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Tini a Tangaroa

Catch-at-age for southern blue whiting (*Micromesistius australis*) in SBW 6I and SBW 6B during the 2025–26 fishing year

New Zealand Fisheries Assessment Report 2026/38

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PLAIN LANGUAGE SUMMARY

This report documents the age and length frequency data collected for southern blue whiting (SBW) in 2025 from the Campbell Rise and Bounty Platform. These data add to the time series produced for the previous fishing years using the same methods. For Campbell Rise, a previously strong year class corresponding to fish born in 2015 represented only a minor component of catch in 2025, with catch dominated by fish born in 2020. For Bounty Platform two strong year classes continued to be observed, corresponding to fish born in 2012 and 2018.

EXECUTIVE SUMMARY

Holmes, S.J.[1]; Stevens, D.W.; Barnes, T.; Sutton, C.; Spong, K. (2026). Catch-at-age for southern blue whiting (*Micromesistius australis*) in SBW 6I and SBW 6B during the 2025–26 fishing year.

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This report documents the age and length frequency data collected for southern blue whiting (*Micromesistius australis*, SBW) in 2025 (2025–26 fishing year) from Campbell Rise (SBW 6I) and Bounty Platform (SBW 6B), and provides length- and age-frequency distributions by year. These data add to the time series produced for the previous fishing years using the same methods. For Campbell Rise, a previously strong year class corresponding to fish born in 2015 represented only a minor component of catch in 2025, with catch dominated by fish born in 2020. For Bounty Platform, two strong year classes continued to be observed, corresponding to fish born in 2012 and 2018.

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1. INTRODUCTION

Southern blue whiting (*Micromesistius australis*, SBW) are almost entirely restricted to sub-Antarctic waters. They are dispersed throughout the Campbell Plateau (SBW 6I) and Bounty Platform (SBW 6B) for much of the year, but during August and September they aggregate to spawn near the Campbell Islands, on Pukaki Rise, on Bounty Platform, and near the Auckland Islands within depths of 250–600 m (see Large et al. 2021, figure 1). During most years, fish in the spawning fishery range between 35 cm and 50 cm fork length (FL), although occasionally smaller size classes of males (29–32 cm FL) are observed in the catch.

Commercial fishing has concentrated on the Campbell Island Rise and, to a lesser extent, the Bounty Platform. The Pukaki Rise and Auckland Islands have seen important fisheries in the past but have recently had much lower annual catches than the Campbell Island Rise and Bounty Platform fisheries (Fisheries New Zealand 2026).

This report first provides a basic characterisation of the fishery catches over time and location. The report then describes the age data available to a stock assessment, from ageing performed on southern blue whiting sampled from both Campbell Rise and Bounty Platform, combined with catch and length sample data extracts from the Fisheries New Zealand observer database (December 2025).

This report is part of the reporting requirements for Fisheries New Zealand Project MID2024-01 (Routine age determination of middle depth and deepwater species from commercial fisheries and resource surveys), specifically to determine catch-at-age for SBW 6B and SBW 6I for the 2025–26 fishing year (1 April 2025 to 31 March 2026).

2. METHODS

The new data described here add to the series produced for the previous fishing years using the same methods (see Datta et al. 2024, 2025). We aged southern blue whiting sampled from fishing vessels working on Campbell Rise and Bounty Platform and extracted data on length composition and spatial distribution of catch from the Fisheries New Zealand observer database. We investigated the annual variation in landings, spatial distribution of catch (catches were assigned to locations based on the starting point of the trawl tow), spawning activity as indicated by female macroscopic maturity stages, timing of catch, length and age frequencies, and calculated catch at-age and mean-weighted coefficient of variation (CV) for the age frequency of males, females, and overall (weighted by length frequency using an age-length key).

For both Campbell Rise and Bounty Platform, otoliths from each 1-cm length class were selected by sex for a target of 600 otoliths per fishery within the fishing season. If the total number of otoliths collected was less than 600 all otoliths were selected. If more than 600 otoliths were available, approximately 600 otoliths were selected using the 'flat top' approach, where the maximum number of otoliths read from any length class was adjusted to achieve the target total. Preparation of the otoliths employed the bake and embed method, and reading of the otoliths was done by a single reader once with quality assurance (QA) via a reference set read at the start of the ageing process. The otolith reading was done following an established methodology (Hanchet & Uozumi 1996). It is noted that there was a change of otolith reader starting in the 2024–25 fishing year.

The total number of otoliths available and aged were as follows:

- Campbell Islands: 4971 otoliths available (n = 629 otoliths aged).
- Bounty Platform: 723 otoliths available (n = 583 otoliths aged).

Due to increased sampling of otoliths from Bounty Platform in 2024–25, the target of 600 otoliths was reached for the first time since 1992. The target of 600 aged was nearly achieved again in 2025–26; the small shortfall was because some selected otoliths were unsuitable for ageing (Figure 1).

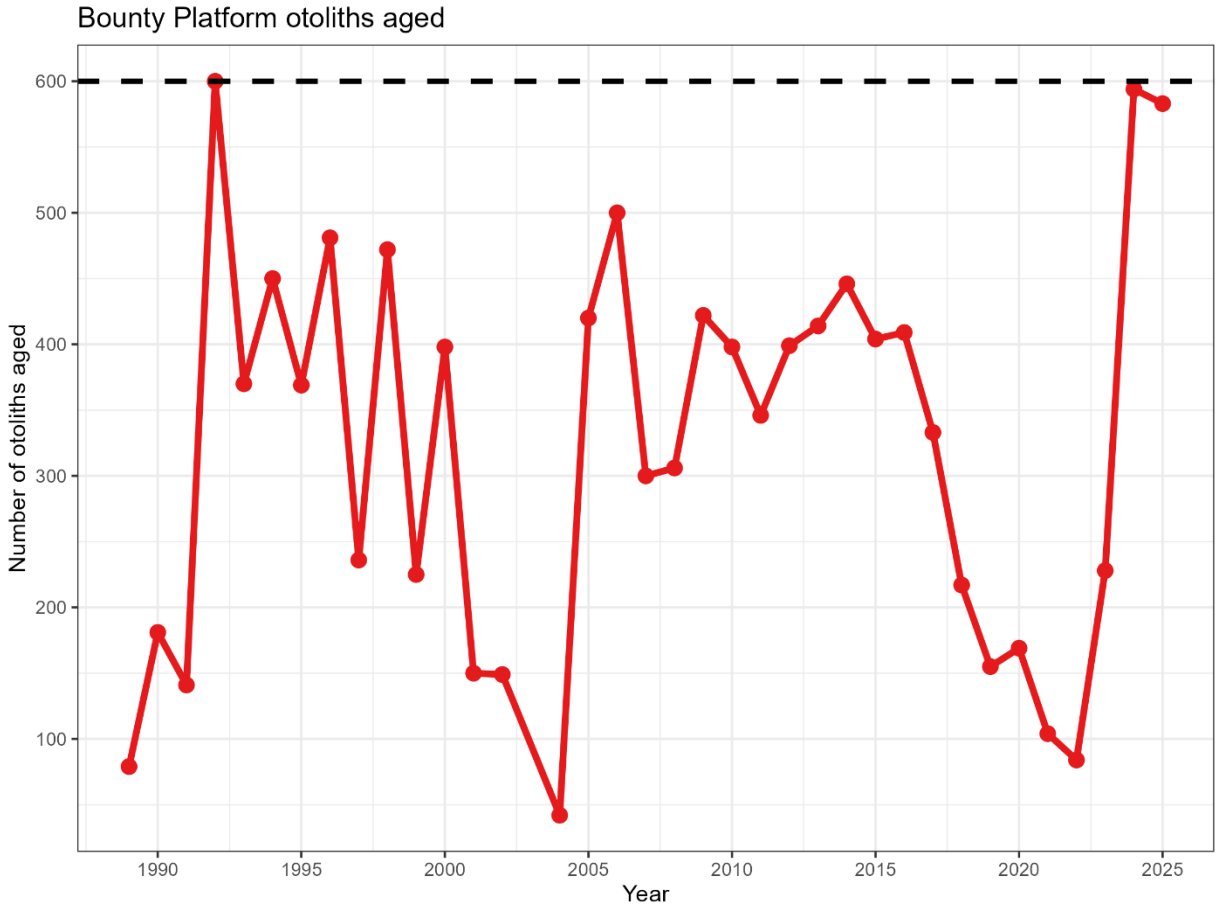


Figure 1: Number of otoliths aged from Bounty Platform over the period 1989–90 (1989) to 2025–26 (2025) inclusive. Target of 600 shown by dashed horizontal black line.

We determined catch-at-age for both Campbell Rise and Bounty Platform using an age-length key via the R package 'catch-at-age'. The process produced scaled length and age frequencies (by sex and overall, by area), as well as mean lengths by age (by sex and overall) and mean weighted CVs of the proportions at age. The target mean weighted CV was 20% for both areas.

3. RESULTS

The fishing year for southern blue whiting runs from 1 April – 31 March. In all the following results, year refers to the starting year, in which most fishing occurs, i.e., 2025 in refers to the fishing year 1 April 2025 – 31 March 2026.

3.1 Catch by year

For Campbell Rise, there was considerable fluctuation in recent catches. They increased from 11 520 t in 2020–21 to over 20 000 t in 2022–23 and 2023–24, decreased to 11 996 t in 2024–25, but increased again to 18 315 t in 2025–26 (Figure 2, Table 1). The total allowable commercial catch (TACC) for Campbell Rise has been 39 200 t since 2014–15.

Catches on the Bounty Platform declined from 15 000 t in 2009–10 to only 120 t in 2022–23 (the lowest on record), and then subsequently increased to between approximately 2000 and 3000 t since (Figure 3, Table 2). The TACC was 2264 t in 2022–23 and 2023–24, before increasing to 4888 t in 2024–25.

