



A NATURE-FIRST CLIMATE RESPONSE

HOW RESTORING NATURE CAN HELP AOTEAROA



**Forest
& Bird**

TE REO O TE TAIAO
Giving Nature a Voice



RESCUING OUR CLIMATE

The first step to any climate response has to be reducing emissions, fast. But the forests, waterways, and oceans of Aotearoa could also play a key part in keeping climate warming to safe levels.

Our natural ecosystems hold a phenomenal amount of carbon, with around 1,450 million tonnes in above-ground vegetation alone. Small changes could make a big difference to how much carbon they can store.

In 2021 Forest & Bird released a report showing how controlling browsing pests in our forests could substantially reduce New Zealand's emissions. The Climate Change Commission recommended increasing pest control to protect existing carbon stocks and allow regeneration. Instead, we currently have low levels of pest control and an out-of-control invasion of deer, goats, and pigs across the country.

Addressing these problems can help us begin solving the climate and biodiversity crises together.

Nature has already been pushed to breaking point. Half of New Zealand's total land area is now used for agriculture, forestry, and housing. Natural landscapes continue to be destroyed, with nearly another 13,000 hectares of indigenous land cover area lost from 2012-2018 alone.

But if we make nature the heart of our climate response, there are real opportunities to be had. Let's put the water back on peatlands, and protect all remaining wetlands. We can reverse native deforestation, reduce irrigation, and plant up our river banks to help store carbon on land. Restoring sea grasses, salt marshes, mangroves, and kelp forests will bring back blue carbon to the oceans.

There are risks to nature from our climate response. Pine forests planted in the wrong places can smother waterways, destroy native habitats, and spread wilding trees. Urban sprawl can destroy rare ecosystems. Choosing the wrong biofuels could bring biosecurity risks.

A nature positive climate response will help reduce climate harm. Nature already protects us every day – coastal dunes regulate storm surges; forests, lakes, and wetlands buffer extreme rainfall; and wide riverbeds absorb flood flows.

These nature-based solutions are only a fraction of the practical and achievable actions the Government can take on climate change. I see many reasons for hope, and I look forward to you joining me in working towards nature-based climate solutions.

Ngā mihi

Kevin Hague
Chief Executive Forest & Bird

Our climate response must:

- **Cut emissions first:** A commitment to faster emissions reductions must come ahead of removing carbon dioxide from the atmosphere.
- **Bring back nature:** Emissions reductions must protect our native plants and animals, not destroy them.
- **Better land use:** Marginal, steep, and erodible land needs to be returned to native forests and shrublands.
- **Help nature help us:** Our climate response should place more emphasis on protecting wetlands, blue carbon, shrublands, mangroves, and more pest control.
- **Help each other:** We need a just transition that helps communities and workforces to adjust, makes sure vulnerable people are not left behind, ensures new technology and ways of working are available to all, and gives effect to the Treaty of Waitangi.
- **Do our fair share:** New Zealand's emissions reduction targets should reflect our economic status, ability to take action, and high current and historical per-capita emissions.

FORESTS

The natural ecosystems of Aotearoa store many billions of tonnes of carbon. Their sheer size means that even small changes to their condition can have a massive impact on the country's greenhouse gas emissions profile.

Yet all of New Zealand's natural terrestrial ecosystems are under stress from introduced feral mammals. Only a small proportion of our conservation land receives pest control each year. Deer, goats, and pigs are growing in numbers and spreading out, with nearly a third more conservation land colonised in just eight years.

Collectively mammalian pests are responsible for emitting between 2.3 and 4.0 million tonnes of CO2 equivalent per annum through eating plants and producing methane. They also prevent us from tackling climate change in other ways – both by degrading habitats, which then produce more greenhouse gas emissions, and by eating new plantings which should be our future carbon sinks.

Restoring forests lost in previous centuries can help New Zealand store carbon. Forest & Bird agrees with the Climate Change Commission

that this effort should focus on permanent native forests to create a long-lived source of carbon removals. Native forest has significant co-benefits in terms of water quality, erosion protection, and human and natural resilience, whereas plantation forestry can have negative outcomes for soil health and landscapes, as well as posing a fire risk.

