

FIFTH NATIONAL REPORT OF AUSTRIA

Convention on Biological Diversity



MIT UNTERSTÜTZUNG VON BUND, LÄNDERN UND EUROPÄISCHER UNION



MINISTERIUM
FÜR EIN
LEBENSWEERTES
ÖSTERREICH



Europäischer
Landwirtschaftsfonds für
die Entwicklung des
ländlichen Raums:
Hier investiert Europa in
die ländlichen Gebiete



Vienna, 2014

WITH THE ASSISTANCE OF THE FEDERAL GOVERNMENT, FEDERAL PROVINCES AND THE EUROPEAN UNION

Project management

Maria Tiefenbach / Umweltbundesamt

Authors

Maria Tiefenbach / Umweltbundesamt, Wolfgang Rabitsch / Umweltbundesamt, Klara Brandl / Umweltbundesamt

Layout and typesetting

Klara Brandl / Umweltbundesamt

Pictures

© Wolfgang Rabitsch (Cover, p. 44); © Thomas Ellmauer (p. 8, 12); © Andrea Bulfon (p. 69).

CONTENT

FIFTH NATIONAL REPORT OF AUSTRIA.....	1
Convention on Biological Diversity	1
CONTENT	3
EXECUTIVE SUMMARY.....	5
A Brief Overview of Austrian Biodiversity	6
AN UPDATE ON BIODIVERSITY STATUS, TRENDS, AND THREATS AND IMPLICATIONS FOR HUMAN WELL-BEING	8
1 AN UPDATE ON BIODIVERSITY STATUS, TRENDS, AND THREATS AND IMPLICATIONS FOR HUMAN WELL-BEING.....	9
1.1 Why is biodiversity important for the country?	9
1.2 What major changes have taken place in the status and trends of biodiversity in your country?.....	16
1.3 What are the main threats to biodiversity?.....	28
1.3.1 Changes in land use	28
1.3.2 Use of land by transport and settlement (sealing)	29
1.3.3 Acidification and eutrophication	31
1.3.4 Invasive alien species in Austria	31
1.3.5 Pressures and threats according to the Habitat Directive.....	34
1.3.6 Light pollution	36
1.4 What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?	37
1.5 What are possible future changes for biodiversity and their impacts?..	40
2 THE NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN, ITS IMPLEMENTATION, AND MAINSTREAMING OF BIODIVERSITY	45
2.1 What are the biodiversity targets set by your country?	45
2.2 How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?	48
2.3 What actions has your country taken to implement the Convention since the Fourth Report and what have been the outcomes of these actions?	49
2.3.1 Communication and awareness raising	60
2.3.2 Institutional and cooperative mechanisms	62
2.3.3 Austrian Development Cooperation	66
2.3.4 Climate Change Research	67
2.4 How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?	68
2.5 How fully has your national biodiversity strategy and action plan been implemented?	71

3	PROGRESS TOWARD THE 2015 AND 2020 AICHI BIODIVERSITY TARGETS AND CONTRIBUTIONS TO RELEVANT 2015 TARGETS OF THE MILLENNIUM DEVELOPMENT GOALS	73
3.1	What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?	73
3.2	What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?	86
4	APPENDICES	88
4.1	Appendix I - Information concerning the reporting Party and preparation of the fifth national report	88
4.2	Appendix II - Process of preparation of national report	89
4.3	Appendix III - Further sources of information	89

EXECUTIVE SUMMARY

This 5th National Report to the CBD provides an overview of recent governmental and non-governmental activities on biodiversity in Austria, mostly since preparation of the 4th report in 2010. It shows that progress and achievements differ between Aichi Biodiversity Targets. There are many success stories and improvements in biodiversity protection and restoration; however, there are also areas of concern. National indicators are presented whenever recent data were available.

The International Year of Biodiversity in 2010 was conducive to triggering many actions towards the achievement of the Aichi 2020 Biodiversity Targets in Austria. Activities have been carried out in particular also to strengthen awareness on biodiversity and its importance for our society. The national biodiversity campaign "livingdiversity" ("vielfalt**leben**") has been very successful, not only in contributing to the protection of endangered species and their habitats but also in gathering many key stakeholders and people for society to raise awareness on biodiversity. In 2010, the campaign was awarded by the European Union as the most successful biodiversity campaign.

In addition to traditional nature conservation measures (species and habitat protection), a strong focus is put on the implementation of the EU Habitat and Bird Directive as well as the Water Framework Directive. It is emphasised that cooperation and communication with other relevant sectors is pivotal to achieve any progress for biodiversity goals, including agriculture and forestry, hunting and fishery, tourism, energy supply, spatial planning and industry.

The Austrian Rural Development Programme aims at strengthening the incorporation of environmental objectives into agricultural and forest policy to guarantee services provided to the society. The Austrian Agri-Environmental Programme (ÖPUL) plays a major role in conserving biodiversity. Agri-environmental measures and ecological forestry measures promote management methods which protect biodiversity. Specific actions within the Common Agricultural Policy and other funds from the EU will help achieve biodiversity targets.

According to the most recent national state of the environment report (2013), water, soil and air quality is generally good, while local improvements are still possible. Nitrogen deposition is decreasing. Land use is still an unsolved problem, with more than 22 hectares lost per day between 2009 and 2012.

Red lists of species and habitats show that some groups are under severe pressure, e.g. amphibians, fish, deadwood beetles, mires and some grassland habitats. The conservation status of habitat types and species of the Habitat Directive is more favourable in the Alpine region than in the continental region. Compared to the previous reporting period 2001-2006 there is a net deterioration (genuine change) of 7–8% for habitat types and 2–3% for species depending on the biogeographical region. Freshwater, mire and grassland ecosystems are in a bad conservation condition, while rocky ecosystems, shrubs and forests have a much better conservation status. Population trends of breeding birds in Austria reveal a stable trend for the 2008-2012 period for most species, with 33 species each showing an increasing or decreasing trend.

The main causes of biodiversity loss in Austria are habitat destruction, degradation and fragmentation, in particular the sealing and fragmentation of landscapes by settlements and transport infrastructure. Additional threats are climate change, invasive alien species, the abandoning of traditional forms of land use and land use intensification. The EU's legislation on invasive alien species will come into force in 2015. It will significantly

contribute to overcoming negative impacts on biodiversity resulting from invasive alien species in Europe.

Climate change will considerably change biodiversity patterns in Austria, specifically in the Alpine regions. Heat waves, reduced water quantities during summer accompanied by an increase in water demand, changes in the growing seasons and the distribution of animals and plants are expected. Recommendations for adaptation measures were set out in the national Climate Change Adaptation Strategy in 2012. To achieve climate change targets, the implementation of further energy efficiency measures and the use of renewable energy sources will also be necessary.

Because ecological systems are complex, positive and negative actions need time to have an effect. Although measures need to be taken now, their full realisation may only become visible in the decades to come. In this context, some Aichi Targets are very challenging to achieve by 2020.

The assessment of the achievements towards the Aichi Biodiversity Targets demonstrates that some have been already achieved or nearly so, some are expected to be achieved by 2020, whereas some seem either unreachable or at least very challenging. A challenge for the implementation of many measures is the sufficiency of funding from all available sources in many areas of action.

In 2012, a participative process started develop a new biodiversity strategy for Austria "Biodiversity Strategy Austria 2020 and beyond". In 2014, the new National Biodiversity Commission started its work to discuss the Strategy with the intention to finalise it by October 2014. The Strategy – in so far - includes five main areas of action: (1) Knowledge about, and acknowledgement of, biodiversity, (2) Sustainable use of biodiversity, (3) Reduction of pressures on biodiversity, (4) Conservation and development of biodiversity and (5) Alert to a global biodiversity loss with the aim of meeting the 2020 Aichi Targets by implementing the Strategic Plan for Biodiversity 2010-2020 and the EU Biodiversity Strategy to 2020. The Strategy identifies twelve objectives around specific, measurable targets.

A Brief Overview of Austrian Biodiversity

Despite its small size (83,853 km²), Austria has an exceptionally diversified landscape, climate and hence biodiversity. In Austria, the Alpine, the Continental and the Pannonian biogeographic regions converge. Austria has the greatest share (32%) of the Alpine arc of all Alpine countries. The country has three major landscape divisions: the Alps, the Granite and Gneiss Highlands of the Bohemian Massif and the forelands and basins. The Alps cover 60% of Austria's territory and harbour landscapes with the highest significance for biodiversity, where great areas 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. Within the Central Alps, most of the almost 900 Austrian glaciers are found. The Northern part of Austria is dominated by the low mountain range of the Bohemian Massif. 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 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 Basin bordering to the East. These areas are the most agriculturally used in Austria,

nevertheless, many natural treasures can be found, e.g. Lake Neusiedl and its salt marshes being one of Europe’s most important bird areas, the Danube floodplains to the east of Vienna, or the cultural landscapes characterised by viticulture such as the Wachau. Natural landscapes and semi-natural cultural landscapes, bearing a very high significance for the maintenance of biodiversity, cover more than a third of the national territory.

