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Sustainability Review 2019 Fisheries Management Fisheries New Zealand PO Box 2526 Wellington 6140. FMSubmissions@mpi.govt.nz









Submission: Review of rock lobster TACs in CRA 1, 7, and 8 for 2022/23

Recommendations

- 1. **The Minister adopt an amended option 1.4 for CRA 1** with a reduction in the Total Allowable Catch to 183 t by reducing the Total Allowable Commercial Catch (TACC) by 15% to 94 tonnes, retaining the current allowance for Maori customary fishing of 20 t, setting a recreational allowance of 28 t, and retaining the allowance for other sources of mortality at 41 t.
- 2. **The Minister adopt option 7.2 for CRA 7** with an increase in the Total Allowable Catch to 146.5 tonnes by increasing the Total Allowable Commercial Catch (TACC) to 111.5 tonnes, retaining the current allowance for Maori customary fishing of 10 t, retaining the recreational allowance at 5 t, and increasing the allowance for other sources of mortality to 20 t.
- 3. If the Minister considers that a fifth increase in TACC in five years is warranted the submitters **support Option 8.2 for CRA 8** with an increase in the Total Allowable Catch to 1394.5 t by increasing the Total Allowable Commercial Catch (TACC) to 1215.5 tonnes, retaining the current allowance for Maori customary fishing of 30 t, retaining the recreational allowance at 33 t, and increasing the allowance for other sources of mortality to 116 t.
- 4. **The Minister directs FNZ to start collecting data** that would allow the next stock assessment of CRA 1 to include a separate assessment of East Northland (areas 903 and 904) and eventually separate management measures for these areas.

The submitters

5. The New Zealand Sport Fishing Council (NZSFC) appreciates the opportunity to submit on the proposals to review Total Allowable Catch (TAC), allowances and the Total Allowable

Commercial Catch (TACC) for rock lobster (*Jasus edwardsii*) in Quota Management Areas CRA 1, 7 & 8. Advice was received on 14 December 2021 with submissions due 8 February, 2022.

- 6. The NZ Sport Fishing Council is a recognised national sports organisation of 55 affiliated clubs with over 36,200 members nationwide. The Council has initiated LegaSea to generate widespread awareness and support for the need to restore abundance in our inshore marine environment. Also, to broaden NZSFC involvement in marine management advocacy, research, education and alignment on behalf of our members and LegaSea supporters. <u>legasea.co.nz</u>.
- 7. The New Zealand Angling and Casting Association (NZACA) is the representative body for its 35 member clubs throughout the country. The Association promotes recreational fishing and the camaraderie of enjoying the activity with fellow fishers. The NZACA is committed to protecting fish stocks and representing its members' right to fish.
- 8. The New Zealand Underwater Association comprises three distinct user groups including Spearfishing NZ, affiliated scuba clubs throughout the country and Underwater Hockey NZ. Through our membership we are acutely aware that the depletion of inshore fish stocks has impacted on the marine environment and the wellbeing of many of our members.
- 9. Collectively we are 'the submitters'. The joint submitters are committed to ensuring that sustainability measures and environmental management controls are designed and implemented to achieve the Purpose and Principles of the Fisheries Act 1996, including "maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations..." [s8(2)(a) Fisheries Act 1996].
- 10. Our representatives are available to discuss this submission in more detail if required. We look forward to positive outcomes from this review and would like to be kept informed of future developments. Our contact is Helen Pastor, secretary@nzsportfishing.org.nz.

Background

- Rock lobster is an important species and fishery for all sectors in the Quota Management Areas under review. In the past rock lobster were abundant and played a significant role in coastal ecosystems. Large catches were taken out of some ports in the 1920s for canning and export to Europe. Widespread commercial rock lobster fishing has occurred since 1945. Updated estimates of recreational harvest are available from the 2017– 18 National Panel Survey. Few of the 7000 New Zealand residents on the panel caught rock lobster, so the estimates are best in areas where most fishing occurred.
- 12. CRA 1 is fished on the east and west coast of Northland. Since 1999 a large proportion of the commercial catch (30% to 50% per year) has come from the Three Kings area, a group of 13 islands about 55 kilometres northwest of Cape Reinga.



