Fisheries New Zealand
Tini a Tangaroa

Review of Sustainability Measures for Red Gurnard (GUR 3) for 2022/23

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1 Stock being reviewed

Red gurnard (GUR 3) – East Coast South Island, Chatham Rise, Sub-Antarctic, Southland, Rakiura and Fiordland

Red gurnard – *Chelidonichthys kumu,* kumukumu, pūwhaiau

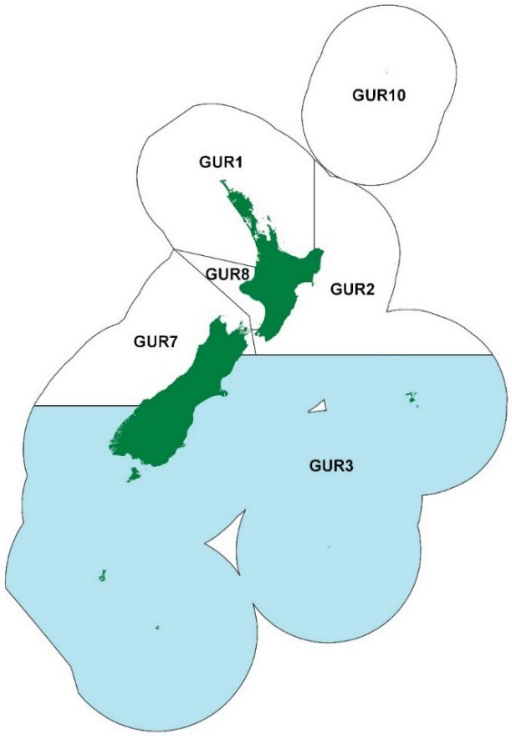

Figure 1: Quota Management Areas (QMAs) for Red Gurnard, with GUR 3 highlighted.

2 Summary

1. Fisheries New Zealand (FNZ) is reviewing sustainability measures for red gurnard in Quota Management Area GUR 3, which is part of the East Coast South Island multi-species trawl fishery, for the 1 October 2022 fishing year (Figure 1).

2. Recent stock assessments and anecdotal information suggest that there is a utilisation opportunity for GUR 3. In May 2022, GUR 3 had its first fully quantitative stock assessment completed. This determined GUR 3 is virtually certain (>99%) to be at or above target and that overfishing is very unlikely (<10%) to be occurring.

3. Based on the best available information and considering the interdependencies identified between stocks in this multi species fishery, FNZ is proposing two options for GUR 3 as outlined in Table 1 below:

Table 1: Proposed management options (in tonnes) for GUR 3 from 1 October 2022.

Option	TAC	TACC	Allowances		
			Customary Māori	Recreational	All other mortality caused by fishing
Option 1 *(Status quo)*	1614	1500	3	6	105
Option 2	1695 ↑ (81 t)	1575 ↑ (75 t)	3	6	111 ↑ (6 t)

4. FNZ welcomes your feedback and submissions on the options proposed, or any other alternatives.

3 About the stock

3.1 Fishery characteristics

5. Red gurnard is a common species predominately caught in the Fisheries Management Area 3 (FMA 3) inshore mixed species trawl fishery along with flatfish, elephant fish, red cod, tarakihi, blue moki, rig, barracouta and leather jacket. Trawling is the main commercial method for red gurnard, there is also some Danish seining. Some gurnard are also taken in the offshore target tarakihi and giant stargazer bottom trawl fisheries. The level of targeting within the ECSI multi species trawl for this species was historically low, averaging less than 10% but has increased to approximately 25% since 2017–18.

6. Rod and line fishing is the preferred recreational fishing method in FMA 3, with some longlining and smaller amounts of other recreational methods (e.g., spear fishing).

3.2 Biology

7. Red gurnard grow to a maximum length of 55 cm with females growing faster and larger than males. They have a maximum age of 16 years and reach maturity at 23 cm in length and 2-3 years of age. Spawning occurs in spring-summer.

8. Red gurnard are found throughout New Zealand coastal waters at depths of 10-200 m. They feed mainly on shellfish, crustaceans, and crabs.

3.3 Management background

9. GUR 3 entered the Quota Management System (QMS) in 1986 with a Total Allowable Commercial Catch (TACC) of 480 tonnes. Through quota appeals the TACC was increased to 900 tonnes in 1996 and then decreased in 2001 to 800 tonnes. In 2012, the TAC and TACC were reviewed, and allowances were set. There have been three reviews and amendments to the management settings since then (2015, 2018 and 2020). Following the most recent review in 2020, the TAC and TACC were increased to 1614 t and 1500 t respectively. There is a commercial preference for red gurnard over 27cm with issues being identified with discarding of small red gurnard in the commercial inshore trawl fishery.

10. For more information about the QMS go to https://www.mpi.govt.nz/law-and-policy/legal-overviews/fisheries/quota-management-system/.

4 Status of the stock

11. The best available information on the status of GUR 3 can be found within the May 2022 Fisheries Assessment Plenary report.

12. The first fully quantitative stock assessment of GUR 3 was completed in May 2022. Previously, GUR 3 was assessed using partial quantitative stock assessments based on standardised Catch Per Unit Effort (CPUE) indices. CPUE trends and the results of the fishery independent East Coast South Island (ECSI) trawl survey show an increase in abundance since 2000 with large confidence intervals (CIs) (Figure 2). The large CIs for the trawl survey are related to the ECSI trawl survey not being optimised to red gurnard. A low number of stations targeting inshore areas (10-30m) are prioritised for the survey with greater importance placed on other species and depth ranges (30-400m). Abundance trends are also reflected in CPUE indices from the ECSI, Southland and Otago (Figure 3).

