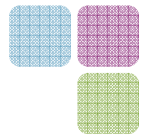


Allotment soils – keeping them healthy



The James
Hutton
Institute

Matt Aitkenhead



What IS soil?

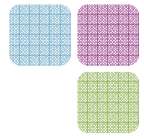
Soil is:

- Solid, liquid, gas and life
- Formed by numerous processes acting on geological materials
- A highly complex environment
- The boundary where atmosphere, hydrosphere and geosphere meet and combine



The James
Hutton
Institute





What is healthy soil (I)?

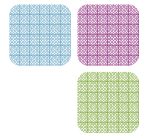


What do we mean by healthy?

- Resilient?
- Productive?
- Flexible (multipurpose)?

What defines healthy soil?

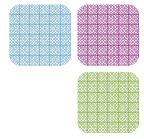
- Biologically active
- Structured
- Contains organic matter
- Components in equilibrium



What is healthy soil (II)?



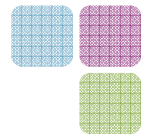
Where is the healthy soil?



What is healthy soil (III)?



This soil is not resilient, productive or flexible – but it is healthy!



What is unhealthy soil (I)?



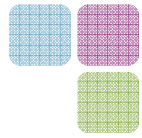
Wikimedia Commons

What do we mean by unhealthy?

- Sensitive to disturbance
- Low productivity?
- Low functionality?

What defines unhealthy soil?

- Reduced biological activity
- Degraded structure
- Low organic content
- Contaminated/disturbed



What is unhealthy soil (II)?



If left to itself, soil will generally be:

- Healthy
- In equilibrium with its environment

It may not be productive

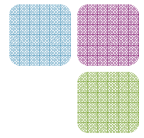
It may not be useful for a desired function

Unhealthy soil is caused by:

- Misuse
- Overuse
- Contamination
- Lack of ground cover

Well-used soil can still be healthy!

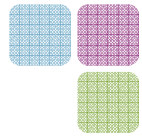




What is unhealthy soil (III)?



This soil has low biological activity, poor structure and is very sensitive to disturbance – but it is not unhealthy!

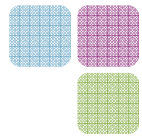


Not all soils are allotment soils



Allotment soils are:

- Relatively managed
- Biologically altered
- Physically altered
- Chemically altered
- Moderate/high organic matter content
- Not shallow
- Very high productivity



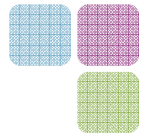
A family tradition (I)

Nobby Elam
Allotment holder
Gardener
Distiller/winemaker



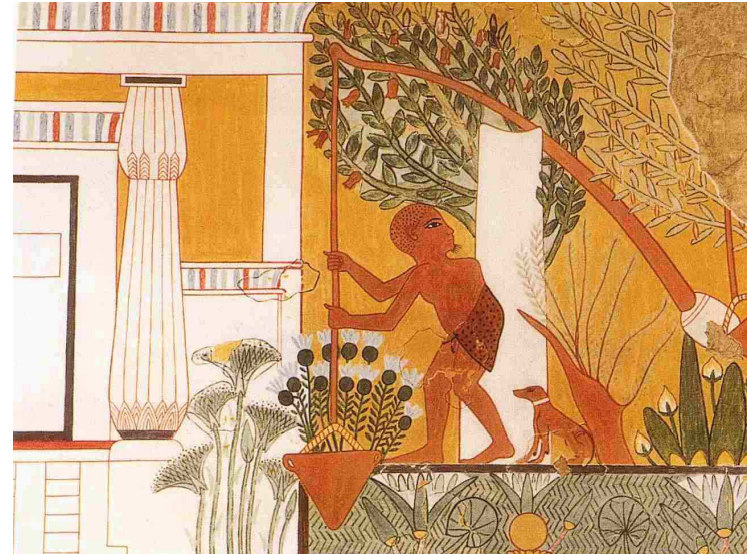
Jacqui (Mum)
Soil scientist
Gardener
Brewer & winemaker

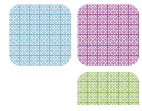




Are allotment soils normal?

- They are certainly not abnormal!
- Smallhold vegetable/fruit gardening is an ancient tradition
- Not a large area but greatly disproportionate food production





Is allotment management normal?



Scotland

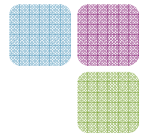
- Some things haven't changed for centuries
- Similarities around the world



USA



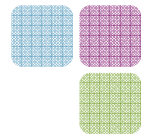
Uganda



What are you doing right?



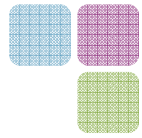
- Composting
- Encouraging pollinators
- Looking after the soil structure
- Crop rotation
- Discouraging invasive species



What are you doing wrong?



- Plastic sheeting
- Horse manure
- Constant potatoes
- Salting slugs
- Overweeding
- Lack of cover in winter
- Neeps!



A family tradition (II)



Me!