The Three Kings area represents just 1 of the 5 fisheries management statistical areas in CRA 1.

- 13. A new stock assessment for CRA 1 was completed in 2019. The base case estimated vulnerable biomass (males of legal size at the start of the fishing year) to be 15.5% of unfished biomass while spawning stock biomass (mature females) was at 37%. The Minister decided to reduce the TAC by 70 t (26%) with the aim of maintaining the stock at the current level. This was comprised of reductions to the TACC of 21 t (16%), a cut to the recreational allowance by 18t (36%), and the allowance of other sources of fishing mortality was revised in line with the estimate used in the stock assessment, down 31 t (43%).
- 14. In 2020 a rapid update assessment that used the 2019 model, with revised catch and updated commercial logbook data, predicted that vulnerable biomass would decline in the short term, even with the catch reductions introduced the previous year. However, a slight increase to about 16.5% of unfished vulnerable biomass was predicted by 2024. Following consultation in 2021 the Minister decided to retain the existing TACC for 2021-22.
- 15. The TACC in CRA 7 has decreased and increased in recent years, currently it is at 126.2 tonnes. The TACC in CRA 8 has been regularly increased over the last 5 years and is currently at 1192 tonnes, which is 44% of total rock lobster TACCs in New Zealand.
- 16. A new stock assessment for CRA 7 and CRA 8 was completed in 2021. Changes were made to some key model assumptions. It is generally accepted that rock lobster settle and grow in CRA 7 but many migrate into CRA 8 a few years after they mature. There is also uncertainty about the historic commercial catch that was probably caught in CRA 8 but landed in CRA 7 before catch was reported only by port of landing.
- In 2021 the CRA 7 and CRA 8 fisheries were combined into a single assessment model but with two areas – region 1 being Otago (CRA 7) and Southland (CRA 8) and region 2 being Fiordland (CRA 8). Both regions show a significant increase in CRA stocks over the last 15 years.
- 18. While rock lobster abundance has been increasing in the lower South Island the stock assessment for Fiordland (region 2) clearly shows that even the most productive area with the highest standing biomass can be fished down to below 10% of the unfished spawning biomass by excessive fishing pressure. In the mid 1980s there were over 200 commercial boats in CRA 8 for a total of more than 1.2 million pot lifts per year, for a reported catch around 1500 tonnes. Prior to the market disruption due to Covid-19 in 2018-19, there were 67 vessels catching more than 1 tonne of rock lobster that completed 290,000 pot lifts for a landed catch of 1070 tonnes. The current TACC in CRA 8 is 1192 tonnes.
- 19. Rock lobster stocks are less productive in the North Island and they also need to be carefully managed as productivity is declining and recruitment is variable.

Management proposals

20. Fisheries New Zealand and the National Rock Lobster Management Group (NRLMG) have released a Discussion Document proposing changes to the Total Allowable Catch (TAC) for rock lobster in three Quota Management Areas from 1 April 2022. Commercial fishers have changed to the new electronic reporting system which provides more detailed information but the catch rates (CPUE) that have been used to inform decision rules may not be directly comparable with the previous system. A new quantitative stock assessment has been completed for CRA 7 and CRA 8 combined. Rapid updates of previous stock assessments have been review and accepted

by the science working group. The rock lobster stock under review this year are CRA 1, CRA 7 and CRA 8 as in Table 1 below (Source: Fisheries New Zealand).