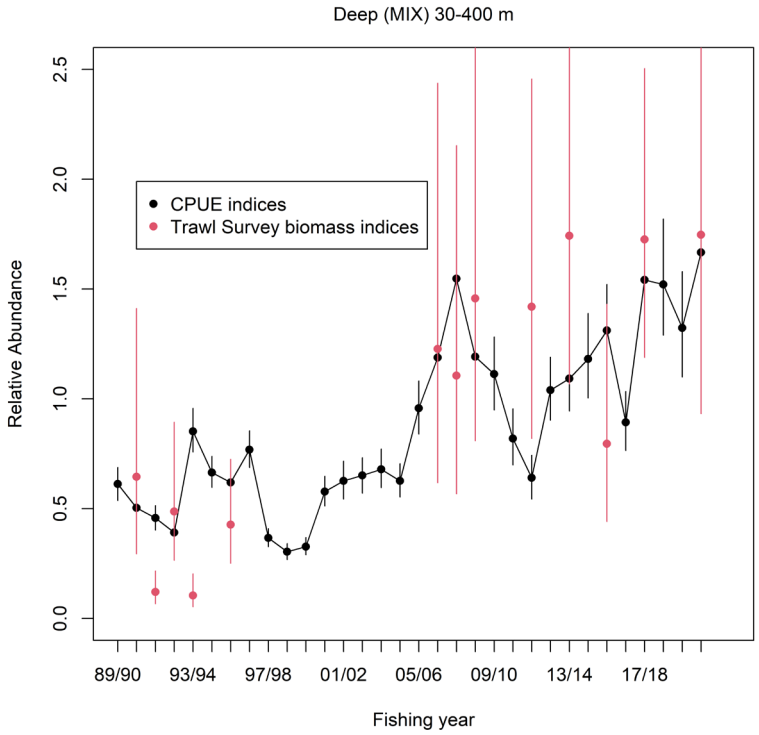

Figure 2: Standardised bottom trawl-mix CPUE indices and the east coast trawl survey biomass estimates for red gurnard from the 30–400 m depth range. Error bars show ±95% confidence intervals.

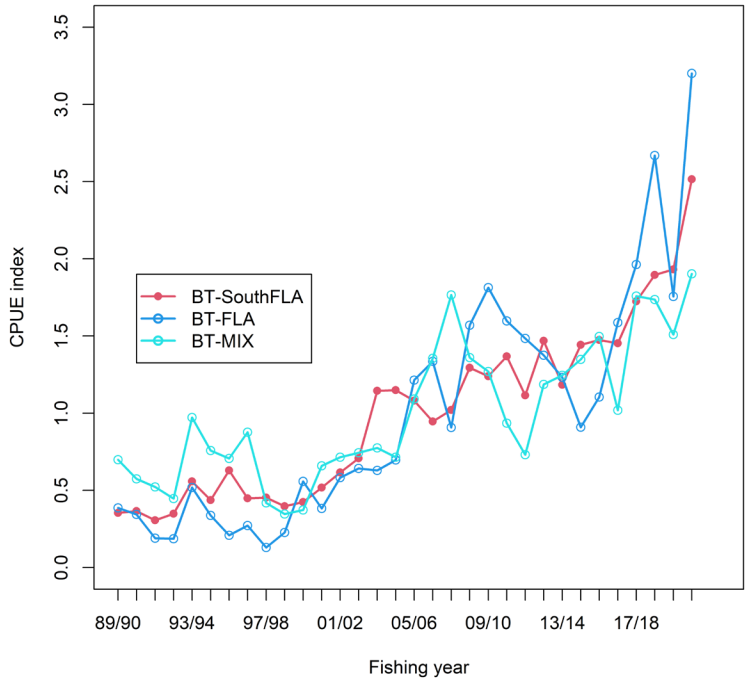

Figure 3: A comparison of the standardised red gurnard CPUE indices for bottom trawl mix (light blue), bottom trawl flatfish (dark blue) and Southland/Otago flatfish (red line) from 1989 to 2021.

13. The 2022 quantitative stock assessment indicates that GUR 3 is very likely (>90%) to be above target levels of 35% SB_0. The stock status is also referenced against the default Harvest Strategy Standard soft limit of 20% and hard limit of 10%. Overfishing is very unlikely (<10%) to be occurring. GUR 3 is very unlikely (<10%) to be below the soft limit and exceptionally unlikely (<1%) to be below the hard limit. At current TAC settings, GUR 3 abundance is very likely (> 90%) to remain above the target biomass level over the next five years. The stock assessment

was conducted using an age-structured population model. The assessments model estimates an upward trajectory in the stock above the interim target level (Figure 4).

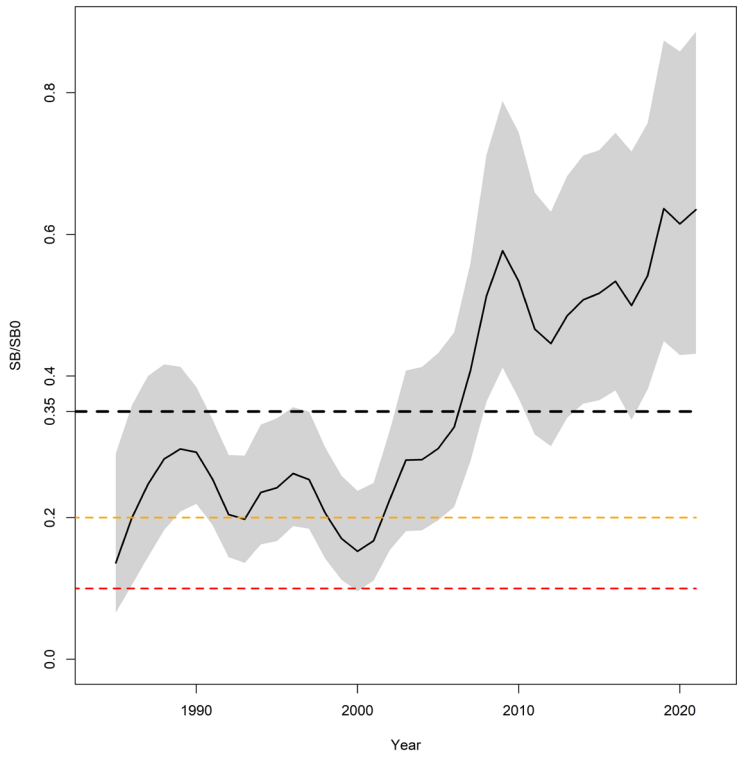

Figure 4: Annual biomass trend by year for GUR 3. The black solid line represents the median and the shaded area represents the 95% credible interval. The dashed line represents the interim target level (35% SB_0). The red and orange dashed lines represent the hard and soft biomass limits, respectively.

