



Global Atlas of Organic Soils

A soil perspective of peatlands

Arwyn Jones

**European Commission
DG Joint Research Centre
Soil Action, Land Resource Management Unit**

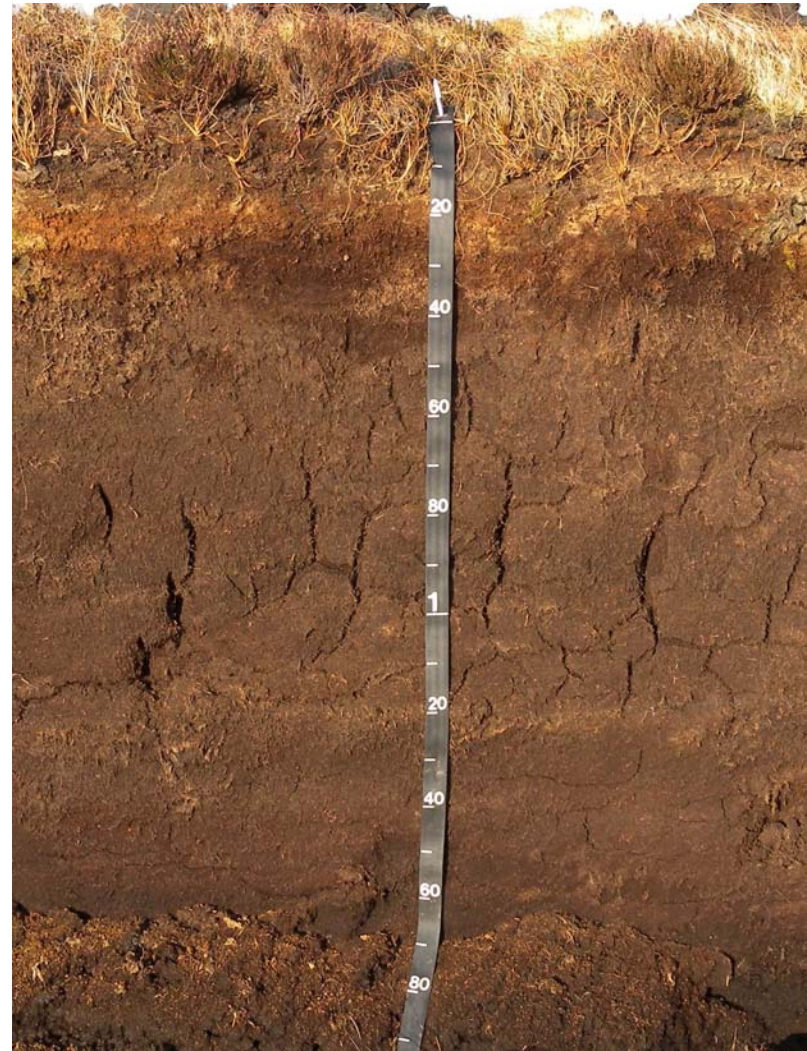
Organic Soils

Global perspective showing the extent and nature of organic soils and landscapes

Organic soils represent accumulations of partly
or completely decomposed plant residues
formed under anaerobic conditions.

Climatic distribution

Distinct topographic settings



CHARACTERISTICS OF ORGANIC SOILS

Have 40 cm or more of organic soil material in the upper 80 cm

Organic carbon content (by weight) of at least 12 to 18%

Distinction as a result of degree of decomposition (fibrous, semi-fibrous or amorphous)

Depth – often unknown (deep peat several m v peaty topsoils)

