

Red Gurnard (GUR 3)

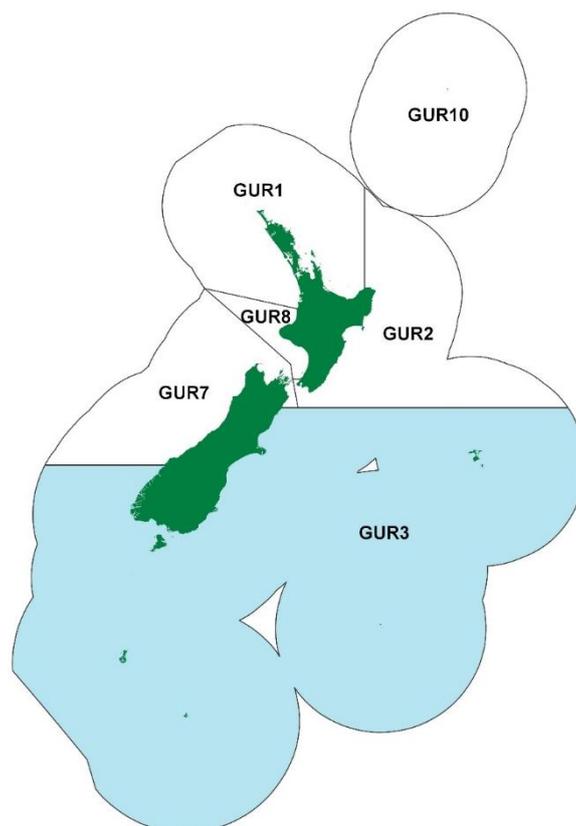


Figure 1: Quota Management Areas (QMAs) for red gurnard (GUR), with GUR 3 highlighted in blue.

1. What is proposed?

822. Fisheries New Zealand is reviewing the total allowable catch (TAC), allowance for Māori customary fishing, allowance for recreational fishing, allowance for all other mortality to the stock caused by fishing, and the total allowable commercial catch (TACC) for red gurnard (*Chelidonichthys kumu*; kumukumu) in GUR 3 off the east coast of the South Island (Figure 1). Fisheries New Zealand proposes that the following initial options be considered, and seeks information and views from tangata whenua and stakeholders (Table 1):

Table 1: Proposed management settings in tonnes for GUR 3 from 1 October 2018, with the percentage change relative to the *status quo* in brackets.

Option	Total Allowable Catch (TAC)	Total Allowable Commercial Catch (TACC)	Allowances		
			Customary Māori	Recreational	All other mortality to the stock caused by fishing
Option 1 (<i>Status quo</i>)	1290	1220	3	6	61
Option 2	1395 ↑ (8%)	1320 ↑ (8%)	3	6	66 ↑ (8%)

823. The interim deemed value rate of GUR 3 is currently set at 90% of the annual deemed value rate and as the current interim and annual deemed value rates are consistent with

the Deemed Value Guidelines¹, no changes are proposed to the deemed value rates for GUR 3, as outlined in Table 2.

Table 2: 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%+
<i>Status quo</i>	1.53	1.70	2.04	2.38	2.72	3.06	3.40

2. Why the need for change?

824. Levels of red gurnard were low in the mid-1990s (Figure 3), but since then stock size has increased substantially. The available information suggests that the stock is above the management target, and is likely to remain so in the short term as a result of high recruitment. Commercial fishers indicate that they find it difficult to stay within the TACC despite the low level of targeting on this species.

3. Background

825. Red gurnard is a fast growing, moderately short lived species, with a maximum age of 16 years. They reach sexual maturity at 2-3 years old at a length of about 23 cm. Due to the fast growth rate and short lifespan, variation in recruitment tends to result in large fluctuations in stock biomass.

826. The fluctuations in stock biomass can provide opportunities for increased utilisation when there are consecutive years of good recruitment, which create strong year classes in the population. But, it also means that management action is required to reduce catches at times of persistent low recruitment.

