



Fisheries New Zealand

Tini a Tangaroa

Review of Sustainability Measures for Elephant fish (ELE 7) for 2021/22

Fisheries NZ Discussion Paper No: 2020/27

ISBN No: 978-1-99-004365-9 (online)

ISSN No: 2624-0165 (online)

December 2020

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1 Stock being reviewed

Elephant fish (ELE 7) - West Coast South Island, Top of the South

(*Callorhynchus milii*), silver trumpeter, white fillets, Reperepe, Makorepe

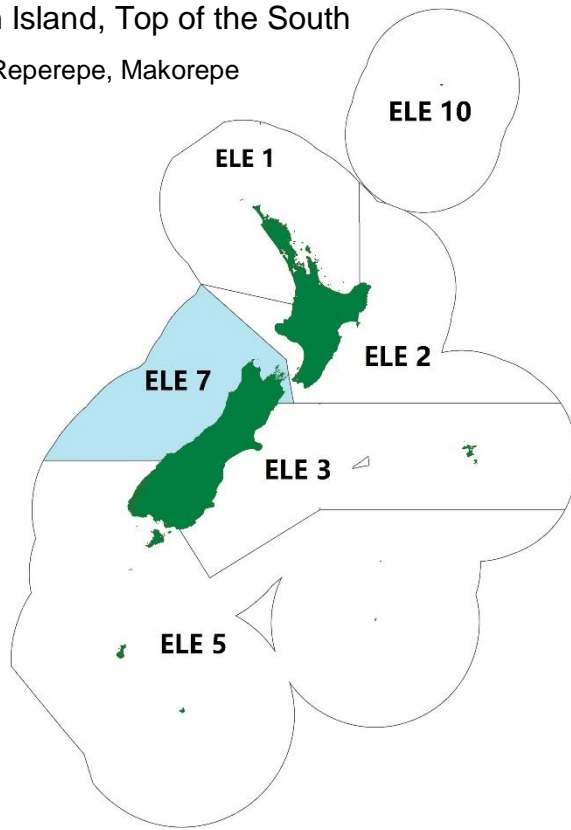


Figure 1: Quota Management Areas (QMAs) for elephant fish, with ELE 7 highlighted.

2 Summary

1. Fisheries New Zealand is reviewing the sustainability measures for elephant fish in Quota Management Area ELE 7 for the 1 October 2021 fishing year (Figure 1).
2. In 2019, Fisheries New Zealand set the Total Allowable Catch (TAC) and allowances for ELE 7; the Total Allowable Commercial Catch (TACC) remained unchanged. It is timely to review the TAC as there have been two further years of good catch reported, and the stock status is assessed to be at or above the management target. Recent trawl survey biomass trends for this stock from the West Coast South Island trawl survey have also been relatively high compared to the long-term average but are unreliable with a high coefficient of variation.
3. Based on this information Fisheries New Zealand is proposing that modest increases to the TAC, allowance for other mortality to the stock caused by fishing, and the TACC of this stock could be considered. Option 1 (status quo) is a cautious approach to managing elephant fish that remains valid given the species' vulnerability to overfishing. Option 2 provides a moderate increase to the TACC and other sources of mortality.
 - **Option 1**, the *status quo*, retains the current TAC and other settings.
 - **Option 2** provides an increase to the TAC by 11 tonnes, an increase to the TACC by 10 tonnes (10%), maintains customary and recreational allowances, and increases other mortality caused by fishing by one tonne.
4. Fisheries New Zealand is seeking feedback and submissions on the proposal to increase the TAC, other mortality allowance and TACC for ELE 7. We note that new information provided by

tangata whenua and stakeholders through consultation could inform further options to be presented in final advice on this review.

3 About the stock

5. Elephant fish live to at least 20 years and reach maturity at about three years (males) to five years (females). Mature elephant fish migrate to shallow inshore waters in spring and aggregate for mating. Eggs are laid on sand or mud bottoms, often in very shallow areas. Females are known to spawn multiple times per season. After egg laying the adults are thought to disperse and are difficult to catch; however, juveniles remain in shallow waters for up to three years. During this time juveniles are vulnerable to incidental trawl capture but are of little commercial value.
6. Elephant fish are an elasmobranch, have low productivity and natural mortality, and therefore can be vulnerable to overfishing.