Soil scientist

- Strong on the theory
- A bit weak on the practice

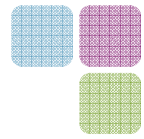
Overenthusiastic allotment holder

- Maize doesn't really grow in Aberdeen (but tomatoes might)

Personal allotment traits

- Intercropping is good
- Weeds are not my enemy (but slugs and mice are!)
- Plant early and pray!

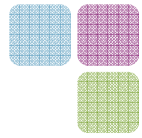
Pickler



What can you do?

- Encourage (most) of the soil life
- Mix it up
- Intercropping
- Permanent borders
- Allow a little chaos





What should you avoid?

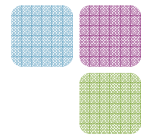
Compaction

Erosion

Repeating crops

Overworking the soil

Over-tillage



A family tradition (III)



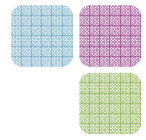
Sprog

“What can I plant?”

“What can I pick?”

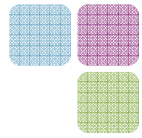
Weeding is not an option

Allotment socialite

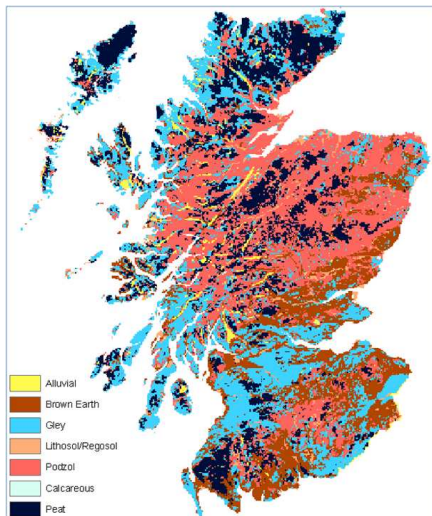
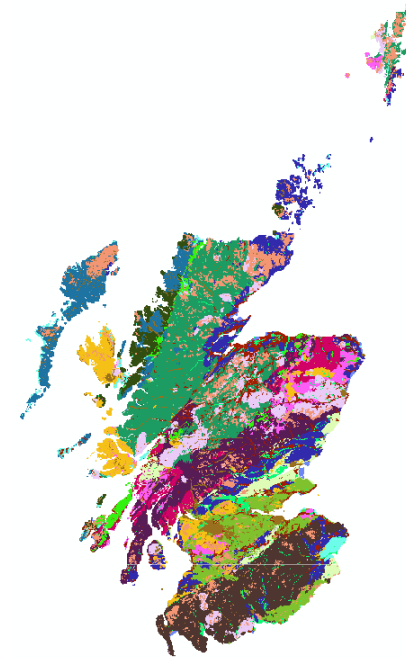
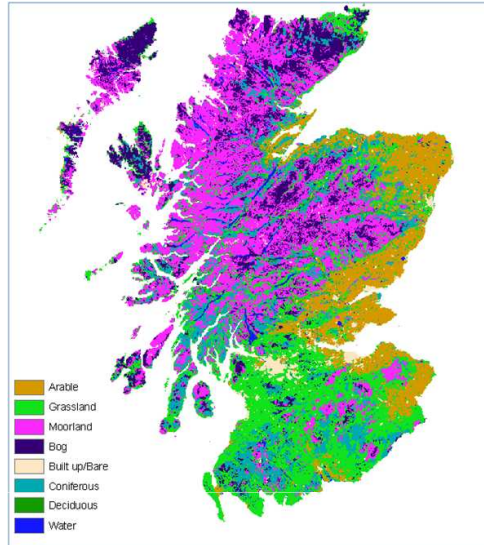
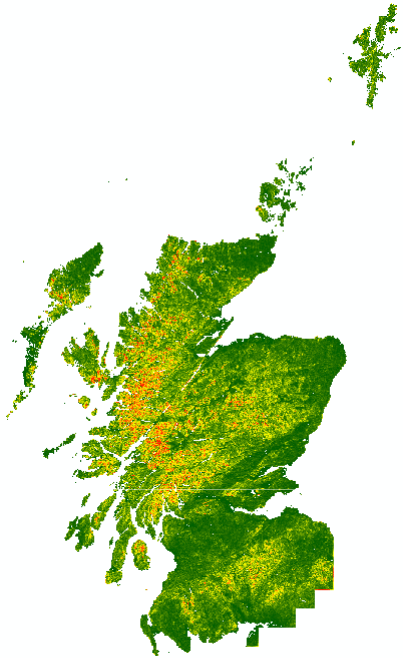


