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## Submission: Climate action for Aotearoa

### General Introduction

1. Our Seas Our Future (“OSOF”) is a not-for-profit- organisation that aims to protect New Zealand’s coastal and marine ecosystems through advocacy, education, and environmental stewardship, ensuring that they are managed sustainably and protected for future generations.
2. Our membership includes a diverse group of science practitioners, professionals, and specialist researchers working in ecology related fields, as well as marine conservation and sustainable development.
3. OSOF supports the actions taken by the Climate Change Commission in committing to net zero emissions of long-lived gases by 2050, and to reducing biogenic methane emissions by between 24-47% by 2050. We support the mandate that Aotearoa must focus on decarbonising and reducing emissions at the source, and that the Government must urgently address issues of climate change across sectors with strong and decisive policy action.
4. OSOF welcomes the opportunity to comment on the Climate Change Commission’s 2021 Draft Advice for Consultation. We advocate for transformative actions that are in the best interest of achieving a thriving, climate-resilient and low emissions Aotearoa, which will better align us with current international best practice to protect our natural environment and marine life from the impacts of climate change.

5. OSOF highlights that the current Draft Advice for Consultation makes little reference to the impacts of climate change on our marine biodiversity and ecosystems. Emissions reductions targets for Aotearoa must consider the enduring impacts on our marine environment, particularly given the urgency of the climate crisis and the irreversible costs of pushing out reduction goals to 2050. The future of climate change resilient Aotearoa is dependent on the health of our marine ecosystems.
  
6. The Commission's advice focuses on reducing methane emissions from organics that end up in landfills. It also needs to include the long-lived GHG emissions generated upstream from extraction, production, transport and consumption of packaging, as well as other materials. The Commission's general waste advice takes us in the right direction but the recommendations need to be more specific, holistic, and ambitious to harness the power of reduction, reuse and recovery strategies to reduce our emissions.

## Our Submission

### KEY ISSUES:

Our native marine species and habitats are under threat due to climate change

New Zealand holds an important place globally as a critical habitat for many major marine species, with around half of the world's cetacean species (whales, dolphins, and porpoises) recorded in New Zealand waters. The oceans around Aotearoa are home to a rich variety of tāonga species like pygmy blue whale, New Zealand sea lion, Maui and Hector's dolphin, kahawai, and kina. Aotearoa is the seabird capital of the world with a greater range of seabirds nesting and breeding on our islands than anywhere else.<sup>1</sup> Our activities today in the area of emissions reductions will leave an indelible legacy for marine conservation.

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[https://d3n8a8pro7vhmx.cloudfront.net/beachheroes/pages/13966/attachments/original/1600465992/Thriving\\_Oceans\\_Plan\\_policy\\_document.pdf?1600465992](https://d3n8a8pro7vhmx.cloudfront.net/beachheroes/pages/13966/attachments/original/1600465992/Thriving_Oceans_Plan_policy_document.pdf?1600465992)

Around 30 percent of Aotearoa New Zealand's biodiversity is in the sea but many species are in trouble. Of the small number assessed, 22 percent of marine mammals, 90 percent of seabirds and 80 percent of shorebirds are threatened with, or at risk of, extinction.<sup>2</sup>

Further, many species are at risk of losing their habitats over the coming years as a direct consequence of climate change. We know that these changes due to climatic shifts can be difficult to repair, and some are irreversible, with only few habitats and species able to recover from disturbance or depletion.

Climate change is affecting our oceans and marine ecosystems, and our natural resilience to climate pollution

**Consultation Q11. Do you support our approach to focus on growing new native forests to create a long-lived source of carbon removals? Is there anything we should change, and why?**

It is well recorded that existing economic and industrial activities are having dire consequences for the health of our oceans and coastal ecosystems, both in New Zealand and internationally.<sup>3</sup>

Importantly, New Zealand's oceans play a huge role in limiting climate pollution, and potentially take up more carbon dioxide than our forests, thus alleviating the burdens of excess carbon dioxide on our planet.<sup>45</sup> Oceans regulate our climate and influence our weather. Oceans have also absorbed 90% of extra heat from the atmosphere associated with global warming. Our oceans act as a major carbon sink, absorbing about 30 percent of the carbon dioxide emitted by human activities since pre-industrial times. Thus, there needs to be a strong onus on protecting our marine systems in order to ensure a long-lived source of carbon removals.