5 Catch information and current settings within the TAC

5.1 Commercial

14. GUR 3 landings regularly exceeded the TACC between 1988–89 and 1995–96. Ageing of fish collected during the ECSI trawl surveys at this time suggests relatively strong year classes moving through the fishery. However, from the 1996–97 fishing year, landings declined. In 2002–03, the TACC for GUR 3 was reduced to 800 tonnes. Since 2000 catch has steadily increased and has been consistently overcaught since 2004 reaching catch levels previously attained in the 1960's (Figure 5).

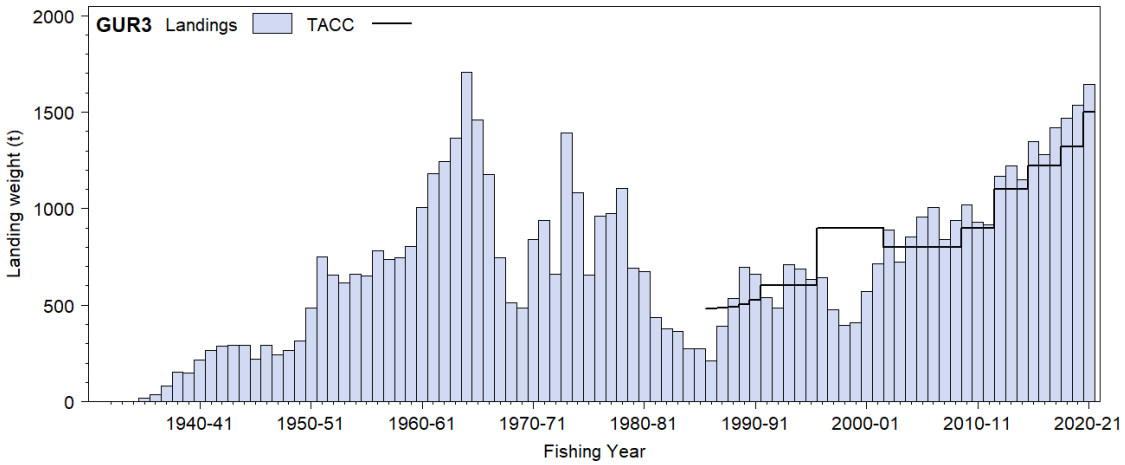

Figure 5: Reported commercial landings (in tonnes) and TACCs for GUR 3 (south east coast).

15. Commercial fishing stakeholder groups (Southern Inshore Fisheries, and Fisheries Inshore New Zealand) have advised that commercial fishers find it difficult to avoid catching red gurnard in GUR 3 and that its abundance has increased over the last several years, especially along the East Coast of the South Island.

5.2 Customary Māori

16. Under the Fisheries (South Island Customary Fishing) Regulations 1999, red gurnard (kumukumu, pūwhaiau) has been reported as taken in small amounts for GUR 3. The small amount of customary reporting may reflect that tangata whenua are using recreational fishing regulations for their harvest.

17. The customary allowance for GUR 3 is currently set at three tonnes based on available information. FNZ welcomes input from tangata whenua on levels of customary take of red gurnard in this area and seeks feedback on whether the current allowance sufficiently accounts for customary take of GUR 3.

5.3 Recreational

18. Red gurnard is a popular recreational fish species across New Zealand. The main recreational fishing method is rod and line, and the recreational daily bag limit for red gurnard in FMA 3 is 30 per person per day as part of the mixed species daily limit. The recreational allowance for GUR 3 is currently set at 6 tonnes.

19. Based on the National Panel Survey of Marine Recreational Fishers (NPS) (2017/18) catch decreased between 2011/12 and 2017/18 surveys (Table 2).

Table 2: Summary of the National Panel Survey of Marine Recreational Fishers results from GUR 3 for red gurnard. Figures are all in tonnes.

Fish stock	2011/12 Estimated harvest	CV	2017/18 Estimated harvest	CV
GUR 3	2.01	± 1.24	1.7	± 0.7

20. The NPS is, however, a snapshot of fishing activity over a fishing year, and it is not appropriate to draw robust conclusions around increases or reductions in recreational harvest solely from this information. Factors such as weather, wind, swell, water temperature and fuel prices all determine how much fishing occurs in any given year.

5.4 Other sources of mortality caused by fishing

21. The allowance for other sources of mortality caused by fishing includes mortality associated with the requirement to return fish below the minimum legal size to sea and other mortality from fish escaping fishing gear, or illegal discarding.

22. In 2020, the then Minister of Fisheries decreased the other mortality allowance for GUR 3 from a level equivalent to 20% of its TACC to a level equivalent to 7% of the TACC (264 t to 105 t). The decision noted the improvements in commercial fishing practices in FMA 3 (e.g., use of lighter gear and larger mesh size).

23. There is no new information available to quantify all other mortality to the stock caused by fishing for GUR 3. As such, FNZ proposes to retain the allowance for other mortality at a level equivalent to 7% of the TACC.

6 Treaty of Waitangi obligations

24. Section 5 of the Fisheries Act 1996 (the Act) requires that the Act be interpreted and people making decisions under the Act to do so in a manner that is consistent with the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (the Settlement Act). The Settlement Act provides that non-commercial customary fishing rights continue to be subject to the Principles of

the Treaty of Waitangi and give rise to Treaty obligations on the Crown.

