

Significance of the Natura 2000 Network for the Protection of Biological Diversity and Threats of the Future Developments

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The Habitats Directive aims to conserve habitats and species of the EU nature conservation interests. The Directive includes about 200 habitats and over 700 species. The most important means to protect this biota is to establish the Natura 2000 Network. The network has been founded on basis of national lists of proposed SCI sites (Sites of Conservation Interest). These proposals are evaluated through biogeographical seminars to determine whether they cover habitats and species sufficiently. At present the Natura 2000 Network includes more than 20.000 SCI sites, representing more than 550.000 km² (about 12 % from the land area of the EU25).

Natura 2000 Network can be recognized as a well developed multinational protected area network. It does not have any counterpart on other continents, therefore it is extremely important from the perspective of the global nature conservation. It will have a great influence on similar exercises in the world concerning e.g. selection criteria, data management, reporting, implementation practices and management strategies.

Natura 2000 Network is mostly based on traditional nature conservation principles, as the chief purpose appears to be to preserve representative examples of selected habitats and ecosystems. Unfortunately, in designing the network insufficient attention has been paid to large-scale connectivity between the sites. That makes many sites sensitive to isolation and to changes occurring in the surrounding areas.

Evaluation of significance and representativeness of the Natura 2000 Network has been mostly done on a national basis. Some examples from Finland will be presented in more detail. Wider analysis based on monitoring results and ecological modeling are urgently needed. A crucial question is the assessment of individual sites in relation to other sites, as well as the connectivity of sites. These studies require information on the dispersal and persistence abilities of selected species.

The main pressures on biodiversity in the EU, as identified in the European Environment State and Outlook, are land use practices and changes in land use, alien species and climate change. The problems of pollution, and resource use and over-exploitation are also important threats. Various wetlands, shores, natural forests and traditional agricultural areas may be the habitats most threatened in the future.

Climate change will have a great impact to the European biota in the future. Greatest changes are expected to occur in Mediterranean areas, mountains and northern latitude. Many southern species are favored by rising temperatures and many northern and/or mountain species will decline. According to recent studies, a considerable part (15-37 %) of species will become threatened by 2050 because of reduction in their habitats caused by climate change. Possibilities of species and communities to adapt to climate change are largely restricted by the habitat loss and fragmentation caused by present land use practices in forestry, agriculture and construction of infrastructure.

In the long-term many Natura 2000 sites may lose a remarkable part of their species and habitats due to above mentioned pressures. In spite of this the network will be of crucial importance. This is because the network consists of most natural ecosystems of Europe. Compared to areas outside the network Natura 2000 sites have more natural soils and more natural ecological processes and wider genetic diversity. Sites in marginal parts of distributions ranges of particular species and habitats may include populations with adaptations in terms of microclimate and soil. Beside taking care of Directive's habitats and species the Nature 2000 Network should in the future aim to protect common species of common ecosystems. It is also necessary to develop both large-scale and small-scale connectivity in the Natura 2000 network in order to create better possibilities to biota to adapt.