



Report from the Waikato Biodiversity Forum, Soil Health and Biodiversity Day. Held at Paterangi Hall, Waipa on the 19th of October 2022

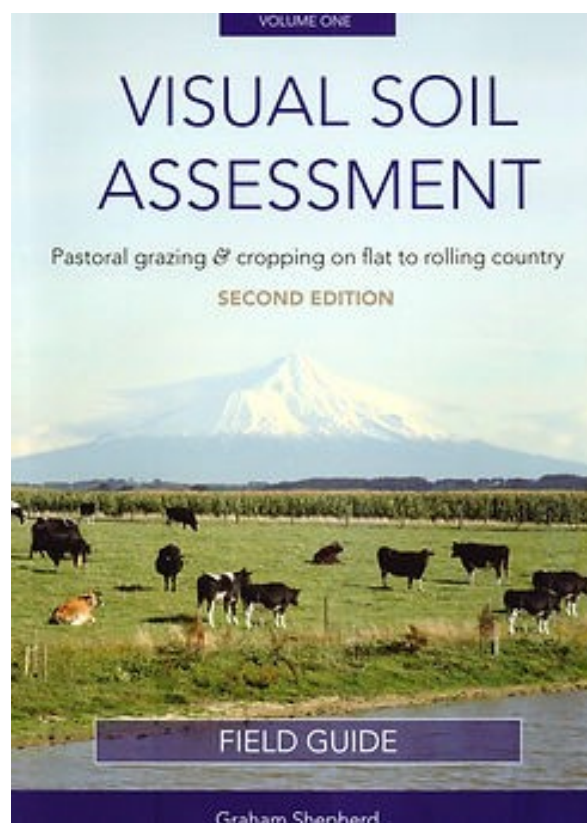
Purpose of the day

- To demonstrate the crucial importance of soil health and biodiversity to our climate, economy and well-being.
- To highlight that soil is the largest living system on earth and has a profound influence on how much carbon is stored or released into our atmosphere.
- To help understand what influences soil health, particularly in agricultural settings (which dominate land-use domestically and globally).
- To understand how measure soil health using the Visual Soil Assessment (VSA) tool.

The soil health and biodiversity day took place on the 19th of October and was held at the Paterangi Hall, in the Waipa district. The day was a collaborative effort between WBF, Waikato Regional Council (WRC) and the Lancare Trust. For a long time soil has been treated as an inert substance which is only balanced through chemical input. The inadequacy of the approach to soil health, has resulted in an emerging global crises, of rapid soil desertification and erosion. These processes are having dire impacts on our soils ability to grow vegetation and hold water, which in turn is contributing up to 40% of global carbon emissions.

The day started off with Bala Tikkisetty from WRC and Sam McElwee, the coordinator of the Waikato Regional Council opening up proceedings. Sam and Bala set the scene for the day with a karakia to welcome everyone and set our intentions. From there, a sobering assessment of both the current national and international health of soil was presented. The picture is now clear that healthy soil is essential for the health (economic, environmental, mental) of almost all life on earth, including humans, and that soil is currently being degraded at unprecedented rates worldwide. Dying soil is unsurprisingly not an issue in areas covered with extensive and established vegetation, like our native forests, which covered much of the country prior to human settlement. The issue of dying soil lies in areas covered in agricultural and horticultural soils, which take up 70% of land globally and around 50% of Aotearoa, NZ. The solution to our soil crisis is of course, not to stop farming, as we all rely on farming in so many ways, but to make farming practices carbon positive, i.e building soil rather than destroying it. Not only will doing this contribute vitally to halting our planets climate crisis, but also farming can be made more profitable in the long run.

Following on from Sam and Bala, Graham Sheppard, took over proceedings and spoke about what makes soil healthy, and how we can assess the health of soil accurately ourselves via Grahams Visual Soil Assessment (VSA) tool. VSA is an effective and immediate way to assess soil quality quickly and cheaply in the field. VSA provides a range of assessment tools to look at soil and plant properties which contribute to soil health, for example soil texture, structure porosity, worm counts and soil smell. This article will not go into detail on these tests, but to find out more about VSA in detail, [click here](#).





Waikato Biodiversity Forum

Ngā Kaihāpai Rerenga Rauropi o Waikato

A key understanding from the day, was that soil carbon plays a vital role in soil health, as it provides the building blocks for all cells and organisms. It also regulates biological, chemical and physical process in soil and is a major reservoir of plant nutrients. As the use of chemical fertilizers has become the norm, we have seen a reduction in organic content going back into soil, this has lead to a major increase of carbon released into the atmosphere globally. Increasing organic content in soil is the key to increasing soil carbon, and therefore also vital for us in tackling climate change and a looming global food crisis. Luckily some farmers in NZ are already carbon positive, and being that much of our farming is pastoral rather than crop based (which is more damaging to soil), farming practices here can quickly be adapted to make the whole agricultural sector carbon positive. This would have hugely positive effects on the long term economic and environmental health of our nation and contribute globally to reducing carbon emissions. A win win.



Above and below, VSA assements in the field. Above with Pirongia Maunga in background.

