Fisheries New Zealand
Tini a Tangaroa

Review of sustainability measures for snapper (SNA 7), flatfish (FLA 7), and elephantfish (ELE 7) for 2024/25

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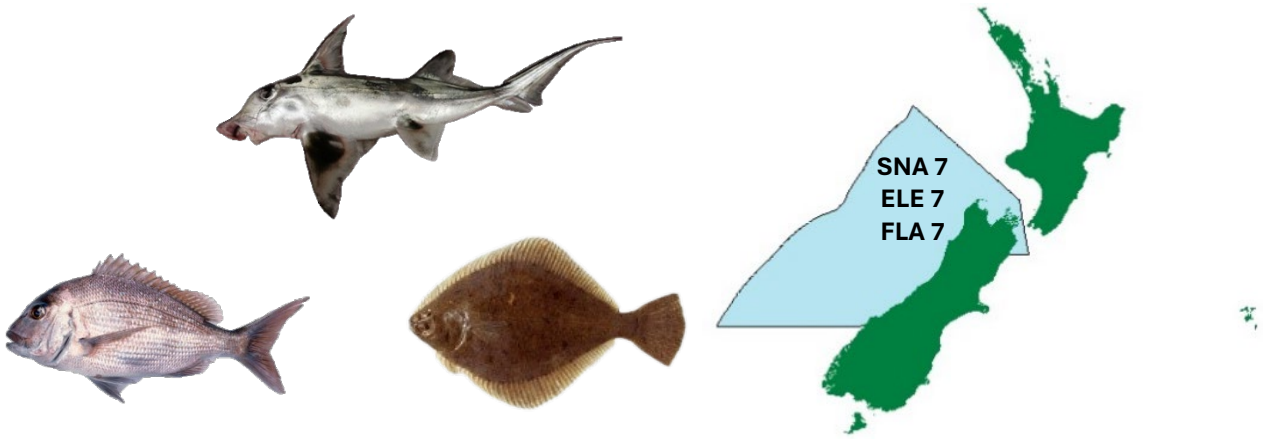


Figure 1: Quota Management Areas (QMAs) for snapper / tāmure (*Pagrus auratus*), flatfish / pātiki (*multiple species, with sand flounder pictured*),[1] and elephantfish / reperepe (*Callorhinchus milii*).

Why are we proposing a review?

1. Fisheries New Zealand (**FNZ**) is reviewing sustainability measures for snapper, flatfish, and elephant fish in Quota Management Areas SNA 7, FLA 7, and ELE 7 for the 1 October 2024 fishing year. These stocks are being reviewed together to consider interlinkages as part of the inshore mixed trawl fishery.
2. SNA 7 supports a highly important shared fishery and has seen a large increase in abundance over the last decade following a rebuild from very low levels. This has been demonstrated in regular stock assessments, noted by all sectors, and reflected through incremental Total Allowable Catch (**TAC**) increases in 2016, 2020, and 2022.
3. Current Total Allowable Commercial Catch (**TACC**) settings are now a major issue for commercial fishers who need to balance increasing snapper bycatch, and customary and recreational fishers are also suggesting that their catches may increase in future. Based on results of a new assessment showing increasing biomass, substantial room for additional utilisation within the management target, and very large numbers of younger fish recruiting into the fishery, FNZ is proposing options to increase the TAC, allowances, and TACC.
4. Some stakeholders have also requested a review of the Marlborough Sounds recreational daily limit for snapper, supporting an increase from 3 to 6 fish. FNZ has canvassed mixed views and considered relevant information on local abundance, leading to an initial position that the current limit remains appropriate at this time. However, this information is presented and feedback is welcomed.
5. FLA 7, comprised of eight different flatfish species, was last assessed in 2020 with most species around their management targets but New Zealand sole likely below target. Commercial catches of all species have declined significantly since but the drivers for this are unclear. Importantly, flounder also provides a key food source and cultural pastime for customary and recreational fishers.
6. The stock was introduced into the Quota Management System (**QMS**) in 1986 as a TACC only stock, with the TACC set high to allow for naturally varying abundance. It has never been fully caught. FNZ therefore considers it timely to reduce the TACC and introduce a TAC and allowances as required under sections 20(5) and 13(10) of the Fisheries Act 1996 (**the Act**).
7. ELE 7 is predominantly taken as bycatch in the commercial trawl fishery, but also by some customary and recreational fishers. Analysis of commercial catch per unit effort (**CPUE**) shows that catch rates have increased over recent years and that relative biomass is above the management target.
8. Noting that during this same period the TACC was substantially overcaught through unintended bycatch, FNZ is proposing options to increase the TAC and TACC in line with these catch levels. Recreational and customary allowances are not proposed to be increased, as available information suggests current settings sufficiently account for catches and non-commercial interests.
9. Adjustments to the TACs for SNA 7 and ELE 7 would be made under section 13(2)(a) of the Act, and section 13(2A) for FLA 7. All options would come into effect from 1 October 2024.

[1] Sand flounder (*Rhombosolea plebeian*), yellowbelly flounder (*R. leporine*), black flounder (*R. retiarii)*, greenback flounder (*R. tapirine)*, lemon sole (*Pelotretis flavilatus)* , New Zealand sole (*Peltorhamphus novaezeelandiae)*, brill (*Colistium guntheri)* &turbot (*C. nudipinnis*).

Proposed options

Table 1: Proposed management options (in tonnes) for SNA 7, FLA 7, and ELE 7 from 1 October 2024.

Stock	Option	TAC	TACC	Allowances		
				Customary Māori	Recreational	All other mortality caused by fishing
SNA 7	Option 1 (*Status quo*)	768	450	30	250	38
	Option 2	1,311 (↑543)	900 (↑450)	60 (↑30)	275 (↑25)	76 (↑38)
	Option 3	1,445 (↑677)	1,000 (↑550)	60 (↑30)	300 (↑50)	85 (↑47)
FLA 7	*Current Settings*	N/A	2,065	N/A	N/A	N/A
	Option 1	2,228	2,065	30	30	103
	Option 2	1,110	1,000 (↓1,065)	30	30	50
	Option 3	584	524 (↓1,541)	10	10	40
ELE 7	Option 1 (*Status quo*)	127	102	5	10	10
	Option 2	149 (↑22)	122 (↑20)	5	10	12 (↑2)
	Option 3	160 (↑33)	132 (↑30)	5	10	13 (↑3)

10. FNZ is satisfied that the current deemed value rates for these stocks provide sufficient incentives for balancing of catch with Annual Catch Entitlement (**ACE**), consistent with section 75(2)(a) of the Act and the Deemed Value Guidelines. No changes are proposed; however, feedback is welcomed.

11. For more information on current fisheries management settings, see the Fisheries Infosite, or our fisheries management and Quota Management System (QMS) webpages.

Finfish Plan – Enabling integrated management and multisector collaboration

12. The National Inshore Finfish Fisheries Plan (**Finfish Plan**) sets out five focus areas for inshore finfish stocks over the next five years to progress an ecosystem-based fisheries management approach; (i) individual stock sustainability, (ii) enhanced stakeholder benefits, (iii) integrated multi-stock management, (iv) improving local fisheries, and (v) improving environmental performance.

Integrated multi-stock management

13. The majority of catch for SNA 7, FLA 7, and ELE 7 is taken in the Fisheries Management Area 7 (**FMA 7**) inshore mixed trawl fishery stock complex, as defined in focus area iii. of the Finfish Plan. These stocks are therefore being reviewed together and while FNZ considers there is no new information to support a review of others in the complex, potential wider impacts of proposed options are considered below.

Table 2: Key links between the stocks being reviewed and others in the FMA 7 inshore mixed trawl stock complex.

Snapper (SNA 7)	Flatfish (FLA 7)	Elephantfish (ELE 7)
Traditionally caught in Tasman/ Golden Bay with gurnard, sand flounder, John dory, and rig. Fishers are reporting increasing snapper bycatch further down the West Coast, and with deeper water species such as barracouta, tarakihi, and school shark.	Sand flounder is caught in Tasman/ Golden Bay with gurnard, John dory, rig, and snapper. Some is also taken in Cloudy Bay. New Zealand sole, brill, and turbot are caught on the West Coast with gurnard, red cod, and elephantfish.	The majority is caught on the West Coast alongside brill, turbot, New Zealand sole, gurnard. A small amount is also taken in Cloudy/Clifford Bay.

14. Of these stocks, last assessed status is:

- **Likely at or above target or better (>60% probability)** for gurnard (GUR 7), snapper and elephantfish
- **About as likely as not at or above target (40-60%)** for sand flounder, brill, turbot, John dory (JDO 7), rig (SPO 7), and school shark (SCH 7);
- **Unlikely at or above target (<40%) or worse** for New Zealand sole and East Coast tarakihi[2]; and
- **Unknown** for red cod (RCO 7) and barracouta (BAR 7).

15. Notably, catches of snapper, elephantfish, and rig have increased in recent years and decreased substantially for flatfish species and red cod. A number of these stocks are also indexed biannually by the West Coast South Island trawl survey, most recently in 2023.

16. There is also a degree of connectivity between SNA 7 and SNA 8, with some fish thought to migrate to Kapiti Coast in autumn/ winter and Tasman/ Golden Bay in spring for spawning. Status for SNA 8 is

[2] Part of TAR 7, which also includes a separate West Coast stock which is scheduled for an assessment with results due in 2026.

positive and TAC increases are also proposed for the stock in this sustainability round. If catches on Kapiti Coast increase significantly, this could affect fishing mortality in the SNA 7 stock, and vice versa.

17. Potential wider impacts of the proposed options are difficult to predict, depending largely on how the trawl fleet responds to increased snapper ACE. Larger SNA 7 TACC increases would be expected to result in increased catches of associated stocks given it is currently a 'choke species'[3]. Fishers have noted that an increase in SNA 7 TACC may increase SPO 7 bycatch, which they also requested be reviewed. They have also suggested that techniques to minimise snapper bycatch (gear modifications and fishing practices) have increased the effort and bottom contact necessary to catch other species.

