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Victorian Rock Lobster Fishery Management Plan 2024

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Vision

A fishery underpinned by best practice management that sustains a healthy resource to support the values and objectives of all users and the wider community now, and into the future.

Minister's Foreword

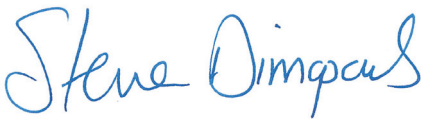
I am pleased to declare the *Victorian Rock Lobster Fishery Management Plan 2024*. This is the fourth plan for the fishery declared under the *Fisheries Act 1995*. It builds on the progress made in previous plans to ensure the fishery remains viable, profitable and sustainable for all users of the resource.

This plan was developed through intensive consultation and guided by an independently chaired stakeholder-based steering committee. I would like to thank the members of the Steering Committee for contributing their time to this process, as well as all stakeholders who made a submission on the draft plan during the public consultation period.

Rock lobster is one of Victoria's most valuable wild-catch fisheries. It has a commercial gross value product of over $25 million and supports fishing and processing businesses, coastal communities and regional employment in ports across the state. It is vital we continue to look after this important fishery by making sure it remains sustainable.

A key component of this plan is a new harvest strategy that incorporates strict rebuilding targets. These targets enhance the consideration of total harvest within the fishery, using improvements in the accuracy of recreational catch assumptions. The strategy provides clear and prescriptive rules to make informed management decisions and determine annual catch allocations. It commits to an ongoing recreational rock lobster reporting program that will facilitate a robust assessment of the recreational catch levels.

The *Victorian Rock Lobster Fishery Management Plan 2024* will ensure the fishery continues to be managed sustainably into the future while allowing for ongoing development, growth and prosperity.



Steve Dimopoulos MP
Member for Oakleigh
Minister for Outdoor Recreation

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Executive Summary

The *Victorian Rock Lobster Fishery Management Plan* (the Management Plan) establishes best practice management arrangements designed to sustain a healthy resource to support the values and objectives of all users and the wider community now, and into the future.

Victoria's fisheries resources are enjoyed by the breadth of the community and utilised by recreational, commercial and Indigenous fishers. This management plan recognises the rich history of Indigenous fishing in Victorian waters for millennia and aligns with the proposed state Treaty plans. Treaty provides a path to negotiate the transfer of power and resources for First Nations Peoples to control matters which impact their lives.

The commercial fishery has been under a quota management system since 2001 and is one of the State's most valuable wild-catch fisheries with a production value averaging approximately $25 million. It is recognised as an important contributor to employment in coastal communities and to the broader economy. However, recent trade sanctions have limited exports markets and production value in 2020/2021 declined to approximately $14 million. The majority of the catch is exported to international markets, predominantly in Asia, so the effective implementation of this Management Plan is required to enable the commercial fishing industry to maintain the approval issued by the Commonwealth Government to export products taken from the fishery.

This management plan is the fourth for the fishery and replaces the previous plan declared in 2017 (Victorian Fisheries Authority 2018). The first management plan for the Rock Lobster Fishery was introduced in 2003 (Department of Primary Industries 2003) and focused on rebuilding rock lobster stock and improving the economic prosperity of the commercial fishery. Each subsequent plan has expanded on the directions within the first plan and enhanced the sustainability of the rock lobster stock for all harvesting the resource.

The Management Plan specifies the policies, management objectives and strategies for managing the rock lobster resource in Victorian waters under the requirements of the *Fisheries Act 1995* and the principles of ecologically sustainable development.

The objectives for the Rock Lobster Fishery are:

- Objective 1: Ensure the sustainability of the rock lobster resource
- Objective 2: Optimise community benefit of the rock lobster resource
- Objective 3: Ensure best practice cost-effective participatory management
- Objective 4: Sustain the ecological integrity of the fishery ecosystem
- Objective 5: Enhance community trust, respect and value of the fishery

The Management Plan builds on initiatives introduced under the third management plan for the fishery, with an updated catch rate-based harvest strategy and a revamped digital program to estimate recreational catch. Both are focused on ensuring that the rock lobster resource is managed sustainably, that the total annual removal from the resource by the commercial and recreational sectors is known, and that analyses of the stock are accurate.

An important principle that has been embraced in this management plan is the introduction of a stock rebuilding target and rebuilding timeframe. This will provide a clear direction and commitment to rebuilding biomass to optimise benefits to all resource users. The Management Plan also maintains a commitment to continuous improvement. This is reflected by embedding an annual data review process into the science program underpinning the assessment of the rock lobster resource and in the development of annual work plans. This ensures constant evaluation and identification of changing conditions to allow management activity to be directed appropriately and the resource to continue to be managed efficiently and effectively.

The status of the stock and the existing management arrangements in the fishery have been reviewed in consultation with stakeholders. The Victorian Fisheries Authority would like to thank the members of the steering committee for their involvement and effort in developing this management plan and to all members of the community who provided input.

1 Introduction

1.1 Overview

The Southern Rock Lobster resource spans across multiple Australian jurisdictions. This management plan applies to the Victorian Rock Lobster Fishery. The fishery is based almost entirely 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, recreational and Indigenous rock lobster fishing. It is the second most valuable commercial fishery in Victoria, making it an important contributor to the State's economy.

The *Victorian Rock Lobster Fishery Management Plan* (the Management Plan) specifies the policies, management objectives and strategies for managing Victoria's rock lobster resource under the requirements of the *Fisheries Act 1995* and the principles of ecologically sustainable development. It is the fourth management plan for the fishery and outlines the management direction for at least the next five years. It ensures that the commercial, recreational, Aboriginal Victorians, conservation and wider community sectors in Victoria have a clear framework specifying how the resource will be sustainably managed.

The objectives, strategies and actions in this management plan build on those from previous plans and maintain the focus on continued stock rebuilding and ensuring community acceptance of the use of marine resources. The strategies and actions will inform the development of an annual work plan of specific and time-bound activities. The annual work plan, including 'continuous improvement' opportunities identified as part of the annual review process, will be developed in consultation with stakeholders and supported by a new and ongoing Rock Lobster Management Advisory Committee (RLMAC).

The new harvest strategy included in this management plan is based on a rebuilding target and timeframe and maintains the transparency and key characteristics of the previous harvest strategy. It takes a precautionary approach with a combined primary focus of rebuilding the rock lobster stock and harvest over time. It uses egg production, standardised commercial catch rate and numbers of juvenile lobsters in the population as determinants for setting the annual Total Allowable Commercial Catch (TACC).

The Management Plan also recognises the ongoing nature of the recreational rock lobster reporting program to collect data on rock lobster taken by the recreational sector. This serves to build confidence in the proportion of recreational catch which was previously a key information gap. All recreational fishers are required to report the rock lobsters they catch using the VFA's smartphone app or web portal.

1.2 Past management plans

During the late 1990s and early 2000s, it was recognised that catch rates in the Rock Lobster Fishery had declined and excessive pressure had been placed on the stock. In response, the first Rock Lobster Fishery Management Plan (Department of Primary Industries 2003) contained two key objectives: (i) rebuild the rock lobster biomass and (ii) promote commercial use for economic prosperity.

The second management plan (Department of Primary Industries 2009) was prepared after undertaking a review of the effectiveness of the first plan and an ecological risk assessment of the fishery. In the years between the two plans, available biomass had only marginally increased and catch rates had fallen sharply in some areas of the fishery. It was recognised that a significant shortcoming of the first plan was a lack of clear decision rules with the ability to react quickly to declining biomass indicators. Consequently, the core objective of the second plan was a deliberate stock rebuilding strategy where commercial catches were constrained to levels that ensured a significant increase in the available biomass over the life of the plan.

The harvest strategy included a rebuilding target and application of commercial catch quotas that endeavoured to maintain stock biomass growth along a predetermined trajectory to a target. The target was to rebuild the available biomass to 40 percent of the estimated biomass in 1951, the first year of formal commercial records for the fishery, over ten years. The available biomass, the annual TACC and other aspects of the fishery such as level of recruitment were estimated using fishery-dependent and fishery-independent data incorporated into a rock lobster fishery model (Punt and Kennedy 1997).

The third management plan (Victorian Fisheries Authority, December 2017), informed by the stock assessment model, introduced a new catch rate-based harvest strategy and a new program to estimate recreational catch. Both initiatives were focused on ensuring that the rock lobster resource was managed sustainably, that the total annual removals from the resource by the commercial and recreational sectors was known and that analyses of the stock depletion levels were accurate. The new catch rate-based harvest strategy provided a structured framework for assessing the status of the fishery and a clear set of rules to determine annual commercial catch limits. Shifting to this approach, rather than the model-based approach, had the benefit of ensuring that fishers, fishery managers and other relevant stakeholders know what action will be taken in response to the conditions in the fishery.

The third plan included the operational objective to continue to rebuild the rock lobster population by setting appropriately conservative TACCs on an annual basis, and to maintain catch rates above 0.40 kg/pot lift (standardised). A notable shortfall of this plan was that a stock rebuilding target and rebuild timeframe were not specified.

Since the implementation of the third plan, the trends in the Western Zone fishery have improved steadily under a stable TACC. However, the Eastern Zone fishery has observed consecutive annual TACC reductions in response to concerning declining catch rate and recruitment trends. With additional years of data now available it is clear that the modelling that underpinned the development of the harvest strategy within the third plan did not account for an observed regime shift to lower levels of productivity within the fishery. As such, the existing harvest strategy has not been successful in rebuilding rock lobster biomass in the Eastern Zone.

1.3 Term of plan

This management plan came into effect in 2024 following its declaration in the *Victoria Government Gazette* and remains in place until a new plan is declared or it is cancelled in accordance with the requirements of the *Fisheries Act 1995*. This management plan encompasses 'Continual improvement' through annually monitoring the effectiveness of the Harvest Strategy and undertaking a comprehensive review every five years.

2 Victoria's Rock Lobster Fishery

2.1 Description of the fishery

2.1.1 Area of the fishery

The Victorian Rock Lobster Fishery spans the length of the Victorian coast and is divided into two separately managed fishing zones: the Western Zone, which extends from the South Australian border to Apollo Bay, and the Eastern Zone, extending from Apollo Bay to the New South Wales border (Figure 1). These zones are managed separately due to different growth and productivity rates across the state. The Victorian Government has jurisdiction over the commercial Rock Lobster Fishery in Commonwealth waters adjacent to Victoria under an Offshore Constitutional Settlement Arrangement with the Commonwealth Government.

Figure 1. Extent and spatial structure of the Victorian Rock Lobster Fishery.

Marine national parks and sanctuaries

Victoria was the first jurisdiction in the world to establish an entire system of highly protected marine areas at the same time where activities such as fishing, mining of seabed materials and dumping of waste are prohibited. Around five percent of the Victoria's coastal waters are protected by marine national parks and sanctuaries under the *National Parks Act 1975*.

Two marine national parks and three marine sanctuaries are located in the Western Zone. Seven marine national parks and five marine sanctuaries are situated in the Eastern Zone (Figure 2). Parks Victoria is responsible for management of these parks and sanctuaries and under a service agreement with Parks Victoria, the Victorian Fisheries Authority is responsible for the delivery of fisheries compliance in these areas.

It is estimated that eight and 16 percent of the biomass in the Western and the Eastern Zones, respectively, existed in the marine national parks at their establishment (Hobday et al. 2005).

There are also four Commonwealth Marine Reserves (CMRs) that are declared within the extent of the Victorian Rock Lobster Fishery, including the Apollo, Zeehan, Beagle and East Gippsland CMRs.

Detailed maps can be found at the Parks Australia website: www.parksaustralia.gov.au/marine/pub/maps/SE-Network%20zones.pdf

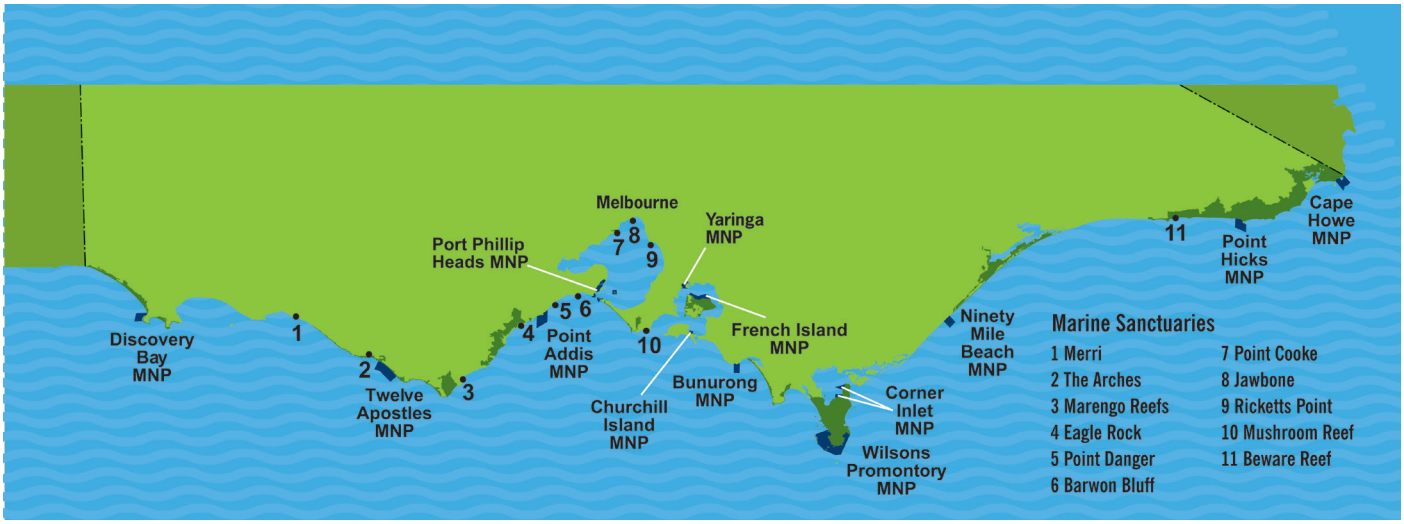


Figure 2. Victoria's Marine National Parks and Sanctuaries.

2.1.2 Stock status

The stock status of Southern Rock Lobster across south-eastern Australia is classified as a sustainable stock by the assessment undertaken in the *Status of key Australian fish stocks report 2020* (SAFS report) (Piddocke et al. 2021). The determination of stock status is based on egg production outputs from the rock lobster stock assessment model used in South Australia, Victoria and Tasmania. The combined egg production across the south-eastern region in 2021/22 was estimated to be 25 percent of the unfished level. The SAFS reports specifies a limit reference point of 20 percent of the unfished biomass, the rock lobster stock is therefore unlikely to be depleted and recruitment is unlikely to be impaired.

The classification of stocks through the SAFS report contributes to the ability of a fishery to gain or maintain export approval, which is granted by the Commonwealth Government under Section 13A of the *Environmental Protection and Biodiversity Conservation Act*.

2.1.3 Species

Southern Rock Lobster

The main species targeted and harvested in the Rock Lobster Fishery is Southern Rock Lobster (*Jasus edwardsii*). The species is found on temperate coastal reefs and has a range that encompasses the south-west coast of Western Australia to the south coast of New South Wales and includes Tasmania and New Zealand.

The most productive fishing grounds exist in New Zealand. In Australia, the waters adjacent to South Australia support the largest fishery for the species, followed by Tasmania and then Victoria.

Because the species is distributed continuously across southern Australia, the population is considered to be a single biological stock. Southern Rock Lobsters have extensive larval dispersal and can be found to depths of 150 metres, with most of the catch coming from inshore waters less than 100 metres deep.

Eastern Rock Lobster

Small quantities of Eastern Rock Lobster (*Sagmariasus verreauxi*) are taken off eastern Victoria, particularly near the border of New South Wales and Victoria.

The Fisheries Act 1995 defines rock lobster as all species in the family Palinuridae, which includes both Southern and Eastern Rock Lobsters. As such, while the TACC is set for Southern Rock Lobster, it currently also includes any catch of Eastern Rock Lobster. Commercial fishers must report catch separately by species in the Vic-eCatch reporting system. A new initiative under this plan, included in the actions table, is to separate quota for Southern and Eastern Rock Lobsters.

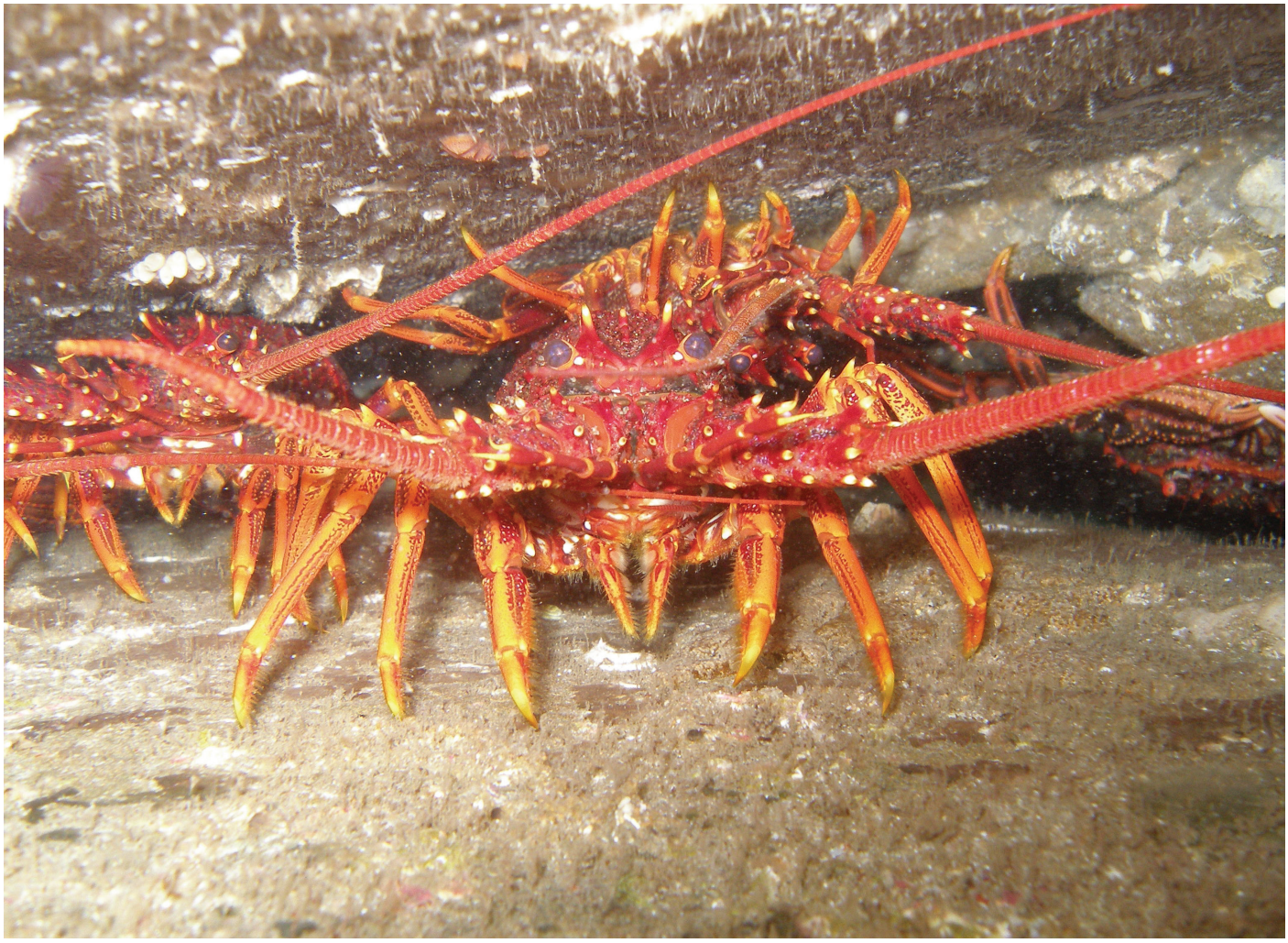
2.1.4 Life history and biology

The life cycle of the rock lobster is complex. After mating in autumn, fertilised eggs are carried under the tail of the female for approximately three months before being released, typically between September and November. Rock lobster larvae, or phyllosoma, live in the plankton and undergo 11 developmental stages over a period of 12 to 18 months while being carried by ocean currents before metamorphosing to a benthic existence.

