



## Outline of upcoming indicators for *Our land 2018*

This document provides an overview of the new and discontinued land indicators for *New Zealand's Environmental Reporting Series: Our land 2018*, which Stats NZ and the Ministry for the Environment (MfE) will publish on 19 April 2018. Apart from the report, we will also publish an infographic, raw data accessible from MfE's website, and indicator pages with dynamic maps and graphs on Stats NZ's website.

The Environmental Reporting Act 2015 (the Act) requires Stats NZ and MfE to publish regular reports about the state of the environment. We publish a report on one of the five domains every six months – air, atmosphere and climate, land, fresh water, and marine – and a synthesis report on the state of New Zealand's environment every three years.

*Our land 2018* will be the fourth domain report, and the first land specific report, to be produced under the Act. The findings will highlight what we know, and also **what we don't yet know** as a country, that will allow us to form a full picture of the state of our land.

This document covers:

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### New indicators

Since [Environment Aotearoa 2015](#), we have added three new indicators for the land domain.

- Irrigated land area is produced using spatial data that show the extent of irrigated land for all New Zealand, including farmland and urban land (eg golf courses). Irrigated land area is mapped using aerial photographs, analysis of satellite imagery, resource consent records of current irrigation consents, and property boundary extents.
- Use of public conservation land has two aspects:
  - Great Walks' bookable units from the Department of Conservation's online booking system is a proxy measure for visitor numbers and pressures from use of the

conservation land. This aspect provides information on bed nights for all Great Walks between 1 November and 30 April each year.

- Commercial activity on public conservation land is measured by the number of permissions (active concessions) and operators (concessionaires) by land-based activity (eg guiding, ski-fields, accommodation, filming) in a financial year.
- **Change in use of Māori land for primary production** takes a subset of Māori owned or managed land, which are identified as farms in Stats NZ's agricultural production statistics (APS) to show the main land use practices (including livestock numbers) on these farms, and changes in practices over a 10-year period. Māori farms in the APS are identified using Stats NZ's Business Register, NZ Māori Tourism, the Poutama Trust, and the Māori Land court.

## Indicators not updated

We are not updating some indicators that were included in the land component of *Environment Aotearoa 2015*. This is so that we could balance the cost of obtaining more data (and the time available to analyse, quality assure, and update indicators) against the benefit of new information. In some cases, new data were not available.

We will not update these land indicators in 2018:

- Distribution of indigenous trees
- Status of widespread indigenous trees
- Land pests (eg distribution)
- Pest impacts on indigenous trees
- Rare ecosystems
- Active sand dune extent
- Modelled rat and stoat population responses to mast-seeding events
- Predicted pre-human vegetation
- Soil orders
- High-class land for food production.

We will investigate the viability of updating some or all these indicators in future reports.

## Revised indicators

We considered that we could add value by providing a more comprehensive analysis of existing indicators. While we will not be able to update some indicators with new data in 2018, we will revise them to maintain their relevance and improve interpretability. These are:

- Estimated highly erodible land in the North Island
- Estimated long-term erosion
- Land cover.

Other indicators will be updated with new data and will be rewritten to improve their relevance, robustness, and interpretability. Other indicators will be updated with new data and will be rewritten to improve their relevance, robustness, and interpretability. These are:

- Land use (agriculture and horticulture only)
- Soil quality and land use
- Wetland extent
- Change in farm numbers and farm size.

## Discontinued indicators

One measure, Economic performance of the agricultural industry (supporting information), has been discontinued as it has limited value as an indicator. It covered agriculture GDP, agricultural merchandise exports, and employment numbers in the agricultural industry, which are available on Stats NZ's website.

This discontinued indicator will still be available from the archived indicator pages on Stats NZ's website but will no longer be updated with new data.

## Supplementary information

In addition to the indicators described above, *Our land 2018* also draws on scientific literature – published peer-reviewed articles and technical reports – to provide a more complete picture of the pressures, states, and impacts for land. This supplementary information helps provide context to and explains our findings. To ensure the report is relevant today, we highlight emerging issues that would otherwise be omitted from the reporting because no nationally robust data is currently available. For example, we will use information from other sources to fill significant gaps, such as around land use change.