Stock	Option	TAC	TACC	Allowances		
				Customary Māori	Recreational	Other mortality
CRA 1 Northland	Option 1.1: Status quo	203	110	20	32	41
	Option 1.2 : Decrease the TAC by 5%	193 🗸 (5%)	105 🗸 (5%)		27 🕹 (5 t)	
	Option 1.3: Decrease the TAC by 9%	185 🗸 (9%)	99 🗸 (10%)		25 🕹 (7 t)	
	Option 1.4 : Decrease the TAC by 12%	179 🗸 (12%)	94 🗸 (15%)		24 🗸 (8 t)	
CRA 7 Otago	Option 7.1: Status quo	126.2	106.2	10	5	5
	Option 7.2 : Increase the TAC by 16%	146.5 🛧 (16%)	111.5 🛧 (5%)			20 🛧 (15 t)
CRA 8 Southern	Option 8.1: Status quo	1282.7	1191.7			28
	Option 8.2: Increase the TAC by 9%	1394.5 🛧 (9%)	1215.5 个 (2%)	30	33	116 ↑ (88 t)
	Option 8.3 : Increase the TAC by 11%	1430 🛧 (11%)	1251 个 (5%)			

Table 1: Proposed management options (in tonnes) for CRA 1, 7 and 8 from 1 April 2022. (continued over the page)

National Rock Lobster Management Group

21. FNZ and the Minister reviewed the membership of the National Rock Lobster Management Group (NRLMG) in 2020. New members representing recreational and Māori customary fishers and environmental NGOs were appointed. The terms of reference for the NLRMG have been revised and a summary of the work undertaken will be published in an annual report.

Remove the concessions

22. The submitters and NZSFC member clubs in CRA 3 have made it very clear repeatedly that the concession that allows commercial fishers to take male rock lobster with a tail width of 52 mm or 53 mm is unfair and must be removed. In 2014 these groups developed a <u>Crayfish 3 policy</u> that aims to increase the size and abundance of rock lobster in CRA 3 and ensure the needs of Māori customary and amateur fishers are met. That policy has been shared with FNZ and the NRLMG.

Crayfish 1 (CRA 1) Northland

CRA 1 Stock Assessment

23. CRA 1 has a range of environments from rugged, exposed coastline to the west, to the Three Kings area with upwellings and strong currents, and East Northland with extensive rocky coastline warmer waters and sheltered bays. Since the late 1990s there has been a significant increase in the proportion of catch taken from the reporting areas for the Three Kings area (901) and the west coast (939) where catch rates are higher and less has been taken from East Northland (903 and 904) where catch rates are lower. While area is taken into account in the analysis of CRA catch rates, much of the data that drives the stock assessment results comes from the north western area.

- 24. The assumption that growth rates and recruitment are the same for the northwestern area and East Northland is probably wrong, but the Rock Lobster Science Working Group concluded that there was insufficient data collected from the East Northland commercial fishery to include it as a separate area in the CRA 1 stock assessment model. While we are told that fishing effort in East Northland has declined over the last year or so, data from the rock lobster catch and effort report (Starr 2021) shows that since 2008 45% of fishing effort and 37% of catch in CRA 1 has come from East Northland (Figure 1). This proportion of catch is higher than in CRA 3 and CRA 5 where 2 areas are modelled based on different tends in catch rate.
- 25. The only critical data missing from East Northland is commercial logbook data or observer coverage used to help estimate trends recruitment. If commercial fishers had self-reported the size of CRAs caught, or if observer coverage had been evenly spread across all statistical areas then a separate status of the stocks and management approach for East Northland would be available. Instead, observer coverage was focused where catch rates were highest and estimates of recruitment probably are not representative of all of CRA 1.



Figure 1: CRA 1 number of pot lifts and commercial catch (open circles) by fishing year. In 2016 two statistical areas (902 & 904) had less than three vessels catching 1 tonne of CRA or more and the data was not shown in the report.