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<sup>2</sup>

<https://www.mfe.govt.nz/publications/marine/our-marine-environment-2019/issue-1-our-native-marine-species-and-habitats-are>

<sup>3</sup> [https://niwa.co.nz/our-science/climate/information-and-resources/clivar/climate\\_change](https://niwa.co.nz/our-science/climate/information-and-resources/clivar/climate_change)

<sup>4</sup> [https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap30\\_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap30_FINAL.pdf)

<sup>5</sup> <https://www.tandfonline.com/doi/abs/10.1080/14693062.2012.620788>

However, carbon dioxide absorption leads to ocean acidification - a phenomenon where the resulting chemical reactions produce hydrogen ions that acidify the water and decrease seawater pH. Ocean acidification is incredibly damaging to marine ecosystems. It reduces the concentration of calcium carbonate in seawater; a building block for the skeletons and shells of many marine organisms. Marine experts have ranked ocean acidification as the most serious threat to New Zealand's marine habitats, and the IPCC concludes that it will take tens of thousands of years to reverse the profound changes to the carbon chemistry of the ocean. Ocean acidification is almost solely caused by increased concentrations of atmospheric carbon dioxide, making the reduction of carbon emissions the most effective way to mitigate ocean acidification.

Intensifying carbon pollution has steadily caused the water in New Zealand's oceans to become warmer, more acidic and expand, causing sea-levels to rise. Sea-level rise during the past 60 years was 2.4mm a year, double the rise during the previous 60 years. New Zealand coastal waters have warmed to between 0.1 and 0.2 degrees Celsius per decade on average. This is not without serious cost: the warmer the water gets, the less ability it has to absorb gases like carbon dioxide, reducing the ability to buffer the effects of climate change. Marine heat waves are occurring and have similar devastating effects as on land. During the unprecedented 2017/18 marine heatwave in the South Island, bull kelp suffered losses in Kaikōura and were completely lost from some reefs in Lyttelton.<sup>6</sup> We recognise these impacts on biodiversity emerge from disturbances in the balance of ecosystems owing to global warming.

In addition, the viability of our ocean species are at certain risk due to increasing emissions. Ocean acidification occurs due to high concentrations of hydrogen ions alongside decreasing carbonate ions, a function of increased carbon dioxide levels. Various marine and fish species, such as mussels, crabs, as well as corals, depend on carbonate ions to grow their shells and skeletons for survival.<sup>7</sup>

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<sup>6</sup> [https://niwa.co.nz/our-science/climate/information-and-resources/clivar/climate\\_change](https://niwa.co.nz/our-science/climate/information-and-resources/clivar/climate_change)

<sup>7</sup> <https://www.ucsusa.org/resources/co2-and-ocean-acidification>

With highly acidic waters and a reduction in minerals critical for the survival of a variety of marine species, the sustainability of our fisheries and marine ecosystems in the future are at risk.<sup>8</sup> As one example, long-term measurements off the Otago coast show an increase of 7.1 percent in ocean acidity in the past 20 years.<sup>9</sup> Shellfish, including oysters, pāua and mussels, are extremely vulnerable to increasing ocean acidity, which is a significant risk for the shellfish-farming industry, while also threatening the sources of kaimoana our communities rely on.

Climate projections suggest the pH of waters around New Zealand will decrease by 0.3 to 0.4 pH units by the end of this century.<sup>10</sup> Oceans will continue to become more acidic as they absorb more carbon dioxide, and reversing this change will take tens of thousands of years.<sup>11</sup> Further, the impacts of climate change have already affected ocean productivity in New Zealand, which sustains our marine systems.<sup>12</sup> Phytoplankton abundance indicates ocean primary productivity, where primary productivity is the creation of energy by living organisms, supporting the energy for most marine food webs.

It is critical that efforts to address the systemic impacts of climate change includes specific measures to protect our marine ecosystems and biodiversity. We benefit from the role oceans have in regulating our climate and storing carbon but these benefits will be compromised by climate change. In order to create ecosystems that are more resilient to the impacts of climate change, it is imperative that we introduce measures to reduce fishing pressures. Having an abundance of fish and other marine life in the sea allows for more carbon to take place: a vital process that locks carbon emissions away.<sup>13</sup>

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<sup>8</sup> <https://niwa.co.nz/research-subject/ocean-acidification>

<sup>9</sup>

<https://www.mfe.govt.nz/publications/marine/our-marine-environment-2019/issue-4-climate-change-affecting-marine-ecosystems>

