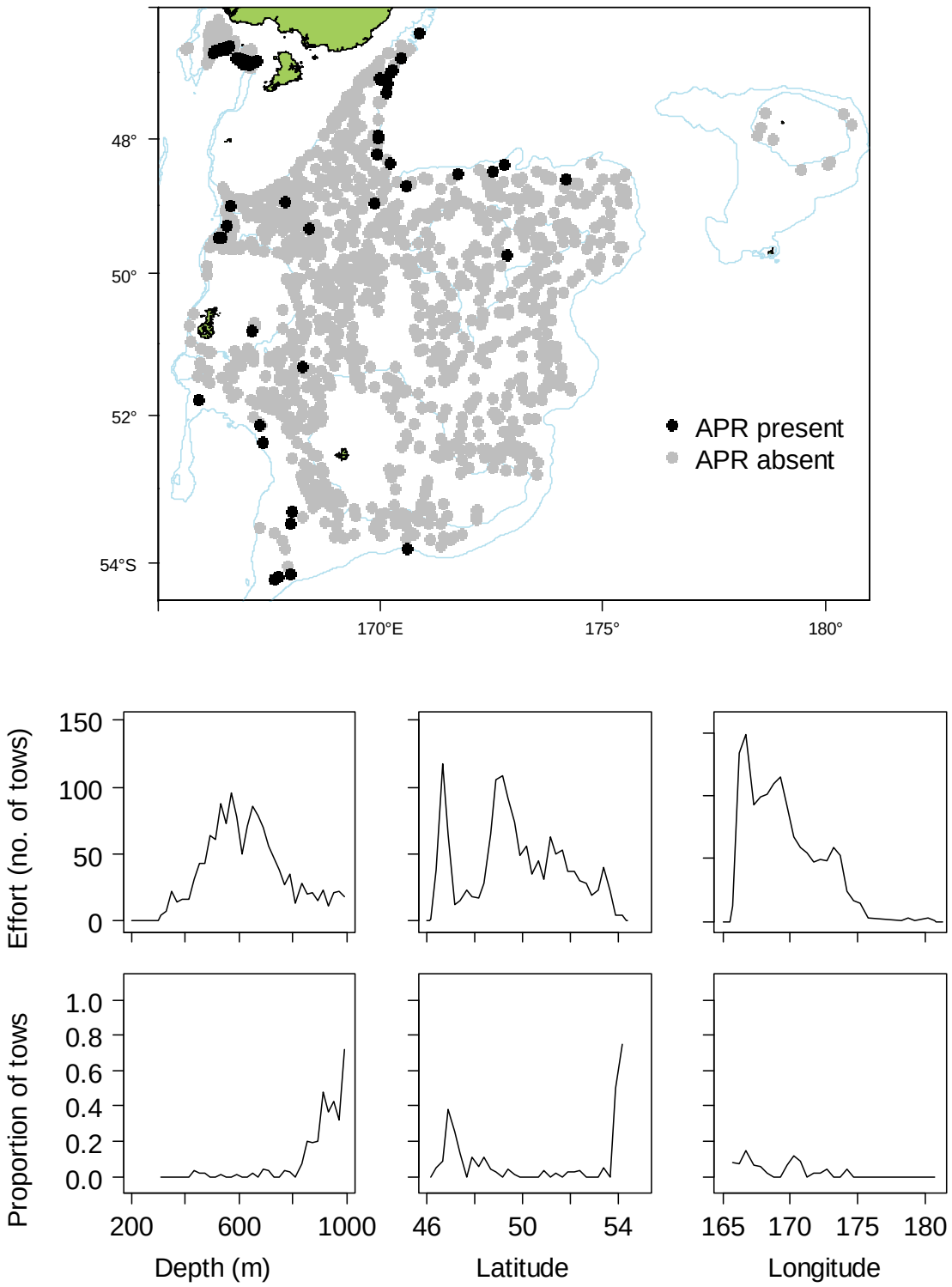
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	11
Total catch weight (kg):	123.4
Number measured	38
Length range (mean) (cm)	31–90 (64.6)
Number weighed	25
Length-weight parameters a, b (r^2)	–

This group **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 group. Distribution **does extend** to the areas 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. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is also **poorly** estimated. Biomass **shows no clear trend** since the start of the time series. Catches are recorded from most areas close to, and deeper than 800 m.

There is no length or gonad stage information presented.

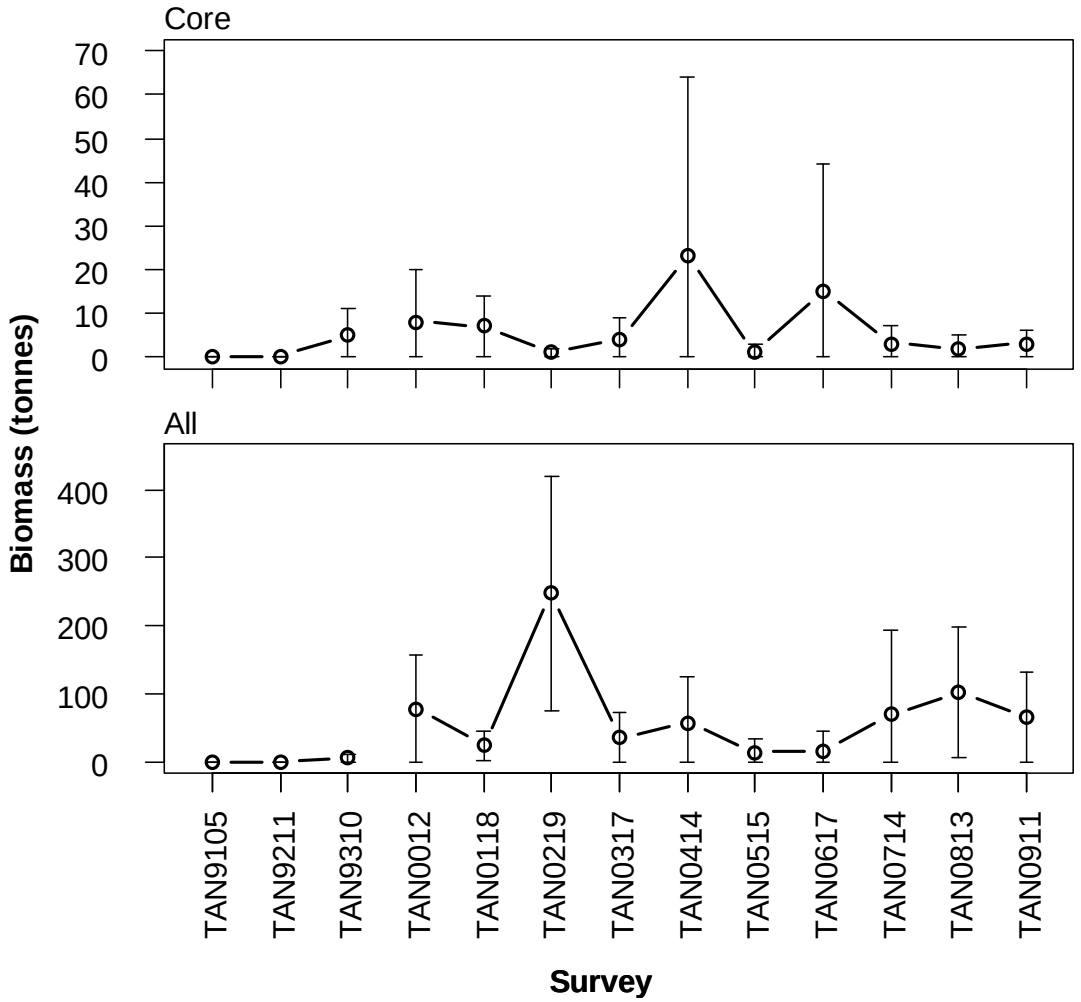
Distribution of *Apristurus* spp. from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Apristurus* 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	0	0	NA	NA	NA	NA	NA	NA	0	0
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	5	65	NA	NA	NA	NA	0	0	5	65
TAN0012	8	73	35	44	35	100	NA	NA	78	50
TAN0118	7	52	9	71	8	100	NA	NA	24	46
TAN0219	1	88	18	28	229	38	NA	NA	248	35
TAN0317	4	66	32	57	NA	NA	NA	NA	35	51
TAN0414	23	93	34	78	NA	NA	NA	NA	57	60
TAN0515	1	80	14	71	0	0	NA	NA	14	66
TAN0617	15	100	0	0	NA	NA	NA	NA	15	100
TAN0714	3	59	4	100	62	100	NA	NA	69	90
TAN0813	2	64	10	100	89	53	NA	NA	101	48
TAN0911	3	70	2	100	61	54	NA	NA	66	50

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



Codheaded rattail (*Bathygadus cottoides*) BAC

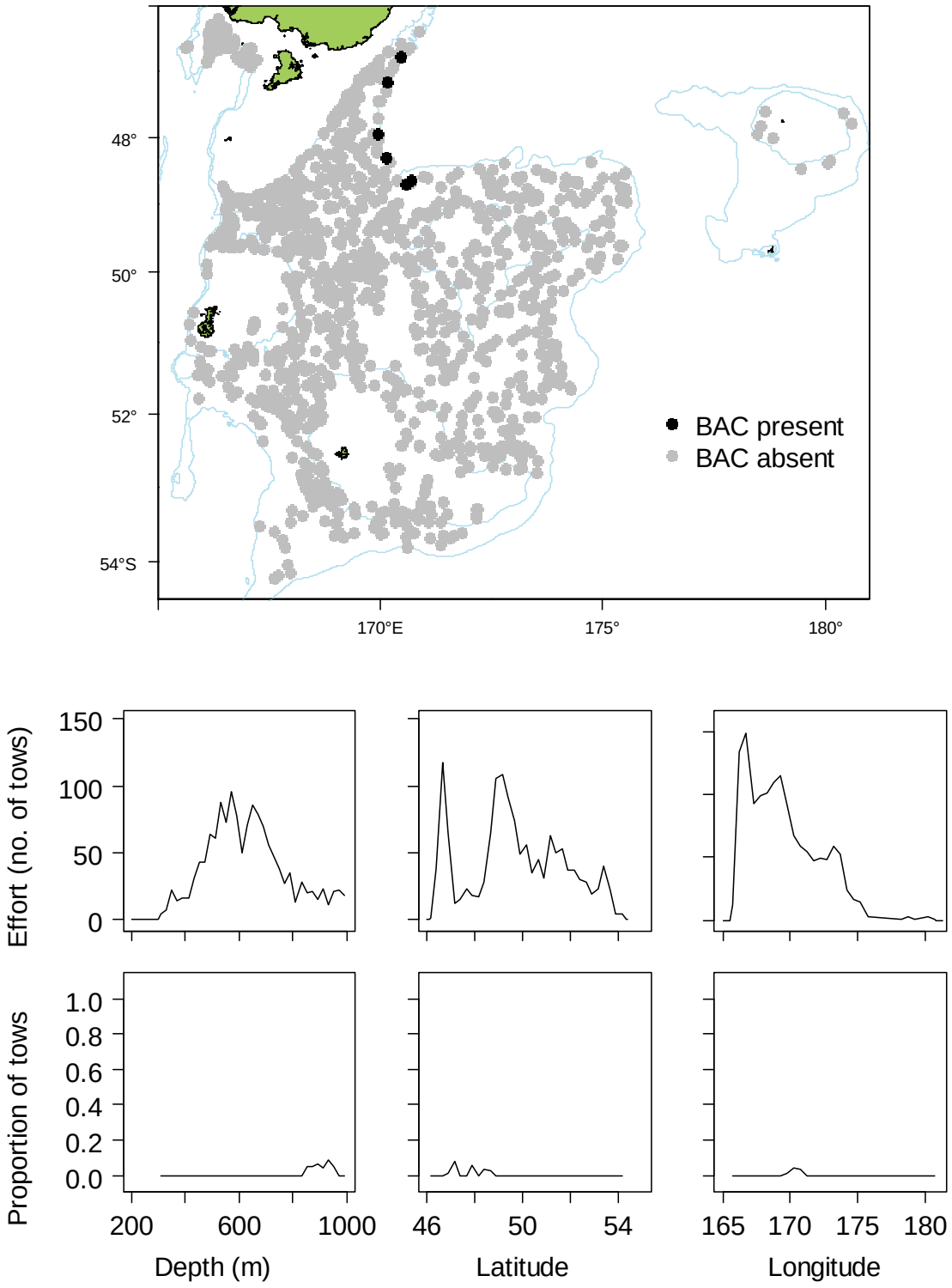
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	75.5
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

This group **has probably not** been well identified during the time series as it is recorded from only 1 survey. It is found **deeper than 1000 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 **was not** recorded from the Bounty Platform.

Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are highest in the **north.**

There is no length or gonad stage information presented.

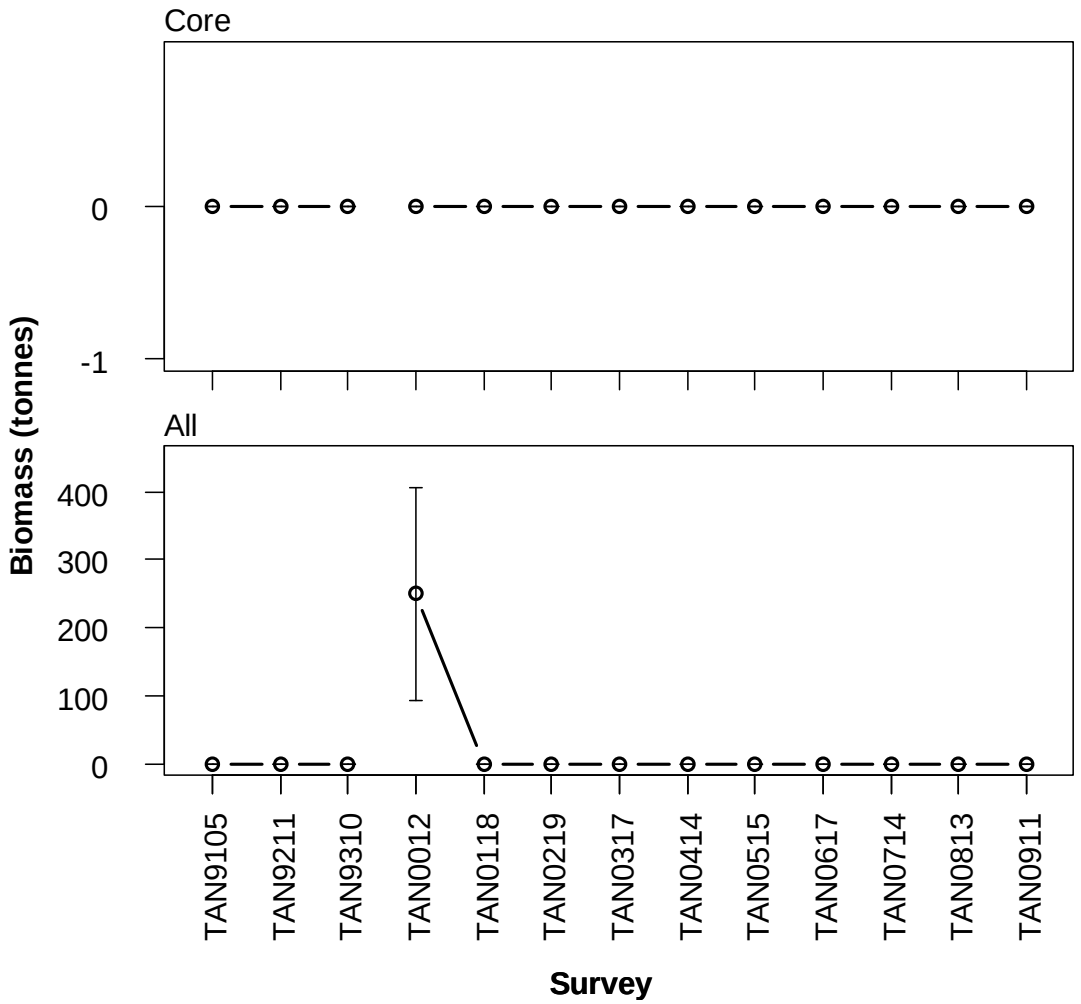
Distribution of *Bathygadus cottoides* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Bathygadus cottoides* 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	250	31	0	0	NA	NA	250	31
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	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 *Bathygadus cottoides* for core strata (above) and all strata (below).



Barracouta (*Thyrsites atun*) BAR

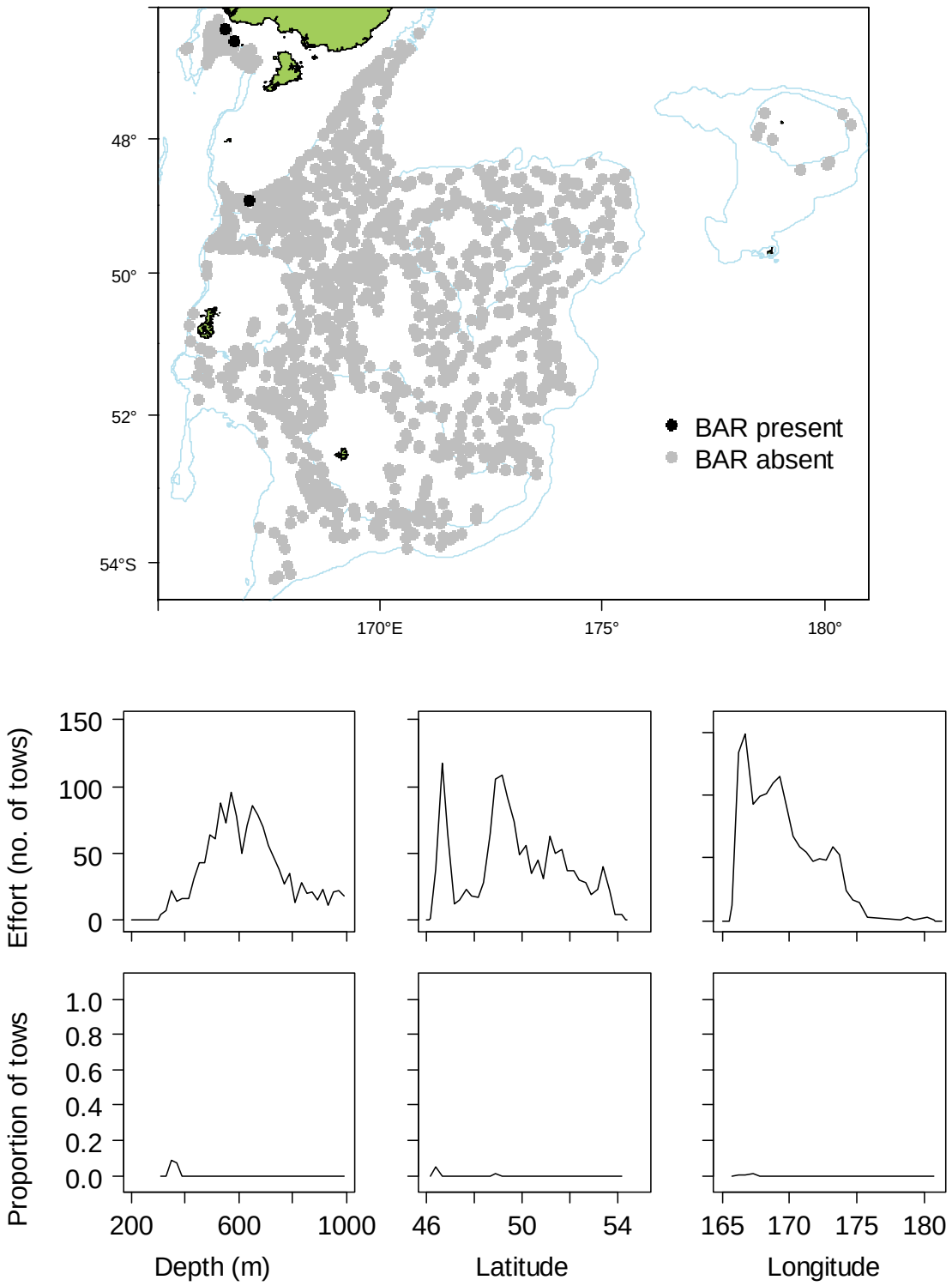
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	2
Total catch weight (kg):	21.7
Number measured	14
Length range (mean) (cm)	65–80 (71.7)
Number weighed	1
Length-weight parameters a, b (r^2)	-

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 **was 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. Catches are highest in the **northwest.**

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

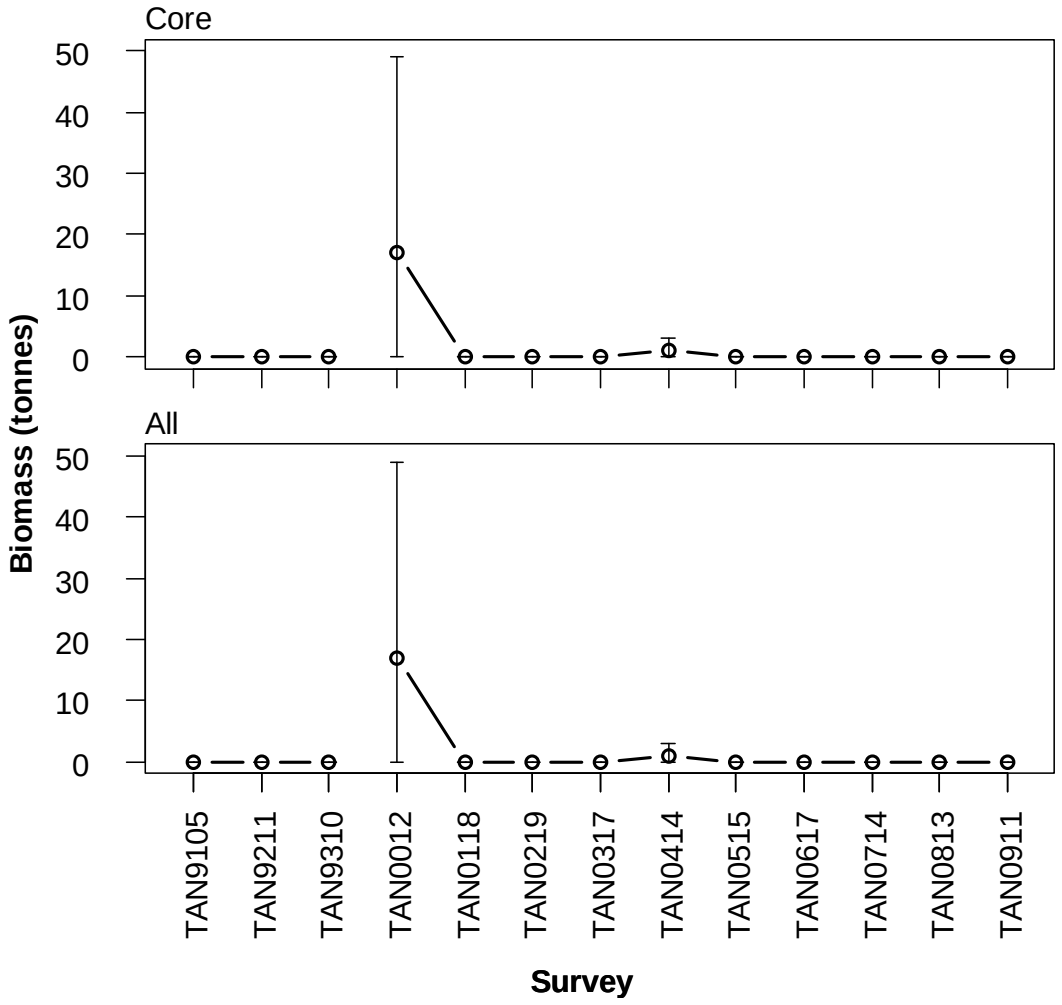
Distribution of *Thyrsites atun* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Thyrsites atun* 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	17	93	0	0	0	0	NA	NA	17	93
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	1	100	0	0	NA	NA	NA	NA	1	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 *Thyrsites atun* for all strata (above) and core strata (below).



Gonad stage summaries by sex for *Thyrsites atun*. 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	0	33	67	0	0	0	0	10	10	70	0	0	10
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	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	33	67	0	0	0	0	10	10	70	0	0	10

Banded bellowsfish (*Centriscops humerosus*) BBE

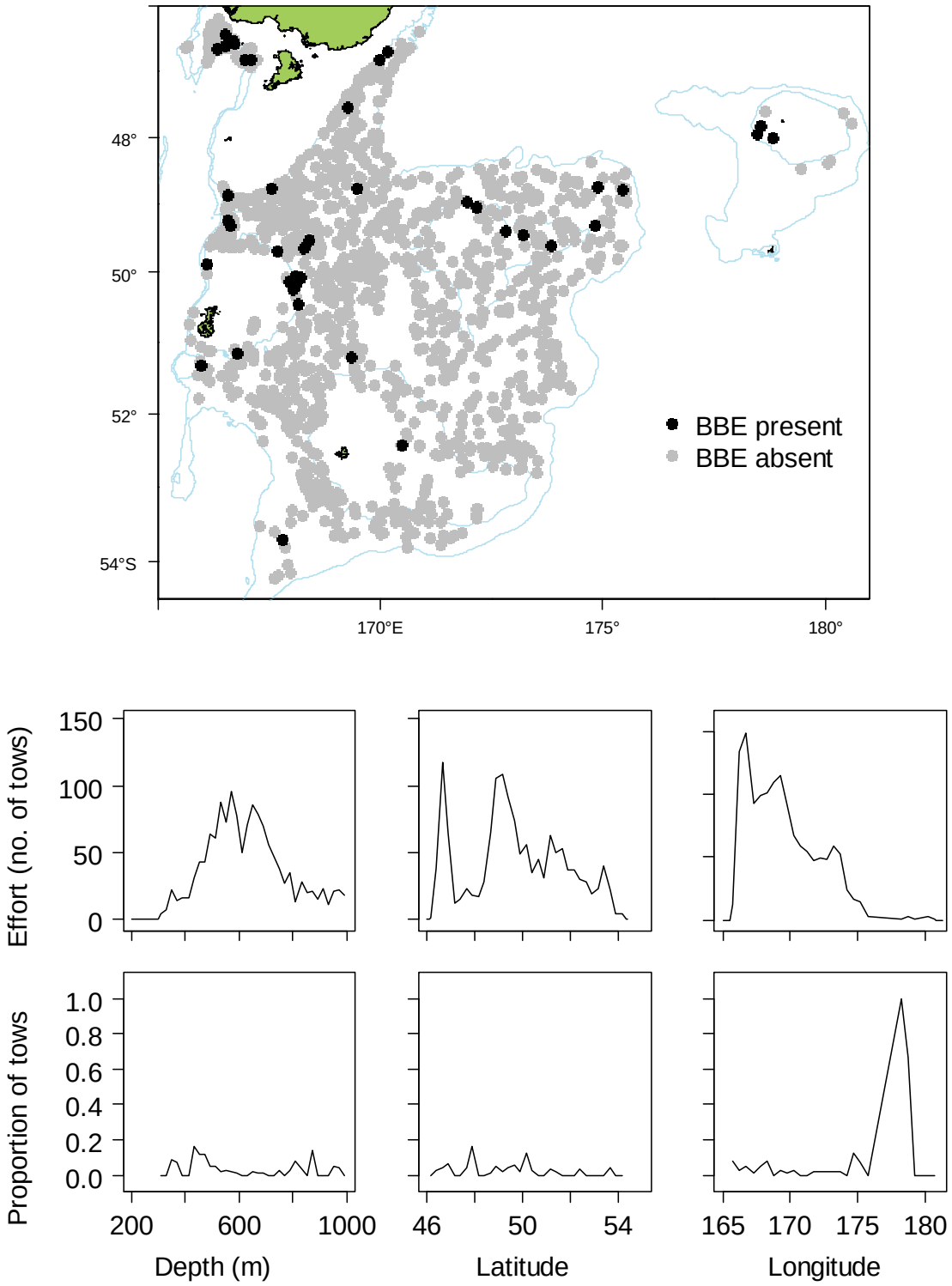
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	55.6
Number measured	1
Length range (mean) (cm)	14 (14)
Number weighed	1
Length-weight parameters a, b (r^2)	-

This species **has** been well identified during the time series although the recorded estimates for stratum 26 from tan0714 is thought to be a miscoding probably basketwork eel (BEE). The core survey area and depth range **is** appropriate for this species.Distribution **extends** to strata deeper than 800 m surveyed from 2000 to 2009. It **is** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey. 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.

There is no length or gonad stage information presented.

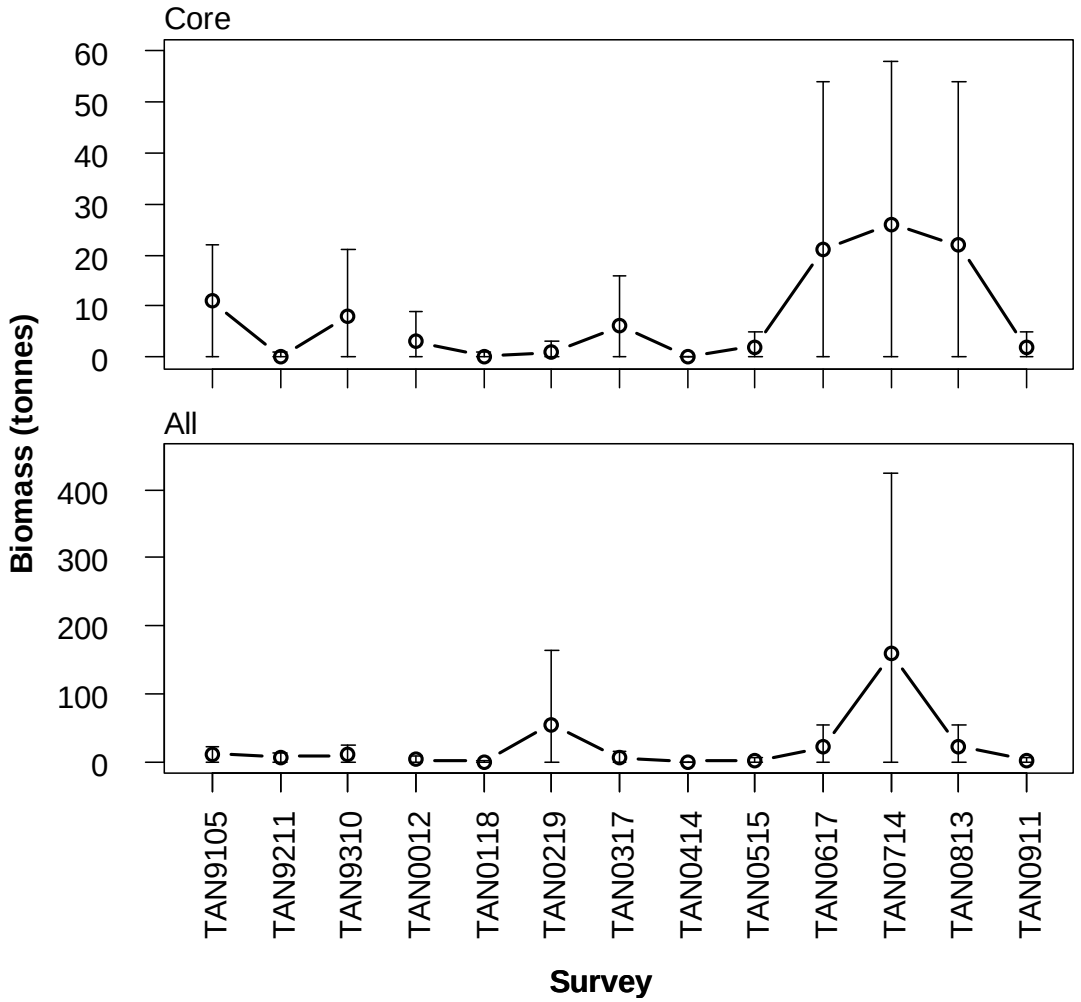
Distribution of *Centriscops humerosus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Centriscops humerosus* 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	11	50	NA	NA	NA	NA	NA	NA	11	50
TAN9211	0	100	NA	NA	NA	NA	6	61	7	59
TAN9310	8	77	NA	NA	NA	NA	2	100	10	64
TAN0012	3	89	0	0	0	0	NA	NA	3	89
TAN0118	0	100	0	0	0	0	NA	NA	0	100
TAN0219	1	100	54	100	0	0	NA	NA	55	98
TAN0317	6	80	0	0	NA	NA	NA	NA	6	80
TAN0414	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	2	74	0	0	0	0	NA	NA	2	74
TAN0617	21	75	0	0	NA	NA	NA	NA	21	75
TAN0714	26	59	0	0	132	100	NA	NA	159	84
TAN0813	22	73	0	0	0	0	NA	NA	22	73
TAN0911	2	66	0	0	0	0	NA	NA	2	66

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



Barracudina (*Magnisudis prionosa*) BCA

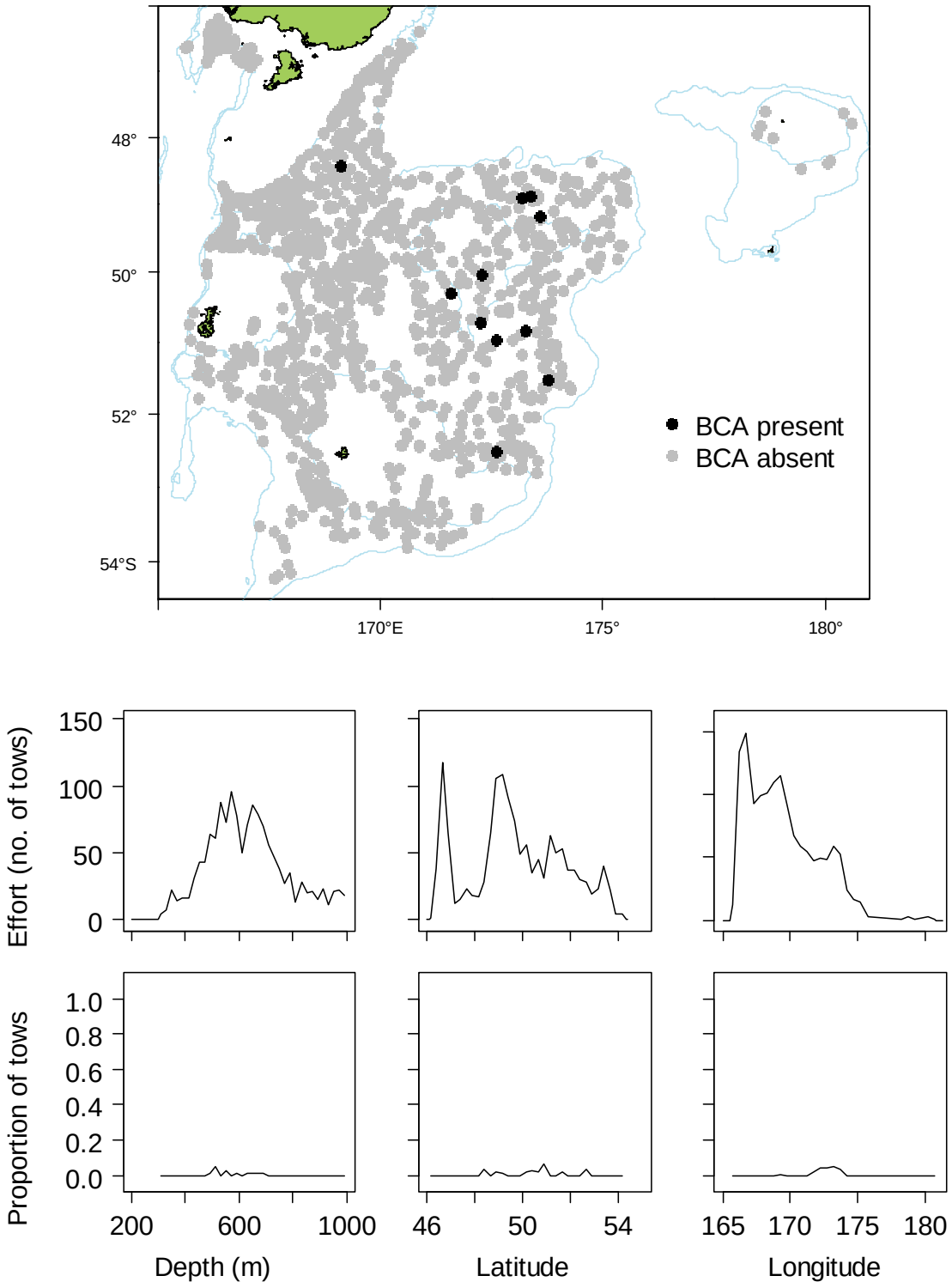
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	11.8
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

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

There were **too few fish caught to determine whether the core survey area is appropriate for this species**. Biomass of this species is **poorly** estimated by the core survey. Catches are highest in the **east.**

There is no length or gonad stage information.

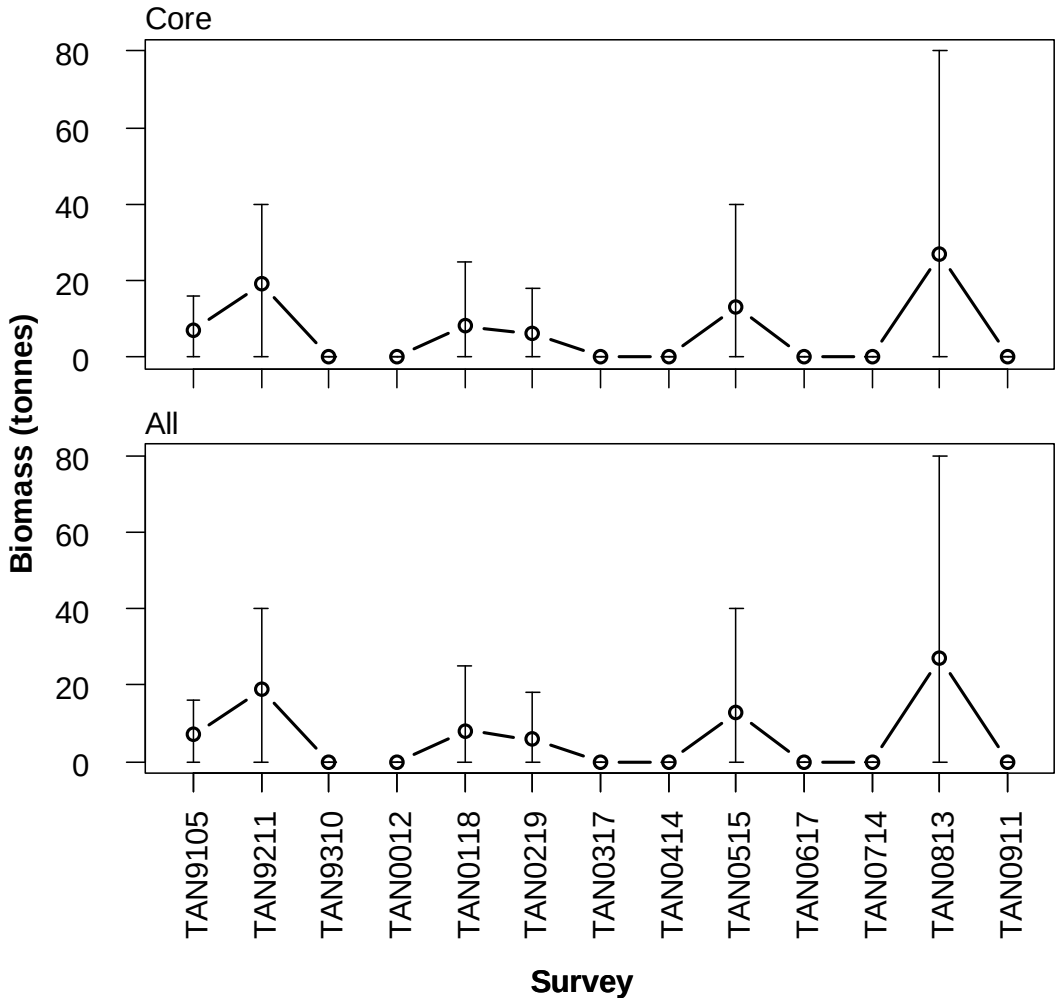
Distribution of *Magnisudis prionosa* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Magnisudis prionosa* 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	7	63	NA	NA	NA	NA	NA	NA	7	63
TAN9211	19	53	NA	NA	NA	NA	0	0	19	53
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	0	0	0	0	0	0	NA	NA	0	0
TAN0118	8	100	0	0	0	0	NA	NA	8	100
TAN0219	6	100	0	0	0	0	NA	NA	6	100
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	13	100	0	0	0	0	NA	NA	13	100
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	0	0	0	0	0	0	NA	NA	0	0
TAN0813	27	100	0	0	0	0	NA	NA	27	100
TAN0911	0	0	0	0	0	0	NA	NA	0	0

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



Basketwork eel (*Diastobranchus capensis*) BEE

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	1354.3
Number measured	437
Length range (mean) (cm)	56–129 (89)
Number weighed	319
Length-weight parameters a, b (r^2)	–

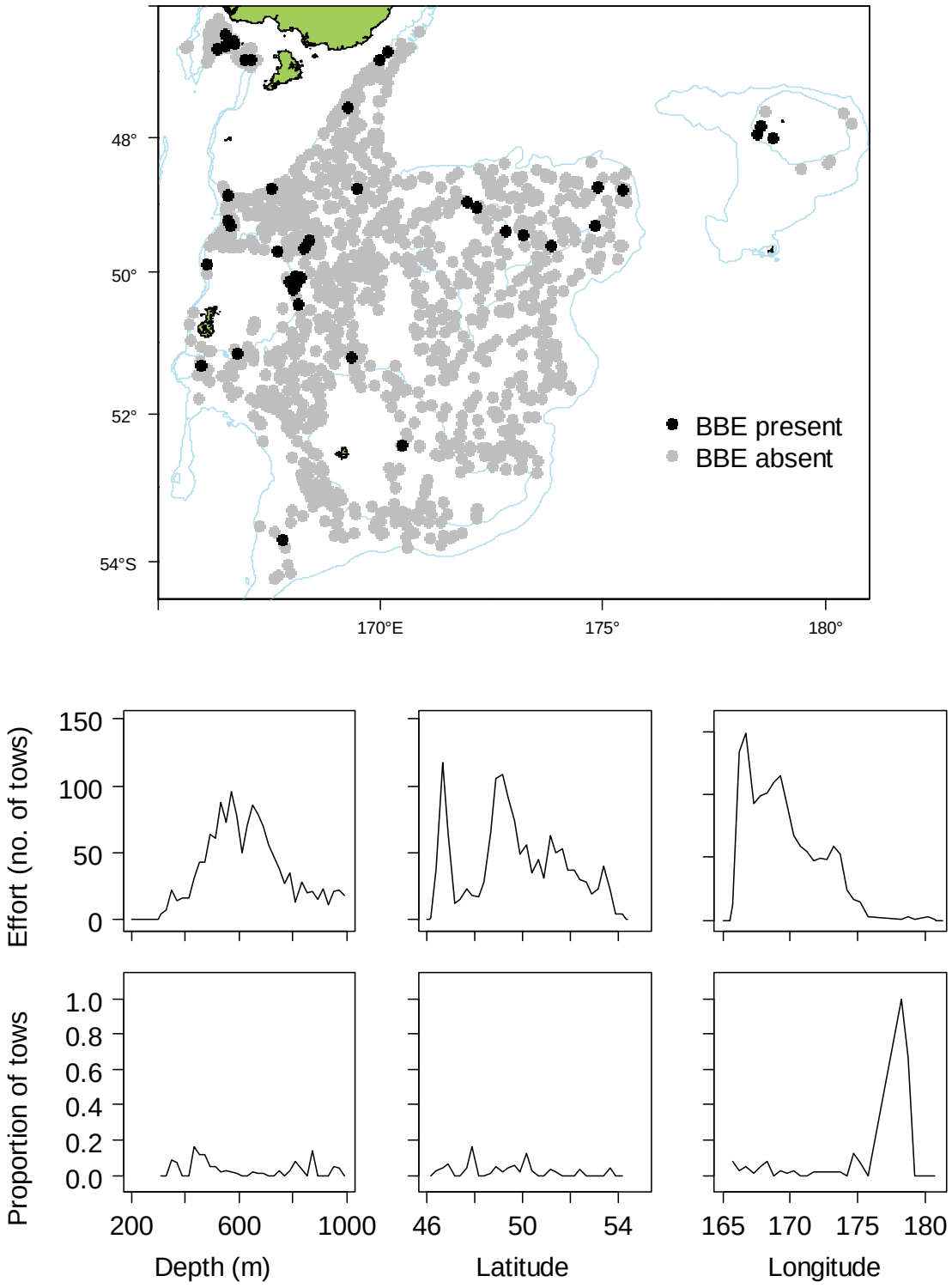
This species **has** been well identified during the time series. It is found **deeper than 1000 m**. The core survey area and depth range **is not** appropriate for this species. Distribution **extends** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty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

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

There is no length or gonad stage information presented.

The recorded estimates for stratum 26 from tan0714 may be an underestimate due to a possible miscoding as banded bellowsfish (BBE).

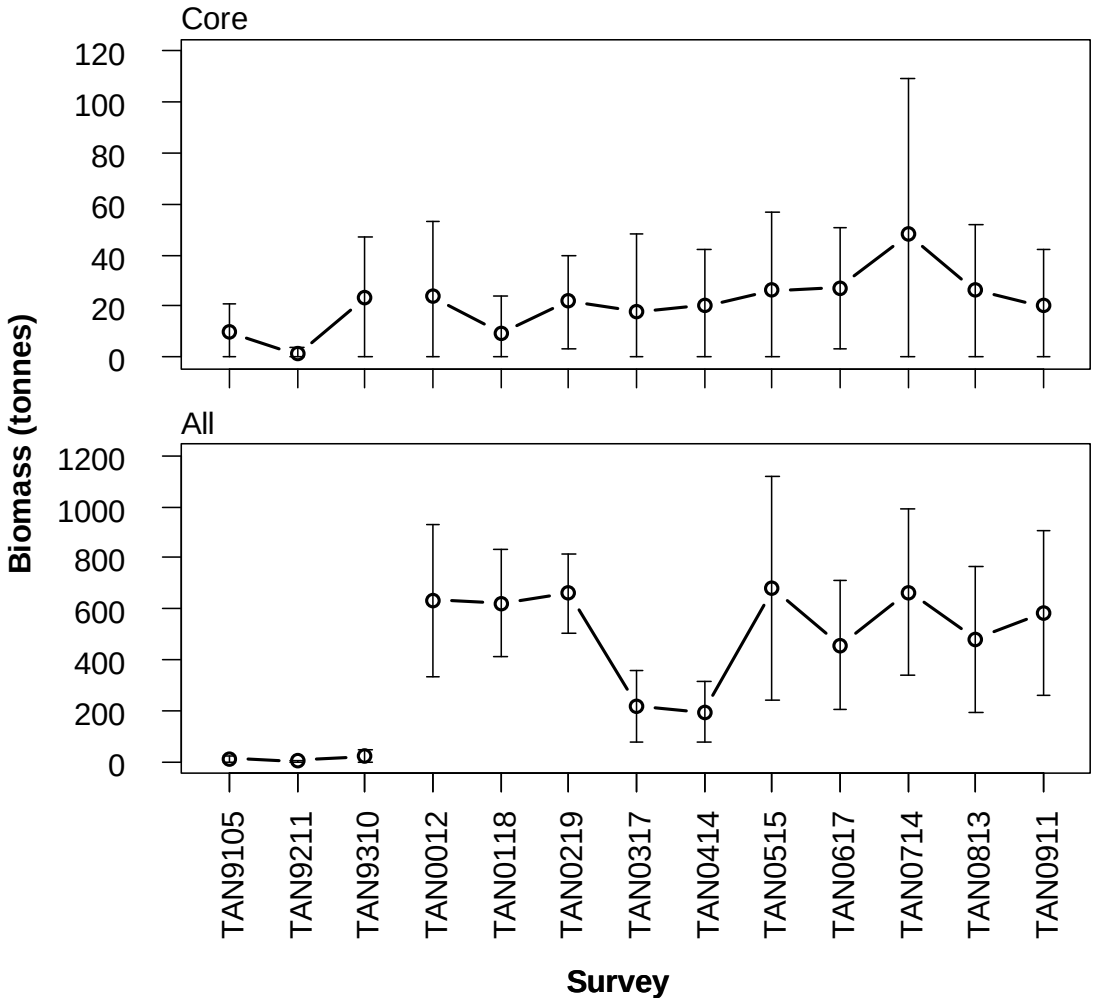
Distribution of *Diastobranchus capensis* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Diastobranchus 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	10	58	NA	NA	NA	NA	NA	NA	10	58
TAN9211	1	100	NA	NA	NA	NA	0	0	1	100
TAN9310	23	51	NA	NA	NA	NA	0	0	23	51
TAN0012	24	61	455	24	153	65	NA	NA	633	24
TAN0118	9	83	231	31	382	20	NA	NA	622	17
TAN0219	22	42	305	18	334	16	NA	NA	660	12
TAN0317	18	83	201	34	NA	NA	NA	NA	219	32
TAN0414	20	53	175	33	NA	NA	NA	NA	195	30
TAN0515	26	58	359	28	294	67	NA	NA	679	32
TAN0617	27	45	430	29	NA	NA	NA	NA	457	28
TAN0714	48	63	497	30	120	54	NA	NA	665	24
TAN0813	26	50	273	24	181	70	NA	NA	481	30
TAN0911	20	56	380	42	184	20	NA	NA	583	28

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



Banded giant stargazer (*Kathetostoma binigrasella*) BGZ

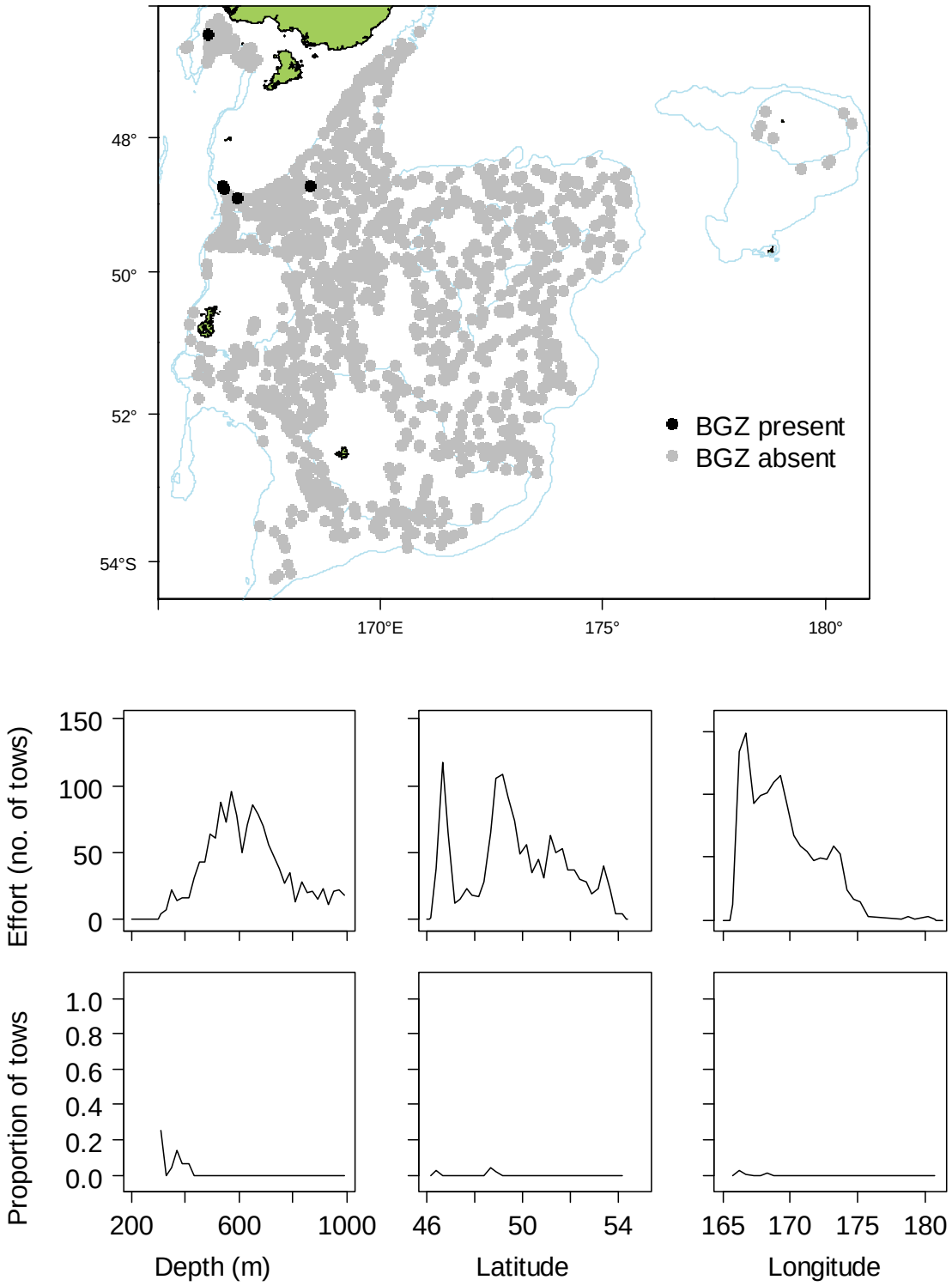
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	5
Total catch weight (kg):	60.4
Number measured	19
Length range (mean) (cm)	35–59 (47.3)
Number weighed	12
Length-weight parameters a, b (r^2)	–

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 or in the areas deeper than 800 m surveyed from 2000 to 2009.

Biomass of this species is **poorly** estimated by the core survey. Biomass has **increased then decreased** since the start of the time series. Catches are highest in the **northwest.**

There is no length information presented. Gonad stage data indicate that most fish sampled (all males) are **spawning**.

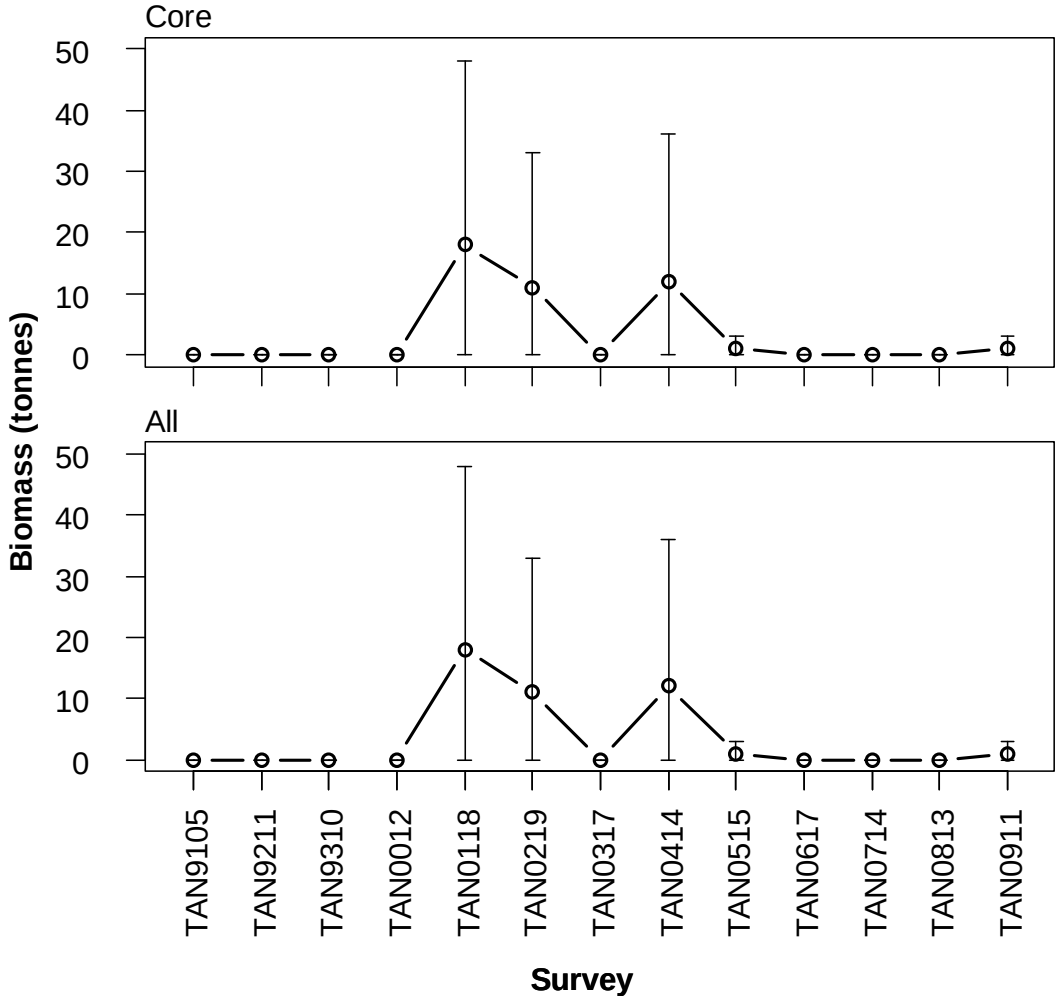
Distribution of *Kathetostoma binigrasella* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Kathetostoma binigrasella* 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	18	83	0	0	0	0	NA	NA	18	83
TAN0219	11	100	0	0	0	0	NA	NA	11	100
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	12	100	0	0	NA	NA	NA	NA	12	100
TAN0515	1	100	0	0	0	0	NA	NA	1	100
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	1	100	0	0	0	0	NA	NA	1	100

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



Gonad stage summaries by sex for *Kathetostoma binigrasella*. 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	0	0	0	83	17	0	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	0	0	0	0	100	0	0	NA	NA	NA	NA	NA	NA	NA
ALL	0	0	0	0	86	14	0	NA	NA	NA	NA	NA	NA	NA

Black javelinfish (*Mesobius antipodum*) BJA

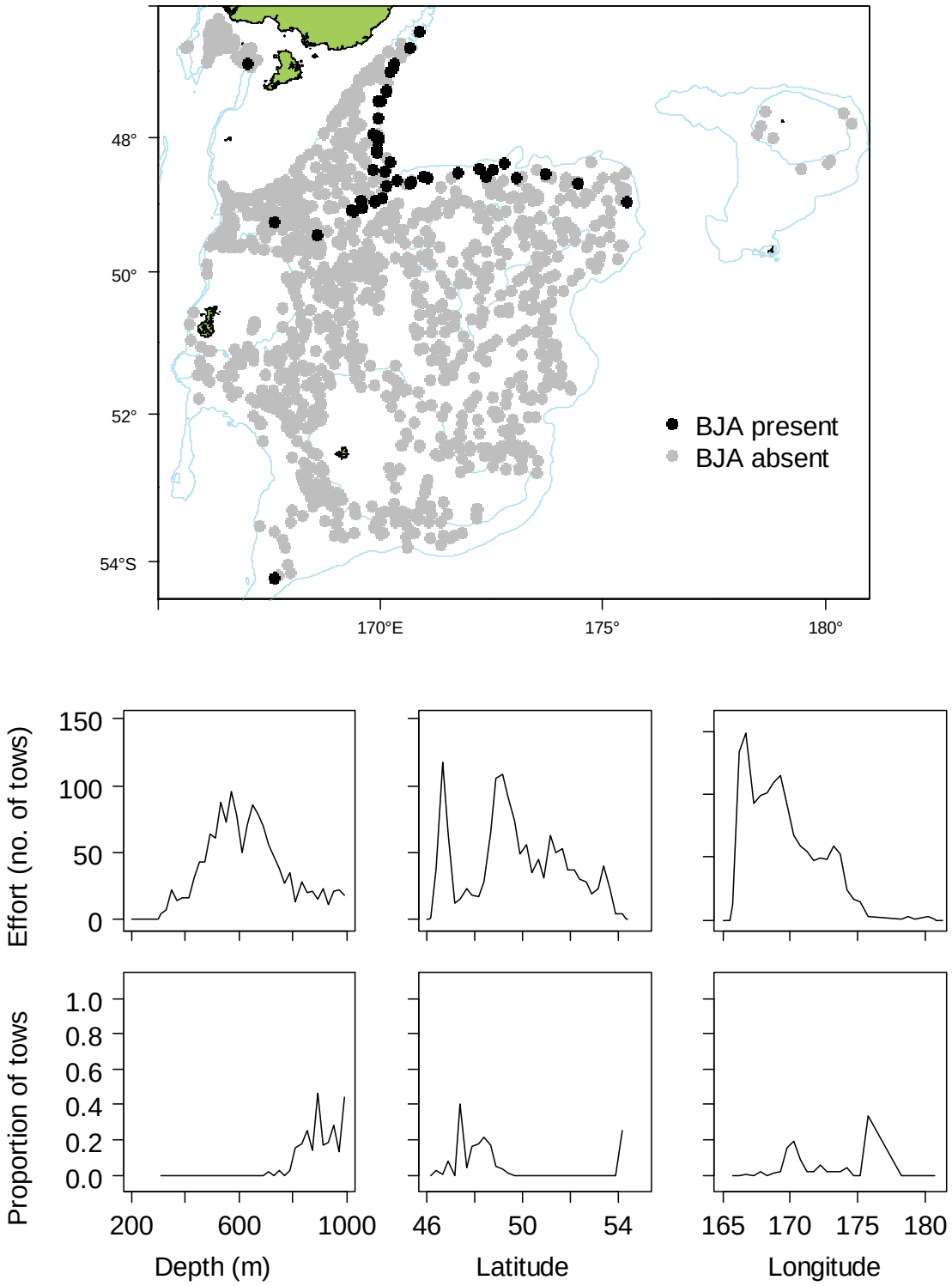
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	10
Total catch weight (kg):	237.7
Number measured	159
Length range (mean) (cm)	38–73 (57.2)
Number weighed	131
Length-weight parameters a, b (r^2)	–

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 **extends** 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. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is also **poorly** estimated. Catches are recorded from **northern** areas close to, and deeper than 800 m.

There is no length or gonad stage information presented.

