The major soil types of Europe

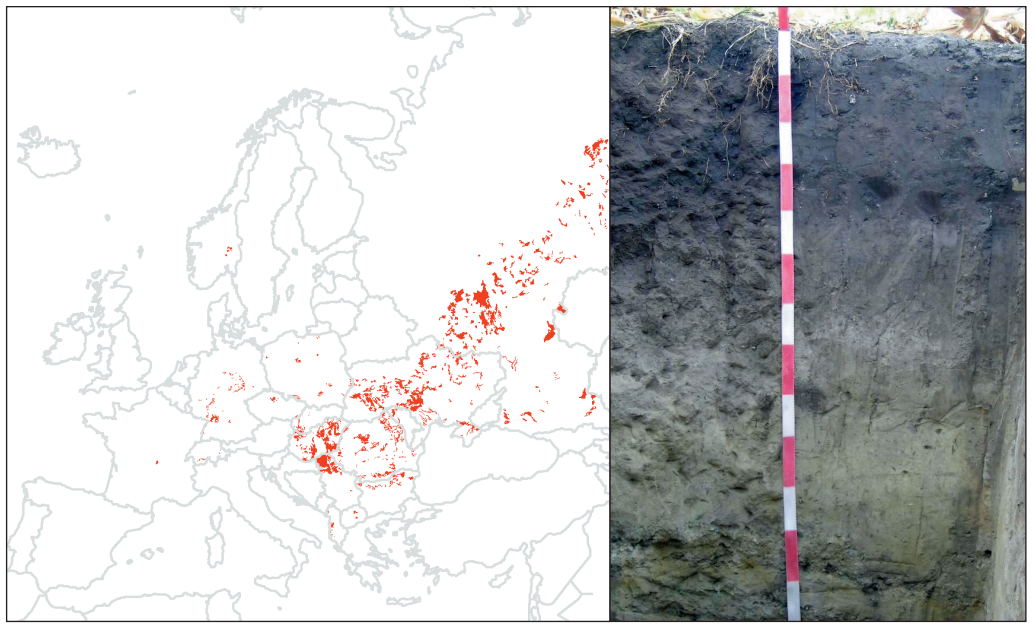
PHAEOZEMS

Soil with a deep, dark surface horizon that is rich in organic matter without secondary calcium carbonate concentrations within 1m (from the Greek, *phaios*, meaning dusk and the Russian, *zemlja*, meaning earth or land).

Phaeozems are found in wet steppe (prairie) regions and are much like Chernozems and Kastanozems but more intensively leached in wet seasons. Consequently, they have a dark, humus-rich surface horizon and have no secondary carbonates in the upper metre of soil. Commonly used international names are Brunizems (Argentina, France), Parabraunerde-Tsjernozems (Germany) and Aquolls in the order of the Mollisols (Soil Taxonomy).

Left: *Chernozems and Phaeozems are highly productive soil types and are used mainly for cereal crop production;* ***Below:*** *Phaeozems are more intensively leached than other steppe (prairie) soils and do not have secondary carbonates in the upper horizons; The* ***map*** *shows the location of areas in Europe where Phaeozems are the dominant soil type.*

Cover 3 % of Europe.



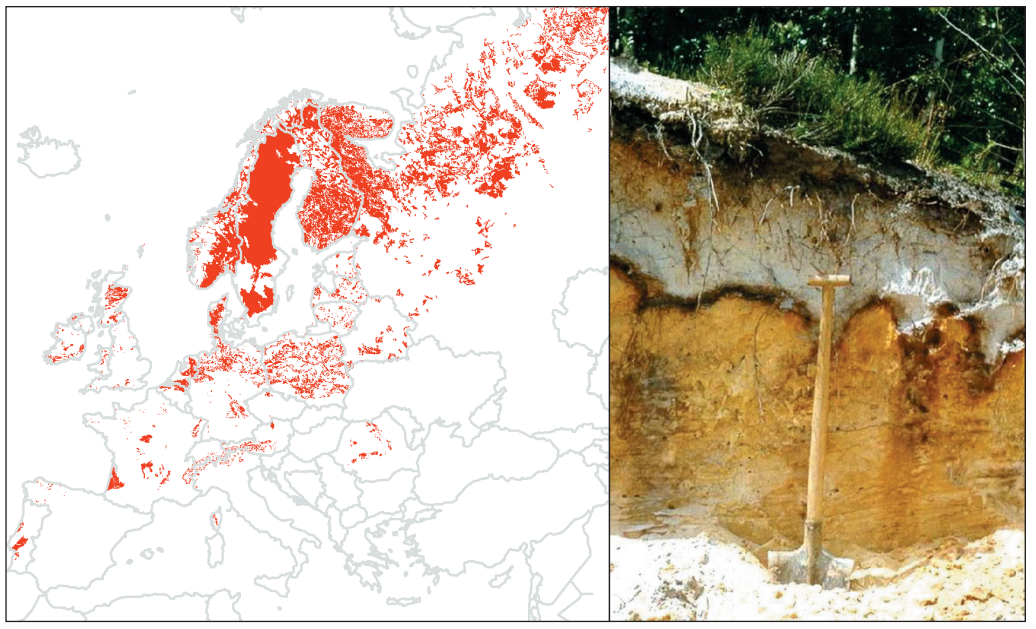
PODZOLS

Acid soil with a bleached horizon underlain by an accumulation of organic matter, aluminium and iron (from the Russian, *pod*, meaning under, and *zola*, meaning ash).