To help our forests store more carbon we could:

- Expand browsing pest control to include possums, feral deer, goats, and pigs on all Department of Conservation, Defence, and state-owned enterprise managed land.
- Eradicate wallabies and maintain all existing deer-free areas in places like Coromandel and Northland.
- Reduce feral browsing mammals on Land Information New Zealand land to comply with the Land Act.
- Control tahr to a level that complies with the Himalayan Tahr Control Plan 1993 and the National Parks Act.
- Establish a native restoration programme across all marginal and erodible land with pest control support, financial support for landowners, and restoration of degraded Crown land.
- Gazette and implement the National Policy Statement on Indigenous Biodiversity.
- Support planting of permanent indigenous forests by restricting new exotic carbon forests and providing biodiversity credits to native forest restoration.



WETLANDS

Restoring wetlands, which are increasingly recognised for their important role in carbon sequestration and storage, could be a crucial part of our climate response.

In Aotearoa 90% of our wetlands have been destroyed and wetlands continue to be lost. Between 1996 and 2018, 5400 hectares – the size of 11 Auckland central business districts – were destroyed by human activity, with nearly all converted to grassland. This is bad for the climate. If we were to instead restore freshwater wetlands, New Zealand’s natural environment could store an extra several hundred million tonnes of carbon.

Peat wetlands in particular hold twice as much carbon as all of the world’s forests combined, globally, yet cover only about 3% of earth’s land surface. As long as they remain healthy, peatlands can continue to gain carbon indefinitely. The 10,000 ha Kopuatai Bog in the Hauraki Plains has been sequestering up to 20,000 tonnes of carbon every year for around the last 11,000 years.

In New Zealand, many dried peatlands have become high-producing grassland. The continued release of carbon to the atmosphere from these peatlands is now responsible for 6% of our agricultural emissions. Aotearoa must transition away from unsustainable grazing on sinking peat



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soils and instead cultivate wet-tolerant species such as flax.

While it is unknown how much coastal wetland has been lost nationally, salt marshes, sea grasses, and mangroves can store carbon up to 57 times faster than a tropical forest.

Wetlands can also contribute to our resilience to the effects of climate change – by retaining soil moisture and helping maintain stream flows, helping to recharge aquifers, dampening the effects of high rainfall events, and providing habitat for native species.

The Government should:

- Develop a national wetland restoration plan with a long-term goal of doubling the area of New Zealand’s wetlands.
- Include carbon gains/losses from peatlands in New Zealand national carbon accounting and fund re-wetting peatlands and the adoption wet-tolerant species.
- Retain the National Policy Statement on Freshwater Management (NPS-FM) and the National Environmental Standard wetland provisions, and do not allow those documents to be modified in a way that would result in the loss of wetland extent or values.
- Encourage councils to implement and enforce the wetland clearance prohibitions in the NPS-FM 2020 and fund compliance, monitoring, and enforcement, as well as restoration projects.
- Include stronger protection for wetlands in the legislation that replaces the Resource Management Act.
- Fund MPI’s soil mapping project to inform land management and help identify wetlands at a scale that matches or improves data as required under the new NPS-FM 2020.
- Act on the recommendations of the Parliamentary Commissioner for the Environment’s report into estuarine environments.

OCEANS AND BLUE CARBON

Marine life such as seagrass, seaweeds, coastal mangrove forests, and shell-forming organisms has the potential to remove and store substantial amounts of carbon. While there is a lack of good data, it’s clear that mangrove removal and fishing methods such as bottom trawling release stored carbon.

There are actions the Government can take now, including to:

- Consider the role of marine habitats in storing carbon when developing the Hauraki Gulf Fisheries Plan.
- Explicitly consider climate change as an environmental effect of fishing in all Fisheries Act decisions.
- Address emissions from fishing and the impact of fishing on marine carbon storage in the development of the Fishing Industry Transformation Plan.

