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2022/23 SURVEY OF RECREATIONAL FISHING IN TASMANIA

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Inland Fisheries SERVICE

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EXECUTIVE SUMMARY

This study is the fifth comprehensive assessment of recreational fishing in Tasmania and complements more targeted assessments of specific fishing activities. It provides a big-picture perspective of recreational catch and effort, and thus comparatively rare or specialised activities may not be well represented. Therefore, if more focused surveys are available (e.g., recent assessments of the Rock Lobster and Abalone recreational fisheries), it is recommended that greater credence be given to results of these focussed surveys, especially where results differ from those of the general fishing surveys.

Fishing participation

Information about participation rates (i.e., proportion of the population who fished at least once a year) and the demographic profile of recreational fishers was collected through a telephone survey involving 2,101 Tasmanian households. This was followed by a telephone-diary survey involving 464 households (1,280 persons) in which fishing activity was monitored over 12 months.

In the 12 months to October 2022, 130,500 Tasmanian residents aged 5 years or older fished at least once in Tasmania, representing an overall participation rate of 27%, or just over one in four Tasmanians. Residents of the South East (Australian Bureau of Statistics region) had the highest participation rate of 32%, followed by the West & North West at 31%, and compared with 27% for the Launceston & North East region and 25% for the Hobart metropolitan area. Statewide participation rate for males and females was 36% and 18%, respectively. Participation varied with age: 5-14 year olds had the highest rate (39%) although the greatest numbers of fishers were in the 45-59 age group. Participation for age groups between 15 and 59 years ranged between 27-31% but declined sharply to 16% in the 60 plus years age group.

Catch and effort

Recreational fishing activity of responding diarists was monitored in detail between 1st November 2022 and 31st October 2023 and results expanded to represent the private dwelling resident population of Tasmania. Just over 95,500 Tasmanians were estimated to have fished in Tasmania during this period, 27% fewer persons when compared to the estimate for the previous 12 months. This lower participation is likely due to recall bias during the screening survey resulting in inflated participation estimates in the year prior. This trend has been evident across all five statewide surveys.

During the 12-month survey period, recreational fishers accounted for 487,341 days of fishing effort, with an average of 5.1 days per fisher. At the individual level, most fished for less than five days whereas a small proportion of avid fishers contributed disproportionately to the total effort (and catch). For instance, it was estimated that 26% of fishers accounted for half of the total fishing effort.

During the survey period, the vast majority (89%) of recreational fishers fished at least once in saltwater, while almost 25% fished at least once in freshwater. Overall, saltwater fishing represented 81% of the total fishing effort (fisher days). Freshwater fishing in lakes and dams accounted for about double the effort in rivers, while most of the saltwater fishing occurred in inshore coastal waters, with estuarine fishing of secondary importance. Offshore fishing (>5 km off the coast) was a minor activity.

Line fishing was the dominant gear used by recreational fishers, representing 427,000 fisher days (88% of total). This was followed by pot fishing (7%), 'other methods' (3%), including the use of spears, set-lines, seine or bait nets, and hand collection, dive harvesting (2%), and the use of gillnets (<1%).

A wide variety of fish species were caught, with an estimated 830,000 finfish (excluding small baitfish) retained, and 1.20 million finfish released or discarded. Flathead (predominantly Southern Sand Flathead) represented 50% of the total finfish catch by number, with an estimated 381,000 kept and 643,000 released. Other finfish species or species groups of significance included, Australian Salmon (92,000 kept and 91,000 released), Trout (73,000 kept and 98,000 released), Gurnards (23,000 kept and 87,400 released) and King George Whiting (36,000 kept and 26,000 released).

Recreational fishers also caught a variety of shellfish and other invertebrates with comparatively high catches of squid, namely Southern Calamari (38,000 kept) and Gould's Squid (29,000 kept).

Overall, 57% of all finfish and squid captured were released. Low release rates (<10%) were identified for species such as Flounder, Gould's squid, and Calamari; intermediate rates (10-30%) for Striped Trumpeter, Garfish, Pike, Yellowtail Kingfish, and Mackerel; moderate rates (31-50%) for King George Whiting, Australian Salmon, Barracouta, and Jackass Morwong; and high rates (>50%) for Sand Flathead, Silver Trevally, Trout, Tuna, Mullet, and Snapper, among others. Reasons for release were varied, with size (under legal size or "too small") being an important factor for Flathead, Bastard Trumpeter, Whiting, Garfish, Australian Salmon, and Silver Trevally, while catch and release (sport) fishing was important for Salmonids. Sharks, skates and rays tended to be released or discarded due to poor eating qualities and/or regulations preventing the taking of sharks from specified areas (i.e., Shark Refuge Areas).

Estimated total harvest weights for key species were compared with commercial fisheries production. The annual recreational harvest of Sand Flathead was estimated at 126 tonnes, nearly eighty times greater than the commercial Sand Flathead catch from State waters. By contrast, the catch of Tiger Flathead, estimated at about 11 tonnes, was less than a fifth of the Tasmanian commercial catch. By weight, other species of importance included Australian Salmon (41 tonnes), Striped Trumpeter (39 tonnes), Southern Calamari (29 tonnes), Gould's Squid (15 tonnes), and King George Whiting (13 tonnes). As a contribution to total harvest for key species from Tasmanian waters, the share taken by the recreational sector during 2022/23 was larger than that taken by the Tasmanian commercial scalefish fishery for Sand Flathead, Striped Trumpeter, Australian Salmon, King George Whiting, Barracouta, Mackerel, Leatherjacket, Silver Trevally, Mullet, Cod, and Jackass Morwong. By contrast, the recreational harvest represented a minor component (<10%) of the total catch for other species like Whiting, Garfish, Wrasse, Banded Morwong, and Gould's Squid.

Catch and effort data for key species was examined by region, method, platform, water body and seasonality. Sand Flathead was the dominant species caught in all regions, except for the West and East Coasts where Australian Salmon and King George Whiting respectively were the most caught. The inland fishery for Trout was largely concentrated in the Western and Central Plateau lakes regions, with catches from rivers of secondary importance.

Recreational fishery since 2000

Since 2000, there have been some notable changes in the Tasmanian recreational fishery. Based on a 12-month recall period, the most conspicuous was a general decline in statewide participation to 2011/12, followed by an increase in both absolute and relative terms (i.e., percentage of population). Fisher participation declined from 29% in 1999/00 to 22% in 2011/12. An increasing trend then followed over the next two survey periods, with participation estimated at 27% in 2021/22.

Linked to changing participation has been a general decline in fishing effort since 2000/01. Total fisher days have fallen from 750,000 in 2000/01 to 490,000 million in 2022/23, noting this was a slight increase from 470,000 in 2017/18. Before this most recent survey, both freshwater and saltwater effort levels declined, this decline has been greatest for shore-based fishing. Between 2000/01 and 2017/18, there was a steady decline in effort in most coastal regions. By comparison with 2017/18, effort in 2022/23 was significantly higher on the West and South East Coasts.

Overall, finfish catches (kept and released) in 2022/23 were 17% lower than in 2017/18 and about 71% of 2007/08 levels. The catch composition and relative importance of the key species has been relatively consistent over time, particularly the dominance of Sand Flathead. However, the total catch of many species has varied over time, linked in part to differences in effort and changes in fishing practices and species availability. The most caught species in 2022/23 following Sand Flathead were Australian Salmon, Trout, Southern Calamari, Gould's squid, King George Whiting, Gurnard/Ocean Perch, Tiger Flathead, and Barracouta.

During the 2017/18 survey, it was reported that one of the more conspicuous developments in the recreational fishery over the past two decades had been the growth in the Southern Calamari fishery. Since 2012/13, recreational catches for this species have declined, though stabilising in the most recent survey. In 2017/18, it was reported that this was a particularly poor year for Calamari due to environmental conditions, while the catches in 2022/23 were likely restricted by a reduction in catch limits due to sustainability concerns.

Another recent change is the emergence of range extending species increasing rapidly in the composition of recreational catches, particularly King George Whiting, Snapper, and Yellowtail Kingfish.

Recreational fishers are generally becoming more conscious of the need for resource conservation and ethical fishing practices. Release rates were the highest reported in the series of statewide surveys at 59% in 2022/23, an increase from 43% in 2007/08. This is likely due to a range of reasons, including population and management changes. Importantly, with more fish being released, ensuring sufficient awareness on fish handling practices to minimise post-release mortality is critical. Moreover, developing a deeper knowledge base of post-release survival for key species is necessary for consideration in stock assessments.

This study underscores the evolving landscape of recreational fishing in Tasmania, marked by shifts in participation rates, demographic influences, and fishing practices over the past two decades. The data reveal that the decline in participation reported for the decade from 2000 has now turned around, with participation rates close to those reported over 20 years ago. The decline in effort in the 2000s has now stabilised, but catch has continued to decline. Despite these changes, the consistent dominance of certain species like Sand Flathead remains, alongside the growing prominence of range-extending species such as King George Whiting. Higher release rates due to management intervention and possibly behavioural change, highlight the importance of sustainable practices. This underscores the need for consistent education on post-release fish handling to ensure the long-term health of fish stocks by minimising the impacts of fishing on individual fish. The findings emphasise the need to consider region-specific management strategies for some species and continued research to adapt to the dynamic nature of the recreational fishery in Tasmania.

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1. INTRODUCTION

The National Recreational Fishing Survey (NRFS) was conducted in 2000. The principal objectives of the NRFS were to determine participation rates in recreational fishing, profile the demographic characteristics of recreational fishers, quantify recreational catch and effort, collect data on expenditure by the recreational sector, and understand attitudes and awareness of recreational fishers regarding issues relevant to the fishery (Henry and Lyle, 2003).

The NRFS was implemented as a series of statewide surveys using a common methodology, having the advantage of providing comparable information Australia-wide as well as including the activity of interstate visiting fishers. In addition to nationally aggregated information, Henry and Lyle (2003) provided summary statistics for each of the states and territories.

Since then, there has not been another national recreational fishing survey that has considered fishing effort and catch. As such, the Tasmania government committed to undertake regular statewide recreational fishing surveys, the first of which was undertaken in 2007-08 (Lyle *et al*., 2009), followed by a survey in 2012-13 (Lyle *et al*., 2014) and again in 2017-18 (Lyle *et al.,* 2019). The surveys have used essentially the same methodology developed for the national survey, enabling valid comparisons to be made with information collected in 2000-01. Despite some evidence of declining participation across the surveys, recreational fishing remains a very popular and significant activity amongst Tasmanians, and for several species, the recreational catch is comparable, if not greater, than catches taken by the commercial sector in Tasmania.

Statewide surveys provide 'big picture' information on recreational fishing catch and effort. It is recognised, however, that more targeted or focussed surveys are also required to provide greater precision for specialised or localised activities such as fishing for Rock Lobster, Abalone, game fishing, gillnetting, etc. In this regard, there have been regular surveys of the Rock Lobster and Abalone fisheries (e.g., Graba-Landry *et al.,* 2022, Tracey *et al.,* 2023), and occasional specialised surveys for the gillnet fishery (Lyle and Tracey, 2012a), set-line fishery (Lyle and Tracey, 2012b), scallop fishery (Tracey and Lyle, 2011), and gamefish and offshore fisheries (Morton and Lyle, 2003; Forbes *et al*., 2009; Tracey *et al*., 2013). Together with general fishing surveys, these surveys have contributed to a greater understanding of the significance of recreational fishing in Tasmania.

The present study represents the fifth statewide assessment of recreational fishing and aims not only to provide a snapshot of participation, catch, and effort but also to examine trends in the fishery that will assist with the ongoing management and development needs of the fishery.

2. METHODS

Primary data collection was based on a telephone-diary survey method. This is an off-site methodology developed to provide cost-effective data over large spatial scales, in this case for the entire state. A detailed description of the telephone-diary longitudinal design philosophy and methodology is provided in Lyle *et al*. (2002a) and Henry and Lyle (2003). Data analysis & expansion procedures are described in detail by Lyle *et al.* (2010) and have been undertaken using the statistical computing language R (R Core Team, 2022). A detailed description of the survey methodology and data analysis can be found in Lyle et al. (2019); however, a summary is provided below.

The principal components of the survey are:

- An initial screening phase to gather profiling information from a sample of the population. The primary purpose of the screening interview was to collect profiling information for all household members, establish eligibility, and asking those eligible to participate in the follow-up longitudinal phase.

- A longitudinal panel survey of households where at least one person identified as a fisher in the household was willing to participate. Participants were interviewed regularly by trained survey staff, providing detailed catch and effort information over a 12-month period.

- A call-back survey of non-intending fishers from a sample of households, which had indicated at screening that none of the residents were likely to engage in any recreational fishing during the longitudinal period. This was to account for 'unexpected fishing' that might have occurred during the longitudinal period.

Data analysis was based on a stratified random survey design using single stage cluster sampling, with the private dwelling household representing the primary sampling unit (PSU) and residents within the household the secondary sampling unit (SSU). In determining household and individual expansion factors (to expand catch and effort estimates from the sample to the resident population), an integrated approach was applied that adjusted for non-response and calibrated against population benchmarks (Lyle *et al*., 2010). Adjustment for non-response at screening was based on fishing propensity determined amongst households that declined to complete the screening interview but answered the question about whether household members had fished in the previous 12 months (informed refusals). Un-informed refusals (those who declined to participate in the screening interview prior to being informed of the topic) were treated the same as non-contacts, i.e., assumed to be unrelated to fishing propensity. Calibration was conducted to Australian Bureau of Statistics 2021 Census of Population and Housing data for Tasmania (number of Occupied private dwellings and number of Persons by age group and sex) (ABS 2022). Using the longitudinal diary phase uptake and completion rates for eligible households, further non-response adjustment was applied to expansion factors in calculating catch and effort information. This adjustment was made sensitive to the avidity classification for the household (the maximum avidity index for any member of the household as determined at screening) and region of residence (stratum).

Unless otherwise indicated, parameter estimates provided in this report are based on expanded data, scaled-up to represent the *resident private dwelling population of Tasmania* rather than the sample from which they were derived.

Statistical uncertainty is expressed in terms of standard error (SE). It should be noted that as survey data are disaggregated, for example by region or method, SEs expressed as a percentage of the estimate (known as relative standard error or RSE) will increase and there may come a point where the disaggregated estimates become unreliable due to excessively large variance.

When interpreting survey estimates, consideration should be given to (a) the magnitude of the RSE and (b) the actual number of households that contributed records to the estimate. Estimates with RSEs of 40% or greater (implying a 95% confidence range of ± 80%) have been highlighted in summary tables and are regarded as imprecise. Estimates derived from records involving fewer than 30 households are also highlighted in summary tables as they may be particularly influenced by the activities of very few fishers and, therefore, may not be representative.

2.1 Screening survey

Table 1 provides a summary of the number of occupied private-dwelling households in Tasmania from the 2021 Census of Population and Housing, sampling details and the response profile relating to the screening survey. Since sampling was undertaken without replacement for sample loss (e.g., disconnected numbers, non-private dwellings including businesses, nursing homes, etc.), the gross sample was reduced from 12,027 to 10,785. It is worth noting that this gross screening sample was significantly greater than the 2017/18 survey (7,000 households). This was to address the declining response to unsolicited phone calls and unfamiliar phone numbers through call-screening or hang-ups which represents a growing challenge in Australia and internationally when conducting telephone-based surveys (Moore *et al.,* 2023).

Of the 10,785 households contacted, 2,101 (19.5%) fully responded, marking a significant decline from the 2017/18 survey of 48.5%. This decline provides further evidence of a reluctance of people to participate in phone-based surveys. Response rates were generally consistent across all sampling strata. Overall, demographic profiling information was collected from 5,105 individuals aged five years or older.

Non-response was due to refusals (21.2% overall), which was lower than the rate in the previous survey. However, non-contacts increased significantly from 26.2% in the 2017/18 survey to 59.0% in this survey, while other non-response factors, such as language or communication difficulties, remained low at less than 0.1%. Within the refusal group, there were 135 partial refusals (where at least the substantive question relating to previous household fishing was answered); the remainder were full refusals, where no information was provided. For most of these full refusals (65%), respondents refused or simply hung up before any introductions or background to the survey were provided, suggesting the reason for the refusal was unrelated to the subject matter (fishing). Partial refusals, on the other hand, had been made aware of the subject matter, and in this regard could be assessed for potential subject (fishing) response bias, which can be corrected for as part of the weighting process. As for most of the full refusals, no inferences about potential subject matter bias can be made from non-contacted households.

Table 1. Tasmanian private dwelling population (number of households), survey sample size, and responses to the screening survey by stratum.

Statistical Area Level 4	Households*	Initial sample	Net sample	Response	Refusals	Non-contact	Other non-response	% response
Hobart	98,783	4,869	4,363	882	933	2532	16	20.2
South East	17,659	1668	1496	311	283	899	3	20.8
Launceston & North East	63,364	3,078	2,767	502	609	1653	3	18.1
West & North West	49,622	2,412	2,159	406	462	1285	6	18.8
Total	229,428	12,027	10,785	2,101	2,287	6,369	28	19.5

* Households based on 2021 Census.

2.2 Longitudinal survey

Table 2 summarises response details as they related to the longitudinal survey. Of those households identified during screening as having at least one resident with intention to engage in recreational fishing during the longitudinal period (1st November 2022 to 31st October 2023), 58% fully responded to the longitudinal survey. In total, 464 Tasmanian households (down from 584 at last survey), representing 1,280 persons aged five years and older, completed the longitudinal survey, with response rates consistent across all strata. Fully responding households reported a total of 2,352 fishing events.

Based on households that gave consent to take part in the longitudinal survey (517), the effective longitudinal completion rate was 90%. Similar longitudinal completion rates were achieved in the previous statewide fishing surveys (Lyle, 2005; Lyle *et al*., 2009, 2014, 2019).

Table 2. Longitudinal survey response profile by stratum.

Statistical area Level 4	Eligible households	Completed longitudinal	% response
Hobart	319	191	59.9
South East	133	81	60.9
Launceston & North East	194	107	55.2
West & North West	151	85	56.3
Total	797	464	58.2

By comparison with other general population surveys and traditional mail-back longitudinal studies, the response rates achieved in all components of this study are still relatively high and represent an important performance metric in terms of the efficacy of the survey instrument.

2.3 Non-intending fisher call-backs

Response rates for the non-intending fisher call-backs are presented in Table 3. All 1,304 households that indicated no intention to fish over the longitudinal period were eligible for the call-back survey to ascertain whether any unexpected fishing had occurred. When sample loss (disconnected numbers) was considered, an overall response rate of about 48% was achieved for this segment of the study. However, 37% of responding households were not deemed usable as they indicated they were likely a different household to that contacted at screening (i.e., based on comparison of postcode, household composition, and asking if they had owned the phone number they were being contacted on for more than 12 months). Of the 391 usable responding households, only 12 households (3%) reported that at least one member had done some ('unexpected') fishing during the longitudinal period.

Table 3. Response profile (household) to the non-intending fisher call-back survey by stratum.

Statistical area Level 4	Initial sample	Net sample	Response	Usable Response	Refusals	Non-contact	Other non-response	% response
Hobart	584	573	285	178	161	95	32	50%
South East	163	156	75	49	50	23	8	48%
Launceston & North East	310	304	140	89	86	63	15	46%
West & North West	247	244	119	75	67	48	10	49%
Total	1,304	1,277	619	391	364	229	65	48%

FISHER CHARACTERISTICS

2.4 Participation rates

The following analyses are based on information derived from the screening survey and are expanded, with non-response adjustments, to represent the resident private dwelling population of Tasmania aged five years or older. An estimated 130,505 (SE ± 4,723) Tasmanian residents aged five years or older fished in Tasmania at least once in the 12 months prior to October 2022, representing a participation rate (proportion of resident population) of 26.8% (SE 1.0%; Figure 1). Including Tasmanians who only fished in other states of Australia during that period brought the total number of recreational fishers to 131,728 (SE 4,730) or 27.0% (SE 1.0%) of the resident population. Unless stated otherwise, subsequent analyses exclude those residents who fished exclusively outside of Tasmania.

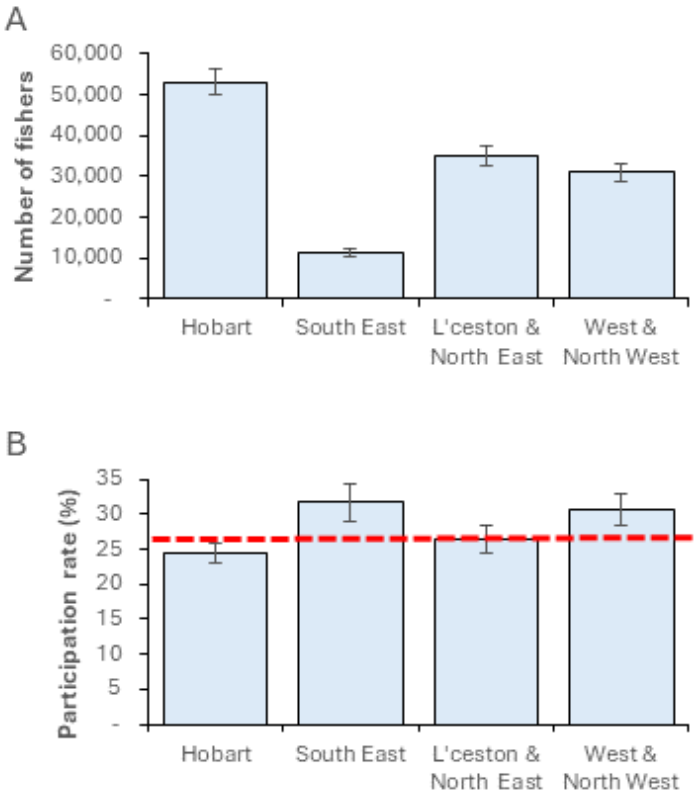

Figure 1. Recreational fishing participation in Tasmania during the 12 months prior to October 2022 by region of residence for persons aged five years or older: A) Number of persons; and B) proportion of the resident population (based on expanded recall estimates). Error bars represent one standard error, and the dotted line represents the overall estimated participation rate.

2.4.1 Trends in participation rate since 1999/2000

Based on the recall estimate from data collected during the screening survey, the estimated number of Tasmanian residents aged five years or older who fished at least once a year in Tasmania declined from 125,000 in 1999/00 to 118,000 in 2006/07, and further again to 98,000 in 2011/12, before increasing to 106,000 in 2016/17 and 131,000 in 2021/22 (Figure 2). When expressed as a proportion of the resident population, this represents a decline in participation from 29.4% in 1999/00 to 26.0% in 2006/07, and then to 21.6% in 2011/12, followed by a slight increase to 23.8% in 2016/17 and a larger increase to 26.8% in 2021/22. This latest estimate approaches the participation levels that were reported in the National survey in 1999/00 (Figure 2).

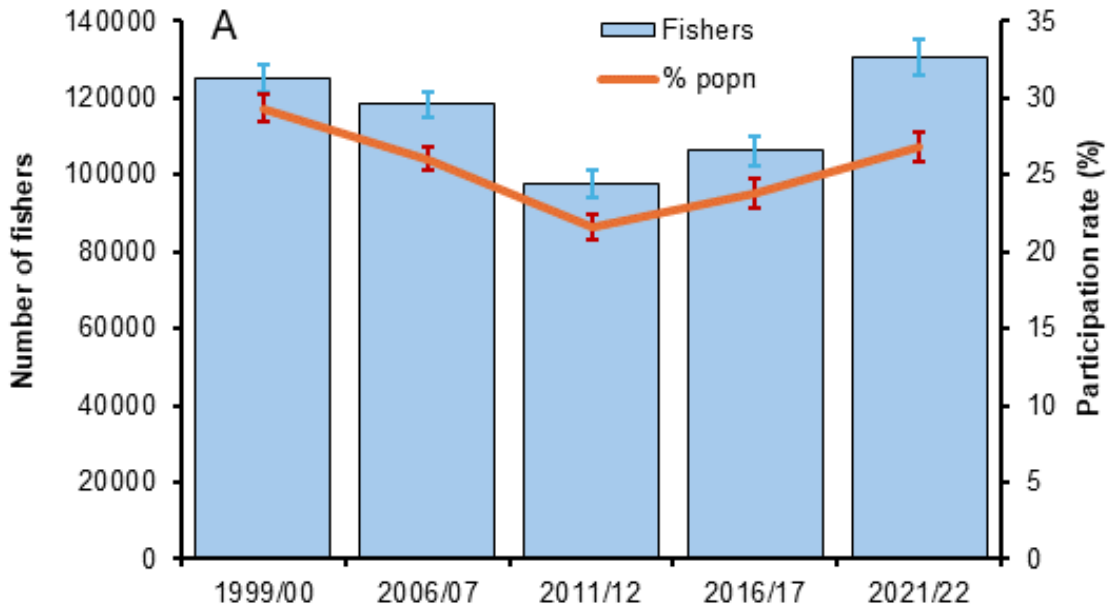

Figure 2. Fishing participation (number of fishers and proportion of population or participation rate) in the 12 months prior to May 2000, November 2007, October 2012, October 2017 and October 2022 based on recall. Error bars represent one standard error.

