
4th NATIONAL REPORT

Convention on
Biological Diversity

AUSTRIA



INTRODUCTION

The Fourth Austrian National Report to the Convention on Biological Diversity has been prepared on the basis of the CBD Guidelines for the 4th National Reports.

Various existing biodiversity-relevant national reports and information documents have been used for preparing the report, in particular:

- Reports on Indicators for Biodiversity Monitoring in Austria
- Indicator Report 2009 Monitoring of Sustainable Development in Austria
- Austrian Article 17 Report EU Directives on Nature Protection
- Grüner Bericht 2009, Grüner Bericht 2010 (Green Reports 2009 and 2010)
- Austrian Forest Report 2008
- Ninth Environmental Control Report (“Umweltkontrollbericht”) 2010 (Federal Environment Agency)
- SOER 2010 (in prep.)

The first draft of this report has been prepared by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management. The draft has been sent to the Members of the National Biodiversity Commission for comments and consolidation. The Members of the Commission are representatives from Ministries, provincial governments, universities and research organisations, various interest groups, land owners including Austrian State Forest Enterprises, social partnership as well as Environmental NGOs. These comments have been taken into account for finalising the report.

The report contains the following chapters:

Chapter I: Overview of Austrian Biodiversity Status, Trends and Threats

Chapter II: Current Status of Biodiversity Strategy and Action Plan

Chapter III: Sectoral and cross-sectoral integration / mainstreaming of biodiversity considerations

Chapter IV: Conclusions

The assessment of the achievement of the 2010 Biodiversity Target in Austria has been based on the “Outcome-oriented targets for achieving the 2010 Biodiversity Target in Austria – and beyond”, which have been adopted by the National Biodiversity Commission in 2007.

Vienna, 2010

CHAPTER I

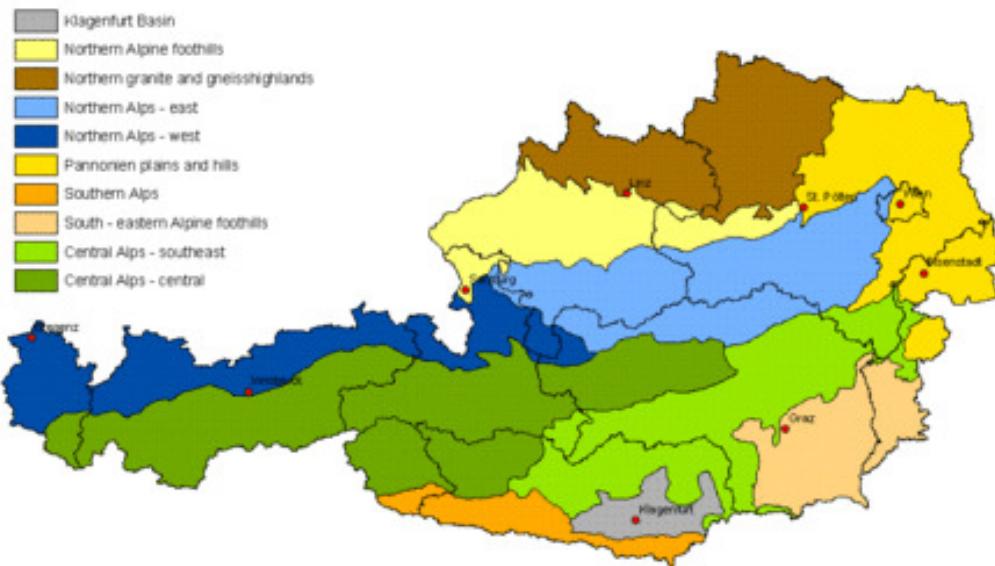
Overview of Austrian Biodiversity Status, Trends and Threats

1. Overview of Austrian Biodiversity

Despite its small size (83,858 km²) Austria has an exceptional diversified landscape and climate. This is because, in Austria, the Alpine, the Continental and Pannonian biogeographic regions meet. The country has three major landscape divisions: the Alps, the Granite and Gneiss Highlands of the Bohemian Massif and the forelands and basins. With 32 %, Austria has the greatest share of the Alpine arc of all Alpine Countries. More than 60% of its territory is high-mountain area with mountain summits reaching heights of more than 3,600 metres. Austria's highest mountain, the Großglockner, is 3,798 m and lies in the Central Alps. This is also where the majority of the almost 1,000 Austrian glaciers are found.

The northern part of Austria, around 10 percent of the federal territory, is covered by the low mountain range of the Bohemian Massif. The landscape is distinguished by gently rolling high plateaus that tend to vary only very slightly in height. Here long stretches of woodlands alternate with typically small-scale structured areas of arable land with dense networks of field margins and hedgerows. In the Granite and Gneiss Highlands it is precisely the small-scale structured landscape where the patchwork-like medieval strip farming is still maintained that shows a very high structural richness. The forelands and basins form the transition zone between the Alps and the Granite and Gneiss Highlands and the Great Pannonian Lowlands bordering to the east. These are the areas most agriculturally used in all Austria. Nevertheless, many natural treasures can be found here, too: Lake Neusiedl and its salt marshes as one of Europe's most important areas, the Danube floodplains to the east of Vienna or the cultural landscapes characterised by viticulture such as, for example, the Wachau that was awarded the Council of Europe Diploma.

Austria is one of Europe's most densely wooded countries. The share of land covered by forests is 49 percent making it the core element of the landscape. The main tree species are spruce, beech, red pine, larch and fir with the proportion of conifers at around 70 percent. Around two thirds of the forestland is natural (3%), semi-natural (22%) or has been moderately changed (41%).



Graph: Natural Landscape Division in Austria

Natural and cultural landscape ensures biodiversity. Landscapes with the highest significance for biodiversity can be found in abundance in the Alpine region where great expanses of the Alpine rock and ice region have remained untouched by mankind. Also the zone adjoining below, the Alpine grassland and the "Krummholz" region (stunted clumps of trees) largely represent semi-natural areas. The riverine forests along the great rivers, such as the floodplain of the River Danube in the area of Vienna and the River March floodplain on the border to Slovakia are also natural spaces of supreme significance. To large part conservation areas protect these. Natural landscapes and semi-natural cultural landscapes, bearing a very high significance for the maintenance of biodiversity, cover more than a third of the federal territory.

Austria has a high biodiversity index, and is provided with a very wide variety of habitat types, flora and fauna. When it comes to autochthonous animal and plant species, Austria is among the countries most rich in species in all Central Europe, as regards flowering plants (spermatophytes) and ferns (pteridophytes) it even has the highest biodiversity of all with 2,950 different species. The current numbers amount to a total of around 45,000 animal species, 1,000 species of moss and 813 different plant communities. There is still some uncertainty surrounding the estimates for the species of lichens (some 2,300), algae (some 5,000) and fungi (around 10,000). There are 581 endemic or subendemic animal species and 167 endemic/subendemic plant species.

With regard to Austria's habitat diversity the Red List of Biotope Types in Austria provides an overview on 488 biotope types to be found in Austria. The largest numbers of biotope types are found in forests (93 biotope types), followed by water (92 biotope types) and grassland (61 biotope types), ranging from species-rich wet meadows classed as the "moor grass meadow" biotope to "xeric grassland with exposed rocky areas". An analysis of the diversity of the patterns of forest biotope types, as well as those of mires, oligotrophic grassland and extensively used arable land was performed on the basis of grid-map distribution data. It shows that lower,

peripheral parts of the Alps and of the Bohemian Massif and the larger Alpine valleys are exceptionally rich in forest, oligotrophic grassland and, to a lesser degree, mire habitats. Moreover, the diversity of forest habitats tends to be very high in the northern and southern Alps. In the Pannonic region as well as in the northern and south-eastern alpine foothills, the large river valleys harbour particularly large numbers of biotope types. Mire biotope types show a strong affiliation to valleys and basins with high precipitation. In contrast, intensively managed forests are concentrated at lower altitudes, where land use intensity peaks. The biotope types of extensively used arable land are concentrated in the Pannonic region as well as in parts of the northern and south-eastern alpine foothills and the lower altitudes of the Bohemian Massif.

2. Status and Trends of Biodiversity

Within the project “Developing a concept for biodiversity monitoring in Austria – MOBI-e” a comprehensive set of indicators for recording and describing biodiversity in Austria has been developed (see box below).

List of indicators for monitoring biodiversity in Austria (MOBI)

Species and habitats

- AL1 - Status and trend of selected habitats including Habitats Directive;
- AL2 - Extensive grassland (rough meadows and pastures);
- AL3 - Bird species groups as indicators of habitat quality;
- AL4 - Dragonflies as indicators of wetland quality;
- AL5 - Diversity of species and habitats at alpine pastures;
- AL6 - Old trees as habitats;
- AL7 - Bats;
- AL8 - Ground squirrels;
- AL9 - Flora;
- AL10 - Orchids as indicators of habitat quality;
- AL11 - Fungi (Macromycets);
- AL12 - Mosses;
- AL13 - Soil organisms (Gamasidae);
- AL14 - Monitoring of commonly known species by amateur biologists;
- AL15 - Monitoring of species by farmers;
- AL16 - Change of flora on summits of the Alps

Forests

- W1 - Naturalness of composition of tree species;
- W2 - Deadwood; W3 - Regeneration; W4 - Impact of browsing by game species on regeneration

Alpine mountains

- A1 - Alpine agricultural holdings;
- A2 - Livestock on alpine pastures;
- A3 - Funded meadows on steep slopes;
- A4 - Voluntary activities on alpine pastures and alpine farms;
- A5 - Extent of glaciers

Cultural landscape

- KL1 - Livestock density;
- KL2 - Agricultural area under organic farming practices; KL3 - Size of agriculturally managed units (land parcel size)

Water systems

GW1 - Indicators according to the EU Water Framework Directive/Austrian Water Act

Soil

BO1 - Biomass and activity;

BO2 - Eutrophication and acidification by nitrogen compounds

Settlement areas

S1 - Parks – state of public green area;

S2 - Emissions of light

Nature protection

N1 - Areas protected by law on nature protection;

N2 - Natural forest reserves;

N3 - Management of protected areas;

N4 - Red list of selected species groups;

N5 - Red list of types of biotopes;

N6 - Status and trend of selected alien species

Genetics

G1 - Plantation for preservation and seed orchards (ex situ);

G2 - Plantation of woody plants with natural seed stocks;

G3 - Sexual reproduction able to function by plant species;

G4 - Genetic diversity in populations of selected species;

G5 - Diversity of fruit species;

G6 - Productive livestock worthy of preservation

Fragmentation

F1 - Use of land by transport and settlement (sealing)

Awareness

B1 - Activities fostering biodiversity

Reports on the evaluation of 16 indicators with regard to species and habitats, forests, Alps, cultivated landscape, waters, soil, nature conservation, and fragmentation show the following picture:

In the field of species and habitats three indicators - AL 3 Bird species groups as indicators of habitat quality, AL 10 Orchids as indicators of habitat quality, and AL 16 Change of flora on summits of the Alps - have been available so far, whereas important indicators, such as AL 1 Status and trend of selected habitats including FFH, AL 2 Extensive grassland (rough meadows and pastures), or for example AL 5 Diversity of species and habitats of Alpine pastures, could not have been evaluated yet. In a first step a method for AL 2 for the determination of extensive grassland was successfully developed and tested.

Austria's forests show a predominantly near-natural composition of tree species. An extension of broad-leaved stands is to be aimed at.

In principle, the Alpine area shows a very high level of biodiversity, although a slightly negative

trend can be observed due to the decline in mountain farming. However, as a result of various measures to support mountain farms this trend could largely be mitigated in the course of the past few years. But the decline of the glaciers brings about massive changes in the glacier forelands.

All in all the biodiversity of the Austrian cultivated landscape is for the most part stable, with the fragmentation of agricultural areas rising in the East of Austria, and the share of organic areas increasing at the same time. The Agri-environmental Programme (ÖPUL) contributes a lot to the stabilisation, whereas in other countries the intensification of agriculture constitutes a major problem for biodiversity.

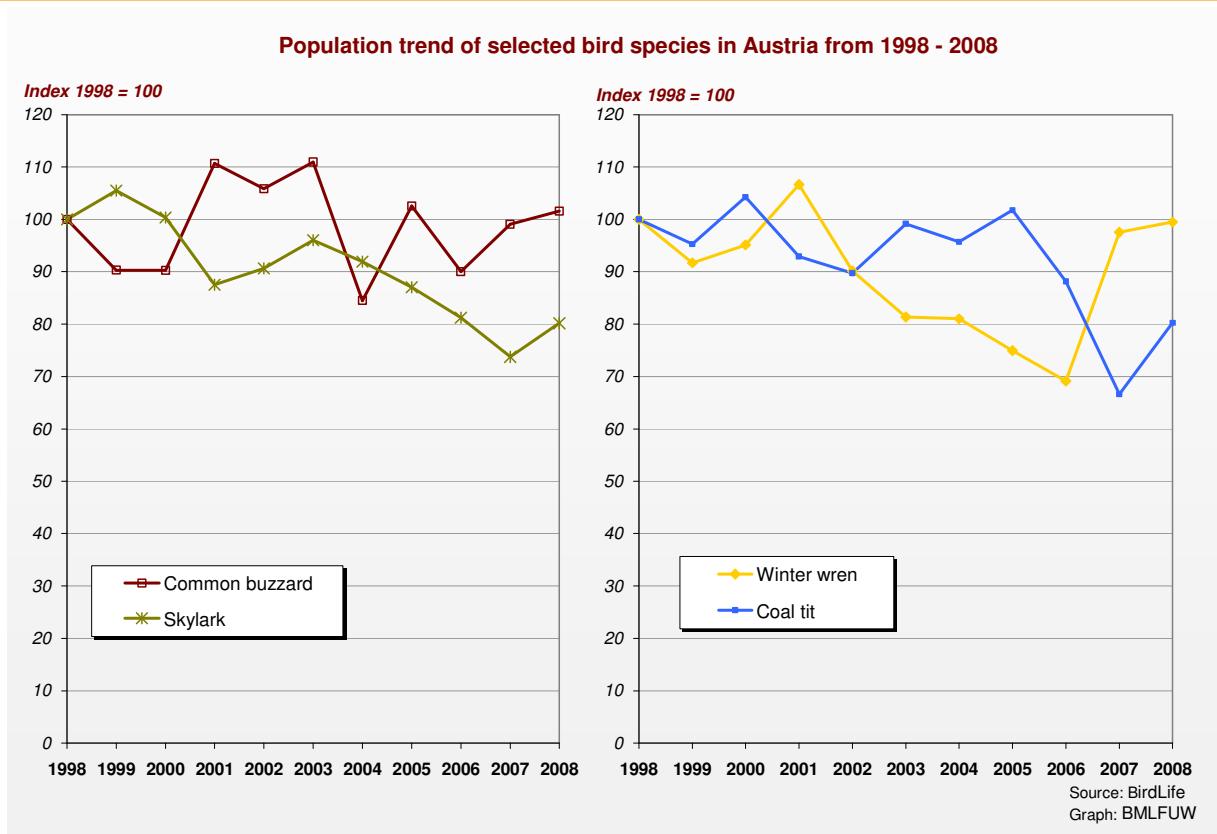
The Austrian water body network has been showing considerable success of remediation measures for years.

As regards eutrophication and acidification due to nitrogen compounds only a slight improvement can be observed.

In the field of nature conservation the Red Lists of selected endangered species groups and biotope types show that especially biotope types of lower zones, of special sites and low-nutrient sites are endangered.

We have not yet been able to sufficiently prevent the negative influence of our land utilisations for settlement and infrastructural facilities (roads, etc.) by legal measures.

AL 3 Bird species groups as indicators of habitat quality



Data source:

“Monitoring of Austria’s Breeding Birds”, BirdLife Austria

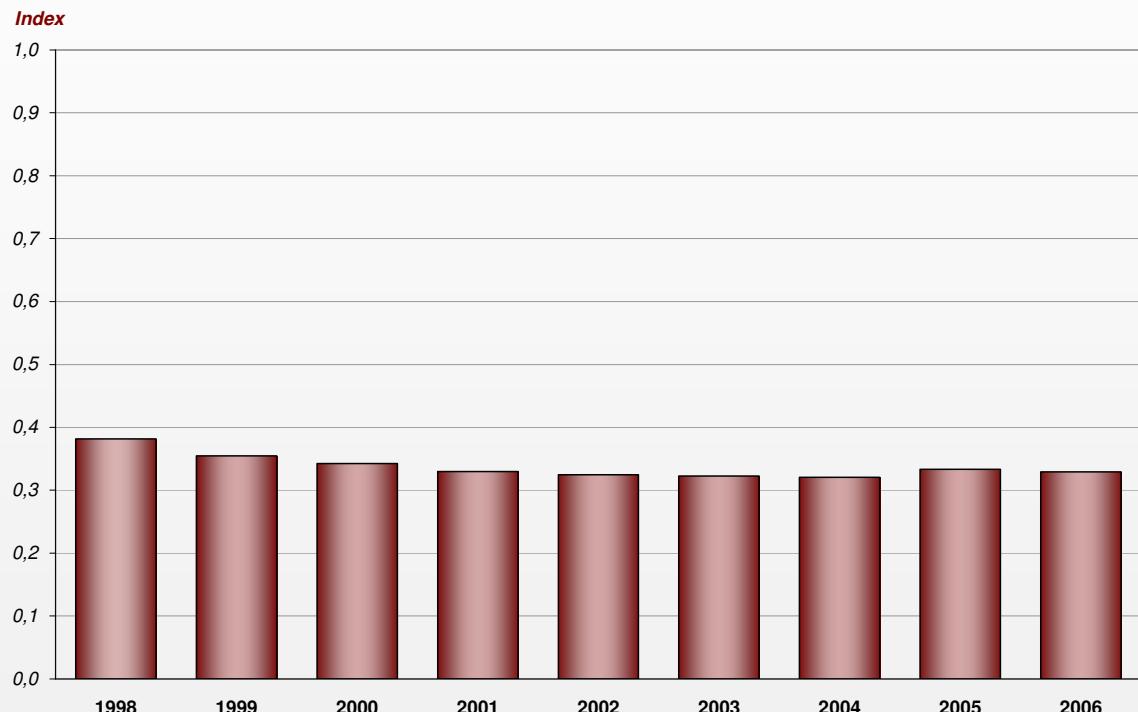
Definition:

Bird populations are recorded every year in defined areas by specially trained volunteers ('citizen science'). Comparable programmes exist in many European countries and at pan-European level. The counts for each year are shown compared with the value for the year 1998, which was made equal to 100.

The findings illustrate that the common buzzard population appears to fluctuate around an average value; it can be considered as stable. The skylark population has slightly declined since 1998. Also the numbers of winter wren and coal tit are declining. Birds are suitable for mapping the biodiversity of other groups of organisms and respond quickly to environmental changes. The indicator shown is to be further developed for the chosen species (to represent all of Austria's main habitats) and with regard to the counts used for the calculation as well as the calculation itself, taking into account the distribution of count areas. Only then can the indicator be meaningfully interpreted.

AL 10 Orchids as indicators of habitat quality

Index for sustainable grassland management with regard to orchids



Source: ZUN-BOKU
Graph: ZUN-BOKU

Data source:

Calculations by the Centre for Environmental Studies and Nature Conservation (ZUN-BOKU) at the University of Natural Resources and Applied Life Sciences, based on data from CORINE-Landcover 2000 (UBA) and the integrated management and monitoring system INVEKOS (Federal Ministry of Agriculture, Forestry, Environment and Water Management)

Definition:

The evaluation of the sustainability of grassland utilisation in terms of the protection and encouragement of orchids is similar to expert systems based on expert knowledge. Different land uses and land-related measures which form part of the Austrian Agri-environmental Programme (ÖPUL) of a holding are given a fuzzy rating (0 = 'very poor' to 1 = 'very good') and combined to produce an overall factor from their percentages of land. By combining the values it is possible to make statements about the potential for areas suitable for orchids at different levels (municipality, district, Federal Province, federal territory).

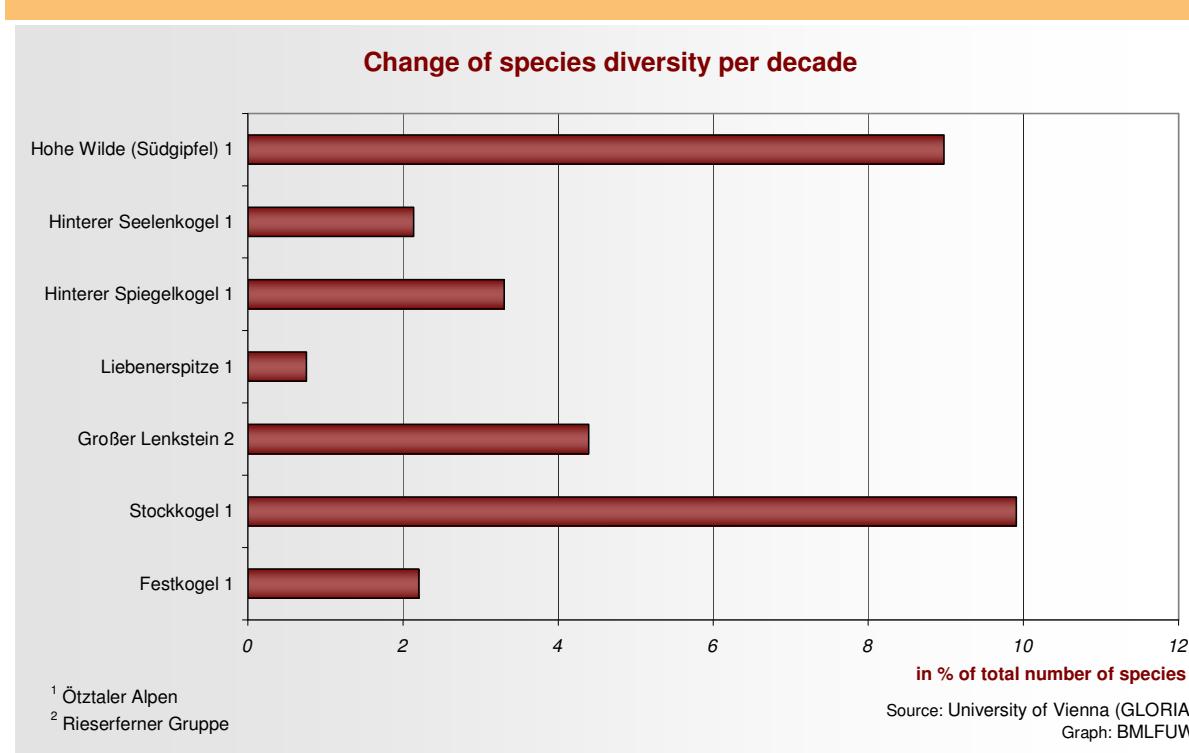
Since 2006, orchid counts have been carried out by volunteers as part of the Austrian Orchid Protection Network (ÖON). In future, these data will be used to establish population trends which will serve to examine and adapt the evaluations.

