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Short webinars for environmental policy-makers and practitioners

Portal to New Zealand's soils information and data

The following questions were asked during our live webinar with Sam Carrick, David Medyckj-Scott and Thomas Caspari but due to time restrictions, we were unable to answer these in the session.

I'm working with a large group in crown property to map contaminated soil data- is this something we could collaborate with MWLR on?

Jo Cavanagh leads this area at Manaaki Whenua. Jo's contact details are CavanaghJ@landcareresearch.co.nz or +64 27 515 2838.

Is LUC data available for the whole of NZ? Or what portion of NZ farmland is LUC mapped?

Yes all of New Zealand is mapped at 1:50 000 scale (region to sub-catchment scale), more detailed farm-scale mapping will require on-farm work and is a service offered by a number of consultants. The national LUC map is available to view on the Our Environment website <https://ourevironment.scinfo.org.nz/>.

The LUC GIS layer can also be downloaded from the LRIS Portal <https://iris.scinfo.org.nz/layer/48076-nzlri-land-use-capability/>. This is a simplified national layer, where adjacent areas with the same LUC have been merged. The original underpinning NZ Land Resource Inventory layers are also available on the LRIS portal e.g. North Island is at <https://iris.scinfo.org.nz/layer/48134-nzlri-north-island-edition-2-all-attributes/>.

Who would be the best person to contact regarding discussing LUC mapping/coverage?

As an initial contact point at Manaaki Whenua contact either Andrew Manderson (MandersonA@landcareresearch.co.nz) or Sam Carrick (carricks@landcareresearch.co.nz).

Can you use this to calculate GHG emissions from land use change with respect to changes in soil carbon stocks?

Land use carbon accounting is managed by the MfE LUCAS team (<https://environment.govt.nz/facts-and-science/science-and-data/new-zealand-land-use-map/>). For soil carbon monitoring, this area at Manaaki Whenua is led by Paul Mudge (MudgeP@landcareresearch.co.nz).

Do you think you could make the soil quality data collected by Manaaki Whenua and used for the soil quality and land use indicator (<https://www.stats.govt.nz/indicators/soil-quality-and-land-use>)?

Yes the soil quality data is available from StatsNZ and MfE at this site <https://www.stats.govt.nz/indicators/soil-quality-and-land-use>. This incorporates both Manaaki Whenua and Regional council data, although as mentioned in the webinar the locations of individual points are not available for privacy reasons. The MWLR Soils Portal also provides further information about different projects and information relating to soil health and quality, including linking to the Our Land 2021 national State of the Environment report which the data and related environmental indicator above underpin.

Is your data only about the soil composition or does it also provide analysis/conclusions that can be derived? e.g. if the data evidences earthquake fault lines, or what land use would be best for a piece of land that is being searched.

Yes, S-map factsheets provide both fundamental soil attribute information as well as information to help inform a range of management issues and tools. The Soils Portal also contains information around a range of topics. We are always open to suggestions on new information that could be useful, or how to improve what is already provided. In regard to earthquakes or geological data we recommend contacting GNS. For looking at land use suitability, the Our Environment website has a lot of information based on the Land Use Capability assessment for New Zealand. There is also a series of reports that has been commissioned by economic development agencies and initiatives. Unfortunately these are not all in one place so will require a bit of web searching. Our Land and Water National Science Challenge also has projects looking at land use suitability

Do you plan to have an online site where land owners can store soil C information on their property like we do with forestry?

No not at this stage. Technically it is feasible to do, and the National Soil data Repository supports national soil carbon monitoring, but there would have to be funding to support building and maintaining the database, end user interface etc. to support farm scale data.

What's the best way to give feedback?

Use the 'Contact us' option on the Soils Portal. Thank you.
<https://soils.landcareresearch.co.nz/contact-us/>

If only 36% of the country is covered – if you look at a regional council how do you know what percentage has bene covered?

Yes S-map coverage varies greatly between regions. You can gain a visual estimate from the map of current coverage in S-map online, or you are welcome to contact Sam Carrick for specific numbers for a region. Coverage varies greatly between regions, and also the type of land, for example the total NZ coverage is currently 37.1%, with a higher coverage of land with multiple-use potential (LUC 1-4 land) which has 67.7% coverage, compared to 'mountain land' with 17.5% coverage.

Given the variety of soils and current coverage, does this mean that tools like Overseer are never likely to be able to do what we want them to do?

There are many aspects to tools such as Overseer, with soil information one of many inputs used to represent a farm system and its environment. At present Overseer users are the biggest user group for S-map, but the demand does vary significantly between regions. This depends on both how tools such as Overseer are used within that region, and also the S-map coverage for that region. Most of the Overseer use of S-map data is for supporting farm decisions in the more intensively farmed land, where S-map has the greatest coverage. For example, nationally S-map covers 67.7% of the multiple use potential land (LUC 1-4) with an extension programme jointly funded by MPI and regional councils aiming to extend S-map coverage by 1.5 million hectares over the next 4 years. So yes, completing national soil map coverage is no small feat, but is certainly achievable, and in many countries is seen as a national priority given the importance of soil and land to many national issues. More information on the business case to support completion of S-map is available at <https://smap.landcareresearch.co.nz/support/citing-s-map/>.

Great to see the legacy work – how about putting all the Water and Soil publications of NWASCO/MWD on there as well? Perhaps the “Broadsheet” of the NZWater and Soil Conservators Association too?

The soils- and land-related issues of 'Water and Soil' have been scanned and are available from our Digital Library at <http://digitallibrary.landcareresearch.co.nz/digital/collection/p20022coll27/search>.

They will form the basis of our resource section for the upcoming 'Land Resources Portal'.

Scans of water-related issues of 'Water and Soil' are being provided by NIWA.

To what extent do you update data using the information that comes though via site specific sampling done for resource consent applications?

Certainly we would always appreciate and value additional data, but presently our funding doesn't extend to cover this. This is an issue with all 'citizen science' or multi-agency data-sharing, whereby you need two key components for success: a) standard methods (tools) to collect and describe so that data from different sources can be integrated, and b) a database system to manage and curate the data as it grows over time. Both are technically feasible, with some very good tools now available, but it is very hard to secure long-term funding to support it. The Parliamentary Commissioner for the Environment has highlighted these challenges in recent reports, and MBIE is looking at how to better support research infrastructure in the Te Ara Paerangi review of the science system <https://www.mbie.govt.nz/have-your-say/future-pathways/>.