18. Under the proposed options for SNA 7, monitoring of the fleet response to a TACC increase would be needed to assess potential stock complex and wider ecosystem implications. FNZ would endeavour to brief multisector workshops annually on spatial trends in fleet activity, any changes in trawl footprint, and catch rates for other associated species, ahead of the next scheduled stock assessment in 2026.

19. FNZ has recently contributed to research on integrated management approaches for stock complexes through the Sustainable Seas Challenge, and is also contracting research to explore implications of managing snapper to higher abundance, and development of tools to quantify bycatch interactions. Results of the FNZ projects are due in 2025 to inform future monitoring and management.

Multisector workshops

20. Noting the importance of snapper and commitments made under focus areas ii. and iv. of the Finfish Plan, FNZ convened workshops in early 2024 to present assessment results and canvas management priorities for the SNA 7 stock. This approach has been taken in previous years and included commercial, recreational, and customary fishing representatives.

21. All sectors shared observations of a highly abundant snapper fishery and agreed that it represented a positive example of collaboration to support the rebuild of the stock over the last decade. There was widespread agreement that future management needs to remain science-based, supported by ongoing monitoring, and seek to alleviate the significant financial pressures of snapper avoidance on inshore commercial fishers while maintaining recreational and customary access to a healthy fishery.

22. Following presentation of assessment results and open discussion, participants expressed in-principle support for commercial and recreational increases under Option 2, with the opportunity to provide individual feedback during consultation. They considered the increased catch settings to be:
    - substantial enough to restore commercial access to other species given rapidly increasing biomass;
    - reflective of recreational fishers' on-the-water observations and expectation that fishing participation will grow with increased success and abundance, despite recent National Panel Survey results; and
    - supported by stock assessments results and relatively moderate given the estimated yield available[4].

23. Participants also discussed stock complex considerations, potential fleet responses, recreational catch reporting, management targets (i.e. 50% virgin biomass (B_0)), spatial management tools, and habitat protections. Comments on these topics are noted throughout this paper where appropriate.

Snapper (SNA 7) Options

Option 1 (*Status quo*)

Benefits	• Strong likelihood of increased catchability of snapper for all sectors with increasing abundance. • Environmental impacts of fishing may decrease, with limited ACE further constraining fishing effort through maintaining snapper as a 'choke species'. • Allows for further monitoring to build certainty in the strength of recent year classes which are driving increasing biomass. Given the longevity of snapper, unrealised yield will not be foregone. • Maintains current recreational and customary allowances based on available information suggesting they aren't being fully utilised. Maintains the allowance for other mortality at 8.5% of the TACC.
Risks	• Does not take into account stock assessment results projecting rapidly increasing biomass, nor the concessions made to rebuild the fishery over the last decade. • Increased abundance combined with insufficient ACE to balance unavoidable bycatch would threaten the commercial fleet's viability and lead to negative socio-economic outcomes, especially for small

[3] A stock for which available ACE is exhausted before other stocks in a mixed fishery, restricting the ability to continue fishing.
[4] 1,872 tonnes at $U_{SB40\%}$ given current (2023/24) biomass.

	operators paying deemed values ($400,000 in 2022). For this reason, FNZ considers this option may not be consistent with the purpose of the Act but welcomes feedback. • Ecosystem implications of managing a generalist predator such as snapper to a much higher level of abundance than other inshore species are unclear, likely both positive and negative.

Option 2 - 71% TAC increase, 100% TACC increase + customary and recreational increases

Preferred by workshop participants

Benefits	• Reflects the scale of increased abundance and concessions made to rebuild the fishery. • Potential socio-economic benefits from increased landings, domestic sales, exports, and employment are substantial. Landed value of an additional 450 tonnes of balanced catch could be $2.25m[5], excluding value derived by processing, retail, and spending in the regional economy. • Still allows room for further monitoring of the fishery to build certainty in increasing abundance. • A significant increase may make ACE available to fishers employing other methods, such as bottom longline and spearfishing, to serve other markets which demand a higher price. • Increases the customary allowance substantially in recognition of the potential for increased harvest through customary permits and for Pātaka Kai in Te Tau Ihu. • Increases the recreational allowance moderately, on the basis that strong recent year classes maturing will drive up average weight and increase the popularity of fishing. Maintains the other sources of mortality allowance at 8.5% of the TACC.
Risks	• How this increase would be caught and resulting environmental impacts cannot be predicted with certainty. Fishers believe techniques to minimise bycatch have increased effort to catch other species. This option may enable maximising of CPUE without increasing footprint, or alternatively lead to increased effort with a corresponding increase in associated bycatch, protected species captures, and benthic impacts. • Potential impacts on bycatch of flatfish are unclear. Given snapper bycatch constrains Tasman Bay effort, and is starting to on the West Coast, pressure on sand flounder and New Zealand sole might increase. Monitoring of spatial shifts in effort would therefore be required. • A significant increase in landings might drive a decrease in price paid to fishers. • Some ecosystem functions of larger snapper, such as predation of kina, may be diminished with increased fishing pressure.

Option 3 - 88% TAC increase, 122% TACC increase + customary and recreational increases

Benefits	• Provides a significant immediate utilisation opportunity to commercial fishers, with landed value of an additional 550 tonnes in balanced catch of $2.73m[5], while still being supported by projections. • Increases the customary allowance substantially in recognition of the potential for increased harvest through customary permits and for Pātaka Kai in Te Tau Ihu. • Increases the recreational allowance more substantially, on the basis that strong recent year classes maturing will drive up average weight and increase the popularity of fishing. Maintains the other sources of mortality allowance at 8.5% of the TACC.
Risks	• This option relies most heavily on recent year classes (2017/18) driving increased abundance over the next five years. If this does not eventuate, this yield would not be sustainable long term. • Would effectively remove the constraining nature of snapper as a choke species, meaning landings prices for fishers may drop and pressure on associated bycatch and protected species could increase. • Some ecosystem functions of larger snapper, such as predation of kina, may be diminished with increased fishing pressure. This risk is greatest under Option 3 as the greatest level of fishing pressure would be enabled. However, snapper biomass is still projected to increase under this option.

24. FNZ welcomes feedback on these options, or any alternatives that fall within this range.

Other matters - Marlborough Sounds recreational daily bag limit for snapper

25. Feedback on this issue was sought during the October 2022 SNA 7 review, with the decision ultimately made to retain the current limit and continue to monitor fishery trends. At the time, FNZ noted that

[5] Based on a 2023/24 port price average of $4.96 per kilogram of unprocessed (green) fish.

Marlborough Sounds snapper are thought to comprise a separate stock, based on tagging study results showing limited mixing between Tasman/ Golden Bay and the Sounds (Drummond & Mace, 1984).

26. FNZ has since investigated available information on local snapper abundance, recreational catch trends, and local views on the state of the fishery. Given the understanding of stock separation, and the fact that no commercial fishery for snapper exists within the Sounds, stock assessment results (largely based on trawl survey and commercial catch data) cannot be generalised to this area.

27. Since 2022, the 2022/23 National Panel Survey of Recreational Fishers (**NPS**) results, annual Waikawa ramp surveys, and early insights from Tindale Trust recreational catch tagging have become available.
    - NPS results indicate that catches in the Sounds increased from 2011/12-17/18 and changed little in 2022/23, comprising about 15% of the SNA 7 recreational harvest (Heinemann & Gray, in prep.).
    - Waikawa ramp surveys show no trend in the harvest index, noting snapper is more commonly caught in Pelorus Sound (Maggs, et al., in prep.).
    - FNZ is not aware of recreational tagging demonstrating any migration between Tasman Bay and the Sounds; however numbers tagged are low and analysis of recaptures is ongoing.

28. Views received to date on this issue have been mixed. Some recreational fishers support an increase to reflect increased abundance in the wider region, while others have suggested snapper fishing in the Sounds varies significantly by year and has not improved at the same rate as in Tasman Bay, therefore they prefer to see current limits maintained. FNZ welcomes wider feedback on this issue.

Flatfish (FLA 7) Options

Current settings

29. This is not presented as an option, as a TAC and allowances have not been set.

Option 1 – Set the TAC and allowances and retain the current TACC

Benefits	• Allows commercial fishers to take advantage of natural variability in abundance. • Recognises that flatfish species are highly variable and that reasons for decreased catches are unclear, with the exception of New Zealand sole which is considered to be below target. • Recognises the importance of flatfish to non-commercial fishers, by setting higher recreational and customary allowances than in Option 3, to provide significant room for potential future harvests during periods of higher abundance.
Risks	• The current TACC may be inconsistent with B_{MSY}, as the TACC was intentionally set high to allow for natural variability in abundance but has never been fully caught since QMS introduction. • Not well aligned with the information principle of caution where information is uncertain. • Information to assess whether the proposed recreational and customary allowances are being exceeded is limited. However, available information from recreational harvest estimates, Iwi Fisheries Forums, and reported disposals volumes suggests this would be highly unlikely.

Option 2 – Set the TAC and allowances and decrease TACC by 52%

Benefits	• Reduces the TACC to a level which has appeared to be consistent with B_{MSY} historically. • Still provides room for commercial fishers to take advantage of variability in abundance. • Recognises the importance of flatfish to non-commercial fishers, by setting the same recreational and customary allowances as in Option 1 to provide significant room for potential future harvests during periods of higher abundance.
Risks	• Unlikely to reduce fishing pressure for New Zealand sole, which is likely to be overfished (this may require consideration of other approaches such as QMA division by species or region). • Information to assess whether the proposed allowances are being exceeded is limited. However, available information suggests this is very unlikely.

Option 3 – Set the TAC, conservative allowances and decrease TACC by 75% to 10-year average catch

Benefits	• Reduces the TACC to a level which in the past has appeared to be consistent with B_{MSY} in the late 2010s and at the time of the last assessment (2020).

