Manapōuri Power Scheme longfin eel mitigation report

2025/26 season

Prepared for Meridian Energy Limited

September 2026



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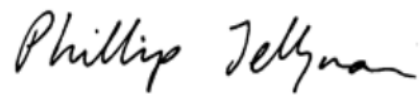
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Cover image: A fyke net set in Lake Manapōuri for the capture of migrating longfin eels [Mike Hickford, Earth Sciences New Zealand]

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Executive summary

- Resource consent conditions, the approved Migrant Eel Mitigation Plan (2023–2031), and Fisheries New Zealand Special Permit 951 require Meridian Energy to undertake and report on trap-and-transfer of migrating longfin eels at the Manapōuri Power Scheme. This report presents the results from the 2025/26 season and fulfils those annual reporting requirements.
- Elver and juvenile eel trapping was heavily constrained by high flows and spilling at the Manapōuri Lake Control structure, limiting effort to 49 trap lifts (approximately half the 90 completed in 2024/25). An estimated 16,678 elvers (62.51 kg) and 1.81 kg of juvenile eels were transferred upstream.
- Longfin eels comprised an estimated 13,048 transferred elvers, with 3,630 shortfins. Transfers of both species were well below their 13-year median values. Frequent high-flow events reduced trapping opportunities and likely contributed to lower transfer numbers; however, the magnitude of the decline suggests that flow-related changes in the timing and detectability of migrating elver cohorts, as well as other influences on recruitment or catchability, may also have contributed.
- Elver migration was highly concentrated, with 77.4% of transfers occurring over three days in February 2026. Limited trapping opportunities also prevented target release distributions from being achieved, with 90.4% of biomass released to the Lake Te Anau catchment and none to Lake Manapōuri.
- Adult eel trapping ran from November 2025 to April 2026, with 2,858 net-nights completed. Despite wind-related disruptions on 39 days, 2,146 migrant longfin eels were captured and transferred below the MLC, similar to 2024/25 levels. Females comprised 49.6% of migrants.
- Migrant eel catch rates peaked in January before declining from February onwards. Migration continued later than in the previous two seasons, with the last catch of 10 or more eels recorded on 21 April 2026.
- The transfer of 167 migrant eels in November 2025, together with consistently high November transfers over the past four seasons, confirms that a significant proportion of the annual migration occurs before the traditional summer peak and supports the continued inclusion of November in the trap-and-transfer programme.
- Despite significant environmental and operational constraints, the 2025/26 trap-and-transfer programme successfully transferred upstream- and downstream-migrating eels. The results extend the long-term monitoring record and support ongoing assessment and adaptive management of eel mitigation in the Upper Waiau catchment.
- Key recommendations are to retain the early-November start to migrant eel trapping, maximise elver trapping opportunities during suitable conditions, and maintain flexibility in the distribution of transferred elvers among release sites.

1 Background

This report fulfils Meridian Energy Limited's (Meridian) annual reporting requirements under its Resource Management Act (RMA) consents and its Fisheries New Zealand (FNZ) permit for transferring eel species.

1.1 Resource Management Act

Two sets of Resource Management Act (RMA) consent conditions require eel mitigation as part of the operation of the Manapōuri Hydro-Electric Power Scheme (MPS). The first is set out in Appendix 1 of the 1996 Resource Consents, including subsequent amendments. The second relates to the Manapōuri Tailrace Amended Discharge (MTAD) Consent 206157, which was granted in 2010, subsequently amended, and implemented in late October 2012.

Appendix 1 of the 1996 MPS consents (CN96019, 96020, 96021, 96022, and CN96023) sets out the monitoring requirements for those consents. Meridian must consult with, and report annually to, specified stakeholders and experts "to develop and implement research, monitoring and management response activities for longfin eel conservation in the Te Anau, Manapōuri and Waiau River catchments".

Condition 9 of MTAD Consent 206157 requires Meridian to implement a trap-and-transfer programme for adult eels migrating downstream "...to mitigate the additional effects of MTAD on the percentage of longfin eels migrating downstream through the MLC [Manapōuri Lake Control] by increasing the number of net nights over the existing eel trap-and-transfer programme by 1200 net nights (i.e., 20 nets set for an additional 60 nights). The trap-and-transfer programme shall continue until such time as the consent holder is advised in writing by Environment Southland that the programme can be discontinued."

Condition 10 of the same consent required Meridian to develop and implement an Eel Mitigation Research Programme. The programme's objective is "to identify options and potential solutions for the existing impact of the MPS on migrating eels, in order that the effects at the MPS are consistent with sustainable management of the longfin eel population". Meridian was required to consult with stakeholders during programme development and submit the programme to Environment Southland (ES) within six months of the consent commencing. Following consultation, Meridian submitted a Migrant Eel Mitigation Programme (MEMPRG) and Migrant Eel Mitigation Plan (MEMPLN), which were endorsed by the Eel Focus Group – now known as the Eel Working Group – and approved by Environment Southland in 2012. Trap-and-transfer was accepted in the MEMPLN (2012–2022) as the most appropriate method for supporting a sustainable population in Lakes Te Anau and Manapōuri and was implemented from 2012.

To meet the requirements of the 1996 consents and MTAD Consent 206157 Conditions 9 and 10, the MEMPLN requires elvers to be trapped at the MLC and transferred to suitable upstream habitats. Downstream migrant eels are also trapped in Lake Manapōuri and transferred beyond the MLC. Monitoring the number and characteristics of adult and juvenile eels captured and transferred provides information for assessing eel populations within the lakes.

The MEMPLN was reviewed in October 2017 (James 2017) and again in November 2022 (Egan et al. 2022), following the consultation and approval processes established for the original plan. The 2017 review found that the trap-and-transfer programme was effective and should continue because it supported the sustainable management of longfin eels in the Upper Waiau Catchment and contributed to national recruitment.

The 2022 review recommended several improvements to the MEMPLN, including:

- trialling downstream migrant eel trapping during November
- collecting individual length data for migrant and 'feeder' eels captured in Lake Manapōuri
- standardising transfer-site nomenclature and recording elver release locations by GPS
- improving the data presented in annual compliance reports by:
  - summarising annual elver transfers to the Upper Waiau Catchment by species
  - including habitat-specific elver stocking data for lakes and rivers
  - standardising adult migrant catches by effort using a CPUE index and reporting those data alongside the raw catch data.

The updated MEMPLN (2023–2031) V1 was accepted by Environment Southland on 29 November 2023. It was subsequently revised under the plan's adaptive management framework, with MEMPLN (2023–2031) V3 approved in October 2025. The V3 updates incorporated recommendations from the 2023/24 Annual Compliance Report, including a trial of migrant eel trapping from 1 November to assess the effects of shifting effort from May to November, and included further revisions to improve clarity and keep the plan current. The MEMPLN sets out specific, measurable, achievable, relevant, and time-bound (SMART) actions to mitigate the effects of the MPS on longfin eel populations and provides the framework for ongoing trap-and-transfer operations, monitoring, and adaptive management across the Waiau catchment.

The objectives of MEMPLN (2023–2031) are to:

- ensure the mitigation plan remains fit for purpose within the broader MEMPRG
- meet all relevant legal and consent obligations applying to Meridian
- support the collection of robust data to assess the effects of the MPS on eel migration and inform future adaptive management.

1.2 Fisheries New Zealand and Department of Conservation

Trap-and-transfer activities undertaken to meet the requirements of the MEMPLN are conducted under the following permits and authorisations:

- Fisheries Act 1996, section 97(1): Special Permit 951 (elvers, migrant eels, and lamprey)
- Conservation Act 1987, section 26ZM(2)(a): Freshwater Fish Transfer Authorisation (elvers, migrant eels, and lamprey)
- Conservation Act 1987, section 26ZM(3)(b): Approval to Transfer Aquatic Life (elvers)
- Conservation Act 1987, sections 17J and 17Q, and National Parks Act 1980, section 59(2): Low Impact, Research and Collection Permit (migrant eels).

In accordance with Fisheries New Zealand Special Permit 951, Meridian is also required to submit an annual report summarising trap-and-transfer data.

2 Elver and juvenile eel trap-and-transfer

The 2023–2031 MEMPLN (V3) requires that:

- elver trapping will run from 1 December until at least the 10 March
- after 1 March, elver trapping will cease 10 days after the last daily catch of ≥2 kg of elvers
- where possible, consecutive daily trapping at MLC will occur, except when flows >50–70 m^3/s are forecast and/or when flushing flows are scheduled
- where possible, three samples of elvers will be retained over the trapping season, ideally near the start, middle and end of the trapping season and used for species identification, length, and weight measurements.

2.1 Effort

Two floating traps fitted with ramps and attractant water were used below the MLC to capture longfin (LFE) and shortfin (SFE) elvers and juvenile eels. When the traps were emptied, the catch was sorted using a stretched-mesh catch bag with 16 mm openings. Eels that passed through the mesh were classified as *elvers*, while those retained in the bag were classified as *juvenile eels*. This method corresponds to a weight-based threshold of about 20 g, which equates to a length of 250 mm, depending on eel condition. In practice, individuals below 20 g, or 250 mm, are classified as *elvers*, whereas larger individuals are classified as *juvenile eels*.

During the 2025/26 season, trapping for elvers and juvenile eels began on 7 January 2026 and ended on 10 March 2026. The final daily catch of ≥2 kg of elvers occurred on 15 February 2026.

Trapping at the MLC during the 2025/26 season was substantially constrained by prolonged high-flow events, which prevented trap deployment (Figure 2-1). As a result, trapping effort was reduced to 49 trap lifts, approximately half the 90 lifts completed during the 2024/25 season. Of the trapping days completed, no elvers or juvenile eels were captured on 18 occasions. The hydrograph shows that elevated flows occurred repeatedly throughout the migration season, including a major flood event in late October 2025 that exceeded 950 m^3/s.

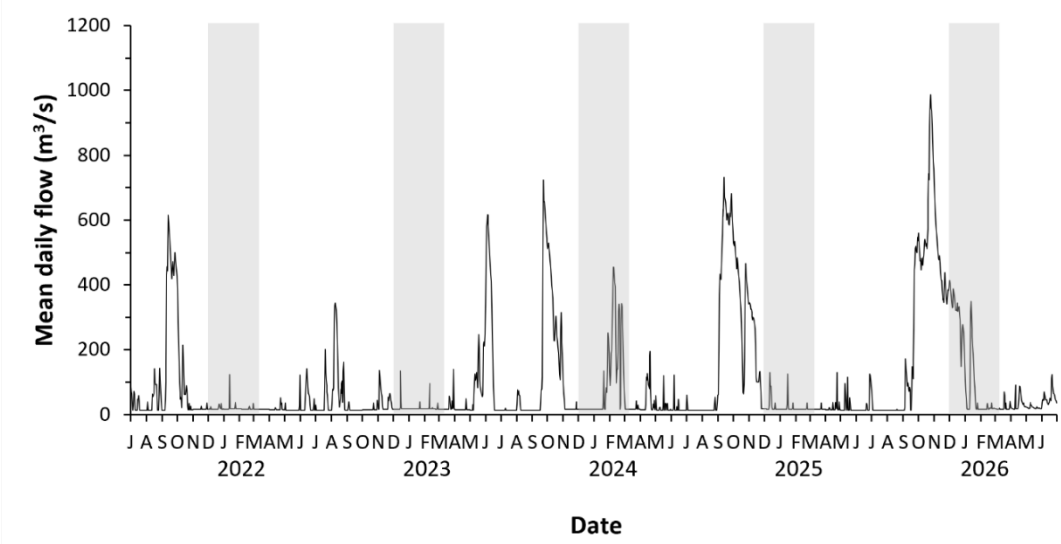


Figure 2-1: Mean daily flows at the Manapōuri Lake Control structure between July 2021 and June 2026. The grey areas indicate the elver and juvenile eel trap-and-transfer seasons.

2.2 Samples

Elver samples, excluding juvenile eels, were collected from both traps on three occasions during the migration season (Table 2-1) and frozen for subsequent analysis. The samples were thawed and processed by Earth Sciences NZ in May 2026. Each elver was identified to species, weighed to the nearest 0.01 g, and measured to the nearest millimetre. Consistent with previous years, thawed weights were adjusted to account for weight loss during freezing using species-specific correction factors of 1.17 for longfin eels (LFE) and 1.25 for shortfin eels (SFE). No adjustment was applied to total length measurements to account for potential shrinkage during freezing. A total of 138 LFE and 34 SFE from the three sampling events were measured and weighed (Table 2-1).

Table 2-1: Summary of elver samples collected from the traps during the 2025/26 season. A correction factor has been applied to the thawed weight to allow for weight loss during the freezing process (1.17× for LFE and 1.25× for SFE).