Fisher numbers in each of the residential regions were higher in 2021/22 when compared to 2016/17 (Figure 3A), with participation rates (% of the population) significantly higher in all regions other than the South East, although participation also increased in this region. In all regions, participation rates had increased to levels comparable to 1999/00, except for the West and NW which significantly exceeded the participation rates from 1999/00 (Figure 3B).

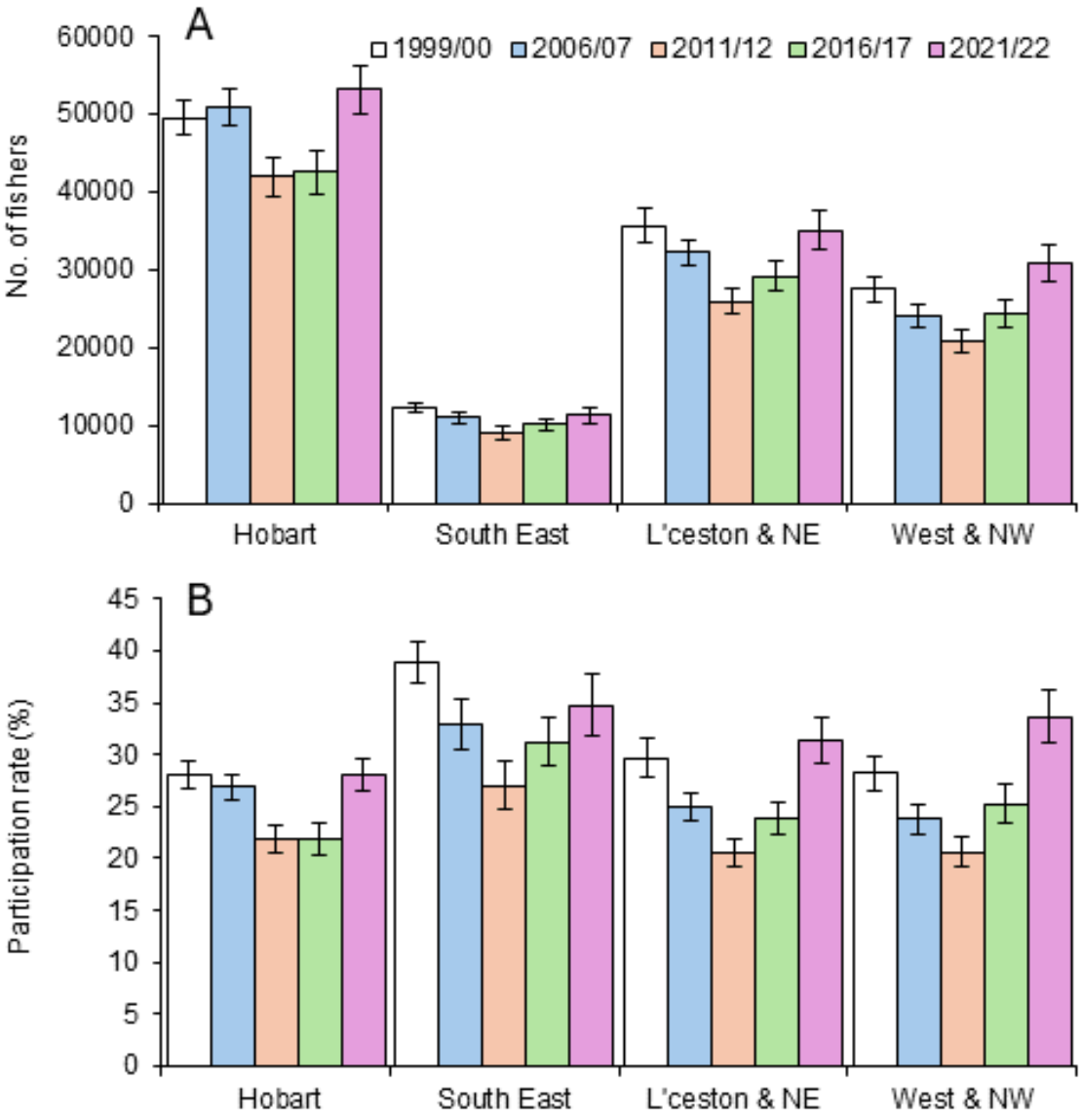

Figure 3. Fishing participation in the 12 months prior to May 2000, November 2007, October 2012, October 2017 and October 2022 by area of residence for persons aged five years or older: A) number of persons; and B) proportion of the resident population. Error bars represent one standard error. Note: regional boundaries applied in 2000 and 2007 were based on the Australian Standard Geographical Classification rather than the Australian Statistical Geography Standard (Pink, 2011).

2.5 Age and gender

Almost twice as many males (85,942; SE 2,753) than females (44,563; SE 2,157) reported recreational fishing in Tasmania during the 12 months prior to October 2022. For males, this equated to a participation rate of 36.1% (SE 1.3%), an increase of 3.6% from last survey. And for females, it equated to a participation rate of 17.9% (SE 1.0%), an increase of 2.5% from last survey.

The prominence of males involved in fishing was evident across all age groups (Figure 4). The number of both males and females who fished generally increased with age up until 45 – 59 years, after which numbers declined quite markedly in the oldest age group (Figure 4A). Participation rates, in contrast, were highest for the youngest age group, while intermediate age groups were relatively stable before also falling sharply in the oldest age group (Figure 4B).

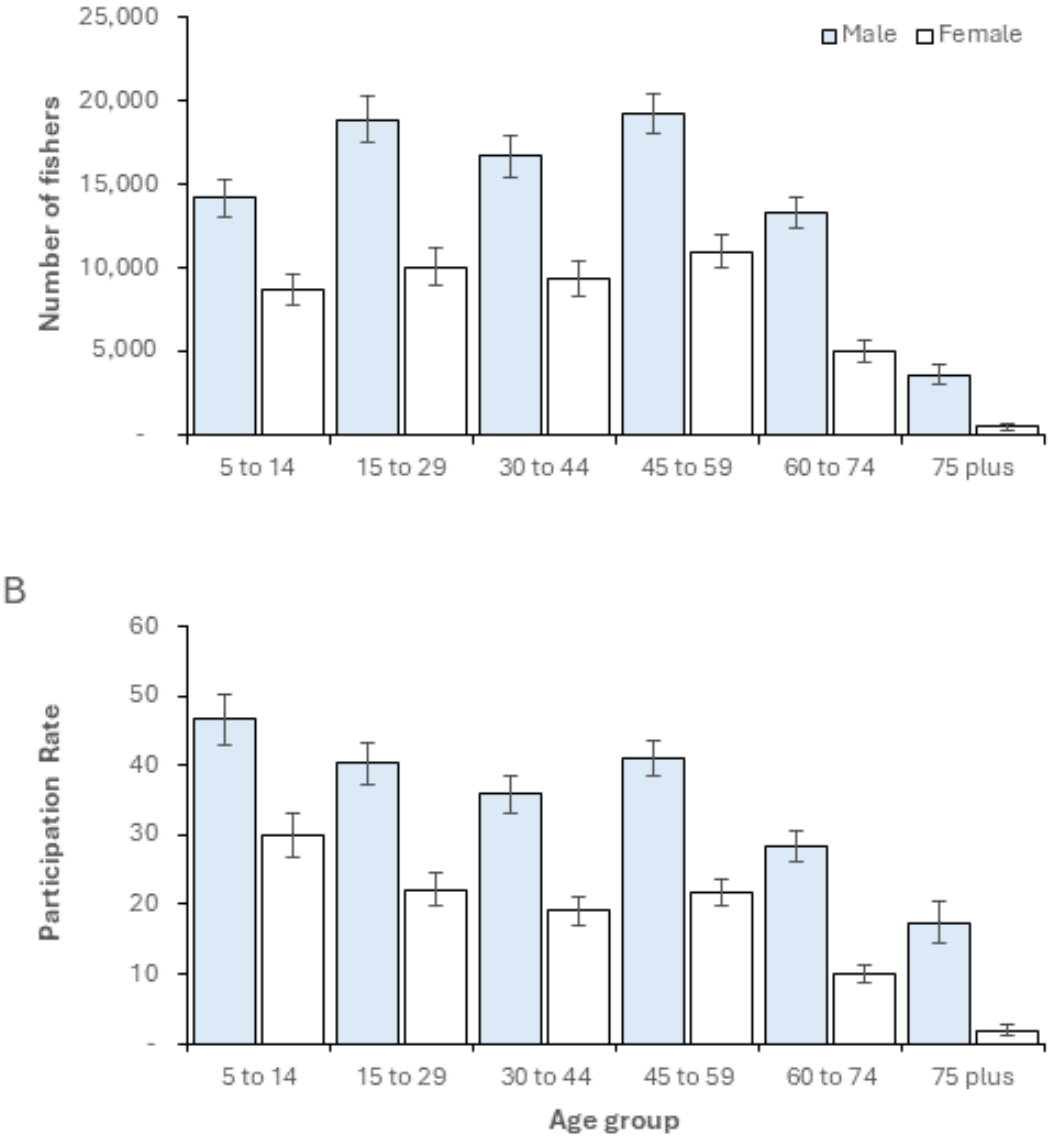

Figure 4. Fishing participation in the 12 months prior to October 2022 by age group and gender by Tasmanian residents aged five years or older based on recall: A) number of persons; and B) proportion (%) of the resident population. Error bars represent one standard error.

The number of fishers aged under 45 years old declined sharply from 2000 to 2011 but since has increased (Figure 5A). For those in the 15-29 year age group, the number of fishers has returned to levels similar to those reported in the national survey in 2000. The number of fishers in the 60 plus age group has consistently been lower than in the younger age groups but has increased significantly over the last 23 years. This trend is much less apparent in the participation rate (Figure 5b), likely due to an ageing population. A similar trend was observed in the 45-59 year age group, with a significant increase in participation rate relative to the previous survey. Also notable was a

significant increase in the number of fishers under 30, with the participation rate not significantly different to that reported in 2000 (Figure 5B).

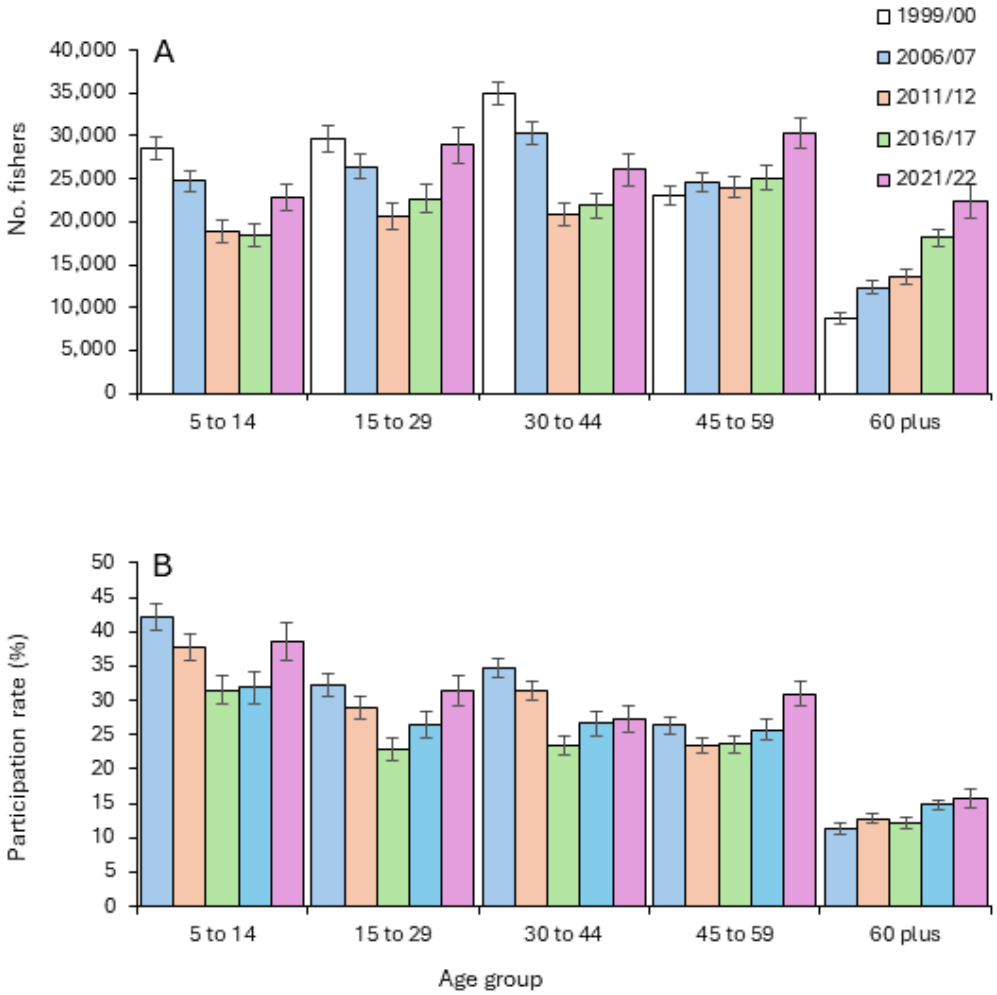

Figure 5. Fishing participation in the 12 months prior to May 2000, November 2007, October 2012, October 2017 and October 2022 by age group for Tasmanian residents aged five years or older: A) number of persons; and B) participation rate (%) of the resident population estimated from recall during the screening. Error bars represent one standard error.

3. FISHING EFFORT

The following analyses are based on information derived from the longitudinal survey and are expanded, with non-response adjustments and adjustments to account for unexpected fishing by non-intending fisher households, to represent the activities of the resident private dwelling population of Tasmania aged five years or older.

It was estimated that 95,502 (SE 5,210) Tasmanians fished at least once between November 2022 and October 2023 (Table 4).

In terms of effort, Tasmanian residents accounted for 487,341 (SE 40,526) fisher days of effort during the 12-month longitudinal survey period. Overall, 24.4% of fishers fished at least once in freshwater, while 88.8% fished at least once in saltwater, resulting in 19.1% of the effort (fisher days) involving freshwater fishing and 80.8% saltwater fishing (Table 4).

Table 4. Estimated number of persons and days fished by Tasmanians aged five years or older who fished in freshwater and saltwater in Tasmania during 2022/23. SE is standard error. NB Fishers may fish in both fresh and saltwater, even on the same day, so the Total number of fishers and fisher days is less than the sum of estimates for freshwater and saltwater.

	Freshwater		Saltwater		Total	
Effort	**Number**	**SE**	**Number**	**SE**	**Number**	**SE**
Persons	23,251	2,886	84,884	5,060	95,502	5,210
Fisher days	93,228	14,869	394,113	37,205	487,341	40,526

Since 2000/01, recreational fishing effort (fisher days) has declined by 35%, largely linked to the decline in the number of active fishers (20%). In 2000/01, Tasmanian residents aged 5 years and older expended an estimated 746,335 (SE 44,462) fisher days of effort in Tasmania, some 14% higher than the equivalent measure for 2007/08 (641,489 fisher days; SE 28,934), which was 21% higher than in 2012/13 (506,802 fisher days, SE 27,787). The most recent estimates in 2017/18 (474,471 fisher days SE 35,290) and 2022/23 (487,914 fisher days SE 40,598) were similar and were only about 3-6% lower than for 2012/13 (Figure 6).

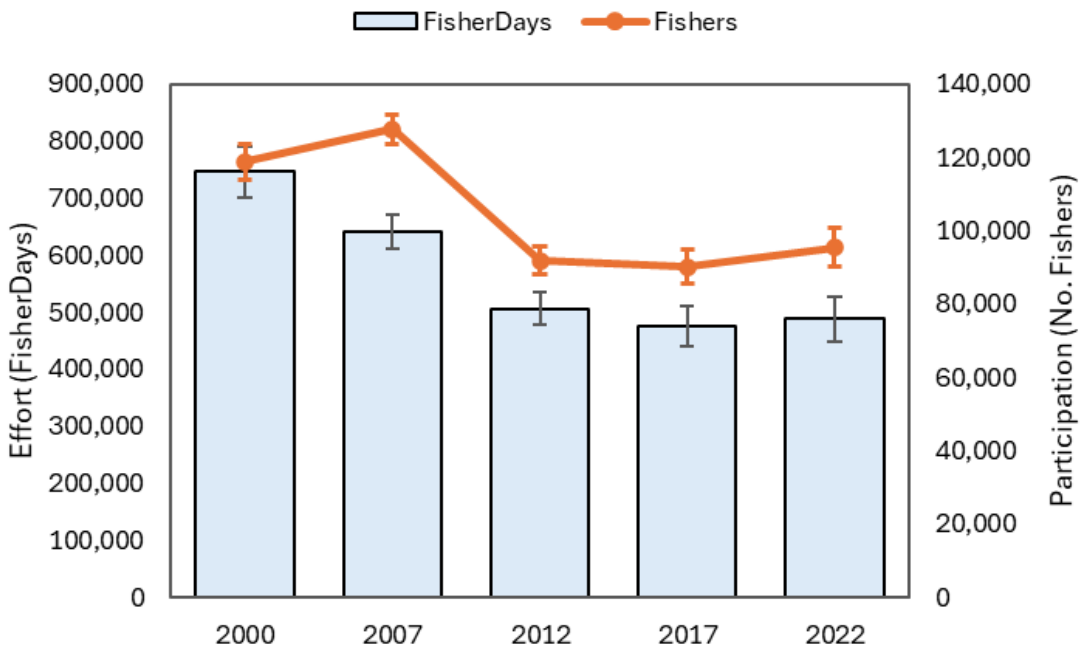

Figure 6. Fishing effort (fisher days) and number Tasmanian resident fishers aged five years or older who fished in Tasmania during 2000/01, 2007/08, 2012/13, 2017/18 and 2022/23.

Declines in effort have been more pronounced for shore-based rather than boat-based fishing, although this latest survey saw a small increase in shore-based effort but a continuation of the decline in boat-based fishing (Figure 7A). Similarly, the marine fishery has had a more dramatic decline than freshwater, however, this latest survey saw a slight but insignificant increase for the first time since the national survey in 2000/01 (Figure 7B).

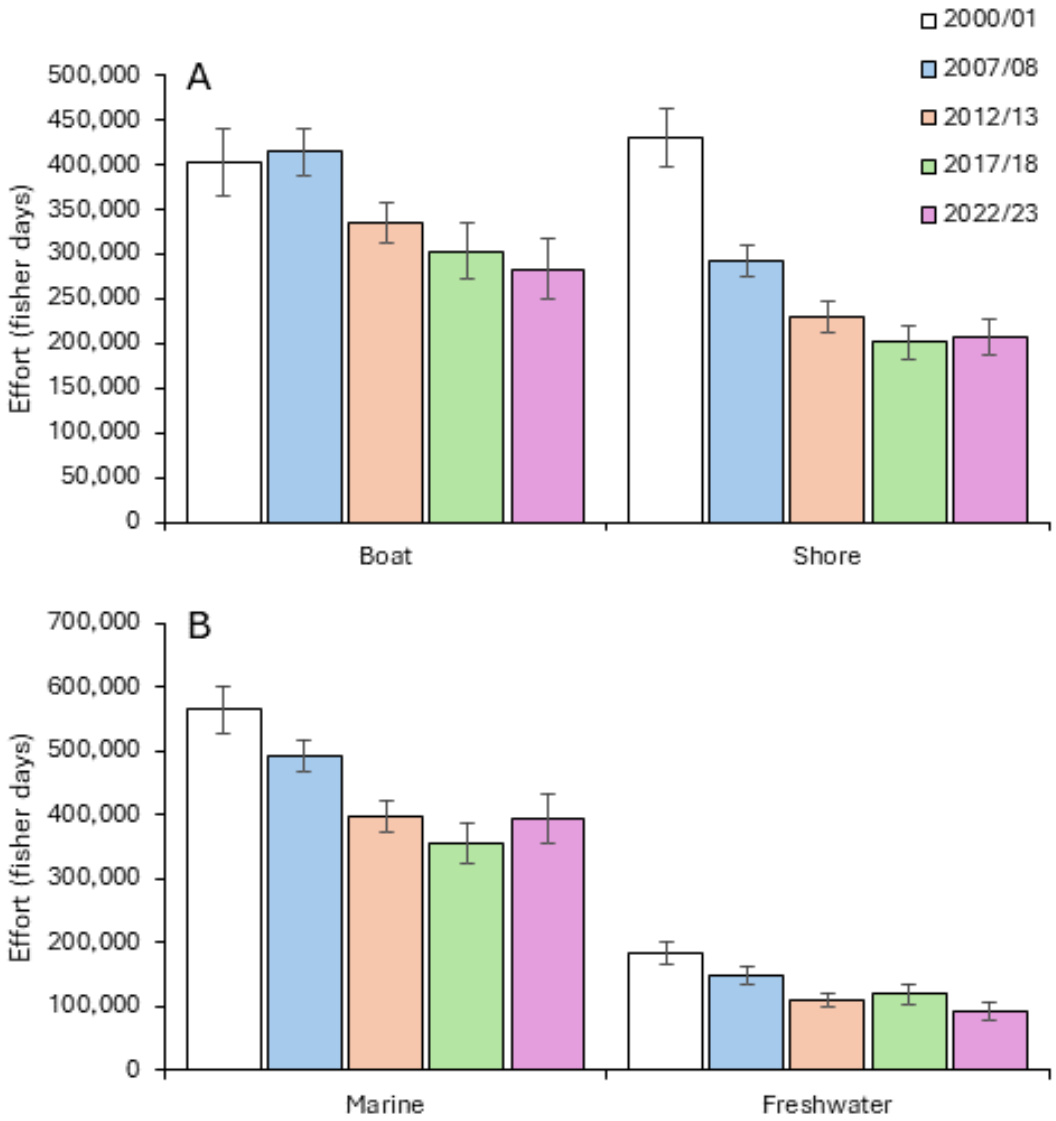

Figure 7. Comparison of fishing effort (fisher days) for Tasmanian residents aged five years or older who fished in Tasmania during 2000/01, 2007/08, 2012/13, 2017/18 and 2022/23: A) based on fishing platform and B) based on marine and freshwater waters. Error bars represent one standard error.

3.1 Days fished

The distribution of fishing effort was characteristically highly skewed to less avid fishers. About 66% of all fishers (about 62,600 persons) were estimated to have fished fewer than five days during the 12-month survey period, whereas just 3% (about 2,900 persons) fished more than 20 days (Figure 8). The average number of days fished was 5.1 days per person for the survey period. However, it was the avid fishers who contributed disproportionately to the total fishing effort. For instance, half of the effort could be attributed to just 26% of fishers, while 10% of fishers accounted for about a quarter (26%) of total effort.

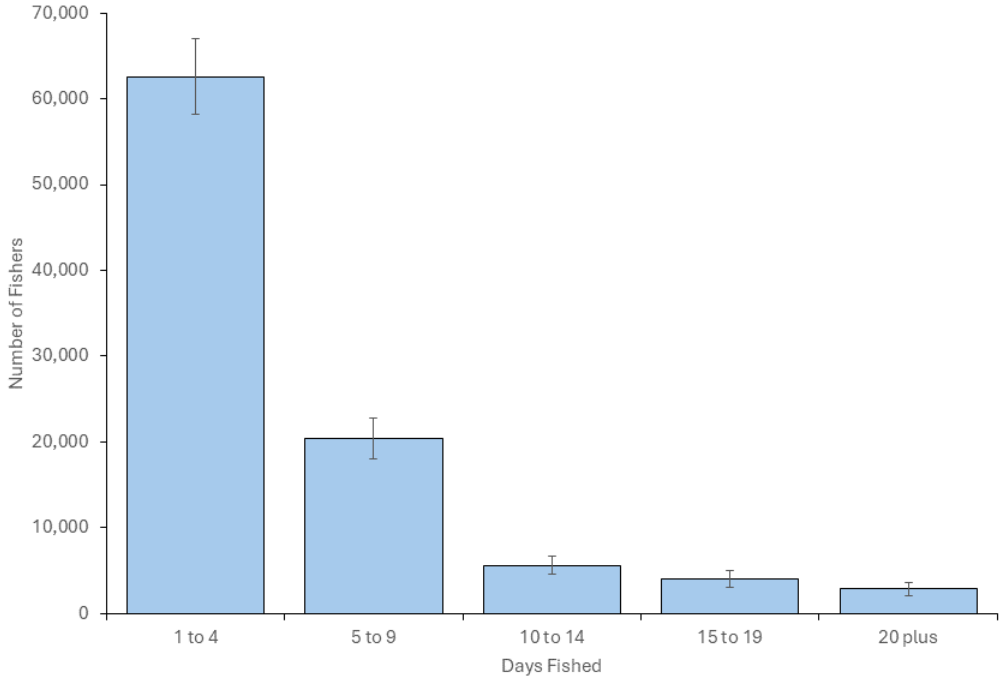

Figure 8. Individual fishing effort (days fished) by Tasmanian residents aged five years or older fishing in Tasmania during 2022/23.

