



Nelson’s state of the environment report – a regional insight

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Nelson City Council’s Science and Environment unit has released its latest State of the Environment Report. The report provides crucial insights into our local environment and serves as a vital resource for understanding its current state and guiding future initiatives aimed at fostering a sustainable and healthy community.

Group Manager Environmental Management Mandy Bishop says the report highlights Council’s ongoing commitment to preserving and enhancing Nelson’s natural resources.

“It underscores the importance of collaborative efforts in addressing environmental challenges and sets a clear path for focusing our efforts to improve our region,” says Mandy.

Air Quality Improvements

Since 2001, Nelson has achieved a remarkable 70% reduction in particulate matter (PM10), with support from Council helping community efforts to update heating methods and regulating industrial emissions. However, challenges remain with finer particulate matter (PM2.5) and nitrogen dioxide levels, primarily linked to vehicle emissions. The report emphasizes the need for ongoing monitoring to ensure these pollutants stay within safe limits, in accordance with new international guidelines. This proactive approach highlights Nelson's commitment to environmental health and the wellbeing of its residents.

Indigenous Bird Populations

The report underscores a concerning trend: while bird numbers in surveyed high-value ecological areas have risen since 2015, the habitats of endemic species — those found only in New Zealand — remain confined to areas of indigenous forest. This pattern signals an urgent need for targeted conservation efforts to safeguard habitats for these species, particularly in higher-altitude native forests. The report concludes that Nelson's biodiversity management programmes must prioritise these critical habitats to ensure the survival of our most vulnerable and unique bird species.

Indigenous Vegetation

The Maitai and Roding Conservation Reserves, located to the east of Nelson City, are recognized for their high ecological value. The vegetation in these reserves is significantly influenced by the underlying geology, including limestone outcrops and ultramafic (highly mineralized) areas. These reserves host nationally important plant communities and habitats. However, invasive plant and animal pests pose a significant threat.

The historic introduction of non-native herbivorous animals, such as goats and deer, has led to a decline in indigenous plant species. Monitoring since

2013 has shown that selective feeding by these animals favours the growth of less palatable species, potentially leading to biodiversity loss and extinctions. The report calls for ongoing vigilance and adaptive management strategies to protect the ecological integrity of these vital conservation areas.

Biosecurity Efforts

Biosecurity is critical for pest control in both terrestrial and marine ecosystems. The report celebrates the successful eradication of the invasive Mediterranean fanworm (*Sabella*) from local waters, a species that posed a significant threat since its arrival in 2014.

Ongoing vigilance is essential to prevent its re-establishment, underscoring the proactive measures taken by the Council, including annual surveys of vessels and marina structures. Collaborative efforts with Taihoro Nukurangi National Institute of Water and Atmospheric Research (NIWA) and Manatū Ahua Matua Ministry for Primary Industries (MPI) to conduct biannual surveys in Nelson Harbour reinforce these actions as part of a broader national strategy to safeguard marine biodiversity against invasive species.

Freshwater Quality Monitoring

Ongoing monitoring of freshwater quality and ecology at 28 sites across the Nelson region reveals significant degradation in urban streams due to increased levels of faecal bacteria (sources include human sources - sewerage, septic tanks and ruminant sources - livestock, farm washdown and avian sources - wildfowl, commercial farming) and sedimentation. These pollutants pose a long-term threat to the health of aquatic ecosystems. In rural areas, while nitrate levels remain relatively low, there is a concerning upward trend.

Elevated nitrates contribute to summer algae blooms, further compromising stream health.

"To combat these issues, Council is formulating Action Plans targeting specific challenges within Nelson's catchments, including Wakapuaka, Whangamoa, Stoke Streams, and the Maitai," says Mandy.

"These plans will focus on interventions to reverse the negative trends identified in the report, with a strong emphasis on improving water quality and ecological integrity."

Impact of the August 2022 Rainfall Event

In August 2022, consistent rainfall over three days led to moderate flooding and severe landslides, causing extensive damage to the landscape. The aftermath of this event has left enduring marks on the environment, with hillsides bearing scars of erosion and water bodies burdened with increased sedimentation. The immediate consequences, ongoing environmental impact, and sediment accumulation in rivers and estuaries pose continuing challenges to the ecological health and stability of the region. This report discusses the response measures taken and the strategies implemented for recovery and future resilience, providing a comprehensive overview of the event's scale, sustained effects on the natural terrain, and implications for environmental management and policy.

Estuary Health

Estuaries serve as crucial confluences where rivers meet the sea, creating vital habitats for juvenile fish, coastal birds, and migrating shorebirds. Despite their relative health, these ecosystems have been compromised by sedimentation, particularly following the floods of August 2022, which resulted in mud deposits that adversely affect seagrass beds and the species they support. Ongoing monitoring of sediment levels and habitat health is planned for Waimea Inlet, Nelson Haven, Delaware Inlet, and Kokorua

Inlet. Additionally, collaborative efforts are underway to implement the Waimea Inlet Strategy and Action Plan, marking a proactive step towards the preservation and improvement of these essential natural resources.

Recreational Use of Rivers and Beaches

Swimming holes and beaches in the region are generally considered safe for recreational use most of the time. However, it is advisable to avoid swimming during periods of windy or stormy weather (and at least 48 hours following heavy or prolonged rainfall), due to the heightened risk of elevated bacteria levels and disturbed sediments, which can compromise water quality. The report identifies Wakapuaka at Paremata Flats Reserve as having recurrent high E. coli levels, Council is developing river catchment management action plans with the aim of improving freshwater quality and recreational bathing sites.

Information on water quality monitoring at bathing sites can be found on the [NCC website](#)

The State of the Environment Report can be viewed [here](#).