Austria’s biodiversity has been shaped by human intervention throughout the ages, especially through agriculture and forestry, hunting and fishing. Austria is rich in species and habitats not least due to agriculture. There are approximately 3,000 indigenous vascular plant species, approximately 8,000 lower plants (algae, bryophytes, and lichens), 10,000 fungi and 46,000 animal species. Most animals (approx. 37,000) are insects, and there are 486 vertebrate species known within the territory. There are 581 endemic or subendemic animal species, mostly beetles (174) and snails (80), and 167 endemic or subendemic plant species known to occur in Austria. The endemic species hotspots are situated in the Northeastern Limestone Alps, the Eastern Central Alps and the Southern Alps, and are associated with Pleistocene refugial areas (Fig. 1). The most recent inventory distinguishes about 500 different habitat types and more than 800 phytosociological associations within Austria.

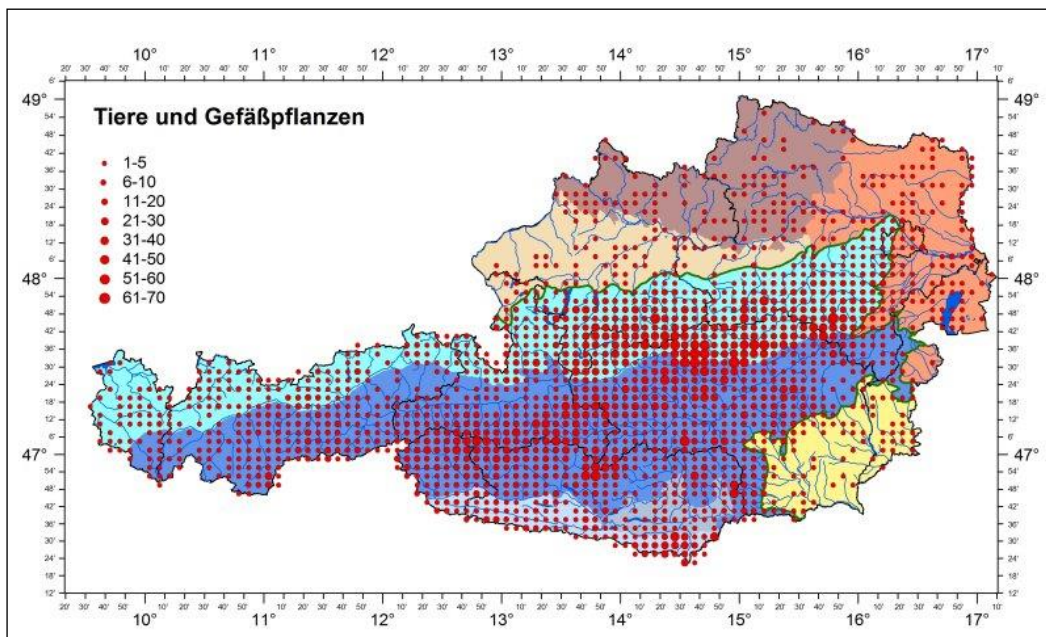


Figure 1: Hotspots (numbers of taxa per grid cell) of endemic species richness in Austria (animals and plants, 748 taxa). Source: Rabitsch & Essl (2009).



**AN UPDATE ON BIODIVERSITY STATUS,
TRENDS, AND THREATS AND
IMPLICATIONS FOR HUMAN WELL-
BEING**

1 AN UPDATE ON BIODIVERSITY STATUS, TRENDS, AND THREATS AND IMPLICATIONS FOR HUMAN WELL-BEING

1.1 Why is biodiversity important for the country?

Biodiversity as a basis for life

Biodiversity builds the essential foundation for our life. The diversity of microorganism, fungi, plants and species ensures the variety of ecological processes, clean water, fertile soils and a pleasant climate in Austria, more indirectly our food, clothes or building materials. These products of nature are critically important for our well-being and economy. They are used by, or provided for, agriculture, forestry, hunting and fisheries as well as tourism and other economic sectors like the food industry or trade.

Relative importance of different land cover types for ecosystem services

A national qualitative expert survey asking for the relevance of different land cover types for performing related ecosystem services shows the importance of forests for timber but also for recreation, biodiversity, the regulation of microclimate and climate protection, detoxification and purification of water, soil, air, for the regulation of mass flows and for water regulation. A wide range of ecosystem services are also provided by bodies of water (e.g. drinking and industrial water, recreation, regulation of climate and water regulation).

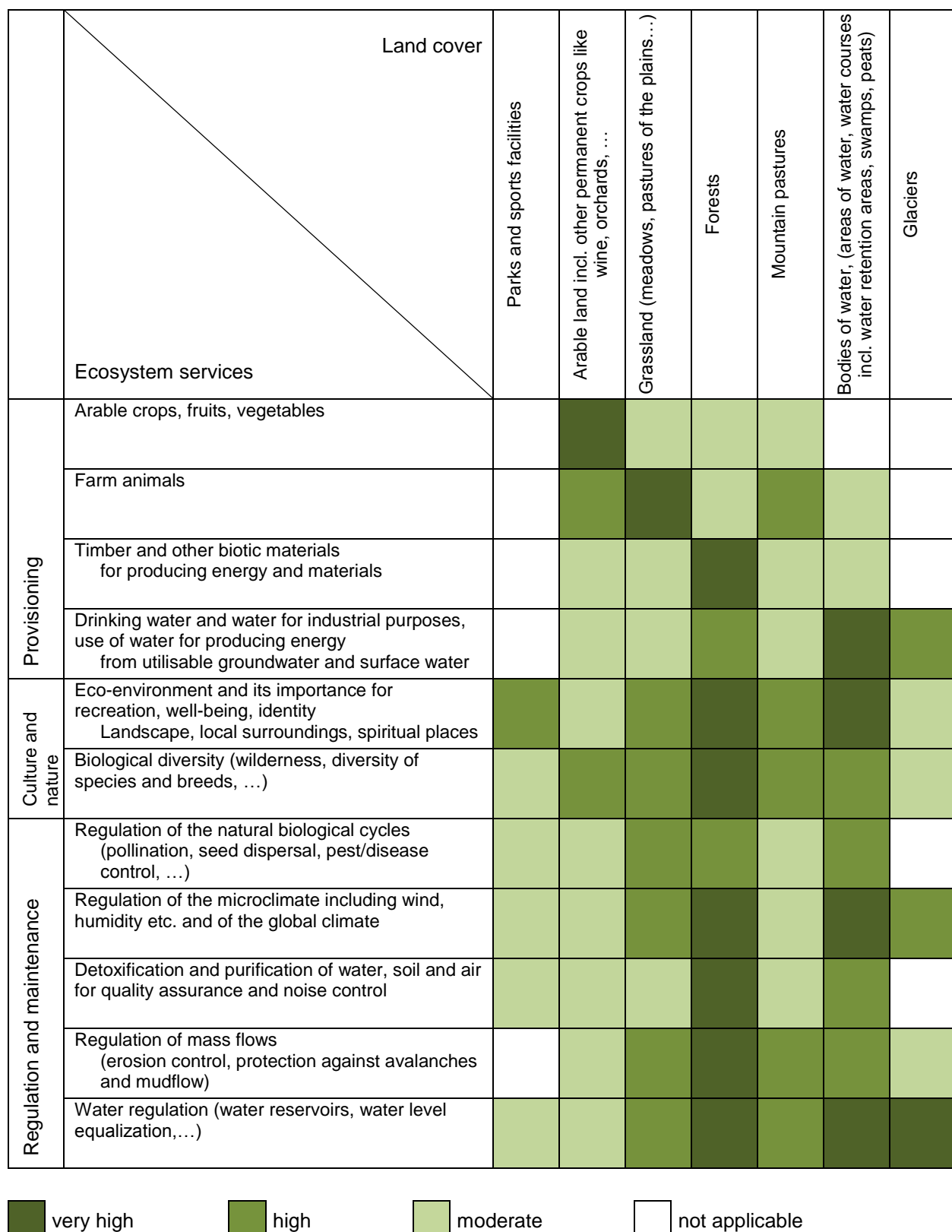


Figure 2: Qualitative assessment of the relevance of land cover types for ecosystem services. Interviews were conducted with experts on biological diversity and persons interested in this subject; the answers of 27 persons were considered in the evaluation. Source: BMLFUW, 2013.

Well-being and health

Information about the factors influencing the Austrian citizens' quality of life and well-being was obtained from evaluations of indicators from the onset of sustainable development monitoring in Austria. The investigations were based on survey results and describe the general satisfaction of Austrians as well as the factors their satisfaction depends on. Some results are encouraging, such as the Austrians' high life satisfaction or the great importance they attach to the environmental quality as a factor influencing their quality of life. Also people's health and a good status of the environment (a high "natural capital" > condition of green space is rated as "good" by over 90 %) contribute to prosperity. More information:

<http://www.lebensministerium.at/en/fields/environment/Sustainabledeve/prosperity.html>

Within a literature review, the benefits of woodlands on human health and well-being was examined. Austrian forests with its four functions, i.e. utility, protection, welfare and recreational function, contribute to human health and social well-being in manifold ways. Particularly the recreational function is a promising aspect in relation to public health. Woodlands seem to provide positive impacts on physical, psychological and social health and the well-being on people.

http://bfw.ac.at/050/pdf/BFW_Bericht147_2014_GreenPublicHealth.pdf

Agriculture

Approximately one third (2.77 million ha in 2013) of Austria's territory is used agriculturally, 1.44 million ha of which are permanent grassland in 2010 and 1.37 million hectares arable land in 2013 (Agricultural Structure Survey performed by Statistics Austria on behalf of the Federal Ministry of Agriculture, Forestry, Environment and Water Management).