3.2 Water body

An important feature of the Tasmanian fishery was the concentration of fishing effort in inshore coastal (64% of fisher days) and estuarine waters (14% of fisher days) (Figure 9). Comparatively little fishing effort occurred in waters further than 5 km offshore. In inland waters, almost three times the effort occurred in lakes compared with rivers.

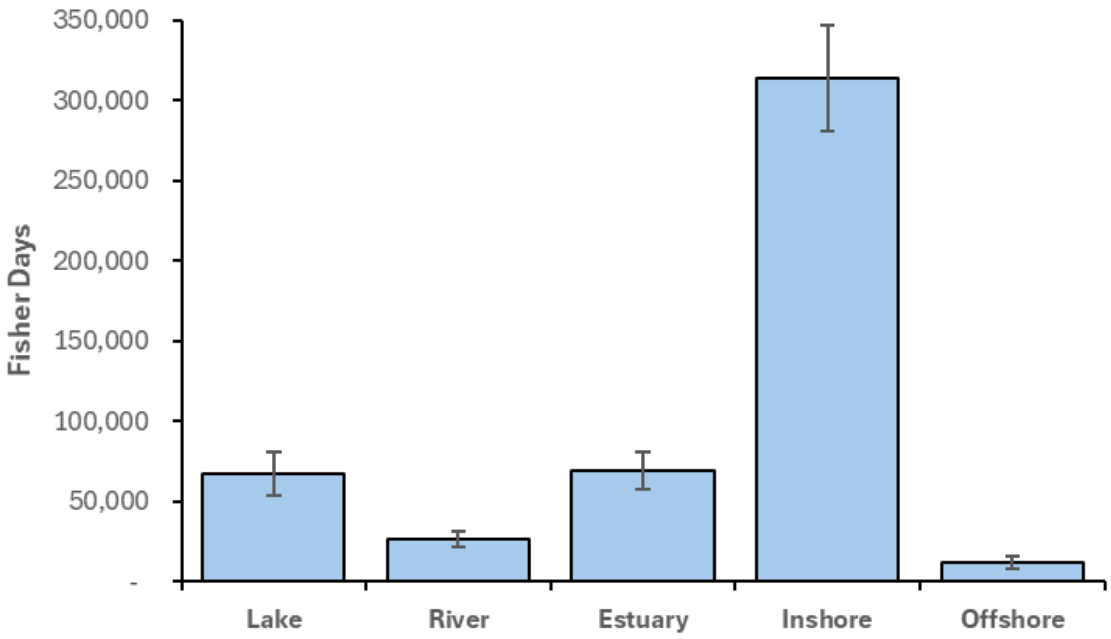

Figure 9. Fishing effort (fisher days) by water body type for Tasmanian residents aged five years or older who fished in Tasmania during 2022/23. Error bars represent one standard error.

3.3 Fishing method

Line fishing (including the use of bait and/or artificial lures and jigs) was by far the dominant fishing mode in Tasmania, occurring on 87% of all fisher days during 2022/23 (Figure 10). Overall, line fishing accounted for over 427,000 fisher days or nearly 1.4 million fisher hours, implying an average of 3.2 hours per line fishing trip. Pot fishing was next in importance, reported on 7% of fisher days and followed by 'other methods' (3%), diving (2%), and gillnet fishing (<1%). By method, since 2000/01, line fishing effort has declined by a third but trended up slightly in 2022/23, lobster pots have declined by 40%, and gillnet effort by 97% (Figure 10).

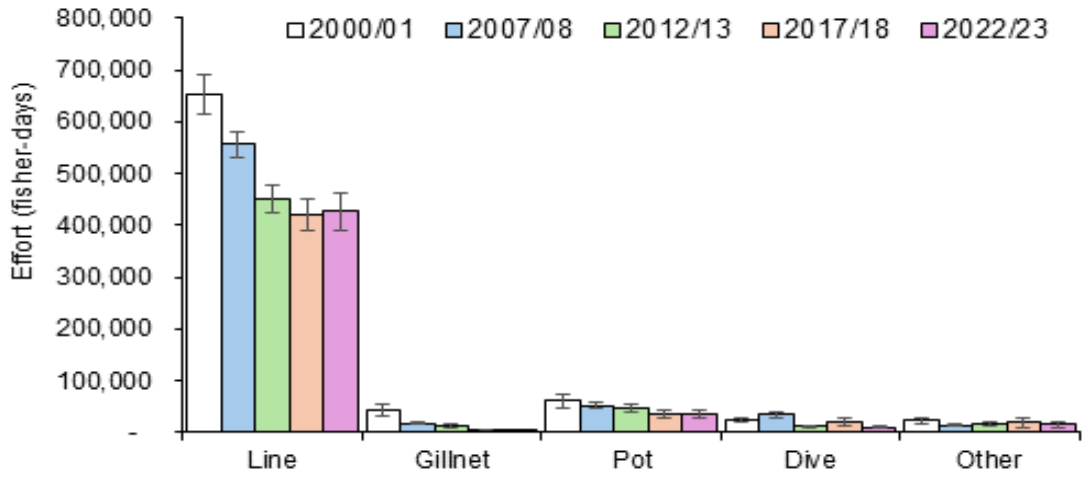

Figure 10. Comparison of fishing effort (fisher days) by fishing method for Tasmanian residents aged five years or older who fished in Tasmania during 2000/01, 2007/08, 2012/13, 2017/18 and 2022/23. Error bars represent one standard error.

3.4 Fishing region

Half of the state's total fishing effort (fisher days) was focused off the east and southeast coasts, with the southeast, including the D'Entrecasteaux Channel, Derwent Estuary and Norfolk-Frederick Henry Bay regions, collectively accounting for 36% of the statewide effort (Figure 11). The north coast attracted over 22% of the overall fishing effort, with slightly more effort in the North West relative to the combined Tamar-North East Coast regions. Effort on the West coast was comparatively low (4%). The inland fishery was particularly concentrated in the Central Plateau region (8%), followed by Eastern (7%) and Western (6%) regions.

The significance of the D'Entrecasteaux Channel was clearly based not only on the number of fisher days of effort (46,500), but also by the number of fishers (17,474) who accessed the region during 2022/23. The North West, Central East and the South East were also popular, with over 16,000 fishing in each.

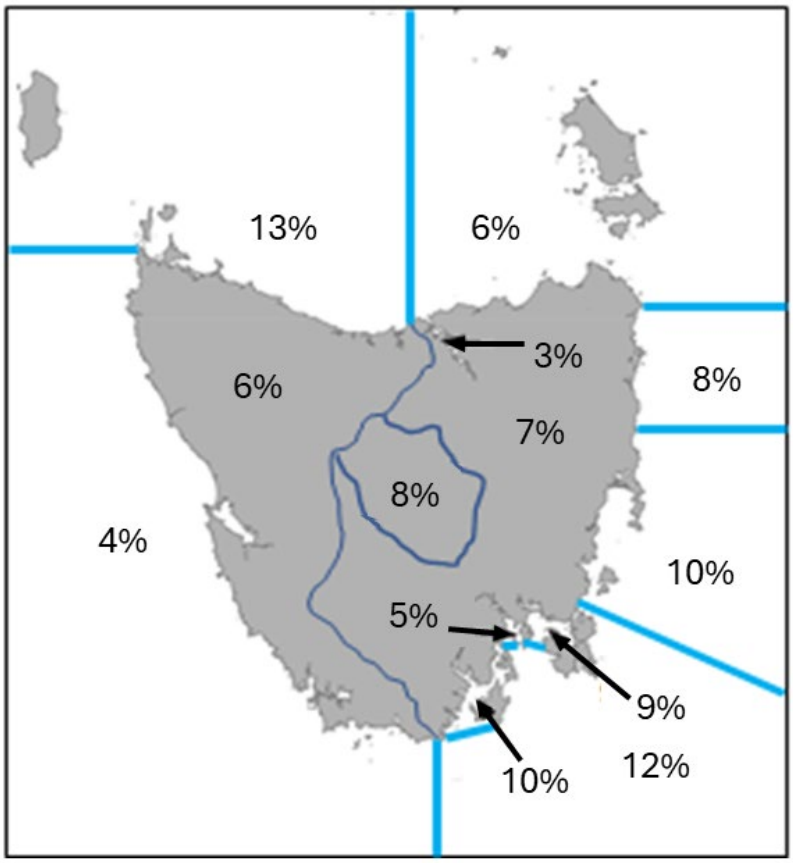

Figure 11. Regional distribution (percentage) of fishing effort (fisher days) for Tasmanian residents aged five years or older who fished in Tasmania during 2022/23.

When effort was disaggregated by region, a number of conspicuous changes are apparent between surveys (Figure 12). In relation to the inland fishery, effort levels in the Western region have remained relatively stable since 2000/01 whereas in the Central Plateau and Eastern regions effort has stabilised at lower levels since the late 2000s.

Effort levels in most coastal regions were lower than those estimated for 2000/01, but either comparable or varying slightly to the 2017/18 survey. Overall, however, the magnitude of change has been relatively low in the North East, East Coast and Norfolk-Frederick Henry Bay regions (Figure 12). Effort has increased off the West and North West coasts for the first time since 2000, although this change was not statistically significant. Increases were also reported for the central East Coast, the South East coast, and the Derwent Estuary. All other areas reported a decrease in effort from the previous survey but none were statistically significant (Figure 12).

It is important to note that some of the variability reported above may have occurred by chance, reflecting the limitations of sampling (reflected in the statistical uncertainty, i.e., standard errors).

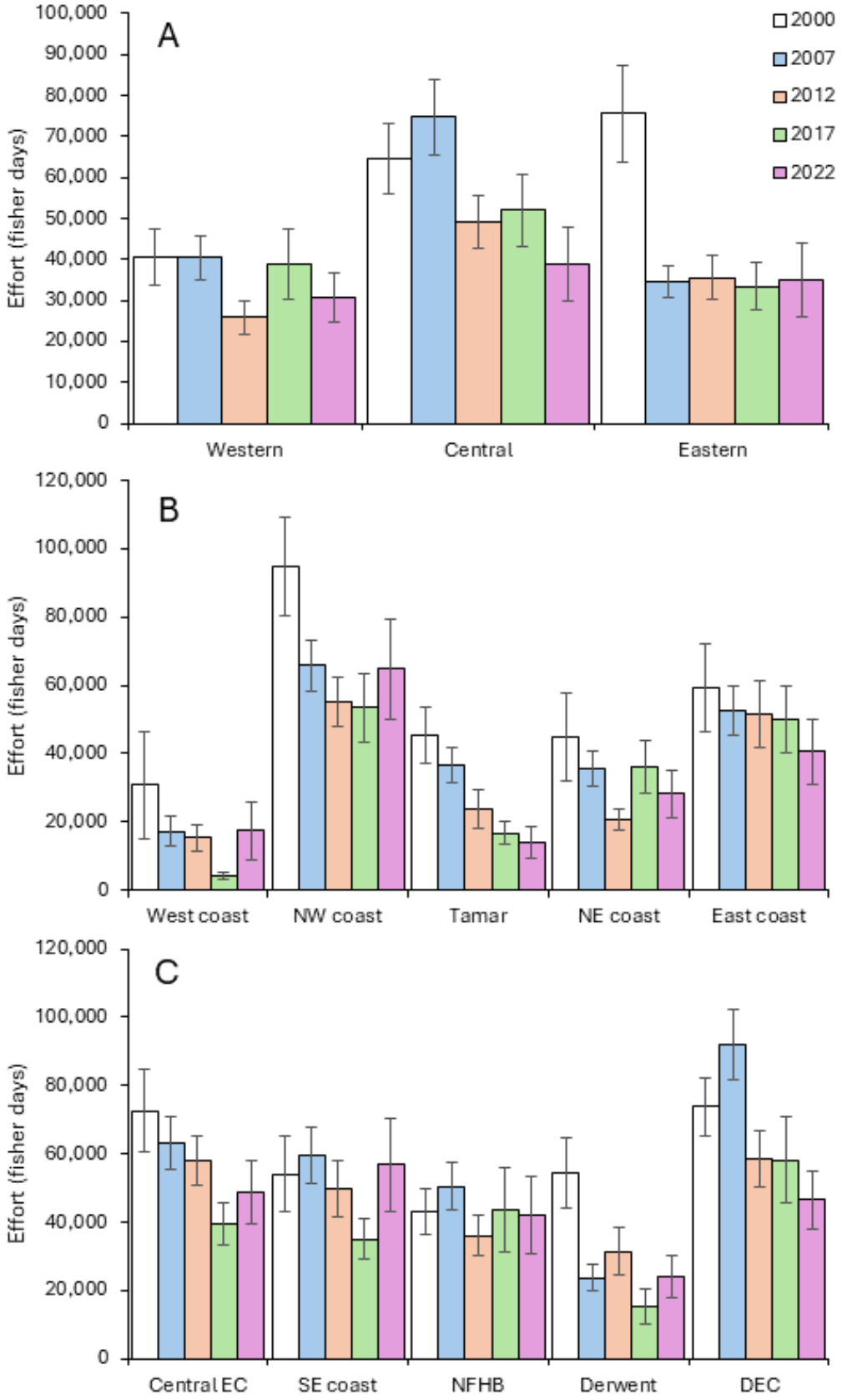

Figure 12. Comparison of fishing effort (fisher days) by (A) inland, and (B&C) coastal fishing regions. NFHB is Norfolk-Frederick Henry Bay, DEC is D'Entrecasteaux Channel.

3.5 Fishing platform

Boat-based activities dominated the statewide fishing effort (58% of fisher days), although there were considerable differences in the relative proportion of shore- and boat-based effort by water body (Figure 13). Shore and boat fishing effort levels were similar in magnitude in lakes, whereas river fishing was primarily conducted from the shore. Shore-based effort was about three times greater than from boats in estuaries while boat-based effort was over two times greater than shore-based effort in the inshore coastal fishery. Offshore fishing was exclusively boat-based.

Shore-based fishing was split according to whether the activity occurred from manmade structures (e.g., jetties, wharves, bridges, dam walls, breakwaters) or from natural structures (e.g., riverbank, beach, rocks). Most fishing events occurred from the latter: 71% overall; >95% for lakes and rivers; 70% for estuarine; and 59% for coastal fishing. Jetties and wharves were significant shore-based platforms for estuarine (29%) and coastal (37%) fishing, the use of other structures was comparatively minor (3% overall).

In terms of boat-based fishing, the vast majority (>99%) of events occurred from privately owned vessels. Charter or hire fishing was reported in the offshore and inshore fisheries, but represented 0.6% of the overall boat-based fishing effort.

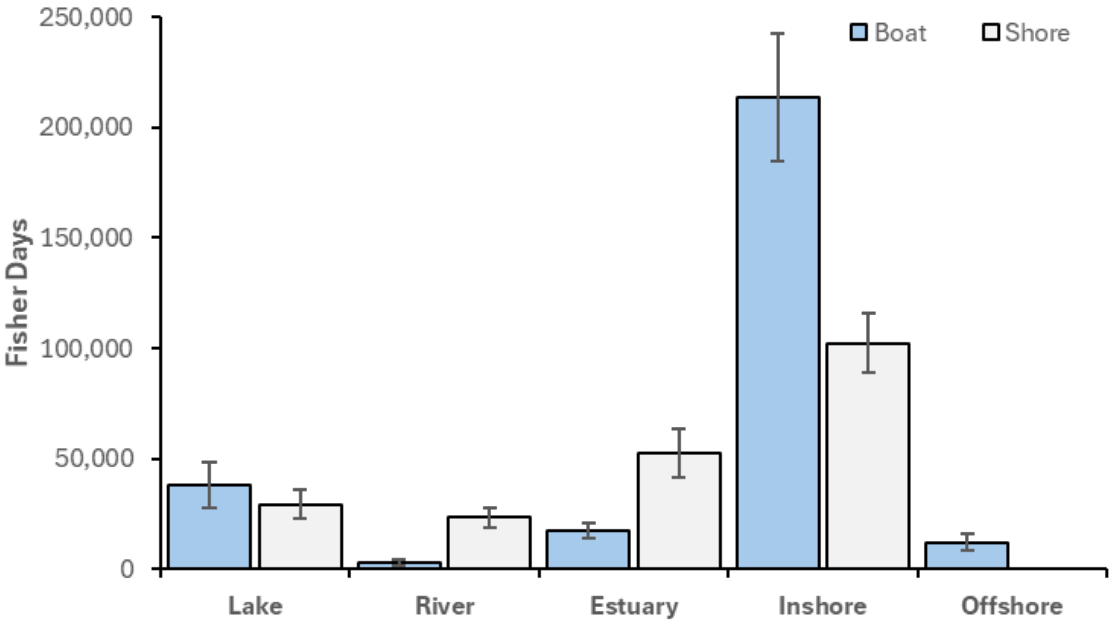

Figure 13. Fishing effort (fisher days) for Tasmanian residents aged five years or older who fished in Tasmania during 2022/23 by fishing platform and water body type. Error bars represent one standard error.

4. CATCHES

The following analyses are based on information derived from the longitudinal survey and are expanded with non-response adjustments and adjustments to account for unexpected fishing by non-intending fisher households, to estimate the activities of the broader Tasmanian population aged five years or older.

Recreational fishers caught a diverse range of finfish, crustaceans, molluscs, and other taxa, of which many were released. For the purposes of reporting and analysis, some species have been grouped (typically at the family level), which recognises that fishers may not reasonably be expected to identify to species level or where particular species were rarely reported.

4.1 Total catch, harvest and release

In recreational fisheries, catches include both retained (harvested) and released fish and other species. The harvested portion may be used for a variety of purposes including consumption or bait, whereas fish may be released because of fishing rules (e.g., size and/or bag limits), ethical reasons, undesirability of the species, and so on.

Excluding small baitfish (including Whitebait), an estimated 2.04 million finfish were caught by Tasmanian recreational fishers during 2022/23, 50% of which (1.02 million) were Flathead (Table 5). Other key species in order of descending catch numbers included Australian Salmon (183,500 or 9%), Trout (171,700 or 8%), Gurnards (110,700 or 5%), King George Whiting, (52,000 or 3%), Sharks & Rays (50,900 or 3%) and Wrasse (35,200 or 2%). While the bulk of the finfish were marine or brackish species, freshwater species other than Trout included Atlantic Salmon, River Blackfish and Redfin Perch (Table 5).

Approximately 72,000 cephalopods (squid and octopus) were captured, with Southern Calamari accounting for 54% (39,000) and Gould's Squid 44% (31,600) of catches. A range of other taxa, including Rock Lobster, Abalone, scallops, crabs, prawns, oysters, mussels, and clams were caught by recreational fishers.

In total, 0.83 million finfish (excluding small baitfish) were retained, indicating that 41% of all finfish caught were harvested (Table 5). Flathead dominated the retained catch (414,700 fish or 50% of retained numbers), followed by Australian Salmon (92,200 or 11%) and Trout (73,100 or 9%). Amongst the other key taxa, significant numbers of Southern Calamari (37,900) and Gould's Squid (29,400) were harvested (Table 5).

Catches of Whitebait, tended to be reported by weight rather than numbers. Using these estimates, it was calculated that around 2,500 kg (SE 1,900), noting a high Relative Standard Error (0.76) of Whitebait was harvested from north and west coast rivers, including the Inglis, Forth and Mersey Rivers.

Overall, around 1.2 million finfish were released and release rates varied markedly between species (Table 5). High release rates (>70%) were reported for Wrasse, Leatherjacket, Eels, Gurnards and Black Bream whereas very low release rates (<10%) were reported for Flounder, Southern Calamari and Gould's Squid. A release rates continuum is illustrated in Table 6.

Catch of range extending species such as Snapper (2,794 kept and 2,909 released) and Yellowtail Kingfish (5,930 kept and 2,262 released) increased significantly from previous years.

Table 5. Estimated annual catch (total, kept and released) and proportion released/discarded for key species during 2022/23, based on Tasmanian residents aged five years or older. SE is standard error; + indicates value <1000; values in bold indicate relative standard error >40%, values in italics indicate that fewer than 30 households recorded catches of the species/species group.

	Total		Kept		Released		%
Species	Number	SE	Number	SE	Number	SE	released
Trout	171,458	36,547	73,081	21,148	98,377	24,443	57%
Atlantic Salmon	1,967	955	1,617	918	+		18%
Redfin	15,328	5,521	11,533	4,366	3,795	1,998	25%
River Blackfish	3,386	2,732	2,883	2,595	+		15%
Australian Salmon	183,519	35,554	92,174	24,405	91,345	21,217	50%
Barracouta	31,783	11,070	18,732	8,014	13,051	7,573	41%
Bastard Trumpeter	2,048	1,065	1,754	912	+		14%
Black.Bream	28,881	13,968	8,188	4,868	20,693	12,485	72%
Blue Warehou	+	421	+		+		23%
Cod	5,996	1,741	1,887	690	4,108	1,450	69%
Eel	2,021	1,100	+		1,687	1,076	83%
Sand Flathead	1,024,466	177,989	381,261	69,311	643,206	112,953	63%
Tiger Flathead	30,390	9,967	20,004	7,605	10,386	3,265	34%
Flathead other	28,471	9,903	13,499	4,338	14,973	6,506	53%
Flounder	6,633	3,194	6,633	3,194	+		0%
Garfish	6,124	4,238	4,519	3,088	1,605	1,157	26%
Gurnard	110,656	25,376	23,195	9,960	87,461	21,478	79%
Jack Mackerel	18,763	12,609	16,921	12,141	1,842	844	10%
Leatherjacket	20,144	10,323	3,573	1,964	16,571	8,623	82%
Banded morwong	3,825	1,415	2,660	1,090	1,165	906	30%
Jackass morwong	16,386	8,733	10,249	6,466	6,136	5,860	37%
Morwong, other	2,577	1,654	2,052	1,254	+		20%
Mullet	18,309	6,293	8,225	3,576	10,084	3,254	55%
Pike	1,139	644	+		+		23%
Shark	46,958	11,416	9,945	2,263	37,013	10,257	79%
Silver Trevally	10,105	3,496	3,481	1,251	6,624	2,689	66%
Skates Rays	3,933	1,541			3,933	1,541	100%
Snapper	5,703	2,485	2,794	1,275	2,909	1,395	51%
Striped Trumpeter	10,122	3,640	7,228	2,582	2,894	1,591	29%
Tuna	28,323	21,169	12,313	6,725	16,010	14,562	57%
King George Whiting	52,061	36,068	25,875	14,436	26,187	22,091	50%
Whiting, other	10,500	5,659	5,983	3,503	4,517	2,952	43%
Wrasse	35,059	10,572	5,130	1,949	29,929	9,830	85%
Yellowtail Kingfish	7,126	2,785	5,930	2,262	1,196	835	17%
Scalefish, other	91,431	28,853	47,309	18,411	44,122	20,134	48%
Rock Lobster	97,948	24,888	45,255	10,776	52,694	15,712	54%
Crustaceans, other	+	605	-	-	+		100%
Southern Calamari	39,146	11,570	37,849	11,035	1,296	751	3%
Goulds Squid	31,547	10,820	29,370	10,504	2,176	1,358	7%
Cephalopod, other	1,390	605	+		1,306	599	94%
Abalone	20,037	7,836	19,377	7,496	+		3%
Scallop	89,235	34,952	86,733	33,782	2,502	2,480	3%
Bivalve, other	27,720	21,444	27,720	21,444	-	-	0%

Table 6. Summary table indicating groupings based on the proportion of the recreational catch for key species that was released or discarded by fishers during 2022/23.

Released → **Kept**

Proportion released				
>70%	51-70%	31-50%	10-30%	<10%
Wrasse	Cod	King George Whiting	Banded Morwong	Goulds Squid
Eel	Silver Trevally	Australian Salmon	Striped Trumpeter	Southern Calamari
Leatherjacket	Sand Flathead	Flathead, other	Garfish	Flounder
Gurnard	Trout	Whiting, other	Redfin	
Shark	Tuna	Barracouta	Pike	
Black bream	Mullet	Jackass Morwong	Blue Warehou	
	Snapper		Atlantic Salmon	
			Yellowtail Kingfish	
			River Blackfish	
			Bastard Trumpeter	
			Jack Mackerel	

4.1.1 Reasons for release

A breakdown of reasons for release for the main species is presented in Figure 14. Size, partly in response to minimum size limits, was the primary reason for release of Whiting species, Flathead and Silver Trevally. The only species for which catch and release was identified as a significant motivation were Black Bream, Trout, and Silver Trevally. Large proportions of the released catch of Jackass Morwong, Redfin Perch, Banded Morwong, Eel, Gurnard and Barracouta was due to it being not wanted. Sharks were predominantly released due to being caught in refuge areas. Some released catch of tuna, trumpeters, trevalla and gurnard was due to partial seal predation. Other reasons for release were due to a fish being too big to land or fishers applying personal size limits or partial catch-and-release fishing. Catch limit was rarely cited as an issue, except for southern calamari, where 35% of the released catch was due to being over the limit. Almost 40% of Snapper were released because fishers felt they had kept enough (too many) (Figure 14).