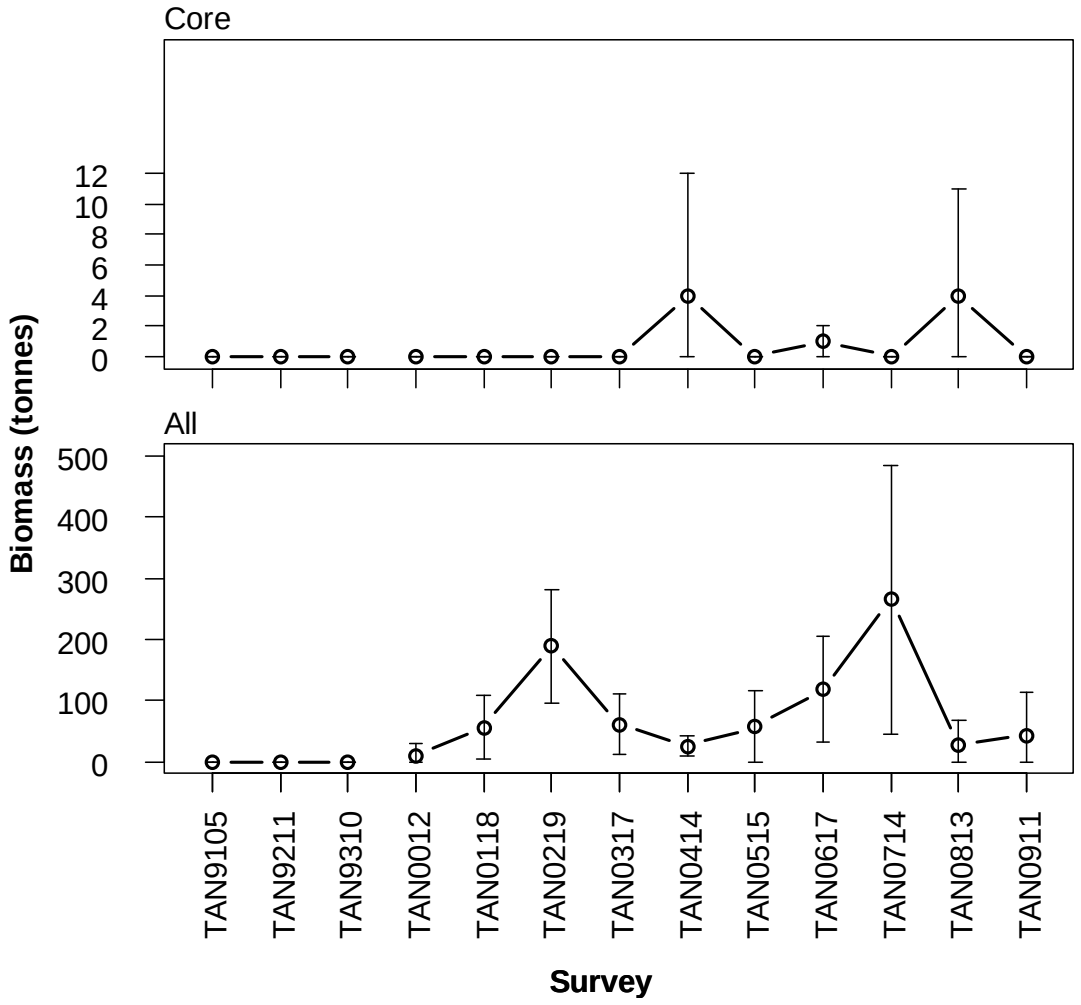
Distribution of *Mesobius antipodum* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Mesobius antipodum* 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	10	100	0	0	NA	NA	10	100
TAN0118	0	0	57	46	0	0	NA	NA	56	46
TAN0219	0	0	185	25	5	100	NA	NA	189	25
TAN0317	0	0	61	40	NA	NA	NA	NA	61	40
TAN0414	4	100	21	34	NA	NA	NA	NA	25	32
TAN0515	0	0	57	52	0	0	NA	NA	57	52
TAN0617	1	100	117	37	NA	NA	NA	NA	118	37
TAN0714	0	100	264	42	0	0	NA	NA	265	42
TAN0813	4	100	24	80	0	0	NA	NA	28	70
TAN0911	0	0	43	82	0	0	NA	NA	43	82

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



Bluenose (*Hyperoglyphe antarctica*) BNS

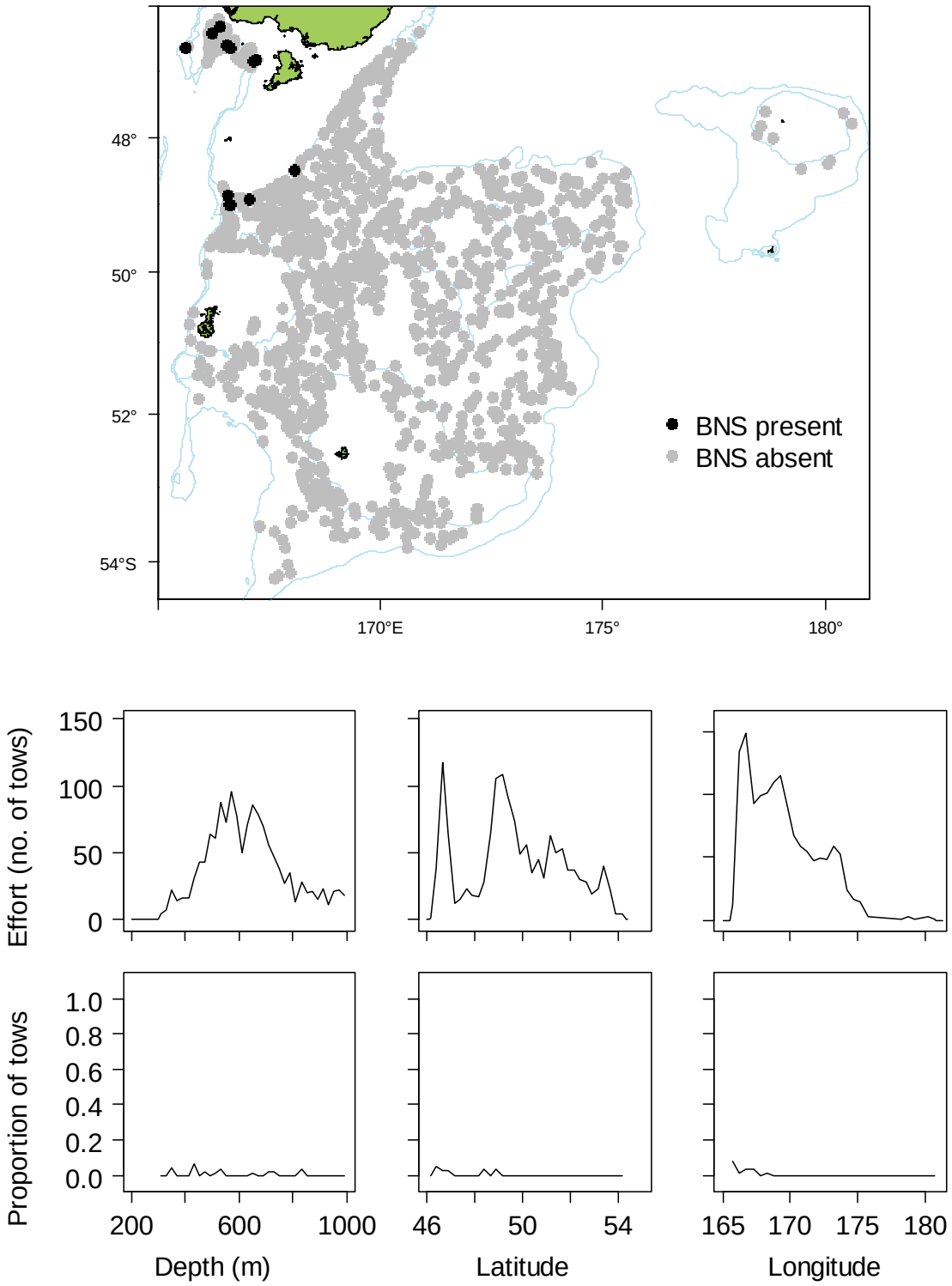
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	8
Total catch weight (kg):	332.2
Number measured	23
Length range (mean) (cm)	50–105 (84.0)
Number weighed	20
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. The core survey area and depth range **is** appropriate for this species. Distribution does **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 group is **poorly** estimated by the core survey. Biomass **shows no clear trend** since the start of the time series. Catch rates are highest in the **northwest.**

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

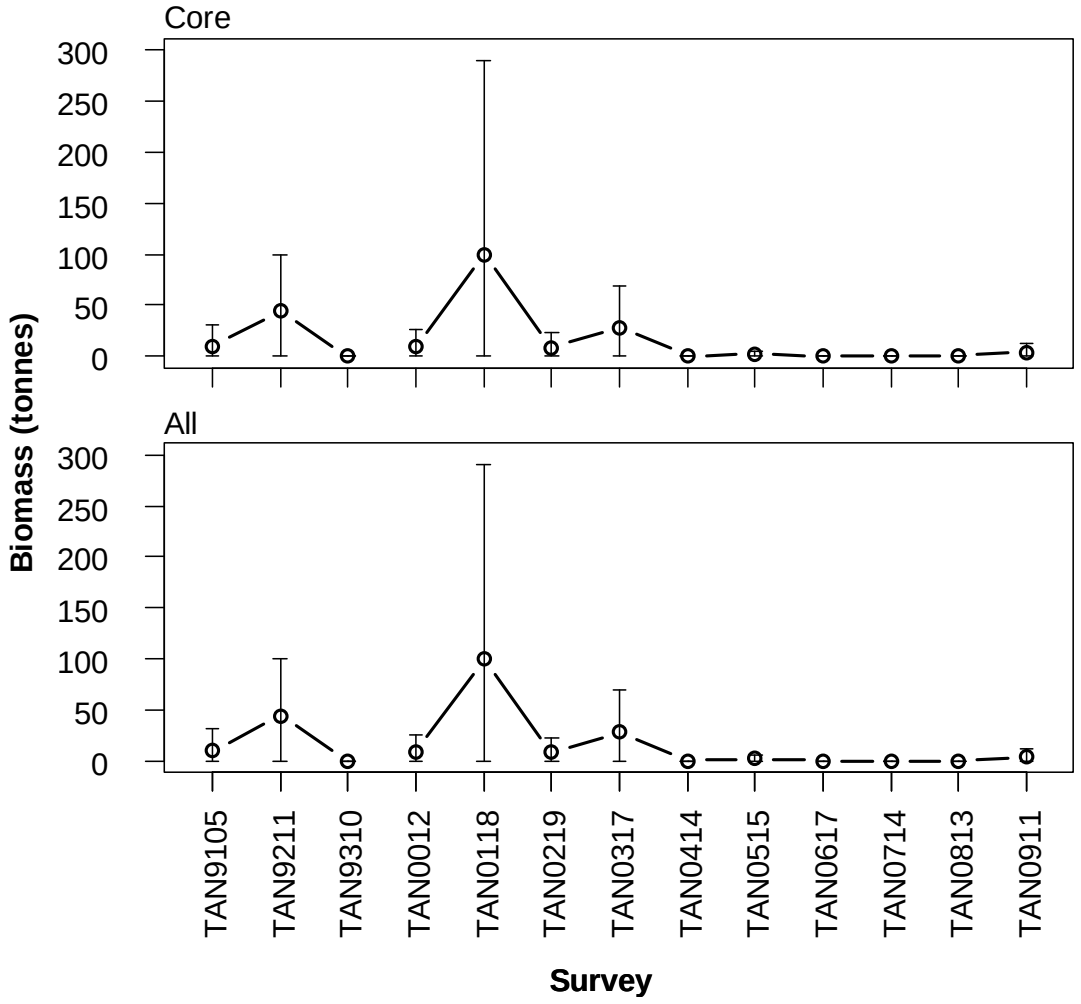
Distribution of *Hyperoglyphe antarctica* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Hyperoglyphe antarctica* 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	10	100	NA	NA	NA	NA	NA	NA	10	100
TAN9211	44	64	NA	NA	NA	NA	0	0	44	64
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	9	100	0	0	0	0	NA	NA	9	100
TAN0118	100	95	0	0	0	0	NA	NA	100	95
TAN0219	8	100	0	0	0	0	NA	NA	8	100
TAN0317	28	73	0	0	NA	NA	NA	NA	28	73
TAN0414	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	2	100	0	0	0	0	NA	NA	2	100
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	4	100	0	0	0	0	NA	NA	4	100

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



Gonad stage summaries by sex for Hyperoglyphe antarctica. 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	100	0	0	0	0	0
TAN0118	0	0	0	0	0	0	100	8	69	23	0	0	0	0
TAN0219	NA	NA	NA	NA	NA	NA	NA	0	0	100	0	0	0	0
TAN0317	NA	NA	NA	NA	NA	NA	NA	0	0	100	0	0	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	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	0	100	0	0	0	0	0
ALL	0	0	0	0	0	0	100	6	61	33	0	0	0	0

Black oreo (*Allocyttus niger*) BOE

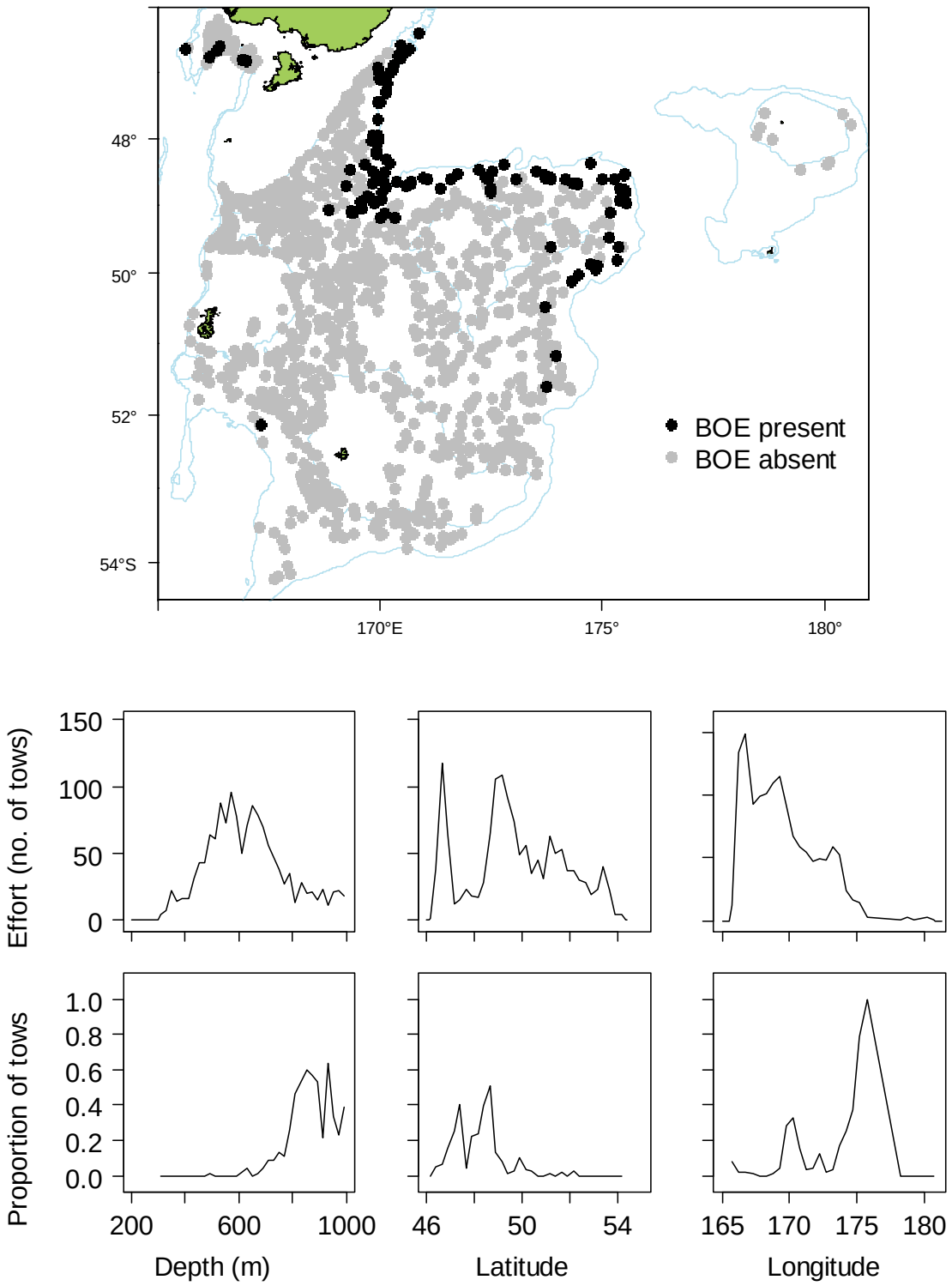
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	28 063.7
Number measured	7 816
Length range (mean) (cm)	17–40 (29.8)
Number weighed	2 747
Length-weight parameters a, b (r^2)	0.02633822, 2.927671 (87.24)

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 areas 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. 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 also **poorly** estimated. Catch rates are highest in the **northeast**.

Length frequencies are usually **unimodal**. Mean length has **increased** since the start of the time series and **shows no clear trend** since 2000. Gonad stage data indicate that most fish are **immature to mature.**

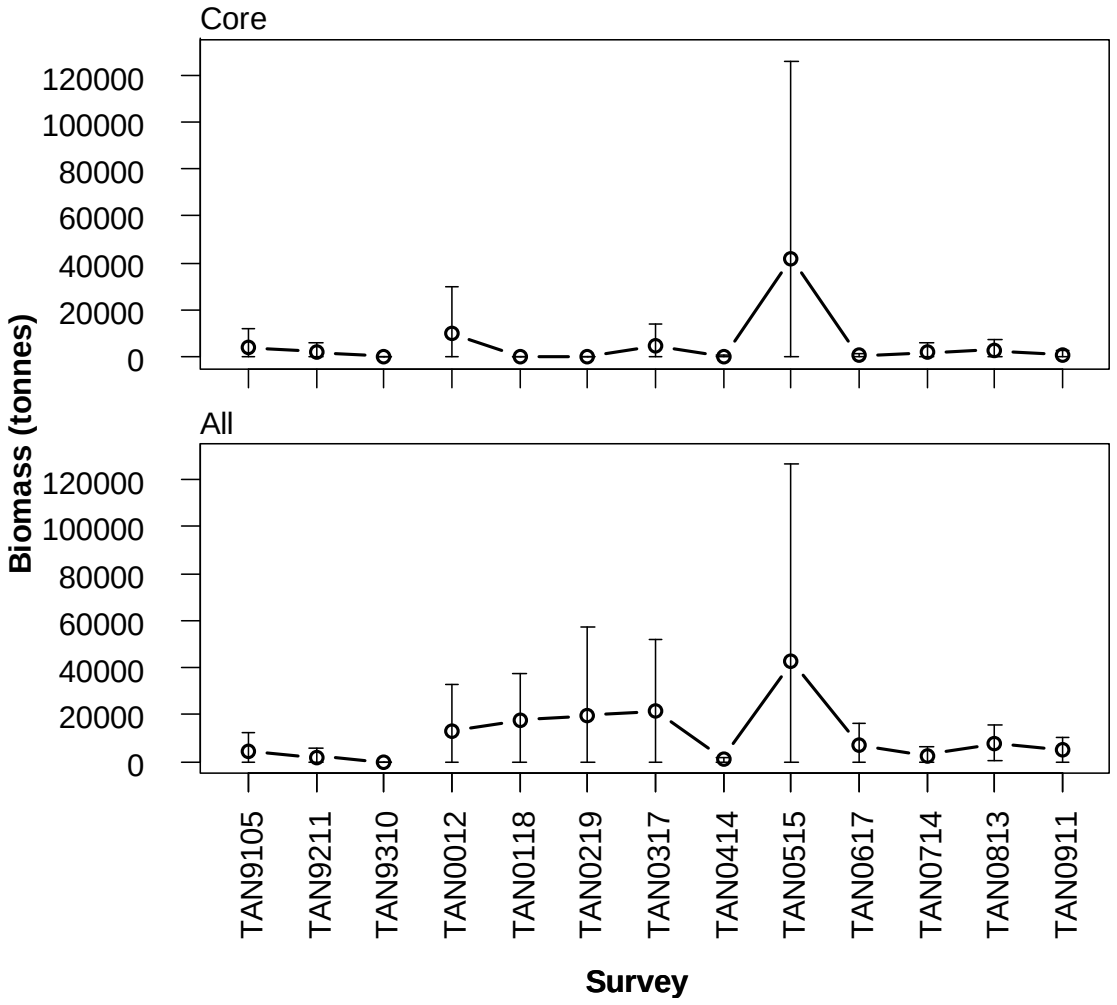
Distribution of *Allocyttus niger* from all summer surveys. Valid biomass stations only.



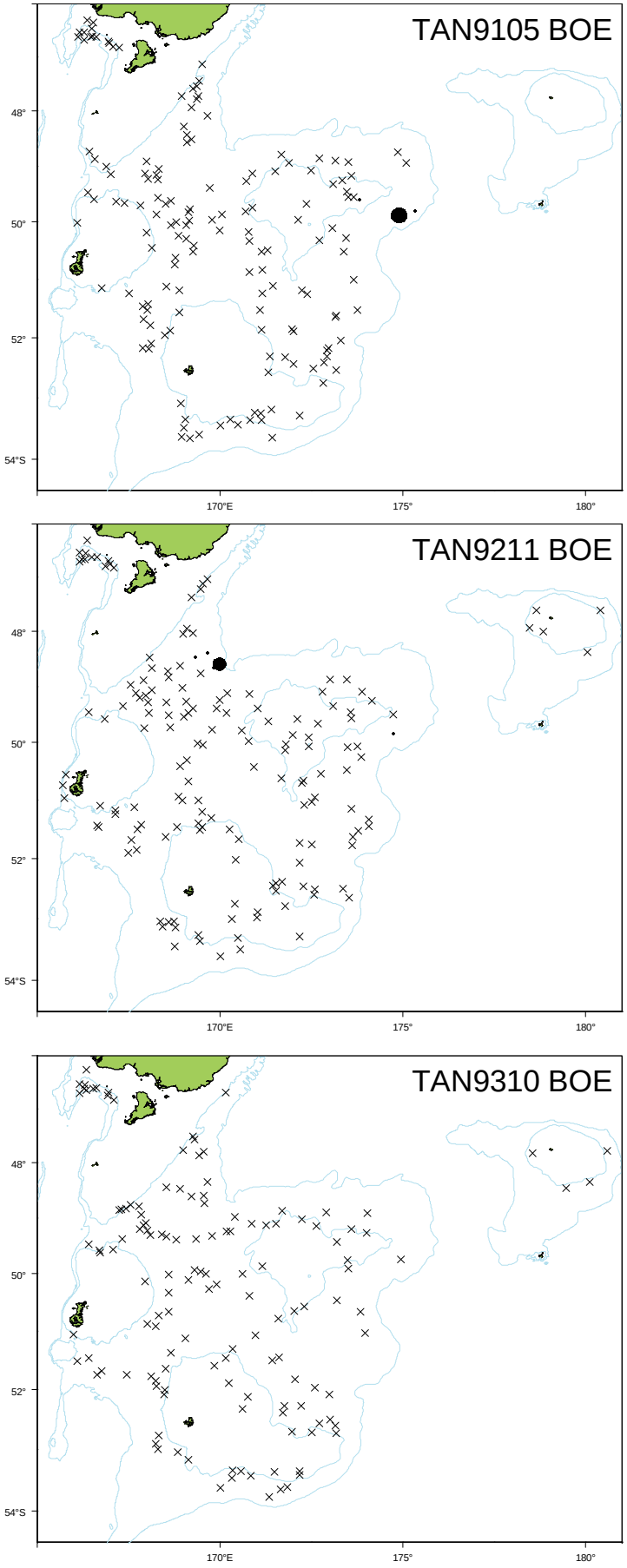
Relative biomass estimates (t) and c.v.s (%) of *Allocyttus niger* for core strata, strata outside the core area and all strata.

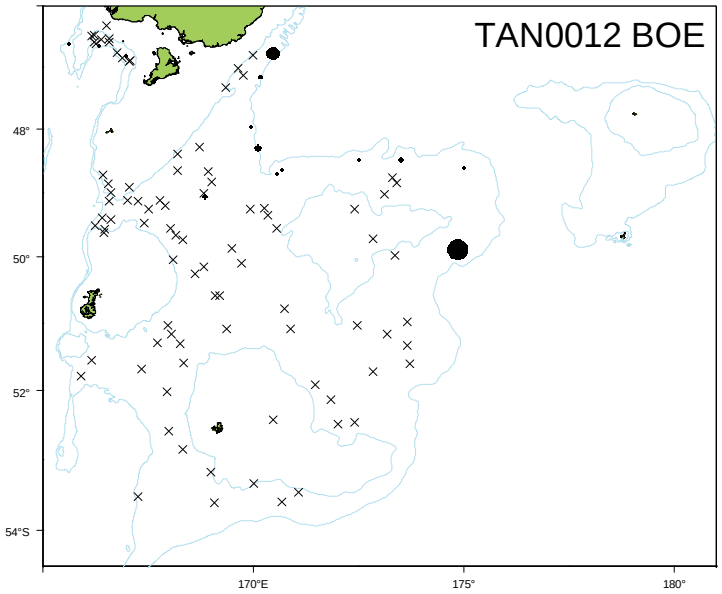
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total Biomass	Total (c.v.)
TAN9105	4123	97	NA	NA	NA	NA	NA	NA	4123	97
TAN9211	1959	97	NA	NA	NA	NA	0	0	1959	97
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	10064	97	3032	51	0	0	NA	NA	13096	76
TAN0118	7	80	17269	58	0	0	NA	NA	17276	58
TAN0219	12	67	19708	96	0	0	NA	NA	19719	96
TAN0317	4642	100	16883	86	NA	NA	NA	NA	21525	71
TAN0414	198	100	668	81	NA	NA	NA	NA	867	66
TAN0515	41986	100	892	69	10	100	NA	NA	42887	98
TAN0617	482	100	6320	75	NA	NA	NA	NA	6802	70
TAN0714	1979	95	696	56	0	0	NA	NA	2675	72
TAN0813	2708	87	5139	59	0	0	NA	NA	7848	49
TAN0911	1042	76	3845	63	0	0	NA	NA	4888	52

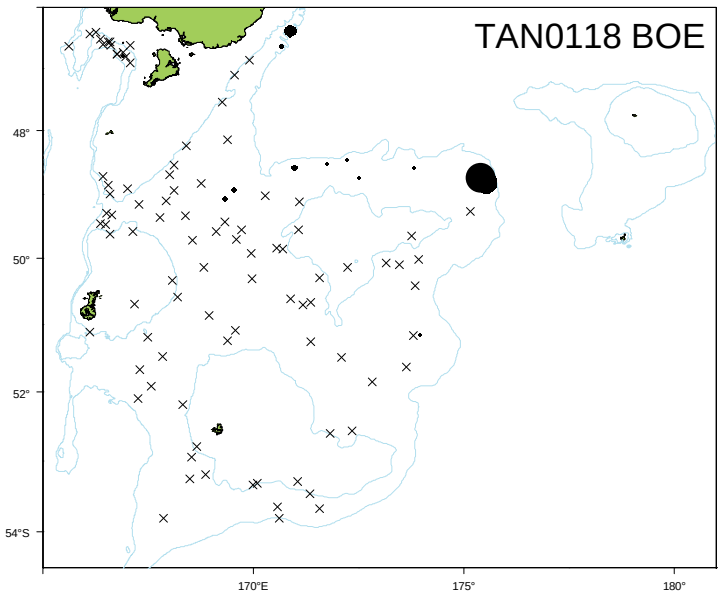
Trends in relative biomass estimates (± 2 standard errors) of *Allocyttus niger* for core strata (above) and all strata (below).

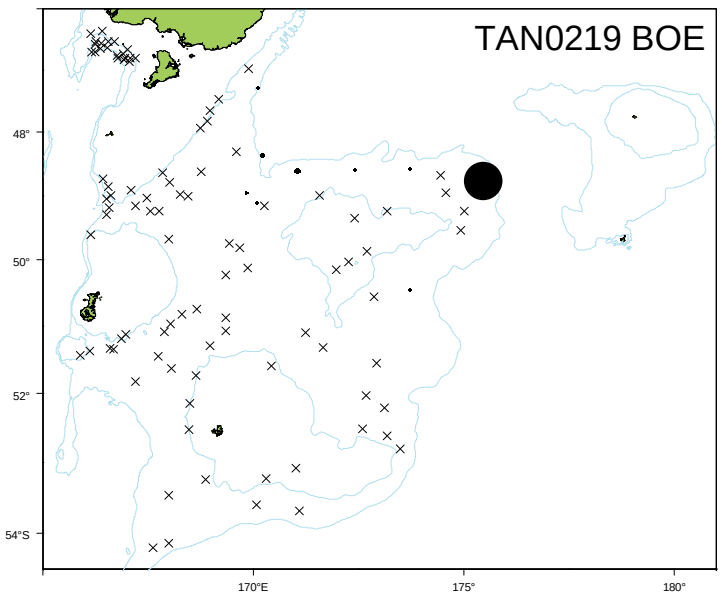


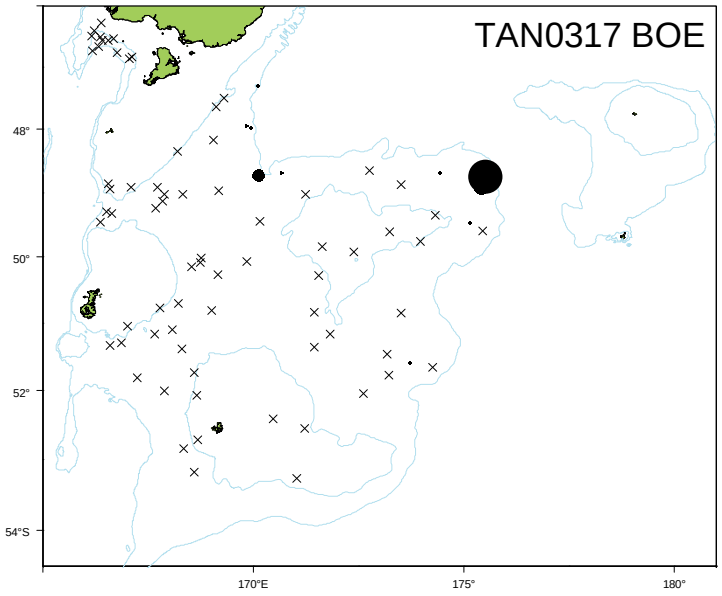
Catchrates of *Allocyttus niger*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

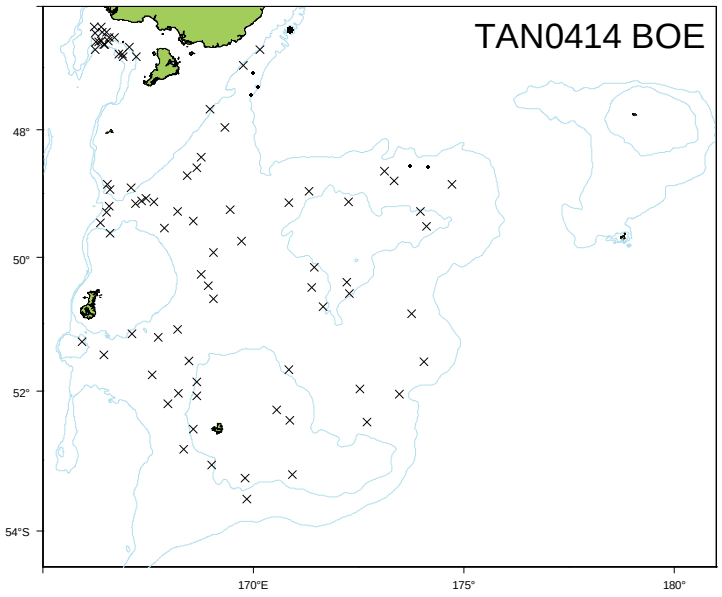


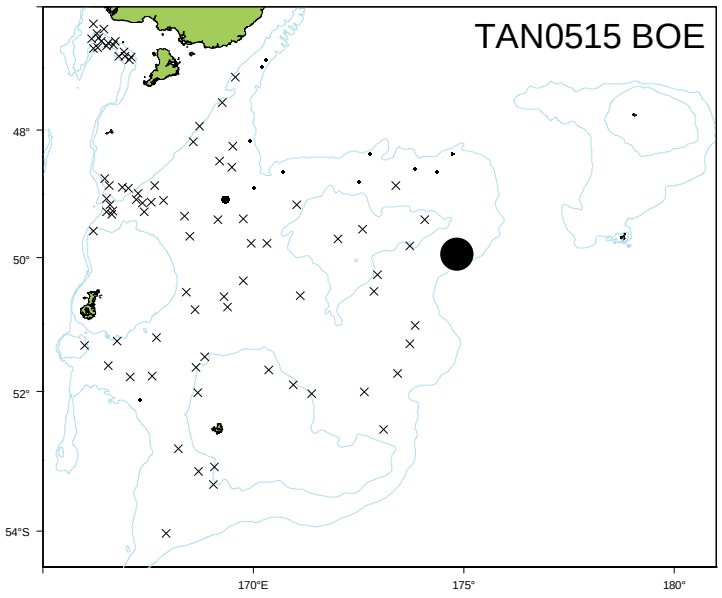

TAN0012 BOE
48°
50°
52°
54°S
170°E
175°
180°

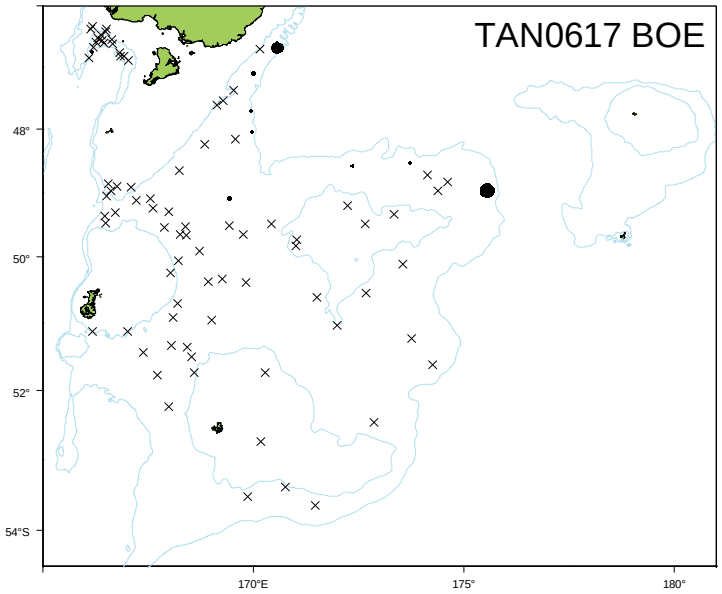

TAN0118 BOE
48°
50°
52°
54°S
170°E
175°
180°

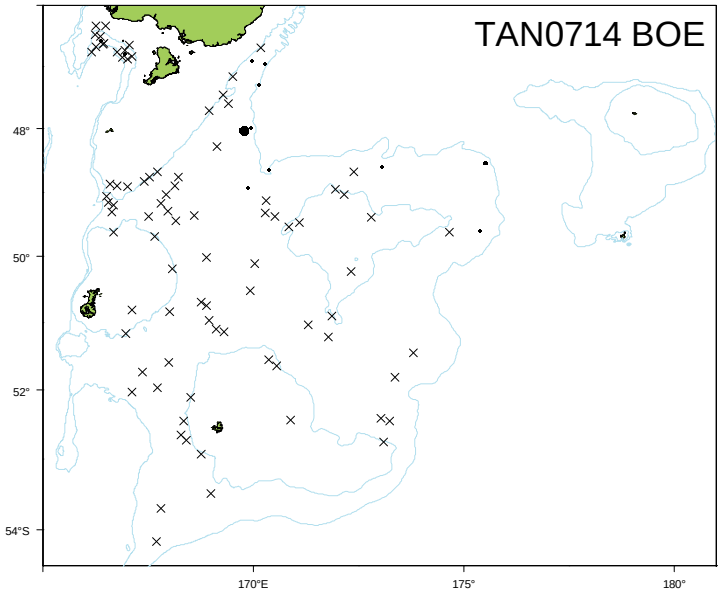

TAN0219 BOE
48°
50°
52°
54°S
170°E
175°
180°

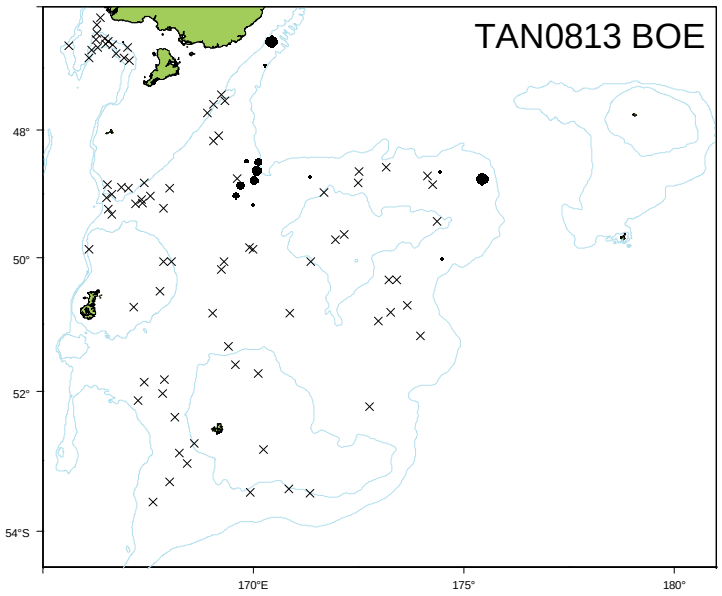

TAN0317 BOE
48°
50°
52°
54°S
170°E
175°
180°

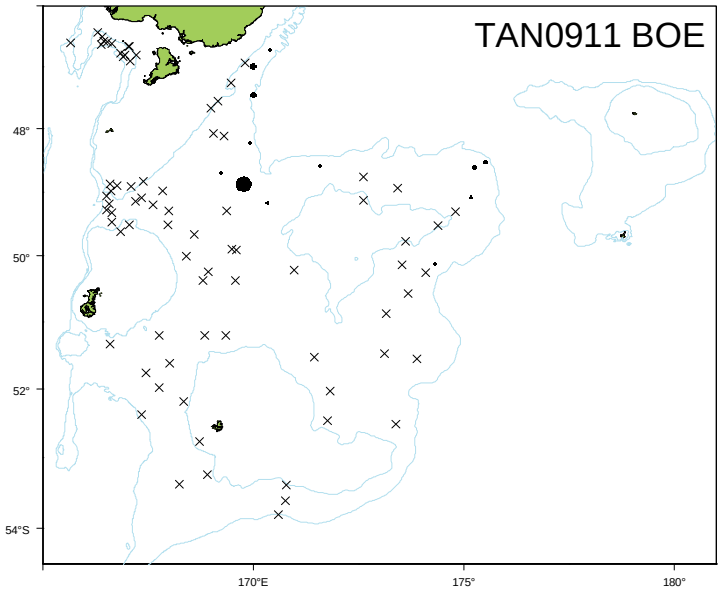

TAN0414 BOE
48°
50°
52°
54°S
170°E
175°
180°


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


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


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

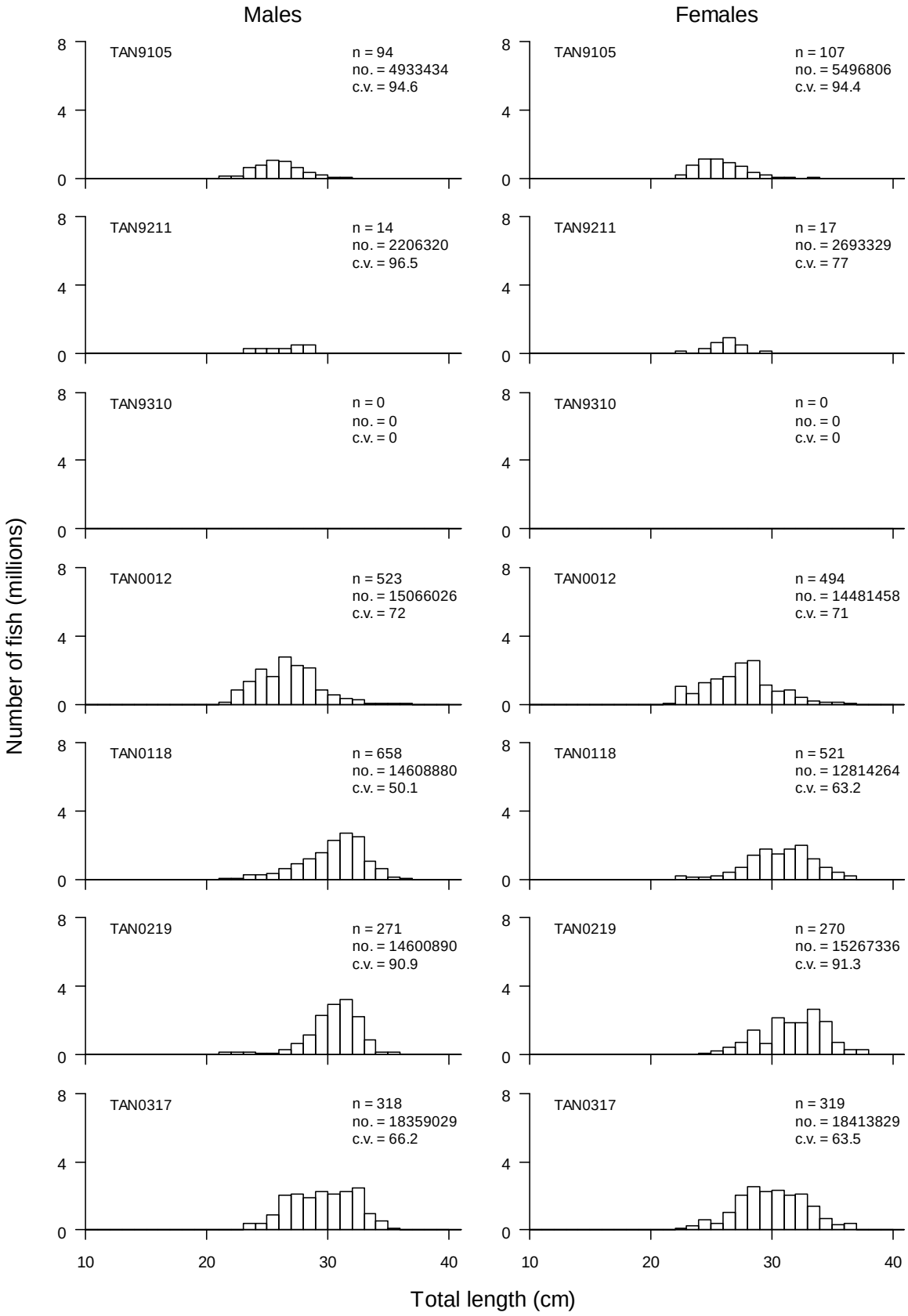

TAN0813 BOE
48°
50°
52°
54°S
170°E
175°
180°

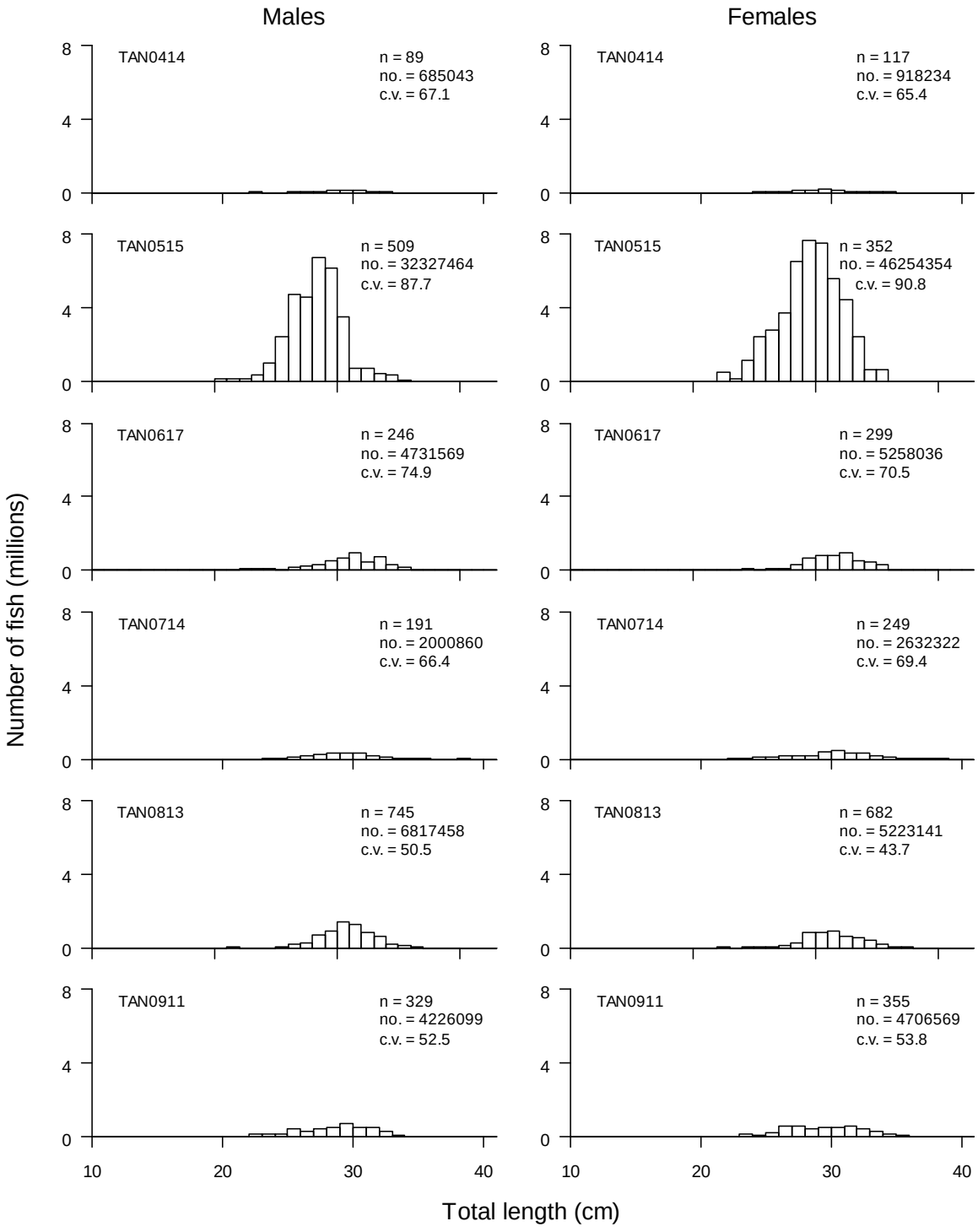


Length summaries

Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	22	35	26.5	237
TAN9211	23	30	26.7	31
TAN9310	NA	NA	NA	0
TAN0012	18	39	29.3	1017
TAN0118	17	39	30.5	1179
TAN0219	22	38	30.3	541
TAN0317	23	38	30.3	637
TAN0414	22	35	29.5	206
TAN0515	21	40	30.5	863
TAN0617	22	40	31.1	552
TAN0714	23	39	30.7	441
TAN0813	22	40	31.8	1428
TAN0911	22	37	29.8	684

Population scaled length frequencies of *Allocyttus niger* for all strata.




Males
Females
TAN0414
n = 89
no. = 685043
c.v. = 67.1
TAN0414
n = 117
no. = 918234
c.v. = 65.4
TAN0515
n = 509
no. = 32327464
c.v. = 87.7
TAN0515
n = 352
no. = 46254354
c.v. = 90.8
TAN0617
n = 246
no. = 4731569
c.v. = 74.9
TAN0617
n = 299
no. = 5258036
c.v. = 70.5
TAN0714
n = 191
no. = 2000860
c.v. = 66.4
TAN0714
n = 249
no. = 2632322
c.v. = 69.4
TAN0813
n = 745
no. = 6817458
c.v. = 50.5
TAN0813
n = 682
no. = 5223141
c.v. = 43.7
TAN0911
n = 329
no. = 4226099
c.v. = 52.5
TAN0911
n = 355
no. = 4706569
c.v. = 53.8
Number of fish (millions)
Total length (cm)
0
4
8
10
20
30
40

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

Survey	M1	M2	M3	M4	M5	M8	F1	F2	F3	F4	F5	F6	F8
TAN9105	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
TAN9310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0012	94	0	0	6	0	0	100	0	0	0	0	0	0
TAN0118	100	0	0	0	0	0	32	0	13	26	18	0	11
TAN0219	0	0	0	100	0	0	0	0	0	0	0	0	0
TAN0317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0414	100	0	0	0	0	0	80	20	0	0	0	0	0
TAN0515	100	0	0	0	0	0	100	0	0	0	0	0	0
TAN0617	42	0	15	42	0	0	31	0	43	11	6	0	9
TAN0714	64	6	9	18	2	1	47	22	18	8	3	0	2
TAN0813	27	3	14	44	12	0	23	4	24	42	4	0	2
TAN0911	49	34	18	0	0	0	41	36	8	15	1	0	0

Seal shark (*Dalatias licha*) BSH

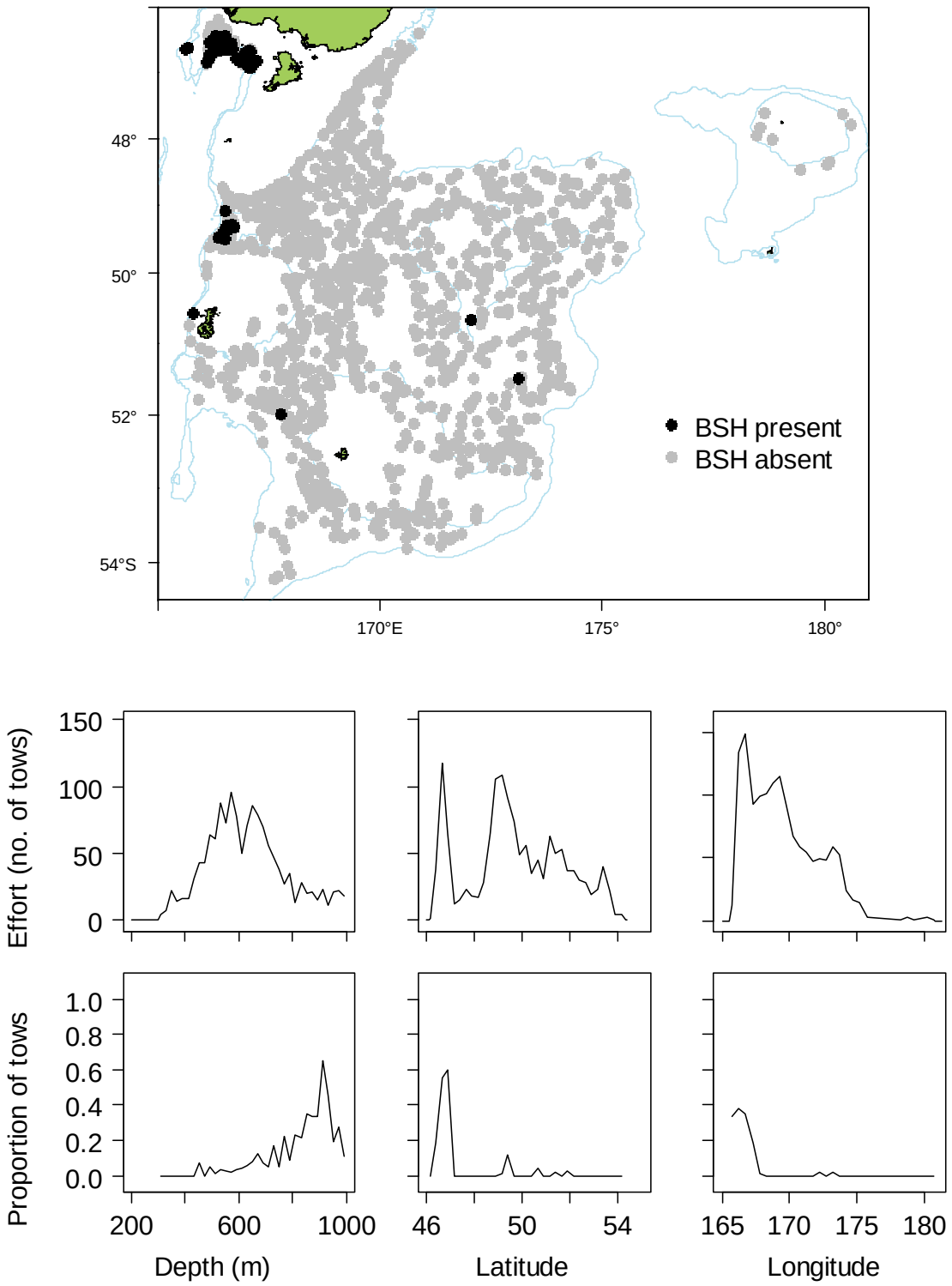
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	1 148.2
Number measured	186
Length range (mean) (cm)	38–153 (65.1)
Number weighed	150
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. The core survey area and depth range **is** appropriate for this species. Distribution **does not extend** to strata 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. Catches are highest in the **northwest.**

Gonad stage data indicate that all fish observed are **immature.** There is no length data presented.

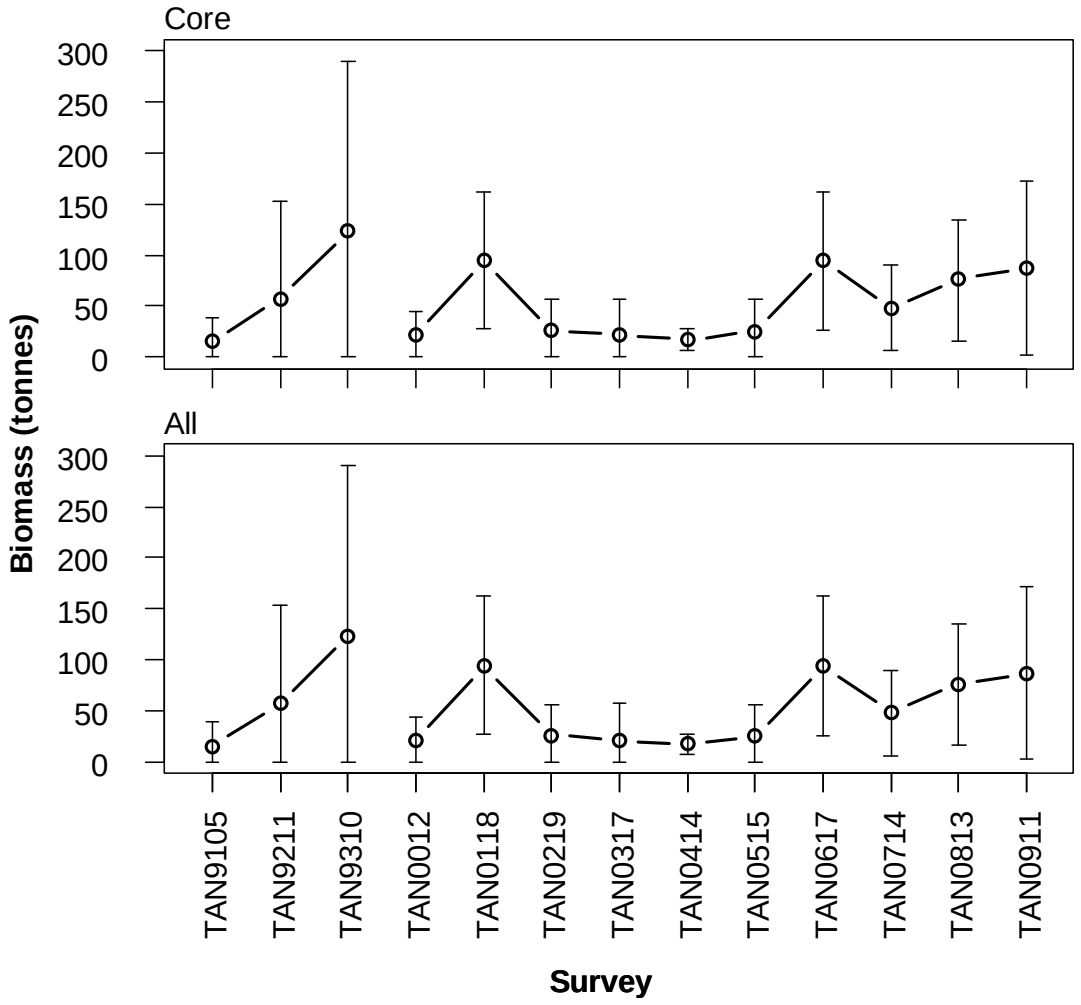
Distribution of *Dalatias licha* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Dalatias licha* 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.)
AN9105	15	84	NA	NA	NA	NA	NA	NA	15	84
TAN9211	57	84	NA	NA	NA	NA	0	0	57	84
TAN9310	123	68	NA	NA	NA	NA	0	0	123	68
TAN0012	21	56	0	0	0	0	NA	NA	21	56
TAN0118	94	36	0	0	0	0	NA	NA	94	36
TAN0219	26	60	0	0	0	0	NA	NA	26	60
TAN0317	21	86	0	0	NA	NA	NA	NA	21	86
TAN0414	17	29	0	0	NA	NA	NA	NA	17	29
TAN0515	25	62	0	0	0	0	NA	NA	25	62
TAN0617	94	36	0	0	NA	NA	NA	NA	94	36
TAN0714	48	44	0	0	0	0	NA	NA	48	44
TAN0813	76	39	0	0	0	0	NA	NA	76	39
TAN0911	87	49	0	0	0	0	NA	NA	87	49

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



Gonad stage summaries by sex for *Dalatias licha*. 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	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0911	100	0	0	100	0	0	0	0	0
ALL	100	0	0	100	0	0	0	0	0

Black slickhead (*Xenodermichthys copei*) BSL

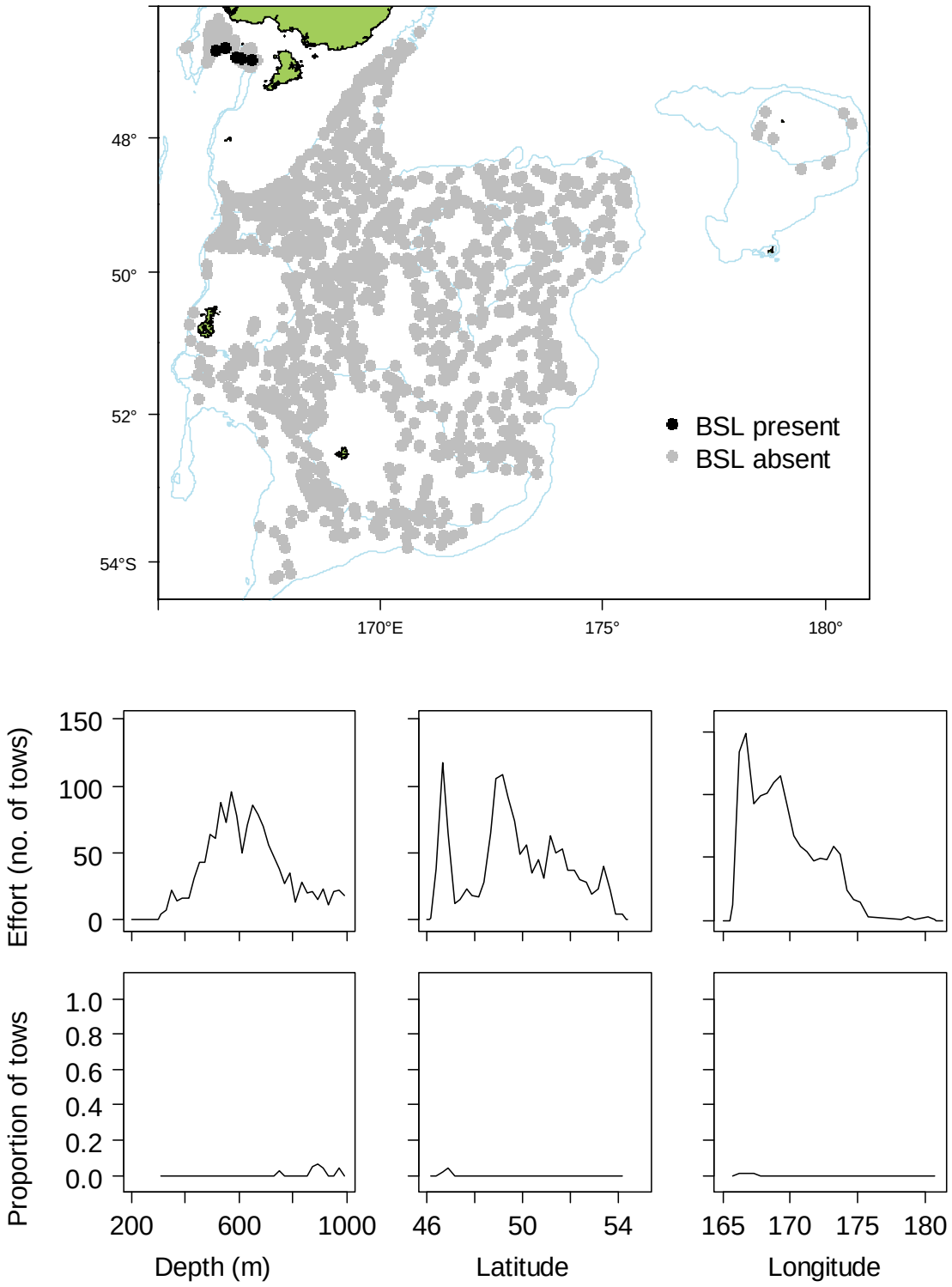
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	2
Total catch weight (kg):	28.3
Number measured	0
Length range (mean) (cm)	-
Number weighed	0
Length-weight parameters a, b (r^2)	–

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 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. Biomass **shows no clear trend** since the start of the time series. Catches are highest in the **northwest** at Puysegur**.**

There is no length or gonad stage information presented.

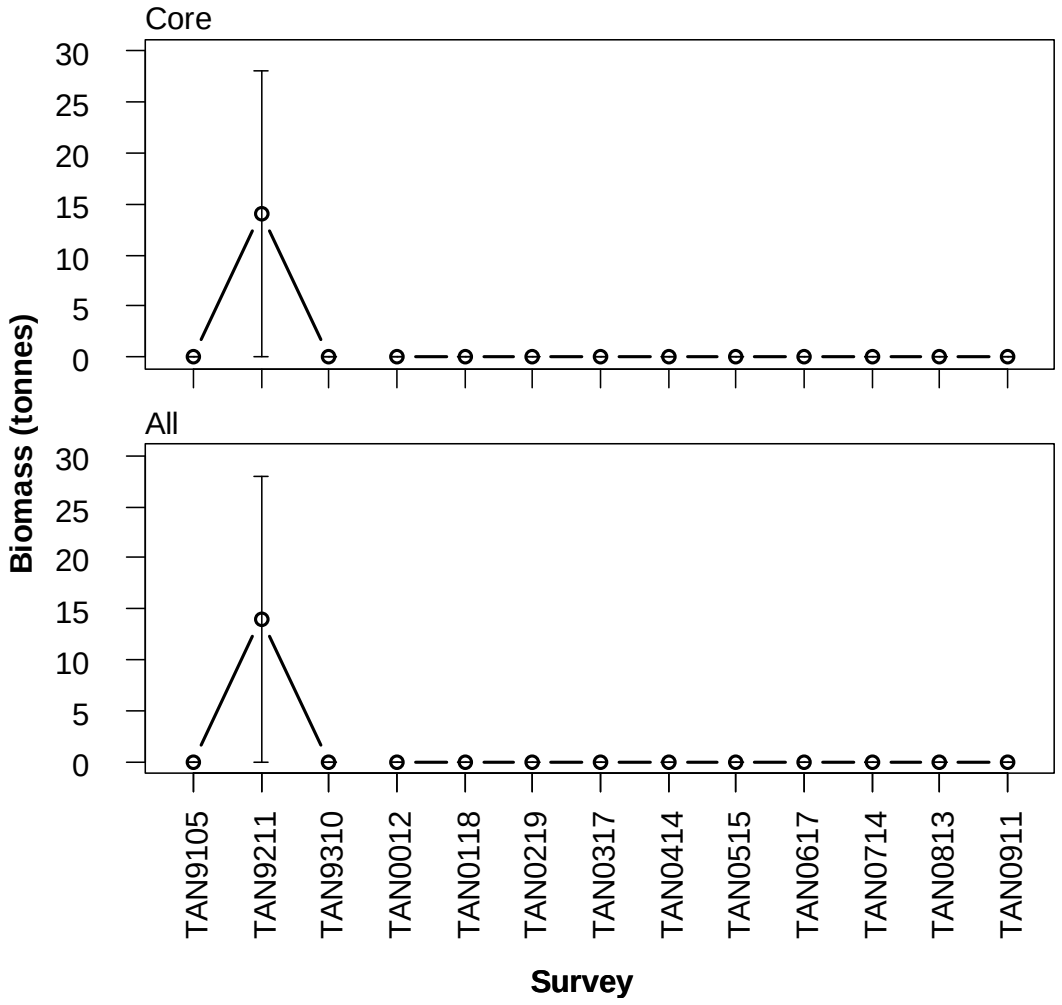
Distribution of *Xenodermichthys copei* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Xenodermichthys copei* 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	14	50	NA	NA	NA	NA	0	0	14	50
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	0	100	0	0	0	0	NA	NA	0	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	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 *Xenodermichthys copei* for core strata (above) and all strata (below).



