Fisheries New Zealand
Tini a Tangaroa

Review of sustainability measures for snapper (SNA 8) for 2024/25

Fisheries New Zealand Discussion Paper No: 2024/19

ISBN: 978-1-991285-78-2 (online)
ISSN: 2624-0165 (online)

June 2024

Te Kāwanatanga o Aotearoa
New Zealand Government

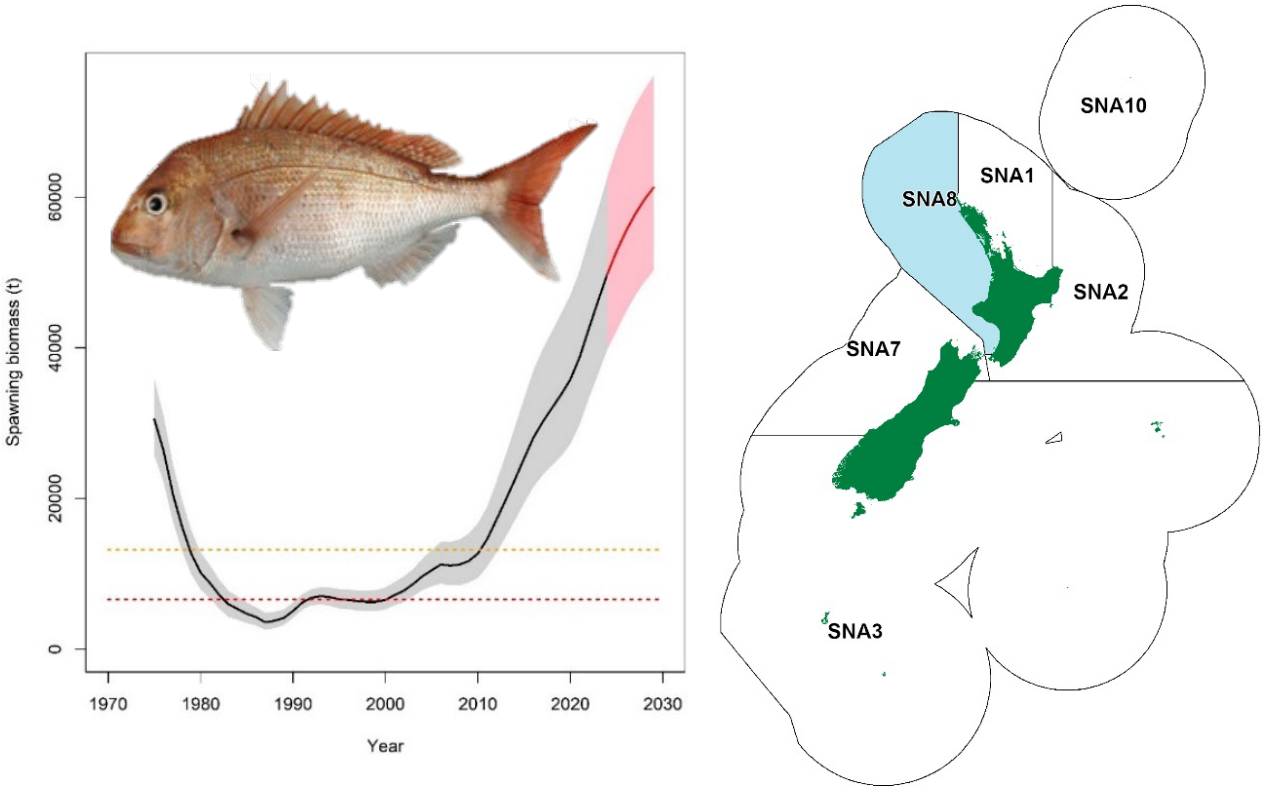

Figure 1: Quota Management Areas (QMAs), with SNA 8 highlighted, and SNA 8 spawning stock biomass (for the period since 1975) for snapper/karati, tāmure (*Pagrus auratus*).

Why are we proposing a review?

1. Fisheries New Zealand (**FNZ**) is reviewing sustainability measures for snapper (*Pagrus auratus)* in Quota Management Area SNA 8 for the 1 October 2024 fishing year (Figure 1).
2. SNA 8 was last reviewed in 2021,[1] when the stock was assessed to have rebuilt from historically low levels. At that point, FNZ considered that there was an opportunity to provide for additional utilisation in the SNA 8 fishery. Of the options proposed in 2021, the then Minister chose the smallest increase which included an increase in the Total Allowable Commercial Catch (**TACC**) from 1300 tonnes (**t**) to 1600 t (Figure 2).[2] This decision provided for some additional utilisation, while also acknowledging the concerns of Iwi Fisheries Forums and recreational stakeholders around the impacts a large-scale increase might have on the continued recovery of SNA 8, other associated stocks, and the wider marine environment. The Minister, in his decision, also signalled his desire for SNA 8 to be managed at a higher abundance and asked that FNZ work with stakeholders to develop advice on future management targets. While acknowledging his 2021 decision as a relatively cautious approach, the Minister directed FNZ to conduct a further review of the SNA 8 stock within the next three years, and that appropriate research be conducted to monitor the fishery.
3. In early 2024, a new stock assessment[3] indicated further increases in the SNA 8 spawning biomass[4] to about 50,000 t (Figure 3). This is a 30% increase from 2021, when the spawning biomass is assessed to have been approximately 38,000 t. The 2024 biomass estimate is well above the hard and soft limits, being assessed as approximately three and a half times greater than the SNA 8 soft limit[5] and seven

[1] Review of sustainability measures for snapper (SNA 8) for 2021/22 - https://www.mpi.govt.nz/dmsdocument/45484/direct
[2] SNA 8 decision letter 2021 - https://www.mpi.govt.nz/dmsdocument/47620-The-Decision-letter-Minister-for-Oceans-and-Fisheries
[3] The 2024 stock assessment is available in the 2024 May Fisheries Assessment Plenary here. It is referred to throughout the text with the following citation: (FNZ - Plenary, 2024)
[4] Spawning biomass - combined weight of all individuals in a fish stock that have reached sexual maturity and are capable of reproducing.
[5] A soft limit – a biomass level below which a stock is deemed to be overfished or depleted and needs to be actively rebuilt using a formal, time constrained rebuilding plan.

times greater than the hard limit.[6] The stock assessment also revealed ongoing increases in recruitment and productivity, which necessitated a change in the approach to setting the Total Allowable Catch (**TAC**). Because the recent increase in productivity has made it difficult to confidently estimate the unfished biomass (B_0)[7] of the SNA 8 stock, it was decided that the maximum sustainable yield (***MSY***)-based target should move to a fishing mortality rate,[8] rather than a biomass target (default target is 40% of B_0). The rationale for this change of approach is described in detail at paragraphs 40 to 45 below.

4. The 2024 stock assessment indicates that for the current SNA 8 biomass, the current level of harvest is at the target fishing mortality rate. However, strong recent year classes (particularly 2016 recruits) will continue to drive rapid growth of the stock and if harvest is maintained at current levels, the fishing mortality rate will almost immediately fall below the management target (FNZ - Plenary, 2024).

5. This 2024 SNA 8 stock assessment, as well as the best available information for other species associated with the SNA 8 fishery, have been used to define the following TAC options proposed for this stock (Table 1).

6. Any adjustment to the TAC of SNA 8 based on the options outlined below would be made under section 13(2)(a) of the Fisheries Act 1996 (**the Act**) and will apply from 1 October 2024 (the beginning of the next fishing year).

Proposed options

Table 1: Proposed management options (in tonnes) for SNA 8 from 1 October 2024.

Option	TAC	TACC	Allowances		
			Customary Māori	Recreational	All other mortality caused by fishing
Option 1 (*Status quo*)	3,065	1,600	100	1,205	160
Option 2	3,505 (↑ 440)	2,000 (↑ 400)	100	1,205	200 (↑ 40)
Option 3	3,637 (↑ 572)	2,120 (↑520)	100	1,205	212 (↑ 52)
Option 4	3,769 (↑ 704)	2,240 (↑ 640)	100	1,205	224 (↑ 64)
Option 5	4,165 (↑1,100)	2,600 (↑ 1,000)	100	1,205	260 (↑ 100)

7. The results of the National Panel Survey of Marine Recreational Fishers (**NPS**)[9] indicate that the current SNA 8 recreational allowance of 1,205 t is appropriate and is unlikely to be overcaught. Consequently, no change in recreational allowance is being proposed as part of this review.

8. Although FNZ has limited information on the size of customary harvest of snapper in SNA 8, it is unlikely that the allowance of 100 t is being overcaught and as such FNZ is not proposing to change the customary Māori allowance as part of this review.

9. SNA 8 biomass is projected to increase under all of the TAC options proposed in this consultation document (Figure 4). Consequently, the benefits of managing SNA 8 at a higher biomass, which include the ecological benefits of a larger snapper biomass and size structure and increased availability to recreational and customary fishers, are expected to be realised under any of these options.

10. FNZ is satisfied that the current deemed value rates of SNA 8 provide sufficient incentives for fishers to balance their catch with ACE (consistent with section 75(2)(a) of the Act and the Deemed Value Guidelines). Therefore, no changes are proposed to the deemed value rates for this stock as this time. However, FNZ welcomes any feedback on these settings.

11. FNZ acknowledges that if the TACC of this stock is varied, subsequent changes in fishing behaviour and the ACE market may result in the need for deemed value rates to be re-evaluated in the future.

12. For more information on the current management settings for SNA 8, see the Fisheries Infosite. For general information about fisheries management in New Zealand, see our fisheries management webpage, and our webpage about the Quota Management System (QMS).

[6] A hard limit – a biomass level below which a stock is deemed to be collapsed and fishery closures should be considered to rebuild the stock at the fastest possible rate.
[7] The average biomass likely to exist in the absence of fishing.
[8] Fishing mortality rate - a measure of the intensity with which a stock is being exploited. This is the fraction of the fish population that is expected to be caught.
[9] National Panel Survey of Marine Recreational Fishers - https://www.mpi.govt.nz/fishing-aquaculture/recreational-fishing/national-survey-of-recreational-fishers/.