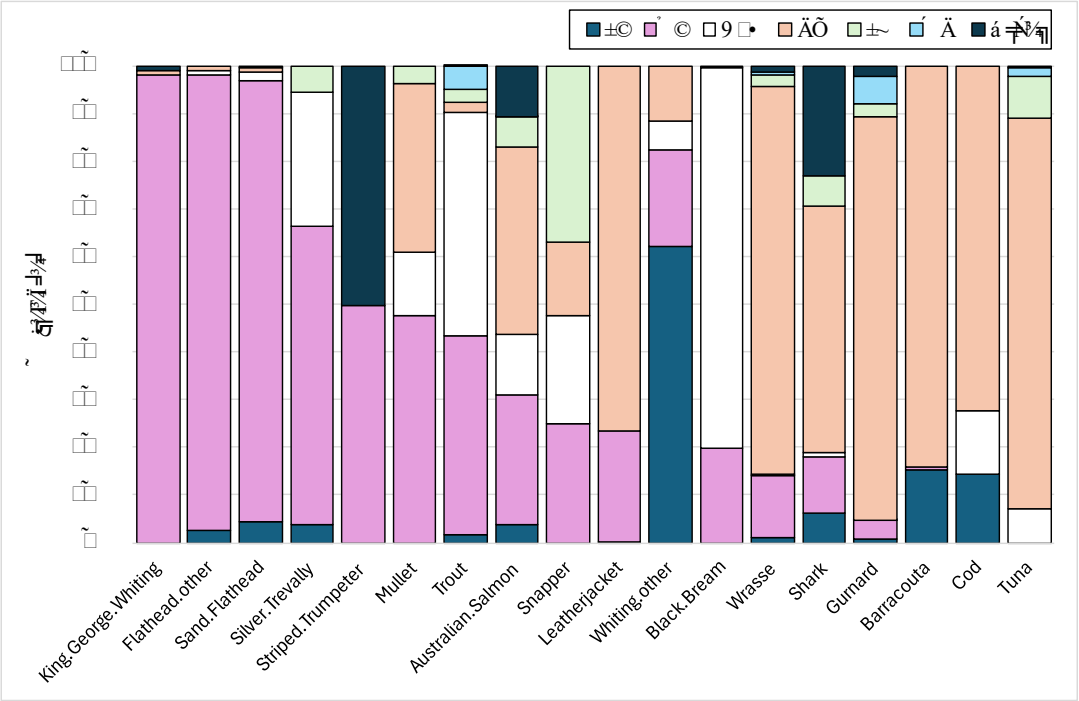

Figure 14. Relative importance (% release numbers) of different reasons for release of key species during the survey period. TS too small; <S "undersized"; C&R catch and release; NW not wanted/ not edible; TM too many; >N more than catch limit.

4.1.2 Targeted fishing

For each fishing event, respondents were asked whether they were fishing for specific species (up to two species could be nominated as targets). This enabled fishing effort to be defined as targeted or non-targeted, and whether the target species was captured. Non-targeted effort was often articulated by respondents as "fishing for a feed", "whatever takes the bait", or "nothing in particular".

Since recreational fisheries are typically characterised by a high proportion of nil catch events, knowledge of targeting allows effort and catch rates to be attributed appropriately. In this study, 19% of fisher days resulted in no catch and, for days where target species were not caught, this proportion would be substantially higher. While it is possible to estimate targeted effort and targeted catch rates (which take account of nil catches), the primary objective of this analysis was to understand the extent to which catches of key species were the result of targeted effort.

The proportion of catches attributed to targeted effort is summarised in Table 7. At one end of the continuum there were numerous species caught almost exclusively through targeted effort, implying a high level of fishing specialisation for these species. For example, the tuna fishery is a discrete activity, as is the inland fishery for trout, and the lobster fishery which uses pots, rings, or dive collection. As such, fishing activities for these species tend to have low catches of non-target species. By contrast, non-targeted effort accounted for the bulk of the Mullet, Silver Trevally, and Morwong, indicating that these species tend to be considered by-product (if retained) or by-catch (if released).

Table 7. Summary table indicating groupings based on the proportion of the recreational catch (kept and released) of key species taken by targeted effort during 2022/23.

Non-target → **Target**

Proportion of catch targeted				
< 30%	31 - 50%	51 - 70%	71 - 90%	> 90%
Silver Trevally	Atlantic Salmon	Sharks	Garfish	Trout
Gurnard	Cod	Barracouta	Leatherjacket	Flounder
Jackass Morwong		Goulds Squid	Australian Salmon	Yellowtail Kingfish
			Flathead, other	Whiting, other
			Skates & Rays	Eel
			Mullet	Jack Mackerel
			Wrasse	Tuna
				Southern Calamari
				King George Whiting
				Black Bream
				Sand flathead
				Snapper
				Striped Trumpeter

4.1.3 Harvest weights

Catch weight or length data was not reported during the longitudinal survey as they tend to be unreliable when self-reported. To estimate total catch weights, total catch numbers were converted to average weights derived from more reliable data sources. When these sources only provided length data, length-weight relationships were used to calculate mean weights (Table 8). For Sand Flathead and Striped Trumpeter, regionally weighted conversions were applied based on IMAS fishery independent sampling and the regional catch estimates derived from this survey.

For a range of reasons outlined in Lyle et al. (2019) it is necessary to view harvest weights as indicative rather than absolute point estimates of recreational fishery catches.

This survey established that recreational catches were significant for a range of species, with annual catches of Sand Flathead, Australian Salmon, Striped Trumpeter, and Southern Calamari each exceeding 20 tonnes. Overall, the harvest of Flathead (species combined) dominated the recreational catch. The recreational harvest of Sand Flathead (126 tonnes) was 78 times greater than the commercial catch of the same species from Tasmanian waters.

The provision of harvest weights for selected species enables comparisons with commercial production and is relevant for stock assessment and management, including issues relating to resource sharing and allocation. Recreational catches were greater than or roughly equivalent to those for the Tasmanian commercial scalefish fishery for numerous species, including Sand Flathead, Australian Salmon, King George Whiting, Barracouta, Mullet, Jackass Morwong, Mackerel, Flounder, Silver Trevally, Cod, Leatherjacket, Bastard Trumpeter, and Striped Trumpeter (Table 8). Although catches for many of these species may be considered low, these findings indicate that both sectors need to be considered in management decision making, particularly as several are currently assessed as depleted (Sharples et al., 2024). Conversely, the recreational harvest represented less than 10% of the total catch for Whiting, Garfish, Wrasse, Banded Morwong, and Gould's Squid.

Commercial fishers are not permitted to take Black Bream and, apart from Eels and Whitebait, there are no commercial fisheries in inland waters, meaning that Trout, Redfin Perch, and River Blackfish are effectively recreational-only species (apart from any Trout taken in marine waters). Atlantic Salmon are stocked in selected inland waters, whereas in marine waters escapees from fish farms are targeted by recreational fishers (Lyle, 2019) and may be marketed by commercial fishers.

Table 8. Annual harvest (numbers), average weight, and estimated harvest weight for key species taken by recreational fishers in Tasmania during 2022/23, based on Tasmanian residents aged five years or older, and compared with commercial production in Tasmania for 2022/23 (Sharples *et al.,* 2024). Commercial finfish catch data are based on General Fishing logbook returns. Weights based on size composition data based on: [A] research fishing and/or IMAS research angler logbook (unpubl. data); [B] commercial/recreational catch sampling; [C] based on Lyle *et al.* (2009); [D] research gillnet fishing (Lyle *et al*., 2014); na not available. Species names are coloured by their current scalefish assessment status – 'Sustainable' (Green), 'Depleted' (Red), 'Undefined' (Grey) (Sharples *et al.,* 2024). Species where the recreational harvest was more than 50% of the total harvest are bolded in the '% recreational' column.

Species	Recreational			Commercial		
	Harvest (No.)	Av. weight (kg)	Estimated harvest (tonnes)	Harvest (tonnes)	Combined harvest (tonnes)	% recreational
Sand flathead	381,261	0.33[A]	125.82	1.6	127.42	**99%**
Australian Salmon	92,174	0.44[C]	40.56	8.5	49.06	**83%**
Trout	73,081	na	-	-	-	-
Southern Calamari	37,849	0.76[A]	28.77	84.2	112.97	25%
Gould's Squid	29,370	0.50[C]	14.69	670	257.00	6%
King George Whiting	25,875	0.51[A]	13.20	7.8	21.00	**63%**
Gurnard/ Ocean perch	23,195	0.39[A]	9.05	-	-	-
Tiger Flathead	20,004	0.55[A]	11.00	50.4	61.40	18%
Barracouta	18,732	0.40[A]	7.49	1.02	8.51	**88%**
Jack Mackerel	16,921	0.18[C]	3.05	1.6	4.65	**66%**
Tuna	12,313	na	-	-	-	-
Jackass Morwong	10,249	0.68[C]	6.97	4.8	11.77	**59%**
Sharks	9,945	na		17.4	-	-
Mullet	8,225	0.49[A]	4.03	2.3	6.33	**64%**
Black Bream	8,188	na	-	-	-	-
Striped Trumpeter	7,228	5.44[A]	39.32	3.1	42.42	**93%**
Flounder	6,633	0.31[C]	2.06	2.1	4.16	49%
Whiting	5,983	0.30[A]	1.79	38.8	40.59	4%
Wrasse	5,130	1.18[A]	6.05	57.7	63.75	9%
Garfish	4,519	0.12[B]	0.54	19	19.54	3%
Leatherjacket	3,573	0.65[A]	2.32	0.3	2.62	**89%**
Silver Trevally	3,481	0.76[A]	2.65	1.1	3.75	**71%**
Banded Morwong	2,660	1.96[A]	5.21	40.5	45.71	11%
Cod	1,887	0.45[A]	0.85	0.6	1.45	**59%**
Bastard Trumpeter	1,754	0.99[D]	1.74	4.56	6.30	28%
Pike	880	na	-	5.4	5.40	-

4.2 Catch by water body

Relative catches of the main finfish (excluding small baitfish) and squid species by water body are summarised in Figure 15. Of the total 2.1 million fish and squid, about 6% were taken from lakes and dams, 2% from rivers, 12% from estuarine waters, 77% from inshore coastal waters, and 3% from offshore waters.

Trout accounted for 87% of the freshwater catch, with Atlantic Salmon, Redfin Perch, and Eels of minor importance in both lake/dam and river fisheries (Figure 15). Flathead and Australian Salmon dominated catches from estuarine and inshore waters, accounting for 41% of the estuarine and 60% of the inshore finfish catches (Figure 15). Other species of significance included Black Bream and Trout in the estuarine fishery, and Gurnard, sharks, King George Whiting, and Southern Calamari in the inshore fishery. Although based on comparatively low numbers, offshore catches included a range of pelagic and demersal species, dominated by unspecified scalefish, Gurnard (mainly Ocean Perch), Striped Trumpeter, and flathead.

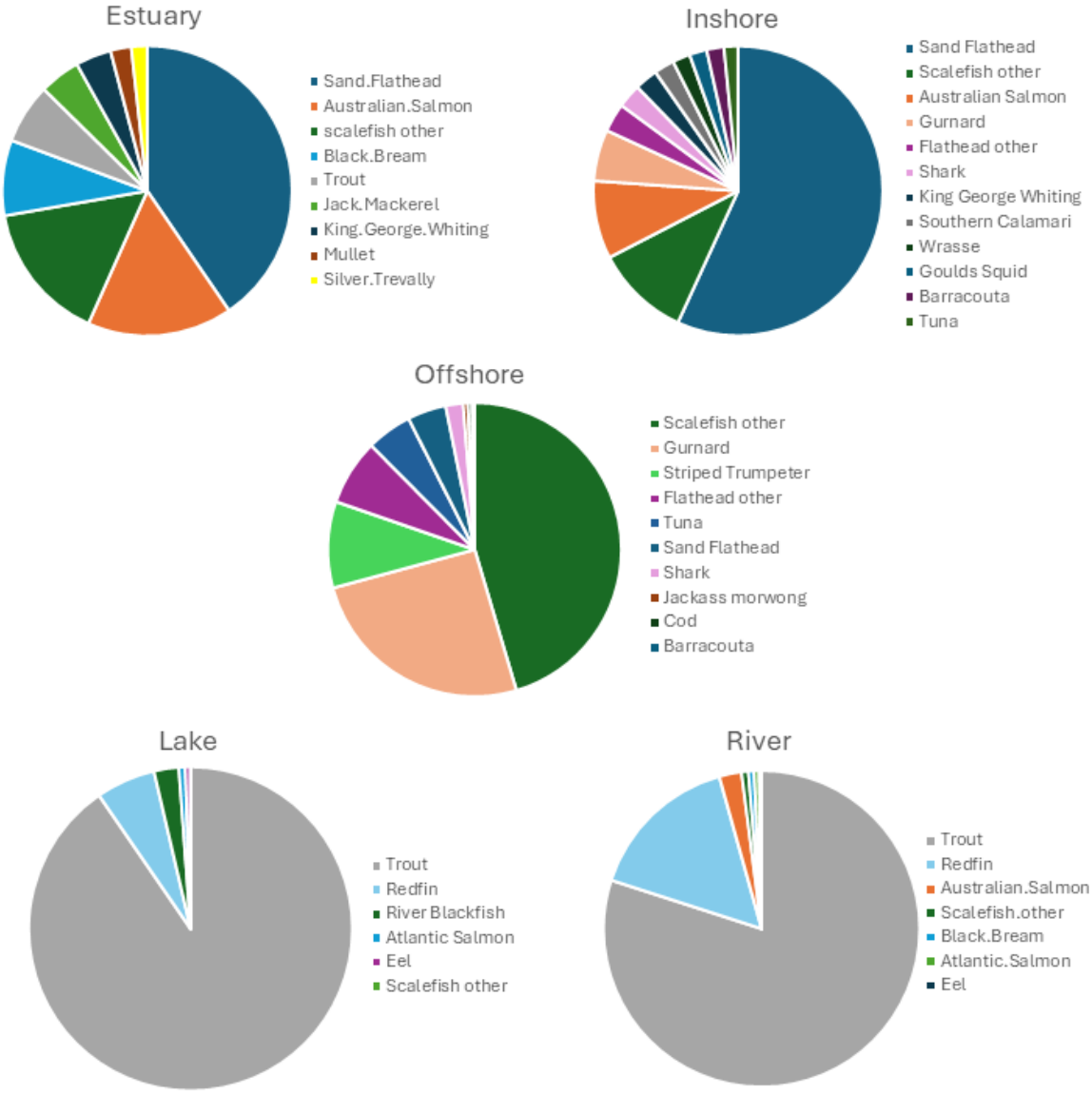

Figure 15. Percentage composition of the recreational finfish and squid catch (numbers kept and released) by water body during 2022/23.

4.3 Catch by method

Overall, line fishing accounted for over 99% of the total finfish and squid catch, with less than 1% (5,100 fish) taken by gillnet. Flathead represented 52% of the line catch, while Australian Salmon, Trout, Gurnard, King George Whiting, Calamari, shark and Wrasse were of secondary importance (Figure 16). The main species taken by gillnet included Bastard Trumpeter, Morwong, and Wrasse (Figure 16). Flounder were mainly captured by spear, while small baitfish (especially Whitebait) were mostly captured in bait nets or traps.

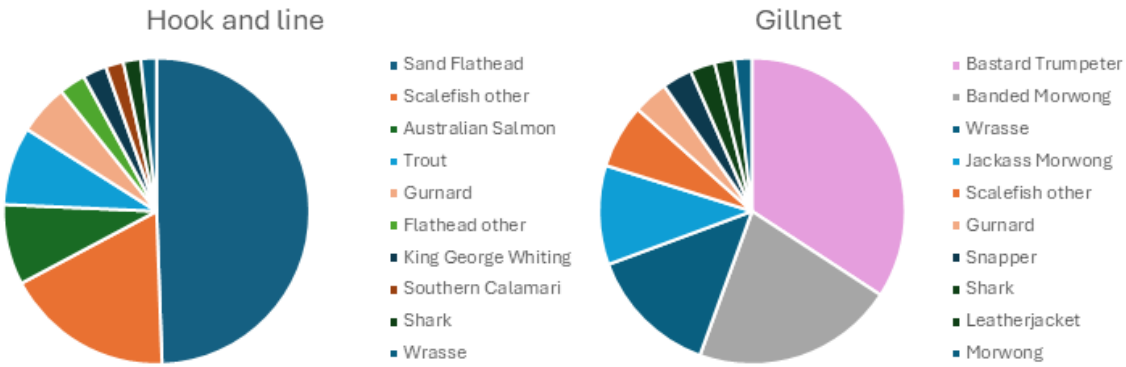

Figure 16. Percentage composition of the recreational finfish catch (kept and released numbers) by line and gillnet fishing methods for Tasmania during 2022/23.

4.3.1 Line fishing

Line fishing was categorised by the use of bait, lures and/or flies. The use of set-lines was also identified, with recreational fishers permitted to use up to 15 hooks (typically baited) on a line, either set as a longline or dropline. Table 9 summarises the relative importance of the different line fishing modes (excluding set-lines) for the key species. For some species including Garfish, Whiting, Mackerel, and River Blackfish at least 90% of the line catch was taken using bait.

In Australia there has been a growing use of lures, in particular soft plastics, for species traditionally caught with bait . For example, during the 2000/01 survey around 90% was taken by bait fishing only (Lyle, 2005), while in this study this has decreased to 55% (Table 9).

Table 9. Estimated catch by line fishing mode indicating catch numbers and proportions taken by bait and/or lure/fly for key species during 2022/23, based on Tasmanian residents aged five years or older. Values in bold indicate relative standard error >40%, values in italics indicate that fewer than 30 households recorded catches of the species/species group; + indicates fewer than 1000 individuals.

	Numbers			% Total	
Species	Bait	Lure/fly	Both	Bait only	Lure/fly only
Sand Flathead	558,762	199,125	265,592	55%	19%
Australian Salmon	37,692	97,086	40,809	21%	55%
Trout	14,684	153,675	3,098	9%	90%
Gurnard	62,545	21,917	25,849	57%	20%
Scalefish other	55,379	15,823	19,235	61%	17%
Flathead other	30,560	6,809	20,484	53%	12%
King George Whiting	45,718	+	5,752	88%	1%
Southern Calamari	1,166	29,300	8,679	3%	75%
Shark	27,454	2,103	8,650	72%	6%
Wrasse	25,405	1,436	7,504	74%	4%
Barracouta	14,406	6,725	10,653	45%	21%
Goulds Squid	1,587	13,695	15,880	5%	44%
Black Bream	13,633	15,193	+	47%	53%
Tuna	+	25,228	2,691	1%	89%
Jack Mackerel	17,519	+	1,035	93%	1%
Mullet	14,202	+	3,044	80%	3%
Leatherjacket	13,562	+	3,439	79%	1%
Jackass morwong	2,070	6,006	7,755	13%	38%
Redfin	+	12,598	2,113	4%	82%
Whiting other	10,056	+	+	96%	1%
Silver Trevally	6,885	1,999	1,149	69%	20%
Striped Trumpeter	4,228	1,157	4,629	42%	12%
Yellowtail Kingfish	1,785	4,030	1,134	26%	58%
Cod	5,351	+	+	89%	2%
Snapper	3,069	+	2,344	55%	2%
Garfish	4,106			100%	0%
Skates Rays	2,364	+	+	66%	18%
River Blackfish	3,107	+		92%	8%
Banded morwong	1,618		1,104	59%	0%
Atlantic Salmon	+	1,487	+	18%	76%
Eel	1,532	+		85%	15%
Morwong	+		1,426	12%	0%
Cephalopod other	+	+	+	61%	5%
Pike	+	+	+	8%	9%
Blue Warehou	+	+	+	65%	16%

4.4 Catch by platform

Over 85% of the total finfish catch (excluding small baitfish) was taken by boat-based fishers. The proportion of the catch taken by boat as opposed to shore-based fishing, however, varied considerably between species (see Section 6. Key Species).

Offshore species, for example, Tuna and Striped Trumpeter, were caught exclusively from boats (Table 10). Other finfish that were primarily captured by boat-based fishers (>90%) included Bastard Trumpeter, Morwong, and Gurnard, while boat-based effort also produced most of the catch for species such as squid, flathead, Garfish, Leatherjacket, Trout and Pike. By contrast, shore-based catches dominated for freshwater species such as River Blackfish, Eel, and Redfin, and estuarine or inshore species such as Silver Trevally, Mullet, and Mackerel.

Table 10. Summary table indicating groupings based on the proportion of the recreational catch of key species that was taken by boat-based fishers during 2017-18.

Shore → **Boat**

% boat-based catch				
< 30%	**31 - 50%**	**51 - 70%**	**71 - 90%**	**> 90%**
Mullet	Cephalopod other	Wrasse	Sand Flathead	Jackass morwong
Jack Mackerel	Cod	Whiting other	Goulds Squid	Striped Trumpeter
Eel	Atlantic Salmon	Flounder	Leatherjacket	Banded morwong
River Blackfish	Redfin	Scalefish other	Pike	Morwong
	Skates Rays	Black Bream	Shark	Bastard Trumpeter
	Silver Trevally	Australian Salmon	Garfish	Tuna
		Trout	Southern Calamari	Gurnard
				Snapper
				Barracouta
				King George Whiting
				Yellowtail Kingfish
				Flathead other
				Blue Warehou

5. KEY SPECIES

In this section, estimated statewide catches for key fisheries are described in terms of regionality (where relative standard errors were less than 50% for most regions), seasonality, retention, fishing platform, method, and water body. Catch numbers and standard errors are presented for these key species in Table 5. It is worth noting the broad confidence intervals are presented for some species and these should be interpreted with caution.

Excluding small baitfish, an estimated 3.52 million finfish were caught (kept and released) by Tasmanian recreational fishers during 2000/01, this compared with 2.86 million in 2007/08, 2.62 million in 2012/13, 2.45 million in 2017/18 and 2.04 million in 2022/23. Flathead have consistently accounted for over half of the total finfish catch numbers, followed by Australian Salmon and Trout.

Based on harvest, the total retained catch of finfish has fallen from 2.29 million in 2000/01 to 1.61 million in 2007/08, 1.48 million in 2012/13, 1.10 million in 2017/18, and 830, 000 in 2022/23. Numbers of finfish released have, however, varied little over time, ranging between 1.22 million fish in 2000/01 to 1.24 million in 2007/08, 1.14 million in 2012/13, 1.35 million in 2017/18, and 1.20 million in 2022/23. This reflects a general increase in the proportion of the finfish catch that has been released or discarded, from about 35% in 2000/01 to 43% in 2007/08 and 2012-13, and increasing to 55% in 2017/18 and 59% in 2022/23. Such a finding appears to be consistent with the greater emphasis placed on catch and release fishing by the recreational sector, as well as Government messages promoting only keeping what is required for “a feed”, and effects of bag and size limits regulations, many of which have been either introduced or become progressively more restrictive since 2001. The increase in release rates indicates a need to consider a deeper understanding of catch and release mortality for several species.

5.1 Southern Sand Flathead

Flathead were by far the most commonly caught species Tasmanian waters. Southern Sand Flathead (*Platycephalus bassensis*) represented 95% and Tiger Flathead (*Neoplatycephalus richardsoni*) 3% of the total catch (kept and released) by number. The balance was comprised mostly of non-specified flatheads (noting that unidentified Southern Sand and Tiger flathead may be included) and Bluespotted Flathead (*Platycephalus speculata*).

Just over half (57%) of the total catch of Sand Flathead was from South East Tasmania, (Figure 17A). The East and North coasts were also important regions. West coast catches were minor.

About 62% of the Sand Flathead caught were released or discarded (Figure 17B); boat-based fishing accounted for 90% of the catch (Figure 17C); and line fishing was the dominant method (Figure 17D). Most line caught fish were caught with bait but the use of lures has increased over the years. Catches were concentrated in inshore coastal waters, with catches also taken from estuaries, and an insignificant amount taken offshore (Figure 17E). The Flathead fishery is highly seasonal, with a marked peak during summer (December-January) and a distinct trough between May and September (Figure 17F). The period between December and April accounted for 75% of the annual catch.

The recreational catch, kept and released, varied little between the 2000/01 and 2017/18 surveys. However, the harvest declined substantially reflecting an increase in release rates, from 35% in 2000/01 to 56% in 2017/18. The increase in the proportion of catch released over this period was likely influenced by the 2015 increase in minimum size limit for Sand Flathead (from 300 to 320 mm). In this most recent survey, the total catch decreased significantly, and the number harvested also decreased significantly with an increase in the number of fish released to over 60% (Figure 17G). The dominant reason for release was fish being undersize (92%) (Figure 14).