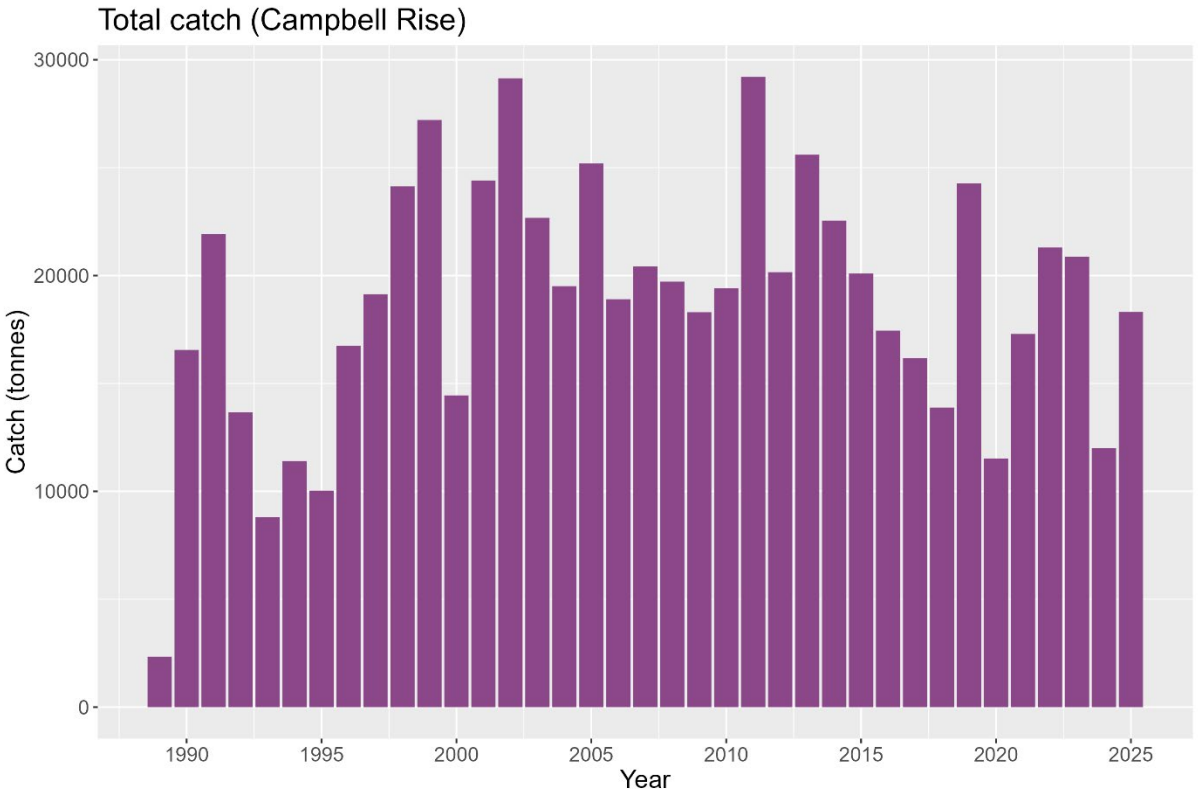


Figure 2: Catch (tonnes) of southern blue whiting on Campbell Rise, over the fishing years 1989–90 to 2025–26 inclusive (labelled by year beginning, i.e., 2025–26 fishing year labelled 2025).

Table 1: Catch in tonnes (t) of southern blue whiting on Campbell Rise by fishing year.

Year	Catch (t)	Year	Catch (t)	Year	Catch (t)
1989–90	2 341	2001–02	24 409	2013–14	25 595
1990–91	16 556	2002–03	29 140	2014–15	22 548
1991–92	21 918	2003–04	22 672	2015–16	20 089
1992–93	13 670	2004–05	19 508	2016–17	17 449
1993–94	8 810	2005–06	25 197	2017–18	16 172
1994–95	11 404	2006–07	18 905	2018–19	13 882
1995–96	10 031	2007–08	20 423	2019–20	24 275
1996–97	16 744	2008–09	19 719	2020–21	11 520
1997–98	19 142	2009–10	18 300	2021–22	17 293
1998–99	24 136	2010–11	19 415	2022–23	21 300
1999–00	27 208	2011–12	29 204	2023–24	20 873
2000–01	14 444	2012–13	20 155	2024–25	11 996
				2025–26	18 315

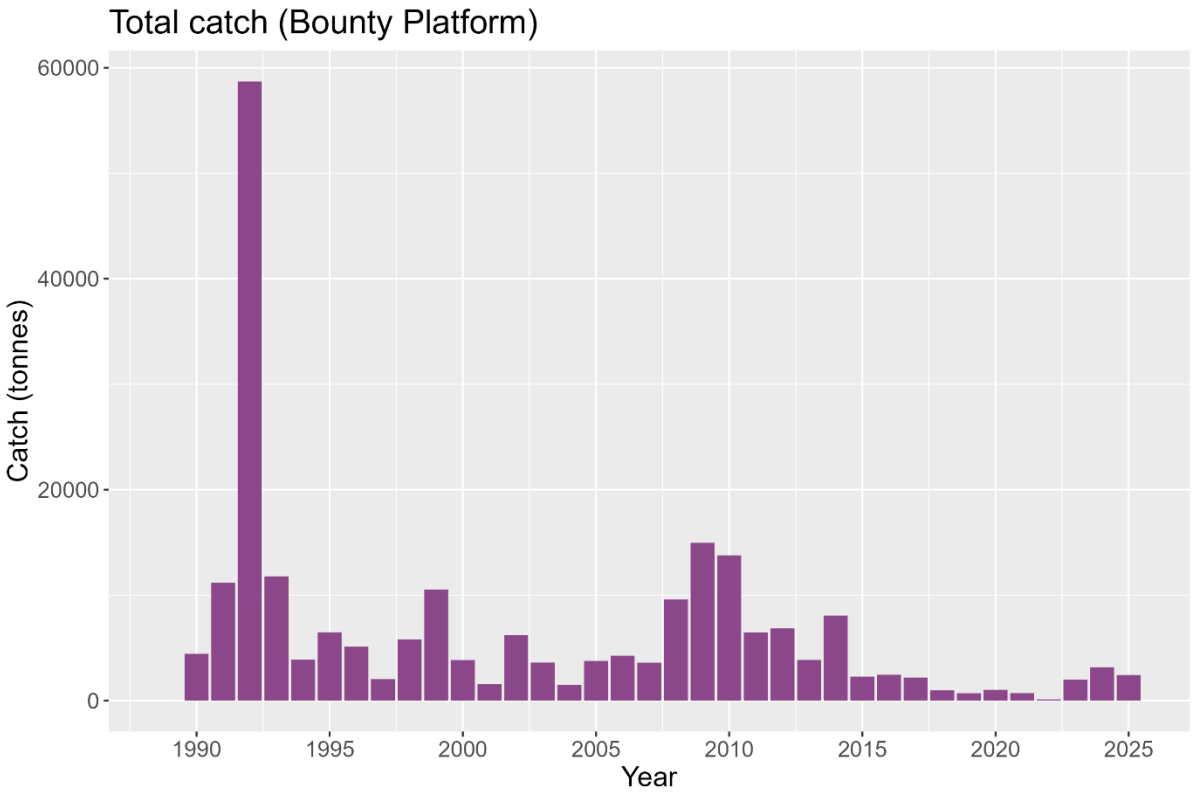


Figure 3: Catch (tonnes) of southern blue whiting on Bounty Platform, over the fishing years 1990–91 to 2025–26 inclusive (labelled by year beginning, i.e., 2025–26 fishing year labelled 2025).

Table 2: Catch in tonnes (t) of southern blue whiting on Bounty Platform by fishing year.

Year	Catch (t)	Year	Catch (t)	Year	Catch (t)
1990–91	4 438	2002–03	6 208	2014–15	8 069
1991–92	11 184	2003–04	3 609	2015–16	2 278
1992–93	58 694	2004–05	1 478	2016–17	2 457
1993–94	11 787	2005–06	3 769	2017–18	2 188
1994–95	3 877	2006–07	4 257	2018–19	987
1995–96	6 472	2007–08	3 603	2019–20	699
1996–97	5 121	2008–09	9 583	2020–21	1 023
1997–98	2 043	2009–10	14 956	2021–22	707
1998–99	5 792	2010–11	13 783	2022–23	120
1999–00	10 531	2011–12	6 468	2023–24	1 985
2000–01	3 852	2012–13	6 856	2024–25	3 170
2001–02	1 554	2013–14	3 860	2025–26	2 423

3.2 Spatial catch distribution

The catch has been scattered across Campbell Rise, often with concentrations in the northern, southern and/or eastern areas (Figure 4). In 2022 and 2023, catch was split between the northern and southern areas, but was concentrated in only the northern area in 2024 and 2025 and was taken in a very small area in 2025 (Figure 5). This contraction of the fishery has occurred previously, for example in 2017.

For Bounty Plateau, catch distribution maps cannot be shown for all years because of Fisheries New Zealand data confidentiality requirements (Figure 6). The spatial distribution of catch on Bounty Platform has generally been to the south of the area (Figure 6). In 2024, the catch was concentrated within three patches in the south and east. In 2025, catch was only taken from the south (Figure 7).