25. Section 10 of the Settlement Act requires the Minister to develop policies and programmes to give effect to the use and management practices of tangata whenua. Consistent with Section 10, the Ministry has worked with Iwi to develop engagement processes that enable iwi to work together to reach a consensus where possible and to inform the Ministry on how tangata whenua wish to exercise kaitiakitanga in respect of fish stocks in which they share rights and interests and how those rights and interests may be affected by sustainability measures proposed by the Ministry.

6.1 Input and participation of tangata whenua

26. The manner in which the Ministry provides for input and participation of Māori is not discretionary but arises as a legal obligation from section 10 of the Settlement Act[1] and section 12 of the Fisheries Act 1996.[2] Section 12 (b) of the Act requires that before undertaking any sustainability process the Minister shall provide for the input and participation of tangata whenua who have a non-commercial interest in the stock or an interest in the effects of fishing on the stock. In considering the views of tangata whenua, the Minister is required to have particular regard for Kaitiakitanga from the perspective of tangata whenua.

27. Consistent with the agreements with iwi under section 10 of the Settlement Act, input and participation of tangata whenua into the sustainability decision-making process is provided mainly through Iwi Fisheries Forums, which have been established for that purpose.

28. Each Iwi Fisheries Forum can develop an Iwi Fisheries Forum Plan that describes how the iwi in the Forum exercise kaitiakitanga over the fisheries of importance to them, and their objectives for the management of their interest in fisheries. Iwi Fisheries Forums may also be used as entities to consult iwi with an interest in fisheries (however, FNZ will also engage directly with iwi on matters that affect their fisheries interests in their takiwa).

29. Te Waka a Māui me Ōna Toka Iwi Forum is the Te Wai Pounamu (South Island) Iwi fisheries forum — it includes all nine tangata whenua Iwi of Te Wai Pounamu: Ngāti Apa ki Ratō, Ngāti Kōata, Ngāti Kuia, Ngāti Rarua, Ngāti Tama, Ngāti Tōarangatira, Rangitāne ō Wairau, Te Ati Awa and Ngai Tahu. Their Iwi Fisheries Forum Plan is titled Te Waipounamu Iwi Forum Fisheries Plan.

30. At the March 2022 hui, FNZ discussed the October sustainability round generally. At that time, South Island stocks to proceed to review were not finalised as trawl survey biomass estimates were not available to inform options for GUR 3 for forum member's input. The options presented in this paper will, therefore, be discussed further with Te Waka a Māui me Ōna Toka Iwi Forum hui in July 2022. In response to the forum's input further options may be presented to the Minister for his consideration.

31. FNZ also welcomes any input and submissions on the options from tangata whenua outside of this planned engagement.

6.2 Kaitiakitanga

32. Kumukumu (red gurnard) are identified as a taonga species in the Te Waipounamu Iwi Forum Fisheries Plan. The Forum Fisheries Plan contains objectives to support and provide for the interests of South Island iwi, including the following which are relevant to the options proposed in this paper:

    - **Management objective 1:** To create thriving customary non-commercial fisheries that support the cultural wellbeing of South Island iwi and whanau;

[1] Section 10 of the Treaty of Waitangi (Fisheries Claims) Settlement act 1992 refers to the effect of settlement on non-commercial Māori fishing rights and interests https://www.legislation.govt.nz/act/public/1992/0121/latest/DLM281461.html

[2] Section 12 of the Fisheries Act 1996 refers to consultation https://legislation.govt.nz/act/public/1996/0088/latest/DLM395504.html

- **Management objective 2:** South Island Iwi are able to exercise kaitiakitanga;

- **Management objective 3:** To develop environmentally responsible, productive, sustainable, and culturally appropriate commercial fisheries that create long-term commercial benefits and economic development opportunities for South Island iwi; and

- **Management objective 5:** to restore, maintain and enhance the mauri and wairua of fisheries throughout the South Island.

33. Under the Fisheries (South Island Customary Fishing) Regulations 1999 and the Fisheries Act 1996, tangata whenua can manage their fisheries in a way that best fits their local practices. The following customary management areas are located within GUR 3 (Table 3).

Table 3: Customary fisheries management areas within GUR 3.

Name	Management type
Te Taumanu o Te Waka a Māui Oaro-Haumuri Akaroa Harbour East Otago	**Taiāpure** *All types of fishing are permitted within a Taiāpure. The management committee can recommend regulations for commercial, recreational, and customary fishing.*
Te Waha o te Marangai Mangamaunu Kahutara Oaro Tūtaeputaputa Lyttleton Harbour/Whakaraupo Rapaki Bay Koukourārata Te Kaio Ōpihi Extension Ōpihi Waitarakao Te Ahi Tarakihi Tuhawaiki Waihao Moeraki Otakou Puna-wai-Toriki (Hays Gap) Waitutu Oreti Motupohue Te Whaka a Te Wera Horomamae Pikomamaku Kaihuka	**Mātaitai Reserve** *Commercial fishing is not permitted within mātaitai reserves unless regulations state otherwise.*

34. FNZ considers the options proposed in this paper will not impact on, or be impacted by, the customary fisheries management areas in GUR 3. Commercial fishing is prohibited in mātaitai. There are no regulations relating to either red gurnard in taiāpure, or bylaws in any of the mātaitai.

35. FNZ is seeking input from tangata whenua on how the proposed options for GUR 3 may or may not provide for kaitiakitanga as exercised by tangata whenua, and how tangata whenua consider the proposal may affect their rights and interests in this stock.

7 Current and proposed settings within the TAC

7.1 Option 1 – *status quo*

TAC: 1614 t	**TACC:** 1500 t	**Customary**: 3 t	**Recreational**: 6 t	**Other mortality**: 105 t

36. Option 1 is to retain the current TAC and other settings (*status quo*). This option notes the uncertainty associated with the ECSI trawl survey biomass estimates and that current fishing pressure is high relative to the commercial catch data time series which dates from the 1960s (Figure 5).

