Victorian Fisheries AUTHORITY

Victorian Recreational Rock Lobster Tagging Program Summary Report

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Executive Summary

The number of registered fishers in the rock lobster recreational tagging program has remained relatively stable over the past four years with ~5500 people registering an interest to fish each season. The total reported catch in Season 1 was the highest of the four years of the program with a catch of 3856 lobsters in the Eastern Zone and 4069 lobsters in the Western Zone. Seasons 3 and 4 had lower catch numbers than previous seasons, which may be influenced by events such as bushfires and the covid-19 pandemic. Consequently, when converted to weight, Season 3 and Season 4 were substantially lower than previous seasons. When compared to the commercial fishery, the recreational catch remains small in the Western Zone whilst in the Eastern Zone catch was at the highest (15.5%) in Season 2. In Season 4 the Eastern Zone caught 8.3% of TACC, while the Western Zone caught 1.6% TACC. The higher Eastern Zone percentage is influenced by the lower TACC in the Eastern Zone which has had several decreases over the last five years (e.g., from 59t to 47t in Season 2 and 47t to 40t in Season 3 and 40t to 32t in Season 4).

Registered fishers are predominately centred around the coastal urban centres of Warrnambool, Queenscliff and Gelong and the majority of tags used in all four seasons occur around these regional areas. The majority of the recreational catch was fished between November and April in the Eastern and Western Zones. Data obtained in the recreational tagging program in Seasons 1 to 4 show a higher number of large lobsters in the Eastern Zone, while the Western Zone has a higher number of smaller lobsters; this supports anecdotal evidence from fishers. The number of participants reporting tags on the day of capture has decreased over the four years of the program. This is of some concern as delayed reporting tends to reduce accuracy. The number of participants in the citizen science program has also decreased over the four years of the program.

Introduction

The Victorian Rock Lobster Fishery is based primarily on the Southern Rock Lobster, *Jasus edwardsii*, which is a high value and iconic species both in Australia and overseas. The fishery spans the length of the Victorian coast and supports both commercial and recreational rock lobster fisheries. It is the most valuable commercial fishery in Victoria, making it an important contributor to the State's economy.

Fishing for rock lobster is an important activity for many Victorians who most commonly harvest whilst snorkelling, diving or using hookah, or with the use of hoop nets. Unless exempt, a fisher must hold a Victorian Recreational Fishing Licence to take rock lobsters. The recreational catch is managed using daily bag limits, possession limits, minimum size limits and closed seasons. The recreational closed season and restrictions correspond with the commercial fishery. The number of rock lobster caught annually by the recreational sector was previously a significant data gap for many years.

On 1 July 2017, the VFA implemented a three-year pilot program requiring all recreational fishers to tag the lobsters they catch and keep and report the use of tags. The objective of the program is to obtain an estimate of the annual recreational catch by using the number of tags used in that season to represent the number of rock lobsters removed from the stock and ascertain whether the actual catch is in line with the assumed notional catch share. Underpinning the concept is the requirement for recreational fishers to create an online account through which they order tags and report tags used through a smartphone app web portal. The tags are registered to individuals and the numbers used represent the number of rock lobsters caught in that year.

This summary report provides an overview of data collected through Season 1 (2017/18), Season 2 (2018/19), Season 3 (2019/20) and Season 4 (2020/21) of the program, and comparisons between the four seasons. The report also provides a brief overview of key learnings that can inform the future development of the program.

It should be noted that the last two seasons were heavily impacted by the COVID 19 lockdowns and bush fires. This needs to be taken into careful consideration when using the results from this analysis. Particularly when characterising the recreational fishing activity and producing forecasts of future recreational catch.

Participation in the Tagging Program

Participation

The number of recreational fishers that have registered in the recreational rock lobster tagging program is 12236 over the four seasons of the program (2017/18 to 2020/21). Over 5000 recreational rock lobster fishers registered an interest to fish (i.e. ordered tags) during Season 1 (2017/18), increasing to 5586 in Season 2 (2018/19) and 5712 in Season 3 (2010/20). In Season 4 (2020/21) there was a decrease to 5516 registered users.

In Season 4, there were 1864 new registered fishers who had not previously been registered in the rock lobster tagging program in the previous three seasons, while there were 5928 fishers who had registered in at least one of the previous seasons that did not register to fish for rock lobster in Season 4. Between Season 1 (2017/18) and Season 2 (2018/19) there were 2448 new fishers registered in Season 2 that hadn't participated in the previous season and 1954 registered fishers in Season 1 that didn't register to participate in Season 2. There were 2333 new participants in Season 3 that hadn't registered in Season 2 and 2205 fishers in Season 2 that didn't register for Season 3. There were 2302 new registered fishers in Season 4 that hadn't registered in Season 3 and 2500 participants registered in Season 3 that didn't register to fish for rock lobster in Season 4. Overall, numbers registered in each of the four seasons have been fairly consistent (~5500) due to similar numbers in new users and users not renewing their registration. However, the numbers of new and lost participants each season indicates substantial turnover of fishers each season.

Participation and tag use by location

In all four seasons, the majority of participants that registered to fish for rock lobster were based in the larger coastal centres of Portland, Warrnambool, Geelong, Mornington and San Remo (Figure 1). The highest number of registered participants are concentrated in the Warrnambool area (3280 postcode) which had 444 registrations in Season 1, 447 in Season 2 and 444 in Season 3. In Season 4, Warrnambool also had the highest number of participants (410). It is important to note that a large number of participants are also based inland and travel to the coast to access the resource.

The highest number of tags used by registered participants in a postcode area occurred in Warrnambool (3280 postcode) in all four seasons, decreasing from 896 in Season 1 to 857 in Season 2 and further decreasing to 560 in Season 3 (Figure 2). In Season 4 Warrnambool had 494 tags used. The Geelong postcode area (3228) had the second highest number of tags used in Season 1 with 343 tags reported and again in Season 3 (172 tags used). Port Fairy postcode area (3284) had the second highest number of tags reported in Season 2 after increasing from 273 in Season 1 to 331 in Season 2 before returning to the third highest postcode to report tags used (154) in Season 3. In Season 4 Port Fairy had the second highest number of tags used (162) followed by Geelong (157).

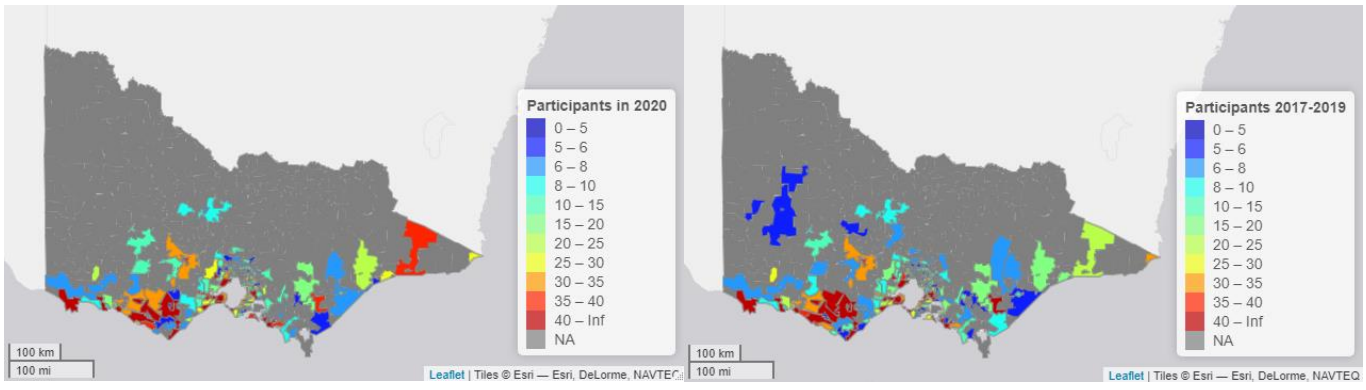


Figure 1 Number of participants registered in Season 4 (2020/21) and the average number of participants in seasons 1 – 3 (2017/18 – 2019/20) by the fishers' postcode in Victoria. Postcodes with less than 5 participants registered have been omitted for confidentiality.

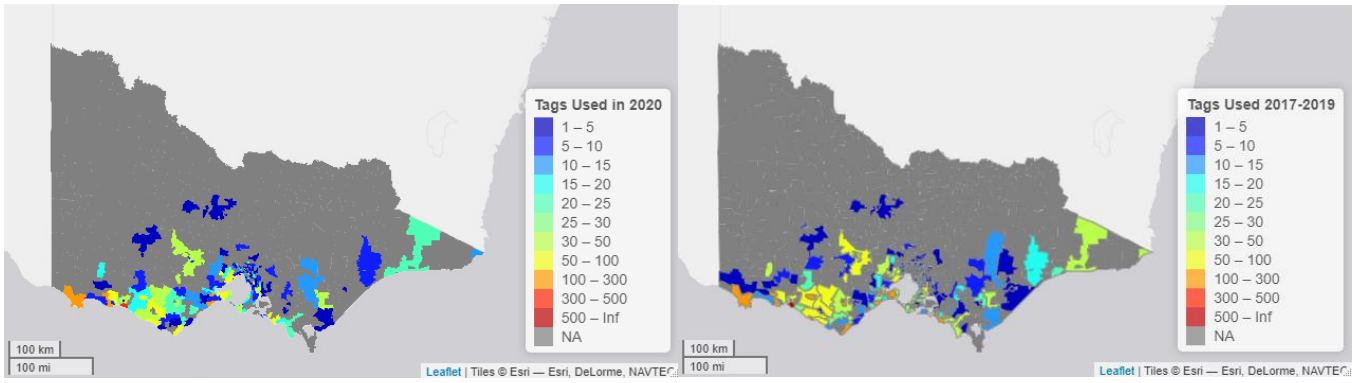


Figure 2 Number of tags reported as used in Season 4 (2020/21) compared with the average number of tags reported used in Seasons 1 (2017/18), 2 (2018/19) and 3 (2019/20) by the postcode of registered fishers in Victoria. The number of tags used in postcodes with less than 5 participants registered have been omitted for confidentiality.

