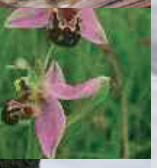
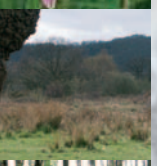
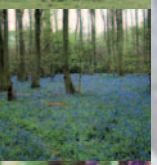
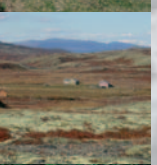
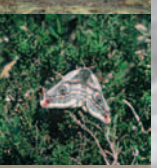
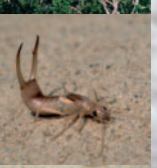
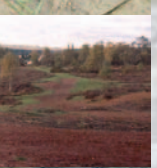
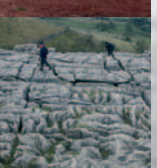







GEODIVERSITY = BIODIVERSITY

Care for Europe's biodiversity implies care for Europe's geodiversity, its geology, its geomorphology and its soils, i.e. its abiotic nature.

Natural and semi-natural biodiversity are closely interlinked with the rich differentiation in geological substrata and topography. A differentiation caused by geological and geomorphological processes. Differences in soil development further enhance the range of biodiversity.

The relationships between abiotic and biotic nature are still poorly understood, often receiving attention only in terms of nutrients and soil acidity. Some examples of the interaction between geodiversity and biodiversity are given below.

Geological formations and landforms may have taken thousands or even millions of years to develop. Soil profiles formed in tens, hundreds or thousands of years. Although rocks, landforms and soils may seem robust, they are susceptible to man-made changes and the processes that formed them may never occur again.

When safeguarding attention should be given as well to saveguarding geodiversity.

Active drift sands, The Netherlands

The largest remnants of active drift sands in Western Europe are located on the Veluwe. These Atlantic deserts are a geologically young landscape that originated from re-activation of coversand deposits of the last Ice Age. They are known to have existed for about the last two thousand years. Differences in topography, wind and water erosion, mass-movements, geological materials and soil formation cause small-scale variations in abiotic conditions. The initial phases of succession are especially of ecological interest. Natura 2000 and Red List species include the grassland vegetations, lichens, insects and birds.

Quarries, all European countries

Quarries are even younger landforms and while many are no more then a few decades old, some date back to prehistoric times. When left, the steep and bare quarry walls, the mounds of sorted materials, the chance occurrence of mounts and pools on impermeable layers and numerous soil forming processes can n???? in these quarries housing special types of amphibians, reptiles, birds, insects and plants.

The Eifel Maars, Germany

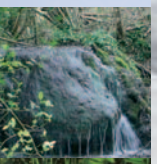
Maars are lakes that originate from volcanic explosions during Quarternary times. The maars gradually develop into moors with typical plants such as: Andromeda polifolia, Oxycoccus palustris, Eriophorum vaginatum, Sphagnum spec.

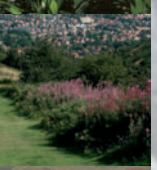
Abberley Hills, UK

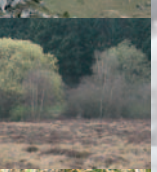
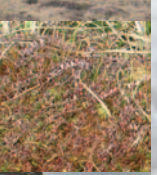
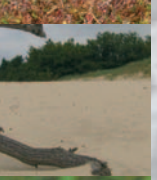
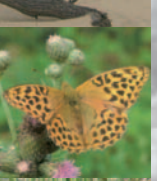
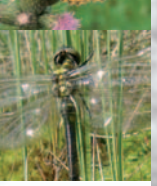
Silurian Limestones, some 450 million years old, form the bedrock of several of the hills in the Abberley and Malvern Geopark. Permian sandstones contribute to the diversity of the flora, but the area is renowned for its lime-loving flora. The Rock Rose, Carline Thistles, Wild Thyme and Dyers Greenweed and at least eight species of orchid, including the common spotted, bee, butterfly and pyramidal orchids, grow in the Geopark.

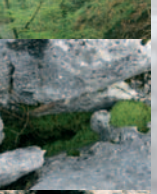
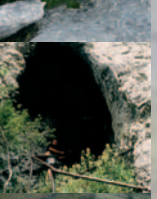
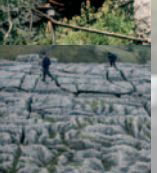
Limestone pavements, Yorkshire Dales, UK

Glacial erosion of surface soil and sediment cover followed by joint weathering of the limestone resulted in deep cracks (grykes), within these damp, sheltered, calcareous habitats there are ecological rare ecosystems.



Hartlebury Common, UK

Hartelbury Common is one of the most important areas of dry dwarf shrub heathland in the Abberley and Malvern Geopark. It lies on wind blown sand covering two terraces of the River Severn overlying Triassic Sandstones. Sand loving plants such as heath dog violet and tower mustard grow here. The Common is also home to all three British Newts and is an important habitat for butterflies and moths.

Karst sink holes, Lithuania

The North Lithuania karst landscape is dotted with sinkholes of different ages. The water filled sinkholes are identified as habitats of European significance. The chemical composition of the water enriched by SO4 and Ca ions favours rich populations of sulphur bacteria and specific water plants such as Chara globularis, Chara contraria, Lemna trisculca, Sparganium erectum.

Oppdal, Norway

The vegetation pattern in the lowlands is a fine grained mosaic governed by Quaternary deposits, river erosion and solifluction. In the hills bedrock structures and glacial erosion determine the vegetation pattern.

The Ar du Tsan marsh, Switzerland

This marsh has developed in a glacial valley where differential erosion has produced several topographical steps separated by steep rocky walls. In the depressions marsh biotopes have developed in relationship with fluvial processes and landforms such as meanders, oxbow lakes and alluvial fans. Because of high biodiversity and landscape value the area is protected by several Swiss legal ordinances.

Forests on Mesozoic escarpments, Luxembourg

Weathering and soil formation in the Mesozoic formations of southern Luxemburg have been active since Miocene times, 6-23 million years ago. Weathering gave rise to different soil forming processes. Earth worms, Lumbricus spec., prefer the clay soils derived from the Keuper shales and their appetite results in the forest floor being bare of litter for a part of the year. This favours natural soil erosion resulting in lowering of the Keuper slopes. In contrast, earth worms cannot live on the calcaric sands of the Luxembourger sandstones. A thick layer of leaves prevents erosion of the forest floor. The differential soil lowering, active over this timespan, explains more than 30 metres of the 70 metres high escarpment slope between the Luxembourger sandstone and the Keuper shales.

Tufa dams in the Teme Valley, UK

The streams in this area that emerge from beneath the Bishops Frome limestone and are rich in CaCO3. They form tufa dams that support a variety of species including lichens, several types of molluscs and other invertebrates, as well as numerous birds including the Dipper and Grey Wagtail.

Colofon

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