4 Quota Management System

7. ELE 7 was introduced into the Quota Management System (QMS) in 1986. At this time, a TACC was set at 102 tonnes. In 2019, as part of a multi-species review, a TAC and allowances were set for ELE 7 and the TACC was retained at 102 tonnes. Since this time, there have been two¹ further years of good catch reported to support a review of the TACC.
8. For more information about the QMS go to <https://www.mpi.govt.nz/law-and-policy/legal-overviews/fisheries/quota-management-system/>.

5 Legal basis for managing fisheries in New Zealand

9. The Fisheries Act 1996 provides the legal basis for managing fisheries in New Zealand, including the Minister's responsibilities for setting and varying sustainability measures. See the separate document *Overview of legislative requirements and other considerations* at <https://www.mpi.govt.nz/dmsdocument/43030> for more information.

6 Treaty of Waitangi obligations

6.1 Input and participation of tangata whenua

10. Input and participation into the sustainability decision-making process is provided through Iwi Fisheries Forums, which have been established for that purpose. Iwi Fisheries Forums ideally develop an Iwi Fisheries Forum Plan that describes how the iwi in the Forum exercise kaitiakitanga over the fisheries of importance to them, and their objectives for the management of their interest in fisheries². Particular regard will be given to kaitiakitanga when making sustainability decisions. Iwi Fisheries Forums may also be used as entities to consult iwi with an interest in fisheries.
11. Te Waka a Māui me Ōna Toka Iwi Forum is the Te Wai Pounamu (South Island) iwi fisheries forum — it includes all nine tangata whenua Iwi of Te Wai Pounamu: Ngāti Apa ki Ratō, Ngāti Kōata, Ngāti Kuia, Ngāti Rarua, Ngāti Tama, Ngāti Tōarangatira, Rangitāne ō Wairau, Te Ati Awa and Ngai Tahu.

¹ The previous TAC review was based on full year fishing data up to the end of the 2017/2018 fishing year. There has subsequently been two further full years fishing data for this review.

² Not all Iwi Fisheries Forums have developed plans at this stage, though work in this area is ongoing.

12. In November 2020, Fisheries New Zealand provided forum members with fisheries management material on the proposed review. No specific input about the proposed changes to ELE 7 was received.

6.2 Kaitiakitanga

13. Elephant fish are identified as taonga species in the Te Waipounamu Iwi Forum Fisheries Plan. The Forum Fisheries Plan contains objectives to support and provide for the interests of South Island iwi, including the following which are relevant to the options proposed in this paper:
- **Management objective 1:** To create thriving customary non-commercial fisheries that support the cultural wellbeing of South Island iwi and whanau;
 - **Management objective 2:** South Island Iwi are able to exercise kaitiakitanga;
 - **Management objective 3:** To develop environmentally responsible, productive, sustainable and culturally appropriate commercial fisheries that create long-term commercial benefits and economic development opportunities for South Island iwi; and
 - **Management objective 5:** to restore, maintain and enhance the mauri and wairua of fisheries throughout the South Island.
14. There are eight customary management areas in Fisheries Management Area (FMA) 7 (Table 1) that provide for tangata whenua to manage their fisheries under customary fishing regulations and the Act. Commercial fishing is prohibited in mātaimai. There are no regulations relating to elephant fish in the Whakapuaka Taiāpure, or bylaws relating to elephant fish in any of the mātaimai.