		Longfin elvers		Shortfin elvers	
Date	**Day**	**Number**	**Mean individual weight (corrected)**	**Number**	**Mean individual weight (corrected)**
4/2/2026	28	7	4.79	2	1.23
5/3/2026	57	78	2.84	22	1.78
6/3/2026	58	53	2.73	10	1.87
Total		**138**	**3.45**	**34**	**1.63**

The species composition of each sample (Table 2-1) was used to estimate the total biomass of each species captured during the period associated with sample collection. Species-specific biomass was estimated by applying the proportion of each species within the sample to the total elver weight recorded for that period. Estimated biomass was then converted to abundance by dividing the species-specific biomass by the mean individual weight of that species from the corresponding sample period.

2.3 Elvers

Between 1 December 2025 and 10 March 2026, an estimated 16,678 elvers were transferred upstream of the MLC to approved release sites under the Department of Conservation transfer authorisations (see Section 1.2). This estimate was derived from a total transfer weight of 62.51 kg of elvers and 1.81 kg of juvenile eels (>20 g). Elver migration was highly concentrated, with 12,912 individuals (77.4% of the seasonal total) transferred during a four-day period between 12 and 15 February 2026.

The number of longfin elvers transferred during the 2025/26 season (13,048) was among the lowest recorded during the 13-year monitoring period and was well below the rolling 13-year median (102,850; Figure 2-2). The only season with a comparable number of longfin transfers was 2019/20 (19,861), when trap-and-transfer operations were severely constrained by COVID-19 travel restrictions. Shortfin transfers (3,630) were also below the rolling 13-year median (6,447) and represented only 15.4% of the 41,820 shortfin elvers transferred in 2024/25. While frequent high-flow events limited trapping opportunities and likely contributed to reduced transfer numbers, the magnitude of the decline exceeded that attributable to reduced trapping effort alone. This suggests that additional environmental or biological factors may have influenced elver recruitment or catchability during the season, including potential shifts in the timing of migration and reduced detectability of migrating elver cohorts during periods of elevated flow.

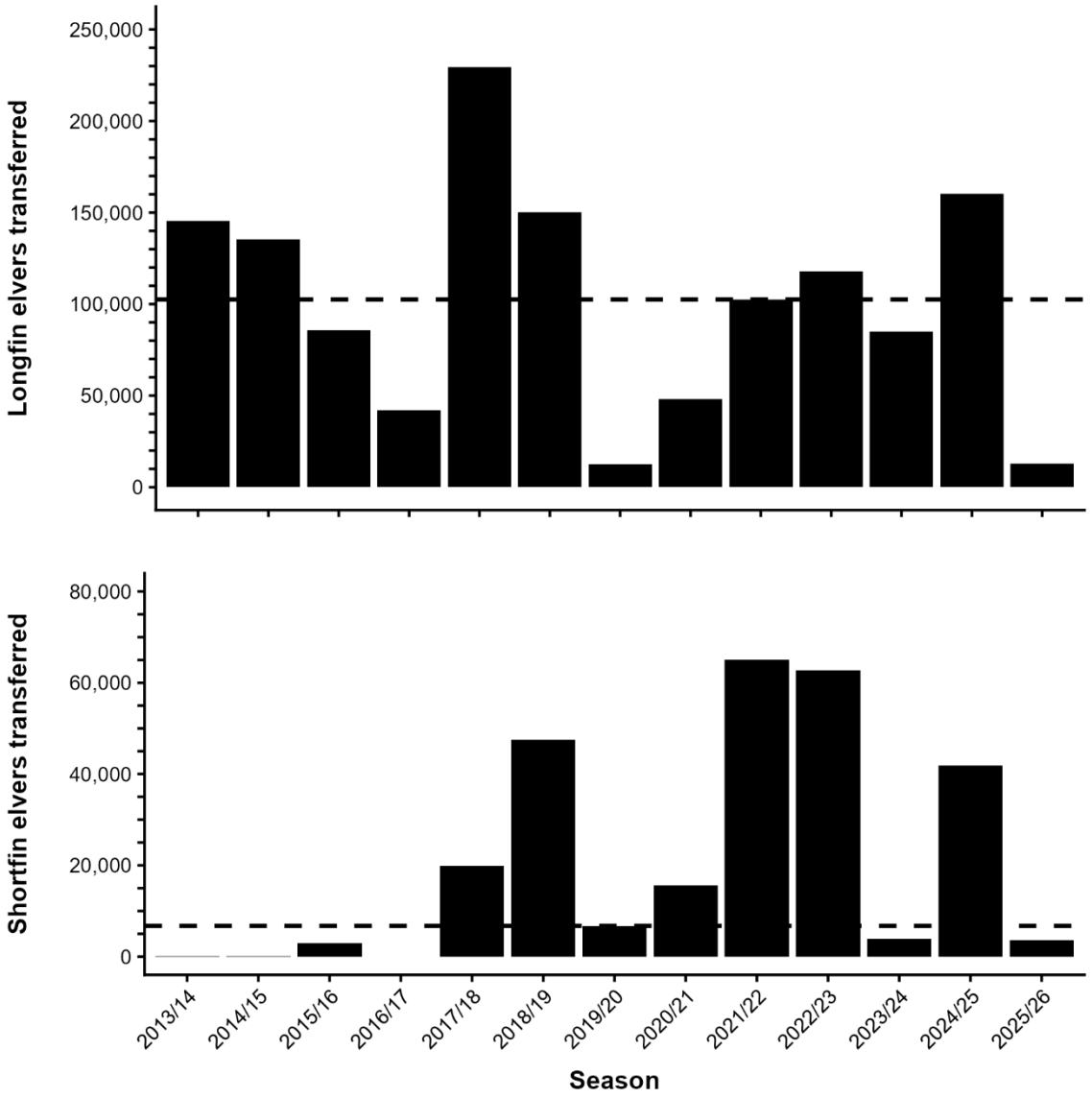


Figure 2-2: Number of longfin (top panel) and shortfin (bottom panel) elvers transferred past the Manapōuri Lake Control structure per season over the past 13-years. The dashed line shows the 13-year rolling median.

Shortfin elvers comprised 21.8% of the total catch in 2025/26, similar to the proportion recorded in 2024/25 (20.7%), although still slightly lower than in several previous seasons. Interpretation of seasonal changes in species composition was limited by the availability of only a single species-composition sample collected during the main migration period (4 February 2026; Table 2-1). Consequently, the estimated temporal distributions of shortfin and longfin elvers were effectively identical for most of the season (Figure 2-3 and Figure 2-4) diverging only during the final few days when two additional species composition samples were collected (Table 2-1). As a result, temporal trends in species composition could not be reliably assessed.

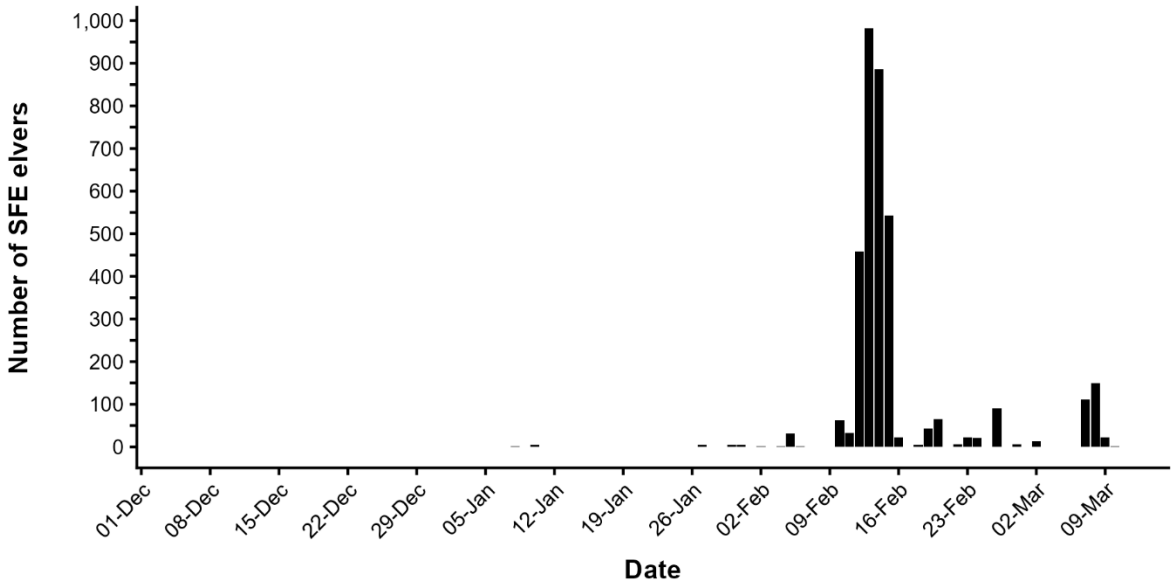


Figure 2-3: Daily catch of shortfin (SFE) elvers at the Manapōuri Lake Control structure across the 2025/26 season. Numbers are estimated from total daily catch weights and proportions of the two eel species in samples (Table 2-1).

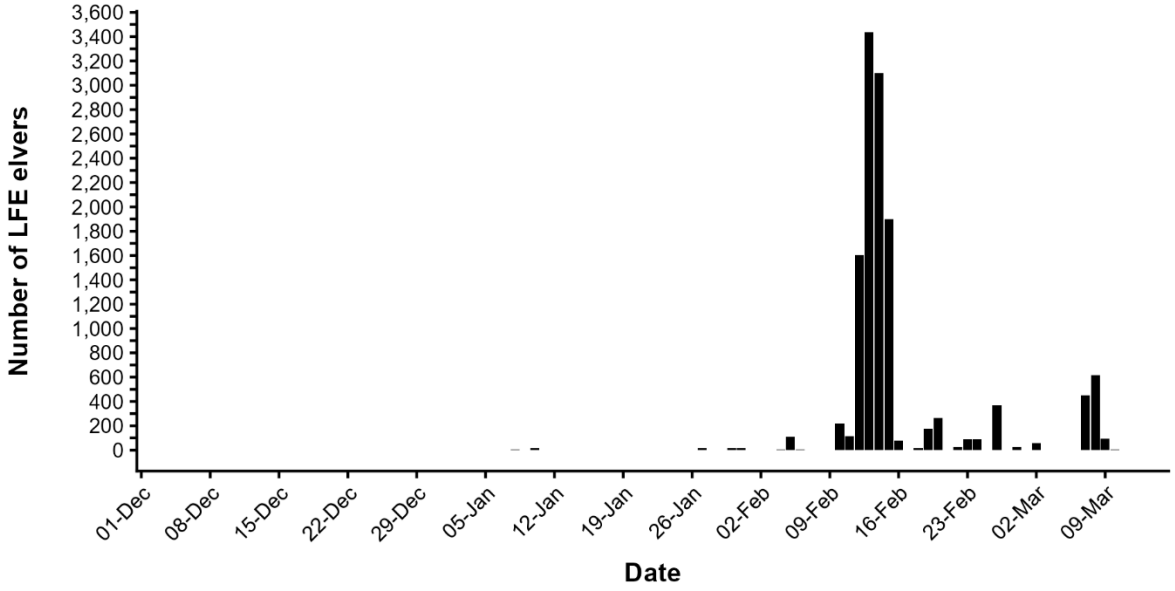


Figure 2-4: Daily catch of longfin (LFE) elvers at the Manapōuri Lake Control structure across the 2025/26 season. Numbers are estimated from total daily catch weights and proportions of the two eel species in samples (Table 2-1).

In contrast to the previous four seasons, when the majority of elvers were caught between January and early February, the 2025/26 season was characterised by a delayed and highly compressed period of capture (Figure 2-5). Very few elvers were caught before mid-February, with most of the seasonal catch being recorded over a short period between 12 and 15 February 2026. This compressed migration pattern likely reflects the limited trapping opportunities available during the season, as prolonged high-flow events prevented trap deployment for extended periods.