Age category and tag use of participants

The majority of participants who registered to fish and ordered tags over the past four seasons were in the 30 – 40 age range (26% in 2017/18, 28% in 2018/19, 28% 2019/20 and 27% in 2020/21). There has been continual increase over the past four seasons in the proportion of participants under 30 registering to fish for rock lobster in Victoria (from 12% in 2017/18 to 19% in 2020/21). There has been a decline in the number of participants registering to fish for rock lobster that are aged 40 and over (Figure 3). The annual proportion of participants that fished (reported used tags) increased in the 20 to 30 age ranges over the past four seasons. The majority of tags reported were by participants aged between 30 and 60 (66%).

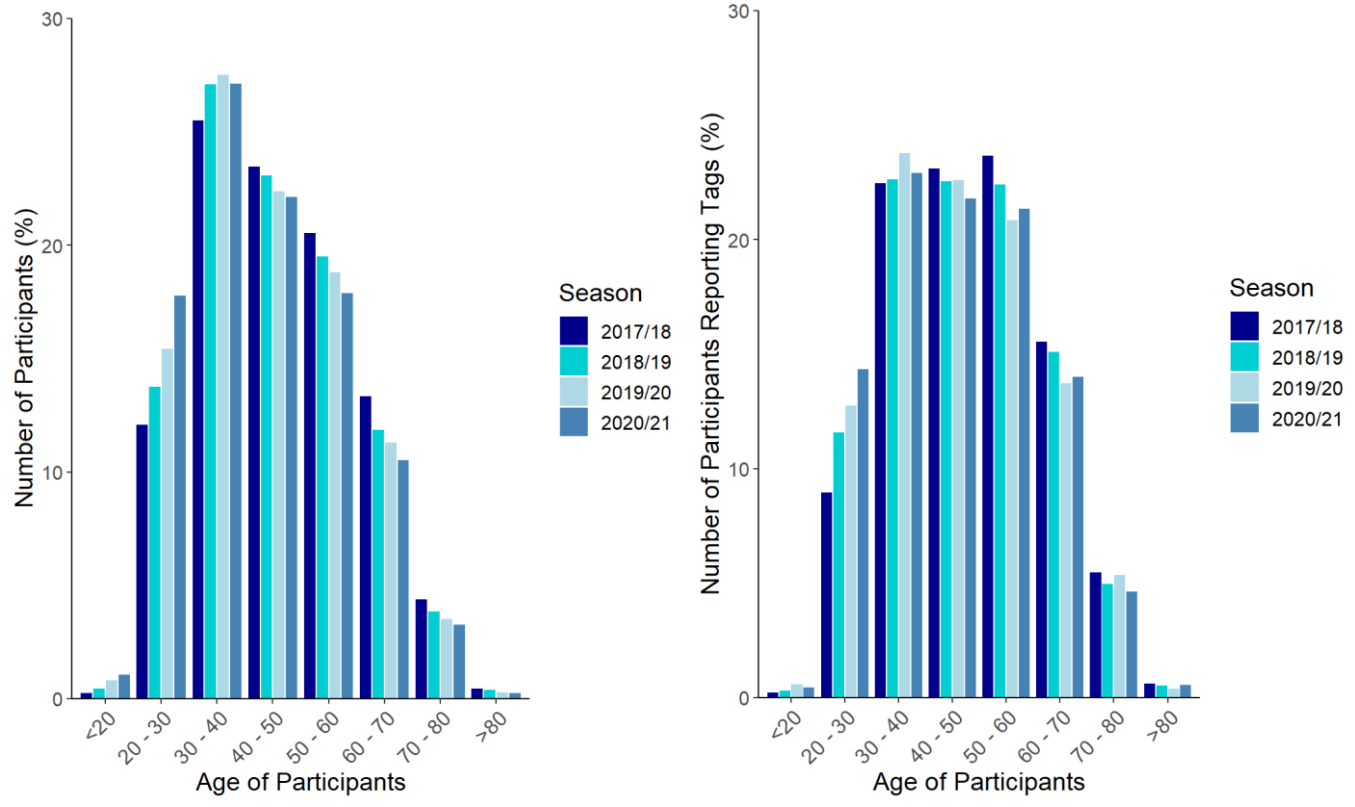


Figure 3 Age demographics (grouped by decade) of all fishers registered (% annual total) in the recreational tagging program (left) and of those fishers who reported using tags (those who reported fishing) between Season 1 (2017/18) and Season 4 (2020/21) (right).

In Season 1 (2017/18) the 50 – 60 age range reported the highest number of tags used (1891). However, in seasons 2 and 3 the 40 – 50 age range reported the highest number of tags used with 1563 in Season 2 (2018/19) and 1046 in Season 3 (2019/20). In season 4 (2020/21) the 50 – 60 age range once again reported the greatest number of tags (Figure 4). Despite only making up 17.87% of registered fishers, the 50 – 60 age range reported 21.2% of the annual catch in 2020/21.

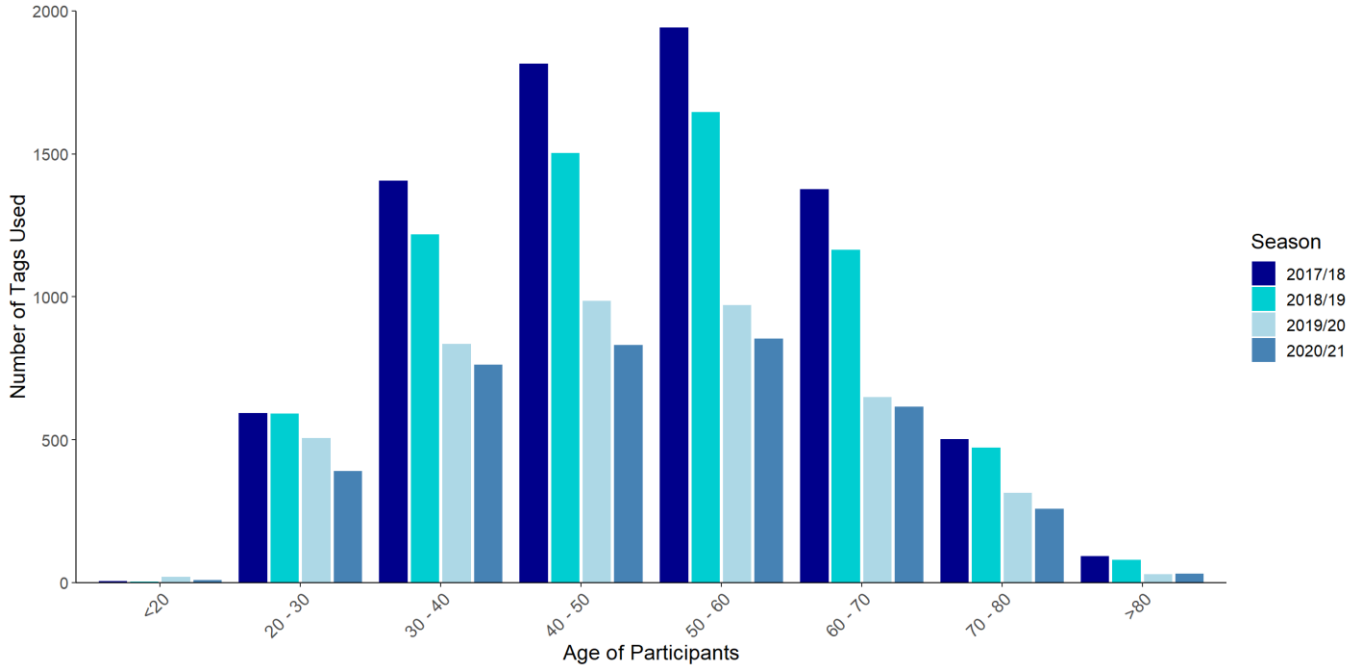


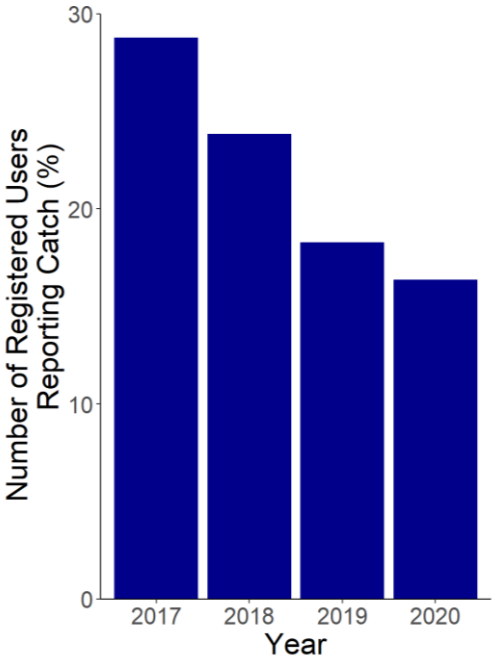
Figure 4 The number of tags reported used by participants in each age demographic group between Season 1 (2017/18) and Season 4 (2020/21).

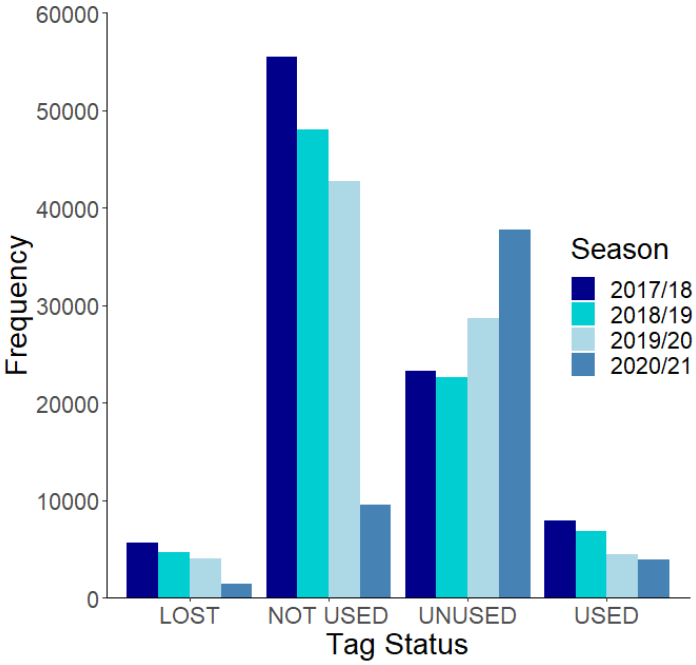
The number of registered rock lobster fishers that report catch has continually declined each season (Figure 5). In Season 1, 29% of registered fishers reported catch. The number of users who reported catch reduced to 24% in Season 2 (2018/19) and 18% in Season 3 (2019/20). In season 4 (2020/21) the number of registered rock lobster fishers reporting catch declined to the lowest recorded levels at 16.4%. Overall, there has been a decline in the number of participants reporting used tags (catches) from over 1400 in 2017/18 to 1300 in 2018/19 and 1000 in 2019/20.