37. The status quo does not provide for a utilisation opportunity and will constrain commercial catch given GUR 3's increasing abundance as reflected in the May 2022 stock assessment and increasing CPUE indices. This potentially also includes constraining the catch of other species caught with red gurnard, given the difficulty fishers are experiencing avoiding this species.

7.2 Option 2

TAC: 1695 t (↑ 81 t)	**TACC:** 1575 t (↑ 75 t)	**Customary**: 3 t –	**Recreational**: 6 t –	**Other mortality**: 111 t (↑ 6 t)

38. Option 2 increases the TAC by 81 tonnes, the TACC by 75 tonnes and the allowance for other mortality caused by fishing by 6 tonnes. No change is proposed for customary and recreational allowances. This takes into account both the results of the 2022 full GUR 3 stock assessment, biomass estimates from the ECSI trawl survey and increasing trends in CPUE indices.

39. This option provides benefits in terms of the overall value of GUR 3, and increased utilisation opportunity for commercial fishers in line with the increase in abundance. This applies not only in relation to GUR 3, but also in relation to catch of other stocks caught together with gurnard such as rig in the ECSI mixed species trawl fishery.

40. It assumes that with an increase in abundance the success and levels of harvest of customary and recreational fishers will also likely increase. However, given recreational and customary catch estimates are below the limits, based on customary returns and NPS 2017/18 estimates, no increase is proposed.

41. Based on the 2020/21 port prices, the proposed increases in TACC under Option 2 for red gurnard will generate a further $180,000 per year in commercial fishing revenue. It is important to note that port price is an average of what commercial fishers receive across a QMA, not what the fish is worth at market (which is higher). Nor does it reflect the income for Licensed Fish Receivers (including, wholesalers and/or processors) and retailers.

42. Option 2 is consistent with the Te Waipounamu Iwi Fisheries Forum Plan management objectives; particularly Objective 3, to support environmentally responsible, productive, sustainable, and culturally appropriate commercial fisheries that create long term commercial benefits and economic development opportunities for South Island iwi.

43. Option 2 also maintains the allowance for other mortality caused by fishing at 7% of the TACC as decided by the previous Minister of Fisheries in 2020.

8 Environmental interactions

44. The key environmental principles, which must be taken into account when considering sustainability measures for GUR 3 are as follows:

    (a) Associated or dependent species should be maintained above a level that ensures their long-term viability (marine mammals, seabirds, fish, and invertebrate bycatch).

(b) Biological diversity of the aquatic environment should be maintained (in particular the benthic impacts from fishing); and

(c) Habitats of particular significance for fisheries management should be protected.

45. It is important to note that in some cases FNZ has made assumptions about environmental interactions based on fisher reported data that may not have been independently verified (for example by an on-board FNZ Observer). Observer coverage in GUR 3 has averaged below 5% in the past 5 fishing years based on event level data[3], with observer effort prioritised to monitor protected species interactions in fisheries considered to be higher risk.

46. Increased uptake of cameras onboard vessels in GUR 3 will enhance FNZ's abilities to monitor environmental interactions in the fishery (refer to section 12.2 for more details).

8.1 Marine mammals

47. Marine mammals are sometimes accidentally caught during commercial fishing. Commercial fishers must file daily reports about what they have caught. FNZ is now releasing these reports quarterly (from the 2019/20 fishing year). You can view this information on our webpage. It is important to note, in some cases FNZ has made assumptions about the likely fishing method.

48. In general, trawl fisheries have been assessed as posing a substantially lesser risk to dolphins than commercial set-net fisheries. The Hector's and Māui dolphin Threat Management Plan guides management approaches for addressing both non-fishing and fishing related impacts on Hector's and Māui dolphins. The risk to the dolphins from trawling around the South Island, including for GUR 3, is largely managed under the current trawl restrictions.

49. Trawl gear is restricted outside 2 nautical miles from the coast between Cape Jackson in the Marlborough Sounds and Slope Point in the Catlin's – only trawl nets with defined low headline heights may be used. Existing restrictions along the east coast of the South Island are presented in the Table 4 below.

Table 4: Existing trawl restrictions along the east coast South Island.

East coast South Island	Method	Existing measures
Pegasus Bay	Trawl	Low headline height required on trawl vessels operating within 2 nm of shore.
Banks Peninsula to Timaru	Trawl	Low headline height required on trawl vessels operating within 2 nm of shore.

50. New Zealand sea lions, New Zealand fur seals, common dolphins and other marine mammals inhabit the marine environment where gurnard are caught in GUR 3. These species periodically interact with trawl vessels. For inshore trawl vessels in 2019/20 three New Zealand Fur Seal deaths were reported by commercial fishers or observed by FNZ Observers in the GUR 3 area (see East Coast South Island). However, only around 6% of inshore trawls were observed, so the total number of interactions is uncertain.

51. Overall, FNZ considers the number of incidental marine mammal captures is unlikely to increase under the options proposed in this paper as it is not expected that the amount of trawling or set netting will increase significantly.

8.2 Seabirds

52. The most recent Spatially Explicit Fisheries Risk Assessment ranks black petrel as the most at risk seabird, followed by the Salvin's albatross, Westland petrel, flesh-footed shearwater, southern Buller's albatross, and Gibson's albatross (Baird & Mules, 2021).

53. Seabird interactions with New Zealand's commercial fisheries are managed under the National Plan of Action (NPOA) - Seabirds 2020. The NPOA – Seabirds, with its focus on education and

[3] This coverage was calculated based on fishing events in which the fish stock was recorded as caught and an observer was on board. This metric does not reflect the overall level of monitoring in the fishery.

ensuring fishers take all practicable steps to minimise risk to seabirds, will drive significant changes in fisher behaviour and help to ensure that fishing does not adversely impact on the health of seabird populations.