Interim management measures introduced in April 2023, in response to the species being defined as 'depleted' may have contributed somewhat to the reduced catch, although most effort and catch for the species occurred in the summer months prior to this management intervention. The interim measure reduced the daily bag limit of 20 to 10 fish and the minimum legal size increased from 32 to 35 cm. In November 2023, further measures were implemented to reduce fishing mortality. These included a reduction of the daily bag limit to 2 fish in the D'Entrecasteaux Channel, Derwent River, Fredrick Henry and Norfolk Bays, a daily bag limit of 5 fish in the Eastern zone and 10 in the northern and western zones, including the Bass Strait Islands. A possession limit of 10 fish per person was implemented and an addition to the increase of the minimum legal-size limit that was implemented as part of the interim measure (35 cm) was the inclusion of a maximum legal-size limit of 40 cm for all waters except the Bass Strait islands.

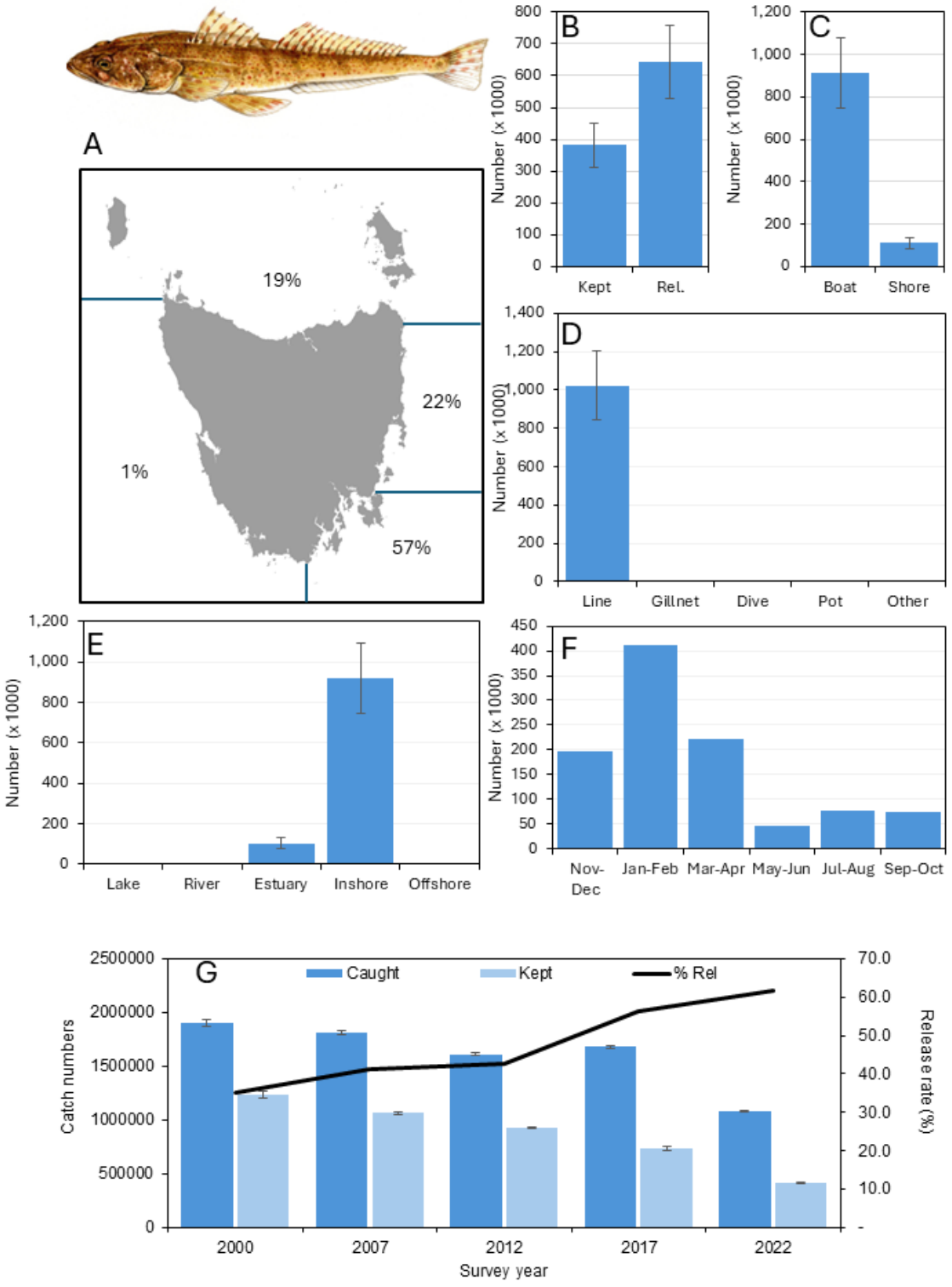

Figure 17. Characteristics of the recreational fishery for Sand Flathead in Tasmania during 2022/23: A) proportion (%) of the total catch (numbers) by fishing region; B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error.

5.2 Trout

Overall, Brown Trout (*Salmo trutta*) represented 89% of the catch, with Rainbow Trout (*Oncoryhnchus mykiss*) comprising the bulk of the remainder. A small proportion of the catch (<0.2%) was not identified to species by survey respondents or reported as Brook Trout (*Salvelinus fontinalis*).

Almost 60% of the catch was released. Trout were being taken more or less equally by boat and shore-based fishers and caught exclusively by line fishing noting this is the only permitted fishing method for all freshwater species with the exception of Whitebait, with lures/flies the main (>90%) method used. The catch from lakes and dams was almost twice that from rivers with small quantities taken from estuarine waters. Catches peaked during spring and summer and then declined to low levels during the winter months, corresponding to the closure of many parts of the fishery.

Catches of Trout have fluctuated without obvious trend since 2000/01. The harvest has fallen steadily as a greater proportion of the catch is released. In this survey, the catch and harvest declined from the previous survey, but the release rate remained consistent (Figure 18).

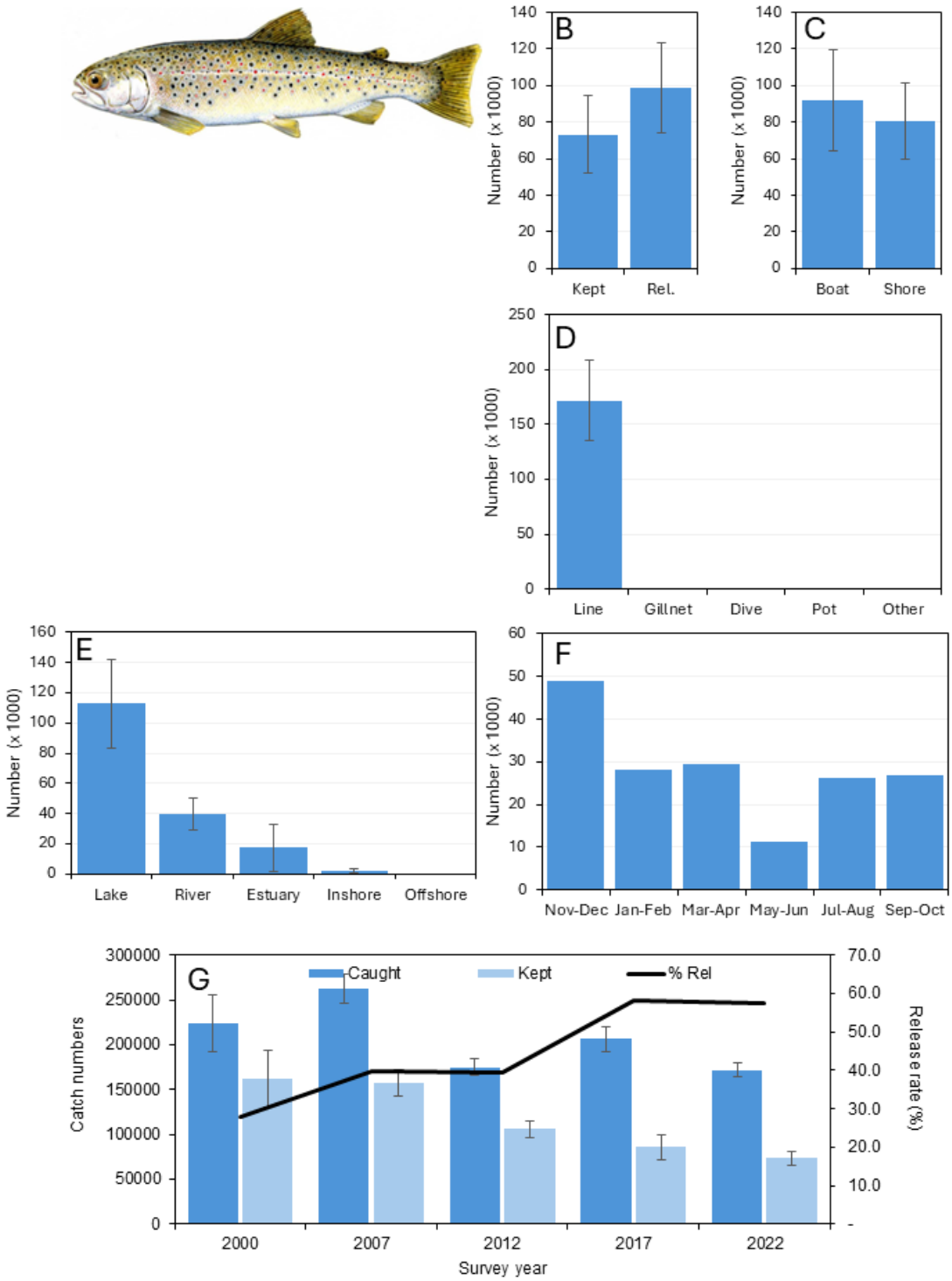

Figure 18. Characteristics of the recreational fishery for Trout in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

5.3 Australian Salmon

Most Australian Salmon (*Arripis trutta* and *A. truttaceus*) were reported in the southeast of the state. This is a divergence from the last survey, when these species were primarily caught off the North and East coasts. Numerically, Australian Salmon were the third most caught finfish, with just under 50% of the total catch released or discarded. In addition to boat-based catches, there was a substantial shore-based fishery for the species, with line fishing the main fishing method. Lure fishing accounted for 55% of the catch, an increase from the last survey. Catches were concentrated in estuarine and inshore coastal waters, with evidence of a spring-autumn (October - May) peak.

The Australian Salmon harvest have been relatively stable since 2007/08, albeit at a lower level than in 2000/01. The catch increased by about 50,000 individuals since last survey (Figure 19).

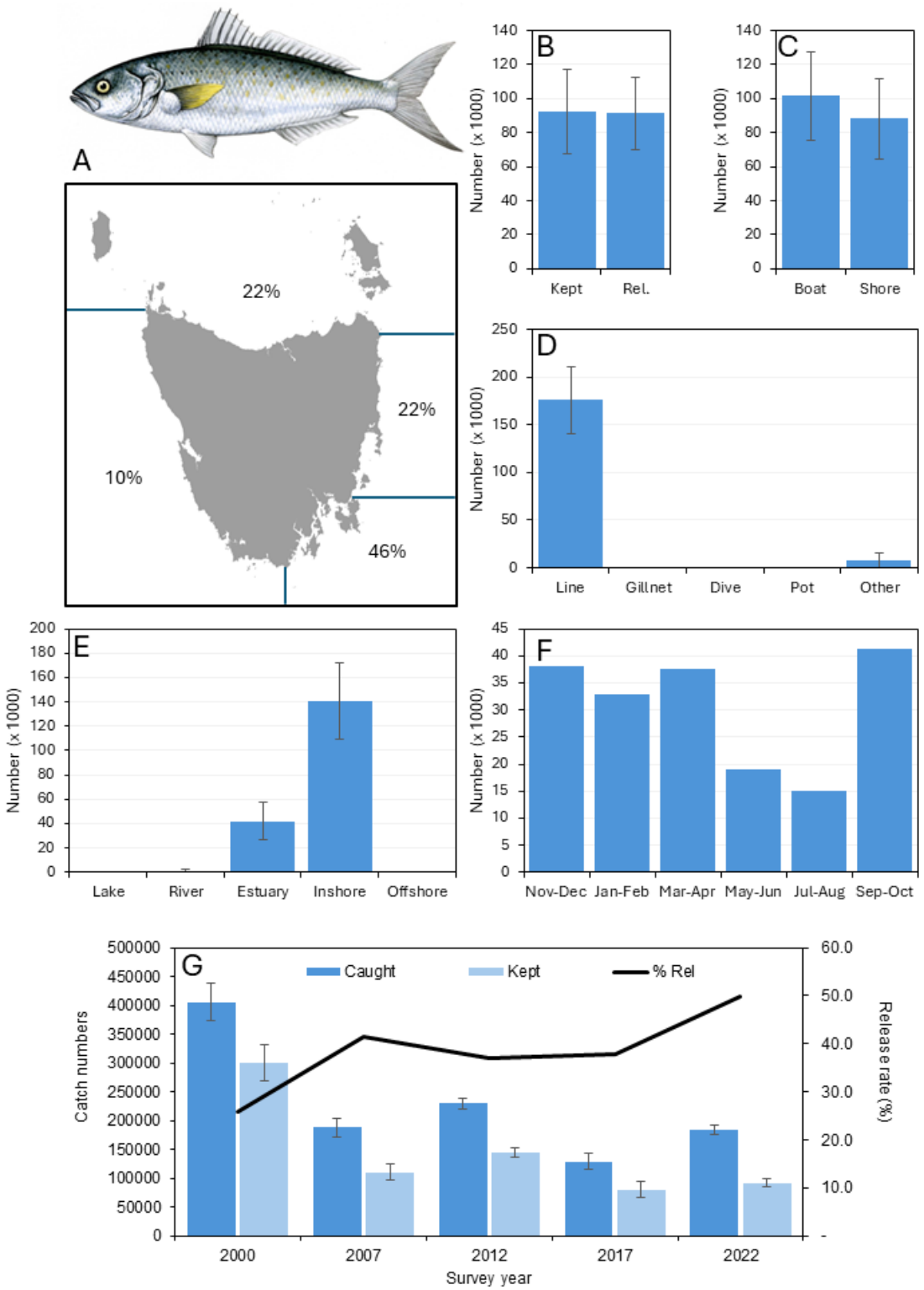

Figure 19. Characteristics of the recreational fishery for Australian Salmon in Tasmania during 2022/23: A) proportion (%) of the total catch (numbers) by fishing region; B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error.

5.4 Striped Trumpeter

Seventy-one percent of Striped Trumpeter were retained, all caught from boats. Almost all fish were line caught with less than 1% taken by gillnet.

Fifty-seven percent of Striped Trumpeter were taken from offshore coastal waters, with the remainder from inshore waters. The highest catches were reported in July-August and November-December, either side of the closed spawning period. There was also a peak in March-April, likely related to increased effort over the Easter period.

Catches of Striped Trumpeter increased from the 2017/18 survey. However, the retained catch did not increase significantly, likely due to a large increase in the release rate (Figure 20). The reason for release of fish was equally attributed to the fish being undersize or 'other' which included fish depredated by seals (Figure 14).

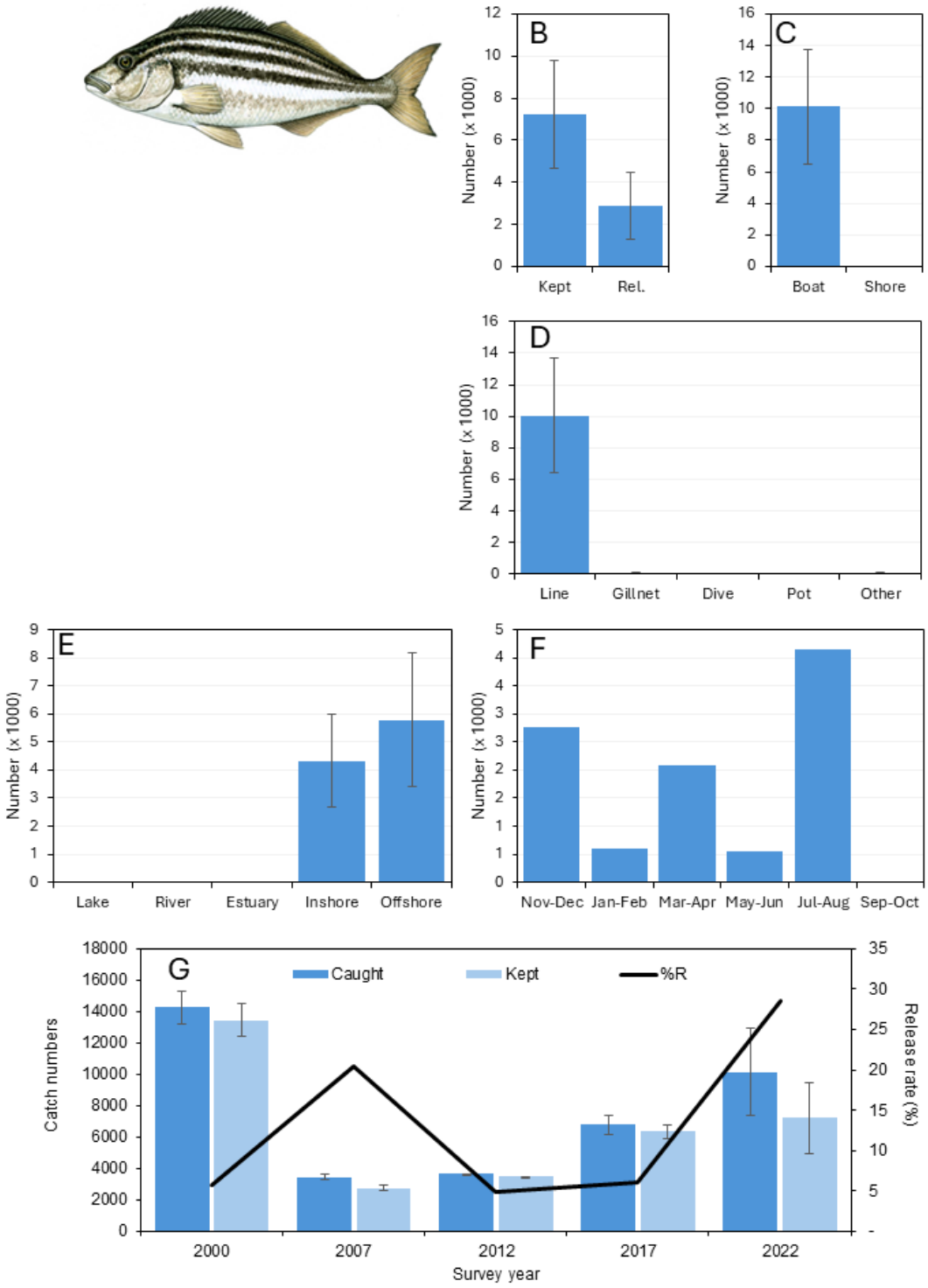

Figure 20. Characteristics of the recreational fishery for Striped Trumpeter in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

5.5 Mullet

Yellow-eye Mullet (*Aldrichetta forsteri*) and Sea Mullet (*Mugil cephalus*) occur in Tasmania waters and, while survey respondents did not distinguish species, Yellow-eye Mullet are known to dominate catches. About 55% of the total catch of 18,300 Mullet was not retained, and shore-based fishers accounted for 77% of the take.

Mullet were captured mainly by line and seine nets ('Other'), with some fish also taken by gillnets (so-called 'mullet nets'). The species was caught mainly in estuarine and inshore coastal waters and the fishery was characterised by a strong peak in catches during summer and autumn and comparatively low quantities taken at other times.

The catch of mullet continued to be substantially lower than in the 2000/01 survey, although the release rate increased from 40% to 55% (Figure 21).

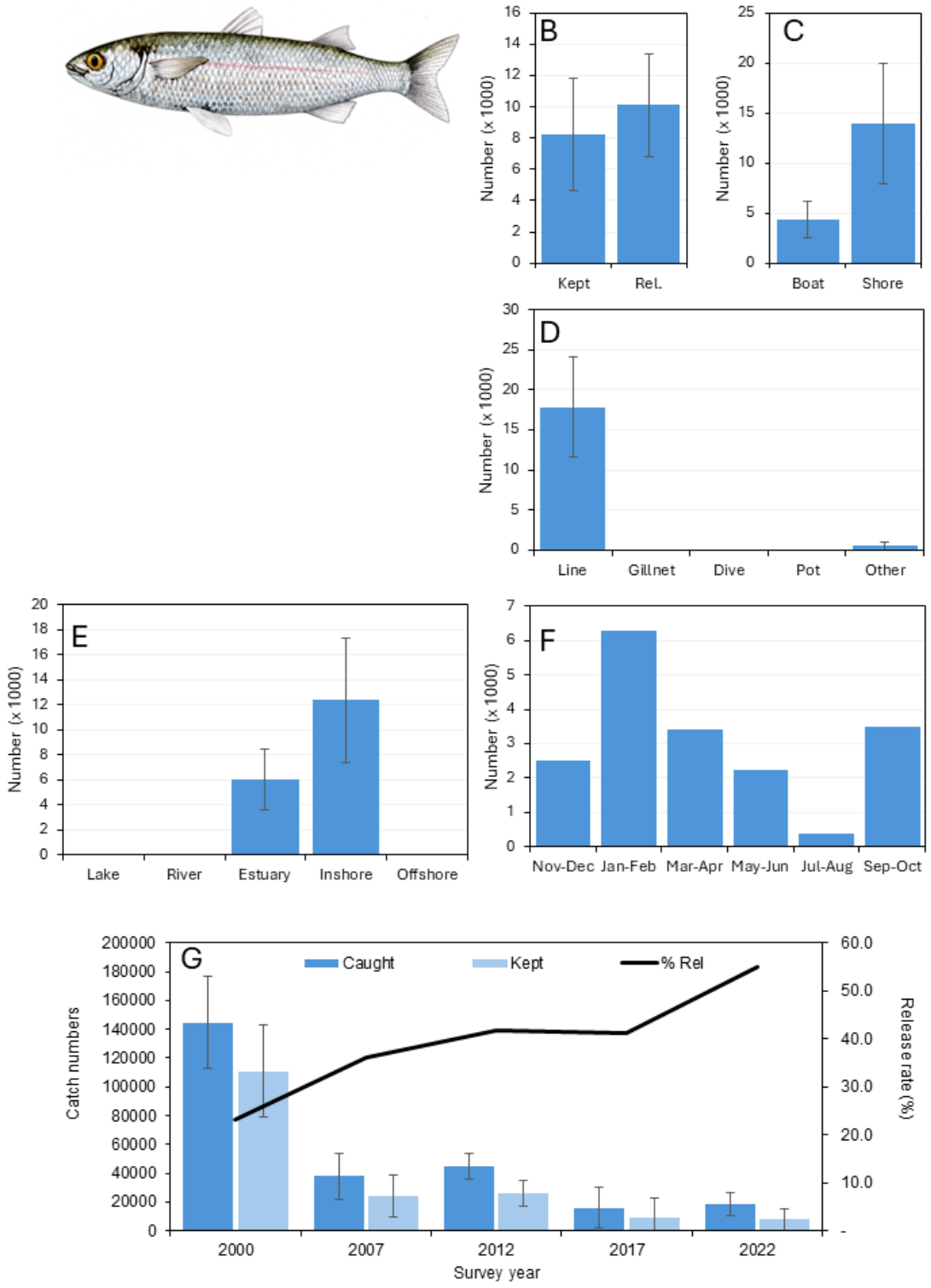

Figure 21. Characteristics of the recreational fishery for Mullet in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

5.6 Flounder

Several species of flounder occur in Tasmanian waters, the most caught being Greenback Flounder (*Rhombosolea tapirina*), and Long-snouted Flounder (*Ammotretis rostratus*) also occasionally taken. Survey respondents did not distinguish catches by species.

All Flounder were retained with shore-based fishing accounting for the bulk of the catch. Spearing was the main method of capture ('Other'), typically undertaken at night wading in the shallows, and is a clear reason why Flounder are not generally released. Catches peaked during spring-summer and were lowest in winter.

Catches were lower than in previous years, although not significantly so (Figure 22).

