

Full list of scenarios considered for Aotearoa New Zealand in 2050

Participants were asked to contribute scenario ideas, which were synthesized into the following list of 10 possible scenarios. Each participant indicated the three scenarios they thought would be most beneficial to discuss in depth, considering how likely the scenario is, the extent of its impacts, and its novelty as an area that has been previously under-explored. From the voting, four scenarios were identified for further discussion (in bold).

- 1) **Rats, possums and mustelids are heavily suppressed or functionally eliminated nationwide as a result of a largely successful Predator Free 2050 programme, with some increase in control of other invasive mammals as well.**
- 2) Shifts in popular opinion result in widespread change (positive or negative) in social license for biosecurity practices, including border and post-border controls, chemical control, and the use of gene technologies.
- 3) **As a result of Treaty settlements and changes in governance structure, indigenous Māori communities manage large tracts of land and Māori voices are consistently represented in land management decision-making locally and nationally.**
- 4) New Zealand achieves net zero emissions of greenhouse gasses, except biogenic methane, which is reduced significantly. Consider scenarios in which other countries likewise drastically reduce greenhouse gas emissions and in which they do not.
- 5) **Native production forest replaces the use of non-native (exotic) trees for commercial harvest and native permanent forest is created through reforestation of marginal lands for ecosystem services including carbon sequestration.**
- 6) Existing data are digitized, centralized, and made widely available, and new programmes are developed to use AI and remote sensing to fill data gaps. These technologies and “big data” drive policy, funding and management decision-making.
- 7) Land-use planning promotes increasingly dense urban centres, proactively protects or restores ecosystem services, indigenous biodiversity, and ecological connectivity, and limits conversion of primary production land.
- 8) City planning, land use, and conservation policies proactively address the anticipated effects of climate change, through strategies like managed retreat, land use restrictions based on hazard assessments, and assisted species migration.
- 9) Biodiversity conservation and land-use planning across the country prioritizes the recovery of mahinga kai species, places and practices, with corresponding legislation that allows Māori communities to manage and sustainably harvest these species.

Bufford JL, Brandt AJ, Sprague R, Peltzer DA. 2024. Non-native invasive plants as a threat. New Zealand's Biological Heritage National Science Challenge Ngā Koiora Tuku Iho Data Repository. <https://doi.org/10.34721/wnwf-5g91>

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- 10) **Climate change results in increasing frequency, scale and intensity of extreme events, including fires, storms and flooding, with significant impacts on infrastructure, funding policies, and persistence of native biodiversity.**

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