

# Response ID ANON-DHPY-JD4B-S

Submitted to Draft Environment and Climate Research Strategy (ECRS)  
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## Section 1: Submitter details

1 What is your name?

Full name::  
Jack Marshall

2 What organisation do you work for?

Organisation name::  
Ngā Ara Whetū is a Research Centre on Climate, Biodiversity and Society at the University of Auckland

3 What is your role?

Role::  
Content writer and coordinator

4 What is your contact email address?

Email::  
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5 Which region are you in?

Select your region::  
Auckland | Tāmaki-makau-rau

6 Please select the sector you are associated with:

Select your sector::  
University

Other: please specify here:

7 Can we contact you in future to find out if you have used the strategy and how it has helped your organisation?

Yes, you can contact me

## Section 2: Purpose and Outcomes

1 Please rate how much you think the strategy will achieve its purpose:

Q1: Strategy achieving purpose - rating - To what extent do you think the strategy as it stands can achieve this purpose?:  
2

Please explain your answer here:

About Ngā Ara Whetū

Ngā Ara Whetū is a Research Centre on Climate, Biodiversity and Society at the University of Auckland. Ngā Ara Whetū (Star Paths) highlights the ethos of our centre named for the journeys of our collective ancestors to the shores of Aotearoa, New Zealand. Ngā Ara Whetū enables and enhances collaborative research and training.

The Ngā Ara Whetū network draws on transdisciplinary scholarship at the University of Auckland in the fields of the natural sciences, social and health sciences, Māori studies, law, engineering, and economics. It strives to connect this work to policymakers and the public, engaging Aotearoa New Zealand in environmental action.

In response to the Ministry's question:

We appreciate the high-level scope of this document. It comprises a wide sweeping set of admirable aspirations that together provide clear vision. We also appreciate the opportunity that it provides to develop and guide research for the environment in a changing climate. However, we are concerned that without depth, specificity, and deliberate effort for transformation, there remains a signal for allowing incremental progress that amounts to continuing with the status quo. And we know now that the ongoing environmental degradation will not be addressed without a radical shift in our

approaches to research and mitigation.

While the strategy scope and tone are commendable, it falls short of the reach toward the need for national transformation in approaches to environmental stewardship that is needed. This is because there are too many missing components, and its approach does not explicitly recognise many complexities of either interconnected systems or identifying critical natural cycles that must be addressed. The document identifies a range of research priorities that touch on the relevant range of research that is needed, but the content is simplistic, which will likely maintain the status quo. We encourage MfE to produce a more ambitious and thorough strategy with detailed targets and pathways to achieve those targets. Here are some considerations: Related to the dual crises of climate and biodiversity, climate change impacts on biodiversity are often equated with extinctions. However, sub-lethal impacts are highly damaging for ecosystem processes. While ecosystem services are mentioned 18 times in the document, it is the ecosystem processes that underpin ecosystem services that will be influenced by a changing climate. Thus, we need to monitor and measure these processes (particularly water cycling, nutrient cycling, pollution in the land, water and air, and carbon cycling). These are related to climate change's indirect impacts on biodiversity, which is not explicitly acknowledged. Without proper quantification of both the current state and climate change impacts on these cycles, we cannot properly understand the impact of climate change on future carbon uptake and storage. Climate change exacerbates existing threats, and there are many effects that we still do not understand, which if missed, will escalate the crises. Finally, the connections between marine, terrestrial and social systems need stronger understandings.

The social dimension of the document is under-considered. Outcomes are dependent on social and political knowledge and action. Currently, our societies are inundated with misinformation, disinformation, and distractions that prevent integrating knowledge, goals, and appropriate actions into our communities. Some of this is due to failures of communicating these complex environmental realities with our broader communities in understandable, relatable ways such that they participate in constructive solutions to the crises. However, even with excellent communication, misinformation can still undermine effective, evidenced based responses (as seen during the COVID-19 pandemic). The internet facilitates the rapid, widespread sharing of false and misleading information. Further research is needed on what makes individuals in New Zealand susceptible to misinformation, and how to counteract it. Further, given the existing knowledge about the climate and biodiversity crises, there should be a focus on why action has not been taken, how to enable changes necessary to contain global emissions and how to reconcile divergent values and interests. The ECRS should address this challenge by acting as a reference for the environmental priorities that must be addressed within aligned programs, policies, actions, and investments by other ministerial and community investments to have wider the ranging impact.

