

WAIHEKE ISLAND REPORTING AREA

Waiheke Local Board

STATE OF AUCKLAND SOIL REPORT CARD

2018



SOIL QUALITY

| | | | | | |
|---|---|---|---|---|---|
| F | E | D | C | B | A |
|---|---|---|---|---|---|

TRACE ELEMENTS

| | | | | | |
|---|---|---|---|---|---|
| F | E | D | C | B | A |
|---|---|---|---|---|---|

Soil quality: Soil samples are tested at three 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 bulk 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

47% (OR 6831 HECTARES)
OF WAIHEKE AND NEARBY ISLANDS ARE COVERED WITH NATIVE BUSH

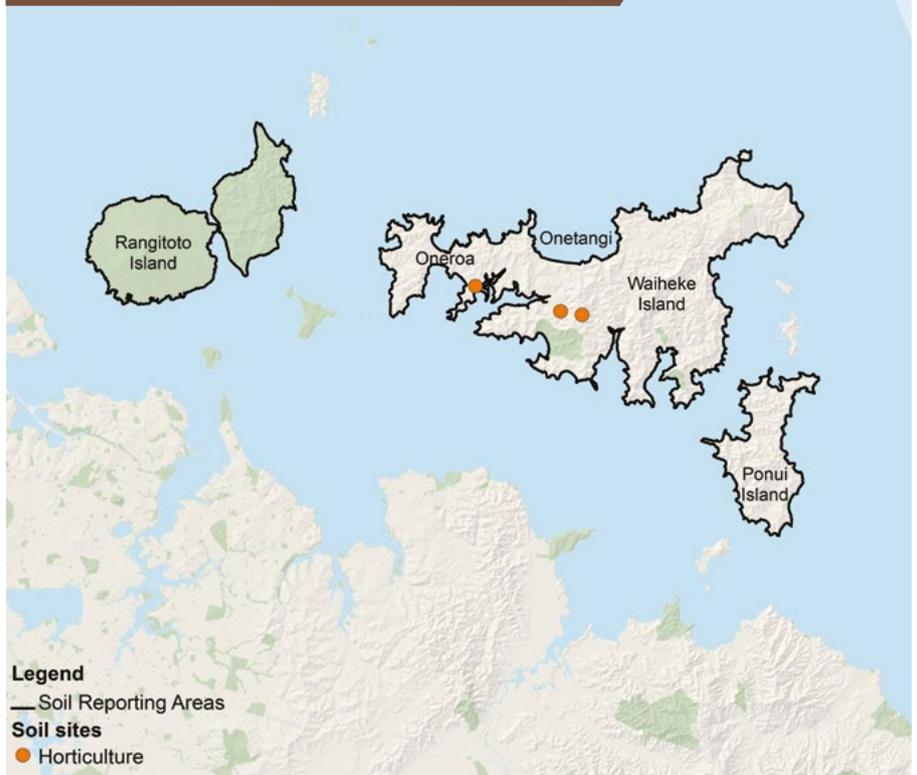
SOIL SITES LOCATED ON WAIHEKE ISLAND WILL BE RE-SAMPLED FOR THE SECOND TIME IN 2018

43% OF THE ISLANDS ARE PASTORAL LAND

56%
OF THE ISLANDS' SOILS ARE FROM THE BROWN SOIL ORDER. THE REST ARE ULTIC SOILS (IMPLYING ULTIMATE SOIL FORMATION) WITH VARIOUS DRAINAGE IMPEDIMENTS.

THE CLIMATE AND LAND ATTRIBUTES OF SOME WAIHEKE ISLAND SOILS ARE FAVOURABLE FOR GRAPE GROWING AND OTHER HORTICULTURAL VINE OR TREE CROPS SUCH AS OLIVES.

MONITORING SITES – WAIHEKE ISLAND 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, maintain environmental quality (for example water purification), and promote plant and animal health.

Soil quality recommended guidelines are those defined by nationwide studies and trace element background concentrations are taken from a region wide 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 – 3
- Land use/last year sampled (number of sites)
 - Horticulture/ 2013 (3 sites).

Summary of monitoring results

| Soil test | Number of sites outside guideline range |
|----------------------------------|---|
| Soil acidity | 0/3 |
| Total carbon | 1/3 |
| Total nitrogen | n/a |
| Plant available nitrogen | 0/3 |
| Plant available phosphorus | 2/3 (low) |
| Bulk density | 0/3 |
| Air filled space (macroporosity) | 2/3 (low) |
| Trace elements | 0/3 |

MONITORING INTERPRETATION

- Test results reveal that Waiheke Island has some environmental soil quality issues. The main issues are:
- Two of the three sites indicated issued with soil compaction (low macroporosity). Compacted soils can have both environmental (nutrient loss in surface runoff) and harvest (fruit or pasture yield) implications.
- Two of the three sites also had low concentrations of plant available phosphorus which could potentially limit production yields.



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. 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 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