Table 1: Customary fisheries areas within QMA 7

Name	Management type
Whakapuaka (Delaware Bay)	Taiāpure
Okuru/Mussel Point	
Tauperikaka	
Mahitahi/Bruce Bay	
Manakaiaua/Hunts Beach	Mātaimai Reserve
Okarito Lagoon	
Te Tai Tapu (Anatori)	
Te Tai Tapu (Kaihoka)	

7 Relevant plans, strategies, statements and context

7.1 The Draft National Inshore Finfish Fisheries Plan (2019)

15. ELE 7 are managed under the Draft National Inshore Finfish Fisheries Plan (2019) which provides guidance on management objectives and strategies for finfish. The Plan will guide the operational management of inshore finfish fisheries for the next five years and is aimed at progressing New Zealand towards more ecosystem-based fisheries management. Stocks are grouped within the plan, with management approaches and objectives tailored accordingly for each group. ELE 7 falls into Group 2, which recognises that we intend to manage it to provide for moderate levels of use with moderate levels of information to monitor its stock status (eg, a partial quantitative assessment compared against trends over time).

7.2 The National Plan of Action for Sharks (2013)

16. The National Plan of Action for Sharks (NPOA Sharks) is also relevant to elephant fish. As an elasmobranch (cartilaginous fish, including sharks, skates, and rays), elephant fish are included in the plan, which takes into account the biological characteristics of elephant fish in terms of its vulnerability to fishing pressure.

17. One of the goals of the NPOA Sharks is to maintain the biodiversity and long-term viability of New Zealand shark populations, based on a risk assessment framework; including maintaining those species in the QMS at or above target.
18. The risk assessment framework evaluates stock status, measures to ensure any mortality is at appropriate levels, and protection of critical habitat. Best available information indicates that elephant fish are at or above target; the options provided in this paper will likely maintain ELE 7 at or above target.

7.3 Regional Plans

19. There are a number of regional plans in place within ELE 7 to address the cumulative effects of activities in the coastal marine area, and the adverse impacts from land-based activities on the marine environment. These regional plans can be found electronically on each council's website.
20. Fishers are subject to the rules in the plans (for example, small scale restrictions on fishing methods in ELE 7). Fisheries New Zealand considers that the large area of ELE 7 means these rules do not, in general, stop fishers taking their ACE from other areas within ELE 7.

8 Recent catch levels and trends

8.1 Commercial

21. Since 1 October 2008, commercial set netting has been prohibited to two nautical miles offshore in the western portion of ELE 7, from Awarua Point north of Fiordland to the tip of Cape Farewell at the top of the South Island. This commercial closure is restricted to the period from 1 December to the end of February. From 1 October 2020, commercial set netting has also been banned within Golden and Tasman Bays out to four nautical miles offshore, from Farewell Spit to Cape Soucis (and applies all year round).
22. Trawl target sets for ELE 7 tend to be in shallow water with most catch taken in less than 40m depth (generally in the 10-11m, 25-27m and 34-37m bands) but have been reported targeted as deep as 90m. As well as a target elephant fish fishery they are also landed as bycatch in a range of other target fisheries including flatfish and red cod. ELE 7 is taken predominately by bottom trawl along the west coast of the South Island in statistical areas 034, 035 and 036.
23. The TACC has been overcaught several times in the last decade (Figure 2).