Option 1 (status quo)

Benefits	While the biomass of SNA 8 is projected to increase over the next five years under all proposed TAC options (Figure 4), Option 1 will allow for the greatest and fastest increase. The benefits of managing SNA 8 at a higher biomass include: - Broadening the age structure of the population to include a higher number of older and bigger fish; - Allowing snapper to maintain the role they play in the ecological functioning of coastal ecosystems; - Offering greater protection against environmental changes that may impact spawning success; and - Increased availability and catchability, which will most benefit recreational and customary fishers, and commercial fishers with access to SNA 8 ACE. As Option 1 does not provide for any additional catch, it is the option least likely to result in additional fishing effort and is therefore least likely to result in additional captures of protected species, bycatch of non-target species, or for greater fishing related impacts on seafloor biodiversity, such as through an increased trawl footprint. Of the five options proposed, this is the option which is most likely to move the stock above a biomass that can produce *MSY*. Options 2 – 4 should maintain SNA 8 at, or close to a level that can produce *MSY*.
Risks	The 2024 stock assessment indicates that under the current catch settings (and at projected higher TACCs) snapper biomass will continue to increase over the next five years. Snapper is commonly described as a 'choke' species[10] for commercial fishers operating in SNA 8 and many are adapting their fishing behaviour to try to minimise their bycatch of snapper while targeting other species. Without a significant TACC increase, the economic viability of some commercial inshore fishers will be threatened by their inability to balance unavoidable snapper bycatch with their annual catch entitlement (**ACE**). This is an acute issue for smaller owner-operators who are responsible for paying the bulk of deemed value penalties. This *status quo* option would forgo an opportunity for sustainable utilisation of snapper in SNA 8 and limit opportunities to utilise other species caught together with snapper in the Fisheries Management Area 8 (**FMA 8** – Central West) and Fisheries Management Area 9 (**FMA 9** - Auckland West)[11] fish stock complex.

Option 2 (14% TAC increase; 25% TACC increase)

Benefits	Of the four options in which TAC and TACC increases are proposed (Options 2-5), Option 2 offers the smallest increase, and will therefore allow for the greatest and fastest increase in snapper biomass (Figure 4; the benefits of managing to a higher biomass are covered in Option 1 benefits section above). The proposed additional 400 t of snapper catch would have an estimated annual landed revenue of close to $2.1 million.[12] This figure does not include value derived outside of the catching sector, such as in processing and retail. This option may provide commercial inshore fishers some ability to balance unavoidable snapper bycatch with ACE, although this relief will be less than that provided in Options 3, 4 or 5. Projections suggest SNA 8 catch under Option 2 is unlikely to exceed the fishing mortality management target[13] at any point over the five-year projection period.
Risks	All options that provide for an increase in TACC could lead to an increase in fishing effort. Consequently, there is potential for additional captures of protected species, bycatch of non-target species, and for

[10] In a mixed fishery, a choke species is a stock whose available quota is exhausted while other stocks still have quota available to the fisher. In this instance it restricts the fisher's ability to continue to fish for stocks where quota is still available.

[11] The New Zealand Exclusive Economic Zone is divided into 10 areas, each known as a Fishery Management Area (**FMA**). FMAs are based on likely stock boundaries as well as administrative considerations. The standard FMAs are the basis of QMAs for most fish stocks. This term is defined in the Fisheries Act 1996.

[12] Based on the 2023/24 port price average.

[13] Management target - the level we want a fish stock to fluctuate around for the best balance between use and sustainability, while allowing for environmental variation.

	greater impacts on seafloor biodiversity through an increased trawl footprint (refer to '*Key matters for assessment of the proposals against section 9 of the Act'* below for information on current impacts). TACC increases, or an aggregation of fishing effort may also lead to localised depletion where catch is not evenly distributed across an FMA. Concerns about localised depletion have been raised by both recreational and customary fishers about the area adjacent to Te Oneroa-a-Tōhe (Ninety Mile Beach), where approximately 24% of the SNA 8 TACC is caught. There is a disproportionate concentration of commercial fishing effort in this area for a number of reasons including: - This area is not subject to trawl restrictions under the Hector's and Māui dolphin Threat Management Plan (**TMP**); - The proximity of this area to the harbours and generally calmer waters of the upper east coast of the North Island. Should the TACC be increased, it is likely that some of this additional snapper catch will be taken adjacent to Te Oneroa-a-Tōhe. This could lead to either perceived or actual localised depletion of snapper in this area. The risk of localised depletion will be greater with larger TACC increases. Providing additional SNA 8 TACC will provide additional access to other species within the fishery complex which may have previously been under caught due to the limited availability of SNA 8 ACE (e.g., GUR 1 and JDO 1). The extent to which these risks could be realised will depend on fisher behaviour which is hard to predict. Of the four options where a TACC increase is proposed (Options 2-5), Option 2 provides the smallest increase and therefore the smallest risk. Option 2 may be viewed as a lost opportunity to utilise SNA 8 biomass, as harvest conducted at this rate is projected to fall below the fishing mortality management target during the final three years of the five-year projection period (Figure 3). However, a benefit of the longevity of snapper is any untaken utilisation opportunity will not be foregone as these snapper will be available to be harvested at a later date. It is possible that the increased availability of SNA 8 ACE provided for under Option 2 will be offset by the forecast increases in snapper biomass. Consequently, commercial fishers with limited access to SNA 8 ACE may continue to be limited in their ability to catch other species from the fish stock complex despite the 400-tonne TACC increase provided in Option 2.

Option 3 (18.5% TAC increase; 32.5% TACC increase)

Benefits	The proposed additional 520 t of snapper provided for by this option would have an estimated annual landed revenue of close to $2.8 million.[14] This option may provide commercial inshore fishers some additional ability to balance unavoidable snapper bycatch with ACE. Projections suggest that when averaged over a five-year period, the levels of harvest provided for in Option 3 will most closely align (on average) to the fishing mortality management target (Figure 4).
Risks	The TACC increase provided for in Option 3 is likely to lead to an increase in fishing effort. Consequently, there is a risk of: - Additional captures of protected species; - Additional bycatch of non-target species; - Greater impacts on seafloor biodiversity; - Increased pressure on species within the FMA 8 and FMA 9 fishery complex; and - Localised depletion. Commercial fishers may still be limited in their ability to catch other species in the trawl fishery stock complex due to the limited availability and affordability of SNA 8 ACE.

Option 4 (23% TAC increase; 40% TACC increase)

Benefits	The proposed additional 640 t of snapper provided for by this option would have an estimated annual landed revenue of close to $3.4 million.[15]

[14] Based on the 2023/24 port price average.
[15] Based on the 2023/24 port price average.

	This option will provide commercial inshore fishers with additional ability to balance unavoidable snapper bycatch with ACE.
Risks	The TACC increase provided for in Option 4 is likely to lead to an increase in fishing effort. Consequently, there is a risk of: - Additional captures of protected species; - Additional bycatch of non-target species; - Greater impacts on seafloor biodiversity; - Increased pressure on species within the FMA 8 and FMA 9 fishery complex; and - Localised depletion. Projections indicate that under Option 4, snapper catch will exceed the fishing mortality management target for the first three years of the five-year projection (Figure 3). However, as recent recruits to the fishery continue to grow and thereby increase the biomass of the stock, the exploitation rate associated with the level of catch proposed under Option 4 will then decline to meet the management target. Some commercial inshore fishers have indicated that a 640-tonne increase would be insufficient to balance unavoidable snapper bycatch with ACE.

Option 5 (36% TAC increase; 62.5% TACC increase)

Benefits	The proposed additional 1,000 t of snapper provided for in this option would have an estimated annual landed revenue of close to $5.25 million.[16] Being the largest of the proposed TACC increases, this option will provide commercial fishers with the greatest opportunity to balance unavoidable snapper bycatch with ACE. Some commercial inshore fishers have indicated that a 1,000-tonne increase would be sufficient to balance unavoidable snapper bycatch with ACE while targeting other species in the fishery stock complex.
Risks	The TACC increase provided for in Option 5 will lead to the greatest increase in fishing effort of all the options proposed here. Consequently, this option comes with the greatest risk of: - Additional captures of protected species; - Additional bycatch of non-target species; - Greater impacts on seafloor biodiversity; - Increased pressure on species within the FMA 8 and FMA 9 fishery stock complex; and - Localised depletion of snapper and associated species. Even though recent recruits to the SNA 8 fishery will continue to grow and thereby increase the biomass of the stock, forward projections indicate that, under Option 5, snapper catch is very likely to result in overfishing for the entire five-year projection period (Figure 4) and will very likely reduce the stock to below the level that would produce the maximum sustainable yield from the fishery. Consequently, FNZ considers this option may be inconsistent with section 13(2)(a) of the Act (see '*Key matters for assessment of the proposals against section 13 of the Act'* on Page 15 for further analysis). While a TACC increase greater than 40% will provide immediate relief for fishers who have limited access to SNA 8 ACE in the short term, it may jeopardise future opportunities for TACC increases. It could be a short-term gain at the expense of maximising yield from the fishery over the longer term.

[16] Based on the 2023/24 port price average.

Who is affected by the proposed changes?

13. SNA 8 is recognised as a shared fishery under the National Inshore Finfish Fisheries Plan, and is highly valued by tangata whenua, recreational, and commercial fishers. To assist with developing the catch setting options proposed in this paper, FNZ met with Iwi Fisheries Forums and with fishery stakeholders to gain insight into fisher experiences in SNA 8 under the current catch settings and a better understanding of expectations for future management of the stock.

Recreational fishers

14. Recreational interest in this stock has increased over the last 15 years (Table 2; FNZ - Plenary, 2024). The highest intensity of recreational fishing is typically around population centres, particularly where launching points and sheltered areas of coast provide access to the fishery. Approximately 25% of the recreational harvest is understood to come from fishing within harbours such as the Kaipara, Manukau and Raglan.

15. Feedback during pre-consultation engagement discussions with recreational fishers identified that subsistence fishing in west coast harbours is common and supports local communities in these areas. While the remote and exposed nature of the west coast of the North Island means that weather conditions often limit access to the open coast fishery, recreational fishing on the open coast (outside of the harbours) still accounts for 75% of recreational SNA 8 catch.

16. The fishing club and recreational fishing representatives that FNZ spoke with have reported that catch rates have improved significantly over the last 10–15 years and that west coast snapper fishing is the best it has been in most fishers' living memory. Recreational fishers have noted an increase in the abundance of smaller fish in SNA 8 in recent times which corresponds with the elevated levels of snapper recruitment seen over the last 10 or more years (FNZ - Plenary, 2024). Recreational harvest inside the harbours tends to include smaller snapper, while fishers on the open coast tend to catch larger fish (although they have also noted recent increases of smaller snapper in their catch).

17. The recreational fishers FNZ have so far spoken to have largely agreed that the current SNA 8 daily limit (10 per person per day) is appropriate. Fishers who predominantly operate on the open coast often supported an increase in the minimum legal size (**MLS**) (currently 27 cm), while subsistence fishers who primarily operate in harbours and catch smaller fish would not support an MLS change.