- 26. The 2019 stock assessment estimated that the vulnerable biomass (males of legal size at the start of the fishing year) showed a flat or declining trend over the last 25 years (Figure 2). The base case estimated vulnerable biomass to be 15.5% of unfished biomass while spawning stock biomass (mature females) was at 37%.
- 27. The rapid stock assessment update in 2021 estimated that CRA 1 vulnerable biomass was 14.6% of the unfished level. By 2025, with 2021 catch levels and recent recruitment, CRA 1 vulnerable biomass is projected be at 15.8% (or 0.158) of unfished levels (median result), with a 90%

probability it will be in the range of 9.2% and 26.8% of unfished levels (Figure 2). The uncertainty in the projections mainly comes from estimating future recruitment of young rock lobster to the fishery. The Discussion Document says that CRA 1 biomass is increasing when in fact it is effectively that same in 2025 as it was in 2019.



Figure 2: Results of the CRA 1 stock assessment with estimates the total weight (biomass) of legal rock lobster at the start of the fishing (vulnerable biomass) which excludes mature females that are mostly carrying eggs. The top graph shows the vulnerable biomass was fished down by the early 1970s and has been at a relatively low level since 1990. The horizonal green line is the reference level estimated intended to be a baseline for a discussion around setting management targets. The bottom graph zooms in on recent years to show the tend in biomass and four year projections from the 2019 stock assessment (red line and shading) prior to the 2020 reduction in the TAC. The blue line and shading show the result of the 2020 rapid update using the reduced TAC and the thin green line shows the result of the 2021 rapid update with data to March 2021 (dotted line).

- 28. The stock trend from the from the 2019 stock assessment and the 2021 rapid update are almost identical in 2020 and 2021 despite the reduction in the TAC and 16% reduction in the TACC. The rapid assessment results suggest that CRA 1 spawning biomass is 36% of unfished levels. Spawning biomass is expected to stay constant relative to 2021 levels.
- 29. What this shows is that under the status quo management settings the median of projected vulnerable biomass in 2025 will be about 15.8% of unfished levels which is not significantly

different for the 2019 vulnerable biomass of 15.5%. The submitters do not support maintaining this important cultural, social and ecological stock at close to historic low levels.

- 30. We submit the CRA 1 stock is not being managed to meet the purpose and principles of the Fisheries Act 1996, nor is it sufficiently abundant to enable people to provide for their social, economic and cultural wellbeings.
- 31. We submit that the CRA 1 stock needs to be rebuilt. The current size of the overall vulnerable biomass is close to its lowest historical level and is predicted to decline in the short term. While commercial fishing effort in East Northland is currently low, low stock abundance is severely limiting access to the fishery for recreational and customary fishers.
- 32. More work is required on real management targets in the coming year and the time frames to rebuild stocks. The submitters do not consider a vulnerable biomass around 16% in 2025 is an acceptable rebuild rate in this important shared fishery.



Figure 3: CRA 1 vulnerable biomass since 1980 and projections to 2025 based on status quo, a 10% reduction to the TAC, and a 15% reduction to the TAC including allowances.

- 33. Model projection using the 2020 stock assessment show that under the status quo the CRA 1 stock will about the same level in 2025 as it was when the initial 16% reduction to the TACC was made in 2020. The other projections are based on a 10% or 15% reduction in the TAC including all allowances (Figure 3). To achieve a plausible reduction in the recreational allowance a reduction in the daily bag limit would be required.
- 34. The submitters support a reduction in the Total Allowable Commercial Catch by 15% to 94 tonnes and the retention of the current allowance for Maori customary fishing at 20 tonnes and the allowance for other sources of mortality at 41 t. The recreational allowance used in the 2021 rapid update was 28 t based on the assumption that recreational catch is proportional to stock abundance. However, this is a 12.5% reduction in the current allowance of 32 tonnes and no estimates of the CRA 1 stock show a decline of that size.