	• Sets recreational and customary allowances that reflect available information on harvest levels and takes into account the significant cuts from historical peaks of utilisation needed to ensure sustainability. However, still leaves room for increased catch in periods of high abundance. • The allowance for other mortality equates to 7.6% of the TACC, rather than around 5%, recognising that in a more constrained fishery an higher proportion of mortality may be unintended bycatch.
Risks	• Still unlikely in itself to result in a reduction in fishing pressure for New Zealand sole. • Without an established monitoring plan to prioritise research, update stock status, and justify future reviews, there is a significant risk that setting the TACC this low could create a choke species out of a known highly variable stock.

Elephantfish (ELE 7) Options

Option 1 (*Status quo*)

Benefits	• Provides a high degree of certainty of achieving the National Plan of Action for Sharks (NPOA) goals including maintaining the biodiversity and long-term viability of QMS shark species. • Could lead to increased catchability of elephantfish for recreational and customary fishers. • May indirectly lead to decreased fishing pressure on New Zealand sole, which is likely below target, through constraining and reducing trawl effort in shallower West Coast waters.
Risks	• Does not account for the fact that CPUE has been maintained above target with catches above the current TACC, nor the current positive stock status. • Would increasingly constrain commercial access to gurnard, brill, and turbot, in years of higher elephantfish catch or regular spawning aggregations in common fishing grounds. In the most recent fishing year, almost $60,000 of deemed values were incurred for elephantfish bycatch.

Option 2 - 20% TACC increase

Benefits	• Recognises increased relative abundance by setting the TACC slightly above average landings during the period in which CPUE has been above target (116.5 tonnes from 2019/20 to 2022/23). • Allows fishers to balance more non-target ELE 7 catch in years of increased catch, with minimal risk of incentivising target fishing. The landed value of 20 tonnes of balanced catch is around $40,000.[6] • Maintains customary and recreational allowances at levels which allow substantial room for any potential harvest, based on available information. Maintains the other mortality allowance at 10% of the TACC, recognising the species' vulnerability to fishing at various life stages. • The likelihood of increased environmental impacts is relatively low, as this option is expected to simply enable balancing of current levels of catch.
Risks	• There is some risk that an increased TACC for elephantfish may drive additional effort and bycatch of New Zealand sole, which is unlikely to be at or above target. However, under this option this risk is limited, as it is only expected to allow for balancing of current levels of catch. • Maintains customary and recreational allowances at levels which allow substantial room for potential increased harvest. Maintains the allowance for other mortality at 10% of the TACC, in recognition of the vulnerability of elephantfish at various life stages to fishing. • Still considered likely to maintain the stock above the management target.

Option 3 - 30% TACC increase

Benefits	• Recognises increased relative abundance by setting the TACC around the highest level of catch during the period in which CPUE has been above target (131 tonnes in 2021/22). • Allows fishers to balance all current non-target ELE 7 catch through additional ACE. The value of additional 30 tonnes of balanced elephantfish catch could be around $60,000. • Maintains customary and recreational allowances at levels which allow substantial room for any potential increased harvest. Maintains the other sources of mortality allowance at 10% of the TACC, recognising the vulnerability of elephantfish to fishing at various life stages.

[6] Based on a 2023/24 port price average of $2.06 per kilogram of unprocessed (green) fish.

Risks	• There is some risk that an increased TACC for elephantfish may drive additional effort and associated bycatch of New Zealand sole, which is unlikely to be at or above target. It is more pronounced under this option than Option 2; however, it is still limited. • If increased effort were to eventuate, there might be an corresponding increase in environmental impacts associated with bottom trawling, such as seabird interactions and benthic disturbance. However, this is unlikely for the same reasons as above.

Who is affected by the proposed changes?

30. Commercial interests in SNA 7, FLA 7, and ELE 7 include quota owners, owner-operators and contract fishers in the catching sector, Licensed Fish Receivers (**LFR**s), and retailers/ exporters. These interests are represented through organisations such as Southern Inshore Fisheries Management Ltd, New Zealand Federation of Commercial Fishermen, local fisher associations, and Seafood New Zealand.

Table 3: Summary of commercial characteristics of SNA 7, FLA 7, and ELE 7.

Stock	No. quota owners	% of quota that is settlement quota	No. permit holders landing the stock	No. vessels landing the stock	No. LFRs landed to
SNA 7	37	8.3%	49	63	20
FLA 7	49	10.0%	38	47	16
ELE 7	31	10.0%	23	28	10

31. These stocks are highly important to recreational interests, especially snapper in the top of the South and flounder species across most coastal estuaries. Recreational interests are represented by groups such as the New Zealand Sport Fishing Council, Fish Mainland, and local fishing clubs and associations.

32. Tangata whenua have both commercial and customary interests in these stocks. Te Waka a Māui me Ōna Toka Iwi Fisheries Forum represents iwi with a customary interest, including Ngāti Koata, Ngāti Tama, Ngāti Rārua, Ngāti Apa, Ngāti Toa, Ngāti Kuia, Te Atiawa, Rangitāne, and Ngāi Tahu.

Input and participation of tangata whenua

33. FNZ has circulated and discussed a summary of the stocks proposed for review in this round (including FLA 7, SNA 7, and ELE 7) with Te Waka a Māui me Ōna Toka Iwi Forum (**the Forum**). FNZ invited feedback from the Forum and offered to provide more detailed information for any stocks upon request. No feedback has been received through this Forum to date. However, input has been received through a representative in the multisector snapper workshops that Te Tau Ihu iwi:

- are supportive of a SNA 7 TACC increase given higher abundance and commercial avoidance issues;
- consider that the customary allowance for SNA 7 should be around 20-50% of the TAC in recognition of Treaty of Waitangi rights, potential for Te Tau Ihu to come under the Fisheries (South Island Customary Fishing) Regulations, an increasing need to provide for events, and potential Pātaka Kai;
- consider that a similar approach should be taken for FLA 7, which was noted as a taonga, key customary food source, and providing for an important cultural/ whanau pastime.

34. FNZ will engage further with the Forum during consultation and welcomes any input from tangata whenua outside of this planned engagement.

Fishery characteristics and current settings

Snapper – SNA 7

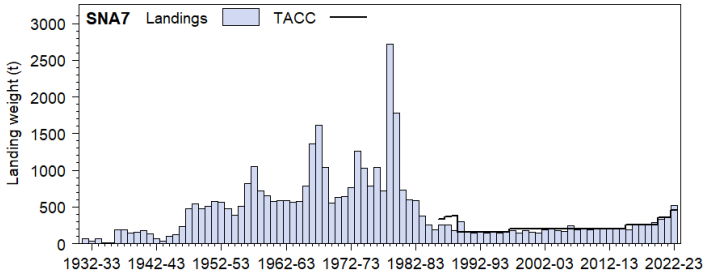
Overview

SNA 7 is recognised as a shared fishery under the Finfish Plan, being highly valued by tangata whenua, recreational, and commercial fishers alike. The majority of catch has historically been taken in Golden and Tasman Bays between spring and autumn (October to April) annually; however in recent years catches have expanded further down the West Coast and later into the fishing year (Langley, in prep.).

SNA 7 entered the QMS in 1986, following a period of intense commercial pair trawl and purse seine fishing pressure (annual landings of up to 2,720 tonnes) over the previous decade, which reduced the stock to low levels. The TACC was set well below those levels at 160 tonnes in 1989/90, and remained relatively constant for around 25 years. Stock assessments now retrospectively suggest that the stock was below the hard limit for a period of almost thirty years following this peak in fishing pressure. A TAC and customary allowances were introduced in 1997.

Commercial

Commercial catch of snapper is predominantly taken as trawl bycatch when targeting gurnard, John dory, and sand flounder in Tasman/ Golden Bay. Notable bycatch is also taken in the jack mackerel midwater trawl fishery and increasingly in other areas such as gurnard, sole, brill and turbot trawls on the West Coast, and barracouta, tarakihi, school shark, and stargazer trawls in deeper areas of the West and East coasts. The TACC is currently 450 tonnes, increased from 350 tonnes in 2022, 250 tonnes in 2020, and 200 tonnes in 2016.



Recreational

Snapper has been a historically significant recreational target fishery, with increasing abundance over the past decade again making it the target of choice over spring, summer, and autumn months for most anglers in Tasman/ Golden Bay and in areas of Pelorus Sounds around mussel farms. The majority of catch is taken by rod, and to a lesser extent, set lines (Heinemann and Gray, in prep.). A winter fishery also occurs around D'Urville/ Stephens Island. The current recreational allowance is 250 tonnes, increased from 90 tonnes in 2016.

	2011/12	2017/18	2022/23
National Panel Survey	88 tonnes (CV= 0.17)	144 tonnes (CV=0.16)	130 tonnes (CV=0.14)
Reported Charter Catch	0.4 tonnes	1 tonne	7.6 tonnes
Section 111	1.7 tonnes	13.4 tonnes	1.6 tonnes
Total	**90.3 tonnes**	**158.5 tonnes↑**	**139 tonnes↓**

Estimates of harvest levels from the National Panel Survey of Recreational Fishers (**NPS**) are detailed above, alongside reported charter vessel[7] and section 111 catch (recreational catch by commercial fishers). These results suggest catch increased markedly as the stock rebuilt in the early to mid-2010s, but has not continued to increase in line with abundance since 2017/18. However, anecdotal evidence from recreational fishers and multisector workshops disputed this, suggesting that increased abundance has driven a noticeable increase in fishing popularity in Nelson/ Tasman, due to accessibility of the fishery to all expertise levels. Some workshop participants advocated for mandatory recreational catch reporting to monitor harvest rates; however others were strongly opposed.

Customary Māori

The customary allowance for SNA 7 is currently 30 tonnes, following an increase from 20 tonnes in 2022. Current levels of customary catch are uncertain as reporting requirements differ by regions; however, FNZ records show that harvest of snapper does occur through customary authorisations, with 12 issued since 2013. This may be a reflection of differing reporting requirements or that customary harvest is occurring under recreational bag limits.

Other sources of mortality caused by fishing

This allowance has generally been set in the past as a proportion of the TACC depending on the biological characteristics of the stock, perceived vulnerability, and anecdotal or recorded evidence on fishing practices. Recent research (McKenzie et al., 2024) suggests low to moderate survivability for trawl caught snapper, with increased

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

Snapper – SNA 7

depth, duration, and catch size of trawls being exacerbating factors. The rollout of onboard cameras has improved confidence in the accuracy of fisher-reported discard volumes, with less than 1% of fisher-reported catch returned, as required due to being under the minimum legal size (**MLS**). Research (Maggs et al., 2024) has also found that gut hooking and increased depth reduced survival rates for recreationally caught fish.

