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Sustainability Review 2019
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Submission: Review of Blue Moki, Leather Jacket, Red Gurnard and Rig TACs in South Eastern New Zealand

Recommendations

1. The Minister maintains the status quo (option 1) for Blue moki 3 (MOK 3).

2. The Minister apply the Information Principles in the Fisheries Act that require that caution be applied when making decisions, especially for vulnerable low information stocks. MOK 3 is one of the stocks requiring a precautionary approach.

3. The Minister give particular regard to the views of Iwi, particularly Ngāti Porou and Te Whānau ā Apanui, on current abundance given the taonga status of Blue moki.

4. The Minister rejects the proposed Total Allowable Catch (TAC) and Total Allowable Commercial Catch (TACC) increases for Leatherjacket 3, Gurnard 3 and Rig 3, on the basis that a precautionary approach is required and the increases are unnecessary.

Submission summary

5. Blue Moki is a long-lived low productivity species that migrates between the North and South Islands and across quota management areas.

6. Moki is a very important taonga for Maori, particularly Ngāti Porou and Te Whānau ā Apanui.

7. It is the target set net fishery in MOK 3 that takes the majority of catch and is responsible for any catch overrun of the Total Allowable Commercial Catch (TACC), not trawl bycatch. Increasing the TACC will not change this.

8. Trends in set net catch rates (CPUE) are not generally considered to provide a reliable index of abundance. In MOK 3 the timing and location of migrating fish and set net fishing effort drives CPUE.

9. There is conflict between trends in the set net CPUE and FMA 2 trawl CPUE that is unresolved.

10. There are serious flaws in the catch-at-age study which:
    a. is 14 years old;
    b. it only collected samples from MOK 1;
    c. it had poor coverage in samples it collected;
    d. age data was pooled over two years; and
    e. the study delivered implausible results.

11. There is no new information to support a TACC increase. An average 2% catch overrun of the TACC over 4 years means nothing.

12. There is little incentive to stay below the TACC when the annual deemed value rate starts at $0.88 and the average port price is $1.43 in MOK 3.

13. The case for a TAC increase for MOK 3 is weak.

14. The submitters oppose the TAC increase for MOK 3 and urge the Minister to give effect to the Information Principles in the Fisheries Act that require caution be applied when making decisions, especially for vulnerable low information stocks.

15. There is little new information on the abundance of leather jacket, red gurnard and rig in Area 3. The trawl survey results show the stocks are stable or slightly declining. The TACCs appear to be limiting catch, but that is how the quota management system is supposed to work. Rewarding quota owners and fishers with regular TACC increases is providing clear incentives to exceed the TACC, then ask for more.

16. The Threat Management Plan for Hector's Dolphin (TMP) and new set net closures from 1 October 2020 may reduce the catch of gurnard and leatherjacket and will significantly reduce the SPO 3 catch. The submitters oppose the TACC increases as they are unwarranted and unnecessary.

17. The submitters recommend a shift away from trawling in inshore waters to protect benthic habitat, to reduce resuspension of fine sediments and reduce the risk of catching Hectors dolphin, and to use fishing methods that increase the quality and value of fish landed.

The submitters

18. 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 Blue Moki, Leather Jacket, Red Gurnard and Rig in Fisheries Management Area 3, with submissions due 1 July 2020.

19. The New Zealand Sport Fishing Council is a recognised national sports organisation with over 36,200 affiliated members from 55 clubs 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. www.legasea.co.nz. Together we are '*the submitters'*.

20. The 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].

21. The submitters note the consultation timeframe of about 26 working days for this process. This time frame has allowed some consultation with local recreational interests, our affected clubs and other representative organisations including the New Zealand Angling and Casting Association. This year the sustainability round includes 12 inshore species in 15 QMAs which has stretched our resources.

22. 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.