Approximately 80 % of Austria's total area are less-favoured agricultural areas, of which mountain areas account for by far the largest share. The average utilised agricultural area (not including Alpine pastures and mountain meadows) per holding was 14.6 hectares in 2011. Dairy farming and cattle farming are by far the most important production sectors of mountain farms; in many cases, farms with the greatest handicaps depend almost exclusively on those sectors – and on forestry. The work of these holdings provides also the basis of the tourism and leisure time sector which accounts for a quite large share of Austria's gross domestic product. The biodiversity of the cultural landscape is tight-knit within Alpine farming. Austria has a relatively large share of organic farming, 19% of the agriculturally utilised area. Domestic sales of organically grown Austrian food stagnates, especially in food retailing (supermarkets) which are selling with around 70 % the main part of organically grown food. 7 % of all fresh products in food retailing are produced organically (Grüner Bericht, 2013). Profits of meats and meat products booming, however starting from a low level. Investigations from Roll-AMA (rolling farm products market analysis) show a trade volume of organic products of over 1 billion Euros. However, exports of organic product are increasing according to expert opinion.

Forestry

Austrian forest habitats are a product of centuries of management and a vital part of the cultivated landscape. Forest management in Austria deliberately aims at sustainability

and multi-functionality. Forests fulfil different functions and provide us with a variety of ecosystem services.

Forests cover 47.6% of the national territory and the area is increasing (Waldinventur 2007/09). According to the Austrian Forest Inventory, approximately 20% of these forests have a designated protective function ("Schutzwald") to mitigate or prevent impacts from natural hazards such as snow and rock avalanches, erosion or flooding, saving approx. 600 million Euros annually. In 62.5% of the forest area, provisioning services, i.e. timber production and biomass for energetic use, dominate, providing jobs for approx. 260,000 people (BMLFUW 2011). A little less than half of the share of the renewable energy production in Austria is provided by forests. Austrian forests are dominated by conifer forests (64%), which have decreased recently, and 24% deciduous and 12% mixed forests.

Box 1: Natural forests

"Wilderness Dürrenstein", covering an area of nearly 2500 hectares, is characterized by the largest natural spruce-fir-beech forest (approx. 460 hectares) of Austria, which has not been cultivated or managed since the last ice age. As part of the Austrian Nature Conservancy Programme, the area aims at protecting species, communities and ecosystems. It has been recognized as the first Austrian "Area of the Wild", Category I, according to criteria of the IUCN.

© Thomas Ellmauer



Austrian bodies of water

Stagnant bodies of water cover an area of 43,000 hectares in Austria. There are about 6,000 stagnant bodies of water that developed naturally, 30 of them with an area of > 1 km². Almost two thirds (59%) have a very good status, 33% have a good status. The Austrian territory includes a dense network of running waters with a total length of approx. 31,000 km (rivers with a catchment area of at least 10 km² have been considered to arrive at this figure), with only 35% in a very good or good ecological status (Fig. 2). There are 136 bodies of groundwater in Austria of which only three show no good chemical status due to high nitrate concentrations (BMLFUW 2011).

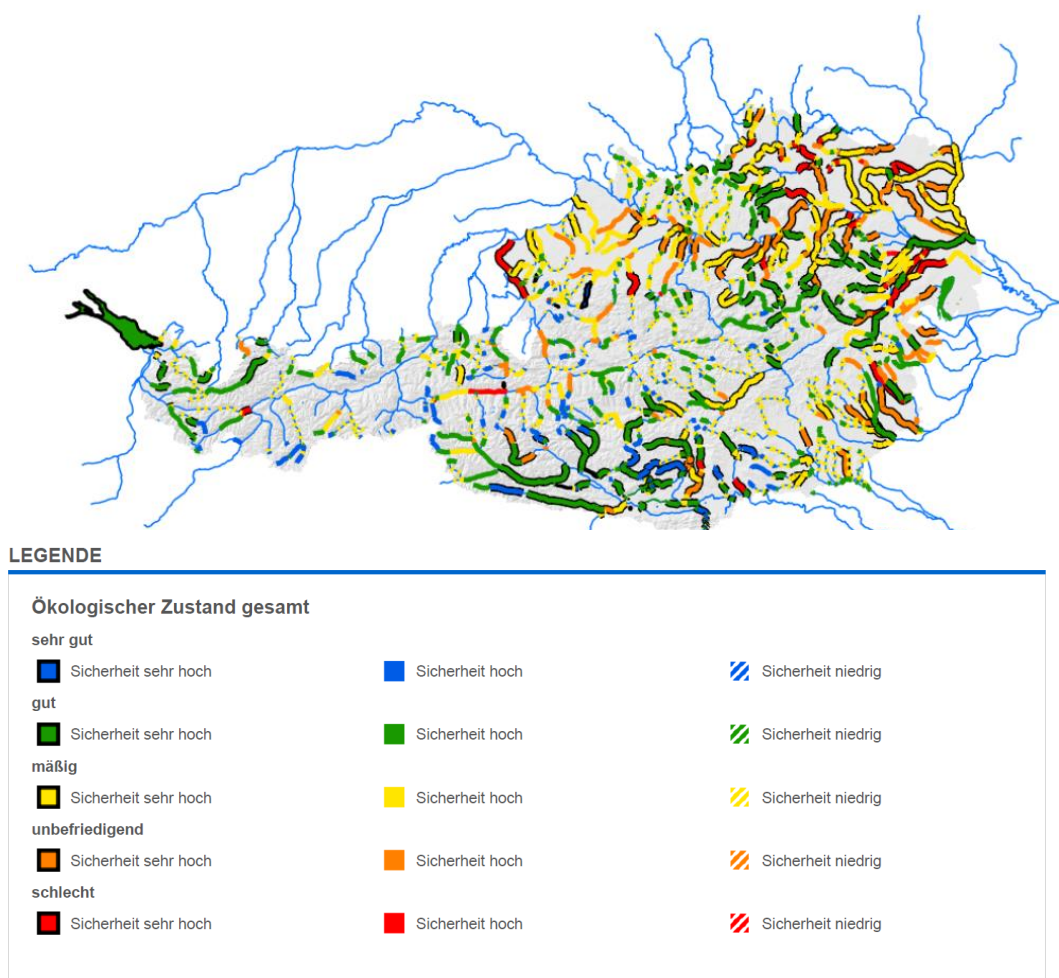


Figure 2: Ecological status of running bodies of water in Austria in 2009. Source: http://wisa.bmlfuw.gv.at/wasserkarten/gewaesserbewirtschaftungsplan-2009/fluesse_und_seen/oekologischer_zustand.html

Box 2:

In a recent study, an economic evaluation of ecosystem services along the 290 km stretch of the river Mur in Styria was performed (Getzner et al., 2011). The study supplied the first experiences with monetary assessments of ecosystem services. The monetary assessment of the selected services amounted to 93–132 Mio. Euros per year for the Mur, with considerably higher values at free running sections compared to regulated sections. The selected services:

- Food (Fish)
- Genetic resources (Biodiversity)
- Drinking water (Groundwater)
- Climate regulation (Microclimate)
- Disaster control (Water retention capacity)
- Education, inspiration, aesthetic values
- Recreation

The total annual water demand amounts to 2.6 billion m³, equal to approximately 3% of the available water resources. Austria draws 50% of its drinking water both from groundwater and spring water resources. Current daily water consumption per capita is about 135 litres. Wastewater treatment coverage in Austria is high (94%). The availability of sufficient water supplies plays also a decisive role as a factor in agriculture, animal husbandry, industry, and in generating energy.

Austrian alluvial wetlands

Austrian wetlands are biodiversity-rich habitats. A recent inventory (2005–2010) commissioned by the Austrian Ministry of Agriculture, Forestry, Environment and Water Management identifies 823 floodplain objects across all altitudes, encompassing 95,541 hectares (1.1% of the national territory) with aggregations in the foothills of the Alps and valleys within the Alps (Fig. 3). 42% of the accompanying forests are softwood stands, 12% hardwood, 11% pioneer stands, and 8% wetland meadows. More than 60% of the area is protected, most often as Natura 2000 site.

