

New Zealand's Environmental Reporting Series – 2015 topics and provisional statistics

Table 1

Air

Framework category	What we're trying to find out	Topic	Statistic (provisional)
Pressure	What human activities and natural factors affect New Zealand's air quality?	Emissions of air pollutants from home heating	Emissions of key pollutants from home heating Relative magnitude of emissions
		Emissions of air pollutants from transport	Emissions of key pollutants from vehicle transport Relative magnitude of emissions
		Emissions of air pollutants from industrial activities	Relative magnitude of emissions
		Emissions of air pollutants from primary industries	*
		Natural sources of particulate matter and other air pollutants	Contribution of natural sources to PM ₁₀ concentrations
		Meteorological conditions that trap or disperse air pollutants	*
State	What is the condition of New Zealand's air?	Airborne particles of concern to human health	Annual average PM ₁₀ concentrations Daily PM ₁₀ concentrations PM _{2.5} concentrations Seasonality of particulate matter exceedances
		Airborne gases of concern to human health	Carbon monoxide concentrations Sulphur dioxide concentrations Nitrogen dioxide concentrations Ground-level ozone concentrations
		Airborne metals of concern to human health	Arsenic concentrations Lead concentrations
		Airborne organic compounds of concern to human health	Benzene concentrations Benzo(a)pyrene concentrations
Impact	What are the effects of the condition of air quality on public health?	Chronic health effects related to air quality	National-level health impacts due to exposure to PM ₁₀ – premature deaths
		Acute health effects related to air quality	National-level health impacts due to exposure to PM ₁₀ – hospitalisations, restricted activity days

Symbol: * No measures have currently been assessed as being of sufficient statistical quality.

Table 2

Atmosphere and climate

Framework category	What we're trying to find out	Topic	Statistic (provisional)
Pressure	What human activities and natural factors affect New Zealand's climate and atmosphere?	Global emissions of greenhouse gases and ozone-depleting substances	Estimate of the global emissions of greenhouse gases Estimate of the global production of ozone-depleting substances
		Sea temperature's influence on weather and climate	Sea surface temperature
State	What are the characteristics of New Zealand's atmosphere and climate?	Greenhouse gases that absorb infrared radiation and contribute to climate change	Concentrations of greenhouse gases over New Zealand
		Atmospheric ozone over New Zealand	Ozone concentrations Ozone hole
		Variations in atmospheric circulation that drive New Zealand's climate	Southern oscillation index Inter-decadal Pacific oscillation Southern annular mode
		National and regional temperature	National temperature time series Warm days Frost days Growing degree days
		Rain, hail, sleet, and snow	Annual rainfall maps Three-day maximum annual rainfall Glacier ice
		The occurrence of extreme weather events	Annual lightning strike density
		Sunshine hours and solar intensity	Sunshine hours in New Zealand UV intensity
Impact	What are the effects of the condition of the atmosphere and climate on ecological integrity?	Impacts on biodiversity	Growing season accumulated potential evapotranspiration deficit Precipitation totals
	What are the effects of the atmosphere and climate and the change in its condition on the New Zealand economy?	Economic production by primary industries	Milk production Economic performance of the agriculture industry
		Impacts on tourism	Ski-field operating days
	What are the effects of the condition of atmosphere and climate on public health?	Chronic health effects related to our changing climate	Occurrence of melanoma
		Acute health effects related to our changing climate	Food and water-borne diseases Influenza

Table 3

Fresh water

Framework category	What we're trying to find out	Topic	Statistic (provisional)
Pressure	What human activities and natural factors affect the condition of New Zealand's fresh water?	Contaminant discharges to fresh water	Nitrate leaching
		Abstractions and diversions that affect rivers, lakes, and groundwater	*
		Land cover in freshwater catchments	Riparian protection
		Land erosion in freshwater catchments	Area of highly erodible land Long-term soil erosion rate
		Landscape and form of freshwater catchments	*
		Climate effects on the freshwater environment	Annual rainfall maps Three-day maximum annual rainfall Precipitation totals
State	What is the condition of New Zealand's freshwater environment?	Condition and physical characteristics of freshwater habitats	River-water quality – visual clarity In-stream sediment cover Wetland extent
		Presence or abundance of freshwater plants and animals	Species diversity in New Zealand Freshwater fish communities Freshwater pests River quality – macro-invertebrate communities
		Biological productivity of lakes and rivers	*
		Chemical properties of river water, lake water, and groundwater	River-water quality – nitrogen, phosphorus Groundwater quality – nitrogen, phosphorus
		Freshwater sediment, clarity, quantities, and flows	Freshwater flows statistics Groundwater volumes Glacier volumes
		Organisms that cause disease or illness	River-water quality – E. coli bacteria
Impact	What are the effects of the condition of the freshwater environment on ecological integrity?	Impacts on biodiversity	Threat classification list
	What are the effects of the freshwater environment and the change in its condition on the New Zealand economy?	Economic impacts related to primary industries	Economic performance of the agricultural industry
		Energy generation and mineral extraction	Proportion of electricity sourced from hydro-generation
		Urban freshwater use	*
		Impacts on tourism	*
	What are the effects of the condition of the freshwater environment on public health?	Acute health effects related to freshwater quality	*
	What are the effects of the condition of the freshwater environment on culture and recreation?	Access to and use of freshwater environments for customary materials and food	*
		Cultural significance of the freshwater environment to Māori	*
		Recreational use of the freshwater environment	Recreational fishing

Symbol: * No measures have currently been assessed as being of sufficient statistical quality.