Orchids growing in open areas depend on the type of land use – intensive utilisation leads to a decline in the population, as does a cessation of utilisation. The species indicator for orchids is therefore used in relation to land use and ÖPUL measures.

The index for sustainable grassland utilisation in terms of the needs of orchids exhibits a negative trend throughout Austria. This means that changes in grassland utilisation are causing a decline in the areas suitable for orchids or are having a negative effect on the conditions for orchids. We can therefore conclude that orchids are in decline in cultural landscapes. This corresponds to estimates of orchids in the Red Lists and has also been extensively documented in specialist

literature. In future, however, this index will be checked, adapted and further developed at the level of regional benchmarks on the basis of population trends determined from orchid monitoring initiatives.

AL 16 Change of flora on summits of the Alps



Data source:

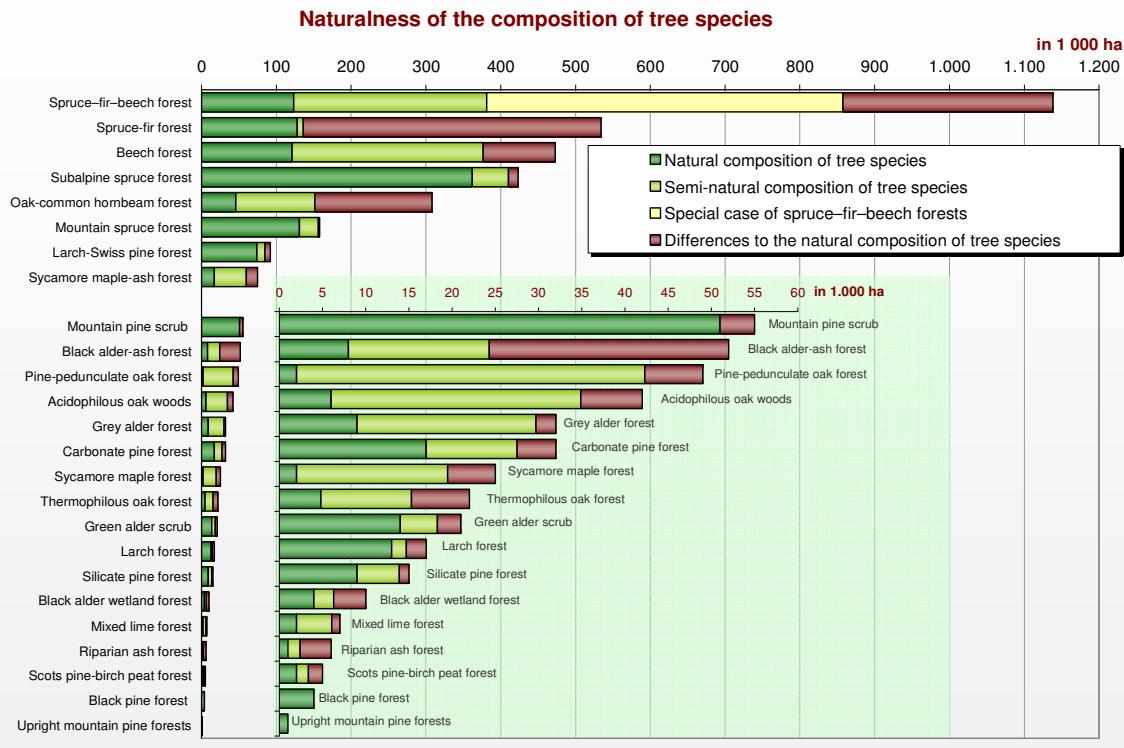
Department of Nature Conservation Biology, Vegetation and Landscape Ecology (Abteilung für Naturschutzforschung, Vegetations- und Landschaftsökologie) of the University of Vienna (GLORIA, Global Observation Research Initiative in Alpine Environments)

Definition:

The assessment is based on an index which compares the numbers of species found in two surveys, the second done after a decade of years. The calculation method considers how often species are found as to avoid over assessing of rare species.

The chart shows an increase in species on all Austrian summits monitored, which is to be interpreted as an omen of a very threatening development.

W 1 Naturalness of composition of tree species



Data source: Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Definition:

The naturalness of the composition of tree species builds on the concept of "potential natural vegetation" (PNV). Thus, the indicator compares the current composition of tree species with the PNV with respect to both trees and in terms of regeneration. For each sample of the Austrian Forest Inventory, three categories are differentiated:

1. Natural composition of tree species: The canopy of "forest-community shaping" tree species (see table below) accounts for more than 50% of the entire canopy.
2. Semi-natural composition of tree species: The tree species shaping the forest community occur on the sample site, but fall short of 50% of the entire canopy.
3. Special case of spruce-fir-beech forests: Out of the three tree species shaping this forest community, either fir or beech are absent from the sample site.
4. Differences to the natural composition of tree species: At least one of the two tree species shaping the forest community does not occur on the sample site.

On the basis of the data collected, the area covered by these four categories is extrapolated for Austrian forests.

The table below lists the tree species that shape potential natural forest communities:

Forest	Tree species
Spruce-fir-beech forest	Fir and ¹ beech
Spruce-fir forest	Spruce and fir
Beech forest	Beech
Subalpine spruce forest	Spruce
Oak-common hornbeam forest: sessile oak-common hornbeam forest; pedunculate oak-common hornbeam forest; mixed Turkey oak forest	Sessile/pedunculate oak and common hornbeam
Mountain spruce forest	Spruce
Larch-Swiss pine forest	Swiss pine (= arolla pine) or ² larch

Sycamore maple-ash forest	Sycamore maple and ash
Mountain pine scrub (Alpine mountain pine scrub, mountain pine bog woods)	Mugo pine (= mountain pine)
Black alder-ash forest	Black alder and ash
Pine-pedunculate oak forest	Sessile or pedunculate oak
Acidophilous oak woods (without common hornbeam)	Sessile or pedunculate oak
Forest	Tree species
Grey alder forest	Grey alder
Carbonate pine forest	Scots pine
Sycamore maple forest	Sycamore maple
Thermophilous oak forest (downy oak forest)	Oak
Green alder scrub	Green alder
Larch forest	Larch
Silicate pine forest	Scots pine
Black alder wetland forest	Black alder
Mixed lime forest	Large-leaved lime or small-leaved lime or Norway maple or ash
Riparian ash forest	Black alder and ash
Scots pine-birch peat forest	Scots pine or birch
Black pine forest (black pine forest of the eastern rim of the Alps and hop-hornbeam-black pine forest of the south-eastern Alps)	Black pine
Upright mountain pine forests	Mountain pine (bog pine)

Table: Tree species and potential natural forest communities

¹ "and" means that all the tree species listed have to be present

² "or" means that, if one of the tree species listed is missing, it can be replaced by the other one specified

The naturalness of the composition of tree species provides key information for assessing the human influence on forests in the form of forest management. The results show that the majority of Austrian forests has a natural and semi-natural composition of tree species. This applies especially to coniferous forest areas out of which a total of around 68% fall into these categories. In contrast, this figure is only 51% for mixed broad-leaved and broad-leaved forests. Across all forest communities, the area covered by a natural composition of tree species reaches 32% and exactly one-quarter falls into the category "semi-natural composition of tree species". For 29% only, the tree species composition differs considerably from the natural one.

These analyses do not cover floodplain forests as the potential natural vegetation was not identified for this type of forest. Inaccessible protection forests without yield had to be left out of account, too. However, these forests are likely to be in a semi-natural state almost without exception.

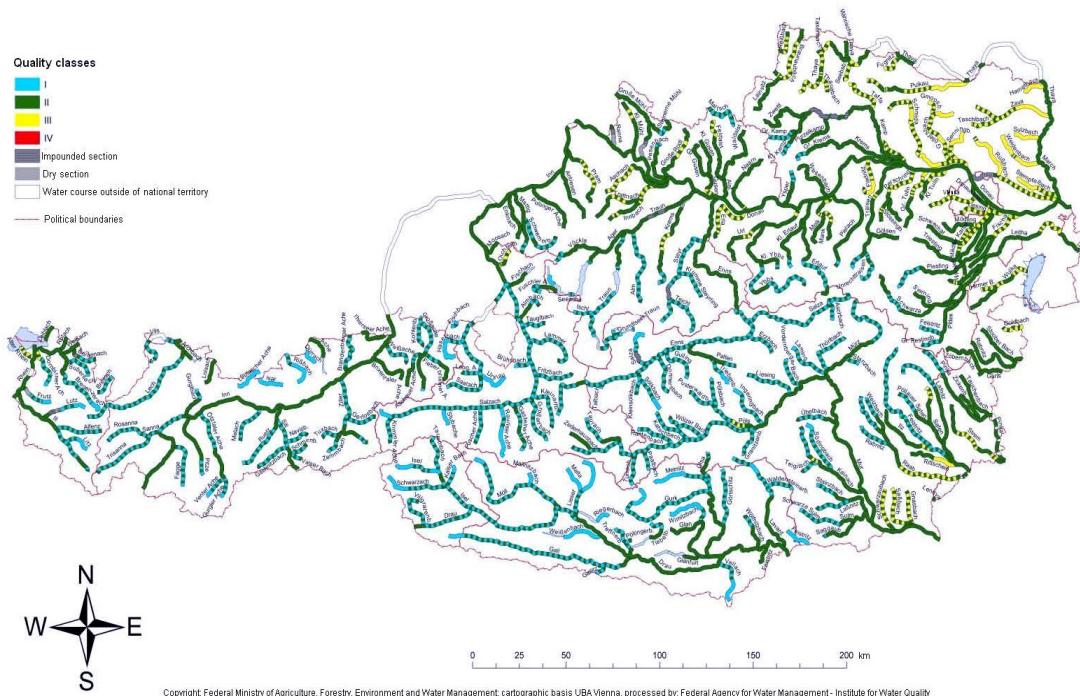
Any deviations from the natural composition of tree species can be attributed to several causes. As a result of the higher growth rates and revenue potentials of coniferous species and the higher marketability of their wood, especially spruce has come to spread also in the area of broadleaf and mixed broadleaf forest communities. Moreover, some tree species lag behind in growth or even directly disappear due to over-grazing. This problem has negative effects especially on the current distribution of broadleaf species and fir. The absence of fir from many of its potential sites is also a long-term consequence of large-scale clear felling during the times of the highest demand for wood in the heyday of mining and early industrialisation, which is no longer permitted

today. The dieback of firs, whose causes have not yet been fully clarified, has led to a further decline in the area covered by this tree species.

GW 1 Bodies of running water: ecological and chemical condition according to the Quality Target Ordinance of the Water Act

Saprobiological quality of rivers in Austria 2005

Published by the Federal Ministry of Agriculture, Forestry, Environment and Water Management



Saprobiological quality class	Relative percentages in water body network as %						
	1966/71	1988	1995	1998	2001	2002/03	2005
I	15	9	6	7	6	4	4
I-II	18	18	22	23	28	28	35
II	31	39	44	51	53	55	49
II-III	19	21	24	17	12	12	11
III	6	10	4	2	1	1	1
III-IV	6	2	< 1	< 1	0	0	0
IV	5	1	0	0	0	0	0

Table: Comparison of biological quality maps 1966/71, 1988, 1995, 1998, 2001, 2002/03 and 2005; relative percentages of quality classes in the water body network shown as %.

Data source:

Biological water quality map issued by the Ministry of Agriculture, Forestry, Environment and Water Management, based on the data from the Austrian Provincial and federal governments.

Definitions:

In Austria, the saprobe system has been used for several decades in the biological study and evaluation of bodies of running water.

The degree of presence or absence of selected indicator organisms is observed. This characterises the reaction of aquatic biocenosis to certain states of contamination and primarily provides a measurement of water pollution by biodegradable substances.

Based on this system, sections of bodies of running water can be classified in four classes of water quality (classes I-IV), or seven classes, counting the intermediate classes.

Quality class II was established as a general quality target back in 1977 (Danube Ordinance, Federal Law Gazette No. 210/1977).

Compliance with that quality target is used as an indicator of the condition of Austrian running water.

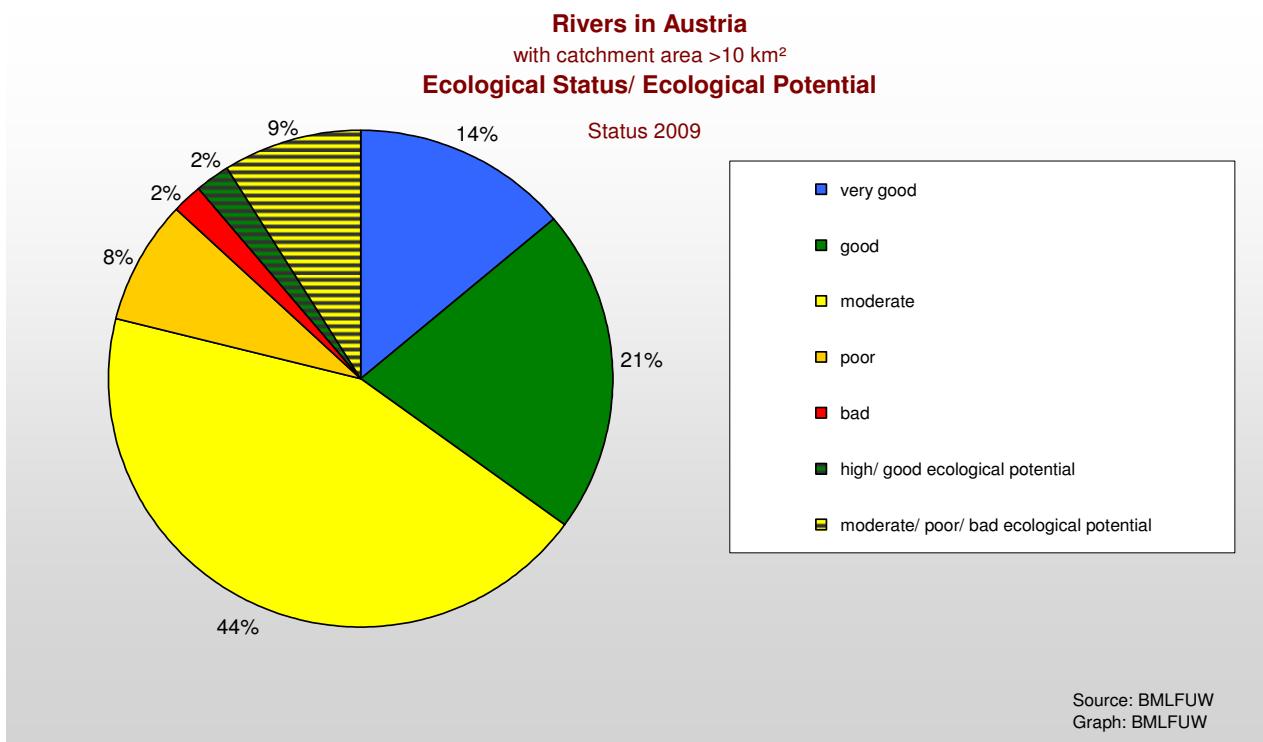
The percentage of bodies of running water shown in the quality map for 2005 which exhibit only a low level of pollution (quality class I, I-II or II) and therefore meet the quality aim is 88%.

It should be stressed that this already high percentage cannot serve as an overall evaluation for the entire Austrian water body network, since the quality map for 2005 only shows and evaluates bodies of water with a catchment area of more than 100 km² and a total length of 11,500 km. If the numerous small bodies of water – particularly Alpine ones – were included, the proportion of bodies of water meeting the quality target would be dramatically increased.

If we compare the current situation with earlier quality situations where the Austrian water body network is shown in a comparable scope (for example the quality maps for 1966/71, 1988, 1995, 1998, 2001 and 2002/2003 – see table), we can clearly see the success of remediation measures. The proportion of bodies of water exhibiting severe pollution in the shape of easily degradable organic materials (water quality class III and poorer) is currently no higher than 1%.

Since 2007 Austria's running waters have been monitored according to the requirements of the EU Water Framework Directive. Natural bodies of water are assessed with respect to their ecological and chemical status, whereas bodies of water classified as "heavily modified" or as "artificial" are assessed in terms of their ecological potential and chemical status.

In 2008, in the context of the drafting of the first national water management plan an assessment of all running waters with a catchment area > 10 km² (totally 31,000 km) was conducted.



Data source:

BMLFUW, assessment of status in the context of the National Water Management Plan 2009

Definition:

The assessment of the status of bodies of water refers to the draft Quality Objective Ordinance Ecology 2009 as well as to the Quality Objective Ordinance Chemistry-Surface Waters (Federal Law Gazette II No 96/2006).

35 % of the Austrian running waters have a very good or good ecological status. The reasons of insufficient ecological status are the intensive use of water power and the comprehensive flood control measures which have brought about changes of the hydromorphological conditions and a missing of the target in 63 % of all running waters.

Material pollution is comparatively low: In 2009, organic pollution and/or nutrient pollution were found in 18 % of the running waters with a catchment area > 10 km²; only 2 % showed exceedances with respect to pollutants regulated on national level.

The good chemical status, which refers to the pollutants regulated on EU level, was found in 99.5 % of Austria's running waters. Only for 0.5% of the running water bodies the chemical status was poorer than good.

It should be mentioned that particularly for smaller bodies of water with catchment areas < 100 km² additional monitoring results are needed to provide better evidence of the status assessments. Only cases where the missing of the target has been proved with great certainty can lead to a need for rehabilitation.

N 4 und N 5 Red list of selected species groups and types of biotopes

In Austria, two versions of national **Red Lists of Threatened Animal Species** were published in 1983 and 1994. The most up-to-date Red Lists of Threatened Animal Species in Austria were published in 2005 and 2007. They use a new assessment concept based on IUCN Categories which has been developed at the Austrian Federal Environment Agency ("Umweltbundesamt"). The latest Red Lists give the following picture:

- The threat situation of the Eagle Owl, » European » Otter, Peregrine Falcon, Black Stork, to name only a few, has improved considerably. In part, this is due to successful conservation programmes.
- 47 or 10% of the vertebrate species are listed as 'Critically Endangered'.
- Species like the Great Bustard and European Roller have persisted due to conservation programmes.
- One Austrian bat species, the Schreiber's Bat, became extinct, two species are critically endangered. The reasons are land use intensification, lack of prey owing to pesticide use and disturbance of roost sites in buildings and caves.
- Amphibians or reptiles are threatened to a varying degree or at least listed as 'Near Threatened'.
- The Bavarian Vole is an Austrian endemic, i.e. the species does not occur elsewhere, since the German populations became extinct. It is one of the rarest vertebrates in Austria and Europe.
- A re-assessment of the *Coregonus* species swarm, which was previously grouped collectively under *C. lavaretus* s. lat., has shown one globally extinct species, one highly threatened species and several endemic species.
- Many threatened species live in wetlands and agricultural habitats; these are landscape types having undergone major transformations in the past decades.
- One third of the mammals, one third of the birds and one third of the fish are listed in the category 'Least Concern'.

With regard to the status of the flora in Austria the **Red List of Threatened Plant Species** was published in 1999 and has not been updated since then. It is therefore not possible to establish an overall trend in Austria's flora since then.

In 1999 about 40% of the fern and flowering plants have been assigned to a threat category:

- 1.2% of the autochthonous ferns and flowering plants are extinct (category 0)
- 33.4% are actually threatened (categories 1 to 3)
- 5.6% are potentially threatened (category 4)

Similarly, the situation of the mosses, liverworts and lichens was estimated. The assessment of the fungi and algae is feasible only for a small selected group of rather well-known species. Hence, a satisfactory evaluation of the whole group of plants is not possible at present.

The status of species in the biogeographical regions according to the FFH Directive of the European Union is summarized in the table below.

Bioregion	Habitat	Nr.	%	Nr.	%	Nr.	%	Nr.	%	Nr.	%	Total nr.
		Favourable	Inadequate	Bad	Unknown	Not reported						
Alpine	Amphibians and reptiles	2	10%	14	67%	5	24%	0	0%	0	0%	21
	Fish	1	6%	6	33%	10	56%	1	6%	0	0%	18
	Invertebrates	3	7%	16	37%	20	47%	4	9%	0	0%	43
	Mammals	11	29%	18	47%	7	18%	2	5%	0	0%	38
	Plants	6	19%	13	42%	10	32%	2	6%	0	0%	31
Continental	Amphibians and reptiles	0	0%	15	68%	7	32%	0	0%	0	0%	22
	Fish	9	0%	8	33%	14	58%	2	8%	0	0%	24
	Invertebrates	3	8%	12	32%	20	53%	3	8%	0	0%	38
	Mammals	10	28%	21	58%	4	11%	1	2%	0	0%	36
	Plants	2	10%	8	40%	10	50%	0	0%	0	0%	20

Table: Conservation Status of Species according to Article 17 Reporting of Austria

(Source: Country Profile Austria, European Biodiversity Knowledge Base)

Nr. = Number of occurrences

% = Percentage of number of occurrences

According to the **Red List of Threatened Biotope Types** around three quarters of the evaluated 488 biotope types have been assigned to a threat category. Five biotope types have been completely destroyed, another 33 biotope types are threatened by complete destruction, 123 biotope types are vulnerable, and another 123 are endangered. There are 93 biotope types of high conservation value that are not threatened - in particular biotope types at higher altitudes, some forest biotope types and geomorphologic biotope types. Out of 61 grassland habitat types 90 percent, of 93 forest habitat types 57 percent are threatened. Even in the high mountain area of 15 habitat types, such as high mountain grasslands, upholstery, or meadows on snow soils, seven percent are threatened.