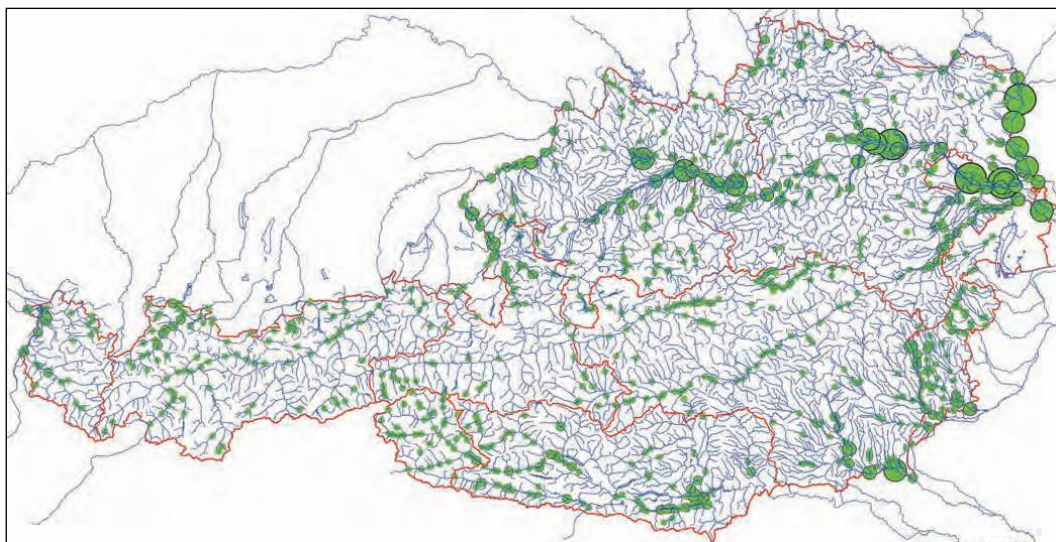


Figure 3: Spatial distribution of alluvial wetlands in Austria. Source: <http://www.bmlfuw.gv.at/wasser/wasser-oesterreich/fluesse-und-seen/aueninventar.html>

Tourism and leisure activities

Tourism and leisure activities are an important economic sector for Austria; together they contribute 15% to the GDP. An attractive landscape is an important competitive advantage for tourism. This reflects the main destinations in Austria. The regions with a higher percentage of tourism are in the Alps and partly also in protected areas like National Parks, Biosphere Reserves or Nature Parks. In the national strategy for tourism "Neue Wege im Tourismus" ("new ways in tourism") 2010, the Alps and the river Danube are acknowledged as unique selling points.

Protected areas also very often play an essential role in terms of regional development, recreation and education. National Parks offer opportunities for regional development and nature-related tourism. The importance of tourism in the Austrian National Park regions shows in the related figures: 11% of the regions' inhabitants work in tourism. One quarter

of all overnight stays take place in the region of the Hohe Tauern National Park in the province of Salzburg, which shows the considerable impact protected areas for tourism in Austria.

Green jobs

The main purpose of green jobs is to make a contribution to environmental protection. This is why there are green jobs in all economic and social areas and why also existing job types can become green jobs. According to Statistics Austria, there were 209,806 green jobs in 2010. Of this quantity, 188,505 persons were working in the manufacturing and service sectors and 21,301 persons in the trade industry of environmental assets and technologies. In 2008, 4.9% of all persons gainfully employed worked in the environmentally oriented production and service sectors. By 2010, this rate had risen to 5.4% of the persons gainfully employed in Austria (in full-time equivalents). While the economy at large suffered an employment loss of 0.7%, employment in the environment sector saw the opposite trend and increased by 9.6%. In the reference period of 2008-2010, particularly high growth rates were observed in organic farming and forest management, both in terms of turnover and employment. In 2010, a master plan "green jobs" was developed to illustrate and enhance further possibilities. The aim is to increase the number of green jobs in Austria by another 100,000 to 2020, particularly in the agricultural and forestry sectors, environmental engineering, and tourism.

1.2 What major changes have taken place in the status and trends of biodiversity in your country?

Since the preparation of the fourth national report selected MOBI (Monitoring Biodiversity in Austria), indicators have been updated and further developed.

Bird species group and orchids as indicators of habitat quality

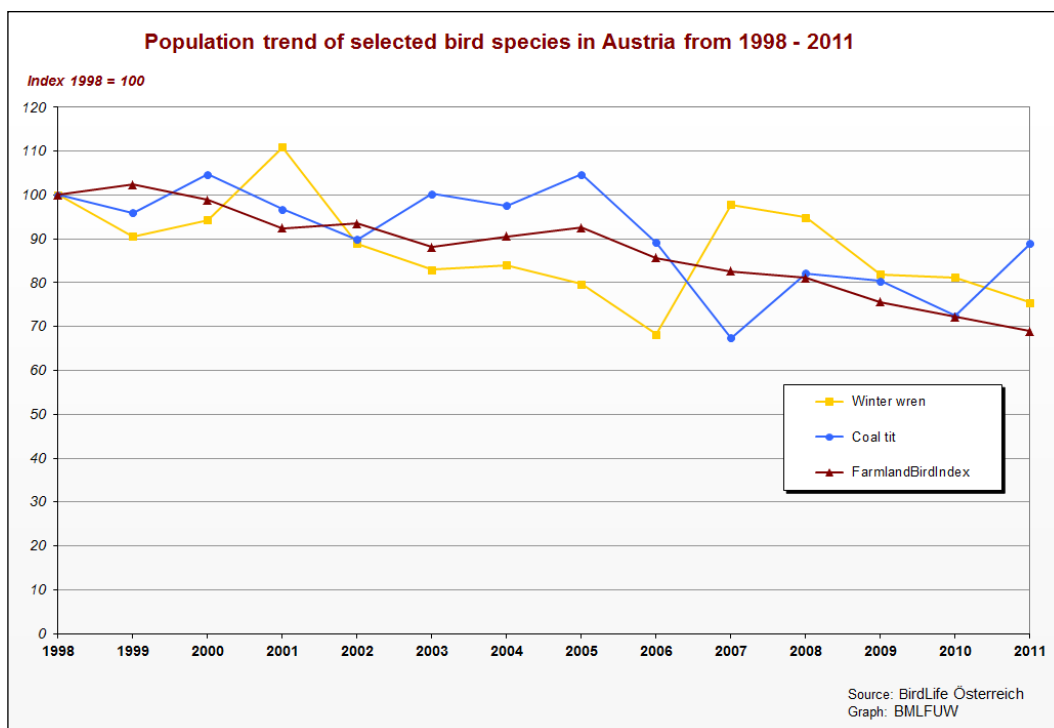


Figure 4: Data source: "Monitoring of Austria's Breeding Birds", BirdLife Austria

Definition.

Bird populations are recorded every year in defined areas by specially trained volunteers ('citizen science'). Comparable programmes exist in many European countries and on a 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 Farmland Bird Index, an indicator applied in the European countries, combines the trends recorded in the numbers of bird species which live in predominantly agriculturally used land and are typical of these areas. For Austria, these are: Kestrel, Grey Partridge, Northern Lapwing, Turtle Dove, Wryneck, Skylark, Tree Pipit, Water Pipit, Whinchat, Stonechat, Northern Wheatear, Fieldfare, Marsh Warbler, Whitethroat, Red-backed Shrike, Starling, Tree Sparrow, Serin, Goldfinch, Linnet, Yellowhammer and Corn Bunting. Sufficient data on cultivated land at higher altitudes (Alpine pastures) are available only from the year 2008 onward.

The numbers of birds living in agriculturally utilised areas have slightly decreased since 1998. Also the numbers of wren and coal tit – two species preferring to live in forests – have been slightly 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). Only then can the indicator be meaningfully interpreted.

Naturalness of composition of tree species

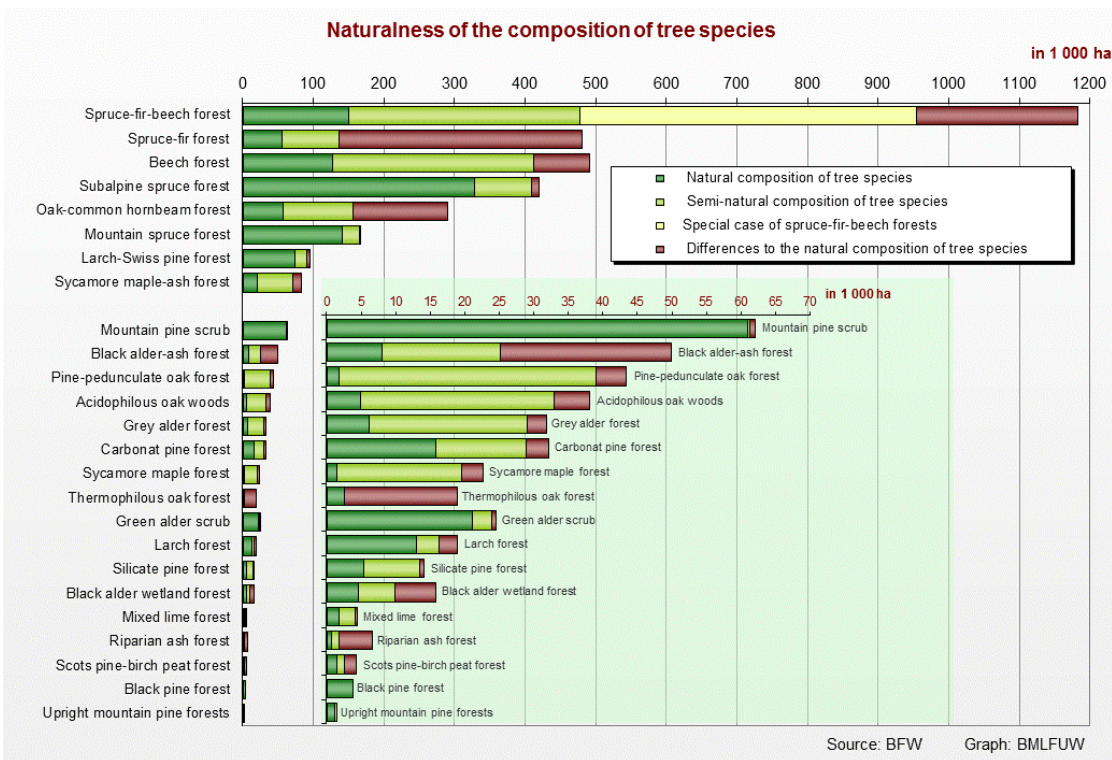


Figure 5: Data source: Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

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 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 have a natural or semi-natural composition of tree species. This applies especially to coniferous forest areas out of which a total of around 72% fall into these categories. In contrast, this value only amounts to 56% for mixed broadleaf and broadleaf forests. 14% of the forest area belongs to the special case of the spruce-fir-beech forest where only one out of the three tree species shaping the forest community is absent. Across all forest communities, the area covered by a natural composition of tree species reaches 31% and with 30% only a little less falls into the category "semi-natural composition of tree species". For 25% only, the tree species composition considerably differs 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 deviation 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 are lagging behind in growth or even 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 industrialization, which is no longer permitted today. The "fir die-back" whose causes are not fully clarified led to a further decline in the area covered by this tree species.

