

## General information about SOIL

Soil is defined as the top layer of the earth's crust. It is comprised of mineral particles, organic matter, water, air and living organisms. It is an extremely complex, variable and living medium which acts as the interface between the earth, air and water. It is formed as a result of physical, chemical and biological weathering processes of the underlying rocks and sediments and influenced by climate, topography, organisms and time. A number of soil properties are determined by the parent material including texture and chemical composition.

Soil is one of the most diverse habitats on earth and contains one of the most diverse assemblages of living organisms. It is one of nature's most complex ecosystems, containing thousands of different organisms which interact and contribute to life support systems (i.e. global cycles that make all life possible). Soil organisms have important effects not only on soil properties but also on the functioning of the ecosystem.

Soil has a socio-economic and environmental role as a habitat and gene pool, a platform for human activities (including food production), landscape and heritage and as a provider of raw materials.

The proposed Soil Framework Directive (COM (2006) 232) identifies seven main environmental, economic, social and cultural functions performed by soil that need to be preserved. These functions are:

- Biomass production, including in agriculture and forestry;
- Storing, filtering and transforming nutrients, substances and water;
- Biodiversity pool, such as habitats, species and genes;
- Physical and cultural environment for humans and human activities;
- Source of raw materials;
- Acting as carbon pool; and
- Archive of geological and archaeological heritage.

Plans may influence activities which have the potential to significantly affect different aspects of soil such as quality and could therefore compromise the delivery of these functions/ services.

Typical threats to the functions and services of soils in Scotland and Northern Ireland may include:

- Loss of soil organic matter;
- Climate change;
- Loss of biodiversity;
- Soil structural degradation and compaction;
- Soil erosion;
- Soil contamination from heavy metals, pesticides, atmospheric deposition of sulphur and nitrogen (acid deposition), past industrial activity and organic contaminants;
- Loss of land to building development; and
- Loss of cultural heritage such as rare or historic soils or buried archaeological features.