Most biotope types are threatened by eutrophication, followed by abandonment of extensive, traditional forms of land use and subsequent succession. Other important threat factors are application and diffuse chemical inputs, land clearance, reforestation, intensification of land use, land development as well as interventions on wetlands such as river regulation, drainage and energy use. In most cases, threatened biotope types are exposed to several threat factors. The largest number of threatened biotope types are found at submontane altitudinal belts, followed by the lower montane and colline altitudinal belts; with increasing altitude, biotope diversity strongly decreases.

Basically, Austria has a very diverse forest landscape. The catalogue of biotope types contains 93 different **forest biotope types**. Of these 93 forest biotope types, 53 types (equivalent to 57%) are endangered. So far, no forest biotope type has been destroyed completely in Austria. A total of 22

forest biotope types (= 24%) are not endangered. Another 18 forest biotope types (= 19%) were classified as “not particularly worth protection” and therefore were not evaluated. Differences can be observed in the analysis of regional endangerment. Generally, the forest habitats in intensively utilised low zones are more severely endangered. In the high zones of the Alps, the situation is much more favourable. Forest types that are particularly endangered include the floodplain forests (four types of floodplain forests are directly threatened by total destruction as a result of river regulation and power plant construction). More than 80% of the endangered biotope types have no or little potential for regeneration. The situation is particularly striking for biotopes characterised by typical site conditions that can hardly be restored or only over a very long period of time, such as e.g. peat, swamp or marsh forests. The quality of many wide-spread biotope types is endangered, for example in beech or oak forests. Here, the analysis of the causes of danger shows that there is a need for protection due to intensive utilisation in the lower zones.

The naturalness of Austria's forest areas has been investigated in an exemplary way. By means of a stratified random procedure, 4,892 sample plots were selected from the network of the Austrian Forest Inventory. A standardised method which allows determining the anthropogenic influence on forests in a differentiated way was developed to establish a practice-oriented list of criteria, to work out reconstructible surveying and evaluation processes, and to describe the distribution of forests and their varying degrees of naturalness. The effects of wood harvesting, grazing, game management, tourism and other influences on forests were analysed. Also parameters like the existing and potential tree species compositions, the share of plants showing disturbance in the vegetation, structural features as well as types and intensities of forest utilisation were examined. With the help of a standardised and transparent calculation scheme a hemeroby value between 1 (artificial) and 9 (natural) was determined for every sample plot. Finally, the surveyed values of the individual sample plots were combined to provide an assessment value for the total forest-covered area. The basis for comparison for the present forest status is the “potentially natural vegetation”.

According to the results of this study three percent of Austria's forest-covered area is natural forest. The term “natural” or “ahemerobic” is defined very restrictively. Only forest-covered areas not showing any human impact are assigned to this category. The percentage of semi-natural forests in Austria is 22%. Moderately altered forests are with 41% definitely the type of forest most frequently occurring in Austria. Strongly altered forests are intensively managed and make up 27% of Austria's forest land. Artificial stands account for 7% of Austria's total forest area. They are mainly constituted by non-indigenous tree species and do not show any similarities to the potentially natural forest community.

The study confirmed that, with sustainable forest management practices which take account of the natural site conditions, it is possible to maintain a high degree of naturalness. However, the distribution of the different levels of hemeroby also furnishes evidence that, in some regions, natural forests do not exist any more.

The **status of habitats in the biogeographical regions according to the FFH Directive** of the European Union is summarized as follows (see also table below):

In the Alpine biogeographical region, 6 out of the 8 (75%) bogs, mires and fens and 1 of 1, or 100%, of sclerophyllous scrub habitats are reported to be in an unfavourable-bad condition. A large proportion of alpine forests, 15 of the 19 (79%), are in unfavourable-inadequate condition. 2 of the 3 (67%) and 8 of the 11 (73%) alpine heath & scrub and rocky habitats are in a favourable condition, respectively. Of the total freshwater habitats in the alpine biogeographical region, the condition of 4 of the 9 (44%) is unknown.

With the exception of rocky habitats (2 of the 5 or 40%), no favourable conditions are recorded for any of the other continental habitat types. 8 of the 15 (53%) alpine forests are recorded to be in favourable condition. 100% of all coastal, dunes, heath & scrub, and sclerophyllous scrub habitats in the continental biogeographical region are reported to be in an unfavourable-bad condition. The condition of 4 of the 8 (50%) continental freshwater habitats is unknown.

Bioregion	Habitat	Number	%	Number	%	Number	%	Number	%	Number	%	Total number
		Favourable	Inadequate	Bad		Unknown		Not reported				
Alpine	Freshwater Habitats	0	0%	2	22%	3	33%	4	44%	0	0%	9
	Heath & Scrub	2	67%	0	0%	1	33%	0	0%	0	0%	3
	Sclerophyllous Scrub	0	0%	0	0%	1	100%	0	0%	0	0%	1
	Grasslands	1	9%	6	55%	3	27%	1	1%	0	0%	11
	Bogs, Mires & Fens	0	0%	1	13%	6	5%	1	1%	0	0%	8
	Rocky Habitats	1	73%	1	9%	1	9%	1	1%	0	0%	11
	Forests	2	11%	15	79%	2	11%	0	0%	0	0%	19
Continental	Coastal Habitats	0	0%	0	0%	1	100%	0	0%	0	0%	1
	Dunes Habitats	0	0%	0	0%	1	100%	0	0%	0	0%	1
	Freshwater Habitats	0	0%	0	0%	4	50%	4	4%	0	0%	8
	Heath & Scrub	0	0%	0	0%	1	100%	0	0%	0	0%	1
	Sclerophyllous Scrub	0	0%	0	0%	1	100%	0	0%	0	0%	1
	Grasslands	0	0%	5	38%	7	54%	1	8%	0	0%	13
	Bogs, Mires & Fens	0	0%	0	0%	5	71%	2	29%	0	0%	7
	Forests	0	0%	8	53%	6	40%	1	7%	0	0%	15

Table: Conservation Status of Habitats according to Article 17 Reporting of Austria

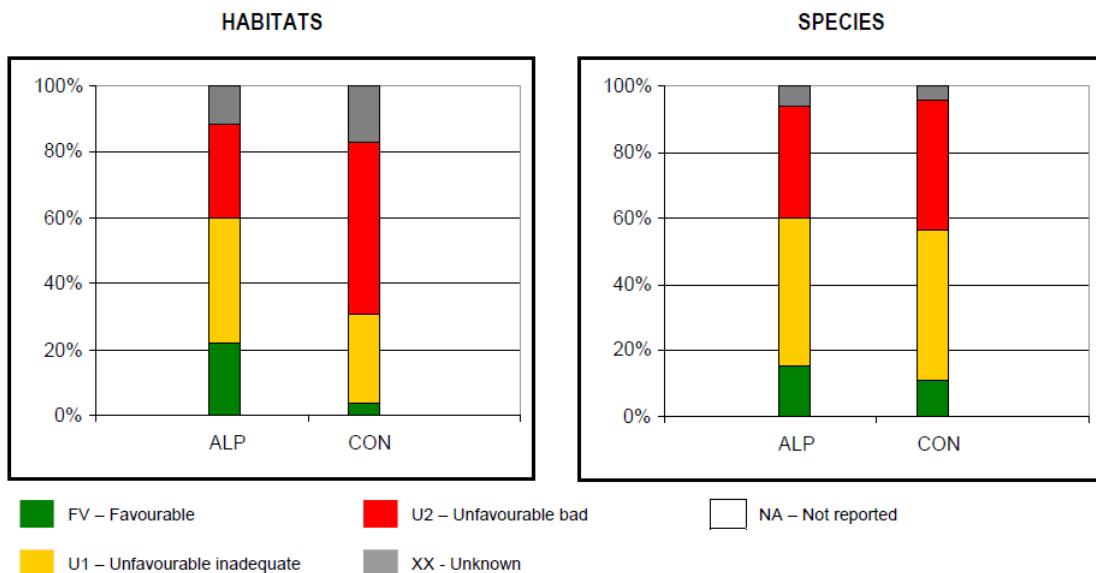
Source: Country Profile Austria, European Biodiversity Knowledge base

Number = Number of occurrences

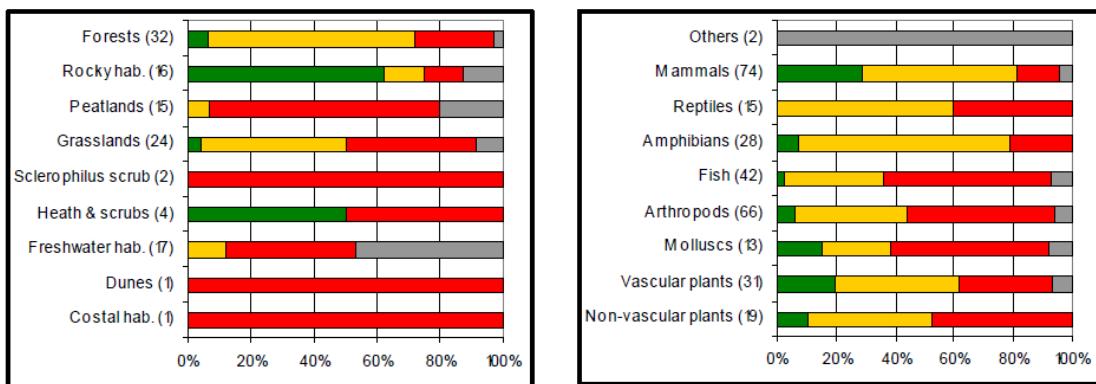
% = Percentage of number of occurrences

A combined analysis of the evaluation results as given in the Austrian Report to the EU FFH Directive (Article 17 Report) concerning the conditions of species and habitats in the alpine (alp) and continental (con) regions in Austria shows that 18% out of 66 habitat types as well as 11% out of the 172 species found in Austria (according to FFH Directive) are in a favourable

conservation status. 70% of the habitat types and 85% of the species are in an unfavourable status (see graphs below). For the remaining ones, no assessment has been made due to data gaps.



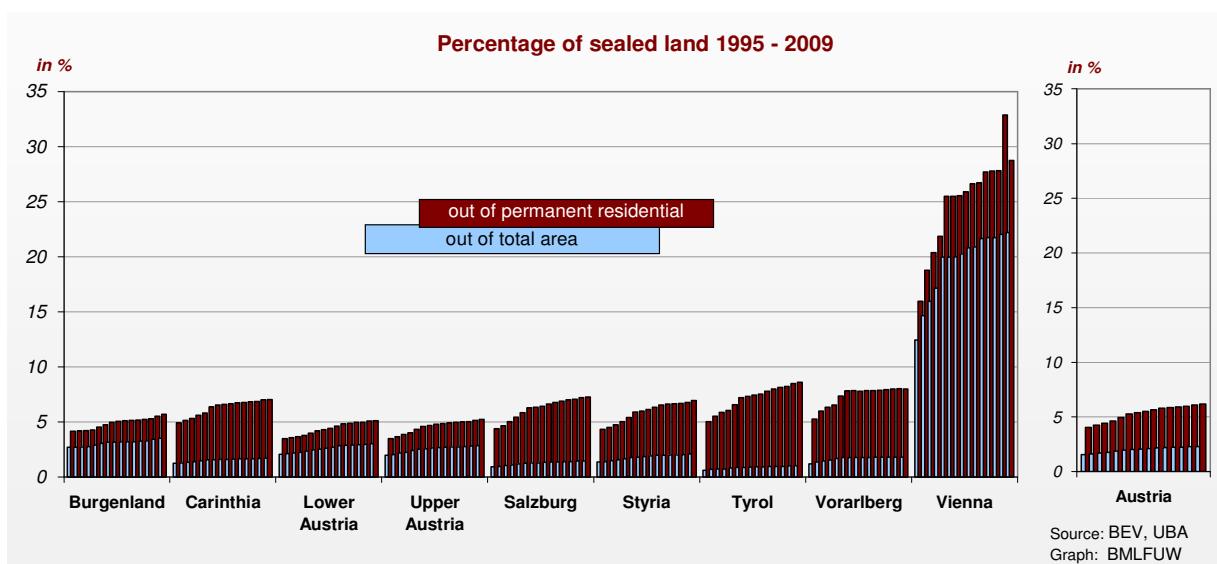
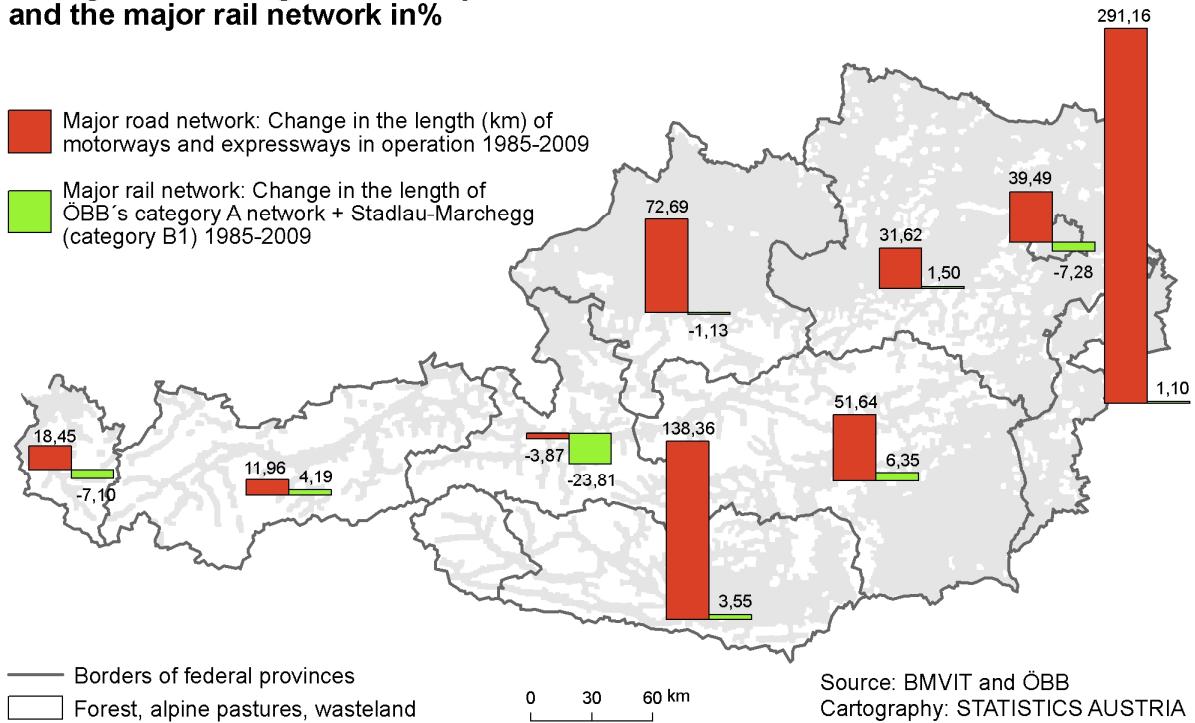
Graph: Overall assessment of conservation status of species and habitats by biogeographical region (%)
 (Source: http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007/ms-reports_summaries/national_summarypdf/EN_1.0 &a=d; 8 Sept. 2009).



Graph: Overall assessment of conservation status by habitat category / species group (%)
 (Source: http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007/ms-reports_summaries/national_summarypdf/EN_1.0 &a=d; 8 Sept. 2009).

F 1 Use of land by transport and settlement (sealing)

Changes in the length of the major road network and the major rail network in%



Data sources:

- (1) Federal Ministry of Transport, Innovation and Technology (BMVIT) for the road network and Austrian Federal Railways (ÖBB) for the rail network; as of 1 January of the given year.
- (2) Sealed land: Calculations of the Austrian Federal Environment Agency (Umweltbundesamt) based on regional information from the land database of the Federal Office of Metrology and Surveying; as of 1 January of the given year (1995-2009); date of inquiry: February 2009

Definitions:

- (1) The map shows the changes in the length of motorways and expressways taken together and in the length of the major rail network of the ÖBB for the periods specified.
- (2) *Sealed land* is the sum of the built-up areas (the areas used for "buildings" and "paved" are factored in at rate of 100% and areas whose use is "unspecified" are factored in at a rate of 30%) and of "Other Areas" (the areas used for "roadways" are factored in at 60% and the areas whose use is "unspecified" are factored in at 10%).
The *total area* is the sum of all areas regardless of their use.
Permanent residential space consists of the sum of all areas regardless of their use ("building", "paved", "with vegetation" and "unspecified"), areas used for agriculture, gardens, vineyards, and "Other Areas" such as "roadways", "railways", "excavation areas" and "unspecified".

Fragmentation caused by roads and railways has an impact on landscape and ecosystems. Therefore, this indicator illustrates the changes in the lengths of major transport networks.

In the period 1985-2009, the length of the rail network increased in five Federal Provinces.

In contrast, the length of motorways and expressways recorded a significant plus in several Federal Provinces between 1985 and 2009.

Please note, however, that the figures do not accurately reflect the development of fragmentation since they may also be influenced, for example, by amendments to the Federal Road Act (*Bundesstrassengesetz*) with regard to the classification of roads as motorways, expressways or federal roads.

Since 1995, the growth of sealed land throughout Austria has increased by more than 170 %. The target laid down in the Austrian Sustainability Strategy gives an intended reduction of 1 hectare per day for the whole of Austria. In a three-year average (2007-2009), land use amounts to more than 8 ha per day. Thus current trends are eight times greater than the target value. If we compare the three-year period 2007-2009 with the previous period 2004-2007, only the Provinces Vorarlberg, Salzburg and Vienna show lower consumption rates.

When interpreting trends based on regional information the uncertainty of the data used has to be expressly mentioned. As the use of land is recorded in the digital cadastral map of the Federal Office of Metrology and Surveying only on occasion, percentages of newly built-up areas will often be reflected in the regional information only several years later. Trends should therefore be interpreted only on the basis of sufficiently long observation periods.

3. Main threats to biodiversity and its components

Habitat loss, habitat fragmentation caused by infrastructure projects and sealing of land (for use of land by transport and settlement (sealing), see indicator F 1) as well as agricultural and forestry practices through intensification, but also through abandonment of land utilization, are among the key drivers and pressures to biological diversity in Austria (see table below).

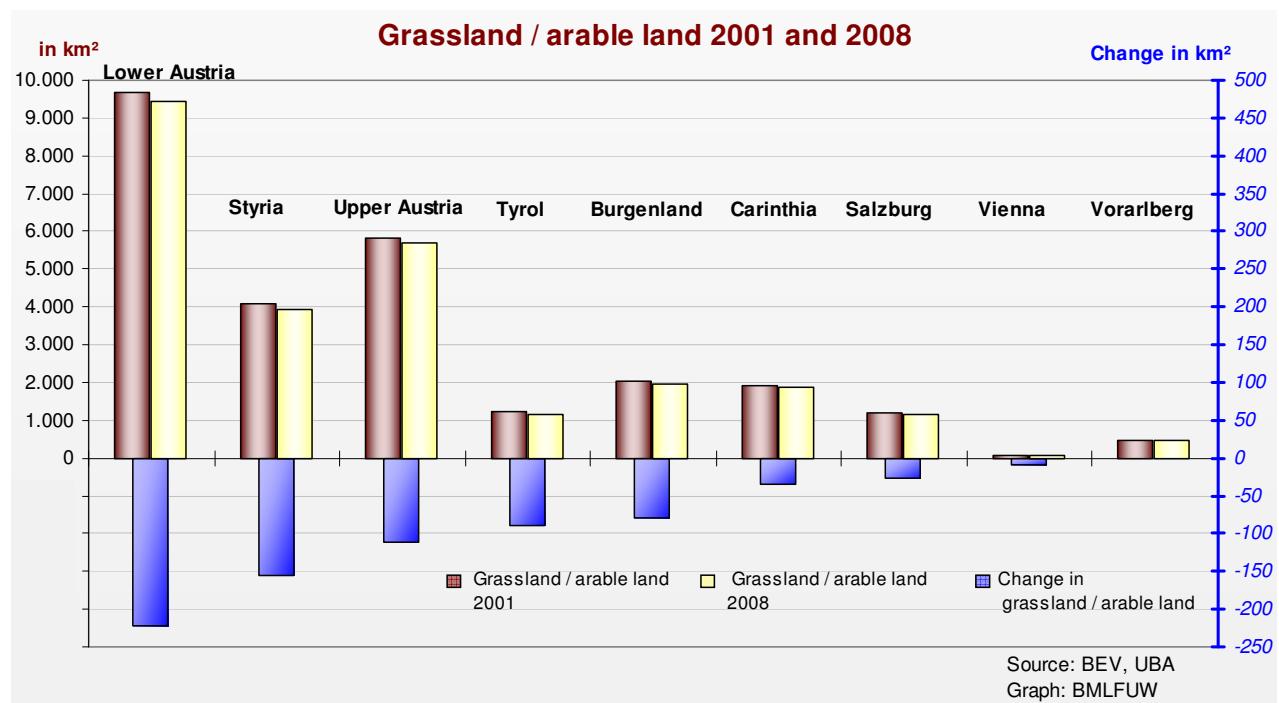
Category of pressure / threat	HABITATS		SPECIES	
	Actual pressures	Future threats	Actual pressures	Future threats
Agriculture, Forestry	65	65	56	52
Fishing, hunting and collecting	11	11	21	20
Mining and extraction of materials	37	34	5	4
Urbanisation, industrialisation and similar activities	32	32	25	26
Transportation and communication	9	9	15	17
Leisure and tourism (other than above)	39	40	16	18
Pollution and other human impacts/activities	27	24	21	16
Human induced changes in wetlands and marine environments	43	41	47	43
Natural processes (biotic and abiotic)	57	57	14	19

Table: Frequency of pressures and threats (%) (Source: Austrian National Article 17 Report, Summary, July 2008)

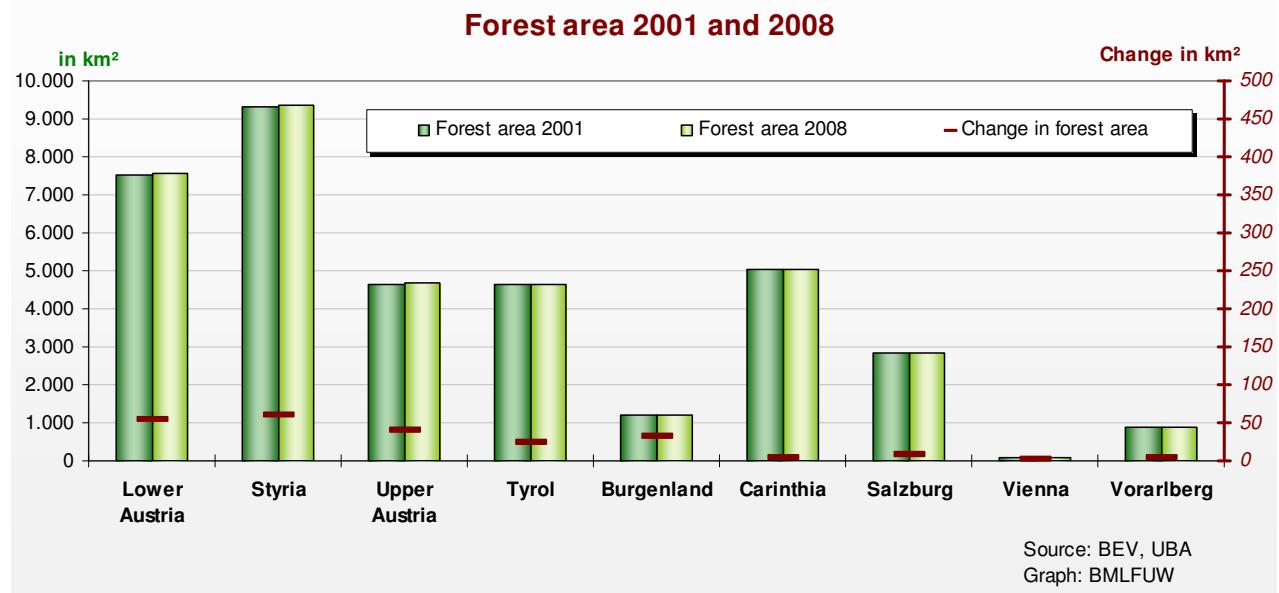
“Changes in land use” affect the ecological values of landscapes, and thus of biodiversity, in Austria.