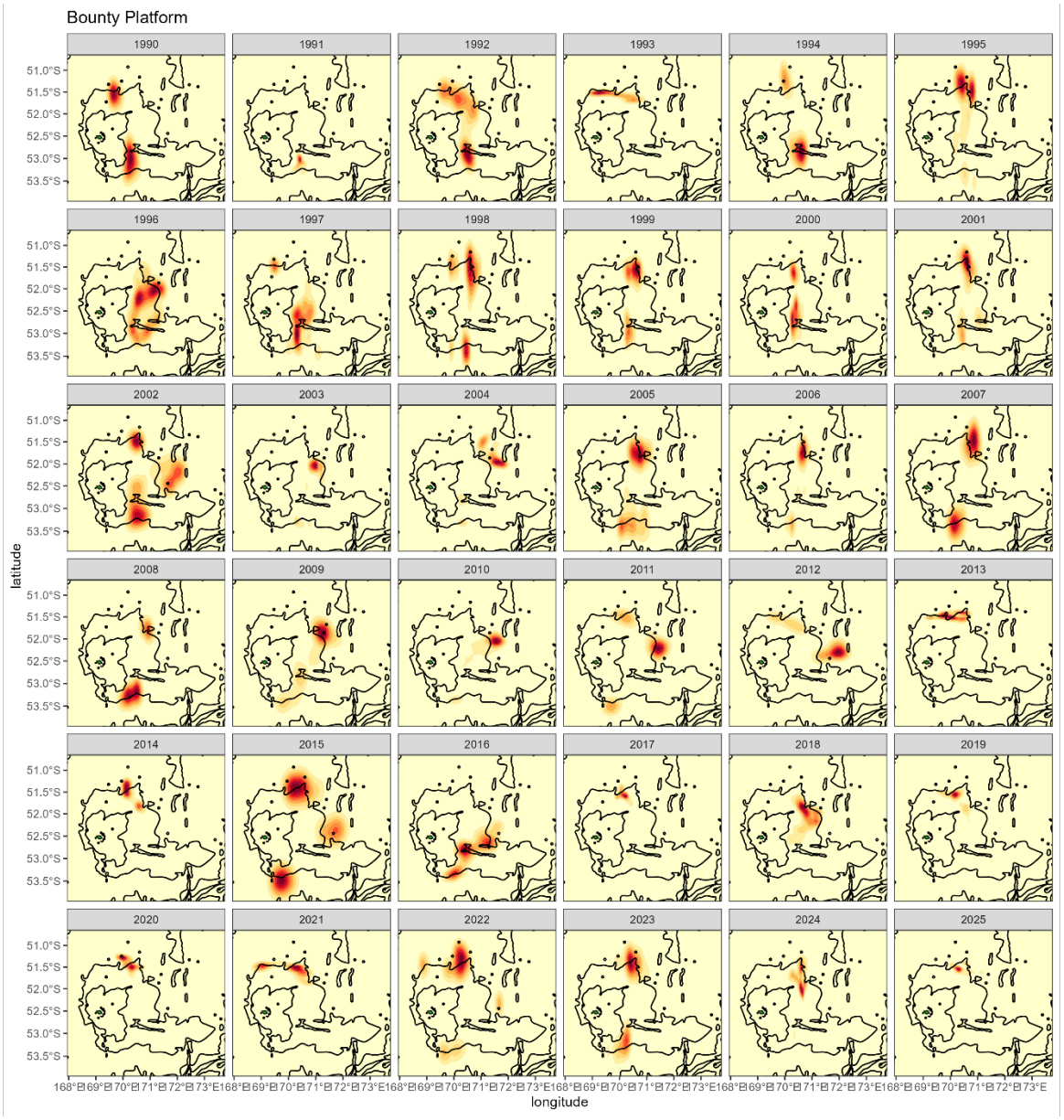


Figure 4: Spatial catch distribution of southern blue whiting on Campbell Rise (coordinates show the location of the start of each tow), over the fishing years 1990–91 to 2025–26 inclusive (labelled by year beginning). Darker red shades indicate higher catches. Black lines represent isobaths at 30, 50, 100, 200, 500, 1000, 2000, 3000 and 4000 m.

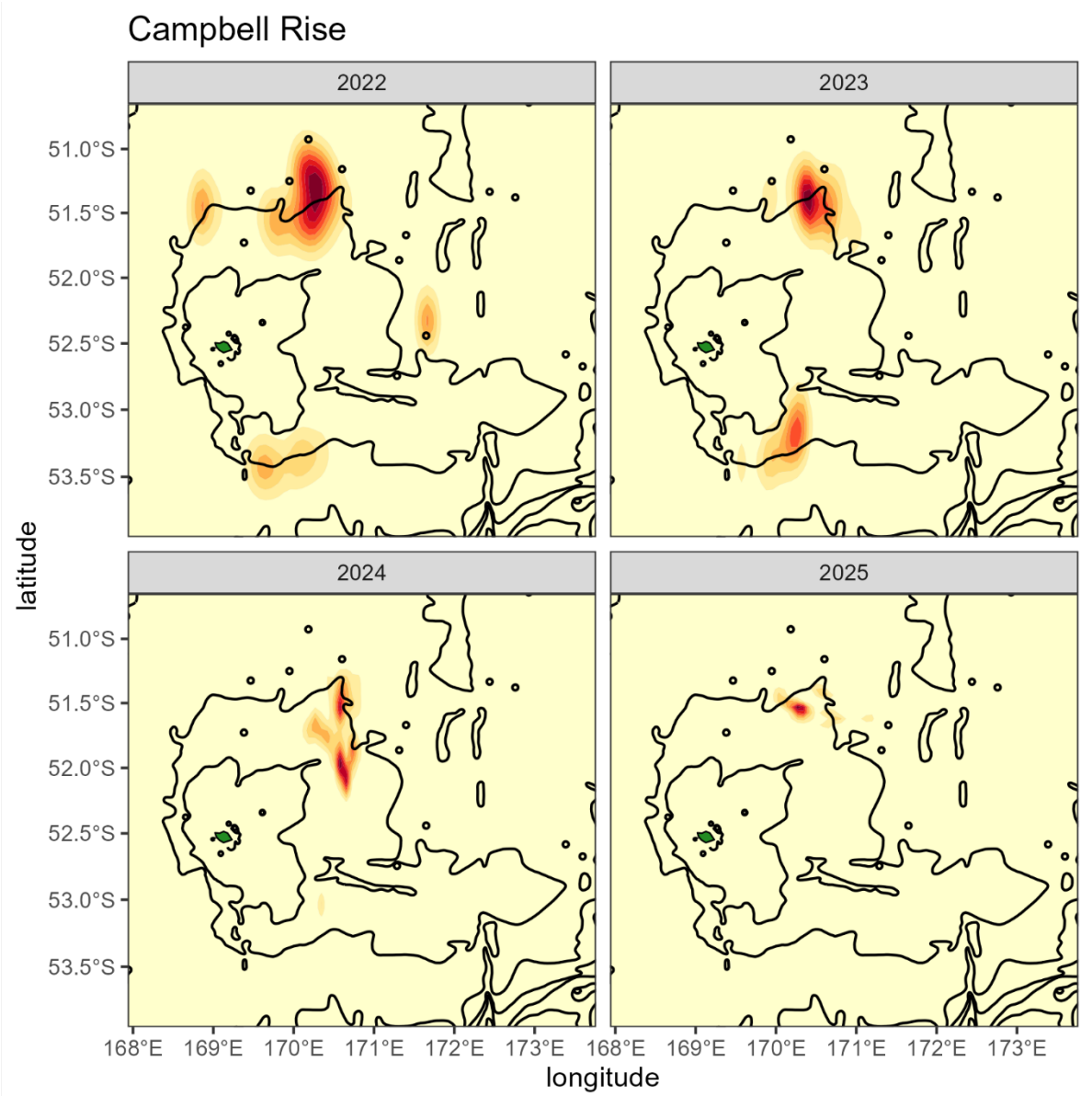


Figure 5: **Spatial catch distribution of southern blue whiting on Campbell Rise in fishing years 2022–23 to 2025–26 (labelled by year beginning). Darker red shades indicate higher catches. Black lines represent isobaths at 30, 50, 100, 200, 500, 1000, 2000, 3000 and 4000 m. Campbell Island shaded in green.**