Much more attention needs to be given to extreme events, which can have the biggest, most sudden, and often unexpected impacts. We need to research the mechanisms of impact and pathways of recovery to identify, for example, vulnerable ecosystems and species and plan for interventions. This includes drought, floods, storms, cyclones and fires. New Zealand's flora does not have fire adaptations, making our ecosystems vulnerable to replacement by invasive species from fire-prone parts of the world. These introduced plants are often more flammable, increasing the risks of future fires. While there is research in this area, fire needs greater attention as a severe threat (particularly in the context of increasing severity and frequency of droughts). The tooling to provide adequate risk assessment and planning, as well as tactical predictive capabilities for these types of environmental hazards is lacking, and needs to be identified better within the document.

We think it is important to understand that there are multiple trajectories of knowledge development. Some of this is place-centred, as the realities in each area vary, requiring improved dialogue, deliberation and decision-making processes.

Question 2: Please rate the extent to which you think the strategy will enable us to achieve our outcomes. Answer only those that apply.

We reiterate our concerns articulated under question one and believe these aforesaid weaknesses will prevent achievement of outcomes. While we applaud the effort toward inclusivity, we fear that these goals are also hampered by a paucity of pathways for Maori engagement, which needs to be prioritised. We encourage new pathways, including scholarships for Maori students and mana whenua.

We agree that trans-disciplinarity is important. However, it is unclear what disciplines are included in this plan, and how this trans-disciplinarity will be developed. Any transformation of the status quo requires collaboration across disciplines, including between natural and social scientists. How will this be encouraged and approached? How will the relationships be developed amongst these scholars and others? What training and rigor will be applied? How will action be driven? What capacities and capabilities are needed for this?

For research to succeed, concrete action, data gathering, measurement and analysis are necessary. But the document does not specify the strategies for data-gathering, measurement, modelling and other means of analysis for likely outcomes under different scenarios. Without these, and without clearly articulated goals, it is unlikely we will reach them.

To date, research institutions, including academic institutions, CRIs, and related private and public entities, have been underfunded in the areas of environment and climate research, and forced to compete for those scarce dollars. The crises we are facing require cooperation and data-sharing instead of competition and operating in silos. Transformation requires recognising expertise while encouraging cooperation, in part by structuring the funding models for that purpose. Current research models sometimes do not encourage wide-ranging participation, so we encourage a shift that prevents domination or monopolisation over domains of research.

The ECRS similarly is placed to better articulate the crisis in information access. New Zealand is distinctively, if not embarrassingly, behind world's best practices in open access data sharing. Aspects of this are noted with the draft, however, the final strategy is the correct place to identify some of the clear needs for investment in the provision of data curation and management that is separated from the investment in research outcomes. The latter has the deleterious outcome of linking hoarding of data repositories to competitive advantage for siloed funding at the expense of the needed national transformation in environment and climate research strategy. We also note the need to work with Māori to ensure their interests in data sovereignty and access and benefit sharing included.

Finally, while we understand the simultaneous research needs for three goals: environmental protection, strengthening the economy and improving social and cultural connections, we think the economy is wholly dependent and reliant on the other two goals and must be acknowledged as such. Putting environmental protection and socio-cultural aspirations first is a fundamental shift in thinking and basis for action. It is a big part of answering the questions about inaction posed earlier.

2 Please rate the extent to which you think the strategy will enable us to achieve our outcomes. Answer only those that apply.