As to the changes in land use in Austria, a general decrease in **agricultural area** is observed, while forest areas tend to increase. Between 2001 and 2008 more than 700 km² of agricultural area were lost in Austria. This corresponds to a daily reduction by 30 hectares. This decrease in agricultural area does not yet take into account the loss of areas for agricultural management in Alpine areas. Almost one third of the agricultural areas are turning into forests, more than two thirds are being converted into living and transport areas. Due to the growing of undesired forests on these former agricultural areas forest-covered land has increased by more than 200 km² since 2001. The trend of a loss of agricultural areas has been proved in all Austrian Federal Provinces except Vorarlberg.

Forest areas are generally increasing in line with the long-term trend. Both accumulated forest losses in poorly forested areas (open agricultural land, surrounding living areas) and further increase in regions already holding a very high share of forests can be problematic (poorer fulfilment of functions, loss of biodiversity). The greatest percent-increase has been observed in the Federal Provinces with little forested area. Only Styria, the Province most abundant in forests, still shows a relatively high increase. The increasing share of broad-leaved trees and shrubs in Austria’s forests and the trend away from pure spruce stands towards mixed stands are signs of a more natural forest management (see also graphs and table below).



Graph: Changes in land use (forests, grassland/arable land); Source: Austrian Headline Indicator Report 2009)



Graph: Changes in forest area 2001 and 2008 in nine Austrian Federal Provinces (Source: Austrian Headline Indicator Report 2009)

Shares in forest area in percent	1971/1980	1981/1985	1986/1990	1992/1996	2000/2002
Pure conifer stands	70	68	67	65	62
Pure spruce stands	45	45	45	44	41
Mixed conifer – broad-leaved stands	13	14	14	14	15
Mixed broad-leaved – conifer stands	8	9	9	10	11
Pure broad-leaved stands	9	9	10	11	12

Source: BFW 2004 – AFI 2000/2002

Table: Shares in forest areas in % in mix types – productive forest

Source: Austrian Forest Report 2004 (2008)

An **inventory of non-indigenous species in Austria** based on literature data and on the expertise of specialists for all groups has been carried out in 2002. All neobiota were classified according to the driving forces responsible for their arrival (anthropogenic induced expansion, unintentional introduction and intentional release), current status (naturalized or casual), conservation threats (invasive, potentially invasive, not invasive) and economic relevance. Additionally, geographic origin, distribution in the Austrian Provinces, preferred habitats, and selected references are given.

Groups of organisms	Total number of species in Austria	Neobiota	Naturalized neobiota	Invasive (potentially invasive) species
Vascular plants	4,060 ¹	1,110 ²	275 ³	17 (35 ⁴)
Bryophytes	1,020	4	2	0
Lichens	Approx. 2,100	2-3?	2-3?	0
Algae	Unknown	4?	?	0
Fungi	Unknown	83	61	6
Animals	45,00	>500	300	6 (46 ⁴)

Table: Currently recognized non-indigenous species in Austria

1 = including 2,950 indigenous species (not including micro-species of the genera Hieracium, Rubus, Taraxacum and Ranunculus auricomus agg. and 1,110 neophytes;

2 = including 51 species with doubtful classification regarding differentiation archaeophytes/neophytes, 14 species that are probably native and 3 species with doubtful classification between escaped/planted;

3 = including 51 probably locally naturalized species;

4 = including potentially invasive species.

By now 1,110 non-indigenous vascular plants (including some varieties) have been documented for Austria. In comparison with the approximately 2,950 indigenous vascular plant species (excluding micro species of the genera Hieracium, Rubus, Taraxacum and Ranunculus auricomus agg., NIKLFELD 1999), neophytes constitute 27% of the complete flora. Of these 1,110 neophytes, 835 species (75%) are casuals, 51 species (5%) are probably naturalized

and 224 species (20%) are naturalized in Austria. Of the latter, 106 species (10%) are naturalized at single or few localities only, whereas 118 species (10%) are naturalized and widespread in Austria. Most neophytes were imported intentionally for ornamental and horticultural reasons. About 627 species (57%) escaped from cultures into the wild, a further 25 species (2%) probably escaped from such cultures. Some 345 species (31%) were introduced unintentionally, a further 27 species (2%) probably were introduced unintentionally and the import route of further 86 species (8%) remains unclear. 14 neophytes exert serious economic impacts, especially in agriculture, but also in forestry, water management and in human health aspects.

Altogether, 17 non-indigenous plant species are considered to pose a conservation threat (invasive), because they readily invade natural and semi-natural habitats, where competition with and replacement of native species occurs. These species include: *Acer negundo*, *Ailanthus altissima*, *Aster lanceolatus*, *A. novi-belgii*, *Bidens frondosa*, *Elodea canadensis*, *Epilobium ciliatum*, *Fallopia japonica*, *Fraxinus pennsylvanica*, *Helianthus tuberosus*, *Impatiens glandulifera*, *I. parviflora*, *Populus x canadensis*, *Robinia pseudacacia*, *Rudbeckia laciniata*, *Solidago canadensis*, *S. gigantea*. A further 18 species are considered a potentially invasive threat due to their invasion history and effects observed in neighbouring countries. Invasive neophytes particularly occur along rivers (riverine forests, tall herbaceous vegetation, riparian areas (banks of rivers, edges of lakes and ponds)) and to a lesser extent in dry meadows in the Pannonic region of eastern Austria. The percentages of neophytes in other natural and semi-natural habitats of Austria are comparatively low. Among the Bryophytes, four neophytes are known of which two are naturalized species and one species shows an expansion in its distribution (*Campylopus introflexus*). Among the lichens, two or three species are suspected to be neophytes.

Among the incompletely known Algae, four species were classified as of probably non-indigenous origin. Among fungi, 83 non-indigenous species are documented, but many more are expected to occur. About half of the species (40 species) are naturalized on agricultural and horticultural crops only, one quarter of each are regarded as naturalized in the wild (23 species) or casuals (22 species). Two species were assigned to two categories, living on agricultural and horticultural crops as well as in natural and semi-natural habitats (*Sphaerotilis mors-uvae*, *Uncinula necator*). In contrast to vascular plants, unintentional import to Austria prevails among the neomycetes (51 species, 61%). Intentional introductions of fungi for gastronomic purposes which escaped into the wild are known for *Agaricus bisporus*, *Lentinula edodes* and *Stropharia rugosoannulata*. For 29 neomycetes the path of introduction to Austria is unclear. Some of the 30 economically important neomycetes are of particular relevance on agricultural and horticultural plants (e.g. *Phytophtora infestans*, *Ustilago maydis*). Six non-indigenous parasitic fungi species were classified posing a conservation threat for their hosts (e.g. *Aphanomyces astaci* (crayfish plague) and *Ophiostoma ulmi* and *O. novoulmi* (Dutch elm disease)).

This survey includes about 500 non-indigenous animal species, i.e. approximately 1% of the complete Austrian fauna. 46 species (9%) pose a threat to the autochthonous fauna (40

potentially invasive species and 6 invasive species). About 30% of the neozoans were classified as having negative economic impacts. This relatively high percentage merely reflects the preferred documentation of economically relevant species, with impacts comprising a wide range from rather low to serious impacts, e.g. in agriculture or forestry. The complete number of neozoans in the investigated taxonomic groups is estimated between 700-800 species. Invertebrate non-indigenous species prevail both in numbers and conservational relevance. Two North American crayfish species (*Pacifastacus leniusculus*, *Orconectes limosus*) act as vectors and reservoirs of crayfish plague (*Aphanomyces astaci*) and have driven native crayfish species almost to extinction. The slug *Arion vulgaris* (= *lusitanicus* auct.) increasingly takes land in semi-natural habitats and outcompetes native slugs and snails. More non-indigenous mollusc species were also considered as potentially invasive threats. Muskrat (*Ondatra zibethicus*) and the Eastern Asiatic freshwater clam (*Sinanodonta woodiana*) may threaten the endangered autochthonous bivalves via predation and competition, respectively. Among vertebrates, raccoon (*Procyon lotor*), raccoon dog (*Nyctereutes procyonoides*), American Mink (*Mustela vison*), several fish species (e.g. topmouth gudgeon *Pseudorasbora parva*), and several tortoise species were classified as potentially invasive threats to native biodiversity. About half of the neozoans originate from the Palaearctic region, particularly from the Mediterranean subregion. There are, however, deviations between different animal groups. For example, half of the non-indigenous fish species were imported from North America, but only 7% of the beetles.

Aquatic environments are more frequently and more seriously affected by biological invasions, whereas in terrestrial environments non-indigenous species preferably colonize man-made, artificial habitats, i.e. monocultures in agriculture and forestry and urban habitats. The lists of species and the classification of impacts, of course, reflect current knowledge.

Non-indigenous organisms will continue to arrive and naturalize in Austria. Increasing global trade, transport, tourism, the intentional introduction or the escape of species from culture, as well as the anthropogenic alteration of selection regimes and the creation of new ecological licenses support a continuing increase in neobiota. Even if these processes were to hold immediately, the delayed period of time between the first known appearance and the naturalization of most species ("time-lag") guarantees a further increase in neobiota in the future.

Climate change impacts on biodiversity through a complex interaction of species and their habitats. Both the structure of habitats and their ecological functions will change in a new climate regime. But the movement of species into or out of a community will also affect both the physical elements of the ecosystem and other species. In Austria the most dramatic ecological consequences of climate warming can be anticipated in alpine ecosystems, in particular at ecological boundaries (= ecotones) such as around the tree- and timberline. See indicator AL 16.

There are no finished risk assessments of habitats under climate change in Austria. However, a current project elucidates climate-change induced risks to mire Austrian habitats – this study

("MoorClim") will be finished in February 2011 and is coordinated by the Austrian Federal Environment Agency. There are also no comprehensive nation-wide assessments of species under risk of climate change. However, the monitoring project GLORIA (www.gloria.ac.at) investigates climate-change driven mountain species range shifts. Austria supports GLORIA (Global Observation Research Initiative In Alpine Environments), which aims at establishing and maintaining a world-wide long-term observation network in alpine environments. Vegetation and temperature data collected at the GLORIA sites will be used for discerning trends in species diversity and temperature. The data will be used to assess and predict losses in biodiversity and other threats to these fragile alpine ecosystems which are under accelerating climate change pressures.

In addition, climate-change induced risks for endemic plant and animal species have been assessed in studies.

According to European Environment Agency data the percentage of natural ecosystem areas at risk of **acidification and eutrophication** amounted to 2 and 100 percent respectively in Austria in 2000, considering an area of 35,746 km² and 40,255 km². Predictions on acidification for 2010 and 2020 indicate a decrease to 1 and 0 percent, assuming that current (2008) policies and measures will be fully implemented. According to the maximum feasible reduction scenario, in 2020 the risk of acidification will be reduced to 0 percent. On eutrophication, the scenario envisages a reduction to 94 percent in 2010 and 78 percent in 2020. The MFR scenario foresees a decrease to 5 percent of natural ecosystem area at risk in 2020.

CHAPTER II

Current Status of National Biodiversity Strategy and Action Plans

1. Revision of the First National Biodiversity Strategy

In 1997 the Austrian Ministerial Council took cognizance of the First Austrian Strategy for the Implementation of the Convention on Biological Diversity. The Strategy had been prepared by the National Biodiversity Commission (NBC), chaired by the Federal Ministry of the Environment. Members of the Commission included representatives of Federal Ministries, Provincial Governments, universities, land owner associations and interest groups, of the Austrian Trade Union Federation, the official representation of employees, the Museum of Natural History, the Austrian Hunting Association, the Austrian Fishing Association as well as the Austrian Federal Forests and environmental NGOs. The Commission is charged with issues related to the implementation and coordination of Austrian positions for the Convention on Biological Diversity in Austria. It serves as an important platform for coordinating biodiversity-related issues and information exchange.

From 2001 to 2003 an independent evaluation of the Strategy was carried out by the Federal Austrian Environment Agency; more than 400 stakeholders were involved. The techniques used for the evaluation included questionnaires (also an electronic questionnaire) as well as interviews with key actors. The evaluation had a focus on the extent to which the activities set out in the Strategy were implemented as well as on issues related to the Strategy itself. The Strategy itself was assessed in order to identify deficits and shortcomings of its objectives and measures to fulfil the objectives. The evaluation did not include an assessment of the impacts of the reported activities. A working group under the National Biodiversity Commission was established with the mandate to provide advice to the evaluation process and to prepare recommendations for the Commission.

Summary of the results of the evaluation:

- 150 individual stakeholders responded and reported on a total of 430 activities carried out in order to implement and/or contribute to the implementation of the Strategy.
- Most of the activities reported as a contribution to the implementation of the Strategy (almost 50%) were related to nature protection (35% species and landscape protection, 13% in situ & ex situ conservation). 21% of the total activities referred to agriculture, 11% to fishery and hunting, 7% to forestry and data collecting activities. Only few activities were reported with regard to the monitoring of changes, traffic, tourism, and

development cooperation. None or only very few activities were reported in the sectors of mining, industry or energy.

- Most of the activities belonged to the categories of research, monitoring and mapping, the vast majority related to the field of species and landscape protection (e.g. research projects to further develop the Red Lists of endangered species, or data collecting on fish populations). Another emphasis was on activities related to political programmes, strategies, legal and incentive measure (e.g. measures to implement EU provisions related to nature protection (FFH Directive, Birds Directive)). Most of the programmes concerned species and landscape protection (e.g. research projects to further develop Red Lists of endangered species, promotion of rare tree species or pilot projects for sustainable management in broad-leaved tree species). Only few responses were received for the category "information and communication".
- Categorizing the response groups, most activities were reported by public administrations, followed by interest groups, in particular in the fields of fishing and hunting, by public institutions (e.g. universities), and NGOs. An interesting result was that also many private persons were reported as actors (e.g. data collecting activities).

The following conclusions drawn from the evaluation were taken into account in the further development and updating of the Strategy:

1. There is a strong need to better communicate the Strategy, its goals, objectives and activities to actors outside the public administration and beyond the nature protection authorities in order to raise awareness about the Strategy. To this end also the identification of the actors responsible for the implementation of each action would be needed.
2. The activities set out in the Strategy need to be accompanied by timetables for implementation, benchmarks for evaluation, where feasible, as well as indicators to be able to measure and evaluate the achievements of goals.
3. Information and awareness-raising are indispensable tools to further the sectoral integration of biodiversity.
4. A high political profile and stronger political commitment could improve the implementation of the Strategy. According to some responses of the questionnaire a stronger legal – even legally binding - status strategy would trigger stronger commitments of actors responsible for the implementation.
5. Availability of financial resources constitutes an important prerequisite for the implementation of the Strategy. The Strategy included a reference that its implementation had to take place within existing budgets and resources. This means that no new or additional resources were provided to implement the Strategy.

2. Revised National Biodiversity Strategy

In 2005 the National Biodiversity Commission (NBC) adopted an updated National Biodiversity Strategy. In revising, the Commission took into account the conclusions from the evaluation process, but also relevant new decisions and thematic as well as cross-cutting programmes adopted by the Conferences of the Parties. The revised Strategy thus also addresses e.g. the ecosystem approach and the implementation of its principles in Austria. The Commission did not succeed in establishing also benchmarks, targets, time lines etc. for the implementation of the Strategy, but it decided that in addition to the general Strategy, which should lay down the general principles, goals, objectives and measures, National Action Plans should be developed for the implementation of the Strategy for areas of great importance to biodiversity in Austria. Also in 2005 the NBC adopted an Action Plan on Invasive Alien Species. Furthermore, the Commission called for the elaboration of specific, time-bound targets with regard to the achievement of the 2010 biodiversity target of halting the loss of biodiversity in Austria. In 2007 such targets were adopted by the Commission (see below).

The revised Strategy stipulates the overall goal of stopping the loss of biodiversity in Austria.

15 principles are set out to guide the implementation of the Strategy, such as precaution, caution, long-term effects, non-economic values, motivation and information, compensation, conciliation of interests, public participation, or restoration.

The Strategy is clustered around four main areas for actions, including goals, targets and actions in order to achieve the targets:

- *Conservation of biodiversity* (addressing in situ and ex situ conservation, species protection, landscape protection and land use and invasive alien species)
- *Sustainable use of biodiversity* (addressing the sectors agriculture, forestry, hunting, fishing, tourism and recreation, mining, industry, energy and traffic)
- *Research and monitoring* (addressing data collection, trends in biodiversity and the ecosystem approach)
- *Cooperation* (addressing access and benefit sharing, protection of traditional knowledge, innovations and practices, development cooperation)

In addition, the Strategy sets out criteria for the development of Action Plans to implement the Strategy.

The Strategy addresses all relevant aspects with regard to the implementation of the Convention on Biological Diversity in Austria. It therefore contains a great number of

descriptive targets and related activities. There is no indication of priority actions or goals of prior importance.

With regard to the conservation of biodiversity the Strategy stipulates the following goals:

- Better coordination of in situ and ex situ activities
- Harmonization, evaluation and – if feasible – improvement of legal and institutional frameworks with a view to efficient protection of biodiversity
- Sufficient financial means and human resources for the implementation of measure in the realm of in situ protection of biological resources
- Striving for cost transparency in the use of nature and landscapes as well as stress put on nature
- More effective communication and outreach as well as awareness raising on the various aspects related to the 2010 target
- Maintenance of genetic resources of crop varieties, livestock breeds and wild relatives through appropriate legal and institutional frameworks
- Development of a technical basis with regard to the spread, threats and protection of breeds and species and sufficient archiving of well defined material of all threatened species and breeds in gene banks, botanical gardens and zoos

With regard to species protection the Strategy aims at

- Securing sufficient populations of all threatened species and – where feasible – reducing the respective threatening status, in particular of those species for which Austria has strong responsibilities for
- Maintaining of diversity of species and of breeds that are typical of the regions
- Establishing of corridors and maintenance of connected landscapes to allow a genetic exchange between populations and thus to contribute to the genetic diversity of species
- Reducing human-induced pressures on the environment
- Ensuring sufficient means for species protection

As to the protection of landscapes and special planning, the following goals are set out:

- Reduction of sealing
- Protection of untouched landscapes (e.g. swamps, glaciers, natural forest reserves)
- Maintenance of connected landscapes or restoration of landscapes of importance to migration in order to allow a genetic exchange within populations to conserve the genetic diversity

To promote sustainable agriculture, the Strategy calls for

- Conservation of the diversity of biotopes in cultural landscapes (e.g. concerning embankments, hedges or other natural sites)
- Further promotion of organic farming, respectively of sustainable agriculture, that promotes ecological aspects
- Continuation and management of soils with marginal yields and special sites with the aim of protecting the typical biodiversity of these habitats
- Protection of agricultural and horticultural species and rare domestic animal species, in particular those species that are threatened
- Increasing the awareness of consumers

Forest management should aim at

- Promoting the biological diversity of indigenous forests
- Conservation of all 93 forest biotope types including their typical biodiversity
- Sustainable management of forests
- Conservation of the genetic diversity of forests
- Promoting layered forest stock structures and the distribution of species and mixed stands in accordance with natural preconditions and strive for integrated forest health protection
- Promotion of natural regeneration in order to conserve the genetic diversity of forests

Goals for hunting stipulate

- Long-term conservation of native populations of wildlife and their habitats
- Sustainable management of wildlife that is consistent with the requirements of their natural habitats

With regard to the fishing sector the Strategy sets out the following objectives:

- Long-term protection of all native fish species
- Fishing management and appropriate legal basis that include ecological requirements

The tourism and recreational sector should ensure

- that biological diversity is not threatened by the tourism sector and
- operational tasks are consistent with criteria for the protection of the environment

As regards mining operations, the protection of biodiversity should be taken into account in extracting operations of raw materials. The same principles of biodiversity integration should be

applied to the industry sector. The Strategy also requires the traffic sector in particular to avoid the fragmentation of habitats and landscapes due to traffic infrastructure.

