

# FRANKLIN REPORTING AREA

Franklin Local Board

## STATE OF AUCKLAND SOIL REPORT CARD

2018



### SOIL QUALITY

F	E	D	C	B	A
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### TRACE ELEMENTS

F	E	D	C	B	A
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**Soil quality:** Soil samples are tested at 40 sites within the reporting area for seven key chemical, physical and biological factors including:

- soil acidity
- amounts of carbon and nitrogen
- plant available nitrogen
- plant available phosphorus
- soil density
- air filled space (macroporosity).

**Trace elements:** Soil samples are tested for eight trace elements including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc.

Grades will vary for individual sites, land use and soil type.

### QUICK FACTS

THE REPORTING AREA IS  
**64%**  
PASTURE LAND  
(OR 78,956 HECTARES)

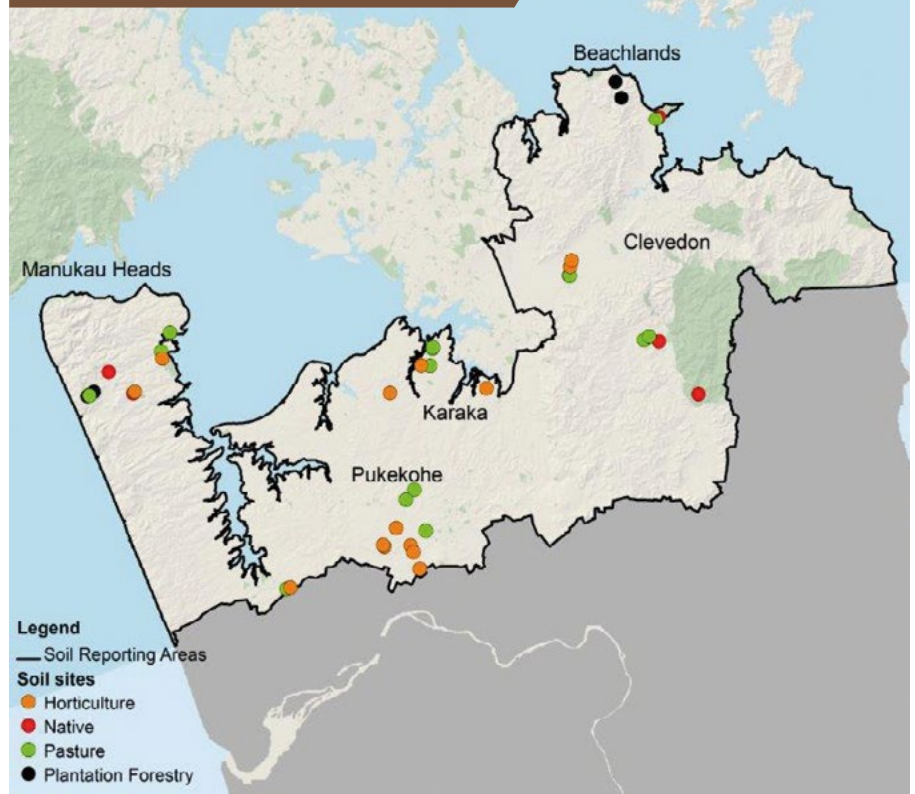
THE FRANKLIN AREA HAS SOME OF THE BEST SOILS IN THE COUNTRY FOR OUTDOOR FOOD PRODUCTION BUT RURAL FRAGMENTATION AND URBAN ENCROACHMENT ARE INCREASING THREATS TO THIS FINITE RESOURCE.

**15%** NATIVE BUSH AND SCRUB

FOREST (INDIGENOUS AND PLANTATION) AND URBAN SITES WERE THE FOCUS OF 2016 AND 2017 SOIL SAMPLING.

HIGH CONCENTRATIONS OF PLANT AVAILABLE PHOSPHOROUS AND SOIL COMPACTION CONTINUE TO BE THE INDICATORS OF MOST CONCERN

### MONITORING SITES – FRANKLIN REPORTING AREA



## MONITORING BACKGROUND

Auckland Council monitors soil quality to observe and report any changes that occur in the extent, quality or health of the region's soil resources. Soil quality refers to the ability of the soil to sustain biological production (for example the amount of tiny microbes in the soil), maintain environmental quality (for example water purification), and promote plant and animal health.

Recommended guidelines for soil quality are those defined by nationwide studies and trace element background concentrations are taken from a regional study (as outlined in ARC TP 153). Soil quality guidelines are refined over time as a result of new research and continuous monitoring; therefore changes can be reflected in overall grade scores.

## MONITORING RESULTS

Data used to produce this report card includes:

- number of sites – 40
- land use/last year sampled (number of sites)
  - horticulture/2013 (14 sites)
  - pasture/2014-15 (15 sites)
  - plantation forestry/2016 (5 sites)
  - indigenous (native) sites/2017 (6 sites).

### Summary of monitoring results

Soil test	Number of sites outside guideline range
Soil acidity	3/40
Total carbon	7/40
Total nitrogen	7/40
Plant available nitrogen	5/40
Plant available phosphorus	25/40 (21 above)
Bulk density	0/40
Air filled space (macroporosity)	14/40 (13 below and compact)
Trace elements	9/40 (8/40 for cadmium)

## MONITORING INTERPRETATION

Test results reveal that Franklin's soils have some environmental health issues. The main issues are:

- A high percentage of sites have been compacted by stock treading or machinery (low macroporosity). Compacted soils can have environmental implications (such as nutrient loss in surface runoff) and harvest/pastoral yield implications.
- A high percentage of sites have high plant available phosphorus concentrations, due to excessive fertilisation. A plant can only take up a certain amount of phosphorus and anything in excess risks being lost in surface runoff.
- A high percentage of sites have cadmium concentrations above the amounts that normally occur. This is due to long term phosphorus fertiliser application. Excessive cadmium concentrations can enter the food chain and potentially have human health implications.



### FIND OUT MORE

This report card is part of a series prepared by the Auckland Council's Research and Evaluation Unit, which undertakes monitoring and research to provide information and evidence to inform the council's activities and reporting. More report cards can be found at: [aucklandcouncil.govt.nz/environment](http://aucklandcouncil.govt.nz/environment). The report card series includes reporting on freshwater, terrestrial, marine, air, soil, capacity for growth, demographics and quality of life.

For more information: e-mail [rimu@aucklandcouncil.govt.nz](mailto:rimu@aucklandcouncil.govt.nz) or call us on 09 301 0101.

### GET INVOLVED

Auckland Council provides more than 20 environmental programmes across the region that you can get involved in. To find out more on how you can help visit: [aucklandcouncil.govt.nz](http://aucklandcouncil.govt.nz)