Q2a: Extent strategy enables us to improve evidence base - rating - How much will the strategy enable us to improve the environmental evidence-base, underpinned by Te Tiriti and mātauranga Māori, that is available to support decision-making?:

1 (the status quo remains)

Q2a: Extent strategy enables us to improve evidence base - rating - How much will the strategy enable actions that positively affect the environment and climate?:

1 (the status quo remains)

Q2a: Extent strategy enables us to improve evidence base - rating - How much will the strategy improve the ability for New Zealanders, including iwi/Māori, to monitor progress towards environmental targets and goals, and identify whether additional action is needed?:

1 (the status quo remains)

Please explain your answers here:

### Section 3: Content of the strategy

3 How much do you agree or disagree with the following statements?

Q3: Rating statements - The research outcomes make sense within the broader themes and relate to research programmes for which we could seek funding/would fund in the future.:

Somewhat agree

Q3: Rating statements - Te ao Māori knowledge systems are well-integrated.:

Somewhat agree

Q3: Rating statements - The strategy will deliver relevant, accessible and inclusive research outcomes.:

Somewhat disagree

Q3: Rating statements - The structure of the strategy is easy to follow.:

Strongly agree

Q3: Rating statements - The strategy provides a full and useful picture of the environment and climate research landscape.:

Neither agree nor disagree

Please explain your answers to the statements:

The document contains ample flexibility to enable a wide range of people to lobby for funding. This is both a strength and a weakness that can either help or hamper our environmental aims.

### Section 4: Applying the strategy / continuous improvement

4 On a scale of 1-5 does the strategy provide the information you need to do your work?

Q4: Does strategy provide info needed - Does the strategy provide the information you need to do your work?:

1 (retains status quo)

Please explain your rating here:

We are encouraged by aspects of the document. However, as noted above, specificity, especially around targets, is needed. More students from different backgrounds have space to engage in new forms of research, particularly Māori and Pasifika students.

5 What would you do to improve the strategy?

Please explain your answer here:

As noted in question 1, we strongly encourage the establishment of targets, addressing missing aspects of necessary data and plans for national data stewardship, and acknowledgement of connectedness and clarity related to pathways of research and capacity.

Revisions should acknowledge New Zealand's unique geographic and political place in the world. This includes New Zealand's vast ocean territory and relationship with Pacific nations. Simultaneously, however, best strategies and practices in other nations may be applicable to Aotearoa and should be incorporated where we can benefit. This includes the precautionary principle, which we strongly support as the guide in all development.

### Section 5: General feedback

6 Is there anything else you would like to share with us about the Environment and Climate Research Strategy | Te Kete Āhuarangi me Te Taiao?

Add your comments, ideas, and feedback here:

For more information on our position, find the readings here:

Armoudian, M., & Poulsen, W. (2023). The politics of animal extinction and conservation: Interests, framing, and policy. *Journal of Political Ecology*, 30(1).  
Derville, S., Torres, L. G., Newsome, S. D., Somes, C. J., Valenzuela, L. O., Vander Zanden, H. B., ... & Carroll, E. L. (2023). Long-term stability in the circumpolar foraging range of a Southern Ocean predator between the eras of whaling and rapid climate change. *Proceedings of the National Academy of Sciences*, 120(10), e2214035120.

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Kolandai-Matchett, K., & Armoudian, M. (2020). Message framing strategies for effective marine conservation communication. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 30(12), 2441-2463.

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Rañeses, M. K., Chang-Richards, A., Wang, K. I., & Dirks, K. N. (2022, November). Climate-adaptive housing for the elderly: A preliminary study in New Zealand. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1101, No. 2, p. 022027). IOP Publishing.

Safaei Pirooz, A. A., Flay, R. G., Turner, R., & Azorin-Molina, C. (2019). Effects of climate change on New Zealand design wind speeds. *National Emergency Response*, 32(2), 14-20.

Tiatia, J., Langridge, F., Newport, C., Underhill-Sem, Y., & Woodward, A. (2022). Climate change, mental health and wellbeing: privileging Pacific peoples' perspectives-phase one. *Climate and Development*, 1-12.

Van der Linden, S. Misinformation: susceptibility, spread, and interventions to immunize the public. *Nat Med* 28, 460-467 (2022). <https://doi.org/10.1038/s41591-022-01713-6>

Wild, K., & Woodward, A. (2021). The bicycle as 'constructive hope': Children, climate and active transport. *Journal of Paediatrics and Child Health*, 57(11), 1785-1788.

Winder, G and Le Heron, R. (2017) Further assembly work: A mountains to seas blue economy imaginary, *Dialogues in Human Geography*, 7, 1, 50-55

Zarocostas, J. How to fight an infodemic. *Lancet* 395, 676 (2020).