As far as the energy policy is concerned, the Strategy includes the following goals:

- Prevention of negative impacts on biodiversity arising from the establishment or renewing of power stations
- Enhancement of energy efficiency with regard to buildings, industry as well as trade and traffic
- Promotion of sustainably produced renewable energy

On investments in order to improve research and monitoring of biodiversity Austria strives for

- integration of biodiversity research in all relevant research programmes;
- bridging the most pressing gaps in basic research;
- centralized and coordinated data collecting with regard to biological diversity;
- preparation of scenarios on impacts of climate change on biological diversity in Austria; as well as other impacts such as sealing.

With regard to monitoring the Strategy underlines the establishment of a national monitoring programme.

The Strategy also addresses the implementation of the ecosystem approach in Austria and calls for further research with regard to the development of adaptive management methods. Furthermore, the principles of the ecosystem approach should be integrated in relevant policies both at federal and regional levels and should be taken into account when deciding upon guidelines for subsidies.

In the field of development cooperation Austria should continue to contribute to the replenishments to the Global Environment Facility (GEF). The aspects of biodiversity should be integrated into projects aiming at improving living conditions of local people in partner countries of the Austrian Development Cooperation. More generally, Austria should also make best use of programmes and projects to raise the awareness of local people on the importance of biological diversity.

As far as access and benefit sharing are concerned, the Austrian Strategy on Biodiversity stipulates that the transfer of genetic resources between countries should respect the provisions of the Convention on Biological Diversity. Advantages, arising from the commercial use, or other uses of genetic resources should be shared with countries of origin.

Finally, Austria should also promote fair cooperation with indigenous people and promote the recognition of traditional knowledge and practices.

Action Plan on Invasive Alien Species

In preparing the Action Plan on Invasive Alien Species the CBD COP6 “Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that threaten ecosystems, habitats or species” (Dec. VI/23) have been used.

The Action Plan on Invasive Alien Species contains objectives and measures for education and awareness raising, capacity building, research and monitoring as well as legal and organizational implementation. It includes a timetable for implementation, indicates the level of priority and identifies actors responsible for the implementation of individual measures. The Annex of the Action Plan includes a list of invasive, potentially invasive, economically problematic and health-affecting alien species to be found in Austria.

The Action Plan strives to develop and implement coordinated and internationally harmonized measures with the intention of minimizing, or preventing, present and future adverse impacts of alien species on biodiversity, the economy and health. The species referred to in greater detail in the Action Plan have been selected taking into account whether they pose a threat to biological diversity or cause either economic or health problems. This group of species includes also invasive alien species which are considered problematic because they presently spread rapidly or because problematic experiences have been made with them in countries close to Austria. As opposed to this the Action Plan is not directed towards the majority of alien species, which do not cause any economic or ecological problems.

When implementing the Action Plan on Invasive Alien Species activities are to be launched primarily for those species that are invasive or potentially invasive and that pose a problem for the conservation of nature or for the economy. Furthermore, species posing risk to human or veterinary health are to be considered.

Action Plan on Species Protection

Another Action Plan on Species Protection has been prepared by the Austrian League for Nature Protection (Österreichischer Naturschutzbund) in cooperation with the Federal Austrian Environment Agency (Umweltbundesamt) and the Federal Ministry of Agriculture, Forestry, Environment and Water Management. However, it has not been adopted by the National Biodiversity Commission yet.

3. Outcome-oriented targets for achieving the 2010 Biodiversity Target

In 2007 the National Biodiversity Commission adopted “Outcome-oriented targets for achieving the 2010 Biodiversity Target of stopping the loss of biodiversity in Austria – and beyond”. Seven overall goals and 29 targets in total, some of them also including sub-targets, should guide the implementation of the National Biodiversity Strategy. The relevant framework of goals and targets of the Convention on Biological Diversity has been the basis for developing the national goals and targets. In addition, the goals and targets to achieve the 2010 Biodiversity Target in Austria should also contribute to the implementation of the EU Biodiversity Action Plan 2010 and beyond.

2010 GOALS	2010 TARGETS
GOAL 1 Protection of biological diversity of ecosystems, habitats and biomes	Target 1.1 Effective protection of at least 50% of rare, endangered and ecologically important areas <u>Sub-targets:</u> <ul style="list-style-type: none">- Establishment of the Natura 2000 network in accordance with the EU Directives and effective management of areas- Development and implementation of efficient measures for the maintenance of most threatened biotope types according to the Red List of biotope types; restoration measures have been initiated and concepts for their protection and management have been developed and implemented.- Continuation and maintenance of Austrian Natural Forest Reserves: A representative network of Austrian Forest Types is established.- Programmes for connecting protected areas through stepping stone and corridors for migratory species and for the exchange of gene-pools are in place or under development, accompanied by corresponding outreach activities.- Obstacles for migratory routes are continuously eliminated, in particular as regards roads, railways and running waters. Target 1.2 Regional guidelines for biodiversity and concepts for management of regions have been developed. Target 1.3

	<p>Concepts for the protection and management of all Austrian wetlands of national and international importance have been developed and implemented.</p> <p>Target 1.4</p> <p>A national list containing natural sections of flowing waters (catchment area > 10 km²) has been established. In these areas no hydropower projects or other construction projects should take place that could deteriorate the ecological status of these sections.</p>
GOAL 2	<p>Target 2.1</p> <p>Significant improvement of status of threatened species</p> <p><u>Sub-targets:</u></p> <ul style="list-style-type: none"> - Programmes are in place to halt the deterioration and improve the status of habitats, species according to FFH and Birds Directive of the EU - Protection programmes for endangered and severely endangered species which predominantly or are only found in Austria (endemic or sub-endemic species) have been developed and implemented - Populations of severely threatened species according to the Austrian Red List of Threatened Animals and Plant Species are secured by Action Plans or ex situ/in situ protection measures - Development and implementation of an Action Plan on Species Protection - Development and implementation of an Action Plan on Agriculture and Biodiversity / Genetic Resources.
GOAL 3	<p>Target 3.1</p> <p>Reduction in the increase of sealed soil to a maximum of 1.1 ha per day (this means 1/10 of the average of the period 2001-2004)</p> <p>Target 3.2</p> <p>Substantial reduction of habitat fragmentation</p> <p>Target 3.3</p> <p>Substantial reduction of negative impacts of invasive alien species</p> <p><u>Sub-targets:</u></p> <ul style="list-style-type: none"> - Management Plans for invasive alien species causing serious ecological, economic or health related problems have been established. - Measures to restrict the imports of invasive alien species have been set up. The unintentional introduction of invasive alien species has been reduced by 50% in the period 2007-2010 compared to the period 2003-2006. Provisions to control the most important pathways of invasive alien species are being developed.

	<ul style="list-style-type: none"> - Measures for eradication of some invasive species are in place at local and regional level. <p>Target 3.4</p> <p>Reports on the evaluation of the Rural Development Programme 07-13 confirm its substantial contributions to the biodiversity target.</p> <p>Target 3.5</p> <p>The annual activities to implement the Austrian National Forest Programme confirm its substantial contribution to the biodiversity target.</p>
<p>GOAL 4</p> <p>Promotion of the sustainable use of biodiversity and sustainable consumption of products deriving from biodiversity</p>	<p>Target 4.1</p> <p>The proportion of land use areas (agriculture, forestry, horticulture, etc.) according to criteria of sustainable ecological management has been significantly increased:</p> <p><u>Sub-targets:</u></p> <ul style="list-style-type: none"> - By 2010 the proportion of organic farming is increased to 20%. - The sustainable management of Austrian forests is secured. <p>Target 4.2</p> <p>The maintenance and ongoing management of grasslands with different intensity of utilization is secured. The proportion of extensively used areas has been increased.</p> <p>Target 4.3</p> <p>The supply and the consumption of products from sustainable, regional, ecological production has been substantially increased by awareness raising and public relation measures (e.g. week of sustainability, Bio-Action-Day).</p> <p>Target 4.4</p> <p>Renewable energy: The national goals and measures aiming at promoting the use of biomass are implemented in accordance with the requirements of biological diversity protection.</p>
<p>GOAL 5</p> <p>Outreach/communication and awareness raising</p>	<p>Target 5.1</p> <p>Information for the public is continuously made available on all NATURA 2000 sites.</p> <p>Austria contributes actively to the development and implementation of an EU-wide communication strategy to</p>

	<p>strengthen the awareness on the importance of biological diversity.</p> <p>Target 5.2</p> <p>The Austrian public is aware of the importance of biological diversity and is involved in local activities. An initiative aiming at the local implementation of the CBD has been established in partnership with the IUCN Countdown 2010.</p> <p>Target 5.3</p> <p>Biodiversity constitutes an emphasis for education in compulsory schools and in the education of teachers.</p> <p>Target 5.4</p> <p>The awareness on the effective implementation of the Alpine Convention and its Protocols has been increased.</p>
GOAL 6 Improvement of knowledge basis	<p>Target 6.1</p> <p>Substantial progress has been made in the bridging of most pressing knowledge gaps with regard to information, maintenance and sustainable use of biological diversity in Austria.</p> <p><u>Sub-targets:</u></p> <ul style="list-style-type: none"> - A research initiative aims at gathering all data on biodiversity in Austria and its importance for the sustainable development. - Research and documentation of taxonomic diversity has been started, in particular with a view to lower taxa of plants and fungi and many groups of invertebrates. - Impacts of possible climate change scenarios on biological diversity have been examined and options for actions have been concluded from that. - A continuous national network for the monitoring of biodiversity all over Austria has been established in order to monitor trends in biodiversity. - Detailed surveys on habitats and species protected under European law have been carried out and are still ongoing. <p>Target 6.2</p> <p>A basis for promoting scientific activities for the implementation of the Convention on Biological Diversity has been created ("Science/Policy/Interface").</p> <p>Target 6.3</p> <p>The review of Red Lists older than 10 years has been started.</p> <p>Target 6.4</p> <p>Deepening on the availability of financial resources, a review of the naturalness of Austria's forests has been started ("Hemerobiestudie").</p>

GOAL 7 Further strengthening of Austria's responsibility with regard to the protection of global biodiversity	Target 7.1 At least 10% of Austria's bilateral development cooperation relates to biodiversity, respectively for the CBD according to the OECD Rio Markers.
	Target 7.2 Austria continues to take a stand for biodiversity protection within international trade agreements which should take into account the objectives of biodiversity protection.
	Target 7.3 Austria continues to take a stand for the global equality of economic, ecologic and social objectives (Global Marshall Plan).

4. Progress made in the implementation of the Strategy and achievements of the outcome-oriented 2010 Targets

1. Protection of biological diversity of ecosystems, habitats and biomes

Protected areas are seen as one of the most important instrument for the protection of biological diversity in Austria. Up to date 27% of the national territory is protected under different categories of protected areas. Generally, nature protection lies within the legal competence of the nine Provinces of Austria. Each Province has its own categories of protected areas. The table below summarizes the various categories.

Category	Number	Km ²	% of national territory (incl. overlaps between categories)
National Park (Category II of IUCN)	6	2,353	2.8
Natura 2000	159	11,557	13.8
Nature Protection Site	442	2,992	3.6
Landscape Protection Site	247	12,696	15.1
Nature-Landscape Protection Site	4	506	0.6

Protected Part of Landscape	347	86	0.1
Nature Park	48	4,143	4.9
Ramsar Site	19	1,380	1.6
Biosphere Park	6	1,525	1.8
Other categories	40	1,507	1.8

Table: Protected Areas in Austria (Dec. 2009, Source: Ninth Environmental Control Report of the Federal Environment Agency ("Umweltkontrollbericht")

The Austrian **Natura 2000 Network of Protected Areas** has been established in accordance with the provisions of the Fauna-Flora-Habitat Directive and the Birds Directive of the European Union. The legal competence for implementing the EU Nature Protection Directives lies within Austria's nine Provincial Governments. As of July 2009, Austria has designated 168 sites of Community importance, which, together, comprise 8,978 km² or 10.7% of the national territory. There are 96 Special Protection Areas, totalling an area of 9,867 km², or 11.8%, of Austria's national territory. At least 20% of the Natura 2000 sites in Austria should have a management plan, e.g. financed by LIFE. In 2006, management plans were established for 58 Natura 2000 sites; for another 58 sites such plans were in the process of development. 86 Natura 2000 sites were provided with special guardians for the sites ("Gebietsbetreuer").

So far, six **National Parks** have been established in Austria, representing the ecologically most valuable regions of Austria. They cover 2,350 km² or roughly 3% of the national territory. All six Austrian National Parks have been acknowledged by the International Union for Conservation of Nature IUCN and fulfil the criteria of IUCN Category II. The renouncing of any economic utilization on at least 75% of the area is an objective of the Austria National Parks policy and was the precondition for achieving the international recognition as National Park from the IUCN. Austria's National Parks are not only environmental educational centres, but also successful regional lead projects and points of attraction for visitors from all over the world. With their modern management and in total more than 300 committed employees they are able to offer a range of programmes for various visitor groups. The National Park Administration Offices dispose of excellent infrastructure facilities such as visitors centre, information points or research stations. Learning trails, exhibitions and excursions complete the programmes for the visitors. Every year about 80,000 students visit the parks; in 2007 almost 400,000 visitors were counted at the visitors centres. Studies have been carried out that underline the contributions of the National Parks to the respective regional development. In June 2010 the Austrian Strategy for National Parks has been presented by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management. The overall objective is the further qualitative development of the parks under a common quality brand "National Parks Austria".

The National Parks Strategy contains the following specific goals and indicators with regard to biodiversity:

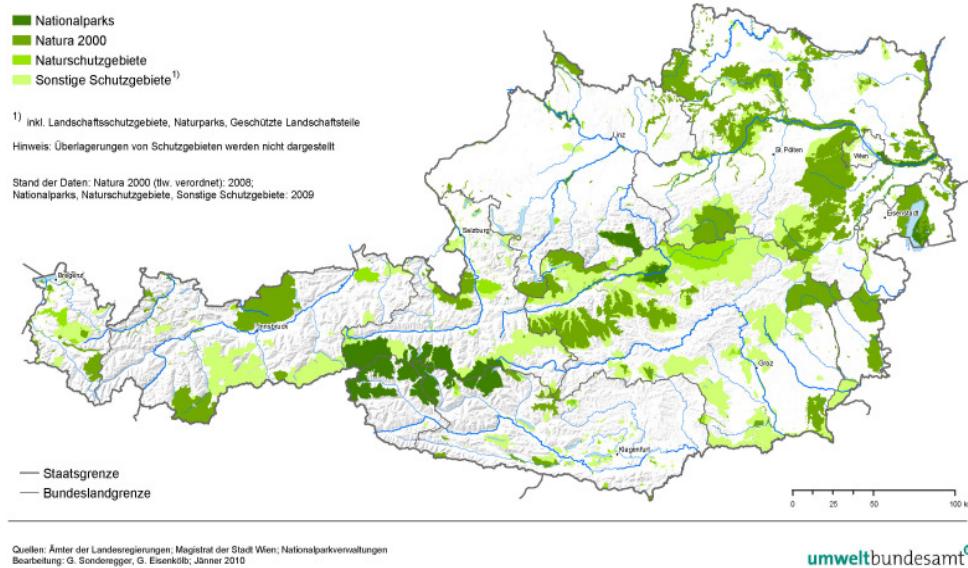
Goal	Success indicator
The protection of biodiversity is clearly the guiding idea of the main activities carried out by the National Parks.	The activities undertaken to protect biodiversity are recorded in a comprehensible form and are regularly evaluated.
Biodiversity protection at regional level has been further improved and the ecological networks with the areas surrounding National Parks are strengthened.	Formal ecological network agreements have been adopted in all National Parks adjacent to other protected areas (initiatives to secure areas and interconnect natural areas).
	Joint conference on biological diversity and regional development takes place.
Pro-active protection is provided for endangered and rare types of species and their habitats.	Programmes supporting threatened or endangered species are conducted.

By joining the Ramsar Convention on Wetlands of International Importance, Austria is obliged to designate at least one wetland site for inclusion in the List of Wetlands of International Importance. To date, Austria has designated 19 **Ramsar Sites**.

The goal of the Austrian “**Programme for Natural Forest Reserves**” is the establishment of a network of natural forest reserves which is representative for all forest communities. This network will be used for the development of ecologically-oriented nature-based silviculture. Forest ecosystems should develop naturally, without human interventions and utilization. By private contracts forest owners are compensated for forgone incomes. By May 2010 200 forest reserves covering an area of 8,603 ha have been included in the national network. Reserve data are entered into a Forest Reserve Database. Some of these data were included in an international Forest Reserve Database located at the European Forest Institute (<http://bfw.ac.at/100/1306.html>).

In Austria, slightly more than one million hectares of **forest in protected areas** identified in accordance with nature conservation law and in natural forest reserves could be classified as Class 1 and 2 in accordance with the MCPFE Assessment Guidelines for Protected Forest Areas. This is equivalent to about one quarter of the total forest area in Austria. Almost 89% of this area is in Class 2 (protection of landscapes and specific natural elements), whilst about 11.5% of the forest area is in Classes 1.2 and 1.3, the main management objective of which is biodiversity.

Naturschutzrechtlich verordnete Gebiete



Graph: Location of the protected areas established by law: National Parks, Natura 2000, Nature Protection Sites and others (Source: Ninth Environmental Control Report of the Austrian Federal Environment Agency ("Umweltkontrollbericht" 2010))

Austria has participated very successfully in many internationally significant EU LIFE Nature Projects, which have been co-financed by the European Commission (see also www.lebensministerium.at or <http://www.umweltnet.at/article/archive/7158>).

Significant Austrian LIFE Nature projects have been / are :Wildflußlandschaft Tiroler Lech“, „Wachau“, „Inneralpines Flussraummanagement Obere Mur“, „Weidmoos“, „Lafnitz II – Lebensraumvernetzung an einem alpin-pannonischen Fluss“, „Schlucht und Hangwälder im Oberen Donautal“, „Pannonische Steppen und Trockenrasen“, „Vernetzung Donau-Ybbs“, „und „Nationalpark Gesäuse“, „Lebensader Obere Drau“, „Untersberg-Vorland“, „Bisamberg Habitatmanagement“, „Traisen“, „Mostviertel-Wachau“ , „Nationalpark Gesäuse“. „Gail“ „Ober Mur II“ und "Flusslandschaftsentwicklung Enns". Summaries of all Austrian LIFE projects can be found on the homepage of the EC under <http://ec.europa.eu/environment/life/project/Projects/index.cfm>.

Ecological improvements caused by LIFE Nature projects have not only positive effects on local level but very often on the whole Natura 2000 site.

Austria's network of protected areas represents most important ecological habitats of Austria. With regard the gaps remaining in the national network of protected areas, a statement of WWF Austria is contained in Annex III of this report.

With regard to the **connectivity of protected areas** the EU FFH Directives asks for “improving the ecological coherence of the Natura 2000 network, to encourage the

management of features of the landscape which are of major importance for wild fauna and flora. Such features are those which, by virtue of their linear and continuous structure (such as rivers with their banks or the traditional systems for marking field boundaries) or their function as stepping stones (such as ponds or small woods), are essential for the migration, dispersal and genetic exchange of wild species.”

Several projects have been initiated aiming at connecting ecologically important areas. The following boxes contain just two of many other examples for such projects.

Alps-Carpathian Corridor (<http://www.alpenkarpatenkorridor.at>)

The Alps and the Carpathians shelter a large variety of large wild animals such as deer, lynx, wolf or bear – species that nowadays strongly depend on humans for the conservation of their natural habitat. The corridor between the Alps and the Carpathians is a traditional migration route for wildlife. This corridor does not only connect the eastern border of the Alps with the Little Carpathians in Slovakia but also crosses a highly dynamic European region located between the cities of Bratislava, Sopron and Vienna. In the frame of this transboundary project financed by European funds, several actors collaborate with the aim of the definition and exemplary realisation of concrete activities to improve ecological connectivity. These actors come from nature protection and landscape planning and cooperate with partners from transport, agri- and silviculture, hunting or tourism and also with the concerned communes. After an intensive preparation phase the project was started mid February 2010. Several partners from Austria and Slovakia are involved in the project. The Alps-Carpathians corridor supports the aims of the Alpine Convention and constitutes, besides the Danube and the Green Belt along the former “iron curtain”, a major migration route of European importance.

PANet – Protected Area Networks (www.panet2010.info)

SUMMARY

The Interreg II B CADSES project “PANet 2010 – PA networks” – Establishment and Management of Corridors, Networks and Cooperation” focuses on systems of protected area (Pas) and their integrated management. PA networks are systems of at least two individual Pas with a coordinated spatial, economic or social management. The project is a follow-up to the “IPAM – toolbox: Integrative Protected Area Management by Example of the Alps-Adriatic Region”, which focused primarily on the integrated management of individual sites. The main output of the IPAM project, the web based Toolbox (expert system), is also the main platform for the PANet project. Results achieved within the PANet were also integrated into the existing Toolbox (www.ipam.info).