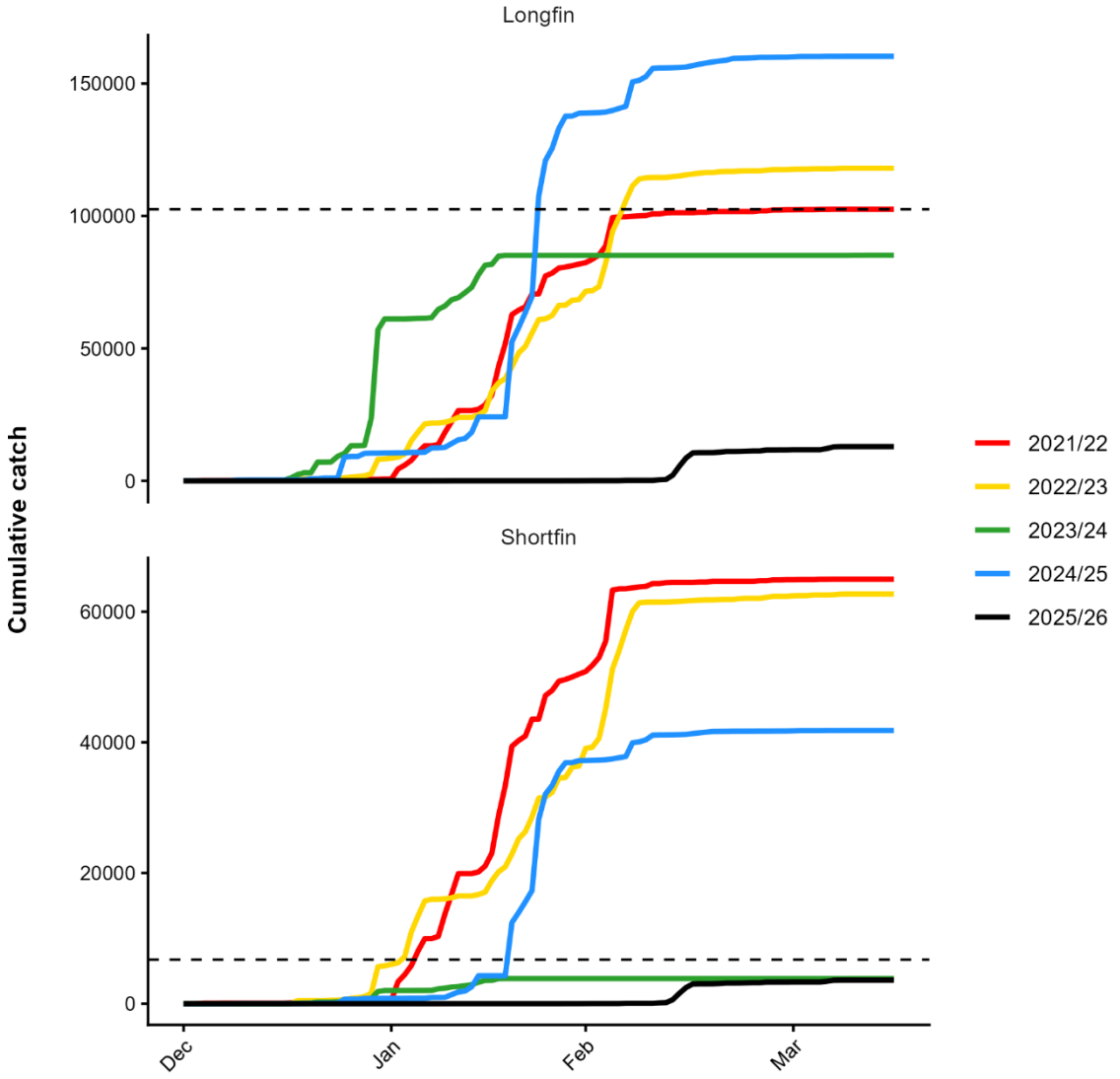


Figure 2-5: Cumulative number of longfin (top panel) and shortfin (bottom panel) elvers caught at the Manapōuri Lake Control structure across the 2021/22 to 2025/26 seasons. The dashed line shows the long-term median total catch per season. Note that trapping also stopped for significant periods in 2023/24 due to high river flows.

The mean weight of the 138 longfin elvers sampled during the 2025/26 trap-and-transfer season was 3.45 g (range 1.0–6.4 g; Table 2-1), with a mean length of 129 mm (range 108–176 mm). The 34 shortfin elvers sampled were smaller, with a mean weight of 1.63 g (range 0.76–2.35 g) and a mean length of 111 mm (range 97–127 mm).

Longfin elvers captured in 2025/26 were predominantly 120–139 mm in length, with the highest frequencies occurring in the 130–139 mm size classes (Figure 2-6). The size distribution was broadly similar to that observed in the previous four seasons, indicating little interannual variation in the size of elvers reaching the MLC despite large differences in catch numbers. Longfin and shortfin elvers in the 110–120 mm size range are estimated to be approximately four years old (Crow et al. 2020), suggesting that the dominant cohort in 2025/26 likely spent around 4–5 years in the lower Waiau River system before reaching the MLC. The presence of a smaller number of larger individuals (>150 mm) indicates some variation in growth rates and age at recruitment, but the catch was overwhelmingly dominated by the mid-sized component that has characterised recent seasons.

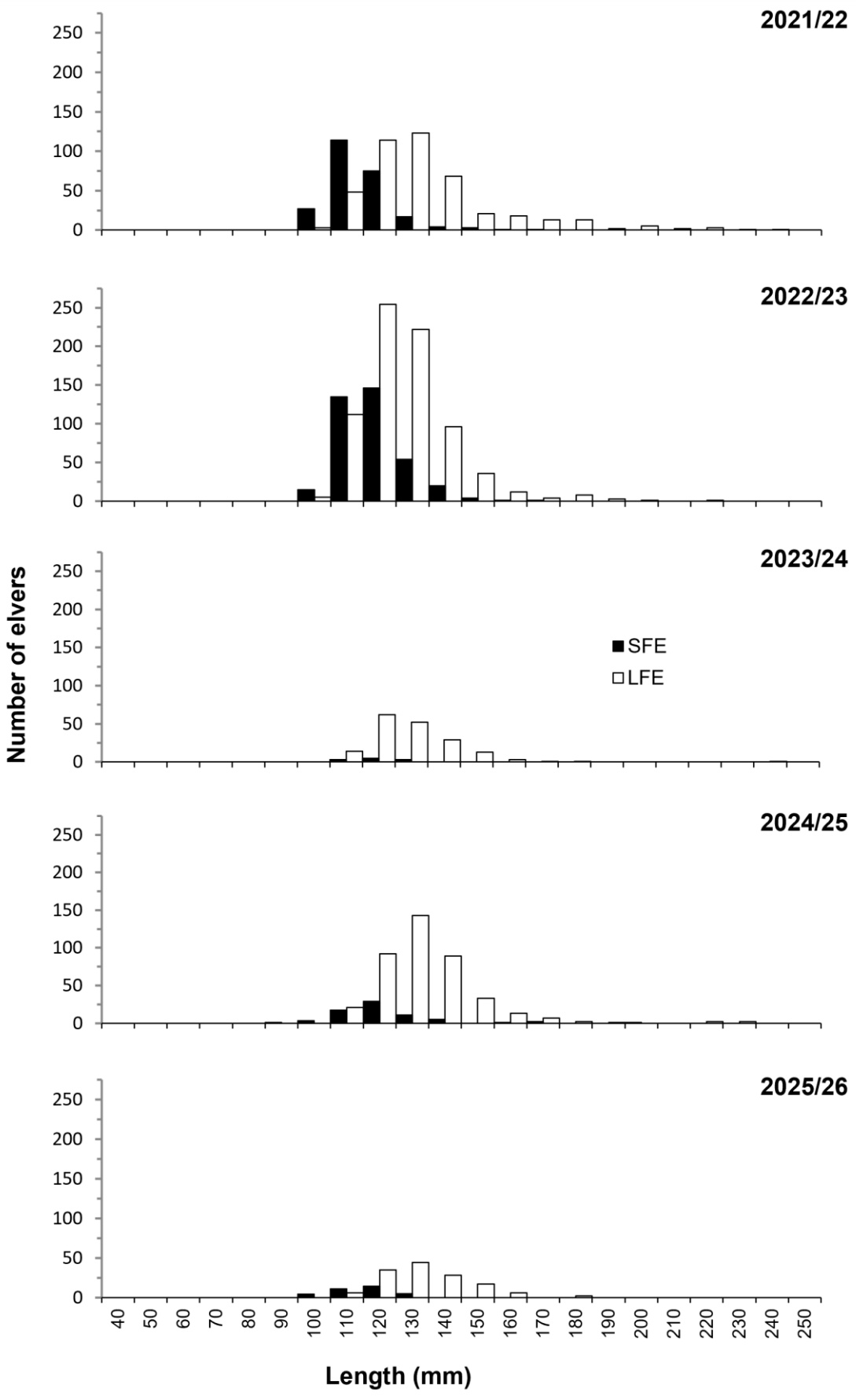


Figure 2-6: Length-frequency distribution of elvers in samples collected at the Manapōuri Lake Control structure during 2021/21 to 2025/26 seasons. LFE = longfin elvers, SFE = shortfin elvers.

Daily elver catches during the 2025/26 season were highly variable and were concentrated within a brief period in mid-February (Figure 2-7). Catch rates remained very low throughout most of the season, with the largest catches occurring between 12 and 15 February 2026. The highest daily catch was recorded on 13 February 2026, when 19.05 kg of elvers were captured. Outside this short migration pulse, catches were generally low or absent, and 17 trapping days yielded no elvers or juvenile eels. This pattern is consistent with the reduced trapping effort caused by prolonged periods of high river flow, which restricted trap deployment throughout much of the migration season.

Waiau River temperatures during the 2025/26 season were relatively stable (Figure 2-7), generally ranging between 14 and 18°C and remaining within the temperature range previously associated with active elver migration (Martin and Bowman 2016). However, despite these apparently favourable temperatures, elver catches were exceptionally low compared with recent seasons (Figure 2-2). This suggests that river temperature was unlikely to be the primary factor limiting catches in 2025/26. Instead, the markedly reduced catch is attributable to the restricted trapping opportunities resulting from frequent high-flow events, which may also have altered the timing and detectability of migrating elver cohorts.

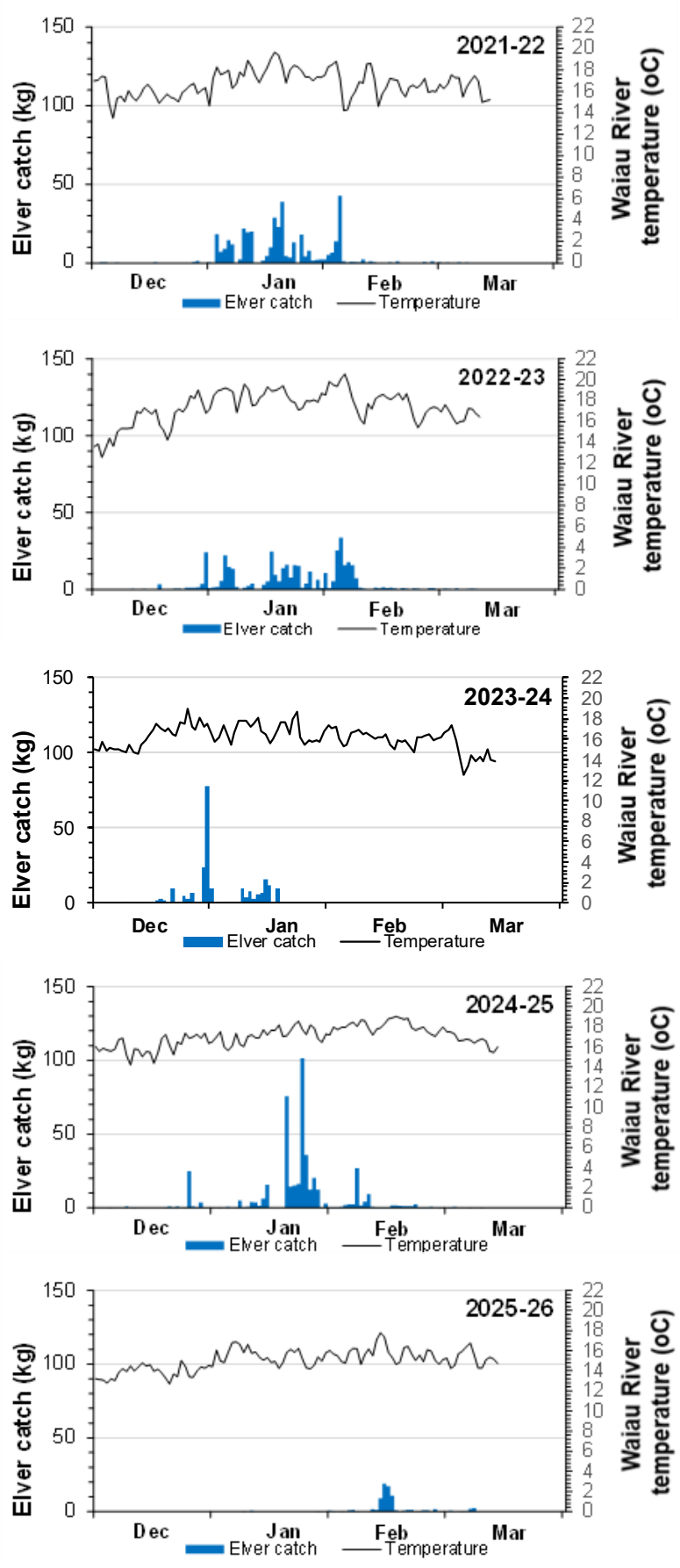


Figure 2-7: Daily catches of elvers during the 2021/22 to 2025/26 seasons and Waiau River temperature measured at the Duncraigen Bridge just below the MLC.

2.4 Release sites

Elvers were transferred by road to approved release sites on Lake Te Anau or, when catches were less than 2 kg, to the Mararoa River immediately upstream of the MLC. The 2 kg threshold was exceeded on only five occasions during the 2025/26 season, resulting in transfers to two Lake Te Anau release sites. Under the MEMPLN, approximately one-third of transferred elvers (by weight) should be released to Lake Manapōuri and two-thirds to Lake Te Anau.