The proposals

23. Fisheries New Zealand (FNZ) is proposing to move towards a multi-stock management approach. This includes more explicit consideration of interactions within a fisheries complex. To test the impacts of the proposed TAC and TACC options across the multiple stocks in the east coast South Island trawl fishery, Fisheries New Zealand has analysed the following:

    • catch proportions across the four stocks

    • percentage of TACC caught per fishing year for each stock

    • the target and bycatch relationship between the four stocks over the last four years

    • biological information

    • stock status and when it was last assessed.

24. FNZ state that the inshore bottom trawl fishery operating within MOK 3 as primarily targeting species such as red cod and flatfish that live close to the seafloor. Being a mixed-species fishery there is inevitable bycatch of co-habiting species such as blue moki.

25. A summary of the proposed increases to TACCs from the discussion document are in Table 7.

26. While the submitters are interested in developing a more multi-species approach to fisheries management, this approach is only valid if it is part of an ecosystem based approach aimed at protecting vulnerable habitats and less resilient species. Blue moki is one of the less resilient species. The current FNZ proposal appears to have more in common with the failed Adaptive Management Programme than an ecosystem based management approach.

27. To achieve effective multi-species management the submitters have developed the Rescue Fish policy. Rescue Fish is a viable alternative to the Quota Management System. It is based on strong principles and seeks to address fish depletion and biodiversity loss in our marine environment. The submitters do not consider the FNZ options presented in Table 7 above meet the need for the Minister to act in a precautionary manner due to uncertain, unreliable or incomplete information.

Table 7: Current and proposed TACs, TACCs and allowances for blue moki, leatherjacket, red gurnard and rig

Stock	Option	Total Allowable Catch (tonnes)	Total Allowable Commercial Catch (tonnes)	Allowances		
				Customary Māori (tonnes)	Recreational (tonnes)	All other mortality caused by fishing (tonnes)
MOK 3	Option 1 *(Status quo)*	197	160	1	20	16
	Option 2	216.6 ↑	176 ↑ (10%)	1	22 ↑	17.6↑
	Option 3	234.2 ↑	192 ↑ (20%)	1	22 ↑	19.2↑
LEA 3	Option 1 *(Status quo)*	140	130	1	2	7
	Option 2	160.3 ↑	143 ↑ (10%)	1	2	14.3↑
GUR 3	Option 1 *(Status quo)*	1,593	1,320	3	6	264
	Option 2	1,606.2 ↑	1,452 ↑ (10%)	3	6	145.2↓
SPO 3	Option 1 *(Status quo)*	710	600	20	60	30
	Option 2	806↑	660 ↑ (10%)	20	60	66 ↑

Blue moki 3 (MOK 3)

28. The case for a TAC increase for MOK 3 is weak.

29. MOK are a long-lived low productivity stock with complex migratory behaviours and limited information on stock status as a whole. There is no new information to support a TACC increase, other than a 2% over catch of the TACC in the last 4 years. In 2018-19 ACE was under-caught by 16.6 t (10%) and 15 t of ACE under-catch was carried over to 2019-20. Moreover, the annual deemed value rate starts at $0.88 while the average port price is $1.43 in MOK 3.

30. The spawning migrations of blue moki from the south to the north and back are well documented and increased catch in MOK 3 will affect abundance in MOK 1, around the North Island. This species is a very important taonga for Māori, particularly Ngāti Porou and Te Whānau ā Apanui and FNZ must present the views of these Iwi on current abundance of blue moki in the final advice paper to the Minister.

31. Of the four species under review blue moki is the species requiring the most caution and the clearest rationale when increasing exploitation. Yet the proposed percentage TAC increases are the same or higher for blue moki than the three more productive species in Table 7 above.
32. We submit the quota management system is failing if there is little incentive to limit commercial catch to the TACC while there is a strong incentive to over-catch and ask the Minister for more quota.

33. There needs to be a detailed breakdown of catch by method in the advice to the Minster highlighting the proportion of catch taken by set net vs trawl in MOK 3.