The main intentions of the PANet project are:

- Establishing networks of Pas as components of integrated and sustainable spatial development strategies, specifically in accordance with the European Spatial Development Perspective (ESDP), regional and national development strategies, and rural development activities.
- Empowering the regions and authorities involved in the management of Protected Areas networks, in particular improving the effectiveness of management, raising awareness of the importance of PA networks, and increasing technical expertise and practical experience in the field of PA network management.
- Supporting international and European conservation obligations (conventions and directives), specifically Natura 2000, conventions (Ramsar, Biodiversity, Berne).

- Increasing the impact and effectiveness of individual Pas through synergies and cumulative effects, specifically by establishing corridors, buffer zones, and networks, through effective backbones for communication and management, and by combining features for different categories.

In addition, Austrian regions also participate in the “ECONNECT Project” (www.econnectproject.eu/cms/), which is funded by the EU within the framework of the ETC Alpine Space Programme and co-funded by ERDF. The project will be implemented from September 2008 to August 2011. The objective of ECONNECT is the safeguarding of an ecological continuum across the Alps. Therefore, besides protected areas as core zones, emphasis is also put on linking these areas in order to achieve connectivity between alpine ecosystems. To achieve an ecological continuum across the Alps, the ECONNECT project will consider not just the purely naturalistic aspects (such as, for example, sustainable land use), but also the economic and social dimensions which are just as important in promoting ecological networks. Within the projects obstacles will be identified and first actions to improve or create ecological connectivity and implementing effective strategies for multi-stakeholder community involvement are carried out. The realisation of an ecological continuum and the reduction of fragmentation will be implemented in these areas, leading to concrete spatial links (corridors) and measures in favour of the establishment of a pan-Alpine ecological network.

Austria is part of the **Green Belt**, the valuable habitats that have been developed and preserved in the shadow of the Iron Curtain. It is today Europe's largest network of biotopes. The inhuman border helped nature to take a breather for nearly 40 years. Therefore the area became a hideaway for many rare animal and plant species. Austria shares nearly 1,300 km with neighbouring countries in this international project: valuable natural assets from the Bohemian Forest to Lake Neusiedl, from the March-Thaya meadows to the Dobratsch mountain range. The number of rare and endangered animal and plant species is huge. The importance of this area for nature conservation and the network of biotopes is unique. The Austrian League for Nature Conservation (NATURSCHUTZBUND) works on the implementation of the project and conservation of the Green Belt. Besides organizing and supervising projects on the conservation of species and biotopes, focus is given on informing the public about the importance of the Green Belt as a hideaway and nature oasis: through public relations, print work, information desks and a week-long press-journey along the Green Belt in cooperation with neighbouring countries. Furthermore, fostering international contacts, organizing information networks and coordinating all Austrian actions concerning the Green Belt are focus of the League's efforts.

Austria's **National River Basin Management Plan** under the EU Water Framework Directive contains a number of actions that are of benefit to biodiversity: diadromous species including the morphological restructuring of rivers; removal of migratory barriers; measures to ensure fish migration through adequate technical solutions and stock enhancement of lake trout.

2. Protection of the diversity of species and genetic resources

According to Article 17 of the EU Habitats Directive Member States are obliged to draw up a report every six years on the implementation of the measures taken under this Directive and about the main results of the surveillance referred to in Article 11. An evaluation carried out by the Austrian "Umweltbundesamt" shows that almost 50% of the habitat types and species have been assessed within the category bad conservation status and about 80 % of the species and 70 % of the habitat types are in an unfavourable conservation status.

The following – more detailed - data have been gathered from the Austrian report on Article 17 (Data source: http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007&vm=detailed&sb=Title, <http://biodiversity.eionet.europa.eu/article17/>; <http://www.birdlife.org/datazone/species/index.html>):

With regard to **endemic species** a comprehensive overview of plants, fungus and animal species and subspecies whose range lies entirely (endemics) or predominantly (subendemic) within the political borders of Austria has been carried out. The results have been published in 2009. Altogether, 748 (sub)endemic animal and plant species have been identified.

The table below summarizes the number of (sub)endemic species and subspecies to be found in Austria.

Taxon	Number of species	Sub (Endemics)	% (Sub) Endemics
Plants	11,500	167	1.4
Algae	5,000	0	0
Bryophytes	1,050	0	0
Ferns and flowering plants	2,950 / 3,428	151	5.1 / 4.4
Lichens	2,500	16	0.6
Fungi	Ca. 10,000	0	0
Animals	Ca. 45,870	581	1.3
Gastropoda	414	80	19.3
Crustacea	Ca. 525	23	4.4
Myriapoda	Ca. 270	35	13.0

Chelicerata	Ca. 1,700	77	4.5
Insecta	Ca. 37,000	345	0.9
Vertebrata	Ca. 460	7	1.5

Table: (Sub)endemic species in Austria

In addition, also (sub)endemic habitats have been identified. On the basis of the Red List of threatened biotope types only a small number of endemic habitats (4 out of 488 biotope types) are found in Austria. These include forest types, two of which are widespread in the Austrian Alps. Another biotope type (Austrian pine forest of eastern part of the Alps) is restricted to north eastern Calcareous Alps.

In general, the threat status of endemic vascular plants as well as endemic animals is quite heterogeneous. The majority of taxa is not threatened. Changes in land use (abandonment of traditional extensive land use and negative effects of intensified land use) rank first. Further cause of threat are river engineering measures, increasing land development, habitat fragmentation due to construction of transport infrastructure, gravel pit and quarry operations. Due to lacking data only around half of the animal taxa could be included in the evaluation. The following factors have been indentified as most important threat factors: capture and destruction of freshwater springs, land use changes in agriculture and forestry, nutrient and pollutant inputs, winter tourism, road construction as well as natural rareness.

Quite a lot of **species protection projects** have been carried out in Austria at all levels that contribute to achieving the goal of protecting diversity of species and genetic diversity in Austria. Among the success stories the following projects are highlighted here:

- Reintroduction of the Bearded Vulture, *Salmo trutta marmoratus*, *Strix uralensis*
- Through protection projects the status of *Bubo bubo*, *Falco peregrinus*, as well as *Lutra lutra*
- Other reintroductions concern e.g. *Pulsatilla oenipontana* (University of Innsbruck), *Coleanthus subtilis*, *Elatine hexandra*, *Isolepis setacea*, *Eleocharis ovatus*, *Scirpus radicans*, *Lindernia procumbens*, *Limosella aquatica*, *Cyperus flavescens*, *Cyperus fuscus*, *Typha minima* as well as *Coleanthus subtilis* and *Limosella aquatica*
- 24 species protection projects carried out within the Austrian National Biodiversity Campaign “vielfaltleben” (“LivingDiversity”) (www.vielfaltleben.at)
- Transboundary LIFE Project “Great Bustard” (*Otis tarda*) with Hungary and Slovakia
- Numerous species protection projects are carried out by the Nature Conservation Authorities of the Provinces, e.g. bats, roller and other birds, various amphibians, various invertebrates.

In Addition to the many LIFE Nature Habitat Projects also LIFE Species Protection Projects have been implemented in Austria, e.g. “Internationales Bartgeierprogramm in den Alpen”,

Schutz der Großtrappe 1 und 2“, Bär 1 und Bär 2“ sowie "Huchen". Summaries of all Austrian LIFE Projects can be found on the homepage of the EC:
<http://ec.europa.eu/environment/life/project/Projects/index.cfm>.

Austrian Botanical Gardens carry out ex situ protection projects for many endangered “Red List” species:

- Botanical Garden of the University of Vienna: e.g. *Dracocephalum austriacum*, *Artemisia pancicii*, *Artemisia laciniata*, *Gypsophila fastigiata*, *Achillea setacea*, *Crepis Pannonica*.
- Botanical Garden Linz: e.g. *Artemisia pancicii*, *Gentianella bohemica*, *Scabiosa canescens*, and *Seseli annum*.
- Alpine Garden Villacher Alpe: *Anemonastrum narcissiflorum*, *Anthyllis montana*, *Dracocephalum austriacum*, *Gladiolus illyricus*, *Wulfenia carinthiaca*, Androsaceae (20 species).
- Botanical Garden Klagenfurt: *Berberis* (30 species), bats protection project, succulents *Stapelia*, *aloe*, *Anacampseros*, *Rhipsalis*
- Botanical Garden Graz: Hyacinthaceae (e.g. *Daubenya zeyheri*, *Spetaea lachenaliiflora*, *Drimia cryptopoda*, *Ledebouria nossibeensis*, *Avonsera convallarioides* etc.)

Furthermore, Austrian Botanical Gardens are also actively involved in the EU project “ENSCONET”.

Actual **checklists** have been established for some taxonomic groups:

Mosses (<http://131.130.59.133/projekte/moose>), fungi (<http://austria.mykodata.net>), molluscs, Palpigradi, collembola, dragonflies, heteropterans, othopterans, coleopterans, neuropterans, lepidopterans, Vespidae, vertebrates. An online-checklist of the Austrian bryophytes will be published soon. These checklists have been compiled mostly after the year 2000. Additionally some older checklists for other organism groups exist.

Ex situ collections exist for several dryland species as well as for some rare aquatic and semiaquatic species like: *Coleanthus subtilis*, *Elatine hydropiper*, *Isolopis setacea*, *Eleocharis ovatus*, *Scirpus radicans*, *Lindernia procumbens*, *Limosella aquatica*, *Cyperus fuscus*, *Cyperus flavescens*, *Typha minima*. For mosses and fungi various private collections but also collections at universities exist.

The Austrian collections and databases on species diversity were subject to an interdisciplinary study for the Global Biodiversity Information Facility.

Within the Austrian National Biodiversity Campaign “vielfaltleben” (“LivingDiversity”) **Action Plans** for the Wild Cat and the Common Hamster have been developed.

The **National Inventory of Plant Genetic Resources** for Food and Agriculture in Austria constitutes a database that contains comprehensive information about ex situ collections of Austrian genebanks. The website www.genebanks.at provides access to 'passport' data, such as accession (variety) name, accession number, maintaining institute and country of origin for each accession. It contains the Phaseolus Database, the Vigna Database, a database for medicinal and aromatic plants as well as a fruit database.

Ex situ collections are run by many institutions (e.g. Austrian Agency for Health and Food Safety AGES (www.ages.at) as well as NGOs, e.g. Arche Noah (www.arche-noah.at).

3. Reduction of pressures on biodiversity

Although several projects have been carried out to further reduce pressure on biodiversity from **fragmentation of habitats**, this is still seen as one of the most important threats for biodiversity in Austria.

Best Practice Examples: Austria's "Wildlife corridors"

"Efficient green bridge insertion in Austria" is a project which has lead to a concept of green bridges for the Austrian network of motorways. By evaluating existing passageways wider than 30 m and their suitability for wildlife and further by gathering information about the most important migration routes for red deer, moose and large carnivores, the permeability of the network of motorways has been investigated.

In addition the report contains the description of requirements for wildlife passages along existing and new motorways (e.g. amount, location, distribution, dimension and constructional design). These requirements were later incorporated into the guideline "Wildlife protection".

An interdisciplinary project in Austria, titled "Wildlife corridors", examined the applicability of remote sensing methods and terrestrial surveys to identify corridor structures at different landscape scales. With the collected data and information from aerial / satellite images and terrestrial surveys a resistance model for the investigation area and the indicator species red deer and wild boar could be developed. The most probable migration route between the floodplains of the Danube and the floodplains of the Leitha was detected.

In a follow-up project "Habitat connectivity in Austria" a migration resistance model for wildlife species was elaborated. Aim of the project was the identification of supra-regional wildlife corridors in Austria and to demonstrate the potential for habitat connectivity and defragmentation. The final result was a map showing the main migration corridors in Austria.

All these projects reveal explicit measurements of resource management, which ensure genetic exchange on the long term. They are a contribution to sustainable wildlife management in Austria and the border areas. Besides the improvement and implementation of the gained data, the integration of our results in instruments of regional planning and landscape planning are the most important next steps.

Only thereby the resource wildlife corridor can be taken into consideration in planning processes and strategies at different scales.

Another study evaluated the most necessary locations for new green bridges along existing motorways. Based on the previous studies 20 wildlife passes were evaluated according to the criteria acceptance probability for wildlife and spatial planning intentions in the adjacent areas. The result was background for the guideline “Habitat connectivity”, which was published later on, to define the defragmentation needs for the coming years.

Another study deals with possibilities of the implementation of wildlife corridors within spatial planning. There are some good examples like Styria, where wildlife corridors are implemented within the regional plans and therefore must stay undeveloped

Another study evaluated the functionality of wildlife passes. A big problem is the use of underpasses for the deposition of wood, agricultural equipment and even for hunting purposes. A simple fact sheet was elaborated, which should help to check the functionality of the passes every two years.

For the implementation of the gained knowledge several guidelines and directives have been released. The Federal Ministry for Transport, Innovation and Technology released a guideline “Habitat connectivity” for the ASFINAG regulating three main points: First the design and construction of wildlife passages along new motorways. That has to be done according to the RVS guideline 04.03.12 “Wildlife protection”. Secondly the evaluations of wildlife passes have to be done every two years according to a fact sheet. The third and most important topic is the installation of 20 wildlife overpasses above existing motorways to connect internationally important corridors (according to the results of the above described studies). Those 20 green bridges need to be built within the next 20 years.

In Austria there are “guidelines for the design, construction and maintenance of roads” called RVS (“Richtlinien und Vorschriften für das Straßenwesen”). Those guidelines deal with all different topics concerning road construction, for example all technical details, as well as environmental topics. Those guidelines are obligatory for all federal roads in Austria, which are all motorways, they represent the state of the art in Austria and their implementation is recommended by the Ministry for all other roads as well. Those environmental guidelines determine how to evaluate the impact of roads on animal species and their habitats and how to minimise or mitigate negative influences.

The RVS 04.03.12 “Wildlife protection” was published in 2007. It is the updated guideline from 1997 containing the topics road signs, deterring devices / warning reflectors, fencing and wildlife passes as well as the control of functionality. The guideline is describing the technical parameters for planning and constructing wildlife protection devices. Concerning wildlife passes it indicates for example the size and design of passes according to the importance of a corridor (local, regional, international).

There are also other RVS guidelines dealing with the protection of biodiversity and with minimising the negative impact of road infrastructure on habitats: RVS 04.03.11 “Amphibian protection along roads” (2003), RVS 04.03.13 “Bird protection at transport infrastructure” (2007) and “Wild mammals (excluding bats) conservation on the transport infrastructure (2009).

After the adoption of the National Action Plan on **Invasive Alien Species**, a National Focal Point on Invasive Alien Species has been established at the Austrian “Umweltbundesamt” (Federal Environment Agency). Many initiatives aiming at better information on the occurrence of invasive alien species in Austria and raising the awareness on these problems (e.g. exhibitions, conferences) have been carried out by various stake holders. A special lecture on invasive alien species at the University of Vienna has been introduced. Austria is also closely working with European, EU and other projects on this issue.

Best Practice examples:

NOBANIS (European Network of Invasive Alien Species, www.nobanis.org): The North European and Baltic Network on Invasive Alien Species (NOBANIS) has developed a network of common databases on alien and invasive species of the region. By establishing a common portal access to IAS-related data, information and knowledge in the region is facilitated. NOBANIS is a network for the cooperation between competent authorities of the region and contributes to implementing recommendations from CBD / COP 6. One of the goals of NOBANIS is to provide administrative tools for making the precautionary approach operational in preventing the unintentional dispersal of invasive alien species. Furthermore, NOBANIS establishes a regional cooperation to aid countries in the eradication, the control and the mitigation of ecological effects of invasive alien species.

The database of alien species in NOBANIS will be used to identify species that are invasive at present and species that may in the future become invasive. NOBANIS thus provides the foundation for the future development of an early warning system for invasive alien species.

DAISIE (Delivering Alien Invasive Species Inventories In Europe, <http://www.europe-alien.org/>):

The project was funded by the sixth framework programme of the European Commission. It provides information on biological invasions in Europe, delivers via an international team of leading experts in the field of biological invasions, latest technological developments in database design and display, and an extensive network of European collaborators and stakeholders. The general objectives of DAISIE are the creation of an inventory of invasive species that threaten European terrestrial, fresh-water and marine environments, an inventory to provide the basis for prevention and control of biological invasions through the understanding of the environmental, social, economic and other factors involved, an assessment and summary of the ecological, economic and health risks and impacts of the most widespread and/or noxious invasive species as well as the use of distribution data and the experiences of the individual Member States as a framework for considering indicators for early warning.

Austria has no general federal legislation in place in relation to **invasive alien species** (IAS);

however, the introduction of IAS is covered under specific legislation. Firstly, the Austrian Law on Plant Protection (1995) covers IAS that are plant pests. IAS are also covered under the jurisdiction of the Federal Provinces (Länder) (Lebensministerium (Austria) 2005). The introduction of alien plants is restricted in eight of nine Federal Provinces; the introduction of alien animals is restricted in all nine Federal Provinces. In some Federal Provinces, there is an exception for species introduced for fisheries, agricultural and forestry purposes. Austrian legislation does not address import and export, possession and trade or control and eradication of IAS.

In October 2007 the European Commission approved the **Austrian Rural Development Programme 2007 – 2013**, the so-called "Green Pact for Austria's Agriculture".

The measures of rural development relate to the four priorities described in the box below. These priorities refer on the one hand to the diversification of the rural economy (transition to novel products and the creation of new gainful occupations) and, on the other hand, to the safeguarding and enhancing of the quality of life in rural areas. This includes measures such as diversification, rural tourism or village renewal, but also the subsidisation of very small-scaled-enterprises.

Four priorities of the Austrian Rural Development Programme 2007-2013

1 - Improving the Competitiveness of the Agriculture and Forestry Sectors:

Key components are the investment aid to modernise agricultural holdings, the setting-up aid for young farmers and the promotion of processing and marketing. 13.8 percent of the funds allocated to the programme, or 1,078 billion euro, are available for Axis 1 in the 2007 - 2013 period.

2 - Improvement of the Environment and the Countryside:

72 percent of the funds or 5,661 billion euro, and thus the greatest part of the rural development funds for the 2007 – 2013 period, are reserved for this Axis. Key components are the environmental programme and the subsidisation for mountain farmers. But also forestry measures are subsidised under this Axis.

3 - Quality of Life in Rural Areas and Diversification of the Rural Economy

The measures that go beyond the immediate fields of agriculture and forestry are summarized under this priority. Various forms of support are thus offered to a target group which consists not only of farmers and forest managers, but includes also non-agrarian enterprises, communities, and most different organisations in charge of projects.

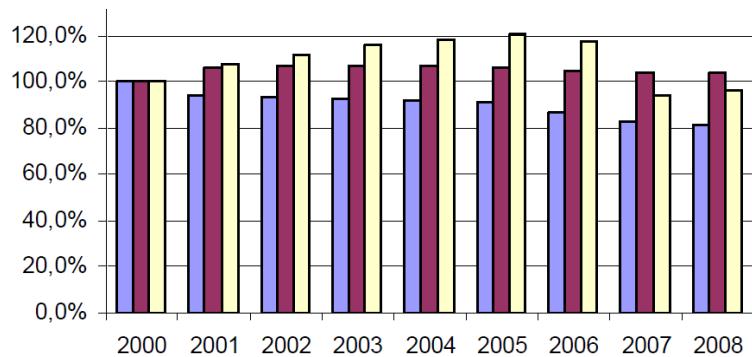
4 - Leader: This is an initiative aimed at supporting rural areas which has been implemented in selected areas of the country since Austria's accession to the European Union. With the reform of rural development for the 2007 – 2013 period Leader has been integrated into the Rural Development Programme and has become an interesting perspective for existing and new Leader regions. The regional approach offers optimum conditions for agriculture. The new legal foundations of the EU provide that in the period from 2007 to 2013 5.5 percent of the EU's rural development funds have to be

reserved for Leader projects. This means an allocation of funds of approximately 423 million euro for the current programming period, and more than a tripling of the funds in this field.

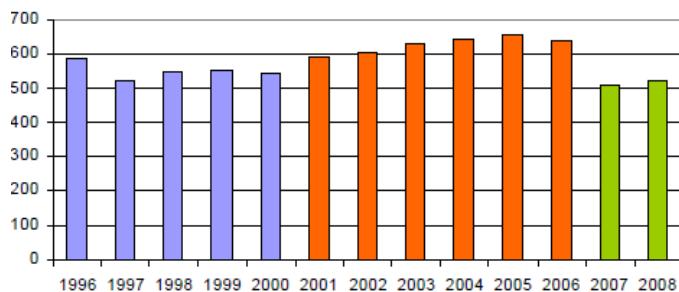
The Austrian agricultural model is based on environmentally sound land management and the preservation of the existing structure of small farms. At total of 3.4 million ha of land are currently dedicated to agriculture in Austria, of which 1.4 million ha are classed as arable land. The Austrian **Agri-environmental-Programme (ÖPUL)** – which constitutes an important pillar of the Austrian Rural Development Programme – sets forth many measures aiming at promoting positive effects on biodiversity. By means of the ex-post evaluation the acceptance and content of the Austrian Rural Development Programme are regularly assessed.

The Agri-environmental Programme pursues an integral, horizontal approach and aims at making agriculture more environmentally friendly in the entire federal territory. Measures are structured in the form of interdependent modules; they are to ensure a basically ecological orientation in the whole country which is supplemented by specific measures, tailor-made to individual topics or regions. In general, this concept has been successful, even though there are regional differences as regards the acceptance and the effect of measures. The analysis of the area development showed an increase especially with respect to the higher-level measures (e.g. organic farming, nature conservation measures, erosion control measures, maintenance of scattered fruit trees, and groundwater protection). As regards the measure “organic farming” it has to be mentioned also that, compared to other EU Member States, Austria already started the Agri-environmental Programme at a very high level. This high level has been maintained; and in the East, where arable farming is dominant, the arable land managed according to organic farming criteria has doubled since the year 2000. As regards assets to be protected, positive effects could be proved in connection with the subjects examined within the framework of the evaluation (soil, water, biodiversity, diversity of habitats, genetic diversity, landscape, socio-economy). Thus a positive correlation could be proved for example between bird population densities and the existence of nature conservation measures and the development of set-aside areas in arable farming. The requirement of soil cover contributes evidently to the reduction of the nitrate output. As far as the measures “organic farming” and “renunciation of the use of yield-increasing inputs in arable farming” are concerned there has been evidence for clearly positive effects on biodiversity. As to the measure “maintenance of scattered fruit trees” the studies have confirmed a high potential effect. The bundle of measures “keeping cultivated landscapes open” (mowing of steep surfaces) on sloping sites as well as “Alpine pasturage and herding” has, due to its high level of acceptance and the extent of area covered by it, enormous importance. However, in order to orient, for the purposes of the evaluation results, which have also shown some deficits, the Austrian Agri-environmental Programme even more efficiently according to “environmental goals”, a transparent and continuous monitoring of the programmes and the evaluation of their results are necessary.