Prolonged spilling at the MLC substantially constrained trapping during the 2025/26 season, reducing both trapping opportunities and the number of elvers available for transfer. As a result, 90.4% of transferred elver biomass was released within the Lake Te Anau catchment, 9.6% was released immediately upstream in the Mararoa River, and no elvers were released to Lake Manapōuri (Figure 2-8). Although most elvers were therefore transferred to the Lake Te Anau catchment, the final release-site distribution differed considerably from the proportions specified in the MEMPLN. This reflected the combination of low elver catches and sustained spilling, which limited opportunities to distribute fish among the full range of designated release locations.

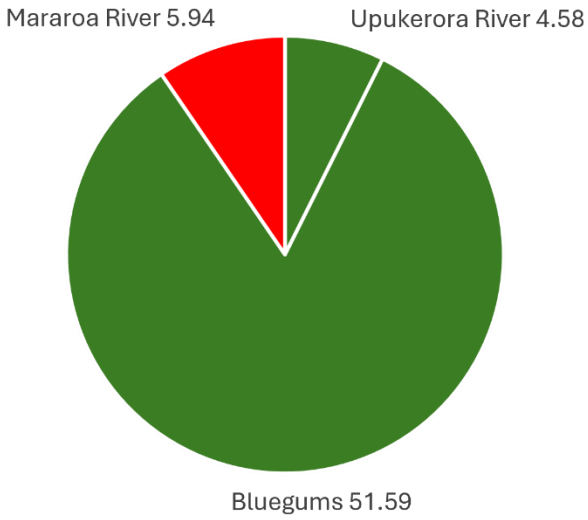


Figure 2-8: Weight (kg) of elvers transferred to Mararoa River (red) and Lake Te Anau (green) during the 2025/26 season.

Figure 2-9 and Figure 2-10 show that release-site use varies among seasons, reflecting differences in elver abundance and operational constraints. In 2025/26, most elvers were transferred to Bluegums in Lake Te Anau, both by weight and number.

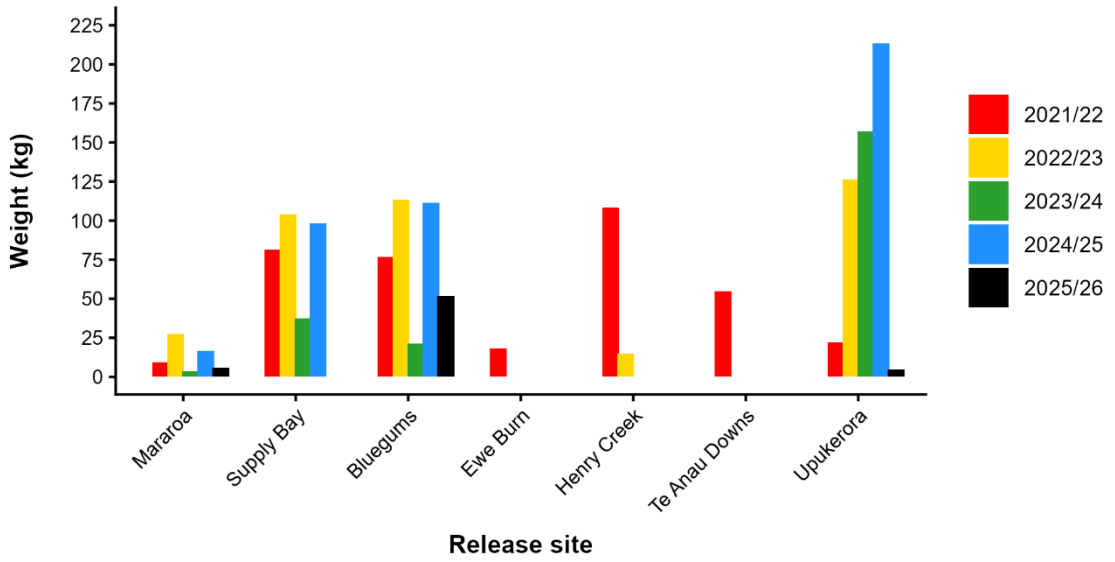


Figure 2-9: Weight of elvers transferred to release sites across five trap-and-transfer seasons. Release sites are just above the Manapōuri Lake Control structure (Mararoa), around Lake Manapōuri (Supply Bay) or Lake Te Anau (Bluegums, Ewe Burn, Henry Creek, Te Anau Downs and Upukerora River).

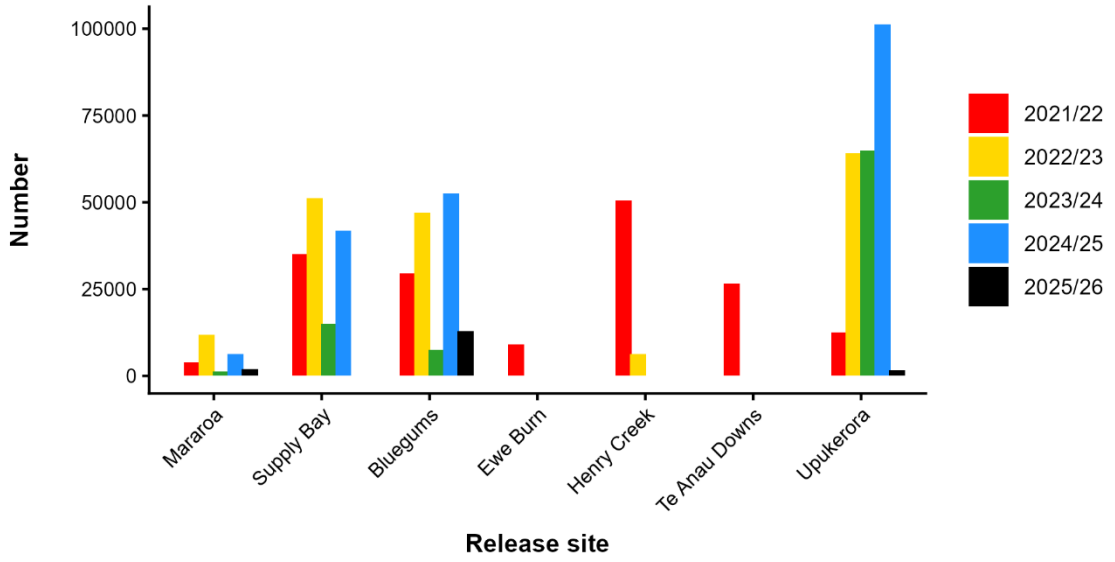


Figure 2-10: Number of elvers transferred to release sites across five trap-and-transfer seasons. Release sites are just above the Manapōuri Lake Control structure (Mararoa), around Lake Manapōuri (Supply Bay) or Lake Te Anau (Bluegums, Ewe Burn, Henry Creek, Te Anau Downs and Upukerora River).

Juvenile eel transfers showed a similar pattern, with most biomass released at Bluegums in 2025/26 (3.08 kg; Figure 2-11), smaller quantities released to the Mararoa River and the Upukerora River, and none released to Lake Manapōuri. Overall, Figures 2-9 to Figure 2-11 show that 2025/26 transfers were concentrated at fewer release sites than in some previous seasons.

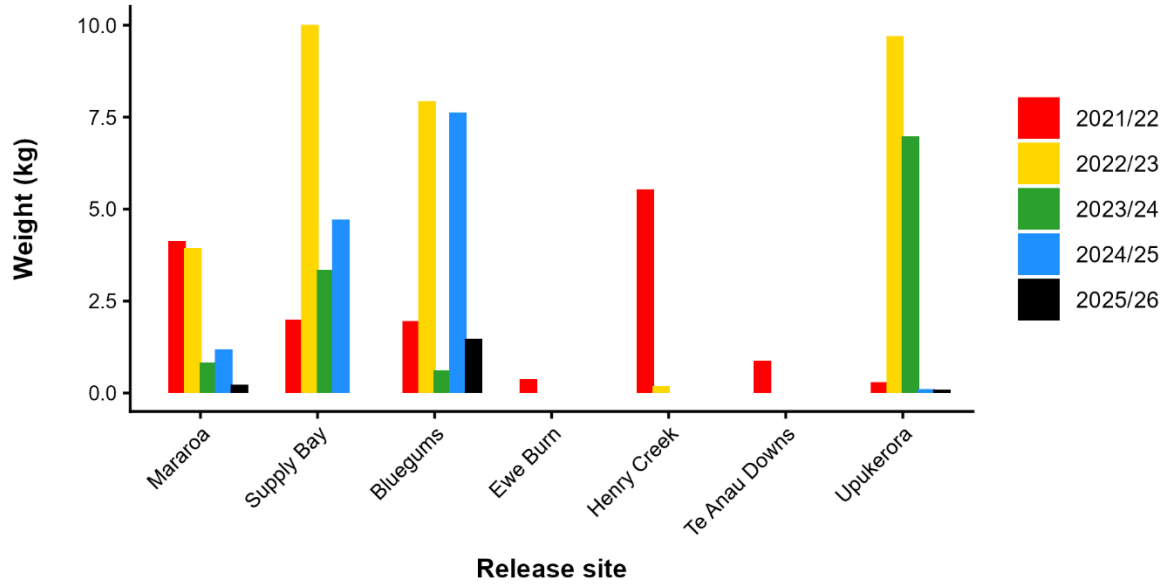


Figure 2-11: Weight of juvenile eels (>20 g) transferred to release sites across five trap-and-transfer seasons. Release sites are just above the Manapōuri Lake Control structure (Mararoa), around Lake Manapōuri (Supply Bay) or Lake Te Anau (Bluegums, Ewe Burn, Henry Creek, Te Anau Downs and Upukerora River).

3 Migrant[1] eel trap-and-transfer

The 2023–2031 MEMPLN (V3) requires that:

- adult migrant trapping will commence 1 November
- after 15 April, trapping will cease 10 days after the last total daily catch of ≥10 migrant eels.

3.1 Effort

Although trapping was scheduled to begin on 1 November 2025, strong winds delayed net deployment until 4 November. The nets were first emptied on 5 November 2025. Trapping ended on 30 April 2026 after 177 nights, although nets were emptied on only 153 occasions because strong winds often prevented safe checking (Table 3-1). Netting effort was concentrated between Surprise Bay and the lake outlet, between Supply Bay and Ruby Beach, and within Shallow Bay. The final day on which 10 or more migrant eels were caught ('trigger' day[2]) was 21 April 2026 (Table 3-1), around three months later than in the two previous seasons, when the trigger day occurred in late January. Females comprised 80% of the catch on the trigger day, highlighting the value of continuing trapping after CPUE has peaked (see Section 3.3).

Table 3-1: Summary of migrant eel trap-and-transfer season dates for the most recent five years. The sex ratio of migrant eels on trigger day[2] is shown in the last two columns.

Season	First night trapping	Last night trapping	No. trapping nights	Trigger day[2]	Trigger day # males	Trigger day # females
2021/22	1 Dec 2021	13 May 2022	144	23 Apr 2022	5	5
2022/23	17 Nov 2022	11 May 2023	154	18 Mar 2023	6	5
2023/24	15 Nov 2023	11 May 2024	159	25 Jan 2024	9	5
2024/25	1 Nov 2024	12 May 2025	170	20 Jan 2025	9	5
2025/26	4 Nov 2025	29 Apr 2026	153	21 Apr 2026	2	8

[1] Because migratory development varies among individuals, only eels with clear migratory features – such as enlarged eyes, a bullet-shaped head, thinner lips, darkened upper-body pigmentation, and a silver or grey belly – are classified as 'migrants'. Eels without these features are classified as 'feeders'.

[2] 'Trigger' day is defined in the 2023–2031 MEMPLN (V3) as the last day after 15 April that ≥10 migrant eels were captured

Prior to the MTAD consents (2005–2012), netting effort averaged 1,006 net-nights per season (i.e., the total number of nets set each night summed across the season). Netting effort in 2025/26 was 2,858 net-nights, representing a decrease from the 3,679 net-nights recorded in 2024/25 (Figure 3-1). This reduction was due to strong winds that prevented the checking of many nets on 39 days, particularly during March and April. The exceptionally low effort recorded in 2019/20 was a consequence of COVID-19 travel restrictions during March and April 2020.

