

# Review of rock lobster management - A summary of proposals

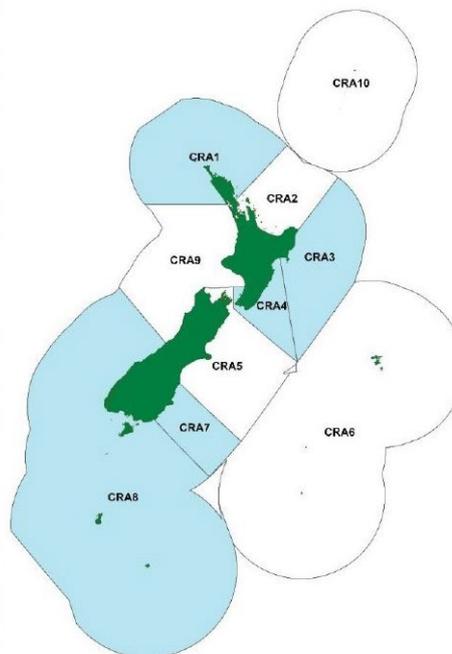
## For the New Zealand Sport Fishing Council

By the Fisheries Management Standing committee

December 2019

On 13 December MPI released a [Discussion Document](#) proposing changes to the total commercial catch for rock lobster in five quota management areas from 1 April 2020. These proposals are based on new stock assessments in CRA 1 and CRA 3 and the operation of existing Management Procedures in CRA 4, CRA 7 and CRA 8 (areas in blue on map). NZSFC will circulate a draft submission in mid-January. **Submissions close on 5 February 2020.**

This document highlights some of the issues that the NZSFC intends to address in its submission, with draft recommendations. Feedback on local or general issues for use in the NZSFC submission is welcome. Email John Holdsworth [john@bluewatermarine.co.nz](mailto:john@bluewatermarine.co.nz) or Trish Rea [trish@moanaconsultants.co.nz](mailto:trish@moanaconsultants.co.nz) by 31 January 2020.



The table below shows the proposed changes to the TAC, TACC and allowances proposed by the National Rock Lobster Management Group (NRLMG) and Fisheries New Zealand.

Table 1: Proposed management options (in tonnes) for CRA 1, CRA 3, CRA 4, CRA 7, and CRA 8 from 1 April 2020.

Stock	Option	TAC	TACC	Allowances		
				Customary Māori	Recreational	Other mortality
CRA 1 Northland	Option 1.1: <i>Status quo</i>	273.062	131.062	20	50	72
	Option 1.2: Based on the new CRA 1 stock assessment	203 ↓ (26%)	110 ↓ (16%)		32 ↓ (36%)	41 ↓ (43%)
CRA 3 Gisborne	Option 3.1: <i>Status quo</i>	351.9	222.9	20	20	89
	Option 3.2: Based on the new CRA 3 stock assessment	303 ↓ (14%)	195 ↓ (13%)		13 ↓ (35%)	75 ↓ (16%)
CRA 4 Wellington Hawke's Bay	Option 4.1: <i>Status quo</i>	513.8	318.8	35	85	75
	Option 4.2: Based on the CRA 4 management procedure	552.4 ↑ (8%)	374.4 ↑ (17%)			
CRA 7 Otago	Option 7.1: <i>Status quo</i>	117	97	10	5	5
	Option 7.2: Based on the CRA 7 management procedure	146.9 ↑ (26%)	126.9 ↑ (31%)			
CRA 8 Southland	Option 8.1: <i>Status quo</i>	1220.6	1129.6	30	33	28
	Option 8.2: Based on the CRA 8 management procedure	1282.7 ↑ (5%)	1191.7 ↑ (5%)			

## General comments on rock lobster management

The rock lobster fishery is a high value, targeted fishery for just two species (red and packhorse) using pots, with little catch of other species. Total catch is dominated by commercial fishing and the catch rate (in kilos) per pot lift is a relatively straight forward measure of catch per unit of effort (CPUE).

Why is it not simple to assess and manage rock lobster stocks?