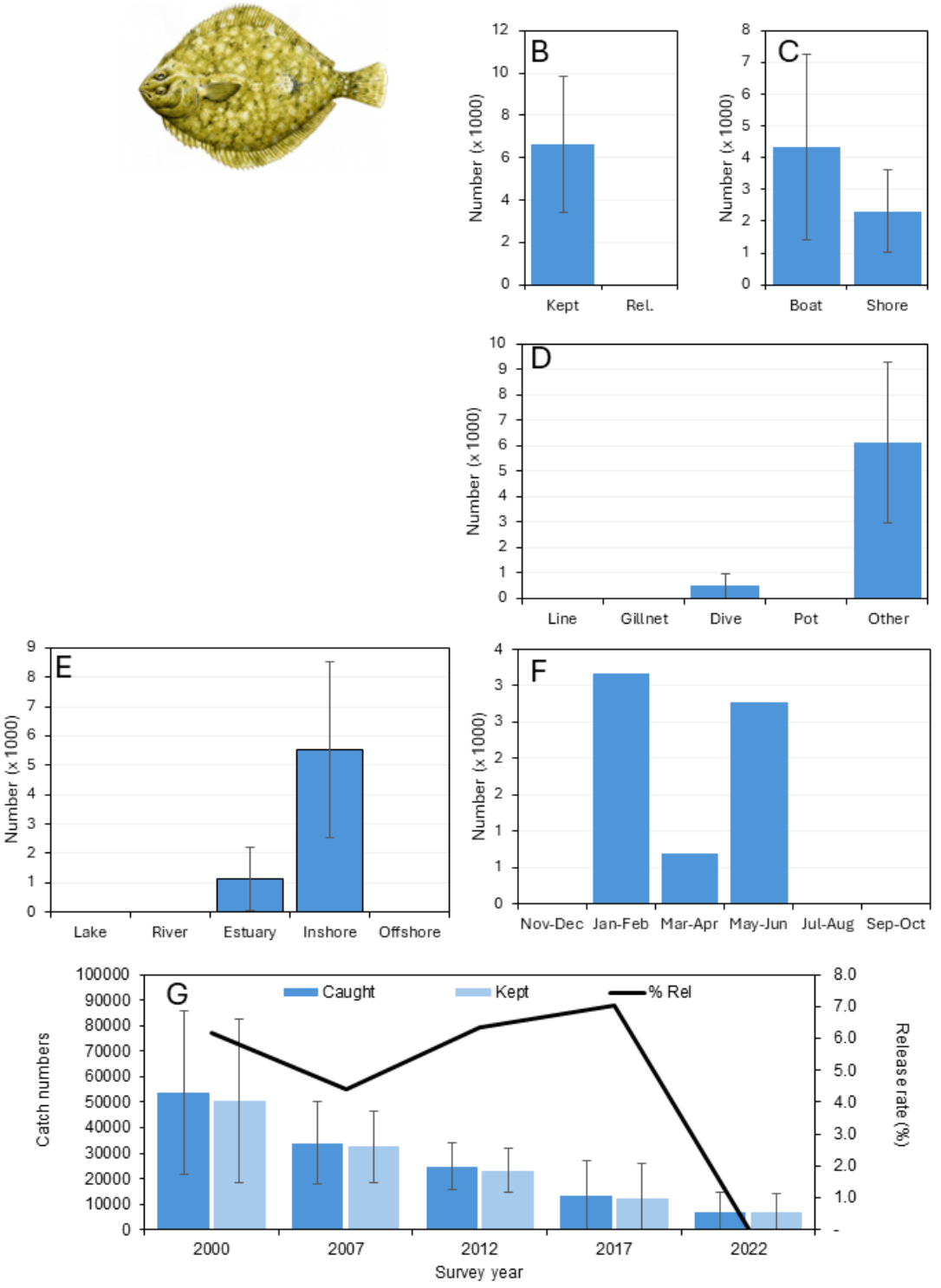

Figure 22. Characteristics of the recreational fishery for Flounder in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

5.7 Black Bream

Most Bream were released (Figure 23B), reflecting a strong catch and release ethic amongst many fishers (refer Figure 14). Catches were dominated by boat fishing (Figure 23C), and line fishing (mainly using lures) accounted for most of the catch (Figure 23D). Black Bream were almost exclusively taken from estuarine waters (Figure 23E), with lowest catches taken during the winter months and little evidence of catch variability at other times of the year (Figure 23F).

Catch, numbers kept, and release rates were similar to the 2017/18 survey, but catches over the last two surveys were approximately half of those reported in the first three surveys starting in 2000/01 (Figure 23 G).

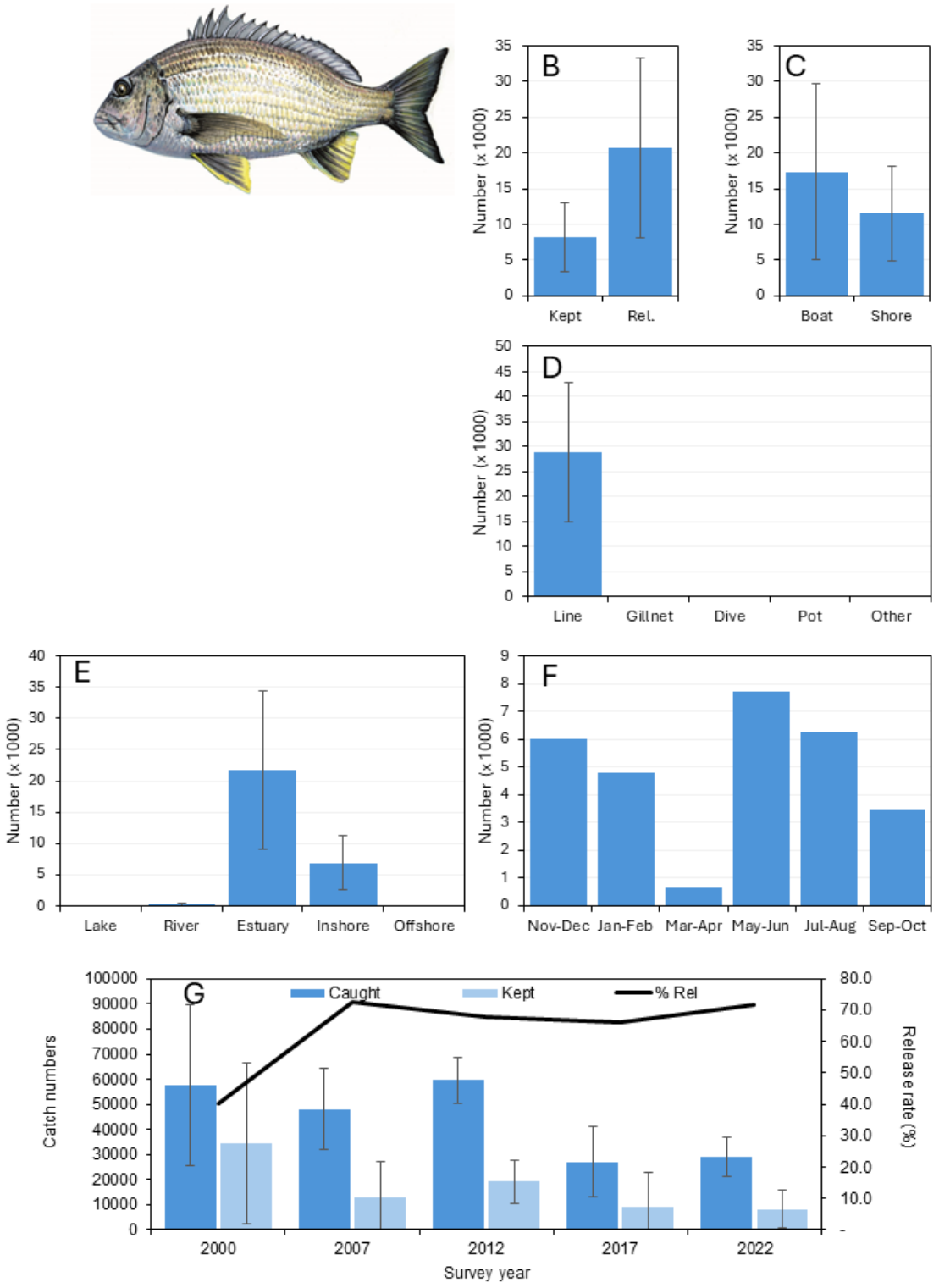

Figure 23. Characteristics of the recreational fishery for Black Bream in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

5.8 Tuna

Recreational fishers reported catching several species of tuna of which Southern Bluefin (*T. maccoyii*) were the most common representing 52% of catch numbers, followed by Albacore Tuna (*Thunnus alalunga*), and Skipjack Tuna (*Katsuwonus pelamis*; < 1%). The specialised nature of the game fishing meant that relatively few trips were reported and thus the figures should be treated with caution.

In the 2017/18 survey, about 18% of tuna were released, this increased significantly in this survey to 57%. All fish were caught from boats using rod and line. Catches were derived mainly from inshore waters and to a lesser extent from offshore waters (>5 km from the coast). Tuna catches peaked through the summer–autumn period, with a marked peak during March and April, but were also reported in all months other than September and October.

Catch and numbers kept increased somewhat compared to the 2017/18 survey, with release rates the highest reported across all surveys (Figure 24).

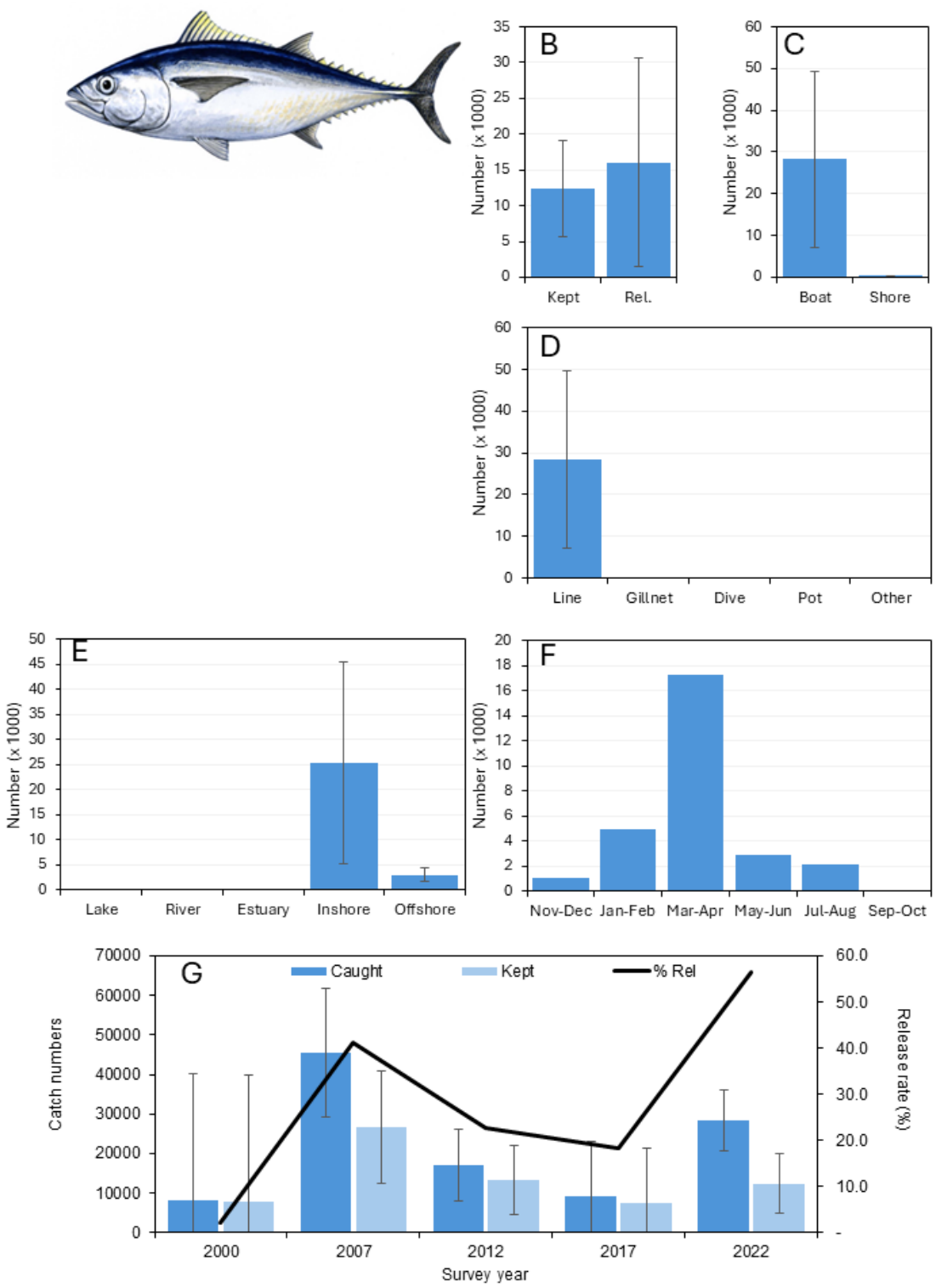

Figure 24. Characteristics of the recreational fishery for tunas in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

5.9 Gould's Squid

Gould's Squid (*Nototodarus gouldi*) catches were concentrated primarily in the South East and to a lesser extent the North coast. Most of the catch was retained and taken primarily from boats. Line fishing (mostly using lures) in inshore waters was the predominant fishing method. Catches were largely restricted to summer and early autumn months, with a marked peaks in December and March.

Catches of Gould's squid were lower than in the last three survey years (Figure 25). The release rates have fluctuated across surveys but have remained lower than 12% across all surveys, suggesting that they are a preferred species to harvest, likely for consumption or use as bait.

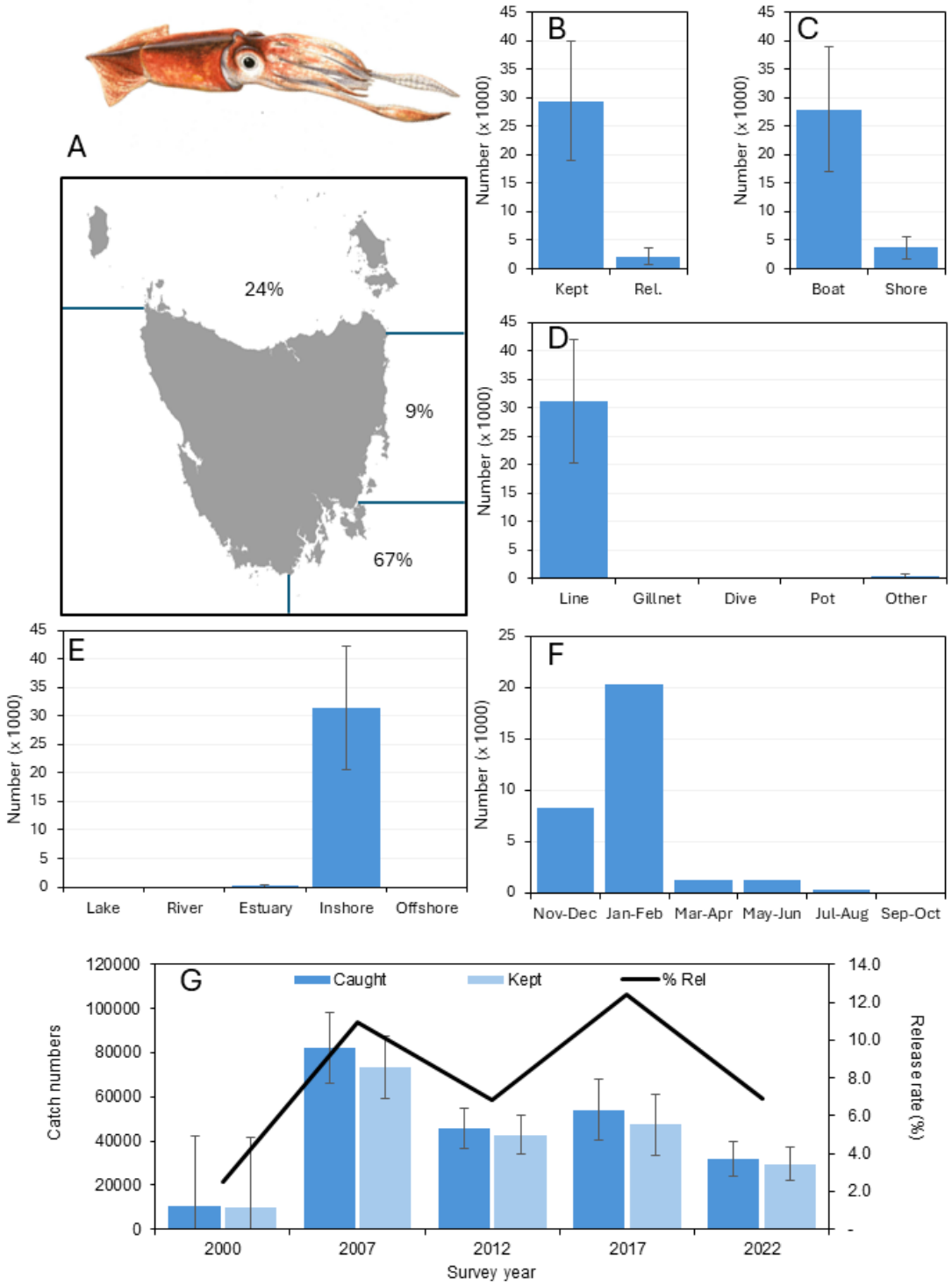

Figure 25. Characteristics of the recreational fishery for Gould's Squid in Tasmania during 2022/23: A) proportion (%) of the total catch (numbers) by fishing region; B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error.

5.10 Southern Calamari

Over half of the Southern Calamari (*Sepioteuthis australis*) catch was taken off southeastern Tasmania. Outside this region, the East and North coasts shared roughly equal catches, and a small amount of catch was also taken on the West coast. Most calamari were retained, and 71% were taken from boats, a notable increase from the previous survey where boat- and shore-based catches were roughly equal. Line fishing (primarily using jigs) was the main capture method, but there was also a small quantity taken by spear. Most Southern Calamari were taken from inshore coastal waters, through moderate quantities were reported from estuarine areas. Catches were concentrated over the summer–autumn period (December–May); relatively low numbers were taken at other times of the year, including during October and November when fishery closures were in place on the east coast.

Catches of Southern Calamari were slightly lower than the previous survey (Figure 26). The release rates have fluctuated across surveys but have remained lower than 12%, confirming that they are a preferred species to harvest. Of those released, 35% of responses indicated it was due to reaching the catch limit.

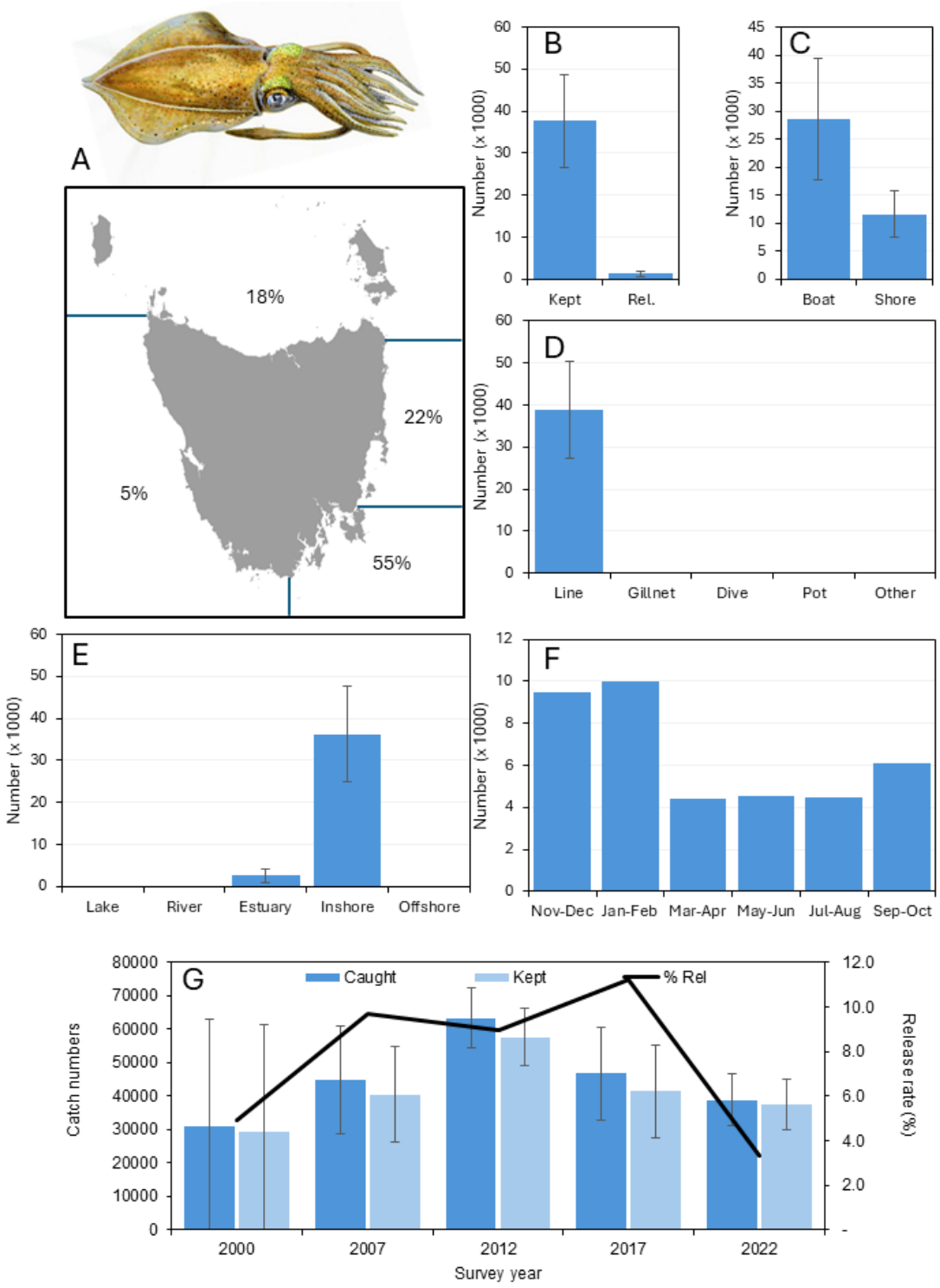

Figure 26. Characteristics of the recreational fishery for Southern Calamari in Tasmania during 2022/23: A) proportion (%) of the total catch (numbers) by fishing region; B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error.

5.11 King George Whiting

Approximately half of the King George Whiting catch was retained, with 95% taken by boat-based fishing. Line fishing was the exclusive capture method. Eighty percent of fish were taken from inshore coastal waters, with the remainder reported from estuarine areas. Catches were concentrated over the summer–autumn period, peaking in January - February; and relatively low numbers were taken at other times of the year.

Catches and retained catches of King George Whiting have roughly doubled since the last survey (Figure 27). The release rate has also increased by approximately 10%, with 98% of the fish released due to being undersize (Figure 14).

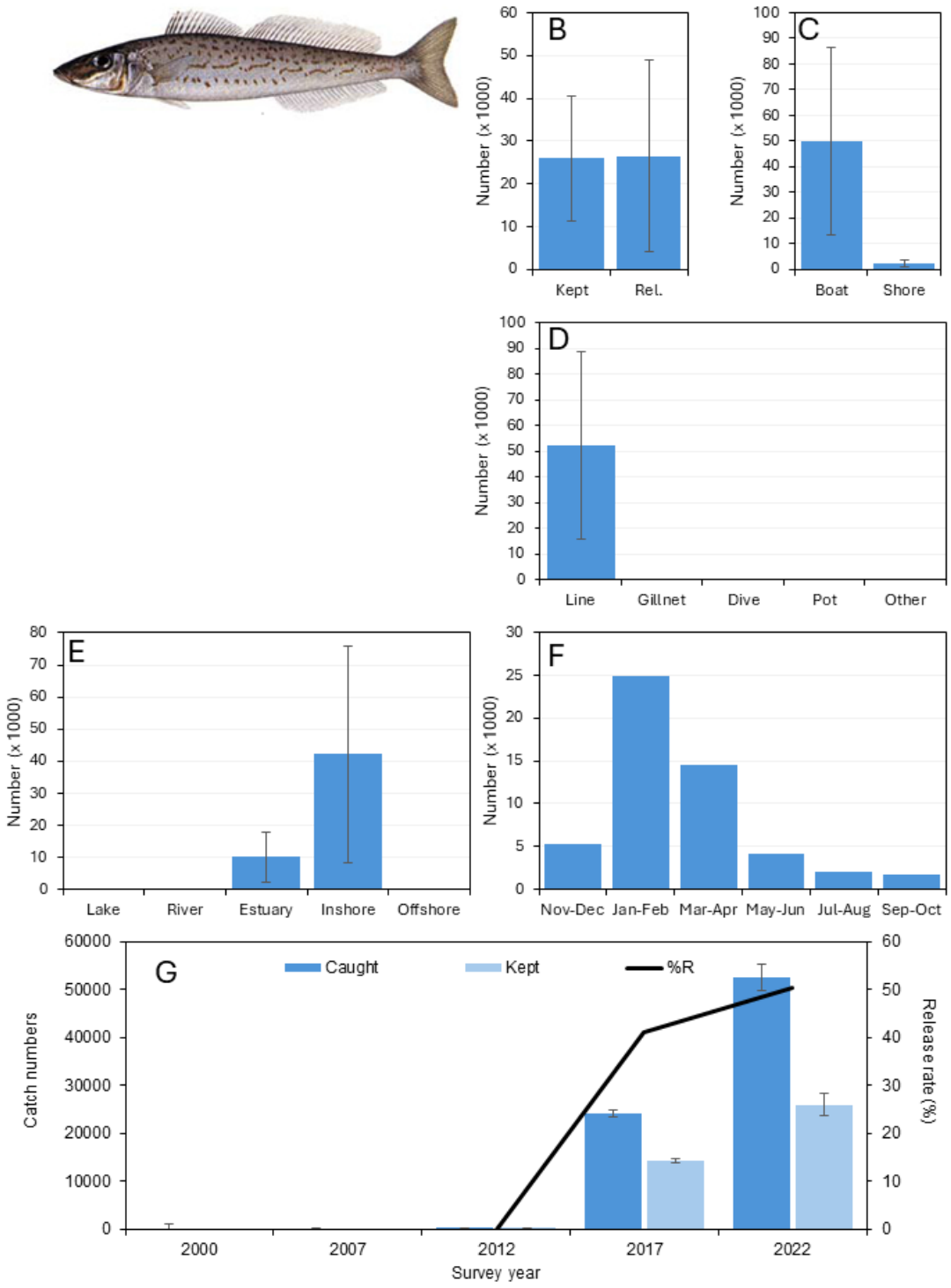

Figure 27. Characteristics of the recreational fishery for King George Whiting in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

5.12 Snapper

Approximately half of the Snapper caught was retained, with 96% taken by boat-based fishing. Line fishing was almost the exclusive capture method, but there was also a small quantity taken by gillnet. Most (80%) of Snapper were taken from inshore coastal waters, with the remainder reported from estuarine areas. Catches were concentrated over the mid-summer–autumn period, peaking in January-February then tailing off; no catch was reported after May.