Catch reporting comparison

The tags (catches) reported by registered fishers as used has continually declined from the highest reported number used (7941) in season 1 (2017/18). There was a 14% decrease in Season 2 and another 36% in Season 3 (Figure 5). In season 4 the number of tags reported as used reached the lowest levels recorded in the program (3869). The number of tags issued but reported as not used by fishers decreased by 20% in Season 2, a further 25% decline in Season 3 and a 78% decrease in season 4. Corresponding to this the number of tags issued to registered fishers that are not reconciled (i.e., not reported against at the end of the season and consequently of which the fate is unknown) has increased by 38% between Season 1 (2017/18) and Season 4 (2020/21). The total number of tags issued to rock lobster fishers has declined from 92326 in Season 1 to 62614 in season 4.

The total number of tags reported as used (and therefore the number of catches reported) has decreased from 7946 in Season 1 (2017/18) to 3869 in Season 4 (2020/21). Over the past four seasons the majority of catch has occurred between the start of the fishing season in November to April (Figure 5).





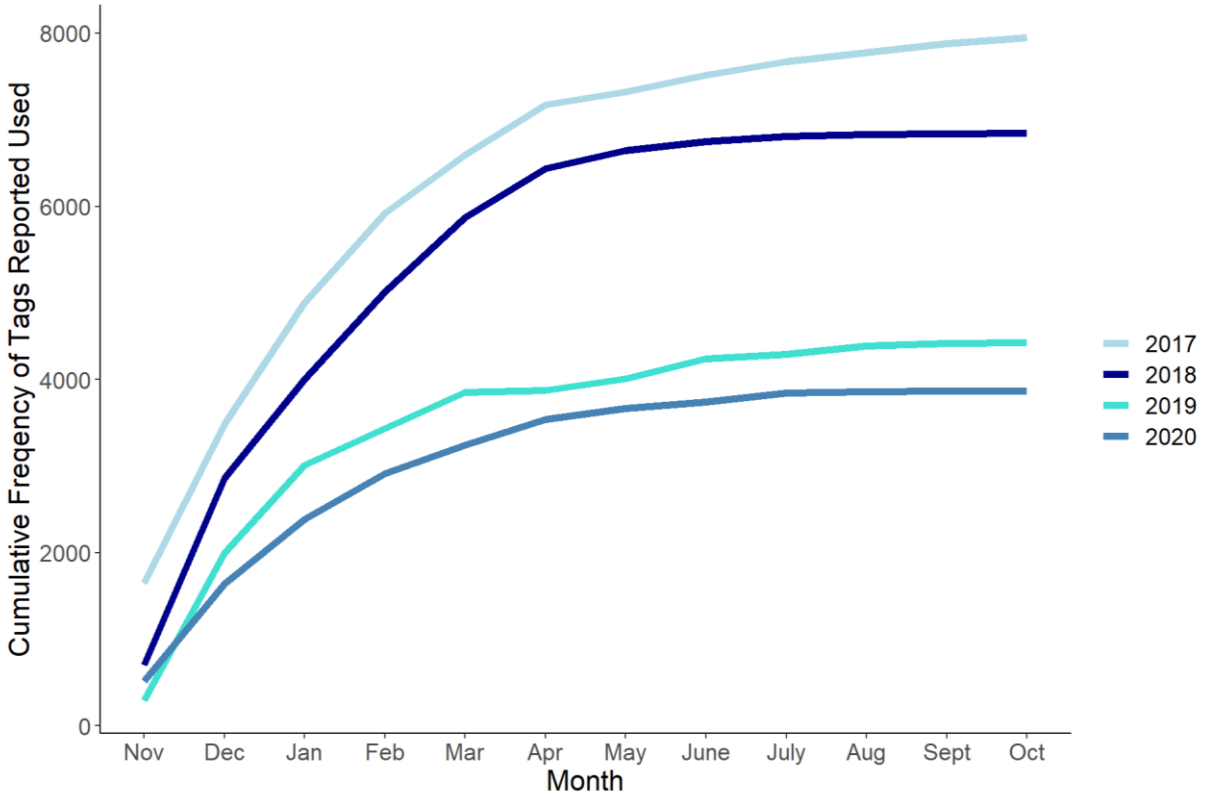


Figure 5 The number of registered fishers that reported a catch annually between Season 1 (2017/18) and Season 4 (2020/21) as a percentage of total registered fishers (top left). The number of tags reported as lost, not used, unused (top right). The number of tags reported used per month between season 1 and season 4 (bottom centre).

Summary of Seasons

Numbers of rock lobster harvested

In the Eastern Zone 3875 rock lobster were reported caught in Season 1 (2017/18) which has continually decreased to 1573 in Season 4 (2020/21). In the Western Zone, 4071 rock lobster were reported caught in Season 1 (2017/18) which has also continually decreased to 2296 in Season 4 (2020/21). Generally, across all four seasons, the catch has been highest in December in both the Eastern and Western Zones (Figure 6). Note reduced catch reported in April of Season 3 (2019/20) across both zones that corresponded to fishing closures because of covid-19 restrictions.

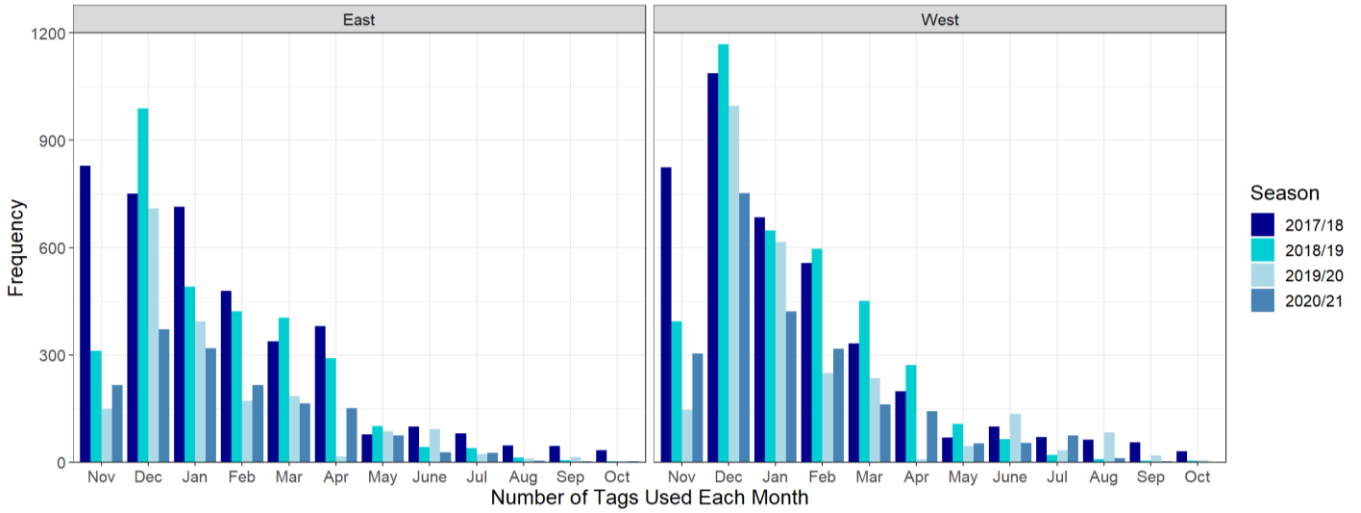


Figure 6 Number of tags used each month in the Eastern Zone (left) and Western Zone (right).

Analysis or reported carapace length

The carapace lengths (CL) of lobster reported as caught by recreational fishers in the Eastern Zone has most commonly been in the 12.1 – 13.0 cm CL size class over the previous four seasons, which was 19.8% of the catch in 2020/21 (Figure 7). The 11.1 – 12.0 CL size class has been the most commonly reported by recreational fishers in the Western Zone except in Season 2 (2018/19) where the 12.1 – 13.0 cm CL size class was most common. In Season 4 (2020/21) 23.8% of catch in the Western Zone was in the 11.1 – 12.0 CL size class. The Eastern Zone has consistantly has a higher proportion of catch >15.1 cm than the Western Zone over the past four seasons. Small lobsters caught in the 10.1 – 11 CL in the Western Zone has increased over the past four seasons indicating some recruitment into the fishery which has also been detected in the stock assessment. Known recruitment patterns that are largely driven from West to East are also supported by these findings.