<sup>10</sup>

<https://www.mfe.govt.nz/publications/marine/our-marine-environment-2019/issue-4-climate-change-affecting-marine-ecosystems>

<sup>11</sup> <https://www.ipcc.ch/report/ar5/syr/>

<sup>12</sup>

<https://www.mfe.govt.nz/publications/marine/our-marine-environment-2019/issue-4-climate-change-affecting-marine-ecosystems>

<sup>13</sup> <https://www.greenpeace.org/aotearoa/story/how-does-overfishing-make-climate-change-worse>  
<https://www.ipcc.ch/srocc/>

In light of this evidence, we support the following actions under a concerted marine strategy, as per the proposed [Thriving Oceans Plan](#):

- Protecting at least 30% of Aotearoa's oceans by 2030, with the aim to increase this percentage through new legislation to create a network of marine protected areas in the territorial sea and the EEZ
- Restoring the health of the Hauraki Gulf/Tīkapa Moana/Te Moananui ā Toi by urgently phasing out the most ecologically harmful commercial fishing practices.
- Working internationally to support the progress toward a Global Oceans Treaty.
- Investing up to \$50 million to help fishers transition to more sustainable, less climate intensive fishing methods
- A 10 year moratorium on all forms of seabed mining, including dredging iron sands and extraction from hydrothermal vents. A moratorium will allow time for a robust assessment of whether seabed mining can or should be undertaken anywhere in New Zealand's ocean space, and if so, under what conditions. It will allow research into potential environmental effects (including emissions impacts) and the rollout of comprehensive marine spatial planning.

The habitats we rely on and draw sustenance from are under threat

Rising sea levels mean rising coastal water tables, leading to semi-permanent or permanent inundation (flooding) of low-lying areas, and the potential for salt water to get into freshwater systems, which will be damaging.<sup>14</sup>

We are at grave risk of damaging the natural habitats we rely on for sustenance and resilience to climate change. Habitats like mangroves, seagrass meadows, and kelp capture and sequester carbon. They can also act as buffers to more extreme

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<https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/climate-change-implications-for-new-zealand/key-risks/ocean/>

weather events. Mangrove forests hold sediment and reduce coastal erosion. This reduces nutrient inputs into estuaries and the ocean and improves water quality for harvesting food, diving, and swimming. Other nursery habitats, such as seagrass meadows, provide support for species such as snapper, and are an important food source, thus impacting on the health of our fisheries.<sup>15</sup>

## Climate change results in natural disaster risks

Many New Zealanders live either on coasts or on floodplains, exposing us to coastal inundation and flood events. A recent report of the Parliamentary Commissioner for the Environment indicates that thousands of households in many towns and cities will be affected. Shoreline ecology, public infrastructure, residential and commercial assets, community values and the future utility of coastal-marine resources will be severely affected by changes to coastlines due to sea level rise, storm surge, and secondary effects such as erosion and flooding.<sup>16</sup>

About two-thirds of New Zealand's population lives in areas prone to flooding, which is New Zealand's most frequent and, after earthquakes, most costly insured disaster.<sup>17</sup> Given that many New Zealanders live on floodplains, rising sea levels will result in damaging flood events occurring more frequently in both urban and rural areas of the country. Near the coast, floods will be exacerbated by rising sea levels and storm surges. Away from the coasts they will increase erosion, siltation and building damage.

The literature is clear: coastal ecosystems like mangroves, salt marshes and seagrasses play a vital role in carbon storage and sequestration.<sup>18</sup> Per unit of area, they sequester carbon faster and far more efficiently than terrestrial forests. When these ecosystems are degraded, lost or converted, massive amounts of CO<sub>2</sub> – an

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<sup>15</sup>

<https://www.mfe.govt.nz/publications/marine/our-marine-environment-2019/issue-1-our-native-marine-species-and-habitats-are>

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<https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/climate-change-implications-for-new-zealand/key-risks/ocean/>

<sup>17</sup>

<https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/climate-change-implications-for-new-zealand/key-risks/ocean/>

<sup>18</sup> <https://www.iucn.org/resources/issues-briefs/ocean-and-climate-change>

estimated 0.15-1.02 billion tons every year – are released into the atmosphere or ocean, accounting for up to 19% of global carbon emissions from deforestation.

The ecosystem services such as flood and storm protection that they provide are also lost.