- End bottom trawling to reduce emissions from seafloor damage.
- Ensure the replacement legislation to the Resource Management Act protects blue carbon and incentivizes restoration, including of mangroves and seagrass beds.
- Include the protection of blue carbon in the proposed replacement to the Marine Reserves Act.
- Build a national map calculating existing and historical coastal carbon storage.



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AGRICULTURE

New Zealand's current policy settings protect our largest source of greenhouse gases from responsibility for its emissions. The Government needs to urgently address this, and explicitly acknowledge that land use change is both desirable and inevitable in this sector.

Our current approach directs investment towards increasing emissions and fails to recognize that in some areas the dairy sector already exceeds environmental limits.

In contrast, changing farming systems to optimise them within environmental limits is likely to increase profitability and resilience for many farmers, while significantly reducing methane and carbon dioxide emissions, nutrient leaching, and the reliance on bought-in feeds and external inputs that have a high carbon footprint.

We need a net change in nationwide land-use overall from high emission forms of production to lower emissions forms. Some of this should come through a reduction in dairy production in some areas and expansion of permanent native forests and other natural ecosystems.

Reduced irrigation and fertiliser use, smaller herd sizes, and the retirement of marginal land will also help clean up our rivers and protect communities from floods.

The Government needs to:

- Introduce agriculture into the ETS.
- Phase out the use of synthetic nitrogen fertilizer.
- Develop a programme to support farmers to convert to low input and regenerative agriculture systems to reverse biodiversity loss, improve soil carbon retention and water management, and reduce nitrous oxide emissions.
- Invest in the further development and use of the Enviro-Economic Model (E2M)
- Make OverseerFM opensource and public, opening research and development and integration opportunities for others in the agricultural industry.
- Direct Pāmu to trial, and roll out at scale, methods for reducing emissions from land-use so that it becomes the best practice climate leader for agriculture, forestry and carbon storage from land-use in Aotearoa.

ENERGY AND INFRASTRUCTURE

As we transform our energy systems, it's important to choose solutions which don't cause environmental harm.

In some cases decarbonisation can actually bring significant co-benefits for nature. Stopping new or expanded coal mines, for example, would prevent damage to public conservation land and avoid water pollution.

Decisive action needs to be taken on this. Because of the time taken for mine development, new or expanded coal mines initiated in New Zealand today risk either locking-in emissions or becoming stranded assets and environmental and fiscal liabilities. Stopping new coal mines now would shift industry laggards to sustainable energy. It would also move New Zealand closer to doing our fair share globally, by preventing our large volumes of coal exports continuing right through the 2040s.

But as Aotearoa moves towards resilience and decarbonisation, we need careful management to ensure nature is not put at risk. Infrastructure should not be placed in sensitive environments or where there are protected or at-risk species. Nature-based solutions, such as swales for stormwater, protection of source water quality, or providing room for rivers, should be considered above costly hard engineering. Wild rivers need to be protected from large-scale hydro development. We should avoid biofuels which could become weeds.

One example where decarbonisation could put nature at risk is the proposed pumped hydro storage system at Lake Onslow, which would destroy important wetlands as well as the habitats of rare and threatened plant and animal species. The Government should instead consider low impact alternatives, demand-side measures, or a residual role for gas as a back-up until technology and improvements in the electricity system solve the dry year problem.

The Government should:

- Prohibit new or expanded coal mines through amendments to the Resource Management Act, the proposed Natural and Built Environment Act, and the Crown Minerals Act.
- Develop a transition plan to phase out existing coal mining, and oil and gas drilling, while addressing the needs of affected communities.
- Use a strategic national spatial planning approach to ensure new wind and solar farms avoid harm to nature and sensitive landscapes.
- Develop a programme to encourage distributed generation and review the structure and operation of the electricity system, including ownership and market operations to minimise dry year risk.
- Investigate the use of existing hydro lakes for pumped storage, including Tekapo/Pukaki.
- Defund infrastructure projects that increase emissions and ensure any solutions support an overall reduction in greenhouse gas emissions.
- Do not include plants that pose significant biosecurity risks in New Zealand's fuel supply, except when sourced from waste materials.
- Prevent new organisms under the definition of the Hazardous Substances and New Organisms Act from being eligible for consideration as biofuels.