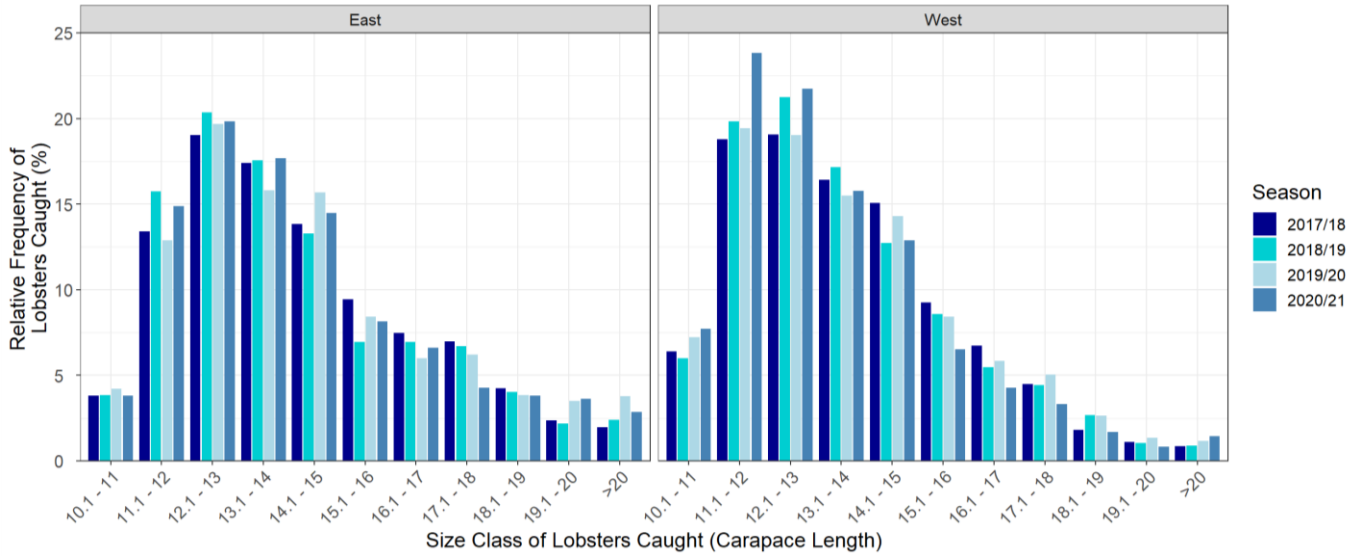


Figure 7 The relative frequency (% annual total) of lobsters caught by size class (carapace length) between season 1 (2017/18) and Season 4 (2020/21) in the Western and Eastern Zones.

Frequency of tag use and reporting

Over the four seasons of the tagging program it is most common for recreational rock lobster fishers to report using one or two tags each season (Figure 8). It is most common for two tags to be reported as used, followed by one tag indicating that it is most common for recreational rock lobster fishers to catch one or two lobster per season. In Season 4 (2020/21) 27% of participants reported using two tags. The majority of tags used over the past four seasons have been reported used via the online App on the day of capture (Figure 9). However, the number of participants reporting on the same day at capture has continually decreased while the reports being lodged >2 days after fishing has increased in Season 4. The number of participants reporting on the same day declined from 64% in Season 1 (2017/18) to 45% in Season 4 (2020/21). The proportion of participants reporting tags after 14 or more days has also decreased in Season 4.

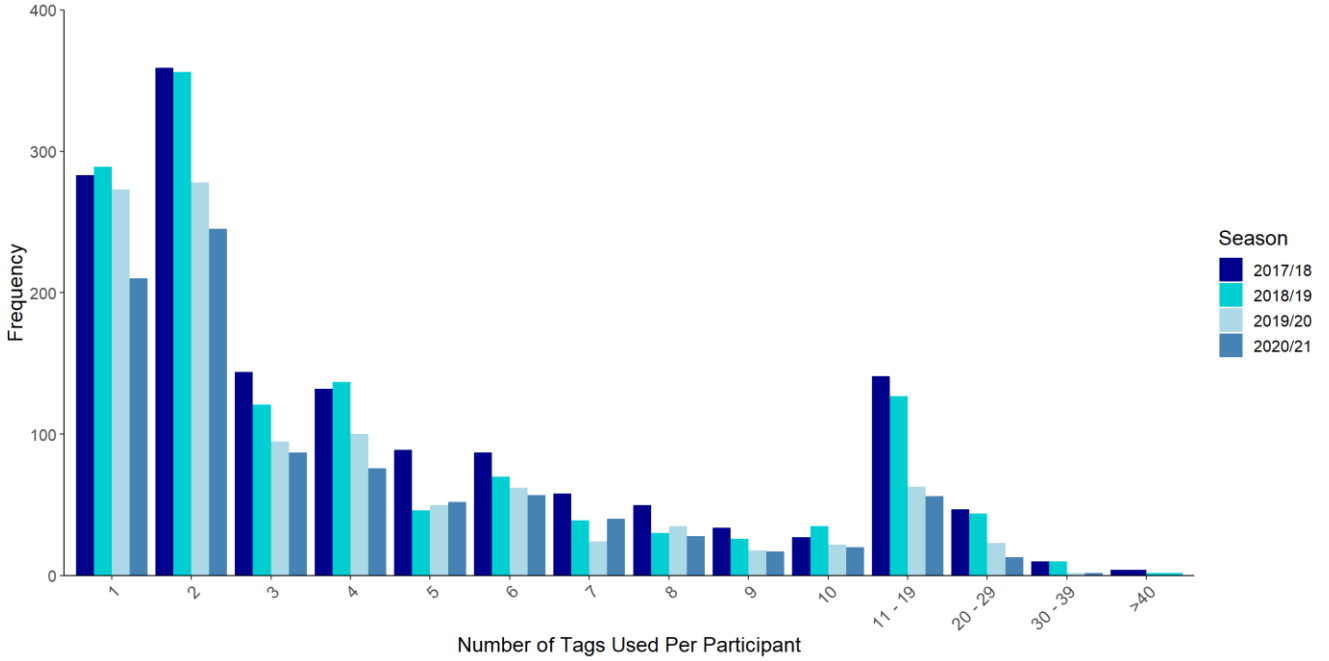


Figure 8 The number of tags used by participants between Season 1 (2017/18) and Season 4 (2020/21).

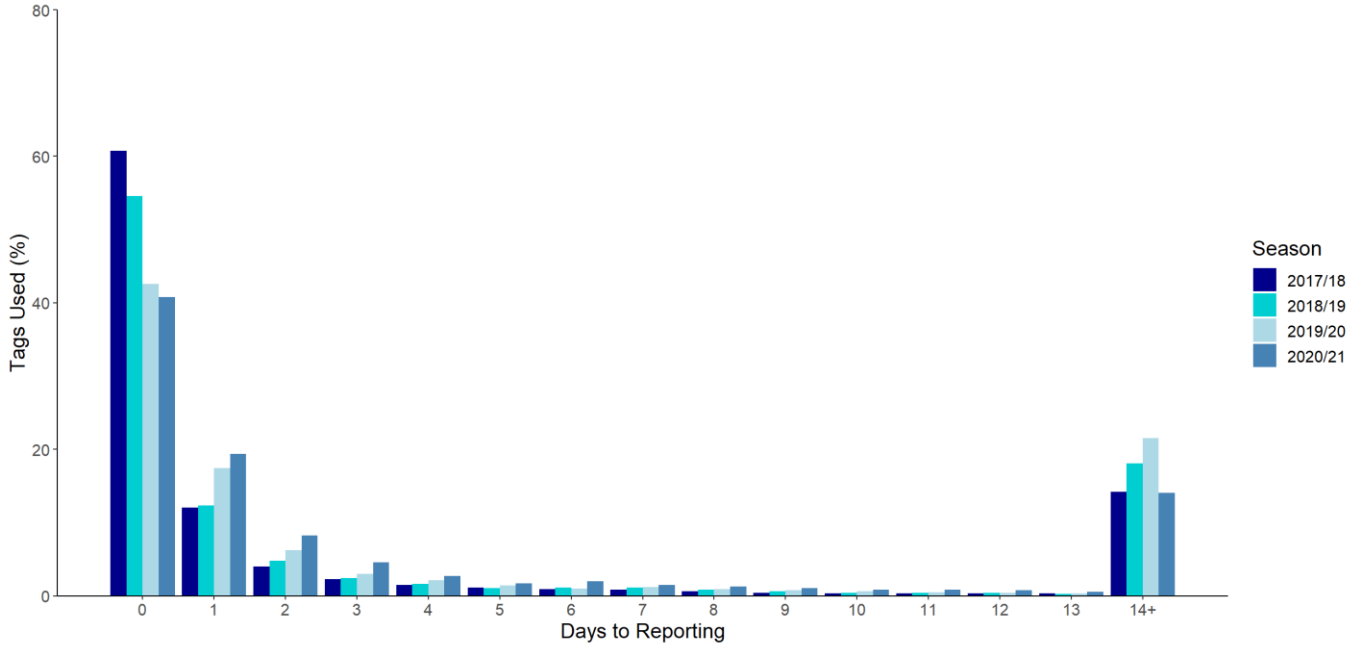


Figure 9 The number of days between fishing (date caught) and the reporting of used tags (as percentage of annual total) by participants in Season 1 (2017/18), Season 2 (2018/19) and Season 3 (2019/20).

Citizen Scientist Reporting

Citizen Scientist Demographics and Profile

The number of registered rock lobster fishers that opt into the citizen science component of the tagging program was at the lowest levels in Season 4 (2020/21) at 11.5%. The highest number of citizen scientists was in Season 2 (2018/19) when 12.3% of registered rock lobsters opted in (Figure 10). However, the number of tags (catch) reported by citizen scientists has declined continuously since Season 1 (2017/18) from 4.9% to 3.0% in Season 4 (2020/21). Although the citizen science data provides a greater level of detail and is assumed to be of higher quality than general tag reporting, please note that due to the low numbers of participants reporting into the program, the information may not accurately represent the overall performance of the fishery.

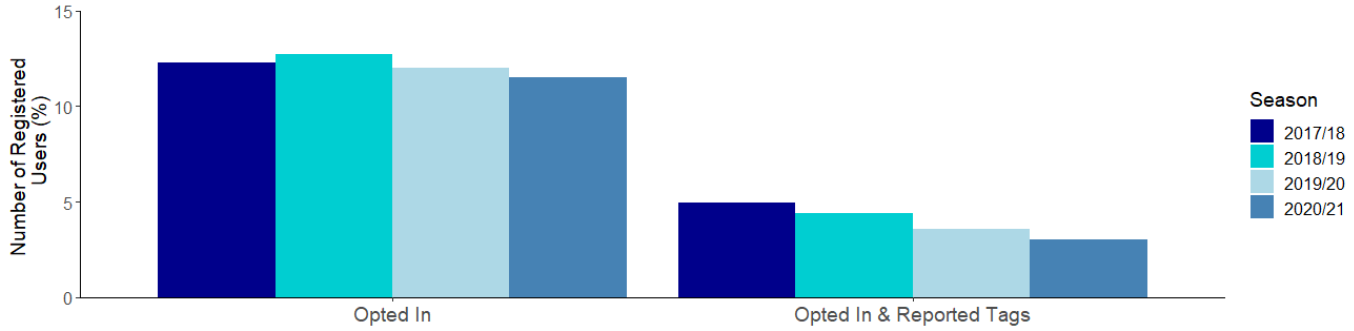


Figure 10 The number of registered fishers (as percentage of total number of registered fishers) that have opted into the citizen science program (left) and the number of citizen scientists that have reported catch (right).