Catches and retained catches of Snapper increased significantly between the 2012/13 and 2017/18 surveys, and that trend has continued with a further increase in this most recent survey (Figure 28). The release rate has varied overtime and in the most recent survey declined by 10% from the 2017/18 survey to 51%. Release reasons included fish being undersize, catch and release only, or catching too many. There were no reports of releasing due to reaching the bag limit (Figure 14).

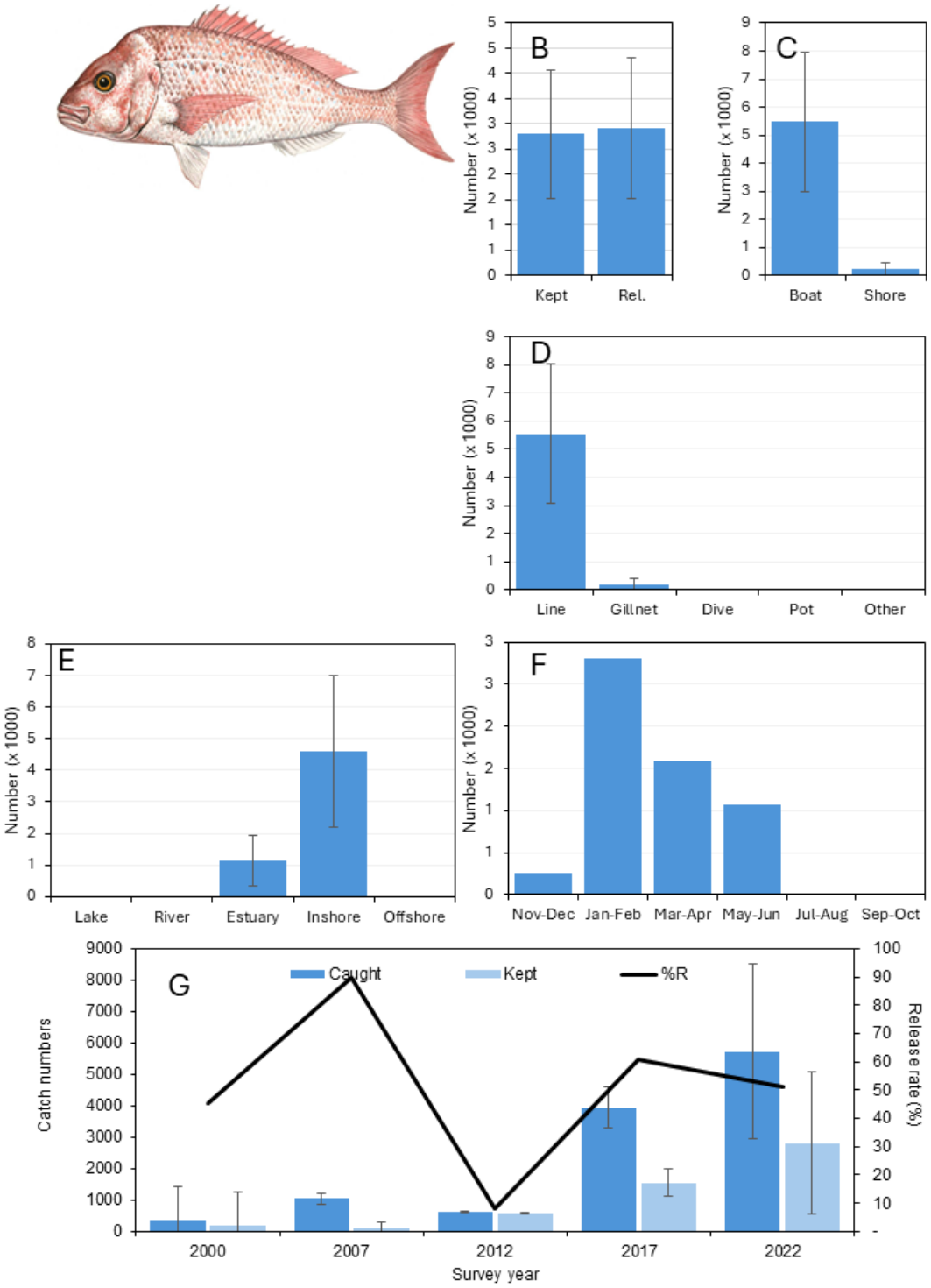

Figure 28. Characteristics of the recreational fishery for Snapper in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

5.13 Yellowtail Kingfish

The majority (83%) of Yellowtail Kingish caught was retained, with 95% taken from boats. Line fishing was the exclusive capture method, and all fish were taken from inshore coastal waters. Catches were concentrated over the summer period, peaking in January and February; no catch was reported after April. Catches of Yellowtail Kingfish increased significantly since the 2017/18 survey (Figure 29).

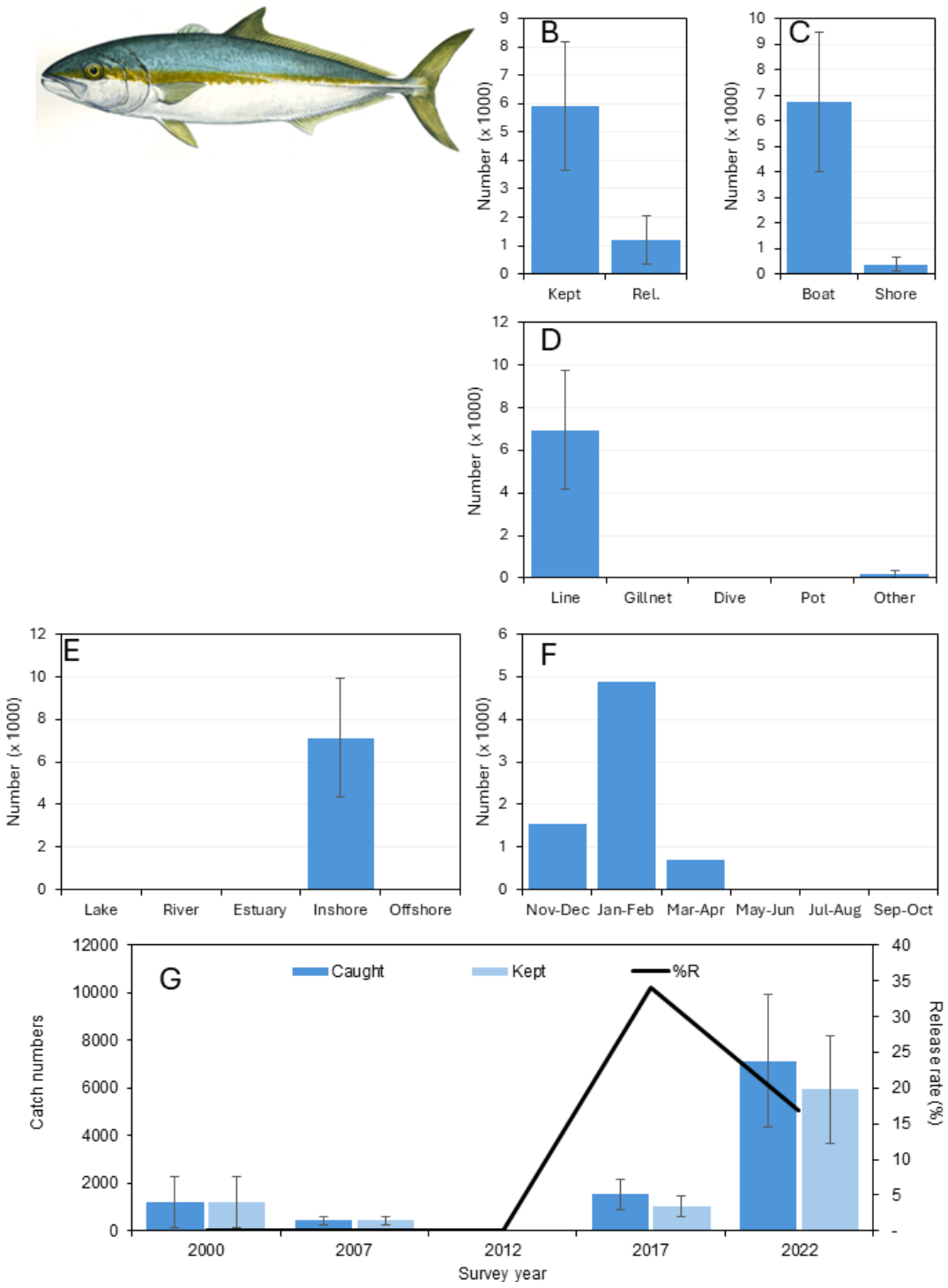

Figure 29. Characteristics of the recreational fishery for Yellowtail Kingfish in Tasmania during 2022/23: B) total numbers kept and released; C) total catch (numbers) by boat and shore based fishing activities; D) total catch (numbers) by fishing method; E) total catch (numbers) by water body fished; F) seasonality in the catch (numbers); and G) Total catch numbers (kept and released), numbers kept (harvested) and proportion of the total catch released (%) by survey year for Tasmanian residents aged 5 years or older. Error bars represent one standard error. There was insufficient data to break down to regional catch estimates.

6. REGIONAL FISHERIES

In this section, effort within a fishing region is considered in the context of where fishers reside, providing an understanding of the level of fishing effort that is 'imported' to the region by residents from outside of the immediate area, the relative importance of the fishing methods used, and the catch composition

6.1 Inland fishery

For reporting, Tasmania's inland fishery was split into three key regions: Western, Central Plateau and Eastern regions. Fishing effort in the Western region was primarily derived from West & North West residents, followed by residents of the Launceston and North East area; there was very limited activity from fishers resident outside of these bordering areas (Figure 30A). A different pattern was evident for the Central Plateau, where a significant proportion of the effort was derived from residents travelling from Hobart, in addition to residents of adjoining areas, indicating the importance of effort 'imported' from the south of the state (Figure 30B). Hobart and Launceston & North East residents accounted for the bulk of the fishing effort in the Eastern region, with very limited activity from West & North West residents (Figure 30C).

Inland fishing was almost exclusively rod and line based, with some Whitebait trapping or netting activity reported in the Western region (Figure 30D-F).

Trout clearly dominated catches (excluding Whitebait), accounting for over 80% of the Eastern, 96% of the Central Plateau, and 97% of the Western region catches (Figure 30G). The balance was comprised mainly of Atlantic Salmon in the Eastern region, Redfin Perch in the Central Plateau region and Redfin Perch and Eels in the Western region.

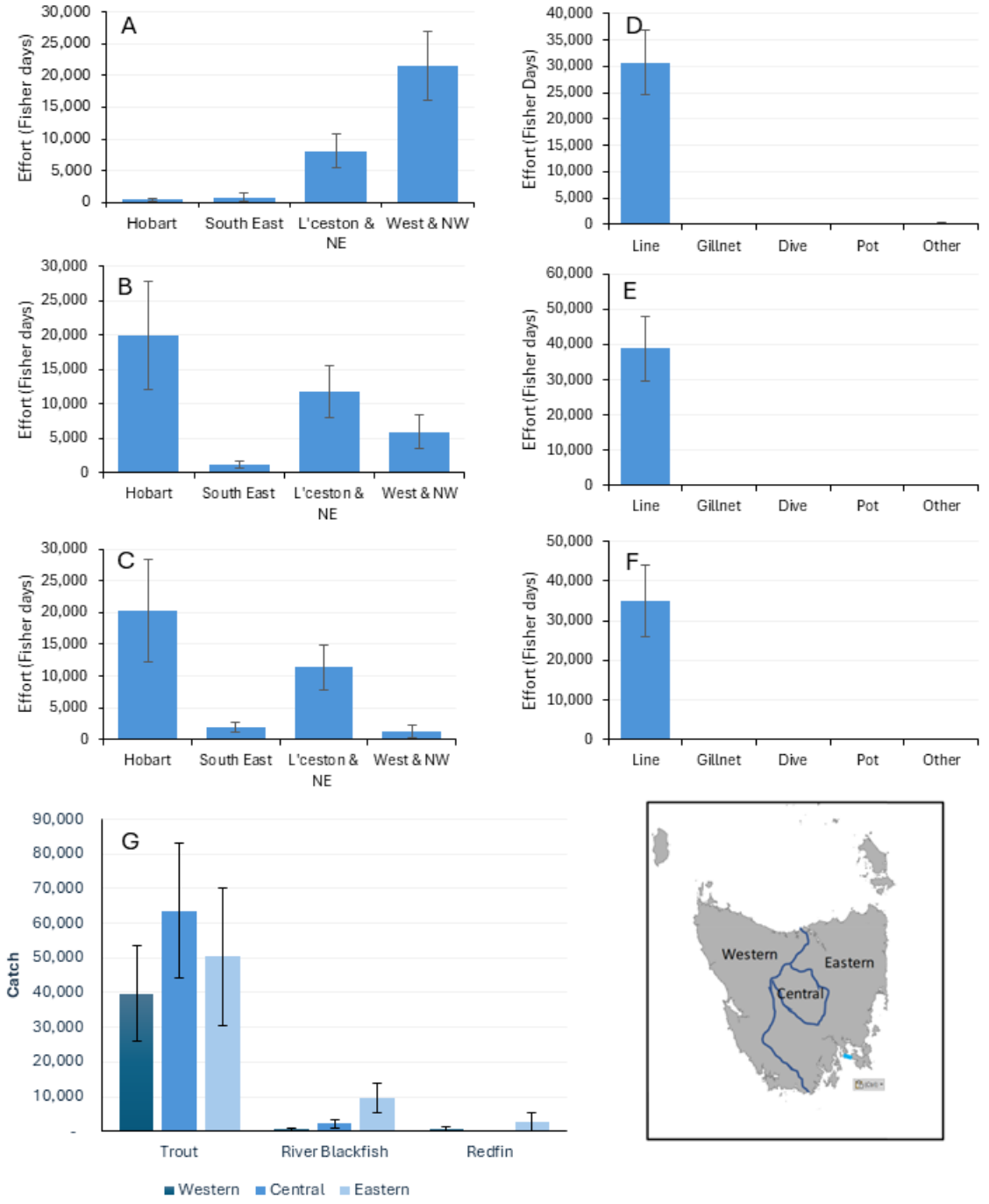

Figure 30. Characteristics of the inland recreational fishery based on based on 2022/23 activity: A) fishing effort (fisher days) in the Western region; based on region of residence (statistical area) of fishers B) fishing effort in the Central Plateau region, based on region of residence of fishers; C) fishing effort in the Eastern region, based on region of residence of fishers, D) fishing effort by method in the Western region, E) fishing effort by method in the Central Plateau region; F) fishing effort by method in the Eastern region; and G) catch (numbers) for the key finfish species by fishing region. Error bars represent one standard error.

6.2 West coast

Given limited survey data available for the West coast, results should be treated with caution.

The effort on the West coast was attributed to fishers residing in the West & North West region and the South East region, with little imported effort from other regions (Figure 31A). A range of methods, including line, lobster pot, and gillnet dominated effort in this region (Figure 31B). Australian Salmon was the most caught species, followed by Sand Flathead and Barracouta (Figure 31C).

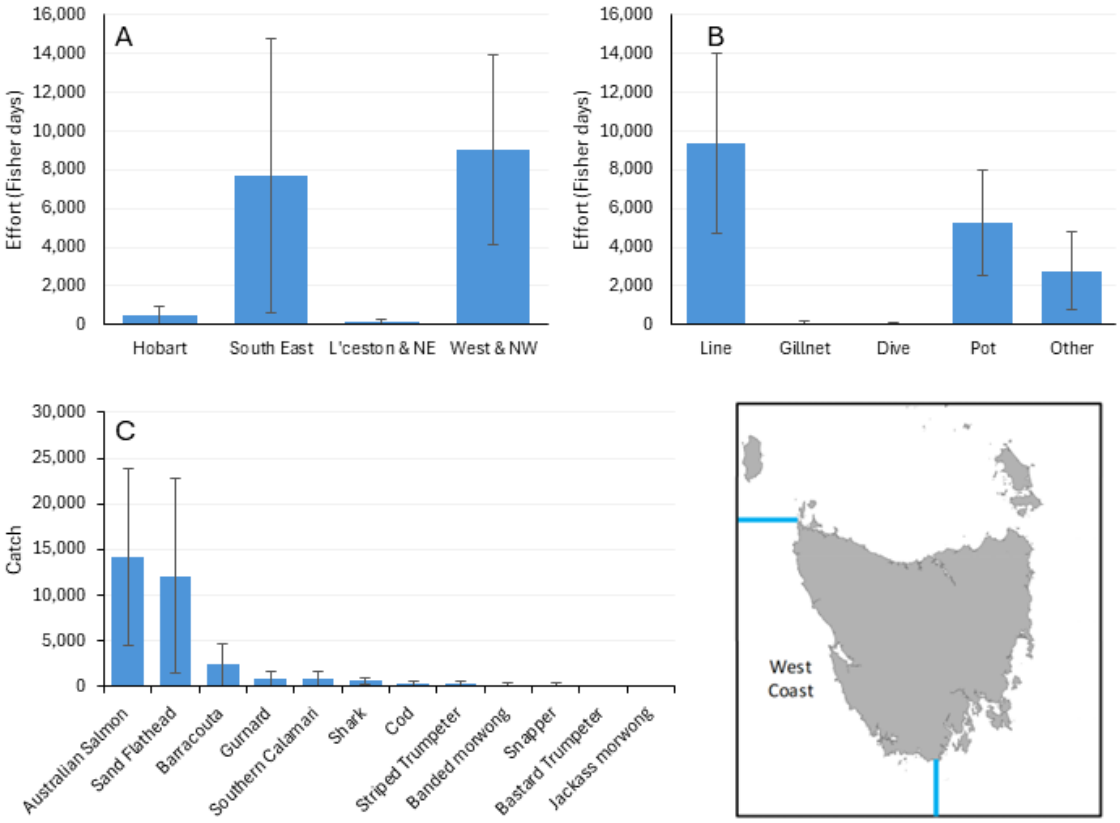

Figure 31. Characteristics of the West coast recreational fishery based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.3 North West coast

Effort in this region was almost entirely (86%) due to the activities of residents from the West & North West (Figure 32A). Line fishing was the main method used, the 'other' methods category included set-line and beach seine usage (Figure 32B). Sand Flathead dominated catches, with Gurnards, Australian Salmon, and a range of other finfish of secondary importance (Figure 32C).

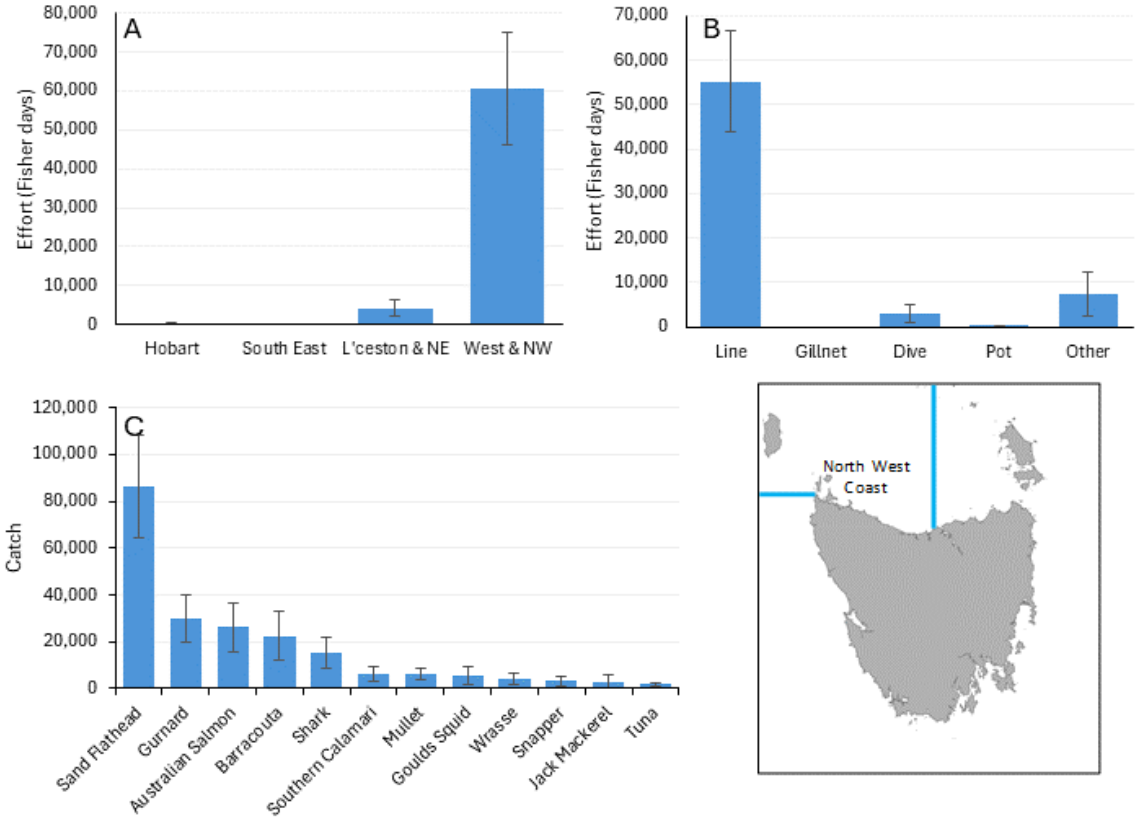

Figure 32. Characteristics of the North West coast recreational fishery based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by platform; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.4 Tamar Estuary

Residents of the surrounding area (Launceston and North East) accounted for the vast majority (87%) of the fishing activity in the Tamar (Figure 33A). Line fishing was the most commonly used method (Figure 33B), with Sand Flathead, Mackerel and Australian Salmon dominating catches, followed by minor catches from a range of other finfish and squid species (Figure 33C).

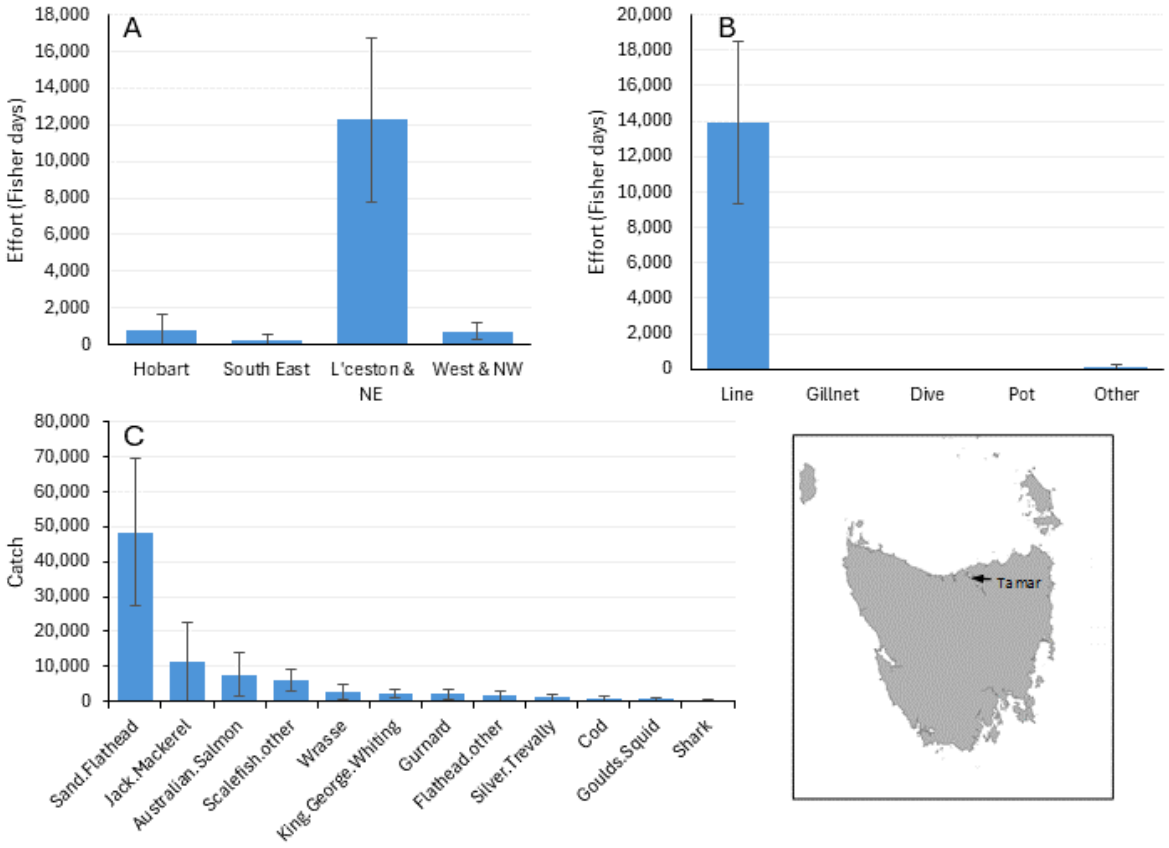

Figure 33. Characteristics of the recreational fishery in the Tamar Estuary based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.5 North East coast

Locally based fishers (Launceston and North East) accounted for over 76% of the total effort in the North East, with low levels of effort from residents of other parts of the state (Figure 34A). Line fishing was the primary method used, dive and pot methods were of secondary importance (Figure 34B). Flathead was the most caught species, followed by comparatively low catches of a range of other species including Australian Salmon, Abalone and Gurnard (Figure 34C).