34. TACC increases are allocated in proportion to quota owned. Most quota or ACE will go to the set net Moki target fishery which used to take about 85% of MOK 3 catch. Any catch in excess of the TACC will be driven by the larger set net target fishery in May-June and October (Figure 1), not the trawl bycatch. This is not acknowledged or discussed in the FNZ document.

35. Very little ACE may end up with the trawl fleet in MOK 3 which lands most catch from January

to March when total catch is less than 15 t per month (Figure 1). The submitters find that the basic premise for the increase in MOK 3 TACC to cover mixed trawl bycatch is flawed.

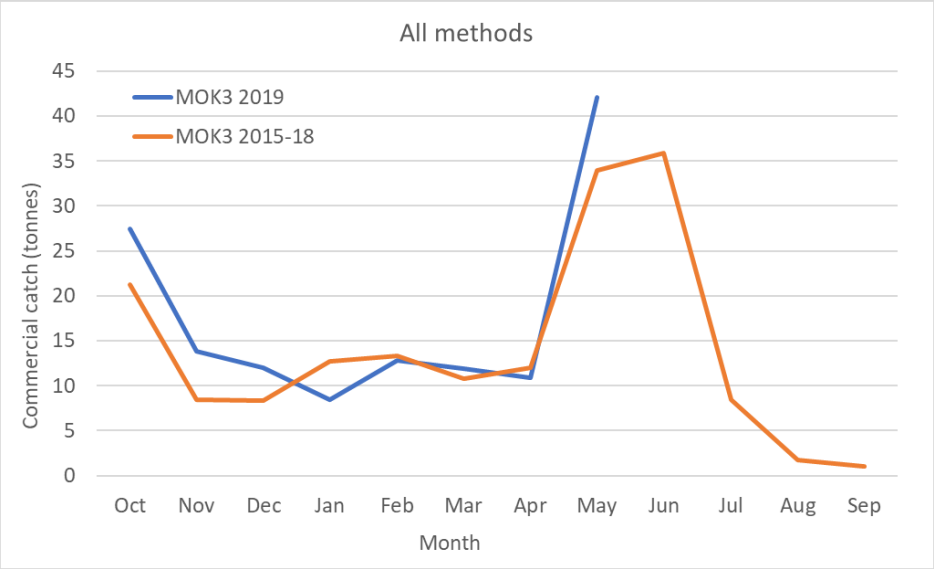

Figure 1: MOK 3 catch by month showing average for 2015-16 to 2018-19 and catch to date in 2019-20 (blue) for all commercial fishing methods.

36. A closer look at the available stock abundance information also casts significant doubt over the assumption in the FNZ proposal document that "the stock is relatively lightly exploited, and that an opportunity may exist to increase harvest at this time."

37. We know that trends in set net catch rates (CPUE) can be affected by changes in fisher behaviour and efficiency, not just changes in abundance. Most of the commercial catch in MOK 3 is taken by set net off Kaikoura as adult fish migrate past. Therefore, the timing and location of fishing effort affect catch and catch rates

38. The MOK 3 set net CPUE shows a significant increase in the period from 2004-05 to 2008-09 while the FMA 2 Trawl CPUE is at its lowest for the whole series (Figure 3). The conclusions of the Southern Inshore Working Group (SINSWG) do not instil confidence in the set net CPUE:

> "The SINSWG rejected the set net-MOK1 and set net-MOK3 CPUE indices as monitoring tools which could be used to determine stock status against Harvest Standard reference points, for the following reasons:
>
> 1. High inter-annual variation in the CPUE indices due to the low precision of CPUE indices derived from limited catch-effort data sets from these small fisheries and/or inter-annual variation in the catchability (availability) of migrating fish.
>
> 2. Possible hyperstability as a result of fishing directed at dense schools of migrating fish."

