

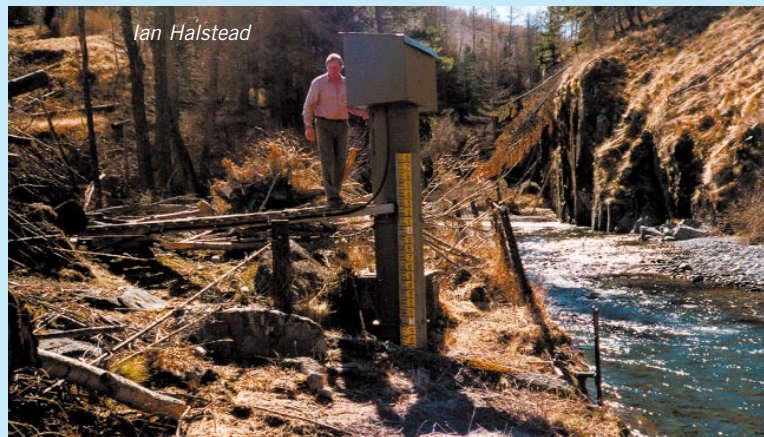
Contribution to government policy & operations

NIWA provides substantial input to New Zealand government bodies, at a national, regional, and territorial level, to help them evaluate costs and benefits of alternative strategies, assess the relative risks and impacts of different human activities on the environment, and improve decision-making.

At a national level, we work closely with the Ministry for the Environment (MfE), Ministry of Agriculture and Forestry (MAF), Department of Conservation (DoC), Ministry of Fisheries (MFish), Energy Efficiency and Conservation Authority (EECA), New Zealand Treasury, Ministry of Foreign Affairs and Trade (MFAT), Te Puni Kōkiri, Ministry for Economic Development (MED), Land Information New Zealand (LINZ), Ministry of Civil Defence and Emergency Management (MCDEM), Ministry of Transport (MoT), Land Transport Safety Authority (LTSA), and Maritime Safety Authority (MSA). We continued to work with all regional and unitary authorities and most city and territorial authorities across the country.

Other specific areas of contribution to local, regional, and central government activities include:

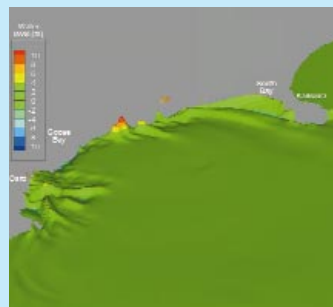
Energy. NIWA seasonal outlooks were used by energy providers and government policy analysts in their planning and policy development to cope with low inflows to hydro lakes and to relax the energy savings targets once it was clear we were returning to a more normal rainfall regime. A mentor group involving EECA, MfE, and Te Puni Kōkiri was established to guide research on energy issues and the implementation of renewable energy technologies for small, rural Māori communities.



Climate. Regular briefings for MAF were used to develop outlooks and projections of rural production for Treasury. Additional collaboration with MAF and Treasury looked at the economic effects of climate. Other work included the development of climate-soil-crop potential land-use information; e.g., the NIWA-led study for the Kaipara and Far North District Councils. NIWA also contributed to national policies to mitigate global climate change and greenhouse gas emissions.

Brochures for the Kaipara and Far North District Councils identified land-use options.

Model of a tsunami generated by a submarine landslide arriving at South Bay, Kaikoura.



Natural hazards. Predictive models, risk evaluation tools, and warning or forecasting systems have been incorporated in land-use policy and plans and to mitigate against natural disasters. A new flood forecasting system has been trialled on the Clutha River with Otago Regional Council and is being extended to other areas. Climate hazards identified and mapped using procedures developed by NIWA have been incorporated by regional and district councils into lifelines and emergency management plans.



Biodiversity. NIWA ran identification courses for regional councils. Research helped DoC select marine and coastal protected areas and map areas of global or national significance for marine biodiversity for the WWF Global 200 Marine Ecoregions project. NIWA provided significant input into policy, particularly the National Policy. A new tool for lake assessment is being adopted by regional councils and will help agencies identify Water of National Importance and provide cost-effective biodiversity protection.



Biosecurity. Information on a major population explosion of a bryozoan in Kaipara Harbour and another alien bryozoan in Golden Bay was reported to MFish, and responses are being formulated. Other work included collaboration on containment and eradication strategies for aquatic weeds, border control assessment, weed surveillance strategies, and weed control in lakes.

Dennis Gordon holding Golden Bay bryozoa.

Fisheries & aquaculture. NIWA provided tools and information on the state and causes of ecosystem change in the Marlborough Sounds which were used by regulators and the Environment Court to plan marine farming growth. Other research results are being used to set environmental guidelines for sustainable marine farm development in northern New Zealand. NIWA research contributed to MFish's decision to reduce quotas for commercial eel fishers in the South Island so that stocks and the fishery could be managed sustainably.



Air quality. NIWA provided significant input to MoT and regional council policies on fuel specifications, vehicle inspection, emission reduction, greenhouse gas emissions, and health effects of air pollution, as well as to Ministry of Health policies on indoor air quality. A new greenhouse gas emissions inventory was developed for all regions to allow local governments to determine optimum mitigation strategies.

Databases. NIWA provides access to Nationally Significant Databases on Freshwater Fish, Water Resources, Marine Benthic Biodiversity, and Climate.

Catchment management. Auckland Regional Council are using NIWA research results for sustainable development. NIWA collaborates with DoC and regional councils in a test site. Contributions to the 'Dairying and Clean Streams Accord' and the 'Clean Streams' project help farmers protect stream margins from the impacts of intensive farming.

Sustainable freshwater and estuarine waters. A NIWA model was used by Environment BOP to evaluate options for controlling nutrient inputs from farmland to the Rotorua lakes. Collaboration with MfE and Environment Waikato on Lake Taupo water quality modelling will support decisions on increases in dairy farming in the lake catchment. A NIWA risk-assessment scheme is used by regional councils for resource consent, and ecosystem-based environmental targets and guidelines are being implemented by regional authorities. NIWA research has been used to assess the impacts of forestry and the dredging and dumping associated with marinas. River management tools were provided, with support from MfE, stream restoration projects were designed, regional water plans were revised, and rules or guidelines for resource management (e.g., discharges to streams) were developed.



Public health. New approaches to calculate risk were used to develop the freshwater component of the Water Quality Guidelines for Marine and Freshwater Recreational Areas, issued by the Ministries of Environment and Health.

Water treatment. NIWA developed treatment methods for agricultural wastewaters with Fonterra, Environment Waikato, and DoC, and designed wetlands for stormwater treatment with city councils. NIWA research is the basis for the Auckland Regional Plan: Coastal to evaluate applications for resource consents to discharge stormwater from urban catchments.