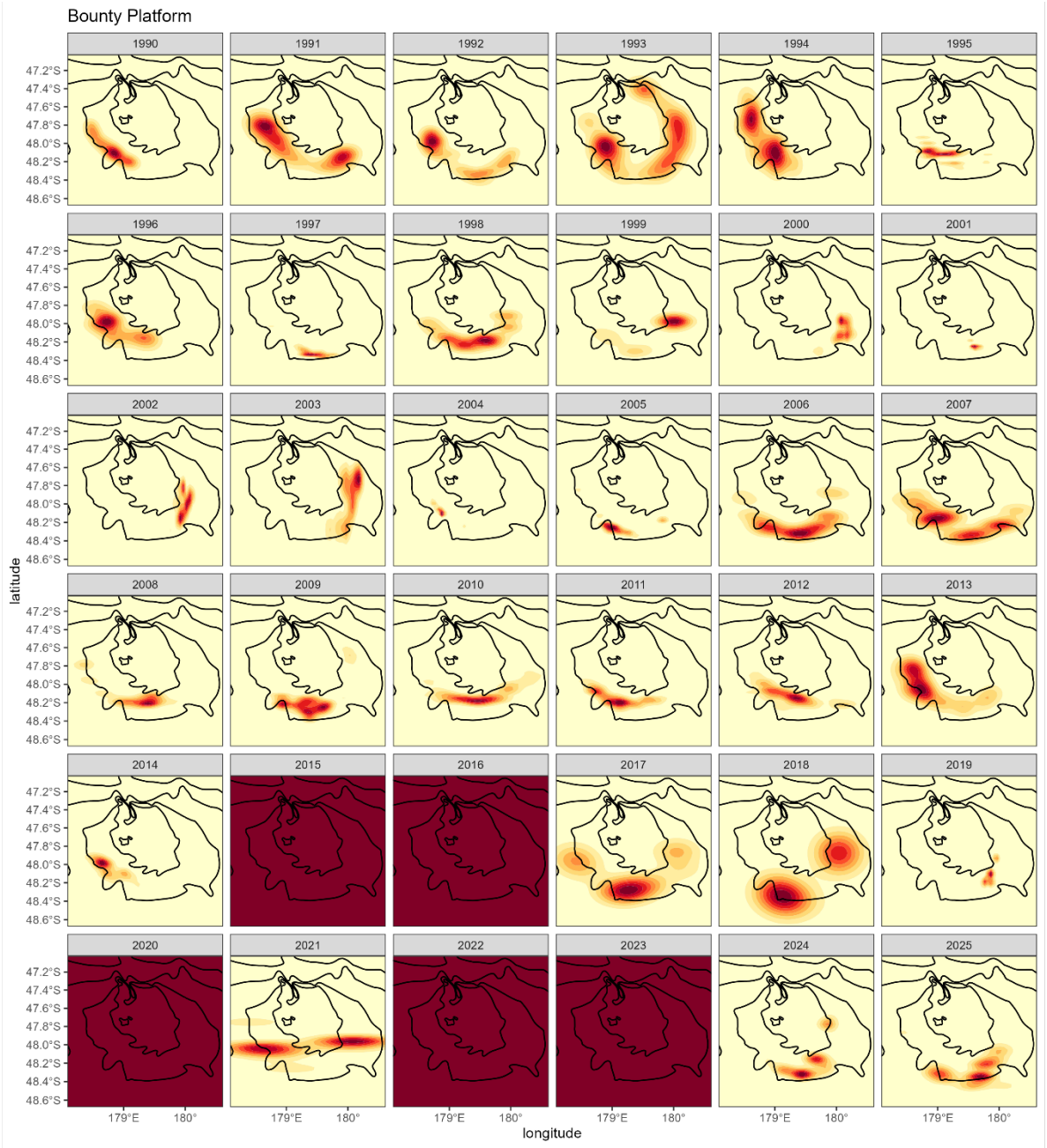


Figure 6: Spatial catch distribution of southern blue whiting on Bounty Platform (coordinates show the location of the start of each tow), over the fishing years 1990–91 to 2025–26 inclusive (labelled by year beginning). Darker red shades indicate higher catches. Black lines represent isobaths at 100, 200, 500, 1000 and 2000 m. Data not plotted for fishing years 2015, 2016, 2020, 2022 and 2023 due to data confidentiality requirements.

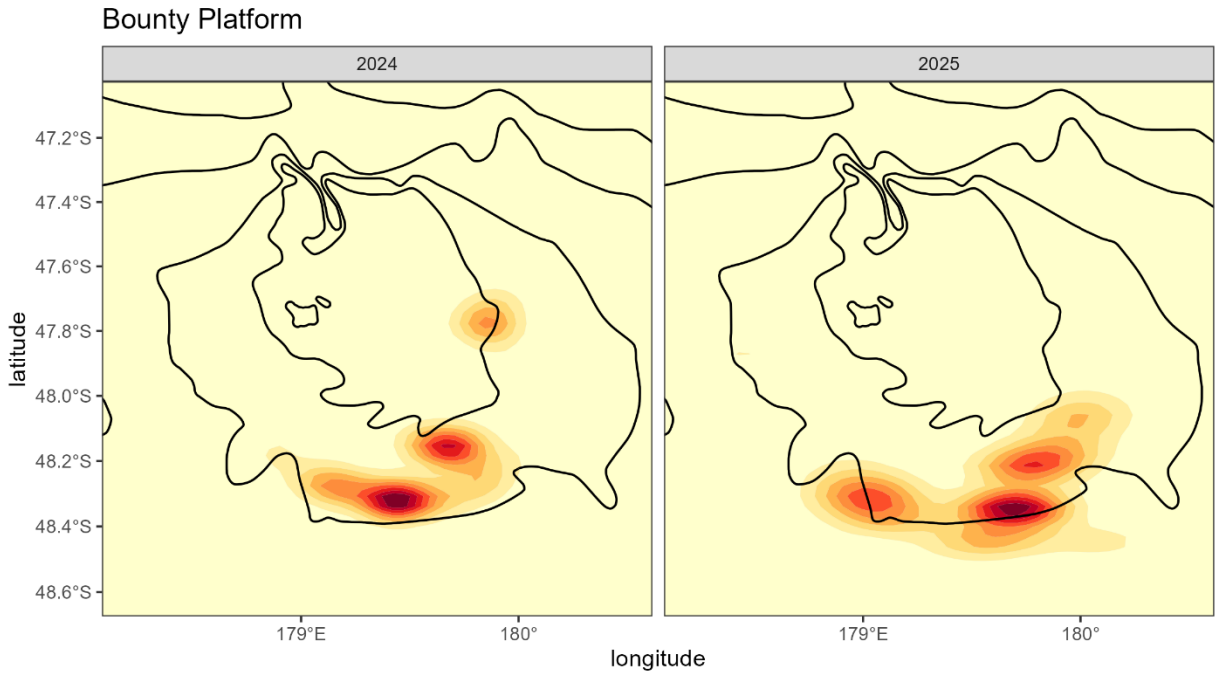


Figure 7: Spatial catch distribution of southern blue whiting on Bounty Platform in fishing years 2024–25 and 2025–26 (labelled by year beginning). Darker red shades indicate higher catches. Black lines represent isobaths at 100, 200, 500, 1000 and 2000 m.

3.3 Timing of catch

The catch on Campbell Rise has generally been during September (Figure 8), although some seasons have started in mid-August (e.g., 2011, 2023). There has not been a clear pattern in the timing of spawning, as evidenced by the lack of consistency or trend between years in the proportion of females spawning through the catch period (Figure 8 orange lines). Some years (including 2025) indicate two peaks in spawning activity.

The timing of catch for Bounty Platform has become sporadic as catches have decreased (Figure 9). Between 2011 and 2017, there was a trend for the timing of spawning to become later, shifting from mid to late August. In 2018 to 2022 catch took place over only a few days or weeks, but the available data for 2024 and 2025 suggested that southern blue whiting may have reverted to spawning earlier in August (Figure 9).

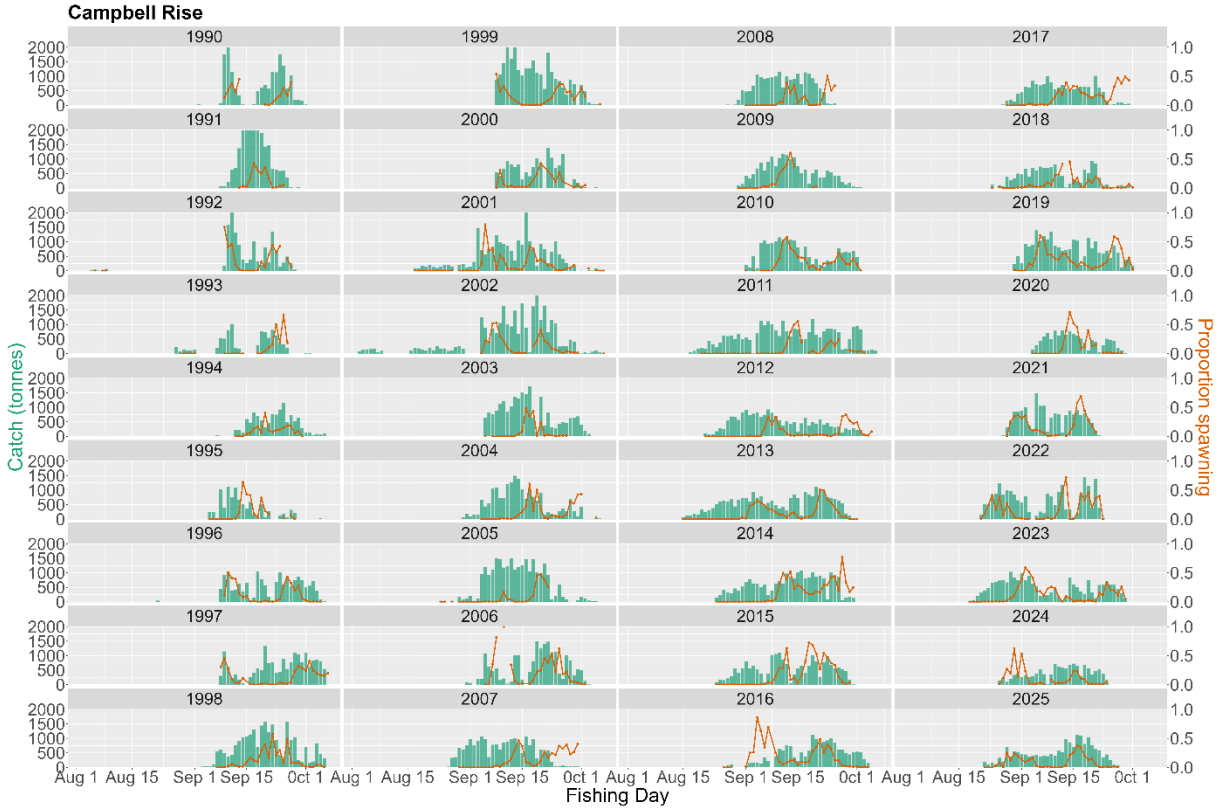


Figure 8: **The timing of catch on Campbell Rise over each fishing year, labelled by year beginning (green bars), along with the proportion of spawning (running ripe) females (orange lines).**