Rock lobsters grow by moulting or shedding their exoskeleton. The frequency of the moulting cycle declines with age from five moults per year for newly settled juveniles to once per year for mature adults. Males grow faster and larger than females, reaching around 160 millimetres in carapace length after ten years. Females generally reach about 120 millimetres in the same period. Growth rates also vary spatially, with growth faster in the east than in the west of the State. Female rock lobsters are thought to mature around the same age as males but, due to variation of growth, generally mature at a larger size in the east (112 millimetres) compared to those in the west (90 millimetres).

Adult rock lobsters are carnivorous and feed mostly at night on a variety of bottom dwelling invertebrates such as molluscs, crustaceans and echinoderms. The major predators of rock lobster include octopus, various large fish and sharks.

In Victoria, the abundance of rock lobsters reduces from west to east reflecting a decreasing area of suitable rocky reef habitat.



2.2 Overview of sectors using the resource

2.2.1 Aboriginal Fishing Sector

Aboriginal people have a strong connection to country and water that is central to their identity and culture. For Aboriginal people, cultural values are informed by, and interconnected with, traditional uses, spiritual connection, ancestral ties and respect for waterways, land, sea and the resources these provide.

Members of Traditional Owner groups and Aboriginal Victorians have legal rights to access fish, including rock lobster, for personal, communal and cultural purposes. These rights are established under Victoria's *Traditional Owner Settlement Agreement Act 2010* (TOS Act) and the Fisheries Act 1995 and the Commonwealth's *Native Title Act 1993*.

Under the Fisheries Regulations 2019, any person who identifies as an Aboriginal person or a Torres Strait Islander is exempt from the requirement to obtain a Recreational Fishing Licence, providing they comply with all recreational fishing rules imposed on recreational fishers (e.g. bag limits, size limits, spatial and temporal closures). This exemption applies to all Aboriginal Victorians, irrespective of whether they are a member of a group that has a settlement agreement under the TOS Act or a positive native title determination under the Native Title Act 1993.

In addition, members of Traditional Owner groups who have a Natural Resource Agreement (NRA) in place under the TOS Act can also take fish on Crown land or on their own properties within their settlement area for personal, communal and cultural purposes. In these circumstances, the Traditional Owners determine when, where and how many fish are taken. However, Traditional Owners must comply with a set of sustainability principles that are defined in each agreement and must ensure that animal welfare and human safety are not compromised when taking fish.

Traditional Owners taking fish under a TOS Act agreement must not use the fish for commercial purposes.

Similarly, members of Traditional Owner groups who have a positive native title determination under the Native Title Act 1993, can take fish within the area of native title for personal, communal and cultural purposes, without the need to obtain a recreational fishing licence. Traditional owners taking fish under their native title rights are also not constrained by recreational fishing rules (e.g. size and bag limits, methods and season dates), but must comply with laws of general application (e.g. members can't take prohibited species or fish in areas where fishing is prohibited) and must not use the fish for commercial purposes.

There is currently no data on the catch history of rock lobsters by Aboriginal Victorians. However, monitoring of most catch by the Aboriginal fishing sector will be captured via the recreational rock lobster reporting program as most Aboriginal fishers are currently required to comply with the recreational fishing rules imposed on recreational fishers. Those Traditional Owners who have a positive determination under the Native Title Act 1993 or an NRA under the TOS Act, catch will be determined via targeted surveys with the relevant Traditional Owner Groups to minimise gaps in data.

Treaty and truth in Victoria

We are deeply committed to Aboriginal self-determination and to supporting Victoria's treaty and truth-telling processes.

We acknowledge that treaty will have wide-ranging impacts for the way we work with Aboriginal Victorians. We seek to create respectful and collaborative partnerships and develop policies and programs that respect Aboriginal self-determination and align with treaty aspirations.

We acknowledge that Victoria's treaty process will provide a framework for the transfer of decision-making power and resources to support self-determining Aboriginal communities to take control of matters that affect their lives. We commit to working proactively to support Victoria's treaty process, including to review the commitments of the Management Plan in line with the treaty process and the aspirations of Traditional Owners and Aboriginal Victorians.

2.2.2 Recreational Fishing Sector

Fishing for rock lobster is an important activity for many Victorians who most commonly collect them by snorkelling, diving using scuba or hookah, or with hoop nets. A fisher must hold a Victorian Recreational Fishing Licence to take rock lobsters, unless exempt under the *Fisheries Regulations 2019*, and all lobster catch must be reported to the VFA. The recreational catch is managed using daily bag limits, possession limits, minimum size limits and closed seasons. The recreational closed season and restrictions align with those of the commercial fishery.

The number of rock lobster caught annually by the recreational sector was previously a significant data gap. A three-year trial program commenced in July 2017 in which recreational fishers were required to apply a VFA plastic tag to the rock lobsters they catch and keep, and then report the use of that tag. Following the highly successful trial, the reporting program has now been made ongoing and has gone digital, making reporting catches easier for recreational fishers.

A smartphone app from the VFA now allows fishers to digitally report their rock lobster catch. Plastic tags are no longer utilised, and this has successfully reduced the environmental footprint of the program. The recorded number of rock lobster recreationally harvested from the stock and the information collected through the program is building the capacity to maintain a healthy fishery for all sectors and is vital to the long-term sustainability of stocks.

A summary of the key elements of the fishery, recreational and commercial, is in Table 1.

More detail on the management arrangements, including the reporting requirements, is in Section 5.1.

2.2.3 Commercial Fishing Sector

Commercial rock lobster fishers must hold a Rock Lobster Fishery Access Licence to harvest rock lobster from Victorian waters. The commercial fishery is quota-managed, using annual TACCs and individual transferable quota (ITQ) units. Separate licences and quotas exist for each of the two zones. Fishing operations mainly occur from the 11 coastal ports identified in Figure 1.

Rock lobsters are caught with baited pots that are generally set and hauled once each day. Commonly used baits include barracouta, Australian salmon, mackerel, carp and some imported fish species.

An overview of the commercial management arrangements is summarised in Table 1 and a summary of the key elements for each zone is in Table 2. More detail on the history and current status of the fishery is in Section 2.1.6 and further detail on the management arrangements in the commercial fishery is in Section 5.2.

Table 1: Key elements of the Rock Lobster Fishery.

Aspect of fishery	Commercial Fishery	Recreational Fishery
Access to fishery	Entry limited to holders of a Rock Lobster Fishery Access Licence 2 operators per licence (no limits on crew)	Recreational Fishery Licence (unless exempt) Unlimited entry Season registration via smartphone app
Allowed fishing method/equipment	Baited pots	Hand capture and hoop nets
Management zones	Eastern Zone and Western Zone	Eastern Zone and Western Zone only for the purposes of recreational catch reporting
Primary method of control	Total Allowable Commercial Catch and individual transferable quotas	Daily bag limit: 2 lobster Possession limit: 4 lobster in, on or next to Victorian waters
Method of monitoring	Quota Management System VMS Daily electronic catch reporting Random inspections	Digital reporting system Random inspections for recreational catch
Secondary controls	Legal minimum length Gear restrictions Closed seasons	Legal minimum length Gear restrictions Closed seasons

Table 2: Key elements of the commercial fishery*.

Commercial Fishery		
	Western Zone	**Eastern Zone**
Zone boundary	Longitude 143°40'E Longitude 140°57.9'E Latitude 40°S	Longitude 143°40'E Longitude 150°20'E Latitude 39°12'S
Maximum number of licences	71	32
Maximum number of licences per boat	Not limited	Not limited
Total number of quota units per zone	3633.48[11]	1000
Total number of pots in zone	5162	2073
Maximum number of pots per boat	140	120
Minimum number of pots to activate licence	20	15
Minimum quota holding per licence	10 units	5 units
Maximum quota holding per licence	No maximum	No maximum

*Information presented is accurate at time of declaration of this management plan and subject to change in accordance with the *Fisheries Act 1995* and *Fisheries Regulations 2019*.

[1] A structural adjustment program was undertaken in the Western Zone in 2008 that resulted in 14 licences, 366.52 quota units being permanently removed from the Western Zone Rock Lobster Fishery. The Initial Quota Order for the Western Zone was amended from 4000 quota units to 3633.48 quota units in accordance with the requirements of the Fisheries Act.

2.3 Catch history in the commercial fishery

The commercial rock lobster fishery has been managed as a separate and limited-entry fishery since 1968. During 2001, the fishery moved to output controls in the form of ITQ management, changing the emphasis from restricting fishing effort to allocating and limiting the catch. The commercial fishery is now managed primarily by limiting the number of Rock Lobster Fishery Access Licences allocated across the two zones; restricting the TACC in each of the zones, which are divided into ITQ units; and restricting the number of pots that can be used in each zone. Additionally, the fishery is subject to male and female size limits, and a closed season between 15 September and 15 November inclusive.

2.3.1 Western Zone Rock Lobster Fishery

During the 1990s and early 2000s, catches in the Western Zone Rock Lobster Fishery ranged between 408 and 525 tonnes (t). With the implementation of quota management in November 2001, the first TACC for a complete season was set at 450 t (note that a TACC of 320 t was introduced for a shortened season from November 2001 to 31 March 2002). The TACC remained at 450 t until 2006/07 but was never fully caught. A fishery restructure and reductions in quota since that time has resulted in constraining TACCs, reductions in effort and improvements in catch rates and stock biomass (Table 3, Figures 3, 4 and 5).

Since 2009/10, TACCs have remained between 230 and 260 t due to the stock rebuilding harvest strategies implemented in the previous two management plans. In 2009/10, after five years of consistent decline in the catch rate, the fishery reached a historical low of 0.34 kg/pot lift (standardised catch per unit effort, CPUE). Reduced fishing pressure from the decreased TACCs has allowed the CPUE to recover, and in 2021/22 was 0.74 kg/pot lift (standardised catch rate) (Figure 4).

Corresponding trends are evident in the exploitation rates and stock biomass in the fishery. Under the increasing exploitation rates experienced between 1980/81 and 2000/01, the model-estimated available biomass in the fishery indicates a ten-year downward trend before entering a phase of stability, fluctuating around 820 t between 1987/88 to 2003/04. Exploitation rates dropped with the introduction of quota, but steadily increased to a historical high of 65 percent in 2006/07. The corresponding available biomass decreased and reached a low of 453 t in 2008/09. After 2006/07, the exploitation rate dropped significantly and the available biomass improved. In 2021/22, the available biomass was estimated to be 783 t, with a corresponding fishing exploitation rate of 32.8 percent (Figure 5).

Table 3: History of TACCs for each quota period from 2001/02 to 2022/23 in the Western Zone.

Year	Season	TACC Set (t)	Catch (t)	% TACC Caught	Months Fished	Active Licenses	Vessels
2001-02*	1 Nov - 31 Mar	320					
2002-03	1 Apr - 31 Mar	450	440	98	12	79	83
2003-04	1 Apr - 31 Mar	450	436	97	12	80	79
2004-05	1 Apr - 31 Mar	450	421	94	12	79	86
2005-06	1 Apr - 31 Mar	450	405	90	12	75	77
2006-07	1 Apr - 31 Mar	450	329	73	12	71	68
2007-08	1 Apr - 31 Mar	380	319	84	12	68	64
2008-09	1 Apr - 31 Mar	320	244	76	12	61	60
2009	1 Apr– 30 Jun	55.2	36	64	3	54	53
2009-10	1 Jul – 30 Jun	240	230	96	12	54	55
2010-11	1 Jul – 30 Jun	240	237	99	12	54	58
2011-12	1 Jul – 30 Jun	240	237	99	12	50	53
2012-13	1 Jul – 30 Jun	260	258	99	12	47	45
2013-14	1 Jul – 30 Jun	260	260	100	12	47	47
2014-15	1 Jul – 30 Jun	230	230	100	12	48	47
2015-16	1 Jul - 30 Jun	230	230	100	12	47	48
2016-17^	1 Jul - 30 Jun	230	209	100	12	43	42
2017-18	1 Jul - 30 Jun	230	230	100	12	42	41
2018-19	1 Jul - 30 Jun	245	245	100	12	43	44
2019-20	1 Jul - 30 Jun	246	225.6	92	12	42	44
2020-21**	1 Jul - 30 Jun	246 (264.3)	255	97	12	38	37
2021-22***	1 Jul – 30 Jun	246 (249.4)	249.3	100	12	41	39
2022-23	1 Jul - 30 Jun	246	246	100	12	38	36

*Quota was introduced 1 November 2001 for a shortened quota period. Data Source: Victorian Fisheries Authority FILS Database.

#At the request of industry, the quota year was shifted to 1 July – 30 June beginning 2009/10.

^The 2016/17 catch was reduced from 230t to 209t as a result of a compensation packaged offered to fishers by Origin Energy in recognition of the loss of access to fishing grounds during survey activity. A condition of accepting compensation was to retire an agreed amount of quota for the remainder of the 2016/17 season.

** TACC of 246 t + 18.3 t of uncaught quota carried over from 2019/20 due to COVID market impacts in 2019/20

*** TACC of 246 t + 3.4 t comprised of 10 percent of uncaught quota for 2020/21, plus uncaught quota of fishers impacted by the abalone virus.

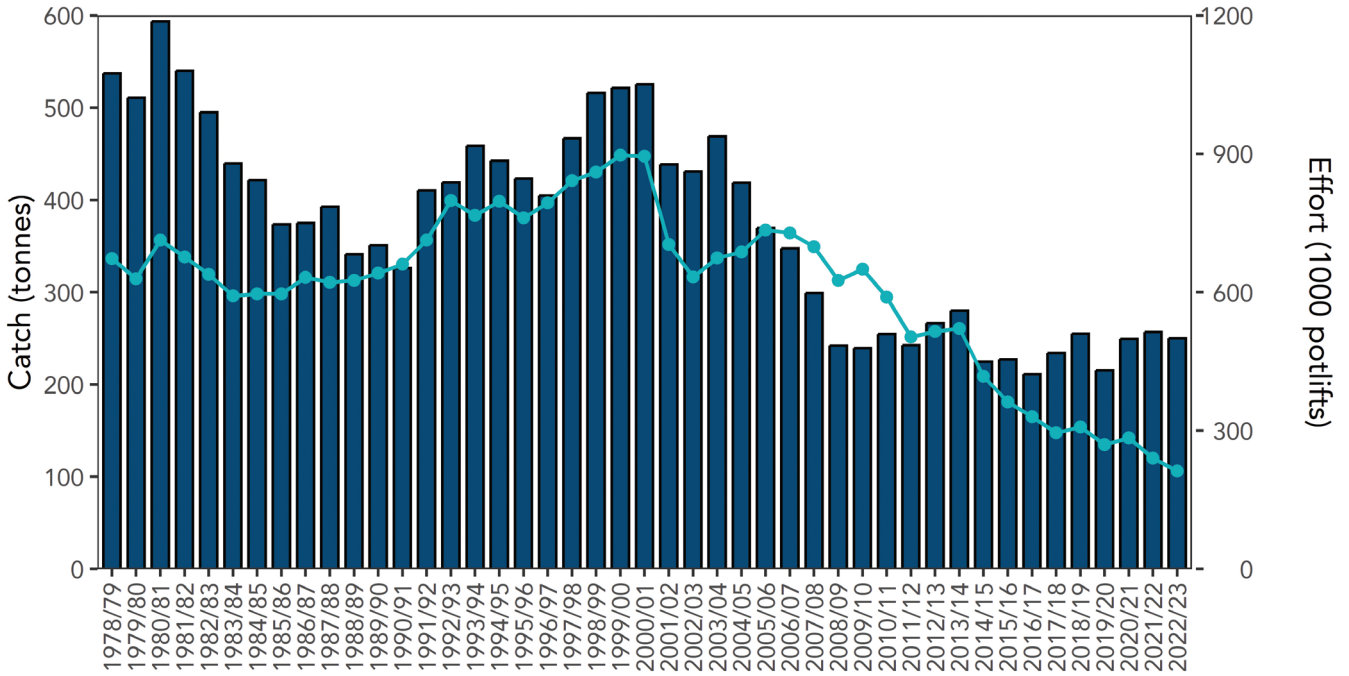


Figure 3. Total catch (tonnes) and unstandardised effort (x1000 pot lifts) in the Western Zone from 1978/79 to 2022/23.

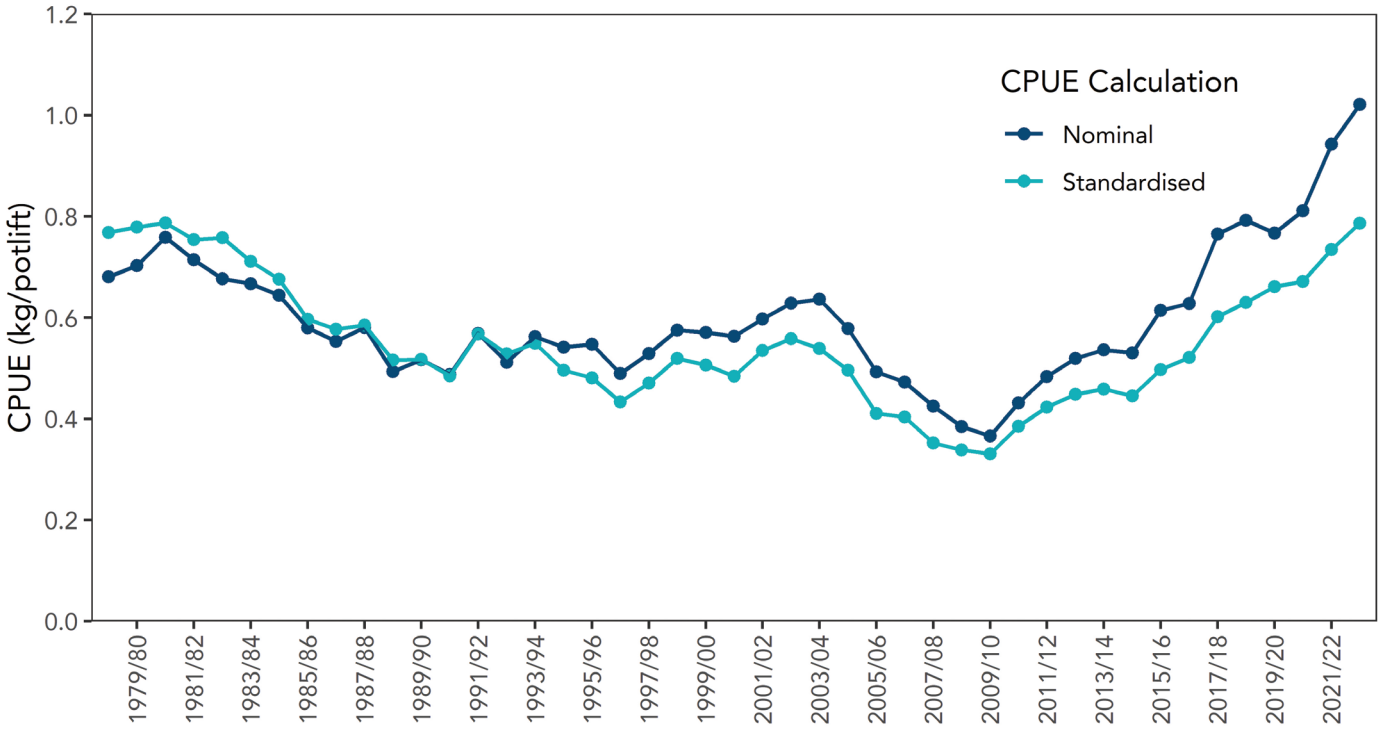


Figure 4. Standardised and nominal CPUE (kg/pot lift) in the Western Zone between 1978/79 and 2022/23.

