

wide network the most important criteria for plot selection is that all forest communities occurring in the respective growth zones are represented. Altogether, Austria has 125 forest communities in 22 growth zones and contains reserves in sufficient numbers, size and distribution to enhance biodiversity conservation. As the widely disseminated zonal forest communities occur often in several growth zones, they are also represented by a number of NFR. Forest communities which occur only in special natural environments are represented rarely in the network.

This systematic and consequently pursued approach is discussed also at the international level. Another reason for the success of the programme is that right from the beginning all participants have been involved in the concept and implementation of the programme and that this approach is being supported by all actors. The small team of the BFW seeks to maintain contact with all those concerned. The success of the project depends to a great extent on those who are directly involved, be it a smallholder, a forester or the head of a forest district.

Formations of spruce-fir-beech forests constitute the biggest share of established NFR. As a rule, this type of reserve corresponds to the protection forests of the Northern and Southern Limestone Alps. Subalpine continuous spruce and pine communities are strongly represented. In some regions therefore clumping is possible, e.g. in the mountains of the Karawanken and the Karnischen Alpen or along the Eastern peripheral zone of the Alps. This is in line with the fact that the forests in these natural areas show signs of hemeroby which are above the average.

Research in Natural Forest Reserves

Natural Forest Reserves are particularly suited for long-term basic ecological research because the dynamics of these forest ecosystems are not influenced by human activities, with the exception of air pollution impact and game pressure.

At the beginning, natural forest research has concentrated specially on vegetation and forest management questions. Today, biodiversity research, population genetic relationship, vulnerability to disturbances or the adaptability of forest ecosystems to possible climate changes are gaining increasingly in importance. The declared goal of applied research is the further development of an ecologically-oriented, close-to-nature type of forest management. Natural forest reserves are examples of natural forest communities and reference plots for biotope assessments and ecological surveys.

Natural forest research comprises both fundamental research and applied research. It identifies and documents, with periodical repetition, and on a long-term basis, the "free" development of forest life communities being thus an important element of ecosystem research. The declared goal of applied research is the further development of an ecologically-oriented, close-to-nature type of forest management. Validated knowledge is needed on forest regeneration and tending, tree species selection, regeneration procedures, production and regeneration periods, competition control, natural selection and differentiation, in order to be able to compare the production, protection and recreation forests as to their ecological conditions.

Further informations:

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Natural Forest Reserves in Austria

Present status of the Austrian Natural Forest Reserve Programme

By signing the resolutions of the Ministerial Conference for the Protection of Forests in Europe in 1993 in Helsinki, Austria has committed herself to accelerate the process of establishing a network of natural forest reserves. The aim of the programme is the conservation and improvement of forest biodiversity being a key requirement for sustainable development and effective functioning of forest ecosystems.

Since 1995, efforts are made to implement the Austrian Natural Forest Reserve Programme. Today this network comprises 180 reserves in Austria, with a total area of 8,272 ha.

Natural Forest Reserves (NFR) are forest lands destined for the free development of the ecosystem without any direct human influence. Natural Forest Reserves contribute to the conservation and natural development of biodiversity. They serve for research, training and educational purposes. Natural Forest Reserves are to represent as far as possible tree species composition and stand structure of natural vegetation aiming at reaching this level in the not too far future. Major goal is not the conservation of the actual condition of the forest structure but to enhance

its natural development. Even in the case of intensive management in the past such forest lands will evolve towards the original virgin forest as periods of non-management increase.

The following direct human interventions are prohibited: forest utilisation, logging of dead wood and artificial regeneration of forest trees. Hunting is an exception as it is a necessary requirement because Natural Forest Reserves are resting zones for game. Without regulation, game pressure on the much too small reserves would be too high as they do not reflect natural game density.

The Austrian Federal Office and Research Centre for Forests has been charged with the selection and scientific monitoring of the plots, under the legal and institutional framework of the Federal Ministry for Agriculture, Forestry, Environment and Water Management.

The NFR programme has followed a pragmatic approach from the very beginning. Much attention was paid to take plots which are justifiable from the scientific point of view. The objective was to create a representative network. In compliance with the overall goal of an Austrian-

Principles of the Austrian Natural Forest Reserves Programme:

- Contract based on voluntary participation
- Eligibility to opt out from the contract under special conditions
- Long-term concept
- Annual recompense as an alternative to normal forest management
- Participation of the owner in plot management and monitoring.

Natural Forest Reserves in Austria