18. Many recreational fishers were also not opposed to an increase in the TACC, but urged caution, preferring the idea of gradual increases over time rather than a single large increase to the commercial allowance. Recreational fishers were also concerned about the impact of a TACC increase on other fish stocks within FMA 8 and FMA 9 and the potential for an increased trawl footprint should the TACC increase. There was general support for management of snapper at higher abundances, concern that large TACC increases could 'crash the fishery' and it was suggested that FNZ should think more holistically about coastal ecosystems when making fisheries management decisions.

Commercial fishers

19. Commercial interests in these stocks include a number of quota owners (8.5% of all SNA 8 shares are Settlement quota), owner/operators and contract fishers in the catching sector, and Licensed Fish Receivers (LFRs). The interests of these groups are represented through organisations such New Zealand Federation of Commercial Fishermen and Seafood New Zealand Inshore Council.

20. Based on the last three fishing years, in SNA 8 there have been on average 71 quota owners that provide ACE to 67 permit holders (10% of all permit holders), landing snapper to 35 LFRs (18% of all LFRs). Over the last three fishing years, there were between 78 and 89 vessels landing snapper in SNA 8, of which on average 22 reported targeting snapper. Other species commonly targeted in the SNA 8 area include red gurnard, trevally, tarakihi, John dory, jack mackerel, rig, and school shark.

21. As detailed in the benefits and risks table above (Option 1), commercial fishers report that the increase in snapper biomass in SNA 8 has become prohibitive when targeting other species such as trevally, red gurnard, rig, and John dory. Many fishers actively avoid snapper (through fishing location and gear settings) and have been targeting other species in order to maximise their overall catch within the limitations of the available SNA 8 ACE. The increasing abundance of snapper is a particularly significant problem for fishers with limited access to SNA 8 ACE.

22. Some smaller commercial fishing operators expressed concern that a big increase in TACC would result in increased competition with larger operators and were concerned how a large TACC increase would impact their ability to catch other species.

23. Larger operators have stressed their need for a significant increase in the TACC to facilitate the harvest of species such as John dory, red gurnard, and trevally, and would like to see SNA 8 managed at lower than the current biomass level.

Input and participation of tangata whenua

24. Historically, snapper were an important harvest for Māori as they were abundant and easily captured in shallow waters close to densely populated areas (Wehi *et al.,* 2013; Nims, 2022). Customary harvest of snapper has continued through time and while data on customary fishing is limited, it is acknowledged that access to and utilisation of a healthy snapper fishery is of significant importance to Māori.

25. Te Hiku o Te Ika, Mid-North West, Ngaa Hapuu o Te Uru o Tainui and Te Tai Hauāuru Iwi Fisheries Forums represent iwi with a customary interest in SNA 8. FNZ circulated a summary of the stocks proposed for review in this round (including SNA 8) to these forums and attended forum hui to discuss the proposed review of SNA 8, including the appropriateness of current allowances.

26. Discussions with some forum members indicated a concern with the accuracy of the stock assessment, in part due to trawl surveys not covering the entire management area and recreational catch data being limited. Forum members expressed a desire for current catch settings to be retained and a concern that large TACC increases could impact on customary harvest. If the TACC was to be increased, the preferred approach was for incremental change rather than large increases. One of their main concerns with an increased SNA 8 TACC was that it could increase the risk of invasive species, such as exotic Caulerpa, being transported from the east coast to the west coast as more vessels moved between coasts to take the additional SNA 8 catch. It was also suggested that FNZ should take a more ecosystem-based approach to fisheries management decision-making, for example, considering impacts of increasing the SNA 8 TACC on the sustainability of other species.

27. The Te Hiku o Te Ika forum raised concerns around localised depletion off the coast of Te Oneroa-a-Tōhe (Ninety Mile Beach) as there is a disproportionate concentration of fishing effort in their rohe. Because trawl restrictions under the Hector's and Māui dolphin Threat Management Plan end south of Ahipara, commercial vessels fish in areas close to shore along the coast of their rohe. Forum members believe that despite the wider stock being in good shape, large scale harvest of snapper (and other species) in their area is leading to localised depletion and affecting their ability to utilise and derive benefit from the recovery of the fishery.

28. Forum members also suggested that fisheries should be managed at smaller spatial scales, and that catch spreading could be used to address issues such as local depletion.

29. Customary fishers with commercial interests also expressed their dissatisfaction with a system that favours larger fishing companies while providing few opportunities, and little or no support for local independent fishers to enter and thrive in the fishing industry.

30. FNZ will engage further with the iwi fisheries forums during consultation. FNZ also welcomes any input from tangata whenua on the proposed options outside of this planned engagement.

Fishery characteristics and current settings

Commercial (TACC)

SNA 8 was introduced into the QMS in 1986 with a TACC set at 1,594 t (Figure 2). The TACC was reduced to 1,500 t in 1992. In 1998, the Minister of Fisheries decided to set a 10-year rebuild strategy for the fishery. At this time, the TAC was set at 2,060 which included an unchanged TACC, a customary Māori allowances of 50 t, a recreational allowance of 360 t, and an allowance of 150 t for other sources of mortality caused by fishing. In response to a new stock assessment in 2005, the TACC was reduced to 1,300 t as part of a fishery rebuild plan (allowances were also reduced). SNA 8 was next reviewed in 2021 when the TAC was increased to 3065 t, including a 300-tonne increase to the TACC (taking it to the current setting of 1,600 t).

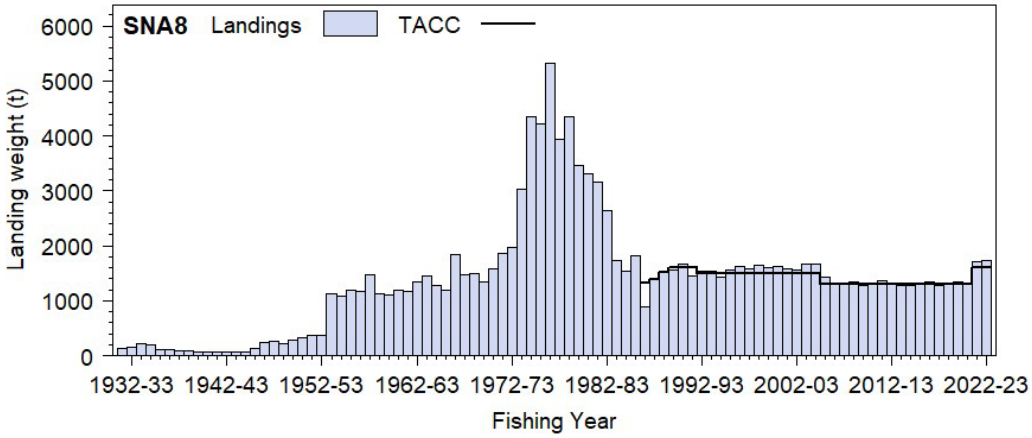

Figure 2: Total reported landings and TACC for the SNA 8.

The majority of commercial SNA 8 catch is taken through bottom trawling (68% in 2022/23), with a relatively small fleet taking the majority of catch. It is worth noting that, in addition to the changes in catch settings that have been implemented over the years, there have also been changes in the behaviour or operation of the commercial fishing fleet (FNZ - Plenary, 2024). These changes have included:

- Moving from being a fishery targeting snapper in the 1990s, to the present-day fishery where snapper are mostly caught as bycatch when targeting trevally, gurnard and tarakihi;
- A move from being an October to April focused fishery in the 1990s, to now being a year-round fishery;
- An increase in the depth at which snapper are caught;
- Fishing gear has been increasingly configured to avoid catching snapper; and
- A move from SNA 8 catch being relatively evenly spread across FMA 9 to now being concentrated in the north, particularly off Te Oneroa-a-Tōhe (Ninety Mile Beach).

These changes have been driven by a range of factors including increased snapper biomass in SNA 8 and the implementation of trawl prohibition areas to protect Maui dolphins.

Recreational

SNA 8 is New Zealand's second largest recreational snapper fishery (after SNA 1) and one of the most popular recreational fisheries in New Zealand.

FNZ's best available information on the size of the recreational catch comes from the NPS. These surveys, as well as boat ramp and camera monitoring, indicate that recreational catch in SNA 8 has increased markedly as the stock has rebuilt in the early to mid-2010s. While the most recent estimate of SNA 8 recreational harvest (702 t) from the 2022/23 NPS was less than the 2017/18 estimated (853 t), this recent survey coincided with a year of unusually bad weather and is not considered representative of recreational SNA 8 harvest under more typical weather conditions.

Estimates of harvest levels from the NPS are detailed below, alongside reported charter vessel[17] and section 111[18] catch.

[17] Reporting of snapper catches on charter vessels has only been mandatory since 2020, meaning comparison between years may be misleading.

[18] Catch taken using recreational methods on a registered commercial fishing vessel, using a permit issued under section 111 of the Act.

Table 2: Recreational catch estimates for SNA 8 for National Panel Survey years. Figures are in tonnes (t). Reporting of charter vessel catch of snapper has only been required since 2020/21.

	2011/12	2017/18	2022/23
National Panel Survey	630 (CV=0.16)	830 (CV=0.13)	543 (CV=0.12)
Reported Charter Catch	3	16	157
Section 111	9	6	6
Total	**641**	**853** ↑	**702** ↓

Customary Māori

The Māori customary fishing allowance for SNA 8 is currently set at 100 t. In 2021, this allowance was increased from 43 t to 100 t. FNZ's information on customary harvest is limited and it is likely that Māori customary fishers often collect kaimoana under the recreational fishing regulations. For significant parts of the SNA 8 QMA the *Fisheries (Kaimoana Customary Fishing) Regulations 1998* are not in effect. In these areas, customary fishing authorisations are instead issued under the customary fishing provisions within the *Fisheries (Amateur Fishing) Regulations 2013*, where there is no requirement to report on catch. As such, customary harvest records held by FNZ are known to be incomplete. The records that FNZ does have, reveal that an average of 37 customary permits have been issued each year in SNA 8 for the last five years, with an average of 18 t of customary harvest authorised each year. The actual amount of snapper caught relative to the amount authorised is unknown.

The customary regulations provide a mechanism to enable the use of Pātaka Kai. This is where customary fishers store and distribute fish taken under a customary authorisation. Fishing for the purposes of a Pātaka Kai can be undertaken by commercial fishing vessels, under authorisation from a kaitiaki of the area. Since 2014, Te Atiawa (Taranaki) iwi have operated a Pātaka Kai system for the purpose of providing kaimoana to whānau/ngā uri o Taranaki Iwi for tangihanga. FNZ is aware that other iwi within SNA 8 are exploring whether a form of Pātaka Kai meets their needs and should be considered. As snapper are one of the most abundant species on the west coast of the North Island, it is likely that if more Pātaka Kai are to be utilised within SNA 8, then the amount of snapper taken under the customary allowance will increase.

