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### **Draft Hauraki Gulf Fisheries Plan**

#### **Introduction**

1. This is a submission on the Draft Hauraki Gulf Fisheries Plan dated January 2023 (**Fisheries Plan**).
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 Hauraki Gulf, having supported the establishment of the Sea Change Tai Timu Tai Pari planning process in 2013. EDS Policy Director Raewyn Peart was a member of the Stakeholder Working Group that prepared the marine spatial plan which was released in 2016. She was also on the Ministerial Advisory Group for the Sea Change project established in 2019, and is currently a member of the Hauraki Gulf Fisheries Plan Advisory Group. Raewyn has also published a comprehensive environmental history of the Hauraki Gulf.<sup>1</sup>
4. EDS also has a broader 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

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<sup>1</sup> Raewyn Peart, 2016, *The Story of the Hauraki Gulf*, Bateman, Auckland

system.<sup>2</sup> 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*.<sup>3</sup> It has also sought to improve fisheries decision-making by submitting on proposals to set sustainability measures for the management of various wild fish stocks.<sup>4</sup>

### Summary of submission

5. EDS supports the development of a regionally-based Fisheries Plan for the Hauraki Gulf. Given the extent of environmental degradation in the Hauraki Gulf, and range of growing pressures, an integrated and eco-system based approach to fisheries management is urgently needed.
6. The Fisheries Plan has been split into two Parts: Part A, which is intended to provide guidance only and Part B, which is operative. Section 2.3, on advancing ecosystem-based fisheries management, is currently within Part A. It needs to be moved to Part B, so that it is included in the operative part of the Fisheries Plan.
7. EDS supports the management objectives for the Fisheries Plan set out in Section 6, particularly those identified for “Achieving healthy, functioning aquatic ecosystems that support sustainable fisheries”.
8. EDS supports the proposed Management Actions in the Fisheries Plan with the following amendments:
  - a) Management Action 1.1.1 needs to be amended to only state: “Exclude bottom trawling and Danish seining from the Hauraki Gulf.”
  - b) Management Action 1.1.2 needs to be amended to state: “Exclude all scallop dredging from the Hauraki Gulf.” Management Action 1.1.4 should be deleted as a consequence of that amendment.
  - c) A new Management Action 1.3.5 should be added which states: “Review the current management settings for rock lobster and snapper to ensure populations are rapidly built to sufficient size to keep kina under effective control and maintain healthy kelp forests.”
9. With the amendments set out above, EDS strongly supports the Fisheries Plan. Given the dire state of the Gulf’s ecological systems it is critical that the actions in the Plan are implemented without delay.

### Need for Fisheries Plan to be ambitious

10. The Fisheries Plan has been developed as part of the Government’s response to the Sea Change Marine Spatial Plan (Sea Change Plan). It is intended to be “a first of its kind, area-based Hauraki

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<sup>2</sup> Greg Severinsen and others, 2022, *The Breaking Wave: Oceans Reform in Aotearoa New Zealand*, Environmental Defence Society, Auckland, available from [www.eds.org.nz](http://www.eds.org.nz)

<sup>3</sup> Raewyn Peart, 2018, *Voices from the Sea: Managing New Zealand's Fisheries*, Environmental Defence Society, Auckland, available from [www.eds.org.nz](http://www.eds.org.nz)

<sup>4</sup> Copies of EDS’s recent submissions on a range of wild fish stocks are available from [www.eds.org.nz](http://www.eds.org.nz)

Gulf Fisheries Plan with actions for fisheries management in the Gulf that will be reviewed every five years.”<sup>5</sup>

11. The earlier Sea Change Plan was developed in response to serious concerns about the ongoing degradation of the Hauraki Gulf. It was “a bold and innovative initiative to improve the entire Hauraki Gulf Marine Park and its catchments by taking a fresh look at management, and to develop a roadmap for the future”. The development of the plan was guided by the vision:

*“Tikapa Moana/Te Moananui-ā-Toi – the Hauraki Gulf Marine Park vibrant with life, its mauri strong, productive, and supporting healthy and prosperous communities”.*<sup>6</sup>

12. The Sea Change process and plan had wide agency, cross-sectoral and public support. The process was sponsored and overseen by the key implementing agencies, including the Department of Conservation and the Ministry for Primary Industries. Mana whenua representatives were active participants in the governance of the project and development of the plan.
13. The Sea Change Plan included a chapter on fish stocks which set out a range of management actions to rebuild fish stocks and restore habitats. The Sea Change process itself commenced in 2013 with the plan completed in late 2016, now more than six years ago. In the interim, the ecological condition of the Hauraki Gulf has worsened (see below) meaning that the fisheries management actions set out in the Sea Change Plan are now conservative and are not likely to be sufficiently robust for current challenges. This means that the provisions in the Fisheries Plan need to be more ambitious than those in the Sea Change Plan (and certainly not undermine the outcomes of that lengthy and collaborative process).