39. The working group nevertheless agreed that "the set net-MOK1 and set net-MOK3 CPUE indices were likely to be broadly indicative of trends in abundance."

40. The submitters do not believe that the conflict between trawl and set net CPUE has been adequately explained or taken into account by Fisheries New Zealand. There is an extensive area of trawl catch data from Cook Strait to Cape Runaway (Figure 2), which shows a much different trend in CPUE to the set net fishery (Figure 3).

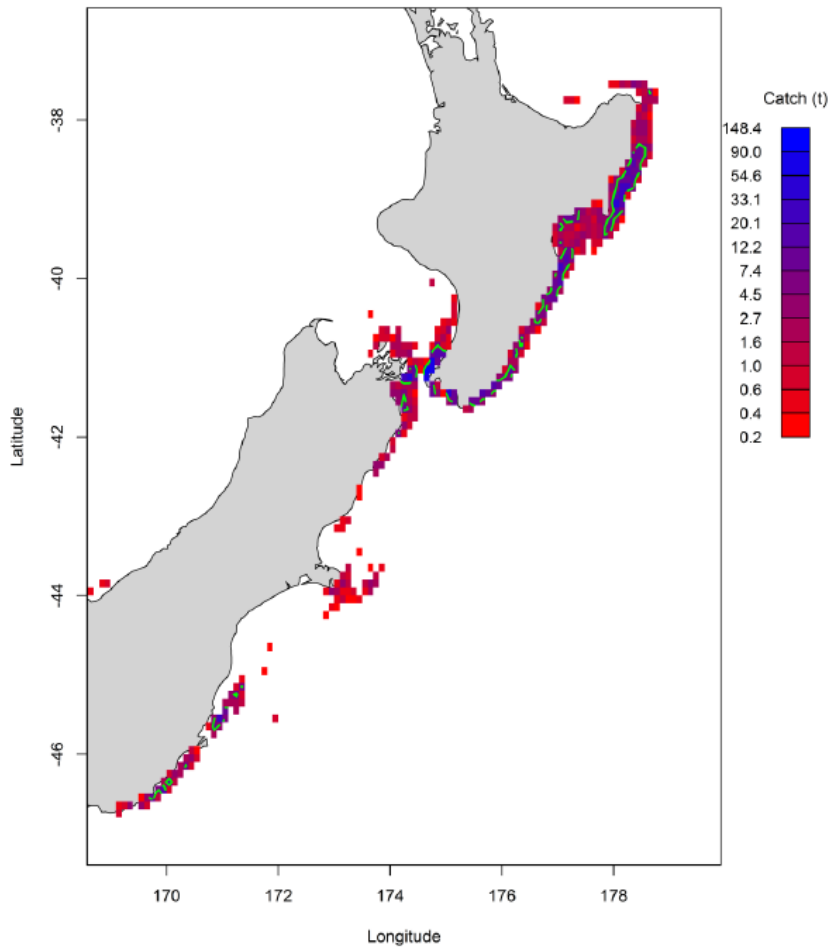

Figure 2: Blue moki catch by trawl aggregated from 2007-08 to 2015-16.