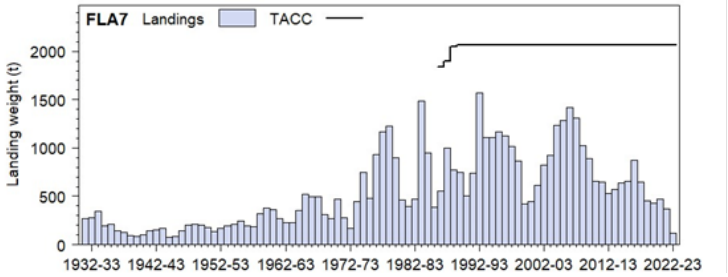
Flatfish – FLA 7

Overview

FLA 7 is a shared fishery, targeted by tangata whenua, recreational, and commercial fishers. The majority of catch is taken commercially by bottom trawling. It is highly significant for recreational fishers and tangata whenua given its accessibility through hand-spearing and netting (where permitted) in estuaries. The stock was introduced into the QMS in 1986, with TACC set high to allow fishers flexibility to adjust catch according to fluctuations in abundance. The TACC has not changed since, apart from early quota appeals increases, meaning a TAC and allowances were never set. It is notable as a Schedule 2 stock under the Act, which means in-season TACC increases can be (but have never been) made to account for natural variability in abundance.

Commercial

Commercial fisheries exist for different species of flatfish in different regions. The majority of catch from the last decade was New Zealand sole and sand flounder (Starr & Kendrick, 2022). In Tasman/Golden Bay, sand flounder is mainly taken by trawl with gurnard, snapper, and John dory; however a small Danish seine target fishery also exists. On the West Coast, New Zealand sole, brill, and turbot are taken in target trawls, or as gurnard bycatch. A small set net fishery for greenback flounder occurs in inner Pelorus Sound and sand flounder is taken by trawl in Port Underwood and Cloudy Bay. The current TACC is 2,065 tonnes. Catches have never exceeded this, but have gone through distinct cycles with high points in the early 1990s, 2000s, and mid-2010s likely due in part to high natural variability. Catches of all species have declined significantly in recent years, to pre-QMS levels.



Recreational

Recreational fisheries, mainly for the flounder species, are widespread across coastal estuaries and inlets in Tasman/ Golden Bay, Westhaven Inlet, inner Pelorus Sound, Port Underwood, and Cloudy Bay. Main methods include set netting, drag netting, and spearing (Heinemann & Gray, in prep.); however netting activity has decreased significantly with the introduction of Tasman/ Golden Bay set net prohibitions from 2020.There is currently no recreational allowance for FLA 7. The best available information on levels of recreational harvest is the NPS; however sample sizes are small and uncertainty in estimates is significant. Only one instance of charter vessel catch has been reported, noting that reporting is not currently required for flatfish species.

	2011/12	2017/18	2022/23
National Panel Survey	4.66 tonnes (CV= 0.37)	5.27 tonnes (CV= 0.43)	2.02 tonnes (CV= 0.42)
Section 111	127 kg	138 kg	283 kg

Customary Māori

There is currently no customary allowance for FLA 7. Flounder species are a key traditional food source for customary harvest. Over the past ten fishing years, 21 customary permits have been recorded, however this is likely an under-representation of catch as reporting is not required in some areas.

Other sources of mortality caused by fishing

There is currently no allowance. Research (McKenzie et al., 2024) suggests that survivability of released sub-MLS trawl caught sand flounder is low, and exacerbated by deeper and longer trawls. However, volumes of reported sub-MLS discards are low and have not changed materially since the introduction of cameras.

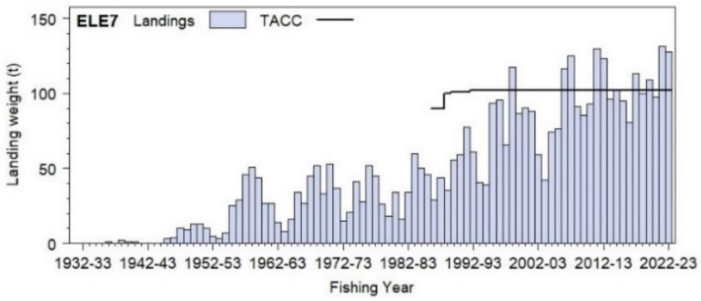
Elephantfish – ELE 7

Overview

ELE 7 is largely a commercial trawl bycatch fishery; however a modest amount is also targeted by recreational surfcasters and tangata whenua on West and East coast beaches. The stock was introduced into the QMS in 1986 and the TACC has stayed largely constant since. A TAC and allowances were introduced in 2019.

Commercial

The majority of ELE 7 is taken as trawl bycatch in shallow waters off the West Coast, when targeting gurnard, sole, brill, and turbot. It appears irregularly in catches marked by large numbers of fish aggregating, often by sex, in shallow coastal waters. Since West Coast set net restrictions came into effect from 2008, very little has been taken using this method. Catches have fluctuated in 10-year cycles, but it is unclear if the drivers for this are abundance, effort, or market based. In recent years, catch has regularly exceeded the TACC of 102 tonnes.



Recreational

The recreational allowance for ELE 7 is 10 tonnes. NPS harvest estimates for elephantfish are highly uncertain due to difficulties sampling the relatively small number of fishers who actively target the species. No estimate of average weight is available, so estimates are provided as a number of fish. For reference, the weight of the maximum recorded length female (97 cm) is estimated at just over 9 kg using a length-weight relationship.

	2011/12	2017/18	2022/23
National Panel Survey	960 fish (CV= 0.97)	189 fish (CV=0.4)	380 fish (CV=0.62)
Section 111	10 kg	5 kg	13 kg

Customary Māori

The current customary allowance is 5 tonnes. Levels of harvest are uncertain for the same reasons as SNA 7.

Other sources of mortality caused by fishing

The other sources of mortality caused by fishing is 10 tonnes, or approximately 10% of the TACC.

Additional supporting information and legal context

35. On the following pages (pages 11-14) FNZ has provided additional information about the status of the stock, biomass projections, biology, interdependence of stocks, and environmental factors, which supports the options and analysis presented above. Following that, from page 15 onward, there is 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 options do you support for the TAC and allowances for each stock? 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 for each stock? Why?
- Do you think these options adequately provide for social, economic, and cultural wellbeing?

- What are your thoughts on the ecological importance of these stocks?
- Do you have any concerns about potential impacts of the proposed options on the aquatic environment?
- Is there any literature or research that is relevant and has been omitted in this paper?
- Do you have any feedback on the current deemed values settings for any of these stocks?
- Do you support increasing the Marlborough Sounds individual daily bag limit for snapper, or maintaining it at the current setting of 3 fish per person?

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**. Please see the FNZ sustainability 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[8]

Stock status

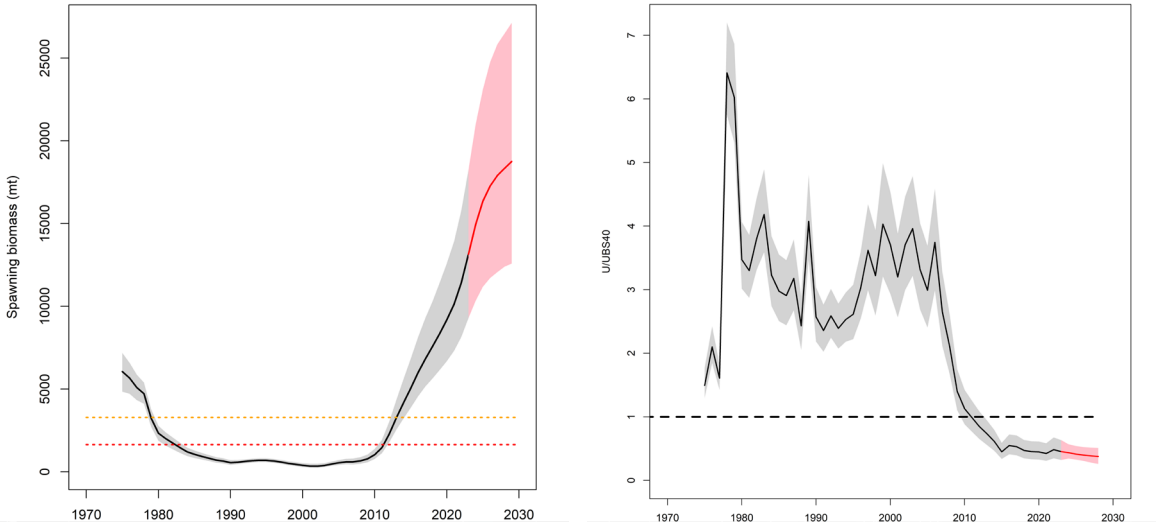
Snapper (SNA 7)

39. SNA 7 was assessed in 2024 using an age-structured model, with a wide range of inputs such as length/age frequencies, commercial and recreational catch histories, biennial independent trawl survey biomass estimates, a 1987 tagging study, and commercial catch per unit effort (**CPUE**).

40. Due to difficulties in estimating B_0 with recent shifts in productivity (increased recruitment), Science Working Groups concluded that the management target should move to an exploitation rate (a default of $\mathbf{U_{SB40\%}}$ or 5% of vulnerable biomass), rather than a biomass (40% B_0).

41. The stock was determined to be:

- very likely to be at or below this fishing mortality based interim management target ($U_{SB40\%}$= 5%); and
- exceptionally unlikely to be to be below the new soft and hard limits (4x and 2x B_{1987}); with
- biomass projected to continue to increase under the *status quo*.

