



Reimagining the Levels Tree Seminar

Compton Dundon

November 7th 2018

Soils & Trees

www.sustainablesoils.org

Sustainable Soils Alliance?



Tree health & soil health

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Treework Environmental Practice

Co-CEO Sustainable Soils Alliance

www.sustainablesoils.org

www.treeworks.co.uk

A RESPONSE TO THE 25 YEAR PLAN

**We have national standards for air & water
BUT NONE FOR SOIL**

SUSTAINABLE SOILS ALLIANCE

Reversing the soil crisis for food security, climate change mitigation and flood protection



A Convening Organisation



A Coordinating Organisation



A Campaigning Organisation

The Sustainable Soils Alliance is a partnership of farming organisations, businesses, NGOs, applied science and academia working together to reverse the current crisis in soil health and restore our soils to health within one generation.

CHAMPIONING THE SUSTAINABLE SOILS ALLIANCE



Kate Jordan

Helen Brownlee

George Fawcett-Woodhouse



Susie Spelgatt

Harry Preece

Tom Preece

Trees are adaptive

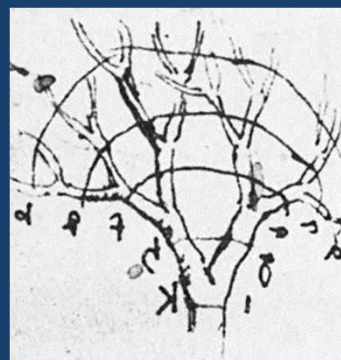
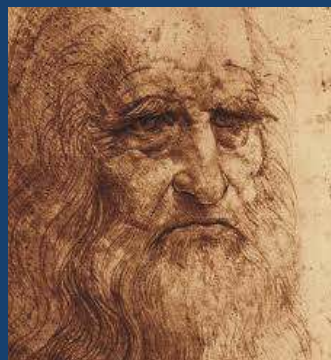


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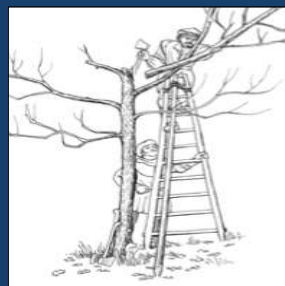
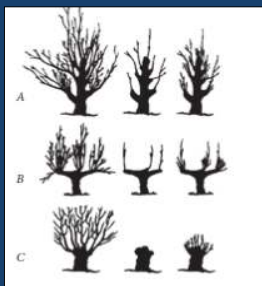
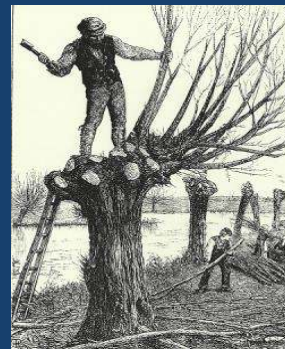


“We know more about the movement of celestial bodies than about the soil underfoot”

Leonardo da Vinci



Pollards = working trees



Growing trees for using natural forms



Willow pollarding on the Levels



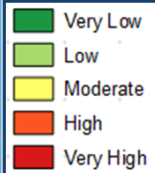
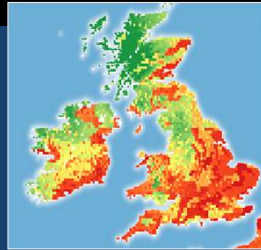
Willow pollarding on the Levels





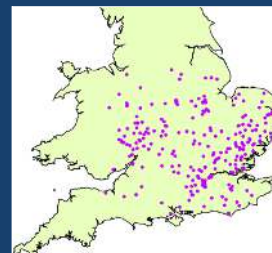
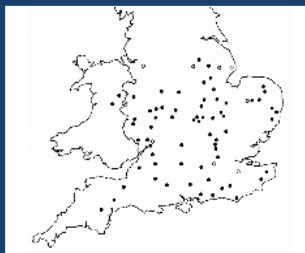
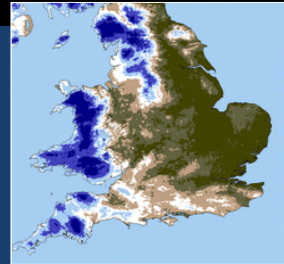
Epidemiological patterns

Environmental factors??



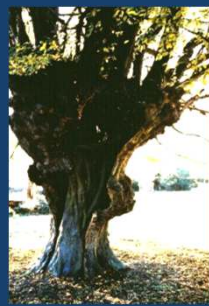
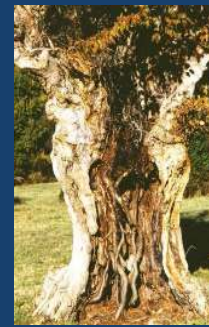
Potential threats to soil biodiversity
2016

Global Soil Biodiversity Maps



Monck & Fay 2016

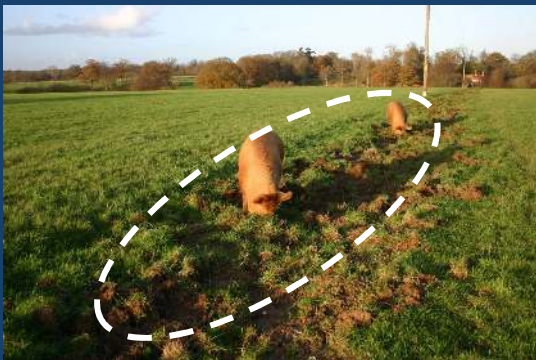
The lifespan approach to trees





Healthy trees have coevolved with fungi

Tree-soil inputs v natural processes



Characteristics of healthy soil



Soil food web

Per gram of soil

- **Bacteria:** 1 billion
- **Fungi:** 200 m hyphae
- **Protozoa:** 10,000
- **Nematodes:** 30
- **Arthropods:** 50,000
- **Fungal : Bacterial Ratio Balance**
- **F:B R** influences plant community growth, optimal ratio varies between annual, perennial and woody (trees)

Dix, N.J. & Webster, J. (1995) *Fungal Ecology*. Chapman and Hall.