The majority of citizen scientists (33%) over the four years of the program have only participated in one season of the citizen science component (Figure 11). There were 29% of citizen scientists that had registered to participate in the citizen science component of the rock lobster tagging program in Season 4. Most citizen scientists have only reported catch for one season (47%), while only 16% of citizen scientists have reported catch in all four seasons of the program.

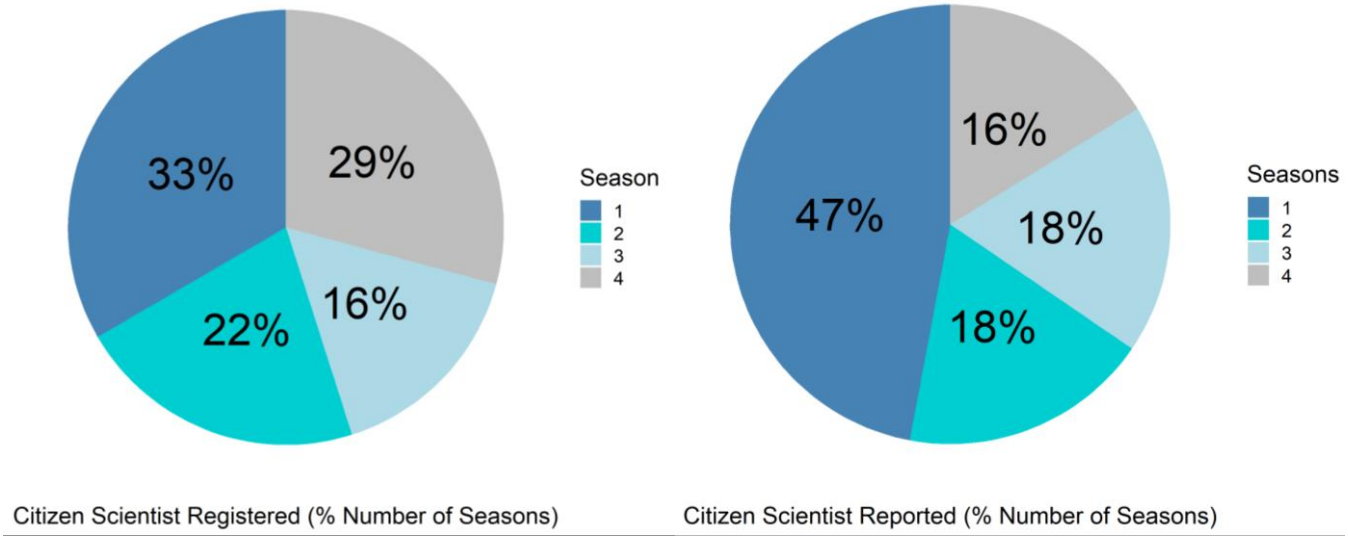


Figure 11 The number of seasons that citizen scientists have been registered in the rock lobster tagging program (left) and the number of seasons that citizen scientists that have reported catch (right).

The age demographics of registered citizen scientists in Season 4 (2020/21) is dominated by fishers in the 30 – 39 year old age class (Figure 12). The 30 – 39 age class also had the highest proportion of citizen scientists report catch in Season 4 (2020/21). The under 20's and over 80s were the age classes with the lowest proportion of citizen scientists opting in to the citizen science program or and reporting catch.

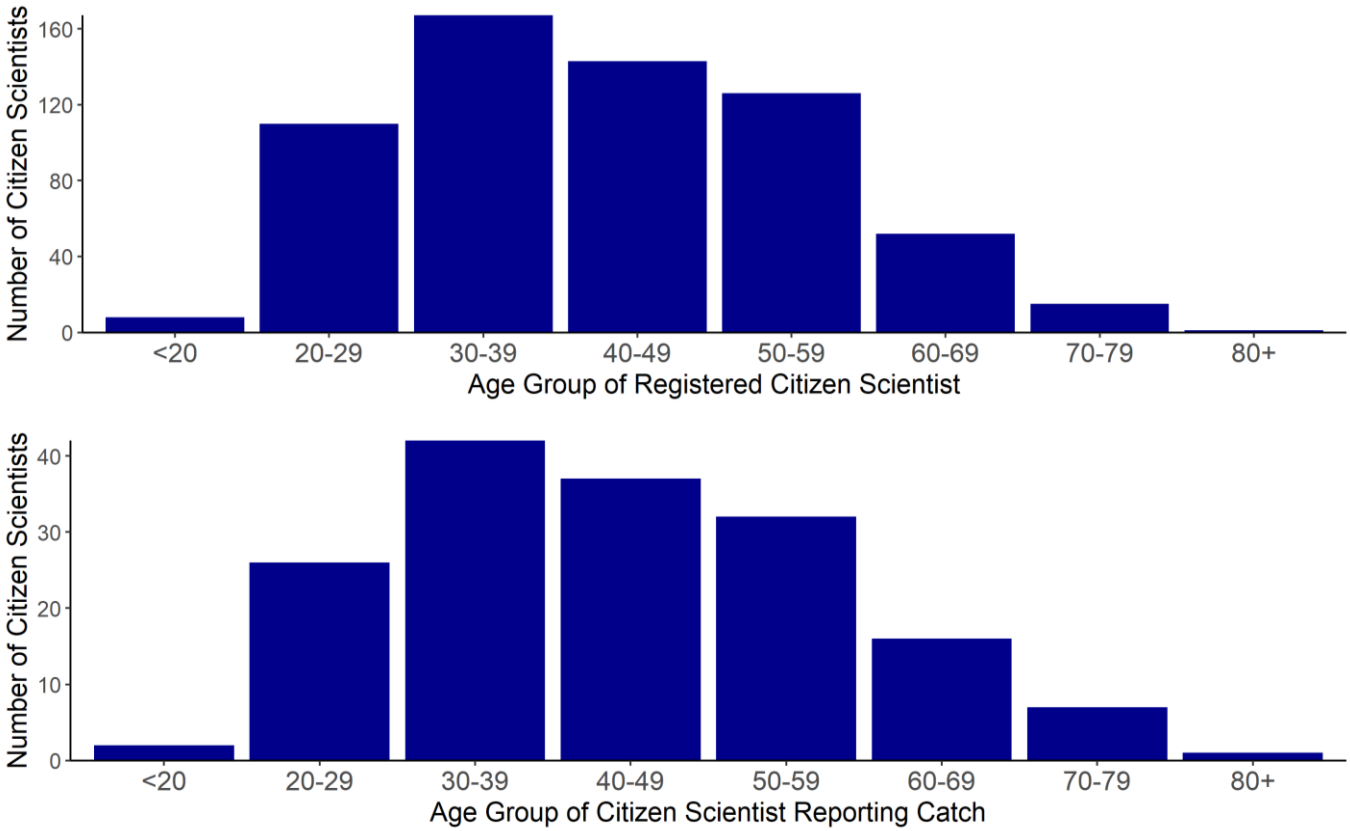


Figure 12 The number of registered fishers that have opted into the citizen science program (top) by age class in Season 4 (2020/21) and the number of citizen scientists that have reported catch (right) by age class in Season 4 (2020/21).

Most citizen scientists over the past four seasons of the tagging program have completed 2 or less catch reports (Figure 13). There are few citizen scientists conducting more than 15 catch reports in any given year of the program.

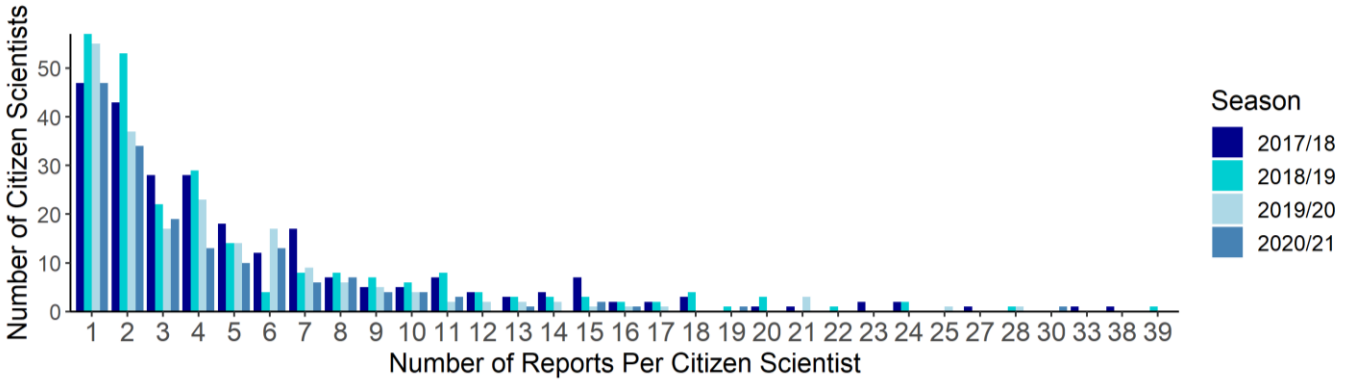


Figure 13 The number of catch reports that have been made by citizen scientists between Season 1 (2017/18) and Season 4 (2002/21).

Citizen Scientist Data

The majority of tags used by citizen scientists over the past four seasons have been in the Warrnambool and Queenscliff regions (Figure 14). The proportion of tags used in Warrnambool has increased from 4% in Season 1 (2017/18) to 6.4% in Season 4 (2020/21). Over the past three seasons (2019/20, 2020/21) there has been an increase in the number of tags used by citizen scientists in Apollo Bay and San Remo regions. Note that there were fewer participants and tags used in the citizen science component of the tagging program in Season 3 (2019/20) and Season 4 (2020/21).