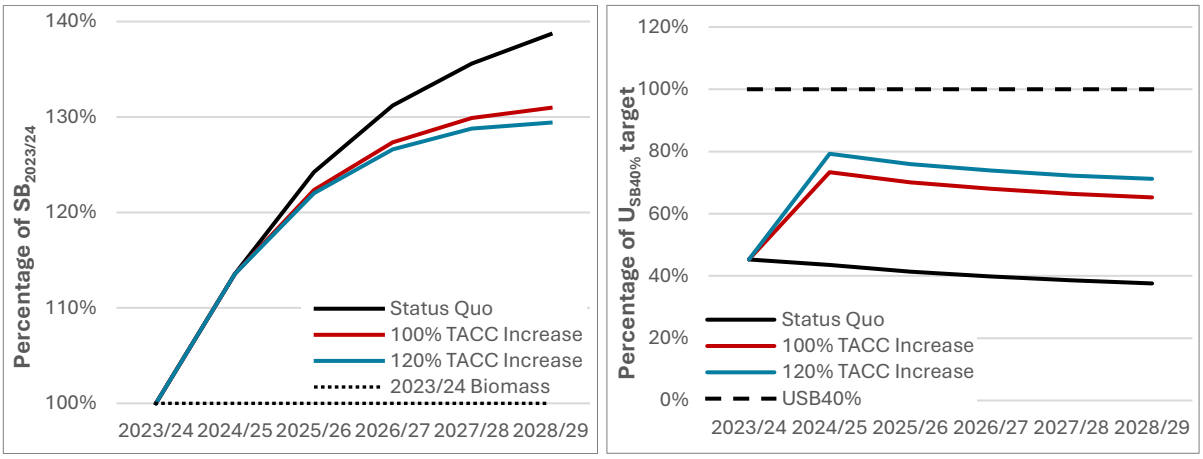


Figures 2 and 3: Modelled biomass relative to the soft and hard limits (left) and fishing mortality rate relative to the $U_{SB40\%}$ target (right), since 1975. Shaded areas are the 95% confidence interval and the red sections are projections.

42. Monitoring of year class strengths is possible through biennial West Coast South Island trawl surveys and catch ageing. Results from the most recent survey in 2023, which saw a significant increase in the adult biomass estimate, somewhat improve certainty in the strength of the 2017 and 2018 year classes which are driving the optimistic assessment projections as they mature and grow rapidly. However, recruitment in recent years (2020 onwards) appears to have returned to lower levels.

43. Given the positive outlook for the stock, projections were made for range of scenarios. Assuming recreational catches would continue to increase at a rate in line with biomass, projections for a range of TACC increases were conducted. These suggest that even under the largest TACC increase, biomass would continue increasing and fishing mortality would remain well below the $U_{SB40\%}$ target.

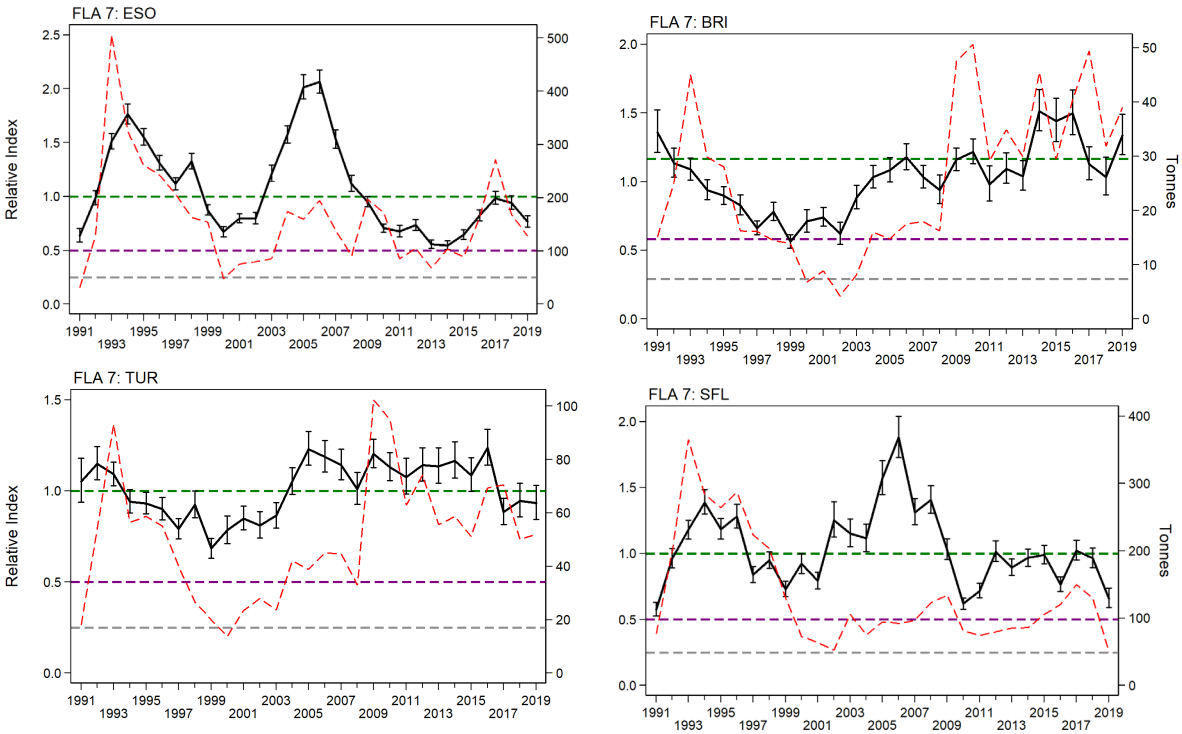
[8] This section refences the Plenary. See the stock-specific chapters for SNA 7, FLA 7, and ELE 7 for more information.



Figures 3 and 4: Projected biomass (left) and fishing mortality relative to $U_{SB40\%}$ (right) under TACC scenarios.

Flatfish (FLA 7)

44. FLA 7 was last assessed in 2020 by CPUE analysis of the bottom trawl fishery. This was complicated by the fact that until 2020, fishers were not required to report catch by species but just the generic FLA stock code. Sand flounder, brill, and turbot were found to be as likely as not at or above target; however New Zealand sole was unlikely (<40%) at or above target with overfishing likely (>60%) to be occurring.



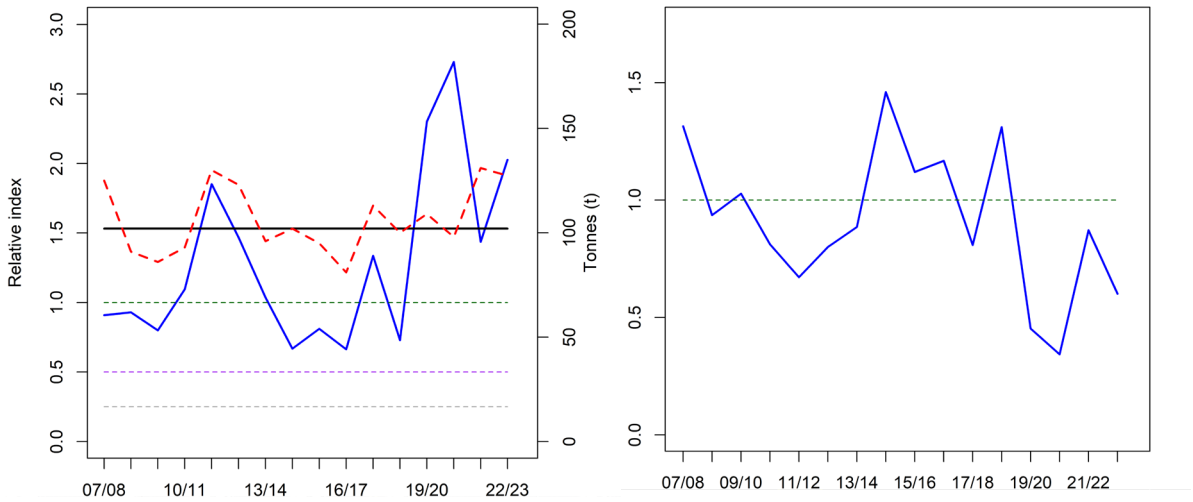
Figures 7 and 8: Standardised bottom trawl CPUE indices for New Zealand sole (ESO), brill (BRI), sand flounder (SFL), and turbot (TUR), clockwise from top left. Plotted against catches (derived by catch-splitting), the management targets, and soft and hard limits.

Elephantfish (ELE 7)

45. ELE 7 was assessed in 2024, using a tow-by-tow CPUE analysis of the West Coast South Island bottom trawl fishery. The stock was determined to be:

- likely (>60%) at or above the agreed B_{MSY} proxy management target of mean 2008-2018 CPUE; and
- very unlikely to be below the soft and hard limits (½ and ¼ of the target, respectively); and

- with biomass predicted to remain above the target level under the *status quo*.



Figures 5+6: Comparison of the CPUE series with the TACC, catch history, target, soft and hard limits (left), and fishing pressure relative to the overfishing threshold (right).

Information on biology, interdependence of stocks, and environmental factors

Biological characteristics

Snapper (SNA 7)

46. Snapper are 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 15-60 m, occupying a range of habitats including rocky reefs and sandy/mud seafloor.

47. It is considered to be a low productivity species, with 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 a relatively young age of maturity (3 to 7 years) and high fecundity, being a serial broadcast spawner. Snapper in SNA 7 and SNA 8 have the fastest growth rates and average size in New Zealand. Snapper are opportunistic predators, eating a wide range of crustaceans, worms, urchins, molluscs, and fish.

48. There is likely a degree of mixing between SNA 7 and southern SNA 8, however the extent of this is unclear. Marlborough Sounds snapper are considered to be a separate stock from the rest of SNA 7. Research has shown a decline of genetic diversity of snapper in Tasman Bay following high levels of historical fishing pressure (Bernal-Ramírez et al., 2003).

Flatfish (FLA 7)

49. Flatfish are generally shallow water species found in less than 50 m depth, with different biological characteristics for each of the eight species managed under this stock code. Brill, turbot, and New Zealand sole are found on the West Coast, whereas sand flounder are more widely distributed in shallow waters, especially Tasman and Golden Bays.