Status of species and habitats according to the Habitat Directive

In 2013, the National Article 17 Report of the Habitat Directive was submitted to the European Commission by the Austrian Federal Provinces, including information on the conservation status and trends of Annex I habitat types and species of the annexes II, IV, and V during the 2007–2012 reporting period. Monitoring data (derived from Article 11) were available for 17 species and 23 habitat types, while comprehensive data were compiled for the remaining species and habitats. All in all, the report includes assessments for 209 species and 74 habitat types.

The conservation status of habitat types and species is more favourable in the Alpine region than in the continental one. The difference is particularly striking for habitats (23% favourable in the Alpine region vs. 3% in the continental region). Compared to the previous report prepared in 2007 for the 2001-2006 reporting period, there is a net deterioration (genuine change) of 7–8% for habitat types and 2–3% for species, depending on the biogeographical region (Fig. 6).

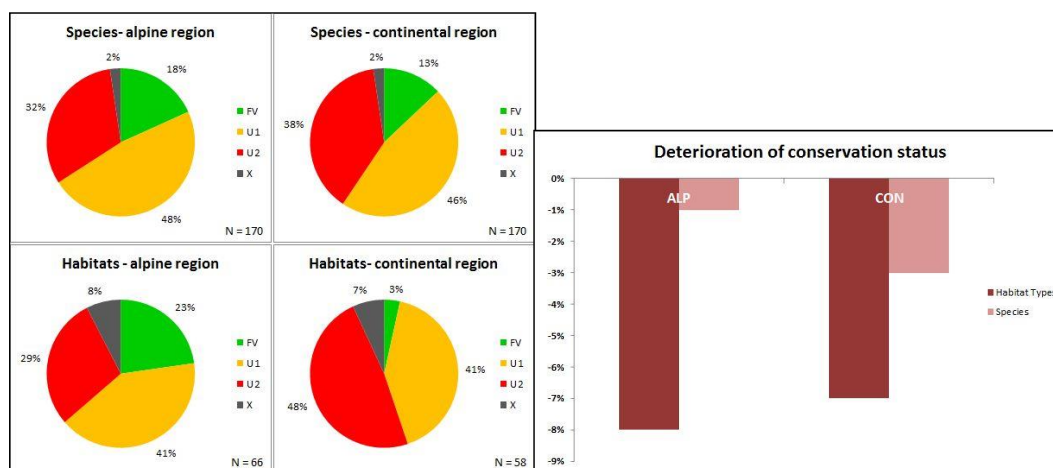


Figure 6: Conservation status of species and habitat types (FV-Favourable, U1-Unfavourable-Inadequate, U2-Unfavourable-Bad, X-Unknown) in the biogeographic regions of Austria (ALP-Alpine, CON-continental) in the 2007–2012 reporting period (left) and deterioration of conservation status between the 2001–2006 and 2007–2012 reporting periods (below) (Umweltbundesamt 2013 on behalf of the Austrian Federal Provinces).

An arrangement of habitat types and species into broad ecosystems revealed that freshwater, mire and grassland ecosystems have the worst conservation status in Austria. In contrast, rocky ecosystems, shrubs and forests have a much better conservation status (Fig. 7).

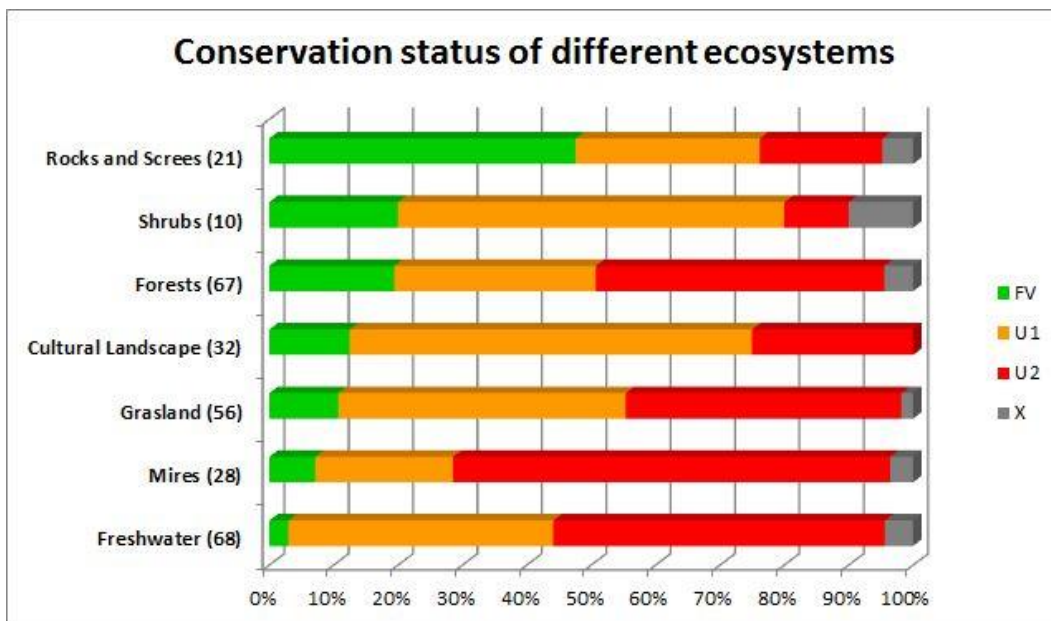


Figure 7: Conservation status (FV-Favourable, U1-Unfavourable-Inadequate, U2-Unfavourable-Bad, X-Unknown) of broad ecosystem attributions (numbers in brackets refer to the number of assessments) (Umweltbundesamt 2013 on behalf of the Austrian Federal Provinces).

Status of birds according to Birds Directive

The analysis of population trends of breeding birds according to Article 12 of the Bird Directive revealed a stable trend for 54% of the species within the 2008-2012 reporting period (Fig. 8). Increases and decreases balance each other out for 33 species. Remarkably, the ratio between singing birds and non-singing birds is exactly opposite. While population trends in non-singing birds more often increased (22 vs. 11 species), the opposite was true for singing birds, with negative trends prevailing (again, 22 vs. 11 species). This may be an indication that non-singing birds respond better to specific measures (improving habitat quality, targeted conservation projects), while the more common singing birds benefit less from individual measures but are more affected by general trends in agriculture and forestry. The attribution of breeding birds to the most commonly used ecosystems accounts for the highest percentage of positive trends in settlements and of negative trends in the cultural landscape (Fig. 9).

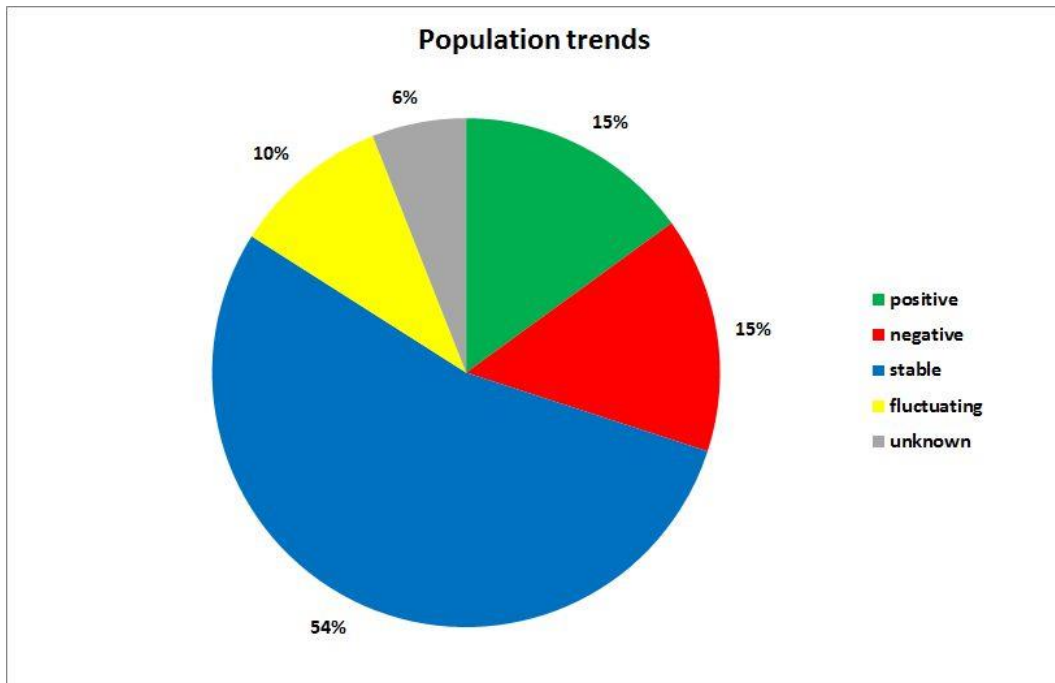


Figure 8: Population trends of Austrian breeding birds 2008–2012. Source: BirdLife 2014 on behalf of the Austrian Federal Provinces. http://www.salzburg.gv.at/art12-bericht_vsrl.pdf

Table 1: Breeding pairs of selected bird species in Austria.