- CRA have a complex and long (12 to 18 month) larval phase and settlement can be far from spawning areas and highly variable;
- It is illegal to take females with eggs which is effectively half of the fishing year so fishing pressure on males is a lot higher;
- So far it is not possible to age CRA so growth in tail width is used as a measure of stock increase in the stock assessment, but growth occurs only after moulting and varies by area and probably over time;
- Generally, CRA have been heavily fished for a long time and improvements in technology and fishing gear have only been accounted for in the most recent stock assessments;
- The switch from paper based reporting to electronic reporting will affect estimates of CPUE and it may be five years before the new data can be used with confidence.
- The usual way of assessing management targets as a percentage of unfished spawning biomass do not work well for CRA. After a lot of modelling work on developing long term targets, the NRLMG considered the new targets to be too conservative. So, in CRA 1, CRA 2 and CRA 3, there are only interim short term management targets.

## CRA 1 Management proposals

The Northland commercial fishery has become very reliant on catch from the Far North, Three Kings and north west coast. The catch rates and CRA population on the more sheltered north east coast has been low for a long time and this area has little influence on the stock assessment which assumes all areas are part of the same stock. Recreational catch has declined in north eastern areas according to recent survey results and anecdotal information. The stock assessment estimates the spawning biomass was 37% of the unfished level, but the vulnerable biomass (males at the start of the fishing year) was just 16% of the unfished level and is predicted to decline over the next 5 years.

The management proposal is to keep the stock at the current level until long term targets are set. The commercial catch would be reduced by 21 tonnes (t). In addition, the recreational allowance would be reduced by 18 t and the estimate of illegal catch by 31 t. The latter two changes align with the estimates used in the stock assessment so do not represent a reduction in future catch.

## CRA 1 response from NZSFC

- Support the 21 t decrease in TACC based on the best available science.
- Note that no improvement in the non-commercial customary or recreational fishery (which is mainly on the NE coast of CRA 1) is expected, based on the information provided.
- If the recreational allowance is reduced in proportion to stock abundance then it must be increased as the stock is rebuilt.

- More work is required on long term management targets and a rebuild plan for the vulnerable biomass which supports the bulk of the fishery.
- The status of the spawning stock biomass is not a good measure of fishery performance or resilience of the stock to fishing pressure.

### **CRA 3 Management proposals**

The CRA 3 fishery is unique in many regards. From Gisborne north most of the catch is male CRA. At times there are large numbers of small CRA but this varies in what appears to be a long-term cycle. When the stock was at a particularly low period it was agreed to allow commercial fishers a concession to take male CRA at a smaller size (52 mm tail width) in winter instead of waiting for them to moult then fishing over summer. CRA are graded by weight, not tail width, so there is little data on the proportion of catch that is caught and kept due to the size concession.

There is also a productive fishery for male and female CRA around Mahia Peninsula, which has shown a different trend in abundance over recent years. The CRA 3 stock assessment splits CRA 3 into two areas then adds the results to get the overall status. The spawning biomass was estimated to be 80% of the unfished level, but the vulnerable biomass (males at the start of the fishing year) was just 18% of the unfished level and is predicted to decline over the next 5 years. Clearly the model assumes that there are plenty of females in CRA 3 but they are just uncatchable; this is unlikely so the focus again needs to be on the status of the vulnerable biomass.

### **CRA 3 response from NZSFC**

- Support the 28 t decrease in TACC based on the best available science.
- Note that no improvement in the non-commercial customary or recreational fishery is expected, based on the information provided.
- If the recreational allowance is reduced in proportion to stock abundance then it must be increased as the stock is rebuilt.
- More work is required on long term management targets and a rebuild plan for the vulnerable biomass, which supports the bulk of the fishery.
- The status of the spawning stock biomass is not a good measure of fishery performance or resilience of the stock to fishing pressure.

### **CRA 4 Management proposals**

The NRLMG use CPUE as an indicator of abundance in CRA stocks. Since 2012 management procedures based on CPUE have been used to guide TACC settings in CRA 4. In 2016 the vulnerable biomass (legal males and females) was below the agreed target biomass reference level by 25%. The spawning stock biomass was estimated to be 51% of the unfished level. A new management procedure was introduced and as a consequence the TACC was reduced from 592 to 484 tonnes from 1 April 2017.