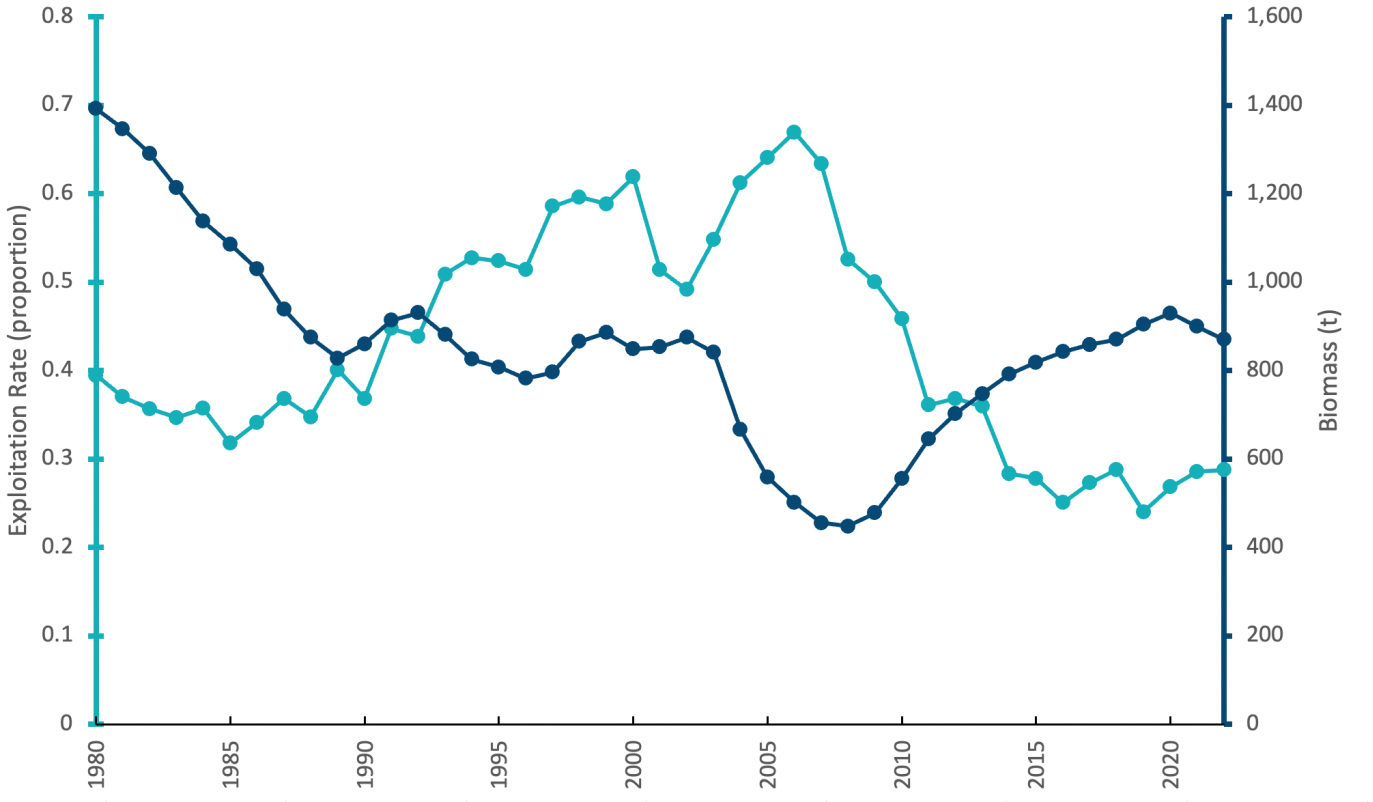


Figure 5. Model estimated levels of available biomass and the associated fishing exploitation rates in the Western Zone between 1979/80 and 2022/23. Note: available biomass is the model-estimated value from mid-November at the start of each fishing season.

2.3.2 Eastern Zone Rock Lobster Fishery

Annual catch in the Eastern Zone Rock Lobster Fishery declined from 143 t in 1982/83 to 41 t in 2008/09. TACCs were introduced in 2001 and an initial TACC was set at 42 t for the partial season between 1 November and 31 March. The TACC for the first complete season was set at 60 t, where it remained until 2006/07. In 2007/08, the TACC was increased to 66 t but catch levels remained beneath the annual TACC until 2010/11. The TACC was reduced to 48 t in 2012/13 and since that time has seen modest increases up to 59 t where it remained for four seasons (2014/15 to 2017/18), followed by several decreases to 32 t in the 2021-22 fishing season. An overview of the quota history is in Table 4 and the historical catch and effort in the zone is in Figure 6.

Standardised CPUE was at its lowest in 1995/96 at 0.26 kg/pot lift. By the time quota was introduced in 2001, CPUE had increased to 0.35 kg/pot lift. The increasing trend continued through to 2012/13 when it reached 0.63 kg/pot lift, but declined for five consecutive seasons after that to 0.45 kg/pot lift in 2016/17 (standardised catch rate). CPUE has gradually risen to 0.49 kg/pot lift in 2021/22 (Figure 7).

Despite a variable exploitation rate ranging between 21 and 38 percent throughout the late 1980's to 2009/10, the modelled available biomass in the fishery remained relatively stable. The biomass then experienced a substantial increase from approximately 190 t to 270 t between 2009/10 and 2013/14 due to a large recruitment event in 2009. As a result of the low recruitment period that followed, this decreased to 172 t in 2019/20. In 2021/22 an increase to 186 t was estimated. As a result of the low catches and the modest increase in biomass, the exploitation was 10.7 percent in 2021/22 (Figure 8).

Table 4: History of TACCs for each quota period from 2002/03 to 2022/23 in the Eastern Zone.

Year	Season	TACC Set (t)	Catch (t)	% TACC Caught	Months Fished	Active Licenses	Vessels
2001-02*	1 Nov - 31 Mar	42					
2002-03	1 Apr - 31 Mar	60	49.9	83	12	39	34
2003-04	1 Apr - 31 Mar	60	54.4	91	12	41	36
2004-05	1 Apr - 31 Mar	60	53.2	89	12	41	39
2005-06	1 Apr - 31 Mar	60	55.7	93	12	30	29
2006-07	1 Apr - 31 Mar	60	53.5	89	12	30	30
2007-08	1 Apr - 31 Mar	66	50.1	76	12	31	31
2008-09	1 Apr - 31 Mar	66	41.3	63	12	26	24
2009-09#	1 Apr - 30 Jun	6.9	5.8	84	3	19	20
2009-10	1 Jul - 30 Jun	66	43.9	67	12	22	21
2010-11	1 Jul - 30 Jun	66	64.8	98	12	29	28
2011-12	1 Jul - 30 Jun	66	65.3	99	12	26	27
2012-13	1 Jul - 30 Jun	48	47.3	99	12	26	25
2013-14	1 Jul - 30 Jun	51	50.8	100	12	27	27
2014-15	1 Jul - 30 Jun	59	59	100	12	25	23
2015-16	1 Jul - 30 Jun	59	58	98	12	21	21
2016-17	1 Jul - 30 Jun	59	52.6	89	12	25	22
2017-18	1 Jul - 30 Jun	59	57.2	97	12	24	25
2018-19	1 Jul - 30 Jun	47	44.7	95	12	20	20
2019-20	1 Jul - 30 Jun	40	37.1	93	12	17	19
2020-21**	1 Jul - 30 Jun	40 (42.8)	31.7	74	12	17	17
2021-22***	1 Jul - 30 Jun	32 (33)	20.7	63	12	14	15
2022-23	1 Jul - 30 Jun	32	14.6	46	12	11	11

*Quota was introduced 1 November 2001 for a shortened quota period. Data Source: Victorian Fisheries Authority FILS Database.

#At the request of industry, the quota year was shifted to 1 July – 30 June beginning 2009/10.

** TACC of 40 t + 2.8 t of uncaught quota carried over from 2019/20 due to COVID market impacts in 2019/20

*** TACC of 32 t + 1 t comprised of 10 percent of uncaught quota for 2020/21.

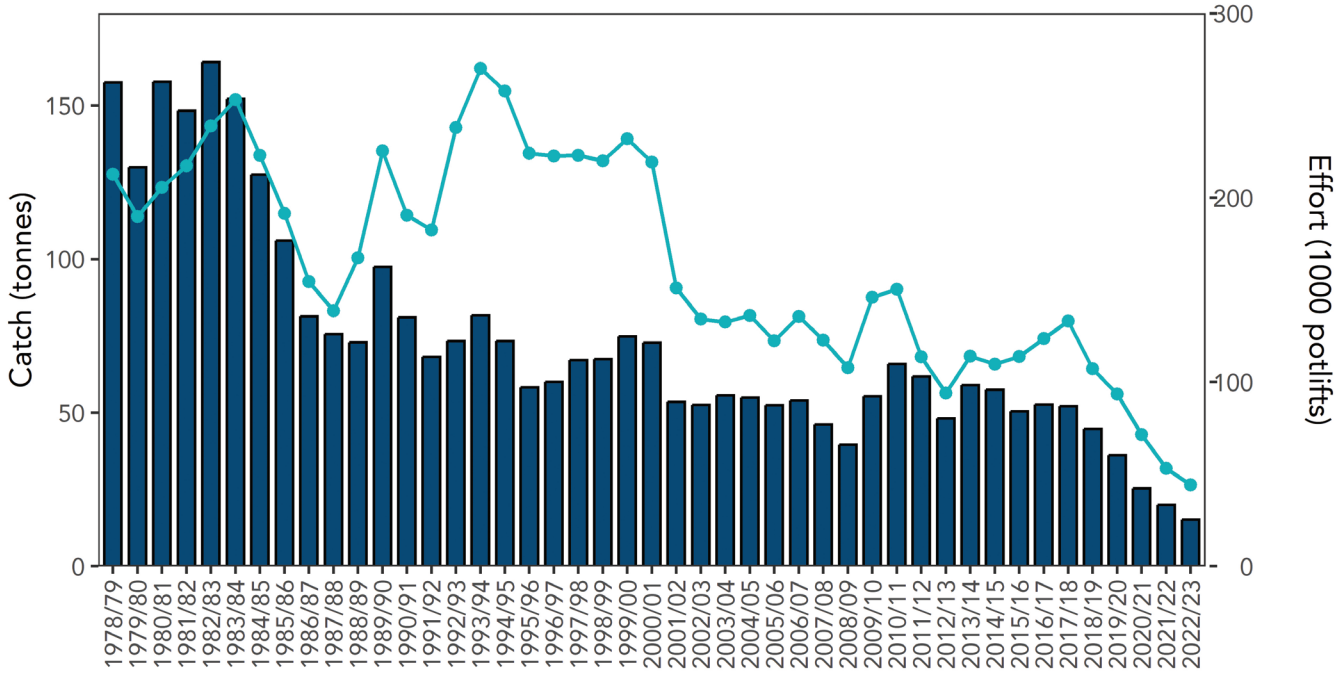


Figure 6. Total catch (tonnes) and unstandardised effort (x1000 pot lifts) in the Eastern Zone from 1978/79 to 2022/23.

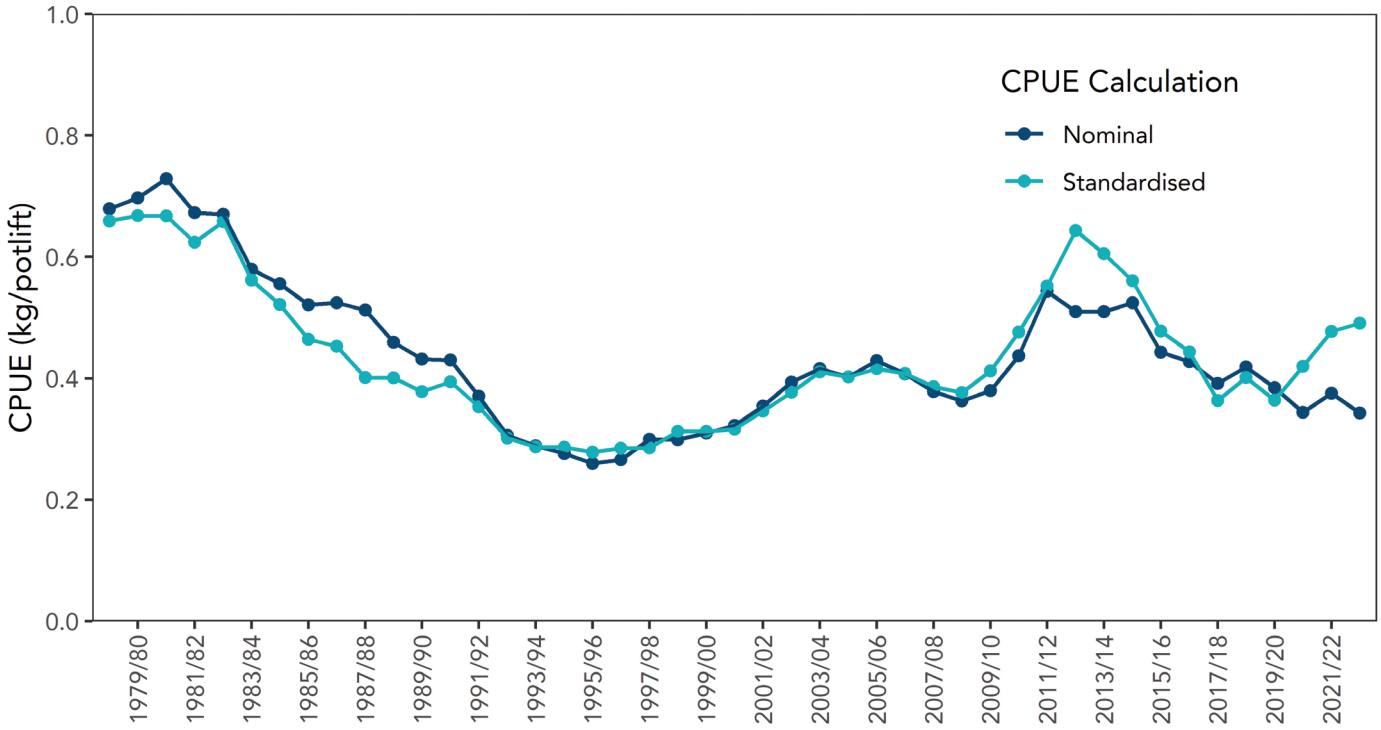


Figure 7. Standardised and nominal *CPUE (kg/pot lift)* in the Eastern Zone between 1978/79 and 2022/23.

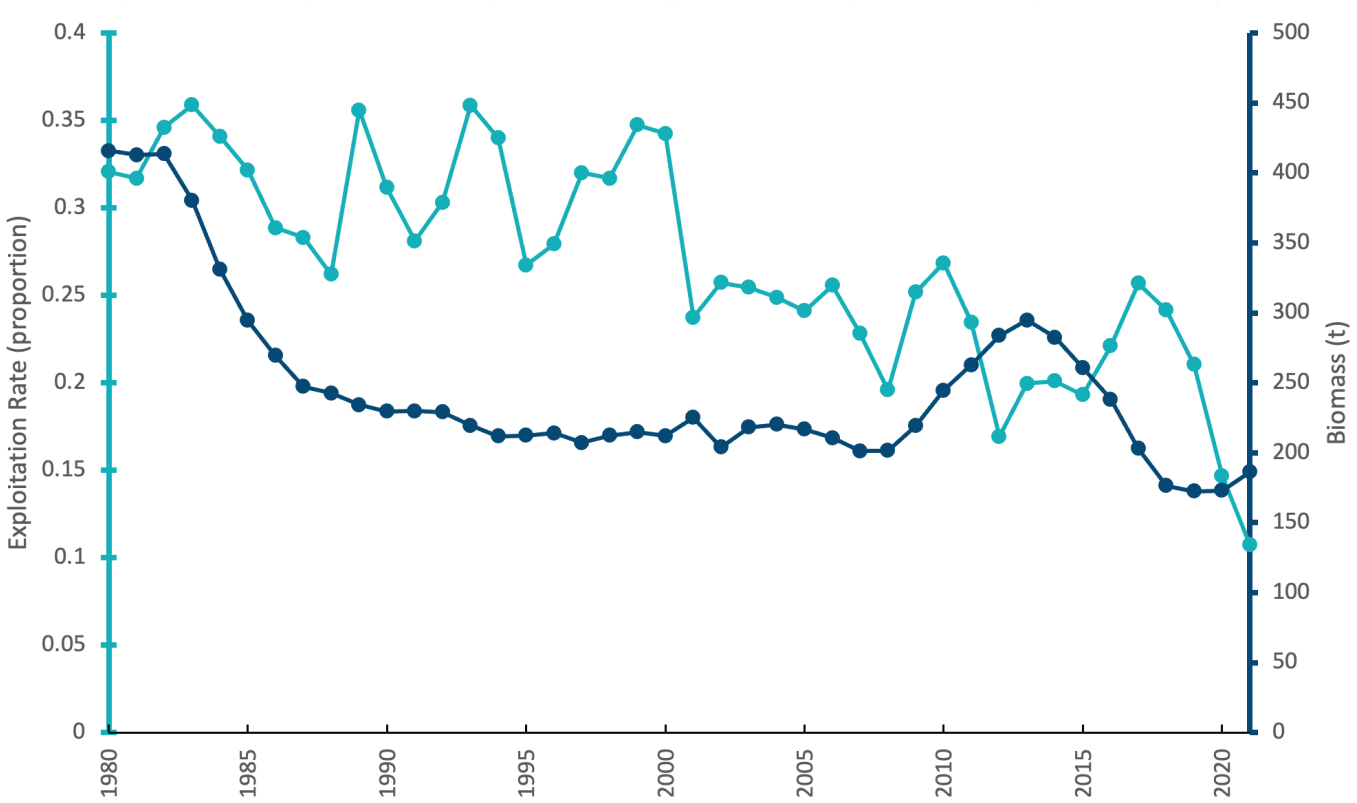


Figure 8. Model estimated levels of available biomass and the associated fishing exploitation rates in the Eastern Zone between 1978/79 and 2021/22. Note: available biomass is the model-estimated value from mid-November at the start of each fishing season.

2.4 Economic characteristics of the fishery

A key action of the Management Plan is to develop economic indicators for the fishery and to better understand the value to the State. This includes contributions from the commercial and recreational sectors.

Commercially, the two zones of the fishery operate on different economic scales. The smaller Eastern Zone fishery operates, in general, closer to the coastline and main ports. Operational costs are therefore somewhat less than those for the Western Zone where many fishers will use bigger boats, more pots and often travel further offshore.

Although TACCs have been reduced in the fishery, the average beach price steadily increased from the mid-2000's (Figure 9). The fishery has typically been able to remain profitable whilst undergoing adjustments to lower the TACCs to levels that better reflect the status of the stocks.

