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Review of Sustainability Measures for scallop (SCA CS) for 2023/24

Introduction

1. This submission addresses proposed sustainability measures for the Coromandel scallop fishery (**SCA CS**) as set out in the Fisheries New Zealand Discussion Paper No 2022/21 (**Discussion Paper**).

2. The Environmental Defence Society (**EDS**) is an independent not-for-profit organisation conducting interdisciplinary policy research and litigation. It was established in 1971 with the purpose of improving environmental outcomes in Aotearoa New Zealand.

3. EDS has a special interest in the marine environment and recently completed the first phase of a multi-year project looking at options for future reform of the oceans management system.[1] This included, among other things, fisheries management. In 2018, EDS led an in-depth review of the national fisheries management system and published findings in a report entitled *Voices from the Sea: Managing New Zealand's Fisheries*.[2] It has also sought to improve fisheries decision-making by submitting on proposals to set sustainability measures for the

[1] Greg Severinsen and others, 2002, *The Breaking Wave: Oceans Reform in Aotearoa New Zealand*, Environmental Defence Society, Auckland, available from www.eds.org.nz
[2] Raewyn Peart, 2018, *Voices from the Sea: Managing New Zealand's Fisheries*, Environmental Defence Society, Auckland, available from www.eds.org.nz

management of various wild fish stocks[3] and has long been involved in seeking improved environmental outcomes for the Hauraki Gulf.

Summary of submission

4. The current abundance figures are alarming and show that the SCA CS scallop populations are on the verge of widespread and persistent collapse. The current closure of SCA CS needs to be extended indefinitely to enable full recovery.

5. Dredging is an inappropriate method for the harvest of scallops due to the significant adverse effects it has on the aquatic benthic environment. The Minister should clearly signal now, that if the Coromandel scallop fishery were to be opened in the future, dredging will not be permitted as a harvest method. This will give the industry time to develop alternative harvest methods while the fishery is closed.

6. Continuing to provide for commercial and recreational catches when the fishery is closed, as proposed in Option 1 of the Discussion Paper, sends mixed messages and is confusing. It also does not comply with section 13 of the Fisheries Act 1996 which requires the total allowable catch (**TAC**) to be set at a level that maintains the stock at or above maximum sustainable yield. The Minister cannot, therefore, legally proceed with Option 1.

7. EDS supports Option 2, which proposes to reduce the TAC to 11 tonnes and the total allowable commercial catch (**TACC**) to 0, retaining an allowance of 10 tonnes for customary harvest and 1 tonne for other mortality.

Status of the Coromandel scallop stocks

8. The Discussion Paper describes the current state of the Coromandel scallop stocks. The 2021 survey indicated that the biomass of the commercially fished scallop beds had declined by more than 80% over the past 10 years.[4] Steeper declines were observed within certain areas, with the biomass of core scallop beds in the Hauraki Gulf declining from 1,005 tonnes in 2012 to just 52 in 2021. The 2021 biomass was therefore only 5% of the 2012 levels. Long-term declines have been observed at all commercially targeted scallop beds except for Pakiri, which hosts a relatively low biomass of 7 tonnes. Similar declines have been observed across recreationally targeted scallop beds in the Hauraki Gulf.

9. This information led to the closure of scallop beds in the SCA CS fishery apart from two large areas to the south and west of Hauturu/Little Barrier Island and in the Colville Channel. A 2022 survey of these beds has now shown that these are also in serious decline, with the Hauturu/Little Barrier beds showing a 85% decline in biomass over the past year, and the Colville Channel beds showing a 37% decline. This information led to the emergency closure of these two remaining beds which EDS supported.

Ecosystem-based fishery considerations

10. EDS is concerned about the wider implications of declines in the abundance and density of scallops in the Coromandel fishery. Large shellfish beds represent an important biogenic habitat and provide a wide range of ecosystem services. In addition, the aggregation of scallops into large shellfish beds is thought to increase their breeding success. It is therefore

[3] Copies of EDS's recent submissions on a range of wild fish stocks are available from www.eds.org.nz
[4] Representing a decline from 1,397 tonnes to 249 tonnes in biomass between 2012 and 2021

important that fisheries management supports the establishment and retention of large, dense scallops beds.

11. All commercial fishing of scallops in the Coromandel fishery is undertaken using self-tipping box dredges, while recreational fishers harvest scallops by hand or using small dredges. A box dredge generally comprises a square steel frame covered in steel mesh, which rides on steel runners that keep the frame slightly off the seafloor. The dredge-seafloor interface consists of a bar fitted with steel prongs at regular intervals, and the prongs dislodge scallops (and other shellfish or marine biota) and flick these up into the meshed box as the dredge box is towed along the sea floor. The dredge is in contact with the seafloor for the duration of the tow.