The graph below depicts the development of the Agri-Environmental Programme in the period 2000-2008 with regard to farmer's participation, ha and Euros spent.



Graph: Development of ÖPUL 2000-2008: Holders/ha / ha / Mio € (L. Weber, June 2009)



Graph: Development of ÖPUL in Mio € (L. Weber, June 2009)

In total ÖPUL contains 28 single measures and measures for the protection of animals. ÖPUL 2007 includes measures aiming at the protection of nature at 75,000 ha (23,000 farm holders). 38 Mio € are spent for measures aiming at nature protection. Horizontal measures with positive impacts on biodiversity are organic farming, mowing of steep slopes, managed grassland with scattered fruit trees (Streuobstwiesen), abandonment of silage, continued management of Alpine areas and herding as well as rare crop varieties and livestock breeds. It contains also biodiversity related restrictions for other measures, e.g. maintenance of 2% of flowering areas (Blühflächen) or restriction of the mowing areas only used two times to 5%.

117,771 holdings with a total area of 2.20 million hectares (not including Alpine pastures and mountain meadows) participated in the Agri-environmental Programme (ÖPUL) in 2009. These are 73% of all farms or 89% of the total territory in Austria. € 548 Million were paid on a total of 36 measures (including Agri-environmental Programme ÖPUL 2000). - 95,701 farms - 67,485 of them mountain farms - received compensatory allowances of totally € 274 million. Farms which received a compensatory allowance managed 1.56 million hectares (not including Alpine pastures and mountain meadows); for this measure, these are about 55% of Austria's total area.

In Austria, ensuring multifunctional **forest management** on a long-term basis is a matter of top priority in the context of forest, environmental and social politics. The **Austrian Forest Act** 2002 provides the basis for sustainable management of the Austrian forests in terms of the economy, of ecology, of the society and of culture. It provides for forests to be declared non-productive as a valuable supplement to the various forest functions. The ultimate goal,

however, is to guarantee the extended sustainability of forest management and thus the safeguarding of the various functions (multifunctionality) for the entire forest area where possible. Due to the high level of forest cover (47.2% of the total area) and the positive balance of forested area (the annual growth amounts to 5,100 hectares), it is necessary to differentiate the growth in area. Therefore, further growth in area is only meaningful in special regions (e.g. high stands for object protection) or in regions that are under-forested (e.g. for climate and water protection). Due to the constantly increasing growing stock, utilisation of the increased cover must be promoted, *inter alia* to strengthen the business location for the sawmill and timber industry, to create additional income, and to improve the employment factor. Forest management as an integral part of rural areas should therefore also be able to make a positive contribution towards its further sustainable development. To achieve this, the sole responsibility of forest owners and forest managers must be promoted. Where the development of the last decades has already shown this, sole responsibility must have priority over regulation by law. In addition to a sustainable exploitation of the timber utilisation potential, however, it must be ensured that non-wood services (multifunctionality) are increasingly taken into account, both with regard to economic services (e.g. protection from natural hazards, tourism, etc.) and also with regard to ecological services (e.g. concerning biodiversity and climate change). Not least, the implementation of international obligations (UN Forest Processes, Ministerial Conference on the Protection of Forests in Europe and EU Forest Strategy, as well as other EU legislation) had to be ensured to the extent possible under the Constitution.

The **Forest Dialogue** aims at the foresighted settling of clashing interests and the improved coordination of forest-related activities. Its objective is to secure and permanently improve the sustainable management, conservation and development of Austrian forests. As the outcome of the Austrian Forest Dialogue, and with the inclusion of over 80 organisations and institutions, the first Austrian Forest Programme was adopted. It can be regarded as a milestone of Austrian forest policy.

The seven thematic areas of the Austrian Forest Programme are:

1. Contribution of Austrian forests to climate protection
2. Health and vitality of Austrian forests
3. Productivity and economic aspects of Austrian forests
4. Biodiversity in Austrian forests
5. Protective functions of Austrian forests
6. Social and economic aspects of Austrian forests
7. Austria's international responsibility for sustainable forest management

The **Austrian Forest Programme** is implemented step by step applying a continuously updated work programme. The work programme comprises concrete individual measures as well as so-called "best practice" measures. Further, also indicators with their respective actual and target values form part of the work programme. As of the year 2006 a permanent body, the "Forest Forum", was established, which meets at least once or twice every year. The tasks of the Forest Forum comprise the discussion of current forest-political developments as well as

the continuing harmonization of interests in forest-relevant topics. The Forest Forum provides for the controlled implementation and development of the Work Programme of the Austrian Forest Dialogue. It is responsible for evaluating the measures taken as well as for addressing new issues of importance. With regard to biodiversity the National Forest Programme stipulates e.g. the protection of biodiversity and the strengthened cooperation between forest and nature protection, the use of private contracts for nature protection measures in forests, as well as other market instruments (e.g. eco sponsoring). The developments with regard to biodiversity can be summarized as follows:

Forest Biodiversity in Austria (Summary, Austrian Forest Report 2008)

Regeneration of Forest Stands: Forest owners are under obligation to reforest deforested surfaces, whereby natural regeneration is preferable to planting or sowing. The share of natural regeneration in the total regeneration has increased considerably, and according to the results of the most recent Forest Inventory almost three quarters of the free-standing regeneration is already due to natural regeneration.

Landscape Patterns: For the first time, the “Forest Monitoring Project” of the European Space Agency (ESA) is providing nationwide information on landscape patterns for reporting units in 100 ha grids. The results provide information about the extent, form and distribution of forest and non-forest surfaces, and clearly illustrate the forest habitats to be found in a landscape.

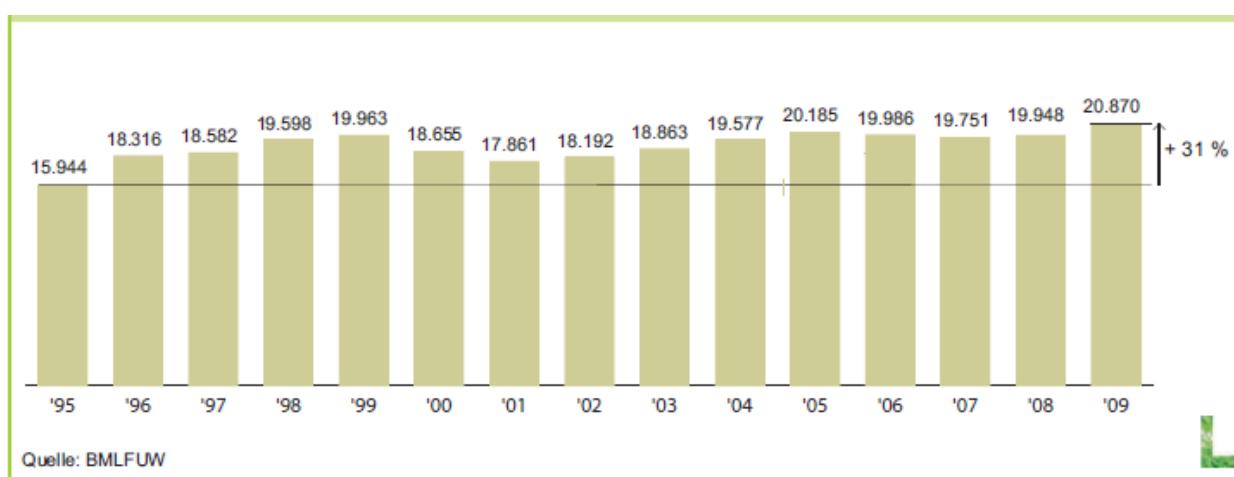
Endangered Forest Types: Of 93 forest biotope types, 53 (57%) are endangered, but so far no forest biotope type has ever been destroyed completely in Austria. A total of 22 forest biotope types (24%) are not endangered. An additional 18 forest biotope types (19%) were classified as “not particularly worthy of protection” and therefore not evaluated.

Protected Forests: Slightly more than one million hectares of forest in Austria are registered as being part of protected areas identified in compliance with nature conservation law and natural forest reserves of Class 1 and 2 in accordance with the MCPFE Assessment Guidelines for Protected Forest Area in Europe.

The **Austrian State Forest Enterprises** (Österreichische Bundesforste AG) have committed themselves to a comprehensive biodiversity programme 2005-2010 and have joined the IUCN Countdown 2010 Initiative. In total the State Forests have carried out 719 voluntary nature protection measures in 2010 (www.bundesforeste.at).

4. Promotion of sustainable use of biodiversity and sustainable consumption of products deriving from biodiversity

With regard to **organic farming** the number of subsidized organic farms in 2009 rose to 20,870, which is a plus of 922 or 4.6% compared to the preceding year. In 2009 the areas under organic farming increased by 5.4 % to a total of 518,172 hectares. The share of organic farms in the total number of IACS holdings (total sum of full-time and part-time farms) amounts to 14.7%. The share of organic farming area in the total area is 18.5%. The graph below illustrates the success story of organic farming in Austria: since the inception of the Agri-environmental Programme in Austria (1995) the share of organic farmers in Austria has increased by more than 30 %. In 2009 the total share of organic farmers was close to 20% of total farm holdings in Austria.



Graph: Development of number of organic farms in Austria (Source: Grüner Bericht 2010)

Many activities are carried out in Austria aiming at increasing consumers' awareness with regard to products coming from sustainable, regional, ecological management. The initiative "**Genussregion Österreich**" (Region of Delight Austria) set by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management is aiming at promoting regional food specialities, and thus contributing to regional diversity as well as to combating climate change. Surveys have shown a trend of consumers to regionally produced, healthy food in Austria. The initiative is aiming at meeting this trend in Austria. The initiative cooperates with the food trade and respective chains as well as with the gastronomy.

Another initiative aiming at promoting consumers awareness are the "**Sustainability weeks**" in Austria taking place every year, also in cooperation with the private sector.

Austria has set itself the goal of achieving by 2020 a share of 34 % of **renewable energy**. As member of the European Union Austria has to implement the sustainability criteria for biofuel production laid down in the EU Directives 2009/28/EC and 2009/30/EC.

5. Outreach/communication and awareness-raising

In January 2009 the Austrian Biodiversity-Campaign “**vielfaltleben**” (LivingDiversity, www.vielfaltleben.at) was launched by the Austrian Federal Minister of Agriculture, Forestry, Environment and Water Management – Nikolaus Berlakovich. It constitutes the largest nature-protection campaign that has ever been carried out in Austria. 21 key-species are in the forefront of the campaign: 20 endangered umbrella-species and the “human being” to demonstrate the close interlinkages between humans and nature, also picked up in the slogan of the campaign “Life is Diversity – Diversity is Life”.

The objectives of the campaign “**vielfaltleben**” are the following:

- Protection of endangered species and habitats thus contribution to the 2010-Biodiversity target: 24 species protection projects throughout Austria contributing to the protection of more than 100 threatened species in Austria
- Join all forces for biodiversity – “Alliance for Diversity”: establishment of partnerships with key stakeholders and representatives of all sectors of the society (business companies, landowners, provincial governments, various associations, prominent people, media, broadcasting, NGOs, etc.)
- Involvement of local communities (municipalities) in biodiversity protection: establishment of a local biodiversity network, launch of the competition “local biodiversity champion”
- Raising awareness on the importance of biodiversity also in cooperation with the media and other partners

The campaign is carried out in co-operation with Austrian NGOs (Naturschutzbund, WWF, BirdLife) – also demonstrating that biodiversity protection needs cooperation, partnership and joined forces.

The campaign is still running (till end of 2010). However, many successes have already been achieved so far, *inter alia*:

- Tenfold increase in breeding stocks of lapwing in Vorarlberg
- Exceptional increase in breeding-pairs of White-tailed sea eagle
- Restoration and safeguard of 10 ha of amphibian habitats
- Elaboration of an Action Plan on Wild Cat in cooperation with hunting society
- Elaboration of an Action Plan on Common Hamster
- More than 200 partners have joined the “Alliance for Diversity” (e.g. 130 municipalities engaged in the local biodiversity network and related competition, 21 VIPs raise awareness on biodiversity as ambassadors of key species of the campaign, 30 MoUs with various business companies, landowners and private associations have established MoUs to carry out joint biodiversity programmes, 10 sponsorships (business enterprises, banks, etc.), 6 Austrian national parks)

- Cooperation with print media, e.g. “Kronen Zeitung” which has widest circulation in Austria, ORF – Austrian Broadcasting (e.g. “Universum” series “Triumph of Life”) and other media
- “Week of Diversity” (22-29 May 2010) with more than 100 events carried out with more than 70 partners all over Austria: conferences, exhibitions, excursions, etc.
- Establishment of a beehive on the roof of the Vienna Opera House with a live stream (<http://www.bienenfreunde.at/livecam>) to raise awareness on IYB2010 and specifically on the importance of bees for ecosystems and also in economic terms
- “GEO-Tag der ARTenvielfalt” (29 May) celebrated in all six Austrian national parks with specific programmes for children and adults to explore and enjoy diversity of life
- “Jugend-Impulse 2010” (24 June): Youth meeting at the Austrian Parliament to discuss and formulate requests to politicians on biodiversity protection needs

Many activities carried out in 2010 have been aiming at awarenessraising on biodiversity issues (e.g. establishment of a bee hive on the roof of the Vienna Opera House, “Week of Biodiversity” in May 2010 with more than 100 events organized all over Austria, etc.)

Many awareness raising activities also have been carried out by the nine Provincial Governments. For example the government of the Federal Province of “Niederösterreich” (Lower Austria) has started the project **“Biologische Vielfalt 2010+”** jointly with the environmental NGO umbrella organization “Umweltdachverband”.

The project **“Netzwerk Land”** is aiming at raising awareness on issues related to the Austrian Rural Development Programme, including the Agri-environmental Programme ÖPUL and biodiversity related issues (www.netzwerk-land.at).

6. Improvement of knowledge basis

The **Austrian Biodiversity Monitoring Project MOBI-e** has developed a concept for the monitoring of biodiversity in Austria by involving a broad range of scientific institutions and stakeholders in biodiversity. The indicator set developed consists of 47 indicators (among them 16 headline-indicators). The indicators are organised in the main sectors forest, cultural landscape, Alps, settlements, waters and the cross section matters soil, genetics awareness, fragmentation and nature protection. The indicator set is based on respective sets established by the European Union (SEBI 2010) as well as the framework of indicators of the Convention on Biological Diversity.

Within the existing set of 47 proposed indicators for the monitoring of biodiversity in Austria (MOBI) (see Chapter I), 16 indicators are implemented and reported, and some additional are in an implementation procedure for further development. The proposed indicator set should allow documenting the changes of biodiversity in Austria. It shall support the international commitments and reporting obligations (CBD, e.g.) and be harmonised with other international

activities, using synergies with Habitats Directive monitoring, and the evaluation of rural development. The MOBI indicator set is comprehensible for decision makers and the public. It is aligned to concrete measures to conserve biodiversity. As a result of the cooperation with amateur biologists and laities (e.g. farmers counting species on their own land) the MOBI indicator set makes available rapid results as well as is active in increasing public awareness

Austria has been an Associate Participant of the **Global Biodiversity Information Facility GBIF** since September 2001. GBIF Austria is Austria's 'Participant Node', involved in promoting, coordinating and facilitating the publication, sharing and use of biodiversity data amongst relevant people and organisations within the participant's domain. GBIF Austria has a portal available at <http://www.biodiv.at/gbif/>, which provides more than 2.8 million records on the distribution of over 40,000 native species of plants (including lichens) and fungal species available.

The **European Network of Biodiversity Information** is the European contribution to the GBIF. The European Network for Biodiversity Information (ENBI) is organized into 13 work packages. Each separate work package is assigned a participant that acts as leader for the task, and will act as Contractor for that work package. All other participants ('members' in the terminology of Thematic Networks) are linked to a work package, depending on their tasks in or contributions to the work package. There are two organisations involved in the ENBI consortium from Austria: the Department of Botany at the Natural History Museum, Vienna (Naturhistorisches Museum, Vienna) and the Biology Centre of the Upper Austrian State Museum (Biologiezentrum des OÖ Landesmuseums). The Department of Botany at the Natural History Museum, Vienna is involved as a Member of ENBI work package 10. This work package comes under the 'Data integration, interoperability and analysis cluster', and WP10specific is the 'general analysis tools and data mining'. The Biology Centre at the Upper Austrian State Museum is the work package leader. The general objectives under this work package are to 1) Explore and select potential applications of generic analysis tools that can be used with the common access interoperable system defined under WP8 and WP9; 2) To ensure that these tools are able to analyse a variety of biodiversity data and combine or plot these data with a-biotic information (weather, geology, etc.); 3) Explore the application of selected analysis tools in a web environment; and 4) Design the description of the integration of these functional analysis tools with the common access system for interoperability of databases as provided by WP 8 and 9 and provide a demonstrator system. The Biology Centre at the Upper Austrian State Museum was also involved in WP7: Observational data, WP8: Data management in large distributed biodiversity database systems, and WP9: Interoperability and common access

There are **organisations recording biodiversity data** collections in Austria, e.g.:

- BirdLife Österreich (<http://www.birdlife.at/>)
- Österreichischer Naturschutzbund (<http://www.naturbeobachtung.at>)
- Austrian Orchid Network (<http://www.austrianorchids.org/>)

- Project “Biodiversity Monitoring by Farmers” (www.biodiversitaetsmonitoring.at)

At the Faculty Centre of Biodiversity (former Institute of Botany and Botanical Garden), University Vienna, the following databases are developed and hosted:

- Botanical excursions: picture collection (e.g. Wettstein ...)
- *Bulbophyllum* A - Z
- Datenbank der Pilze Österreichs
- GLORIA
- Herbarium (Herbarium WU)
- PalDat (Palynological Database)

The "**Platform Biodiversity Research Austria**" (<http://www.biodiv-forschung.at>) was established to provide a network for biodiversity research in Austria and to provide for more effective communication on biodiversity. The platform also aims at linking Austrian biodiversity research more closely to international networks and programmes such as EPBRS, DIVERSITAS or EUROSITE, to promote communication between research and practical implementation, NGOS and managers of protected areas. Furthermore, it should also provide for better communication of strategically important research issues and results of national, EU and international research to the public.

Austria is about to elaborate a **national adaptation strategy to climate change**. The publication is expected in 2011. The website www.klimawandelanpassung.at provides comprehensive information on the adaptation to climate change in Austria and the process of preparing and developing the Austrian adaptation strategy to climate change.

Austria does not have a national research programme dedicated exclusively to supporting biodiversity research, but biodiversity research is incorporated into other national programmes. The Research Programme PFEIL 10 (www.dafne.at), under the responsibility of the Federal Ministry of Agriculture, Forestry, Environment and Water Management, covers research in biodiversity. There are also research programmes of the Austrian Academy of Sciences, ProVision research initiative of the Ministry of Science (<http://www.provision-research.at/cms/scripts/active.asp>), and the climate change research programme ACRP (<http://www.era.gv.at/space/11442/directory/12765/link/12823.htm>) that may incorporate biodiversity research. In addition, the “Fonds zur Förderung der wissenschaftlichen Forschung – FWF” in Austria is a partner in the ERA-net project BiodivERsA under the EU’s 6th Framework Programme for Research. The aim of BiodivERsA (<http://www.eurobiodiversa.org>) is to achieve efficient research cooperation in the field of biodiversity research funding in Europe.

7. Strengthening Austria's responsibility with regard to the protection of global biodiversity

Expenditures on development cooperation in global biodiversity in order to meet the target:

I. OEZA/ADA	2002		2008		2009	
	Commitments	in %	Commitments	in %	Commitments	in %
CBD-Marker (UN Convention on Biological Diversity)						
Specific (Code = 2)	3.76	4.80%	11.83	10,80%	12,92	13,20%
Integrated (Code = 1)	2.65	3.37%	6,95	6,34%	8,34	8,52%
Total (1+2)	6.40	8.17%	18,78	17,13%	21,26	21,72%
Total OEZA/ADA	78.40	100.00%	109,60	100,00%	97,90	100,00%

II. Bilateral ODA total	2002		2008		2009	
	Commitments	In %	Commitments	In %	Commitments	In %
CBD-Marker (UN Convention on Biological Diversity)						
Specific(Code = 2)	3.98	0.82%	12.30	1.36%	13.50	3.50%
Integrated (Code = 1)	2.65	0.54%	6.97	0.77%	8.38	2.17%
Total (1+2)	6.62	1.36%	19.27	2.13%	21.88	5.67%
Total bilateral ODA	486.54	100.00%	906.83	100.00%	385.96	100.00%

Table: Share of biodiversity marked ODA in the portfolio of the Austrian Development Agency; Source: ADA/OECD DAC

Total Austrian Contributions to GEF (About 1/3 allocated for Biodiversity) in €	GEF 3 (2003- 2006)	GEF 4 (2007- 2010)	GEF 5 (2011- 2013)
	24,380,000	24,380,000	42,600,000

Table: Austrian contributions to GEF Source: ADA/OECD DAC Statistics

Austria has ratified all of the most important biodiversity-related conventions and agreements thus there is cooperation on international and regional level for the protection of global biodiversity. Austria also continuously takes a stand for biodiversity protection within international trade agreements which should take into account the objectives of biodiversity protection.