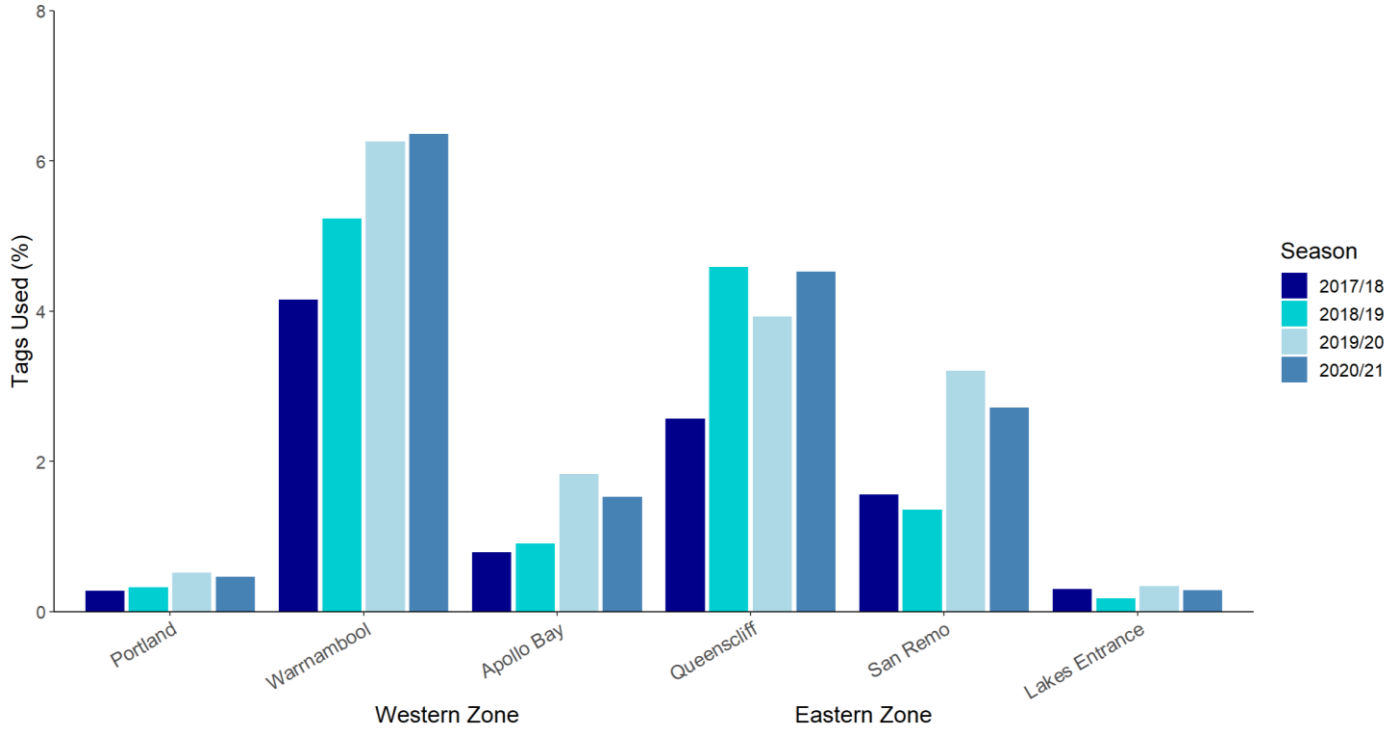


Figure 14 The number of tags used by citizen scientists as percentage of total tags used by all participants in each region.

Male/female catch by citizen scientists

The majority of female lobsters caught by recreational fishers in the Eastern Zone had a CL in the 12.1 – 13.0 cm size class followed by 13.1 – 14 cm size class over the past four seasons (Figure 15). Over the past two seasons (2019/20 and 2020/21) there was an increase in the number of female lobsters caught in the Eastern Zone with CL in the 14.1 – 15.0 cm size class, the while in Season 4 (2020/21) there was also an increase in number of female lobsters in the 15.1 – 16.0 cm size class caught in the Eastern Zone. The majority of male lobsters caught in the Eastern Zone were also in the 12.1 – 13.0 cm CL size class. The majority of female lobsters caught in the Western Zone had a CL in the 11.1 – 12.0 cm size class followed by the 10.1 – 11 cm and 12.1 – 13 cm CL size classes, while there was also an increase in the 13.1 – 14.0 cm CL size class in Season 4 (2020/21). The majority of male lobsters caught in the Western Zone Zone were also in the 12.1 – 13.0 cm CL size class. In both the Eastern and Western Zones there was a higher proportion of large male lobsters (>15.1 cm CL) caught compared to females.

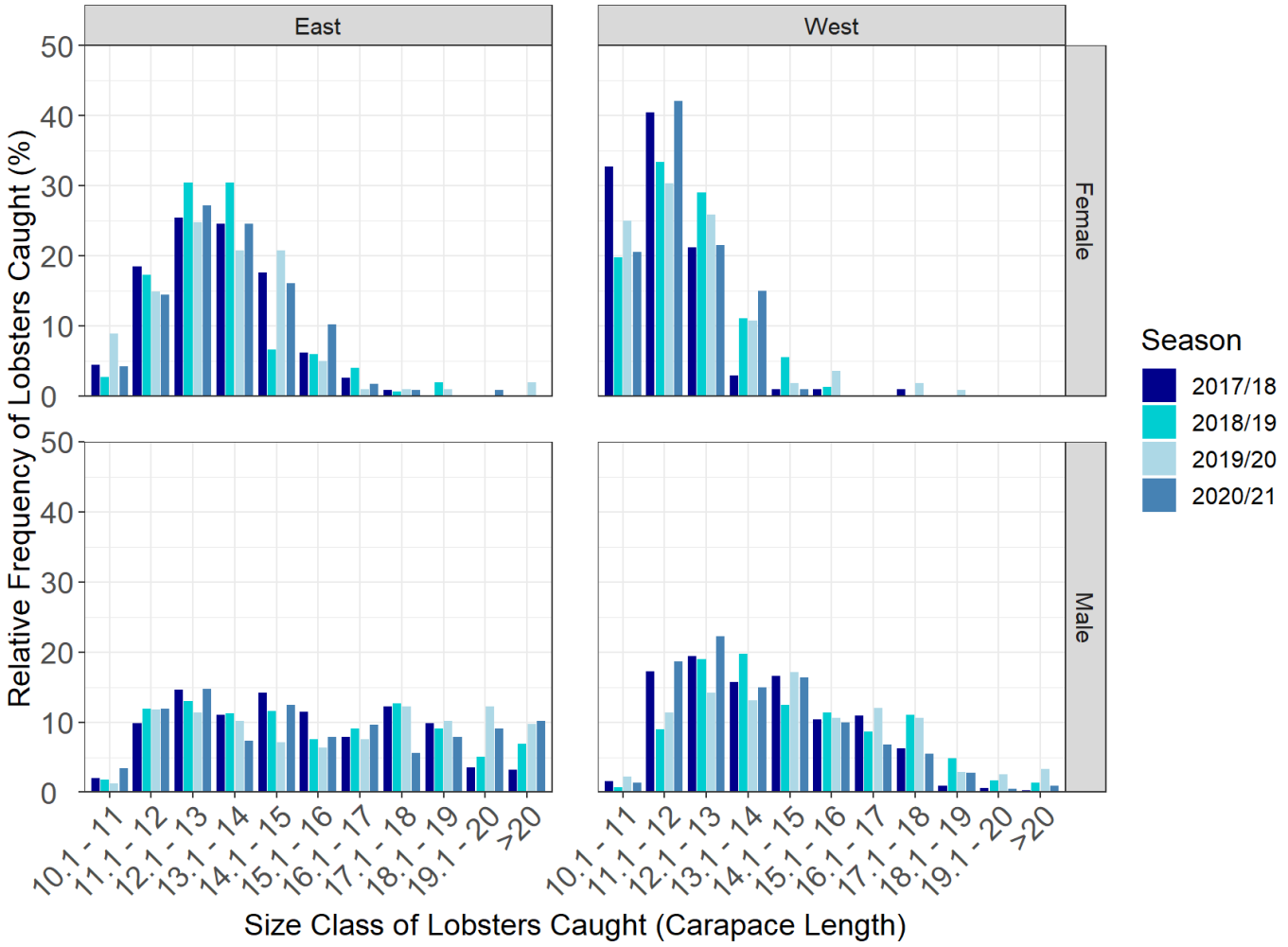


Figure 15 The number of tags used (as percentage of annual total for that sex and Zone) by citizen scientists for each class size.

Over the past three Seasons, the majority of female rock lobster caught by citizen scientists were in the 1.0 – 1.4 kg weight class in both the Eastern (45% in 2020/21) and Western (61.9% in 2020/21) Zones (Figure 16). Of the male rock lobster caught by citizen scientists in the Eastern Zone the majority were in the 3.0 – 3.9 kg weight class (33.8% in 2020/21) followed by 2.0 – 2.4 kg weight class (21.3% in 2020/21). The majority of male catch in the Western zone was in the 1 – 1.5 kg and 1.5 – 2 kg weight classes (29.2% of catch each). There was a higher proportion of males >2 kg in both the Eastern and Western Zones than Females.