- 35. The Fisheries Act 1996 section 9 says that, "All persons exercising or performing functions, duties, or powers under this Act, in relation to the utilisation of fisheries resources or ensuring sustainability, shall take into account the environmental principles". This includes FNZ staff and management, members of the NRLMG and the Minister. The principles include maintaining biological diversity of the aquatic environment and ensuring the long-term viability of associated and dependant species. If the vulnerable biomass in CRA 1 is around 15% of the unfished level, then East Northland must be close to 10%.
- 36. In our view, a 12% TAC reduction is required now with a further review after the next stock assessment in 3 years' time. Reducing the allowance for recreational fishing interests from 32 t to 28 t is a 12% reduction and is in line with the estimate used in this years rapid update. To help ensure an increase in rock lobster stocks in East Northland the submitters would support a consultation process to review the amateur bag limit in CRA 1. A step change in the TAC and bag limit in CRA 2 appears to be working to slowly rebuild the stock. A CRA 2 stock assessment this year will help quantify the level of change.
- 37. As discussed above, the marine environment of East Northland with its sheltered bays and relatively warm water where most recreational fishing effort occurs is different to where commercial fishing effort is now concentrated, in the Far North, Three Kings area, and northwest coast with cool water, currents, and upwellings. It is problematic drawing conclusions about the state of East Northland, where commercial catch rates have historically been low, based on a stock assessment based on primarily on data from the Far North and west coast.
- 38. It is clear that the CRA 1 management area is unmanageable. We want this stock to rebuild and cannot envisage that rebuild occurring if East Northland continues to be considered as productive and functional as the Three Kings and Far North western areas. This is simply not plausible.
- 39. The submitters recommend FNZ start collecting data that would allow the next CRA 1 stock assessment to include a separate assessment of East Northland (areas 903 and 904) and eventually separate management measures for these areas.

CRA 7 and 8 Stock Assessment

- 40. A new stock assessment for CRA 7 and CRA 8 was completed in 2021. As has been the case previously, the CRA 7 and CRA 8 fisheries were combined into a single assessment model but instead of allowing the model to estimate movement between CRA 7 & 8 the area was split into two areas region 1 being Otago (CRA 7) and Southland (CRA 8) and region 2 being Fiordland (CRA 8) with no movement assumed. Catch rates per pot lift are used as a relative measure of abundance but have not been included in the assessment since the change in the way catch is reported in new electronic reporting system.
- 41. The 2021 combined CRA 7 and 8 vulnerable biomass was estimated at 21% of the unfished level, and spawning biomass in 2021 was 48% of the unfished level. Plots of the trends in biomass by region are shown in Figures 4 and 5 below (Source: Fisheries New Zealand).



Figure 4: The CRA 7 & 8 stock assessment vulnerable biomass since 1945 spit by region. The autumn/winter line (AW red) is legal size males only, the spring summer line (SS green) includes legal size males and females.



Figure 5: The CRA 7 & 8 stock assessment spawning stock biomass (SSB blue) since 1945 spit by region showing the soft limit (20% of unfished SSB green), and the hard limit (10% of unfished SSB orange).

42. These plots show that CRA 7 & 8 were fished down since the early 1950s, with the effort in the 1980s described above just the tail of that era. The model estimates that the Fiordland stock was in an overfished state (below the soft limit) from 1970 to 2006. Significant cuts to the TACC in the early 2000s (36% reduction in 3 years in CRA 7 & CRA 8) seem to be the turning point for the stocks.

43. Rock lobster abundance is increasing in both regions under current management settings. Over the next four years, with 2021 catch levels and recent recruitment, the combined region vulnerable biomass is projected to increase to 25% of unfished levels with a range between 19% and 32%. Combined spawning biomass is projected to increase to 54% of unfished levels by 2025 with a range between 48% and 61%.



Figure 6: The CRA 7 (Otago) and CRA 8 (Southern) Quota Management Areas and statistical areas, showing approximate boundary of the two regions used in the 2021 CRA 7 & 8 stock assessment model (black lines).

Crayfish 7 (CRA 7) Otago

44. The biological stocks of rock lobster in the lower South Island do not align with the Quota Management Area boundaries and the stock assessment splits CRA 7 & CRA 8 into regions which are not stock boundaries but allow the model to work given the data available. The proportion of the stock increase from region 1 that can be attributed to CRA 7 is uncertain so some caution is warranted.