54. FNZ and the fishing industry have worked collaboratively for over a decade, more recently for the inshore fleet, to ensure vessels have, and follow, a Protected Species Risk Management Plan (PSRMP). A PSRMP specifies the measures that must be followed on board each vessel to reduce the risk of incidental seabird captures. While there is no legal requirement that fishers have a PSRMP, more than 90% of the full-time vessels that operate in the GUR 3 trawl fishery have, and follow, one.

55. FNZ is now releasing seabird interaction reports quarterly (from the 2019/20 fishing year). You can view this information on our webpage. For the inshore trawl fishery in 2019/20 for the East Coast South Island 12 seabird interactions (7 deaths, 5 released alive) were reported or observed. However, as described elsewhere, only a small proportion of trawls are observed by FNZ observers.

56. Overall, FNZ considers the number of incidental seabird captures is unlikely to increase under the options as it is not expected that the amount of trawling or set netting will increase significantly.

8.3 Fish bycatch

57. Fish and invertebrate bycatch information in the mixed trawl fishery is primarily from trawl surveys. Trawl surveys along the east coast of the South Island have captured more than 50 finfish species including spiny dogfish, red cod, barracouta, tarakihi, hake and Jack Mackerel. Invertebrates captured included sponges, mussels, octopus, and arrow squid.

58. Increases to catch limits for GUR 3 will increase the ability of fishers to target this species and may allow them to avoid bycatch of other less abundant species with overlapping depth profiles. This is of particular importance for East Coast tarakihi as it is currently undergoing a rebuild due to low abundance. Tarakihi has a wide depth profile that includes many species including gurnard. Increasing the TACC for GUR 3 will allow fishers to move into shallower waters, away from traditional tarakihi habitat and undertake more targeted fishing.

8.4 Benthic impacts

59. Bottom trawling can damage the marine environment; particularly where trawling occurs on biodiverse habitats. However, the proposed increase is modest and is not likely to significantly increase trawl effort as it reflects increased fish abundance and CPUE. Trawling in this fishery is also typically confined to areas that have been consistently fished over time (i.e., not areas of high biodiversity).

60. Concerns have been raised about catch being taken in “hay paddocks” on the South east continental shelf. These are polychaete worm beds that are biologically sensitive, habitat forming areas and maybe vulnerable to disturbance from fishing. FNZ does not expect increases to the amount or location of bottom trawling. FNZ will closely monitor any increase in targeted fishing, by activity and location, and if an increase in fishing activity does occur, we can look at appropriate measures to manage any issue that may arise.

61. Aquatic Environment and Biodiversity research has characterised both New Zealand’s benthic environment and the level of benthic impact from fisheries activity (Aquatic Environment and Biodiversity Annual Review 2018). The environmental impacts of fishing are summarised annually by FNZ. FNZ will continue to monitor the bottom trawl footprint of fisheries.

62. Overall, FNZ considers the increase to the catch limit proposed reflects increased fish abundance and CPUE and, therefore, is unlikely to increase impact on the benthic habitat.

8.5 Habitats of particular significance for fisheries management

63. Red gurnard is broadly distributed in FMA 3 and 5 and there is limited information regarding what specific areas of habitat are of particular significance to the stocks. Some general habitats that could be regarded as particularly significant to GUR 3 are discussed in Table 5 below.

Table 5: Summary of information on habitats of particular significance for fisheries management for GUR 3.

Fish Stock	GUR 3
Habitat of particular significance	Spawning areas are widespread throughout much of New Zealand, including in GUR 3. Running ripe gurnard are found throughout the fishery, however, general areas where spawning occurs include the Canterbury Bight and Pegasus Bay where high catches of juveniles suggest bays may be a spawning and nursery area which might supply the east coast of the South Island.
Attributes of habitat	Spawning areas are widespread throughout much of New Zealand, including in GUR 3. Most commonly in shallow coastal waters (inner and central shelf) over muddy or sandy bottoms. Egg and larval development occur in surface waters and it takes about 8 days before the larvae start to feed. **Juvenile**: Information suggests they prefer rough or weed covered ground in shallow embayment's.
Reasons for particular significance	• Successful spawning and development through juvenile stages is critical to supporting the productivity of the stock and ensuring juveniles recruit into the fishery. • Juvenile habitats are likely to provide shelter and protection from predation and harvesting, and suitable food while growth and development proceeds.
Risks/Threats	• Changes in water temperature and water circulation could impact spawning and egg/larval development. • Bottom contact fishing methods impacting biogenic habitats inshore. • Land-based impacts, for example sedimentation, on habitats with benthic structure and aquatic plants that provide juvenile habitat.
Existing protection measures	Although not specific to GUR 3, within the management area of GUR 3 there are several habitats that are possibly of particular significance to other species that are currently protected by regulatory and non-regulatory measures (voluntary).

64. FNZ will be starting an online consultation in mid-2022 on draft guidelines for identification of habitats of particular significance for fisheries management and the operational proposals to support its application. We would welcome your feedback. More information will be available on https://www.mpi.govt.nz/fishing-aquaculture/ when the consultation starts.

8.6 Multi-species effects

65. FNZ is moving towards more explicit consideration of interactions within a fishery complex and within a multi-stock management approach.

66. In 2019, FNZ took a multi species approach to reviewing those stocks (where appropriate) caught together in FMA 3. At that time, analysis of the interdependencies between the stocks identified that there appears to be three tiers of interdependences (where target catch influences bycatch):

- one with blue moki and gurnard,
- the second with leatherjacket and gurnard,
- and the third with gurnard and rig.

67. The proposed increases to the catch limit for red gurnard should not impact the catch of tarakihi along the ECSI, East Coast tarakihi, which is currently undergoing a rebuild due to low abundance. The distribution plots below indicate that red gurnard is taken inshore of the main tarakihi distributions (Figure 6 and 7 below).