Trade sanctions introduced in 2020, however, restricted access to the primary export market in China resulting in significantly reduced beach prices. Recent economic pressures associated with the COVID pandemic have also increased operational costs limiting opportunity for profitable fishing. Further, as TACCs have reduced, the cost of licence/quota fees per kilogram have increased under the current cost recovery model. This suite of economic factors, coupled with decreasing catch rates and biomass, has resulted in under-catch of the TACC in the Eastern Zone in recent years.

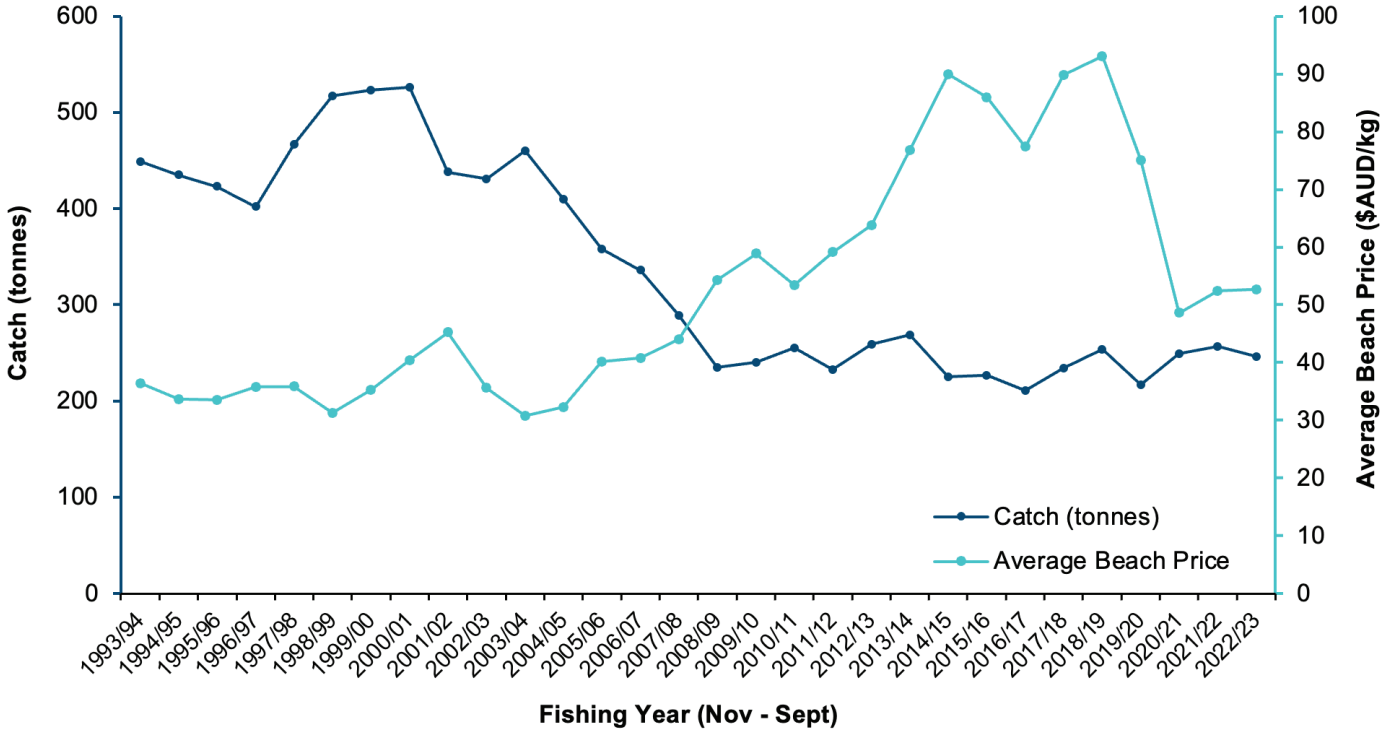


Figure 9. Changes in the average beach price and catch in the Western Zone from 1993/94 to 2022/23.

2.5 Catch history in the recreational fishery

Historically, the stock assessment process included a notional recreational catch share equivalent to five and ten percent of the commercial TACCs for the Western Zone and Eastern Zone, respectively. The 2017 management plan highlighted a lack of current data on the level of recreational catch to verify if the notional estimates were accurate. It further highlighted the absence of a direct measure of catch is a substantial impediment to understanding and managing for the total amount of rock lobster removed from the stock annually.

Consequently, on 1 July 2017, the VFA implemented mandatory catch reporting with the objective to obtain an estimate of the annual recreational catch. Further details on the recreational reporting program are available in section 5.

In the Eastern Zone, 3,875 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, 4,071 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 10). A summary of catch data and participation is provided below in Table 5.

Table 5: Annual recreational catch estimates and participation since the introduction of the recreational reporting program in 2017.

Factor	Participants	Weight Fished (kg)	Sex Fished	Length Fished (Carapace, cm)	Number Taken	Weight Taken (kg)	Weight Taken (% of TACC)
Program Average		Mean 1.8 East 2.0 West 1.7	Male 68.1% Female 31.9%	Mean 13.5 East 13.8 West 13.2	East 1978 West 2481	East 3693 West 3897	
2017/18	5092	Mean 1.7 East 1.8 West 1.6	Male 71.5% Female 28.5%	Mean 13.6 East 13.9 West 13.3	East 3857 West 4069	East 6940 West 6510	East 11.8% West 2.8%
2018/19	5586	Mean 1.9 East 2.0 West 1.7	Male 65% Female 35.0%	Mean 13.5 East 13.7 West 13.2	East 3107 West 3734	East 6202 West 6346	East 15.5% West 2.6%
2019/20	5712	Mean 1.9 East 2.1 West 1.7	Male 71.1% Female 28.9%	Mean 13.6 East 14.0 West 13.3	East 1840 West 2555	East 3864 West 4343	East 9.7% West 1.8%
2020/21	5516	Mean 1.9 East 2.1 West 1.7	Male 64.1% Female 35.9%	Mean 13.6 East 13.8 West 13.0	East 1573 West 2296	East 3303 West 3903	East 8.3% West 1.6%
2021/22	2819	Mean 1.9 East 2.1 West 1.7	NA	NA	East 546 West 1018	East 881 West 1,389	East 2.8% West 0.6%
2022/23	1523	Mean 1.9 East 2.1 West 1.7	Male 68.5% Female 31.5%	Mean 14.23 East 14.32 West 13.66	East 584 West 635	East 965 West 891	East 3.0% West 0.3%

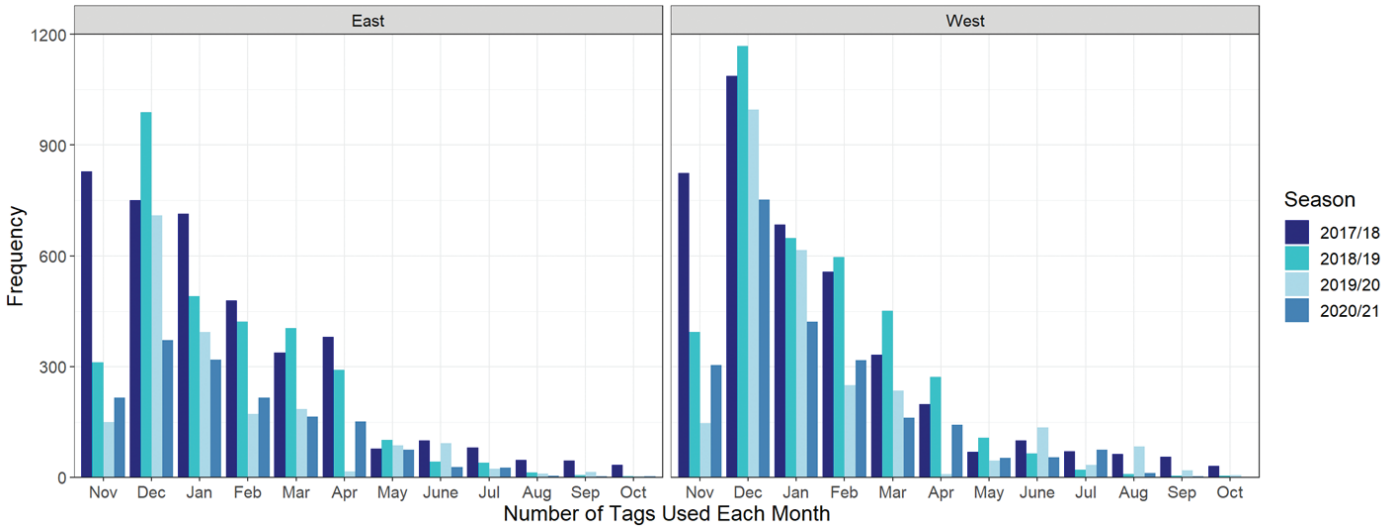


Figure 10. Number of tags used each month in the Eastern Zone (left) and Western Zone (right).

Note the reduced catch reported in April of Season 3 (2019/20) across both zones that corresponded to fishing closures because of covid-19 restrictions. Season 5 data has not been included due to anomalies in the dataset following transition to the GoFishVic smartphone app.

Due to the disruptions from bushfires, COVID, and the data collection challenges from the recent transition to digital reporting, the most recent season of data that is considered reliable is 2018/19, season[2].

[2] https://vfa.vic.gov.au/__data/assets/pdf_file/0008/907433/RLRAG-Minutes-Meeting-36.pdf

Western Zone

In the 2018/19 season, 6,346 kg were reported as caught and retained by recreational fishers in the Western Zone. Weight was calculated by multiplying the average citizen science weight in the Western Zone (1.7kg in 2018/19) by the total number of tags reported (3,734 tags in 2018/19). (This is equivalent to 2.6 percent of the TACC in 2021/22 quota year. Note the fishing season for the recreational reporting season has been reported as November – September).

For context, in the 2021/22 season, 1,018 lobsters were reported as caught and retained by recreational fishers in the Western Zone. Using a length-to-weight relationship (derived from 165,000 lobsters measured and weighed in fish processors from 1995 – 2017), the estimated mean weight was 1.47 kg and 0.97 kg for male and female lobsters, respectively. The estimated total weight of lobsters caught was 1,389 kg, equivalent to 0.6 percent of the TACC in 2021/22. This data was however, not considered reliable due to the transition to electronic reporting.

By applying the length-to-weight relationship (with the same average weights and sex ratio used for the WZ in 2021/22) to the reported catch for 2018/19, the estimated total weight landed was 5,070 kg, equivalent to 2 percent of the TACC in 2021/22 quota year.

Eastern Zone

In the 2018/19 season, 6,202 kg were reported as caught and retained by recreational fishers in the Eastern Zone. This is equivalent to 19.4 percent of the TACC in 2021/22. Weight was calculated by multiplying the average citizen science weight in the Eastern Zone (2.0kg in 2018/19) by the total number of tags reported (3,101 tags in 2018/19).

For context, in the 2021/22 season, 545 lobsters were reported as caught and retained by recreational fishers in the Eastern Zone. Using a length/weight relationship (derived from 165,000 lobsters measured and weighed in fish processors from 1995 – 2017), the estimated mean weight was 1.87 kg and 1.21 kg for male and female lobsters, respectively. The estimated total weight of lobsters caught was 881 kg, equivalent to 2.8 percent of the TACC in 2021/22, however not considered reliable due to transition to electronic reporting.

3 Framework for Managing the Fishery

3.1 Legislative and policy framework

3.1.1 Victorian legislation and regulation

The Rock Lobster Fishery is managed in accordance with the *Fisheries Act 1995*, the *Fisheries Regulations 2009* and the *Fisheries (Fees, Royalties and Levies) Regulations 2017*. The Fisheries Act provides the legislative framework for managing Victoria's fisheries resources and sets out the general provisions applicable to all recreational fishing activities and commercial access licences including the Rock Lobster Fishery Access Licence.

The objectives of the Fisheries Act are:

- To provide for the management, development and use of Victoria's fisheries, aquaculture industries and associated aquatic biological resources in an efficient, effective and ecologically sustainable manner;
- To protect and conserve fisheries resources, habitats and ecosystems including the maintenance of aquatic ecological processes and genetic diversity;
- To promote sustainable commercial fishing and viable aquaculture industries and quality recreational fishing opportunities for the benefit of present and future generations;
- To facilitate access to fisheries resources for commercial, recreational, traditional and non-consumptive uses;
- To promote the commercial fishing industry and to facilitate the rationalisation and restructuring of the industry; and
- To encourage the participation of resource users and the community in fisheries management.

The Fisheries Regulations 2019 provides the general detail regarding the activities authorised by a recreational fishery licence. It further provides specific detail regarding authorised activities and the obligations of the Rock Lobster Fishery Access Licence holder and persons acting on their behalf (there may be further conditions which will be expressed or referred to on the licence itself).

The Fisheries (Fees, Royalties and Levies) Regulations 2017 specify the fees and levies that recreational and commercial licence holders must pay to obtain a licence. This includes the levies for a recreational fishing licence and the commercial fishing licence levies that cover the costs of the services provided by the VFA to the commercial sector (more information on the VFA's commercial "cost recovery" framework is provided below). These regulations also specify the fees that must be paid to cover administrative costs associated with commercial licences, including transferring, renewing or variation fees, fees for transferring quota units (where applicable) and fees for boat registrations, renewals and transfers.

All Australian governments, including Victoria, have made a commitment to manage fisheries according to the principles of ecologically sustainable development. These principles include:

- Ensuring that fishing is carried out in a biologically and ecologically sustainable manner;
- Ensuring that there is equity within and between generations regarding the use of fish resources;
- Maximising economic and social benefits to the community from fisheries within the constraints of sustainable utilisation;
- Adopting a precautionary approach to management, particularly for fisheries with limited data; and
- Ensuring that the processes and procedures involved in management of a fishery are appropriate, transparent and inclusive.

Other key legislation and policy relevant to the Rock Lobster Fishery includes:

- *Victorian Fisheries Authority Act 2016*;
- The *Traditional Owner Settlement Act 2010*;
- *Aboriginal Heritage Act 2006*;
- *Environment Protection Act (Victoria) 1970*;
- *National Parks Act 1975*;
- *Historic Shipwreck Act 1976*;
- *Marine and Coastal Act (Victoria) 2018*;
- *Seafood Safety Act 2003*; and
- *Occupational Health and Safety Act 2004*.

Aboriginal rights in Victoria

Aboriginal Victorians currently have rights to access natural resources recognised under law. These include native title determination under the Commonwealth's *Native Title Act 1993* (NT Act), discussed in the Commonwealth Legislation section below.

Traditional Owner rights can also be recognised under Victoria's *Traditional Owner Settlement Act 2010* (TOS Act). Under the TOS Act, the State legally recognises Traditional Owner rights in public land and water and facilitates the exercise of Traditional Owner rights in relation to natural resources; participation in natural resource management; procedural rights on proposed activities on public land; and returns certain public land to Traditional Owners by grants of freehold and 'Aboriginal title' (for joint management). A TOS Act settlement can also provide resources to the Traditional Owner group to give effect to the settlement.

The VFA recognises the importance of Aboriginal Victorians' engagement in management of their country and fisheries resources and is committed to working with all Traditional Owner groups to strengthen this partnership.

Victoria also has in place a broad exemption from the requirement to obtain a Recreational Fishing Licence for any person who identifies as an Aboriginal person or a Torres Strait Islander, subject to compliance with existing recreational fishing rules that apply to recreational fishers in Victoria (e.g. bag limits, size limits, and spatial and temporal closures). This exemption applies to all Aboriginal Victorians, irrespective of whether they are a member of a group that has a native title determination under the NT Act or a settlement agreement under the TOS Act.

3.1.2 Victorian policies and frameworks

Cost Recovery Framework

The VFA delivers a range of compliance, management, research and administration services for the ongoing sustainable operation of Victoria's commercial fisheries (comprising wild-catch, aquaculture and fish receiver licences and individual quota holders). The costs of delivering these services are recouped via licence levies on a "cost recovery" basis, consistent with the Victorian Department of Treasury and Finance Cost Recovery Guidelines. Cost recovery is only in place for the commercial fisheries sector, although, recreational fishing licence fees collected by the VFA, on behalf of the Government, are held in a Trust Account in accordance with the Fisheries Act and invested back into recreational fishing.

Seismic Surveying Activity in Victorian Waters

Seismic surveying is commonly used in the earth resources sector to gain a better understanding of subsurface geology.

In line with legislated responsibilities, the VFA is committed to ensuring that, where possible, seismic surveys cause minimal disturbance to fisheries, fish habitat and the businesses and community accessing these resources in Victorian-managed waters. This is outlined in the VFA's policy, *Undertaking seismic surveys in Victorian managed waters* (VFA, 2017).

This policy is primarily intended to provide clarity about the role of the VFA in assisting either a proponent seeking approval to undertake seismic surveys in Victorian-managed waters, or a fisher operating in waters in which seismic surveying is planned to take place. It describes the fishing related matters and mitigation strategies to be considered by proponents when planning and implementing seismic surveys in commercially and recreationally fished waters.

For more information on the policy, refer to the publication on the VFA website.

Offshore Constitutional Arrangements

Under international law, Australia controls all economic resources, including fishing, mining and oil exploration, within its exclusive economic zone, which extends 200 nautical miles from the territorial sea baseline (normally the low water mark). The division of management arrangements between the Commonwealth and the States within the exclusive economic zone is an important constitutional issue.

Management of marine fishing outside of bays and inlets is divided between the Commonwealth and the States, in accordance with an agreement known as the "Offshore Constitutional Settlement Agreement" (OCS Agreement). The OCS Agreement gives rise to a general rule that Victorian fisheries laws apply from the territorial sea baseline out to three nautical miles and Commonwealth law applies between three nautical miles to 200 nautical miles. However, there are several exceptions to this rule, which are outlined in documents known as "OCS Arrangements". These documents utilise the OCS clause that jurisdictional arrangements can be varied by agreement in particular circumstances.

3.1.3 Commonwealth legislation

The Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Government and is Australia's key piece of environmental legislation.

The EPBC Act provides for the protection of the environment by identifying key threatening processes; protecting critical habitat; promoting the conservation of biodiversity; and providing for the protection of listed species, protected areas and communities in Commonwealth areas.

Part 13A of the EPBC Act also requires all fisheries intending to export product commercially to be assessed against the *Guidelines for the Ecologically Sustainable Management of Fisheries* to ensure that each fishery is being managed in an ecologically sustainable manner.

The Victorian Rock Lobster Fishery was first given export approval under the EPBC Act in March 2004. The approval has been successfully maintained, with periodic assessments every five years. In 2014, the Commonwealth Government extended the length of the export approval from five to ten years for any commercial fisheries assessed as posing low environmental risk. In August 2016, the Victorian Rock Lobster Fishery was granted export approval until 28 August 2026.

This management plan has been prepared in recognition of the Commonwealth's sustainability guidelines in order to assist the Victorian Rock Lobster industry to maintain access to export markets into the future.

Native Title Act 1993

The NT Act is administered by the Commonwealth Government and provides recognition and protection of native title amongst other objectives.

Victorian Traditional Owners currently have rights to access natural resources recognised under law. Members of Traditional Owner groups with a native title determination under the NT Act have non-exclusive rights to hunt, fish and gather natural resources for personal, communal and cultural purposes, without the need to obtain a licence.

3.2 Ecologically sustainable development risk assessment

An ecological risk assessment (ERA) was undertaken to inform the development of this management plan. The assessment method was based on the *National Ecologically Sustainable Development (ESD) Reporting Framework for Australian Fisheries* (Fletcher et al. 2002).

The framework was developed in response to the Australia's *National Strategy for Ecologically Sustainable Development* (Australian Government 1992), which defines ecologically sustainable development as: "using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased".

