

The major soil types of Europe

ARENOSOLS

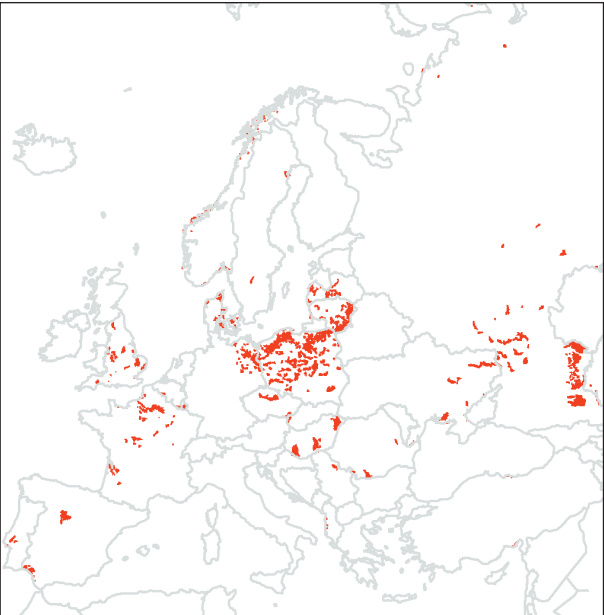
Easily erodable sandy soil with slow weathering rate, low water and nutrient holding capacity and low base saturation (from the Latin, *arena*, meaning sand).

Arenosols have a coarse texture to a depth of one metre or to a hard layer. Soil formation is limited by low weathering rate and frequent erosion of the surface. If vegetation has not developed, shifting sands dominate. Accumulation of organic matter in the top horizon and/or lamellae of clay, and/or humus and iron complexes, mark periods of stability. Arenosols are amongst the most extensive soil types in the world.



Left: the surface of Arenosols are often unstable in the absence of continuous vegetation cover; Below: stabilized Arenosol with organic matter accumulation at the surface and lamellae in the subsurface; The map shows the location of areas in Europe where Arenosols are the dominant soil type.

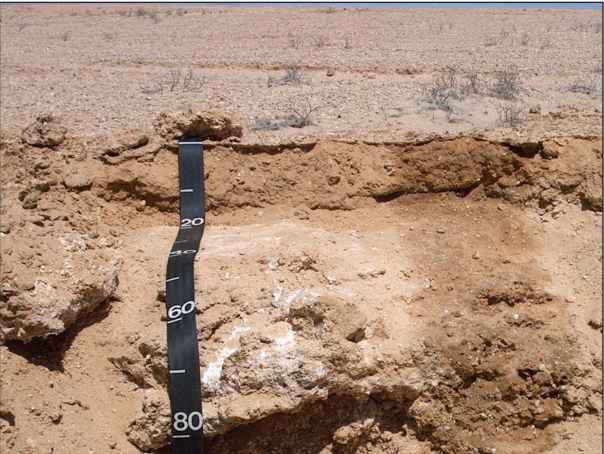
Cover 1 % of Europe.



CALCISOLS

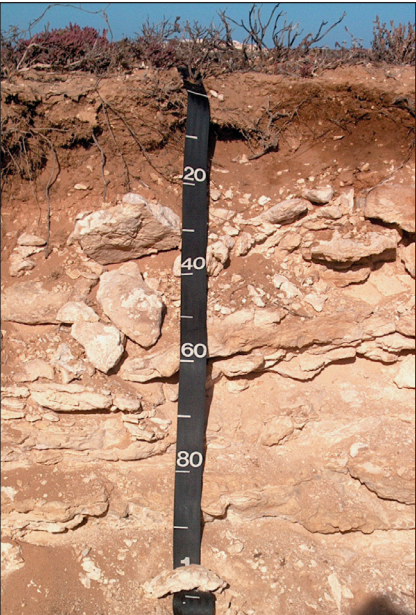
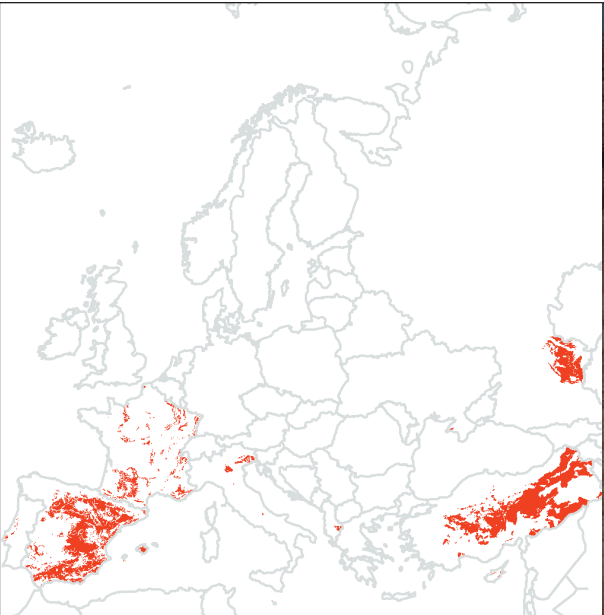
Soil with significant accumulation of secondary calcium carbonates, generally developed in dry areas (from the Latin, *calcarius*, meaning calcareous or lime-rich).