3.1 FISHERY CHARACTERISATION

Customary Māori fishery

827. Red gurnard (kumukumu) is an important species for customary non-commercial fishing interests, by virtue of its wide distribution in shallow, accessible coastal waters. It is identified by Te Waka a Māui me Ōna Toka iwi forum as a taonga species in the Te Waipounamu Iwi Fisheries Plan. This plan contains objectives to support and provide for the customary and commercial interests of South Island iwi.

828. The GUR 3 QMA is under two different regulations for customary catch, the Fisheries (South Island Customary Fishing) Regulations 1999 (the South Island Regulations) and the Fisheries (Amateur Fishing) Regulations 2013 (the Amateur Regulations). The South Island Regulations apply south of the Clarence River down the east coast of the South Island and the Chatham Islands, while the Amateur Regulations apply north of the Clarence River along the top of the South Island.

¹ Available at www.mpi.govt.nz/document-vault/3663

829. For tangata whenua groups in GUR 3 operating under the Fisheries (South Island Customary Fishing) Regulations 1998, there is a requirement for Tangata Kaitiaki/Tiaki to provide information on Māori customary harvest of fish. Available information suggests customary Māori take is within current allowances, with 11 authorisations to take gurnard for customary purposes since 2000.

Recreational fishery

830. The National Panel Survey of Marine Recreational Fishers 2011/12² (NPS) estimated that 2.01 tonnes of gurnard (4605 individual fish) was harvested by recreational fishers in GUR 3 during the 2011/12 fishing year. There is uncertainty in using this estimate to predict current or future catches, however, given the strength of the current stock biomass, it is likely recreational catch will increase to reflect this higher abundance. Nevertheless, the best available information suggests that current settings will provide for both current levels of catch and increased recreational harvest of gurnard in GUR 3.
831. A repeat of the 2011/12 NPS is currently underway in 2017/18, and updated estimates of recreational catch in SPO 7 will be used to inform future management.

Commercial fishery

832. GUR 3 is taken primarily in coastal trawl fisheries with a small proportion of the catch taken by Danish Seine. The fish stock is a key bycatch species (around 60% is caught as bycatch) in the south-east flatfish, red cod and barracouta mixed trawl fisheries and in the Foveaux Strait flatfish target trawl fishery. Some gurnard are also taken in the target tarakihi and stargazer bottom trawl fisheries.
833. About 90% of GUR 3 is taken as a bycatch of the mixed trawl fishery off the east coast South Island. The TACC has been consistently over-caught since 2012 (Figure 2). Fishers report that the high abundance of gurnard in GUR 3 is requiring fishers to avoid fishing many areas, and the landing of unintentional catch of gurnard is resulting in high deemed value payments incurred. The fishery is at high catch levels not seen since the 1970s. Catch has exceeded 1 000 tonnes for each of the last five years and, has already exceeded 1 000 tonnes this current fishing year with 5 months of the year remaining.
834. Across the fishery, deemed value penalties of \$252,770.28 were paid in the 2015/16 fishing year and \$147,032.52 in the 2016/17 year. The large deemed value payments reflect the current abundance and availability of fish in the GUR 3 fishery. The commercial sector has not requested a reduction in the deemed value for GUR 3, but rather that an increase in the TACC by 100 tonnes would provide additional annual catch entitlement (ACE) to better reflect the gurnard abundance they are seeing and to cover current landings. The previous TAC review in 2015/16 resulted in the TACC being increased by 120 tonnes.

² Wynne-Jones J, Gray A, Hill L, Heinmann A (2014) National Panel Survey of Marine Recreational Fishers 2011-2012: Harvest Estimates. New Zealand Fisheries Assessment Report 2014/67. 139p. Accessible at: <https://www.mpi.govt.nz/dmsdocument/4719/send>