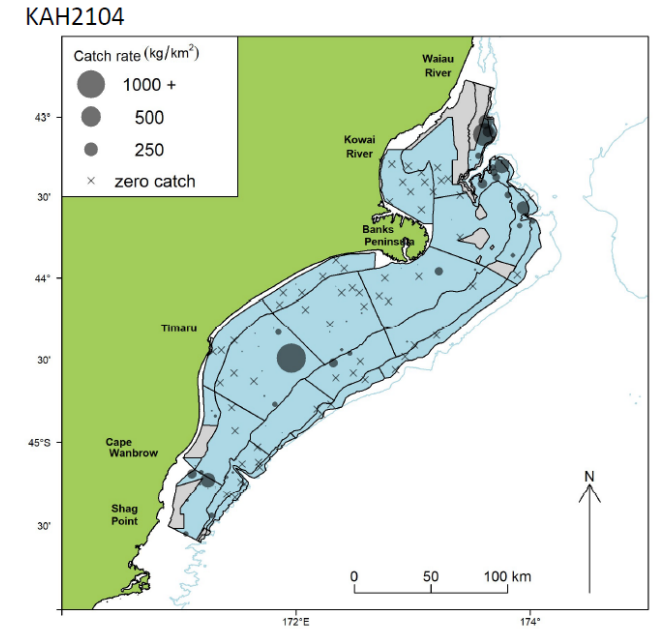

Figure 6: 2021 ECSI Trawl survey Catch rates of tarakihi.

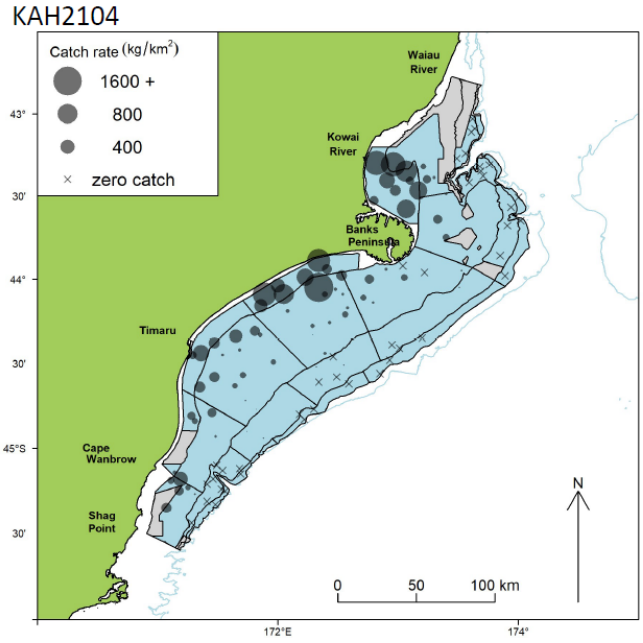

Figure 7: 2021 ECSI Trawl survey Catch rates of red gurnard.

9 Relevant plans, strategies, statements, and context

68. The following plans and strategies are relevant for GUR 3.

9.1 Draft National Inshore Finfish Fisheries Plan

69. Although not yet approved under Section 11 A of the Fisheries Act 1996, red gurnard will be managed under the National Inshore Finfish Fisheries Plan (the Plan). The Plan outlines the management objectives and strategies for finfish fisheries including GUR 3 for the next five years and was consulted on in early 2020.

70. The Plan is aimed at progressing New Zealand towards ecosystem-based fisheries management. Stocks are grouped within the Plan, with management approaches and objectives tailored accordingly for each group.

71. GUR 3 falls into Group 2, which recognises the need to manage it to provide for moderate levels of use with moderate levels of information to monitor its stock status (i.e., a partial quantitative assessment comparing against trends over time). Given the importance of GUR 3 in the east coast mixed trawl fishery, a proposal by industry to manage GUR 3 as a group 1 stock has been made and is being considered by fisheries management and science.

9.3 Regional Plans

72. Under the Resource Management Act 1991, there are several regional plans in place within GUR 3 to address the cumulative effects of activities in the coastal marine area, and the adverse impacts from land-based activities on the marine environment. These regional plans can be found electronically on each council's website. Councils occurring in GUR 3 include- Environment Canterbury, Otago Regional Council and Environment Southland.

73. Fishers are subject to the rules in the plans (for example, small scale restrictions on fishing methods in Fiordland). FNZ considers that the small scale of the restrictions in relation to the large area of GUR 3 means these rules do not, in general, stop fishers taking their catch from other areas within GUR 3.

9.4 Te Mana o te Taiao (Aotearoa New Zealand Biodiversity Strategy)

74. Te Mana o te Taiao – the Aotearoa New Zealand Biodiversity Strategy sets a strategic direction for the protection, restoration and sustainable use of biodiversity, particularly indigenous biodiversity, in Aotearoa New Zealand. The Strategy sets several objectives across three timeframes. The most relevant to setting sustainability measures for GUR 3 are objectives 10 and 12:

    Objective 10: Ecosystems and species are protected, restored, resilient and connected from mountain tops to ocean depths.

    Objective 12: Natural resources are managed sustainably.

75. The Ministry for Primary Industries (MPI) is undertaking work to support this strategy, as well as the requirement under the Fisheries Act to avoid, remedy or mitigate adverse effects on the aquatic environment. The Environmental Interactions section in this paper provides information on relevant interactions with the wider aquatic environment for this stock.

11 Deemed values

76. Deemed values are the price paid by fishers for each kilogram of unprocessed fish landed more than a fisher's Annual Catch Entitlement (ACE) holdings. The purpose of the deemed values regime is to provide incentives for individual fishers to acquire or maintain sufficient ACE to cover catch taken over the course of the year, while allowing flexibility in the timing of balancing, promoting efficiency, and encouraging accurate catch reporting.

77. The Deemed Value Guidelines set out the operational policy FNZ uses to inform the development of advice to the Minister on the setting of deemed values.

78. The deemed value rates for GUR 3 are shown in Table 6.

Table 6: Standard deemed value rates ($/kg) for GUR 3.