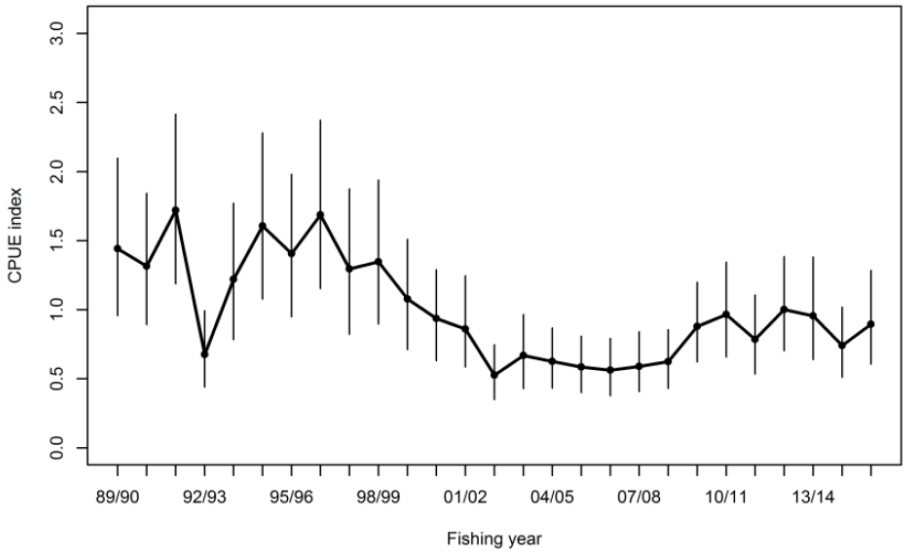

Figure 3: Blue moki CPUE from the TAR 2 bottom trawl fishery with 95% confident intervals (vertical bars).

41. Fisheries New Zealand rely on another study to support the MOK 3 increase. That study is based on catch-at-age data from samples of the commercial trawl and set net fisheries. It is hard to put much weight on the results of this study because all the samples were collected

from the North Island MOK 1 fishery 14 or 15 years ago. There were also significant concerns that the sampling was not representative of the commercial catch, let alone the population as a whole. In the first year most of the samples came from the Gisborne set net fishery while in the second year most came from the Wellington set net fishery and none from Gisborne. In the end, the data was pooled across two years, which never happens if the sampling is well executed.

42. Moreover, the results don't seem realistic. Using a catch curve analysis of data collected during 2004–05 and 2005–06 the estimates of Total mortality (Natural mortality plus Fishing mortality) for MOK 1 ranged from 0.11 to 0.14, but the estimates of Natural mortality range from 0.10 to 0.14 which implies no (or very low) Fishing mortality depending on what numbers were chosen. This is totally unrealistic as the commercial catch of blue moki had been reasonably high for this fishery, at around 500 tonnes a year for the previous 10 years.

43. There is no information regarding the discard rate for sub-MLS moki caught by trawl or set net; the two methods that could be expected to have significant catch of blue moki less than 40 cm. A standard allowance of 10% of the TACC is proposed for MOK 3 to account for other mortality caused by fishing.

44. Whether this 10% allowance is reasonable or not, given the MLS of 40cm, depends on the discard rates and the survivorship of undersize discarded fish from trawl and set net fisheries. Data on the discard rates of undersize blue moki need to be collected and the allowance for fishing related mortality reviewed.

45. The Threat Management Plan for Hector's Dolphin and new set net closures from 1 October 20120 may reduce the MOK 3 catch. FNZ need to assess the impacts of these closures on future catch.

46. The submitters oppose the TAC increase for MOK 3 and urge the Minister to apply the Information Principles in the Fisheries Act that require that caution be applied when making decisions, especially for vulnerable low information stocks.

Leather jacket 3 (LEA 3)

47. Leather jacket is a widespread species common over reefs and structure as well as clear ground, where schools may be found in mid-water. It is not a target or high value commercial species and is caught mostly by trawl. The east coast South Island winter trawl survey provides some information on vulnerable biomass, with LEA 3 catches highest in the 10 to 30 m depth range.

48. The submitters recommend a shift away from trawling in inshore waters to protect benthic habitat, to reduce resuspension of fine sediments and reduce the risk of catching Hectors dolphin, while enabling fishers to land high quality, high value fish. Alternative fishing methods will reduce the catch of leather jacket in LEA 3 and a TACC increase will be unnecessary.

49. The submitters support option 1 to retain the status quo on the basis that a precautionary approach is required and the increases are unnecessary.