Development of the ERA involved input from the Rock Lobster Fishery Management Plan Review Steering Committee. Risks associated with the fishery were identified, then scored according to the potential consequence of that risk and the likelihood that the risk may occur. The risks were then categorised into risk ratings (low, moderate, high, extreme) to help prioritise the importance of each risk.

The Management Plan primarily focuses on outcomes that the VFA can directly manage. Matters that are not the direct responsibility of the VFA, such as climate change mitigation efforts, will be addressed through ongoing consultation with the appropriate agency. This may include, but is not limited to, the Department of Energy, Environment and Climate Change (DEECA), Parks Victoria, catchment management authorities, local councils, environment management bodies in other jurisdictions, conservation groups, representative bodies (Seafood Industry Victoria, VRFish etc.) and Traditional Owner groups.

Close to 70 risks were identified across eight components of the ESD framework (and its sub-components): retained species, non-retained species, impacts on ecosystem, community wellbeing, wider wellbeing (i.e. national), Aboriginal community wellbeing, governance, and external factors affecting this fishery. Table 6 summarises the issues identified as a high risk relevant to the Rock Lobster Fishery and which justify a management response or action for inclusion in this management plan.

Management responses to each of these risks (proposed and current) were developed in consultation with the Rock Lobster Fishery Management Plan Review Steering Committee. Table 7 (management strategies and actions) outlines the approaches to address the key risks.

Byproduct, bycatch and Threatened Endangered and Protected Species (TEPS)

The risk assessment for bycatch, byproduct and TEP species is based on findings from FRDC Project No. 2017-082 *(Leon et al., 2020)*.

The ERA did not identify any bycatch, byproduct or TEP species under high risk from the impacts of the operations of the Southern Rock Lobster Fisheries (SRLF). However, some species of bycatch in the SRLF are also target or bycatch species in other fisheries or may be exposed to other environmental impacts. Therefore, this may result in cumulative impacts.

Table 6: High priority issues identified in the ESD risk assessment process.

Risk (Issue)	Risk Rating
Biomass level not considered resilient to climate change implications including water temp, acidification, changing dynamics, species range extension)	High
Loss of kelp forests providing habitat in the Eastern Zone and Western Zone	High
Knowledge gaps - Incomplete understanding of the rock lobster fishery (spawning, recruitment, connectivity and growth rates) impacting the ability to effectively manage the fishery	High
Urchin barrens reducing lobster habitat availability in the Eastern Zone	High
Interaction with protected species	High
Impact of restricted market access on commercial industry as a whole: including market failure, supply chain failure and disruption of distribution networks	High
Market volatility impacting the viability of commercial fishers	High
Lack of third-party accreditation impacting market access for product	High
Loss of social licence for commercial fishers to operate within community	High
Impact of inter-sectoral allocation (i.e. TO allocation, recreational allocation)	High
Loss of/aging commercial work force increasing pressure on business operations and continuity	High
Mental health wellbeing of commercial fishers	High
Safety including work related injuries for commercial fishers	High

4 Objectives, Strategies and Actions

4.1 Fishery objectives and strategies

The objectives for this management plan build on those in previous plans. Actions have been developed for each of the strategies which address key risks identified through the ESD risk assessment process and these are detailed in Table 7. The intent is that the strategies, actions and outcomes from annual reviews inform the development of an annual work plan of specific and time bound activities. The annual work plan will be developed in consultation with stakeholders.

Objective 1: Ensure the sustainability of the rock lobster resource

- Strategy 1: Ensure reproductive capacity, biomass and recruitment capacity are sufficient to build and/or sustain the stocks into the future.
- Strategy 2: Ensure the harvest strategy and broader management arrangements effectively promote the sustainable use of the resource.
- Strategy 3: Collect sufficient data and information to inform a quantitative stock assessment and harvest strategy and support sound management of the resource for all users.
- Strategy 4: Ensure management arrangements effectively account for the impacts of climate change on the rock lobster resource and broader marine ecosystem.

Objective 2: Optimise community benefit of the rock lobster resource

- Strategy 5: Rebuild the stock biomass with specified rebuilding targets and timeframes.
- Strategy 6: Ensure equitable resource sharing decisions that consider the whole Victorian community.
- Strategy 7: Ensure management arrangements facilitate a profitable and viable commercial fishery, within the constraints of ecological sustainability.
- Strategy 8: Optimise cultural, recreational and lifestyle benefits of fishing for those who participate in utilising the resource within the constraints of ecological sustainability.

Objective 3: Ensure best practice cost-effective and participatory management

- Strategy 9: Ensure meaningful stakeholder participation in decision-making.
- Strategy 10: Ensure collaborative management with other agencies and jurisdictions around fishery issues.
- Strategy 11: Deliver best practice fishery management arrangements.
- Strategy 12: Implement appropriate legislation and maintain compliance with legislation utilising technology in a cost-effective manner.
- Strategy 13: Maintain transparent and open budgeting and financial reports.

Objective 4: Sustain the ecological integrity of the fishery ecosystem

- Strategy 14: Ensure that management supports the sustainability of bycatch, bait and
- by-product species.
- Strategy 15: Monitor and minimise interactions with threatened, endangered and protected species.
- Strategy 16: Maintain the integrity of the marine ecosystem and minimise the impact on habitats.
- Strategy 17: Monitor environmental change and evaluate management implications to sustain the integrity of the ecosystem.

Objective 5: Enhance community trust, respect and value of the fishery

- Strategy 18: Actively build the profile of the fishery to increase awareness of community value and quality of product.

4.2 Actions

Table 7: Fishery level objectives, strategies and actions for the Rock Lobster Fishery.

Objective	Strategy	Actions
Objective 1: Ensure the sustainability of the rock lobster resource	1. Ensure reproductive capacity, biomass and recruitment capacity are sufficient to build and/or sustain the stocks into the future.	1 (i) Set the TACCs (and commercial and recreational input controls) in accordance with scientific recommendation from the RLRAG.
		1 (ii) Ensure the fishery is managed in accordance with the principles of ecologically sustainable development and the precautionary principle.
		1 (iii) Monitor the effectiveness of the Harvest Strategy through identifying areas for improvement each year and undertaking a comprehensive review every 5 years.
	2. Ensure the harvest strategy and broader management arrangements effectively promote the sustainable use of the resource.	2(i) Annually assess the effectiveness of management arrangements and add actions to the annual work plan as necessary.
		2 (ii) Ensure input and output controls are effective in achieving the sustainable use of the rock lobster resource.
		2 (iii) RLMAC to develop a soak time restriction in the Eastern Zone through a Fisheries Notice and similar measures to be reflected in the Western Zone with industry Code of Practice.
	3.Collect sufficient data and information to inform a quantitative stock assessment and harvest strategy and support sound management of the resource for all users.	3 (i) Continue to improve commercial data recording technology and systems
		3 (ii) Assess the fishery using quantitative stock assessment techniques
		3 (iii) Maintain and improve fishery-independent monitoring programs (including tagging to inform improved understanding of growth rates)
		3 (iv) Harmonise reporting across the southern rock lobster stock and work with States to improve the efficiency of data collection and methods of stock assessment.
		3 (v) Continue to cost effectively develop, maintain and improve the methods to measure the fishing effort and catch taken by the recreational fishing and Traditional Owner sectors
		3 (vi) Undertake targeted catch surveys with coastal Traditional Owner Groups following a positive determination under the *Native Title Act 1993* or an NRA under the TOS Act.
		3 (vii) Continue to review all economic data in making informed management decisions.
	4. Ensure management arrangements effectively account for the impacts of climate change on the rock lobster resource and broader marine ecosystem.	4 (i) Monitor long terms changes in rock lobster productivity such as growth and recruitment.
		4 (ii) Ensure the harvest strategy, assessment methods and recreational management are robust to climate change.
		4 (iii) Apply the precautionary principle to management decisions in the context of climate change.
		4 (iv) Monitor and consider climate change research impacting the broader ecosystem of Southeast Australia.

Objective	Strategy	Actions
Objective 2: Optimise community benefit of the rock lobster resource	5. Rebuild the stock biomass with specified rebuilding targets and timelines.	5 (i) Monitor and assess management measures to ensure biomass trajectory is in line with Harvest Strategy target.
		5 (ii) Monitor rock lobster population dynamics and the broader marine ecosystem to detect possible regime shifts and consider these when reviewing management arrangements to achieve rebuilding targets.
	6. Ensure equitable resource sharing decisions that consider the whole Victorian community.	6 (i) Review existing notional and actual cross-sector allocations and formally determine sectoral allocations.
		6 (ii) Establish management strategies for the commercial and recreational sectors to constrain catches within sectoral allocations.
		6 (iii) Engage with traditional owner groups with established Natural Resource Agreement's under the Traditional Owner Settlement Act to better understand cultural resource requirements and sharing implications
		6 (iv) Maintain recreational allocation in line with achieving rebuild targets under the harvest strategy.
		6 (v) Maximise flow of benefits across sectoral allocations from the fishery to the Victorian community.
		6 (vi) Pursue opportunities and align with processes occurring at broader Government levels that seek to provide commercial access to indigenous people.
		6 (vii) Develop a set of objectives to measure community benefit (e.g. Gross State Product, employment, recreational access etc).
		6 (vii) Develop a clear VFA ITQ policy relevant to the commercial sector and ensure that management arrangements in the Victorian Rock Lobster Fishery (VRLF) reflects this direction. The VFA ITQ policy should provide direction on number of vessels, profitability, operating size, shifting demographics, efficiency and the reallocation of the resource between commercial, recreational and Traditional Owner sectors.
	7. Ensure management arrangements facilitate a profitable and viable commercial fishery, within the constraints of ecological sustainability.	7 (i) Determine management arrangements in line with the harvest strategy rebuild target that also consider the profitability and viability of the fishery.
		7 (ii) Improve the collection of economic information to assist in making informed management decisions.
		7 (iii) Develop a set of economic indicators for the fishery.
		7(iv) Provide explicit flexible management arrangements that allow commercial fishers to be economically efficient whilst ensuring stock rebuilding and sustainability.
		7 (v) Continue communication between the VFA and other jurisdictions when considering management changes to facilitate profitability of the VRLF.
		7 (vi) Separate Eastern and Southern Rock Lobster Quota to facilitate industry growth and increase profitability through retention as valuable by-product.

Objective	Strategy	Actions
Objective 2: Optimise community benefit of the rock lobster resource	8. Optimise cultural, recreational and lifestyle benefits of fishing for those who participate in utilising the resource within the constraints of ecological sustainability.	8 (i) Maintain appropriate recreational size, bag and possession limits.
		8 (ii) Ensure that social and cultural issues are considered when any new management strategies are developed.
		8 (iii) Understand the value of rock lobster fishing to the Victorian community.
		8 (iv) Consider mental health and workplace injury risks associated with proposed management changes to the commercial sector.
		8 (v) Pursue opportunities to facilitate Traditional Owner involvement in on-country works relevant to the management of rock lobster (e.g. survey works and habitat management).
Objective 3: Ensure best practice cost-effective and participatory management	9. Ensure meaningful stakeholder participation in decision-making.	9 (i) Ensure effective and timely consultation undertaken by the VFA.
		9 (ii) Ensure transparent decision-making processes by Government and fisheries management advisory bodies including the VFA.
		9 (iii) Ensure minutes are publicly available on the VFA webpage.
		9 (iv) Pursue opportunities to improve Aboriginal Victorian input into rock lobster management planning and decisions making.
	10. Ensure collaborative management with other agencies and jurisdictions around fishery issues.	10 (i) Ensure Stakeholders from all sectors are adequately represented on the rock lobster fishery management advisory group.
		10 (ii) Ensure Victorian Rock Lobster Fishery information and interests are considered in the decision-making processes of other agencies.
		10 (iii) Ensure adequate collaboration is undertaken with other jurisdictions to ensure overall best practice management decisions are made for the rock lobster resource.
		10 (iv) Ensure adequate consultation with NSW Department of Primary Industries in determining Eastern Rock Lobster quota allocation.
	11. Deliver best practice fishery management arrangements.	11 (i) Industry to develop, implement and conform to a code of conduct.
		11 (ii) Form a Management Advisory Committee (MAC), within 12 months of implementing this management plan, to recommend best practice management.
		11 (iii) Evaluate management arrangements against recognised standards.
	12. Implement appropriate legislation and maintain compliance with legislation utilising technology in a cost-effective manner.	12 (i) Develop annual compliance strategies that incorporate a compliance risk assessment.
		12 (ii) Develop annual compliance report and present to stakeholders.

Objective	Strategy	Actions
Objective 3: Ensure best practice cost-effective and participatory management	13. Maintain transparent and open budgeting and financial reports.	13 (i) Ensure licence fees recovered from commercial licence holders are used in accordance with the Government's cost recovery policy.
		13 (ii) Ensure management arrangements are effective at achieving management objectives whilst minimising costs.
		13 (iii) Ensure that a clear breakdown of fees and levies is provided to licence holders at licence renewal time including total expenditure against the VFA provision of services.
		13 (iv) MAC to undertake annual review of cost recovery program and provide input into VFA review of alternative cost recovery models.
Objective 4: Sustain the ecological integrity of the fishery ecosystem	14. Ensure that management supports the sustainability of bycatch, bait and by-product species.	14 (i) Regularly (at least every 5 years) conduct ecological risk assessment.
		14 (ii) Maintain fishery-independent surveys to collect information on levels of bycatch and by-product including bait species.
		14 (iii) Manage the harvest of key by-product species to ensure that all risks to the species are acceptable.
		14 (iv) Implement a by-catch and discard workplan.
	15. Monitor and minimise interactions with threatened, endangered and protected species.	15 (i) Ensure commercial data recording systems capture fishing interactions with threatened, endangered and protected species and that risks to these species are acceptable.
		15 (ii) Ensure management arrangements are reflective of best practice fisheries management to mitigate whale entanglement.
	16. Maintain the integrity of the marine ecosystem and minimise the impact on habitats.	16 (i) Develop a program to assess changes in risks to habitat.
		16 (ii) Manage the distribution of fishing effort to ensure that risks to the habitat are acceptable.
		16 (iii) Manage the catch to ensure that risks to the ecosystem are acceptable.
		16 (iv) Consider the role of lobsters in assisting management of urchin barrens.
	17. Monitor environmental change and evaluate management implications to sustain integrity of the ecosystem.	17 (i) Consider *Centrostephanus* change in abundance and range. This includes being actively engaged in the review of the Victorian Sea Urchin Management Plan.
Objective 5: Enhance community trust, respect and value of the fishery	18. Actively build the profile of the fishery to increase awareness of community value and quality of product.	18 (i) SIV, VRFish and VFA to promote all aspects of the fishery through social media, fishing festivals and public education.
		18 (ii) Implementing targets under the harvest strategy in line with internationally recognised standards amongst consumer markets.
		18 (iii) Consider legislative barriers to preventing tourism services.
		18 (iv) Align with the SRL strategic direction to diversify consumer markets.
		18 (v) Implement measures to better understand Aboriginal cultural fishing practices relevant to rock lobster and inform the community of these practices.

5 Managing the Rock Lobster Fishery

5.1 Recreational fishing management arrangements

Management arrangements for the recreational catch of rock lobsters are established in the regulations which are subordinate to the Fisheries Act. Unlike the commercial fishery, there are no regulated zones. Recreational fishers are allowed to fish for rock lobster in all areas other than the intertidal area in Port Phillip Bay and fishing exclusion areas, such as marine parks and sanctuaries. Fishers are only required to hold a recreational fishing licence, unless exempt, which are not limited in number. Most recreational catch of rock lobsters occurs in water less than 20 metres deep and in coastal waters that are easily accessible from shore.

5.1.1 Licences

Unless a recreational fisher is exempt, a Recreational Fishing Licence is required to take rock lobsters from marine waters in Victoria. Recreational licences in Victoria are non-specific so there is no specific recreational rock lobster entitlement.

5.1.2 Management controls

The recreational fishery is managed using daily bag and possession limits, closed seasons, size limits, marking and reporting requirements, and gear restrictions.

Current Limits

- **Daily bag limit:** 2 rock lobsters
- **Possession limit:** 4 rock lobsters ('possession' refers to the number of rock lobster in a person's possession in, on or adjacent to Victorian waters).
- **Size limit:** the legal minimum length is 110 millimetres for male rock lobsters and 105 millimetres for female rock lobsters. The length is determined by the length of the carapace, which is measured from the front edge of the groove between the large antennae to the nearest part of the rear edge of the carapace. Divers are required to measure rock lobster underwater prior to placing them in their catch bags.

Marking of rock lobsters

All rock lobster taken by recreational fishers must be tail-clipped or tail-punched with a hole not less than 10 millimetres in diameter. This must be done within five minutes of bringing rock lobster onto a boat or, if taken from the shore, within five minutes of landing and within 50 metres of the place of landing.

Fishing methods

Rock lobsters can be collected by hand (SCUBA, snorkel and hookah are permitted) or with hoop nets. No more than two hoop nets are allowed per person.

A hoop net is a cylindrical net open at the top, consisting of one or two hoops not exceeding 77 centimetres in diameter and with a drop of up to 50 centimetres. Hoop nets must have a label, which remains above the surface of the water, displaying the recreational fisher's full name and place of residence.

Consistent with the rock lobster closed season, from 15 September to 15 November, hoop nets cannot be used, set or immersed in any marine waters other than Port Phillip Bay, Western Port, Gippsland Lakes or in any inlet.

Closed seasons

The closed season for female rock lobsters is from 1 June to 15 November. The purpose is to protect females in berry (i.e. with eggs attached) during the spawning period. The take or possession of soft-shelled rock lobster or female rock lobster in berry, or the removal of eggs, spawn, setae or fibres from females, is prohibited in Victoria.

Fishing for male rock lobsters is prohibited between 15 September to 15 November to protect males during the moulting period when soft shells increase their vulnerability.

The recreational closed season and restrictions correspond with the commercial fishery.

Catch estimation – Recreational Rock Lobster Reporting Program

Historically, the stock assessment process included a notional recreational catch share equivalent to five and ten percent of the commercial TACCs for the Western Zone and Eastern Zone, respectively. The 2017 management plan highlighted a lack of current data on the level of recreational catch to verify if the notional estimates were accurate, and the absence of a direct measure of catch being a substantial impediment to understanding and managing for the total amount of rock lobster removed from the stock annually.

Consequently, on 1 July 2017, the VFA implemented a three-year pilot program requiring all recreational fishers to tag the lobsters they caught and kept, and report the use of tags. The objective of the program was 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 to ascertain whether the actual catch is in line with the recreational catch assumed in the assessment process.

Following the success of the trial, the Minister committed to transitioning the trial to an ongoing program. This has resulted in the annual collection of recreational catch data feeding into annual stock assessments, rather than relying on notional assumptions.

During 2021, the VFA worked closely with the Institute of Marine and Antarctic Studies (IMAS) under the Fisheries Research and Development Corporation (FRDC) project 2019-075, and a dedicated Rock Lobster Tagging Program Steering Committee to undertake a thorough review of the program. Based on the recommendations from this work, phase two of the rock lobster reporting program was launched in November 2021.

Phase two of the rock lobster reporting program utilises a smartphone app from the Victorian Fisheries Authority that revolutionises the collection of recreational fishing information.

This app streamlines the process for reporting rock lobster catches by adopting digital reporting. This reduced the plastic footprint by removing the need for fishers to order, possess and affix plastic tags to rock lobsters.