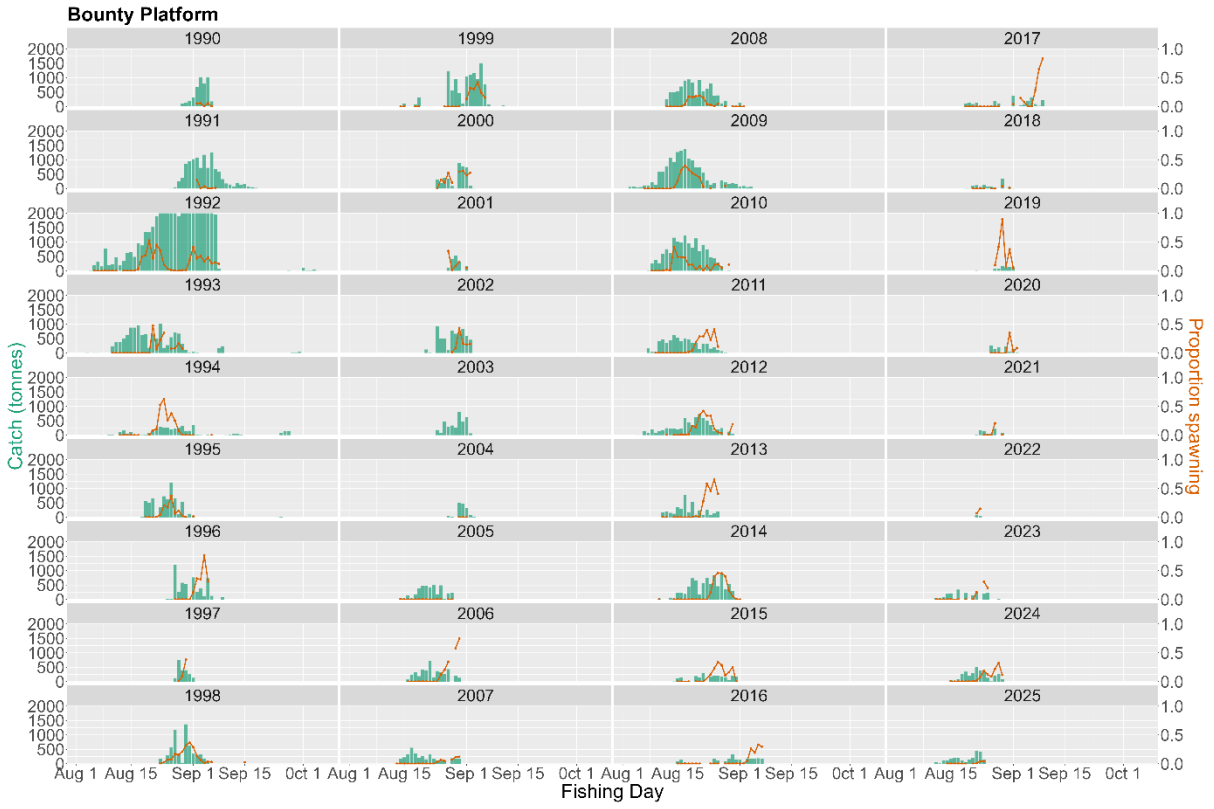


Figure 9: **The timing of catch on Bounty Platform over each fishing year, labelled by year beginning (green bars), along with the proportion of spawning (running ripe) females (orange lines). The catch for 1992–93 has been capped at 2000 t so that other years are more easily visible; the maximum observed value in that year was 4019 t.**

3.4 Length and age frequencies

Length and age frequencies for Campbell Rise show a clear progression of cohorts over the last ten years (Figure 10 and Figure 11). The strongest cohort in 2025 was from the 2020 year-class at age 5 (Figure 11). The stronger year-class from 2015 had mostly disappeared by 2024, so that catches were dominated by the 2020 year-class in 2024 and 2025 (Figure 11).

On Bounty Platform, cohort progression was also visible, despite the lower sample sizes particularly for age frequencies (Figure 12 and Figure 13). The previously strong year classes from 2002 and 2007 had mostly disappeared by 2024. The relatively strong cohorts from 2012 and 2018 persisted through to 2025 and the last two years of data suggest that the 2019 year-class was also relatively strong (Figure 13).

Historical length frequencies for both areas are given in Appendix 1 (Figure A1 and Figure A2). Historical age frequencies for both areas are given in Appendix 2 (Figure A3 and Figure A4) and summarised in Figures 14 and 15 for Campbell Rise and Bounty Platform respectively.

The mean-weighted CVs for the catch-at-age are shown for Campbell Rise and Bounty Platform in Table 3 and Table 4 respectively.

Table 1: Mean-weighted CVs for the catch at age for Campbell Rise for fishing years from 2017–18 to 2023–24.

Fishing year	CV (males)	CV (females)	CV (total)
2017–18	17.7	16.6	12.4
2018–19	18.1	18.7	13.8
2019–20	22.0	18.2	14.0
2020–21	19.7	16.7	13.1
2021–22	20.5	18.3	13.7
2022–23	19.6	17.5	13.3
2023–24	19.5	21.1	14.6
2024–25	10.8	12.6	8.6
2025–26	14.5	11.7	9.5

Table 2: Mean-weighted CVs for the catch-at-age for Bounty Platform for fishing years from 2017–18 to 2023–24.

Fishing year	CV (males)	CV (females)	CV (total)
2017–18	20.3	16.3	13.5
2018–19	47.1	29.7	29.0
2019–20	55.8	38.2	34.4
2020–21	42.3	26.7	23.9
2021–22	68.5	70.4	58.6
2022–23	43.9	27.3	25.3
2023–24	34.8	40.8	27.0
2024–25	24.0	23.3	17.2
2025–26	21.5	21.0	15.9

For the Campbell Rise, otolith sample sizes were 500–600 per year (see Figure 11; with many more collected) with mean-weighted CVs in the range 12–15% from 2017 to 2023. In 2024 and 2025, the mean-weighted CVs were less than 10% (Table 3).

The number of otoliths collected on Bounty Platform were generally low between 2015 and 2023 (see Figure 13); in 2021, 2022 and 2023 the numbers collected were 104, 84, and 197 respectively, with all of them being aged. The lower sample sizes meant CVs were generally higher than for Campbell Rise. In 2024 and 2025, due to increased sampling, 594 and 583 otoliths were aged respectively, leading to

mean-weighted CVs below 20% (Table 4). Before 2024, the previous time a mean-weighted CV below the target of 20% was achieved for Bounty Platform was in 2017.

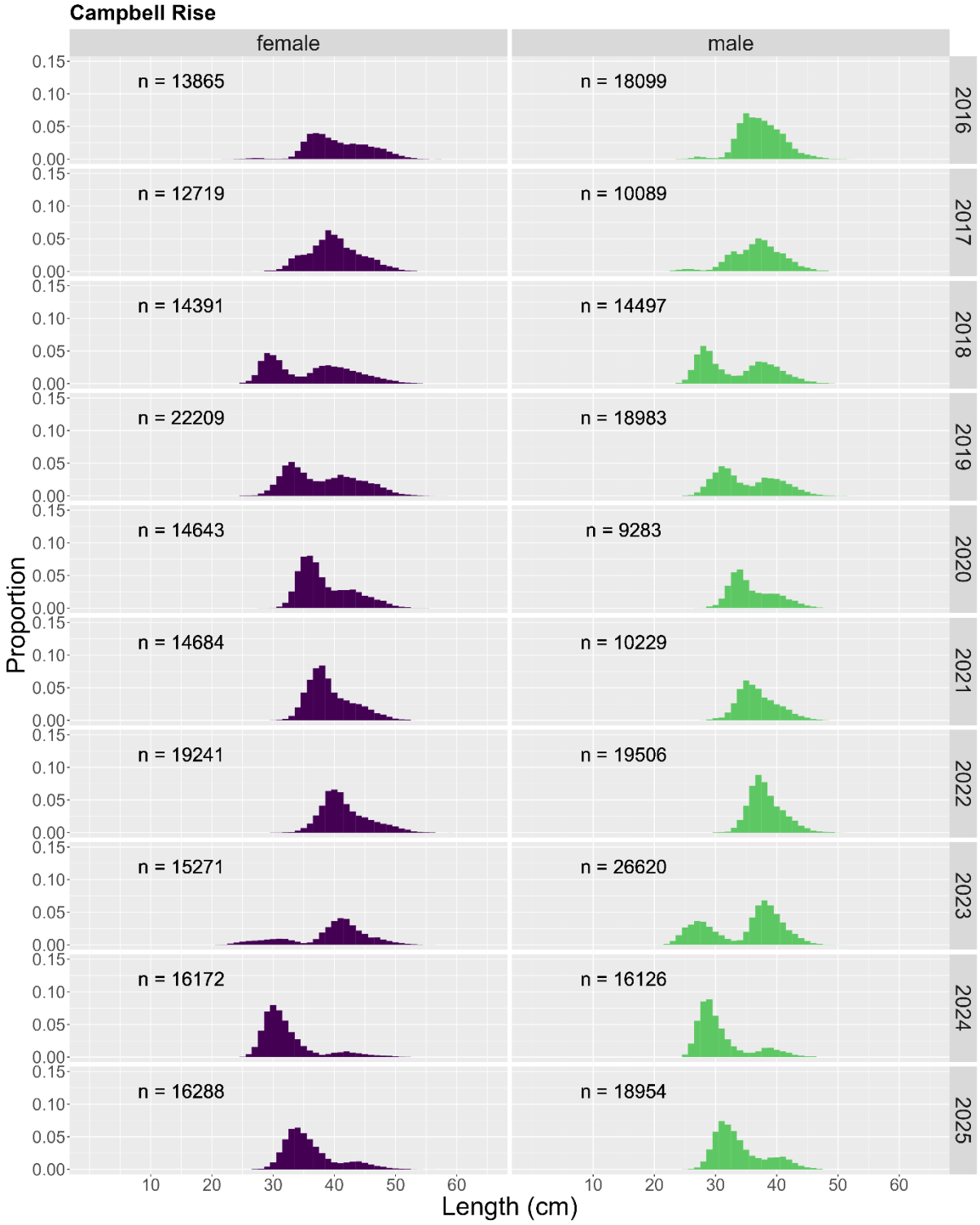


Figure 10: Length frequency distributions for southern blue whiting caught on Campbell Rise over the fishing years 2016–17 to 2025–26, labelled by year beginning (top to bottom) and for females (left column) and males (right column). The number of fish measured *n* is shown in the top left corner of each plot.



Figure 11: Age frequencies for southern blue whiting caught on Campbell Rise over the fishing years 2016–17 to 2025–26, labelled by year beginning (top to bottom) and for females (left column) and males (right column). The number of fish aged *n* is shown in the top right corner of each plot.