Usually acidic (pH <5) unless associated with calcareous or base rich water

Low bulk density, high water holding capacity and low load-bearing strength

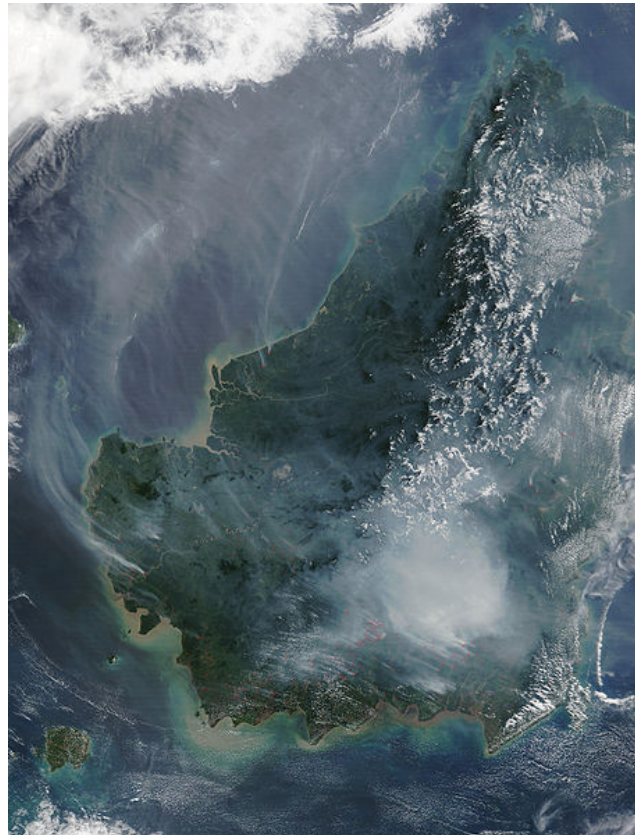
Peats are often characterised by specific plant communities

High political and social interest.