Deepwater skates (*Brochiraja* sp.) BTH

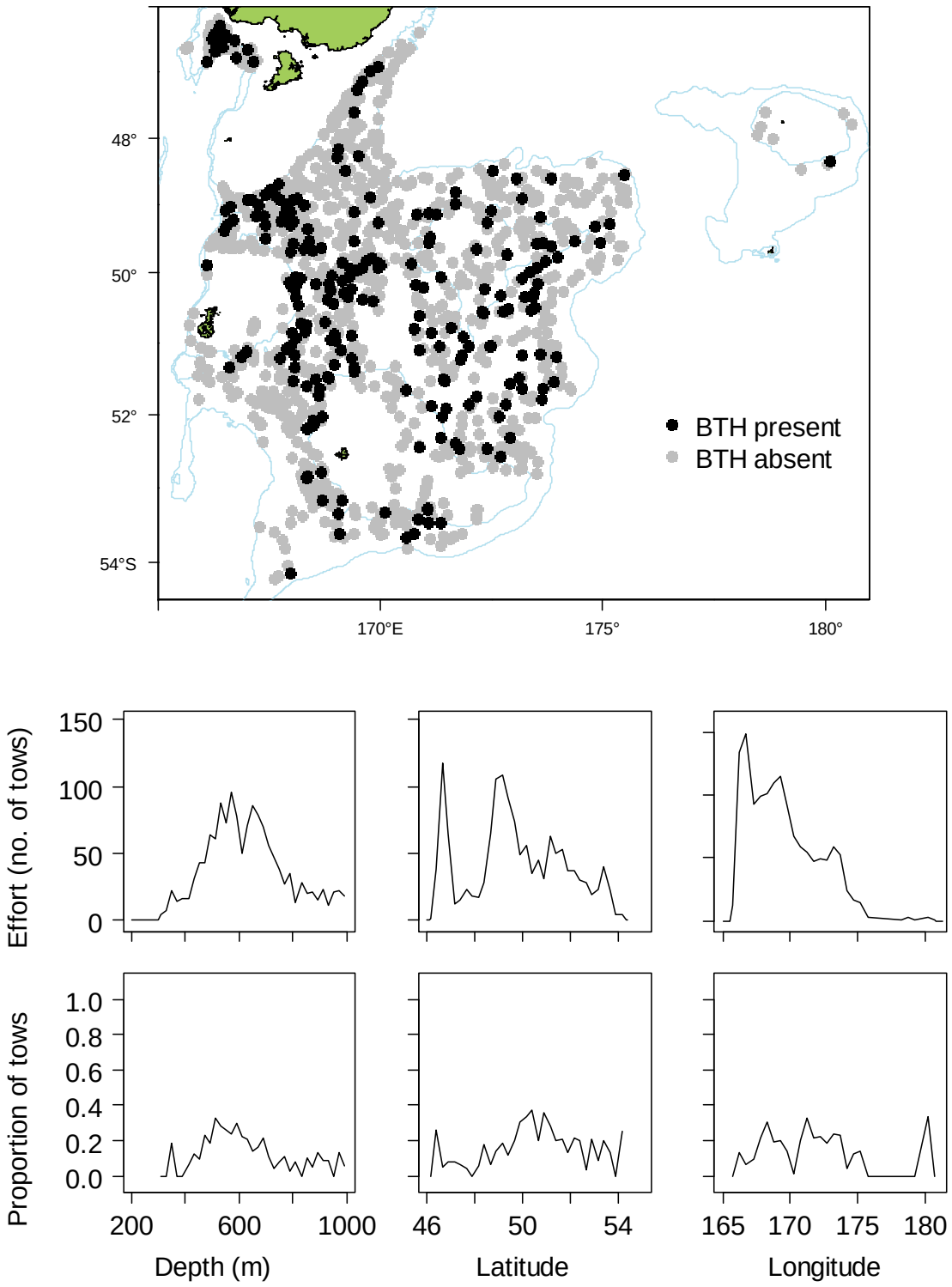
Coded as BTA	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	90.6
Number measured	4
Length range (mean) (cm)	27–31 (29.0)
Number weighed	4
Coded as BTH	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	43.6
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Coded as BTS	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	103.1
Number measured	1
Length mean (cm)	(31.0)
Number weighed	1

This group **has** been well identified during the time series. It is found **shallower** than 300 m and **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** recorded from the Bounty Platform.

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

Gonad stage data from a very small sample size indicate that fish are **mature.** There is no length information presented.

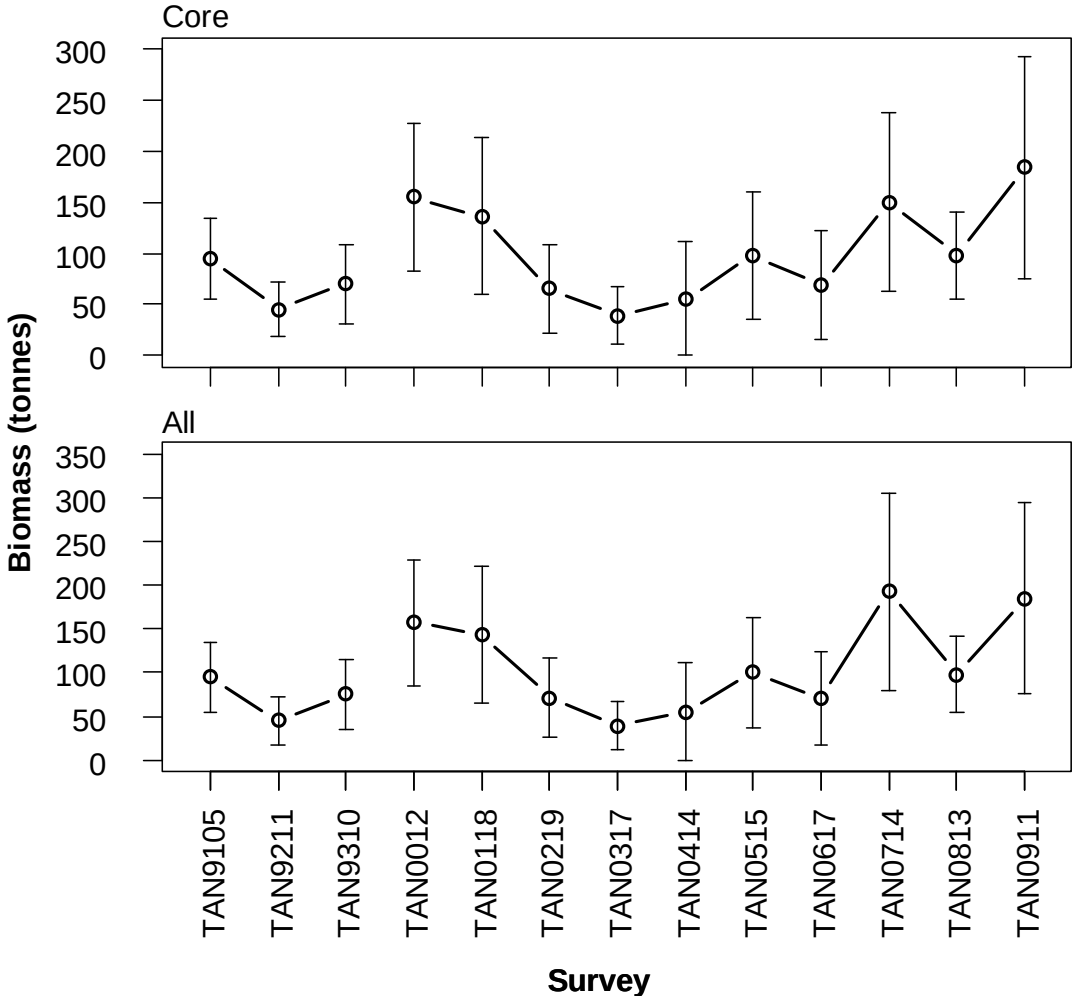
Distribution of Deepwater skates from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of Deepwater skates 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	95	21	NA	NA	NA	NA	NA	NA	95	21
TAN9211	45	30	NA	NA	NA	NA	0	0	45	30
TAN9310	70	29	NA	NA	NA	NA	5	100	75	28
TAN0012	155	24	3	100	0	0	NA	NA	157	24
TAN0118	136	29	0	0	9	100	NA	NA	144	28
TAN0219	65	34	0	0	6	100	NA	NA	71	32
TAN0317	39	37	0	0	NA	NA	NA	NA	39	37
TAN0414	55	52	0	0	NA	NA	NA	NA	55	52
TAN0515	98	33	2	100	0	0	NA	NA	100	32
TAN0617	69	39	2	100	NA	NA	NA	NA	70	39
TAN0714	150	30	43	84	0	0	NA	NA	193	30
TAN0813	98	22	0	0	0	0	NA	NA	98	22
TAN0911	184	30	1	100	0	0	NA	NA	185	30

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



Gonad stage summaries by sex for Deepwater skates. 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	0	100	0	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	NA	NA	NA	NA	NA	NA	NA	NA	NA
TAN0911	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL	0	100	0	NA	NA	NA	NA	NA	NA

Oblique banded rattail (*Coelorinchus aspercephalus*) CAS

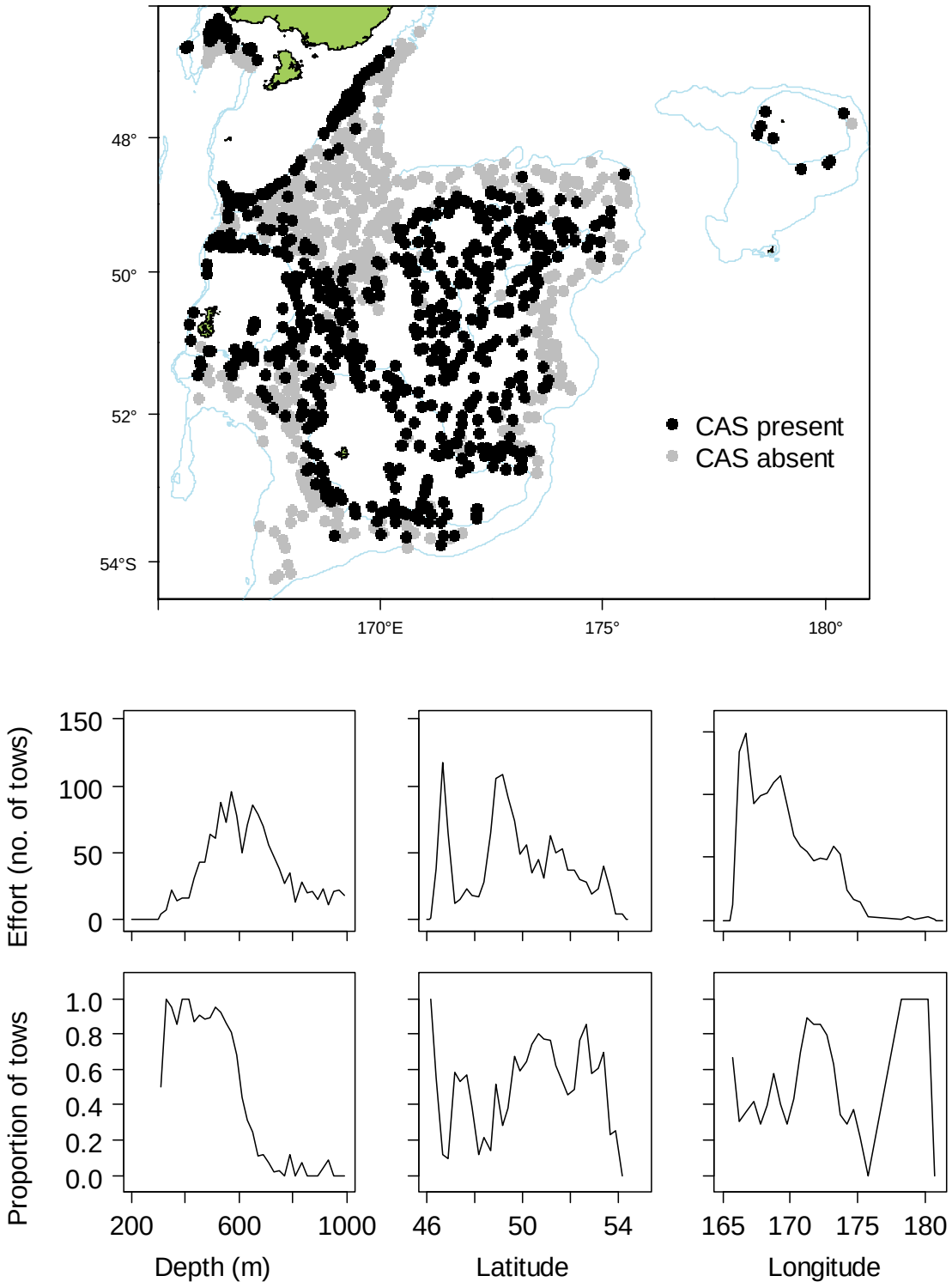
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	4 468.1
Number measured	6 986
Length range (mean) (cm)	14–48 (32.4)
Number weighed	2 924
Length-weight parameters a, b (r^2)	0.0007428, 3.514302 (95.81)

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** on 3 surveys 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 **well** estimated by the core survey. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Biomass **shows no clear trend** since the start of the time series. Catchrates are highest in the shallower strata on the eastern side of the Stewart/Snares shelf, and around Campbell Island.

Length frequencies are mostly **bimodal, which may represent larger females and smaller males**. Mean length **shows no clear trend** since the start of the time series. Gonad stage data indicate that most fish are **resting and mature**.

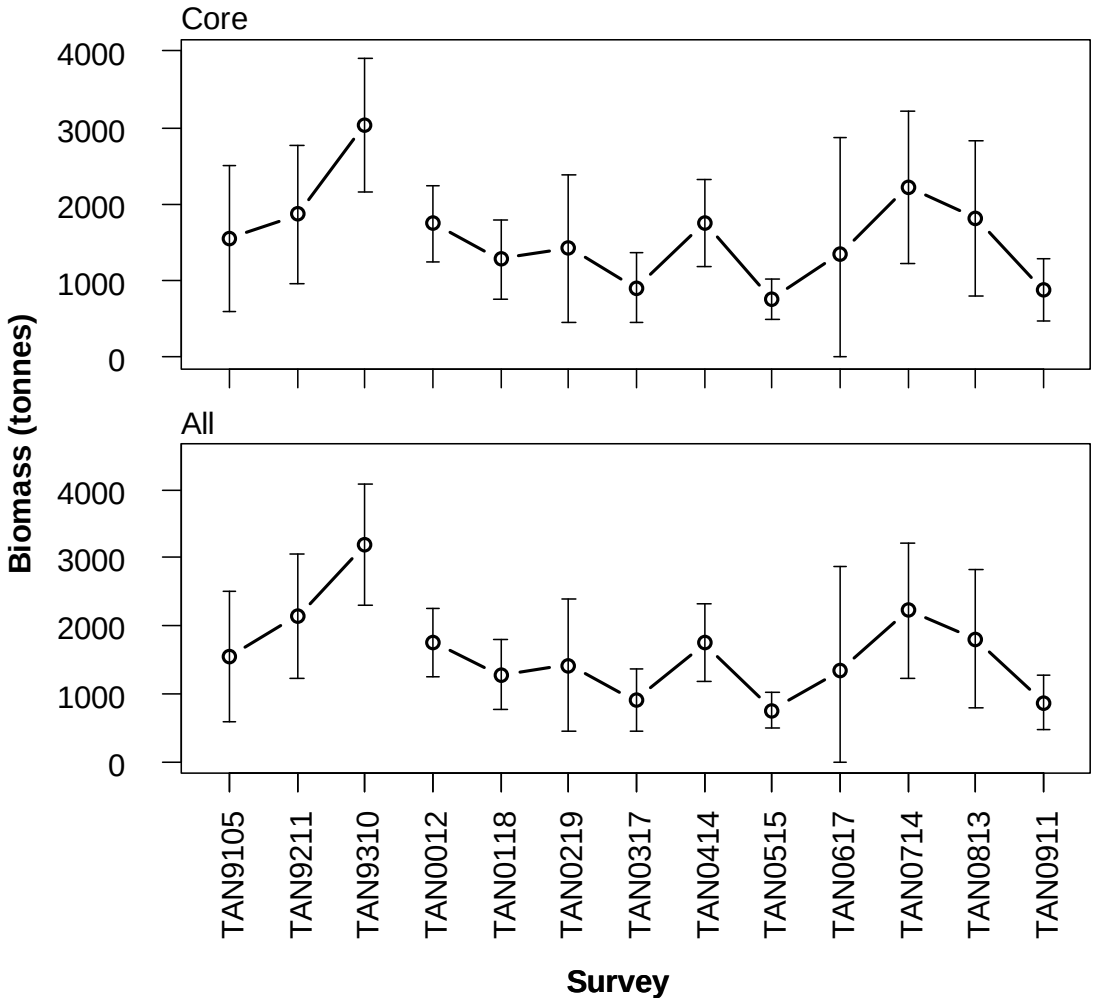
Distribution of *Coelorinchus aspercephalus* from all summer surveys. Valid biomass stations only.



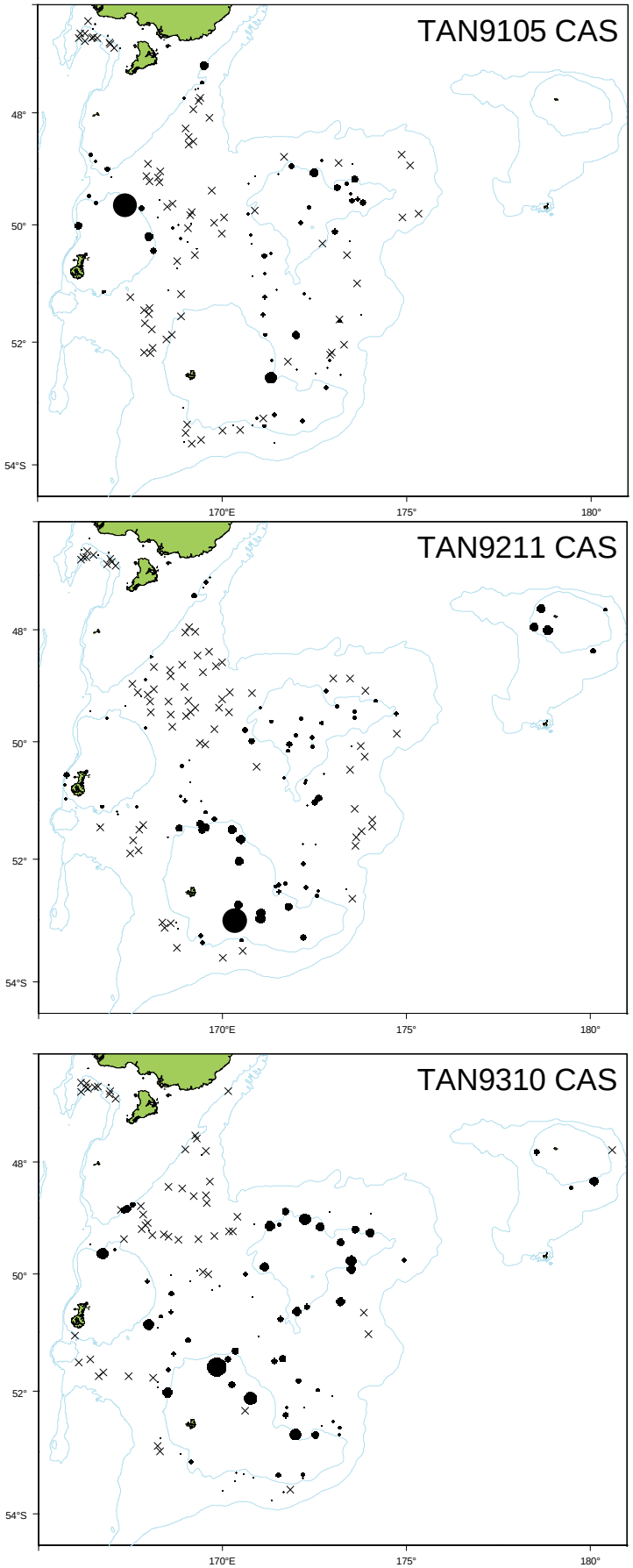
Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus aspercephalus* for core strata, strata outside the core area and all strata.

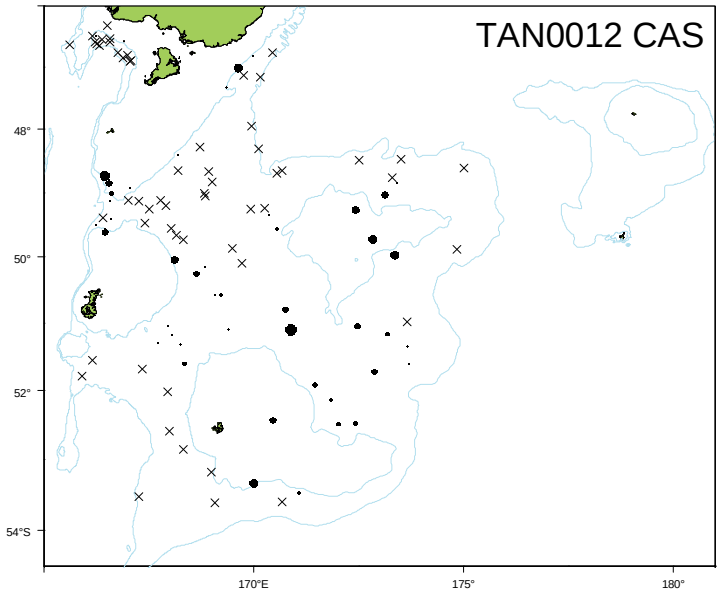
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	1543	31	NA	NA	NA	NA	NA	NA	1543	31
TAN9211	1863	24	NA	NA	NA	NA	272	26	2135	21
TAN9310	3038	14	NA	NA	NA	NA	152	54	3190	14
TAN0012	1749	14	0	0	0	0	NA	NA	1749	14
TAN0118	1277	20	0	0	2	100	NA	NA	1280	20
TAN0219	1418	34	0	0	0	0	NA	NA	1418	34
TAN0317	905	25	0	0	NA	NA	NA	NA	905	25
TAN0414	1752	16	0	0	NA	NA	NA	NA	1752	16
TAN0515	755	17	0	0	0	0	NA	NA	755	17
TAN0617	1352	56	0	0	NA	NA	NA	NA	1352	56
TAN0714	2223	22	1	100	0	0	NA	NA	2223	22
TAN0813	1805	28	1	100	0	0	NA	NA	1806	28
TAN0911	871	23	0	0	0	0	NA	NA	871	23

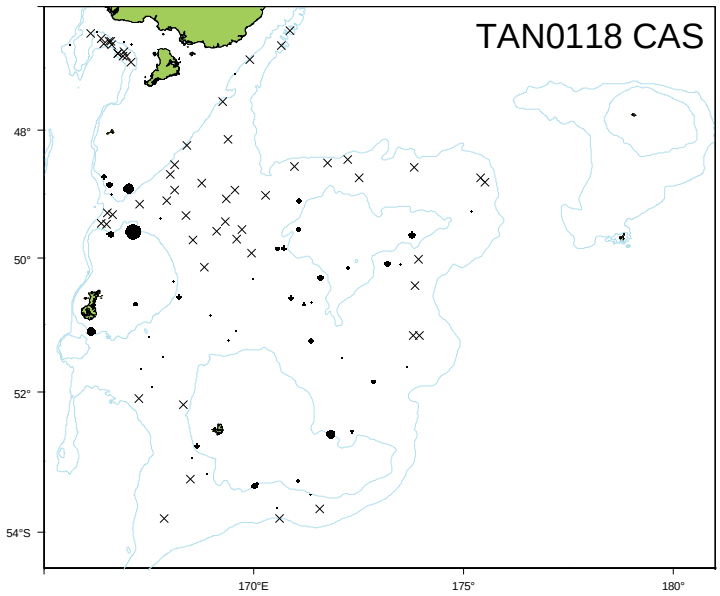
Trends in relative biomass estimates (± 2 standard errors) of *Coelorinchus aspercephalus* for core strata (above) and all strata (below).

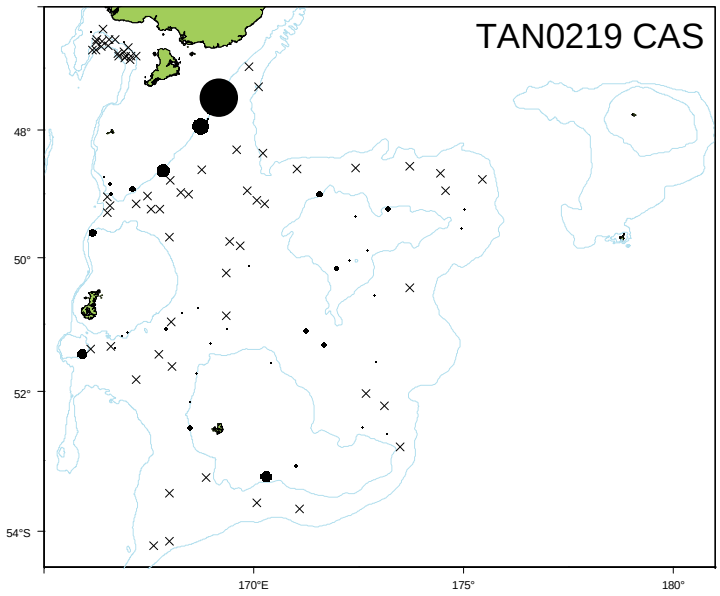


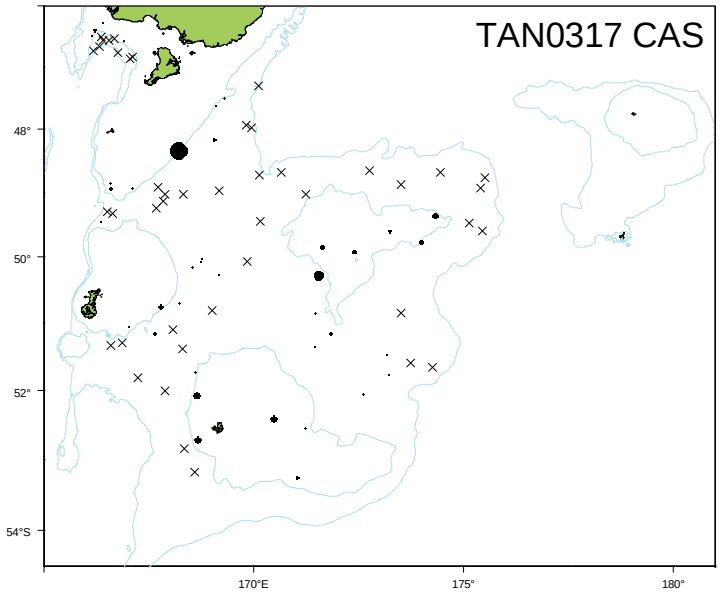
Catchrates of *Coelorinchus aspercephalus*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

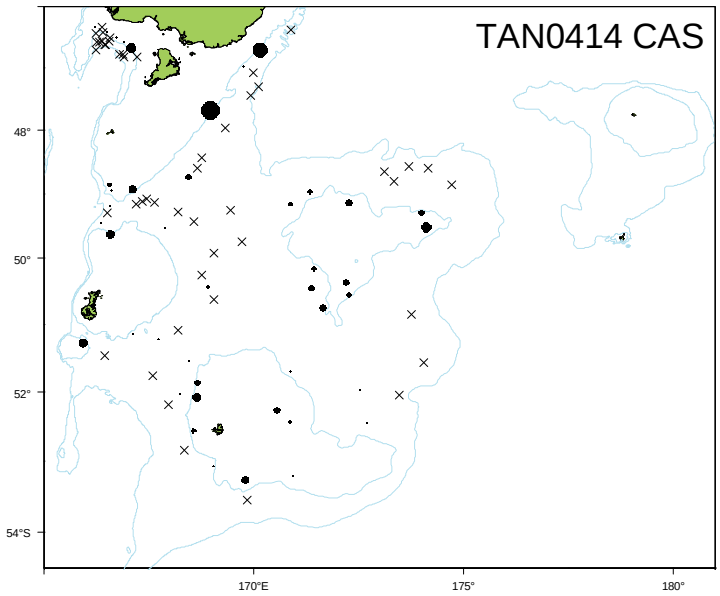


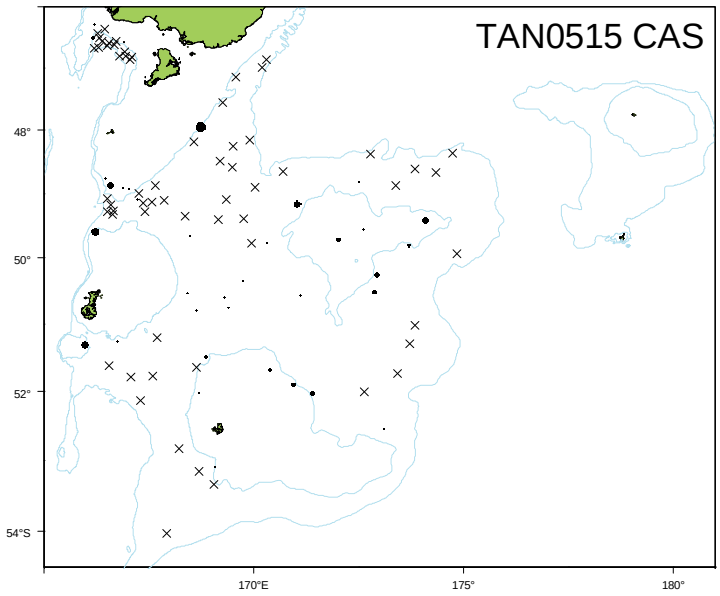

TAN0012 CAS
48°
50°
52°
54°S
170°E
175°
180°

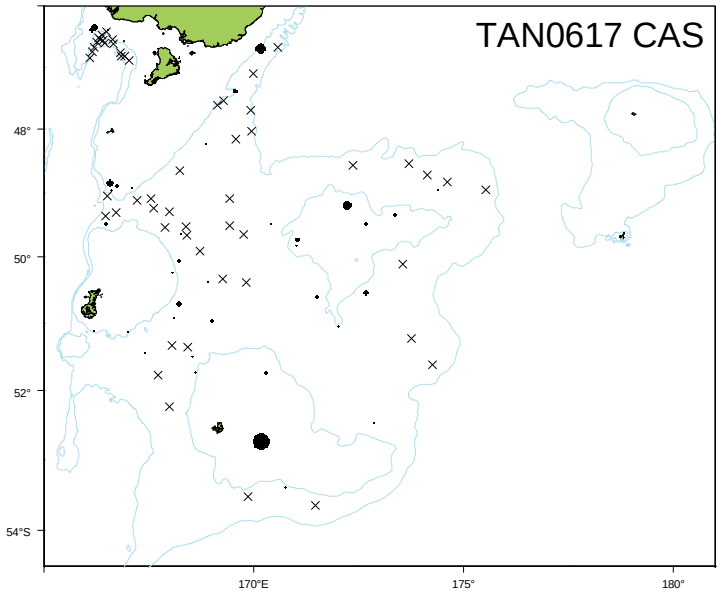

TAN0118 CAS
48°
50°
52°
54°S
170°E
175°
180°

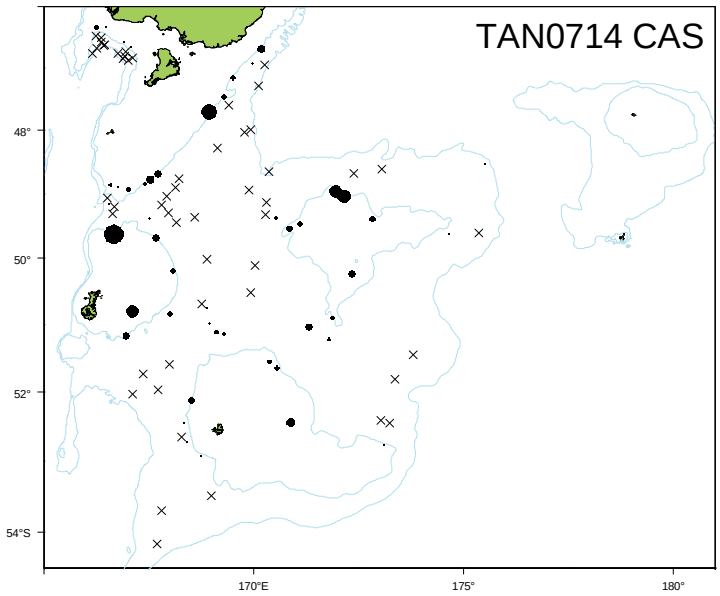

TAN0219 CAS
48°
50°
52°
54°S
170°E
175°
180°

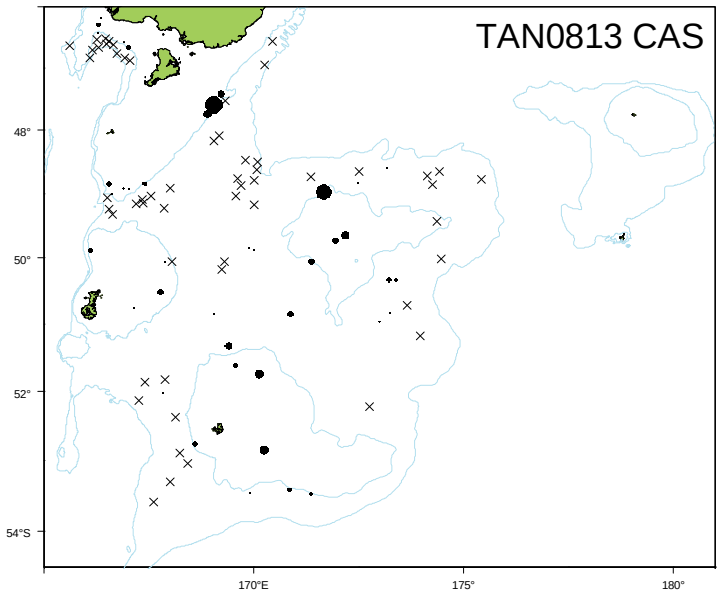

TAN0317 CAS
48°
50°
52°
54°S
170°E
175°
180°

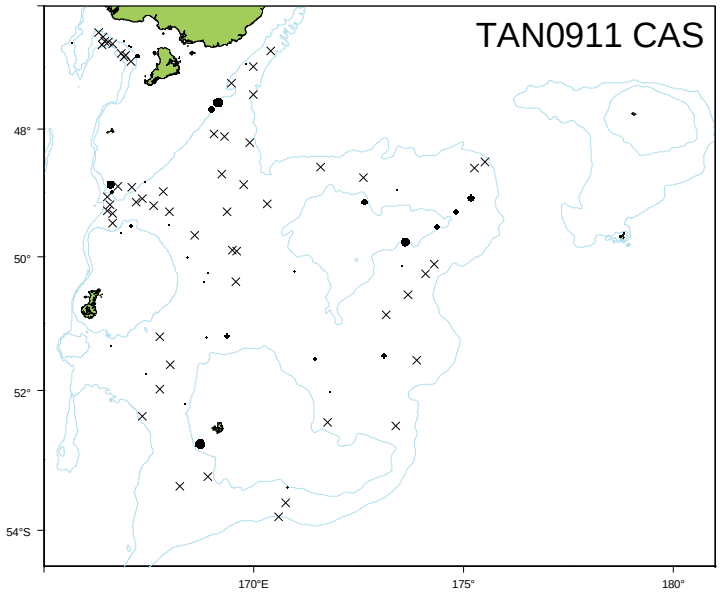

TAN0414 CAS
48°
50°
52°
54°S
170°E
175°
180°


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


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


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

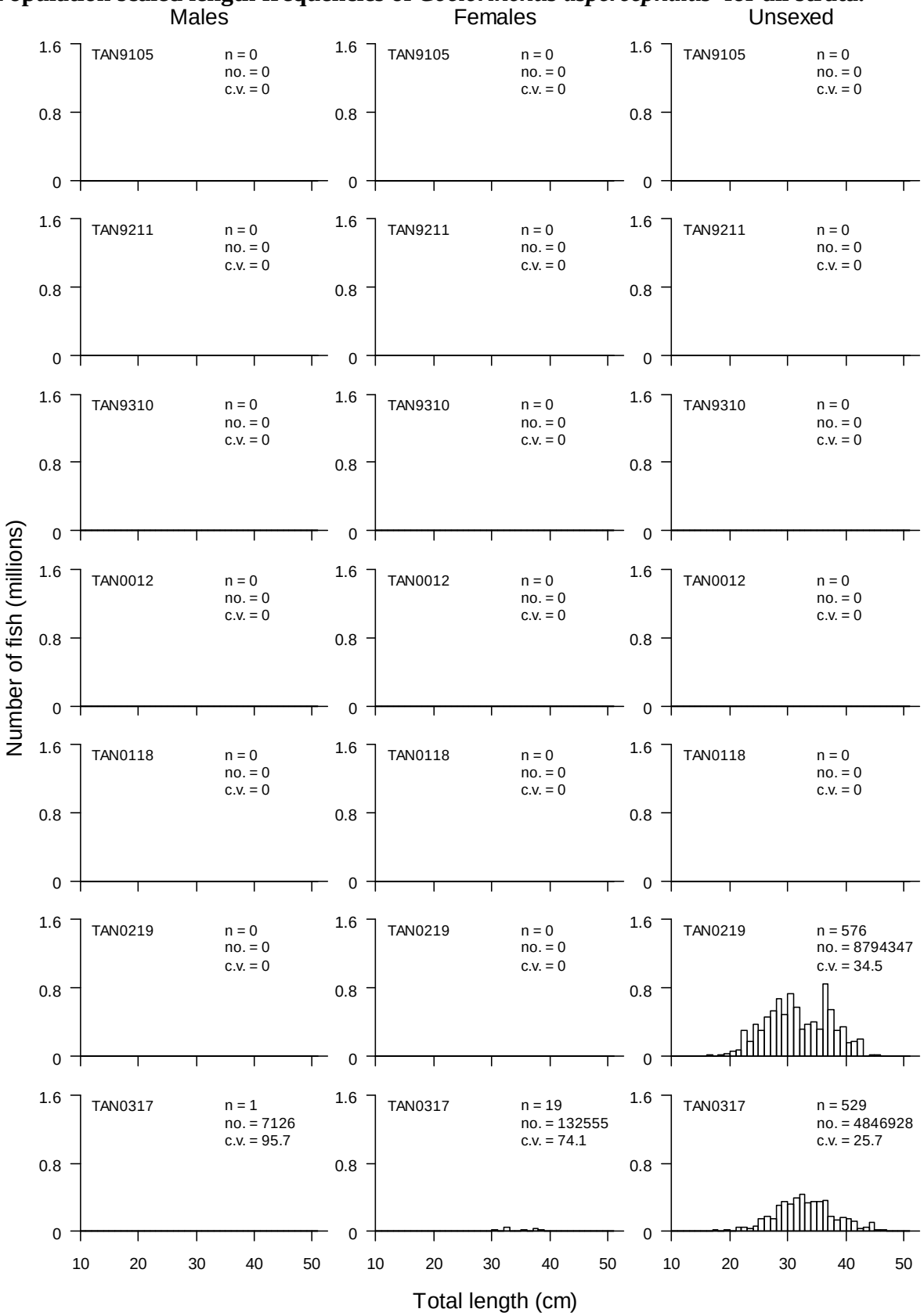

TAN0813 CAS
48°
50°
52°
54°S
170°E
175°
180°

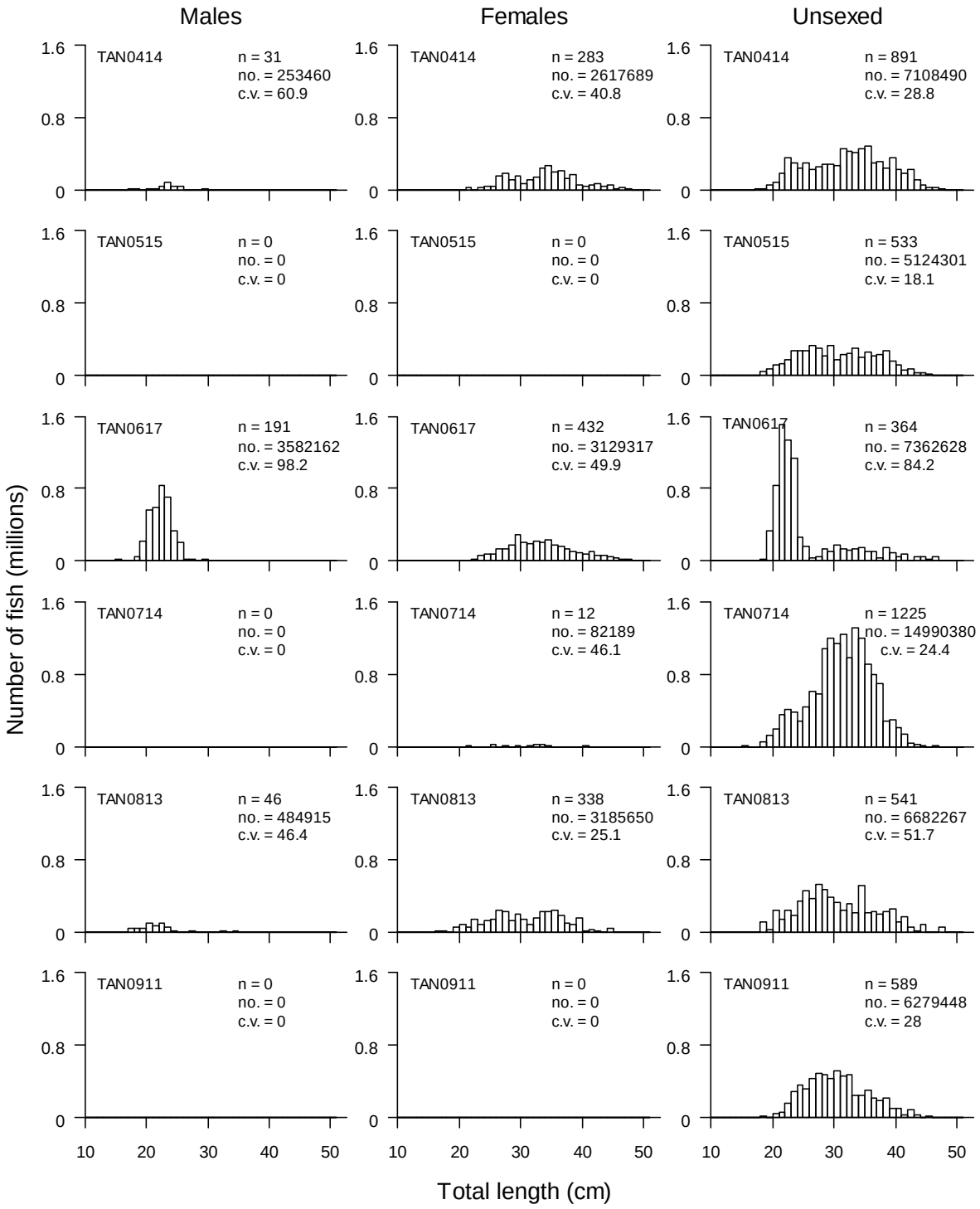


Length summaries

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	19	47	31.3	165
TAN0219	17	46	31.6	576
TAN0317	18	47	33.4	549
TAN0414	14	48	32.4	1205
TAN0515	18	46	31.2	533
TAN0617	16	48	28.4	987
TAN0714	16	47	31.8	1237
TAN0813	17	48	29.7	925
TAN0911	19	46	32.1	589

Population scaled length frequencies of *Coelorinchus aspercephalus* for all strata.




Males
Females
Unsexed
Number of fish (millions)
Total length (cm)
TAN0414
n = 31
no. = 253460
c.v. = 60.9
TAN0414
n = 283
no. = 2617689
c.v. = 40.8
TAN0414
n = 891
no. = 7108490
c.v. = 28.8
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 533
no. = 5124301
c.v. = 18.1
TAN0617
n = 191
no. = 3582162
c.v. = 98.2
TAN0617
n = 432
no. = 3129317
c.v. = 49.9
TAN0617
n = 364
no. = 7362628
c.v. = 84.2
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 12
no. = 82189
c.v. = 46.1
TAN0714
n = 1225
no. = 14990380
c.v. = 24.4
TAN0813
n = 46
no. = 484915
c.v. = 46.4
TAN0813
n = 338
no. = 3185650
c.v. = 25.1
TAN0813
n = 541
no. = 6682267
c.v. = 51.7
TAN0911
n = 0
no. = 0
c.v. = 0
TAN0911
n = 0
no. = 0
c.v. = 0
TAN0911
n = 589
no. = 6279448
c.v. = 28

Gonad stage summaries by sex for *Coelorinchus aspercephalus*. 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	8	61	11	5	15	0	5	68	9	13	0	4	0
TAN0714	NA	NA	NA	NA	NA	NA	NA	0	100	0	0	0	0	0
TAN0813	NA	NA	NA	NA	NA	NA	NA	0	80	20	0	0	0	0
TAN0911	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL	0	8	61	11	5	15	0	4	69	9	13	0	4	0

Humpback rattail (*Coryphaenoides dossenus*) CBA

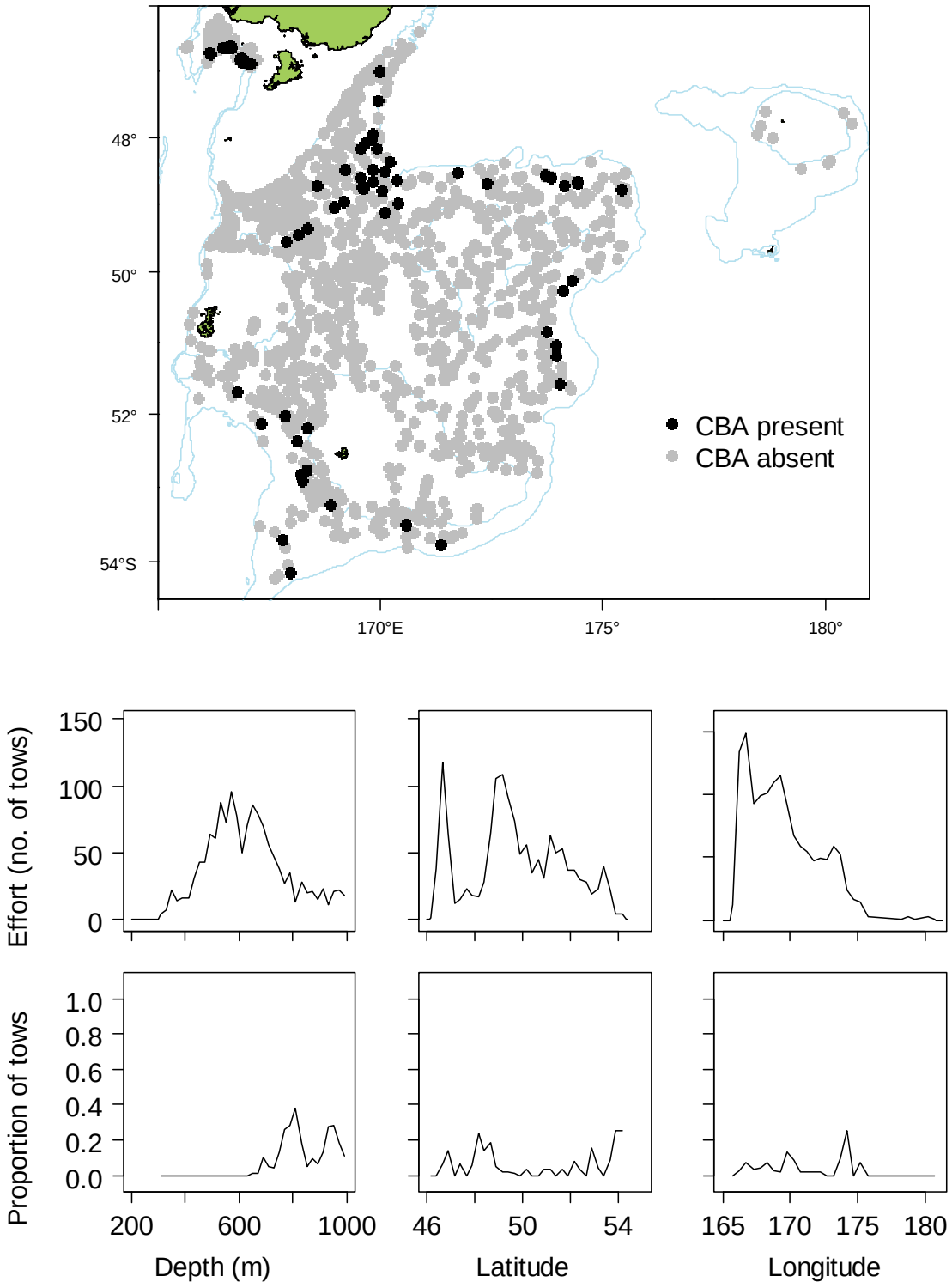
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	141.2
Number measured	19
Length range (mean) (cm)	41–83 (65.7)
Number weighed	18
Length-weight parameters a, b (r^2)	–

This species probably **has not** been well identified during the time series. There may have been some confusion with the Abyssal rattail (*Coryphaenoides murrayi*) on early surveys. The humpback rattail 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. 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 also **poorly** estimated. Catches are recorded from most areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

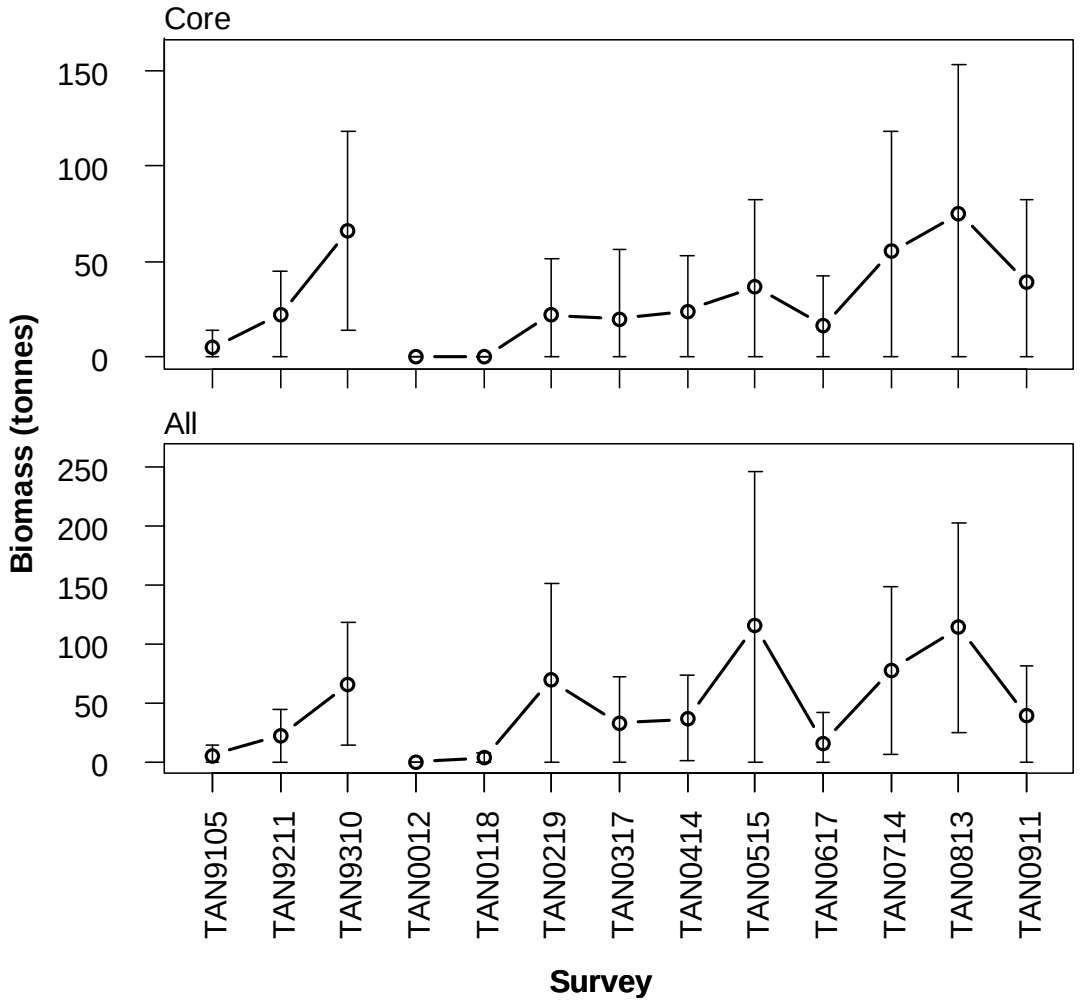
Distribution of *Coryphaenoides dossenus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Coryphaenoides dossenus* 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	5	100	NA	NA	NA	NA	NA	NA	5	100
TAN9211	22	50	NA	NA	NA	NA	0	0	22	50
TAN9310	66	39	NA	NA	NA	NA	0	0	66	39
TAN0012	0	0	0	0	0	0	NA	NA	0	0
TAN0118	0	0	3	100	0	0	NA	NA	3	100
TAN0219	22	66	10	100	37	100	NA	NA	69	60
TAN0317	20	89	12	74	NA	NA	NA	NA	32	62
TAN0414	24	57	13	93	NA	NA	NA	NA	37	49
TAN0515	37	61	19	73	60	100	NA	NA	116	56
TAN0617	16	84	0	0	NA	NA	NA	NA	16	84
TAN0714	55	56	5	100	17	100	NA	NA	78	46
TAN0813	75	52	39	55	0	0	NA	NA	114	39
TAN0911	39	56	0	0	0	0	NA	NA	39	56

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



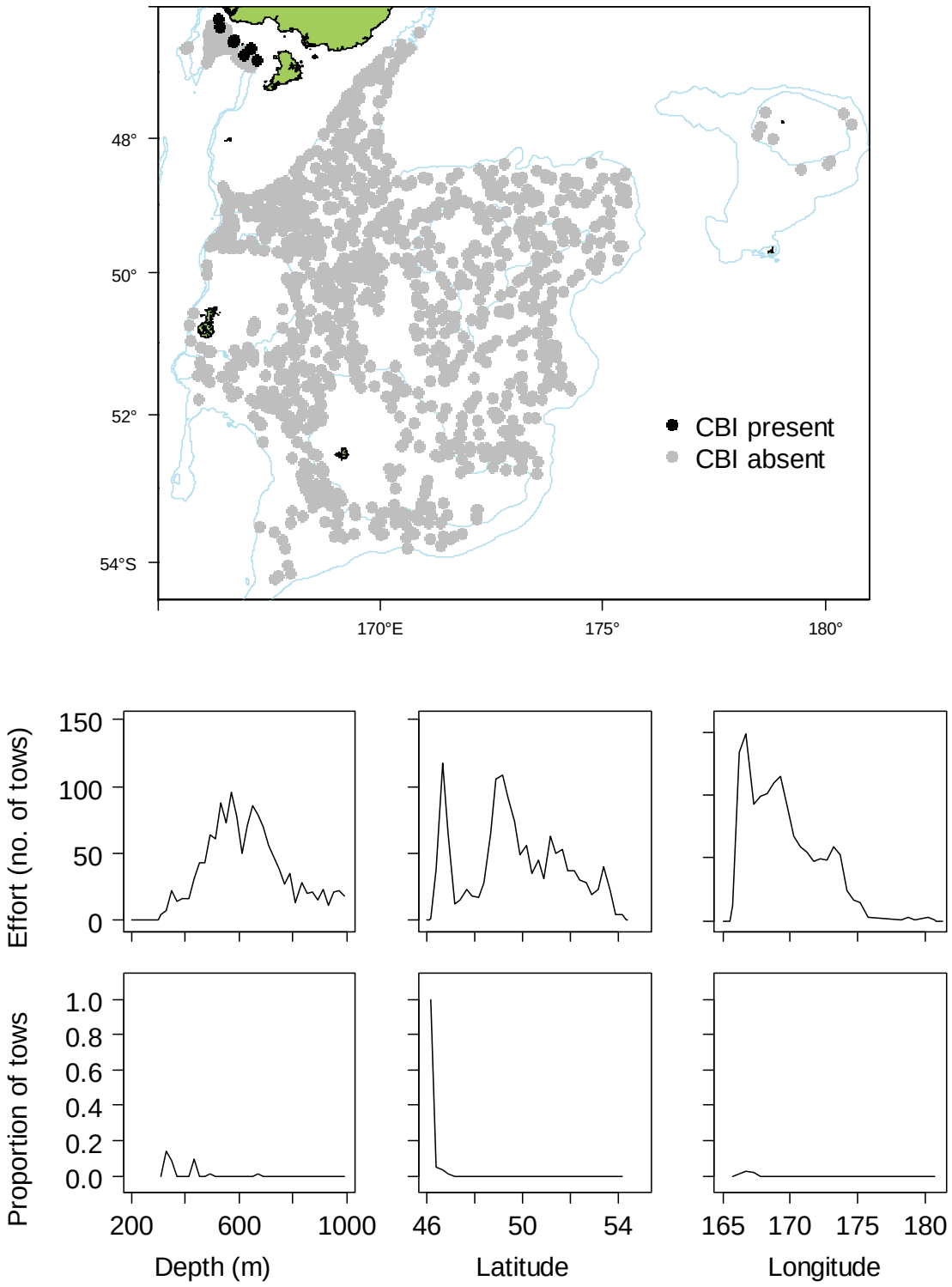
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	30.7
Number measured	51
Length range (mean) (cm)	22–54 (35.8)
Number weighed	1
Length-weight parameters a, b (r^2)	-

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. Catch rates are only recorded at Puysegur.

There is no length or gonad stage information presented.

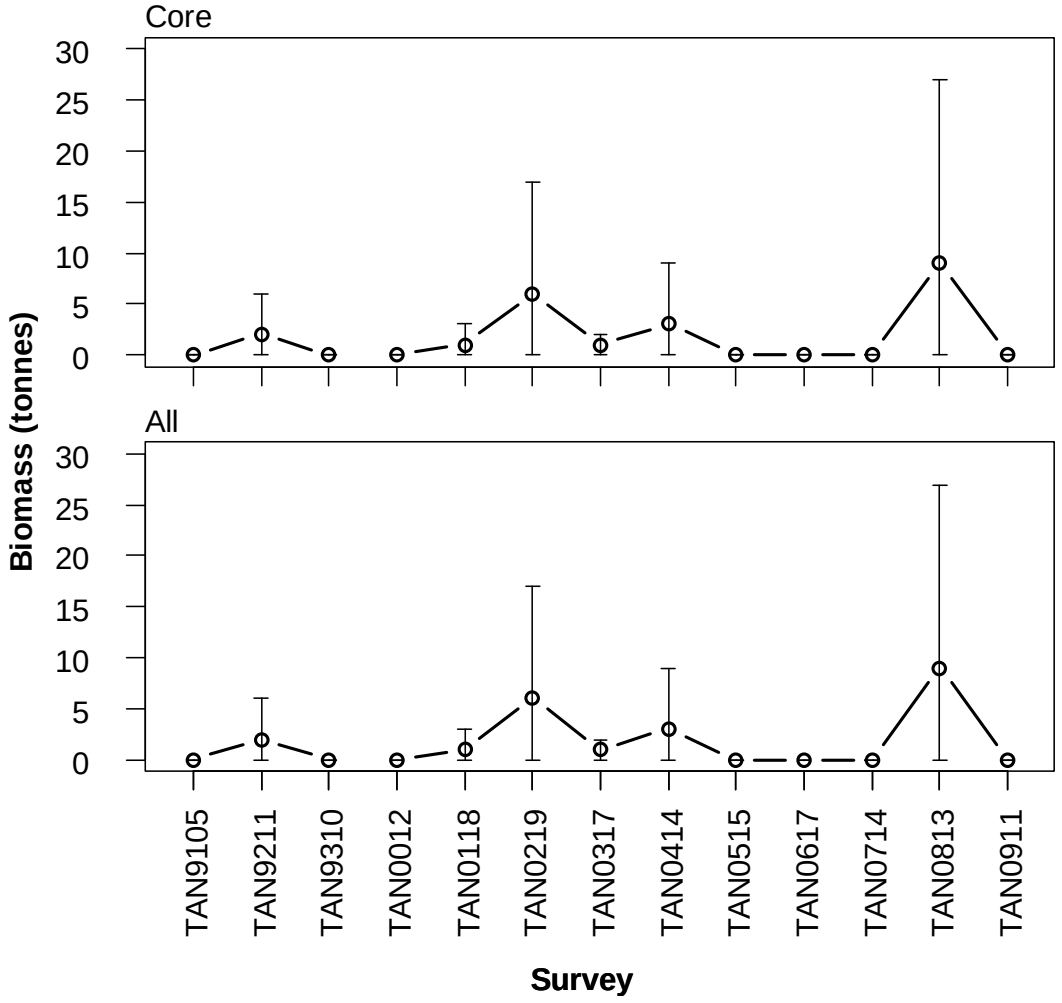
Distribution of *Coelorinchus biclinozonalis* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus biclinozonalis* 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	2	100	NA	NA	NA	NA	0	0	2	100
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	0	0	0	0	0	0	NA	NA	0	0
TAN0118	1	100	0	0	0	0	NA	NA	1	100
TAN0219	6	98	0	0	0	0	NA	NA	6	98
TAN0317	1	100	0	0	NA	NA	NA	NA	1	100
TAN0414	3	89	0	0	NA	NA	NA	NA	3	89
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	9	100	0	0	0	0	NA	NA	9	100
TAN0911	0	0	0	0	0	0	NA	NA	0	0

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



Bollons rattail (*Coelorinchus bollonsi*) CBO

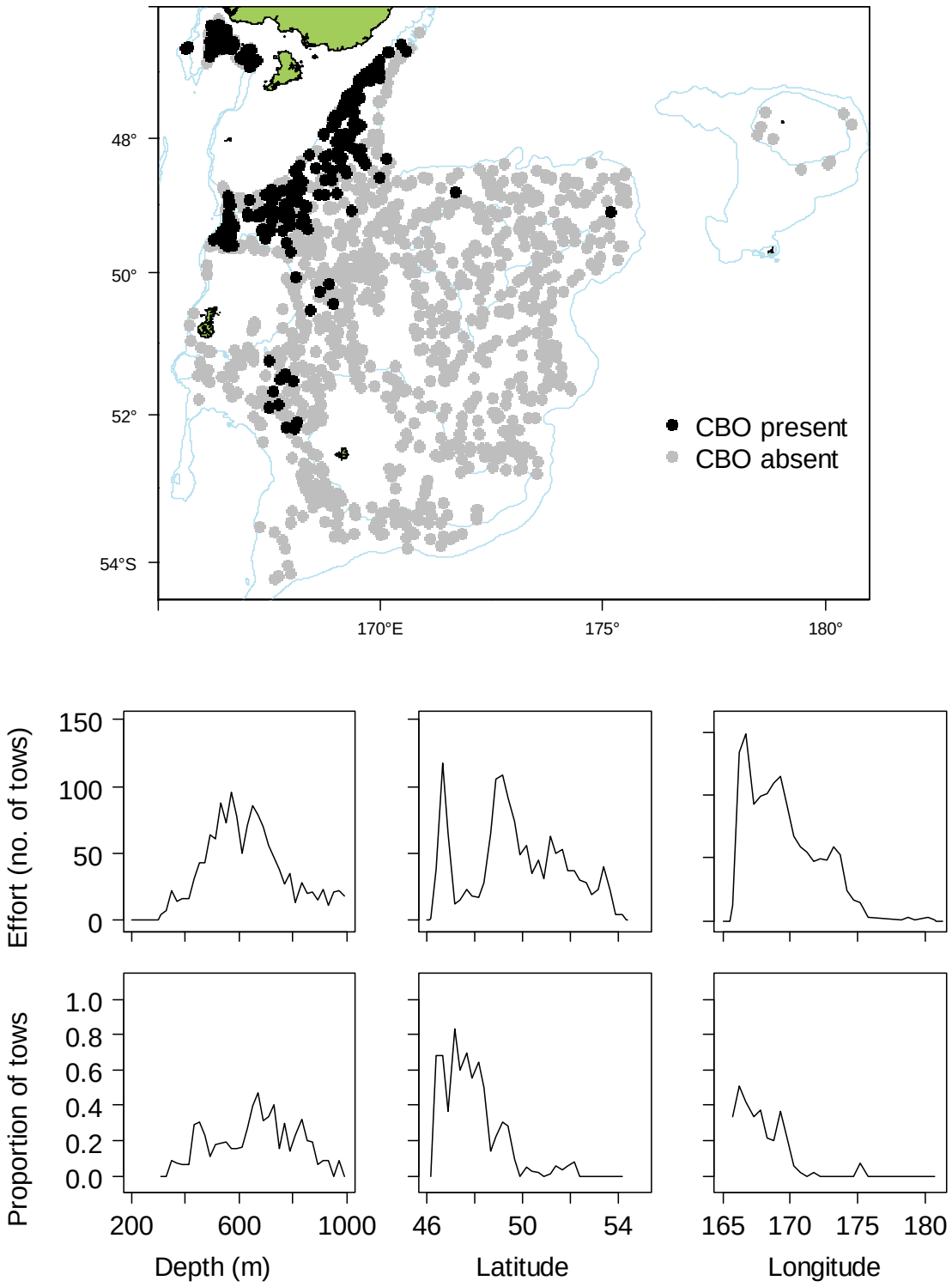
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	2 726.1
Number measured	1 435
Length range (mean) (cm)	15–74 (48.9)
Number weighed	1 012
Length-weight parameters a, b (r^2)	-

This species has been **well** identified during the time series. 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 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. Catch rates are highest in the **northwest** east of Foveaux Strait and at Puysegur**.**

Length frequencies usually **have multiple modes**. Mean length **shows no clear trend** since the start of the time series. Catch rates are highest in the **northwest**. Gonad stage data indicate that most fish are **resting and maturing for males and maturing and spent** for females**.**.