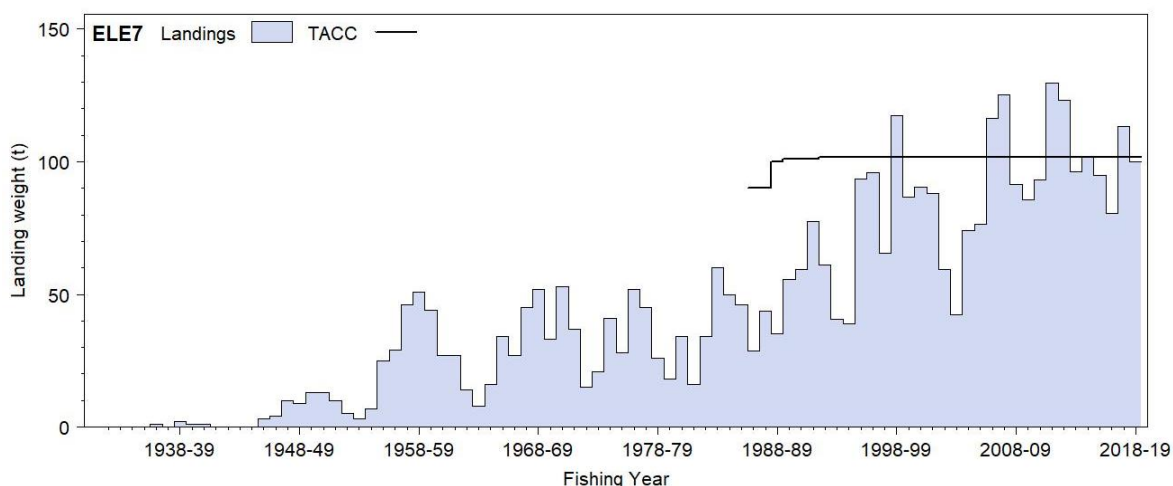


Figure 2: Reported commercial landings and TACC for ELE 7 (Challenger).

8.2 Customary Māori

24. The current level of Māori customary catch for finfish in QMA 7 is uncertain. Elephant fish (*Reperepe*, *Makorepe*) has been reported under the Fisheries (South Island Customary Fishing) Regulations 1999 in past years, but not in the last 10 years. The absence of customary reporting may reflect that tangata whenua are using recreational fishing regulations for their harvest. Tangata whenua north of Kahurangi Point and in the Marlborough Sounds and Tasman/Golden Bays area are still operating under regulation 50 of the Fisheries (Amateur Fishing) Regulations 2013, which do not require that customary permits or catches be reported.

8.3 Recreational

25. Catches of elephant fish by recreational fishers are low compared with those of the commercial sector. Catches estimated using National Panel Surveys in 2011–12 and 2017–18 are shown in Table 2 — the estimates are uncertain with a relatively high coefficient of variation. However, regional surveys of recreational fishing in the early 1990s and national surveys in 1996, 1999, and 2000 showed similarly low numbers of fish harvested and similar geographical patterns. No estimates of mean weight are available to convert these estimates of harvested fish to harvested weights (Plenary, 2020). Section 111 catch (recreational catch taken by commercial fishers) are negligible for this fishery.

Table 2: Recreational harvest estimates for elephant fish stocks. Insufficient data on mean fish weights are available from boat ramp surveys to convert numbers to catch weights (Plenary, 2020).

Fish stock	2011/12 Estimated harvest (number of fish)	CV	2017/18 Estimated harvest (number of fish)	CV
ELE 7	960	-	189	0.39

9 Current state of the stock

26. The interim target for ELE 7 is the B_{MSY} proxy based on the mean of the Catch Per Unit Effort (CPUE) series for the period: 2007–08 to 2017–18. The stock status is also referenced against the associated soft limit (which triggers a formal time-constrained rebuilding plan) of 50% of the target and a hard limit (where a closure of the fishery should be considered) of 25% of the target. The overfishing threshold is the mean annual relative exploitation rate for the period 2007-08 to 2017-18.
27. In the most recent stock status assessment update (2019), ELE 7 was assessed to be about at or above target. The stock status (see Figure 3) is also referenced against the associated soft and hard limits. Standardised CPUE indices represent the best available information for monitoring trends in ELE 7 stock abundance with relative biomass predicted to continue to fluctuate around the target level at current catch. The overfishing threshold is the mean relative exploitation rate for the period 2007-08 to 2017-18 (Figure 4). Overfishing is about as likely as not (40-60% probability) to be occurring. It is possible that practises used by the fleet to avoid over-catching elephant fish and management changes in this fishery have biased the CPUE trends low in this fishery.
28. Recent trawl survey biomass trends for this stock from the West Coast South Island trawl survey (MacGibbon, 2019) have been relatively high compared to the long-term average but are unreliable with a high coefficient of variation.