Not all soils are the same

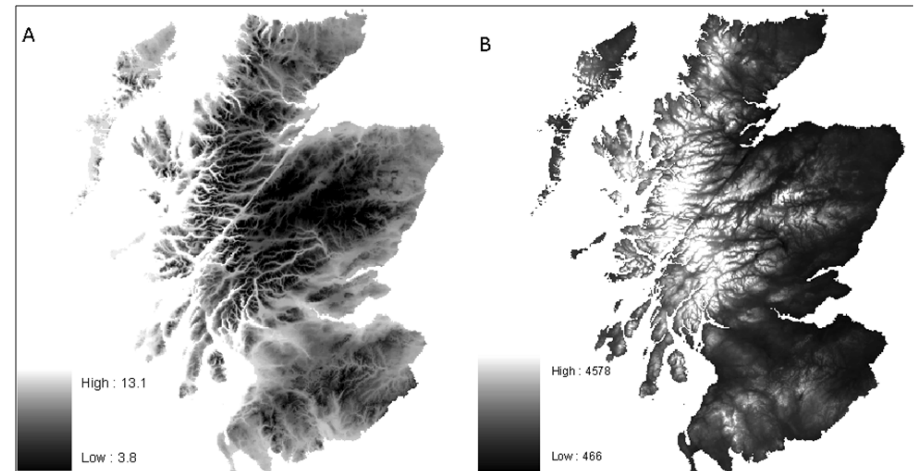


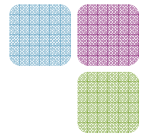


Know your soil

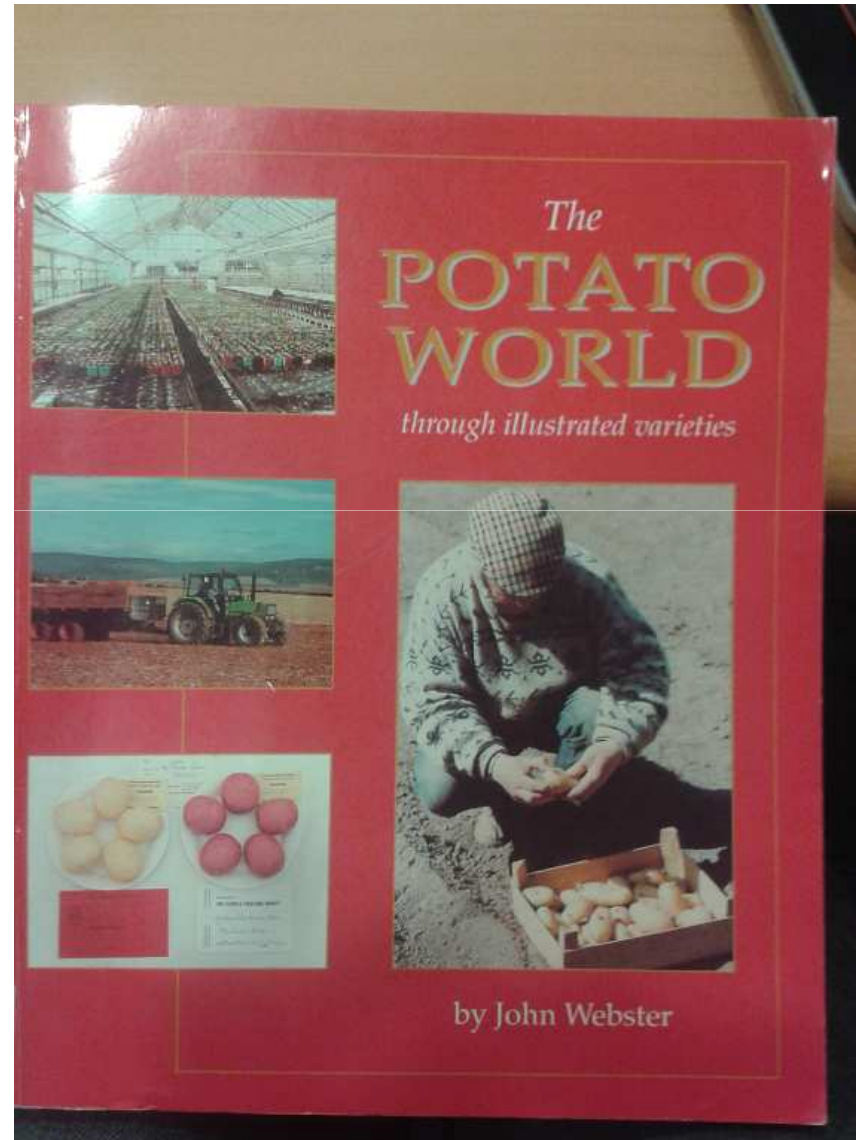


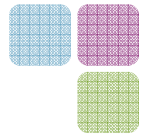
Slope
Land cover
Parent material
Climate
Soil type





Know your crops

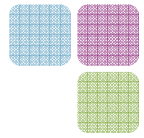




Who ya gonna call?



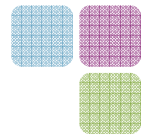
- Me (matt.aitkenhead@hutton.ac.uk)!
- Scotland's Rural College (SRUC)
- Scottish Environmental Protection Agency (SEPA)
- Scottish Natural Heritage (SNH)
- Soil Association Scotland
- The James Hutton Institute (JHI)



What's family got to do with it?



- Give me a child until they are seven and I'll give you back a soil scientist
- Fun = interest
- Kids eat fresh produce (shock!)
- Soil is not exciting – but the wildlife is

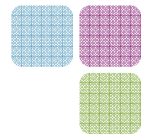


Saving the world?

What can we fix?

- Obesity
- Lack of outdoors activity/fresh air
- Increase in allergies
- Disconnect with food sourcing
- Lack of preparedness for the zombie apocalypse





Thank you!