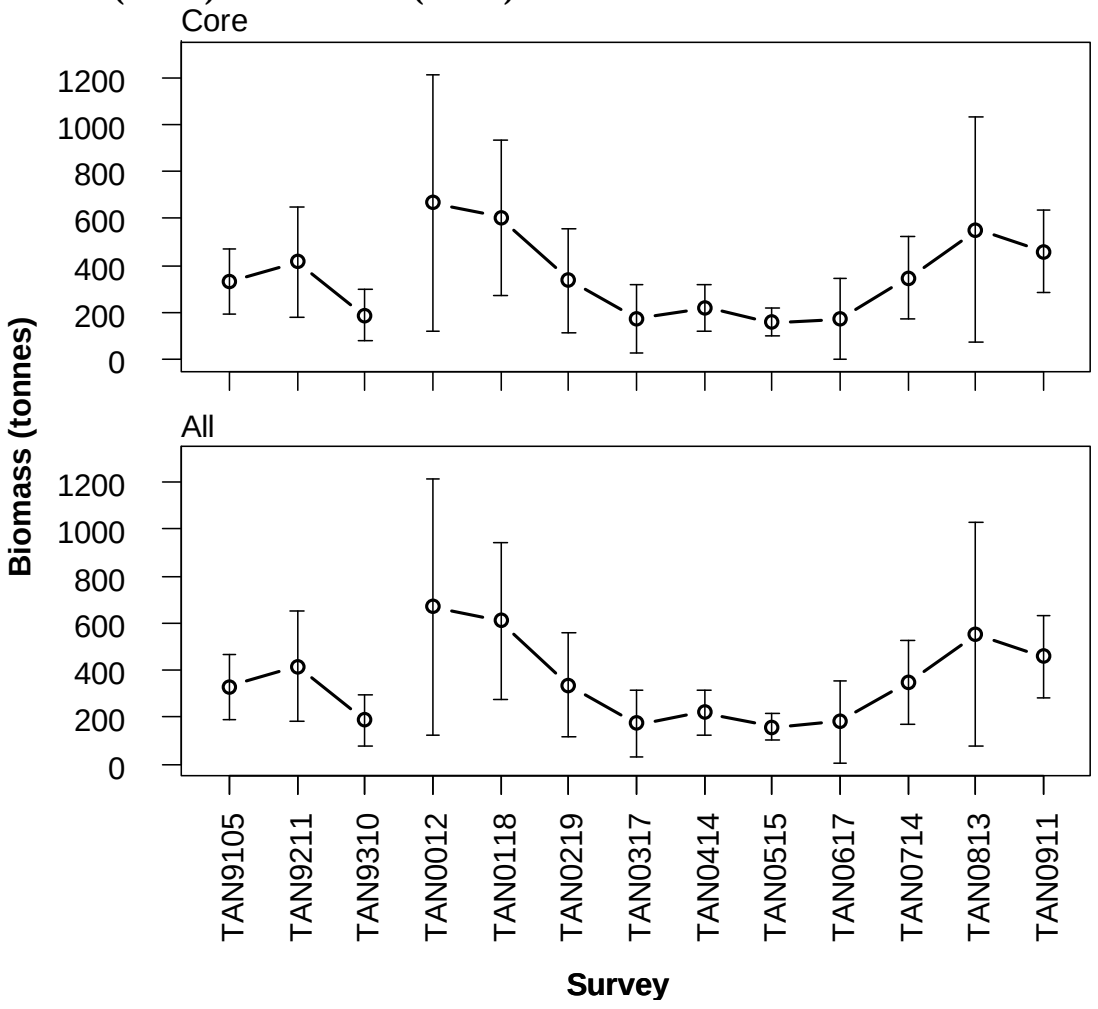
Distribution of *Coelorinchus bollonsi* from all summer surveys. Valid biomass stations only.



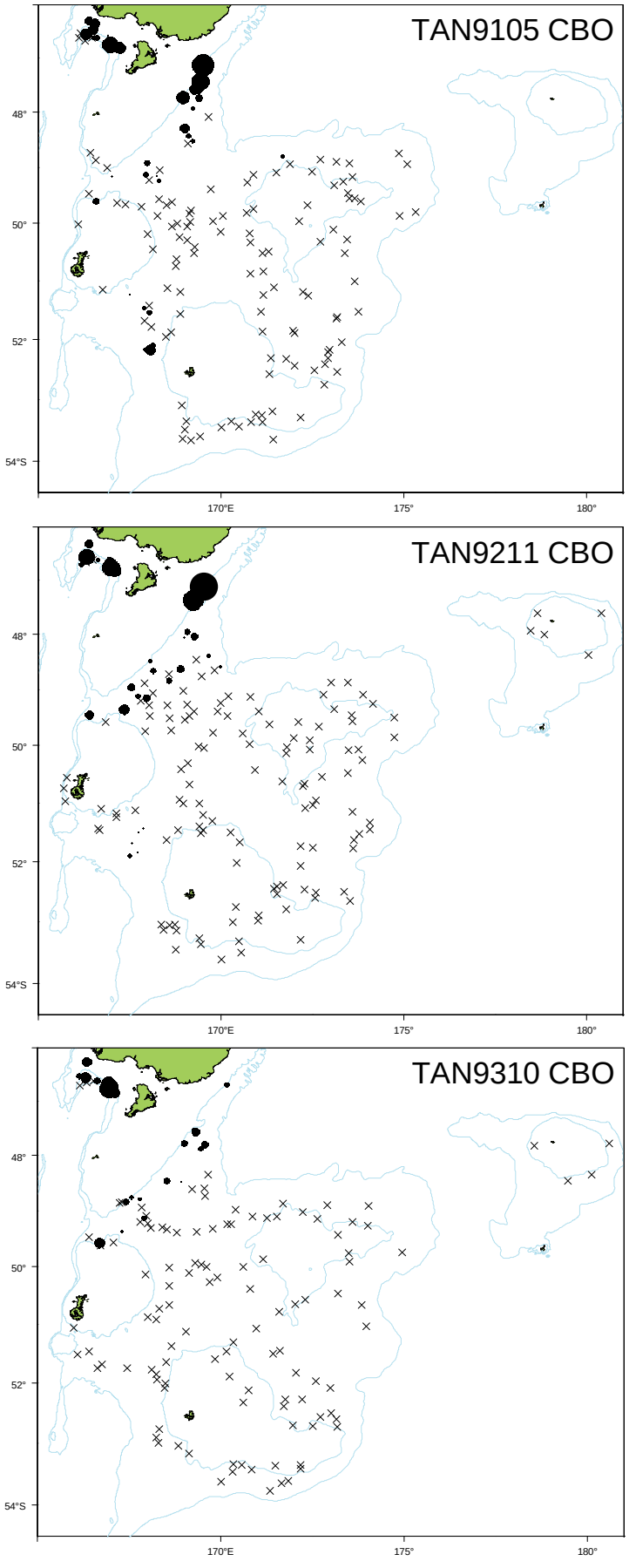
Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus bollonsi* for core strata, strata outside the core area and all strata.

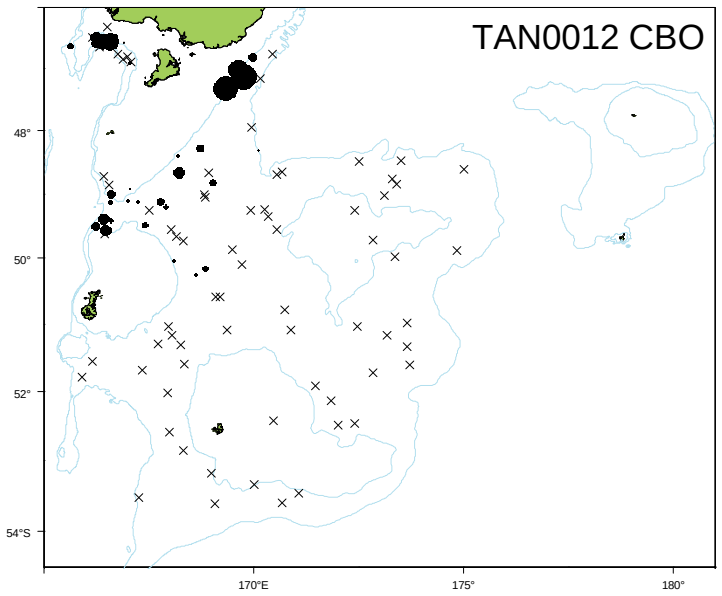
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	329	21	NA	NA	NA	NA	NA	NA	329	21
TAN9211	415	28	NA	NA	NA	NA	0	0	415	28
TAN9310	186	29	NA	NA	NA	NA	0	0	186	29
TAN0012	668	41	2	100	0	0	NA	NA	670	41
TAN0118	604	27	6	100	0	0	NA	NA	610	27
TAN0219	336	33	0	0	0	0	NA	NA	336	33
TAN0317	173	42	0	0	NA	NA	NA	NA	173	42
TAN0414	220	22	0	0	NA	NA	NA	NA	220	22
TAN0515	159	18	0	0	0	0	NA	NA	159	18
TAN0617	171	51	9	100	NA	NA	NA	NA	180	48
TAN0714	347	25	0	0	0	0	NA	NA	347	25
TAN0813	552	43	0	0	0	0	NA	NA	552	43
TAN0911	458	19	0	0	0	0	NA	NA	458	19

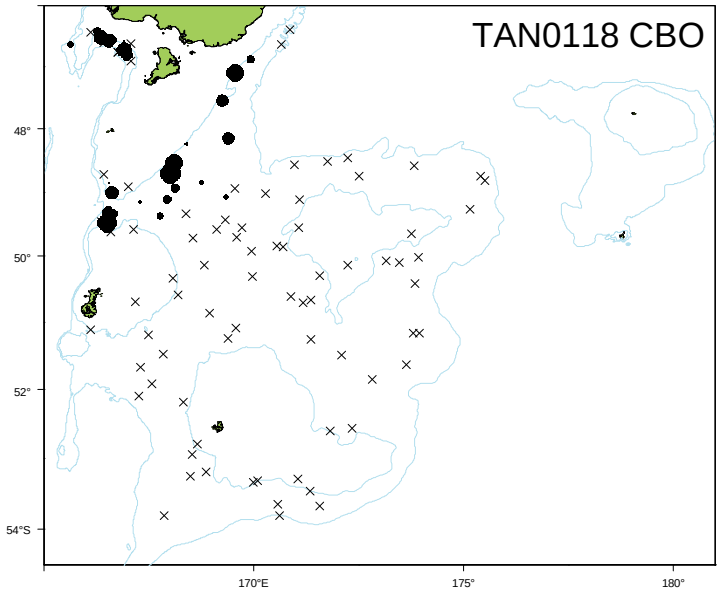
Trends in relative biomass estimates (± 2 standard errors) of *Coelorinchus bollonsi* for core strata (above) and all strata (below).

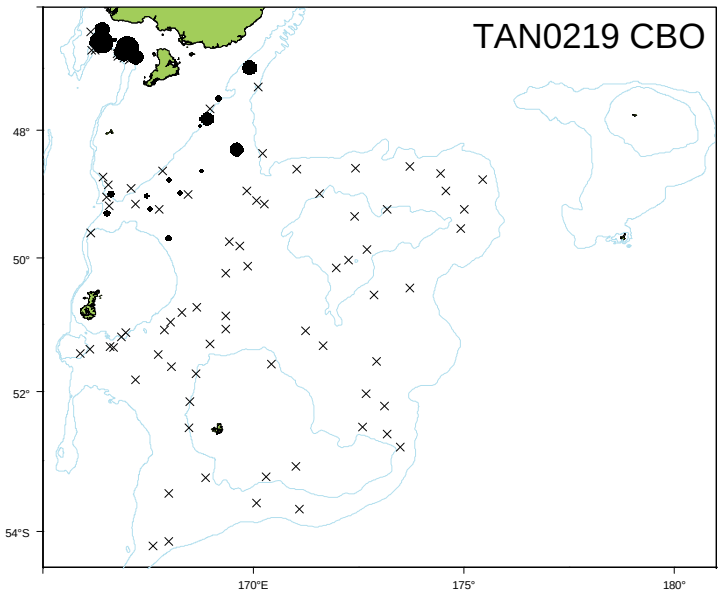


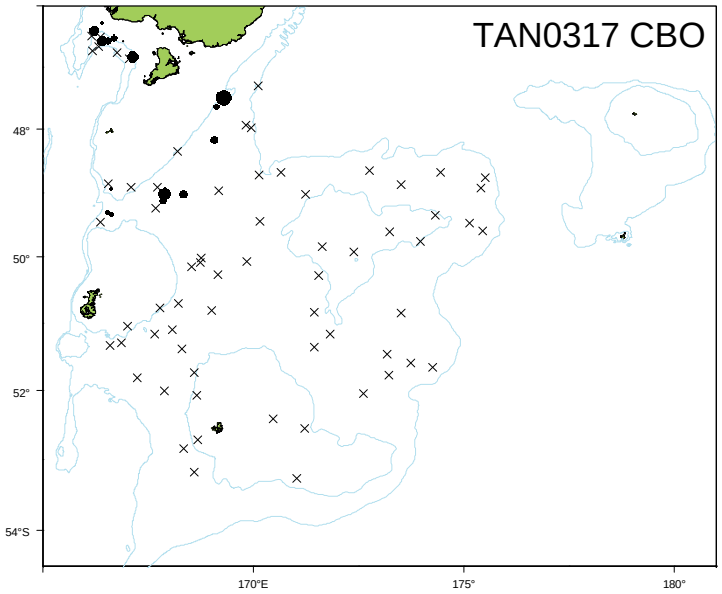
Catchrates of *Coelorinchus bollonsi*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

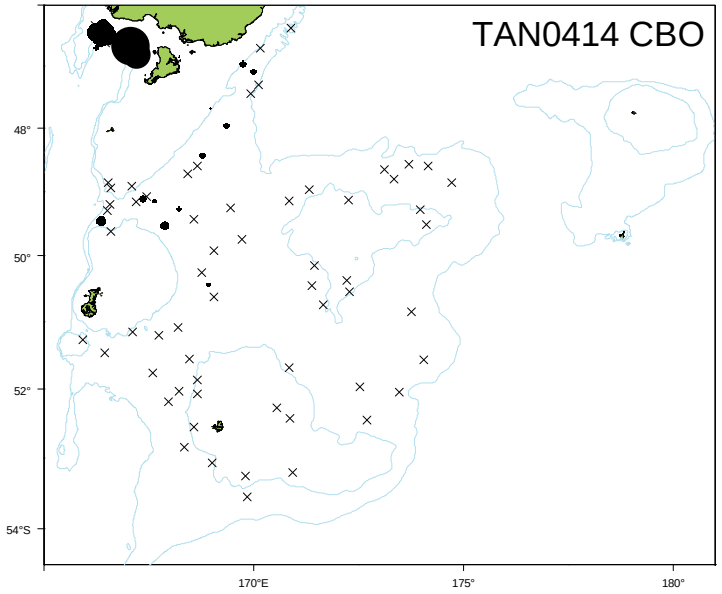


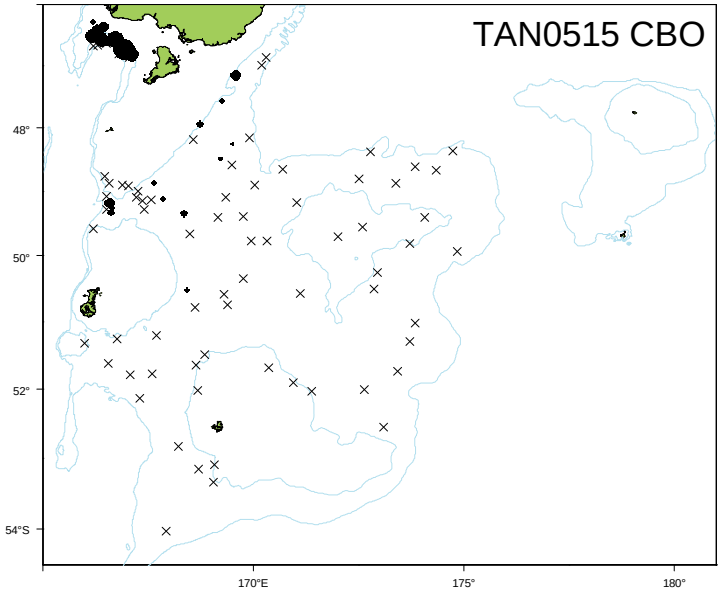

TAN0012 CBO
48°
50°
52°
54°S
170°E
175°
180°

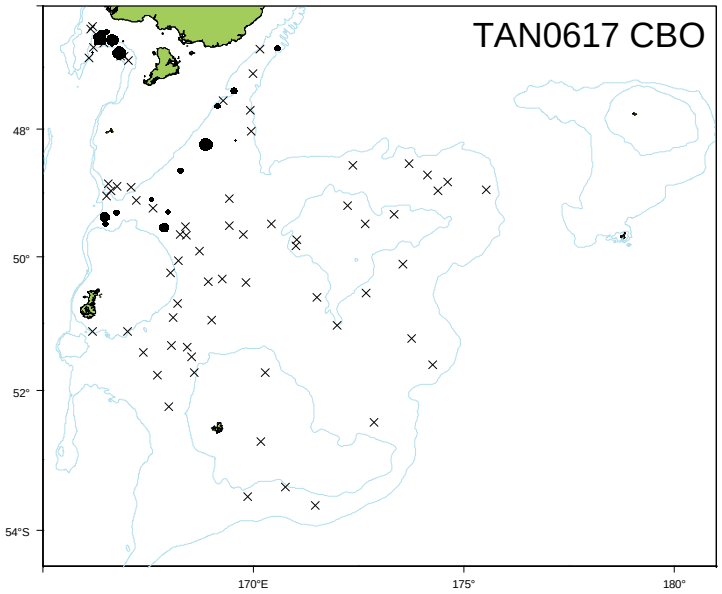

TAN0118 CBO
48°
50°
52°
54°S
170°E
175°
180°

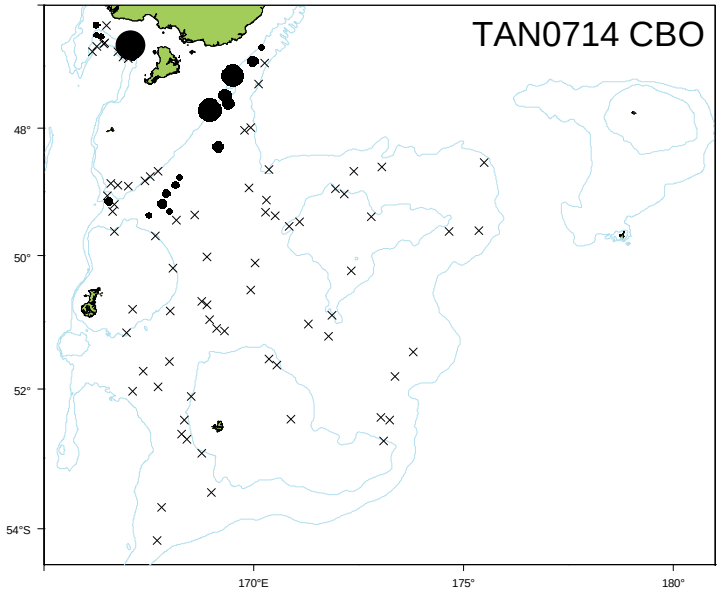

TAN0219 CBO
48°
50°
52°
54°S
170°E
175°
180°

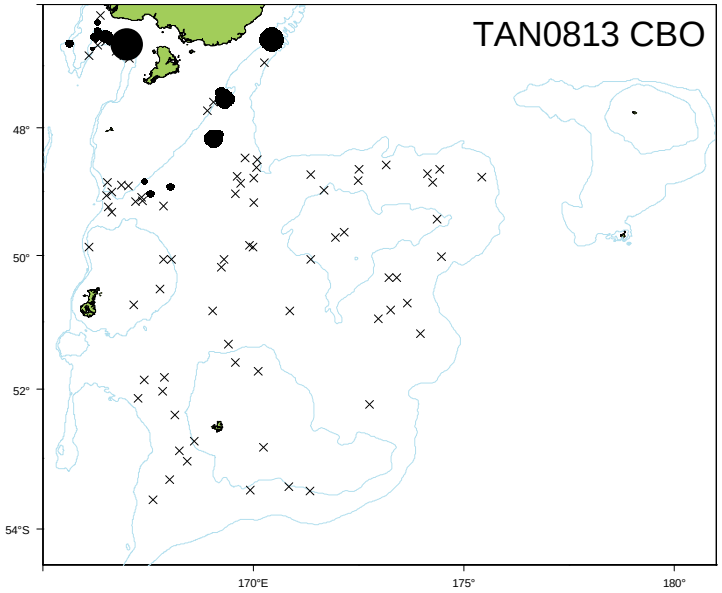

TAN0317 CBO
48°
50°
52°
54°S
170°E
175°
180°

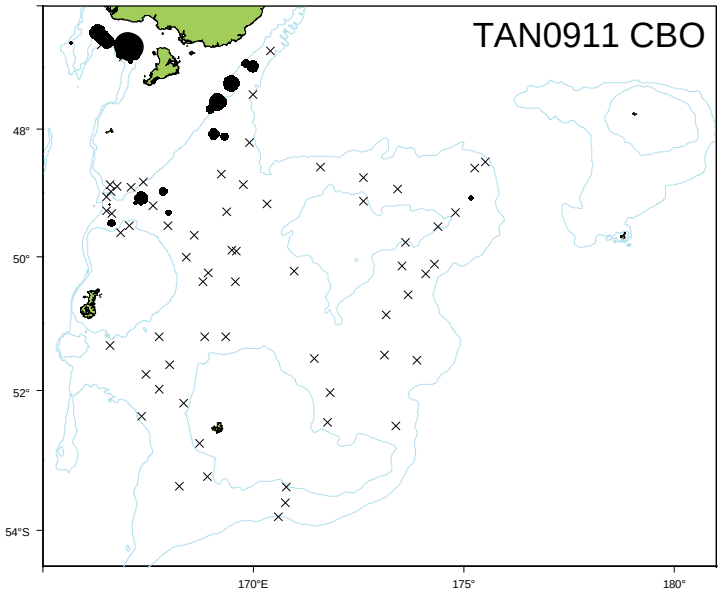

TAN0414 CBO
48°
50°
52°
54°S
170°E
175°
180°


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


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


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

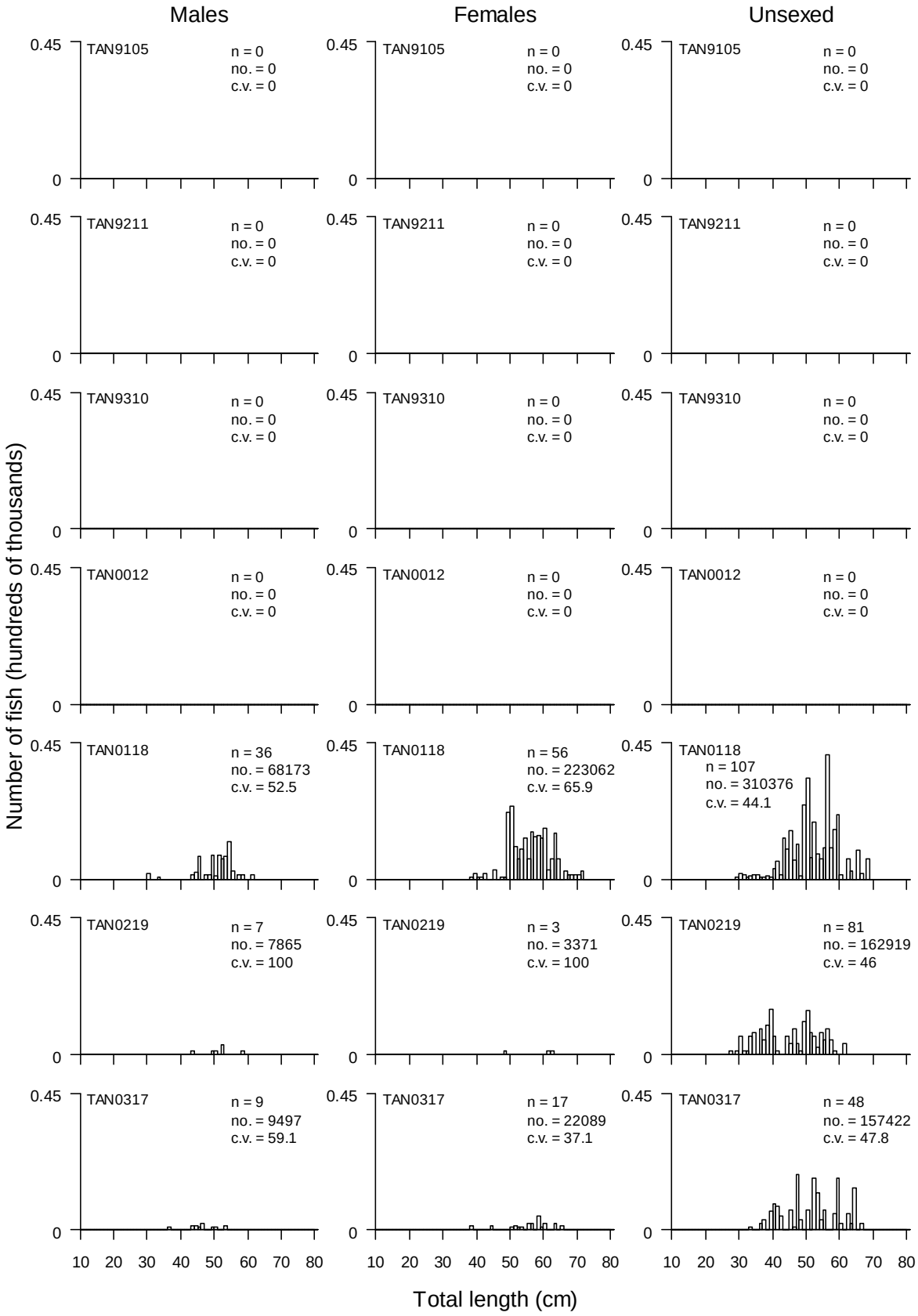

TAN0813 CBO
48°
50°
52°
54°S
170°E
175°
180°

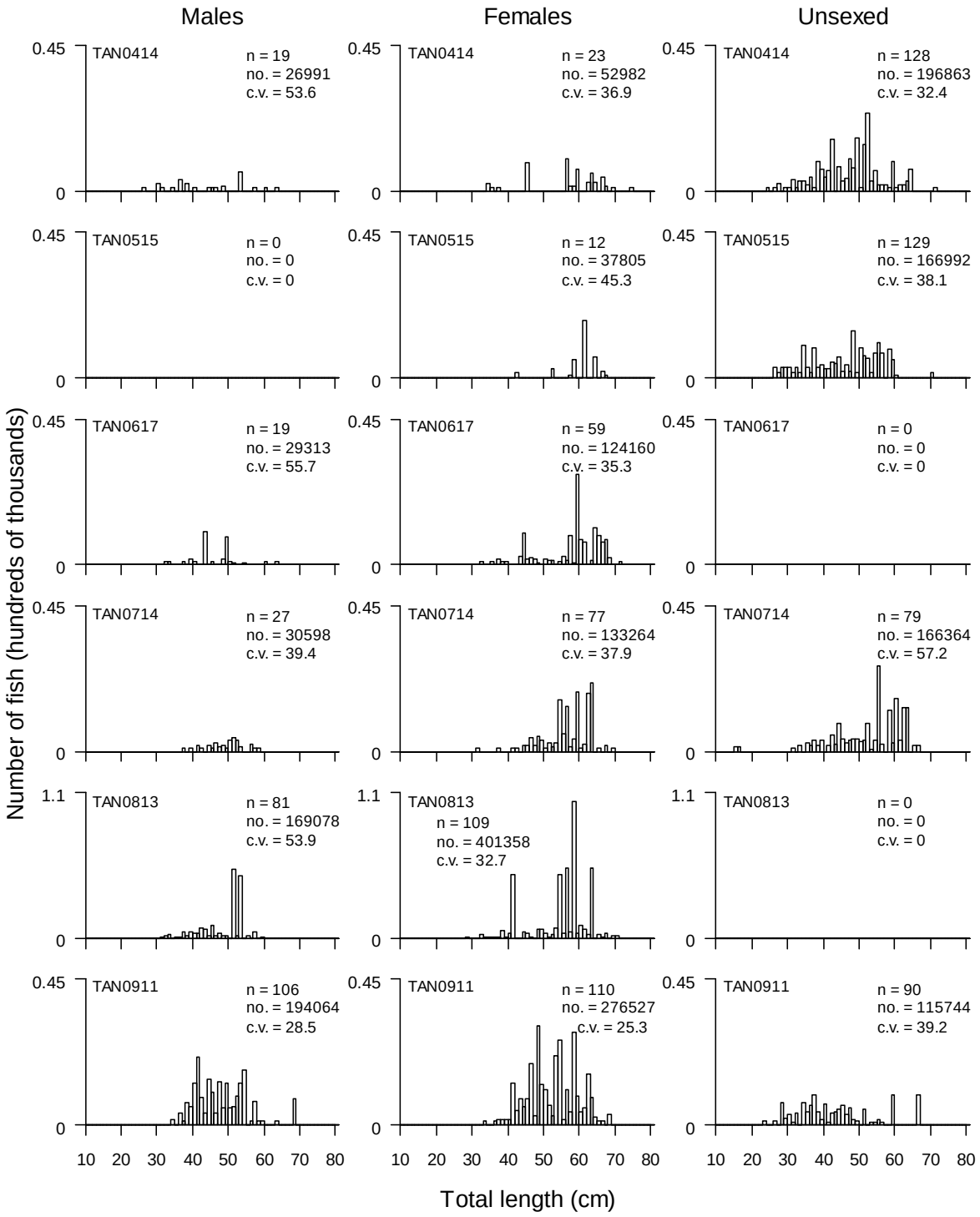


Length summaries

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	29	71	50.2	199
TAN0219	27	62	46.1	91
TAN0317	33	66	50.0	74
TAN0414	24	74	46.8	170
TAN0515	26	70	46.7	141
TAN0617	32	71	51.5	78
TAN0714	15	69	51.2	183
TAN0813	28	70	48.6	190
TAN0911	23	68	46.6	306

Population scaled length frequencies of *Coelorinchus bollonsi* for all strata.




Males
Females
Unsexed
Number of fish (hundreds of thousands)
Total length (cm)
TAN0414
n = 19
no. = 26991
c.v. = 53.6
TAN0414
n = 23
no. = 52982
c.v. = 36.9
TAN0414
n = 128
no. = 196863
c.v. = 32.4
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 12
no. = 37805
c.v. = 45.3
TAN0515
n = 129
no. = 166992
c.v. = 38.1
TAN0617
n = 19
no. = 29313
c.v. = 55.7
TAN0617
n = 59
no. = 124160
c.v. = 35.3
TAN0617
n = 0
no. = 0
c.v. = 0
TAN0714
n = 27
no. = 30598
c.v. = 39.4
TAN0714
n = 77
no. = 133264
c.v. = 37.9
TAN0714
n = 79
no. = 166364
c.v. = 57.2
TAN0813
n = 81
no. = 169078
c.v. = 53.9
TAN0813
n = 109
no. = 401358
c.v. = 32.7
TAN0813
n = 0
no. = 0
c.v. = 0
TAN0911
n = 106
no. = 194064
c.v. = 28.5
TAN0911
n = 110
no. = 276527
c.v. = 25.3
TAN0911
n = 90
no. = 115744
c.v. = 39.2

Gonad stage summaries by sex for *Coelorinchus bollonsi*. 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	0	100	0	0	0	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	17	72	11	0	0	0	0	4	41	9	0	0	13	33
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	0	100	0	0	0	0	0	0	27	0	0	0	0	73
ALL	15	75	10	0	0	0	0	3	40	7	0	0	10	39

Small banded rattail (*Coelorinchus parvifasciatus*) CCX

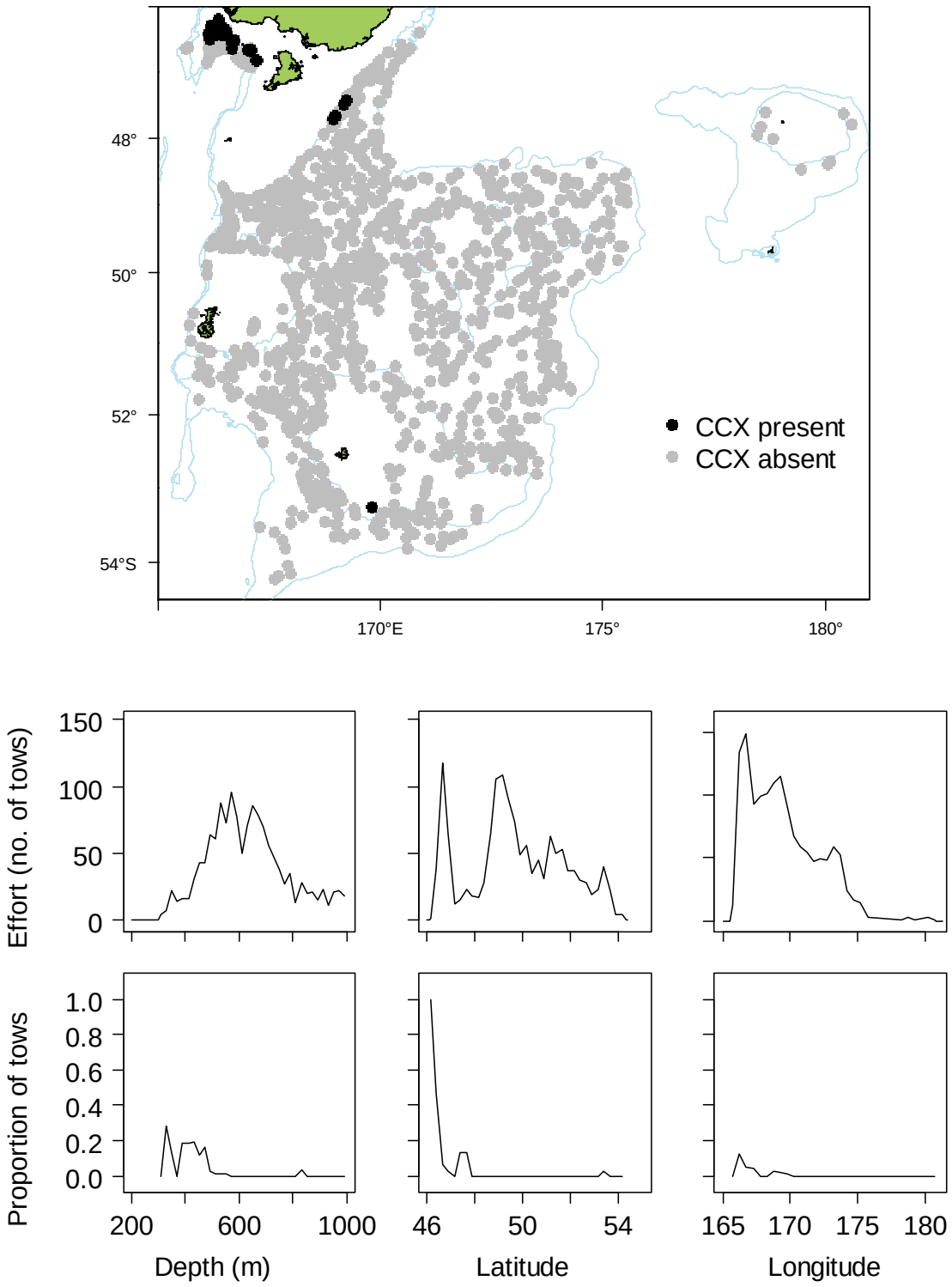
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	8
Total catch weight (kg):	40.5
Number measured	111
Length range (mean) (cm)	20–32 (25.2)
Number weighed	12
Length-weight parameters a, b (r^2)	–

This species has **not been well** identified during the time series. It may have been miscoded on the early surveys. It is not found **deeper than 800 m**. The core survey area and depth range **is** appropriate for this species. 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. Catch rates are highest in the **northwest** at Puysegur.

There is no length or gonad stage information presented.

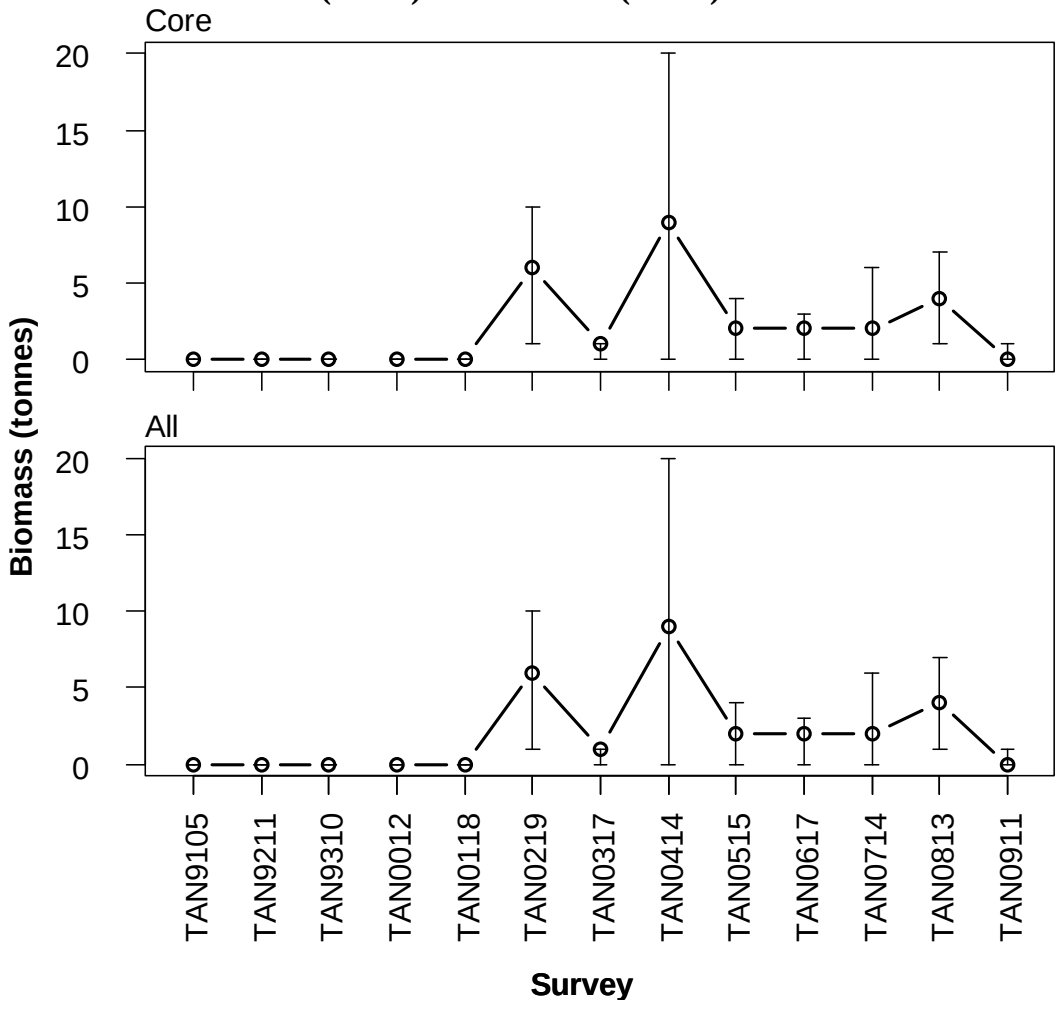
Distribution of *Coelorinchus parvifasciatus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus parvifasciatus* 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	6	43	0	0	0	0	NA	NA	6	43
TAN0317	1	35	0	0	NA	NA	NA	NA	1	35
TAN0414	9	55	0	0	NA	NA	NA	NA	9	55
TAN0515	2	68	0	0	0	0	NA	NA	2	68
TAN0617	2	48	0	0	NA	NA	NA	NA	2	48
TAN0714	2	70	0	0	0	0	NA	NA	2	70
TAN0813	4	42	0	0	0	0	NA	NA	4	42
TAN0911	0	100	0	0	0	0	NA	NA	0	100

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



Cardinalfish (*Epigonus lenimen* & *E. robustus*) CDL

Coded as EPL	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	358.6
Number measured	131
Length range (mean) (cm)	15–25 (20.5)
Number weighed	33

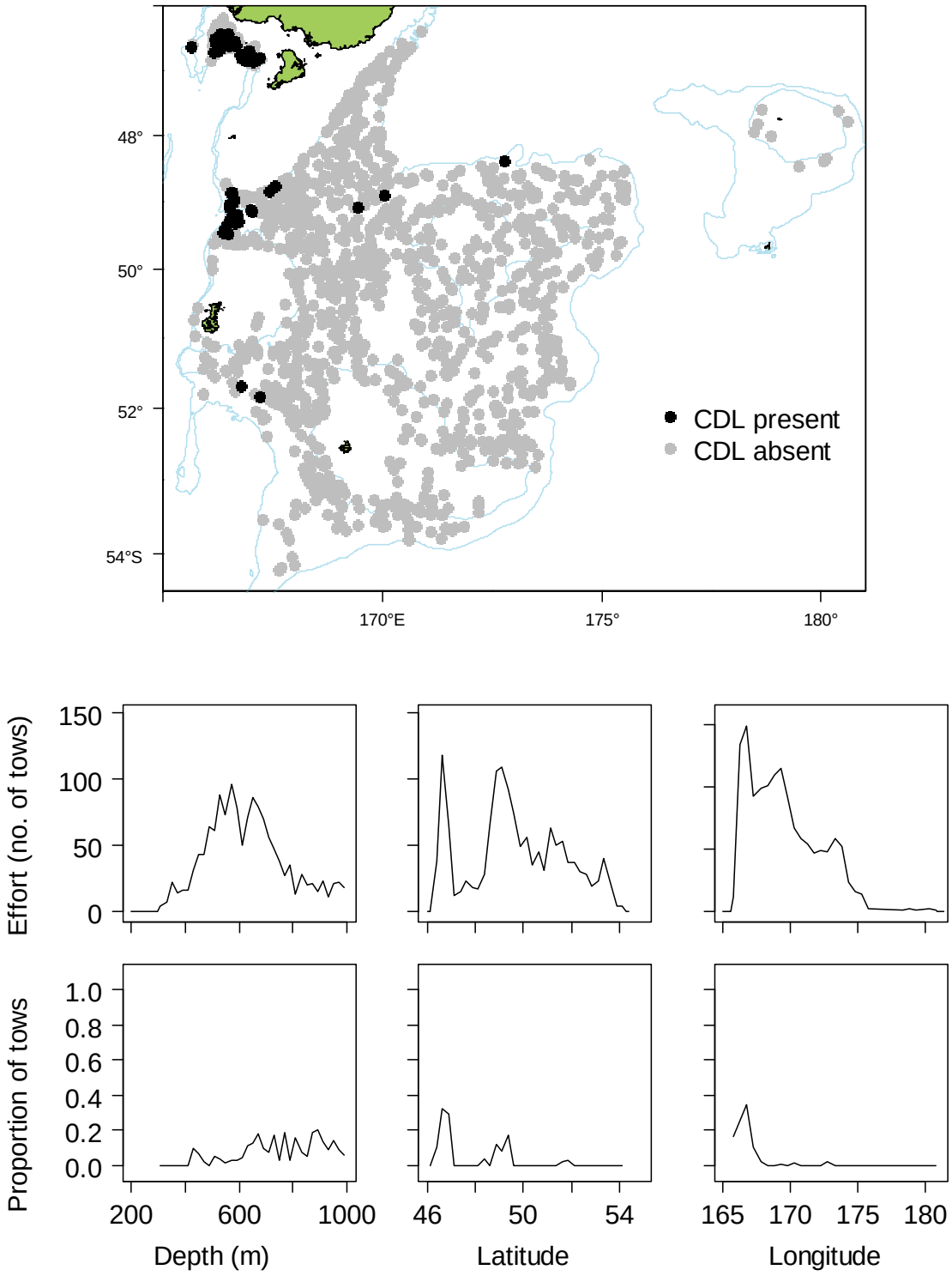
Coded as EPR	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	10
Total catch weight (kg):	6.5
Number measured	6
Length range (mean) (cm)	18–22 (19.4)
Number weighed	1

This species group 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 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. Catches are highest in the **northwest.**

There is **no length or gonad stage information** presented.

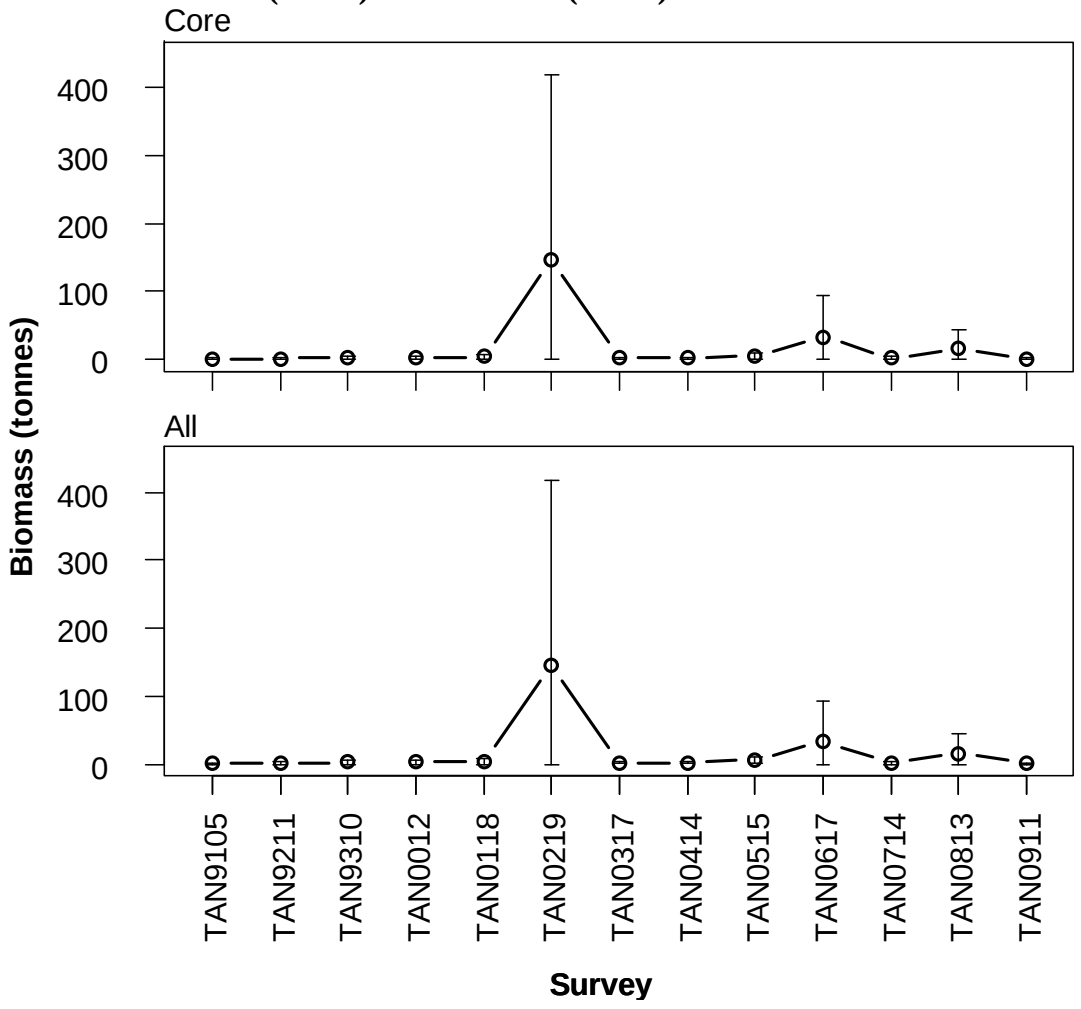
Distribution of *Epigonus lenimen* & *E. robustus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Epigonus lenimen & E. robustus* 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	74	NA	NA	NA	NA	NA	NA	1	74
TAN9211	1	81	NA	NA	NA	NA	0	0	1	81
TAN9310	3	58	NA	NA	NA	NA	0	0	3	58
TAN0012	3	50	0	0	0	0	NA	NA	3	50
TAN0118	4	45	0	0	0	0	NA	NA	4	45
TAN0219	146	95	0	0	0	0	NA	NA	146	95
TAN0317	2	32	0	0	NA	NA	NA	NA	2	32
TAN0414	2	35	0	0	NA	NA	NA	NA	2	35
TAN0515	5	53	1	74	0	0	NA	NA	6	46
TAN0617	33	92	0	0	NA	NA	NA	NA	33	92
TAN0714	2	48	0	0	0	0	NA	NA	2	48
TAN0813	16	90	0	0	0	0	NA	NA	16	90
TAN0911	1	58	0	0	0	0	NA	NA	1	58

Trends in relative biomass estimates (± 2 standard errors) of *Epigonus lenimen & E. robustus* for core strata (above) and all strata (below).



Capro dory (*Capromimus abbreviatus*) CDO

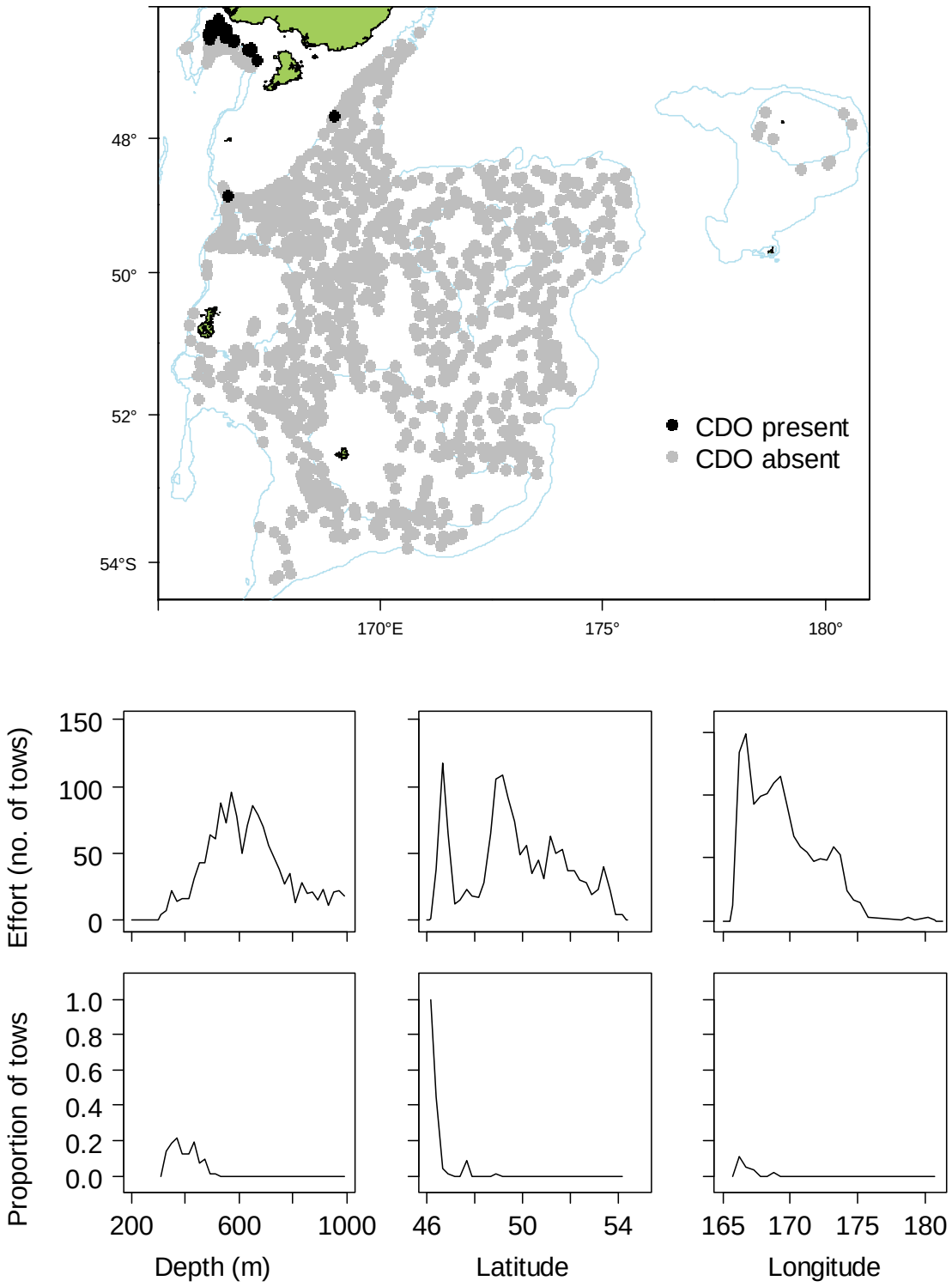
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	9
Total catch weight (kg):	15.2
Number measured	0
Length range (mean) (cm)	-
Number weighed	0
Length-weight parameters a, b (r^2)	–

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** 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 has **increased then decreased** since the start of the time series. Catches are highest in the **northwest** at Puysegur.

There is no length or gonad stage information presented.

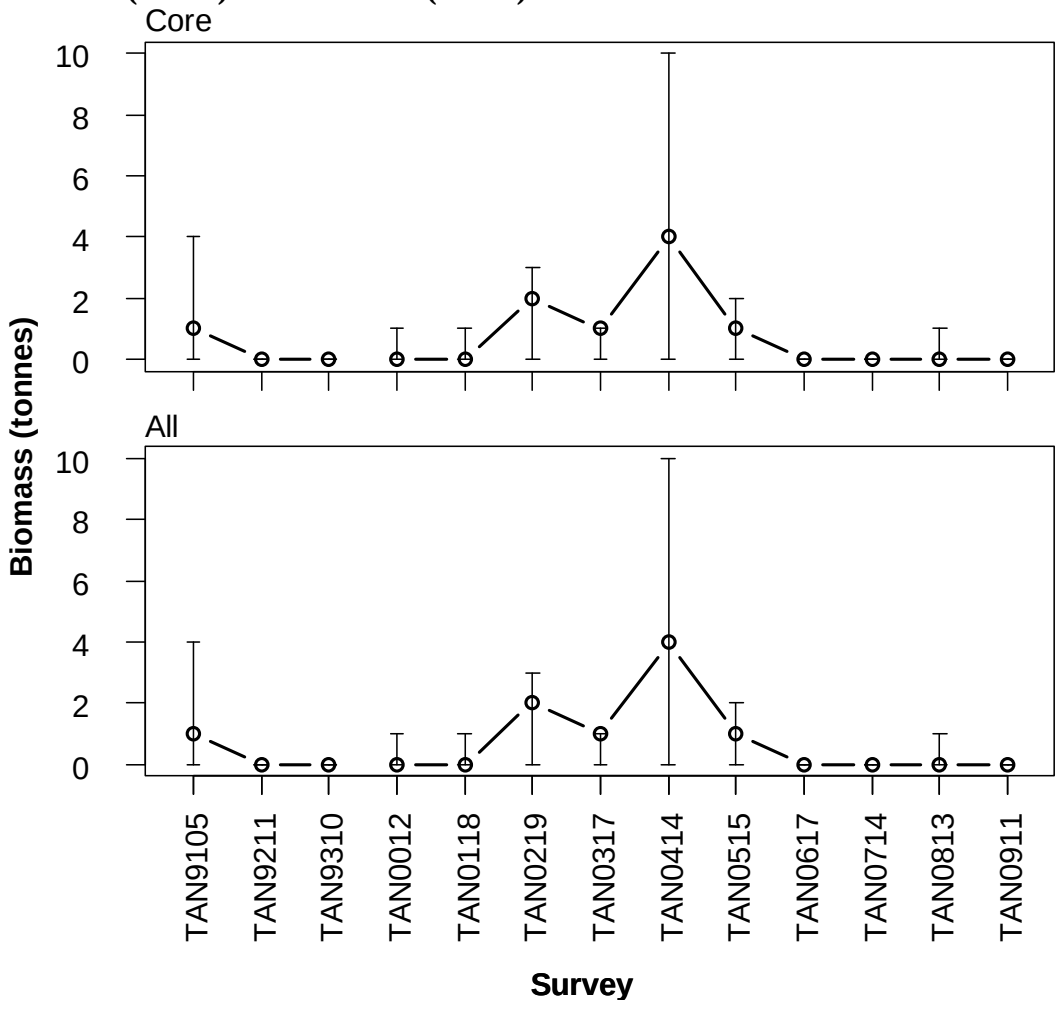
Distribution of *Capromimus abbreviatus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Capromimus abbreviatus* 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	96	NA	NA	NA	NA	NA	NA	1	96
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	0	64	0	0	0	0	NA	NA	0	64
TAN0118	0	58	0	0	0	0	NA	NA	0	58
TAN0219	2	43	0	0	0	0	NA	NA	2	43
TAN0317	1	38	0	0	NA	NA	NA	NA	1	38
TAN0414	4	84	0	0	NA	NA	NA	NA	4	84
TAN0515	1	67	0	0	0	0	NA	NA	1	67
TAN0617	0	49	0	0	NA	NA	NA	NA	0	49
TAN0714	0	0	0	0	0	0	NA	NA	0	0
TAN0813	0	71	0	0	0	0	NA	NA	0	71
TAN0911	0	0	0	0	0	0	NA	NA	0	0

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



Banded rattail (*Coelorinchus fasciatus*) CFA

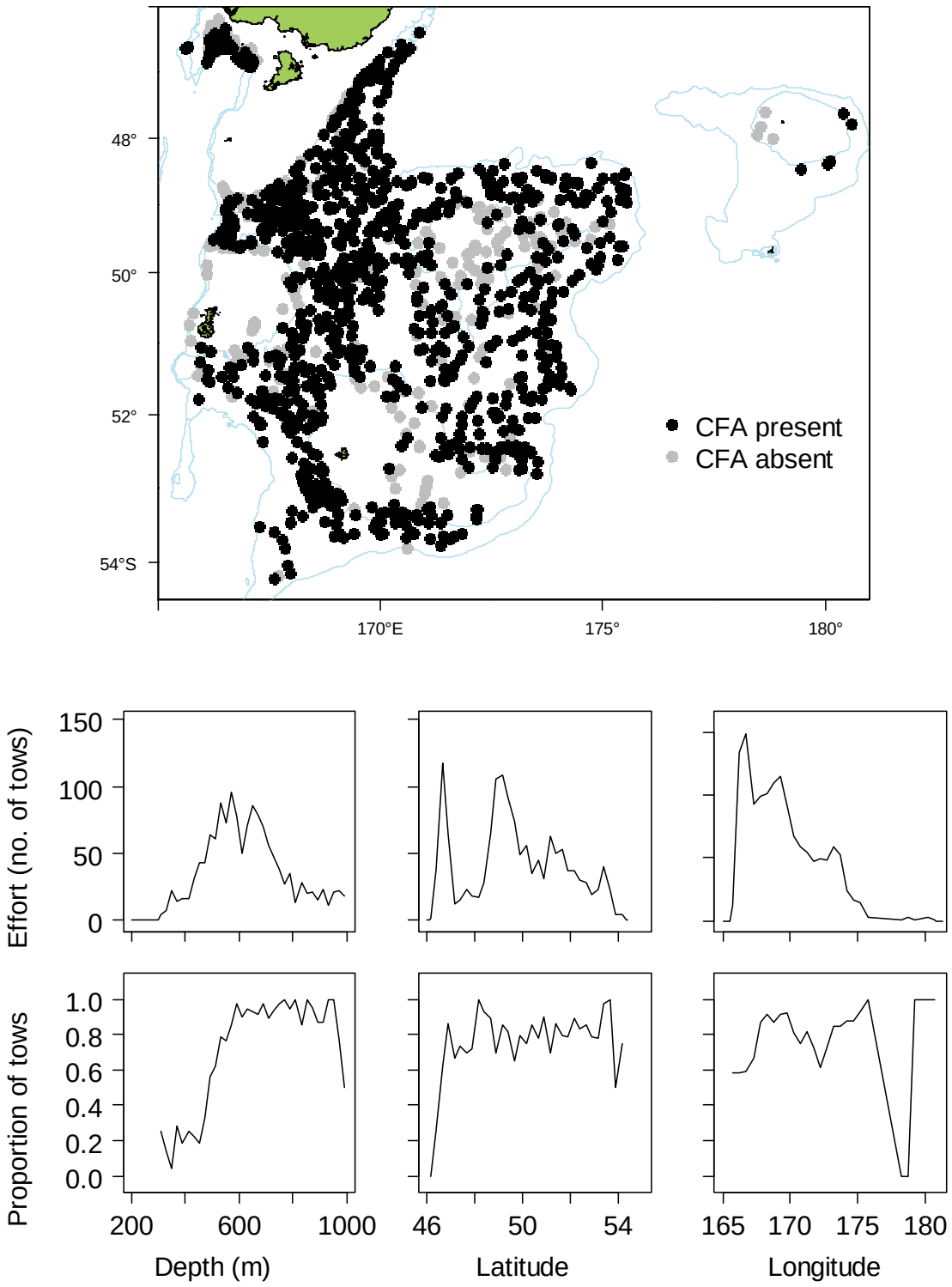
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	3 145.9
Number measured	15 554
Length range (mean) (cm)	11–42 (26.0)
Number weighed	4 960
Length-weight parameters a, b (r^2)	0.0034824, 3.062431 (87.8)

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 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 **very 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 **well** estimated. Catchrates are highest in the **north** and **northwest** east of the Stewart/Snares shelf.

Length frequencies are usually **unimodal**. Mean length **shows no clear trend** since 2000. Gonad stage data indicate that most fish are **resting and maturing.**.

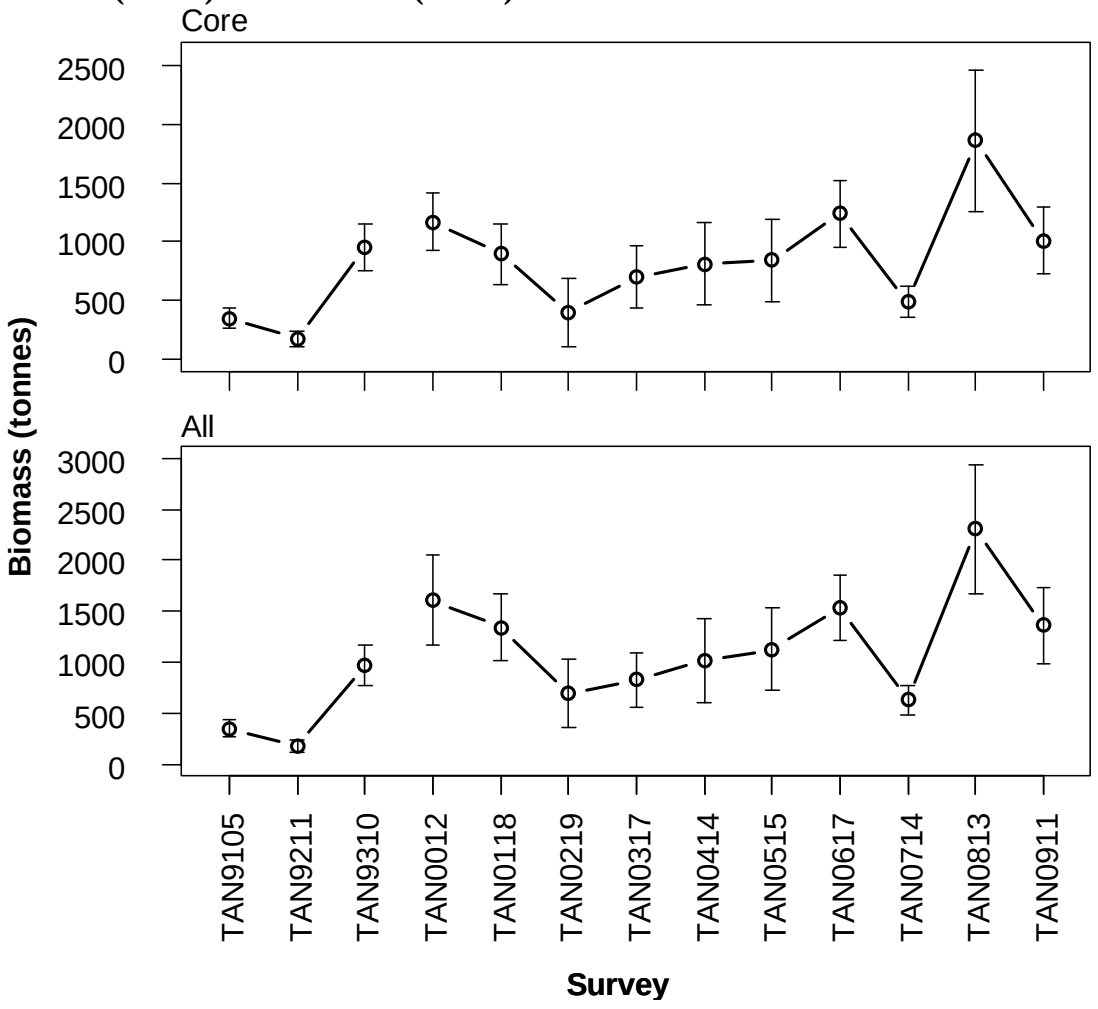
Distribution of *Coelorinchus fasciatus* from all summer surveys. Valid biomass stations only.