Global Context

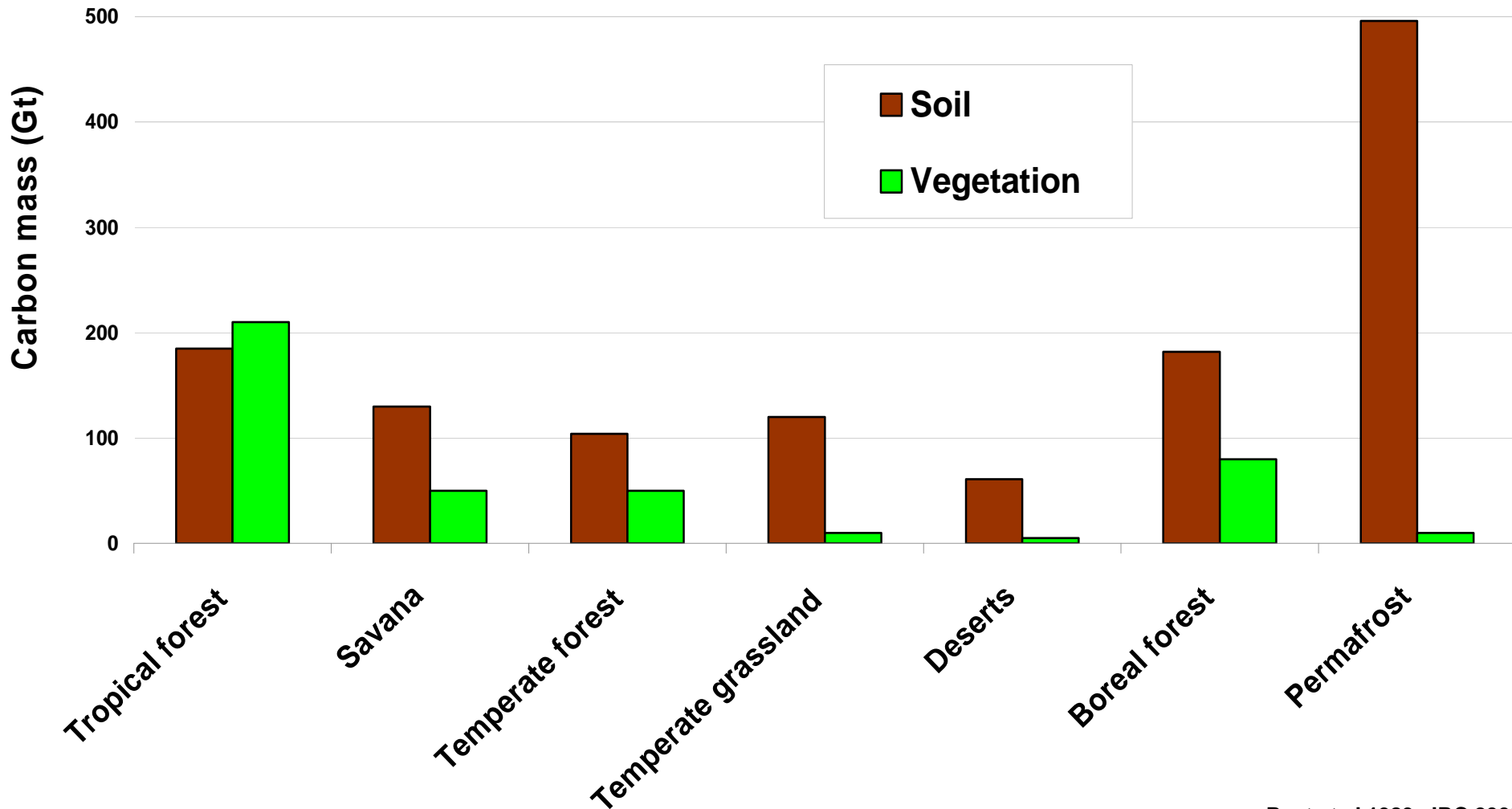


Issues





Global Carbon Stocks



Global Atlas of Organic Soils

- Based on JRC Soil Atlas Series – aimed at non-specialists
- Need to improve the understanding of the terminology about peatlands used in different disciplines / countries / technical contexts.
- Propose global harmonisation through Universal Soil Classification WG
- Focus on the scientific aspects of organic soils / peatlands such as GHG fluxes, ecological importance, cultural aspects, peatland restoration, peat extraction as fuel, and possible peat substitutes (e.g. compost) in soil improvers and growing media.....