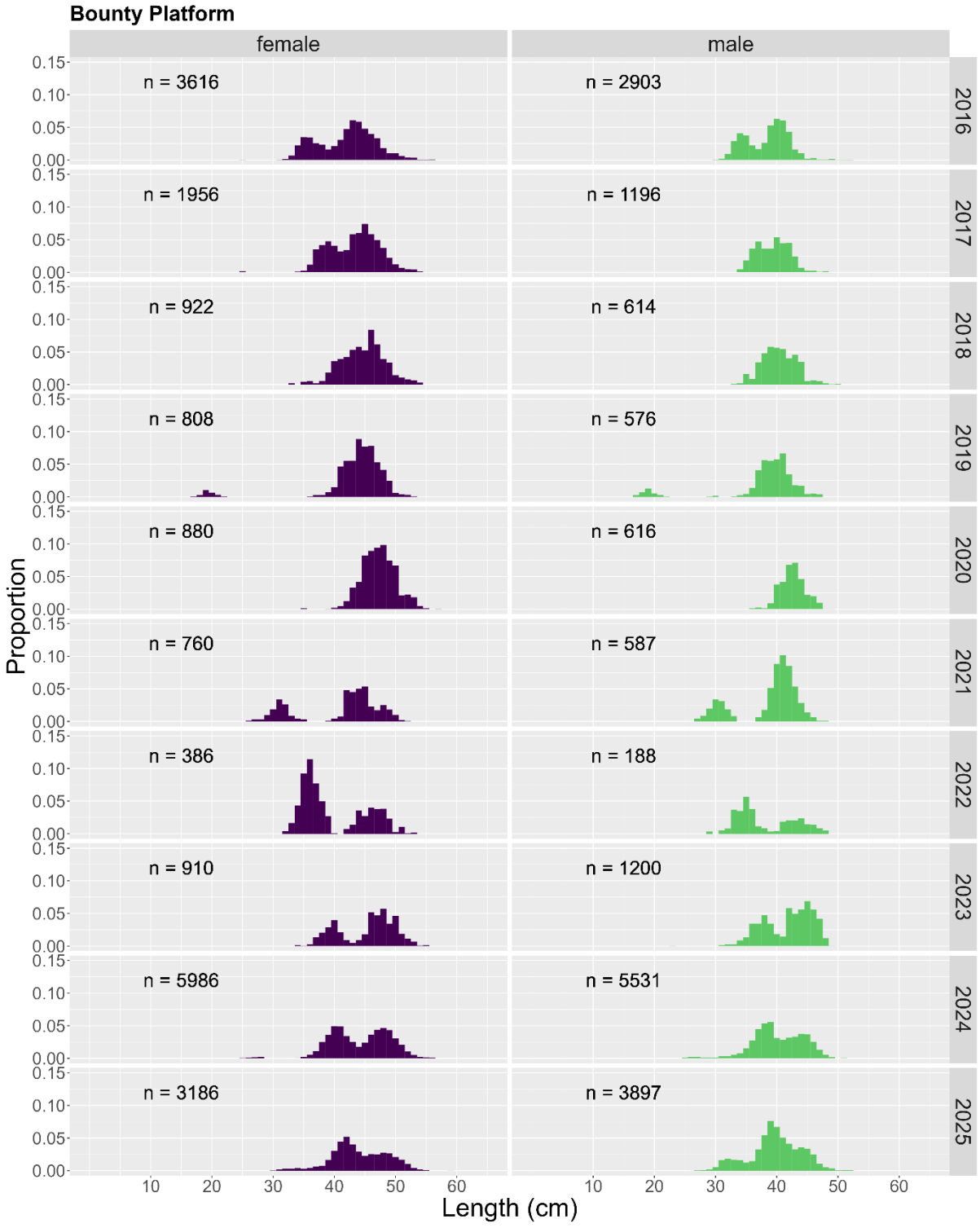


Figure 12: Length frequency distributions for southern blue whiting caught on Bounty Platform over the fishing years 2016–17 to 2025–26, labelled by year beginning (top to bottom) and for females (left column) and males (right column). The number of fish measured *n* is shown in the top left corner of each plot.



Figure 13: Age frequencies for southern blue whiting caught on Bounty Platform over the fishing years 2016–17 to 2025–26, labelled by year beginning (top to bottom) and for females (left column) and males (right column). The number of fish aged *n* is shown in the top right corner of each plot.

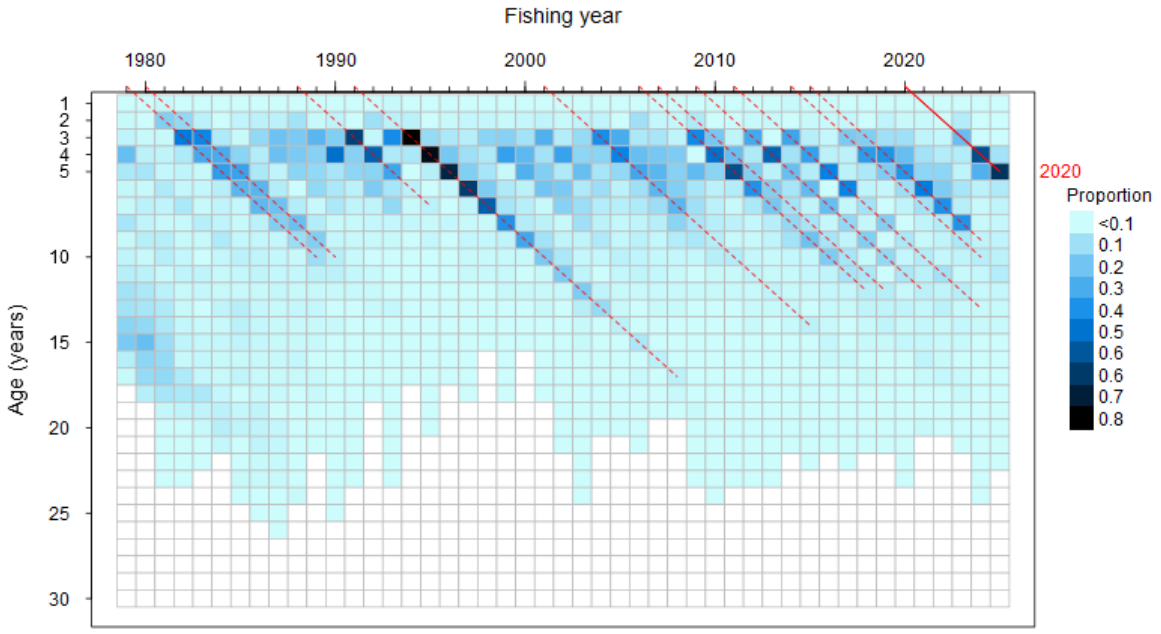


Figure 14: Scaled age frequencies for Campbell Rise since 1979–80 (scaled using length frequencies and an age-length key), labelled by year beginning. Higher proportions are indicated by darker shades of blue. The cohort from 2020 is highlighted by a solid red line; older relatively strong cohorts are shown by dashed red lines.

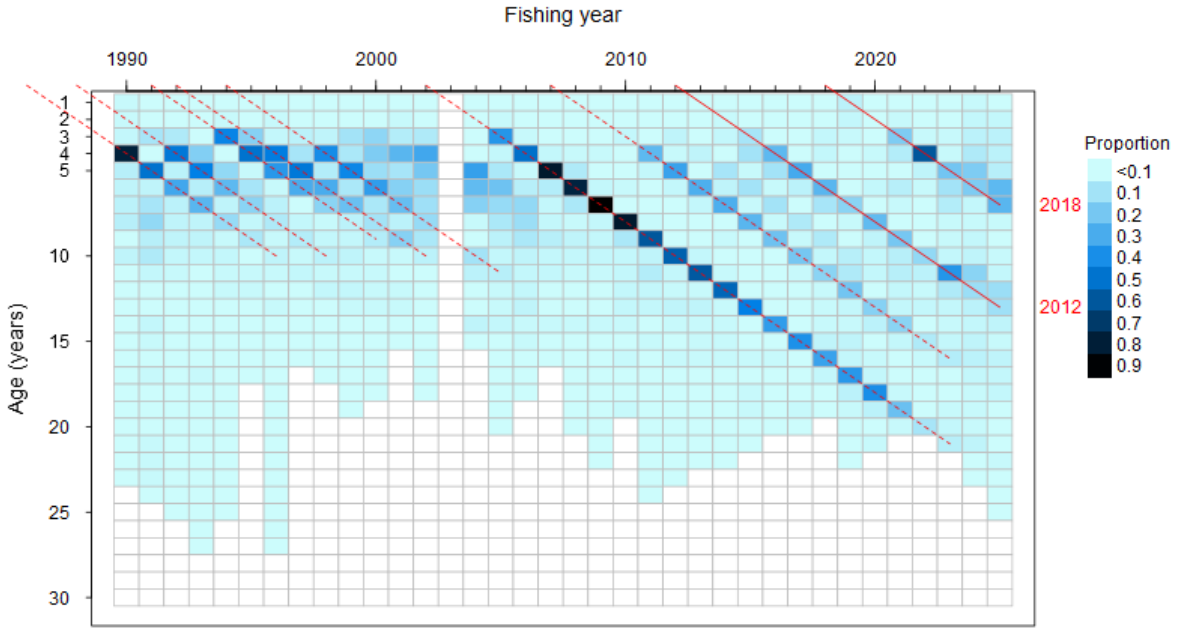


Figure 15: Scaled age frequencies for Bounty Platform since 1990–91 (scaled using length frequencies and an age-length key), labelled by year beginning. Higher proportions are indicated by darker shades of blue. Cohorts from 2012 and 2018 are highlighted by solid red lines; older relatively strong cohorts are shown by dashed red lines.

4. DISCUSSION

This report updates the length and age frequencies for SBW presented by Datta et al. (2025).

Catches from the Campbell Rise in 2025 were higher than in 2024 but still lower than those in 2022 and 2023. Catches from the Bounty Platform in 2025 were similar to catches from the previous two years. The spatial distribution of catch on the Campbell Rise has varied; catches were concentrated in both the north and south areas in 2022 and 2023, whereas most catch was taken in the north area in 2024 and 2025. Industry feedback indicated that the very small area fished in 2025 was a result of the fleet not needing to search beyond the initial fishing location to fulfil its catch objectives for quantity and size of fish (Charles Heaphy, Sealord, pers. comm.).