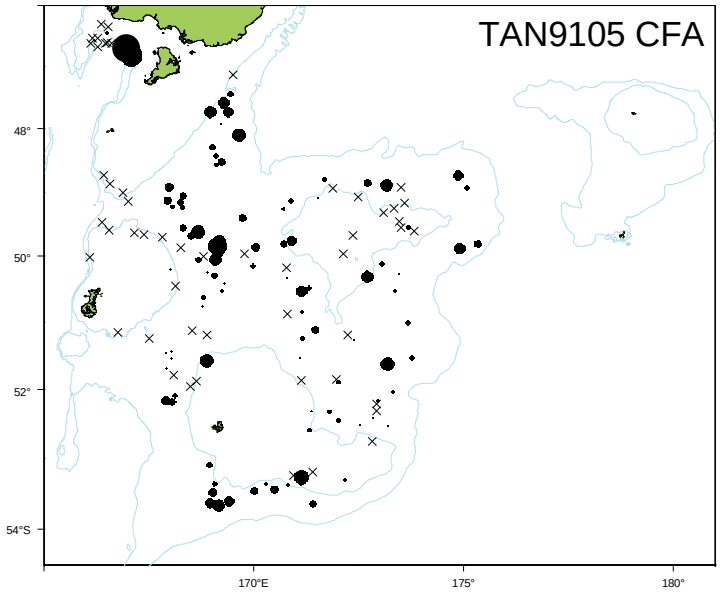
Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus fasciatus* for core strata, strata outside the core area and all strata.

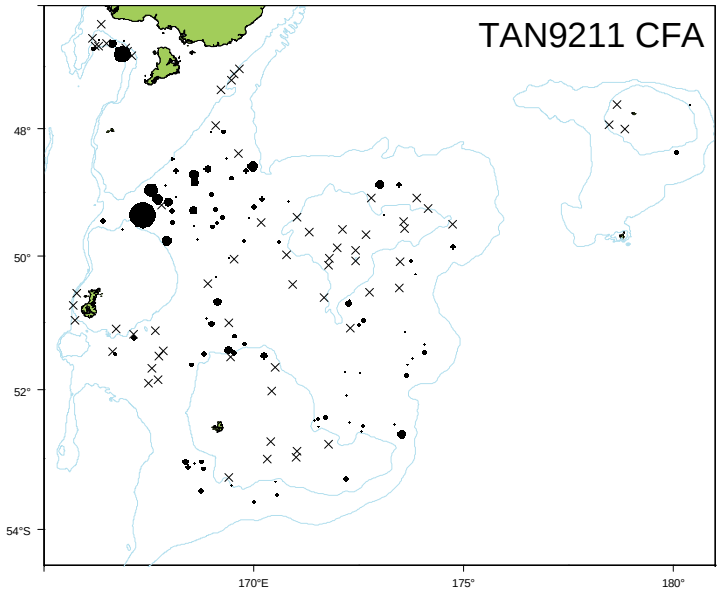
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	349	12	NA	NA	NA	NA	NA	NA	349	12
TAN9211	175	18	NA	NA	NA	NA	2	77	176	17
TAN9310	952	10	NA	NA	NA	NA	23	42	975	10
TAN0012	1168	10	189	18	251	71	NA	NA	1608	14
TAN0118	894	14	284	29	160	36	NA	NA	1338	12
TAN0219	398	36	205	12	93	88	NA	NA	696	24
TAN0317	698	19	127	17	NA	NA	NA	NA	826	16
TAN0414	814	22	201	49	NA	NA	NA	NA	1015	20
TAN0515	843	21	171	18	117	79	NA	NA	1130	18
TAN0617	1240	12	293	24	NA	NA	NA	NA	1534	10
TAN0714	486	14	113	21	32	67	NA	NA	630	12
TAN0813	1859	16	277	29	169	35	NA	NA	2305	14
TAN0911	1008	14	224	30	127	77	NA	NA	1359	14

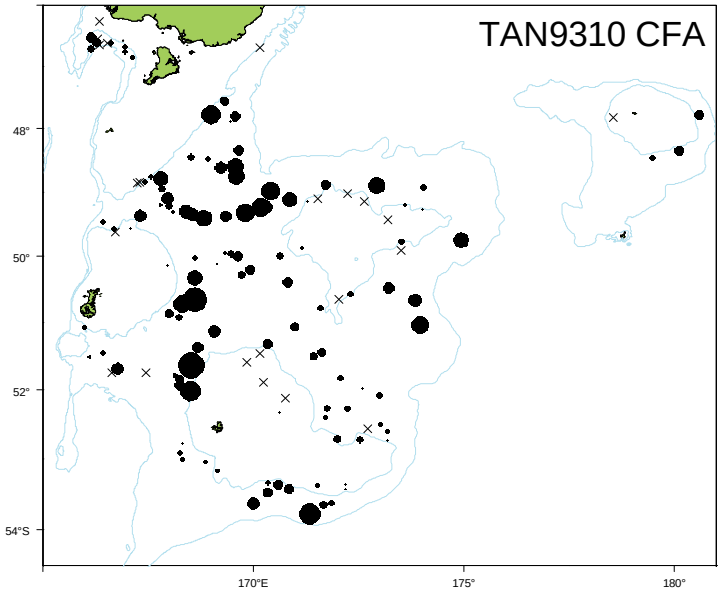
Trends in relative biomass estimates (± 2 standard errors) of *Coelorinchus fasciatus* for core strata (above) and all strata (below).

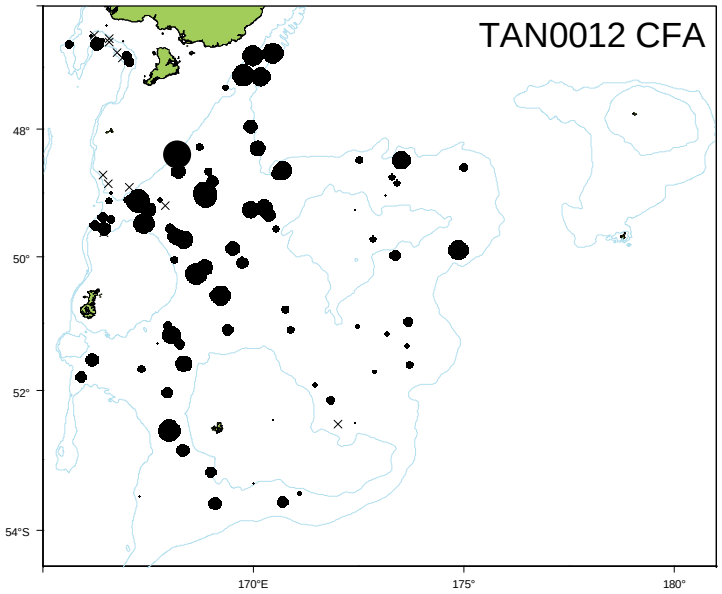


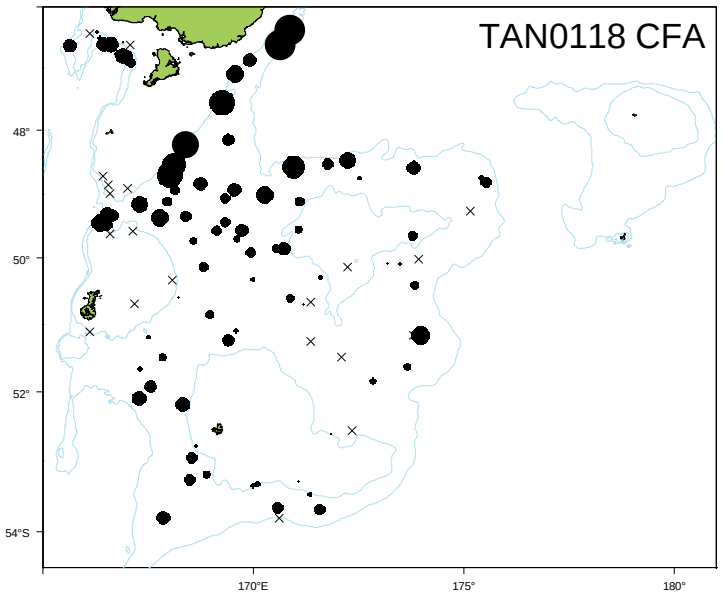
Catchrates of *Coelorinchus fasciatus*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

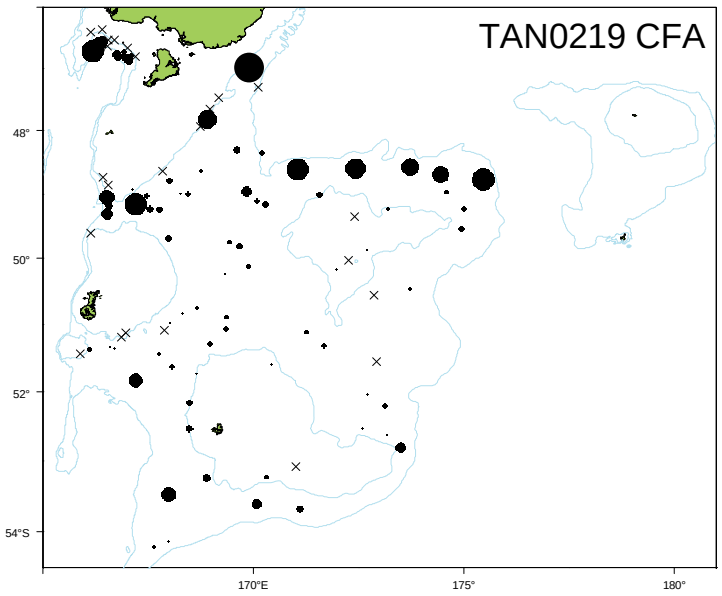


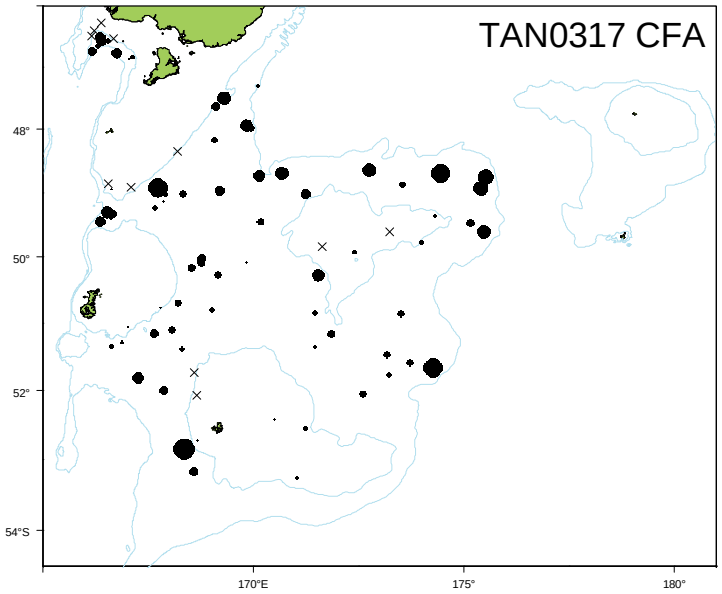


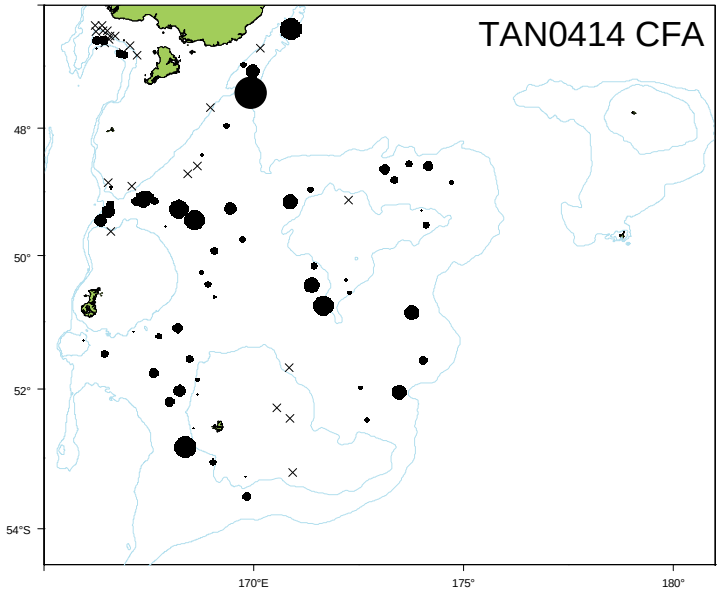


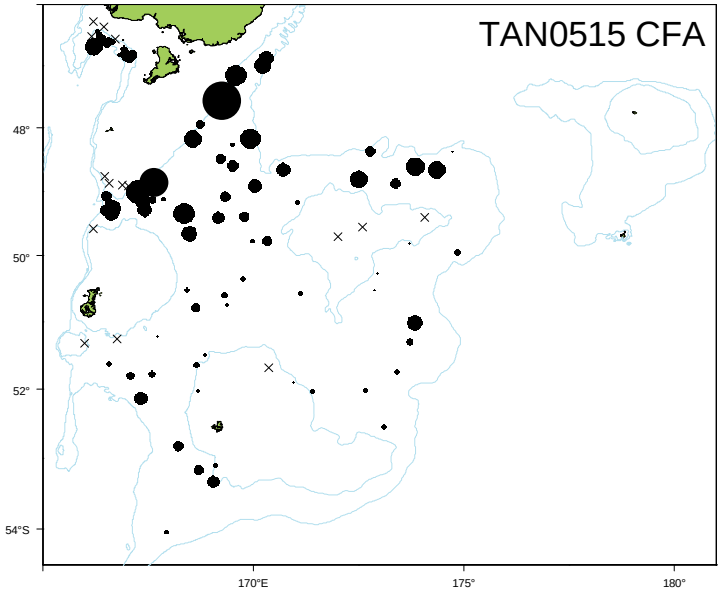

TAN0012 CFA
48°
50°
52°
54°S
170°E
175°
180°

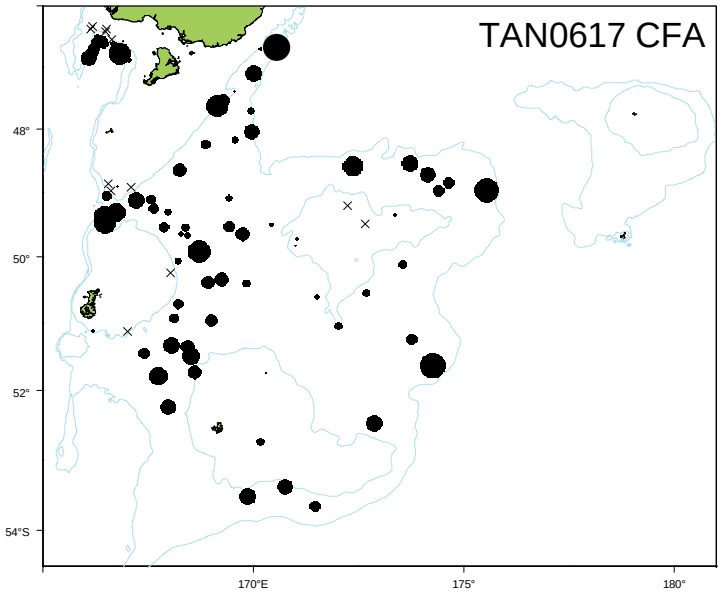

TAN0118 CFA
48°
50°
52°
54°S
170°E
175°
180°

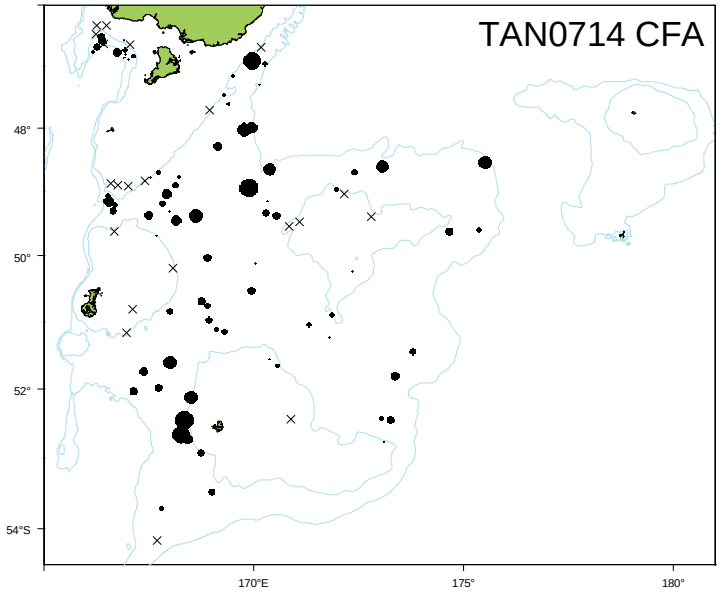

TAN0219 CFA
48°
50°
52°
54°S
170°E
175°
180°

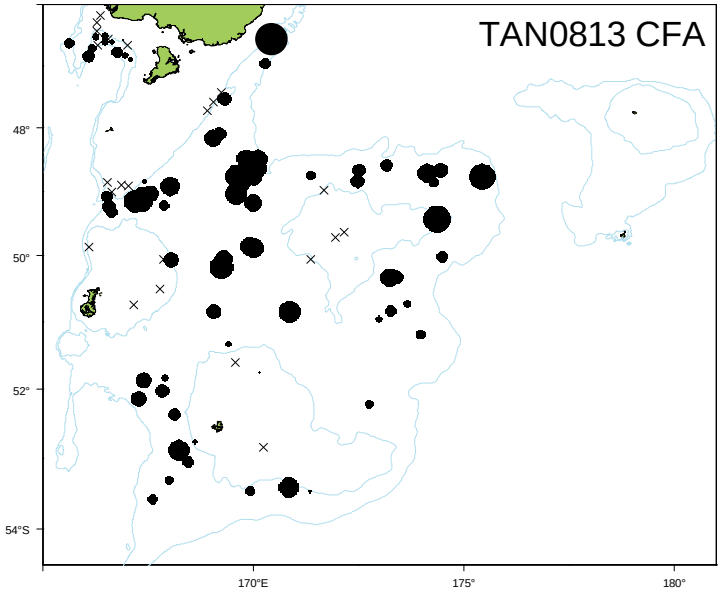

TAN0317 CFA
48°
50°
52°
54°S
170°E
175°
180°

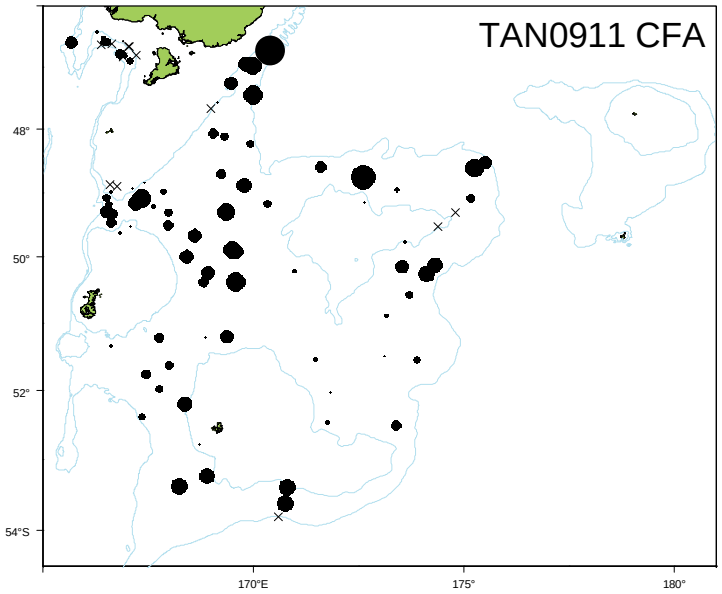

TAN0414 CFA
48°
50°
52°
54°S
170°E
175°
180°


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


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


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

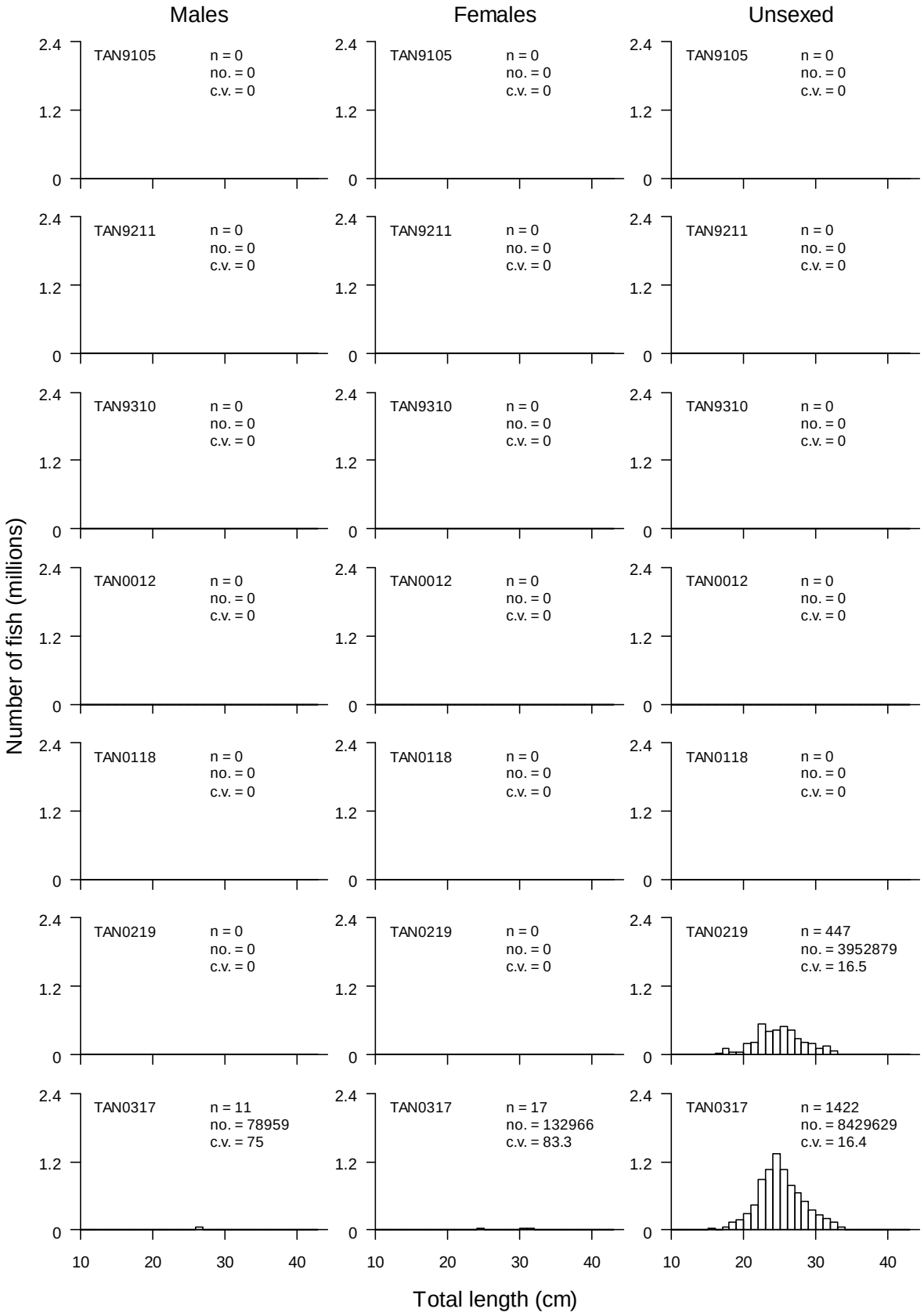

TAN0813 CFA
48°
50°
52°
54°S
170°E
175°
180°

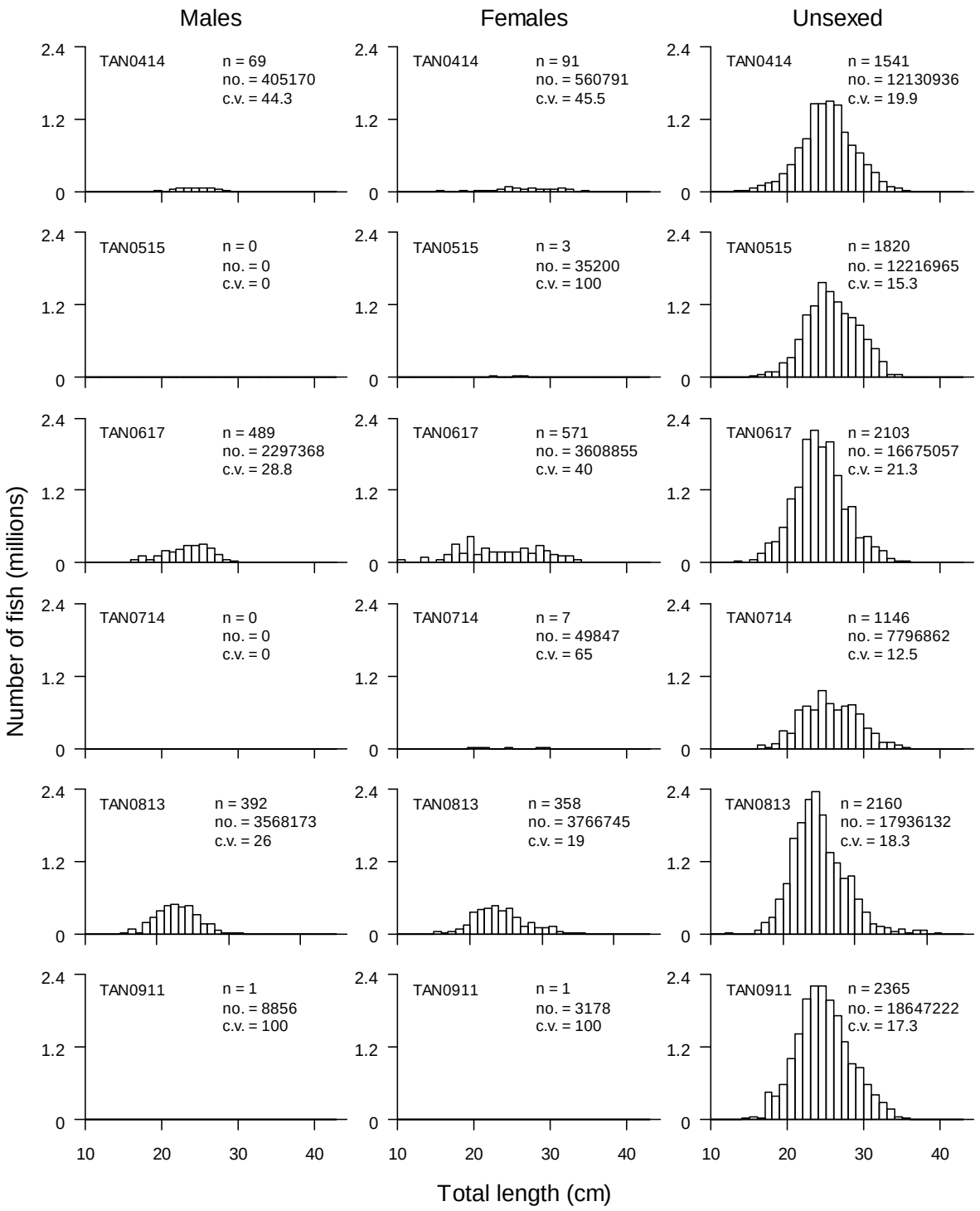


Length summaries

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	18	32	25.0	53
TAN0219	17	34	26.3	447
TAN0317	13	37	25.8	1450
TAN0414	14	36	26.0	1701
TAN0515	15	39	26.6	1823
TAN0617	11	37	25.5	3163
TAN0714	17	36	26.4	1153
TAN0813	13	42	25.5	2910
TAN0911	15	36	25.7	2367

Population scaled length frequencies of *Coelorinchus fasciatus* for all strata.




Males
Females
Unsexed
TAN0414
n = 69
no. = 405170
c.v. = 44.3
TAN0414
n = 91
no. = 560791
c.v. = 45.5
TAN0414
n = 1541
no. = 12130936
c.v. = 19.9
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 3
no. = 35200
c.v. = 100
TAN0515
n = 1820
no. = 12216965
c.v. = 15.3
TAN0617
n = 489
no. = 2297368
c.v. = 28.8
TAN0617
n = 571
no. = 3608855
c.v. = 40
TAN0617
n = 2103
no. = 16675057
c.v. = 21.3
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 7
no. = 49847
c.v. = 65
TAN0714
n = 1146
no. = 7796862
c.v. = 12.5
TAN0813
n = 392
no. = 3568173
c.v. = 26
TAN0813
n = 358
no. = 3766745
c.v. = 19
TAN0813
n = 2160
no. = 17936132
c.v. = 18.3
TAN0911
n = 1
no. = 8856
c.v. = 100
TAN0911
n = 1
no. = 3178
c.v. = 100
TAN0911
n = 2365
no. = 18647222
c.v. = 17.3
Number of fish (millions)
Total length (cm)

Gonad stage summaries by sex for *Coelorinchus fasciatus*. 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	25	70	3	0	0	2	0	15	28	30	1	0	21	5
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	25	70	3	0	0	2	0	15	28	30	1	0	21	5

Viperfish (*Chauliodus sloani*) CHA

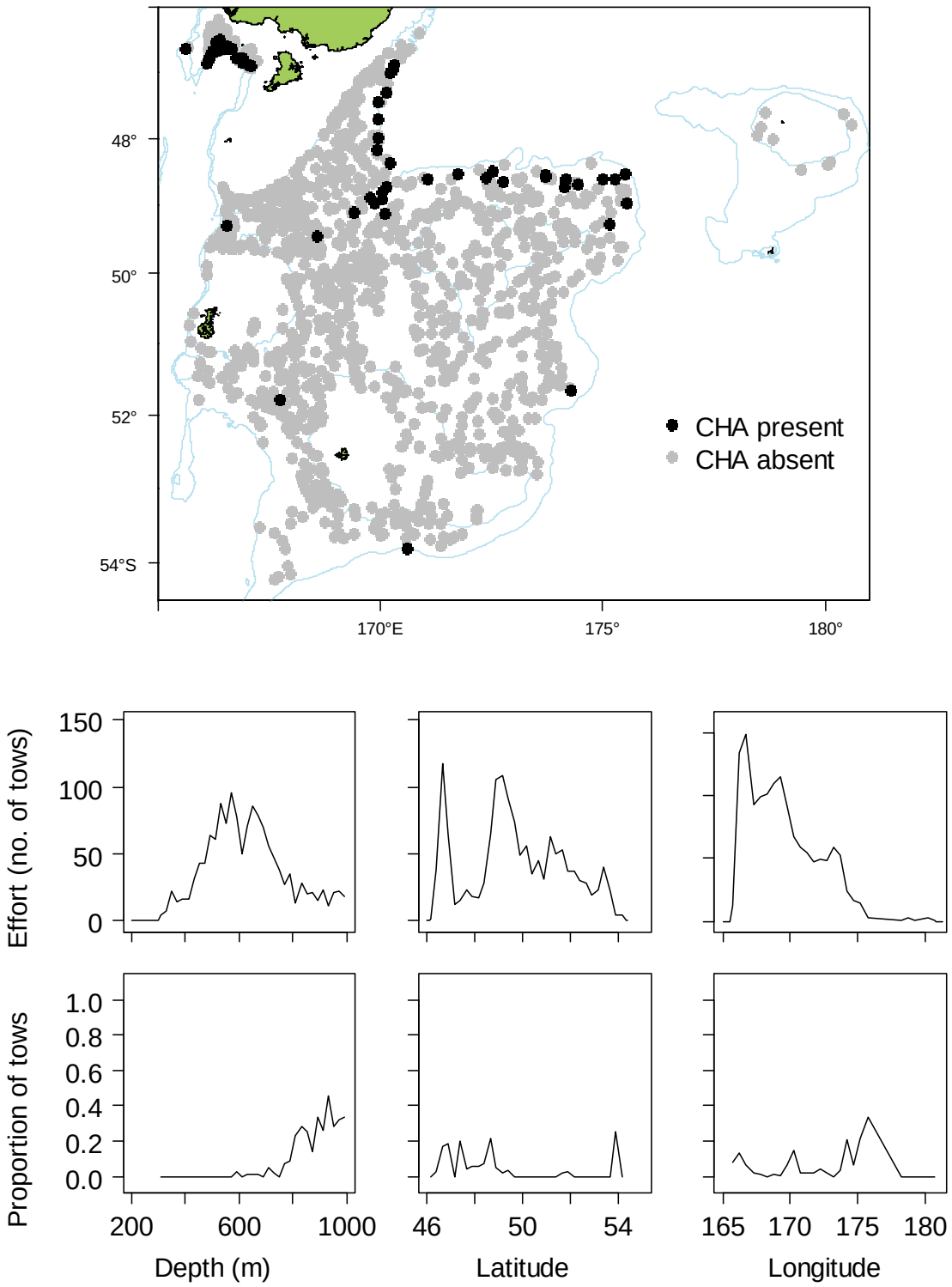
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	10
Total catch weight (kg):	11.4
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

This species **has** been well identified during the time series. It is **pelagic**. 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 **was not** recorded from the Bounty Platform.

There were **too few fish caught to determine whether the core survey area is appropriate for this species**. Biomass of this species is **poorly** estimated by the core survey. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is also **poorly** estimated. Catches are highest in the **north.**

There is no length or gonad stage information.

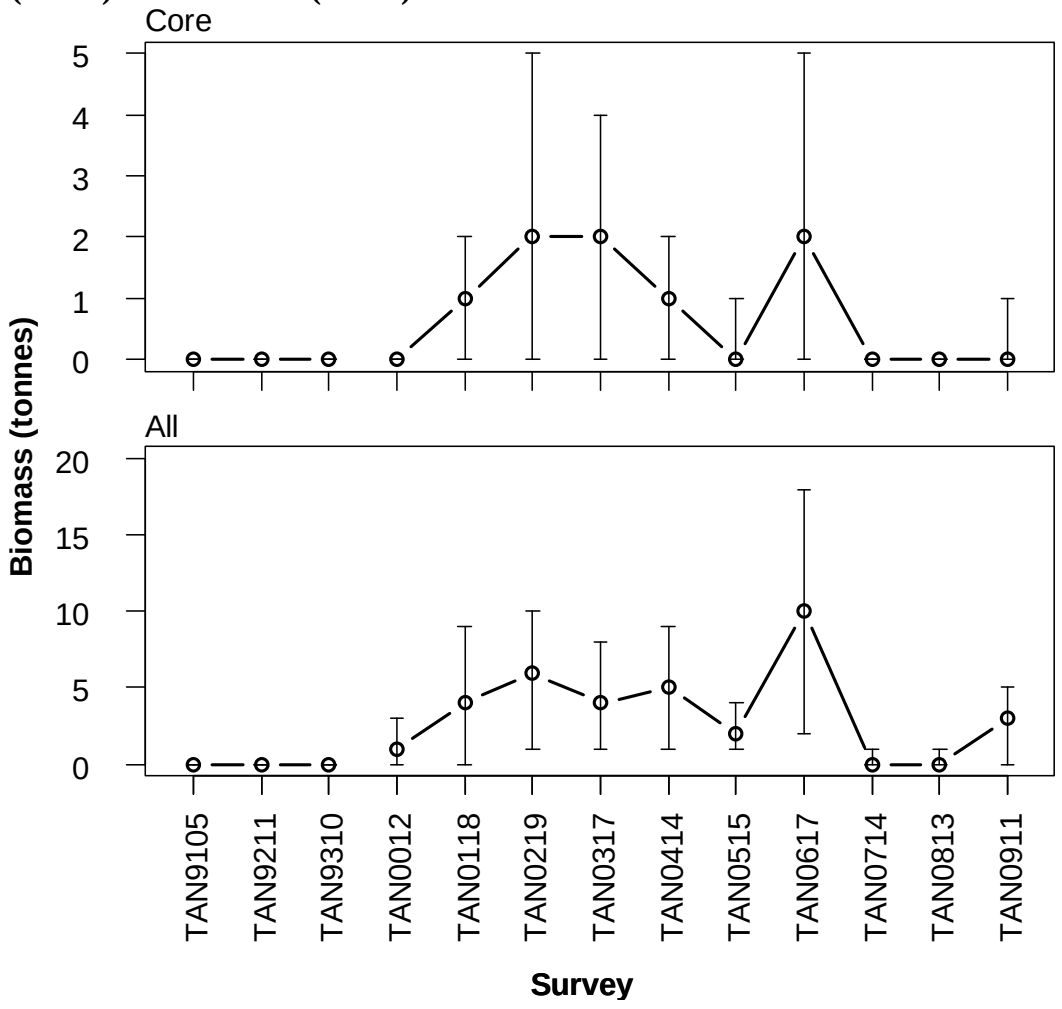
Distribution of *Chauliodus sloani* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Chauliodus sloani* 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	100	1	69	0	0	NA	NA	1	67
TAN0118	1	94	1	100	2	100	NA	NA	4	68
TAN0219	2	100	4	39	0	0	NA	NA	6	41
TAN0317	2	53	2	62	NA	NA	NA	NA	4	39
TAN0414	1	78	5	40	NA	NA	NA	NA	5	36
TAN0515	0	37	2	54	0	0	NA	NA	2	37
TAN0617	2	63	8	49	NA	NA	NA	NA	10	39
TAN0714	0	49	0	0	0	0	NA	NA	0	74
TAN0813	0	38	0	0	0	0	NA	NA	0	54
TAN0911	0	45	2	59	0	0	NA	NA	3	46

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



Giant chimaera (*Chimaera lignaria*) CHG

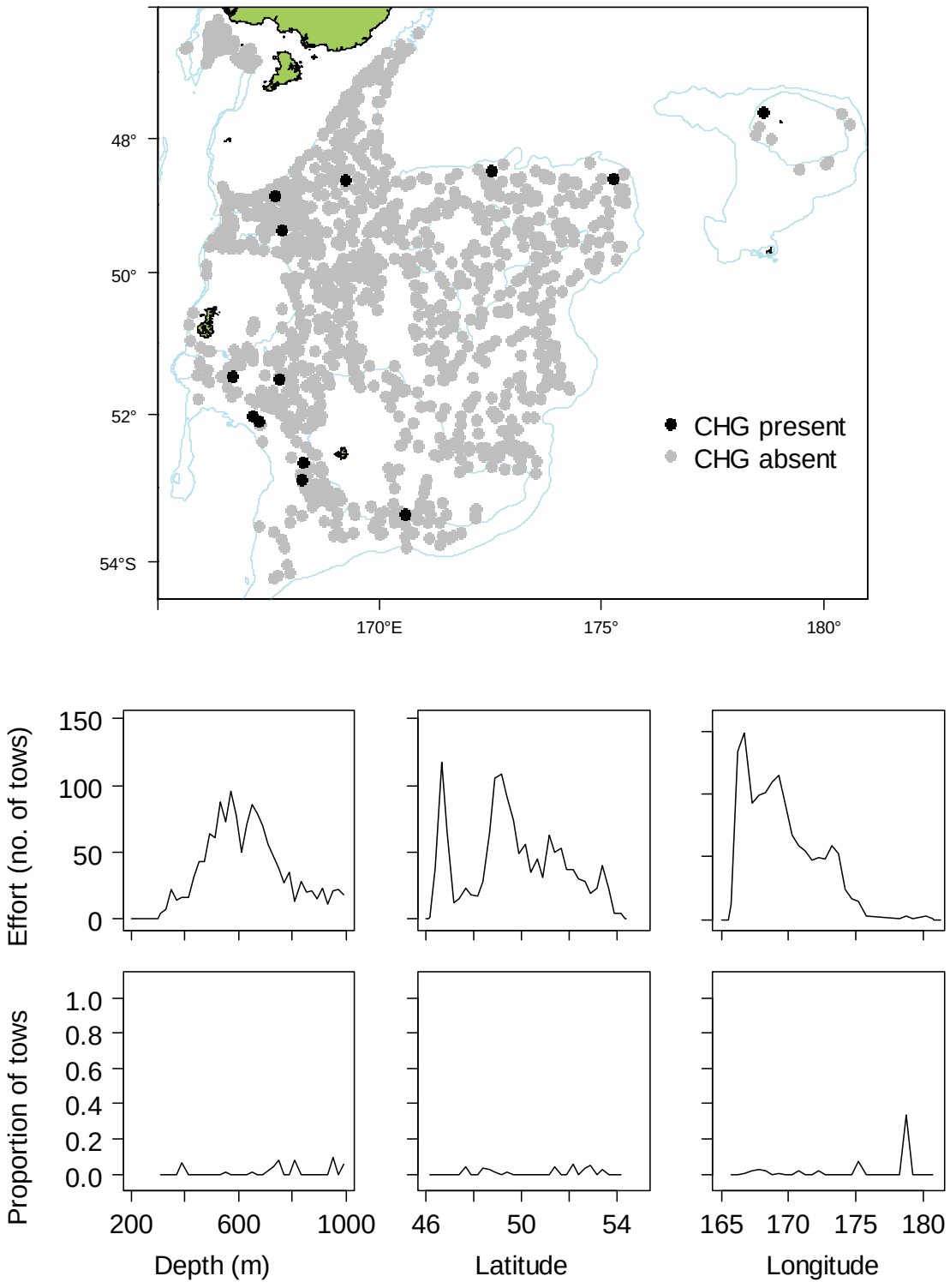
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	8
Total catch weight (kg):	223.1
Number measured	7
Length range (mean) (cm)	86–131 (113.7)
Number weighed	7
Length-weight parameters a, b (r^2)	–

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.

There were **too few fish caught to determine whether the core survey area is appropriate for this species**. Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Catches are recorded from areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

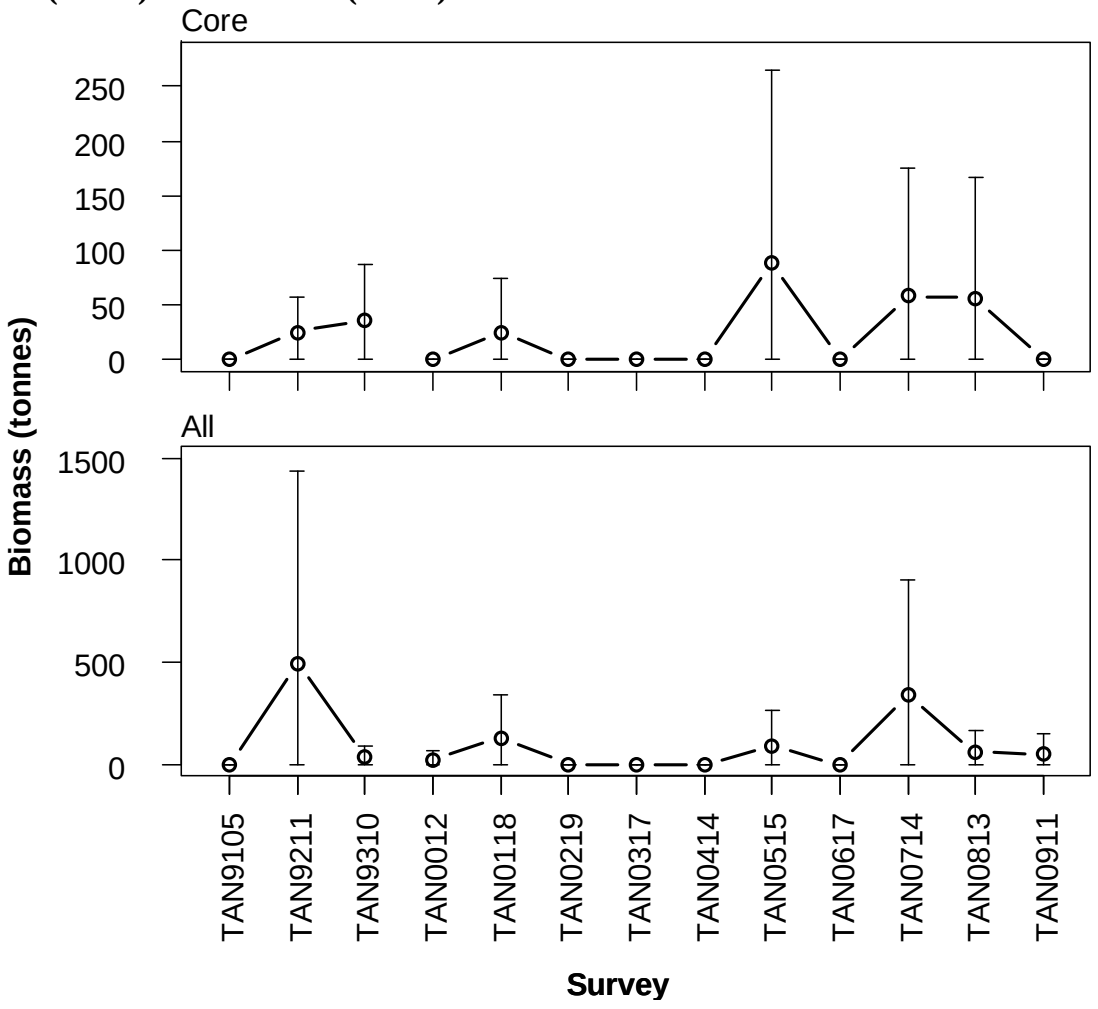
Distribution of *Chimaera lignaria* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Chimaera lignaria* 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	25	65	NA	NA	NA	NA	470	100	495	95
TAN9310	36	71	NA	NA	NA	NA	0	0	36	71
TAN0012	0	0	22	100	0	0	NA	NA	22	100
TAN0118	25	100	0	0	103	100	NA	NA	128	83
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	88	100	0	0	0	0	NA	NA	88	100
TAN0617	0	0	0	0	NA	NA	NA	NA	0	0
TAN0714	58	100	0	0	279	100	NA	NA	337	84
TAN0813	56	100	0	0	0	0	NA	NA	56	100
TAN0911	0	0	51	100	0	0	NA	NA	51	100

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



Brown chimaera (*Chimaera* sp.) CHP

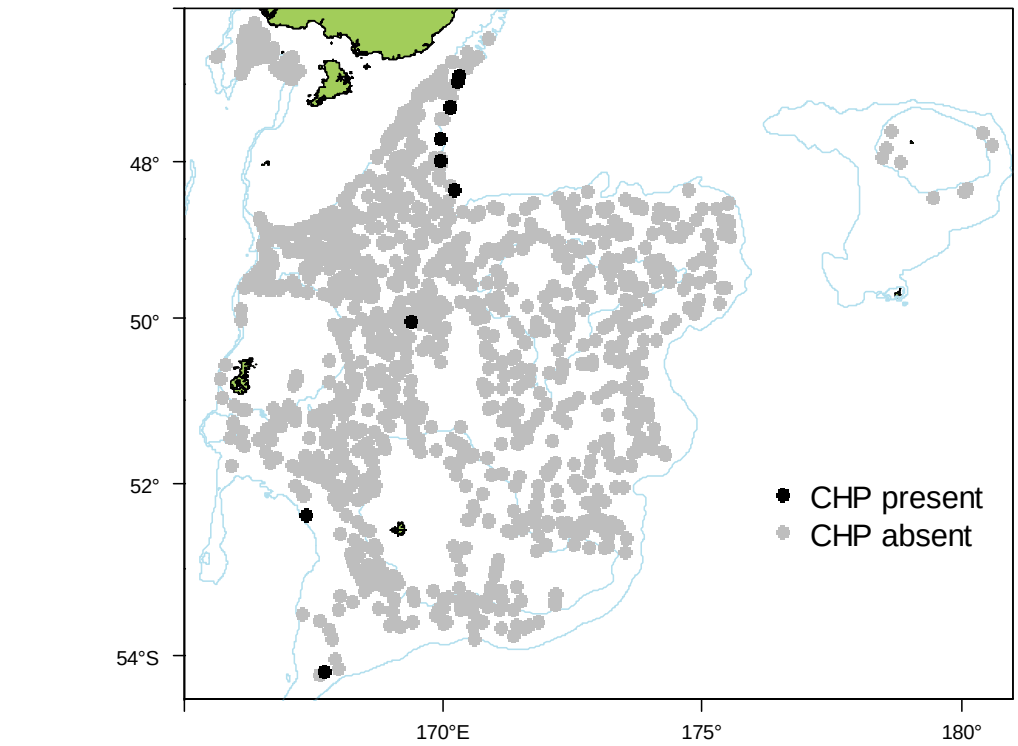
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	8
Total catch weight (kg):	57.5
Number measured	11
Length range (mean) (cm)	75–91 (83.9)
Number weighed	10
Length-weight parameters a, b (r^2)	–

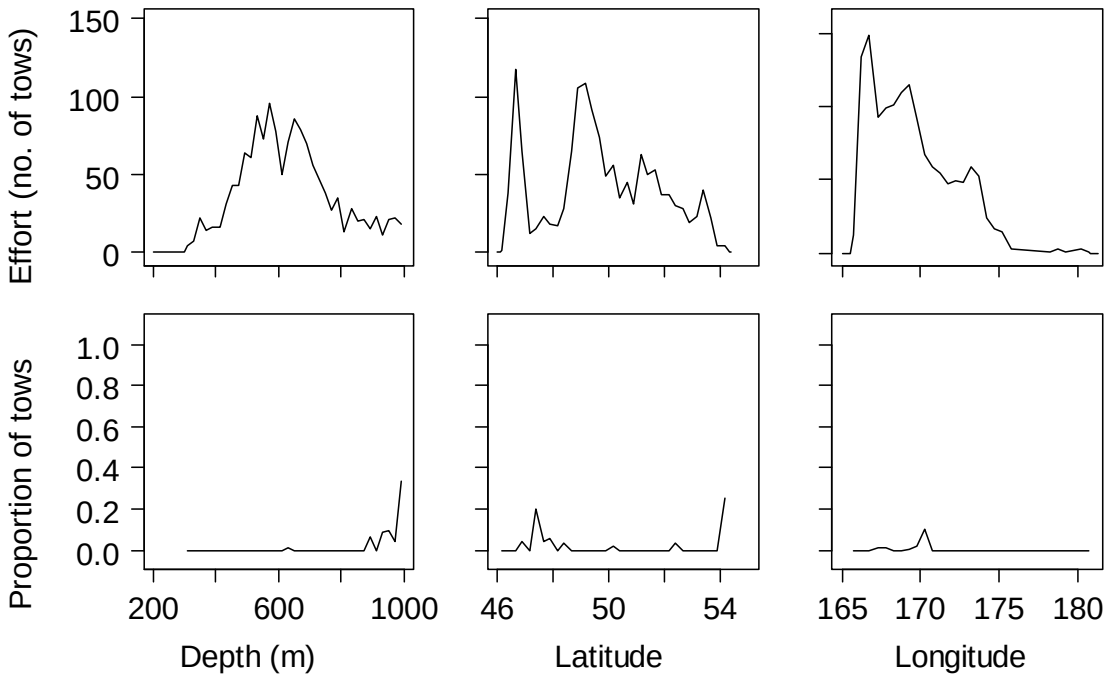
This species **has** been well identified during the time series. It is found **deeper** than 1000 m. The core survey area and depth range **is not** appropriate for this species. Distribution **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty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

There were **too few fish caught to determine whether the core survey area is appropriate for this species**. Biomass of this species is **poorly** estimated by the core survey area. Biomass **shows no clear trend** since the start of the time series. Catches are recorded from areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

Distribution of *Chimaera* sp. from all summer surveys. Valid biomass stations only.

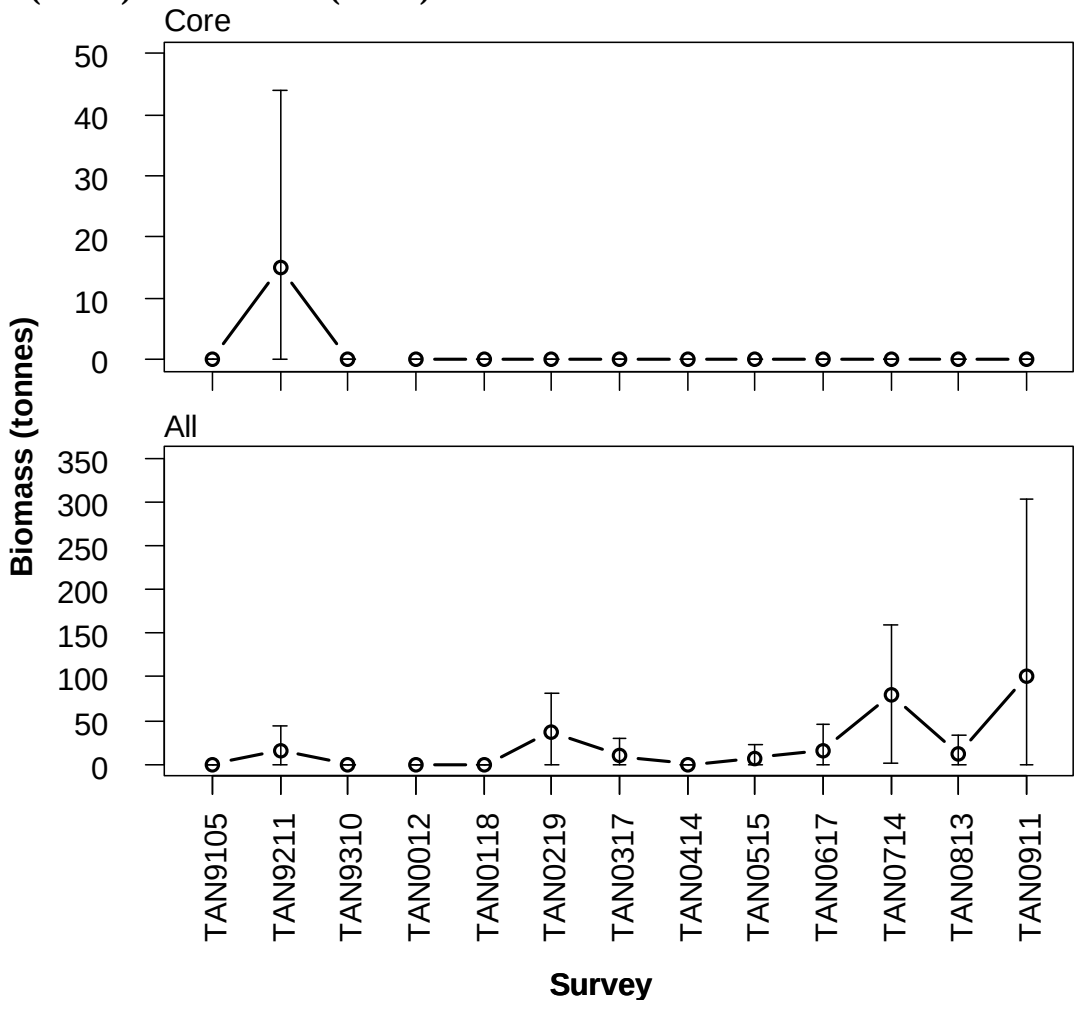




Relative biomass estimates (t) and c.v.s (%) of *Chimaera* sp. for core strata, strata outside the core area and all strata.

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	15	100	NA	NA	NA	NA	0	0	15	100
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	36	61	0	0	NA	NA	36	61
TAN0317	0	0	10	100	NA	NA	NA	NA	10	100
TAN0414	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	0	0	7	100	0	0	NA	NA	7	100
TAN0617	0	0	15	100	NA	NA	NA	NA	15	100
TAN0714	0	0	48	48	32	100	NA	NA	80	49
TAN0813	0	0	11	100	0	0	NA	NA	11	100
TAN0911	0	0	0	0	101	100	NA	NA	101	100

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



Notable rattail (*Coelorinchus innotabilis*) CIN

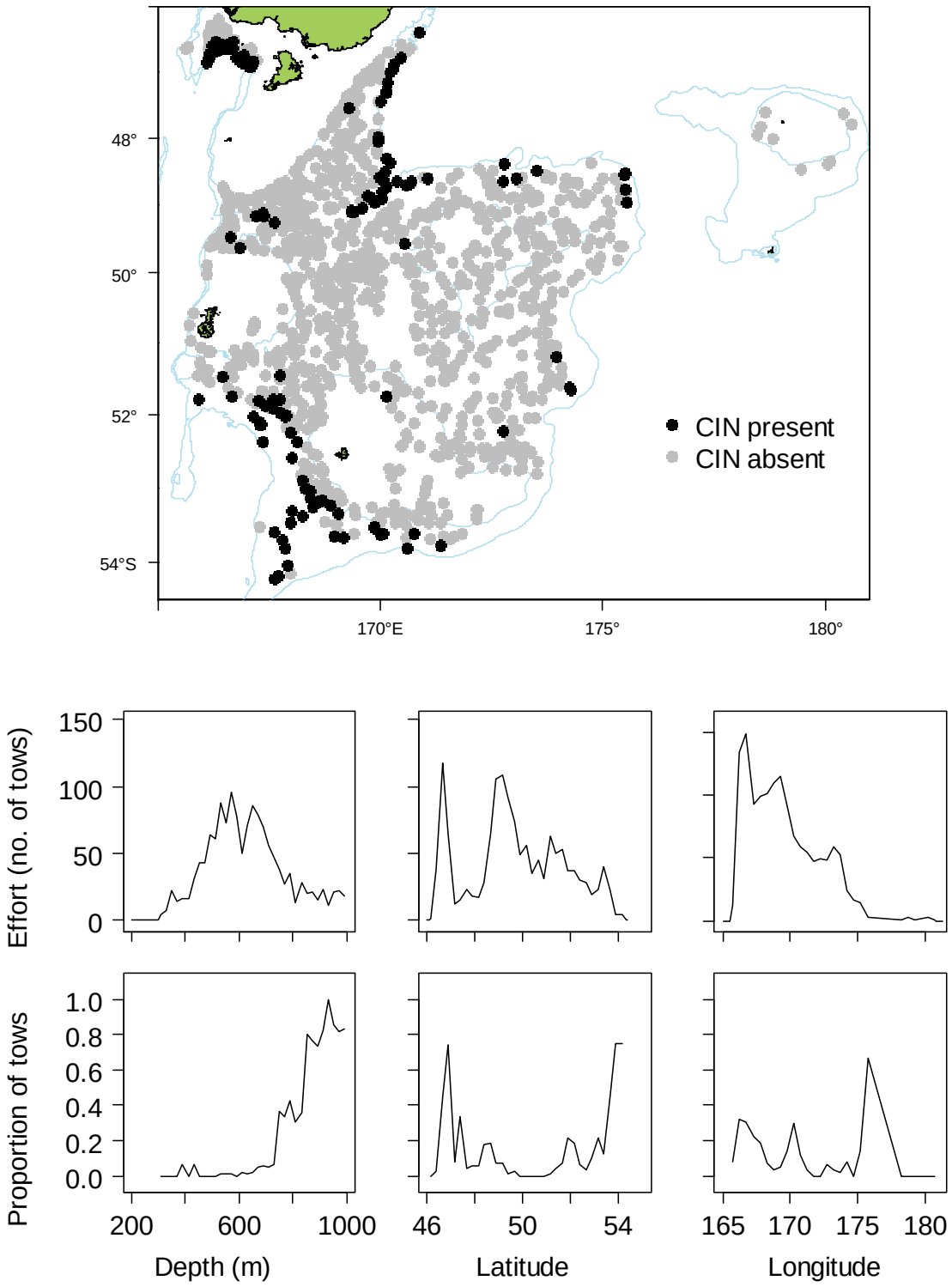
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	127.2
Number measured	647
Length range (mean) (cm)	18–35 (26.9)
Number weighed	193
Length-weight parameters a, b (r^2)	0.01461245 ,2.449691 (73.3)

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 moderately well estimated by the core survey area. Biomass has **increased** since the start of the time series. Catches are recorded from most areas close to and deeper than 800 m. Highest catch rates are in the **north** at Puysegur and in the **south**.

Length frequencies from 2004 **are usually unimodal**. Mean length **shows no clear trend** for the few years it has been measured. **There is no gonad stage information**.

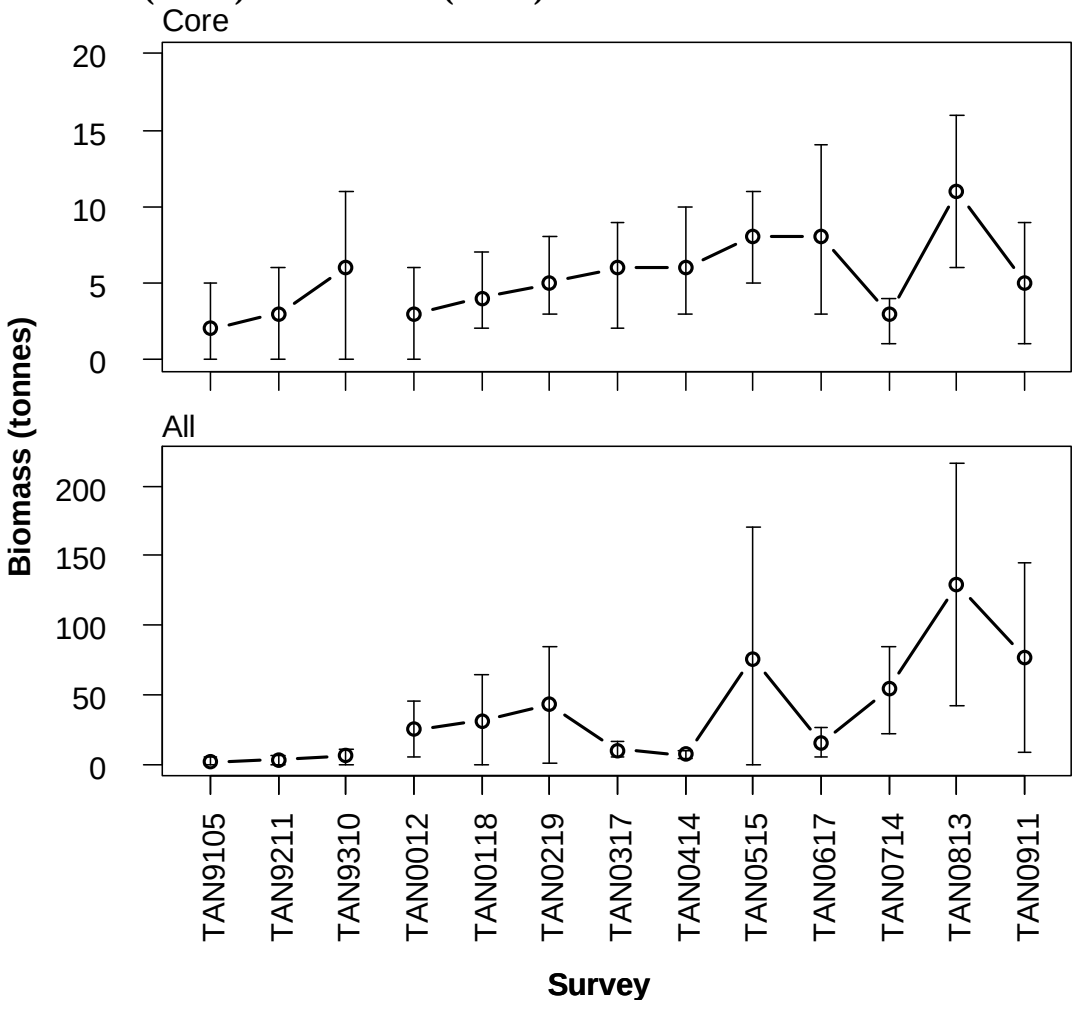
Distribution of *Coelorinchus innotabilis* from all summer surveys. Valid biomass stations only.



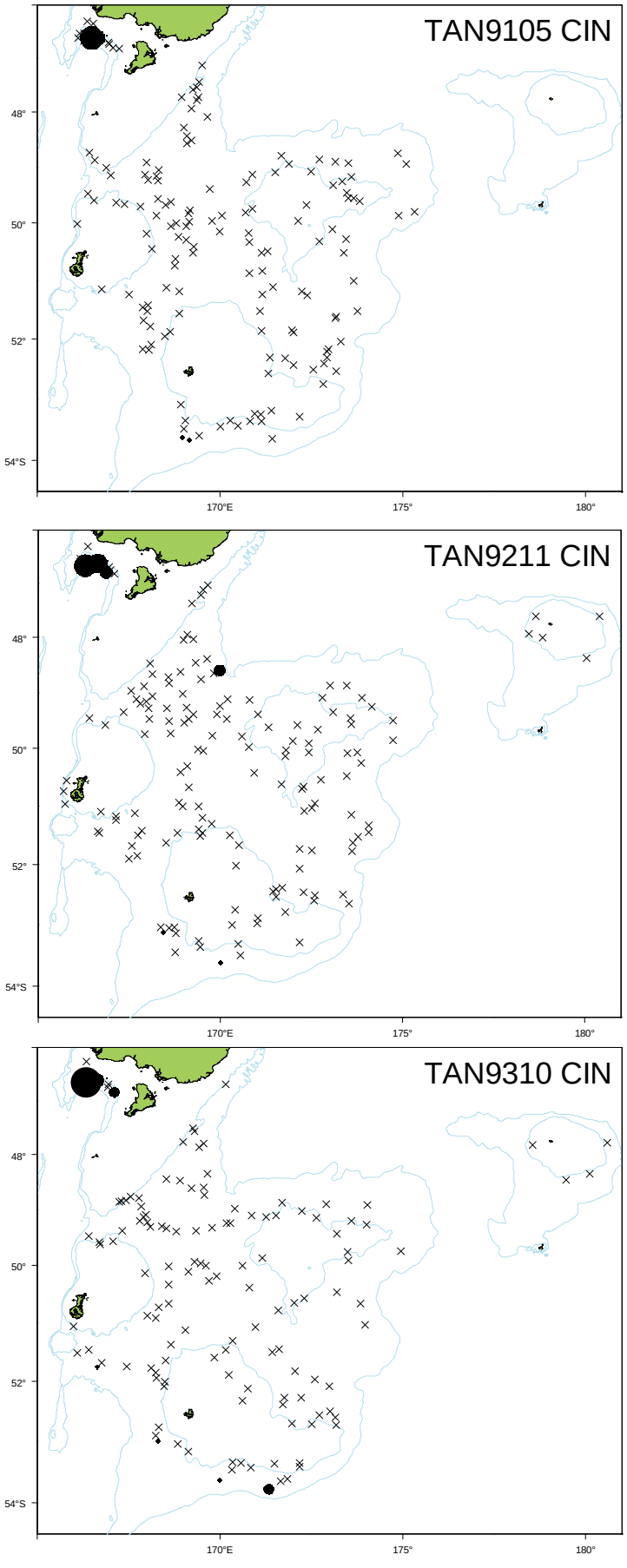
Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus innotabilis* for core strata, strata outside the core area and all strata.