Red Gurnard 3 (GUR 3)

50. Red gurnard is a relatively common species taken by trawling on open ground in FMA 3 and FMA 5, which combine into GUR 3 covering waters from the Clarence River on the east coast of the South Island around to Awarua Point, Fiordland. It is becoming a more common target species for trawl and Danish seine in this area. Indications from the south east trawl survey are that abundance has been stable in recent years.

51. The 2014 trawl CPUE analysis is out of date. A report for the Southern Inshore Fisheries Management Company in 2018 provided a good characterisation of the fishery and an updated index of relative abundance. This showed that CPUE had remained high but a change in the analysis was recommended by the science working group and the index was not accepted.

52. The submitters recommend a shift away from trawling in inshore waters to protect benthic habitat, to reduce resuspension of fine sediments and reduce the risk of catching Hectors dolphin, and to use fishing methods that land high quality, high value fish. In the interim, the reported increase in trawl cod end mesh size in the south east trawl fishery should reduce the catch of red gurnard in GUR 3 and a TACC increase will be unnecessary.

53. The submitters support option 1 to retain the status quo on the basis that a precautionary approach is required and the increases are unnecessary.

Rig 3 (SPO 3)

54. Indications from trawl CPUE are that the SPO 3 stock (FMA 3 and FMA 5) has increased in recent years and the south east trawl survey shows that abundance in FMA 3 has been stable since 2012, although there is a decline in deeper strata in 2018 (Figure 4).

55. Overall, the commercial catch is close to available ACE and the rig population seems stable. However, rig give birth to live pups, so the population size is closely linked to the female biomass. Care is needed to avoid targeting areas where pregnant females school.

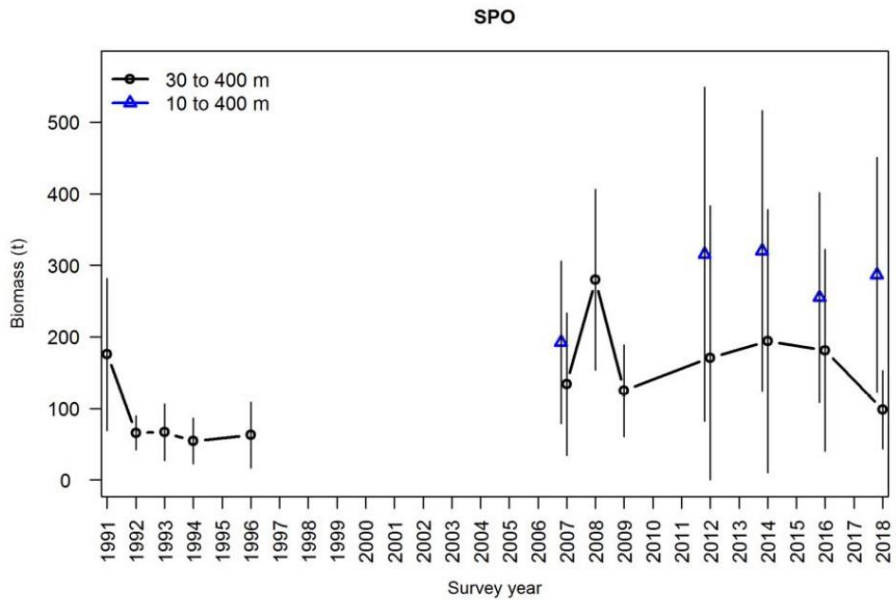

Figure 4: Trawl survey biomass estimates of rig in SPO 3.

56. The Threat Management Plan for Hector's Dolphin and new set net closures from 1 October 2020 will significantly reduce the SPO 3 catch. We submit the TACC increases are therefore unnecessary.

57. The submitters recommend a shift away from trawling in inshore waters to protect benthic habitat, to reduce resuspension of fine sediments and reduce the risk of catching Hectors dolphin, and to use fishing methods that land high quality, high value fish.

58. The submitters support option 1 to retain the status quo on the basis that a precautionary approach is required and the increases are unnecessary.