	Breeding pairs	Population trend 2001-2012
Common Chaffinch (<i>Fringilla coelebs</i>)	1,500,000 – 2,300,000	Stable
European Robin (<i>Erithacus rubecula</i>)	800,000 – 1,200,000	Stable
Eurasian Blackcap (<i>Sylvia atricapilla</i>)	800,000 – 1,200,000	Increasing 15-25%
Coal Tit (<i>Parus ater</i>)	800,000 – 1,100,000	Decreasing 20-30%
Common Blackbird (<i>Turdus merula</i>)	750,000 – 1,100,000	Stable
Great Tit (<i>Parus major</i>)	700,000 – 1,000,000	Stable
Chiffchaff (<i>Phylloscopus collybita</i>)	450,000 – 700,000	Stable
Song Thrush (<i>Turdus philomelos</i>)	350,000 – 550,000	Stable
House Sparrow (<i>Passer domesticus</i>)	240,000 – 410,000	Stable
Goldcrest (<i>Regulus regulus</i>)	250,000 – 400,000	Unknown
...	...	
Short-eared Owl (<i>Asio flammeus</i>)	5-15	Fluctuating
Red-footed Falcon (<i>Falco vespertinus</i>)	6-14	Increasing 30-80%
Eurasian Dotterel (<i>Charadrius morinellus</i>)	6-12	Decreasing 10-30%
Imperial Eagle (<i>Aquila heliaca</i>)	6-11	Increasing 600-1100%
Ural Owl (<i>Strix uralensis</i>)	5-10	Unknown
Ortolan (<i>Emberiza hortulana</i>)	4-10	Decreasing 20-50%
Common Gull (<i>Larus canus</i>)	4-7	Stable
European Roller (<i>Coracias garrulous</i>)	4	Decreasing 30-80%
Northern Pintail (<i>Anas acuta</i>)	2-4	Stable
Bearded Vulture (<i>Gypaetus barbatus</i>)	1-2	Increasing 100-200%

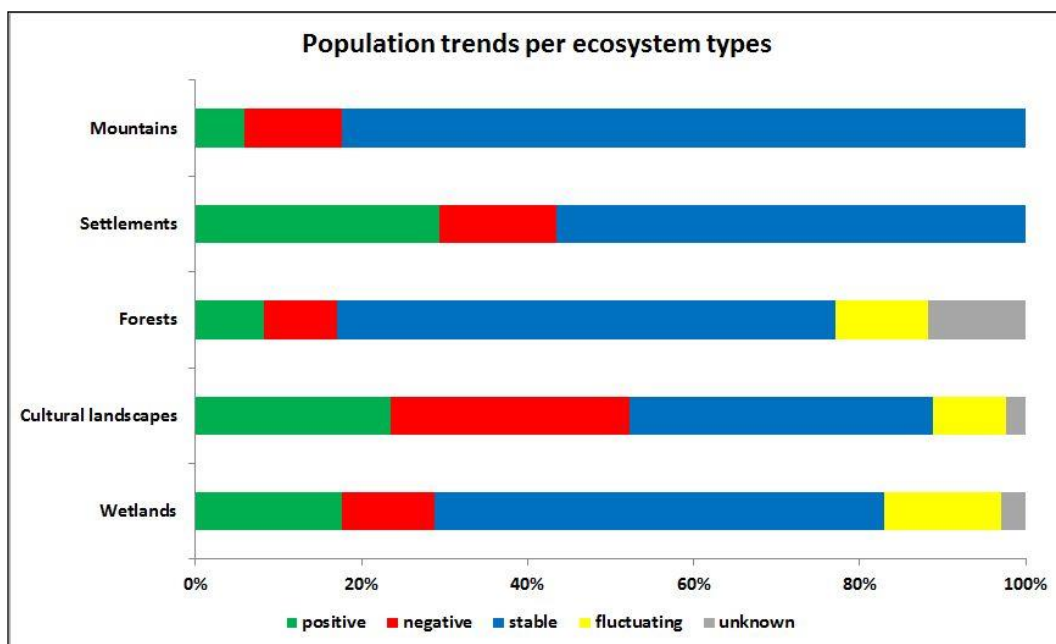


Figure 9: Population trends of Austrian breeding birds 2008–2012 according to major ecosystem types. Source: BirdLife 2014 on behalf of the Austrian Federal Provinces.

http://www.salzburg.gv.at/art12-bericht_vsrl.pdf

Extensive grassland (rough meadows and pastures)

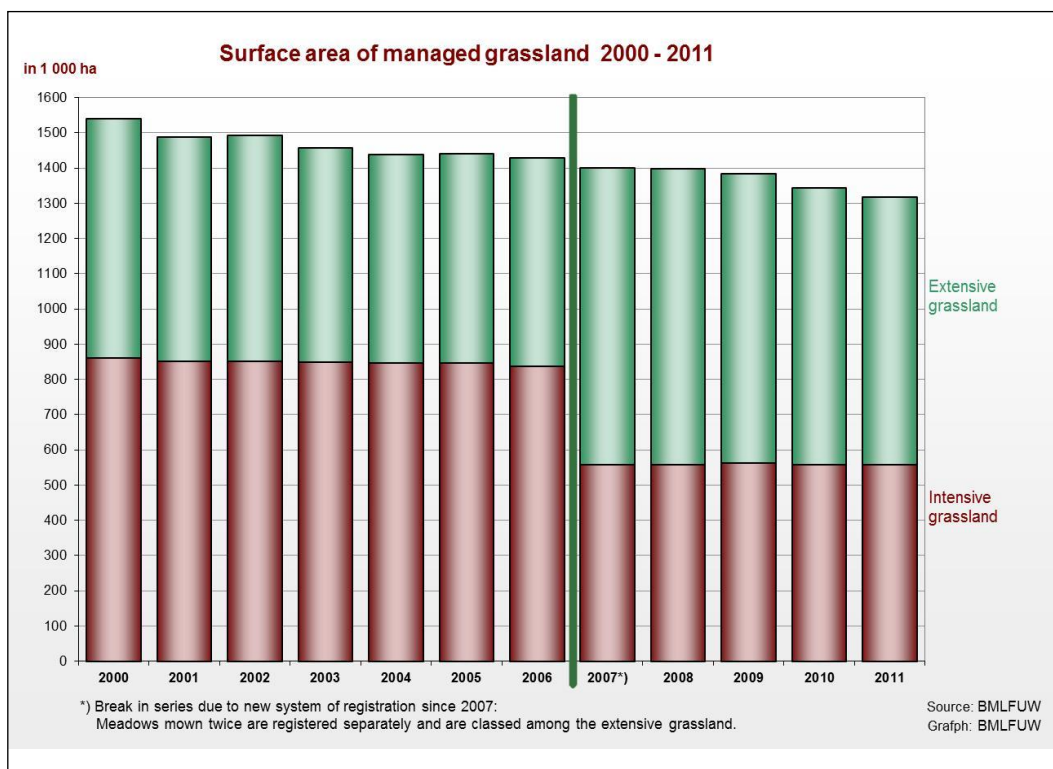


Figure 10: Data source: Integrated Administration and Control System (IACS), BMLFUW: The data on grassland are based on the annually available IACS data which are collected by AMA in the course of the implementation of subsidies.

Definitions:

Intensive grassland includes pastures and meadows mown several times per year, from 2007 onwards also meadows and cultivated pastures mown three and several times (as from 2007 permanent pastures).

Extensive grassland covers alpine pastures, meadows on steep slopes, sparsely wooded pastureland, meadows mown once a year, litter meadows and set-aside grassland, from 2007 onwards also meadows mown twice

In total, managed grassland accounts for around 50 % of the agricultural area. Grassland is one of the habitats that are of special importance for preserving biodiversity in Austria. Particular attention has to be paid to extensive grassland that is particularly rich in species but endangered. It includes lowland moors, dry grassland, *Nardus* grassland, rough pastures and meadows as well as rich meadows with numerous species (mown twice a year at most) in valleys and on mountains. These types of grassland are threatened by intensification (e.g. afforestation) and abandonment (and, thus, overgrowing by scrub or trees).

The Alpine forage area has decreased continuously over the past years. This decrease is for the most part due to the more detailed registration of land which has been implemented step by step since the year 2000. For the areas of meadows mown once, rough meadows and scattered meadows the decline is significantly lower.