50. Sand flounder is considered high productivity, being fast-growing, highly fecund, and short-lived, generally only surviving to 3 to 4 years of age due to high natural mortality. Brill and turbot have longer lifespans (up to 21 years). For other species, reproductive capacity and longevity is poorly understood. Diet varies by species, but includes crustaceans, molluscs, worms, and small fish.

51. Many species migrate between depths seasonally for spawning, with juveniles occupying shallow bays and estuaries. Morphological analysis suggests sand flounder populations are localised and distinct.

Elephantfish (ELE 7)

52. Elephantfish are found most plentifully around the South Island, particularly the East Coast. They migrate between coastal waters of up to 200 m depth to shallow sandy/mud areas for spawning in spring. It is likely that fish on the East Coast of ELE 7 are linked to ELE 3.

53. The species is considered low productivity, being an elasmobranch with low fecundity and natural mortality, and average natural lifespan (>20 years). Distinct characteristics such as spawning aggregations, laying of egg cases in shallow areas, and incubation for at least 5-8 months make this species vulnerable to overfishing. Diet consists predominantly of molluscs but also crustaceans and fish, likely located using the snout.

Interdependence of stocks

Snapper (SNA 7)

54. As one of the most abundant demersal predators in the inshore waters, snapper are an integral part of northern and central coastal marine ecosystems. There is evidence that they play an important role in limiting the abundance of kina on coastal reef ecosystems, preventing the overgrazing of kelp forests and the spread of kina barrens (Doheny, Davis & Miller, 2023).

55. Kina barrens have been documented in Queen Charlotte Sound and Tasman Bay (Wing, Shears, Tait, & Schiel, 2022) but there is less information on their distribution across the rest of SNA 7, especially the West Coast. In the Tasman Bay and Marlborough Sounds, kelp loss and kina barrens are likely to be caused by the cumulative effects of fishing, sedimentation from land-based activities, and warming seas (Wing, Shears, Tait, & Schiel, 2022).

56. Changes in snapper age structure or abundance (through fishing pressure) could also affect a range of other species. They are generalist predators, meaning they are likely to have significant diet overlap with many other inshore species such as gurnard, tarakihi, John dory, and flatfish.

Flatfish (FLA 7)

57. There is little information on predator-prey relationships for flatfish, but they likely form part of the diet of a wide range of species. Left-eyed flounder species (not part of FLA 7 or commercially targeted) and lemon sole are a significant food source for Marlborough Sounds king shags (van der Reis & Jeffs, 2020)

Elephantfish (ELE 7)

58. Elephantfish likely play an intermediate ecosystem role, linking primary consumers such as shellfish to larger predators such as sharks. Little is known about their specific predator species.

Environmental conditions affecting the stocks

59. There are widespread concerns about the impacts of sedimentation on demersal finfish in the nearshore coastal area, including **snapper** and **flatfish** species. This is especially pronounced for less mobile and generalised visual feeders such as flatfish. In FMA 7, research has found that fine sediment accumulation has degraded large areas of biogenic and estuarine habitats, such as the Separation Point bryozoan beds following Cyclone Gita, and areas of inner Pelorus Sound (Morrison et al., 2023).

60. Climate change associated factors, such as changes in water temperatures and increased ocean acidification, are also likely to be affecting these species. Cummings et al., (2021) found **snapper** nationally to be moderately vulnerable to likely environmental changes, suggesting increased sea temperatures may lead to southward range expansion, changes in the distribution of predators, competitors, and disease, and toxicity due to algal blooms. Tank experiments have demonstrated potentially opposing effects of climate change on snapper, with warmer water and acidification reducing metabolic performance but increasing survival and growth rate (Parsons, et al., 2021).

61. Warmer water appears to have corresponded with high recruitment observed in recent years (2007, 2017, and 2018) (Langley, in prep.), with stock assessment results suggesting SNA 7 is experiencing a period of higher productivity. Commercial catches and West Coast South Island (**WCSI**) trawl survey results also indicate range expansion is occurring down the West Coast. However, the relationship between water temperature and recruitment success is unlikely to be linear, with an upper limit to temperatures after which recruitment would be negatively impacted.

62. For **flatfish** and **elephantfish**, water temperature effects are unclear but there is some suggestion that recent marine heatwaves have negatively impacted flatfish species. A significant decline in red cod catch has been linked to warmer water potentially impacting recruitment (Beentjes & Renwick, 2001). Importantly, anthropogenic impacts such as climate change, eutrophication from nutrient runoff, and resuspended sediment through bottom contact can compound each other as cumulative stressors.

Relevant provisions of the Act

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

63. The proposed changes for SNA 7 and ELE 7 would be made under section 13(2)(a) of the Act, as status in relation to *MSY* can be reliably estimated. Changes for FLA 7 would be made under section 13(2A), as it isn't feasible to set a TACC which achieves *MSY* across eight species (some with unknown status).

Matters for assessment under section 13(2)(a) of the Act – SNA 7 and ELE 7	
Section 13(2)(a)	The proposed changes for SNA 7 and ELE 7 would be made under section 13(2)(a) of the Act, as status in relation to *MSY* can be reliably estimated through a 2024 SNA 7 stock assessment and a 2024 ELE 7 stock assessment (CPUE analysis). Under this provision, the Minister must set TACs using the best available information, consistent with maintaining the stocks at or above levels that can produce *MSY*, while also having regard to the interdependence of stocks. FNZ's initial view is that all the TAC options proposed for SNA 7 and ELE 7 would be consistent with the objective of maintaining the stocks at or above a level that can produce *MSY*. For SNA 7, this view is supported by the assessment forward projections (Figures 3 and 4). For ELE 7, forward projections are not available but given that relative biomass is assessed to be above a level which can produce *MSY* with catches concurrently exceeding the TACC, FNZ considers it likely the proposed TAC options would maintain the stock at or above this level.
Harvest Strategy Standard	Information on SNA 7 reference points can be found in the *Stock status* section above. None of the options proposed are likely to bring fishing mortality to at or above the interim target of $U_{SB40\%}$. Some recreational stakeholders have indicated a desire to manage some snapper stocks at higher levels of abundance to recognise their shared importance, such as 50% B_0. FNZ notes that under all of the proposed options, biomass is projected to increase and fishing mortality is very unlikely to reach or exceed the interim $U_{SB40\%}$ target, meaning further discussions on management targets can occur. Results of a current project on implications of managing snapper to higher abundance will become available in 2025 and might inform this. ELE 7 is managed to a target based on a historical average of CPUE indices between 2008 and 2018, which constitutes a B_{MSY} conceptual proxy. While projections are not possible, FNZ considers that the options proposed are unlikely to take the stock to below this target as they would enable fishers to balance catch already being taken.
Interdependence of stocks	Larger SNA 7 TAC increases could increase fishing pressure on larger snapper and therefore reduce potential predation of kina. There could also be effects of reduced snapper predation for prey species such as scallops (currently in low abundance), paddle crabs, and other food sources which snapper competes with other demersal fish for. Increased fishing pressure could also act in combination with environmental factors and have stronger ecosystem effects than anticipated. However, FNZ notes that under all proposed options snapper biomass is projected to increase significantly. There are also potential ecosystem effects of the *status quo*, such as increased food competition from managing a generalist predator such as snapper to much higher abundance than other species. Impacts of the proposed ELE 7 TAC increases cannot be quantified precisely with available information. FNZ considers that they would have limited effects on associated predator and prey species, as they are intended to allow only for balancing of current levels of catch.

Matters for assessment under section 13(2A) of the Act – FLA 7	
Section 13(2A)	The proposed changes for FLA 7 would be made under section 13(2A), as it is not feasible to set a TACC which achieves *MSY* across eight species, some of which are of unknown stock status in relation to a *MSY*-compatible target. Under this section, the Minister must set TACs which are not inconsistent with the objective of maintaining the stocks at or above a level that supports *MSY*, or moving the stocks towards or above and level that can produce *MSY*, while having regard to the interdependence of stocks, the biological characteristics of the stocks, and any environmental conditions affecting the stocks. FNZ's initial view is that Options 2 and 3 proposed for FLA 7 would not be inconsistent with the objective of maintaining or moving FLA 7 to a level that supports *MSY*. FNZ notes that Option 1, which proposes to retain the current TACC, carries the lowest likelihood of maintaining the stock at or above a level that supports *MSY*.

Matters for assessment under section 13(2A) of the Act – FLA 7	
Harvest Strategy Standard	Species in FLA 7 have separate management targets. For New Zealand sole, sand flounder, and turbot the B_{MSY} proxy is average CPUE from 1990/91 to 2018/19. For brill, CPUE is averaged from 2004/05 to 2018/19. For other species, B_{MSY} cannot be reliably estimated.
Interdependence of stocks	FNZ considers that the proposed options are unlikely to have any adverse effects on any interdependent stocks; however, information available to assess this is limited.
Biological characteristics of the stock	Biological characteristics such as growth rates, distributions, age at maturity, longevity, and spawning behaviours vary significantly between individual flatfish species. Given differing levels of productivity, natural variability, and vulnerability to fishing pressure, FNZ considers some caution is warranted when setting a TAC for FLA 7.
Environmental conditions	Environmental conditions affecting FLA 7, predominantly sedimentation in Tasman/ Golden Bay, could be having an effect on their distribution, abundance, and resilience to fishing pressure. Given the highly variable nature of many flatfish species, isolating and quantifying these impacts is difficult based on the information available. As we are proposing TAC decreases, risks that fishing may exacerbate these effects is reduced.
Section 13(3) Factors to have regard to in considering the way and rate the stock is moved towards or above B_{MSY}	Section 13(3) is not considered relevant to the TAC decision for FLA 7. The options only aim to maintain the stock as a whole at or above a level that is not incompatible with *MSY*, by setting a TAC and allowances for the first time and reducing the TACC to levels closer to actual catches. While New Zealand sole was assessed in 2022 as likely below the management target, all other stocks were about as likely as not at or above target or are of unknown stock status. Forward projections are also not available to help FNZ determine what way and rate these options would move the level of the stock as a whole.