12. Benthic impacts from mobile contact fishing methods, such as the dredges used to commercially and recreationally harvest scallops, are one of the greatest threats to the marine environment in Aotearoa New Zealand.[5] Direct effects include crushing scallops and non-target organisms, or removing them as bycatch, thereby reducing the diversity of seafloor biota and their densities.[6]

13. The Aquatic Environment and Biodiversity Annual Review (**AEBAR**) includes a summary of the main impacts of mobile bottom fishing methods on benthic habitats and communities. Some of the key findings from studies of the impacts linked to scallop dredging are:[7]

    a. "*Density of common macrofauna at both sites decreased as a result of dredging at two contrasting sites; some populations were still significantly different from reference plots after three months*." (Mercury Islands scallop dredge impacts)

    b. "*Decreases in the density of echinoderms, long lived taxa, epifauna, especially large species, the total number of species and individuals, and the Shannon-Weiner diversity index with increasing fishing pressure (including trawl and scallop dredge). Increases in the density of deposit feeders, small opportunists, and the ratio of small to large heart urchins*." (Hauraki Gulf, bottom trawl and scallop dredge impacts)

    c. "*Sponges seemed most affected by scallop dredging, and samples taken in an area once rich in sponges had few species in 1999. This area had probably been intensively dredged for scallops. Analysis of historical samples of scallop survey bycatch showed a marked decline in sponge species richness between 1996 and 1998*." (Spirits Bay scallop dredge impacts)

    d. "*In 2010, analysis of both epifaunal and infaunal community data identified change since 2006, and significant depth, habitat, and fishing effects. The combined fishing effects accounted for 15–30% of the total variance (about half of the explained variance).*" (Spirits Bay scallop dredge impacts)

14. Studies indicate that the recovery of benthic marine species and habitats from dredging impacts can take several years, although recovery is influenced by a variety of factors including

[5] MacDiarmid et al., 2012, Assessment of anthropogenic threats to New Zealand marine habitats, *New Zealand Aquatic Environment and Biodiversity Report* No 93

[6] Thrush, S F, J E Hewitt, V J Cummings and P K Dayton, 1995, 'The impact of habitat disturbance by scallop dredging on marine benthic communities: What can be predicted from the results of experiments?', *Marine Ecology Progress Series, 129*, 141–150; Currie D and G Parry, 1996, 'Effects of scallop dredging on a soft sediment community: A large-scale experimental study', *Marine Ecology Progress Series* 134, 131-150

[7] Fisheries New Zealand, 2021, *Aquatic environment and biodiversity annual review*, Fisheries New Zealand, Wellington, Table 11.4

local environmental conditions and the significance of cumulative bottom contact fishing methods in an area. A study by Lambert et al. (2014),[8] reported in AEBAR, estimated recovery from scallop dredging to take anywhere from less than one year to over ten years, depending on the species impacted, with faster recovery in areas flushed frequently by strong tidal currents. Some studies have shown that sensitive habitat is permanently degraded by bottom contact fishing methods.

15. The best available information shows that the use of dredge methods for the harvest of scallops in Aotearoa New Zealand has already impacted marine biodiversity and ecosystem functioning. It has likely contributed to the decline of the scallop populations in the Coromandel fishery.

16. In light of the above information the Hauraki Gulf Marine Spatial Plan (**Sea Change Plan**) stated that scallop dredging should be removed from the entire Hauraki Gulf Marine Park by 2025.

17. In EDS's view, dredging is an inappropriate method for the harvest of scallops due to the significant adverse effects it has on the aquatic benthic environment. The Minister should clearly signal now, that if the Coromandel scallop fishery were to be opened in the future, dredging will not be permitted as a harvest method. This will give the industry time to develop alternative harvest methods while the fishery is closed.

EDS's preferred management option

18. The Discussion Paper sets out two management options. Both involve an indefinite closure of the SCA CS fishery, which EDS supports. Option 1 proposes to leave the TAC at 19 tonnes and the TACC at 5 tonnes. Option 2 proposes to reduce the TAC to 11 tonnes and the TACC to 0. Both options retain an allowance of 10 tonnes for customary harvest and 1 tonne for other mortality.

19. Given that the SCA CS fishery is closed, there is no reason why the TAC and TACC should continue to provide for commercial and recreational harvest. It sends mixed messages and is confusing. It also does not comply with section 13 of the Fisheries Act 1996 which requires the TAC to be set at a level that maintains the stock at or above MSY. Clearly providing for 11 tonnes of commercial and recreational harvest does not achieve this, as indicated by the current closure. The Minister cannot, therefore, legally proceed with Option 1.

20. EDS supports Option 2. Setting the TACC at 0 will remove all ambiguity about the SCA CS fishery closure. The Minister should clearly signal that if the SCA CS fishery is to ever open again, it will only do so on the basis that the use of dredging methods for harvesting scallops is prohibited.

[8] Lambert G I, S Jennings, M J Kaiser, T W Davies and J G Hiddink, 2014, 'Quantifying recovery rates and resilience of seabed habitats impacted by bottom fishing', *Journal of Applied Ecology, 51(5)*, 1326–1336