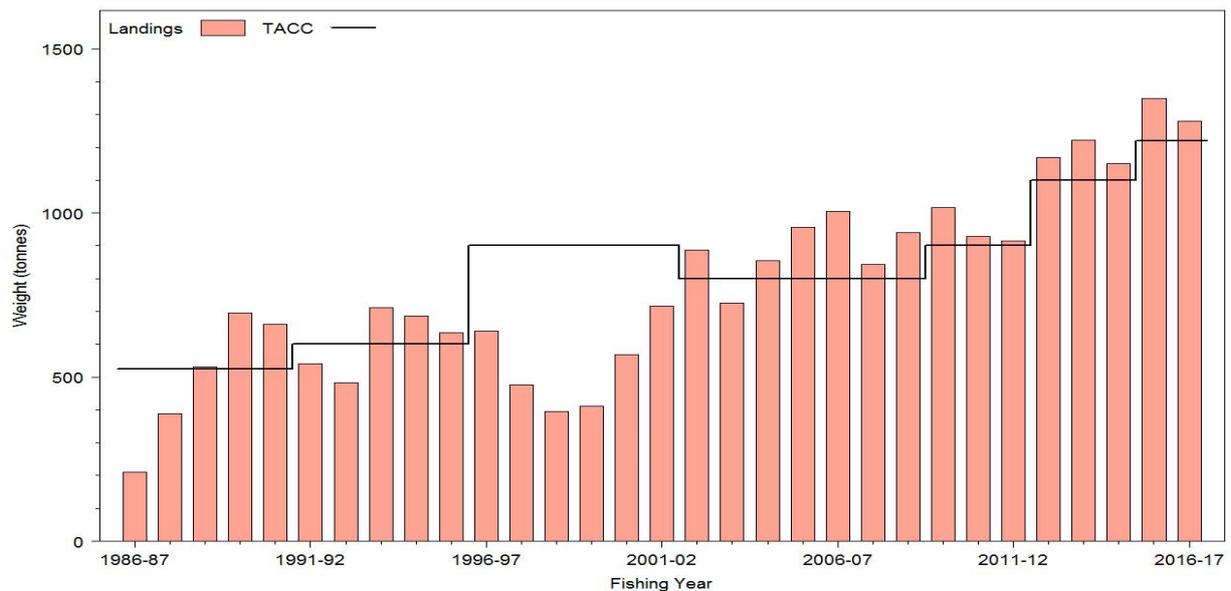


Figure 2: Landings vs TACC for GUR 3 from 1986/87 to 2016/17.

Status of the stocks

Management targets

835. GUR 3 is managed through the Harvest Strategy Standard.³ The target level is set at a CPUE index of 1.1. The Soft Limit was developed through an average of historical lowest catch rates (mean from 1997/98 to 1999/00). The target limit was then defined by being twice the soft Limit, and the hard limit being half of the soft Limit.

836. The fluctuations in stock biomass can provide opportunities for increased utilisation when there are consecutive years of good recruitment, which create strong year classes in the population. But, it also means that management action is required to reduce catches at times of persistent low recruitment.

Status of the stock

837. Fisheries New Zealand monitors the state of GUR 3 with CPUE analysis and the biennial east coast South Island (ECSI) inshore trawl survey.

838. The CPUE has been updated to the end of the 2013/14 fishing year, and a fishery-independent estimate of relative biomass from the ECSI research trawl survey from 2018. The ECSI trawl survey was expanded inshore in 2007, to cover depths 10-30 meters, in order to monitor the abundance of GUR 3 and ELE 3. The survey series therefore spans the period 2007 to 2018.

³ Harvest Strategy Standard for New Zealand Fisheries, October 2008, accessible at: <http://fs.fish.govt.nz/Page.aspx?pk=113&dk=16543>
The Harvest Strategy Standard is a policy statement of best practice in relation to the setting of targets and limits for New Zealand fishstocks managed under the quota management system (QMS).