## Climate intensive activities on land are destroying our marine environment

As outlined in the draft report, agriculture has a large role to play in reducing emissions, and farming needs to become even more efficient. There have been improvements in the last few decades in developing 'green' or climate resilient agricultural practice, but they must be ramped up to avoid causing further damage to our marine ecosystems and biodiversity.

For instance, sediment (silt, mud, and various other organic materials) is moved by water. Soil washed from pastures and from forests after felling moves along waterways and settles as sediment on streambeds, filling in the spaces used by fish and invertebrates for hiding and breeding, and makes it more difficult for them to find and consume their food.<sup>19</sup>

Our everyday activities in cities and towns, and our use of rural areas, have altered the state of many of our coastal ecosystems. They receive and process pollutants from the land, and many of the changes that have occurred have compromised the ecological health of coasts and estuaries following European settlement.<sup>20</sup>

The issues at hand are interwoven, and require a cohesive, holistic set of solutions across sectors

### **Consultation Q19: Multi Sector strategy**

We support the recommendation stated by the Commission in advancing a cohesive, multisectoral strategy that includes water, biodiversity and climate. The ongoing

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<sup>19</sup>

<https://www.mfe.govt.nz/publications/marine/our-marine-environment-2019/issue-2-our-activities-land-are-polluting-our-marine>

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<https://www.mfe.govt.nz/publications/marine/our-marine-environment-2019/issue-2-our-activities-land-are-polluting-our-marine>

damage done to our native species and ecosystems are the consequence of an interlocking combination of events and activities, including:

- what we do on land, as our activities on land are polluting our marine environment
- what we do in the sea, as our activities at sea are affecting the marine environment
- the increasing pressures from climate change

Agriculture, forestry and waste sector emissions represent a critical threat to our natural ecosystems and marine biodiversity, impacting on human and planetary health. We highlight some that these interactions are continuing to accelerate the degradation and loss of our natural taonga. Further impacts on marine biodiversity and habitats are the result of historical activities, like the first conversions of land from native forest, early exploitation and localised depletion of coastal kaimoana, and the industrialisation of fishing. We have a history of intensive farming and industrialisation, which has created these problems over generations, but we have the opportunity to resolve them now to avert further degradation.

## Policy and Governance

**Consultation Q2: Do you agree we have struck a fair balance between requiring the current generation to take action, and leaving future generations to do more work to meet the 2050 target and beyond?**

The cost must fall on industries most responsible. Our policy approaches to equity must ensure that the cost of transitioning to a low-carbon future falls on industries and companies most responsible for climate change rather than individual consumers so that policies do not regressively impact low-income communities. We need a stronger system of checks and balances to ensure history does not repeat itself again, particularly given our legacy of environmentally destructive practices as a developed and highly industrialised first world country.

Our approach to transitioning equitably must take into account our role as a developed nation that has historically contributed more than our fair share of emissions, and account for the high-polluting industries that have profited from decades of pollution with little consequence. It is essential that our actions account for our fair share to reduce the burden on future generations and communities on the frontlines of climate impacts, particularly when considering our neighbours in the Pacific Islands, who have contributed the least to the problem but are paying the highest costs.

The degradation of coastal and marine ecosystems threatens the physical, economic and food security of coastal communities – around 40% of the world population. Local fishers, indigenous and other coastal communities, international business organisations and the tourism industry are already seeing the effects of climate change particularly in Small Island Developing States (SIDS) and many of the Least Developed Countries (LDCs).<sup>21</sup> We have humanitarian obligations to the international community and most vulnerable to ensure that this does not continue.

### Current recommendations on Climate Change and RMA:

Align legislation and policy to enable local government to make effective decisions for climate change mitigation and adaptation, including aligning the Local Government Act, the Building Act and Code, national direction under the RMA, the proposed RMA reforms, implementation of the freshwater management framework and the 30-year infrastructure plan. Government to have, by 30 June 2022, outlined its progress on developing the necessary partnerships between central and local government.

### **Consultation Q8: Central and local government working in partnership**

The current local government implementation of climate change mitigation and adaptation measures is inconsistent, largely due to insufficient alignment between key pieces of legislation and national direction.

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<sup>21</sup> <https://www.iucn.org/resources/issues-briefs/ocean-and-climate-change>

In 2004, the RMA was amended to essentially prevent local authorities from considering the effects of greenhouse gas discharges on climate change in planning and resource consent decisions unless it related to the benefits of renewable energy. As the key piece of legislation for environmental planning, this left a large gap in New Zealand's response to greenhouse gas emissions. In 2020 this was amended so that local authorities can consider greenhouse gas emissions once national direction is put in place under the Zero Carbon Act. It is essential that this national direction is enacted as soon as possible so that local authorities can include the effects of greenhouse gas emissions in their decisions.