#### **Poor ecological state of the Hauraki Gulf**

14. The latest state of the environment report for the Hauraki Gulf Marine Park, published by the Hauraki Gulf Forum in 2020, describes long-term declines in biodiversity, the depletion of taonga species, and the loss of important benthic habitat.<sup>7</sup> Cumulative effects of human-induced pressures, including overfishing, introduction of invasive species and poorly regulated land-based activities (i.e. sedimentation and nutrient run-off), have led to widespread degradation of the marine environment. This has undermined the capacity of species and ecosystems to perform important ecological functions and provide ecosystem services, including fish production.<sup>8</sup>

15. Such decline is highlighted by:

- a) Scallop beds in the Hauraki Gulf being in a state of collapse, with the biomass of commercially fished scallop beds declining by more than 80% in the Coromandel fishery

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<sup>5</sup> Department of Conservation, Fisheries NZ and Ministry for Primary Industries, 2021, *Revitalising the Gulf: Government action on the Sea Change Plan*, at 24

<sup>6</sup> Waikato Regional Council, 2017, *Seachange Tai Timu Tai Pari: Hauraki Gulf Marine Spatial Plan*, Waikato Regional Council, Hamilton, at 17

<sup>7</sup> Hauraki Gulf Forum, 2020, *State of our Gulf 2020: Hauraki Gulf/Tikapa Moana/Te Moananui-ā-Toi State of the Environment Report 2020*, available from [www.haurakigulfforum.org.nz](http://www.haurakigulfforum.org.nz)

<sup>8</sup> Hauraki Gulf Forum, 2020, *State of our Gulf 2020: Hauraki Gulf/Tikapa Moana/Te Moananui-ā-Toi State of the Environment Report 2020*, available from [www.haurakigulfforum.org.nz](http://www.haurakigulfforum.org.nz)

over the past 10 years, and with all beds now closed to commercial and recreational harvest.<sup>9</sup>

- b) Recent research documenting the expansion of kina barrens off Te Hauturu-o-toi/Little Barrier Island and the Noises. Kina barrens surrounding Te Hauturu-o-toi/Little Barrier Island have increased from 0.4% of the rocky reef system in 1953, to 11.6% in 1979 and 32.73% in 2019. The figures for the Noises are even more stark with kina barrens increasing from 23.97% of reef areas in 1978 to 49.52% in 2019.<sup>10</sup> Kina barrens are associated with the fishing down of large snapper and crayfish.
  - c) Newly detected invasive species placing increasing stresses on an already degraded ecosystem. For example, two species of the exotic *Caulerpa* seaweed have recently been found at Aotea/Great Barrier Island and Ahuahu/Great Mercury Island. The seaweeds are spreading rapidly forming vast dense meadows over the seafloor excluding other indigenous species.<sup>11</sup>
  - d) Severe marine heatwaves which have recently hit the Hauraki Gulf, with the 2022 episode being the longest marine heatwave on record. The heated water caused bleaching of large rocky reef sponges, with some appearing to 'melt' off the Hauraki Gulf reefs. This is of considerable concern as the sponges play important ecological and biochemical roles within these rocky reef communities.<sup>12</sup>
16. The impacts of such pressures are not only ecological. It is now difficult to find, let alone harvest, many of the taonga marine species that were once abundant across shallow coastal waters of the Hauraki Gulf. For example, the absence of rock lobsters, scallops, mussels and pāua around Waiheke Island has impeded the continuation of customary harvest practices and led to local tangata whenua imposing rāhui and requesting urgent fisheries closures.
17. Such impacts are very concerning because of the enormous importance of the Hauraki Gulf to regional communities and Aotearoa New Zealand as a whole. It is such poor outcomes that need to be addressed in the Fisheries Plan.

### **Submissions on broad elements of the Fisheries Plan**

18. The Fisheries Plan has been split into two Parts. Part A is intended to provide guidance only. Part B will be approved by the Minister and become an operative fisheries plan under the Fisheries Act 1996. Section 2.3 on advancing ecosystem-based fisheries management is currently in Part A.
19. EDS considers that Section 2.3 should be included in the operative part of the Fisheries Plan (Part B) to help ensure that an ecosystems-based lens is properly applied when implementing plan provisions.