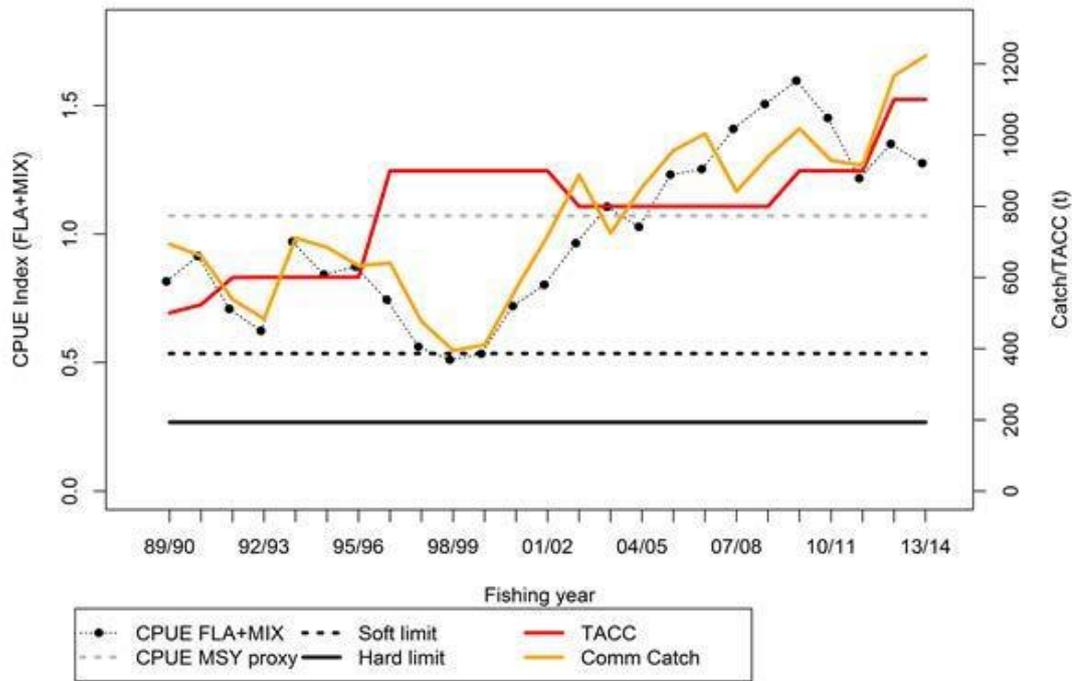


Figure 3: Comparison of east coast South Island winter trawl survey recruited biomass and CPUE indices (average FLA and MIX) and the trajectories of catch and TACCs from 1989/90 to 2013/14. The dashed grey line represents the B_{MSY} proxy, and the dashed black and solid black lines represent the soft and hard limits, respectively.