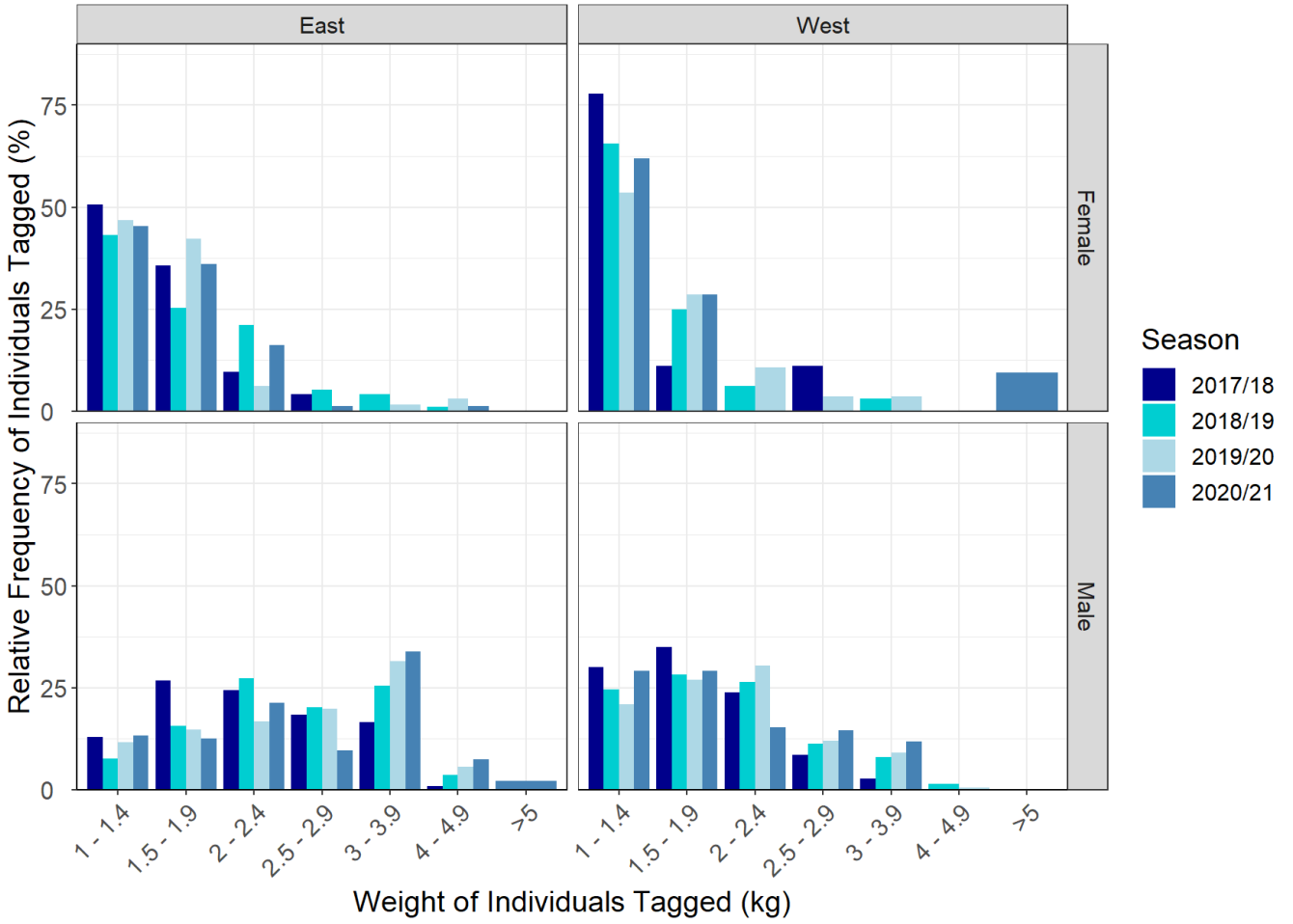


Figure 16 The number of tags used (as percentage of annual total for each sex and Zone) by citizen scientists for each weight range of lobsters caught between season 1 (2017/18) and Season 4 (2020/21) in the Eastern and Western Zones.

Comparison of fishing methods amongst citizen scientists

Free diving has been the most popular method for targeting lobster in the Western Zone over the past four seasons, however, has had a decline in popularity over this time. In the Eastern Zone SCUBA diving was most popular in the Eastern Zone for the past three seasons and increased in popularity in 2020/21. In both Zones there has been a decrease in the number of citizen scientists that do not record the fishing method (Figure 17).

In the Eastern Zone SCUBA has been the most efficient fishing method for all seasons over the past four years except for in season 3 (2019/20) when hookah was the most efficient fishing method used by citizen scientists (Figure 18). In the Western Zone SCUBA was the most efficient fishing method for all seasons over the past four years. Hoop net in the Eastern Zone and Hookah in the Western Zone were removed from the analysis due to insufficient data. Note that CPUE is inflated due to the lack of reporting of fishing events with no lobsters captured (i.e. only catch is reported and data on unsuccessful fishing trips is not collected).

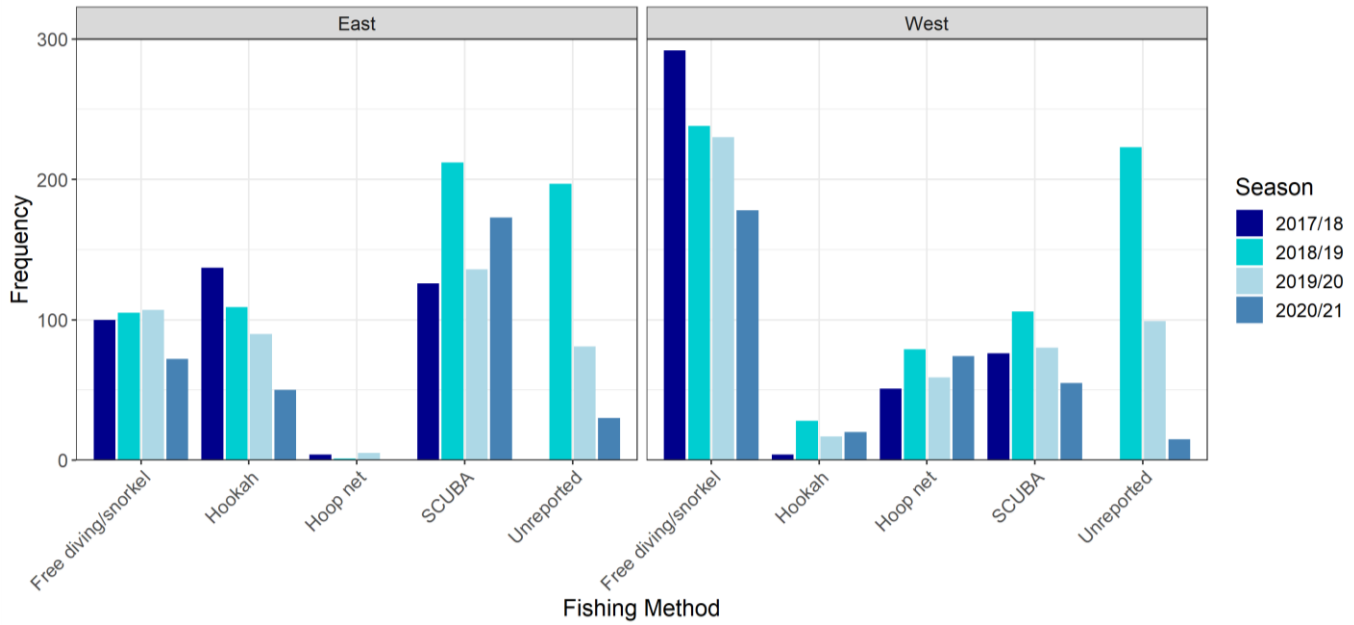


Figure 17 The frequency of tags used by citizen scientists for each fishing method.

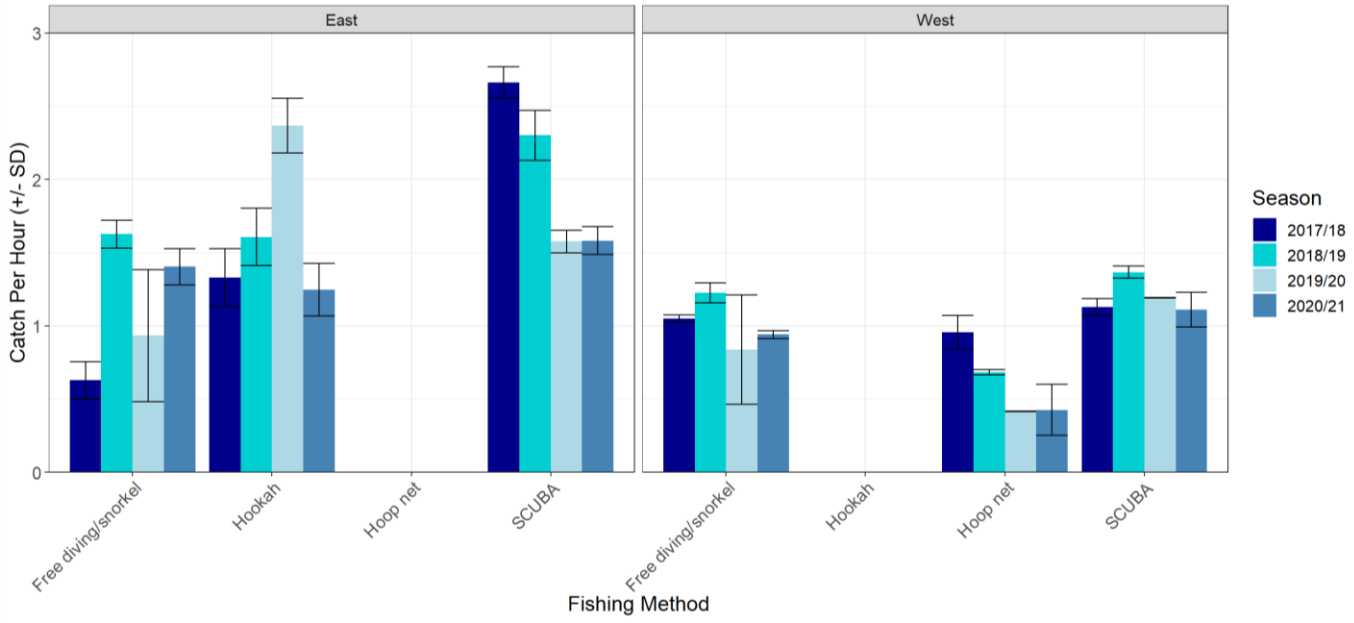


Figure 18 The average catch per hour by citizen scientists for each fishing method. Hoop net in the Eastern Zone and Hookah in the Western Zone are omitted due to the low prevalence of these methods preventing meaningful CPUE calculation.

Citizen scientist reporting

The proportion of tags reported on the day of fishing by citizen scientists has declined from 64.5% in Season 1 (2017/18) to 45% in Season 4 (2020/21). However, the proportion of tags reported on the day after fishing by citizen scientists increased from 13% to 19% between Seasons 1 and 4 (Figure 19). Generally, there was an increase in the number of reports that occurred in the 1-3 days after fishing in 2020/21. Reporting on the day of capture provides a greater level of confidence in the reported data with an assumed increased accuracy of details relevant to reporting time lags, e.g., recall errors. The number of participants that reported used tags 14 or more days after capture had declined in Season 4 (2020/21) from the previous year but remained higher than in Seasons 1 and 2.