Other sources of mortality caused by fishing

This allowance accounts for other mortality arising from loss in commercial fishing gear including cryptic mortality occurring for example as a result of fish escaping through the meshes underwater, release mortality (both recreationally and commercially for sub-MLS returns), any illegal discarding or high-grading, and poaching. This allowance has not previously been quantified by source, but rather set as a proportion of the TAC or TACC depending on the biological characteristics of the stock, perceived vulnerability, and anecdotal or documented evidence on fishing practices. The current allowance for other sources of mortality caused by fishing is set at a level that equates to 10% of the TACC for SNA 1 and SNA 8, and 8.4% of the TACC for SNA 7. During our pre-consultation discussions with stakeholders, questions were raised as to whether the current approach to setting this allowance in SNA 8 is appropriate.

A review of the allowance would need to consider a range of factors including the amount of sub-MLS fish caught in a fishery and the likelihood of those fish surviving once returned to the sea. We know from commercial catch records and from discussions with recreational fishers operating on the open coast that the sub-MLS catch in SNA 8, as a proportion of total catch, is much less than that of SNA 1, but is more comparable to SNA 7. Conversely, for recreational fishers operating within the west coast harbours, which are snapper nursery areas, sub-MLS fish are a larger component of their catch. Based on the differences between SNA 8 and SNA 1, it may make sense to align the allowance for other sources of mortality in SNA 8 with that of SNA 7 (8.4%), rather than with SNA 1 (10%). Furthermore, due to the rollout of onboard cameras, FNZ has improved confidence in the accuracy of fisher-reported catch and discard volumes.

In terms of assessing the survivability for released snapper, there is new research that could aid in determining an appropriate allowance. For example, a recent study by NIWA suggests low to moderate survivability for trawl-caught snapper, with increased depth, duration and catch size of trawls being exacerbating factors (McKenzie *et al.,* 2024). Similarly, for recreationally caught fish, research has confirmed that post-release survival decreases as capture depth increases and that the survival of gut-hooked fish is low (Maggs *et al.,* 2024).

FNZ is considering adjusting the allowance for other sources of mortality as part of this review, and we would welcome feedback on the topic.

Preferential allocation rights (28N rights)

31. There are 632.4 t of preferential allocation, known as '28N' rights, associated with the SNA 8 stock. A total of sixteen SNA 8 quota holders have preferential rights, with two holders having 96% of the rights.

32. Preferential allocation rights were granted to permit holders under section 28N of the Fisheries Act 1983 who elected to take administrative rather than compensated reductions to their catch allocations. When the TACC is increased for a stock that has 28N rights associated with it, the quota shares of owners who do not have 28N rights are reduced and redistributed to the holders of 28N rights. Reallocation of quota shares not only increases the catch entitlement of the 28N rights holder, but also alters the proportionate shares of all quota owners in the stock.

33. Te Ohu Kai Moana Trustee Ltd has brought a claim for declaratory judgment regarding the operation of 28N rights. It claims that the Act has enabled, via the redemption of 28N rights, a re-taking of settlement benefits in breach of an implied term of the settlement, tikanga, and general obligations under Te Tiriti o Waitangi. The High Court is due to hear that claim in July 2024. However, it is unknown when a judgment in that litigation will be available, and the claim is not about how section 23 of the Act should be interpreted or whether the Minister can or must take into account the potential effect of 28N rights on settlement assets if the TACC is increased. When making decisions, MPI must apply the statute as it currently understands Parliament intended it to operate.

34. Therefore, notwithstanding their consequence for quota holders, the existence of 28N rights is not a reason for or against setting or varying the TAC, TACC, and allowances. If a TACC is to increase for a stock with associated 28N rights, section 23 must be applied and shares deducted from persons owning quota for that stock and reallocated to 28N rights holders.

Additional supporting information and legal context

35. On the following pages (page 11 onward) FNZ has provided:

    - More detailed information about the status of the stock, including the 2024 stock assessment and forward projections for SNA 8 biomass under different TACC settings; and
    - Additional information on biology, interdependence of stocks, and environmental factors; and
    - A series of tables outlining key matters that support an initial assessment of the proposed changes against provisions of the Fisheries Act 1996. This includes matters relevant to sections 9, 10, 11, and 13 of the Act, as well as mātaitai reserves and other customary management tools which are relevant to the Minister's decision making under section 21(4).

36. For information on the relevance of sections 5 (Application of international obligations and Treaty of Waitangi (Fisheries Claims) Settlement Act 1992), and 8 (Purpose) of the Act, as well as detail on the statutory considerations relevant to TAC decisions, please see the **Legal Appendix** ('*Overview of legislative requirements and other considerations in relation to sustainability measures for the 2024 October round*') on our consultation webpage.

How to have your say

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

    - 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?

38. FNZ invites you to make a submission on the proposals set out in this discussion document. Consultation closes at 5pm on **Monday 29 July 2024**.

39. Please see the our consultation webpage 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.

Supporting information

Stock status (for more information, see the Plenary)

40. SNA 8 was assessed in 2024 (FNZ - Plenary, 2024) using an age-structured fully quantitative model, with a wide range of inputs such as length/age frequencies of commercial and recreational catches, commercial and recreational catch histories, trawl survey biomass estimates, two biomass estimates from tagging studies, and commercial catch per unit effort (**CPUE**).

41. In addition to providing an estimate of the current biomass of snapper in SNA 8, the assessment also confirmed a belief, arising from the 2021 assessment, that recruitment into SNA 8 has undergone a regime shift in the last 10-15 years and is now significantly greater than it had been in the period from the 1980s through to early 2000s (Figure 5). While the estimate of the actual biomass of fish present in SNA 8 is robust, variability in recruitment means it is not possible to produce a reliable estimate of SB_0 (the biomass SNA 8 would attain in the absence of fishing). Importantly, because of this issue, the Inshore Working Group (a science working group including participants from the fishing industry and other stakeholders) made the decision that it would be most appropriate to base the SNA 8 management target on an exploitation rate (harvest of a proportion of the current biomass), rather than the previous approach of managing the stock to a proportion of SB_0.

42. The exploitation-rate based approach revolves around utilising a proportion of the stock biomass each year, with the weight of fish able to be harvested changing as the stock biomass changes over time. The current management target for SNA 8 is 40% of SB_0 (the unfished spawning biomass). Even without a reliable estimate of what SB_0 is for SNA 8, the science tells us that fishing to an exploitation rate of 4.8 percent (of the spawning biomass each year) will over time move the stock to the 40% biomass target ($\boldsymbol{SB_{40}}$) that is considered likely to achieve the maximum sustainable yield (*MSY*) from the fishery.

43. This exploitation-rate based approach provides a more consistent and stable approach to managing the fishery because it is independent of variability in recruitment patterns. FNZ considers that the approach of utilising an exploitation rate of 4.8 percent is robust and should maintain the SNA 8 spawning biomass at SB_{40} over time. This outcome is consistent with the Harvest Strategy Standard guidance, and the objective set out in the Act of maintaining the stock at or above a level that can produce *MSY*.

44. Due to stock assessment scientists now having a better understanding of the increasing productivity of the fishery, the assessment of where the stock is at relative to the management target (SB_{40}) has changed between the 2021 and 2024 assessments. Based on the updated considerations of recruitment and productivity, the recent stock assessment indicates that in 2021 the fishery was at (or close to) the management target, as opposed to being above the target (at 54% of SB_0) as assessed in 2021.

45. In 2024, the stock was determined to be:

    - About as Likely as Not (40–60%) to be at or below the exploitation rate management target ($U_{SB40\%}$= 4.8%; Figure 3); and
    - Very unlikely to be to be below the new soft limit (twice the biomass of the hard limit; Figure 2); and
    - Exceptionally unlikely to be to be below the new hard limit (average spawning biomass between 1992 and 2000); with
    - Likely to increase in biomass based on projections five years into the future under the *status quo*.

46. Monitoring of year class strengths is possible through West Coast North Island trawl surveys and catch ageing. These surveys began in 1986 with subsequent surveys conducted in 1987, 1989, 1991, 1994, 1996, 1999, 2018, 2019, 2020 and 2022.

47. Results from the most recent surveys (2018-2022) have shown a substantially higher biomass than estimated in the earlier surveys (1987-1999), and as described above, have also revealed there has been substantially higher recruitment in recent times. It is this elevated level of recruitment that is driving the increased productivity and growth of the stock. SNA 8 biomass is currently dominated by fish that recruited into the fishery from an exceptionally strong 2016 year class. It is the strength of this year class and knowing that these fish will mature and grow rapidly over the next few years that drives the upward trajectory of biomass projections for SNA 8.

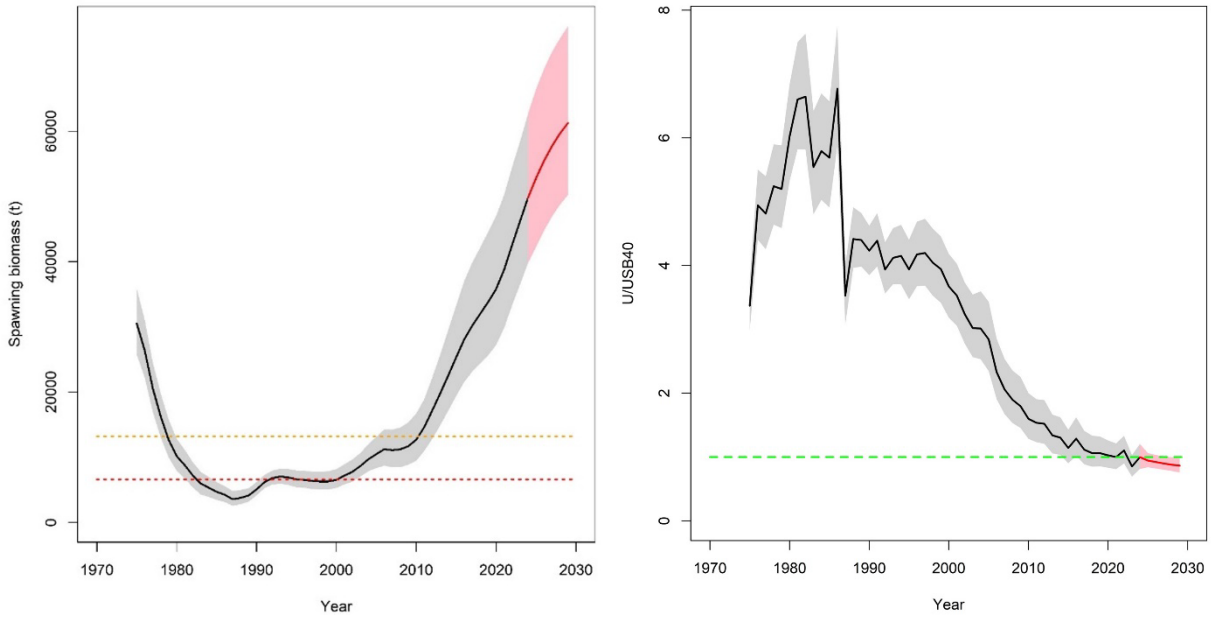

Figure 3: Modelled biomass (left) and exploitation rate ($U_{SB40\%}$) (right) trajectories for the period since 1975 (red and orange dashed lines represent the hard and soft limits respectively and green dotted line indicates target $U_{SB40\%}$ fishing mortality rate). The black line represents the median, the shaded area represents the 95% credible interval, and the red sections are five-year projections under status quo catch setting.