Under acidic conditions aluminium, iron and organic compounds migrate from the surface soil down to the B-horizon with percolating rainwater. The humus complexes deposit in an accumulation (spodic) horizon while the overlying soil is left behind as a strongly bleached *albic* horizon. Most Podzols develop in humid, well drained areas, particularly, in the Boreal and Temperate Zones.

Left: *Podzols are common under vegetation with acidic litter (e.g. conifer trees);* ***Below:*** *the typical contrasting leached and accumulation horizons of a Podzol - note the formation of an 'iron pan'; The* ***map*** *shows the location of areas in Europe where Podzols are the dominant soil type.*

Cover 14 % of Europe, the dominant soil of the northern latitudes.



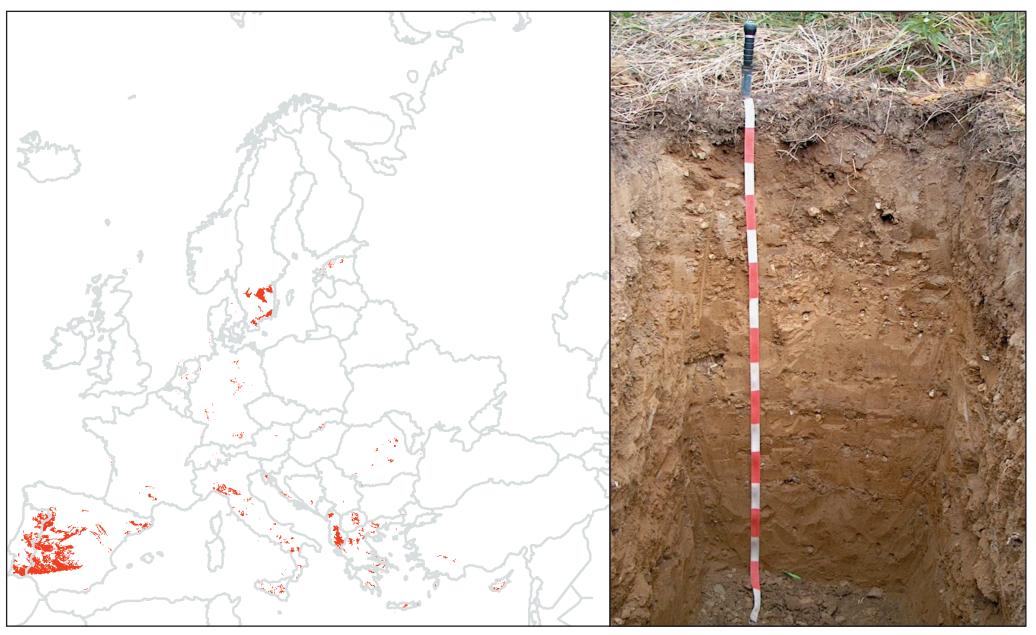
REGOSOLS

Soils with limited development (from Greek, *rhegos*, meaning blanket).

A Regosol is a very weakly developed mineral soil in unconsolidated materials with only a limited surface horizon having formed. Limiting factors for soil development range from low soil temperatures, prolonged dryness, characteristics of the parent material or erosion. Regosols form a taxonomic rest group containing all soil types that cannot be accommodated in any of the other WRB Reference Groups. Regosols are extensive in eroding lands, in particular, in arid and semi-arid areas and in mountainous regions. Internationally, Regosols are similar to Entisols (USA), skeletal soil (Australia), Rohböden (Germany) and Sols peu évolués régosoliques d'érosion(France).

Left: *Regosol is a shallow blanket-like soil - rock outcrops are often common;* ***Below:*** *Regosol profiles show thin surface horizons overlaying generally unstructured deposits; The* ***map*** *shows the location of areas in Europe where Regosols are the dominant soil type.*

Cover 2 % of Europe.



SOLONCHAKS

Strongly saline soil (from the Russian, *sol*, meaning salt and *chak*, meaning salty area).

Solonchaks are a strongly saline soil type with high concentration of soluble salts. They occur where saline groundwater comes near to the surface or where the evapo-transpiration is considerably higher than precipitation, at least during a large part of the year. Salts dissolved in the soil moisture remain behind after evaporation of the water and accumulate at or near the surface. Their morphology, characteristics and limitations to plant growth depend on the amount, depth and composition of the salts. Common international names for Solonchaks are saline soil and salt-affected soil.

Left: *after evaporation of water salts accumulate at or near the surface of Solonchaks - note the surface salt crusts and crystals;* ***Below:*** *a Solonchak with shallow saline groundwater; The* ***map*** *shows the location of areas in Europe where Solonchaks are the dominant soil type.*

Dominant in very small areas but can be very important locally.