Calcisols have substantial movement and accumulation of calcium-carbonate within the soil profile. The precipitation may occur as *pseudomycelium* (root channels filled with fine calcite), nodules or even in continuous layers of soft or hard lime (*calcrete*). Calcisols are common on calcareous parent material in regions with distinct dry seasons, as well as in dry areas where carbonate-rich groundwater comes near the surface. Formerly Calcisols were internationally known as Desert soil and Takys.



Left: a typical Calcisol landscape showing a hard calcrete layer; Below: the deposition and accumulation of calcium carbonate (CaCO₃) may form a continuous hard pan layer; The map shows the location of areas in Europe where Calcisols are the dominant soil type.

Cover 5 % of Europe.



CAMBISOLS

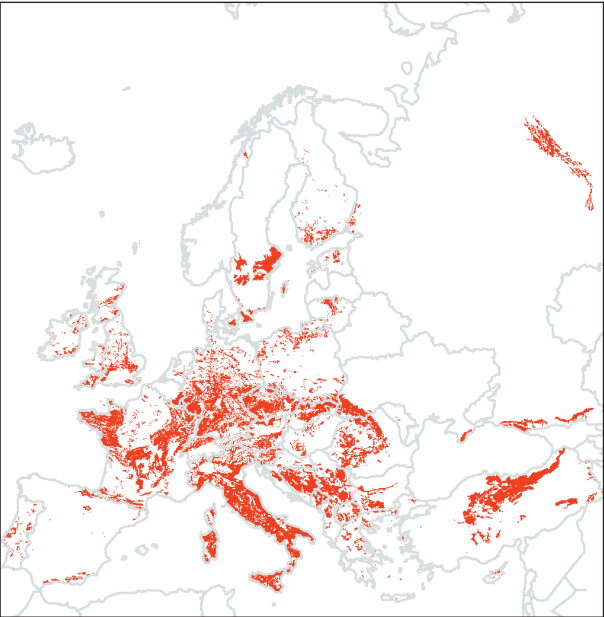
Soil that is only moderately developed on account of limited age or rejuvenation of the soil material (from the Latin *cambiare* meaning to change).

A Cambisol is a young soil. Pedogenic processes are evident from colour development and/or structure formation below the surface horizon. Cambisols occur in a wide variety of environments around the world and under all many kinds of vegetation. Commonly referred to as brown soil, Braunerde (Germany), Sols bruns (France) or Brunizems (Russia). The USDA Soil Taxonomy classifies Cambisols as Inceptisols.



Left: Cambisols are common in Europe and can be very productive agriculturally, especially in loess areas; Below: Pedogenic processes are evident in colour development or structure formation below the surface horizon; The map shows the location of areas in Europe where Cambisols are the dominant soil type.

Cover 12 % of Europe.



CHERNOZEMS

Soil with a deep, dark surface horizon that is rich in organic matter and secondary calcium carbonate concentrations in the deeper horizons (from the Russian for *chern*, black, and *zemlja*, earth).

Soil having a very dark brown or blackish surface horizon with a significant accumulation of organic matter, a high pH and having calcium carbonate deposits within 50 cm of the lower limit of the humus rich horizon. Chernozems show high biological activity and are typically found in the long-grass steppe regions of the world, especially in Eastern Europe, Ukraine, Russia, Canada and the USA. Chernozems are amongst the most productive soil types in the world.



Left: The main source of the high organic content of Chernozems is the annual decay of grass; Below: the dark surface soil material is generally mixed to significant depths by the high biological activity; The map shows the location of areas in Europe where Chernozems are the dominant soil type.

Cover 9 % of Europe.