Table 4

Land

Framework category	What we're trying to find out	Topic	Statistic (provisional)
Pressure	What human activities and natural factors affect the condition of New Zealand's land environment?	Land use and land-use change	Land use Livestock numbers Farm size
		Effects of surface and groundwater on the land environment	*
		Climate effects on the land environment	Growing season accumulated potential evapotranspiration deficit Annual rainfall maps Three-day maximum annual rainfall Precipitation totals Growing degree days National temperature time series
		Landscape and physical form	*
State	What is the condition of New Zealand's land environment?	Presence and abundance of indigenous plants and animals	Status of widespread indigenous trees and birds, including introduced bird species on public conservation land Species diversity in New Zealand
		Ability of terrestrial ecosystems to function effectively	Carbon stocks in terrestrial ecosystems
		The occurrence of invasive plants and animals	Distribution of pest and weed species
		Vegetation and other land cover	Land cover Threatened land environments Pre-human vegetation
		Status of, and susceptibility to, erosion	Area of highly erodible land Long-term soil erosion rate
		Soil health and quality	Soil health (acidity, fertility, organic reserves, and physical status) under different land uses
		Soil types	*
		Land contaminated by hazardous substances	*
Impact	What are the effects of the condition of the land environment on ecological integrity?	Impacts on biodiversity	Pest (possums, goats and deer) impacts on indigenous trees Distribution of mortality and recruitment of indigenous trees Rare ecosystems, including wetlands and active sand dunes
	What are the effects of the land environment and the change in its condition on the New Zealand economy?	Economic impacts related to primary industries	Economic performance of the agriculture industry
		Extent of highly productive soils available for food production	High-class land
		Energy generation and mineral extraction	*
		Impacts on tourism	*
	What are the effects of the condition of the land environment on public health?	Chronic health effects, resulting from condition and management of land	*
		Acute health effects, resulting from condition and management of land	*
	What are the effects of the condition of the land environment on culture and recreation?	Access to and use of the land environment to provide customary materials and food	*
		Cultural significance of the land environment to Māori	*
		Recreational use of the land environment	*

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Table 5

Marine

Framework category	What we're trying to find out	Topic	Statistic (provisional)
Pressure	What human activities and natural factors affect the condition of New Zealand's marine environment?	Discharges to the marine environment	Marine debris
		Extraction of mineral and biological marine resources	By-catch of protected species Fish and invertebrate by-catch Hector's and Māui's dolphins fisheries interactions Oil, gas, and mineral extraction
		Marine habitat modification by human activity	Commercial seabed trawling Commercial seabed trawling coastal footprint Anthropogenic threats to marine habitats
		Climate effects on the marine environment	Estimate of the global emissions of greenhouse gases Climatic oscillations measures National temperature time series
State	What is the condition of New Zealand's marine environment?	Presence and abundance of indigenous plants and animals	State of fish stocks Commercial catch sharks and rays Indigenous animal and plant species diversity in New Zealand Conservation status of seabirds and shorebirds Conservation status of marine mammals
		Extent and occurrence of marine habitats	Marine environment Coastal habitats Marine protected areas
		Ability of marine ecosystems to function effectively	Primary productivity (chlorophyll-a) Chatham Rise marine trophic index
		Presence and abundance of animals at the top of the food chain	Conservation status of marine mammals Conservation status of seabirds and shorebirds
		Occurrence of invasive marine organisms	Exotic species
		Quality of coastal and estuarine waters	Coastal and estuarine water quality Heavy metals in estuarine sediment
		Ocean acidity	Ocean acidity
		Sea level, temperature, and circulation	Coastal sea-surface temperature Coastal sea-level rise Ocean sea-surface temperature
Impact	What are the effects of the condition of the marine environment on ecological integrity?	Impacts on biodiversity	Changes in the conservation status of native and endemic animal and plant species North Island snapper origins
	What are the effects of the marine environment and the change in its condition on the New Zealand economy?	Economic impacts related to primary industries	Marine economy – value of fisheries and aquaculture Marine ecosystem services
		Energy generation and mineral extraction	Marine economy – value of oil, gas, and mineral extraction
		Impacts on tourism	*
	What are the effects of the condition of the marine environment on public health?	Chronic health effects resulting from the condition of the marine environment	*
		Acute health effects resulting from the condition of the marine environment	*
	What are the effects of the condition of the marine environment on culture and recreation?	Access to and use of marine resources to provide customary materials and food	*
		Cultural significance of the marine environment to Māori	*
		Recreational use of the marine environment	*

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