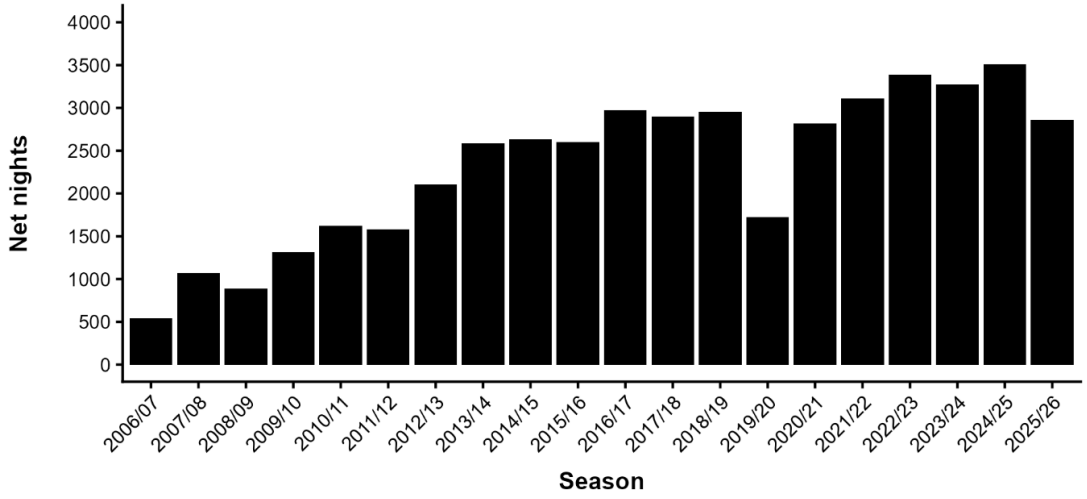


Figure 3-1: Total number of net-nights per migrant eel trap-and-transfer season. The Manapōuri Tailrace Amended Discharge (MTAD) consent 206157 applies from 2012/13 onwards.

During the 2025/26 season, between 3 and 24 nets were set and cleared each night, with the maximum of 24 nets deployed on 81 nights (53% of the 153 netting nights completed during the season; Figure 3-2). This represents an increase from the previous season, when the maximum number of nets was deployed on only 63 nights.

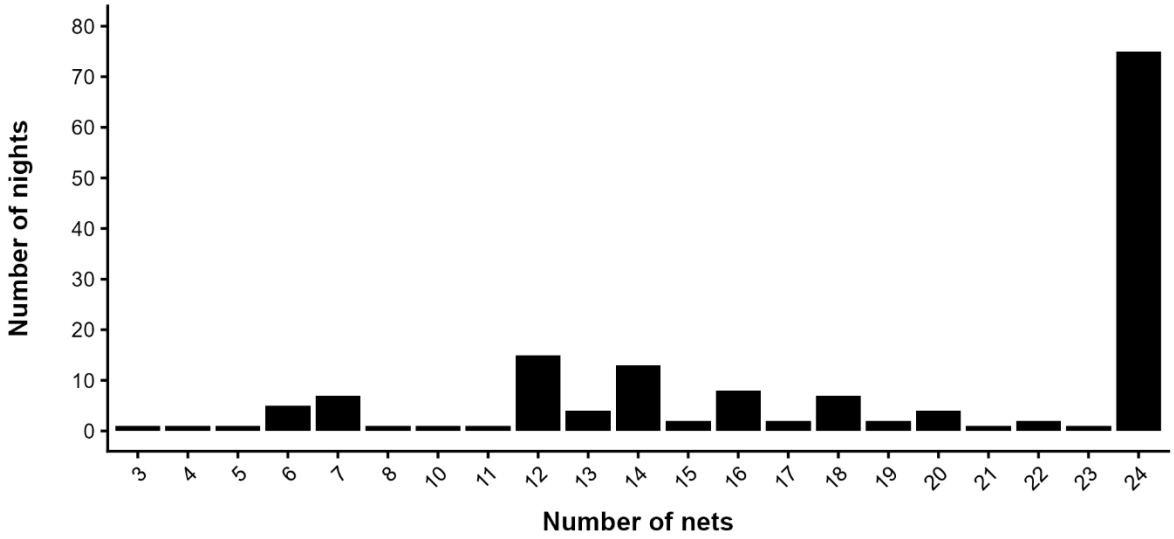


Figure 3-2: Frequency distribution of number of nets set per night across the 2025/26 trap-and-transfer season.

3.2 Feeder[1] eels

In 2025/26, 4,452 feeder longfin eels (LFE) and 318 feeder shortfin eels (SFE) were captured and released at their point-of-capture (Figure 3-3). The LFE catch shows a slight increase from 2024/25 (4,074) but remains well below the peak levels observed in 2009/10 and 2010/11. Shortfin eel captures remain a small proportion of the total (<8%), however there is a clear upward trend, with SFE numbers increasing by approximately 30% relative to 2024/25 (Figure 3-3).

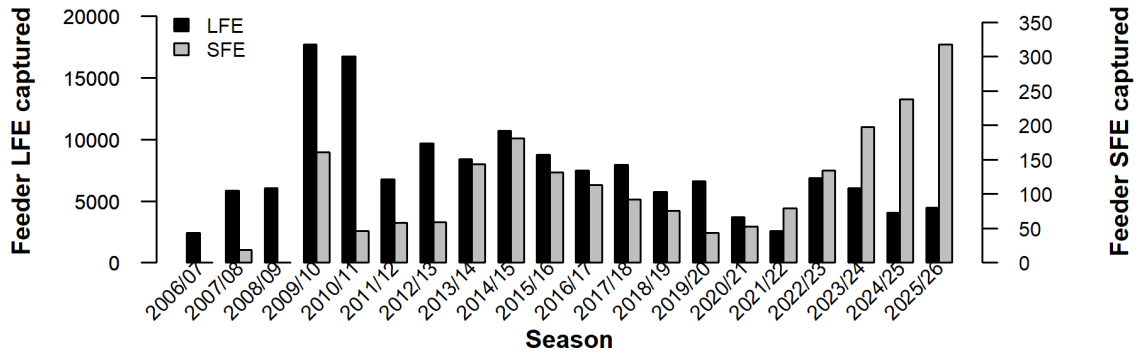


Figure 3-3: Total number of feeder longfin (LFE) and shortfin eels (SFE) captured and released per trap-and-transfer season since 2006/07. Note that SFE numbers are shown on the right-hand axis.

The 2025/26 season was marked by elevated early-season catch rates, with feeder longfin eel abundance reaching a peak of approximately 4.8 eels per net-night in November, exceeding November observations from each of the preceding three seasons (Figure 3-4). This pattern was also evident in bulk weight, which reached about 5.0 kg per net per night in November, nearly twice the next-highest November value shown (Figure 3-5). Both abundance and biomass declined sharply in December, followed by a small secondary peak in January. Catches then decreased steadily through the remainder of the season, falling to low levels by April. Unlike the pronounced February peak observed in 2023/24, feeder longfin eel catches in 2025/26 were concentrated early in the season, with no substantial late-season pulse evident.

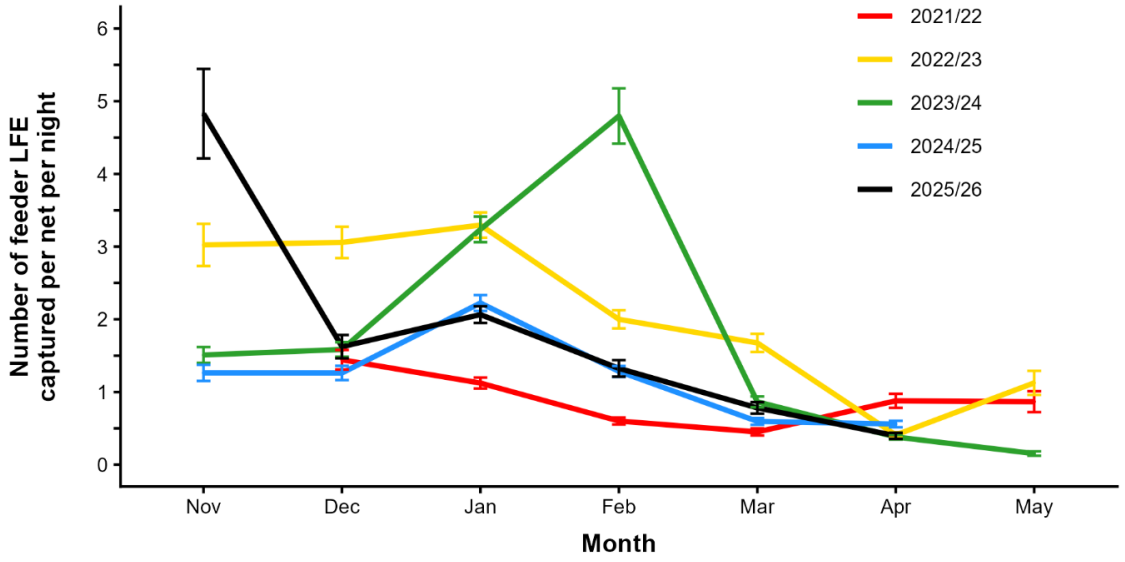


Figure 3-4: Mean (±SE) number of feeder longfin eels (LFE) caught per net per night across five trap-and-transfer seasons. Note that trapping commenced on 30 November in 2021/22, 17 November in 2022/23, 15 November in 2023/24, 1 November in 2024/25 and 4 November in 2025/26.

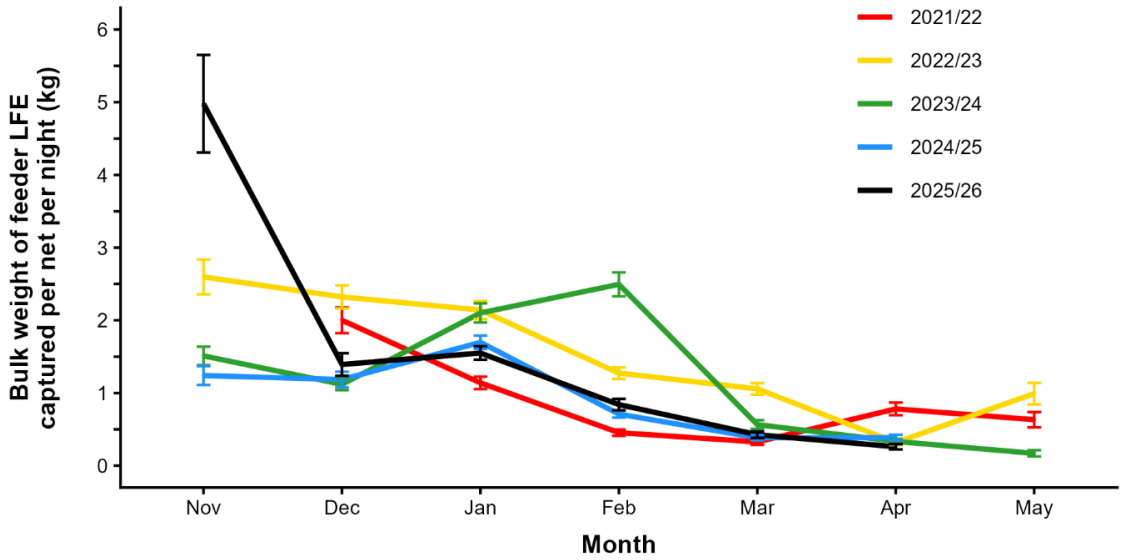


Figure 3-5: Mean (±SE) bulk weight of feeder longfin eels (LFE) caught per net per night across five trap-and-transfer seasons. Note that trapping commenced on 30 November in 2021/22, 17 November in 2022/23, 15 November in 2023/24, 1 November in 2024/25 and 4 November in 2025/26.

In 2025/26, feeder shortfin eel catches were substantially higher early in the trapping period than in the three previous years. Both abundance (Figure 3-6) and biomass (Figure 3-7) peaked in November, at approximately 0.34 SFE and 0.33 kg per net per night, respectively—more than double the levels recorded in earlier seasons. Catches declined sharply in December but remained relatively elevated through January, when a smaller secondary peak occurred at around 0.18 SFE and 0.12 kg per net per night. Catches then declined steadily, reaching levels similar to other years by March and April.

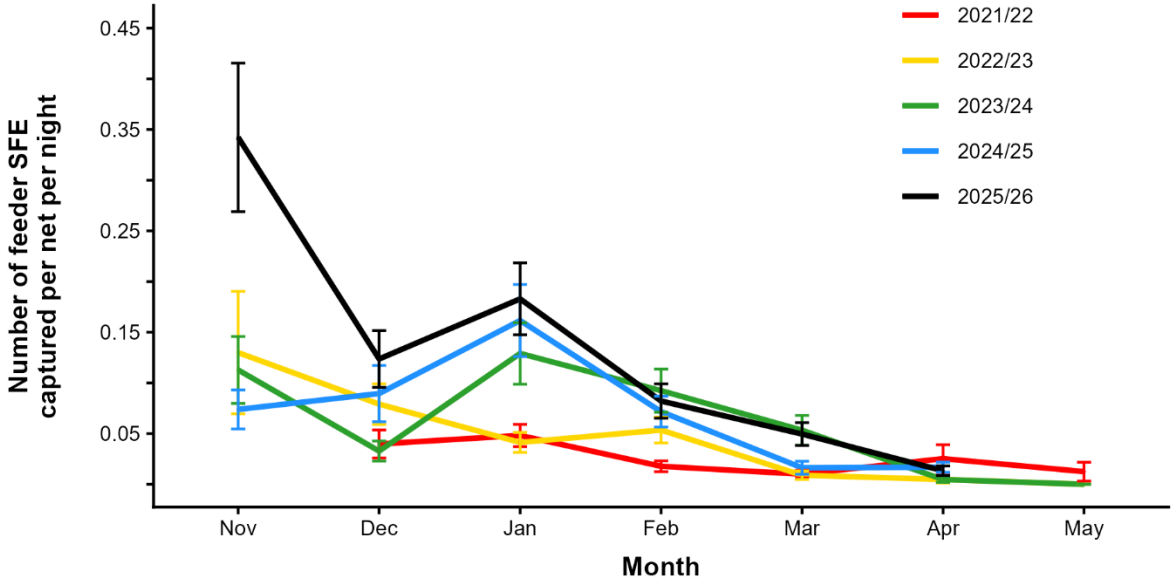


Figure 3-6: Mean (±SE) number of feeder shortfin eels (SFE) caught per net per night across five trap-and-transfer seasons. Note that trapping commenced on 30 November in 2021/22, 17 November in 2022/23, 15 November in 2023/24, 1 November in 2024/25 and 4 November in 2025/26.