48. Given the positive outlook for the stock, projections were made for a range of scenarios with increased catches. Assuming that recreational catches remain at the current allowance (1,205 t), commercial catch increases of 25% to 75% of the current TACC were initially modelled before narrowing the range of TACC increase down to between 25% to 62.5% as shown below (Figure 4).

49. These projections suggest that while biomass would continue to increase under the proposed TACC increases in the short term, that TACC increases of 45% and above would more likely than not exceed the target fishing mortality rate throughout the 5-year projection period (Figure 4) and would likely prevent the fish stock attaining a biomass that would produce the *MSY* from the fishery.

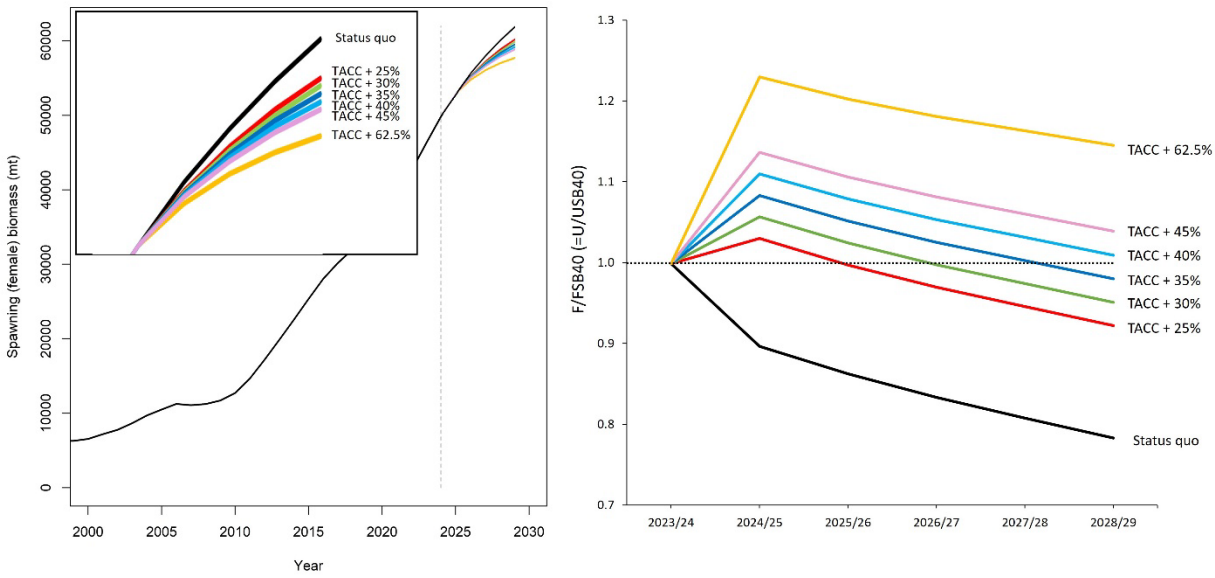

Figure 4: Projected biomass, with five-year projections magnified in inset panel (left), and fishing mortality rate relative to $U_{SB40\%}$ (right), under the current TACC (black) and TACC increases of 25% (red), 30% (green), 35% (dark blue), 40% (light blue), 45% (pink) and 62.5% (yellow). Dashed horizontal line indicates the fishing mortality rate target.

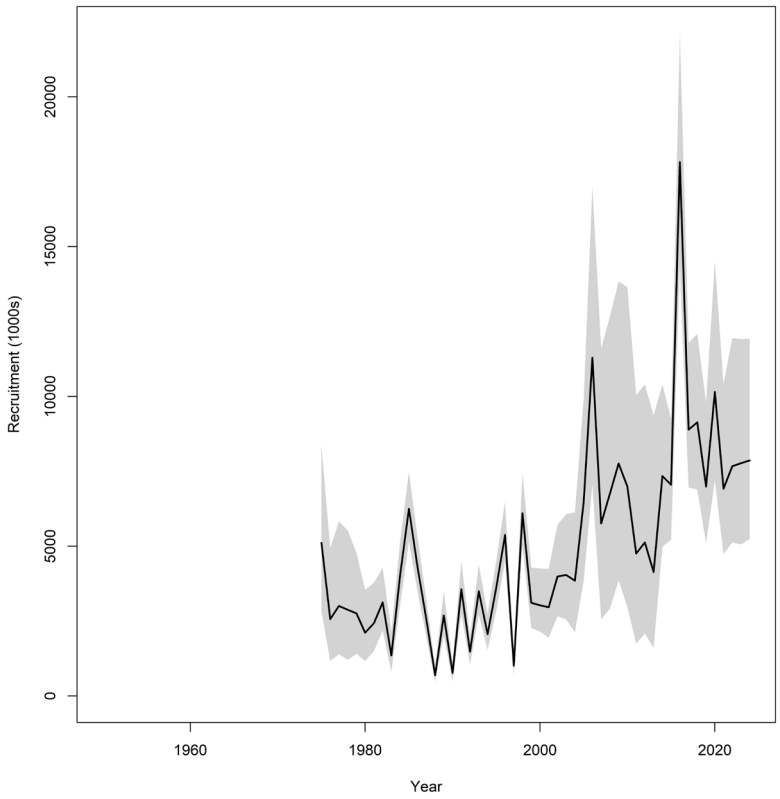

Figure 5: Estimates of annual recruitment (numbers of fish, thousands) from the 2024 SNA 8 stock assessment. The black line represents the median estimate and the shaded area represents the 95% credibility interval (FNZ - Plenary, 2024).

Information on biology, interdependence of stocks, and environmental factors

Biological characteristics

50. Snapper is a demersal species, found in central and northern regions of New Zealand to depths of 200 m. It is one of the most abundant, dominant, and widely distributed inshore species from 15-100 m, and occupies a range of habitats including rocky reefs and sandy/mud seafloor. There is likely a degree of mixing between the southern part of SNA 8 (South Taranaki Bight) and SNA 7 (top of the South Island and West Coast South Island), given continuous commercial catch across the western approaches to Cook Strait and similarities in age compositions and growth rate (Parsons *et al.,* 2014).
51. Snapper is considered to be a low productivity species, as it has a low level of natural mortality and long natural lifespan (up to 60 years or 105 cm). These characteristics are offset to some degree by their relatively young age of maturity (3 to 7 years) and high fecundity, being serial broadcast spawners.
52. Snapper are generalist predators, eating a diverse range of species opportunistically including crustaceans, polychaetes, echinoderms (urchins), molluscs, and other fish.
53. For more information, see the snapper chapter of the Fisheries Assessment Plenary, May 2024.

Interdependence of stocks

54. Snapper are generalist predators that feed opportunistically on a range of benthic invertebrates and fish. They a occupy a wide range of habitats, including rocky reefs and areas of sand and mud seafloor, and are found down to depths of 200 m (but are most abundant in 15 – 100 m). Consequently, snapper are likely to have significant dietary overlaps with many other carnivorous inshore species such as red gurnard, John dory, blue cod and flatfish. There is very little information on natural predators of snapper (Parsons *et al.,* 2014).
55. When setting a TAC for snapper stocks in some regions of New Zealand (particularly SNA 1), it is important to consider the role that snapper play in shaping the ecology of rocky reefs through their consumption of kina (sea urchin; *Evichinus chloroticus*). Predation by snapper and other species such as rock lobster can reduce kina abundance and alter kina behaviour thereby reducing the prevalence of kina barrens (Doheny *et al.,* 2023). However, the dynamics of kina barren formation in SNA 8 (west coast) are different to those in SNA 1 (east coast) due to differences in prevailing sea state and reef depth. Our current understanding is that for the most part, kina barrens do not form on west coast reefs because of the near-constant high wave action and the mostly shallow depth of coastal reefs. The theory is that west coast conditions are too rough for kina to roam freely across reefs and cause widespread deforestation (of kelp forests). Urchin barrens have been recorded at places such as Gannet Rock (off Raglan) and the Sugarloaf Islands (New Plymouth), but these are structures with lee shores, and deeper reefs where kina do not have to contend with such severe turbulence. As a consequence of this interplay between kina behaviour and coastal oceanography in the SNA 8 area (see Shears and Babcock 2007), FNZ considers that there is a low risk of kina barren formation under any of the proposed options, but FNZ welcomes feedback on this view.
56. For more information, see the see the Fisheries Assessment Plenary, May 2024 and the AEBAR.

Environmental conditions affecting the stock

57. There is evidence of above average recruitment over recent years for SNA 8, which may correspond with environmental conditions such as warmer water temperatures (FNZ - Plenary, 2024). However, predictors for recruitment success are numerous and not well understood. It is uncertain if the current high recruitment will continue, revert to the long-term average, or decline (if, for example, environmental conditions exceed a natural threshold and begin to negatively impact snapper recruitment).