Indicators according to the EU Water Framework Directive /

Austrian Water Act

The most recent annual report (2012) on Water Quality in Austria summarises the assessments for groundwater (according to "Qualitätszielverordnung Chemie Grundwasser") and standing waters (according to "Qualitätszielverordnung Ökologie") from 2009-2011 (BMLFUW 2013: Wassergüte in Österreich - Jahresbericht 2012; <http://www.lebensministerium.at/publikationen/wasser/Wasserg-te-in--sterreich--Jahresbericht-2012.html>). Assessments for running waters are available for 2011.

Groundwater

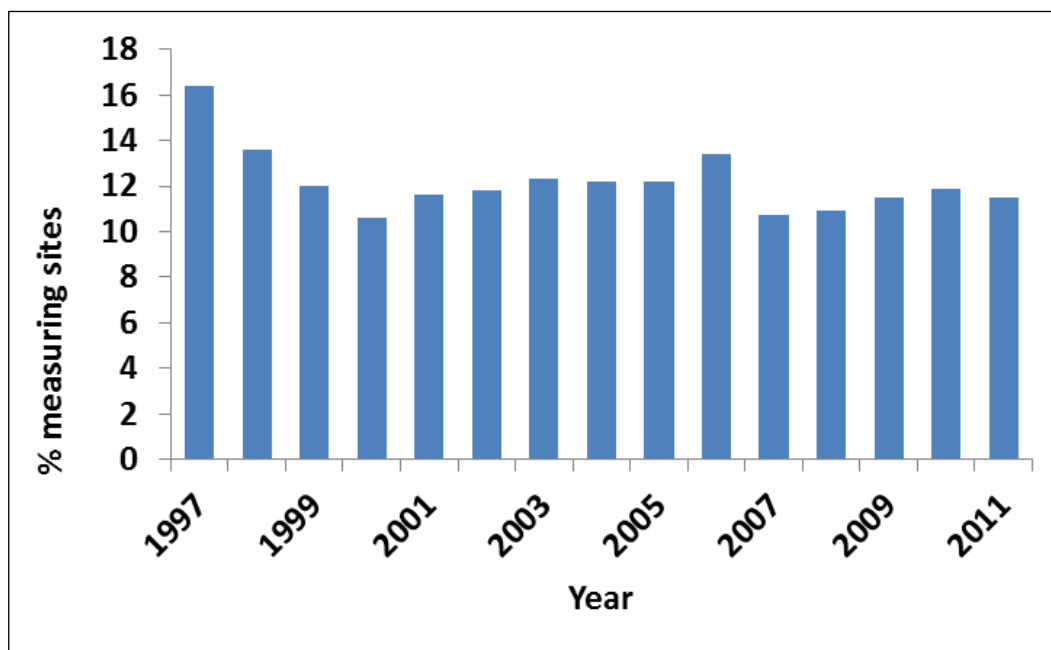


Figure 9: Data source: GZÜV, BGBl. Nr. 479/2006 i.d.g.F.; Ministry of Agriculture, Forestry, Environment and Water Management; Ämter der Landesregierungen; Environment Agency Austria.

Definition:

Exceedance of threshold levels of nitrate pollution in groundwater of Austria. Shown are percentages of the total numbers of measuring facilities since 1997. Performance within the analysed climate change scenarios.

The results of groundwater chemical analyses show that most of the approx. 140 parameters are below the critical thresholds. Nitrate pollution from intensive agriculture on permeable soils in regions with low annual precipitation is of local relevance but has continuously decreased over the last years. Exceedance of other pollutants is generally low, e.g. 1.0% of all control points for atrazine in 2011, which means a continuation of the declining trend since the legal ban in 1995.

Standing Waters

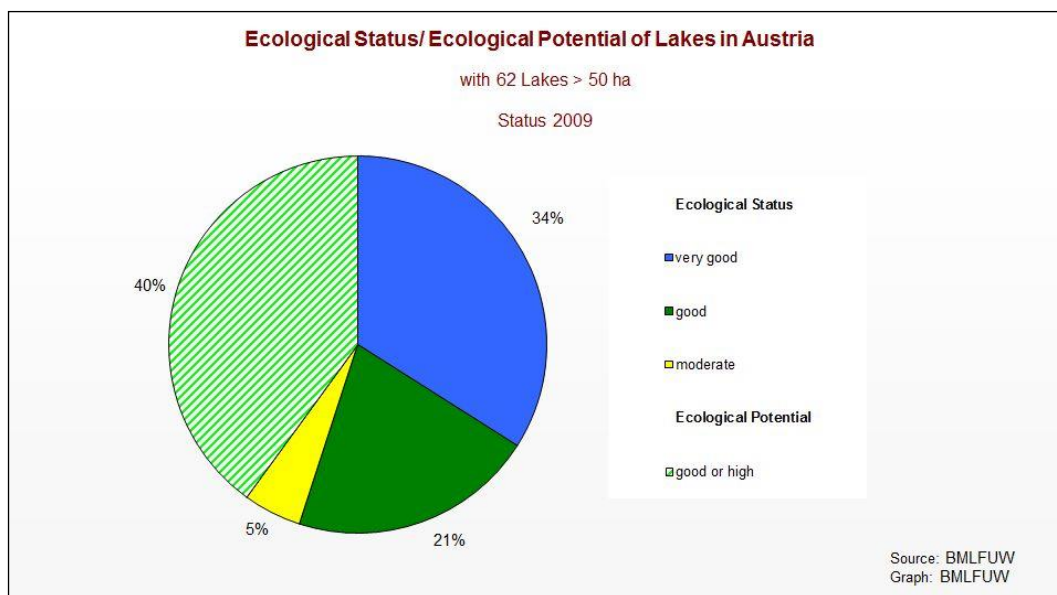


Figure 10: Data source: Nationaler Gewässerbewirtschaftungsplan 2009; Ministry of Agriculture, Forestry, Environment and Water Management (data from 2007).

Definition:

The assessments of the ecological status and of the ecological potential of lakes (size > 50 ha) according to national legislation (BGBl 99/2010 and 96/2006).

There are 26 natural lakes with a size of > 1 km² in Austria. Water quality is good or very good due to comprehensive restoration measures implemented since the 1970s. A good chemical status has been achieved in all lakes. Three of the larger lakes (and six lakes in total) have been considerably modified due to hydropower utilisation but have managed to achieve a good ecological potential.

Running Waters

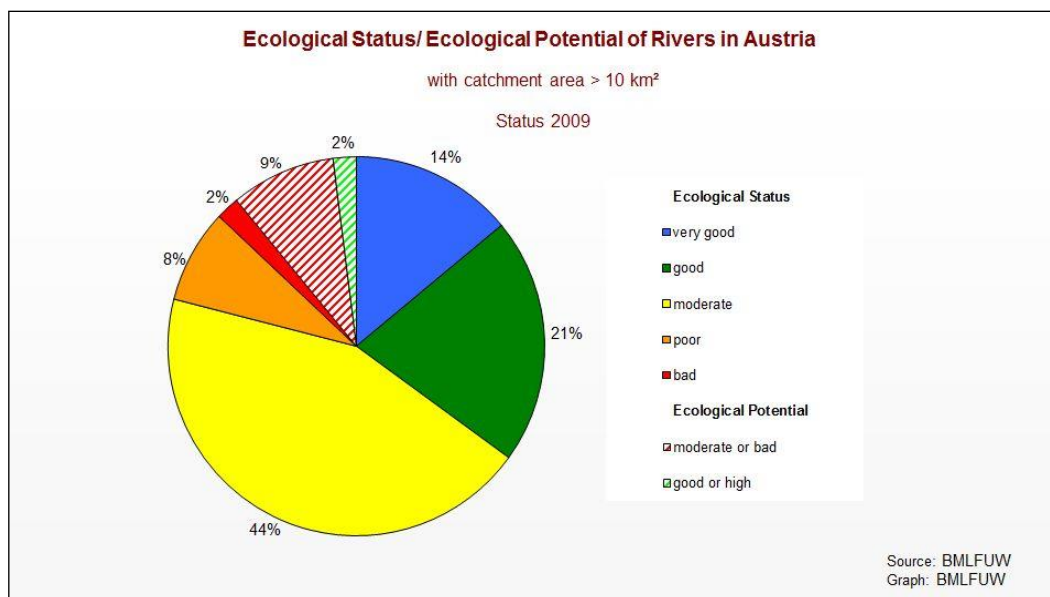


Figure 11: Data source: Nationaler Gewässerbewirtschaftungsplan 2009; Ministry of Agriculture, Forestry, Environment and Water Management (data from 2007).

Definition:

The assessments of the ecological status and of the ecological potential of rivers (catchment area > 10 km²) according to national legislation (BGBl 99/2010 and 96/2006).

No new data are available regarding the assessments of the ecological and chemical status on behalf of the requirements of the EU Water Framework Directive. As reported previously, 35% of running waters have a very good or good ecological status, with the intensive use of water power and flood control measures changing the hydromorphological conditions being the major reasons for the insufficient status of the remainder.