The catch timing and proportion of spawning individuals varied between years and areas. For Campbell Rise, catch generally occurred from late August to late September across all years. There was no consistent date for peak spawning (running ripe) females, with the peak(s) occurring at any time between the start and end of September. Between 2011 and 2017, the peak of spawning for Bounty Platform shifted from mid- to late-August. From 2018 to 2022, catch took place over only a few days or weeks providing little spawning data for analyses. Southern blue whiting on the Bounty Platform may have reverted to spawning earlier in August (see also figures 4 and 5 in Wieczorek et al. 2024).

The length and age frequencies for both areas showed progression of cohorts, with strong recent year classes from the Campbell Rise in 2020, and for Bounty Platform in 2012 and 2018. The 2015 year-class on Campbell Rise and the 2007 year-class on Bounty Platform were still present in 2023, but contributed only a minor proportion of the catch in 2025.

The mean-weighted CVs for catch-at-age were low for Campbell Rise (9.5%) and the lowest seen in recent years for Bounty Platform (15.9%). Increased sampling for Bounty Platform starting in 2024 contributed towards the lower CVs in 2024 and 2025. There is cohort tracking in both areas, including up to 2025, which implies that the change in reader has not affected results significantly, and the new reader achieved a low CV on the reference set of otoliths (1.67%). Increased sampling of otoliths from the Bounty Platform would help to reduce uncertainty.

5. FULFILMENT OF BROADER OUTCOMES

As required under Government Procurement rules[2], Fisheries New Zealand considered broader outcomes (secondary benefits such as environmental, social, economic, or cultural benefits) that would be generated by this project.

As part of this project, the team has continued to build capacity and capability in fisheries science and stock assessment. By using a broader team approach, we promoted a more diverse use of staff; and importantly shared expertise and grown institutional knowledge of New Zealand fisheries and stock assessments amongst these staff. This will reduce the risk of such knowledge being lost in the future and potentially benefit a wide range of future fisheries research projects. Earth Sciences New Zealand staff working on this project were a combination of senior and mid-career scientists, almost half of whom were women.

The broader outcomes specific to this project involved building capacity, collaborations, capability, and diversity in the research sector. The project fostered collaboration between Earth Sciences New Zealand, the fishing industry, and other New Zealand research providers. The catch-at-age process

[2] https://www.procurement.govt.nz/procurement/principles-charter-and-rules/government-procurement-rules/planning-your-procurement/broader-outcomes/

successfully provided opportunities for fishing industry stakeholders to contribute their unique observations and knowledge to the research process.

6. ACKNOWLEDGEMENTS

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APPENDIX 1 – HISTORICAL LENGTH FREQUENCIES

Length frequencies back to 1979 for Campbell Rise (the start of the data for that area) are shown in Figure A1. The corresponding length frequencies for Bounty Platform back to 1990 (the start of the data for that area) are shown in Figure A2.

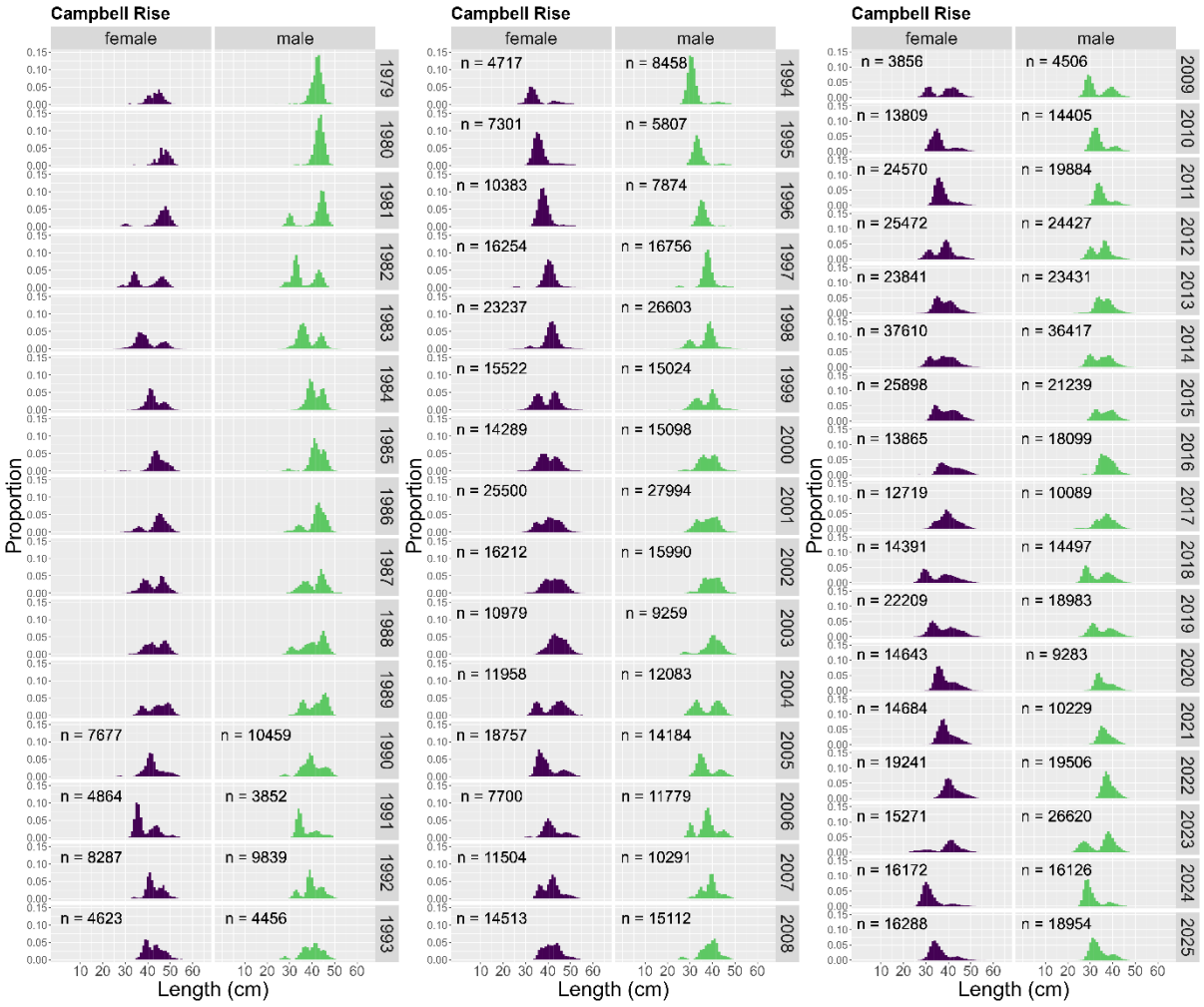


Figure A1: Length frequencies for southern blue whiting samples caught on Campbell Rise over the fishing years 1979–80 to 2025–26, labelled by year beginning (top to bottom, then left to right) and for females (left column) and males (right column). Sample numbers given in top left corner of each year/sex combination. Note sample numbers were not available prior to 1990.

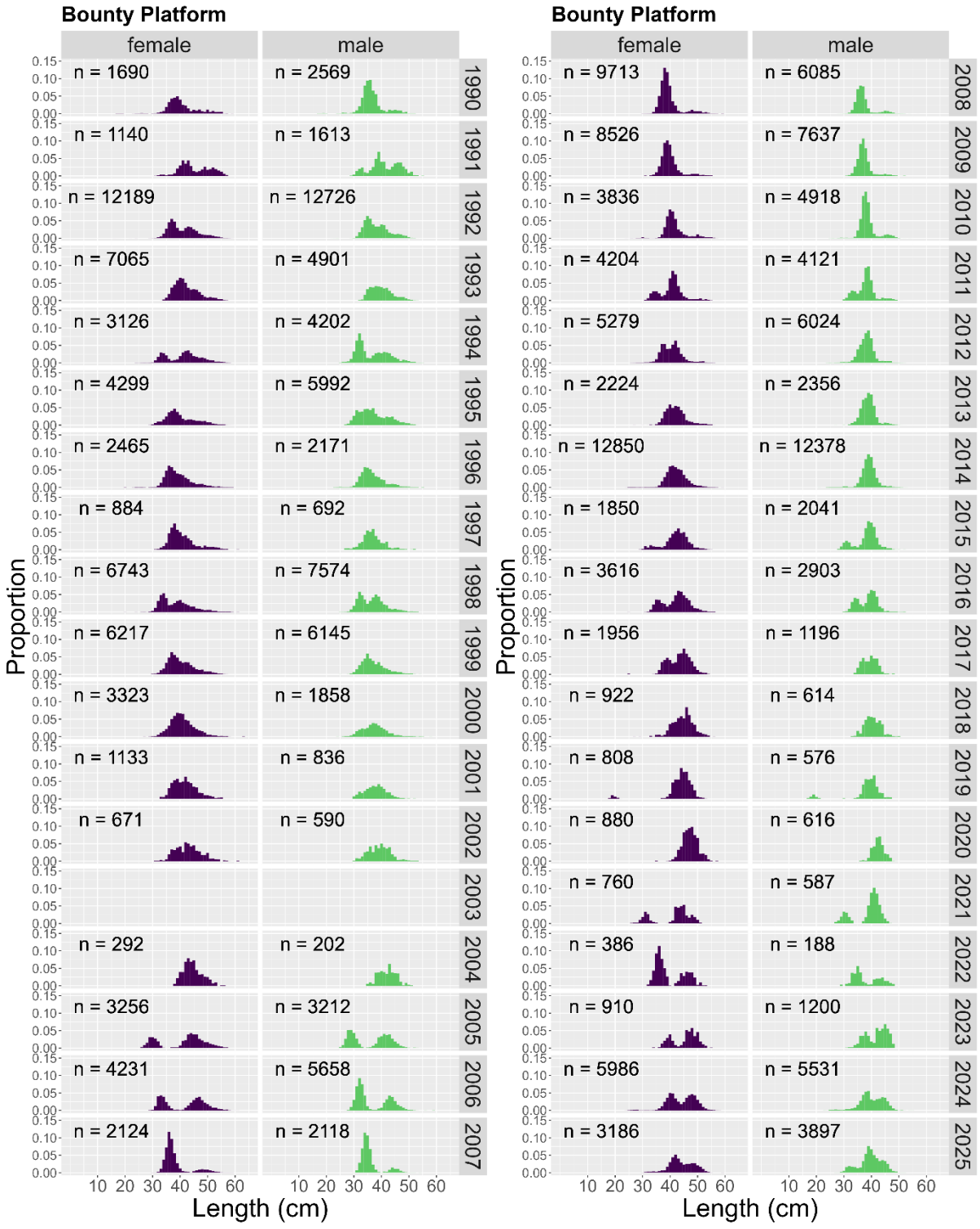


Figure A2: Length frequencies for southern blue whiting samples caught on Bounty Platform over the fishing years 1990–91 to 2025–26, labelled by year beginning (top to bottom, left and then right) and for females (left column) and males (right column). Sample numbers given in top left corner of each year/sex combination. Note no sampling took place in 2003–04.