Relevant provisions of the Act

Key matters for assessment of the proposals against section 13 of the Act

Matters for considerations under section 13(2)(a) of the Act	
Section 13(2)(a)	The best available information on *MSY* for SNA 8 comes from a 2024 stock assessment which shows that biomass is high and increasing. The *MSY*-compatible management target has been changed from a percentage of B_0 to a target exploitation rate. The stock is currently at this target rate, but at current catch levels, the exploitation rate is projected to fall below the management target over the next five years as a result of increasing snapper biomass (meaning the stock will move to a level above that which would produce *MSY*). As the stock status can be reliably estimated in relation to *MSY* and there is a desire to maintain the stock at or above this level, the proposed changes for SNA 8 would be made under section 13(2)(a) of the Act. Under this provision of the Act, the Minister must set a TAC using the best available information that is consistent with maintaining the stock at or above a level that can produce *MSY*, while also having regard to the interdependence of stocks. FNZ's initial view is that Options 1-4 (which range from maintaining the *status quo* to applying up to a 23% TAC / 40% TACC increase) would be consistent with the objective of maintaining the stock at or above the level that would produce *MSY*. This view is supported by the assessment forward projections (Figure 4), which show that under these options, the stock would be maintained at or above the level that would produce *MSY* within 5 years (as measured by being at or below the fishing mortality rate target). Biomass is also projected to continue increasing under all of these options. For Option 5 (which proposes a 36% TAC increase including a 62.5% TACC increase), SNA 8 biomass is projected to continue increasing, but forward projections indicate that the fishing mortality rate target is very likely to be exceeded for the duration of the 5-year projection period, and thus, the stock is unlikely to be maintained above a level that produces *MSY* within this timeframe. FNZ therefore considers this option may be inconsistent with section 13(2)(a) of the Act. However, we welcome feedback on this view, and any submissions in support or opposition to this option.
Section 13(2)(a) Interdependence of stocks	SNA 8 biomass is projected to increase under all of the proposed options with the greatest increase expected under *status quo* catch settings (Option 1). Kina barrens are not presently thought to be a significant ecological issue in FMA 8 and FMA 9, but in the limited areas in SNA 8 where they are known to occur (Shears and Babcock 2007), the increasing snapper biomass will not exacerbate the issue and may potentially contribute to reducing the abundance of kina and the prevalence of kina barrens. Adult snapper are generalist predators, capable of occupying a wide range of habitats and eating a wide variety of food sources (Parsons *et al.,* 2013). They have significant dietary overlaps with many other carnivorous inshore species such as gurnard, John dory, blue cod and flatfish. As the SNA 8 biomass grows, snapper are likely to be increasingly in competition for food resources with other finfish species. It is possible that increases in SNA 8 biomass (driven by recent increased productivity) will, through competition, drive a decline in the abundance of other finfish species. SNA 8 biomass is now the highest it has been since the 1970s (Figure 3) and it may be that if the relative abundance of different fish species is changing, that it is returning to something like it was prior to the intensification of fishing in the 1960s. However, we can only speculate on this as the information needed for a quantitative comparison is not presently available.

Harvest Strategy Standard

58. The default biomass target for snapper provided by the Harvest Strategy Standard (**HSS**) and Guidelines, based on the biological characteristics of the species, is considered to be 40% of the unfished biomass. This reflects international best practice.

59. Substantial increases in annual recruitment (Figure 5) suggest an increase in productivity, and possibly a regime shift, for SNA 8. Owing to the complexities associated with estimating SB_0 under these circumstances, the Inshore Working Group made the decision to base the target reference point on exploitation rate instead of biomass as a proportion of SB_0. Consistent with international best practice, the hard and soft limits were based on absolute biomass.

60. The default target accepted for SNA 8 was the exploitation rate that, if applied perfectly over the long term, would produce a spawning biomass of 40% of that in the absence of fishing ($F_{SB40\%}$; U=4.8%).

61. The hard limit was selected as the average spawning biomass estimated for the period 1992 to 2000. This was a relatively stable period that was close to the default Harvest Strategy Standard hard limit of 10% SB_0 when estimated in previous assessments, particularly the 2005 assessment (Davies *et al.*, 2013), which did not include the period of increased productivity. This period was preceded by a period of very high catch from which it took the stock a long time to rebuild, possibly due to impaired recruitment. The soft limit was assumed to be twice the biomass of the hard limit.

62. FNZ considers that Options 1 – 4 are consistent with the HSS.

Mātaitai reserves and other customary management tools

63. When making TAC decisions, the Minister must allow for Māori customary non-commercial interests. In doing so, the Minister must take into account any gazetted mātaitai reserve in SNA 8, and any area closure, fishing method restriction, or prohibition imposed in SNA 8 under sections 186A or 186B.

64. For more information on how mātaitai reserves and other customary management tools are relevant for TAC decisions, see heading 2.7 in the Legal Appendix.

Mātaitai reserves and other customary management tools	
Within the SNA 8 management area there are two mātaitai reserves and a taiāpure. The proposed catch setting option will not impact on Māori customary non-commercial interests within these areas or across SNA 8.	
Customary area	**Management type**
Aotea Harbour Mātaitai Marokopa Mātaitai	**Mātaitai reserve** Commercial fishing is not permitted within the mātaitai reserve.
Kawhia Aotea Taiāpure	**Taiāpure** All types of fishing are permitted within the taiāpure.

Key matters for assessment of the proposals against section 9 of the Act

65. When considering sustainability measures, the Minister must take into account the below environmental principles. For more information on how section 9 of the Act relates to TAC decisions, see heading 1.4. of the Legal Appendix.

66. The proposals to increase the TACC for SNA 8 may lead to increased fishing effort in FMA 8 and FMA 9. Therefore, there is potential for additional captures of protected species,[19] bycatch of non-target species, and for greater fishing related impacts on seafloor biodiversity such as through an increased trawl footprint.[20] Increasing the SNA 8 TACC will provide additional access to other species within the fishery complex which have previously been undercaught due to the limited availability of SNA 8 ACE (Table 2). The extent to which these risks could be realised will depend on the size of any TACC increase and how the fishing fleet responds to increased SNA 8 availability, for example, undertaking additional fishing events versus raising trawl headline heights to increase snapper CPUE.

67. While FNZ has received some feedback from commercial fishers that additional ACE will be caught through modifying trawl gear configuration rather than through additional fishing events, it is a reasonable assumption that the larger TACC increases proposed will result in additional fishing effort.

68. Potential effects on associated or dependent species, biological diversity of the aquatic environment, or potential habitats of particular significance are outlined below. Information presented is based on observer collected information and fisher-reported data that may not have been independently verified, noting that over the last three fishing years average observer coverage for these stocks has been 21%. On-board cameras have been live on proof-of-concept vessels in SNA 8 since 2019, and on trawl vessels less than or equal to 32 metres in overall length fishing in SNA 8 since August 2023. The independent information that cameras provide supports the reputation of our fishing industry, the sustainability of our fisheries, and more confident management decisions.[21] Camera coverage in SNA 8 from the 2018/19 to 2022/23 fishing years is 24%. These coverage levels have been calculated from all events which caught SNA 8 (rather than those just targeting SNA 8).

[19] https://www.mpi.govt.nz/fishing-aquaculture/sustainable-fisheries/managing-the-impact-of-fishing-on-protected-species/
[20] https://www.mpi.govt.nz/fishing-aquaculture/sustainable-fisheries/strengthening-fisheries-management/bottom-trawling/
[21] https://www.mpi.govt.nz/fishing-aquaculture/commercial-fishing/fisheries-change-programme/on-board-cameras-for-commercial-fishing-vessels/

Associated or dependent species should be maintained above a level that ensures their long-term viability - Section 9(a) of the Act	
Seabirds	Four of the five options proposed include an increase to the TACC. It is likely that if fishing effort increases in SNA 8 as a result of an increased TACC, then incidental capture of seabirds will also increase. However, feedback from commercial fishers suggests that fishing effort will not increase with proposed TACC increases. FNZ will monitor the impacts of any changes to the SNA 8 fishery as a result of this review. Over the last five years in SNA 8, 15 seabird captures have been reported in fishing events targeting snapper, and 63 seabirds were reportedly caught in all fishing events that caught snapper (includes events where snapper was not the target species). The species with the most captures was the flesh-footed shearwater (medium-risk ranking), which made up around a third of these captures. Another third consisted of black petrels, sooty shearwaters, and unidentified albatrosses, with the remaining captures including shearwaters, petrels, albatross, gulls, shags, gannets, and prions. Despite covering a larger area, fewer seabirds were caught in SNA 8 compared to SNA 1 over the same period (15 versus 619 captures when targeting snapper, and 63 versus 727 captures for events in which snapper were caught). While the underwater ridges, seamounts, and extensive shelf areas within SNA 8 create a rich foraging habitat for seabirds, a lack of larger offshore islands on the west coast means there is limited seabird breeding habitat. Consequently, there seems to be less overlap between protected seabirds and risk activity in the SNA 8 fishery which likely contributes to the lower seabird capture rate in FMAs 8 and 9. Nationally, the inshore trawl fishery (trawl vessels <28 m, including vessels that catch snapper in SNA 8) poses significant risks to several seabird species, including four high-risk ranking species: the white-capped albatross, Salvin's albatross, Westland petrel, and black petrel. Management of seabird interactions in New Zealand commercial fisheries is guided by the National Plan of Action - Seabirds 2020, with recommended measures set out under a series of method specific mitigation standards. The Trawl Mitigation Standards are most relevant in SNA 8 given it is a predominantly trawl caught commercial fishery. FNZ, DOC, and industry also work to ensure vessels have and follow a vessel-specific Protected Species Risk Management Plan (**PSRMP**). A PSRMP specifies measures that should be followed on board each vessel to reduce risk of incidental seabird captures. While there is no legal requirement that fishers have a PSRMP, more than 95% of full-time inshore trawl vessels have and follow one.
Mammals	Historically, trawl fisheries in the areas that encompass SNA 8 have been responsible for incidental capture of fur seals and dolphin species. SNA 8 includes the only habitat that Māui dolphin are found in. 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. Extensive set netting and trawl prohibitions are in place to manage the risks of commercial and recreational fishing to Māui dolphins along the west coast North Island (Cape Reinga to Wellington). In October 2020, as part of a revised TMP, extensive new measures were implemented to further reduce fishing-related threats to Māui dolphins. The new measures provide a high degree of certainty that the current risk fishing has to Māui dolphin mortality is close to zero. The measures included: • Creating a new commercial and recreational set-net closure out to 4 nm offshore between Cape Reinga and Maunganui Bluff; • Extending the commercial and recreational set-net closure between Maunganui Bluff and the Waiwhakaiho River (New Plymouth) from 7 nm to 12 nm offshore; • Extending the commercial and recreational set-net closure between the Waiwhakaiho River (New Plymouth) and Hawera from 2 nm to 7 nm offshore; • Creating a new commercial and recreational set-net closure out to 4 nm offshore between Hawera and Wellington; and • Extending the existing trawl closure between Maunganui Bluff and Pariokariwa Point further south to the Waiwhakaiho River (New Plymouth), and to 4 nm offshore from Maunganui Bluff to the Waiwhakaiho River. New regulations also include a fishing-related mortality limit of one dolphin (*Cephalorhynchus spp.*) within the Māui dolphin habitat zone that extends from Cape Reinga to Cape Egmont. To support