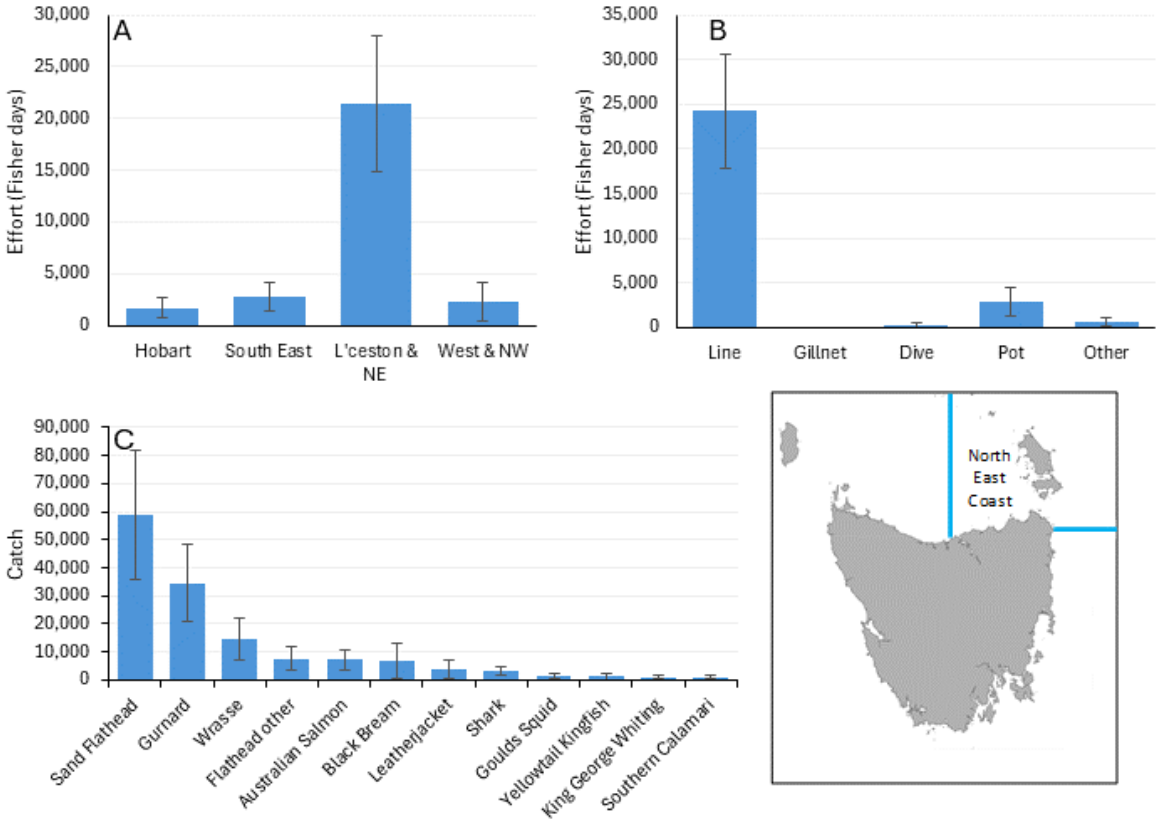

Figure 34. Characteristics of the recreational fishery in the North East region based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.6 East coast

Residents from Launceston and North East statistical area contributed 87% to the East coast region fishing effort, with residents from Hobart and West & North West areas of secondary importance (Figure 35 A). Line fishing followed by pot effort were the main fishing methods (Figure 35B). For the first time, King George Whiting overtook Sand Flathead as the most caught species, although the confidence intervals are quite broad for the species, Australian Salmon was the third most caught species (Figure 35C).

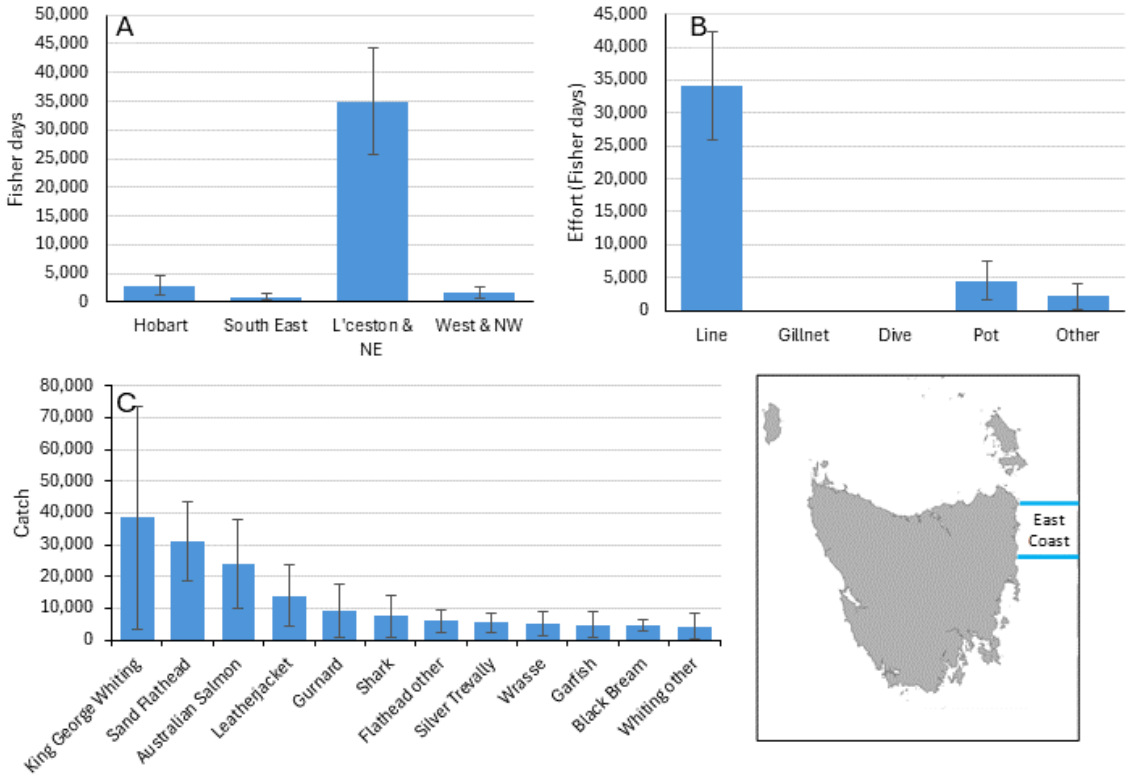

Figure 35. Characteristics of the East coast recreational fishery based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.7 Central East coast

Although the South East statistical area represented the adjacent region, fishing effort by Launceston and North East (39%) and Hobart (33%) residents exceeded that of local residents (18%; Figure 36A). Line, dive and pot fishing methods were the main activities in the region (Figure 36B), with Sand Flathead, other flathead species, and Southern Calamari the most commonly caught species (Figure 36C). A variety of other finfish were also caught but in comparatively low numbers.

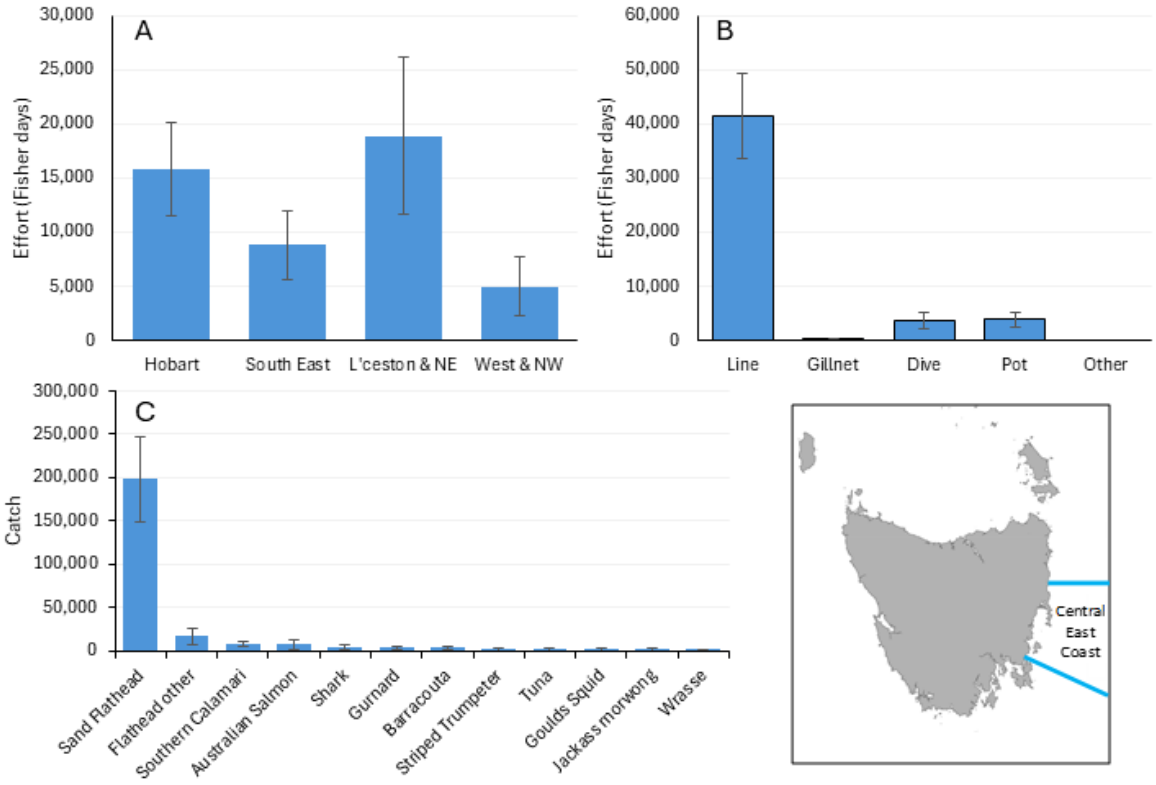

Figure 36. Characteristics of the Central East coast recreational fishery based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.8 South East coast

The impact of fishers residing in the Hobart area was clearly evident, accounting for 78% of the fisher days effort in the South East coast, with South East residents representing the bulk of the remainder (Figure 37A). Line and potting were the dominant fishing methods, with gillnet and dive effort of secondary importance (Figure 37B). Catches were dominated by Sand Flathead, with lower catches of Tuna, Gould's Squid and Southern Calamari (Figure 37C).

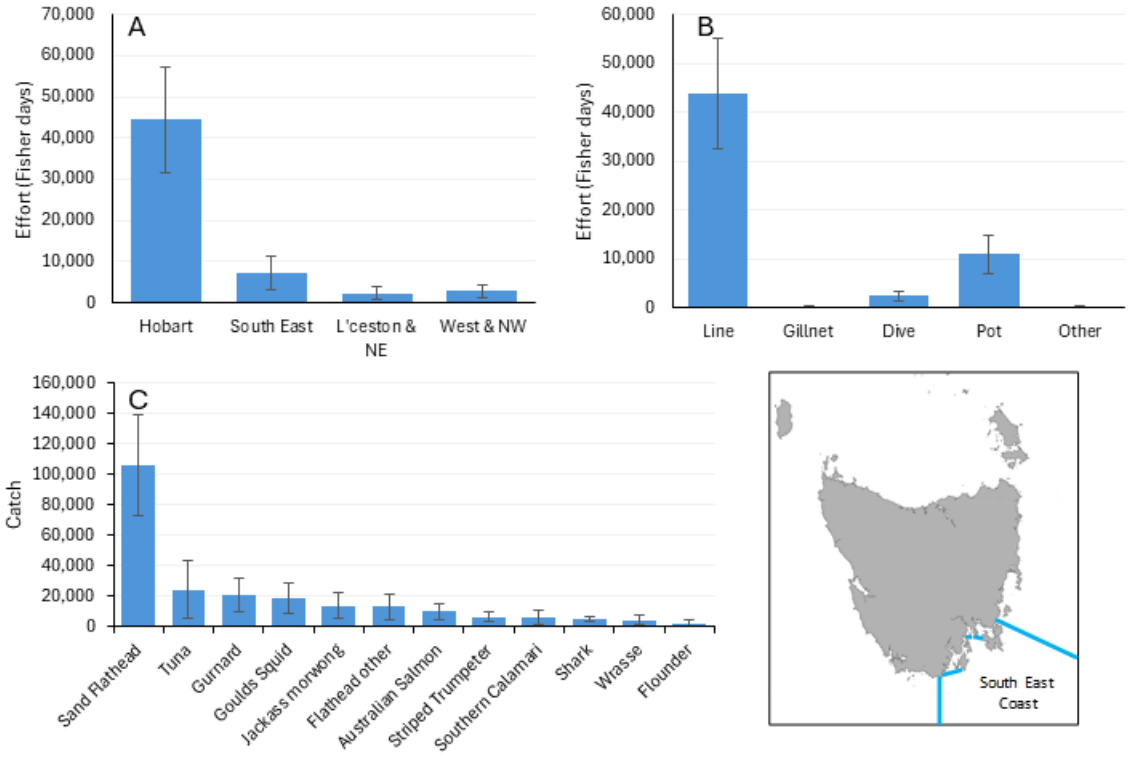

Figure 37. Characteristics of the South East coast recreational fishery based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.9 Norfolk-Frederick Henry Bay

Fishers from Hobart accounted for 69% of the fishing effort in Norfolk and Frederick Henry Bay. Residents from Launceston & North East (L&NE) accounted for 19% of the effort in this region, however, there is a large error around this estimate. It would be prudent to consider this result an anomaly. It has occurred due to a small number of respondents from L&NE spending a disproportionate amount of time fishing in the region. Residents from the South East accounted for the remainder (Figure 38A). Line and pot fishing were the main fishing methods (Figure 38B). Sand Flathead accounted for most of the total catch from the region (Figure 38C).

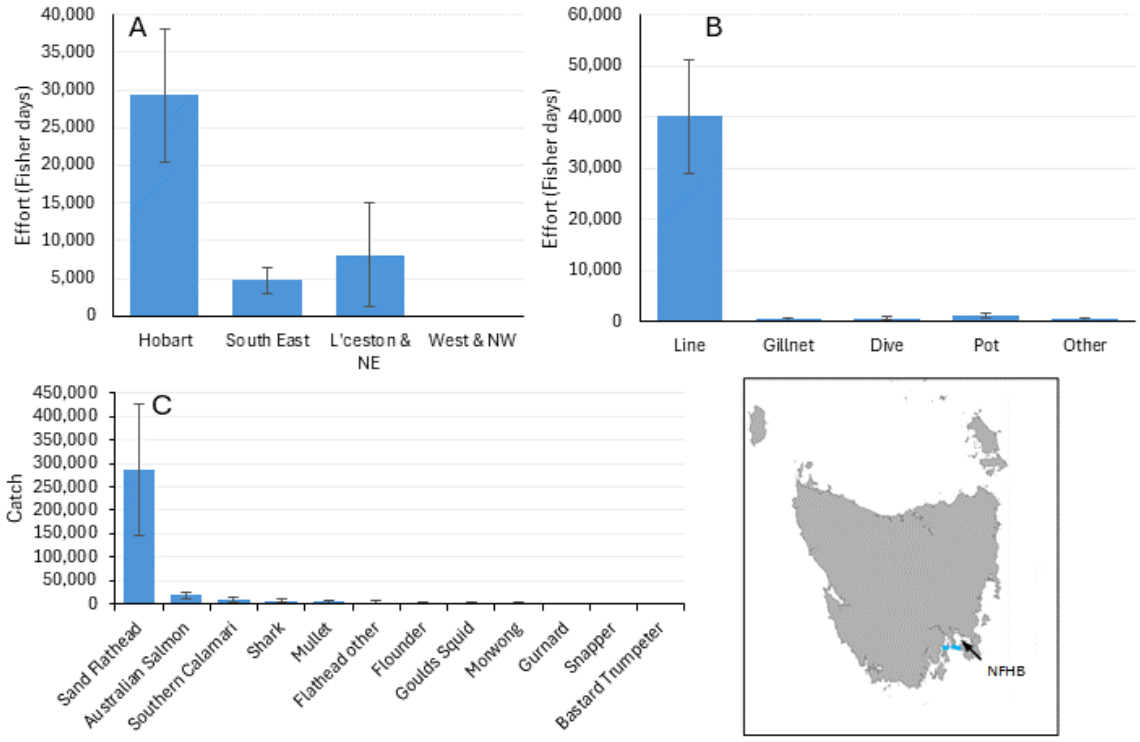

Figure 38. Characteristics of the Norfolk-Frederick Henry Bay recreational fishery based on 2022/23activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.10 Derwent Estuary

The majority (70%) of the fishing activity in the Derwent Estuary was attributed to locally based fishers from Hobart, with fishers from the South East contributing about 14% of the effort in the estuary (Figure 39A), primarily involving line fishing (Figure 39B). Sand Flathead dominated the catches followed by Australian Salmon and Black Bream (Figure 39C).

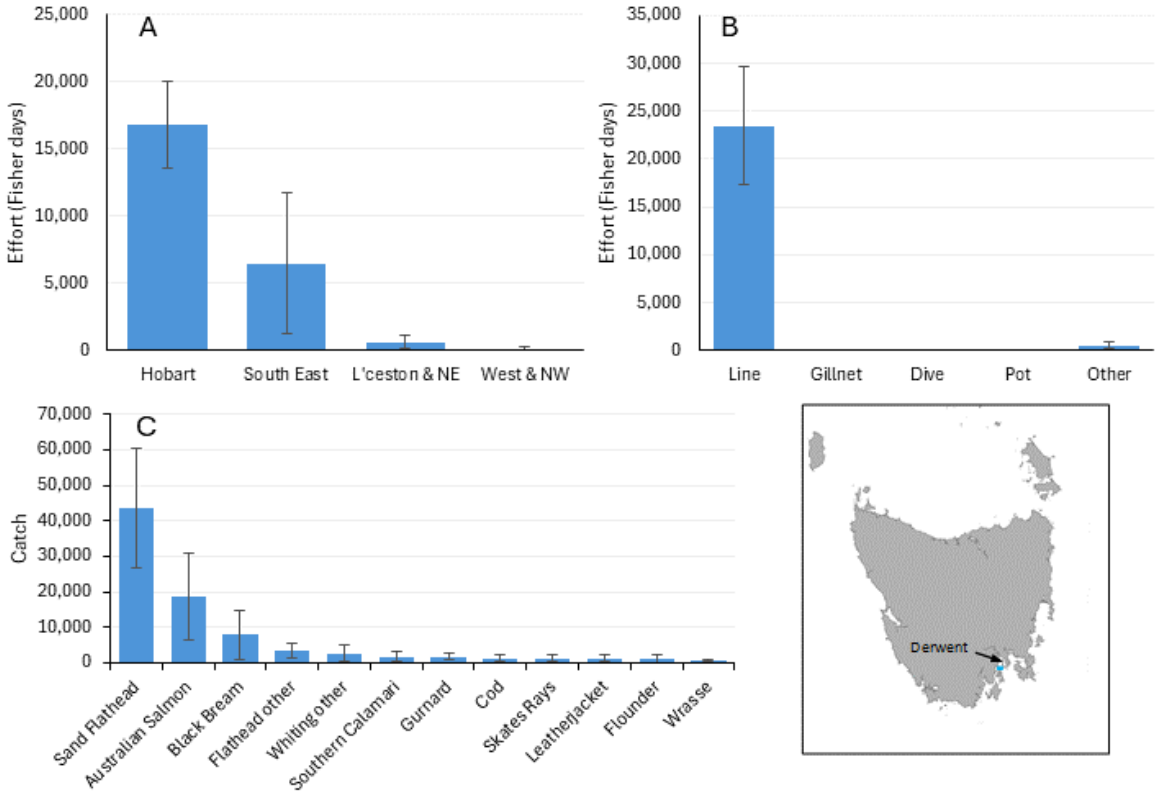

Figure 39. Characteristics of the Derwent recreational fishery based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

6.11 D'Entrecasteaux Channel

The D'Entrecasteaux Channel[1] represented one of the more heavily fished regions in Tasmania, accounting for 10% of fisher-days. Effort was equally attributed to residents of the Hobart (48%) and South East (48%) statistical areas (Figure 40A). Line fishing accounted for most fishing activity, with potting of secondary significance (Figure 40B). Sand Flathead were the most caught species followed by Australian Salmon, Gurnard and Southern Calamari (Figure 40C).

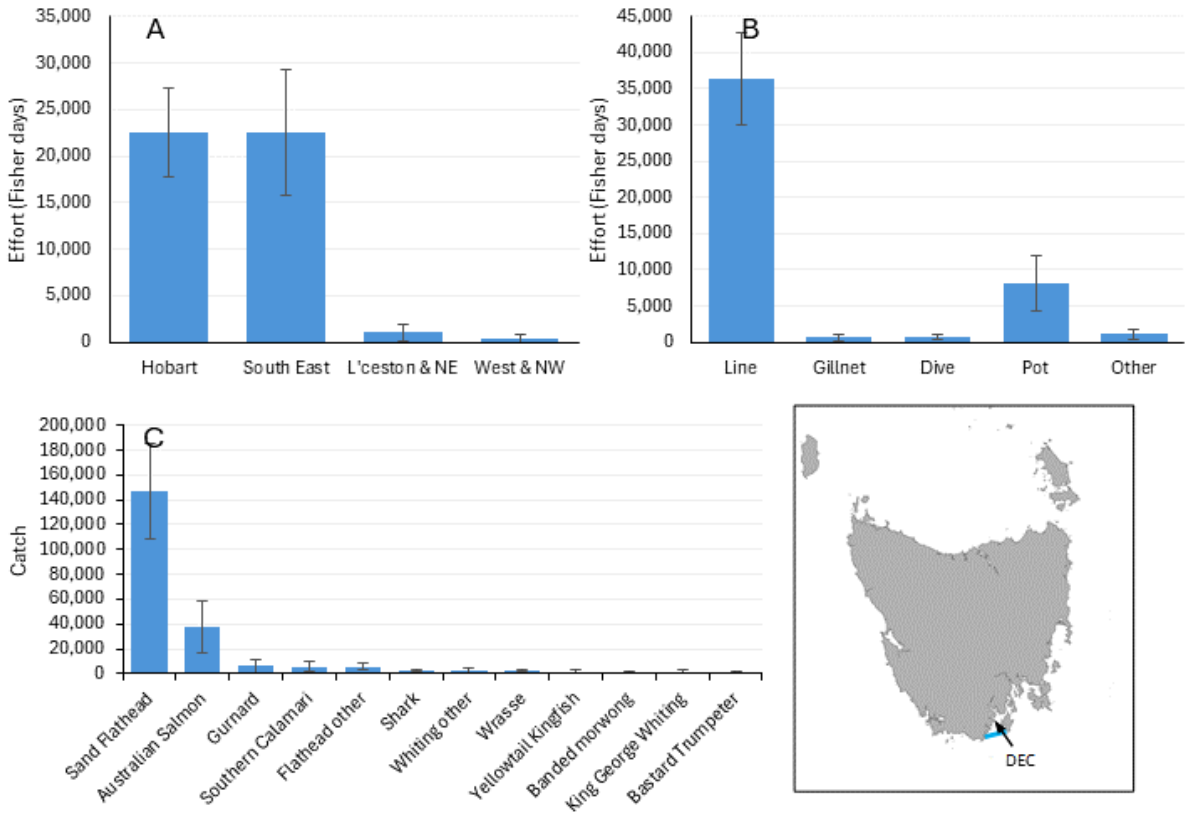

Figure 40. Characteristics of the D'Entrecasteaux Channel recreational fishery based on 2022/23 activity: A) fishing effort (fisher days) based on the region of residence (statistical area) of fishers; B) effort (fisher days) by method; and C) catch (numbers) for the key species. Error bars represent one standard error.

[1] The D'Entrecasteaux Channel in this study includes Southport, hence why potting is reported.

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This study was conducted with appropriate approval from the Tasmanian Social Sciences Human Research Ethics Committee – 27548.

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