	Interim Rate ($/kg)	Annual Differential Rates ($/kg) for excess catch (% of ACE)					
		100-120%	120-140%	140-160%	160-180%	180-200%	200%+
GUR 3 status quo	1.53	1.70	2.04	2.38	2.72	3.06	3.40

79. The average price paid by fishers during the 2020/21 fishing year for one kilogram of GUR 3 ACE was $1.20. The 2020/21 port price for GUR 3 was $2.70 (Figure 8).

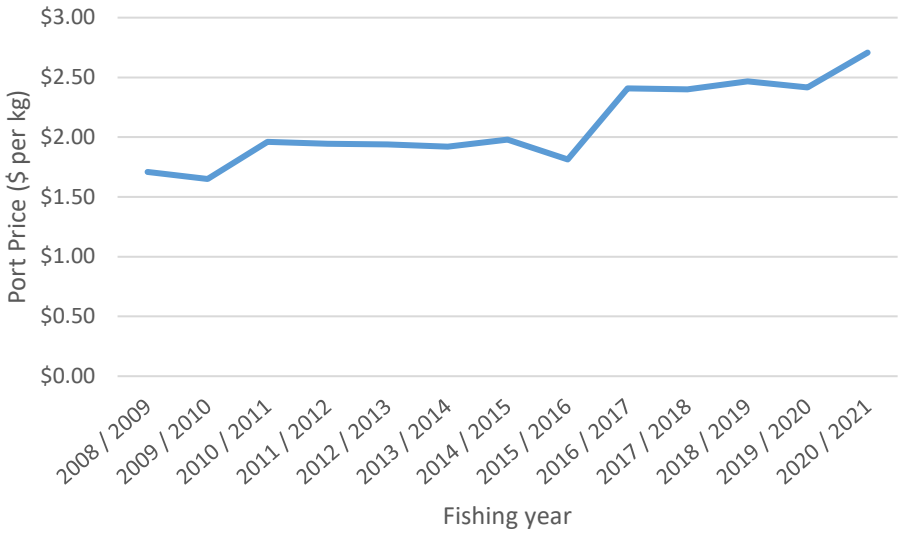

Figure 8: Average port price ($ per kg) for GUR 3 2008-present.

80. As the current deemed value rates for GUR 3 are set slightly above the average ACE price, no changes are proposed to the deemed value rates at this time. FNZ acknowledges that if the TACC is increased, subsequent changes in fishing behaviour and the ACE market may result in the need for the deemed value to be re-evaluated in the future. FNZ welcomes any feedback on this.

12 Uncertainties, risks and other considerations

12.1 Maximum Sustainable Yield

81. When setting a TAC, the requirement is to set it a level that maintains the stock at, or above a level that can produce the Maximum Sustainable Yield (MSY). Due to limitations on scientific information for the whole of the GUR 3 area, there is uncertainty in terms of the sustainability of increases in TACC over time.

82. Under all options, FNZ will continue to monitor catch for any signals of future sustainability risks and look for opportunities to gather better information on these stocks.

12.2 Fisheries Amendment Bill and On-board cameras

83. The Fisheries Amendment Bill[4], currently before Select Committee, is part of the wider fisheries reform programme. Its goal is to encourage better fishing practices. It aims to update and strengthen New Zealand's fisheries management system. The Bill proposes to change the current rules and policies by:

    (a) tightening commercial fishing rules for landings and discards;

    (b) creating new rules and regulations for offences and penalties;

    (c) introducing new mechanisms for commercial and recreational management decision-making;

    (d) enabling the further use of on-board cameras on vessels; and

[4] Fisheries Amendment Bill. Ministry for Primary Industries

(e) creating a new defence to help save marine mammals and protected sharks and rays.

84. The Minister recently announced key details of the nationwide rollout of cameras on commercial fishing vessels[5]. It is expected that the independent information they will provide will support the reputation of New Zealand's fishing industry, the sustainability of New Zealand's fisheries and provide for more confident management decisions.

85. This will include vessels that use the following methods:

- Set net vessels (8 metres or larger), surface longline, and bottom longline vessels.
- Trawlers of 32 metres or less, except those targeting scampi, and danish and purse seine vessels.

86. Of most relevance to GUR 3, it is expected that cameras[6] will be installed and transmitting footage on all inshore trawl vessels operating in GUR 3 by June 2023.

87. It is expected that the On-board camera rollout, and the wider Fisheries Amendment Bill, will enhance our understanding of this stock, provide for better verified information to underpin fisheries management decisions, and encourage better fishing practices.

13 Questions for submitters

- Which option do you support for revising the TAC and allowances? Why?
- If you do not support any of the options listed, what alternative(s) should be considered? Why?
- Are the allowances for customary Māori, recreational and other sources of mortality appropriate? Why?
- Do you think these options adequately provide for social, economic, and cultural wellbeing?
- Do you have any concerns about potential impacts of the proposed options on the aquatic environment?

88. We welcome your views on these proposals. Please provide detailed information and sources to support your views where possible.

14 How to get more information and have your say

89. FNZ invites you to make a submission on the proposals set out in this discussion document. Consultation closes at 5pm on 22 July 2022.

90. Please see FNZ's sustainability consultation webpage (https://www.mpi.govt.nz/consultations/review-of-sustainability-measures-2022-october-round/) for related information, a helpful submissions template, and information on how to submit your feedback. If you cannot access to the webpage or require hard copies of documents or any other information, please email FMSubmissions@mpi.govt.nz.

[5] Rollout of cameras on fishing vessels to begin. Honourable David Parker, Minister for Oceans and Fisheries.
[6] On-board cameras for commercial fishing vessels. Ministry for Primary Industries

15 Legal basis for managing fisheries in New Zealand

91. The Fisheries Act 1996 provides the legal basis for managing fisheries in New Zealand, including the Minister's responsibilities for setting and varying sustainability measures. See the separate document *Overview of legislative requirements and other considerations* at https://www.mpi.govt.nz/dmsdocument/51712 for more information.

16 Referenced reports

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