

**“A healthy Ocean in which coastal ecosystems and human communities thrive  
in a harmonious, respectful and mutually beneficial relationship.”**

19<sup>th</sup> December 2022,

To whom it may concern,

Te Wairua O Te Moananui-Ocean Spirit Charitable Trust has been conducting community-based ecological surveys on the Tutukaka Coast (both within and outside the proposed 186a closure area) since the beginning of 2018. The survey method is designed to allow communities to assess the overall ecological health of the survey site as well as specific indicator species. The survey results can be plotted onto an ecological health index, enabling comparative analysis of sites over time as well as between survey sites (Fig 1).

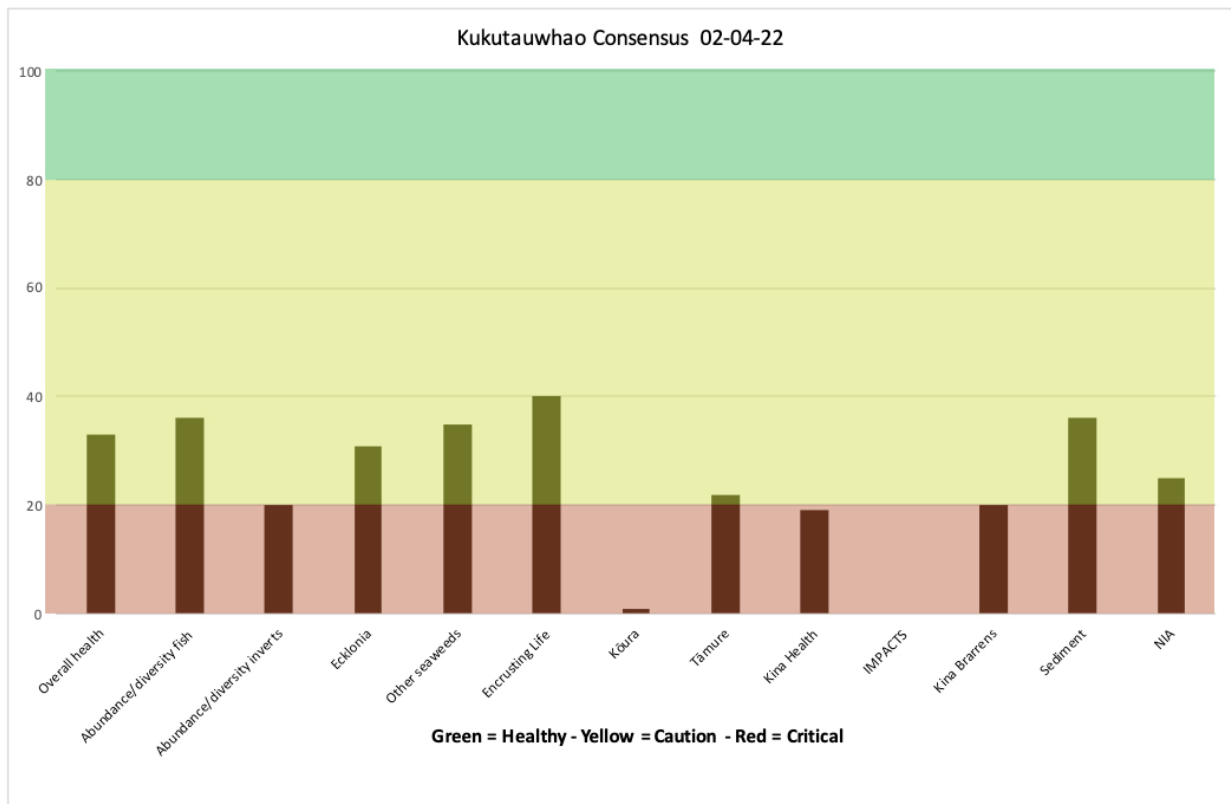


Figure 1: example of the ecological health index from Kukutauwhao Bay, Tutukaka harbour

Results from these surveys over the past five years show a consistent trend of ecological degradation. Specifically, results for kōura (Rock Lobster *Jasus edwardsii*) are consistent with 2019 stock assessment of vulnerable biomass for Northland of 15.5% of un-fished biomass<sup>1</sup>. Surveys of kōura nurseries within Tutukaka Harbour undertaken in June and July 2022, indicated a zero, or near zero breeding success, with no adult Kōura found in the breeding nurseires<sup>2</sup>.

<sup>1</sup> see Holdsworth notes of this document.

<sup>2</sup> Edney, G. (2022). Philip Island Kōura Survey report 19-06-22.

Likewise results for Tāmure (Snapper *Pagrus auratus*) are consistent with Fisheries New Zealand estimates of snapper stocks at approximately 24% of unfished biomass for East Northland<sup>3</sup>. It is well understood that there is a direct link between overfishing of these species and the dramatic increase in kina barrens, and subsequent loss of ecklonia kelp forests and other macro algae assemblages.

Ecklonia forests are the foundation of the ecological structure of rocky reef habitats for much of the East coast of the North Island. Our surveys indicate that without intervention, we will continue to see rapid decline in these fundamentally important ecosystems. In my opinion, the proposed closure of the kōura fishery associated with this 186a application would provide the necessary intervention to support a local recovery of kōura. In addition the fishing method prohibition on netting will contribute to tāmure recovery, leading to a re-balancing of the kina population and consequently a recovery of the ecklonia kelp forests. This closure will also support the efforts of mana whenua, Te Wairua O Te Moananui – Ocean Spirit Charitable Trust and the wider local community in regenerating the kelp forests of Tutukaka Harbour through a collaborative kelp re-seeding project. Recovery of the kelp forests is also beneficial for the recovery of other species named in this application, including Pāua, kutai (mussels), manaia (seahorses) and wheke (octopus), all of whom make their home in the kelp and seaweed forests of the rocky reefs.

To date, we have only found Pāua at one of our survey sites, Rauhomaumau, which supports the anecdotal evidence of the decline in both size and number of Pāua within the rohe moana. Likewise our surveys in Ngunguru Estuary corroborate the quantitative surveys of pipi and cockle. In addition we note that the prohibition of netting in this application will likely have an indirect, positive effect on these populations by dramatically reducing the catch pressure on the grey and yellow eyed mullet populations that frequent the estuary. Grey mullet especially, ingest large amounts of mud from the bottom whilst feeding on organic matter and benthic organisms. Because they move in and out of the estuary with each tide, and increased population would be capable of removing vast quantities of sediment from this estuarine ecosystem, thereby improving the shellfish habitat<sup>4</sup>.

Te Wairua O Te Moananui- Ocean Spirit will continue to monitor all of these species within (and outside the closure area) and provide mana whenua with the results of these surveys.

Glenn Edney MSc,

Ocean Ecologist and Trustee,

Te Wairua O Te Moananui – Ocean Spirit Charitable Trust

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<sup>3</sup> Fisheries New Zealand, Fisheries Assessment Plenary May 2021 (in Decision [2022] NZEnvC 228).

<sup>4</sup> Grace, R. (2015) Ecological Services of Grey Mullet Lost Through Fishing. *Whangateau Harbour Care*