Tree-soil health signs



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1. Convening



2. Coordinating



3. Campaigning



- **Holding government to account**
- **Overcoming siloes**
- Platform for debate
- Science + end-users
- Monitoring progress
- Promoting technology
- Soil Library
- Informing decision-making

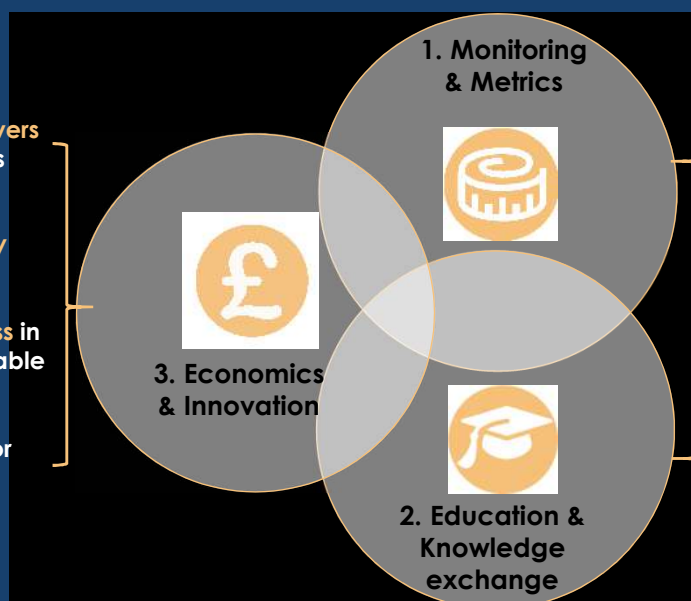
Our workstreams

The **economic drivers** of sustainable soils

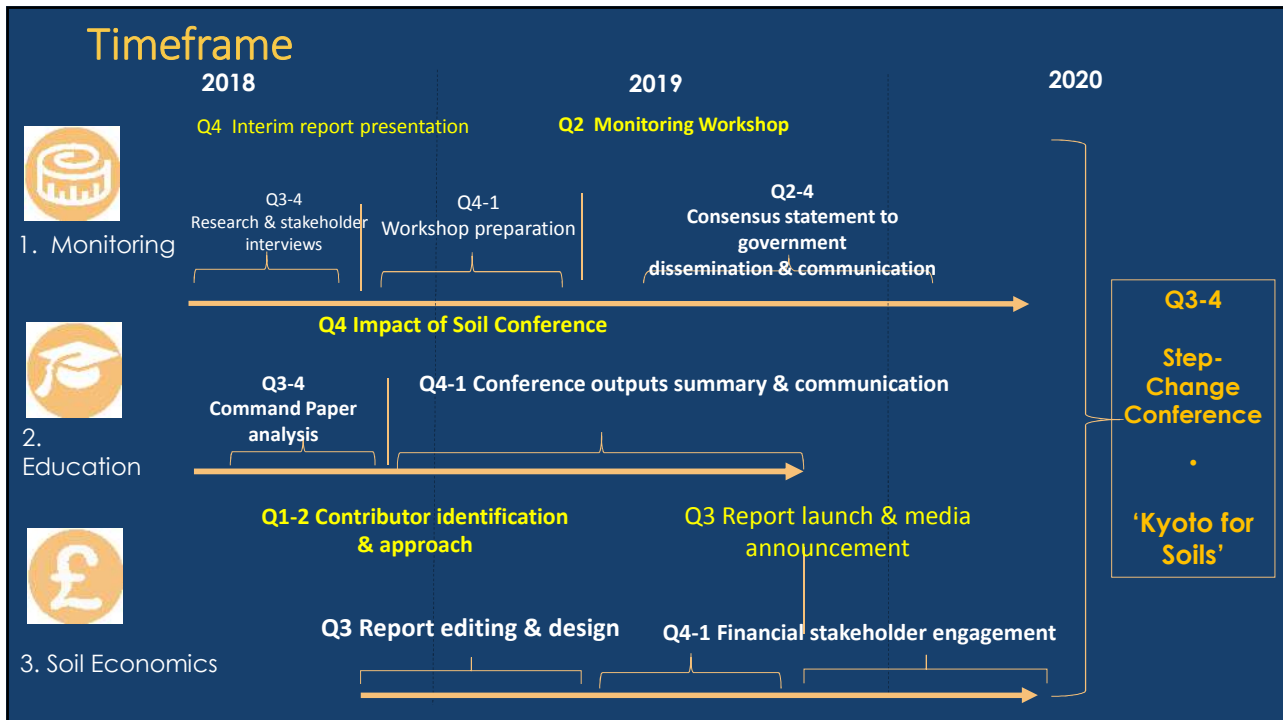
Soil within a post-Brexit **farm subsidy scheme**

The **role of business** in achieving sustainable soils

A **market-place** for soil



- Indicators of soil quality
- Monitoring for change
- On-farm & nationwide soil long-term monitoring
- Definition of 'public goods' as they relate to soil
- Soil in higher education
- Collaboration - farming & research communities
- Soil management innovation
- Public engagement in sustainable soils





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Why the Sustainable Soils Alliance?