APPENDIX 2 – HISTORICAL AGE FREQUENCIES

Age frequencies back to 1979 for Campbell Rise (the start of the data for that area) are shown in Figure A3. The corresponding age frequencies for Bounty Platform back to 1990 (the start of the data for that area) are shown in Figure A4.

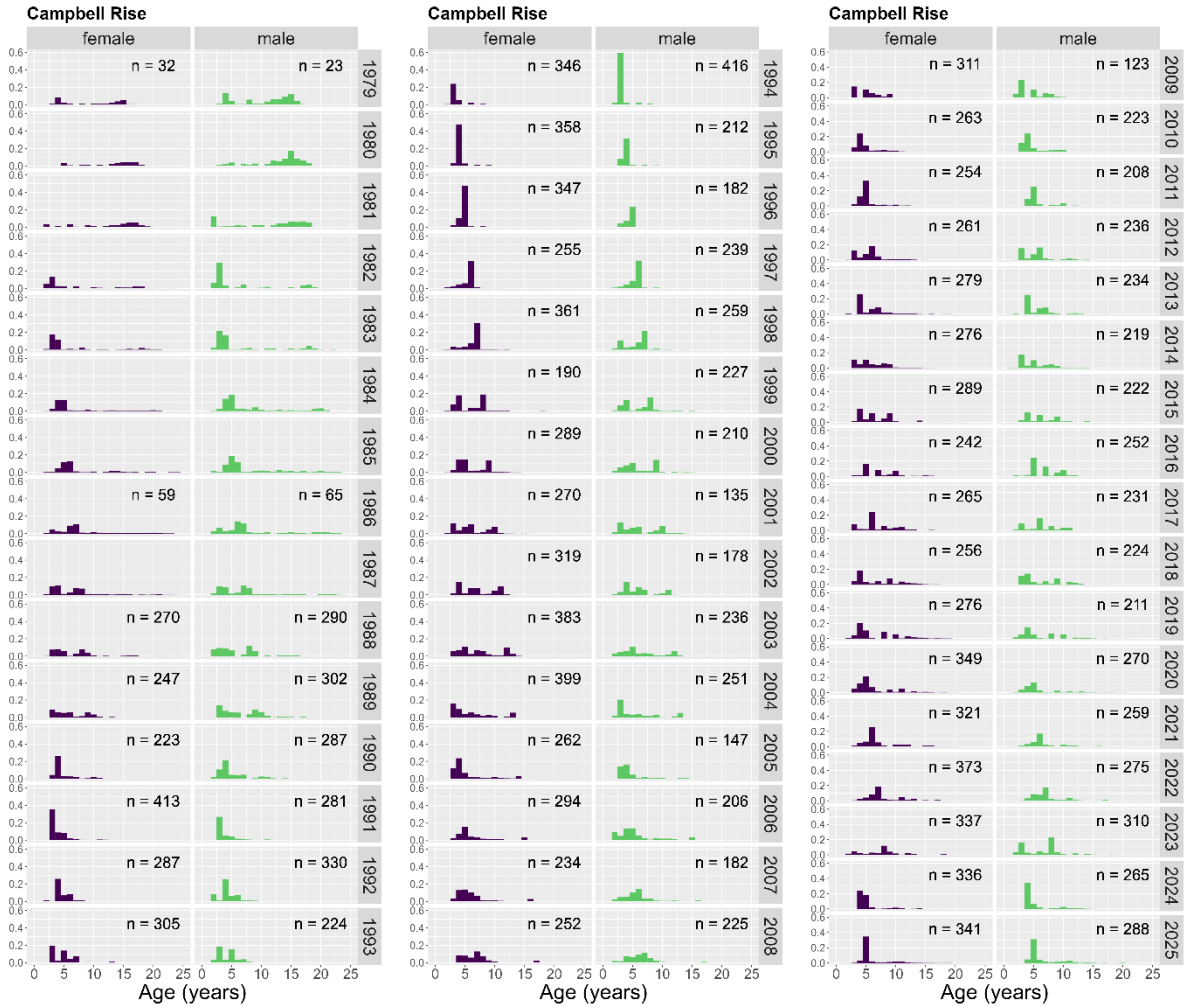


Figure A3: Age frequencies for southern blue whiting samples caught on Campbell Rise over the fishing years 1979–80 to 2025–26, labelled by year beginning (top to bottom, then left to right) and for females (left column) and males (right column). Sample numbers given in top right corner of each year/sex combination. Note that sample numbers were not available prior to 1986 and in 1987.

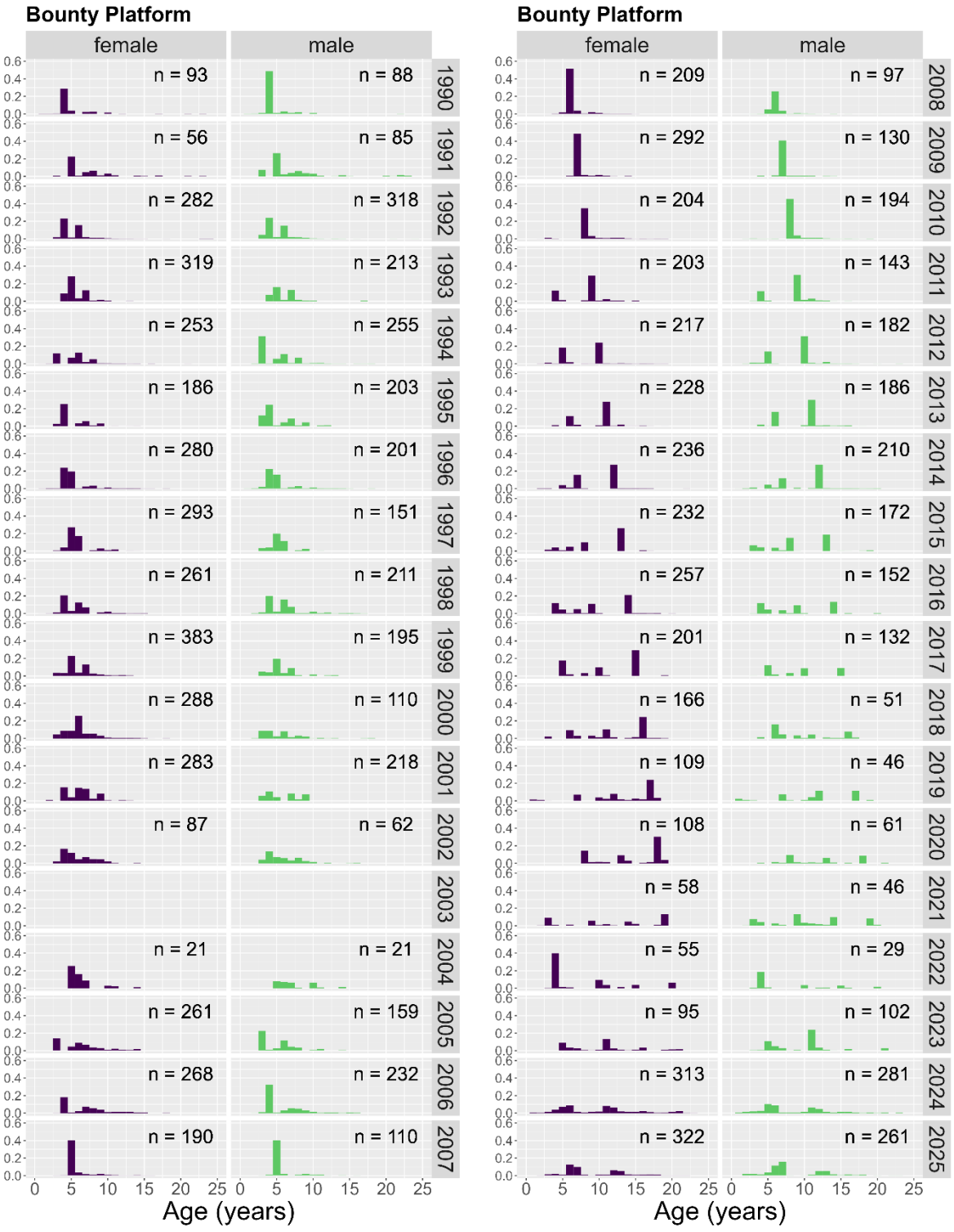


Figure A4: Age frequencies for southern blue whiting samples caught on Bounty Platform over the fishing years 1990–91 to 2025–26, labelled by year beginning (top to bottom, left and then right) and for females (left column) and males (right column). Sample numbers given in top right corner of each year/sex combination. Note no sampling took place in 2003–04.