Content - 1

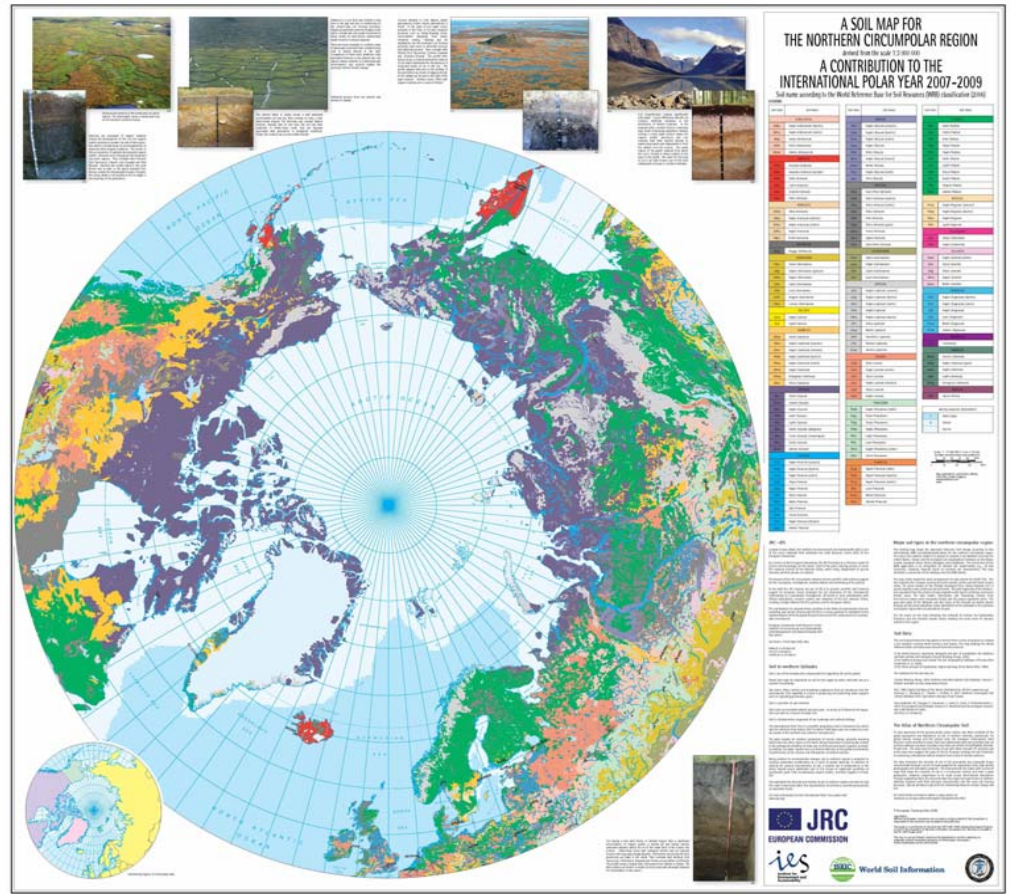
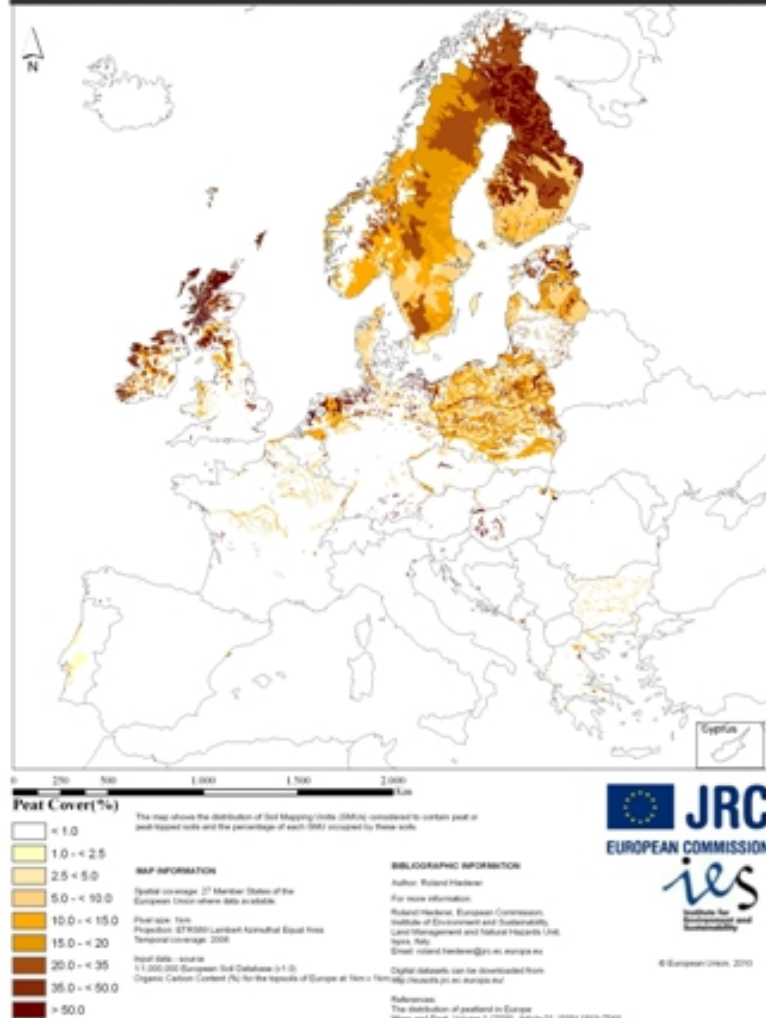
- Subject and definitions (What are peatlands, peatlands as part of wetlands, not dealing with wetlands in general, eg fens versus bogs should be explained etc.)
- Focus on soils in peatlands thus Histosols/Organic Cryosols.
- Classification – Histosols, etc.
- Decomposition, humus and humus forms
- Soil organic matter – differences from organic rich mineral soils, etc &
- Introduction to soil carbon, compost v organic soils
- Services from organic soils
- Introduction to pressures of peatlands – drainage, fires, shrinkage....

Content - 2

- Peatlands and Associated Soils in Various Ecozones
- Histosols / Organic Cryosols, Carbon and Climate Change
- Special and Regional Aspects
- Outreach and Education
- Maps!
 - Global perspective
 - Continental overview
 - Regional or national maps, focusing on ‘high density’ areas
 - Database

European Perspective

Relative cover (%) of peat and peat-topped soils



Possible request to EIONET-Soil

- Inventory of organic soils / peatlands
- Key characteristics – nature of material, depth
- Key pressures and policies
- Resolution / scale
- To be defined during 2013

Thank you for your attention.



[\(arwyn.jones@jrc.ec.europa.eu\)](mailto:arwyn.jones@jrc.ec.europa.eu)