The key principles and concepts of the program are detailed in Appendix 1. The main concepts are:

- **Plastic tags have been replaced with digital reporting.**
  Fishers are no longer required to order, possess and attach plastic tags to rock lobster. Rather, catch details must be reported via the app or web platform.
- **Reporting catch is mandatory.**
  All recreational fishers, regardless of whether they are exempt from the requirement to hold a Victorian Recreational Fisheries Licence (RFL), are required to report their catch via the app platform. Allowances for families with children under the age of 18 and under the supervision of an adult have been included.
- **Fishers need to register intent to be active before rock lobster fishing each season.**
  Fishers are required to register the intent to be active for each season via the App or web platform prior to targeting rock lobster. Registering intent unlocks the ability to digitally report rock lobster catch during the season. Registering intent to be active for a fishing season helps to measure the level of participation in the fishery and review how participation fluctuates from year to year.
- **All recreationally caught rock lobster must be reported within 7 days of capture.**
  Recreational fishers are required to provide data on their catch including the date fished, the sex of each lobster, the location (east or west of Apollo Bay, which aligns with the commercial fishing zones) and the carapace length.
- **The program is free and entirely digital**
  Recreational fishers are required to create an online account through which they report catch.

The concepts and requirements of the program will be reviewed at the end of each season to identify opportunities for improvement. The data collected will be used to enhance the accuracy of the annual stock assessment analyses.

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5.2 Commercial fishery management arrangements

As with the recreational fishery, management arrangements for the commercial fishery are established in the Fisheries Regulations, which are subordinate to the Fisheries Act.

5.2.1 Rights and entitlements

Rock lobster fishing entitlements are based on the legal ownership of a Rock Lobster Fishery Access Licence and the licence provides access to the fishery. Within each zone, access licences are fully transferrable and the quota units and pot entitlements on access licences are separate and independently tradeable commodities.

The fishery is a limited-entry fishery. No additional licences will be issued in either zone of the fishery and licences will not be replaced when cancelled by a court or removed from the fishery through mechanisms such as restructure or non-renewal.

Rock Lobster Fishery Access Licences are issued for one year and must be renewed prior to expiry in order for the licence holder to commence fishing at the start of a new quota period. Licence holders will not receive a quota notice for a new quota period until their licence is renewed.

5.2.2 Management controls

The commercial fishery has been managed as a separate and limited-entry fishery since 1968. During 2001, the fishery moved to output controls in the form of quota management, involving an annual TACC and individual transferrable quotas. This changed the emphasis from restricting fishing effort to allocating and limiting the catch. A number of input controls were retained: licence conditions, total number of pots per zone and per boat, legal minimum length, and closed seasons.

Individual transferrable quota and total allowable commercial catch

The primary catch control tool for the Rock Lobster Fishery is individual quotas. The quota units are attached to Rock Lobster Fishery Access Licences and each licenced commercial fisher is annually assigned a proportion of the TACC through the individual transferable quota units.

Individual quota units are tradable and a licence holder may apply to transfer the quota units to the holder of another Rock Lobster Fishery Access Licence within the same zone. Individual transferable quota units may be transferred permanently or for a quota period.

Each fishing zone has a total number of individual transferable quota units. The number of quota units was established when the quota management system was introduced and quota units allocated through an Initial Quota Order. There are 1,000 quota units in the Eastern Zone. As a result of a structural adjustment program implemented in the Western Zone in 2009, 366.52 quota units were permanently removed from that zone. The Initial Quota Order for the Western Zone was therefore amended from 4,000 quota units to 3,633.48 quota units (refer to Table 2).

It is a requirement that a minimum amount of quota be attached to a licence before it may be used. The minimum amounts of quota are ten units in the Western Zone and five units in the Eastern Zone. There is no maximum number of quota units that can be attached to a licence in either zone. The VFA cannot approve the permanent transfer of quota units from a licence if following that transfer the licence would have less than the minimum (5 units in the Eastern Zone, 10 units in the Western Zone) remaining on it. However, it is not specified that the units remaining against a licence must be permanent. Licences may be transferred without quota but cannot be operated until the required minimum quota units are attached. The VFA may approve the permanent transfer of all the quota units from a licence if the licence is then surrendered in accordance with the regulations.

Once the annual TACC is determined, it is divided by the number of quota units in the zone, which results in a kilogram value for each unit. A quota notice is then issued by the Minister or delegate to each access licence holder stating the TACC for each zone, the kilogram value of a quota unit in each zone and the period for which the quota notice applies (refer to Sections 6.2. and 7 for more detail on the TACC-setting process).

The TACC setting currently includes both southern and eastern rock lobster species. The catch is predominantly Southern Rock Lobster but small amounts of Eastern Rock Lobster (*S. verreauxi*) are landed.

Catches of each species must be recorded separately in the Vic eCatch system. This management plan includes an action to separate Eastern and Southern Rock Lobster under the TACC. Previously, if the annual catch of Eastern Rock Lobster exceeded one tonne, a management review would have been triggered and controls to manage the fishery introduced if necessary. However, this management trigger was never realised as fishers largely returned Eastern Rock Lobster to the water in preference for landing the more valuable Southern Rock Lobster. New arrangements will be put in place under this management plan to provide increased opportunity for targeting Eastern Rock Lobster and industry growth in the far east of the State, whilst providing for retention of valuable by-product across the remainder of Victoria.

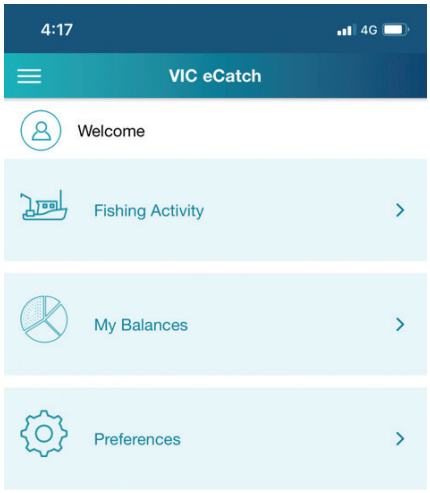
Quota management system

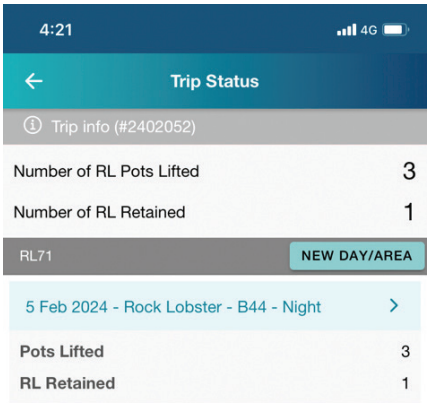
The number of individual transferable quota units assigned to a Rock Lobster Fishery Access Licence is known and tracked through the Quota Management System. As rock lobsters are caught, the weight of the catch is subtracted from the quota balance assigned to the Rock Lobster Fishery Access Licence. When the entire quota assigned to a licence has been caught, the holder must either acquire more quota units or cease fishing for the remainder of the quota period.

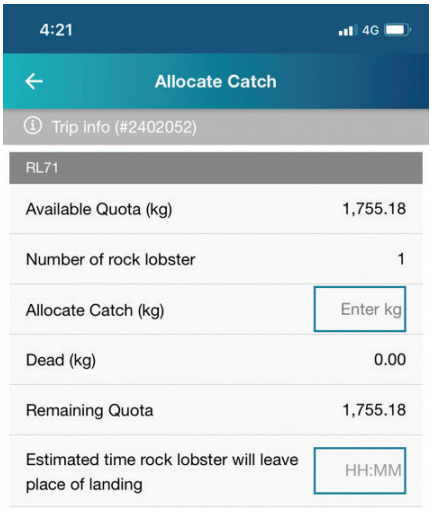
Vic eCatch

The requirement to report daily has been in place since 1978. Logbooks containing all catch and effort information were submitted monthly until June 2020, after which they were replaced by electronic reporting via Vic eCatch. Fishers record the number of rock lobsters caught in their daily catch record via the Vic eCatch system. The Vic eCatch report must be made within the regulated minimum time prior to the vessel entering any of the ports or mooring areas at which rock lobster can be landed in Victoria. The daily catch report and allocation of quota must be completed within 60 minutes of arriving at the place of landing and before product leaves the place of landing.

Rock lobsters sold or taken from the place of landing must be recorded in catch disposal records which must be completed before selling or giving product to another person. Catches, boats and required reporting documentation are inspected regularly by Fisheries Officers.







Vessel Monitoring Systems (VMS)

VMS is required on vessels operating in the Victorian rock lobster fishery. VMS devices are used for the purpose of providing the VFA with information on vessel position, bearing and speed. Individual's information collected is used for compliance and fisheries management purposes and is shared only with external agencies under strict conditions and in accordance with the *Fisheries Act 1995*.

Cross-jurisdictional management arrangements

Rock lobster catches from Victorian waters may be landed in Port MacDonnell, South Australia and Eden, New South Wales. Licence holders must apply each year for a condition to allow for interstate landings to be added to their licence.

Licence conditions

Licence holders may apply to vary the conditions relating to the operators, boat and pot entitlements on a Rock Lobster Fishery Access Licence. No more than two operators can be named on a licence and either person may operate the licence. However, no more than one operator can actively fish under the licence at any one time. The same boat may be specified on multiple access licences in the same zone but not different zones. This allows multiple licences to be operated from one boat.

Pots, pot entitlements and limits

In the commercial fishery, rock lobsters can only be harvested using pots. Pot design and size is specified in the *Fisheries Regulations 2019*. Pots must have only one entrance, one chamber and at least one escape gap of a regulated size.

Pots may be transferred permanently, or for one licensing period, between Rock Lobster Fishery Access Licences within a zone.

The overall number of pots in the fishery is limited to 5,162 in the Western Zone and 2,073 in the Eastern Zone. No more than 140 pots in the Western Zone and 120 pots in the Eastern Zone can be fished from a commercial rock lobster fishing boat at any one time.

Licence holders must have a minimum of 15 and 20 pots to operate in the Eastern Zone and the Western Zone, respectively. A licence holder can own quota without pots but cannot operate in the fishery unless these minimum requirements are met.

Size limits

The legal minimum length and the method of determining the length is the same in the commercial and recreational sectors. That is, the legal minimum length for male rock lobsters is 110 millimetres and for females is 105 millimetres. The length of a rock lobster is determined by the carapace length, which is measured from the front edge of the groove between the animal's large antennae to the nearest part of the rear edge of its carapace.

Due to differences in size at the onset of sexual maturity and growth rates of male and female rock lobsters, the legal minimum length may be reviewed as part of the TACC-setting process to manage available and spawning biomass in each zone.

Closed seasons

The commercial fishing season is consistent with the recreational fishing season. Fishing for rock lobsteris prohibited during closed seasons and no soft-shelled rock lobster can be taken at any time.

The closed season for female rock lobsters is from 1 June to 15 November inclusive. This protects females with eggs attached during the spawning period. The removal of eggs, spawn, setae or fibres from females are prohibited.

The closed season for male rock lobster is from 15 September to 15 November inclusive and protects males during the moulting period when soft shells increase their vulnerability.

Fisheries regulations are in place to manage the environmental risks associated with leaving rock lobster pots unattended during closed seasons (i.e. holding ground). Under the Fisheries Regulations, holders of Rock Lobster Fishery Access Licence must not, during the closed season for male rock lobster, use any rock lobster pot or leave or have any rock lobster pot immersed or set in Victorian waters.

Coffs and wet wells

A coff is a sea cage used to store rock lobster alive. A wet well is a water-filled chamber on board a rock lobster fishing boat used to store rock lobster alive. Rock Lobster Fishery Access Licence holders may continue to use coffs and wet wells. Licence holders are entitled to three coffs per licence. Additional coffs can be requested through application to the VFA and an assessment of the particular circumstances will be conducted. The movement of rock lobster into and out of coffs and wet wells in managed through Vic eCatch.

Reporting of rock lobster mortality in coffs and wet wells is mandatory to assist in quantifying mortalities. Deaths in coffs and wet wells are recorded in Vic eCatch. Quota is automatically deducted when the death of 10 or more lobster are reported during an unload. The auto-calculated deduction is based on a seasonal average weight for each zone.

6 Monitoring and Assessment

A vital component in the management of the Rock Lobster Fishery is the collection and analysis of data. The Rock Lobster Fishery has a comprehensive data collection program that informs the annual stock assessment and is used in setting the TACC and directing management decisions.

The data collection program incorporates a range of fishery-dependent and fishery-independent data.

6.1 Data collection

6.1.1 Fishery-dependent data

Commercial catch and effort data

The requirement for fishers to report daily has been in place since 1978. Logbooks were submitted monthly until June 2020, after which they were replaced by electronic reporting. The information currently recorded includes:

- Fishing location;
- The minimum and maximum depths of pot set;
- Number of pots lifted;
- Number and weight of rock lobsters caught;
- Number of undersize rock lobsters;
- Number of females in berry;
- Number and weight of octopus caught;
- Number of dead rock lobsters; and
- Weight of other species caught as bycatch or by-product.

The commercial catch and effort data contributes to a significant proportion of the stock assessment modelling and analysis. The standardised catch per unit effort (CPUE) of legal-sized rock lobsters is the primary determinant of the annual TACC and underpins the stock assessment.

Voluntary pot sampling

A small number of fishers currently measure catch from three specially marked pots each day. This data supplements the data collected by on-board observers and has the potential to greatly improve the spatial and temporal coverage of data collected across the fishery, provided sufficient participation.

Wildlife interaction data

It is a requirement under the EPBC Act to report all interactions with threatened, endangered and protected species. This requirement has been incorporated into the electronic reporting app, Vic-eCatch.

Recreational catch and effort data

Data from the recreational reporting program will be used to estimate the recreational proportion of rock lobster harvest. This data has replaced the existing notional assumption of recreational catch that fed into the Rock Lobster Stock Assessment model, therefore improving the accuracy of annual biomass estimates and modelled future fishery trajectories.

Traditional Owner data

Targeted catch surveys with coastal Traditional Owner Groups will be undertaken annually. The catch surveys will be used in conjunction with recreational and commercial catch data to measure total annual mortality and manage progress against defined rebuilding targets.

6.1.2 Fishery-independent data

There are currently three sources of fishery-independent data collected in the fishery.

i. On-board observer sampling

The on-board sampling program has been operating since 2004. Data is collected at sea, including the length, sex, colour, shell hardness and reproductive condition of rock lobsters, and the length and number of bycatch species. There is a commitment to maintaining approximately 80 observer days in the Western Zone and 60 observer days in the Eastern Zone, annually, to provide robustness to the data.

ii. Fixed-site surveys

Fixed-site surveys have been conducted on an annual basis in the Western Zone since 2002 and in the Eastern Zone since 1996. The data set is considered one of the most comprehensive throughout the south-east Australian rock lobster fisheries. The surveys are conducted at the same times and sites each year, with eight sites in the Western Zone and three sites in the Eastern Zone. The escape gaps of the pots are closed to retain a higher number of undersize rock lobsters. This is important since the number of undersize animals is an indicator of the potential recruitment to the fishery, one to three years into the future.

Commercial rock lobster fishers are contracted on an annual basis to provide their expertise and fishing vessels for the survey. A VFA observer is present to record data including length, sex, colour, shell hardness and reproductive condition of rock lobsters, and the length and number of all bycatch species.

Undersize lobsters are tagged as part of the tag and recapture program, under which 2,500 to 7,000 lobsters are tagged each year. When recaptured, the tagging data provides important information on the growth and movement of rock lobsters. Approximately 12 to 14 percent of tags have been returned, mostly by commercial fishers.

iii. Puerulus collection

A program to monitor the settlement of puerulus (final larval stage of rock lobster) began in 1994. Crevice collectors attached to concrete bases and supported just above the sea floor were serviced monthly by divers. The exposed nature of the Victorian coastline meant that all but a few locations were suitable. The harbour in Apollo Bay is the only site currently being monitored. Trial of a new style of collector, by a local community group in Apollo Bay, commenced in 2021. It consists of plastic baskets suspended from ropes attached to floating pontoons in the harbour. A major benefit of the baskets is that they can be hauled to the surface for servicing without the need for divers. The basket collectors are working well and have now replaced the original crevice collectors.

iv. Marine Park Monitoring

The VFA will continue to work with Parks Victoria to improve the robustness of surveys within and adjacent to Marine Parks including greater frequency and funding from external revenue streams. The VFA will actively pursue external revenue streams to boost the current Fixed site survey program and MPA monitoring.

6.2 Stock assessment

The status of the rock lobster resource in Victoria is reviewed annually and published in a Stock Assessment Report. The data collected in the fishery is designed to inform a fully quantitative length-structured population model that estimates the current status of the fishery in each zone (Hobday et al. 2005). Inputs into the assessment include catch and effort data, as well as the likely future status through analysis of trends in puerulus, pre-recruits and recruits. This assessment uses data and biological information such as growth and reproductive characteristics to provide estimates of the current stock biomass.

Currently, data is assessed to the end of the 'fishing year', which runs from 16 November to the following 14 September, inclusive.

6.2.1 Catch rate standardisation and modelling

The stock assessment model uses standardised CPUE. Prior to standardisation, the data are filtered to ensure that only data from fishers contributing logbook returns in more than two separate fishing years and contributing 200 or more records are included in the CPUE standardisation.

CPUE standardisation

After filtering, the CPUE is standardised for each zone separately by adjusting for differences among the regions, depth ranges, fishing seasons, months, fishers and vessels.

For the standardisation, the regions are Portland, Warrnambool and Apollo Bay in the Western Zone, and Queenscliff, San Remo and Lakes Entrance in the Eastern Zone.; and the fishing depth ranges are <40 m and ≥40 m. The model uses the interactions between region and year to create yearly estimates of standardised CPUE by region (Walker et al. 2012, Linnane et al. 2015).

Modelling

The model is fitted simultaneously to several data sets: monthly standardised CPUE, expressed as kilograms per pot lift; monthly mass and number of rock lobsters landed; and length-frequency distribution of the catch observed at-sea above and below legal minimum length (Walker et al. 2012).

Marine Protected Areas are accounted for in the model (eight percent in the Western Zone and 16 percent in the Eastern Zone) and levels of recreational catch are determined through the recreational reporting program.

The model estimates two stock performance indicators: 'egg production' and 'available biomass'. Egg production is a measure of the number of eggs produced by mature female rock lobsters. Available biomass is a measure of the stock biomass of rock lobsters that can be legally caught.

The model infers change and absolute levels of stock abundance. It estimates levels of recruitment to the fishery by combining changes in mean size and size distribution of the catch from length-frequency data, and on changes in CPUE (Linnane et al. 2015).

6.2.2 Stock assessment and reporting

The results of the modelling, combined with summarised fishery data, comprise the annual stock assessment for the fishery. The results of the assessment are used to set the TACC for the upcoming season.

Data is collected across the range of life stages of rock lobster and long-term trends are analysed as a way of strengthening the understanding of the current status of the fishery and likely future scenarios. Trends in the following are considered throughout the stock assessment process:

- Catch and fishing effort;
- Nominal and standardised CPUE;
- Egg production;
- Puerulus settlement;
- Pre-recruitment (to 60 mm carapace length);
- Numbers of undersize (approx. 80 mm carapace length up to just under legal minimum length);
- Available biomass; and
- Exploitation rate.

The results of the analysis are presented in the annual Stock Assessment Report, which is publicly available and provided to stakeholders. The report provides an evaluation of the fishery and an interpretation of the stock assessment results against the management objectives for the fishery, the stock performance indicators and reference points. The report also provides the information needed to set the TACC for the following season in accordance with the decision rules in the harvest strategy of this management plan (refer to Section 7).