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<sup>9</sup> Fisheries New Zealand, 2021, *Review of sustainability measures for New Zealand scallops (SCA 1 & SCA CS) for 2022/23*, FNZ Discussion Paper No 2021/30, available at [www.mpi.govt.nz](http://www.mpi.govt.nz)

<sup>10</sup> Dartnell L, 2022, *The extent of kina barrens over time at Hauturu-o-Toi and the Noises Islands*, Masters of Marine Studies Masters thesis, University of Auckland

<sup>11</sup> <https://www.mpi.govt.nz/biosecurity/major-pest-and-disease-threats/caulerpa-exotic-seaweeds-found-at-great-barrier-and-great-mercury-islands/#About>

<sup>12</sup> Shears N, 2022, *Marine heatwave and melting sponges in Te Moananui o Toi – the Hauraki Gulf, Aotearoa New Zealand*, Youtube video, 9 June, at <https://www.youtube.com/watch?v=Cvmp1jQIJc>

20. EDS supports the management objectives for the Fisheries Plan set out in Section 6, particularly those identified for “Achieving healthy, functioning aquatic ecosystems that support sustainable fisheries” which are:

- (a) Protect marine benthic habitats from any adverse effects of bottom contact fishing methods, to enable passive and active restoration that support ecosystem services.
- (b) Protect marine habitats, that have been identified as having ecological importance, from any adverse effects of fishing.
- (c) Mitigate the impacts of fishing on the marine food chain.
- (d) Reduce fishing-related deaths of non-fish and protected species, working towards zero deaths by 2050.

### **Detailed submissions on Fisheries Plan**

21. Many of the Management Actions in the Fisheries Plan are positive and supported by EDS however, the plan needs amendment in two key areas. It fails to adequately address two of the most serious fisheries-related threats to the Hauraki Gulf: the impact of bottom contact fishing methods on benthic habitats and the impact of the harvest of rock lobster and snapper on the expansion of kina barrens and consequential widespread loss of kelp reef systems.

#### *Bottom contact fishing methods*

22. The Sea Change Plan recognised the damaging impacts of bottom contact fishing methods on marine habitats. In response it required a phase out of all bottom trawling, Danish seining and scallop dredging from the Hauraki Gulf, with all such methods excluded by 2025.

23. The Fisheries Plan recognises this imperative in Management Objective 1.1 which is to “Protect marine benthic habitats from any adverse effects of bottom contact fishing methods ...”. However, the management actions fail to achieve this objective:

- a) Management Action 1.1.1 requires that bottom trawling and Danish seining be excluded from the Hauraki Gulf, except in some “defined areas” or “corridors” which are yet to be defined. This means that these damaging fishing methods will be able to continue in parts of the Hauraki Gulf Marine Park.
- b) Management Action 1.1.2 requires that recreational, but not commercial, scallop dredging is excluded from the Hauraki Gulf. Commercial dredging can continue in the Gulf under Management Action 1.1.4 “within defined commercial dredging access areas that are informed by the commercial dredging footprint.”

24. It is well accepted that trawling, dredging and Danish seining have adverse impacts on benthic habitats which can be significant. As summarised in Chapter 11 of the Aquatic Environment and Biodiversity Annual Review 2021, “biogenic habitats are important features of the seabed because they support diverse communities”, “contact with fishing gear can damage or kill benthic organisms, create a disturbance, and change the nature of the physical habitat”, and “bottom fisheries can have extensive and long-lasting effects on seabed species and habitats”.<sup>13</sup>

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<sup>13</sup> <https://www.mpi.govt.nz/dmsdocument/51682-Chapter-11-Benthic-seabed-impacts>

25. Such impacts have been extensive and pervasive throughout most of the Hauraki Gulf, and recovery of benthic habitats will only be possible if such activities are excluded. The Fisheries Plan should require the cessation of all *bottom contact fishing methods* to allow for this recovery and to properly implement the Sea Change Plan.

26. Accordingly, EDS submits that:

- a) Management Action 1.1.1 should be amended to state “Exclude bottom trawling and Danish seining from the Hauraki Gulf”, with no area or corridor qualification.
- b) Management Action 1.1.2 should be amended to state “Exclude all scallop dredging from the Hauraki Gulf.” Management Action 1.1.4 should be consequentially deleted.

#### *Kina barrens*

27. The Sea Change Plan directly addressed the issue of the expansion of kina barrens in the Hauraki Gulf due to over-fishing of large predators, such as rock lobster and snapper. It states as an action “Implement a package of management measures aimed at reducing the density of kina, improving the condition of harvestable kina and restoring healthy kelp forests.”<sup>14</sup> As part of this package it identifies as a management measure, “Restoring the abundance of kina predators, including rock lobster and snapper, to levels that keep kina populations under effective control.”