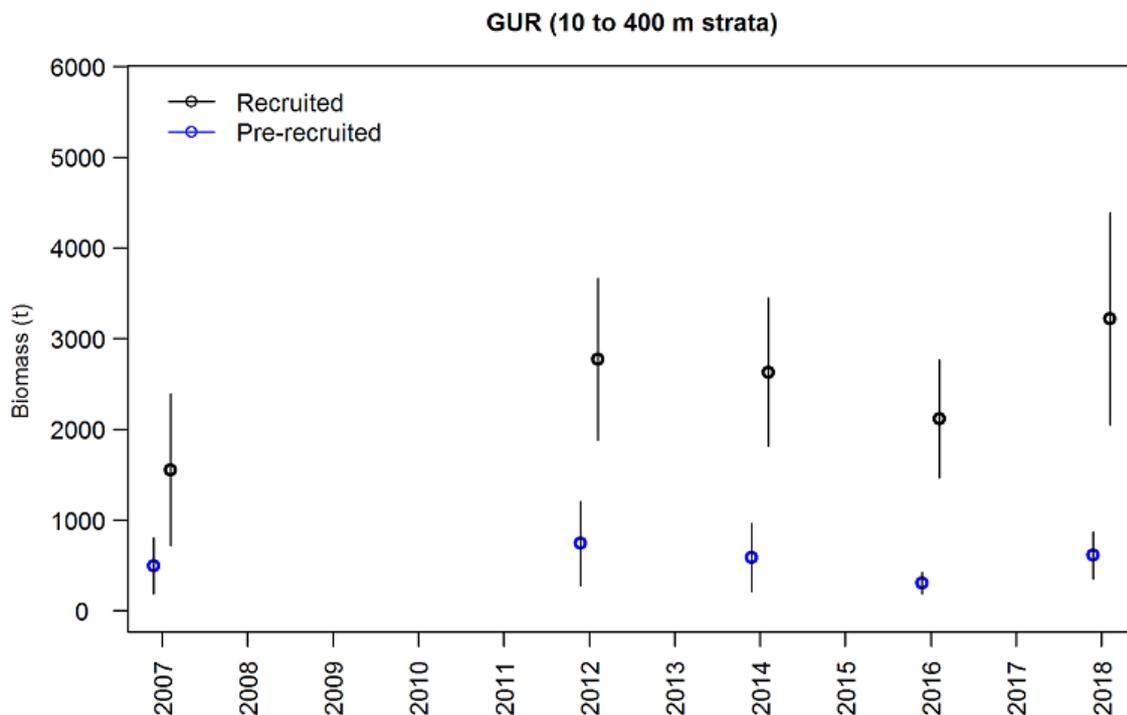


Figure 4: Red gurnard total biomass for all ECSI winter surveys in core plus shallow strata (10–400 m) in 2007, 2012, 2014, 2016 and 2018. Error bars are \pm two standard deviations.

839. CPUE indications suggest that the status of GUR 3 in relation to the reference point target is likely (>60%) to be above the target, and that, as it is a by catch fishery, the current catch is unlikely to pose a risk to fish stock levels and cause overfishing.

840. The CPUE trend shows a substantial increase in abundance after 2000 (Figure 3) and this level of abundance continues to be reflected in the results of the fishery independent ECSI trawl survey (Figure 4) as well as the recent reporting landings for the fishery.

3. Why are these options proposed?

841. The options proposed for GUR 3 are given in Table 3 and discussed below.

Table 3: Proposed management settings in tonnes for GUR 3 from 1 October 2018, with the percentage change relative to the *status quo* in brackets.

Option	Total Allowable Catch (TAC)	Total Allowable Commercial Catch (TACC)	Allowances		
			Customary Māori	Recreational	All other mortality to the stock caused by fishing
Option 1 (<i>Status quo</i>)	1290	1220	3	6	61
Option 2	1395 ↑ (8%)	1320 ↑ (8%)	3	6	66 ↑ (8%)

3.1 VARYING THE TAC

842. The GUR 3 TAC was last reviewed in 2015. The best available information (as set out above) suggests that the biomass level of red gurnard in GUR 3 is likely to be above the management target (B_{MSY}), and likely to remain so under current catch. Consequently, there is an opportunity to increase utilisation while ensuring stock remains at or above target levels.

843. In cases such as GUR 3, where the level of biomass that can produce the maximum sustainable yield (B_{MSY}) is not known, s 13(2A) of the Act provides for the Minister to use the best available information to set a TAC that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, the B_{MSY} level.

844. An increase to the TAC will increase the sustainable utilisation of this fish stock. Fisheries New Zealand anticipates that any increase in catch limits and allowances will cover the increased bycatch of gurnard as a result of its availability and abundance in GUR 3, rather than to provide for additional fishing effort.

Option 1 (*Status quo*)

845. Option 1 is the *status quo*, meaning no change to the TAC and allowances should the best available information be determined not sufficient to justify an increase or decrease.

846. This option reflects a cautious approach to change given the likely large fluctuations in stock biomass of this fishery due to the fast growth rate and short lifespan, resulting in variation in recruitment and stocks fluctuating year to year.

Option 2

847. Option 2 is an increase to the TAC of 106 tonnes or 8%. The current TAC is consistently being over-caught by a similar quantity. GUR 3 is predominantly (60%) a bycatch of the east coast South Island mixed trawl fishery. Estimates of the total biomass from the

fishery independent ECSI trawl survey suggest a utilisation opportunity is available that should also maintain a low risk to sustainability.

848. The increase to catch limits and allowances proposed is an increase to TACC of 100 t considered to be sustainable, and supported by the best available information which suggests that abundance in GUR 3 is currently high.
849. In either case, ongoing monitoring of the stock using CPUE analysis and trawl surveys (the next survey is in 2020) will enable responsive management and appropriate adjustments to address any risk or possible opportunity.

