

## Soil microbiology on the Falkland Islands

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This January and February, I joined the Soil Mapping team from SAERI for one month of field work on the Falkland Islands to collect samples for eDNA analysis of soil microbiology. I think it is important to study microbiology because microbes are responsible for the decomposition of organic matter and recycling of nutrients. Some bacteria, microfungi and other microbial eukaryotes also have close associations with plants roots. These microbial communities in the soil line a zone around the roots that is called rhizosphere and they are now thought to be beneficial for the growth and health of plants. There are studies that have suggested that the plants may actively select for microbes that have a positive effect for the plants through the secretion of chemicals from the roots.



As microbes are very small and up to 99% cannot be grown in the lab, we use culture-independent DNA methods to identify the number of microbes and abundance in each sample using gene markers and sequencing technologies, which will be carried out at the Life Sciences Department of the Natural History Museum in London, UK.

# SAERI NEWS

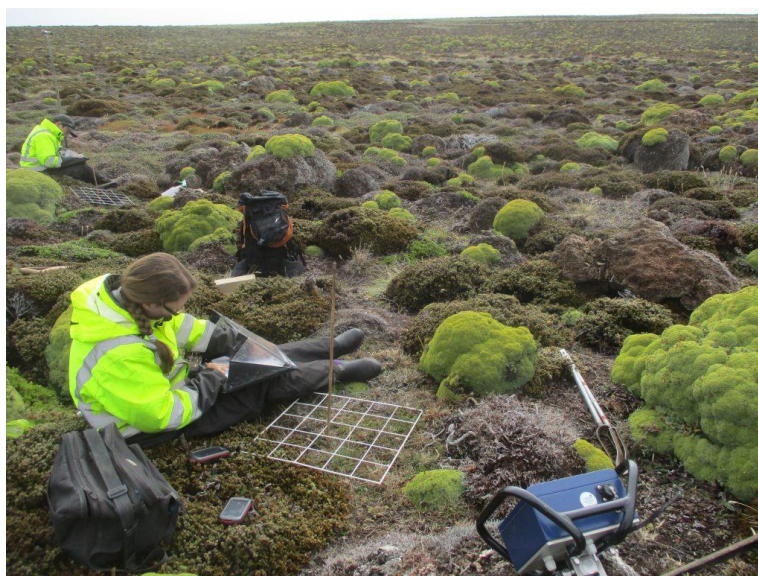


During my one month on the Falkland Islands, I was able to collect samples from sites on East and West Falkland. Having to do a range of sample collections from microbiology to soil chemistry in addition to soil and vegetation characterisation, we spent between 1-3 hours at each site. To provide an overview of how it looks when we sample, I prepared two time lapse movies that I took of us at Port Stephens on West Falkland – it also shows how quickly the weather can go from bright sunshine to rain within minutes!

Time-lapse videos:

<https://youtu.be/4Uh5-BzZrLU>

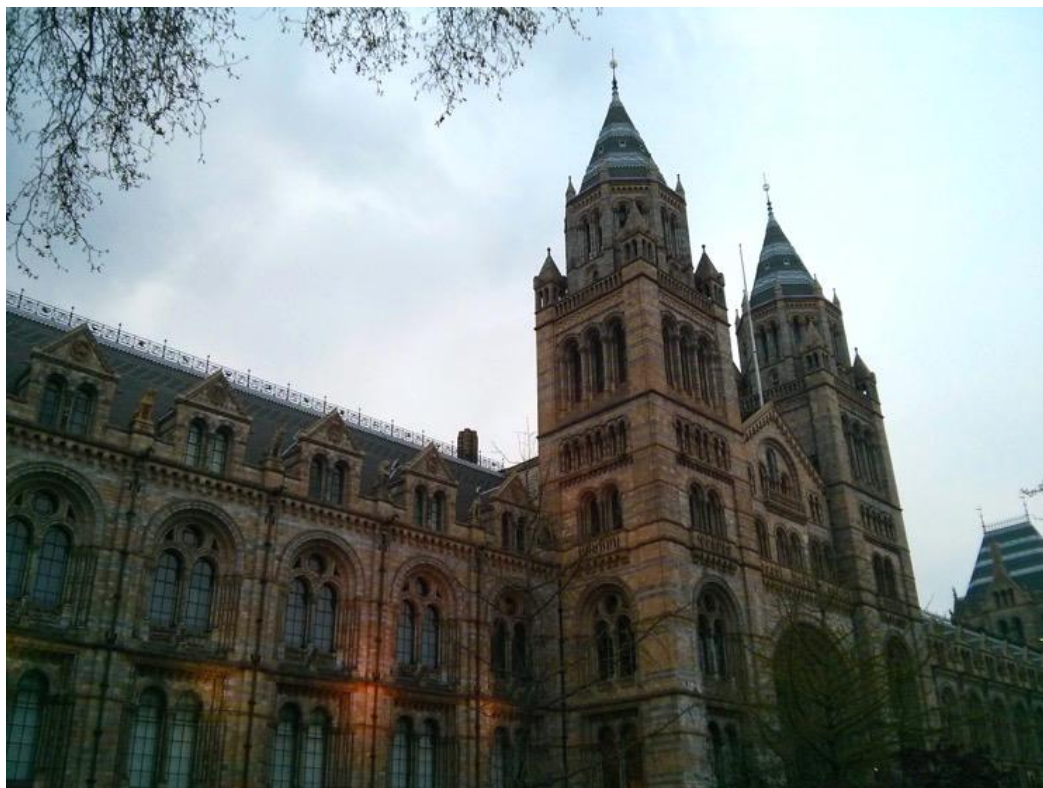
<https://youtu.be/hiWYBZhu664>





# SAERI NEWS

I am now back at the Life Sciences Department, Natural History Museum, in London, United Kingdom; and it is time to start the processing of the samples, which will include DNA extractions, amplification of the 16S rRNA gene for prokaryotes, 18S rRNA gene for microbial eukaryotes and ITS for fungi followed by high throughput sequencing and bioinformatics analyses of the sequencing data. Exciting times ahead!



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