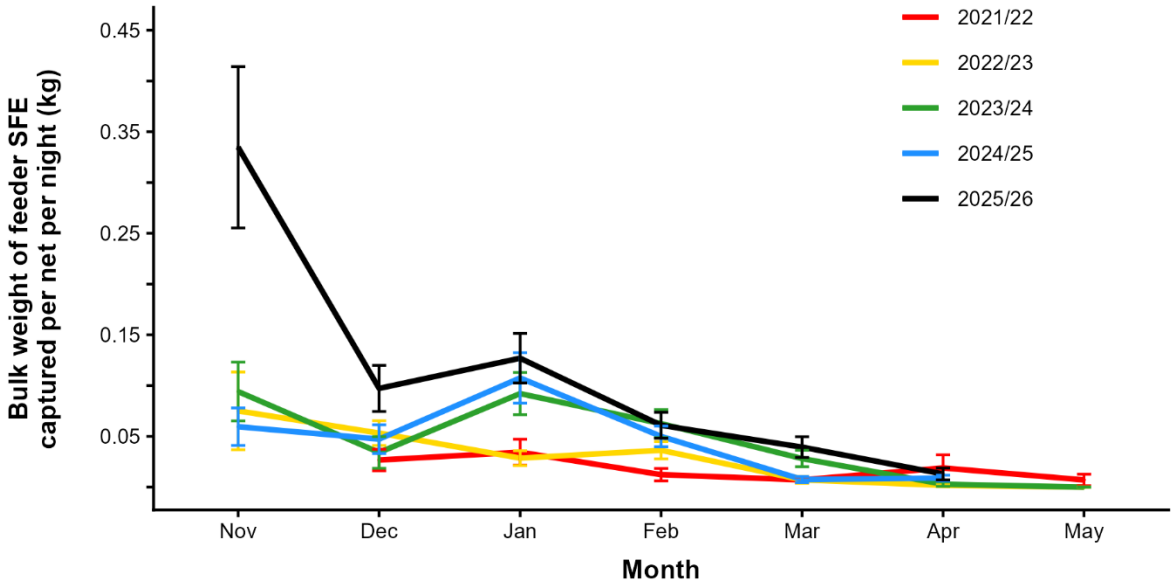


Figure 3-7: Mean (±SE) bulk weight of feeder shortfin eels (SFE) caught per net per night across five trap-and-transfer seasons. Note that trapping commenced on 30 November in 2021/22, 17 November in 2022/23, 15 November in 2023/24, 1 November in 2024/25 and 4 November in 2025/26.

3.3 Migrant eels

In 2025/26, a total of 2,146 migrant longfin eels were caught and transferred below the MLC structure. This was substantially fewer than the 4,658 migrants transferred in 2022/23, but broadly comparable to the 2,675 migrants transferred in 2024/25. Transfer numbers remain well below the peak years of the mid-2010s, when annual totals exceeded 6,500 migrants, and continue the generally lower levels observed over most of the past five seasons (Figure 3-8).

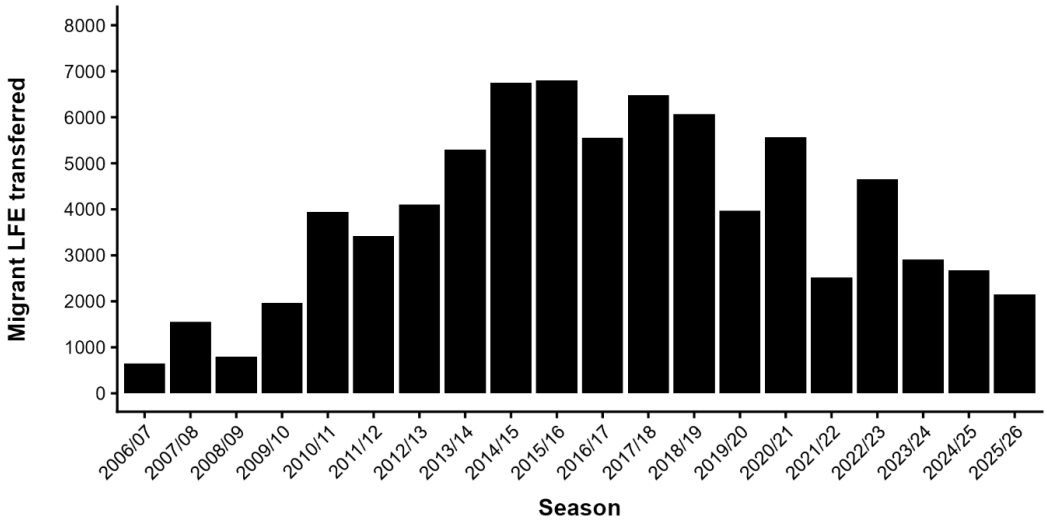


Figure 3-8: Total number of migrant longfin eels (LFE) captured and transferred below the Manapōuri Lake Control structure per trap-and-transfer season since 2006/07.

During the 2025/26 trap-and-transfer season, females comprised 49.6% of transferred migrant longfin eels (Figure 3-9). This represents a substantial increase from the preceding three seasons, during which females made up only 35.4–40.2% of migrants, and is the highest proportion recorded since 2021/22. The 2025/26 value was also closer to the long-term average of 53.3% across the 20 seasons monitored than in recent years. Following several seasons with relatively low female representation, the 2025/26 season indicates a shift towards the higher proportions of female migrants that have typically been observed in longfin eel migration at MLC, although females still comprised slightly less than half of all migrants.

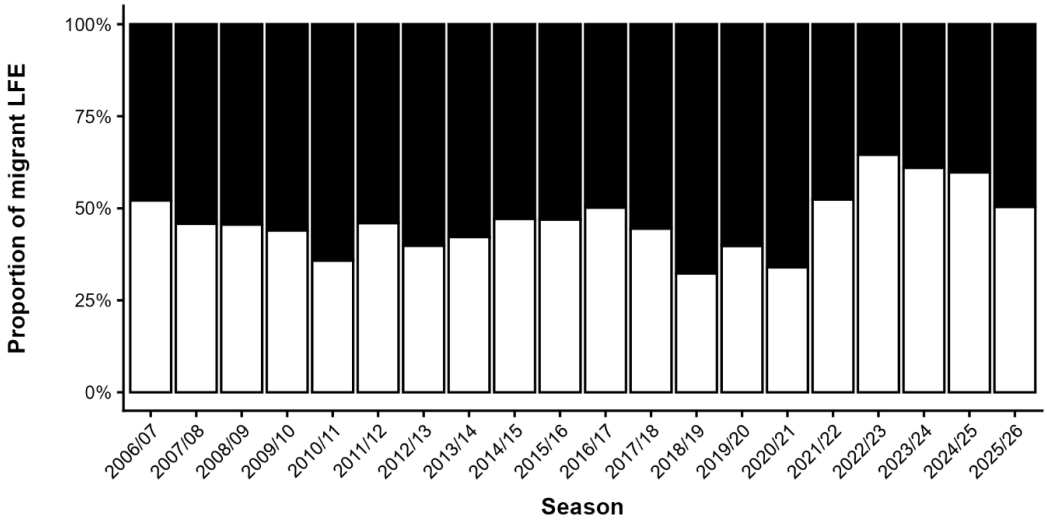


Figure 3-9: Proportion of migrant female (black) and male (white) longfin eels (LFE) captured and transferred below the Manapōuri Lake Control structure per trap-and-transfer season since 2006/07.

During the 2025/26 trap-and-transfer season, the number of migrant longfin eels transferred per night ranged from zero on seven nights to a maximum of 86 individuals (46 females and 40 males) on 30 January 2026. Monthly transfers increased from November to a peak of 839 migrants in January before declining steadily through February, March, and April (Figure 3-10). Although sampling effort increased progressively throughout the season, the number of migrants transferred declined markedly after January.

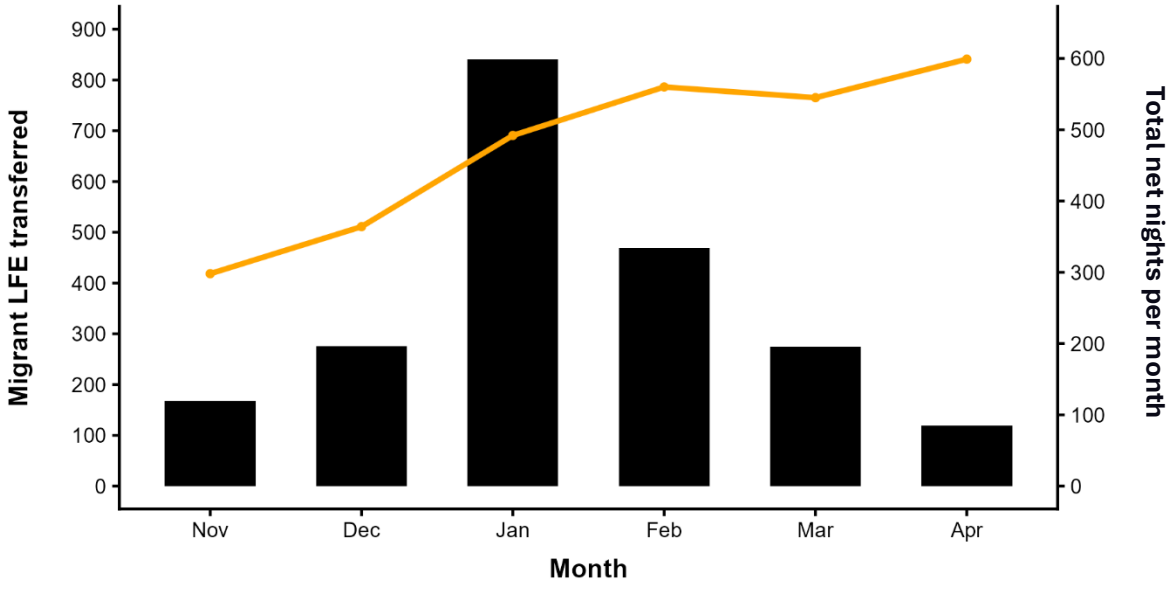


Figure 3-10: Number of migrant longfin eels (LFE) caught and transferred each month during the 2025/26 trap-and-transfer season (bars and left y-axis) and the total number of net nights each month (line and right y-axis).

November is of particular interest because it has only been included in the trap-and-transfer programme for the past four seasons, following an extension of trapping into the early part of the migration period. In November 2025, 167 migrant eels (85 males and 82 females) were transferred below the MLC (Figure 3-10). Although this was lower than the November totals recorded in the two preceding seasons (263 in 2023 and 251 in 2024), it nevertheless represents a substantial migration event occurring before the traditional peak summer transfer period. The capture and transfer of 167 migrants in November 2025, together with consistently high November totals over the past four seasons, demonstrates that a meaningful proportion of the annual migrant run occurs during this month. These results support the continued inclusion of November in the operational programme.

CPUE of male (Figure 3-11) and female migrant eels (Figure 3-12) increased through the early part of the 2025/26 season, peaking in January before declining steadily through the remainder of the season. Male migrant longfin eel CPUE increased from 0.29 fish per net per night in November to 0.86 fish per net per night in January, before decreasing to low levels from February onwards. Compared with 2024/25, male CPUE was lower during December and January but was similar from February through May. Female migrant longfin eel CPUE followed a comparable seasonal pattern, increasing from 0.28 fish per net per night in November to 0.85 fish per net per night in January before declining thereafter. Female CPUE was generally higher than in 2024/25 during November, January, and February. Overall, the timing of peak migration in 2025/26 was consistent with previous seasons, with the highest catch rates occurring in January.