5. Financing of Biodiversity

In Austria, biodiversity funding allocations are made on federal level through federal agricultural and environment budgets. Since 1995, in line with EU Regulation No. 2078/92 in situ protection runs under the **Austrian Agri-environmental Programme (ÖPUL)**. In addition, all nine

Austrian Provincial Governments have individual annual budgets allocated to nature conservation. All government expenditure is being monitored, including biodiversity spending. (Weblink: <http://www.cbd.int/reports/search/>).

Within the Austrian Agri-Environmental Programme (ÖPUL) various measures are being offered aiming at the protection and sustainable management of biodiversity. These measure are financed by funds from EU, and budgets from the Federal and Provincial Governments.

The table below indicates the allocation to various biodiversity related measures of the ÖPUL.

ÖPUL Measure	Mio EURO	1,000 Ha
Organic farming	88.5	365
Renunciation of the use of yield-increasing inputs on arable land	1.1	9
Renunciation of the use of yield increasing inputs on arable land & grassland	22	437
Abandonment of silage	18.5	115
Maintenance of "Streuobstwiesen" (meadows of scattered fruit trees)	1.4	11
Mowing of steep slopes	19	163
Management of mountain grassland	0.9	2
Pastorage and herding	23.7	452
Ecopoint system	28	94
Rare livestock breeds	3.8	
Rare crop varieties	1.5	11
Nature protection Measures	37.8	74

Table: ÖPUL measures related to biodiversity, financial support and affected area

Within LIFE projects (EU nature protection financing instrument) Austria has spent 10,886, 959 Mio EUR per year (period 2004-2008) on management for Natura 2000 sites. Since 1996 42 LIFE Nature and Biodiversity projects have been implemented in Austria, 21 of which in cooperation with river management. These projects have all together a total project volume of 133 Million Euro; the EU contribution has been 62 Million Euro. The Austrian part was 71 Million Euro. With this money Natura 2000 habitats along the rivers Danube, Drava, Lech, Ybbs, Morava, Dyje, Gail, Mura, Melk, Mank and Pielach has been significantly improved, xeric grassland projects in Lower Austria and Burgenland could be supported, mires and peat bogs

could be revitalized and river management could be adapted on the current requirements.

The many LIFE projects related to nature protection carried out in Austria are to be found on the EU website:

<http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.search&cfid=72126416&cftoken=cac9ce4c35e6e2ae-84194656-C757-051F-1148B59653E78AEE>

From 2008-2009, Austria has spent between 1,300,000 EUR and 1,956,872 EUR annually for **biodiversity research programmes** plus institutional funding for research infrastructure.

6. Global Strategy for Plant Conservation – implementation in Austria

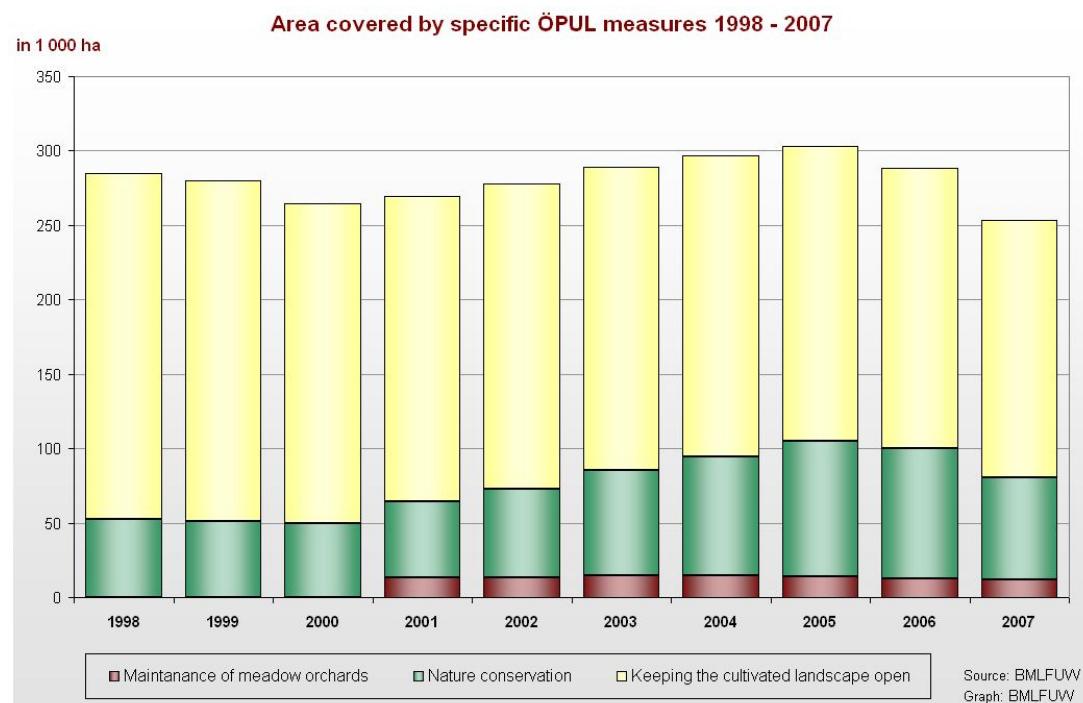
Activities to implement the targets of the Global Strategy for Plant Conservation (GSPC) were carried out in the framework of an Austrian roadmap with target-oriented proposals for actions. The corresponding activities are coordinated by the Botanical Garden, University of Vienna. Actions and progress to achieve the targets were monitored and discussed in three workshops with the participation of relevant stakeholders. The results of these activities have contributed to several plant-related activities reported in previous chapters.

CHAPTER III

Sectoral and cross-sectoral integration / mainstreaming of biodiversity considerations

1. Agriculture

As already demonstrated in detail in chapter II Austria has successfully integrated biodiversity aspects into the agricultural policies, in particular by the Agri-environmental Programme ÖPUL. The graph below shows the area covered by specific ÖPUL measures in the period 1998-2007. Generally, Austria's cultivated landscape has resulted from extensive management. However, this can only be secured if the income of the farmers is sufficient for an economic existence and the environmental services thereby provided are compensated adequately also in the future.



Graph: Areas with specific ÖPUL measures 1998-2007 (Fiala 2009c) n
<http://www.nachhaltigkeit.at/article/articleview/72258/1/25770>

2. Forestry

As also described in Chapter II the integration of biodiversity-related aspects into forest policy and management has been very successful in Austria. The Federal Forest Act stipulates the sustainable management of forests in Austria, and thus also acknowledges its important role for biodiversity. The Austrian National Forest Programme includes out of seven areas for actions also “forest biodiversity” as a key area. Improving the ecological quality of the forests serves to preserve and enlarge the biological diversity in the forests, and to protect and improve their health and vitality. In addition to the safeguarding of forest biodiversity also long-term improvement in the socio-cultural capacity of the forests is to be achieved by optimising the forests’ functions as a protection from natural hazards, improving the instruments for balancing the various interests in the forests, and the expansion of job opportunities in rural areas remain challenges in the future. The economic capacity of the forests is to be achieved by better use of the available timber resources, expansion of the use of wood as a renewable, environmentally friendly raw material, and diversification of the range of products and services offered by forests.

3. Spatial Planning

In Austria each Federal Province has its own legislation on spatial planning, and local authorities draw up their own land use plans: Bebauungsplan for urban planning, Flächenwidmungsplan for detailed zoning regulations. The Austrian Conference on Regional Planning, bringing together the Federal Government, the Federal Provinces and local communities, draws up a ten-year Austrian Regional Planning Concept. National spatial planning is closely linked to forestry planning through the Forestry Development Plan, which sets long-term priorities for each of the roles played by woodland (i.e. economic, social, soil protection, leisure and protection against natural disasters) and acts as a forestry and land use management tool; and ii) hazard zone plans, which map out areas at risk from avalanche or flash flooding. Hazard zone plans are generally reflected in municipal land use zoning, as it is a criterion for eligibility for the Disaster Relief Fund. The Federal Provinces do a considerable amount of mapping work. In Upper Austria, for instance, a sophisticated information system called GENISYS, available on the Internet, uses maps and texts to provide basic information on the state of the natural environment and ongoing projects concerning protected areas, natural habitats, wildlife, etc. Between 1997 and 2001, various Federal Provinces drew up 20 digital biotope maps for a range of natural habitats, including Alpine valleys, pre-Alpine moraines and flysches, and alluvial valleys. One programme, known as “Nature and Landscape: Master Images for Upper Austria”, continuously monitors 41 areas in the Federal Province, evaluating conservation and land use planning performance.

4. Tourism

The tourism and leisure industry accounts for about 18% of Austria's GDP. Largely based on mountain holidays, Austrian tourism depends heavily on the natural environment and landscape. The mountainous regions where most tourism activities take place, are also the most environmentally sensitive ones.

Measures to promote *sustainable tourism* were first introduced under the 1995 National Environment Plan and were subsequently incorporated into tourism development plans and the 2002 National Strategy for Sustainable Development. Although responsibility for tourism policy lies with the Federal Provinces, the Federal Government is promoting a policy of quality tourism aimed at protecting the natural environment. The emphasis is on providing good accommodation and small-scale facilities, such as mountain refuges and hiking paths that blend into the environment (Austrian Ecolabel Tourism). More information can be found on: <http://www.umweltzeichen.at/cms/home/tourismus/content.html>.

Almost one third of all private accommodation for tourists (which accounts for 18% of the total), is offered by farms. In a few cases, payments are made from the tourism industry to local farmers for providing tourism-related services. It is recognised that preserving small-scale farming in Alpine regions (one of the objectives of ÖPUL) also serves to provide a desirable backdrop for eco-tourism.

The CBD Guidelines on Sustainable Tourism have been taken into account in the Austrian National Strategy on Biodiversity. The Strategy includes the following measures on tourism and leisure industry:

- Development of strategies to ensure the protection on nature and landscapes;
- Measures in the field of education and research;
- Measures to ensure cooperation between all stakeholders concerned;
- Measures aiming at ensuring sustainable development of tourism support systems;
- Measures related to international tourism policy.

Thus the CBD Guidelines are taken into account when planning tourism development. It also has to be noted that the building of tourism infrastructures has to follow an EIA procedure.

5. Hunting

Hunting is a way of using wild living natural resources and as such has impacts on biodiversity and ecosystem processes. By taking and managing huntable wild animals, it has a direct influence on genetic diversity of game species, the composition of game species, the structure of game populations, and the condition of game habitats. It also has an indirect influence on non-huntable animal species as well as on plant species and soil. This influence may have effects upon ecosystems and, in some cases, has a potential for conflicting with the interests of other users of natural resources (e.g. forestry, agriculture, recreation). Overarching objectives and principles of sustainable use of wild animals derive from a number of international

conventions and agreements, including the Convention on Biological Diversity (CBD), particularly the Ecosystem Approach and the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity under the CBD. In order define what we understand by 'sustainable hunting' and for tools to assess the sustainability of hunting activities - in its ecological, economic and socio-cultural aspects - becomes hereby very urgent. Assessment frameworks for sustainable hunting in Austria have been developed by the "Umweltbundesamt" (Federal Environment Agency), the Research Institute of Wildlife Ecology (University of Veterinary Medicine Vienna), and WWN-Technical Consulting Bureau Martin Forstner, together with hunters and other stakeholders and experts from a broad range of hunting-related fields of land use and society.

As a voluntary tool to assist in self-assessment, and the application of the principles, criteria and indicators of sustainable hunting allows hunters to self-examine the degree of sustainability of their own practice of hunting. Moreover, it can be used to:

- provide practical guidance on issues of sustainable hunting;
- support the analysis of individual strengths and weaknesses in sustainable hunting;
- provide decision-support for the definition of action to optimise sustainability;
- examine effectiveness of actions and measure progress in implementing sustainability requirements over time (monitoring);
- foster questioning of one's own hunting-related actions;
- contribute to a common understanding of 'sustainable hunting', both among hunters themselves and among hunters and the society-at-large.

Besides being a tool for self-evaluation, the Principles, Criteria and Indicators of Sustainable Hunting are practice manual for hunters, wildlife managers, nature conservationists, wildlife ecologists, planners dealing with wildlife and land use matters, members of authorities, and all persons interested in hunting and nature.

7. Industry / Energy / Traffic

The Austrian Strategy for Sustainable Development contains is generally addressing four fields of action ("Quality of life", "Business location", "Living spaces", and "International responsibility") and strives for

- No consumption of the environment at the expense of the future
- Protection of soil, water and air
- Securing a decent life with prosperity and social security for today's generation and future generations
- Social security and fairness for all generations
- Economic control with steering effects, incentives, the burden of labor and the use of renewable raw materials and energy

It contains various objectives for promoting the sustainability in the sectors industry, energy and traffic.

The Austrian National Biodiversity Campaign "vielfaltleben" also promotes increased

awareness on biodiversity within all relevant sectors thus promoting sectoral integration of biodiversity. Within the “Alliance for living diversity” Memoranda of Understanding have been signed with business companies promoting biodiversity related activities within the relevant sectors. More information can be found on www.vielfaltleben.at.

Regarding **biofuels and bioliquids**, Austria is currently working on the implementation of Sustainability Criteria based on EU Directives 2009/30 and 2009/28 into national laws. The transposition of the EU Directives has to be finished by the end of 2010. Requirements addressing biodiversity problems in relation with biomass production are also under development.

CHAPTER IV

Conclusions: Progress towards the 2010 Target and Implementation of the Strategic Plan

In general, one can conclude that the 2010 Biodiversity Target has triggered and stimulated many actions in Austria that contribute to the stop of biodiversity loss. Biodiversity has become an issue at almost all levels, however, with differing degrees of commitments. It is therefore important to further continue the raising of awareness on the importance of biodiversity in Austria at all levels, the broad public and political decision-makers alike, and to further strengthen the integration of needs and aspects of biodiversity into all relevant sectors.

The national biodiversity campaign “vielfaltleben” and its four areas of actions have contributed not only to the protection of endangered species and habitats but vitally also to increase awareness on biodiversity in many sectors and areas. To ensure long-term effects the continuation of the campaign would therefore be of great importance.

The assessments of achievements concerning the “outcome-oriented targets for reaching the 2010 Biodiversity Target in Austria” – as contained in Chapters II and III - show that good progress has been made in almost all of the 25 targets. Some of the targets have already been achieved in Austria. This should, however, by no means be interpreted as a reason for complacency.

Good success has been achieved particularly with regard to the status of various threatened species and habitats, for which protection projects, including LIFE projects, have been carried out. Examples include the reintroduction of the Bearded Vulture, *Salmo trutta marmoratus* (marble trout) in Austria, the protection of Ural Owl, etc. Nevertheless many threatened species are still facing conditions that are not supportive to improving their threatening status. It will be thus be crucial to effectively address the main drivers and pressures for biodiversity in Austria.

With regard to protected areas Austria has already achieved coverage of 27% of protected areas. The six Austrian National Parks represent the Austrian biodiversity hot spots. Although Austria has successfully fulfilled the “protected areas” target, further efforts are needed to ensure representativeness, effectiveness, sustainable management and financing as well as the connectivity of the protected areas network in Austria.

Within the agricultural, forestry and water management sectors, programmes – in particular the Austrian Agri-environmental Programme (ÖPUL) - have been established that promote the protection and integration of biodiversity into land management. Reports on the implementation

of these programmes underline their effectiveness with regard to biodiversity protection and sustainable management. However, the long-term effects and efficiencies of these programmes need to be secured.

Furthermore, there is a general need to further improve and secure sustainable financing for biodiversity in Austria, both nationally and with regard to EU funds.

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Appendix I - Information concerning reporting Party and preparation of national report

Contracting Party	AUSTRIA
NATIONAL FOCAL POINT	
Full name of the institution	<i>Federal Ministry of Agriculture, Forestry, Environment and Water Management</i>
Name and title of contact officer	<i>Nouak Dr., Andrea</i>
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SUBMISSION	
Signature of officer responsible for submitting national report	
Date of submission	<i>20 Oct 2010</i>

Appendix II - Additional tables

Table: Red List Animals 2005/2007: Number of species in categories of threat

Group of Animals (Examples)	Total number in Austria	Number of Species in Category			
		Extinct or missing (Category RE - Regionally extinct and EX - Extinct)	Threatened by extinction (Category CR – Critically Endangered)	Critically threatened and threatened (Categories EN – Endangered and VU - Vulnerable)	Early warning list (Category NT – Near Threatened)
Mammals	101	4	4	23	14
Birds	242	21	33	33	5
Reptiles	14	0	3	6	5
Amphibians	20	0	1	11	8
Fish	84	7	6	33	9
Grasshoppers	126	5	10	38	19
Leafhoppers and Planthoppers	626	2	88	144	64
Minute Moss Beetles	54	2	7	12	7
Riffle Beetle	21	1	3	2	2
Butterflies	215	5	12	46	48
Moths	800	35	65	133	93
Caddiesflies	308	1	9	146	32
Lacewings	121	1	10	19	21
Scorpionflies and Hangingflies	10	2	1	1	0
Crayfish	7	0	2	2	0
Scorpions	3	0	1	2	0
Harvestmen	62	0	6	29	7
Snails and slugs	455	11	67	91	54
Bivalves	35	0	4	9	4

Table: Red List Plants 1999: Number of species in categories of threat

Group of Plants (Examples)	Total number in Austria	Number of Species in Category			
		Extinct or missing (Category 0)	Threatened by extinction (Category 1)	Critically threatened and threatened (Categories 2 and 3)	Early warning list (Category 4)
Ferns and Flowering Plants	2,950	36	172	813	166
Mosses, Liverworts	1,018	40	34	204	154
Lichens	2,100	95	57	386	735

Table: Red List of Threatened Biotope Types in Austria: Categories of Threatening Status according to main categories (source: 9th Environmental Control Report ('Umweltkontrollbericht') of the Austrian Federal Environment Agency ('Umweltbundesamt')

Main Group	Total number in Austria	Completely destroyed	Threatened by complete destruction	Threatened and strongly threatened	Possible threatening, cautioning status
Waters	92	3	15	52	0
Bogs, swamps and spring swamps	24	0	3	17	0
Grassland	61	0	4	51	0
High mountain lawns Alpine cushion vegetation Lawn fragments and 'snowy soils'	15	0	0	1	2
Arable land and ruderal meadows	26	0	2	17	0
Tall herbaceous vegetation	18	0	0	6	0
Dwarf shrub heath	12	0	0	3	0
Scrubs, groves of open landscapes	48	0	3	24	0
Forests	93	0	5	48	0
Geomorphological biotope types	45	2	1	19	4
Urban biotope types	54	0	0	8	0

Appendix III - Specific Comments of Members of the National Biodiversity Commission

Comment of WWF-Austria – supported by the Austrian League for nature Protection - on Fourth Austrian National Report to the CBD

■ Protected Areas

Despite the general good coverage of protected areas in Austria, there are some major gaps remaining.

The most significant gap relates to the **March-Thaya floodplains**, along the easternmost border of the country. In biodiversity terms, this lowland river region is of outstanding national and international value. It contains a total of 497 endangered species and biotope-types, representing 37% of the national total among studied groups (mammals, birds, reptiles, amphibians, crustaceans, grasshoppers, dragonflies, vascular plants and biotope types). For 91 endangered species and 11 endangered biotope types the March-Thaya floodplains represent the major (often only) spot of occurrence in Austria, for another 120 species and 22 biotope types, the region harbours significant proportions of the national total. The region extends over 15,000 hectares on Austrian territory, but is part of a 55,000 hectares cross-border wetland complex, shared between Austria, Slovakia and the Czech Republic. Although the area has been declared a trilateral Ramsar site and is part of the Natura 2000 network, **effective conservation is totally insufficient, when compared to the urgent biodiversity management needs and current threats**. Only 12% of the area are strictly protected and explicitly managed for biodiversity purposes, the rest faces a wide range of threats, from un-ecological flood-prevention and river-regulation measures, lowered ground water tables, intensification of agriculture and forestry, abandonment of traditional land-use, to highway- and infrastructure development. Currently, the March-Thaya floodplains represent the most threatened large-scale biodiversity hotspot in Austria. It is widely accepted among conservationists that the critical situation could only be resolved by the **establishment of a large scale protected area** in the region (either national park or biosphere reserve). But so far, no political consensus has been reached on this issue.

Another gap regarding protected areas relates to **wilderness**. There is only one declared IUCN 1b-wilderness area in Austria (wilderness area of Dürnstein, 2,472 hectares), while there would be high potential for several more in the alpine parts of the country. **The lack of large areas with strict non-intervention management** is especially felt with regard to **forest habitats**. The certainly impressive network of “Natural Forest Reserves” consists in large part of very small to small areas, ranging from 5-20 hectares. According to forest ecologists, contiguous areas of several hundred hectares are the minimum requirement for the preservation of all natural processes and species typical of natural forest dynamics in Europe. Non-intervention core areas in forested national parks and biosphere reserves currently make up just 0.7% of the total Austrian forested land. In comparison, Scandinavian countries and Germany aim at a proportion of 5-15% non-intervention areas on their forested land. The establishment of additional **forest wilderness areas in Austria** is thus an urgent need and a major challenge for the future.

■ National River Basin Management Plan

Among Austria's larger rivers (basin size >500 km²), only **20% can be considered as ecologically intact**. The remaining 80% are modified, either by river correction and flood-prevention measures or by hydropower-dams. The recent emphasis on the use of renewable energy sources exerts enormous pressure on the few remaining intact river stretches, as a large number of new hydropower dams have been proposed. Austria uses its hydropower potential already to a very high extent (70%); the development of the remaining 30% would fail to satisfy the rapidly growing energy demand. All else remaining equal, maximum hydropower development would only cover the increments in electricity consumption for the next 5 years, eventually leaving Austria with almost no free-flowing river stretches, a dramatically reduced aquatic biodiversity and an unsolved energy problem. **It is thus imperative that the remaining, unmodified river stretches be protected against any further development.** Reducing energy consumption and increasing the efficiency of existing hydropower plants is a feasible and sustainable alternative to current development plans.