6.2.3 TACC-setting process

Upon completion of the Stock Assessment Report, the VFA will coordinate a meeting of the Rock Lobster and Giant Crab Resource Assessment Group (RLRAG) to analyse and discuss the results. The RLRAG is an expertise-based committee comprising representatives from the commercial, recreational, scientific and management sectors. The role of the RLRAG is to provide advice and recommendations to the VFA on the status of the fishery.

The RLRAG assesses the stock assessment results and provides a recommendation on the outcomes and the application of the harvest strategy. The Stock Assessment Report is then disseminated to stakeholders in preparation for broad consultation on the TACC proposed for the following season.

As part of the decision-making process, the rock lobster fishing industry will be invited to provide comment on the stock assessment, particularly the CPUE. It is acknowledged that on occasion the CPUE can be affected by factors that are external to the status of the stock but which result in portions of TACC being uncaught or lower CPUE levels. Such factors could include, but are not limited to:

- Environmental conditions;
- Market failure;
- Currency fluctuations in Australia or in export destinations;
- Factors impacting price (product fluctuations, market forces, logistics costs); or
- Fluctuations in fuel and bait prices

The rock lobster fishing industry must submit a written statement to the VFA providing factual and credible evidence to support any claims of these external factors on that year's CPUE.

The VFA will also conduct broader consultation with all relevant stakeholders on the proposed TACC in accordance with the consultation principles outlined in the Fisheries Act.

The VFA will then consider all submissions and a resulting TACC will be recommended to the Minister, or the Minister's delegate. The Minister, or delegate, has the responsibility of determining the value of a quota unit and setting the TACC under the Fisheries Act and publishing the Further Quota Statement in the Victoria Government Gazette.

The annual TACC-setting process is summarised in Table 8.

Table 8: Annual TACC-setting process for the Rock Lobster Fishery.

Action	Responsibility
The annual assessment of the rock lobster stock is conducted and results are presented in the Stock Assessment Report.	Stock assessment science provider
The RLRAG reviews the Stock Assessment Report and provides advice to the VFA on the status of the fishery and application of the harvest strategy.	RLRAG
Management Advisory Committee (MAC), when formed, will review the recommendation from the RLRAG prior to undertaking broader consultation.	MAC
The Stock Assessment Report is disseminated to all relevant stakeholders.	VFA
Through industry representative groups, the industry provides a written statement documenting credible evidence to support any claims of external factors influencing that year's CPUE.	Industry groups
The VFA convenes an annual Stock Assessment Forum with relevant stakeholders.	VFA
The VFA prepares a draft Further Quota Order for statutory consultation (minimum two weeks), with the quota for each zone included.	VFA
The independent stock assessment provider will review submissions and provide scientific validation of comments made throughout the consultation process.	Independent stock assessment provider
The Minister (or delegate) makes a decision regarding the TACC following consideration of all available information and consultation submissions	Minister (or delegate)
The annual TACCs are gazetted and published on the VFA's website. The VFA writes to all stakeholders to inform them of the decision.	VFA

7 Rock Lobster Fishery Harvest Strategy

Harvest strategies provide a structured framework for assessing the status of a fishery and a set of rules to determine the annual catch limits. Decisions regarding catch limits are set out in advance, ensuring that fishers, fishery managers and other relevant stakeholders know what action will be taken in response to the conditions in the fishery (Sloane et al 2014).

Unlike the previous harvest strategy that focused on setting a constant exploitation rate to enable stock rebuilding, the foundation of this harvest strategy is based on establishing a clear rebuilding target to be achieved within a defined timeframe. As the stock rebuilds, more conservative exploitation rates will be adopted to increase the resilience of the fishery.

7.1 Operational objectives

The harvest strategy aims to achieves three main operational objectives, all of which link to the overarching objectives for the management of the fishery. These operational objectives are:

1. Establish a clear target that guides rebuilding trajectories of the rock lobster population by setting appropriately conservative TACCs on an annual basis.
2. Ensure the agreed Target Reference Point (TRP) of 28 percent and 28.8 percent pre-fishing available biomass for the Western Zone and Eastern Zone, respectively, is reached by 2043.
3. As the stock rebuilds, gradually transition towards a more conservative exploitation rate to reduce the probability of future declines back to the current level.

7.2 Principles of the harvest strategy

- The harvest strategy is based on standardised CPUE from commercial catch and effort logbook information and is derived from the 'fishing year data series' (i.e. November to September). All estimates of standardised CPUE are rounded to two decimal places.
- TACCs are set by assessing the fishing zone's performance against stock performance indicators, biological reference points and applying decision rules. These factors include the standardised CPUE from that year's stock assessment, a pre-recruit index (PRI) and predefined TACC tables that determine whether the annual TACC is increased, maintained or decreased in the following season.
- TACCs are predetermined and have been calculated to ensure that the target reference points are achieved within the rebuilding timeframe.
- The exploitation rate is zero at or below the CPUE limit reference point.
- The TACC is calculated in each CPUE band on the basis of the exploitation rate in that band.
- The TACC is capped at a specified level, consequently the exploitation rate declines once this cap is reached.
- The fishery will be closed to all fishing if the annual standardised CPUE falls below 0.30kg/pot lift for the Western Zone and 0.25kg/pot lift for the Eastern Zone (the lower limit reference point)
- To receive an increase in TACC, the annual PRI must be above the PRI threshold set for each zone.
- The TACC can only be increased by one level at any time ('one-jump rule').
- An upper limit, or cap, on TACC levels has been included in this harvest strategy. The cap is 242 tonnes for the Western Zone and 32 tonnes for the Eastern Zone.

7.2.1 Stock performance indicators

Performance indicators measure and track the performance of the stock against the operational objectives in this harvest strategy and are integral in determining the level at which the TACC will be set.

Three biological performance indicators are used in setting the TACC:

1. **Egg production:** an estimate of the reproductive potential of the population. It is a crucial determinant of the health of the stock and is used in this strategy as a primary indicator in the decision rules.
2. **Standardised CPUE:** Catch per unit effort (CPUE) data comes from the catch and effort logbooks submitted by commercial fishers. It is expressed as the catch (kilograms) achieved per pot lift. In lobster fisheries, CPUE closely correlated to abundance and is widely accepted as being a proxy for abundance of legal-size rock lobsters. Standardised CPUE is calculated from logbook data that has undergone a quality control process and has been standardised for a range of factors that affect catchability, such as month, year, depth, region and fisher (i.e. the ability and practices of fishers). Throughout this document all references to CPUE refer to standardised CPUE.
3. **Pre-recruit index:** is the number of undersize lobsters per pot lift and is derived from the data collected through the fixed-site survey and on-board observer programs. This provides a measure of the level of recruitment to the legal-size biomass likely to be experienced in the next few years.

The total biomass (for all lobsters >60mm) is also available from the stock assessment model and is used as an additional performance indicator in the assessment of the fishery. This indicator does not directly impact TACC adjustments but is used as a secondary indicator to track the stock status and performance against the rebuilding trajectory.

7.2.2 Reference points for the performance indicators

Reference points are the benchmarks of performance that define acceptable levels of impact on a stock (Sloane et al. 2014). Reference points are usually linked to the performance indicators and three types have been used; these are limit, threshold and target reference points.

Limit reference points

A limit reference point (LRP) provides a level below which the risk to the stock is unacceptably high and severe management action is required. For this fishery egg production compared to the pre-fishing stock is the indicator used to assess performance against the LRP. This provides the most direct indicator for the capacity of this component of the stock to continue to provide recruitment into the future.

The LRP is set to 20 percent of the unfished level of egg production. The 20 percent level is widely used and is the default level in several policy frameworks including the Marine Stewardship Council sustainable fishing standard and the Australian Commonwealth Harvest Strategy Policy. Due to the high potential consequence of falling below the LRP, a 90 percent probability of the fishery being above the LRP is required. Work in other crustacean fisheries indicates that generally these fisheries are resilient to exploitation and 20 percent is a conservative LRP.

LRP Proxy

The LRP is assessed annually on the basis of egg production estimates from the stock assessment model. However, the LRP is also used in formulating the CPUE-TACC relationship, hence a CPUE proxy for the LRP is needed. This proxy can also be used where model-based egg production estimates are unavailable (for example if there is insufficient data for the stock assessment model, or if the stock assessment is not conducted annually as a cost saving measure). Analysis of past egg production estimates and CPUE resulted in a CPUE proxy for the egg production LRP of 0.30kg/pot lift for the Western Zone and 0.25kg/pot lift for the Eastern Zone.

A limitation of this proxy is that whilst CPUE is correlated with egg production, it is not a direct measure. For instance, egg production is only influenced by mature females whilst CPUE is also influenced by male lobsters and not influenced by undersize mature females. This limitation should be clearly kept in mind, particularly in future stock assessment years where the model-based assessment of biomass and egg production may differ from what the CPUE proxy indicates. For example, a situation could arise where CPUE is below the proxy for the egg production LRP, but due to good abundance of undersize lobsters the model-based assessment may indicate that egg production is above the LRP. However, this limitation is of limited concern given that the LRP proxy is only used for formulating the lower bands of the CPUE-TACC table.

Threshold reference point

Threshold reference points can represent a threshold value which triggers a certain management action or a pre-determined management response.

Pre-recruit index threshold

The Pre-Recruit Index (PRI) is determined using data from the fixed-site surveys and on-board observer program and is averaged, weighted by region.

In this harvest strategy, threshold reference points have been established for the PRI. These thresholds are set at the 40th percentile of a normal distribution fitted to the PRI during a reference period of 2008 to 2022.

To be eligible for an increase in the TACC in an upcoming season, the PRI for that stock assessment period must be above the threshold level for that zone.

The PRI thresholds are:

- 1.67 undersize per pot lift in the Western Zone; and
- 0.25 undersize per pot lift in the Eastern Zone.

Note that the 40th percentile is used for the threshold to enable TACC increases in years where the number of pre-recruits is slightly less than average recruitment during the reference period. For the Eastern Zone the reference period includes some low years, resulting in a reduction in the threshold from the previous harvest strategy. However, this is consistent with the very precautionary TACC table that is implemented.

Target reference point

A target reference point (TRP) provides an indication of the level around which the fishery should be managed to best achieve its biological, social and economic objectives. For this fishery total biomass above 60mm carapace length, as compared to the pre-fishing stock, is used as the indicator to assess performance against the TRP. This provides a measure that is relevant across a range of objectives. Total biomass at the TRP level should meet the key objectives of the Management Plan to ensure a sustainable resource and optimised community benefit.

Explicitly translating the Management Plan objectives to a target biomass level is complicated, particularly as the objectives can be countervailing. Instead, this fishery uses a TRP of 40 percent of the biomass that would be available if fishing ceased. This level is the default level used in many fisheries and fishery standards globally including the Commonwealth Fishery Harvest Strategy Policy and the Marine Stewardship Council's (MSC) sustainable fishing standard. In this context it is often considered a proxy for B_{MSY}.

Across the Australian SRL stock, a substantial reduction in productivity has occurred which is likely a sign of an environmentally driven regime shift (Linnane et. al. 2020). The impact on the Victorian component of the population has been assessed by using the stock assessment model in conjunction with the reduced level of recruitment experienced from 2008 onwards. This analysis indicates that if fishing permanently ceased the biomass would only expect to return to 70 percent and 72 percent of the pre-fishing biomass level for the Western Zone and Eastern Zone respectively.

The productivity reduction is likely due to factors unrelated to the fishery. In line with many standards, the TRP has been adjusted to account for the reduction in productivity (Linnane et. al. 2019). Consequently, the TRP has been set at 28 percent and 28.8 percent for the Western Zone and Eastern Zone respectively. This is consistent with the intent behind the TRP of representing B_{MSY}, which has also reduced in-line with productivity changes.

TRP Proxy

A comparison of CPUE with model estimated biomass levels was used to obtain a CPUE proxy for the target reference point. This was calculated to be 1.20 and 0.86 kg/pot lift for the Western Zone and Eastern Zone respectively.

		Indicator Level		CPUE Proxy (kg/potlift)	
Reference Point	**Indicator**	**Western Zone**	**Eastern Zone**	**Western Zone**	**Eastern Zone**
Limit	Egg Production	20%	20%	0.30	0.25
Target (B^{MSY} proxy)	Biomass (>60mm)	28%	28.8%	1.20	0.86

7.3 Current stock state and rebuilding timeframe

The stock is currently well below the target reference point with 2021/22 standardised CPUE at 0.74 kg / pot lift in 2021/22 in the Western Zone and 0.49kg/pot lift in the Eastern Zone. This corresponds to a biomass of 22 percent of the unfished level in the Western Zone and 20.7 percent in the Eastern Zone. Consequently, a key element of the harvest control rule is to facilitate stock rebuilding to the target reference point.

A stock rebuilding time frame of 20 years has been set for this fishery. This long time frame is appropriate given the long generation time of lobster and consistent with standards such as the MSC standard which requires a rebuilding time frame that is the lesser of 20 years or two generations. The generation time used in the MSC standard is calculated as 1/M +A50 (where M is natural mortality and A50 the age at 50 percent maturity). Both of these quantities are difficult to estimate due to challenges in observing and/or tagging small lobsters. However, the best estimates are M=0.1 and A50 = 6. This gives a generation time of 16 years. Hence two generation times is equal to 32 years and the lesser period of 20 years applies for a rebuilding strategy.

The implementation of this harvest strategy provides a clear pathway to achieve the target reference point within the 20-year rebuilding timeframe. It is, however, important to note that progress towards the rebuilding target will be subject to continual review which may result in adjustment

7.4 Harvest control rule principles

Exploitation Rate

The harvest control rule sets a TACC that implements an exploitation rate which starts at zero at the LRP and then increases linearly to a maximum level as biomass increases. The TACC is also capped, hence once biomass exceeds the level at which the TACC cap is reached the exploitation rate decreases. This relationship is depicted in Figure 11. A key principle underlying this harvest strategy is that as the stock rebuilds, more conservative exploitation rates will be adopted. This ensures that the risk of future stock declines is significantly reduced.

The exploitation rate is implemented through a relationship between CPUE and the TACC. Tables 9 and 10 show the highest TACCs that can be set for each CPUE band in order to achieve the TRP within the rebuilding time frame. More details of how this is operationalized in practice are provided in the commercial harvest control rule section.

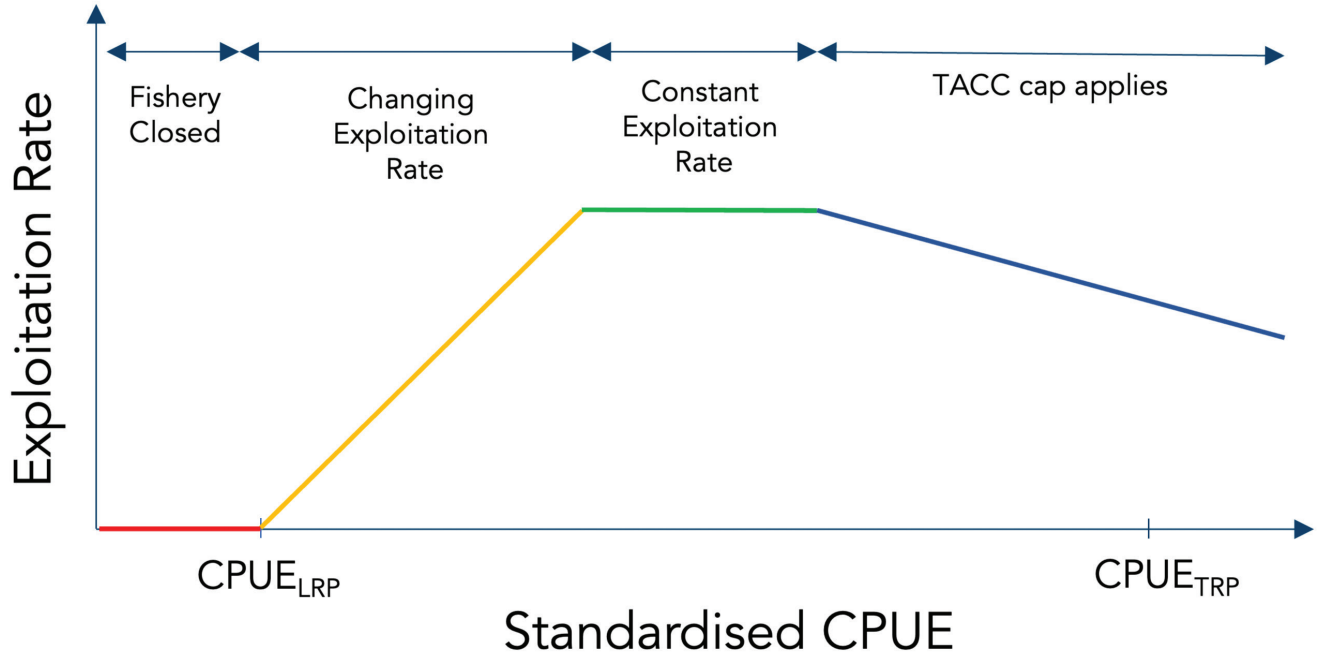


Figure 11. Conceptual relationship between exploitation rate and the stock status indicator (standardised CPUE). The exploitation rate rises from 0 at the CPUE LRP proxy to its maximum value. It then remains at this maximum value until the TAC cap is reached after which it declines. This decline is because no further TAC increases are permitted but the stock continues to increase.

Table 9: The highest TACC (t) that can be set in the Western Zone and still achieve a rebuild to the TRP within the rebuilding time frame. The TACC depends on the stock state as indicated by the standardized CPUE. A recreational catch of 6t has been assumed. Red indicates when the fishery is closed, orange where the exploitation rate is increasing, green a constant exploitation rate and blue a capped TACC.

CPUE	TACC
<0.25	0
0.250 - <0.275	0
0.275 - <0.300	0
0.300 - <0.325	5
0.325 - <0.350	15
0.350 - <0.375	27
0.375 - <0.40	40
0.40 - <0.425	55
0.425-<0.45	71
0.45 - <0.475	89
0.475<-0.50	108
0.50 - <0.525	129
0.525<-0.55	151
0.55 - <0.575	175
0.575<-0.60	200
0.60 - <0.625	227
0.625<-0.65	236
0.65 - <0.675	245
0.675<-0.70	245
>=0.70	245

Table 10: The highest TACC (t) that can be set in the Eastern Zone and still achieve a rebuild to the TRP within the rebuilding time frame. The TACC depends on the stock state as indicated by the standardized CPUE. A recreational catch of 6t has been assumed. Red indicates when the fishery is closed, orange where the exploitation rate is increasing, green a constant exploitation rate and blue a capped TACC.

CPUE	TACC
<0.25	0
0.250 - <0.275	1
0.275 - <0.300	4
0.300 - <0.325	7
0.325 - <0.350	10
0.350 - <0.375	14
0.375 - <0.40	19
0.40 - <0.425	23
0.425 -< 0.45	29
0.45 - <0.475	30
0.475 -<0.50	32
0.50 - <0.55	32
0.55 - <0.60	32
0.60 - <0.65	32
0.65 - <0.70	32
0.70 - < 0.75	32
>= 0.75	32

7.5 Resource allocation

The assessment modelling conducted to develop Tables 9 and 10 assumed a recreational catch of 6t in both zones. This is based on the reported catch from the 2018/19 fishing period. 2018/19 is considered the most accurate year of recreational catch estimates since mandatory catch reporting was introduced due to subsequent years data being disrupted as a result of bushfires, COVID and data collection challenges from the transition to digital reporting. Recreational catch has the potential to increase significantly in the future as the planned rebuilding occurs and lobsters become easier to catch. This has the capacity to undermine the rebuilding strategy and timeframe and will need to be addressed through additional management measures or resource sharing considerations. The impact of the assumed recreational catch will be monitored on an annual basis.