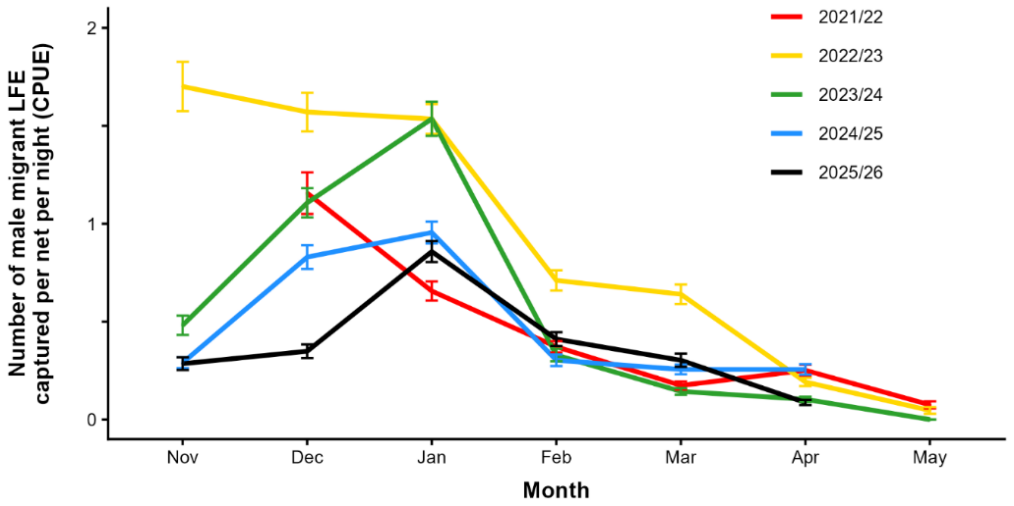


Figure 3-11: Mean (±SE) number of male migrant longfin eels (LFE) caught per net per night (CPUE) across five trap-and-transfer seasons. Note that trapping began in mid-November during the 2022/23 and 2023/24 seasons, but in 2024/25 and 2025/26 it commenced earlier, on 1 November.

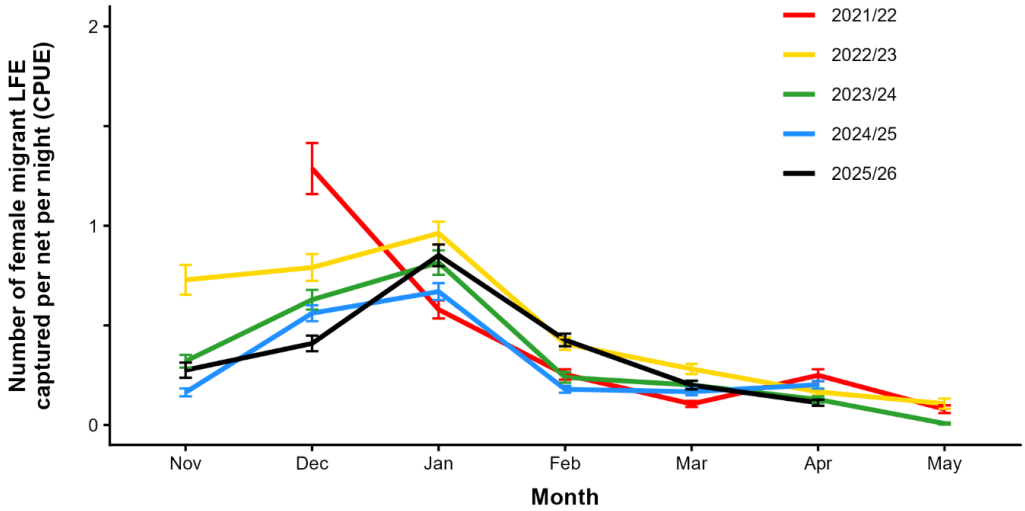


Figure 3-12: Mean (±SE) number of female migrant longfin eels (LFE) caught per net per night (CPUE) across five trap-and-transfer seasons. Note that trapping began in mid-November during the 2022/23 and 2023/24 seasons, but in 2024/25 and 2025/26 it commenced earlier, on 1 November.

This season, to improve consistency with Section 4.6 of the MEMPLN, measured weights (g) of male migrant longfin eels were converted to estimated lengths (mm) using the length-weight relationship:

$$\text{Length} = \left(\frac{\text{Weight}}{\text{-6.6121}}\right)^{\frac{1}{3.3454}}$$

The constants were derived from measured relationships for 229 male migrant longfin eels from Makara Stream (Todd 1980).

The mean length of male migrant longfin eels in 2025/26 was 675 mm (Figure 3-13), virtually unchanged from the 673 mm recorded in 2024/25. However, it remained below the long-term average of 687 mm for male migrants recorded since 2006/07 (Figure 3-13).

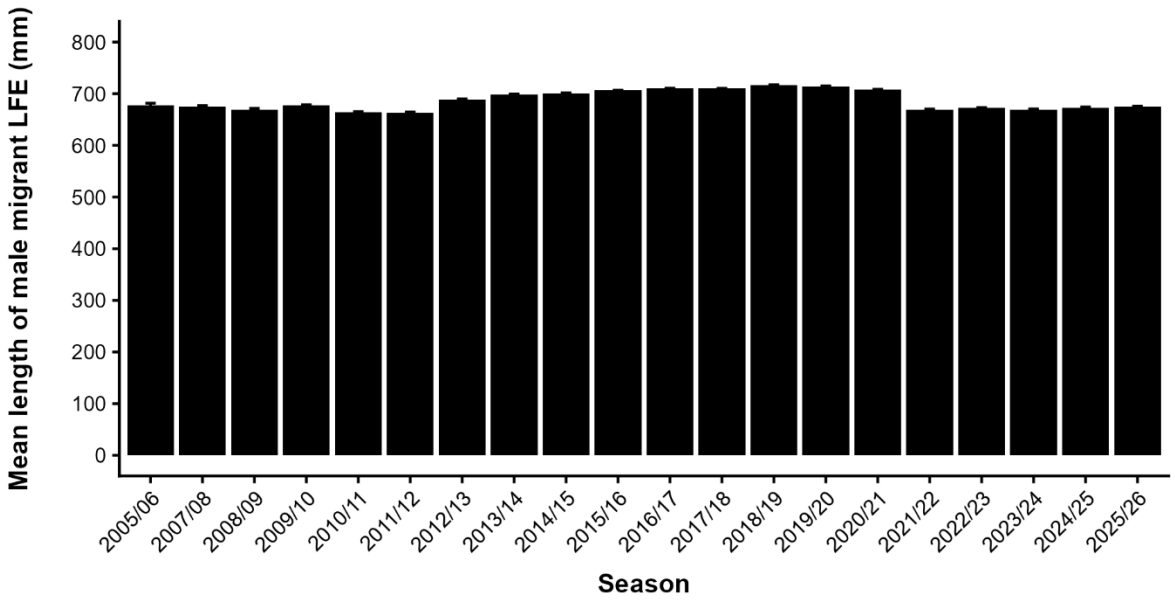


Figure 3-13: Mean (+SE) length of male migrant longfin eels (LFE) recorded for each trap-and-transfer season since 2005/06. Error bars are not readily visible for many years due to the very small standard errors associated with the large sample sizes.

During the 2025/26 season, most transferred male migrant longfin eels were between 600 and 750 mm in length (Figure 3-14), with a length distribution similar to that recorded in 2024/25. However, the modal length appears to have decreased by approximately 40–50 mm compared with most seasons prior to 2021/22. Interpretation of the 2021/22 and 2022/23 length-frequency distributions requires caution, as weights during these seasons were recorded only to the nearest 100 g and subsequently converted to lengths using the length-weight relationship above. This reduced precision produced artificial peaks and gaps in the distributions, as many eels with similar recorded weights were assigned the same estimated length. In contrast, weights in all other seasons were recorded to the nearest gram, resulting in finer-resolution length estimates and smoother length-frequency distributions.

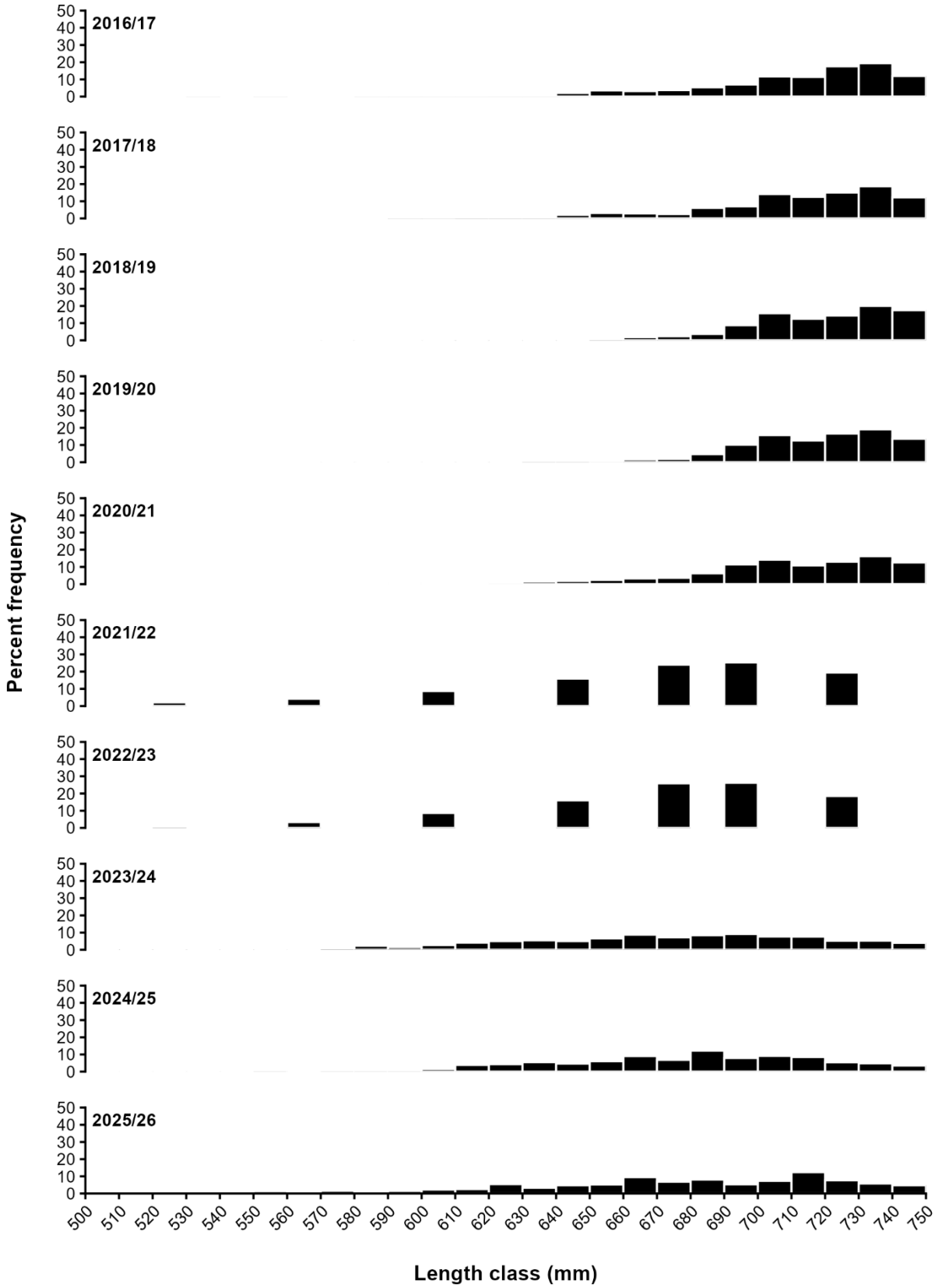


Figure 3-14: Length-frequency (%) distribution of male migrant longfin eels captured across 10 trap-and-transfer seasons.

This season, to improve consistency with Section 4.6 of the MEMPLN, measured weights (g) of female migrant longfin eels were converted to estimated lengths (mm) using the length-weight relationship:

$$\text{Length} = \left(\frac{\text{Weight}}{-7.3816}\right)^{\frac{1}{3.5956}}$$

The constants were derived from measured relationships for 66 female migrant longfin eels from Makara Stream and Lake Ellesmere[3] (Todd 1980).

The mean length of female migrant longfin eels in 2025/26 was 970 mm (Figure 3-15), virtually identical to the 967 mm recorded in 2024/25. However, it remained above the long-term average of 959 mm.