Mātaitai reserves and other customary management tools

64. When making TAC decisions, the Minister must allow for Māori customary non-commercial interests. In doing so, they must take into account any mātaitai reserves or section 186B closures in FMA 7. 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	
Customary area	**Management type**
Anatori, Kaihoka, Mikonui, Okarito Lagoon, Manakaiaua/ Hunts Beach, Mahitahi/ Bruce Bay, Paringa , Tauparikaka, Popotai Taumaka, Okuru/ Mussel Point, Ōkahu, Tauneke	**Mātaitai reserves -** Commercial fishing is not permitted unless regulations state otherwise.
Whakapuaka/ Delaware Bay – no bylaws	**Taiāpure -** All types of fishing are permitted. Management committees can recommend regulations to manage commercial, recreational, and customary fishing.
Popotai Taumaka and Ōkahu (only restricts fishing of pāua)	**Temporary closures -** restrict or prohibit fishing of any species of fish, aquatic life or seaweed or the use of any fishing method.

65. FNZ does not consider the proposed options would negatively impact availability of snapper, flatfish, or elephantfish in these areas. Proposed options for SNA 7 are projected to see an overall increase in abundance, proposed options for FLA 7 would reduce potential commercial fishing pressure enabled under the TACC, and ELE 7 options would bring the TACC to a level which reflects recent catches.

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

66. 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.

67. Increases to the SNA 7 TACC may enable greater levels of effort in the FMA 7 mixed trawl fishery and associated environmental impacts, especially in Tasman/ Golden Bay where snapper is a ‘choke’ species which currently constrains effort. However, given the measures taken to minimise snapper

bycatch in recent years, it is unclear if an increased TACC would be realised through increased effort, or changes in trawl gear to maximise catches. The options proposed for FLA 7 and ELE 7 are unlikely to result in additional effort as these are intended to either reduce potential catches or allow fishers to balance current levels of catch, respectively.

68. Potential effects of the proposed options are outlined below. Information presented is based on fisher-reported data that may not have been independently verified, noting that over the last five fishing years average observer coverage in the FMA 7 inshore mixed trawl fishery was negligible at 1.2%[9]. Set net vessels (≥8 m) and trawlers (<32 m) have operated onboard cameras since 31 October 2023 on the North, East, and South coasts of the South Island, which has substantially increased verification levels.

Associated or dependent species should be maintained above a level that ensures their long-term viability - Section 9(a) of the Act	
Seabirds	In the past five years there have been 114 fisher-reported seabird interactions on bottom trawl vessels targeting species in the FMA 7 inshore mixed trawl fishery stock complex. Species reported included (by occurrence); unidentified albatrosses and petrels, prions and shearwaters, common diving petrel, black-billed gull, black petrel, and Buller, Chatham, Salvin's, Wandering, Westland, and Campbell albatrosses. The majority of these interactions are from the West Coast and Cook Strait, when targeting deeper water species such as tarakihi and warehou. Management of seabird interactions in commercial fisheries is guided by the National Plan of Action Seabirds, with mitigation measures under the Seabird Scaring Devices Circular and Trawl Mitigation Standards. FNZ, DOC, and industry also work to ensure vessels follow Protected Species Risk Management Plans (**PSRMP**).
Mammals	In the past five years there have been 15 fisher-reported mammal interactions on bottom trawl vessels targeting FMA 7 inshore mixed trawl stocks. Species reported included (by occurrence); New Zealand fur seal and dolphins. In general, trawl fisheries have been assessed as posing a lesser risk to dolphins than commercial set-net fisheries. Risks to Hector's dolphins are managed under various trawl and set restrictions, Fishing-Related Mortality Limits, the Hector's and Māui Dolphin Threat Management Plan and Hector's Dolphin Bycatch Reduction Plan.
Fish and invertebrate bycatch	Snapper, elephantfish, and flatfish, are all generally commercially caught as part of a mixed bag. Common targets and bycatch mixes can be found in the *Finfish Plan* and *Fishery Characteristics* sections. The 2023 West Coast South Island trawl survey recorded 16 chondrichthyan (cartilaginous) and 60 teleost (bony) fish species caught (MacGibbon, Walsh, Buckthought, & Bian, 2024).During this survey, 50 benthic macroinvertebrate species were also taken as bycatch, including various sponges, prawn killer, starfish, squids, and sea cucumbers. The survey areas largely exclude areas of foul ground and hard substrate (which some bryozoans prefer).
Biological diversity of the environment should be maintained - Section 9(b) of the Act	
Bottom trawling can directly impact on benthic habitats and biodiversity, particularly where it occurs outside of the existing trawl footprint and in high biodiversity value areas. Research has characterised both New Zealand's benthic environment and the level of impact from fishing activity, in the Aquatic Environment and Biodiversity Annual Review. Tasman/ Golden Bay has been intensively fished by trawling, dredging, and seining over the last century. Trawling and dredging have been consistently identified as important factors in explaining the variance in Tasman Bay epifaunal and infaunal community structure and species diversity (Tuck, Hewitt, & Lundquist, 2017). The introduction of the QMS in 1986 significantly reduced fishing effort in the bays, while regulatory and non-regulatory controls have been introduced over time to protect areas of higher biodiversity such as Separation Point, a number of coastal estuaries, various marine reserves, and areas of the Marlborough Sounds. Marlborough District Council has also identified a number of ecologically significant marine sites, some of which are protected from bottom contact fishing activity under the proposed Marlborough Environment Plan. Analysis of the trawl footprint between 2008 and 2021 showed the footprint from targeting of all inshore stocks in FMA 7 is relatively intense (regularly trawled), and has remained reasonably steady in total size with a slight decrease in 2019-2021 (MacGibbon & Mules, 2023). The extent of benthic impacts as a result of the options, particularly the larger TACC increases for SNA 7, depend largely on fleet response; however, an increase in area trawled is possible. FNZ will therefore continue to monitor the bottom trawl footprint.	
Habitat of particular significance for fisheries management should be protected - Section 9(c) of the Act	
A range of known or potential habitats of particular significance for fisheries management are outlined below.	

[9] This coverage is calculated based on fishing events (individual tows, sets or shots) in which stocks in the stock complex were recorded as caught and an observer was on board. This metric does not reflect the overall level of monitoring in the fishery.

Potential habitat of particular significance for fisheries management						
Stock	Potential habitat of particular significance	Attributes of habitat	Reasons for particular significance	Risks/Threats	Potential habitat of particular significance	Existing protections
SNA 7 Snapper	Separation Point	Bryozoan beds - likely to provide shelter, refuge from predation, and food access for juveniles	Juvenile habitats for snapper - Successful recruitment is critical to maintaining productivity	Land-based sedimentation	(Vooren, 1975) (Morrison, Jones, Parsons, & Grant, 2014)	See existing controls that apply to the stock or area in the *Section 11* table below.
	Inner Golden and Tasman Bays	Estuarine areas, horse mussel beds and other structured habitats	Juvenile habitats for snapper	Land-based sedimentation, eutrophication, dredging, and bottom contact fishing		
	Tasman Bay	Not a well-defined area	Snapper spawning area	Disturbance of spawning aggregations	(Morrison, Jones, Parsons, & Grant, 2014)	
FLA 7 Flatfish	Wairau Lagoon, inner Sounds, Tasman/ Golden Bay and West Coast estuaries and sandflats.	Shallow mudflats and sandflats	Juvenile nursery grounds for flatfish	Land-based sedimentation, eutrophication, dredging, and bottom contact fishing	(Morrison, Jones, Parsons, & Grant, 2014)	
	Admiralty Bay & eastern Tasman Bay	Not well defined.	Lemon sole spawning grounds	Bottom contact fishing	(Rapson, 1946)	
ELE 7 Elephant fish	Grove Arm, Iwirua Point, Penzance, Kumutoto, Fitzroy, Savill, and Garnes Bays.	Fine sand and broken shell in less than 25 m	Elephantfish egg laying habitat	Sedimentation from land activity and marine farming, exotic algae species, and bottom contact fishing (currently largely absent)	(Didier, 1992) (Morrison, Jones, Parsons, & Grant, 2014)	
	Clifford Bay	Not well defined	Elephantfish spawning area	Land-based sedimentation and bottom contact fishing	C. Duffy - pers. comm. (Morrison, Jones, Parsons, & Grant, 2014)	

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 – 11(1)(a)	The majority of catch of SNA 7, FLA 7, and ELE 7 are taken in the FMA 7 inshore mixed trawl fishery. Potential effects of the options proposed are discussed throughout this paper, including in the *Finfish Plan, Fishery Characteristics,* and *Section 9 of the Act* sections
Existing controls that apply to the stock or area – 11(1)(b)	**Commercial** (under the Fisheries (Challenger Area Commercial Fishing) Regulations 1986) • Trawl prohibitions in inner Pelorus Sound, Waimea Estuary/Nelson Harbour, Separation Point, Hautai, Greville Harbour, and Cook Strait Cable Zone. • A seasonal trawl prohibition in inner Golden Bay between 1 November and 30 April.

<table>
<tr><td></td><td colspan="3">

Maud Island and Double Cove closed areas and finfish restrictions in inner Queen Charlotte and Kenepuru Sounds, Croisilles and Tennyson Inlet.
Low headline requirements on the East Coast from Cape Jackson south and a Cloudy/Clifford area Hector's dolphin fishing-related mortality limit (FRML) of 10.
Set net prohibitions to 4nm in Tasman/ Golden Bay and East Coast, as seasonally to 2nm on the West Coast between1 December and 28 February.

Recreational (under the Fisheries (Amateur Fishing) Regulations 2013)

Set net prohibitions to 4nm in Tasman/ Golden Bay and East Coast, 2nm on the West Coast, inner Pelorus Sound, and within Queen Charlotte Sound. Prohibited in Kenepuru Sound and inner Queen Charlotte outside of 1 April to 30 September.
Minimum set net mesh size of 100 mm and maximum length of 60 m in the inner Pelorus and Queen Charlotte Sounds, Tennyson Inlet, and Croisilles.
No more than 25 hooks on a longline, one longline per person or two per vessel.
Maud Island, Double Cove, and Cook Strait Cable Zone areas closed to fishing.