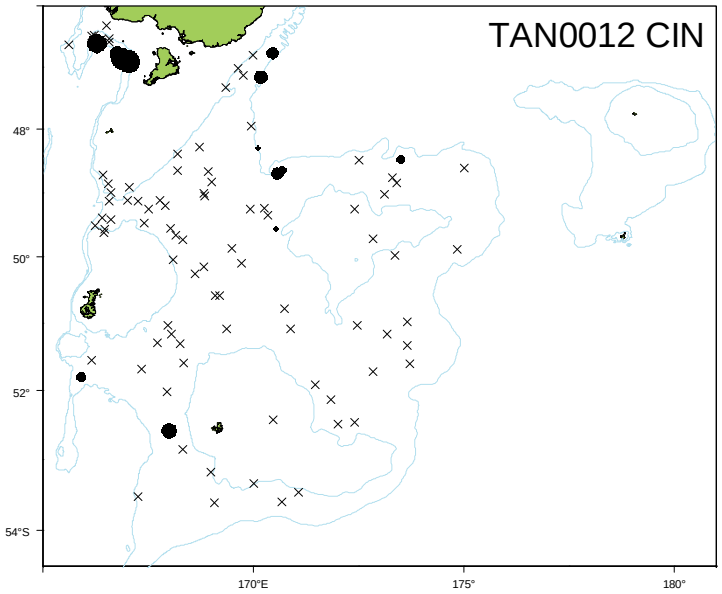
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	2	56	NA	NA	NA	NA	NA	NA	2	56
TAN9211	3	45	NA	NA	NA	NA	0	0	3	45
TAN9310	6	50	NA	NA	NA	NA	0	0	6	50
TAN0012	3	44	6	33	16	61	NA	NA	25	40
TAN0118	4	28	1	64	26	63	NA	NA	31	52
TAN0219	5	22	7	34	31	67	NA	NA	43	49
TAN0317	6	30	5	38	NA	NA	NA	NA	10	24
TAN0414	6	24	0	0	NA	NA	NA	NA	7	24
TAN0515	8	20	6	40	62	76	NA	NA	76	63
TAN0617	8	31	7	66	NA	NA	NA	NA	15	35
TAN0714	3	22	7	40	44	35	NA	NA	54	29
TAN0813	11	23	6	23	113	38	NA	NA	129	34
TAN0911	5	41	7	75	66	51	NA	NA	77	44

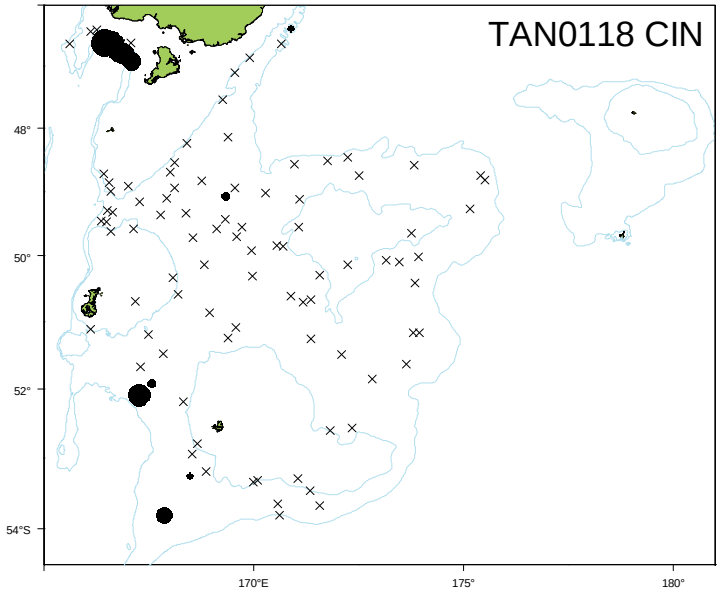
Trends in relative biomass estimates (± 2 standard errors) of *Coelorinchus innotabilis* for core strata (above) and all strata (below).

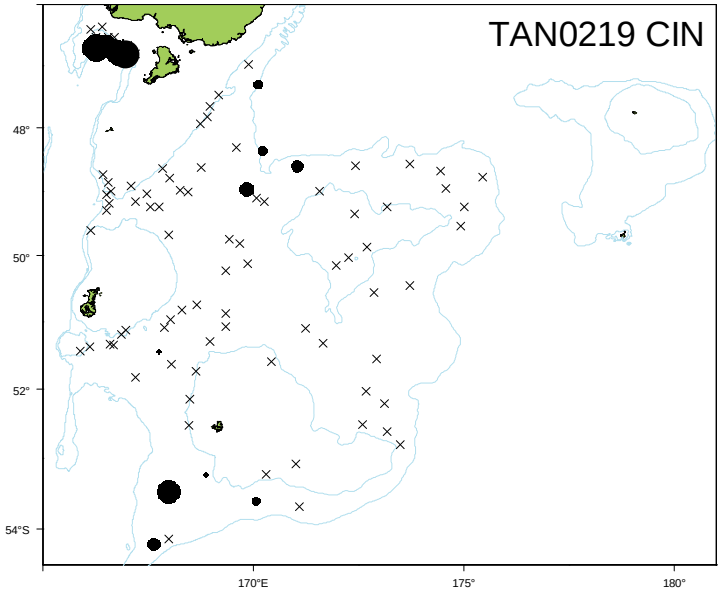


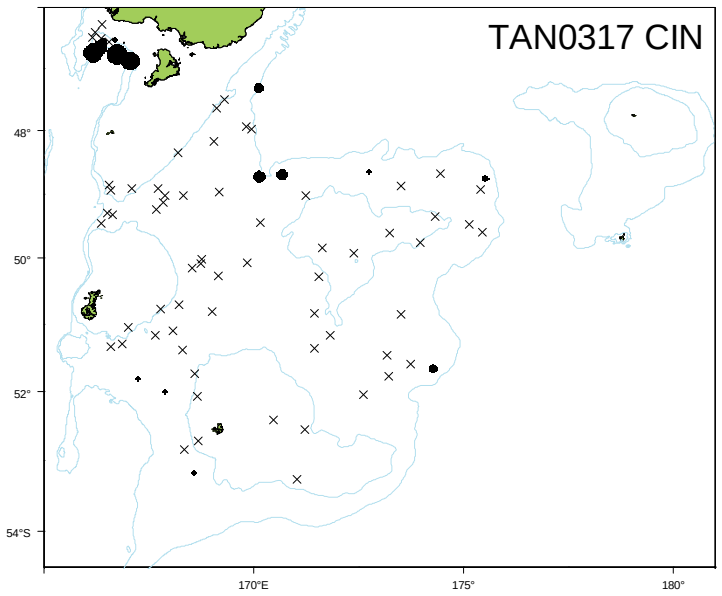
Catchrates of *Coelorinchus innotabilis*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

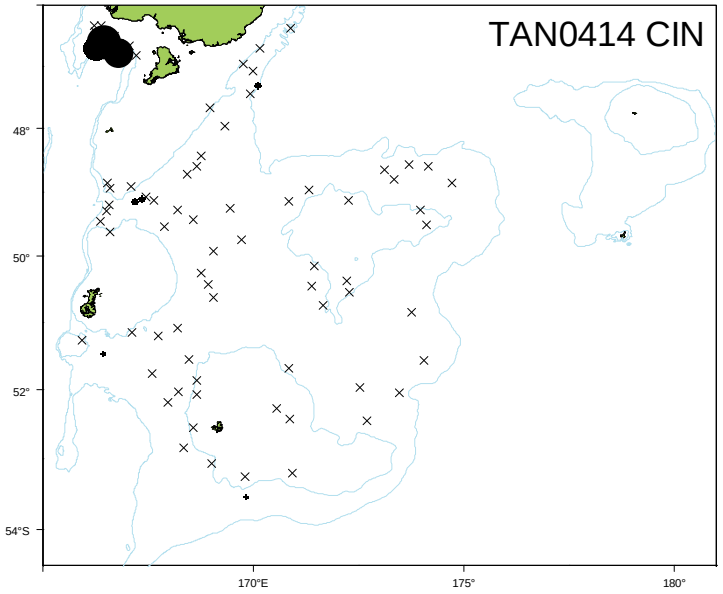


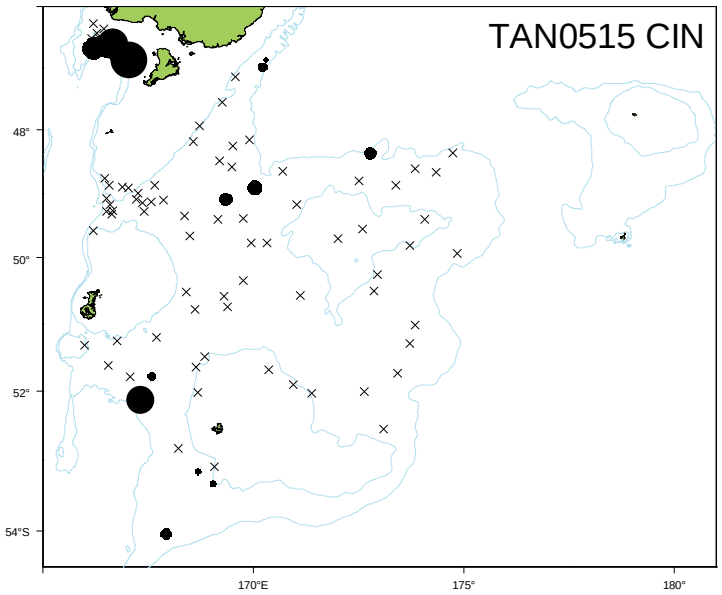

TAN0012 CIN
48°
50°
52°
54°S
170°E
175°
180°

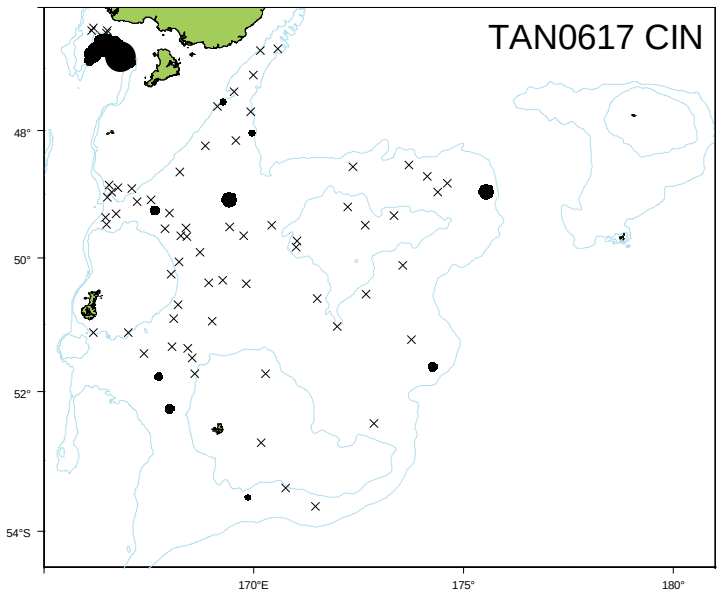

TAN0118 CIN
48°
50°
52°
54°S
170°E
175°
180°

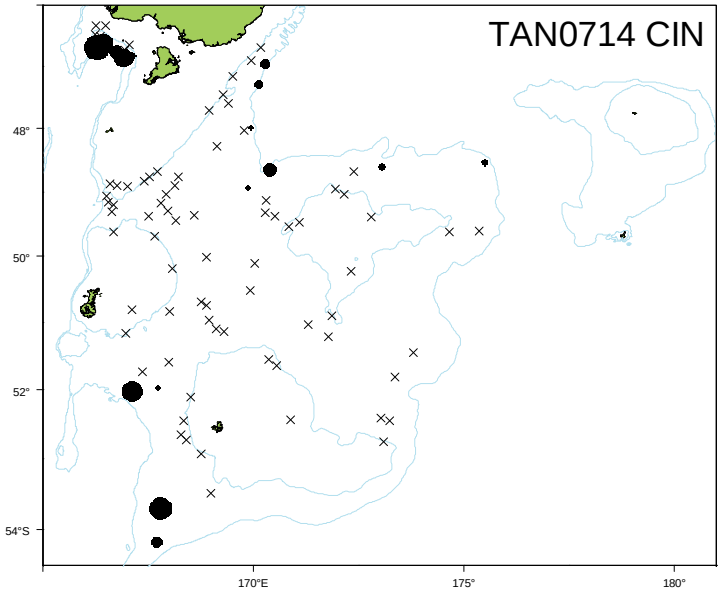

TAN0219 CIN
48°
50°
52°
54°S
170°E
175°
180°

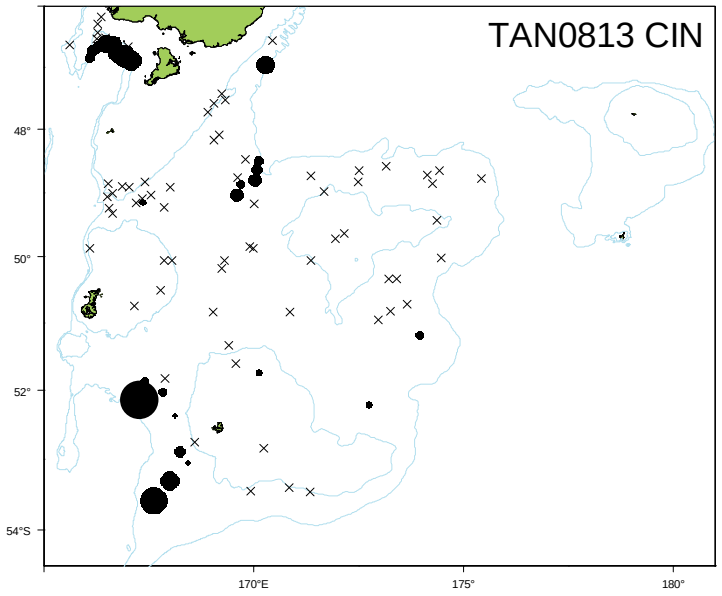

TAN0317 CIN
48°
50°
52°
54°S
170°E
175°
180°

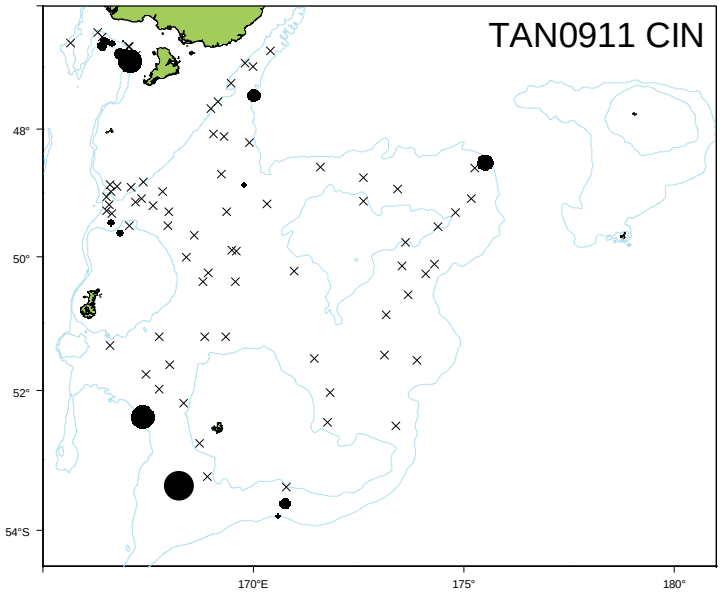

TAN0414 CIN
48°
50°
52°
54°S
170°E
175°
180°


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


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


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

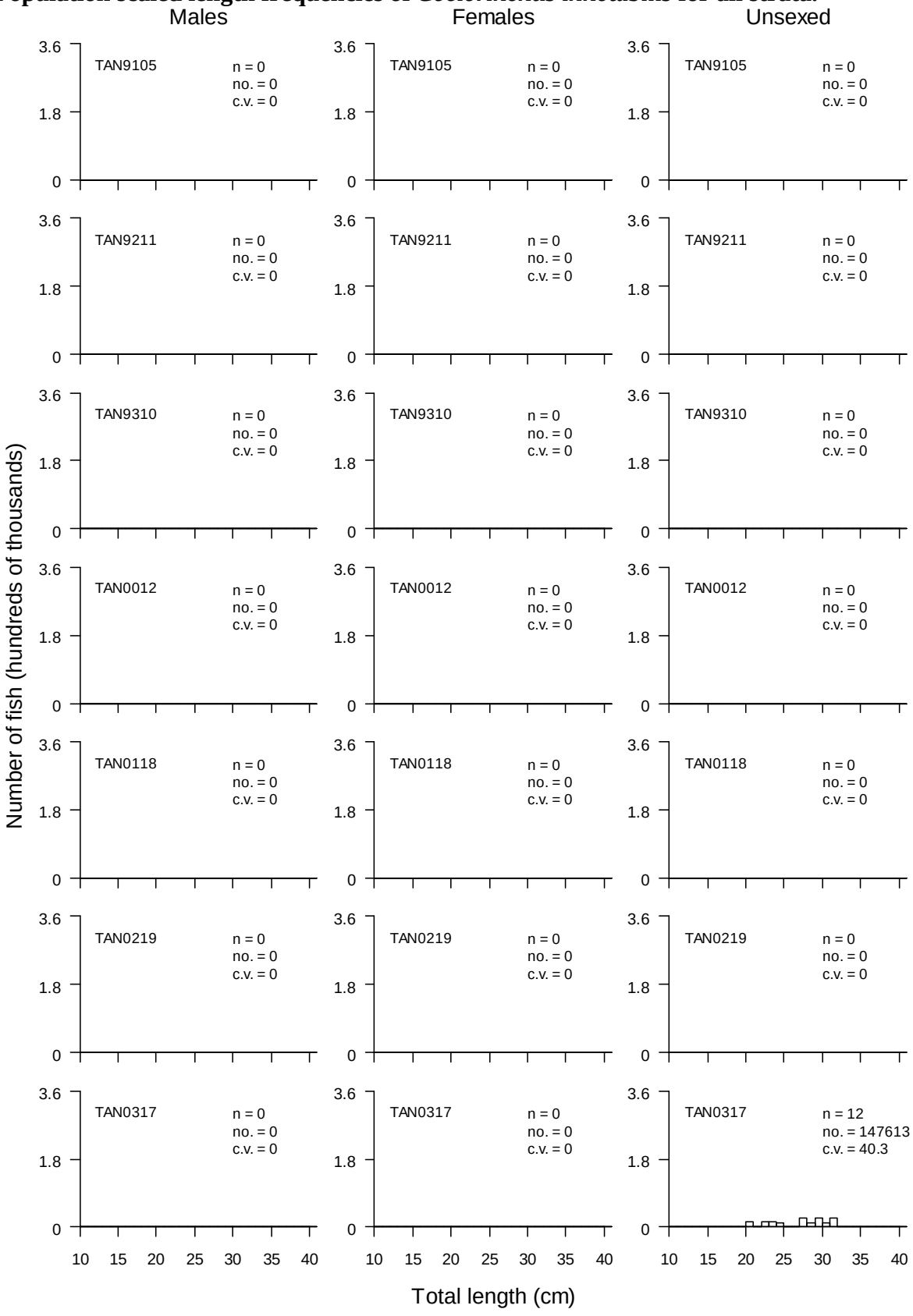

TAN0813 CIN
48°
50°
52°
54°S
170°E
175°
180°

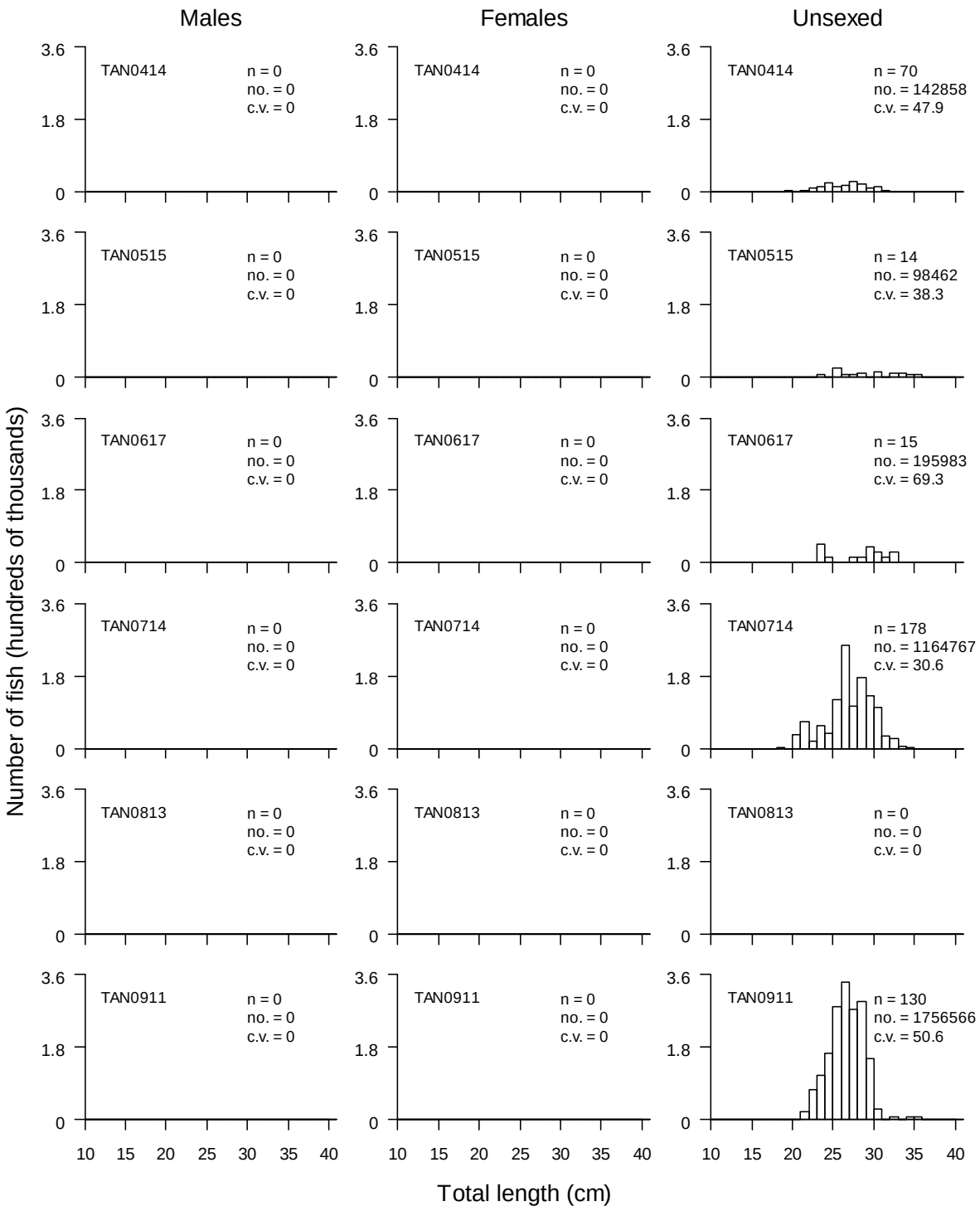


Length summaries

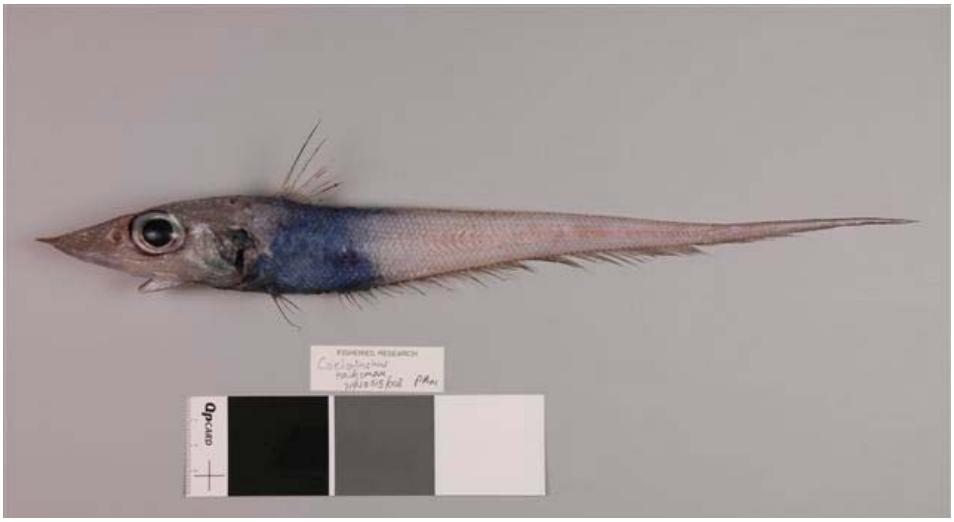
Survey	Minimum length (cm)	Maximum length (cm)	Mean length (cm)	Number measured
TAN9105	NA	NA	NA	0
TAN9211	NA	NA	NA	0
TAN9310	NA	NA	NA	0
TAN0012	NA	NA	NA	0
TAN0118	NA	NA	NA	0
TAN0219	NA	NA	NA	0
TAN0317	20	32	26.8	12
TAN0414	19	31	26.0	70
TAN0515	18	35	29.7	14
TAN0617	21	32	27.5	15
TAN0714	18	34	27.0	178
TAN0813	22	30	26.0	81
TAN0911	21	35	26.8	130

Population scaled length frequencies of *Coelorinchus innotabilis* for all strata.




Males
Females
Unsexed
Number of fish (hundreds of thousands)
Total length (cm)
TAN0414
n = 0
no. = 0
c.v. = 0
TAN0414
n = 0
no. = 0
c.v. = 0
TAN0414
n = 70
no. = 142858
c.v. = 47.9
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 14
no. = 98462
c.v. = 38.3
TAN0617
n = 0
no. = 0
c.v. = 0
TAN0617
n = 0
no. = 0
c.v. = 0
TAN0617
n = 15
no. = 195983
c.v. = 69.3
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 178
no. = 1164767
c.v. = 30.6
TAN0813
n = 0
no. = 0
c.v. = 0
TAN0813
n = 0
no. = 0
c.v. = 0
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 = 130
no. = 1756566
c.v. = 50.6
0
1.8
3.6
10
15
20
25
30
35
40

Kaitomaru rattail (*Coelorinchus kaiyomaru*) CKA



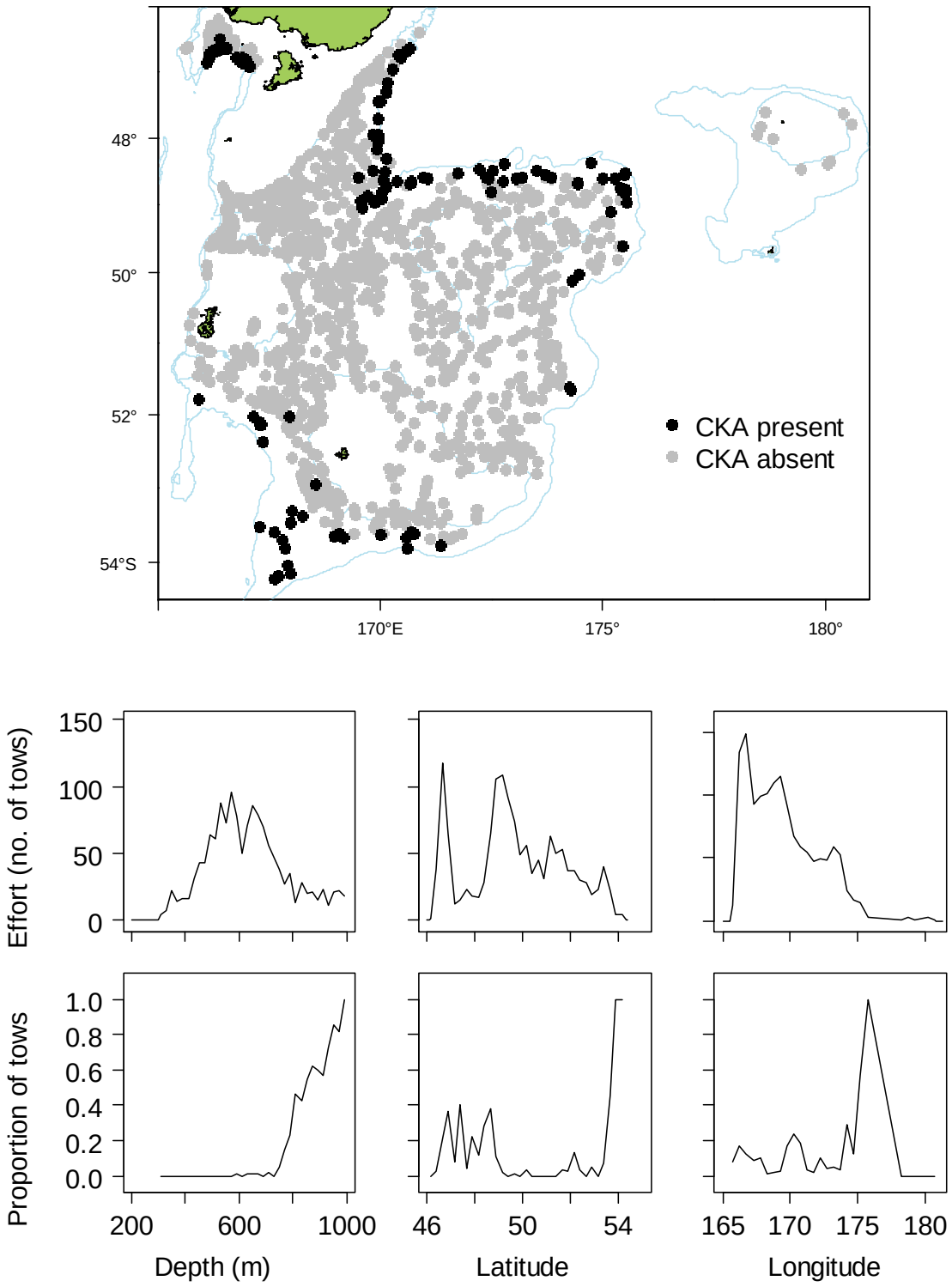
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	101.5
Number measured	322
Length range (mean) (cm)	14–41 (31.6)
Number weighed	197
Length-weight parameters a, b (r^2)	–

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 most areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

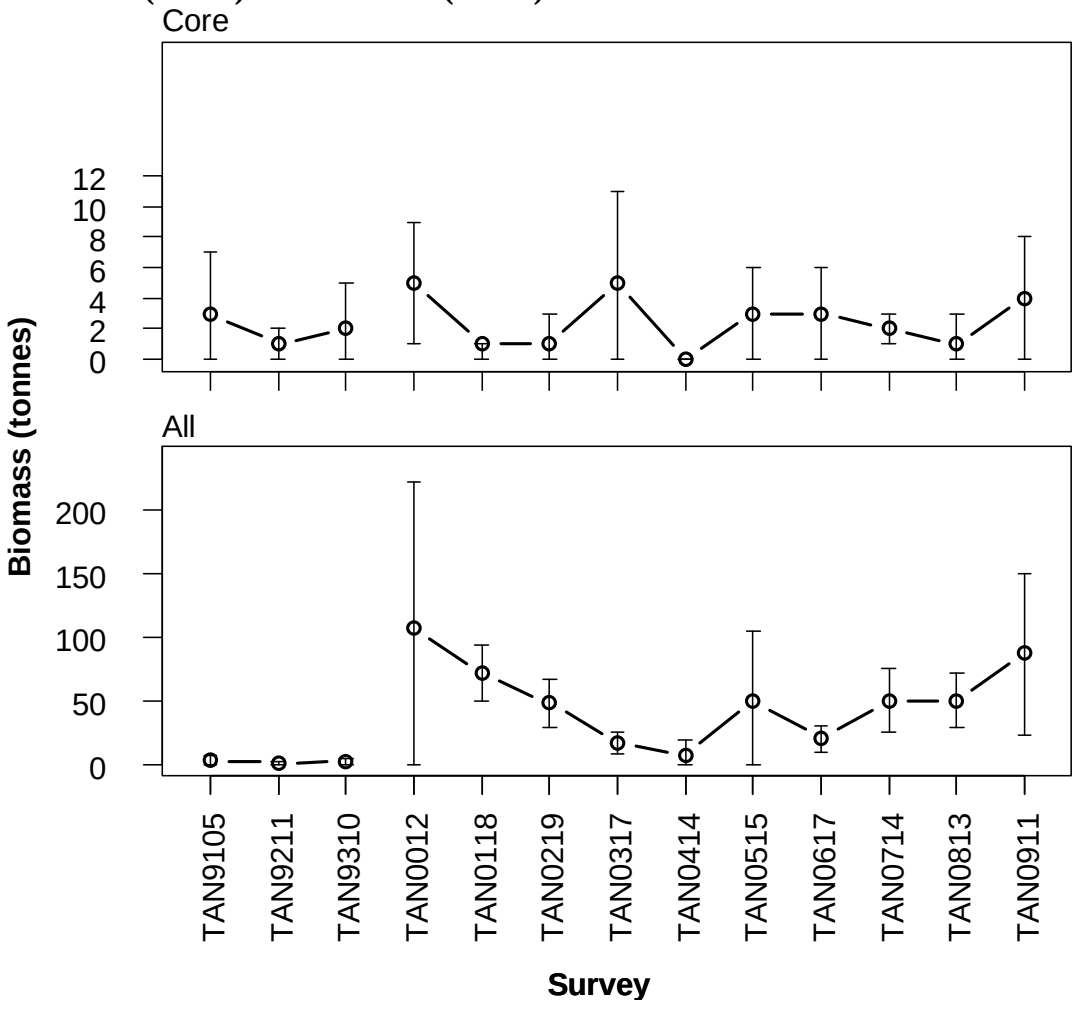
Distribution of *Coelorinchus kaiyomaru* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus kaiyomaru* 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	75	NA	NA	NA	NA	NA	NA	3	75
TAN9211	1	90	NA	NA	NA	NA	0	0	1	90
TAN9310	2	81	NA	NA	NA	NA	0	0	2	81
TAN0012	5	42	37	64	65	80	NA	NA	107	53
TAN0118	1	70	16	37	54	17	NA	NA	71	15
TAN0219	1	60	11	34	36	24	NA	NA	48	20
TAN0317	5	56	12	27	NA	NA	NA	NA	17	25
TAN0414	0	74	7	90	NA	NA	NA	NA	7	88
TAN0515	3	50	16	56	31	84	NA	NA	50	55
TAN0617	3	55	16	29	NA	NA	NA	NA	20	26
TAN0714	2	32	19	40	29	35	NA	NA	50	25
TAN0813	1	52	16	28	32	30	NA	NA	50	21
TAN0911	4	53	50	59	32	33	NA	NA	87	37

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



Mahia rattail (*Coelorinchus matamua*) CMA

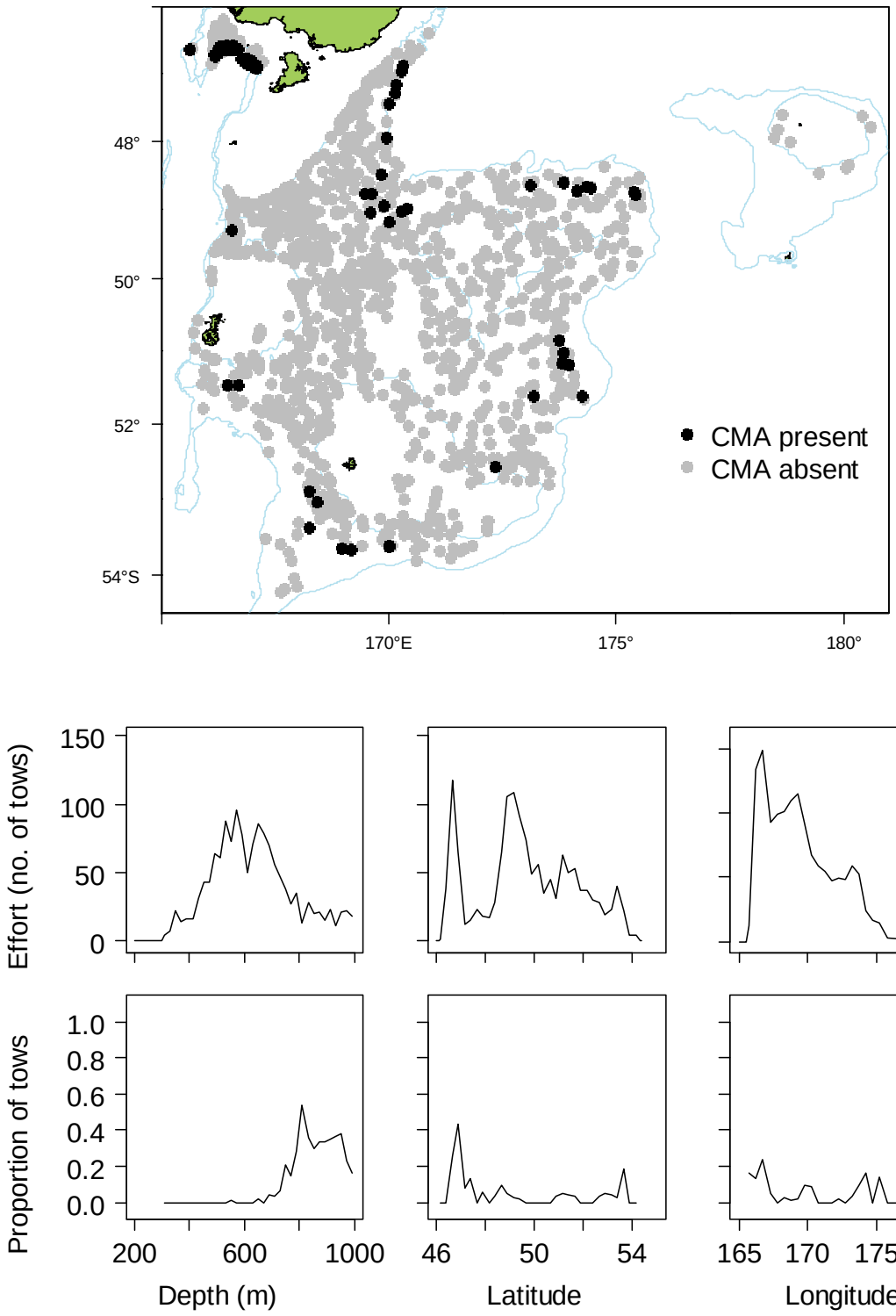
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	106.5
Number measured	37
Length range (mean) (cm)	27–71 (43.9)
Number weighed	11
Length-weight parameters a, b (r^2)	–

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 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 beginning of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from most areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

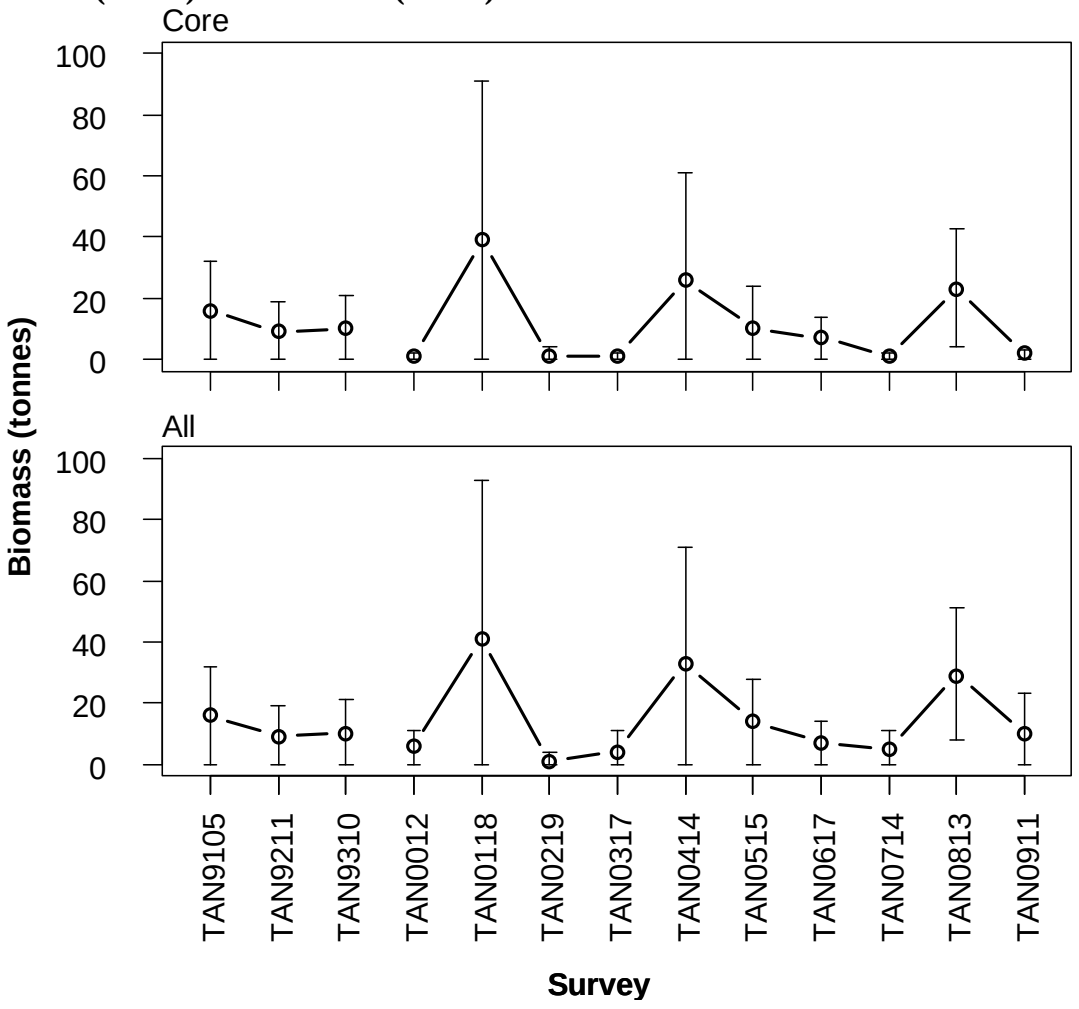
Distribution of *Coelorinchus matamua* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus matamua* 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	16	53	NA	NA	NA	NA	NA	NA	16	53
TAN9211	9	54	NA	NA	NA	NA	0	0	9	54
TAN9310	10	56	NA	NA	NA	NA	0	0	10	56
TAN0012	1	54	5	58	0	0	NA	NA	6	48
TAN0118	39	67	2	100	0	0	NA	NA	41	64
TAN0219	1	75	0	0	0	0	NA	NA	1	75
TAN0317	1	72	3	100	NA	NA	NA	NA	4	81
TAN0414	26	67	7	100	NA	NA	NA	NA	33	57
TAN0515	10	65	4	59	0	0	NA	NA	14	49
TAN0617	7	48	0	0	NA	NA	NA	NA	7	48
TAN0714	1	47	4	68	0	0	NA	NA	5	57
TAN0813	23	42	6	65	0	0	NA	NA	29	36
TAN0911	2	37	1	100	7	100	NA	NA	10	71

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



Abyssal rattail (*Coryphaenoides murrayi*) CMU

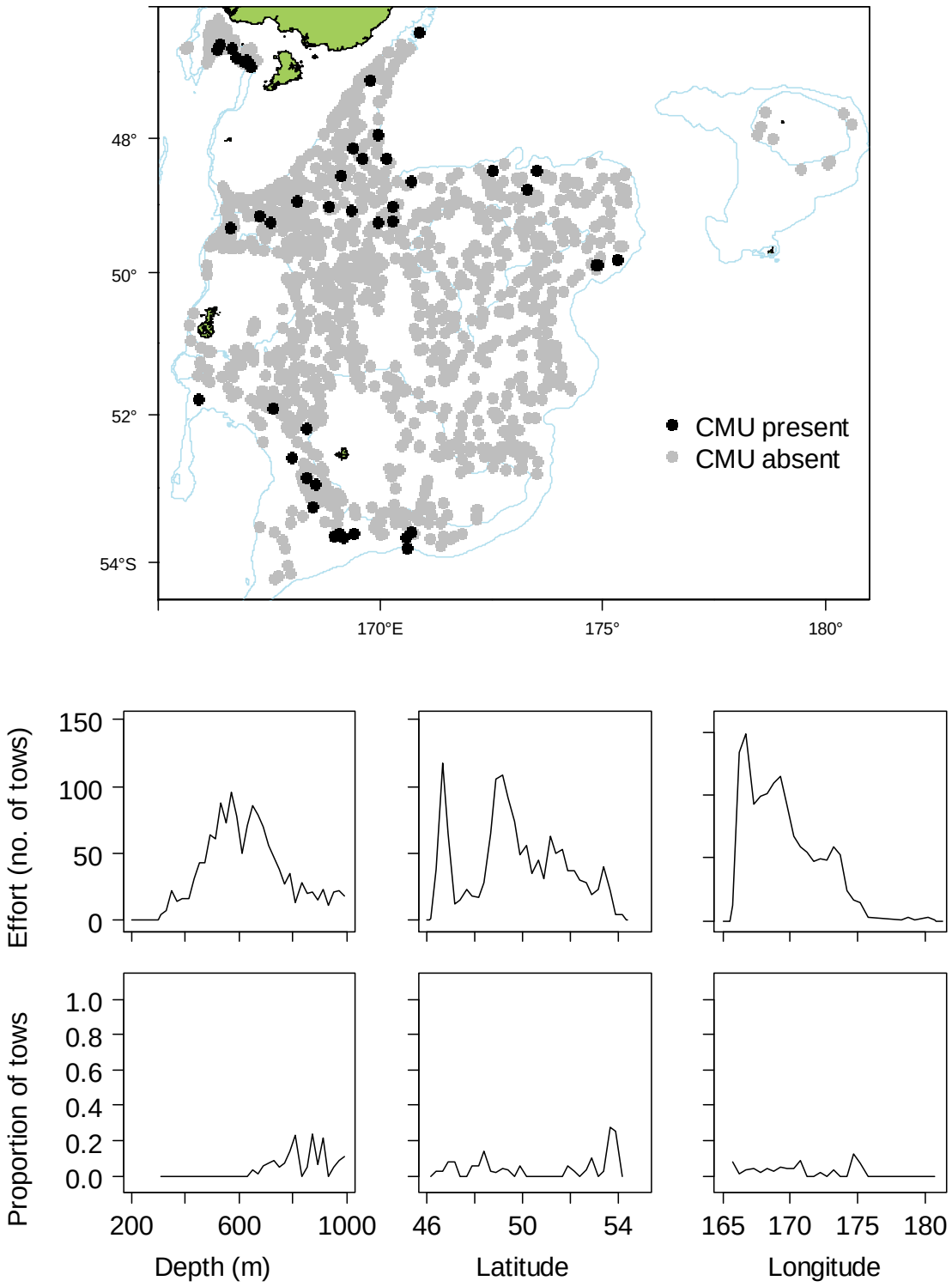
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	100.8
Number measured	2
Length range (mean) (cm)	58–66 (62.0)
Number weighed	2
Length-weight parameters a, b (r^2)	–

This species probably **has not** been well identified during the time series. Confusion with the Humpback rattail (*Coryphaenoides dossenus*) may have occurred on early surveys. The Abyssal rattail 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 has **increased then decreased** since the beginning of the time series. Biomass in the areas deeper than 800 m surveyed from 2000 to 2009 is **poorly** estimated. Catches are recorded from most areas close to and deeper than 800 m.

There is no length or gonad stage information presented.

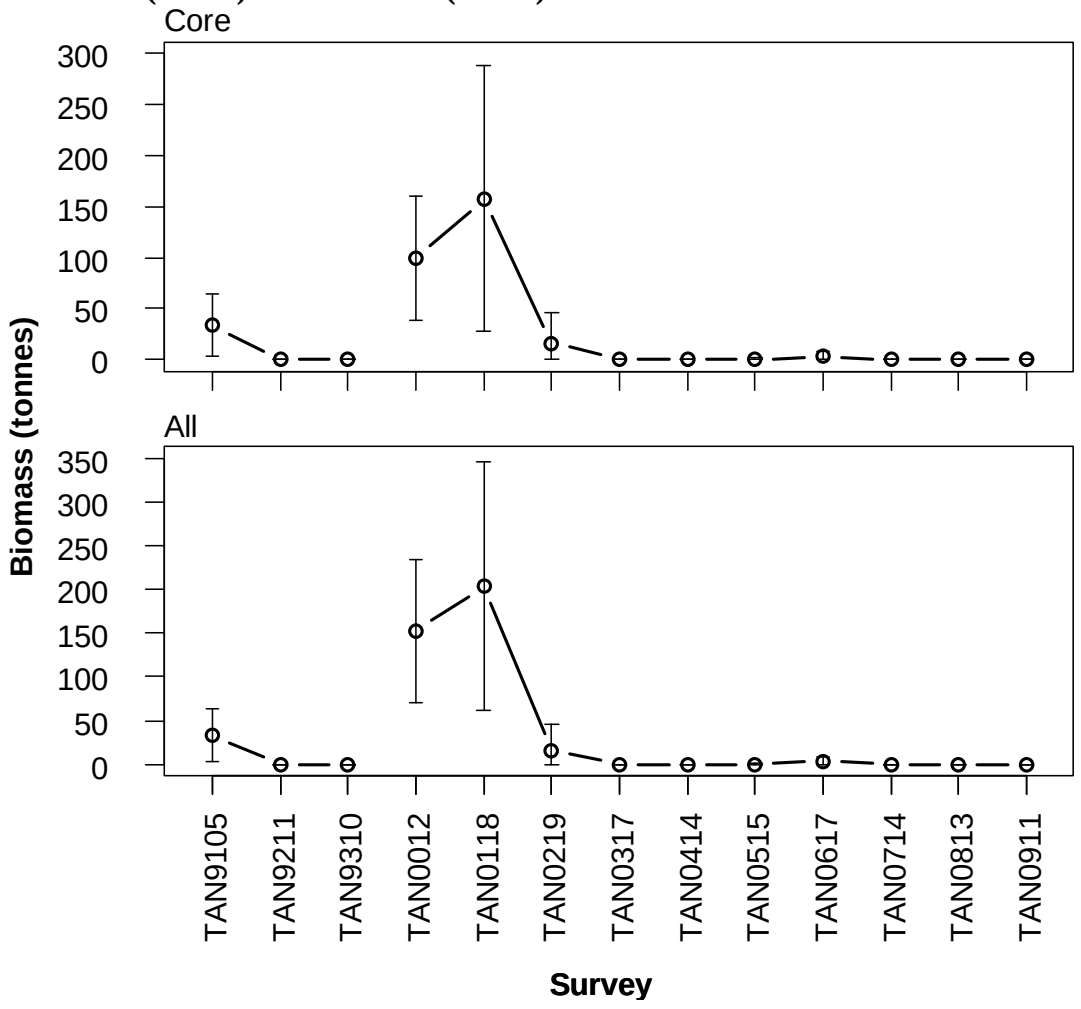
Distribution of *Coryphaenoides murrayi* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Coryphaenoides murrayi* 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	33	46	NA	NA	NA	NA	NA	NA	33	46
TAN9211	0	0	NA	NA	NA	NA	0	0	0	0
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	100	31	17	56	36	71	NA	NA	153	27
TAN0118	157	42	5	59	41	70	NA	NA	204	35
TAN0219	16	98	0	0	0	0	NA	NA	16	98
TAN0317	0	0	0	0	NA	NA	NA	NA	0	0
TAN0414	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	0	100	0	0	0	0	NA	NA	0	100
TAN0617	3	100	0	0	NA	NA	NA	NA	3	100
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 *Coryphaenoides murrayi* for core strata (above) and all strata (below).



Olivers rattail (*Coelorinchus oliverianus*) COL

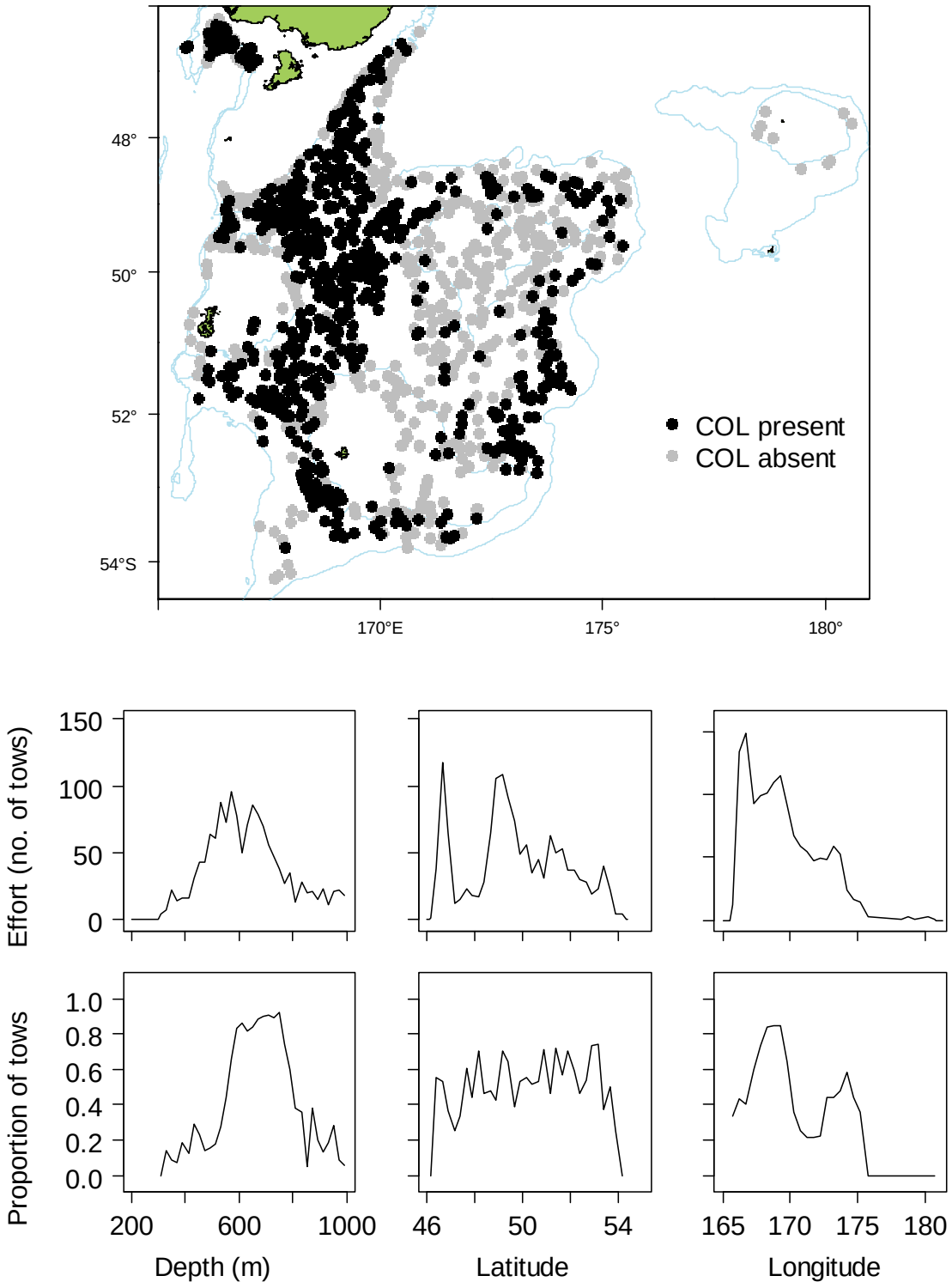
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	5 343.4
Number measured	18 205
Length range (mean) (cm)	9–40 (25.5)
Number weighed	3 274
Length-weight parameters a, b (r^2)	0.01487075, 2.500347 (76.2)

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** 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 has i**ncreased** 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 in the **west** and **south** of the survey area.

Length frequencies are usually **unimodal**. Mean length **shows no clear trend** since 2001. Gonad stage data indicate that most fish are **resting and maturing.**.

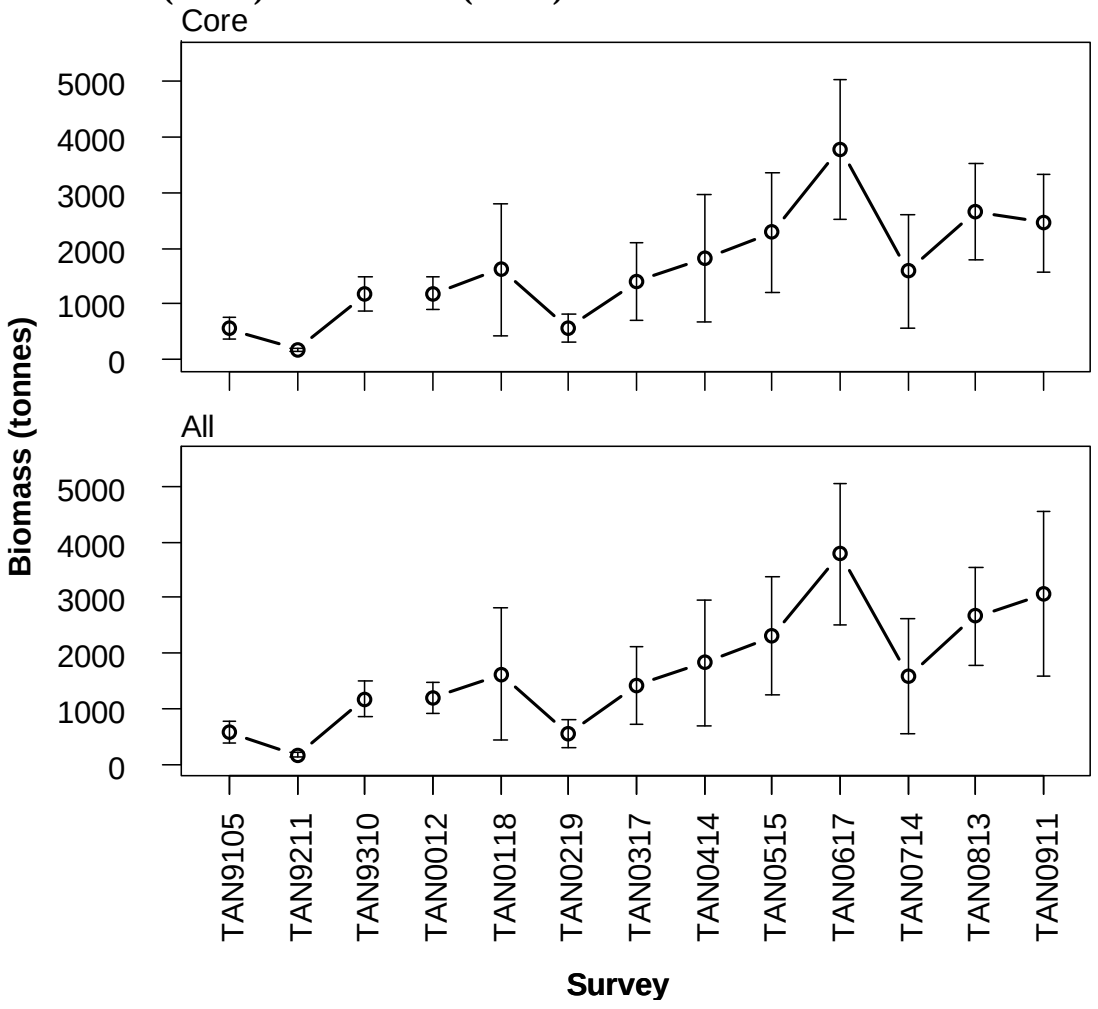
Distribution of *Coelorinchus oliverianus* from all summer surveys. Valid biomass stations only.



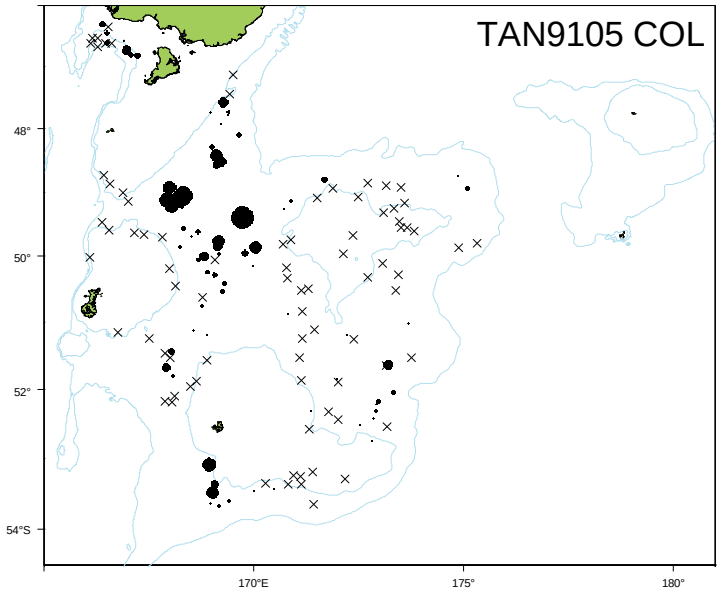
Relative biomass estimates (t) and c.v.s (%) of *Coelorinchus oliverianus* for core strata, strata outside the core area and all strata.

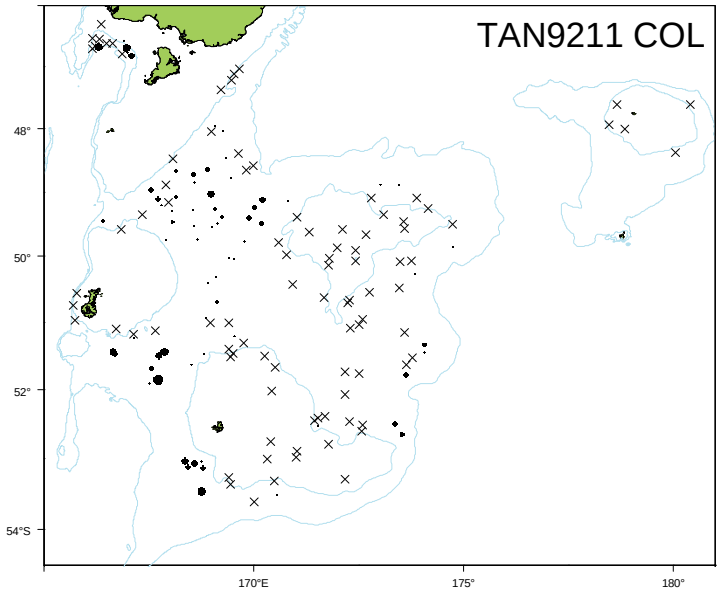
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	567	18	NA	NA	NA	NA	NA	NA	567	18
TAN9211	170	12	NA	NA	NA	NA	0	0	170	12
TAN9310	1173	14	NA	NA	NA	NA	0	0	1173	14
TAN0012	1189	12	0	0	2	100	NA	NA	1191	12
TAN0118	1612	37	2	60	6	77	NA	NA	1620	37
TAN0219	555	22	1	100	0	0	NA	NA	556	22
TAN0317	1407	25	0	0	NA	NA	NA	NA	1407	25
TAN0414	1823	31	1	100	NA	NA	NA	NA	1824	31
TAN0515	2284	23	10	60	7	100	NA	NA	2302	23
TAN0617	3777	17	3	44	NA	NA	NA	NA	3779	17
TAN0714	1587	32	0	0	0	0	NA	NA	1587	32
TAN0813	2663	16	1	68	0	0	NA	NA	2663	16
TAN0911	2451	18	602	99	4	100	NA	NA	3058	24

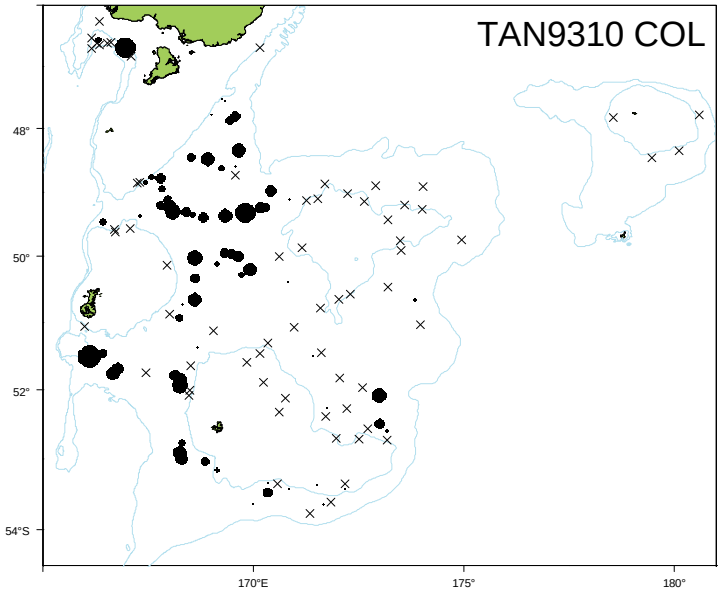
Trends in relative biomass estimates (± 2 standard errors) of *Coelorinchus oliverianus* for core strata (above) and all strata (below).