	this, on-board cameras or observers are used to monitor potential interactions with commercial trawl or set net vessels operating in the coastal area. Any increase to the TACC for SNA 8 will need to be closely monitored to assess changes in fishing effort (number of events and distribution) by methods that pose a risk to Māui dolphins. Reviews of the existing fisheries restrictions may be necessary if new information changes our assessment that the risk of fishing-related mortality is no longer close to zero.
Fish and invertebrate bycatch	SNA 8 is predominantly caught in a 'mixed' multispecies inshore trawl fishery (Table 2). The core associated species are red gurnard (GUR 1 & 8), John dory (JDO 1 & 2), spiny dogfish (SPD 8), rig/spotted dogfish (SPO 1 & 8), tarakihi (TAR 1 & 8), trevally (TRE 7), and school shark (SCH 1 & 8). Although these stocks are not being reviewed together with SNA 8 in the October 2024 sustainability round, in recognition of the interlinkages between them and commitments made to progressing integrated multi-stock management, we have considered the status of these stocks and the potential impacts of changes to the SNA 8 TAC (Table 3). Of the species in this complex, none are currently overcaught and it is only GUR 1, TAR 8, and SCH 1 where reported catches are more than 80% of the TACC. Depending on the size of any TACC increase and how the commercial fishing fleet respond to the availability of additional ACE, it is possible that these species could be fully caught and end up constraining catches of other stocks. JDO 2 is being reviewed as part of this sustainability round, with proposals to either retain or reduce the TACC. The current TACC is significantly underutilised at present, however there is concern that a sustainability risk could occur should the full current TACC be caught. This has the potential to lead to the stock constraining commercial fishers' ability to catch SNA 8. In addition to the species complex above, skate species in FMA 9 may be affected should the TACC of SNA 8 increase. These species occur largely in deeper water where fishing pressure has moved since the introduction of the Hector's and Māui dolphin Threat Management Plan. Should the SNA 8 TACC be increased, it will be important to monitor catch rates across the whole fishery stock complex to determine whether future changes in fishing effort or behaviour pose a sustainability risk for the species associated with SNA 8. Future reviews of North Island West Coast fishery could move further towards a multi-stock management approach.

Table 3: Species included in the inshore mixed trawl and set net fishery stock complex for FMA 8 and FMA 9 with TACC and reported catch (tonnes) for the 2022/23 fishing year. The species caught in significant quantities alongside snapper are indicated in bold text. Catch level indicates reported catch relative to the TACC: 90-100% of TACC (At target), 80-90% of TACC (****), 70-80% of TACC (***), 60-70% of TACC (**), and less than 60% of TACC (*). Stock specific sustainability concerns are identified where they exist.

Species	Stock	TACC in 2022/23	Commercial harvest in 2022/23	Catch level	Sustainability concerns
Snapper	**SNA 8**	1,600	1,728	Overcaught	No known concerns
Red gurnard	**GUR 1**	800	615	***	No known concerns
	GUR 8	543	86	*	No known concerns
John dory	**JDO 1**	354	235	**	No known concerns
	JDO 2	269.5	90	*	There is concern that a sustainability risk could occur should the full current TACC be caught
Tarakihi	**TAR 1**	978	676	**	CPUE is declining strongly and fishing intensity increasing, so some sustainability concern
	TAR 8	225	202	At target	No known concerns
Trevally	**TRE 7**	2,153	1,132	*	No known concerns
School shark	**SCH 1**	689	586	****	No known concerns
	SCH 8	529	273	*	No known concerns
Rig	SPO 1	692	241	*	No known concerns
	SPO 8	310	66	*	No known concerns
Spiny dogfish	SPD 8	307	97	*	No known concerns
Warehou	WAR 8	160	45	*	No known concerns
Kahawai	KAH 8	520	274	*	No known concerns
Ling	LIN 1	400	268	**	No known concerns

Biological diversity of the environment should be maintained Section 9(b) of the Act

SNA 8 is mainly caught by bottom trawling, which is known to have negative impacts on seafloor biological biodiversity and benthic habitats, some of which may support the different life stages of harvested fish species.[22] Although it is difficult to predict how the commercial fleet will respond to a significant increase to the TACC, possible outcomes include (a) no change to the amount of trawl effort (with additional snapper taken through modification of fishing gear such as raising headline height), (b) an increased trawl footprint, (c) new areas being fished, and (d) intensification of fishing in areas that are already fished. During pre-consultation engagement discussions, it was noted that some commercial trawlers have changed fishing behaviour and gear setup to actively avoid snapper and target gurnard. The resulting lowered headline and concerted effort to keep the net on the seafloor to actively target gurnard may result in greater levels of bottom contact.

Set netting, trawling and Danish seining are currently prohibited from large areas within SNA 8. This includes harbours and estuaries, and Māui dolphin habitat protected under the Hector's and Māui dolphin Threat Management Plan. This protects large areas of inshore marine space from impacts from trawling (Table 4).[23] At present, 55,541 km^2 of seafloor is protected from the impacts of bottom trawling and Danish seining. This includes all of the harbours, 55% of seafloor out to a distance of 2 nm from the coast, and 46% of seafloor between 2 nm and 4 nm from the coast (Table 2).

[22] https://www.mpi.govt.nz/fishing-aquaculture/sustainable-fisheries/strengthening-fisheries-management/bottom-trawling/

[23] West Coast North Island Trawl Prohibition Map https://fs.fish.govt.nz/Page.aspx?pk=175&tk=564

Table 4: The area (km^2) of seafloor present at different distances from the mainland coast within SNA 8, and the area (km^2) and percentage of each distance band that is closed to set netting, trawling and Danish seining under the Hector's and Māui dolphin Threat Management Plan.

Zone	Total area of habitat in SNA 8 (km2)	Total area closed to trawling and Danish seining in SNA 8 (km2)	Total percentage of habitat closed
Over 4 nm	373,177	50,357	14
2 – 4 nm	3,735	1,715	46
0 – 2 nm	3,777	2,060	55
Harbours	1,409	1,409	100
Total	382,098	55,541	15

FNZ considers that the proposed options which include a TACC increase (Options 2-5) may result in some additional impacts on the benthic environment relative to current settings. However, we do not consider that the potential effects of these TACC increases will be adverse at the scale of the SNA 8 FMA as (a) trawling is already occurring throughout SNA 8, and (b) large areas of seafloor within SNA 8 are already protected from the impacts of bottom contact fishing methods (Table 3). FNZ will continue monitor changes in the fishery (including trawl footprints) that occur as a result of this review.

Habitat of particular significance for fisheries management should be protected - Section 9(c) of the Act

Using the best available information, FNZ have identified three potential habitats of particular significance for fisheries management in SNA 8. Patea Shoals, off the South Taranaki Bight, and the Kaipara Harbour are considered to be nursery and spawning grounds for finfish, including snapper, John dory, rig, grey mullet, and trevally. Intertidal and subtidal green-lipped mussel beds off Ahipara and Te Oneroa-a-Tōhe are considered the primary sources of mussel spat to support customary and recreational fisheries, and the $380 million per year mussel aquaculture industry. The attributes and threats to these habitats are detailed in the table below.

While the attributes of the Kaipara Harbour that support fisheries are protected from potentially adverse effects of fishing (through prohibitions on trawling, Danish seining, and dredging), the Patea Shoals and Ahipara subtidal mussel beds are not. Geospatial Position Reporting (**GPR**) data from inshore trawl vessels indicates that both habitats experience moderate levels of trawl disturbance.

The proposals to increase the TACC for SNA 8 may lead to increased fishing effort in FMA 8 and FMA 9. At present there are no measures in place to protect these habitats which, based on the best available information, are considered to be of particular significance for fisheries. The Ahipara mussel beds may be especially vulnerable as approximately 24% of the SNA 8 TACC is caught off Te Oneroa-a-Tōhe (Ninety Mile Beach) in the vicinity of these mussel beds.

Potential habitats of particular significance for fisheries management
Patea Shoals – South Taranaki Bight
Attributes of habitat • Mixed biogenic habitat – rippled sands, sand-wave bed forms, low-lying rocky outcrops, worm fields, bivalve rubble and bryozoan rubble. **Reasons for particular significance** • Supports diverse benthic and suspension feeding assemblages and is a known nursery ground for some finfish species; • Patea Shoals may also be a spawning ground for some finfish species, including John dory. **Risks/Threats** • Climate change can induce extreme weather events (such as Cyclone Gabrielle), destroying or modifying inshore biogenic habitats. • Mobile bottom-contact fishing methods, such as bottom trawling, can impact biogenic habitats and may account for the lack of any large, robust colonies at Patea Shoals. However, the frequency of disturbance in individual areas seems sufficiently low to maintain reasonable biodiversity and moderate colony sizes; • Some habitat types, e.g., bryozoan thickets, are characterised by slow growth and can decades to recover. • Those biogenic habitats that are susceptible to breakage and dislodgement are likely to be heavily impacted by ongoing fishing activities, with extensive areas already showing signs of damage and loss (e.g., bryozoan thickets off Patea Shoals); • Biogenic habitats may be vulnerable to sedimentation from land-based sources or the resuspension of sediments by bottom contact fishing or subtidal sand or mineral mining. **Existing protection measures** • Trawl and set net restrictions along the North Island West Coast; • Prohibition of Danish seining around the lower North Island within 3 nautical miles seaward of the mean high-water mark; • Restricted areas around Taranaki, to protect petroleum installations, prohibits fishing in these areas. **Evidence** • Morrison *et al.,* (2014d) • Morrison *et al.,* (2022) • Beaumont *et al.,*(2015) • Anderson *et al.,* (2019) • Hurst at al. (2000)
Intertidal and subtidal mussel reefs and macroalgal beds at and adjacent to Ahipara and Te Oneroa-a-Tōhe (Ninety Mile Beach)
Attributes of habitat • Intertidal and subtidal rocky reefs; • Intertidal and subtidal mussel beds to a depth of 25m; • Intertidal and subtidal macroalgal beds with associated sponges, bryozoans, and hydroids. **Reasons for particular significance** Best available evidence suggests that these mussel and macroalgae reefs provide: • Mussel spat to support the sustainability of mussel stocks in the wider area; • Mussel spat to ensures the sustainability of an important customary and recreational fisheries; and • Mussel spat and seaweed that is the main source of mussel spat for New Zealand's $380m per year mussel aquaculture industry. **Risks/Threats** • These subtidal mussel reefs are likely to be vulnerable to the resuspension of sediment from bottom contact fishing, and more significantly from the physical disturbance of bottom contact fishing methods (trawling/dredging). • GPR data indicates that, for the 2020-2023 period, some of the Ahipara subtidal reefs were subjected to moderate levels of bottom trawl disturbance. **Existing protection measures** • There is currently a set net prohibition in this area.