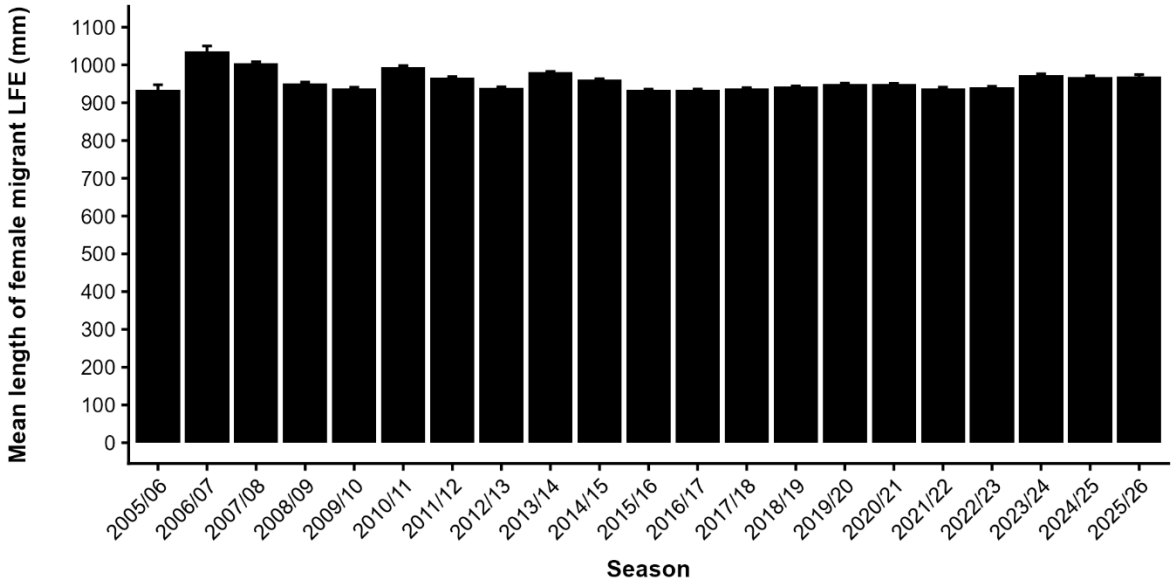


Figure 3-15: Mean (+SE) length of female migrant longfin eels (LFE) recorded for each trap-and-transfer season since 2005/06.

During the 2025/26 season, the length-frequency distribution of transferred female migrant longfin eels spanned a similar range to previous seasons, with most fish between approximately 770 and 1150 mm in length (Figure 3-16). The distribution was relatively broad and even, resembling those observed in 2023/24 and 2024/25. Consistent with recent seasons, there also appeared to be a slightly greater proportion of very large females (>1150 mm) than was evident in earlier years. The largest female migrant transferred in 2025/26 was 1484 mm long (10.52 kg), having been captured in late February. Interpretation of the 2021/22 and 2022/23 length-frequency distributions requires caution because lengths were estimated from weights recorded only to the nearest 100 g. This reduced precision produced artificial peaks and gaps in the distributions, whereas lengths in all other seasons were derived from weights recorded to the nearest gram, resulting in smoother and more reliable size-frequency distributions.

[3] Todd (1980) reported length-weight relationships for 23 female migrant longfin eels from Makara Stream and 43 females from Lake Ellesmere. Combined constants from these fish were calculated by averaging the constants for Makara Stream (scaling coefficient a = -7.2218, allometric exponent b = 3.5386) and Lake Ellesmere (a = -7.5413 and b = 3.6525).

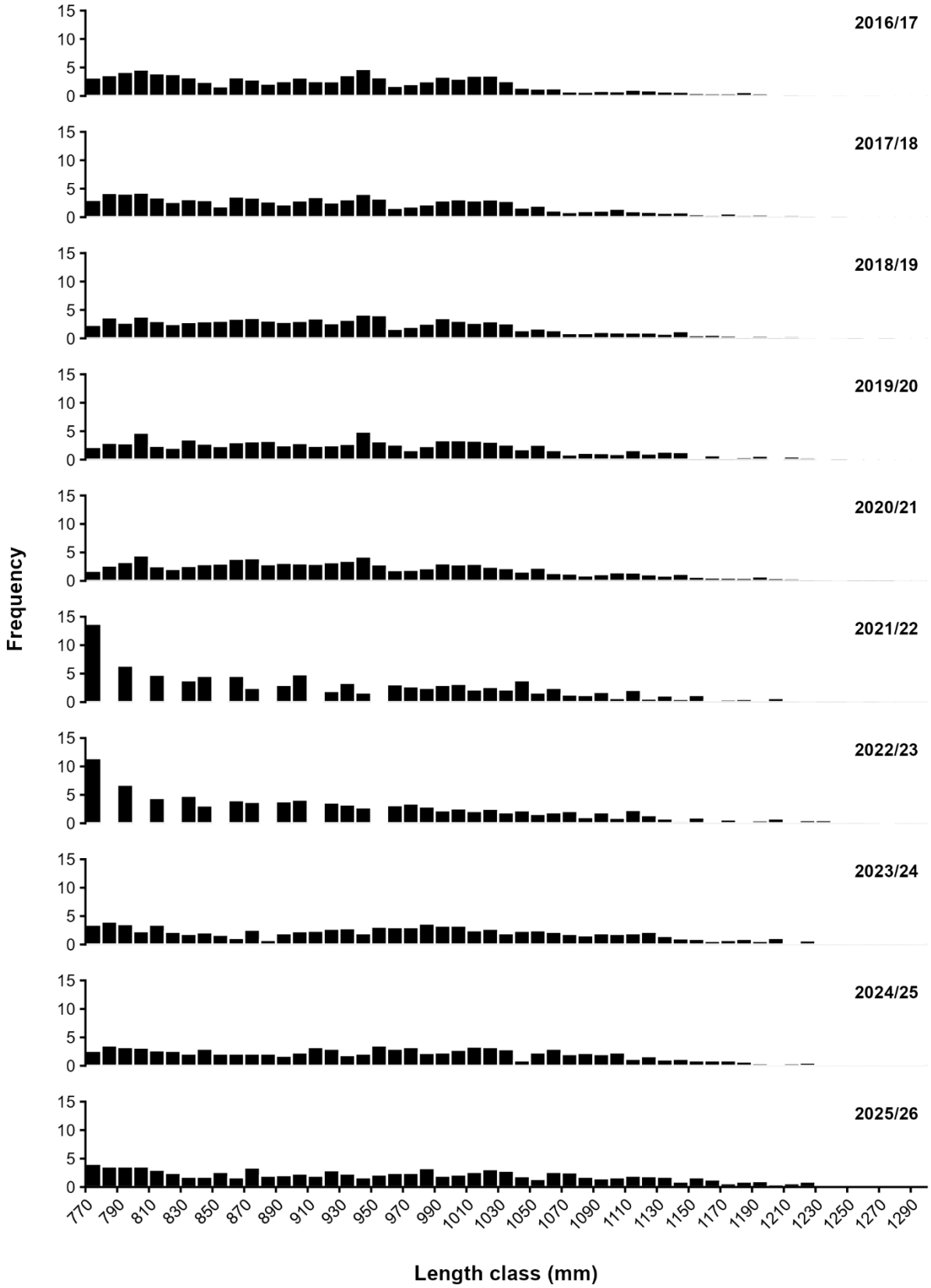


Figure 3-16: Length-frequency (%) distribution of female migrant longfin eels captured across 10 trap-and-transfer seasons.

3.4 Bycatch

During the 2025/26 season, 192 perch (Figure 3-17) and 495 brown and rainbow trout (Figure 3-18) were captured and released at their points of capture. Perch catches were substantially lower than those recorded during the preceding three seasons and were among the lowest observed since monitoring resumed in 2011/12. Trout catches also declined compared with recent years, continuing the gradual decrease from the peak catches recorded during 2013/14. Despite these reductions, trout remained more numerous than perch in trap catches. The strategic placement of nets minimised black shag (*Phalacrocorax carbo novaehollandiae*) bycatch, with only two individuals captured over 2,800 net nights during the 2025/26 season. Full details of species-specific catch rates by date are available on request.

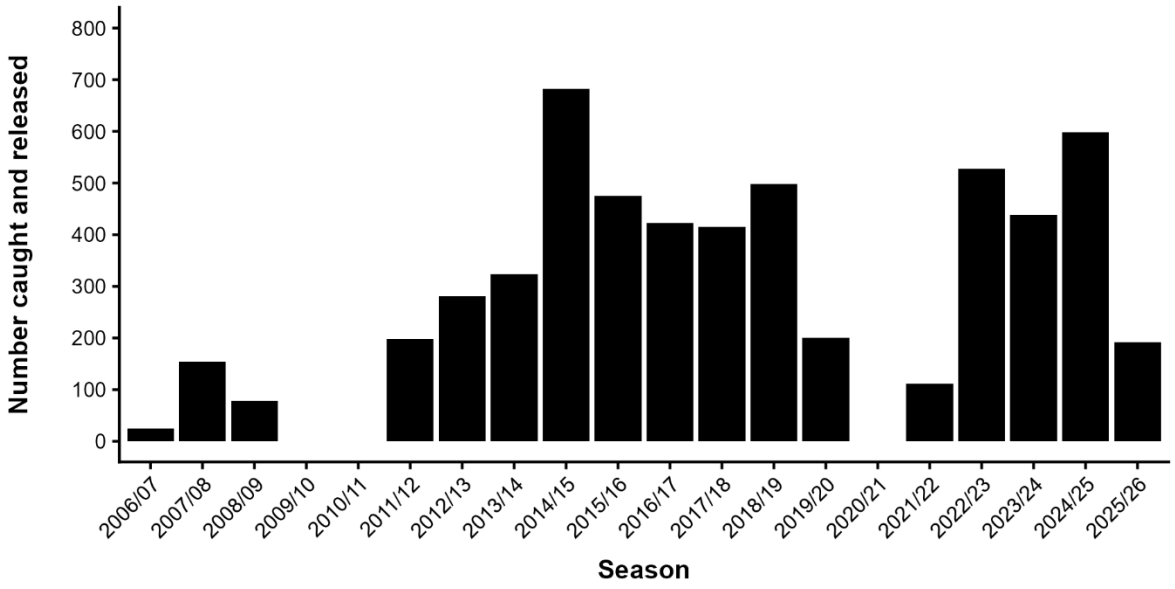


Figure 3-17: Number of perch (*Perca fluviatilis*) captured and released during each trap-and-transfer season since 2006/07.

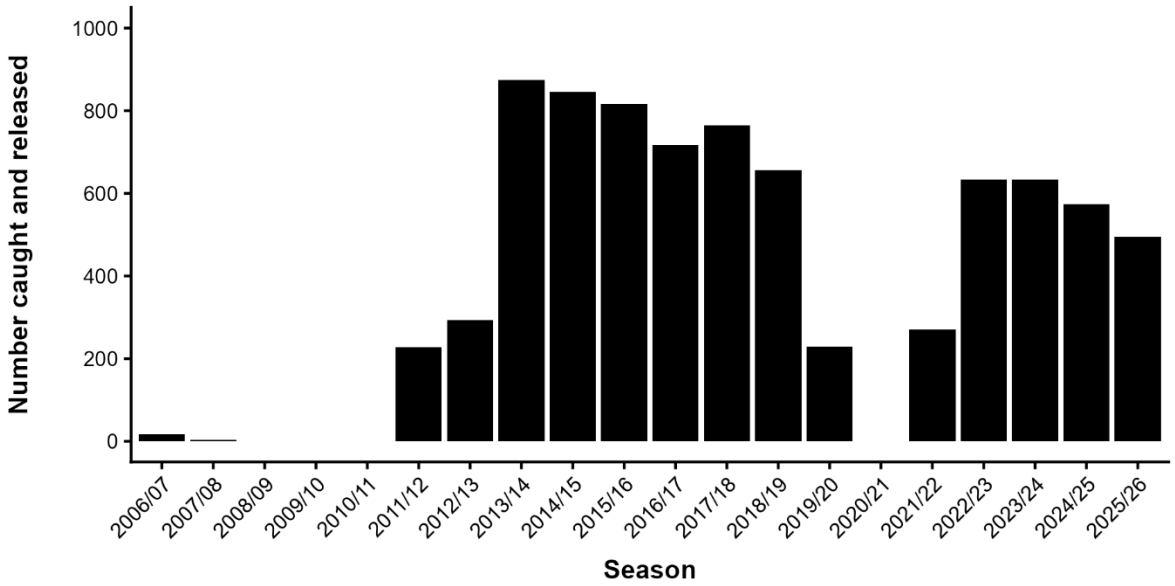


Figure 3-18: Number of brown and rainbow trout (*Salmo trutta* and *Oncorhynchus mykiss*) captured and released during each trap-and-transfer season since 2006/07.

4 Recommendations for operational management

- **Retain the early-November start to migrant eel trapping.** The 2025/26 data show migrant activity in November, before catch rates increased through December and January. An early-November start therefore helps capture early migrants and remains consistent with the current MEMPLN objectives.
- **Maintain flexible elver release-site allocation.** Where catch volumes and operational conditions allow, continue distributing elvers between the Lake Manapōuri and Lake Te Anau catchments. Although no elvers were released into Lake Manapōuri in 2025/26 due to low catches, compressed migration pulses, and associated operational constraints, the catchment has received proportional releases in previous seasons. Consequently, there is no current need to preferentially allocate a greater proportion of elvers to Lake Manapōuri next season, although this position should be reviewed if similar constraints result in successive years without releases.
- **Identify additional suitable release sites.** Assess options to expand the range of approved release locations, improving operational flexibility during seasons with low catches, short migration pulses, or limited access to existing sites.

5 References

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