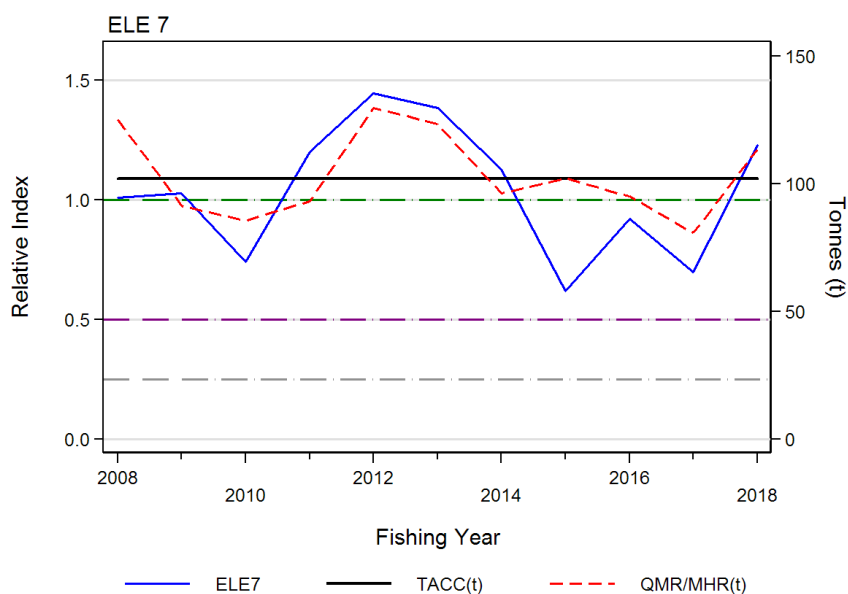


Figure 3: Comparison of the ELE 7-BT (tow-by-tow) CPUE series with the TACC and commercial landings for ELE 7. The agreed B_{MSY} proxy is shown as a green line; the soft limit is shown as a purple line; the hard limit is shown as a grey line.

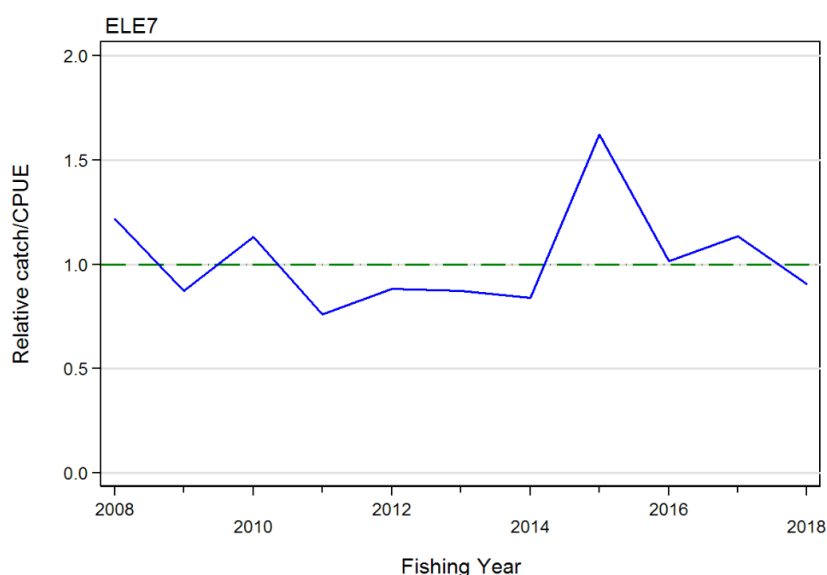


Figure 4: Relative fishing pressure for ELE 7 based on the ratio of commercial landings relative to the ELE7-BT (tow-by-tow) CPUE series which has been normalised so that its geometric mean=1.0. Horizontal green line is the geometric mean fishing pressure from 2007–08 to 2017–18.

10 Current and proposed TAC, TACC and allowance settings

Table 3: Summary of current and proposed catch settings for ELE 7 from 1 October 2021. Figures are all in tonnes. Figures in parentheses indicate the change from current settings.

Option	TAC	TACC	Allowances		
			Customary Māori	Recreational	All other mortality caused by fishing
Option 1 (<i>Status quo</i>)	127	102	5	10	10
Option 2	138 ↑ (11 t)	112 ↑ (10 t)	5	10	11 ↑ (1 t)

29. Fisheries New Zealand invites your views on these proposed options. We note that new information provided by tangata whenua and stakeholders through consultation could inform further options to be presented to the Minister of Fisheries for his consideration.