## Remaining data gaps

*Our land 2018* will describe significant gaps in data coverage and consistency that have limited our ability to form definitive and integrated findings.

Data coverage for pressure and state topics in the land domain is generally good. The most important gaps are for impact topics, particularly impacts on biodiversity and ecosystem processes, economic impacts, and impacts related to te ao Māori.

Significant data gaps include:

- no single, comprehensive, robust national dataset for land use
- limited national perspective on the long-term trends on the quality and condition of our soils due to coverage and consistency issues with soil quality data
- characterising impact – **through mātauranga Māori and tikanga Māori; and on kaitiakitanga, customary use and mahinga kai.**

## How we selected the indicators

Stats NZ and MfE undertook the selection process, starting in May 2017.

Initial considerations involved how we could fill information gaps (such as topics under the Act not informed by measures in *Environment Aotearoa 2015*), and specific gaps that were identified in a closure report produced following *Environment Aotearoa 2015* that identified potential new indicators as well as improvements to existing indicators.

We prioritised whether we updated indicators by considering:

- what value the measure adds to the environmental stories in the domain
- the relative cost of obtaining some data
- the feasibility of updating or creating the measure within the required timeframes
- customer need and perception of importance.

We gained Technical Advisory Group (TAG) agreement on the priority land domain stories and data gaps to fill. With input and guidance from our technical advisers, we adapted the criteria for importance proposed by the Parliamentary Commissioner for the Environment (2016) to identify key themes. The criteria were scale of issues, magnitude of pressure, whether the state is getting better or worse, potential risk to natural systems, cumulative impact, irreversibility, significance to public health, significance to te ao Māori, economic impacts, and public interest.

We developed three new indicators from this process (Irrigated land use, Use of public **conservation land**, and **Change in use of Māori land for primary production**) and investigated the data availability of a range of other potential new indicators.

We collected data from January 2017 to August 2017.

## Quality assurance

We took the draft list of indicators through a quality assessment process that involved assessment of the data and its methodology by the Statistical Methods and the Environmental Statistics teams at Stats NZ. This work, which took place from March to August 2017, was supported by technical and scientific advice from MfE and data providers.

We assessed all potential indicators against the six criteria from the data quality framework (as outlined in the [Principles and Protocols for Producers of Tier 1 Statistics](#) – PDF, 797 KB): relevance; accuracy; timeliness; coherence and consistency; accessibility; and interpretability.

All the indicators included will be robust enough to report on, but not all will have the same level of data quality. To communicate this, the indicators are classified based on data quality into three categories: national indicator, case study, or supporting information. All indicators are of higher statistical quality than the supplementary information.

[Good practice guide for environmental reporting](#) has more information on quality assurance and the classification of measures.

We completed the first draft of the report in December 2017. From January 2018 to March 2018 we sought expert advice on the interpretation of the indicators used in the report and webpages, including from technical advisers from central government, Crown research institutes, a regional

council, and a university. Four independent peer reviewers provided a review of the draft report and webpages in February 2018.

## Reference

Parliamentary Commissioner for the Environment (2016). [The state of New Zealand's environment: Commentary by the Parliamentary Commissioner for the Environment on Environment Aotearoa 2015](#) (PDF, 1.06MB). Retrieved from [www.pce.parliament.nz](http://www.pce.parliament.nz).

Indicators for <i>Our land 2018</i>			
	National indicator	Case study	Supporting information
Pressure	Change in livestock numbers	Agricultural and horticultural land use	Change in farm numbers and farm size
	Land pests	Use of public conservation land	Irrigated land area
		<b>Change in use of Māori land for primary production</b>	Modelled rat and stoat population responses to mast-seeding events
State	Bird species on public conservation land	Soil quality and land use	Indigenous cover and protection in land environments
	Distribution of indigenous trees	Status of widespread indigenous trees	Predicted pre-human vegetation
	Estimated highly erodible land in the North Island	Wetland extent <sup>(1)</sup>	Soil orders
	Estimated long-term soil erosion		
	Land cover		
Impact	Pest impacts on indigenous trees	Conservation status of indigenous land species	Active sand dune extent
		High-class land for food production	
		Rare ecosystems	
1. Shared with the freshwater domain.			

## Citation

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