3.2 VARYING ALLOWANCES AND THE TACC

850. Having set the TAC, the Minister then allows for Māori customary non-commercial fishing interests, recreational fishing interests, and all other mortality to the stock caused by fishing (s 20 & 21).

Allowance for Māori customary fishing

851. The best available information suggests that current settings will provide for both current levels of catch and increased customary harvest of gurnard in GUR 3. Therefore, it is proposed not to change what is currently allowed for Māori customary non-commercial harvest of GUR 3.

Allowance for recreational fishing

852. The 2011/12 National Panel Survey estimated recreational catch of 2.01 tonnes in GUR 3 during the 2011/12 fishing year. There is uncertainty in using this estimate to predict current or future catches, however, the best available information suggests that current settings will provide for both current levels of catch and increased recreational harvest of gurnard in GUR 3. Therefore, it is proposed not to change what is currently allowed for recreational harvest of GUR 3.

Allowance for all other mortality to the stock caused by fishing

853. Information to inform the setting of an allowance for other sources of fishing-related mortality in GUR 3 is uncertain. The current allowance is 61 t, option 2 proposes an increase to this allowance that would result in the allowance being approximately 5% of the TACC. This proportion is based loosely on how robust the species is and the likely incidental mortality from the main fishing methods used.

TACC

Option 1 (Status quo)

854. Option 1 proposes no change to the *status quo*. The existing TAC, TACC and allowances would be retained. As the stock is considered to be likely above target biomass, the current TAC is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, a level that can produce the maximum sustainable yield.

855. Retaining the current TAC settings may result in opportunity lost for the commercial sector. This is because Option 1 does not enable industry to respond to the high biomass in a way that would allow them to maximise value. Refer to the earlier section on commercial fishing for detail on the current state of the commercial fishery.

Option 2

856. Option 2 proposes an increase to the TACC from 1220 to 1320 tonnes which aligns more closely with commercial landings since 2015/16.

857. The increase to catch limits and allowances proposed is an increase to TACC of 100 t considered to be sustainable, and supported by the best available information which suggests that abundance in GUR 3 is currently high. By increasing the TACC, fishers are more likely to be able to cover GUR 3 catch with ACE and therefore, in addition to increased revenue from catches, will be less likely to incur deemed value payments.

858. The level of targeting on this species is low, averaging less than 40% of the total landed catch since 2013/14. Therefore, it is unlikely that there will be a meaningful increase in environmental interactions from the proposed increase.

859. Fishers report that gurnard is acting as a “choke species”, a species with low quota that can cause a vessel to stop fishing even if they still have quota for other species, in the FMA 3 mixed species trawl fishery. Fishers are reporting that they are having to avoid gurnard when fishing for other species as there is insufficient ACE within the fishery to cover the quantity of bycatch. An increase in TAC for GUR 3 will provide further ACE to cover the current gurnard bycatch when targeting other fish species.

860. Fisheries New Zealand will continue to monitor the state of GUR 3 with CPUE analysis and the biennial ECSI inshore trawl survey.

861. The economic implications of the proposed increase in TACC is outlined in Table 4.

Table 4: Predicted changes to commercial revenue of the proposed options, based on the price to the fisher of \$2.41/kg for GUR 3 in 2017/18.

	TACC	Change from status quo (t)	Predicted revenue change (\$ p.a.)
Option 1 (<i>Status quo</i>)	1 220 t		
Option 2	1 320 t	100 t ↑	\$241 000 ↑

862. Fisheries New Zealand welcomes information and views of tangata whenua and stakeholders regarding these proposed options, including any other information to support alternate options.

3.3 DEEMED VALUE RATES

863. There are no proposed changes to the deemed value rates for GUR 3 for the 2018/19 fishing year (see Table 2 above).

3.4 EVALUATION OF OPTIONS

864. Red gurnard in GUR 3 are taken mostly by bottom trawl in fisheries targeted at red cod, barracouta and flatfish. Some gurnard are also taken in the target tarakihi and stargazer bottom trawl fisheries. The level of targeting on this species averages less than 40% over the last five years.
865. The increase to catch limits and allowances in Option 2 proposed is considered to be sustainable, and supported by the best available information which suggests that red gurnard abundance in GUR 3 is at an historical high. However, biomass will vary over time as recruitment fluctuates. Fisheries New Zealand will continue to monitor the state of the GUR 3 fishery via CPUE analysis and the biennial ECSI inshore trawl survey, and may consider reviewing the TAC when this information is updated.

