

Nelson Biodiversity Forum submission on climate targets

The Nelson Biodiversity Forum came together following the development of a Biodiversity Strategy for Nelson in 2007. It was established as a way to continue action on one of the core aims of the Strategy - to align action on biodiversity by responsible agencies and the community. Over twenty partner organisations that developed the Strategy are now continuing to work together and have been joined by other groups that share their aims of protecting and enhancing our biodiversity. The Forum has developed several action plans and is a successful model of leadership and collaboration. The Forum wishes to highlight the consequences of global warming for our community and for biodiversity in Nelson and encourage our Government to provide a strong example of responsible climate behaviour in the global community.

Nelson is ready to move to a low carbon future

In June 2013 Nelson City released a document “Nelson 2060” that set the goals for Nelson’s future. It said:

Here in Nelson we are very dependent on carbon based energy. The challenge we face is to maintain our lifestyle in a fair and equal way that makes us less vulnerable to changing energy costs and supply, while reducing our contribution to climate change. We can meet this challenge through taking advantage of the range of renewable resources available to us to create energy, building a thriving economy based on new technology along the way. We can also look at how we design our neighbourhoods, live close to where we work, and walk and cycle more. Done the right way, we can be better off as well as enjoying cleaner air and healthy lifestyles.

This will mean:

- *More of Nelson’s energy needs are met by local, renewable energy sources*
- *We use energy in ways that don’t harm our land, air and waterways*
- *Everyone uses fuel efficiently*
- *We are a low-carbon society with a thriving local economy*
- *We have reduced greenhouse gas emissions by using less fossil fuel*
- *Our economy takes advantage of the opportunities offered by renewable energy.*

Our community is not afraid of challenging targets in reducing greenhouse gas emissions.

Issues

A high carbon future will reduce the well-being of our community and add to the pressures on the remnants of our indigenous biodiversity already reduced by land clearance and by pests and weeds. Summarised below are issues for our marine, freshwater and terrestrial environments that will be exacerbated by a high carbon future:

Coastal and marine environment

Nelson faces a future of increased high intensity wind and rain events, raised sea levels, warmer water and increased ocean acidity as global greenhouse gases increase. These changes could affect our regional biological diversity by:

1. Exacerbating the high sediment loadings that, with fishing disturbance and other effects, have contributed to the loss of our benthic marine communities in Tasman Bay including a \$90M a year scallop fishery, and make recovery that much harder;;
2. Eroding barrier islands, spits, dunes and boulder banks which are important features of our region and act as habitat for unique and increasingly rare flora and fauna;
3. Destroying the backshores and eel grass beds of our estuaries that provide refuge for the higher plants and juvenile stages of important fish species;
4. Increasing the range of invasive organisms and add to the marine biosecurity risks of the region.

Freshwater environments

Nelson rivers and streams will experience higher peak flows and longer droughts in a high carbon future. Wetlands may also experience prolonged droughts. Water temperatures are likely to be higher and sediment and bed loads increased with greater erosion of the land triggered by more severe storm events. In developed environments there will be greater pressure for channelization and stop banking to protect vulnerable property. Rising sea levels will increase the effects of flood events and may lead to the establishment of barrages to protect the city centre. Run off from contaminated sites will increase and previously stable landfills may be compromised. These changes could diminish our regional biological diversity by:

1. Compromising river and stream habitats through flood events, requirements for increased gravel extraction to protect property, loss of riffles and pools and increased sedimentation of rocky sections;
2. Creating barriers to fish passage through increased use of channelization, culverting and the potential introduction of barrages;
3. Increased contamination leading to kills of fish and invertebrates;
4. Loss of wetland plants in periods of drought and changes that reduce habitat for vulnerable species such as fern birds.
5. Warmer waters resulting in the loss of temperature sensitive invertebrate and fish species

Terrestrial environments

With both more high intensity rain and longer droughts terrestrial biodiversity will come under increasing pressure. Already high wind events have toppled forests in the region. Increasing air and soil temperatures will expose the region to increased issues with animal and plant pests and weeds as subtropical species are added to the load. This will potentially reduce regional indigenous biodiversity by:

1. Increased land erosion and wind throw compromising the integrity of native forests;
2. Increased risk of forest fires, particularly in regenerating forests;

3. Drought stress in vulnerable forest remnants that are just being brought under active management;
4. Increased plant and animal pests and weed pressure as warmer winters favour survival and breeding of species such as wasps, rats and stoats;
5. Compromise higher elevation species including the biologically rich tussock and herb fields above the native tree line with accelerated invasion by weeds such as wilding pines.

Conclusions

Climate change is real. Its principal cause is the emission of greenhouse gases by human action. This must be addressed by verifiable science-led approaches.

We support NZ doing its part to reducing overall greenhouse gas emissions to maintain the international target of limiting the increased average global temperatures to 2°C or less while recognising that there are costs and opportunities in meeting agreed targets.

The costs of not acting to reduce NZ's GH gas emissions include:

- Reductions to indigenous biodiversity
- Increases in invasive pest species adapted to warmer climates
- Drought affecting growth and extent of vulnerable native species and ecosystems
- Deforestation of existing native forest and shrubland species affecting existing carbon uptake
- Requiring more irrigation and land conversion to maintaining farm production with consequent adverse effects on terrestrial biodiversity, waterways and coastal receiving waters
- Changes in ocean acidity affecting shellfish species extent and growth

Conversely measures to reduce impacts on native biodiversity help to address global warming and add carbon sinks:

- Weed and invasive biosecurity pest management and control leads to healthier faster growing forests that mop up CO₂
- Enhanced fire responsiveness to reduce damage and destruction of vulnerable ecosystems leaves more growing forest and shrubland
- Land change rules to minimise/reduce impacts on valued native biodiversity and preserve the carbon storage in native vegetation
- Riparian management and land retirement planning to maintain and enhance native fish habitats leads to more woody vegetation and retains organic carbon on the land and also reduces oxidative stress on wetlands
- Management/treatment of urban runoff which could otherwise affect seagrass beds and estuarine productivity reducing their capacity for carbon capture

- Planned coastal retreat will preserve natural carbon capture and could retire farmland with a greater greenhouse footprint

For these reasons we consider that the current target of 5% by 2030 is too conservative and does not reflect the emerging world consensus on greenhouse gas emission targets. We favour an agreed Target of at least 20% below 1990 levels (or 41% below current levels), which would take NZ towards a 2050 target of 50% reduction.

New Zealand's approach should also integrate our domestic policies and measures on biodiversity:

- to reduce the sources of greenhouse gases in our economy and
- reduce and mitigate the impacts of climate changes on our vulnerable and endangered native species.

For this reason the proposed intention to principally use offsets via the ETS Trading scheme does not satisfy the imperative to reduce impacts on native biodiversity via the Biodiversity Accord signed by the Government in 2000. We therefore urge adopting a robust target supported by a more in-depth consideration of complementary activities to support retention and recovery of our native biodiversity.

Brian McGurk
Chair
Nelson Biodiversity Forum
Tuesday, 2 June 2015

-