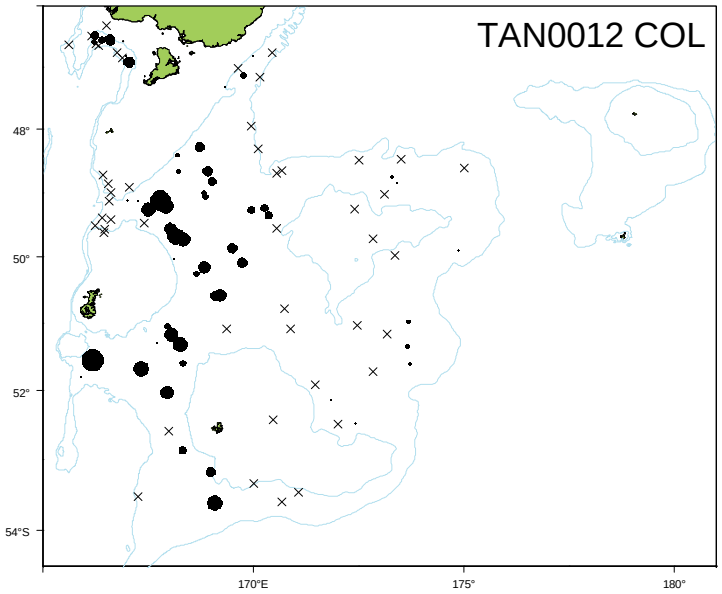


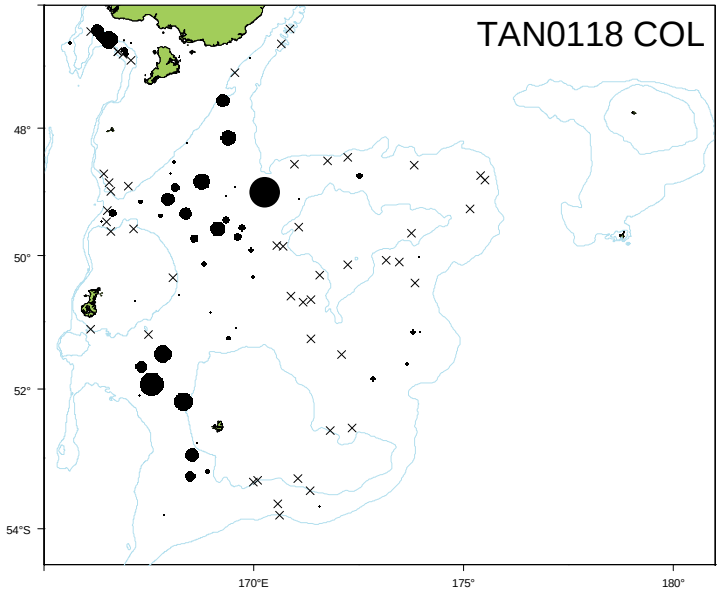
Catchrates of *Coelorinchus oliverianus*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

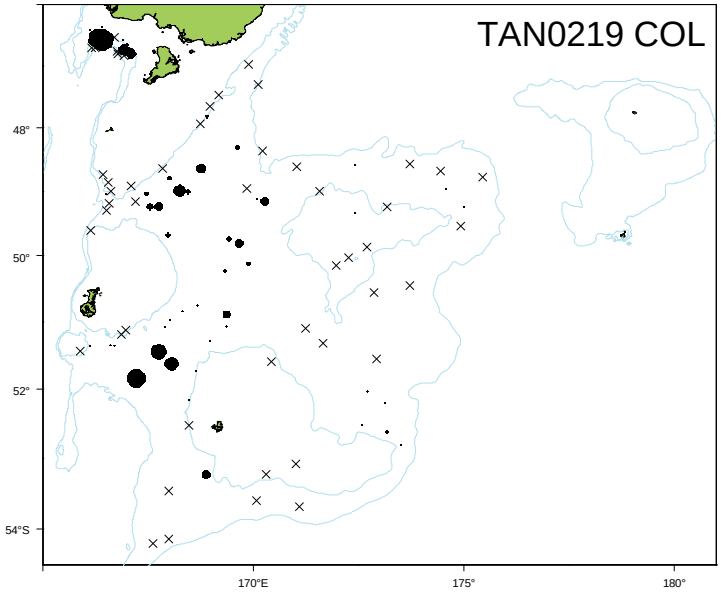


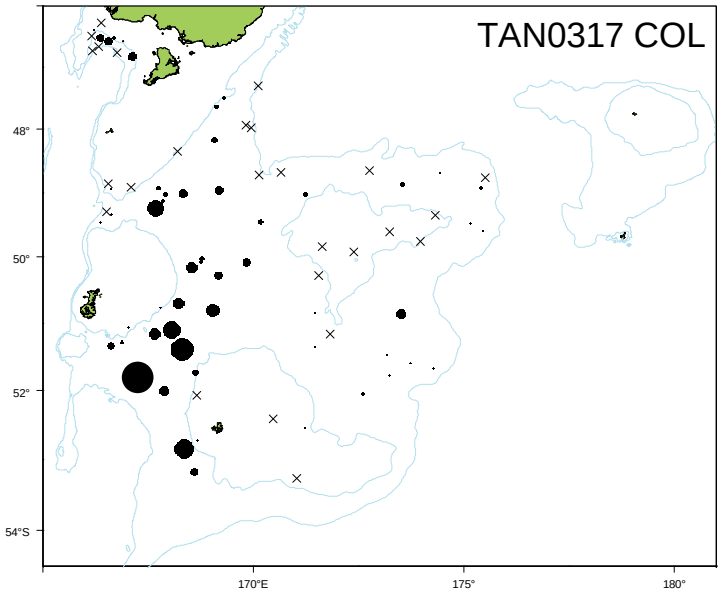


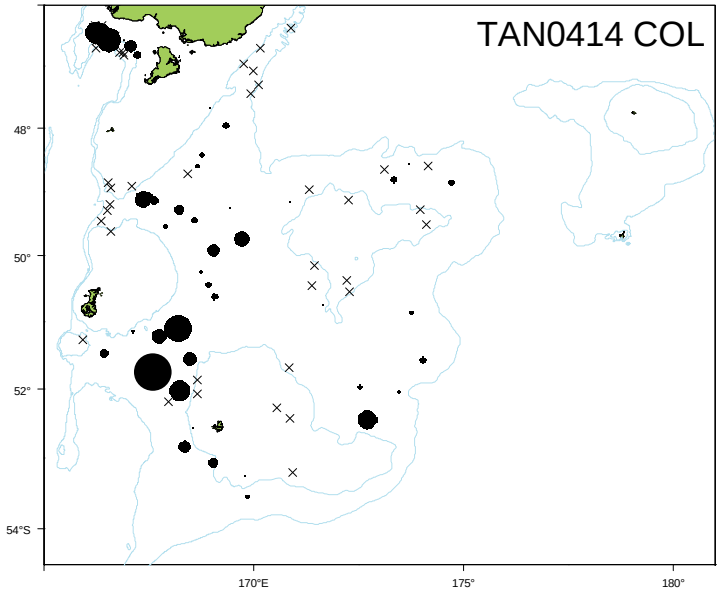


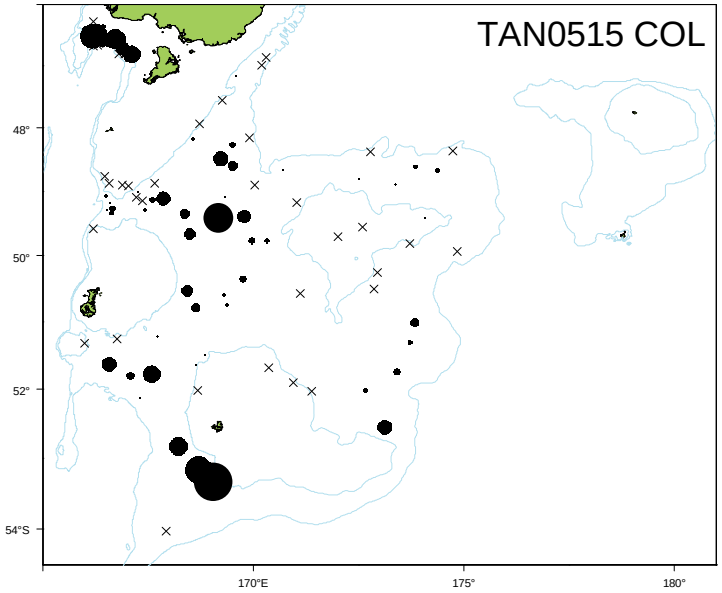

TAN0012 COL
48°
50°
52°
54°S
170°E
175°
180°

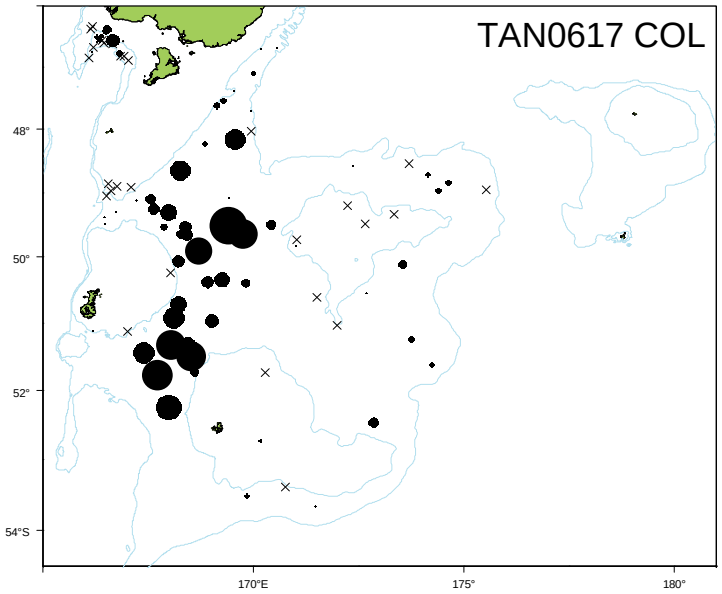

TAN0118 COL
48°
50°
52°
54°S
170°E
175°
180°

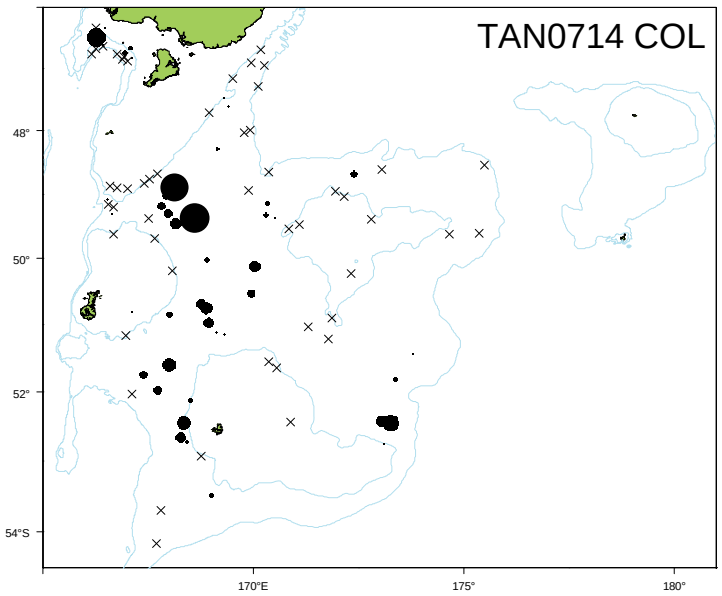

TAN0219 COL
48°
50°
52°
54°S
170°E
175°
180°

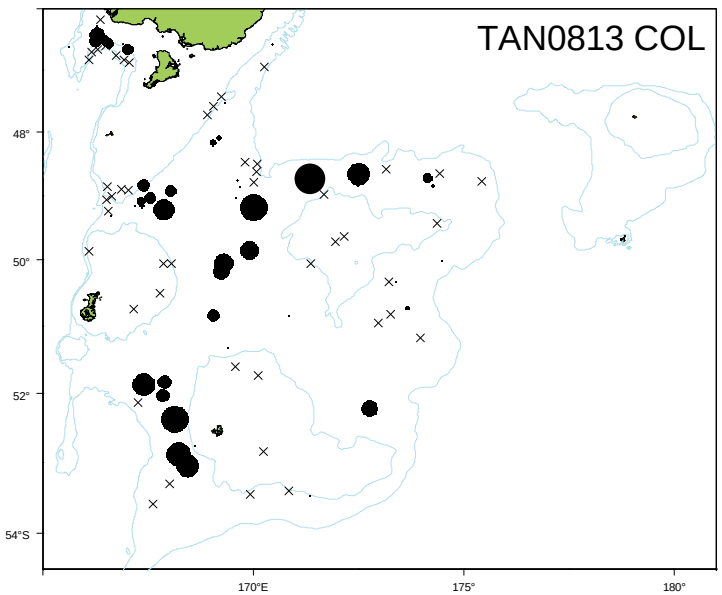

TAN0317 COL
48°
50°
52°
54°S
170°E
175°
180°

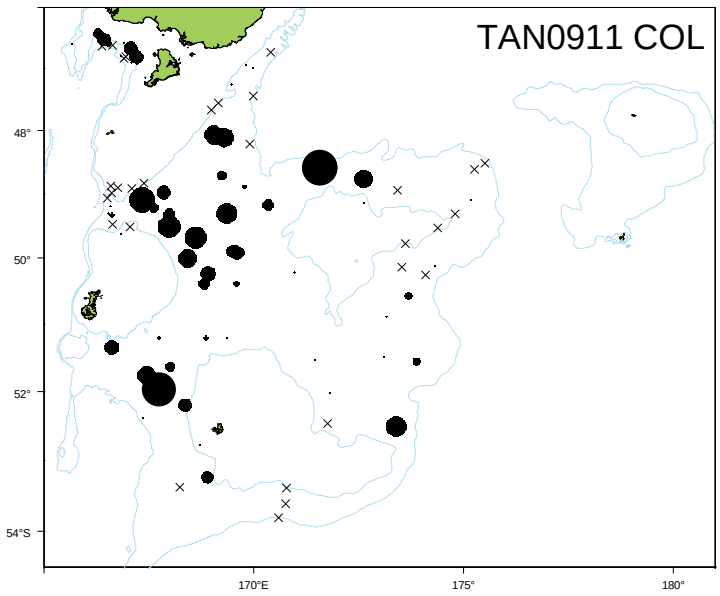

TAN0414 COL
48°
50°
52°
54°S
170°E
175°
180°


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


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


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

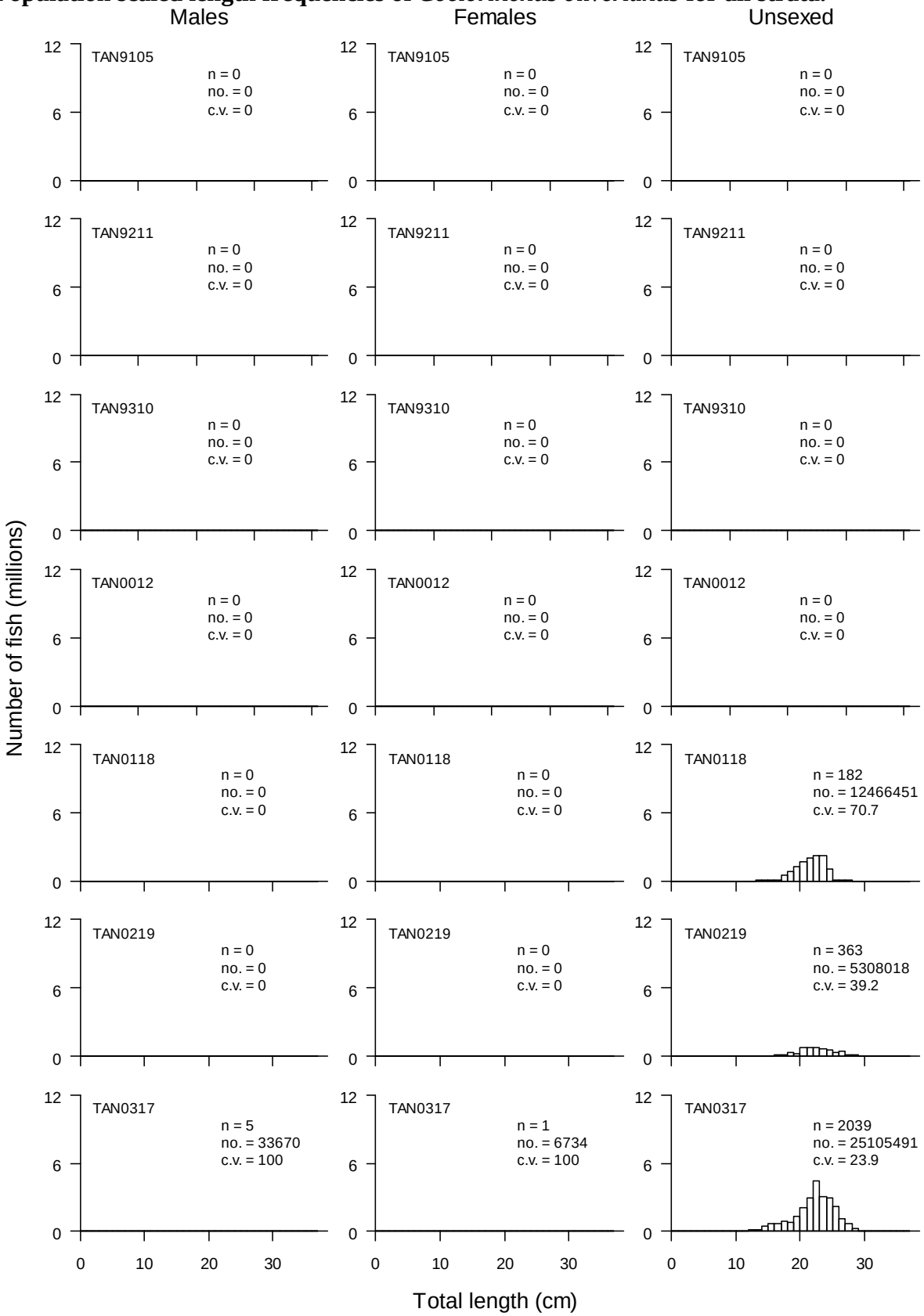

TAN0813 COL
48°
50°
52°
54°S
170°E
175°
180°

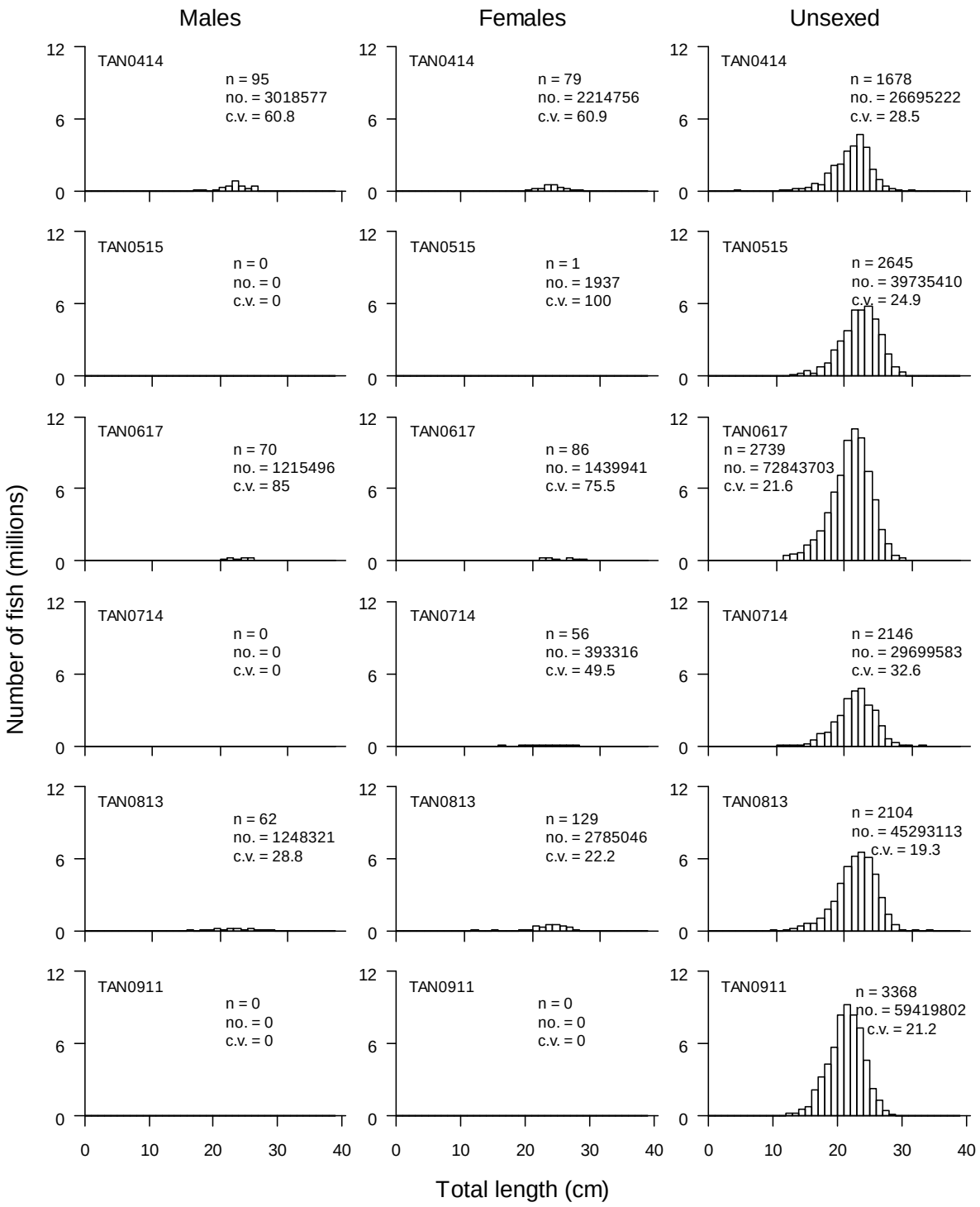


Length summaries

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	18	32	26.0	182
TAN0219	15	36	27.3	363
TAN0317	14	37	26.4	2045
TAN0414	9	40	26.6	1852
TAN0515	15	38	26.8	2646
TAN0617	13	37	25.3	2895
TAN0714	15	38	26.5	2202
TAN0813	14	39	26.2	2295
TAN0911	9	40	26.2	3368

Population scaled length frequencies of *Coelorinchus oliverianus* for all strata.




Males
Females
Unsexed
TAN0414
n = 95
no. = 3018577
c.v. = 60.8
TAN0414
n = 79
no. = 2214756
c.v. = 60.9
TAN0414
n = 1678
no. = 26695222
c.v. = 28.5
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 1
no. = 1937
c.v. = 100
TAN0515
n = 2645
no. = 39735410
c.v. = 24.9
TAN0617
n = 70
no. = 1215496
c.v. = 85
TAN0617
n = 86
no. = 1439941
c.v. = 75.5
TAN0617
n = 2739
no. = 72843703
c.v. = 21.6
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 56
no. = 393316
c.v. = 49.5
TAN0714
n = 2146
no. = 29699583
c.v. = 32.6
TAN0813
n = 62
no. = 1248321
c.v. = 28.8
TAN0813
n = 129
no. = 2785046
c.v. = 22.2
TAN0813
n = 2104
no. = 45293113
c.v. = 19.3
TAN0911
n = 0
no. = 0
c.v. = 0
TAN0911
n = 0
no. = 0
c.v. = 0
TAN0911
n = 3368
no. = 59419802
c.v. = 21.2
Number of fish (millions)
Total length (cm)

Gonad stage summaries by sex for *Coelorinchus oliverianus*. 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	33	53	14	0	0	0	0	11	46	41	0	0	2	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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL	33	53	14	0	0	0	0	11	46	41	0	0	2	0

Corals COU

Coded as BOO
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 1
Total catch weight (kg): 0.4

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

Coded as COF
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 4
Total catch weight (kg): 0.9

Coded as COU
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 7
Total catch weight (kg): 18.1

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

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

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

Coded as GOC
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 4
Total catch weight (kg): 0.7

Coded as HDR
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 2
Total catch weight (kg): 0.2

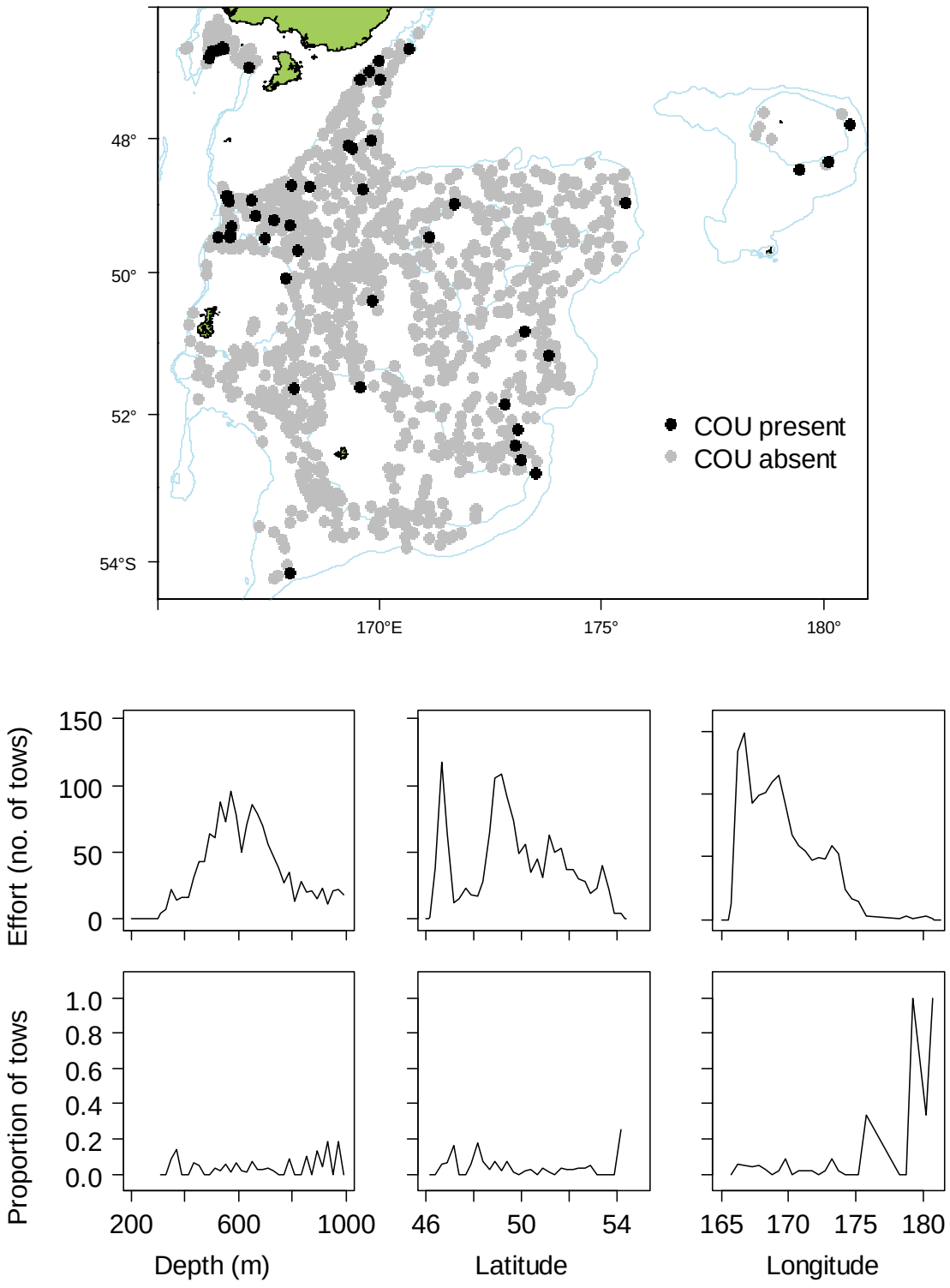
Coded as ISI
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 1

Total catch weight (kg):	0.2
Coded as LLE	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.1
Coded as PAB	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	2
Total catch weight (kg):	0.3
Coded as SOC	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	0.9
Coded as THO	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	3
Total catch weight (kg):	0.5

This group **has not** been well identified during the time series, particularly on early surveys in 1991 and 1992. 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 **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **is** recorded from the Bounty Platform.

Biomass of this species is **poorly** estimated by the core survey from 1993. 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.

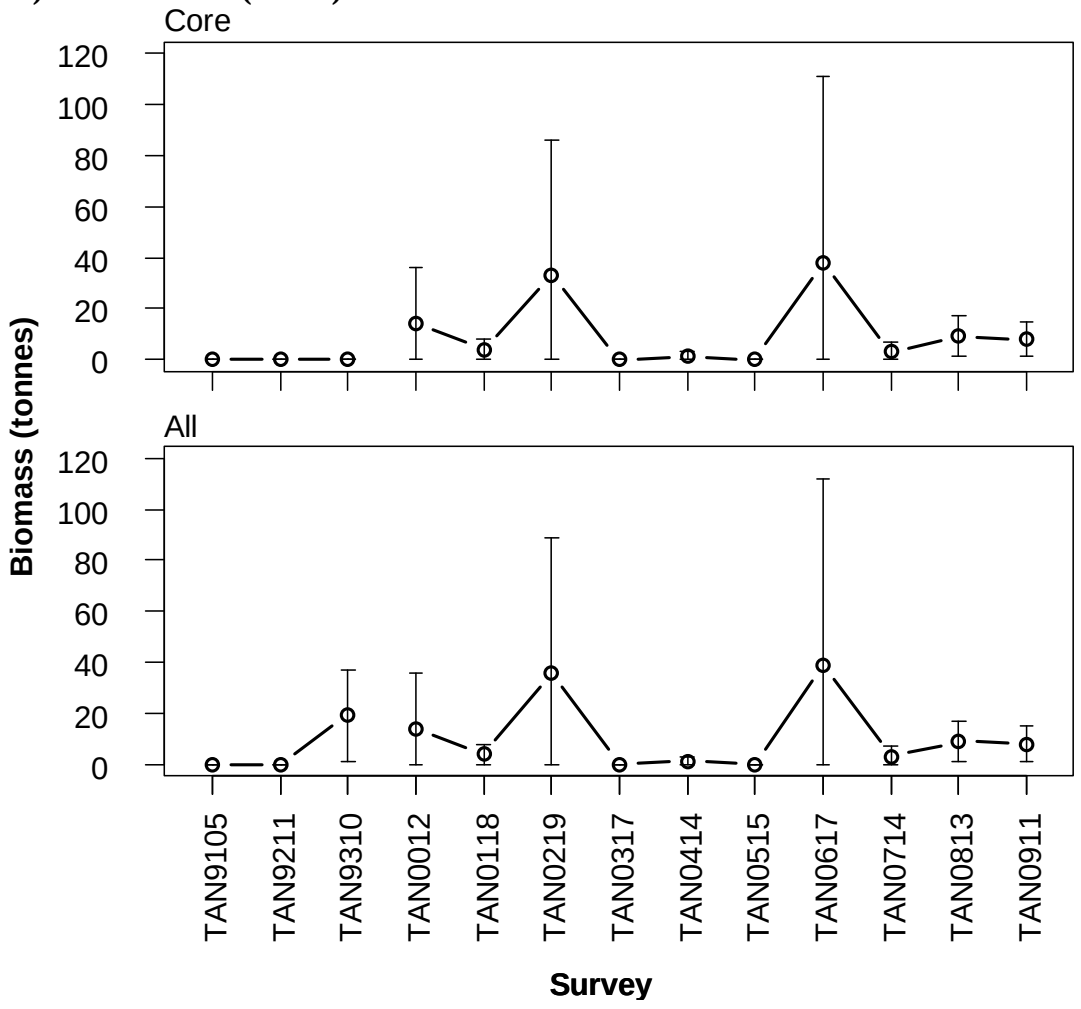
Distribution of Corals from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of Corals 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	0	NA	NA	NA	NA	NA	0	0	0	NA
TAN9310	0	NA	NA	NA	NA	NA	19	48	19	48
TAN0012	14	82	0	0	0	0	NA	NA	14	82
TAN0118	4	54	0	0	0	0	NA	NA	4	50
TAN0219	33	81	0	0	3	100	NA	NA	36	75
TAN0317	0	NA	0	0	NA	NA	NA	NA	0	NA
TAN0414	1	96	0	0	NA	NA	NA	NA	1	96
TAN0515	0	NA	0	0	0	0	NA	NA	0	NA
TAN0617	38	98	1	100	NA	NA	NA	NA	39	96
TAN0714	3	60	0	0	0	0	NA	NA	3	60
TAN0813	9	46	0	0	0	0	NA	NA	9	46
TAN0911	8	42	0	0	0	0	NA	NA	8	42

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



Coded as CRB
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 11
Total catch weight (kg): 8.0

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

Coded as GMC
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 1
Total catch weight (kg): 0.6

Coded as KCU
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 1
Total catch weight (kg): 1.6

Coded as LLT
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 3
Total catch weight (kg): 6.4

Coded as NCB
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 2
Total catch weight (kg): 0.7

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

Coded as PAG
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 6
Total catch weight (kg): 2.2

Coded as PHS
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 4
Total catch weight (kg): 9.7

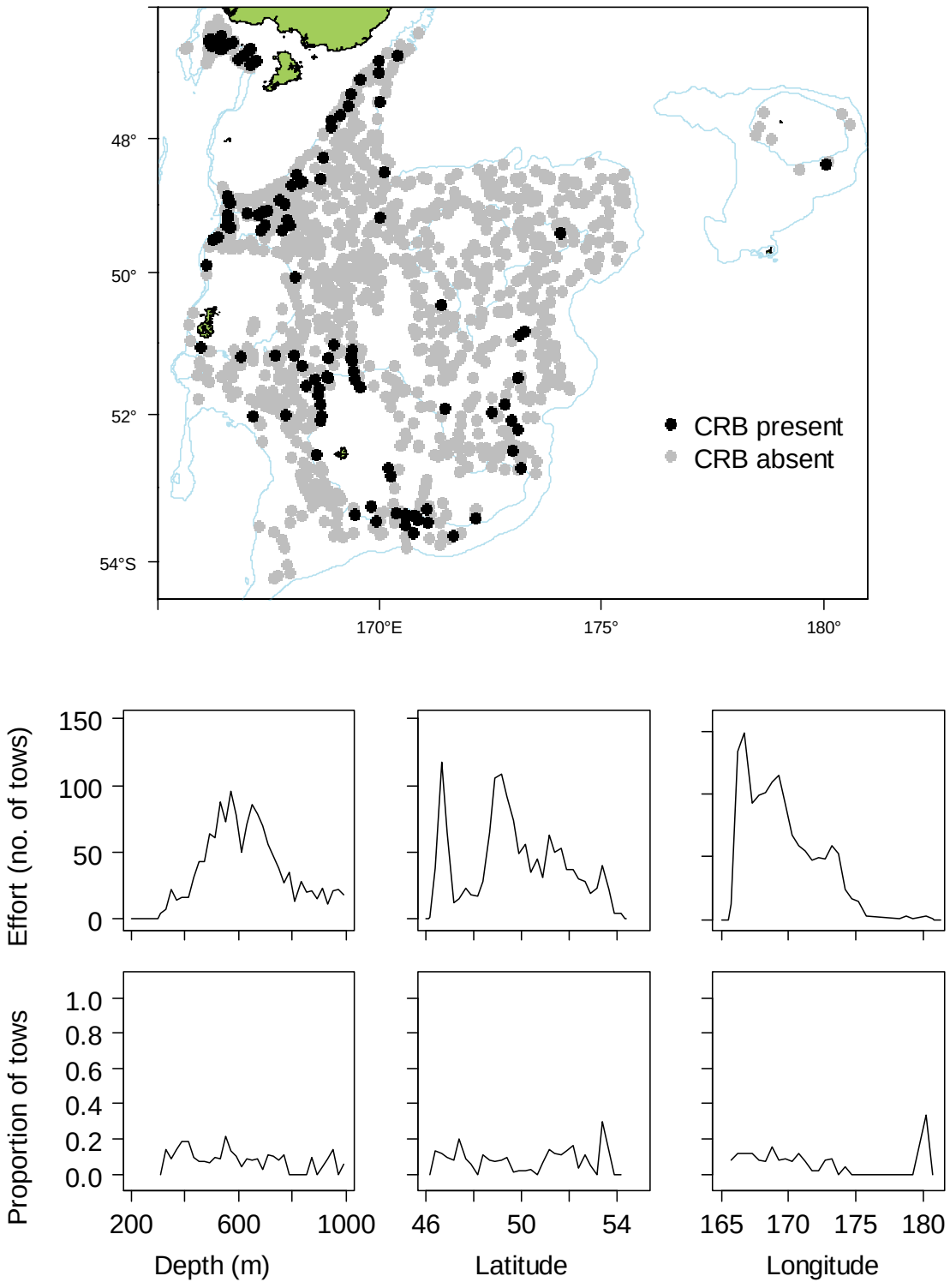
Coded as PZE
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13): 7
Total catch weight (kg): 10.9

Coded as SDM	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	5
Total catch weight (kg):	1.0
Coded as SMK	
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	6
Total catch weight (kg):	1.2
Coded as SPI	
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 in 1991 and 1992. 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 **does extend** to strata deeper than 800 m surveyed from 2000 to 2009. It **is** recorded from the Bounty Platform.

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

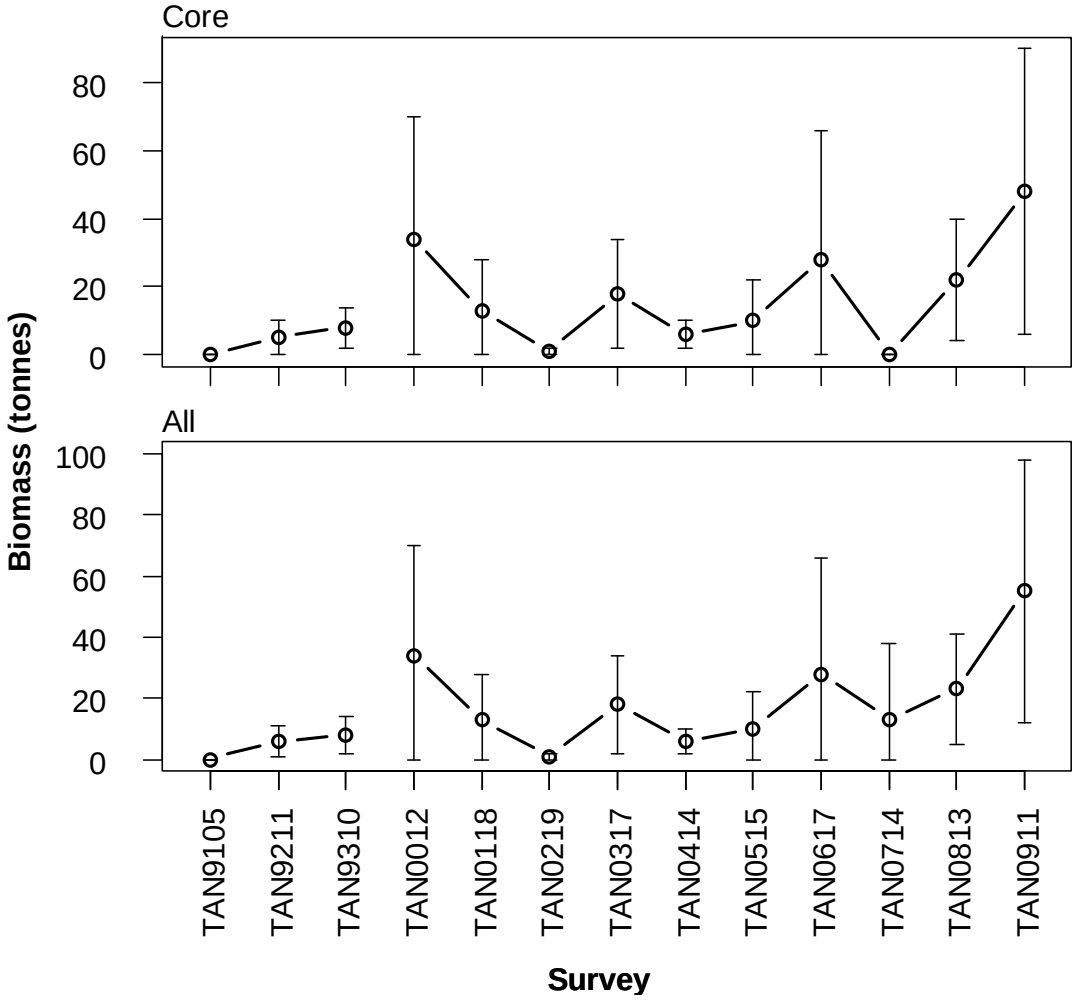
Distribution of Crabs from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of Crabs 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	5	46	NA	NA	NA	NA	1	100	6	42
TAN9310	8	36	NA	NA	NA	NA	0	0	8	36
TAN0012	34	53	0	0	0	0	NA	NA	34	53
TAN0118	13	60	0	0	0	0	NA	NA	13	60
TAN0219	1	74	0	0	0	0	NA	NA	1	74
TAN0317	18	46	0	0	NA	NA	NA	NA	18	46
TAN0414	6	35	0	0	NA	NA	NA	NA	6	35
TAN0515	10	62	0	0	0	0	NA	NA	10	62
TAN0617	28	69	0	0	NA	NA	NA	NA	28	69
TAN0714	0	0	0	0	13	100	NA	NA	13	100
TAN0813	22	43	2	100	0	0	NA	NA	23	40
TAN0911	48	45	7	61	0	0	NA	NA	55	40

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



Serrulate rattail (*Coryphaenoides serrulatus*) CSE

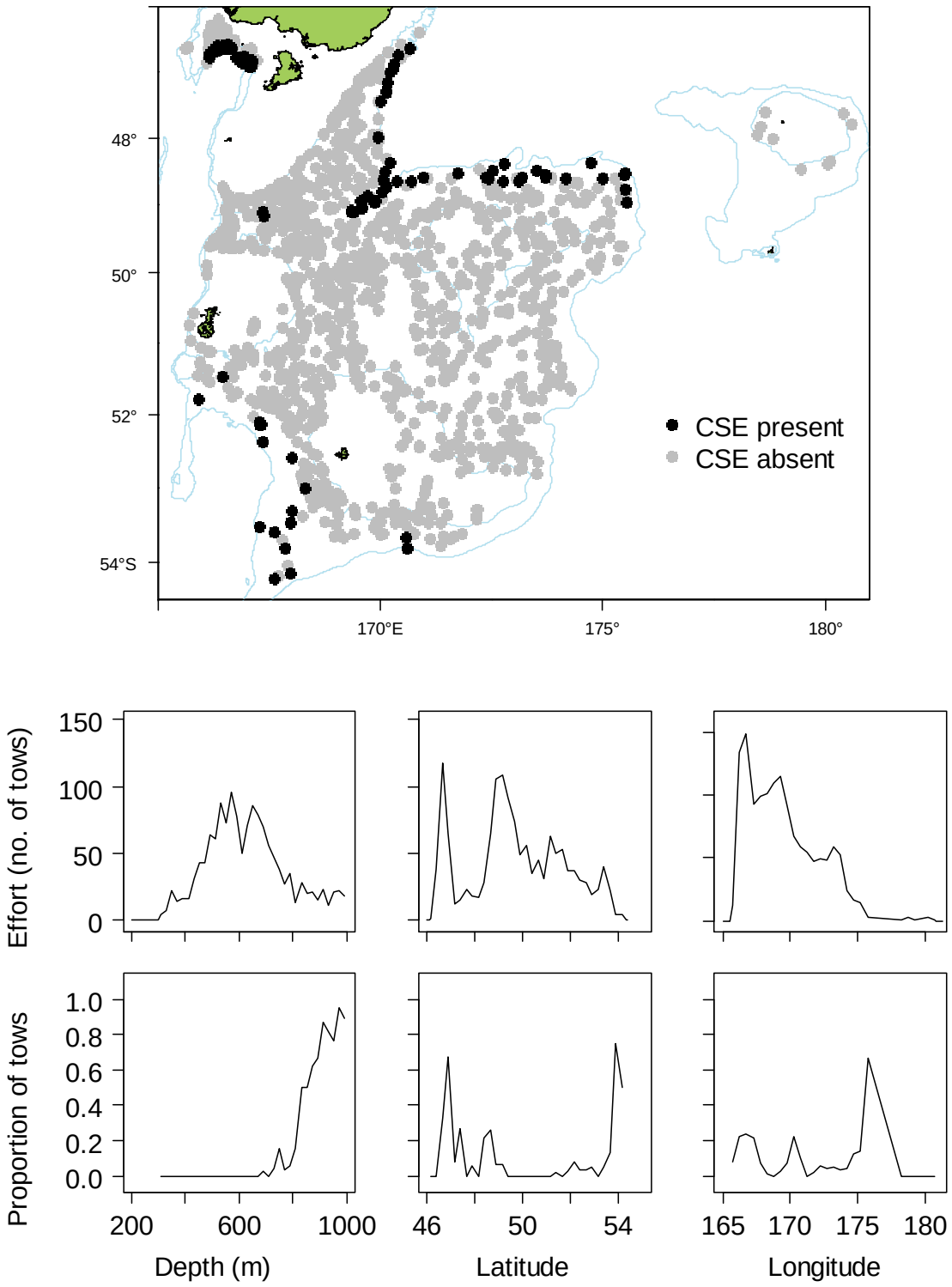
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	12
Total catch weight (kg):	178.0
Number measured	225
Length range (mean) (cm)	25–49 (38.5)
Number weighed	76
Length-weight parameters a, b (r^2)	–

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 group. Distribution **extends** to strata deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

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

There is no **length or gonad stage** information presented.

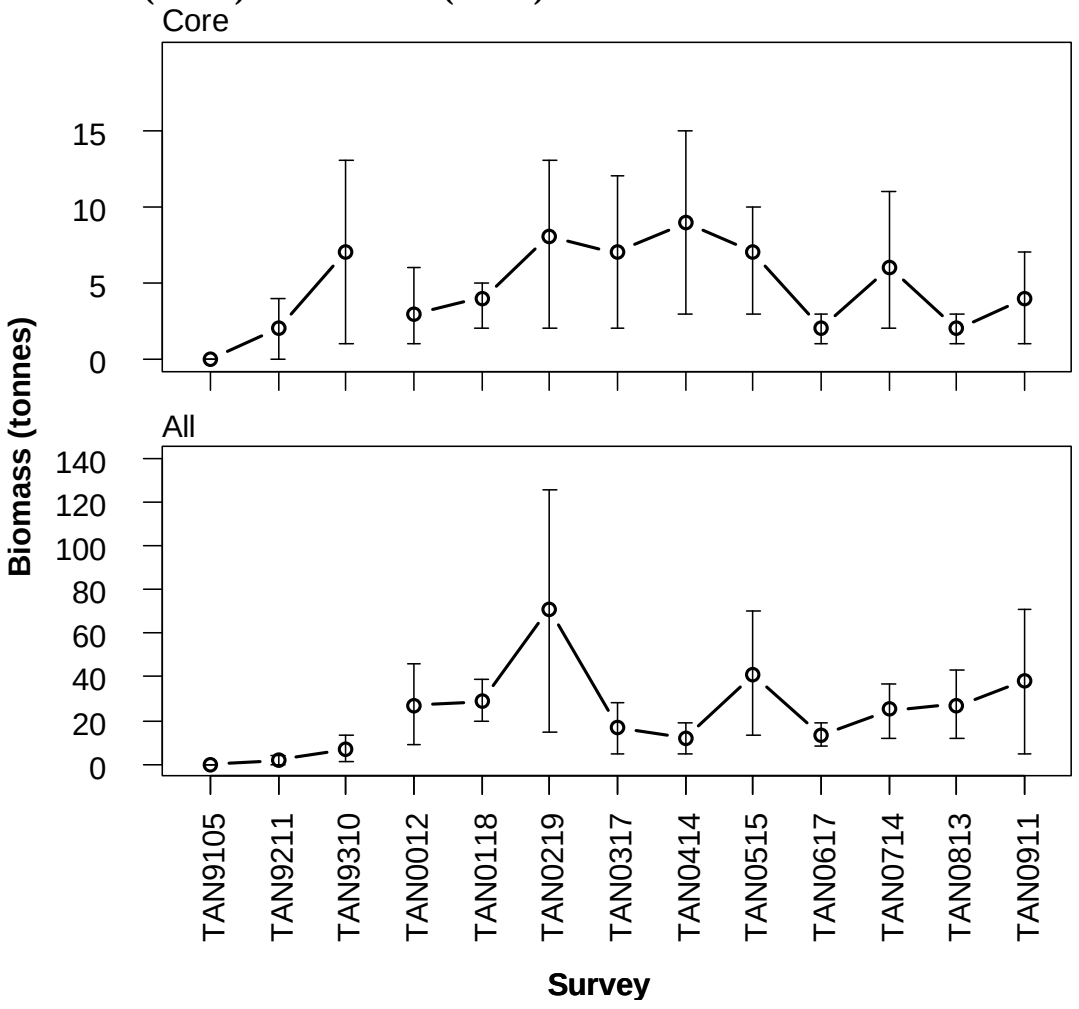
Distribution of *Coryphaenoides serrulatus* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Coryphaenoides serrulatus* 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	2	71	NA	NA	NA	NA	0	0	2	71
TAN9310	7	44	NA	NA	NA	NA	0	0	7	44
TAN0012	3	41	9	48	15	55	NA	NA	27	34
TAN0118	4	16	6	36	19	22	NA	NA	29	16
TAN0219	8	36	39	72	24	7	NA	NA	71	39
TAN0317	7	38	10	54	NA	NA	NA	NA	17	35
TAN0414	9	34	3	53	NA	NA	NA	NA	12	29
TAN0515	7	26	28	45	7	100	NA	NA	41	35
TAN0617	2	33	11	24	NA	NA	NA	NA	13	22
TAN0714	6	36	19	32	0	0	NA	NA	25	25
TAN0813	2	25	12	25	14	51	NA	NA	27	28
TAN0911	4	39	22	69	12	54	NA	NA	38	43

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



Leaf-scale gulper shark (*Centrophorus squamosus*) CSQ

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	6 516.6
Number measured	730
Length range (mean) (cm)	25–142 (87.1)
Number weighed	607
Length-weight parameters a, b (r^2)	0.001143714, 3.347816 (0.99)

OSD

Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	1
Total catch weight (kg):	23.2
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

NOTE: The code OSD was used on tan9105 and are all known to be juvenile CSQ's.

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 group. Distribution **does** extend to the areas 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. 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. Higher catchrates are recorded from Puysegur.

Length frequencies **have no clear modes** and include both adults and juveniles. Mean length has **increased** since 2001, although sample sizes are small. Gonad stage data indicate that most fish are **immature and maturing**.

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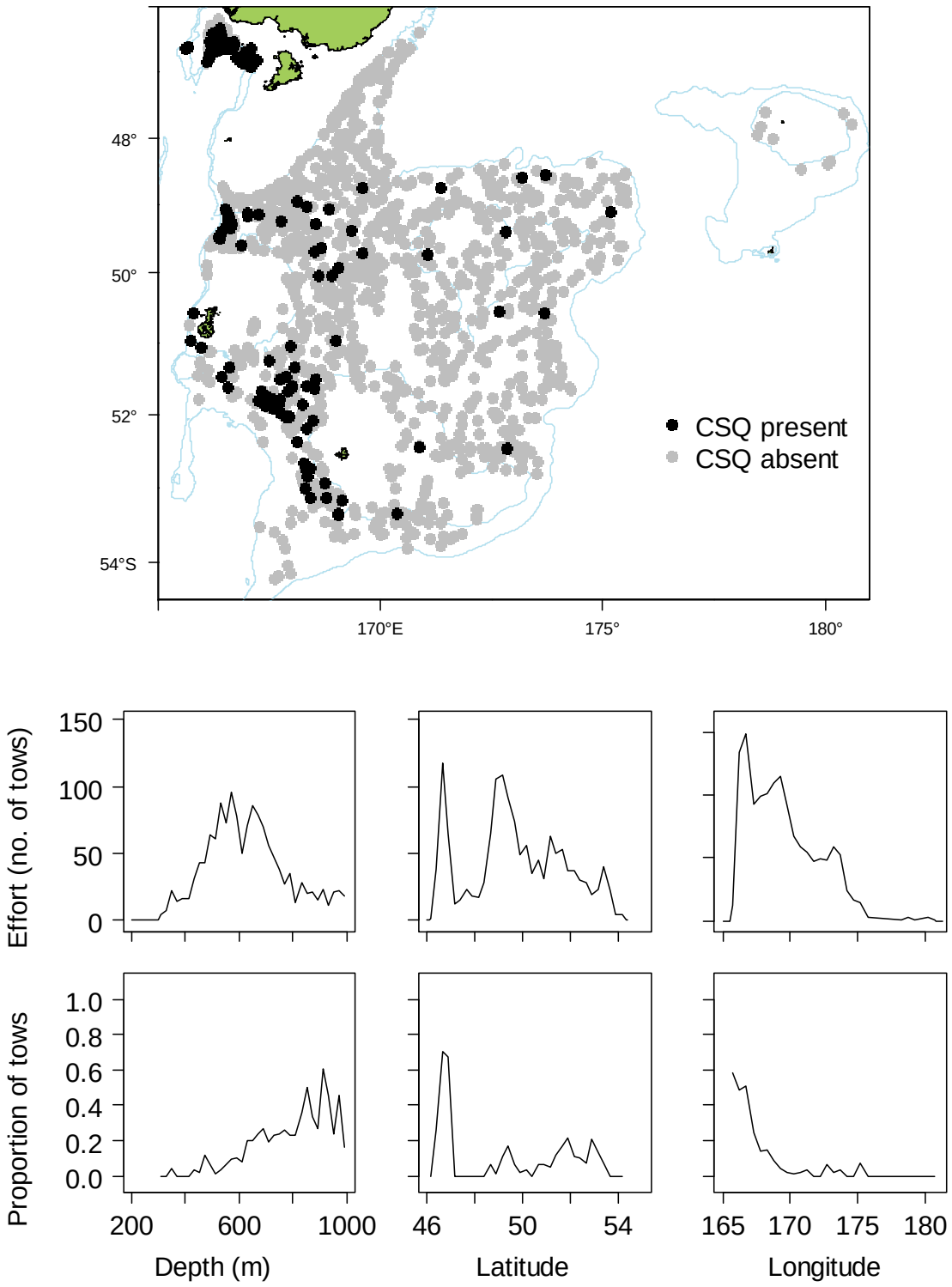
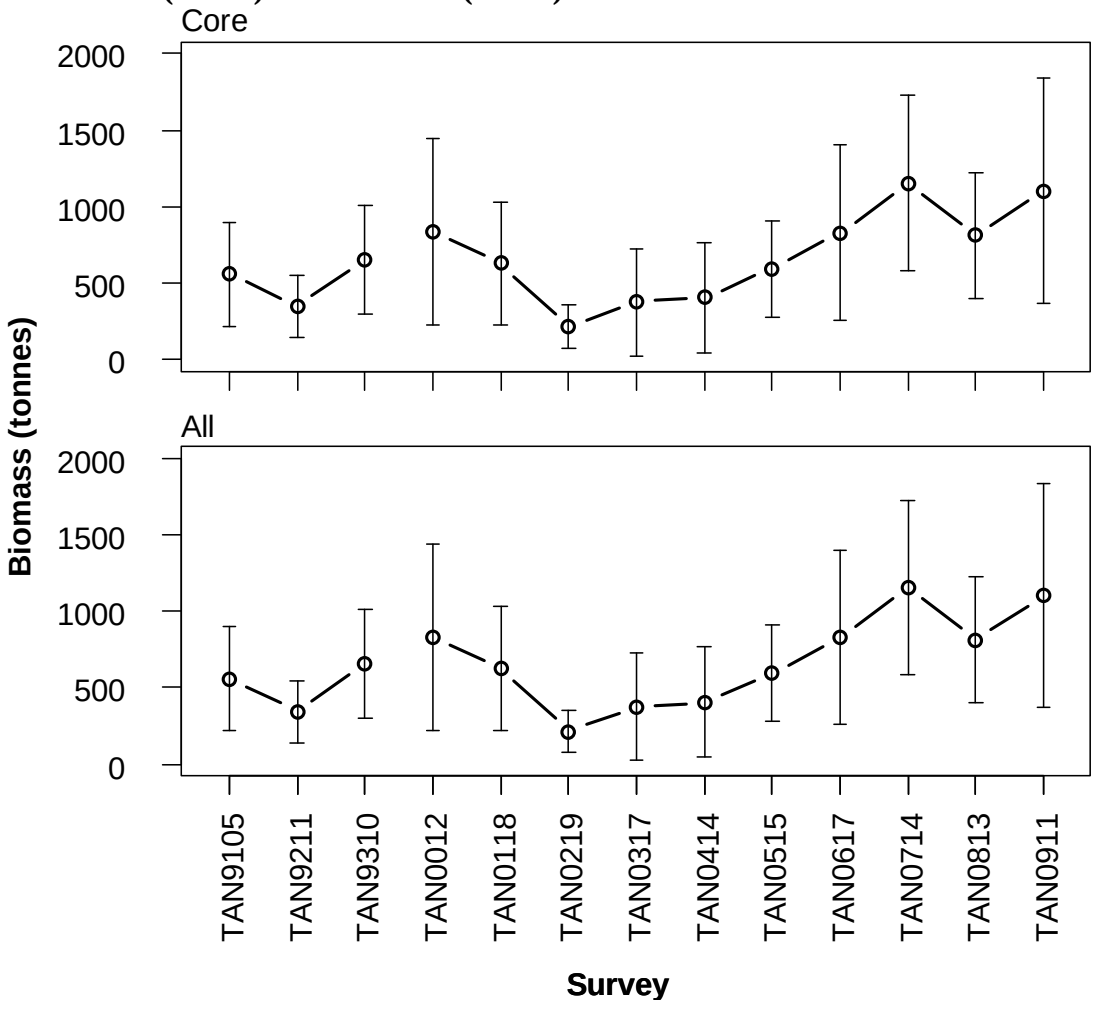
Distribution of *Centrophorus squamosus* from all summer surveys. Valid biomass stations only.



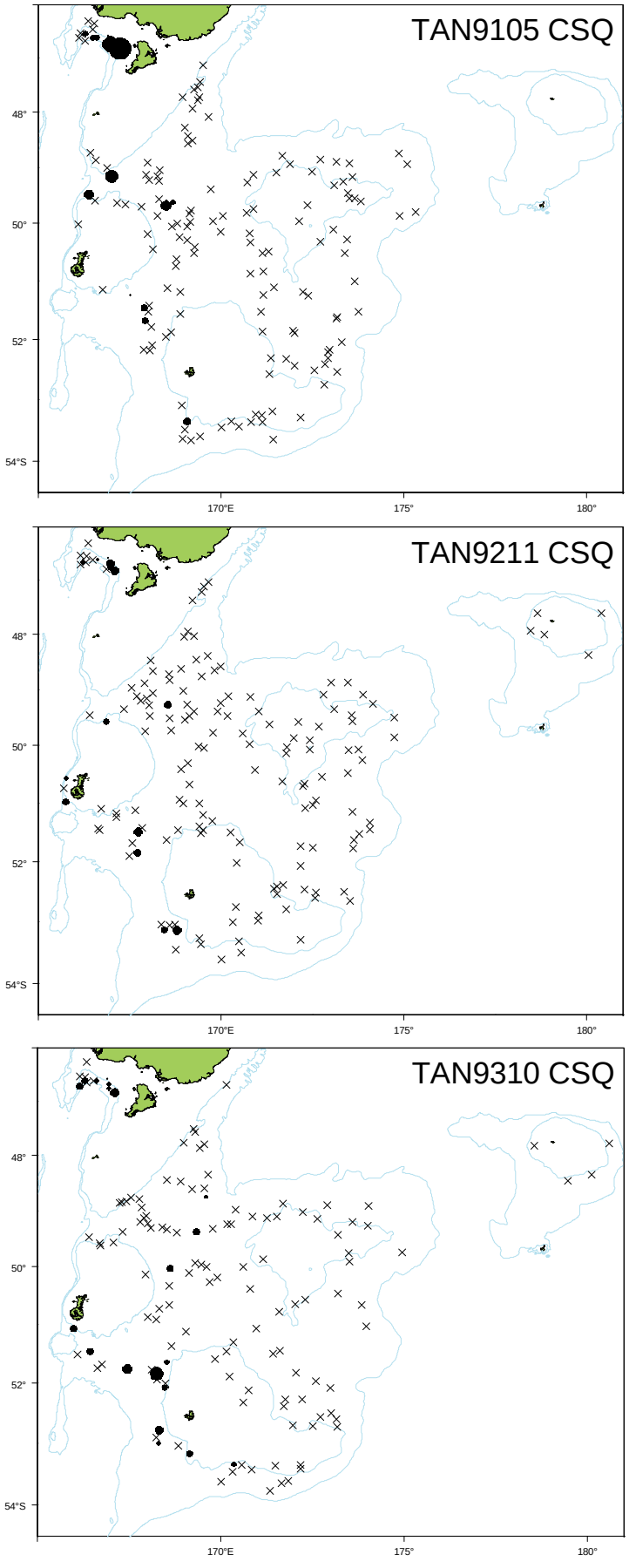
Relative biomass estimates (t) and c.v.s (%) of *Centrophorus squamosus* for core strata, strata outside the core area and all strata.

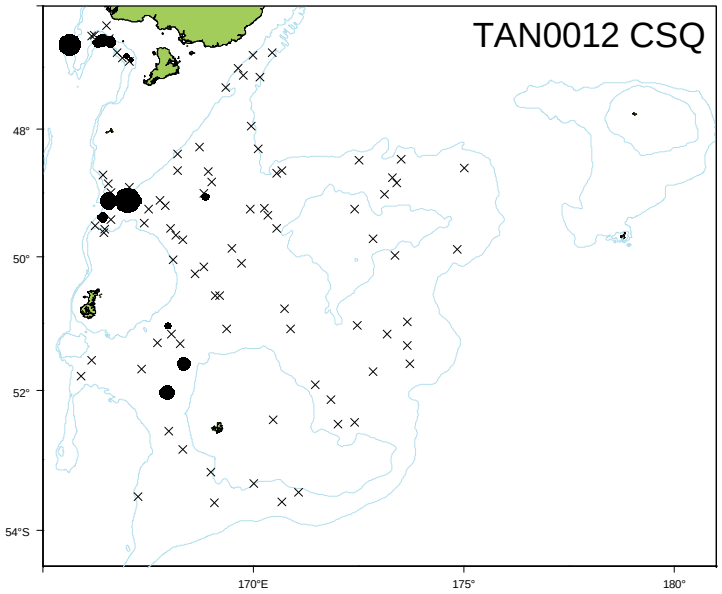
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	559	31	NA	NA	NA	NA	NA	NA	559	31
TAN9211	346	30	NA	NA	NA	NA	0	0	346	30
TAN9310	653	28	NA	NA	NA	NA	0	0	653	28
TAN0012	832	37	0	0	0	0	NA	NA	832	37
TAN0118	627	33	0	0	0	0	NA	NA	627	33
TAN0219	214	33	0	0	0	0	NA	NA	214	33
TAN0317	375	48	0	0	NA	NA	NA	NA	375	48
TAN0414	404	46	0	0	NA	NA	NA	NA	404	46
TAN0515	594	27	0	0	0	0	NA	NA	594	27
TAN0617	827	35	3	100	NA	NA	NA	NA	831	35
TAN0714	1155	25	0	0	0	0	NA	NA	1155	25
TAN0813	810	26	4	100	0	0	NA	NA	813	26
TAN0911	1104	34	0	0	0	0	NA	NA	1104	34

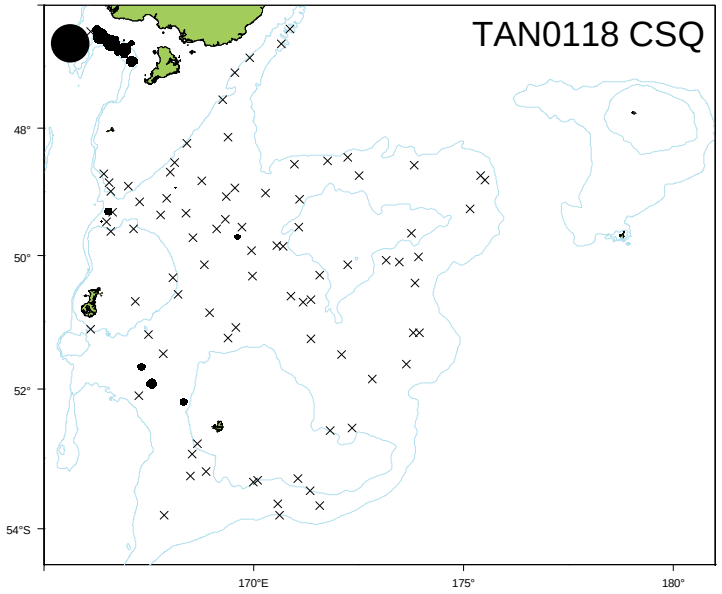
Trends in relative biomass estimates (± 2 standard errors) of *Centrophorus squamosus* for core strata (above) and all strata (below).