28. As indicated above, kina barrens are currently expanding in the Hauraki Gulf and are at alarming levels on inshore reefs, such as at the Noises Islands. The widespread loss of kelp forest habitat in the Hauraki Gulf represents a significant threat to fish stocks, as well as broader marine biodiversity and ecosystem functioning.

29. For example, kelp forests are an important facilitator of rock lobster puerulus settlement onto rocky reefs after larval transition, with the physical structure and chemical cues emitted by them having a positive effect on settlement and recruitment levels.<sup>15</sup> Scientists have recorded significantly higher survival rates of juvenile rock lobster (40%) in kelp habitat versus in urchin barren habitat (10%).<sup>16</sup> The differences in survivorship were attributed to increased predation of juvenile rock lobster due to exposure in urchin barrens habitats that were devoid of shelter.

30. Macroalgal forests fulfil a variety of other important functions. Many kelp species are adapted to tolerate vigorous water movement and turbulence, which promotes high levels of nutrient uptake, photosynthesis and growth. In turn, the carbon produced by kelp during photosynthesis fuels marine food webs through the primary production of tissues and secondary production of detritus.<sup>17</sup>

31. Macroalgal forests are structurally complex and provide habitat for finfish and invertebrates. Studies have shown that kelp canopies reduce light intensity on the reef surface beneath, which

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<sup>14</sup> Waikato Regional Council, 2017, *Seachange Tai Timu Tai Pari: Hauraki Gulf Marine Spatial Plan*, Waikato Regional Council, Hamilton, at 68

<sup>15</sup> Hinojoa, I.A., Green, B.S., Gardner, C., and Jeffs, A, 2015, *Settlement and early survival of southern rock lobster, *Jasus edwardsii*, under climate-driven of kelp habitats*, *ICES Journal of Marine Science*, 72 (Supplement 1)

<sup>16</sup> Ibid

<sup>17</sup> See review by Teagle, H., Hawkins, S.J., Moore, P.J., and Smale, D.A, 2017, *The role of kelp species as biogenic habitat formers in coastal marine ecosystems*, *Journal of Experimental Marine Biology and Ecology*, 492, 81-98

creates favourable conditions for small encrusting animals. In addition, they modulate wave energy, maintain water clarity, and prevent sediment movement.<sup>18</sup>

32. Research has also identified that kelp forests provide an essential food source for at least four fish species, and a critical habitat for crested weedfish and triplefin fish species in north-eastern New Zealand (including the Hauraki Gulf). These species-habitat associations represent a “*strict dependence*” relationship, which means the localised loss of kelp forest habitat could drive these species to extinction.<sup>19</sup>
33. In contrast, urchin barrens represent a significant decline in primary productivity and structural complexity.<sup>20</sup> It is widely accepted that urchin barrens are an indicator of significant ecosystem degradation.<sup>21</sup>
34. The Fisheries Plan does not adequately address the development of kina barrens. Management Action 1.3.4 states “facilitate the co-development of a kina management plan, which will also address the environmental impacts of kina barrens”.
35. EDS submits that a new Management Action 1.3.5 should be added to the Fisheries Plan which states “Review the current management settings for rock lobster and snapper to ensure that populations are rapidly built up to sufficient size to keep kina populations under effective control and maintain healthy kelp forests.”

## Conclusion

36. With the amendments set out above, EDS strongly supports the development of a Fisheries Plan for the Hauraki Gulf. Given the dire state of the Gulf’s ecological systems it is critical that the actions in the Plan are implemented without delay.

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<sup>18</sup> Ibid

<sup>19</sup> See review by Jones, G.P., 2013, *Ecology of rocky reef fish of northeastern New Zealand: 50 years on*, New Zealand Journal of Marine and Freshwater Research, 47:3, 334-359, doi: 10.1080/00288330.2013.812569

<sup>20</sup> As evident in the results reported by Babcock, R.C., Kelly, S., Shears, N.T., Walker, J.W., and Willis, T.J., 1999, *Changes in community structure in temperate marine reserves*, *Mar Ecol Prog Ser* 189: 125–134 which found increased productivity following the recovery of kelp forests in a marine reserve off the coast of northeastern Aotearoa New Zealand

<sup>21</sup> See Filbee-Dexter, K. and Schiebling, R.E., 2014, *Sea urchin barrens as alternative stable states of collapsed kelp ecosystems*, *Mar Ecol Prog Ser*, 495:1-25; Ling, S.D., et al., 2015, *Global regime shift dynamics of catastrophic sea urchin overgrazing*, *Phil. Trans R Soc. B*, 370:20130269