- 45. The reference level modelling produced some implausible results when applied at the regional level. The combined CRA 7 & CRA 8 reference level is 14.5% of the unfished vulnerable biomass. Models on their own cannot set management targets. Wider considerations and stakeholder input are required and the general feeling is that the model-based reference points are useful as a lower bound for male vulnerable biomass in a similar way that the soft limit is a limit reference point for female spawning stock biomass.
- 46. The submitters support an increase in the TAC to better account for other sources of fishing related mortality (15 tonnes) and a modest increase in the TACC (5.3 tonnes) given the evidence of good recruitment and increased abundance. This lifts the TACC to 111.5 tonnes which is similar to the TACC of 112.7 tonnes set in 2017-18. There is no information to suggest that the allowances of 5 tonnes for recreational catch and 10 tonnes for Māori customary harvest is not adequate. These allowances may be reviewed when new information is available.
- 47. The current method of undertaking an annual rapid update using the stock assessment and one more years data will not be much use for CRA 7 given the area covered in region 1. Resolving some of the issues around catch recording under the Electronic Reporting System may help track fisheries trend, particularly in CRA 7.

Crayfish 8 (CRA 8) South Coast/Fiordland

- 48. CRA 8 is a productive rock lobster fishery with by far the highest commercial catch rates in New Zealand. This is a remarkable turnaround for this fishery considering that the spawning stock biomass was below the soft limit for 36 years and probably below the hard limit from 1986 to 2002 (Figure 4).
- 49. While the current rebuild is encouraging, CRA 8 used to be a very large stock and a large fishery and the vulnerable biomass in Fiordland (region 2) is about 21% of the unfished level. The TACC has been increased four times since 2017 from 962 t to 1192 t (24%) and the 59 t increase proposed for 2022 in option 8.3 equates to a 30% increase over 5 years.
- 50. The projections for region two presented to the Rock Lobster Plenary meeting show that at current catch the vulnerable biomass would stay around the current level. A 10% increase in catch across all sectors could see the vulnerable biomass decline by 10%. The submitters are opposed to such a large increase in the TACC on top of the four increases over the previous four years. This stock was over fished in the 1980s with catches around 1500 t, we do not recommend the Minister risks going there again.
- 51. If the Minister considers that another increase in the CRA 8 TACC is warranted, the submitters recommend that a modest increase of 2% (23.8 t) strikes the right balance of providing for utilisation without the risk of limiting the productive potential of the CRA 8 fishery or the flow on effects of good recruitment in CRA 7.
- 52. Historically, a concession was introduced to allow commercial fishers to harvest male rock lobster below the national minimum legal size when fishing was hard, and a high proportion of catch was small.

- 53. The submitters recommend the Minister revoke all concessions in the rock lobster fisheries, including CRA 7 & CRA 8, as the original purpose of the concessions is no longer valid.
- 54. The National Panel Survey estimated the recreational harvest in CRA 8 to be about 16 t (CV 36%), the balance of current allowance of 33 t is made up of 18 t of rock lobster reported from commercial vessels as recreational catch for the crew. While the submitters are comfortable leaving the recreational allowance at 33 t for now, if new information is collected then it can be revisited and reviewed.
- 55. It is concerning to hear of proposals from some groups to severely limit individual catch by recreational fishers on charter boats in Fiordland when this catch is really at the margin of overall catch. (1192 t current TACC, 117 t for other sources of fishing mortality mainly from commercial pots, and 18 t taken home by crews on commercial vessels). The Minister has a statutory duty to 'allow for' the mortality due to recreational fishing before he sets the TACC. The current allowance is to enable that recreational harvest to occur. **The submitters will object If further constraints are imposed on recreational harvest when stock abundance is increasing, and commercial catch limits are being frequently increased.**
- 56. The increase in the allowance for other fishing related mortality is in line with the estimates used in the stock assessment and is supported by submitters. A lot of crayfish are returned to the sea by commercial fishers in CRA 8 due to market preference and price. The previous 28 t allowance for other mortality is inadequate considering that it has not changed for a long time despite increased landed catch and number released.