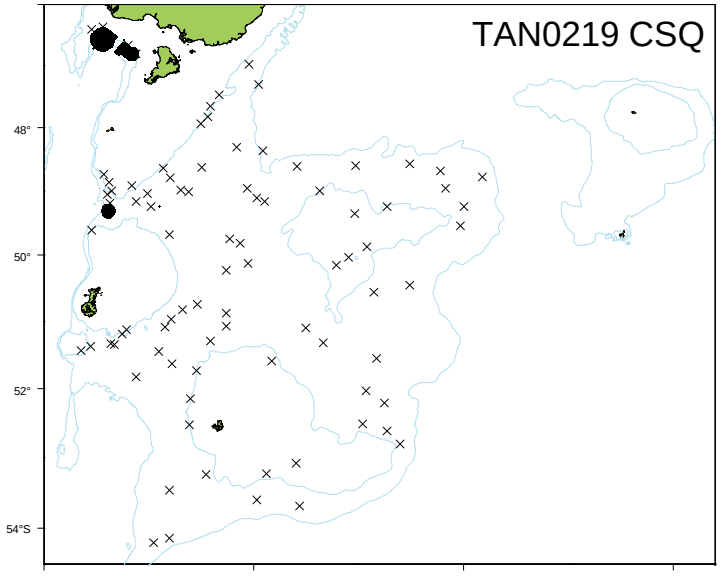


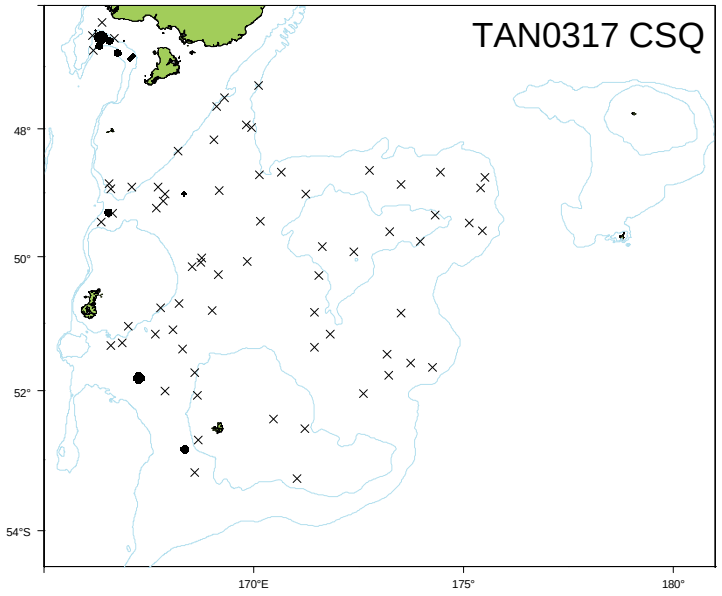
Catchrates of *Centrophorus squamosus*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

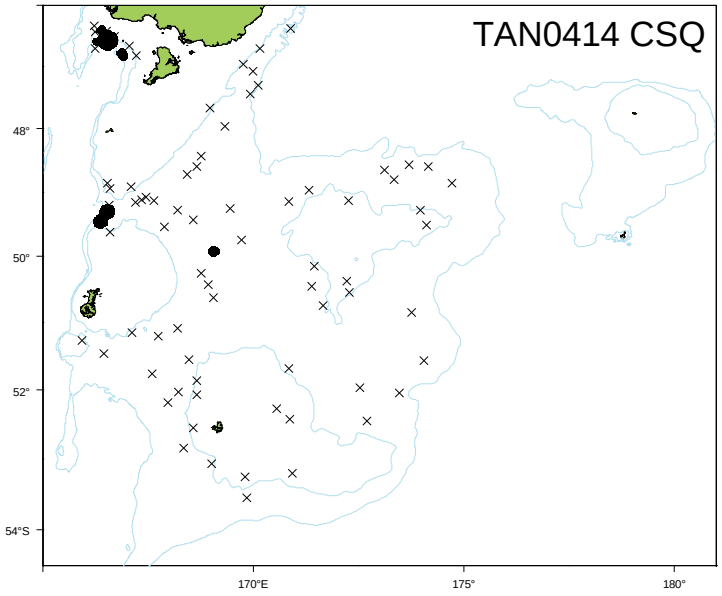


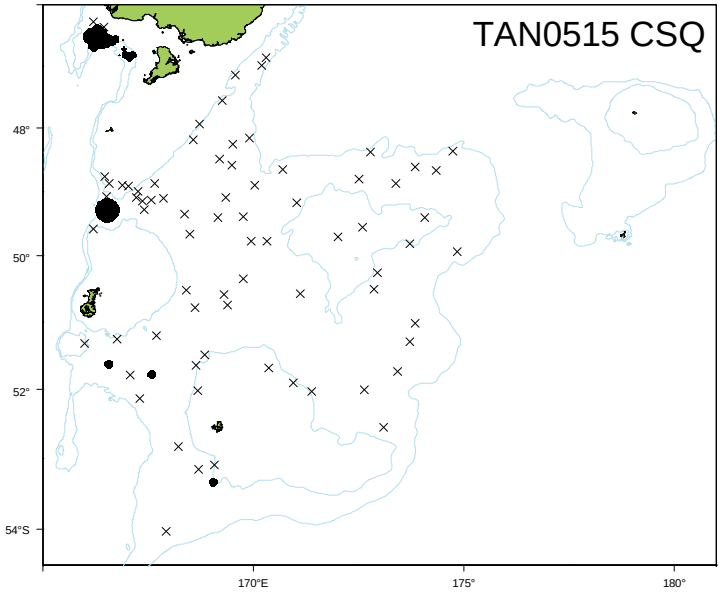

TAN0012 CSQ
48°
50°
52°
54°S
170°E
175°
180°

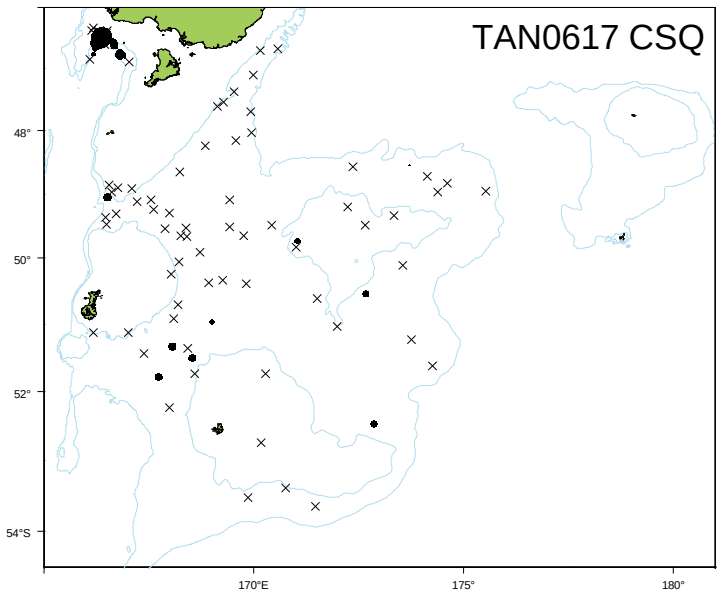

TAN0118 CSQ
48°
50°
52°
54°S
170°E
175°
180°

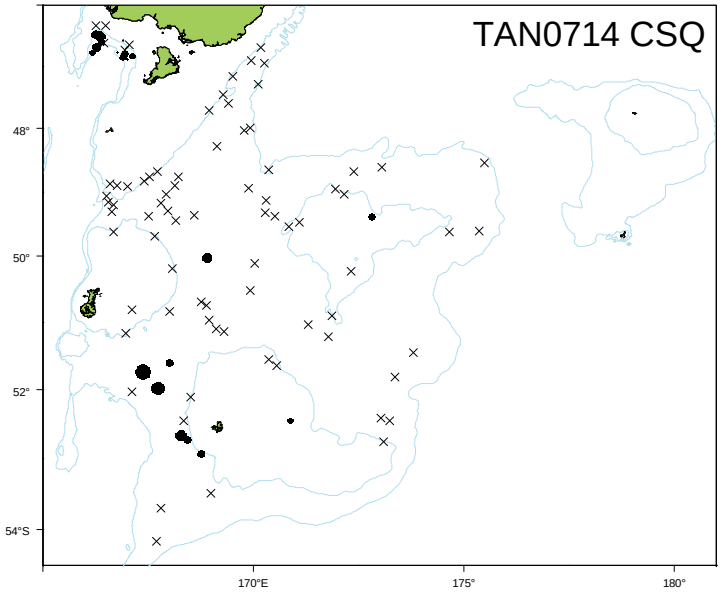

TAN0219 CSQ
48°
50°
52°
54°S

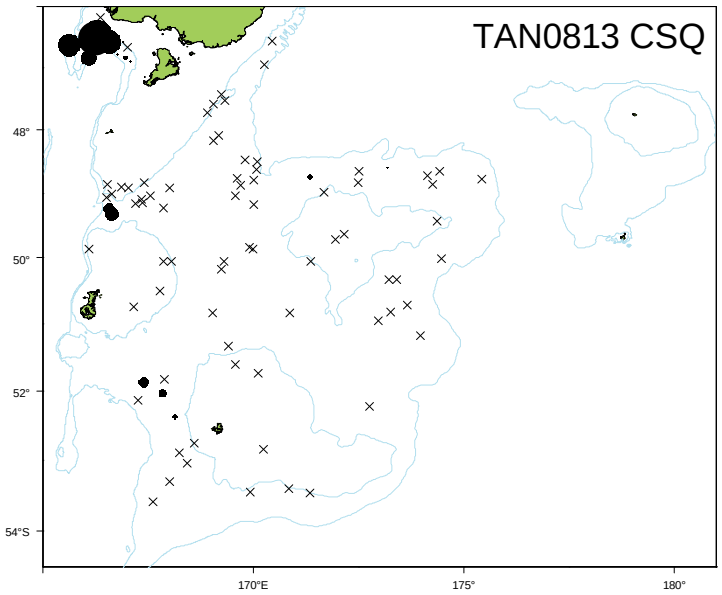

TAN0317 CSQ
48°
50°
52°
54°S
170°E
175°
180°

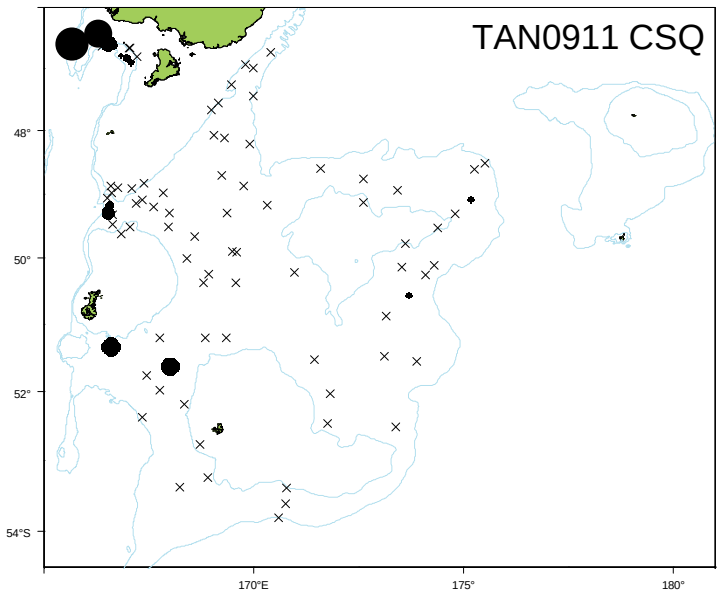

TAN0414 CSQ
48°
50°
52°
54°S
170°E
175°
180°


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


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


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

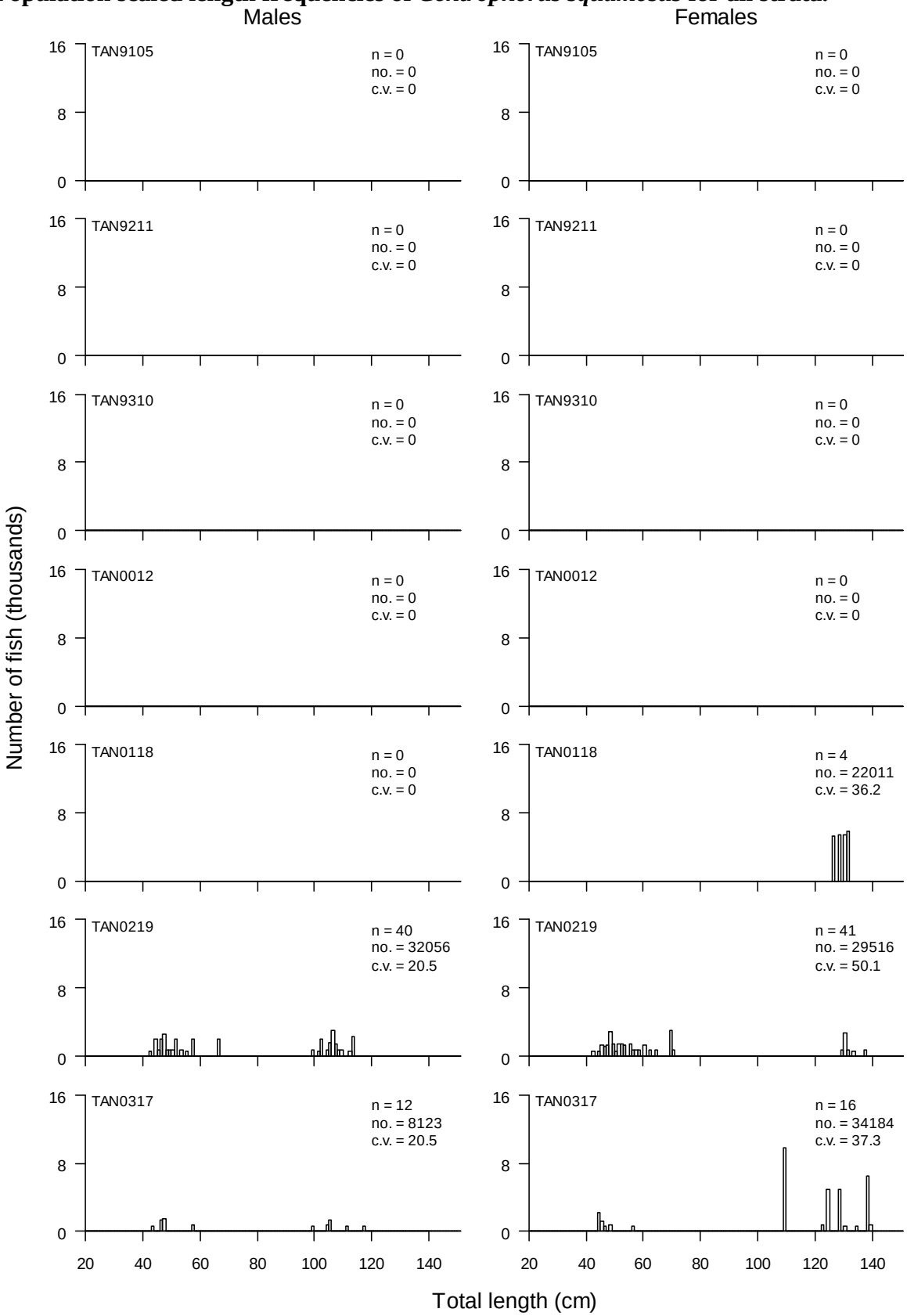

TAN0813 CSQ
48°
50°
52°
54°S
170°E
175°
180°

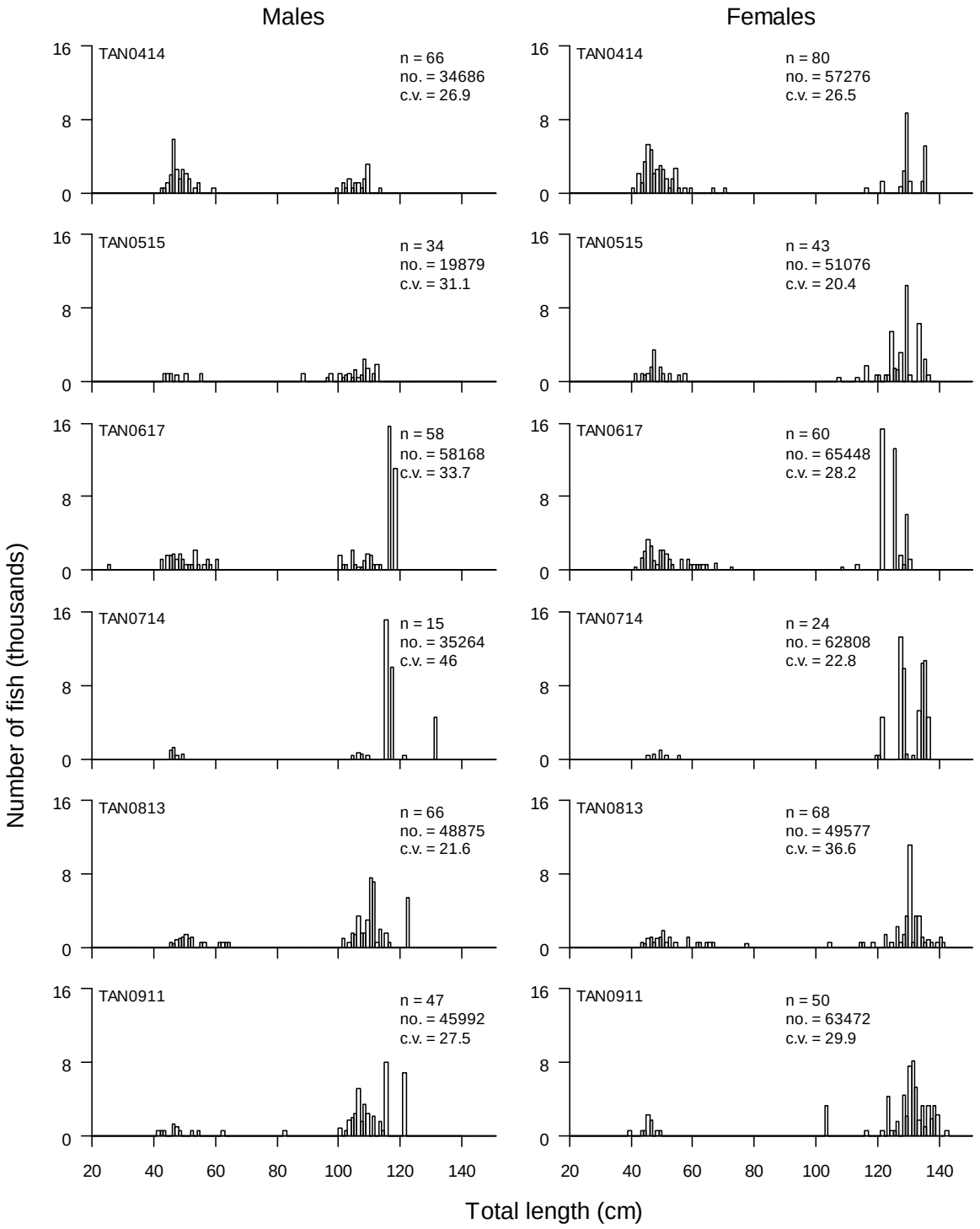


Length summaries

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	126	131	128.8	4
TAN0219	42	137	71.2	82
TAN0317	43	139	83.0	28
TAN0414	40	135	63.4	149
TAN0515	41	136	93.9	79
TAN0617	25	130	69.1	118
TAN0714	42	136	98.8	39
TAN0813	43	141	94.4	134
TAN0911	39	142	101.8	97

Population scaled length frequencies of *Centrophorus squamosus* for all strata.




Males
Females
TAN0414
n = 66
no. = 34686
c.v. = 26.9
TAN0414
n = 80
no. = 57276
c.v. = 26.5
TAN0515
n = 34
no. = 19879
c.v. = 31.1
TAN0515
n = 43
no. = 51076
c.v. = 20.4
TAN0617
n = 58
no. = 58168
c.v. = 33.7
TAN0617
n = 60
no. = 65448
c.v. = 28.2
TAN0714
n = 15
no. = 35264
c.v. = 46
TAN0714
n = 24
no. = 62808
c.v. = 22.8
TAN0813
n = 66
no. = 48875
c.v. = 21.6
TAN0813
n = 68
no. = 49577
c.v. = 36.6
TAN0911
n = 47
no. = 45992
c.v. = 27.5
TAN0911
n = 50
no. = 63472
c.v. = 29.9
Number of fish (thousands)
0
8
16
20
40
60
80
100
120
140
Total length (cm)

Gonad stage summaries by sex for *Centrophorus squamosus*. 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	68	3	29	40	12	41	4	1	1
TAN0911	24	0	76	23	16	57	0	2	2
ALL	42	1	57	33	13	47	3	2	2

Four-rayed rattail (*Coryphaenoides subserrulatus*) CSU

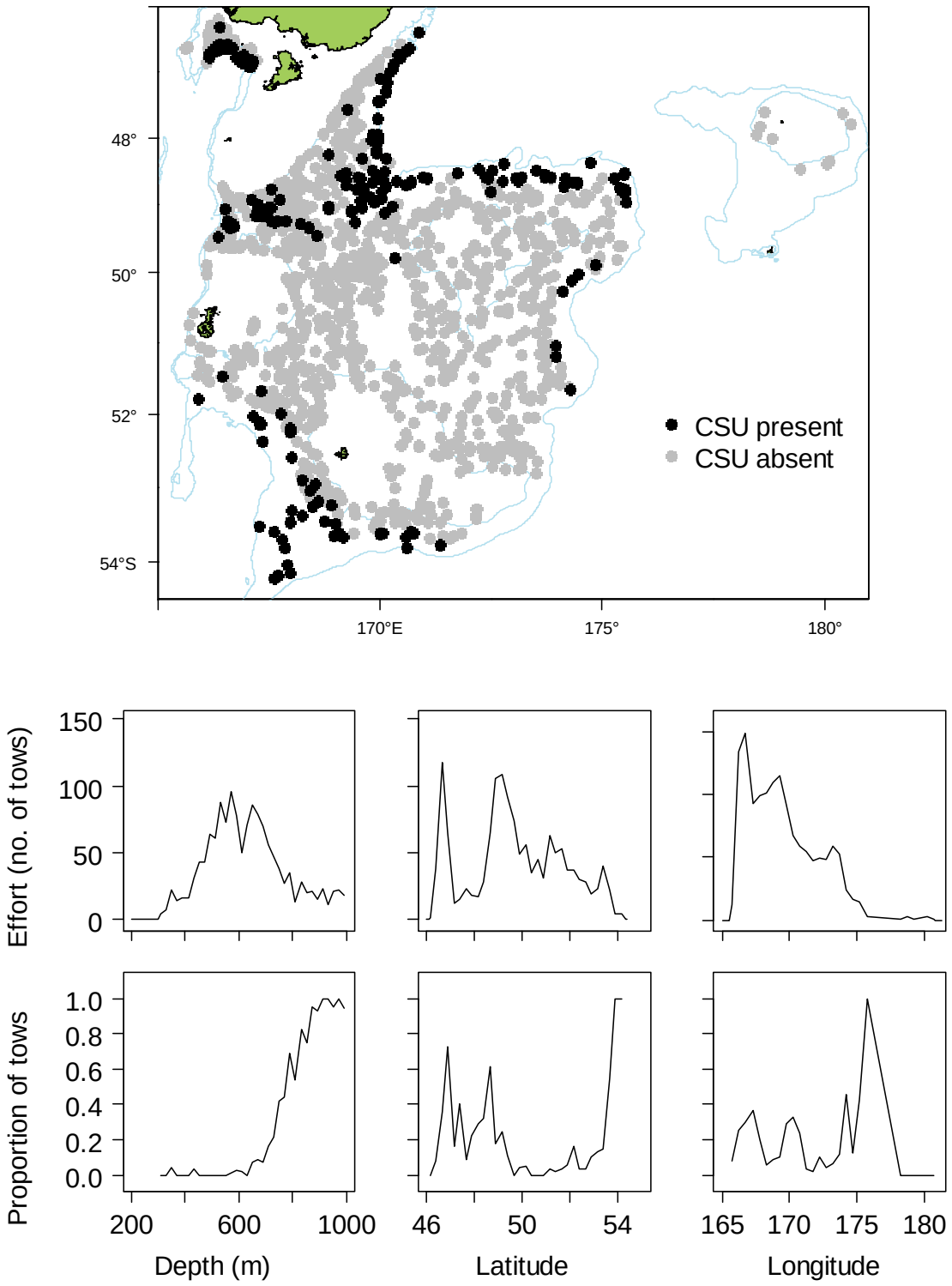
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	13
Total catch weight (kg):	2 165.4
Number measured	7 444
Length range (mean) (cm)	12–41 (28.7)
Number weighed	1 589
Length-weight parameters a, b (r^2)	0.0025355, 2.933137 (0.85)

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 group. Distribution **does** extend to the areas 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. 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 **moderately well** estimated. Higher catchrates are recorded from the **northwest** at Puysegur and from areas to the **north** of the survey area.

Length frequencies **have multiple modes** and include both adults and juveniles. Mean length **shows no clear trend** since the start of the time series. Gonad stage data indicate that most fish are **immature and maturing**.

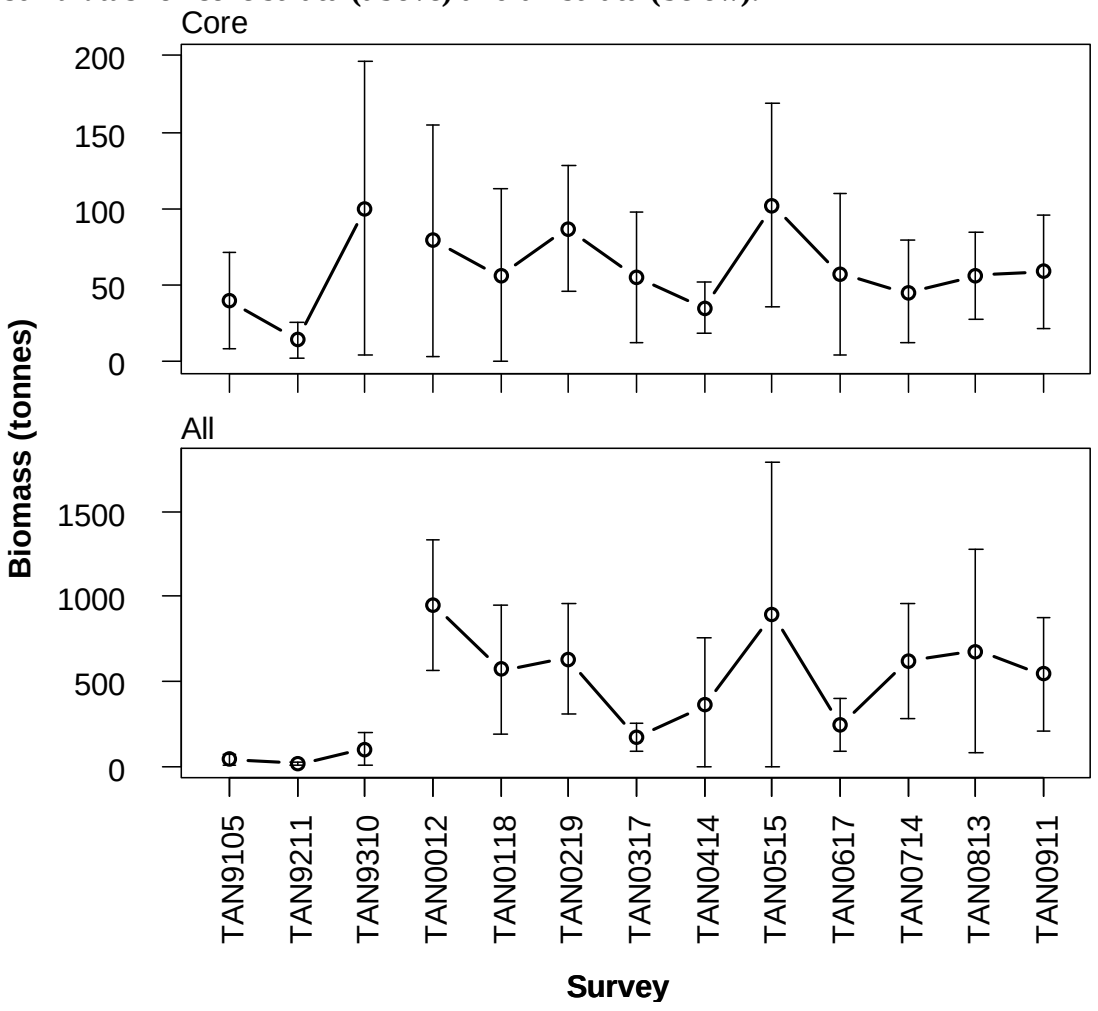
Distribution of *Coryphaenoides subserrulatus* from all summer surveys. Valid biomass stations only.



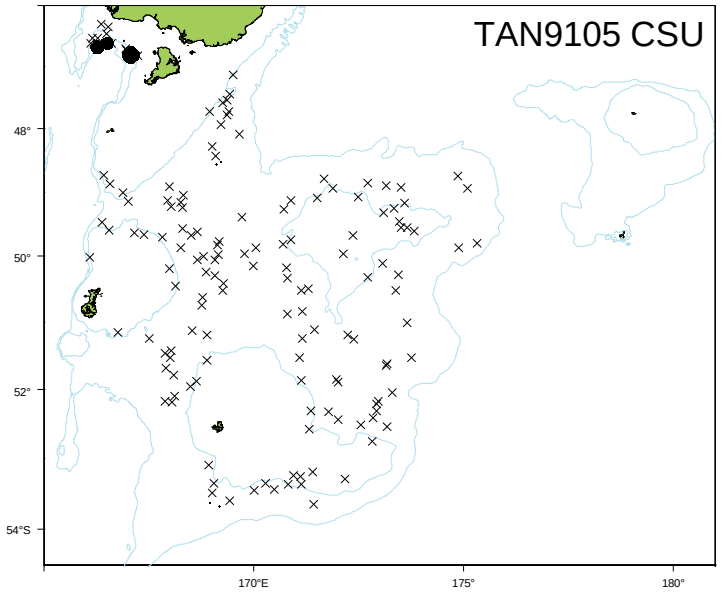
Relative biomass estimates (t) and c.v.s (%) of *Coryphaenoides subserrulatus* for core strata, strata outside the core area and all strata.

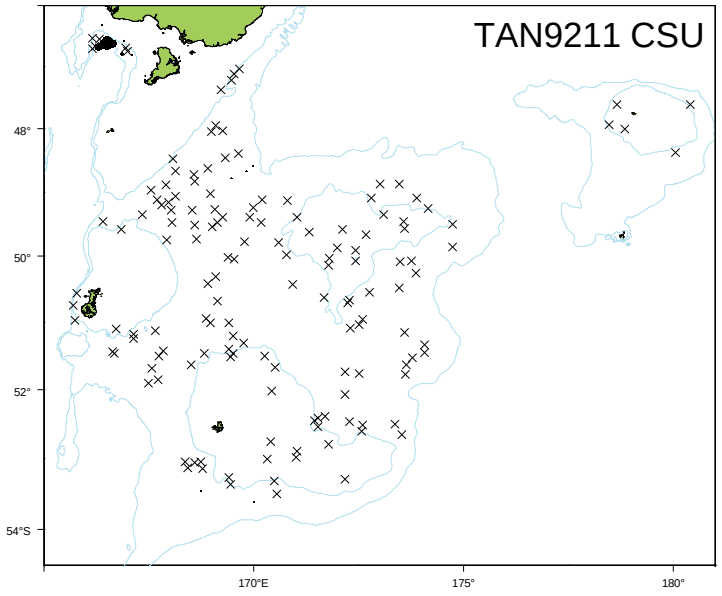
Survey	Core biomass	Core (c.v.)	Strata 27+28 biomass	27+28 (c.v.)	Stratum 26 biomass	26 (c.v.)	Stratum 17 biomass	17 (c.v.)	Total biomass	Total (c.v.)
TAN9105	40	40	NA	NA	NA	NA	NA	NA	40	40
TAN9211	14	42	NA	NA	NA	NA	0	0	14	42
TAN9310	100	48	NA	NA	NA	NA	0	0	100	48
TAN0012	79	48	186	17	683	27	NA	NA	949	20
TAN0118	56	51	273	32	240	69	NA	NA	569	34
TAN0219	87	23	303	53	241	8	NA	NA	631	26
TAN0317	55	39	112	31	NA	NA	NA	NA	168	24
TAN0414	35	24	323	61	NA	NA	NA	NA	358	55
TAN0515	102	32	226	34	566	78	NA	NA	894	50
TAN0617	57	47	185	39	NA	NA	NA	NA	242	32
TAN0714	45	37	369	39	201	43	NA	NA	616	27
TAN0813	56	25	256	53	364	73	NA	NA	677	44
TAN0911	59	32	144	44	338	45	NA	NA	541	31

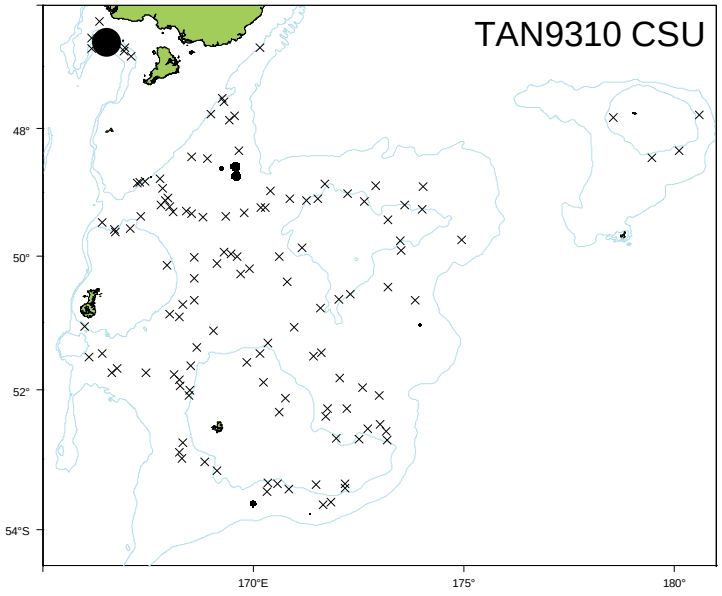
Trends in relative biomass estimates (± 2 standard errors) of *Coryphaenoides subserrulatus* for core strata (above) and all strata (below).

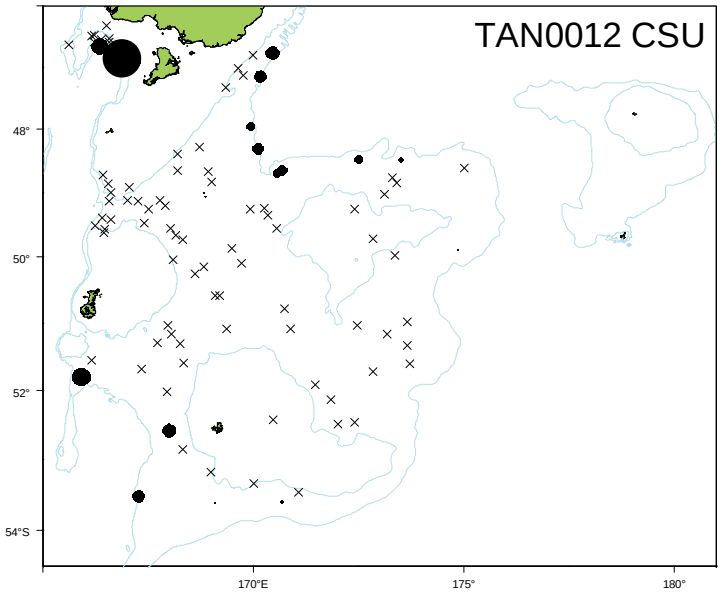


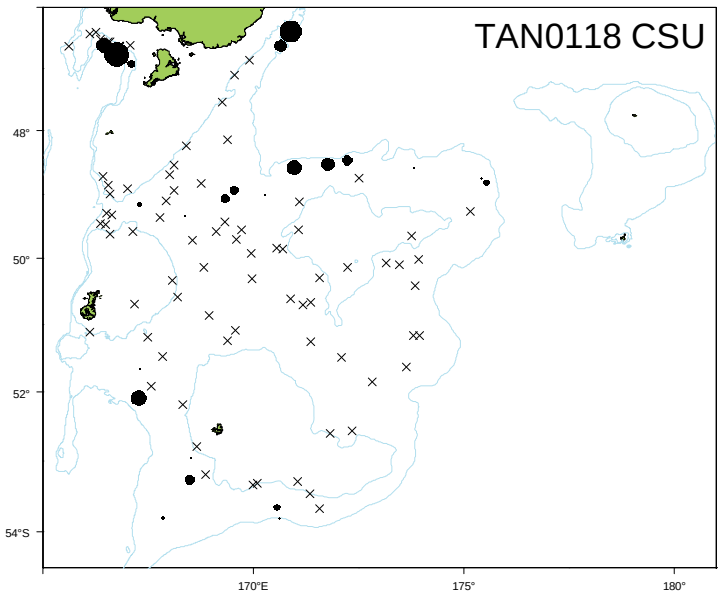
Catchrates of *Coryphaenoides subserrulatus*. Circle area is proportional to the maximum catchrate from all surveys (see Table 5).

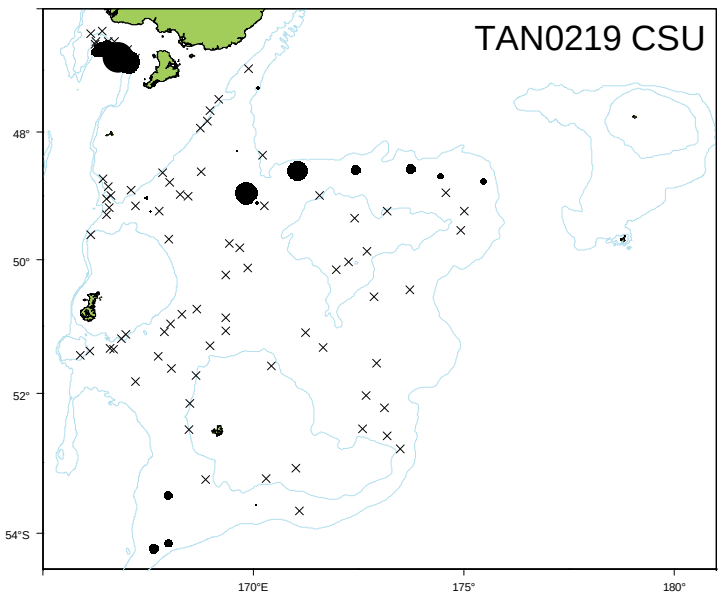


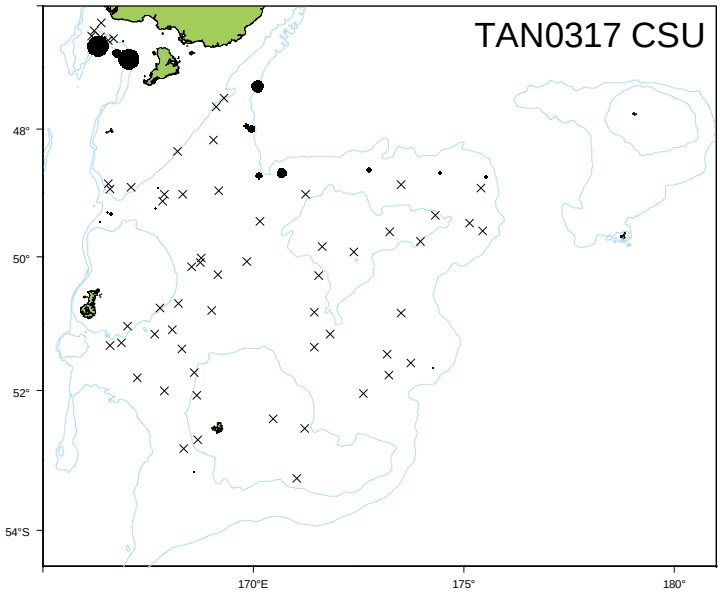


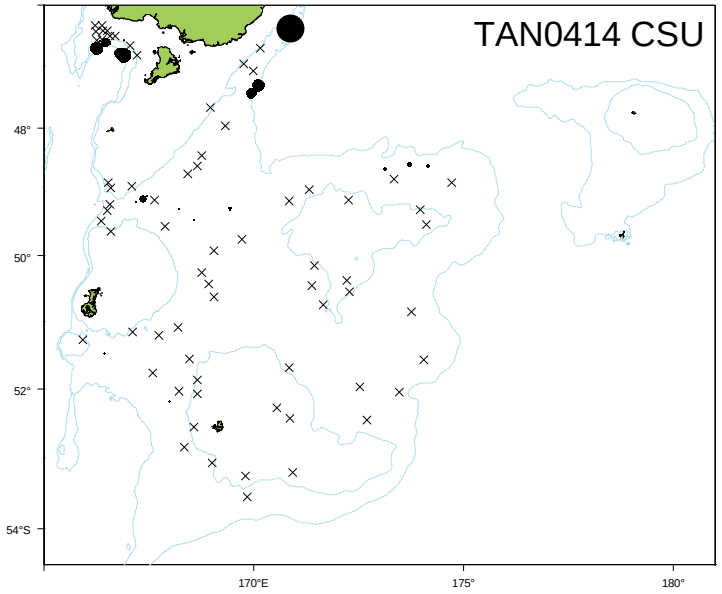


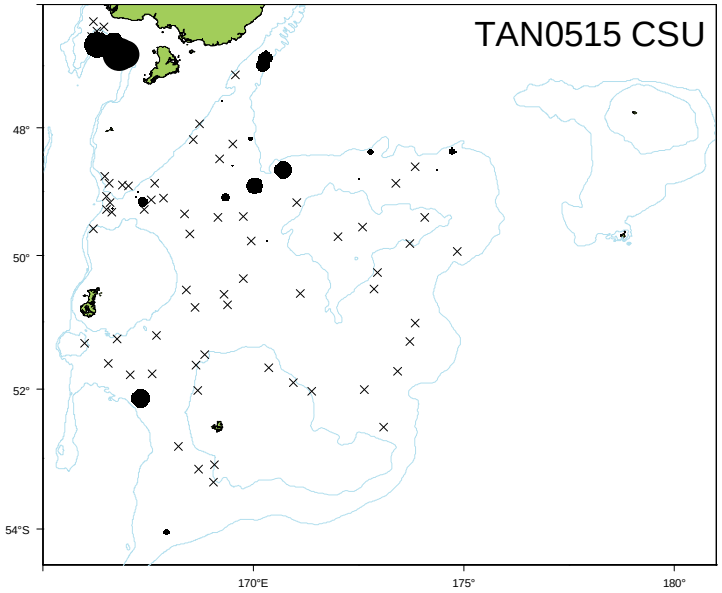

TAN0012 CSU
48°
50°
52°
54°S
170°E
175°
180°

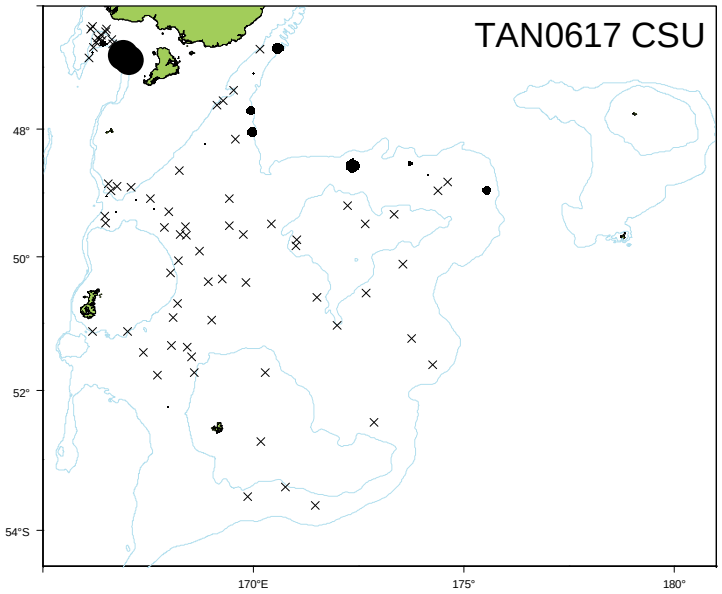

TAN0118 CSU
48°
50°
52°
54°S
170°E
175°
180°

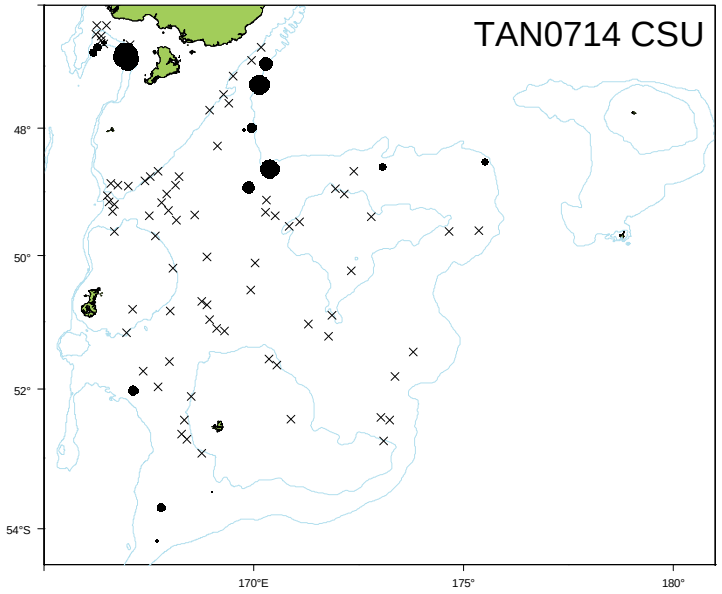

TAN0219 CSU
48°
50°
52°
54°S
170°E
175°
180°

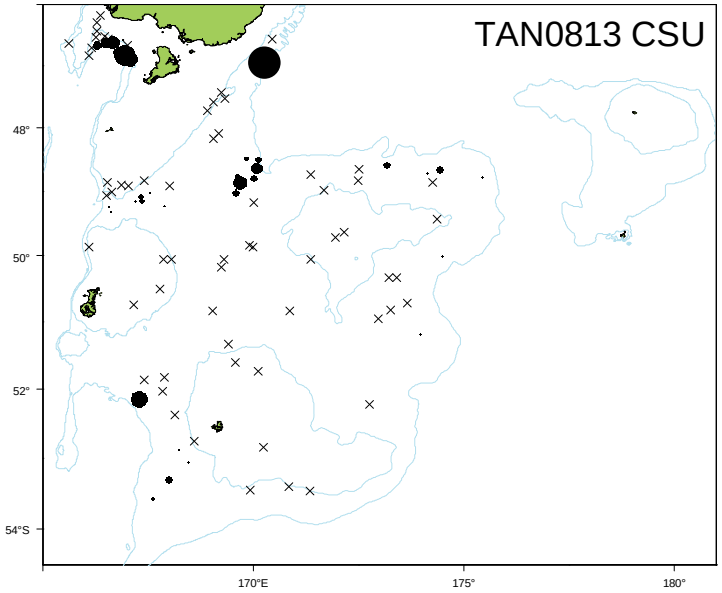

TAN0317 CSU
48°
50°
52°
54°S
170°E
175°
180°

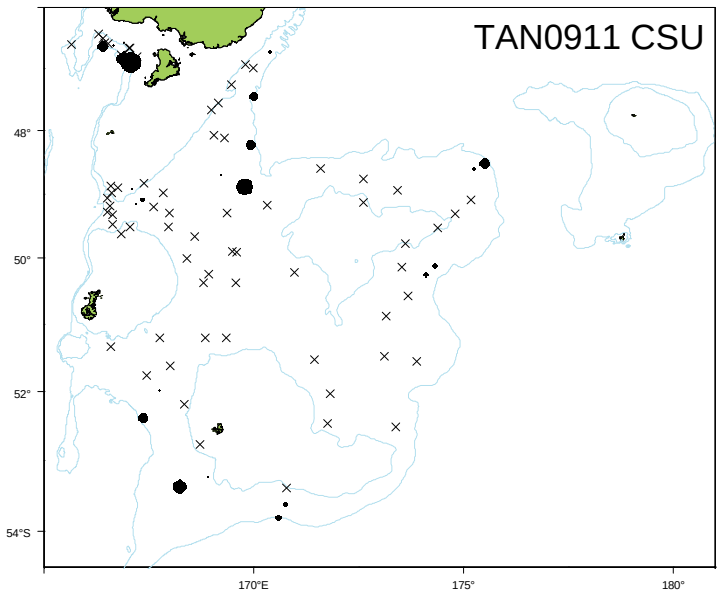

TAN0414 CSU
48°
50°
52°
54°S
170°E
175°
180°


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


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


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

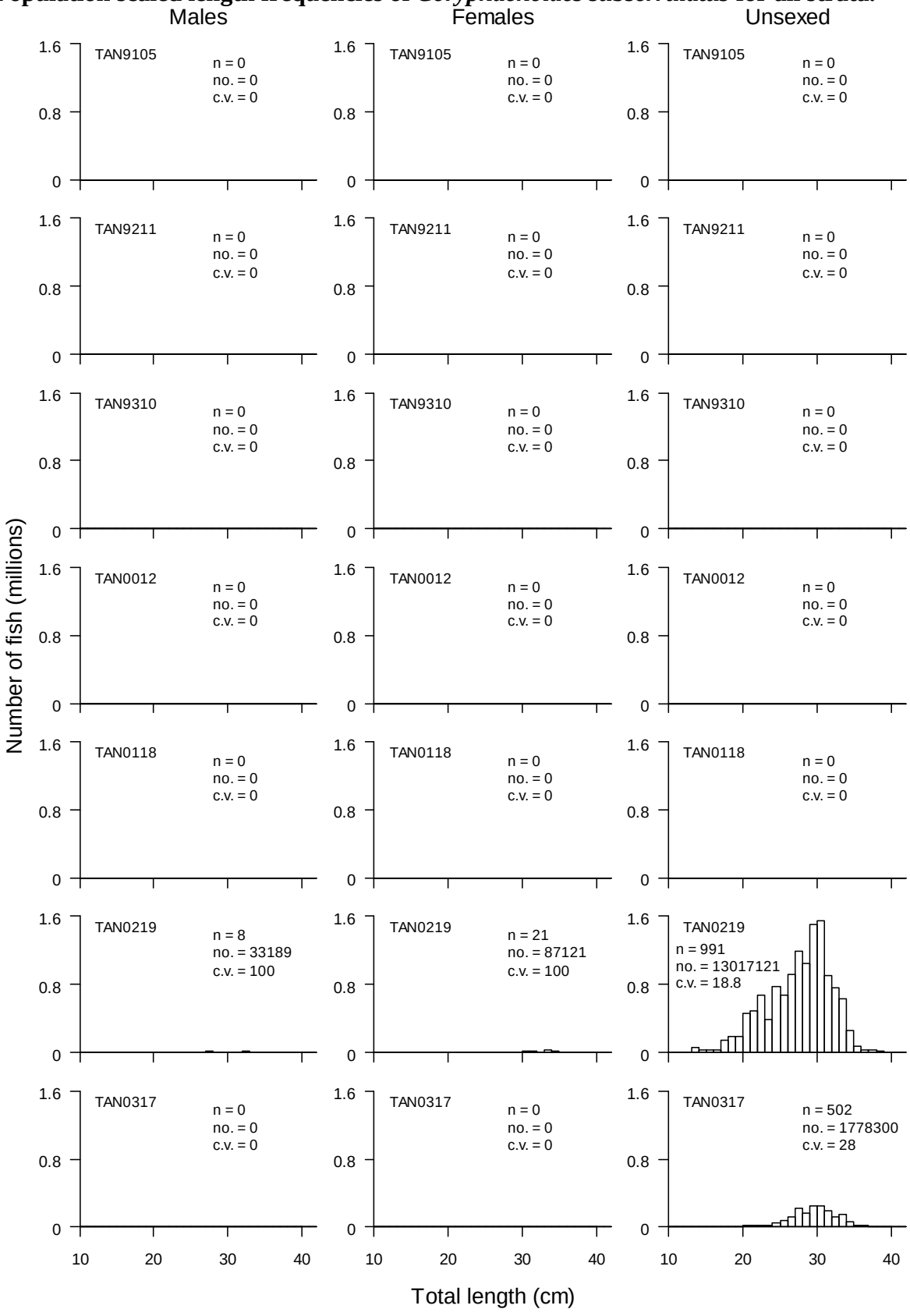

TAN0813 CSU
48°
50°
52°
54°S
170°E
175°
180°

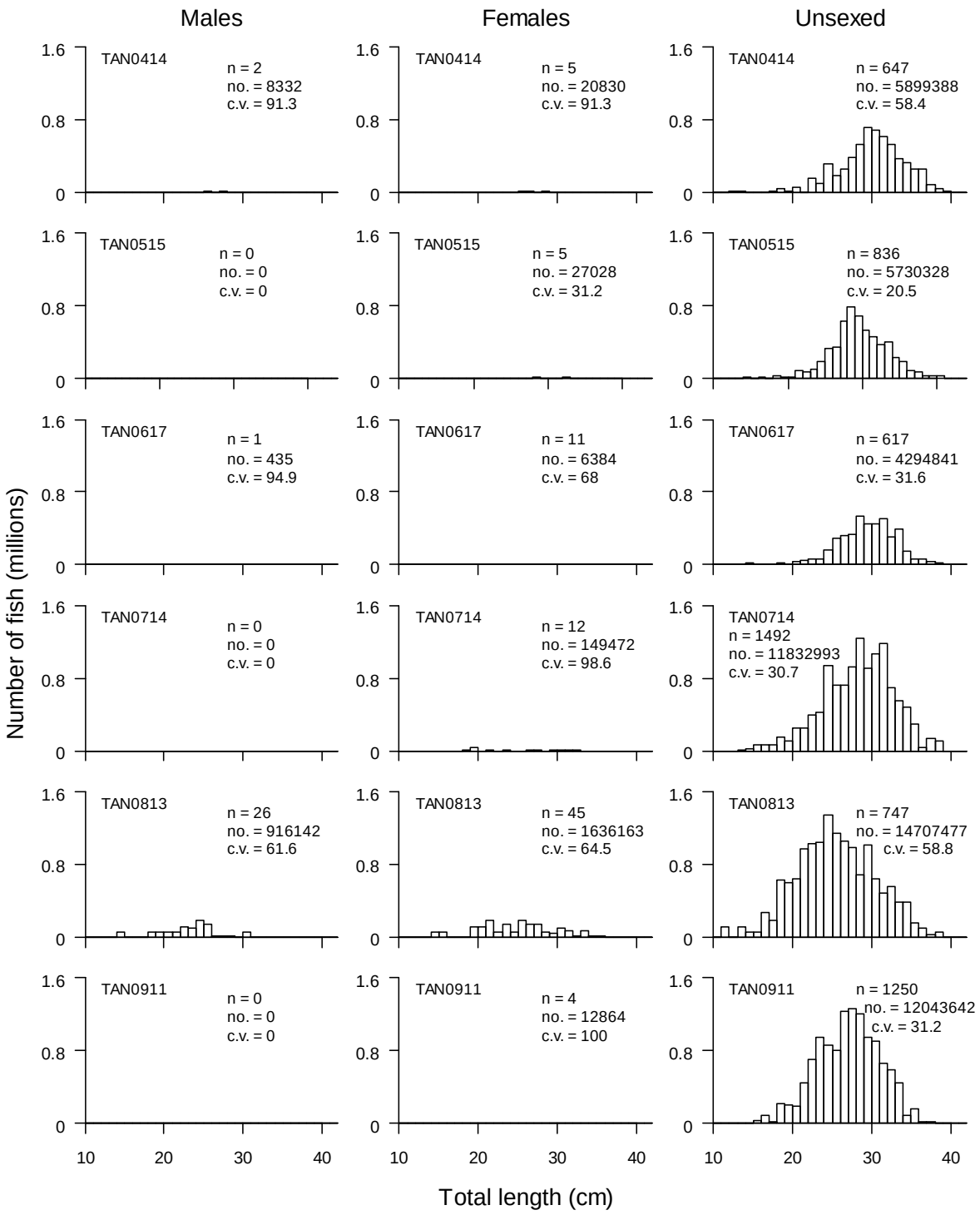


Length summaries

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	14	39	29.0	1020
TAN0317	17	40	30.3	502
TAN0414	13	40	30.3	654
TAN0515	15	41	29.8	841
TAN0617	15	39	29.8	629
TAN0714	14	39	29.2	1504
TAN0813	12	39	27.9	818
TAN0911	16	38	28.6	1254

Population scaled length frequencies of *Coryphaenoides subserrulatus* for all strata.




Males
Females
Unsexed
Number of fish (millions)
Total length (cm)
TAN0414
n = 2
no. = 8332
c.v. = 91.3
TAN0414
n = 5
no. = 20830
c.v. = 91.3
TAN0414
n = 647
no. = 5899388
c.v. = 58.4
TAN0515
n = 0
no. = 0
c.v. = 0
TAN0515
n = 5
no. = 27028
c.v. = 31.2
TAN0515
n = 836
no. = 5730328
c.v. = 20.5
TAN0617
n = 1
no. = 435
c.v. = 94.9
TAN0617
n = 11
no. = 6384
c.v. = 68
TAN0617
n = 617
no. = 4294841
c.v. = 31.6
TAN0714
n = 0
no. = 0
c.v. = 0
TAN0714
n = 12
no. = 149472
c.v. = 98.6
TAN0714
n = 1492
no. = 11832993
c.v. = 30.7
TAN0813
n = 26
no. = 916142
c.v. = 61.6
TAN0813
n = 45
no. = 1636163
c.v. = 64.5
TAN0813
n = 747
no. = 14707477
c.v. = 58.8
TAN0911
n = 0
no. = 0
c.v. = 0
TAN0911
n = 4
no. = 12864
c.v. = 100
TAN0911
n = 1250
no. = 12043642
c.v. = 31.2

Gonad stage summaries by sex for *Coryphaenoides subserrulatus*. 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	64	0	0	36	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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALL	0	100	0	0	0	0	0	0	0	64	0	0	36	0

Portuguese dogfish (*Centroscymnus coelolepis*) CYL

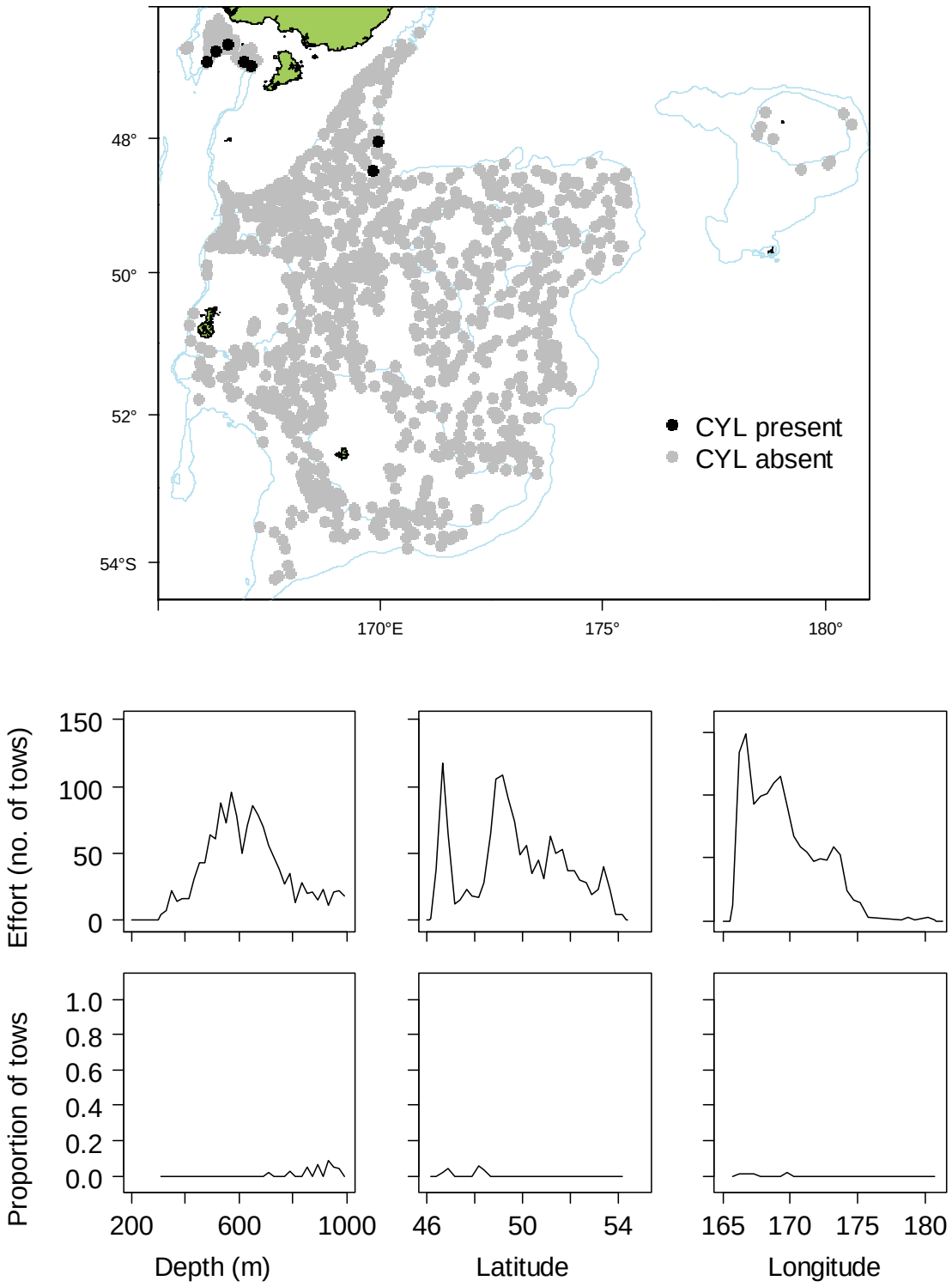
Number of surveys caught 1991–93 and 2000 to 2009 (out of 13):	4
Total catch weight (kg):	32.6
Number measured	0
Length range (mean) (cm)	–
Number weighed	0
Length-weight parameters a, b (r^2)	–

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** appropriate for this species. Distribution **does** extend to the areas deeper than 800 m surveyed from 2000 to 2009. It **was not** recorded from the Bounty Platform.

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

There is no length or gonad stage information presented.

Distribution of *Centroscymnus coelolepis* from all summer surveys. Valid biomass stations only.



Relative biomass estimates (t) and c.v.s (%) of *Centroscymnus coelolepis* 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	4	100	NA	NA	NA	NA	0	0	4	100
TAN9310	0	0	NA	NA	NA	NA	0	0	0	0
TAN0012	1	100	0	0	0	0	NA	NA	1	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	0	0	0	0	NA	NA	NA	NA	0	0
TAN0515	0	0	0	0	0	0	NA	NA	0	0
TAN0617	0	0	7	100	NA	NA	NA	NA	7	100
TAN0714	0	0	0	0	0	0	NA	NA	0	0
TAN0813	26	74	0	0	0	0	NA	NA	26	74
TAN0911	0	0	0	0	0	0	NA	NA	0	0

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