Potential habitats of particular significance for fisheries management

- There are no measures currently in place to protect this habitat of particular significance for fisheries from the impacts of trawling or dredging.

Evidence

- Alfaro *et al.,* (2011)
- Dunphy *et al.,* (2015)
- Quigley *et al.,* (2022)
- Quigley (2023)
- Quigley *et al.,* (2023)

Kaipara Harbour

Attributes of habitat

Different attributes of the Kaipara Harbour are important for different species.

Grey mullet:

- High level of connectivity to freshwater environment;
- Large, muddy estuaries.

Rig/spotted dogfish:

- Muddy substrata in shallow turbid parts of harbours which have a significant freshwater component;
- High shellfish density.

Snapper:

- Biogenic habitat – e.g., subtidal seagrass beds, Asian date mussel hummocks, red algal meadows.

Reasons for particular significance

The Kaipara Harbour acts as a nursery area for Grey Mullet, Rig/Spotted Dogfish, and Snapper. The Kaipara Harbour is also known to support juveniles of other fish species (e.g., Trevally).

Grey mullet:

- Connected to large adult populations.

Rig/spotted dogfish:

- One of two known nursery areas;
- Rig spend their first 6-8 months in estuaries and harbours until autumn or winter.

Snapper:

- Biogenic habitat in the Kaipara provides refugia (e.g., from predation, currents) and feeding opportunities;
- A high proportion of SNA 8 recruits are thought to come from the Kaipara Harbour;
- It is likely that recruitment failure in the Kaipara would significantly decrease the productivity of SNA 8.

Risks/Threats

- Sedimentation from land-based practices.
- Eutrophication from land-based practices and finfish farming.
- Electricity generating turbines altering tidal energy flux – note: this proposal has not progressed.
- Additional aquaculture facilities over seagrass beds (oyster BST racks over subtidal seagrass have been shown to have no adverse effects on seagrass).
- Commercial fishing using bottom-impacting methods across the habitat.
- Amateur scallop dredging (recreational scallop fishery is currently closed).
- Adverse effects from non-indigenous/invasive species such as the Asian date mussel.

Existing protection measures

- Trawl, Danish seine, and commercial scallop dredging are prohibited in all estuaries and harbours in SNA 8.
- The Kaipara Harbour is closed to recreational fishing for scallops (including recreational dredging).
- The National Policy Statement on Freshwater Management and the National Environmental Standards for Freshwater, which came into effect on 3 September 2020, should lead to improved water quality in shallow harbours and estuaries and other shallower inshore waters.
- FNZ engages with the RMA coastal planning processes to support marine management decisions to manage land-based impacts on habitat of particular significance for fisheries management.

Evidence

- Morrison *et al.,* (2014d)
- Francis *et al.,* (2012)
- Getzlaff (2012)
- Nurhazwan (2013)

Potential habitats of particular significance for fisheries management
• Morrison *et al.*, (2014a, b, c) • Morrison *et al.*, (2016) • Jones *et al.*, (2016)

Key matters for assessment of the proposals against section 11 of the Act

69. Section 11 of the Act sets out various matters that the Minister must take into account (sections 11(1) and 11(2A)) or have regard to (section 11(2)) when setting or varying sustainability measures such as the proposed TAC changes. The matters relevant to this review under section 11 are set out below. For more information on how section 11 is relevant for TAC decisions, see heading 2.2 in the Legal Appendix.

Effects of fishing on any stock and the aquatic environment – section 11(1)(a)	The effects of fishing for SNA 8 on other stocks and the aquatic environment are discussed throughout this paper. In particular, see the 'Assessment of proposals against section 9 of the Act' table for a summary of environmental impacts.
Existing controls that apply to the stock or area – section 11(1)(b)	**Commercial** A number of inshore areas within SNA 8 are closed to bottom trawl and Danish seining, including all harbours and estuaries. Various restrictions on the use of commercial fishing gear and methods exist within SNA 8. Examples include but are not limited to the following: • Spatial prohibitions / restrictions in some areas on trawlers larger than 46 metres, drag netting, beach seining and set netting; • Area prohibitions on the methods of pair trawling and Danish seining; • Fishing gear restrictions including set net and cod-end mesh size; and • Prohibition on the sale of certain reef species, to prevent targeting of reef habitat. In 2020, as part of the fisheries measures under the Hector's and Māui Dolphin Threat Management Plan, a number of measures were introduced to strengthen the protection of Māui dolphins and reduce the risk of capture. This included broader closures for set netting and extending the area closed to bottom trawling. A commercial minimum legal size (MLS) limit of 25 cm applies for snapper across all fisheries. Any snapper below 25 cm must be returned to the sea and, since the introduction of electronic reporting 2019, fishers must record an estimate of the quantity of undersize snapper returned for each fishing event where undersize snapper is caught. **Recreational** The MLS for recreationally caught snapper in SNA 8 is 27 cm. The daily bag limit is 10 per person per day. It was noted during pre-consultation engagement that the current bag limit and size limit in SNA 8 were important to allow for subsistence fishing, which supports local communities. Various fishing method restrictions are also in place in SNA 8. These include closed areas for set netting consistent with those for commercial fishers. Outside these areas, a minimum net mesh size of 125 mm for set nets applies for snapper. For line fishing (long line, contiki and dahn lines) there is a maximum number of 25 hooks that can be used on a line.
The natural variability of the stock – section 11(1)(c)	Snapper is a low variability species, given low natural mortality, high longevity, role in coastal ecosystems as dominant generalist predator, and broadcast spawning characteristics. However, recent analysis suggests that recruitment success can vary significantly, potentially in response to environmental conditions such as water temperature.

Relevant statements, plans, strategies, provisions, and documents - section 11(2)	There are six Regional Councils [24] that have coastline within the boundaries of SNA 8. Each of these regions has multiple plans to manage the coastal and freshwater environments, including terrestrial and coastal linkages, ecosystems, and habitats. FNZ considers that the proposed management options presented are in keeping with the objectives of relevant regional plans, which generally relate to the maintenance of healthy and sustainable ecosystems to provide for the needs of current and future generations.
Relevant services or fisheries plans – section 11(2A)	Snapper is managed under the National Inshore Finfish Fisheries Plan, which is an approved fisheries plan under section 11A and specifies management objectives and strategies for the next five years. Snapper falls under Group 1, which recognises stocks that provide the greatest benefit and are highly desirable to all sectors. They are managed to provide for utilisation, while mitigating the increased risk to their sustainability as a consequence of high levels of fishing pressure.
Other plans and strategies	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 a number of objectives across three timeframes. The most relevant to setting sustainability measures for SNA 8 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.

[24] Regional Councils that have coastline within SNA 8: Northland Regional Council, Auckland Council, Waikato Regional Council, Taranaki Regional Council, Horizons Regional Council (Manawatu-Wanganui Region) and Greater Wellington Regional Council.

Information principles: section 10 of the Act

70. The best available information relevant to this review of SNA 8 has been presented throughout this paper, and uncertainties in the information have been highlighted where relevant. The table below provides an additional summary of the best available information and key areas of uncertainty, unreliability, or inadequacy in that information. As per section 10(c) of the Act, caution is required in decision making where information is uncertain, unreliable, or inadequate. However, as per section 10(d) of the Act, the absence of, or any uncertainty in, any information must also not be used as a reason for postponing or failing to make a decision.

71. For more information on how section 10 is relevant for TAC decisions, see heading 1.5 in the Legal Appendix.

Best available information
The best available information to inform management of SNA 8 includes the 2024 stock assessment which is summarised within this paper and described in more detail within the May 2024 Fisheries Assessment Plenary. It also includes the other scientific reports cited in the text and listed in the reference section below. Additional information about the operation of and challenges faced by the commercial fishing fleet is derived from pre-consultation engagement discussions with fishers, fishing companies and industry groups. Similarly, FNZ's understanding of the experiences of recreational fishers in SNA 8 comes from ongoing dialogue and pre-consultation engagement discussions held prior to the development of this consultation paper.
Key areas of uncertainty
Since 1989–90, the area north of Cape Egmont has accounted for 90–95% of the SNA 8 commercial catch. Most observational data included in the stock assessment model were also derived from the northern area of the fisheries including the CPUE indices, trawl survey indices, and the commercial age composition data. Consequently, the dynamics of the assessment model will be strongly influenced by the data from the northern area of the fisheries. Snapper from the South Taranaki Bight also grow significantly faster than those found further north, but not as fast as those from SNA 7. This may indicate some degree of spatial structure in the SNA 8 population and possible linkages between the southern area of SNA 8 and the SNA 7 (Tasman Bay/Golden Bay) stock. Productivity of the SNA 8 stock appears to have varied considerably over the history of the fishery, with variable levels of recruitment and variation in growth rates (that appear to be related to stock abundance). Recent recruitment appears to be at an historically high level, suggesting that the stock is currently in a phase of higher productivity. Future recruitment trends are unknown and only observed with a high degree of uncertainty through trawl surveys for year classes since 2019. The available information on these cohorts suggests they may be smaller than those which have driven the increasing biomass trajectory over the last decade. The variability in the catchability of adult snapper in the recent west coast North Island trawl surveys has limited the utility of the trawl surveys to monitor the overall magnitude of the increase in the abundance of snapper. The limitations of the trawl survey are partly attributable to variability in the timing of the survey relative to the main spawning period and the restriction from sampling within the Māui dolphin trawl exclusion zone. Further, the distribution of snapper appears to have expanded (into deeper water) as the abundance of snapper has increased over recent years. A longer time series of trawl surveys may enable a more thorough evaluation of the factors influencing the variability in catchability of adults (>5 years old) and, thereby, increase the utility of the trawl surveys to monitor stock abundance. There have been considerable changes in the operation of the trawl fisheries during the assessment period related to the extent of targeting/avoidance of snapper. The CPUE analysis has endeavoured to account for some of these changes; however, the CPUE indices are considered to under-estimate the increase in abundance during the more recent years. The increase in the catch from the recreational fishery highlights the importance of this component of the fishery, which currently accounts for approximately 30–40% of the total catch. Consequently, it is important to routinely monitor the level of recreational catch to determine total removals from the stock. Additional areas of uncertainty in the stock assessment are recorded in the working group report (FNZ - Plenary, 2024).

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