7.6 Commercial harvest control rule (HCR)

The TACC is set using a CPUE-TACC table in conjunction with a harvest control rule. The harvest control rule (HCR) regulates the rate at which the TACC can increase and decrease in response to CPUE changes. The HCR also implements the shift to more conservative exploitation rates over time and draws on the secondary PRI indicator to prevent TACC increases when undersize abundance is low.

The commercial HCR is based on CPUE-TACC look up tables that differ from that in Table 9 and 10 in two ways:

1. A stepped approach that reduces the exploitation rate across all CPUE bands as rebuilding takes place to ensure that any future declines are halted earlier.

2. More conservative TACCs in the Eastern Zone than what is permitted in Table 10. This was chosen to address greater uncertainty about this component of the fishery and concerns about potential further reductions in productivity at this extreme end of the SRL distribution. Further, the Management Plan Review Steering Committee strongly recommended adopting a more rapid rebuilding plan that sought to achieve the TRP within 10 years. This was determined as a result of the recent performance of the fishery where key indicators have reached historical lows and declining catch rates have impacted operational viability. The more rapid rebuild plan will improve resilience against future climate change threats, such as increasing urchin abundance, loss of kelp forests and ocean acidification.

The resulting tables are shown in Table 11 and 12. TACCs are initially set according to the column “Step 1” and as rebuilding occurs the more conservative exploitation rates in Step 2 onwards are gradually adopted.

Note that from step 7 onwards the maximum TACC for the Eastern Zone exceeds the maximum 32 tonnes indicated in Table 10. This is a benefit of the more precautionary approach adopted by industry and will at the earliest occur in eight years, by which time progress against the rebuilding target will have been re-evaluated multiple times and likely reflected in updates to the harvest strategy.

The formal harvest control rule can be divided into parts:

Harvest Control Rule Part 1: Ensuring Egg Production LRP is met

Model estimated egg production must be above the limit reference point of 20 percent of the virgin level with a 90 percent probability. This decision rule must be satisfied before the CPUE-based harvest strategy can be used to set the TACC. In circumstances where a model-based estimate of egg production is unavailable, a CPUE based proxy may be used to evaluate the fishery against the limit reference point identified in Section 7.2.2.

If this decision rule is not met, the TACC will be determined using the rock lobster fishery model to ensure that the TACC returns the egg production to above the limit reference point within two years with a 90 percent probability.

Harvest Control Rule Part 2: TACC Determination

When Decision Rule #1 has been met, the TACC is set using the standardised CPUE-TACC Table 11 and 12 for the Western Zone and Eastern Zone, respectively. Note that the HCR initially, at the time of its adoption, commences in Step 1.

1. The fishery will move to the next CPUE band (and possibly a higher TACC unless the cap has been reached) if:
   i) the standardised CPUE is in a band higher than in the previous season;

   AND

   ii) the PRI (rounded to two decimal places) is at or above the threshold level of 1.67 undersize per pot lift for the Western Zone or 0.25 undersize per pot lift for the Eastern Zone.

Note that the CPUE band can only increase a single level per year. If the new CPUE band has reached the final value for that step, as indicated by the arrow, then the next step will be used for setting this TACC and the TACC in all subsequent years.

2. The TACC will remain at the same level and the same band when:
   i) the standardised CPUE remains in the current band;

   OR

   ii) the standardised CPUE has increased to a higher band but the PRI is below the trigger point.
3. The TACC will be **decreased** when:
   i) the standardised CPUE has decreased into any lower band. In this circumstance the TACC will be set at the level that corresponds to the standardised CPUE band in the current step.

4. The harvest control rule will be reviewed when:
   i) The catch rate band decreases for two consecutive years; or
   ii) The PRI is below threshold for two consecutive years.

Both of these conditions provide an early warning sign that the recruitment assumptions underpinning the harvest control rule may no longer be valid (as happened with the reduction in recruitment and productivity experience in the late 2000s). Consequently, a review of the harvest control rule to investigate this further will be required.

Worked examples of Part 2 of the Harvest Control Rule are shown in Appendices A and B.

Western Zone

Table 11: The TACC (t) corresponding to each CPUE band for the Western Zone. The steps indicate a progression towards a more precautionary HCR with lower exploitation rates which will be adopted as the stock rebuilds. Red indicates when the fishery is closed, orange where the exploitation rate is increasing, green a constant exploitation rate and blue a capped TAC. If the HCR indicates a shift to a cell containing an arrow, the step will be increased and the TACC will be taken from the new step used.

CPUE	Step 1	Step 2	Step 3	Step 4	Step 5
<0.25	0	0	0	0	0
0.250 - <0.275	0	0	0	0	0
0.275 - <0.300	0	0	0	0	0
0.300 - <0.325	5	4	4	3	3
0.325 - <0.350	15	13	12	10	9
0.350 - <0.375	27	24	21	18	16
0.375 - <0.40	40	36	32	28	24
0.40 - <0.425	55	49	43	38	32
0.425-<0.45	71	64	56	49	42
0.45 - <0.475	89	79	70	61	53
0.475<-0.50	108	97	85	75	64
0.50 - <0.525	129	115	102	89	76
0.525<-0.55	151	135	119	104	89
0.55 - <0.575	175	156	138	120	103
0.575<-0.60	200	178	157	138	118
0.60 - <0.625	227	202	178	156	134
0.625<-0.65	236	227	201	176	150
0.65 - <0.675	245	236	224	196	168
0.675<-0.70	245	245	232	217	186
0.70 - <0.75	245	245	245	229	215
0.75 - <0.80	→	245	245	245	230
0.80 - <0.85		→	245	245	245
0.85 - < 0.90			→	245	245
>= 0.90				→	245

Eastern Zone

Table 12: The TACC (t) corresponding to each CPUE band for the Eastern Zone. The steps indicate a progression towards a more precautionary HCR with lower exploitation rates which will be adopted as the stock rebuilds. Red indicates when the fishery is closed, orange where the exploitation rate is increasing, and blue a capped TACC. If the HCR indicates a shift to a cell containing an arrow, the step will be increased and the TACC will be taken from the new step used.

CPUE	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10
<0.25	0	0	0	0	0	0	0	0	0	0
0.25 - < 0.30	1	1	1	1	1	1	1	0	0	0
0.30 - <0.35	5	4	3	2	2	2	2	2	2	2
0.35 - <0.40	9	7	6	5	4	4	4	3	3	3
0.40 - <0.45	15	11	9	8	7	6	6	5	5	5
0.45 - < 0.50	21	16	13	11	10	9	9	8	7	7
0.50 - <0.55	21	22	18	15	14	13	12	10	10	9
0.55 - <0.60	21	22	23	19	18	16	15	13	13	12
0.60 - <0.65	→	22	23	24	22	20	19	17	16	15
0.65 - <0.70		→	23	24	27	25	23	21	19	18
0.70 - <0.75			→	24	27	30	28	25	23	22
0.75 - <0.80				→	27	30	33	29	28	25
0.80 - <0.85					→	30	33	34	32	30
0.85 - <0.90						→	33	34	37	34
0.90 - <0.95							→	34	37	39
0.95 - <1.00								→	37	39
1.00 - < 1.05									→	39

Appendix A: Worked Example of Commercial HCR Part A Western Zone

CPUE	Step 1	Step 2	Step 3	Step 4	Step 5
<0.25	0	0	0	0	0
0.250 - <0.275	0	0	0	0	0
0.275 - <0.300	0	0	0	0	0
0.300 - <0.325	5	4	4	3	3
0.325 - <0.350	15	13	12	10	9
0.350 - <0.375	27	24	21	18	16
0.375 - <0.40	40	36	32	28	24
0.40 - <0.425	55	49	43	38	32
0.425-<0.45	71	64	56	49	42
0.45 - <0.475	89	79	70	61	53
0.475<-0.50	108	97	85	75	64
0.50 - <0.525	129	115	102	89	76
0.525<-0.55	151	135	119	104	89
0.55 - <0.575	175	156	138	120	103
0.575<-0.60	200	178	157	138	118
0.60 - <0.625	227	202	178	156	134
0.625<-0.65	236	227	201	176	150
0.65 - <0.675	245	236	224	196	168
0.675<-0.70	245	245	232	217	186
0.70 - <0.75	245	245	245	229	215
0.75 - <0.80	→	245	245	245	230
0.80 - <0.85		→	245	245	245
0.85 - < 0.90			→	245	245
>= 0.90				→	245

This example considers application of the harvest control rule for a hypothetical scenario beginning with the actual decision made in 2024. Note that due to the lag between a season finishing and an assessment being made, the CPUE in one year will affect the TACC two years later (e.g. the 2022/23 CPUE informs the 2024/25 TACC setting process).

Note also that the CPUE values for 2023/24 onwards that are discussed here are arbitrarily chosen to demonstrate how the harvest control rule works. For simplicity, it is also assumed that the PRI threshold is met each year.

Year 1: The starting point is the 0.70 – 0.75 CPUE band, in step 1 based on the 2021/22 CPUE value which was used to set the TACC for 2023/24. (Note: The TACC that was set in 2023/24 was 242t instead of 245t as the table has since been updated based on new information pertaining to a significant recruitment event).

Year 2: CPUE increased to 0.79 in 2022/23. This falls in the next CPUE band and an increase by one CPUE band level is permitted. This band has an arrow which indicates that the next step should be used. As such, the TACC will be 245 tonnes in 2024/25, with Step 2 used from that time onwards.

Year 3: If CPUE increased above 0.80 in 2023/24, the fishery would then move to Step 3 and a TACC of 245 tonnes in 2025/26. Future declines in CPUE would now be dealt with using the Step 3 TACC bands.

Year 4: If CPUE dropped to 0.68 in 2024/25, the TACC for 2026/27 would reduce to 232 tonnes.

Appendix B: Worked Example of Commercial HCR Part A Eastern Zone

CPUE	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10
<0.25	0	0	0	0	0	0	0	0	0	0
0.25 - < 0.30	1	1	1	1	1	1	1	0	0	0
0.30 - <0.35	5	4	3	2	2	2	2	2	2	2
0.35 - <0.40	9	7	6	5	4	4	4	3	3	3
0.40 - <0.45	15	11	9	8	7	6	6	5	5	5
0.45 - < 0.50	21	16	13	11	10	9	9	8	7	7
0.50 - <0.55	21	22	18	15	14	13	12	10	10	9
0.55 - <0.60	21	22	23	19	18	16	15	13	13	12
0.60 - <0.65	→	22	23	24	22	20	19	17	16	15
0.65 - <0.70		→	23	24	27	25	23	21	19	18
0.70 - <0.75			→	24	27	30	28	25	23	22
0.75 - <0.80				→	27	30	33	29	28	25
0.80 - <0.85					→	30	33	34	32	30
0.85 - <0.90						→	33	34	37	34
0.90 - <0.95							→	34	37	39
0.95 - <1.00								→	37	39
1.00 - < 1.05									→	39

This example considers what would happen over the next 5 years if the PRI threshold were met each year and the CPUE was consistently one band higher than in the previous year. The TACCs set would be as shown in the table above and detailed below:

Year 1: 2021/22 CPUE is 0.49, so the fishery is currently in the top circled box in Step 1 (21 tonnes in 0.50-0.55 CPUE band, Step 1)

Year 2: 21 tonnes in 0.50-0.55 band, Step 1

Year 3: 21 tonnes in 0.55-0.60 band, Step 1

Year 4: 22 tonnes in 0.60-0.65 band, Step 2

Year 5: 23 tonnes in 0.65-0.70 band, Step 3

Year 6: 24 tonnes in 0.70-0.75 band, Step 4

8 Glossary

These terms are intended to be used for the purpose of this management plan only and are not intended to be inconsistent with fisheries legislation.

Available biomass: The mass of the rock lobster stock that is above the legal minimum length and therefore available to the fishery.

Bag limit: The maximum number of a species that can legally be taken per day by a recreational fisher.

Biomass: The total weight or volume of individuals in a fish stock.

Bycatch: The component of the catch that is not a targeted species and which is returned to the water.

By-product: Non-targeted catch that is commercially valuable and retained by commercial fishers.

Catch per unit effort: A measure of fishing success with a type or unit of fishing gear. Catch per unit effort in the lobster fishery is measured as the weight of lobster captured per pot lift.

Ecologically Sustainable Development: The use of natural resources in a manner that maintains the life-support systems of nature and does not diminish the potential of the resource to meet the needs and aspirations of future generations.

Egg production: The mass of stock that has reached sexual maturity and contributes to recruitment. Egg production is an estimate of the spawning capacity.

Exploitation rate: The ratio of annual legally sized catch (tonnes) divided by the exploitable biomass (tonnes).

Fishery: The act, process and or industry of catching fish. In Victoria, fisheries are defined by the species to be taken, the equipment used or area as specified in the *Fisheries Regulations 2019*.

Fishery-dependent data: The information collected by the participants in the fishery about that fishery or fish stock, e.g. commercial catch and effort logbooks.

Fishery-independent data: The information collected about a fishery or fish stock by researchers independent of the fishery. e.g. scientific surveys and on-board observers.

Harvest: The total number or weight of fish caught and kept from an area over a period of time.

Individual transferable quota units: A management tool by which portions of the total allowable commercial catch are allocated amongst licence holders as quota.

Input controls: Indirect restraints on catch including regulation of the amount or type of fishing gear (e.g. numbers of pots) and fishing period (e.g. closed seasons).

Limited entry fishery: A fishery where the number of operators or vessels is restricted.

Maximum economic yield (MEY): MEY is the theoretical catch or effort level that maximises the profit of the commercial fishery. MEY occurs when the total fishing revenue minus total fishing costs is maximised. Economic efficiency in a fishery suggests that the stock is protected and the net returns (i.e. the profits) for fishers are maximised.

Nominal fishing effort: 'Nominal' means raw data, including commercial catch data, as reported by fishers before any analyses or statistical transformations have been carried out on the data. Nominal effort refers to measures of fishing effort or vessel carrying capacity that have not been standardised.

Offshore Constitutional Settlement (OCS): An agreement between the State(s) and the Commonwealth whereby the State or the Commonwealth (or in some cases a Joint Authority) is given jurisdiction for a particular fishery occurring in both coastal waters and the Australian Fishing Zone.

Output controls: A direct limit on catch in a fishery (e.g. a Total Allowable Catch) or on an access licence holder (e.g. individual transferable quota).

Possession limit: The number of a species in a person's possession in, on or next to Victorian waters.

Pre-recruit index (PRI): The pre-recruit index is an indicator of the likely future stock levels in the fishery. It is measured by the number of undersize animals (i.e. below the legal minimum length) in each pot lift averaged over all pot lifts.

Precautionary principle: This concept asserts that where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decision making should be guided by: (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and (ii) an assessment of the risk-weighted consequences of various options.

Quota: A limit on the weight or number of fish of a particular stock or from specified waters that may be caught in a specified timeframe.

Recruitment: The addition of new individuals of legal size to a stock.

Reference point: An indicator level of fishing (or stock size) to be used as a benchmark for assessment or decision making.

Size limit: A minimum or maximum size limit that determines the legal size at which a given species can be retained.

Species: A group of organisms capable of interbreeding freely with each other but not with members of other species.

Stakeholder: An individual or organisation, including peak bodies, with a vested interest or an historical association with a fishery resource.

Stock: A group of individuals of a species occupying a well-defined spatial range independent of other groups of the same species, which can be regarded as an entity for management or assessment purposes.

Target reference point: The target reference point defines the level or value of an indicator that is considered ideal or desirable and at which management should aim.

Total Allowable Commercial Catch (TACC): The mass of rock lobster that may be taken within a quota period by commercial access licence holders according to the final quota order.

Trigger or threshold points: Events or measures that, if they occur or if they reach specified levels, are used to determine when a response should be made. The action to be taken is usually prescribed.

Vessel Monitoring System (VMS): VMS devices are used for the purpose of providing the VFA with information on vessel position, bearing and speed.

Vic eCatch: Electronic catch reporting system used to report daily catch details, allocate quota against catch, complete daily catch records, manage movement of lobster in coffs and wetwells and for fishers to review their own catch history.

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Appendix 1: Rock Lobster Reporting Program

Program Objective

The aim of the reporting program is to enable a recreational harvest estimate to be made to improve the sustainable management of the fishery.

Reporting Program Principles

Plastic tags have been replaced by a digital reporting app.

Fishers no longer are required to order, possess and attach plastic tags to rock lobster. Instead, catch details must be reported via the GoFishVic RL smartphone app.

Fishers need to register intent to be active before they go rock lobster fishing.

Fishers are required to register their intent to be active for each season via the app prior to targeting rock lobster. Registering intent to be active for a fishing season helps us to measure the level of participation in the fishery and review how this changes from year to year.

Reporting catch is mandatory.

All recreational fishers, regardless of whether they are exempt from the requirement to hold a Victorian Recreational Fisheries Licence (RFL), are required to report their catch and allocate a digital tag via the smartphone app platform. Allowances for families with children under the age of 18 and under the supervision of an adult have been included.

All rock lobster landed must be reported within seven days of capture.

Recreational fishers are required to provide data on each rock lobster caught including the sex; the fishing method; the location (east or west of Apollo Bay, which aligns with the commercial fishing zones); and the carapace length. This report must be completed within seven days of capture. Fishers can also participate in a voluntary 'Citizen Science Program' in which they provide additional data; time spent targeting lobster; regional location of catch; and report trips of 'no catch' to improve effort data.

Fishers must report their catch in their own account.

Exception: children under 18 who are under adult supervision can use the adult's account to report their catch.

The program is 100% free.

Opt-in to the citizen science program.

Fishers can opt in to help provide information valuable to maintaining the health and population of lobster in Victorian waters.

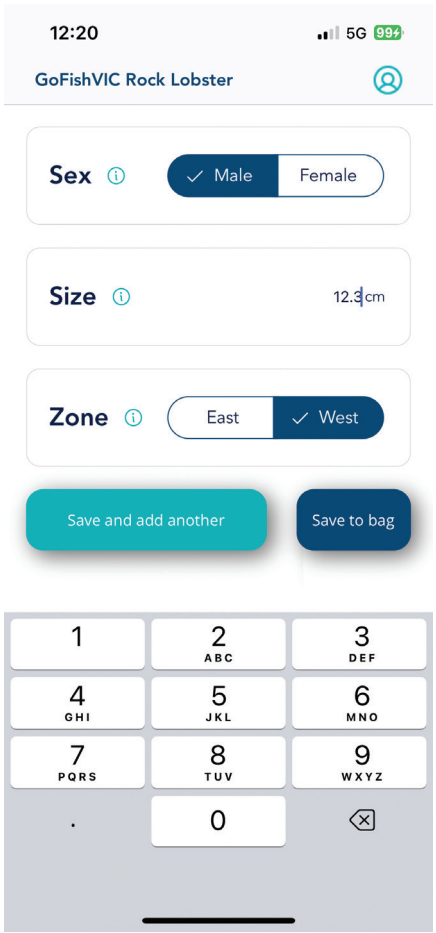
How to register for a rock lobster reporting season

1. Download the GoFishVicRL App (from the App store or Google Play)
2. Create an account
3. Register your intent to be active in the season

To report catch:

1. Select +Add catch at the bottom of your home screen to take you to My Bag.
2. Confirm the date at the top of the screen.
3. Select Add a catch and enter the details of your first rock lobster
4. Select Save and add another if you have another rock lobster to record.
5. Select Save to bag when you have finished recording your catch.
6. Need help?
   Call 136 186 or email gofishvic_feedback@vfa.vic.gov.au.

The rock lobster reporting program is improving the accuracy of annual harvest estimates to benefit the sustainable management of the fishery.



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