4. Other Relevant Matters

4.1 ENVIRONMENTAL PRINCIPLES AND SUSTAINABILITY MEASURES

866. The proposals are not expected to significantly change the environmental impacts and interactions of the GUR 3 fishery (s 9 of the Act). The proposals will provide for additional ACE to cover existing catch taken as bycatch of other target fisheries within the FMA 3 mixed trawl. As such, additional targeted fishing effort is not expected. Therefore, any additional impacts on bycatch species, protected species, and the benthic environment are unlikely. The proposal is also considered to adequately address the requirements of s 11 of the Act.
867. There have been instances on the west and east coast of the South Island where endangered Hector's dolphin have been caught in commercial and non-commercial set nets. To manage this risk, a range of commercial and non-commercial set netting restrictions have been put in place around much of the coast in FMA 7. Fisheries New Zealand considers that the proposed TACs under Option 1 and Option 2 will not result in an increase in set net effort in areas where Hector's dolphin may be found.

4.2 RECREATIONAL CONTROLS

868. The main methods used to manage recreational harvest of red gurnard are minimum legal size limits (MLS), method restrictions, and daily bag limits. Fishers in GUR 3 can take up to 30 red gurnard as part of their combined daily bag limit, and the MLS is 25cm. There is no information to suggest a change to recreational controls would be needed and no changes to the recreational daily bag limit are proposed.

4.3 INPUT AND PARTICIPATION OF TANGATA WHENUA

869. The proposal to consult on a sustainability review covering a range of South Island stocks was presented to the Iwi Fisheries Forum relating to South Island iwi, the Te Waka a Māui me Ōna Toka Iwi Forum. This forum represents the iwi of the South Island, each holding mana moana and significant interests (both commercial and non-commercial) in South Island fisheries. The forum supports a review of the GUR 3 fishery.

870. Fisheries New Zealand will be taking the proposed options to the Te Waka a Māui me Ōna Toka Iwi Forum again in July to seek further input, and will incorporate the Forum's views into the final advice to the Minister.

Kaitiakitanga

871. Under Section 12(1)(b) the Minister must also have particular regard to kaitiakitanga before setting or varying a TAC. Under the Act, kaitiakitanga is the exercise of guardianship, and in relation to any fisheries resources, includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori.

872. Relevant Iwi or Forum Fish Plans provide a view of the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from Forum meetings and submissions received from iwi can also provide an indication.

873. Red gurnard (kumukumu) is identified as a taonga species in the Te Waipounamu Iwi Fisheries Plan. This plan contains objectives to support and provide for the interests of South Island iwi. That Forum Fisheries Plan contains three objectives which are relevant to the management options proposed for GUR 3:

- a) Management objective 1: to create thriving customary non-commercial fisheries that support the cultural wellbeing of South Island iwi and our whānau;
- b) 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
- c) Management objective 5: to restore, maintain and enhance the mauri and wairua of fisheries throughout the South Island.

874. Fisheries New Zealand considers that the management options presented in this advice paper will contribute towards the achievement of these three management objectives in ensuring that appropriate allowances are made for customary non-commercial fishing, the fishery remains sustainable, and that environmental impacts are minimised.

5. Further Information

Should you require further information, please see:

Fisheries Act (1996)

<http://www.legislation.govt.nz/act/public/1996/0088/latest/DLM394192.html>

Fisheries New Zealand Plenary document

Fisheries New Zealand (2018). Fisheries Assessment Plenary, May 2018: stock assessments and stock status. Compiled by the Fisheries Science Group, Fisheries New Zealand, Wellington, New Zealand.

Fisheries New Zealand recreational fisheries species page

<http://fs.fish.govt.nz/Page.aspx?pk=8&tk=31&stock=GUR3>