10.1 Option 1

30. Option 1 retains the current TAC and other settings. It places the greatest weight on the biological vulnerability of elephant fish to overfishing and does not provide for any increase in utilisation of elephant fish in ELE 7.

10.2 Option 2

31. Option 2 provides an increase to the TAC of 11 tonnes, an increase to the TACC by 10 tonnes (10%), maintains customary and recreational allowances, and increases other mortality caused by fishing by one tonne.
32. Other mortality caused by fishing in ELE 7 includes mortality associated from fish escaping fishing gear, or illegal discarding. In 2018, the previous Minister of Fisheries indicated a preference for Fisheries New Zealand to move toward standardising other mortality caused by fishing for inshore trawl fish stocks at an amount that would equate to a minimum of 10% of their respective TACCs, unless there is evidence to suggest otherwise. The proposed one tonne increase retains the other sources of mortality at this standardised approach of 10% of the TACC for ELE 7.
33. Fisheries New Zealand considers Option 2 will not impact on, or be impacted by, the customary management areas in ELE 7. Commercial fishing is prohibited in the mātaītai reserves and the Whakapuaka (Delaware Bay) taiāpure has no regulations restricting the harvest of elephant fish and is not located in area of high ELE 7 target trawls.
34. Option 2 would contribute towards the achievement of the Te Waipounamu Iwi Forum Fisheries Plan management objectives. Particularly Objective 3, to supporting environmentally responsible, productive, sustainable and culturally appropriate commercial fisheries that create long-term commercial benefits and economic development opportunities for South Island iwi.
35. One of the goals of the NPOA Sharks is to maintain the biodiversity and long-term viability of New Zealand shark populations, based on a risk assessment framework; including, maintaining those species in the QMS at or above target. Best available information indicates that elephant fish are at or above target; this option will likely maintain ELE 7 at or above target.
36. Option 2 provides for additional utilisation by the commercial sector and greater derived value from the fishery. The modest increase of 10% to TACC would have the effect of allowing fishers to balance non-target ELE 7 catch through additional ACE.
37. The estimated economic value of the proposed Option 2, based on 2019/20 port prices, suggests an additional \$19,300 value (primarily in the domestic market). Port price is what the commercial fisher receives, not what the fish is worth at market (which is higher). Nor does it reflect the income for Licensed Fish Receivers (including, wholesalers and/or processors) and retailers.

11 Uncertainties and risks

38. It is possible that practises used by the fleet to avoid over-catching elephant fish and management changes in this fishery have biased the CPUE. If so the CPUE trends are most likely to be biased low, underestimating the abundance of elephant fish.

12 Environmental interactions

39. The key environmental interactions with this fishery, which must be taken into account when considering sustainability measures, concern marine mammals, seabirds, fish and invertebrate bycatch and benthic impacts.
40. Fisheries New Zealand does not anticipate any significant increase in environmental effects of fishing associated with this fishery as the proposed increase is modest, reflects likely high abundance of elephant fish and is unlikely to result in a change to total fishing effort, although there may be a small increase in the number of target tows.
41. Research has characterised both New Zealand's benthic environment and the level of benthic impact from fishing activity (Aquatic Environment and Biodiversity Annual Review 2019/20). The environmental impacts of fishing are summarised annually, and Fisheries New Zealand will continue to monitor the bottom trawl footprint of fisheries.

12.1 Marine Mammals

42. In the last five fishing years (to the end of September 2020) there has been no reported or observer-recorded non-fish protected species captures by vessels targeting elephant fish in ELE 7. Given this and that the proposed TAC increase for elephant fish is unlikely to result in a change in fishing effort the risk of the presented options increasing the adverse effects on marine mammals is considered low.
43. The Hector's and Māui Dolphin Threat Management Plan guides management approaches for addressing both non-fishing and fishing-related impacts on Hector's and Māui dolphins. The risk to the dolphins from trawling around the South Island, including FMA 7, is considered low and is largely managed under the current trawl restrictions. As part of the previous Minister of Fisheries' decisions on the plan, a new management approach is being considered for Hector's dolphin captures in the South Island in areas not closed to set-net or trawl fishing to encourage fishers to avoid all bycatch of Hector's dolphins. Before any formal consultation, Fisheries New Zealand will seek iwi input and participation, and undertake targeted engagement with stakeholders, to inform the development of the proposed approach.