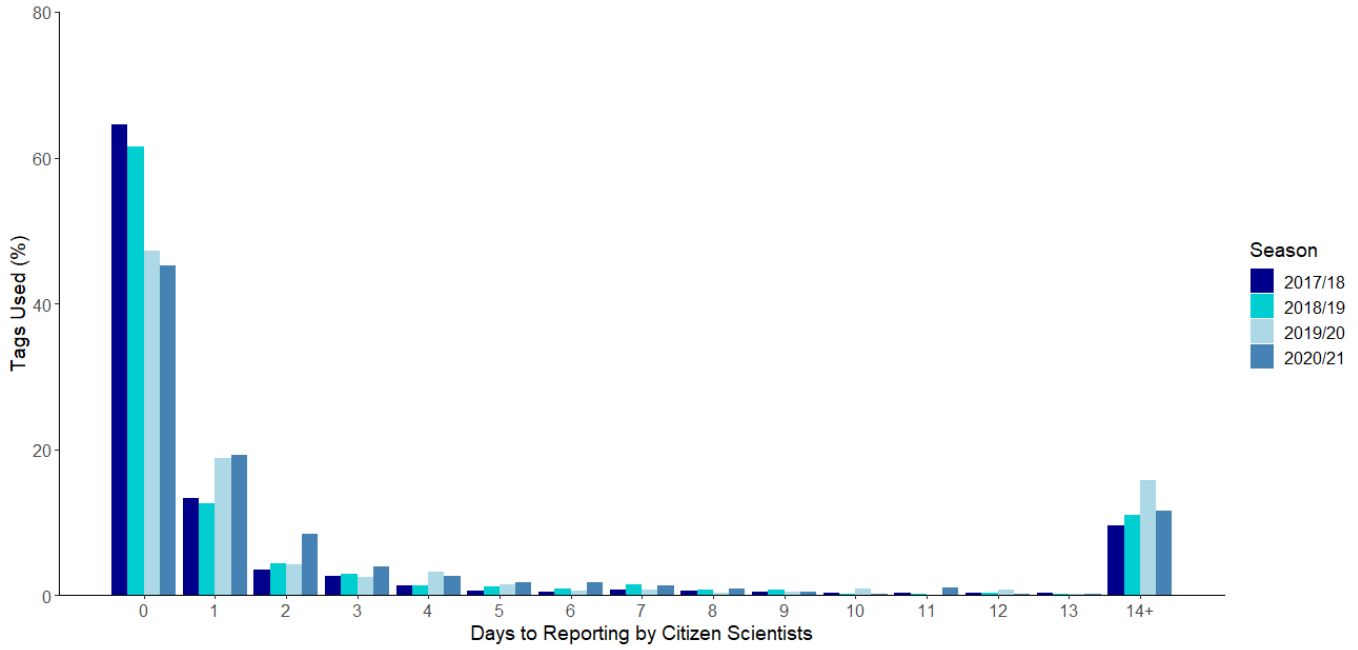


Figure 19 The number of days between fishing (date caught) and the reporting of used tags (as percentage of annual total) by citizen scientists between Season 1 (2017/18) and Season 4 (2020/21).

Annual Comparisons

Table 1 Summary of comparisons between Season 1 and Season 2. Completeness is the number of complete records (reports) for the factor as a percentage of the total tags used each year or as a total of the tags used over the duration of the program.

Factor	Participants	Weight Fished (kg)	Sex Fished	Length Fished (Carapace Length cm)	Victorian Fishers	Number Taken	Weight Taken	Weight Taken (% of TACC)
Program Average		Mean = 1.8 East = 2.0 West = 1.7 11.9% completeness	Male = 68.1% Female = 31.9% 14.9% completeness	Mean = 13.5 East = 13.8 West = 13.2 100% completeness	99.45%			
2017	5092	Mean = 1.7 East = 1.8 West = 1.6 10.8% completeness	Male = 71.5% Female = 28.5% 13.4% completeness	Mean = 13.6 East = 13.9 West = 13.3 100% completeness	99.60%	East = 3857 West = 4069	East = 6940.8 kg West = 6510.4 kg	East = 11.8% West = 2.8%
2018	5586	Mean = 1.9 East = 2.0 West = 1.7 11.2% completeness	Male = 65% Female = 35.0% 14.1% completeness	Mean = 13.5 East = 13.7 West = 13.2 100% completeness	99.10%	East = 3107 West = 3734	East = 6202.0 kg West = 6346.1 kg	East = 15.5% West = 2.6%
2019	5712	Mean = 1.9 East = 2.1 West = 1.7 13.7% completeness	Male = 71.1% Female = 28.9% 16.9% completeness	Mean = 13.6 East = 14.0 West = 13.3 100% completeness	99.50%	East = 1840 West = 2555	East = 3864.0 kg West = 4343.5 kg	East = 9.7% West = 1.8%
2020	5516	Mean = 1.9 East = 2.1 West = 1.7 12.8% completeness	Male = 64.1% Female = 35.9% 16.9% completeness	Mean = 13.6 East = 13.8 West = 13.0 100% completeness	99.61%	East = 1573 West = 2296	East = 3303 kg West = 3903 kg	East = 8.3% West = 1.6%

Evaluation of Citizen Science Program

Table 2 Summary of the citizen science program. Completeness is the number of complete records (reports) for the factor as a percentage of the total tags used each year (2017,2018) or as a total of the tags used over the duration of the program by citizen scientists.

Factor	Participants	Participants who used tags	Weight Fished (kg)	Sex Fished	Length Fished (Carapace Length cm)	Catch per Hour (CPUE)	Victorian Fishers
Program Average			Mean = 1.8 East = 1.95 West = 1.65 62.8% Completeness	Male = 66.4% Female = 33.6 % 78.8% Completeness	Mean = 13.77 East = 14.2 West = 13.3 100% Completeness	Mean = 1.28 East = 1.6 West = 0.93	99.75%
2017	600	243	Mean = 1.7 East = 1.9 West = 1.4 48.5% Completeness	Male = 61.7% Female = 38.3% 60.4% Completeness	Mean = 13.6 East = 14.0 West = 13.3 100% Completeness	Mean = 1.3 East = 1.5 West = 1.0	99.80%
2018	685	235	Mean = 1.9 East = 2.0 West = 1.4 61.0% Completeness	Male = 64.5% Female = 35.5% 77.5% Completeness	Mean = 13.7 East = 14.0 West = 13.5 100% Completeness	Mean = 1.5 East = 1.9 West = 1.1	99.30%
2019	652	194	Mean = 1.8 East = 2.0 West = 1.5 68% Completeness	Male = 75.4% Female = 24.6% 84.2% Completeness	Mean = 14.2 East = 14.9 West = 13.7 100% Completeness	Mean = 1.2 East = 1.6 West = 0.8	99.9%
2020	634	166	Mean = 1.65 East = 1.9 West = 1.4 74.1% completeness	Male = 64% Female = 36% 93% completeness	Mean = 13.5 East = 14.2 West = 12.8 100% completeness	Mean = 1.1 East = 1.4 West = 0.82	100%

Compliance

The VFA has undertaken a state-wide initiative with Fisheries Officers to collect details when conducting an inspection of recreational rock lobster fishers to enable comparisons of data reported through the App. The details of date, location, carapace length, sex, weight, method and dive time are recorded. This has enabled Fisheries Officers to follow-up with inaccurate reporting and provide greater confidence in data collected through the program.

Fisheries Officers recorded the details of 25 recreational rock lobster inspections during Season 4 of the tagging program. 80% of the tags were accurately reported as 'Used'. An analysis of the reported tags has found that that 64 percent of the tags that were inspected were reported accurately with relation to the key details of location, date and reporting status. Only 20% of tags were reported with an accurate measurement as observed during the Fisheries Officer inspection.

A breakdown of the tags that were considered to have been reported inaccurately is as follows:

- 2 tags remained as unreported or 'unused';
- 3 tags were inaccurate due to incorrect date;
- 20 tags were inaccurate due to incorrect length;
- 4 tags were reported as 'Not used'

Methods

This report is based on catch data reported for Season 1 (2017/18), Season 2 (2018/19), Season 3 and Season 4 to VFA until 15/12/2021.

To ensure the quality and robustness of the analysis some data filtering occurred. The following is a list of the filters and calculations that were applied to the data:

Season- Previously, preliminary data from the current season has been excluded resulting in only complete fishing seasons being analysed. In the 2020/21 season there was no preliminary data for the 2021/22 season to exclude due to the electronic catch reporting app changing.

Participation- individual fishers were identified from email addresses each season.

Date fished- In cases where the date fished occurred after the date that a used tag was reported, the data was excluded.

Age of participants- Participants who listed their age as less than 18 or over 100 were excluded from the analysis.

Weight of catch- the reported weights were excluded if less than 1 kg or more than 6 kg. There are some reported weights of 500 – 800 that are assumed to be measured in grams, however, were excluded.

Total weight Taken Estimates- calculated from the mean weight of the citizen science data.

Catch per hour (CPUE)- calculated from the citizen science data.

Days to report- Measured as a count of the days from the date fished to date reported. All values over 14 days were allocated a greater than 14 days value.

Personal data- was excluded if there were less than 5 samples to de-identify the fishers, such as the postcode of registered users.

To calculate the total catch weight, the mean weights recorded by the citizen science program were applied to the weight in numbers from the overall dataset.

Informing the Annual Rock Lobster Stock Assessment Process

The annual stock assessment process has previously included a notional recreational catch share equivalent to five and ten percent of the commercial Total Allowable Commercial Catches (TACCs) for the Western Zone and Eastern Zone, respectively. Through the Recreational Rock Lobster Tagging Program, the VFA is now in a position to obtain an estimate of the annual recreational catch by using the number of tags used in each zone for that season, to represent the number of rock lobsters removed from the stock.

Data on the actual number of lobsters harvested by the recreational sector, combined with the known catch under the quota managed commercial fishery, is now used to inform stock assessments. This has resulted in the existing notional assumption of recreational catch that has fed into the Rock Lobster Stock Assessment model becoming replaced with actual numbers of lobster removed by the recreational sector, therefore improving the accuracy of annual biomass estimates and modelled future fishery trajectories. Continuing to obtain accurate data on the total removal of rock lobster from the stock in Victoria is integral to managing a sustainable and healthy fishery into the future.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