Measures under other legislation or on a non-regulatory basis (cannot be taken into account under section 11(1)(b) but are otherwise pertinent):

Farewell Spit Nature Reserve and Long Island, Horoirangi, Westhaven, Kahurangi, Punakaiki, Waiau, Tauparikāka, and Hautai Marine Reserves
Voluntary trawl closures in Delaware Bay, inner Golden Bay, Farewell Spit, Whakapuaka Taiāpure and inner Tasman Bay between 1 Nov - 30 April.

</td></tr>
<tr><td></td><td>Snapper (SNA 7)
25cm commercial and recreational MLS.
Species daily bag limit of 10 (3 in the Sounds).
Combined daily bag limit of 20.
Minimum net mesh size of 100mm.</td><td>Flatfish (FLA 7)
25cm MLS for all species except commercially for sand flounder (23cm).
Combined daily bag limit of 20.
Minimum net mesh size of 100mm.</td><td>Elephantfish (ELE 7)
Combined daily bag limit of 20.
Minimum net mesh size of 150mm.</td></tr>
<tr><td>The natural variability of the stock– 11(1)(c)</td><td>Snapper is a low variability species, given low natural mortality, high longevity, its role in coastal ecosystems as dominant generalist predator, and broadcast spawning characteristics.</td><td>Flatfish are highly variable, given high natural mortality and short lifespans for flounders. However, for brill, turbot, and New Zealand sole, variability is likely closer to moderate.</td><td>Elephantfish are moderately variable. While they have low natural mortality, low fecundity means recruitment success may be highly dependent on environmental conditions.</td></tr>
<tr><td>Relevant statements, plans, strategies, provisions and documents - 11(2)</td><td colspan="3">Four regional councils and/or territorial authorities have coastlines within the boundaries of the stocks being reviewed: Canterbury, Marlborough, Nelson, Tasman, and West Coast. A range of policy statements and plans have been developed by these councils to manage the effects of activities in the coastal marine area and address land-based effects on the marine environment. summary of these can be found on our website here. FNZ considers the options in this paper are all consistent with the objectives of these relevant plans.</td></tr>
<tr><td>Relevant services or fisheries plans– 11(2A)</td><td colspan="3">The National Inshore Finfish Plan is an approved fisheries plan under section 11(2A)of the Act. SNA 7 is a Group 1 stock which recognises the need to manage it to provide for higher levels of use, with higher levels of information (fully quantitative stock assessment). It is also an identified shared fishery. FLA 7 and ELE 7 are Group 2 stocks, to be managed for moderate levels of utilisation with moderate levels of information (partial-quantitative stock assessments). FNZ considers that the options proposed for all three stocks are consistent with this.</td></tr>
<tr><td>Other plans and strategies</td><td colspan="3">FNZ considers that the proposed options are consistent with Te Mana o te Taiao including Objectives 10 and 12.
FNZ considers that the proposed ELE 7 options are consistent with NPOA Sharks in maintaining biodiversity and long-term viability of elephantfish.</td></tr>
</table>

Information principles: section 10 of the Act

70. The best available information relevant to this review of SNA 7, FLA 7 and ELE 7 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 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.

Stock	Best available information	Key areas of uncertainty
SNA 7	Results of the 2024 fully quantitative SNA 7 stock assessment.	• Future recruitment trends are unknown and only observed with a high degree of uncertainty through trawl survey juvenile biomass estimates since 2019. These surveys suggest recent year classes may be smaller than those over the last decade. • Due to shifting productivity, estimates of B_{MSY} or virgin biomass cannot be reliably made. An *MSY*-compatible proxy (USB40%) is used. • The degree of connectivity with SNA 8 (also proposed for a TAC increase) is unquantified. Higher fishing pressure in southern SNA 8 could impact SNA 7.
FLA 7	Results of the 2022 partial quantitative stock assessment using CPUE.	• Stock status is relatively outdated for the species where it is known, given their high natural variability and short lifespan (last updated in 2020). Catches have dropped since, but it is unclear if this reflects decreased abundance without CPUE analysis. • Stock status is unknown for lemon sole, greenback, yellowbelly, and black flounder. • It is unclear how TACC settings will influence pressure on individual flatfish species.
ELE 7	Results of the 2024 partial quantitative stock assessment using CPUE.	• The tendency of ELE to aggregate and migrate leads to variability in catchability, meaning very short-term CPUE trends may not reflect abundance. • The sex ratio of fish subject to fishing mortality, and the unfished population is unknown.

References

Beentjes, M. P., & Renwick, J. A. (2001). The Relationship between Red Cod, Pseudophycis Bachus, Recruitment and Environmental Variables in New Zealand. *Environmental Biology of FIshes*, pages 315–328.

Bernal-Ramírez, J. H., Adcock, G. J., Hauser, L., Carvalho, G. R., & Smith, P. J. (2003). Temporal stability of genetic population structure in the the New Zealand snapper, Pagrus auratus, and relationship to coastal currents. *Marine Biology 142(3)*, 567-574.

Cummings, V. J., Lundquist, C. J., Dunn, M. R., Francis, M., Horn, P., Law, C., . . . Mielbrecht, E. (2021). *Assessment of potential effects of climate-related changes in coastal and offshore waters on New Zealand's seafood sector.* New Zealand Aquatic Environment and Biodiversity Report No. 261.

Didier, D. A. (1992). *Phylogenetic systematics of extant chimaeroid fishes (Holocephali, Chimaeroidei).* Phd Thesis University of Massachussets.

Doheny, B., Davis, J. P., & Miller, B. (2023). *Fishery-induced trophic cascades and sea urchin barrens in New Zealand: a review and discussion for management.* New Zealand Aquatic Environment and Biodiversity Report No. 324.

Drummond, K., & Mace, J. (1984). South Island snapper tagging results. *Catch '84 (Ministry of Agriculture and Fisheries)*, 6-7.

Fisheries New Zealand. (2024). *Fisheries Assessment Plenary May 2024: stock assessments and stock status*. Wellington, New Zealand: Compiled by the FIsheries Science Team, Fisheries New Zealand.

Heinemann, A., & Gray, A. (in prep.). *National Panel Survey of Recreational Marine Fishers 2022-23.* New Zealand Fisheries Assessment Report.

Hurst, R. J., Stevenson, M. L., Bagley, N. W., Griggs, L. H., Morrison, M. A., & Francis, M. P. (2000). *Areas of importance for spawning, pupping or egg-laying, and juveniles of New Zealand coastal fish*. Report for Ministry of Fisheries research Project ENV1999/03.

Langley, A. (in prep.). *Stock assessment of snapper in SNA 7 for 2024.* New Zealand Fisheries Assessment Report.

MacGibbon, D. J., Walsh, C., Buckthought, D., & Bian, R. (2024). *Inshore trawl survey off the west coast South Island and in Tasman Bay and Golden Bay,March–April 2023 (KAH2302).* New Zealand Fisheries Assessment Report 2024/06.

MacGibbon, D., & Mules, R. (2023). *Extent and intensity of bottom contact by commercial trawling and shellfish dredging in New Zealand waters, 1990-2021.* New Zeaqland Aquatic Environment and Biodiversity Report No. 316.

Maggs, J. Q., Armiger, H., Evans, O., Taylor, R., Davey, N., Payne, G., . . . Hartill, B. W. (in prep.). *Trends in recreational boat effort and harvest from 2004-05 to 2022-23.* New Zealand Fisheries Assessment Report.

Maggs, J. Q., Hartill, B. W., Evans, J. C., Holdsworth, J. C., Lumley, T., & Stevens, T. (2024). *Mortality rates of snapper released by recreational fishers.* New Zealand Fisheries Assessment Report 2024/17.

McKenzie, J. R., Underwood, M. J., Jones, E. G., Jordan, L., & Bian, R. (2024). *Estimation of finfish release survival from New Zealand inshore commercial fisheries.* New Zealand Fisheries Assessment Report 2024/09.

Morrison, M. A., Jones, E. G., Parsons, D. P., & Grant, C. M. (2014). *Habitats and areas of particular significance for coastal finfish fisheries management in New Zealand: A review of concepts and life history knowledge, and suggestions for future research.* New Zealand Aquatic Environment and Biodiversity Report No. 125.

Morrison, M., Elliot, S., Hughes, A., Kainamu, A., Williams, E., Lowe, M., . . . Semadeni-Davies, A. (2023). *Land-based effects on coastal fisheries and kaimoana and their habitats - a review.* New Zealand Aquatic Environment and Biodiversity Report No. 309.

Parsons, D. M., Allan, B. J., Bian, R., Herbert, N. A., Gublin, Y., McKenzie, J. R., . . . Munday, P. L. (2021). *Ocean acidification and elevated temperature effects on New Zealand snapper.* New Zealand Aquatic Environment and Biodiversity Report No. 275.

Rapson, A. M. (1946). *The reproduction, growth, and distribution of the Lemon Soles (Pelotretis flavatus) of Tasman Bay and Marlborough Sounds.* New Zealand Marine Department Fisheries Bulletin No. 7.

Starr, P., & Kendrick, T. H. (2022). *FLA 7 fishery characterisation and CPUE analysis, 1989–90 to 2018–19.* New Zealand Fisheries Assessment Report 2022/03.

Tuck, I., Hewitt, J., & Lundquist, C. (2017). *Assessing the effects of fishing on soft sediment habitat, fauna and processes.* New Zealand Aquatic Environment and Biodiversity Report No. 178.

van der Reis, A., & Jeffs, A. (2020). *Determining the diet of New Zealand king shag using DNA metabarcoding.* Report prepared for Department of Conservation - Conservation Services Programme Project BCBC2019-05.

Vooren, C. M. (1975). Nursery grounds of Tarakihi (Teleostei: Cheilodactylidae) around New Zealand. *New Zealand Journal of Marine and Freshwater Research, 9(2)*, 121-158.

Wing, S., Shears, N., Tait, L., & Schiel, D. (2022). The legacies of land clearance and trophic downgrading accumulate to affect structure and function of kelp forests. *Ecosphere (13)2*.