12.2 Seabirds

44. Incidental captures of seabirds occur in trawl fisheries in FMA 7, although none have been reported in the last five years in trawls targeting ELE 7. Seabird interactions with New Zealand's commercial fisheries are managed under the National Plan of Action - Seabirds 2020. The revised NPOA Seabirds, with its focus on education and ensuring fishers take all practicable steps to minimise risk to seabirds, will drive significant changes in fisher behaviour and help to ensure that fishing does not adversely impact on the health of our seabird populations.
45. Fisheries New Zealand and the fishing industry have worked collaboratively for over a decade to ensure the vessels have, and follow, a Protected Species Risk Management Plan (PSRMP). A PSRMP specifies the measures that must be followed on board each vessel to reduce the risk of incidental seabird captures. Approximately 90% of full-time fishing vessels in FMA 7 (which includes the West Coast where most ELE 7 is caught) have a PSRMP.

12.3 Fish bycatch

46. Fish and invertebrate bycatch information for trawl fisheries along the west coast of the South Island is primarily from trawl surveys. While the trawl surveys are not optimised for elephant fish, bycatch captured during the survey is reflective of that which occurs within the same depth profile as elephant fish. The 2019 trawl survey captured more than 50 finfish species with many, including spiny dogfish, red cod, barracouta, tarakihi, and hake within the same depth range as elephant fish.

12.4 Benthic impacts

47. Trawling can directly impact on biological diversity of the benthic environment; however, the proposed increase is modest, reflects likely high abundance and is unlikely to result in a change to total fishing effort. Bottom trawling in this fishery is also typically confined to areas that have been consistently fished over time (rather than areas of high biodiversity).

13 Deemed values

48. Deemed values are the price paid by fishers for each kilogram of unprocessed fish landed in excess of a fisher's ACE holdings. The purpose of the deemed values regime is to provide incentives for individual fishers to acquire or maintain sufficient ACE to cover catch taken over the course of the year, while allowing flexibility in the timing of balancing, promoting efficiency, and encouraging accurate catch reporting. The Deemed Value Guidelines (Fisheries New Zealand, 2020) set out the operational policy Fisheries New Zealand uses to inform the development of advice to the Minister on the setting of deemed values.
49. ELE 7 deemed values are set at a standard differential rate (see Table 4 below) this means that the annual rate increases for higher levels of excess catch (also known as ramping). The deemed value rates have been unchanged since 2013. The 2019/20 port price for ELE 7 is \$1.93.

Table 4: Current deemed value rates (\$/kg) for ELE 7

Stock	Interim	Annual 100-120%	Differential rates (\$/kg) for excess catch (% of ACE)				
			120-140%	140-160%	160-180%	180-200%	>200%
ELE 7	1.50	1.65	1.98	2.31	2.64	2.97	3.30

50. Fisheries New Zealand considers the current deemed value rates provide the right balance to incentives fishers to balance catch against ACE while incentivising accurate reporting. Thus, no changes are proposed to the deemed values of ELE 7 at this time.

14 Questions for submitters on options for varying TACs, TACCs and allowances

- 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?

51. Please provide detailed, verifiable information and rationale to support your views. If you are an organisation, please advise who you represent and/or your membership base.

15 How to get more information and have your say

52. Fisheries New Zealand invites you to make a submission on the proposals set out in this discussion document. Consultation closes at 5pm on 5 February 2021.
53. Please see the Fisheries New Zealand sustainability consultation webpage (<https://www.mpi.govt.nz/consultations/review-of-sustainability-measures-2021-april-round/>) for related information, a helpful submissions template, and information on how to submit your feedback. If you cannot access to the webpage or require hard copies of documents or any other information, please email FMSubmissions@mpi.govt.nz.

16 Referenced reports

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