It is also important that national direction under the RMA (or its replacement) directs consistent and clear actions from local authorities. Currently, it can be difficult for local authorities to implement the often-conflicting provisions of national direction. For example, reconciling the provisions of the National Policy Statement for Renewable Electricity Generation with the National Policy Statement for Freshwater Management (**NPSFM**) can be problematic. On one hand, renewable electricity is essential to meeting New Zealand's zero carbon ambitions. However, renewable electricity generation activities can also have negative effects on freshwater ecosystems. New national direction is needed to assist local authorities in implementing these provisions.

Key pieces of legislation must be aligned so that local authorities can implement a climate change response in a consistent manner. As greenhouse gas emissions impact climate change on a global level, it makes sense to have national direction prescribe what this response should look like. However, it is important that local authorities have more flexibility in how to implement adaptation measures (such as flood protection, erosion control, and managed retreat) as this response must be tailored to the local context.

While it is important that central government creates broad strategic policy and provides funding to local bodies, local authorities can only respond effectively if government agencies on ground (including MfE, MPI and landholding agencies like DOC, LINZ and MHUD) also have a mandate to put climate change at the centre of their decision-making and leadership in directing local authorities. We emphasise that the effectiveness of a well coordinated and concerted response on ground is

dependent on a robust partnership between local authorities and central government, and in accordance with well established indicators of progress.

It is also essential that local authorities are provided with funding to implement emissions reduction plans and new policy requirements. Implementing large scale policy change is extremely time and resource intensive for local authorities. Local authorities are currently undertaking the large task of implementing the 2017 and 2020 amendments to the NPSFM. Along with this work and implementing further policy change under a new resource management legislation framework, it will be crucial that local authorities are provided with financial assistance to effectively implement a response to climate change mitigation and adaptation.

### **Consultation Q9: Establish processes for incorporating the views of all New Zealanders**

We support the mandate that central and local government develop new and more effective mechanisms to incorporate the views of all New Zealanders when determining how to prioritise climate actions and policies to meet emissions budgets over the next 30 years, to create more inclusive policy development.

In particular, we highlight the need to improve outreach mechanisms in order to engage communities generally left out of consultative forums. We support proactive forms of community consultation, across diverse communities who are otherwise not fully engaged with civic participatory processes. Formats that may better engage diverse segments of the public could include focus groups and hui across the country at schools, universities, cultural and community groups, and so on, to ensure as many New Zealanders as possible are given the opportunity to be involved in consultation. We support the use of digital tools in engaging people outside traditional spaces, including online forums and social media outlets.

Alongside opportunities for public engagement, we strongly advance better public communication mechanisms and investments in science education, particularly in addressing some of the key issues and science at stake in considerations of climate

change, as well as the social and economic impacts of inaction. We recognise that technicalities and jargonistic science can often make it difficult for the public to comment and engage in understanding the impacts of climate change in their everyday lives without specialist knowledge. Making relevant information more accessible to broad audiences is crucial in bringing about more inclusive policy outcomes. We recognise that the Government can and should influence consumers to adopt more environmentally conscious practices, and improve collective attitudes amongst people in achieving sustainability goals.

### **Consultation Q7: Genuine, active and enduring partnership with iwi/Māori**

OSOF recognises that climate policy and emissions reductions plans in Aotearoa must be underpinned by a commitment to honouring te Tiriti o Waitangi. There must be central recognition of the special kaitiaki role Māori play in managing our natural resources and our responsibilities pursuant to Te Tiriti o Waitangi in legislation, with a focus on climate change. Iwi and hapū have rangatiratanga over our environment, protected under Te Tiriti. Effective environmental strategy can be operationalised in a way that centres kaitiakitanga, and new approaches should take place with the involvement of iwi and hapū. We identify the potential impacts of climate change to include the irreversible loss of significant taonga and mātauranga Māori.<sup>22</sup> In addition, the Crown has a fundamental obligation to protect marine environments for the benefit of future generations and the natural world that sustains us all, with climate policy part of this critical responsibility.

We support and encourage partnerships with iwi to sustainably manage marine resources, and engage in effective emissions reductions.

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<sup>22</sup> <https://www.ipcc.ch/srocc/chapter/summary-for-policymakers/>