NRLMG advise CPUE has increased since 2016, from 0.7 to 0.9 kilos per potlift in 2019, indicating CRA abundance has increased. A TACC increase of 17% has been proposed to increase utilisation of the CRA 4 fishery. Earlier this year the Minister refused to increase the TACC, preferring to take a precautionary approach. This is the last year of the management procedure. A CRA 4 stock

assessment is proposed for 2020 to update stock status and to inform a potential new approach to setting the TAC and TACC in future.

#### **CRA 4 response from NZSFC**

- Do not support the proposed TACC increase, from 318.8 tonnes to 374.4 t.
- Do not support the application and use of management procedures based on CPUE.
- Note that retaining the status quo will likely result in an increase in abundance of crayfish, which will improve catch rates for all users, and may reduce commercial harvesting costs.
- Support the need for a stock assessment in 2020 to update stock status.
- Support the need for a new approach to setting the TAC in future.
- Support the retention of the allowances for non-commercial fishing interests, Maori customary and recreational, and other mortality.

#### **CRA 7 Management proposals**

The CRA 7 fishery is the second smallest fishery in the country. It supports a comparatively small, but valuable fishery for Maori customary and recreational interests. Since 2012 commercial vessel numbers have fluctuated from 9 to 12. The proposed 31% TACC increase, from 97 t to 126.9 t, is estimated to increase commercial revenue by \$5.33 million annually. The proposed TACC increase is based on the application of a management procedure. This is the last year the CRA 7 management procedure will apply due to the effects of electronic reporting on CPUE. A new stock assessment is due in 2021.

The CRA 7 stock is likely to be at or above the agreed target spawning stock biomass reference level. MPI report there has been a greater uptake of electronic data reporting in CRA 7 compared to other areas, so this new data makes up a greater proportion of the data available and shows significantly higher CPUE than the boats remaining on the paper reporting system. The NRLMG suggest the increase in CPUE indicates CRA abundance has increased, however, there is a high level of emigration – stock moving out of CRA 7 to other areas and this fishery relies heavily on the number of recruits to the fishery each year. In April 2018 the TACC was decreased from 112.52 t to 97 t due to sustainability concerns.

#### **CRA 7 response from NZSFC**

- Do not support the proposed TACC increase, from 97 tonnes to 126.9 t. Support status quo.
- Do not support the application and use of management procedures based on CPUE.
- Note that retaining the status quo will likely result in an increase in abundance of crayfish, which will improve catch rates for all users, and may reduce commercial harvesting costs.
- The NZSFC has reservations about using electronic data to inform the management procedure as there is no way to validate the comparison with older CPUE records.
- Express concern that any TACC increase in this review could apply until 2022.

## **CRA 8 Management proposals**

CRA 8 is the largest rock lobster fishery in the country with 65 vessels reporting at least 1 tonne of catch in 2018. A management procedure has been used to guide TACC settings since 1996. The last stock assessment was in 2015. Vulnerable biomass (legal males and females) in 2015 was 1.4 times the agreed target biomass reference level. Spawning stock biomass (mature females) in 2015 was estimated to be 44% of the unfished level. CRA 8 is unique in that CPUE only accounts for landed catch, as much of the legal sized catch is returned so only marketable fish are retained. CPUE in 2019 was the highest observed, at 4.83 kg/potlift. In the main Fiordland fishing area there is a spatial separation between the commercial fishery and the non-commercial fishery.

A new stock assessment is proposed for 2021 and this will have to include an allowance for increased efficiency in commercial fishing gear and vessels. The switch to electronic reporting means it is likely that any TAC increase this year will apply until April 2022. No changes are proposed for the allowances set aside for Maori customary or recreational fishing, or other mortality. There is a large amount of CRA taken by commercial fishers under s111 and classed as recreational catch, 18.8 tonnes, more than the National Panel Survey estimated recreational harvest of 16.17 t in 2018.

### **CRA 8 response from NZSFC**

- Any TACC increase means the 3<sup>rd</sup> consecutive year of TACC increases, with no changes to the non-commercial allowances or other mortality allowance.
- This stock remains strong and could support a 5% TACC increase until the next stock assessment in 2021.
- If recreational catch is roughly proportional to abundance (as assumed elsewhere) then the allowance for recreational harvest could be increased. Initial thinking is an increase from 33 t to 45 t (36% increase). This is about the same as the increase in standardised commercial CPUE in CRA 8 over the last 3 years.
- Any TACC increase in this review could apply until 2022.