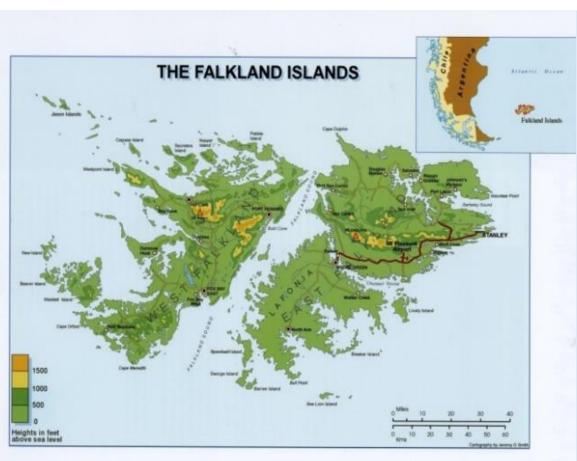


Mapping the Peatland Resource in the Falkland Islands (UKOT)

Jim McAdam, Stefanie Carter, Anne D. Jungblut, James Bryan, Chris Evans, Matt Aitkenhead, Sergio Radic

Jim.mcadam100@outlook.com, Scarter@saeri.ac.fk



Background:

- The Falkland Islands contain the largest peatland reserve in the UK Overseas Territories
- Agriculture is based on sheep farming for wool from extensively grazed grasslands
- Soils are peaty and shallow

Climate Change

- Small oceanic islands are particularly <u>vulnerable to climate change</u> given their isolation, biodiversity and self-reliance
 - Climate change predictions: Temp:1.3-2.2°C increase, Rainfall: no change but more sporadic and intense; Wind: more stormy
 - <u>Key risks</u>: changes in soil moisture and drying; soil erosion; invasive plants; pests and diseases; plants unable to shift ranges; fire risk; soil organic carbon loss



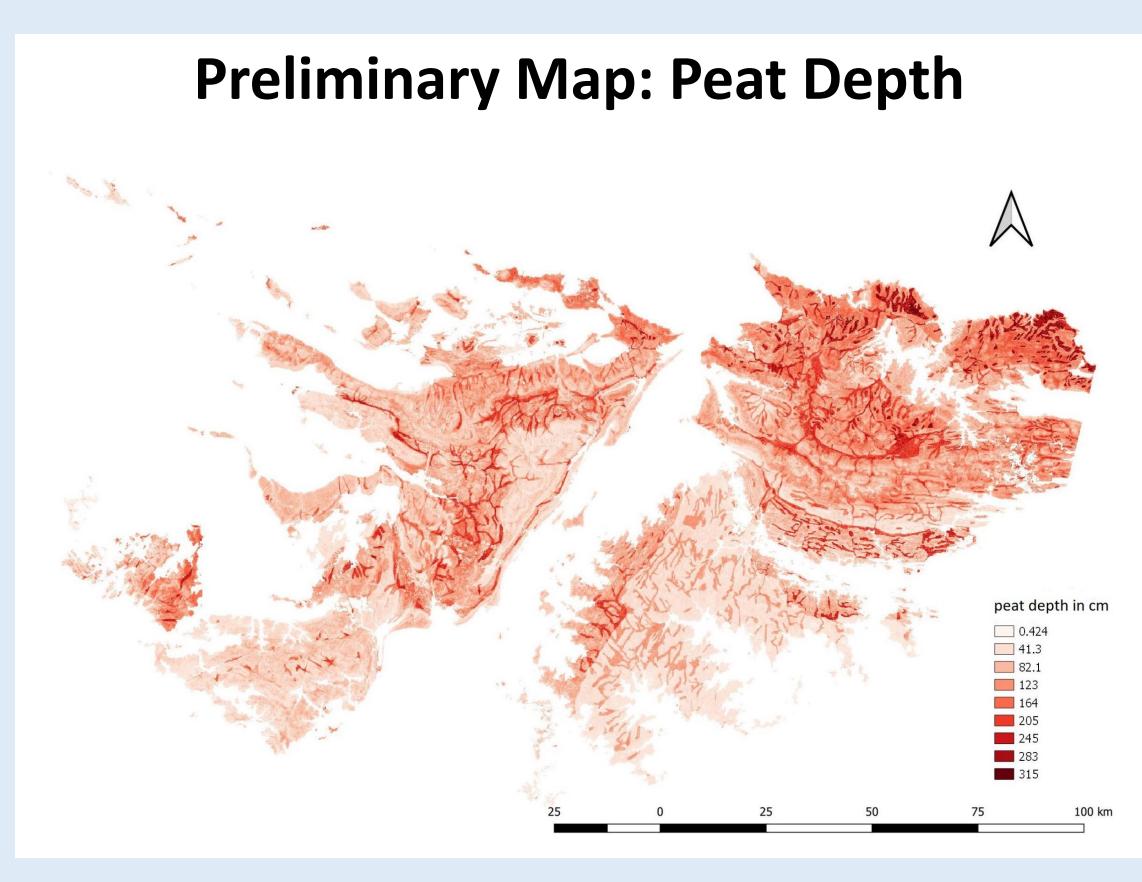


The Soil Mapping Project (2018-20) aims:

- to create a national soil map for the Falklands
- to establish a baseline for peat extent, carbon stock and erosion risk
- to deliver an online tool for farmers to improve land management and be more climate resilient
- to establish baseline data on richness and relative abundance of bacteria, archaea, fungi and other microbial eukaryotes in soils
- to provide scientific evidence to the Falkland Islands Government to underpin its climate risk and resilience policy

Mapping Methodology

Mapping is being carried out using Digital Soil Mapping (DSM) with spatial covariates (e.g. topography, geology) and field observations linked using a neural network model.



Microbiology

Microbial communities will be characterised using 16S rRNA, 18S rRNA and ITS gene DNA-based high throughput sequencing.



CO, flux

Dark and light measurements are taken regularly from four different environmental conditions.