1.3 What are the main threats to biodiversity?

1.3.1 Changes in land use

Changes in the use of land (forests, grassland/arable land)

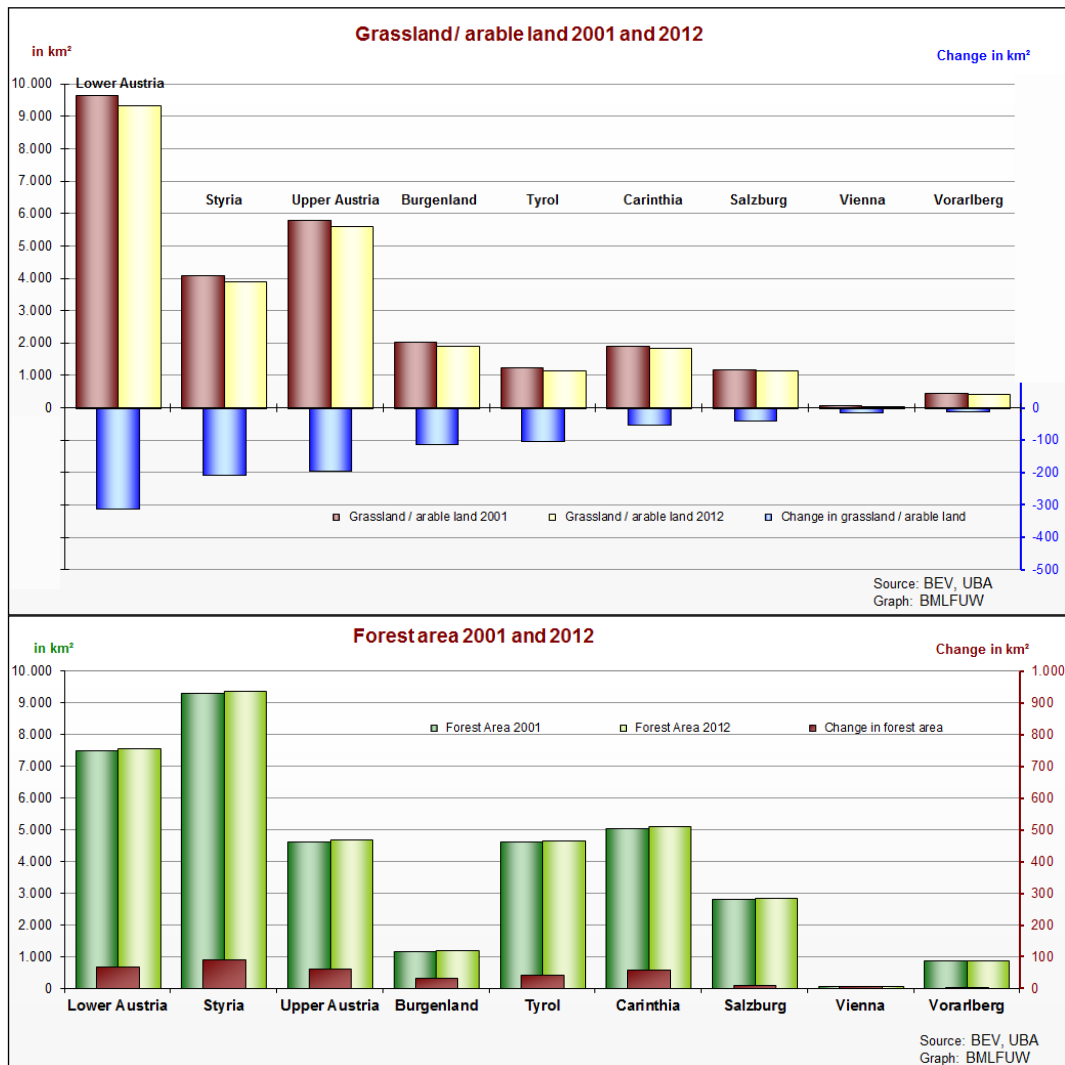


Figure 14: Calculations of the Umweltbundesamt, based on: Land use: Regional information from the land database of the Federal Office of Metrology and Surveying; as of 1 January 2001 and 1 January 2012 respectively; GZ: 950/2005 and 85.412/2012.

Comments:

Forest coincides with the use type 'forest'.

Grassland/arable land is the total land classified as agricultural land and vineyards.

Between 2001 and 2012, more than 1,040 km² of agricultural area were lost in Austria. This corresponds to a daily reduction by 26 hectares. This decrease in agricultural area does not yet take into account the loss of areas for agricultural management in Alpine

areas and for vineyards. Almost one third of the agricultural areas are turning into forests, more than two thirds are being converted into living and transport areas (see indicator BO 1a). Due to the growing of unwelcome forests on these former agricultural areas, forest-covered land has increased by more than 380 km² since 2001.

Any interpretation of the results according to regional information has to bear in mind that data are not updated continuously but only in the framework of large-scale projects and on occasion. Therefore, over certain periods of time regional information does not reflect the actual situation.

The trend of the loss of agricultural areas has been found in all Federal Provinces except Vorarlberg. It is therefore not surprising that a high absolute decrease of areas is observed in the Federal Provinces having a high share of agricultural area (Lower Austria: -311 km², Styria: -207 km² and Upper Austria: -193 km²). However, this decrease is not as dramatic as it is in Federal Provinces with a low share of agricultural area. Especially Vienna and Tyrol have to be mentioned in this context (V: 57 km² and T: 1 146 km² of agricultural area), with proportionally very high losses of agricultural areas (V: -14%, T: -9%). We cannot judge, however, to which extent, especially in Tyrol, these figures are due to the inaccuracy of regional information.

Vorarlberg is a positive exception. Despite possessing only a very small share of agricultural areas (443 km²), no significant losses of agricultural areas have occurred. Thanks to current measures ('Vision Rheintal'), Vorarlberg's agricultural area appears to be well ensured.

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 a further increase in regions already holding a very high share of forests can be problematic (poorer fulfilment of functions, loss of biodiversity). The greatest percentage 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. Changes in land use are just one aspect of the factors affecting the ecological value of the landscape.

1.3.2 Use of land by transport and settlement (sealing)

In 2012, approximately 1,972 km² of Austria became sealed. In relative figures the amount of sealed land in Austria comprises only 2.3% of the federal territory, but due to the topographic conditions soil as a resource can only to a limited extent be used for settlement and transportation. Only 37% of Austria's total territory is available as permanent settlement areas that can be used for agriculture, settlement activities and transportation. In relation to the permanent settlement area, sealed land accounts for more than 6%, with a lower but still rising development. In the course of the last year, there has only been a marginal rise in sealing. The highest shares of sealed land in permanent settlement areas are found in Vienna and in the predominantly Alpine Federal Provinces like Vorarlberg and Tyrol with 8.9% and Salzburg and Carinthia with 7.3%.

Percentage of sealed land

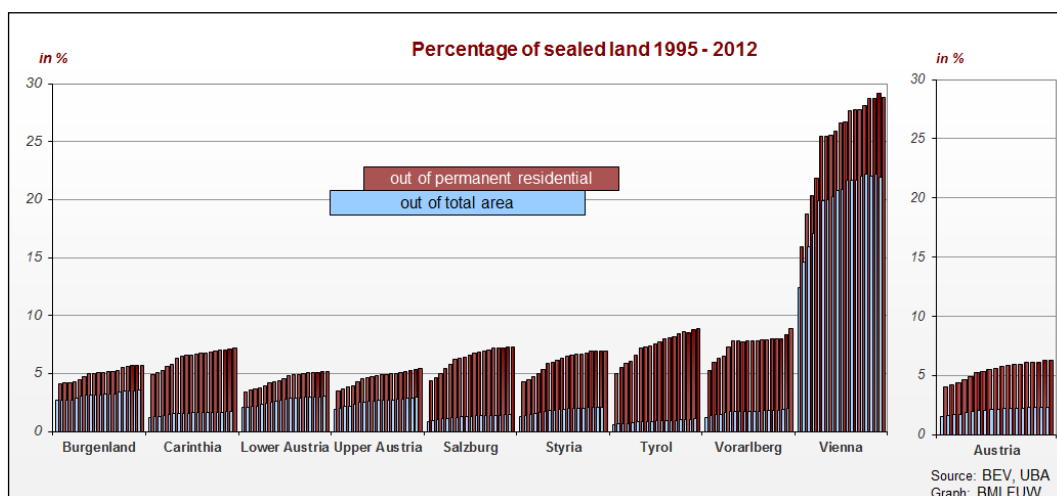


Figure 15: Data source: Sealed land: Calculations by the Umweltbundesamt based on regional information from the land database of the Federal Office of Metrology and Surveying; as of 1 January of the given year (1995-2012); date of enquiry: May 2012

Definitions:

Sealed land is the sum of the built-up areas (the areas used for "buildings" and "paved" are factored in at a rate of 100%; areas the use of which is "unspecified" are factored in at a rate of 30%) and of "Other Areas" (the areas used for "roadways" are factored in at 60%, while areas the use of which 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".

Since 1995, the area of sealed land throughout Austria has increased by 150%. The target laid down in the Austrian strategy of sustainable development gives an intended reduction of 1 hectare per day for the whole of Austria. In a three-year average (2009-2012), land use amounted to more than 22 ha per day, which means that about 7.5 hectares are sealed each day. Thus current trends are still almost eight times greater than the target value. If we compare the three-year 2009-2012 period with the previous 2005-2008 period, the Provinces of Burgenland, Lower Austria, Salzburg and Vienna are showing lower consumption rates – the data basis, however, is too unreliable for deducing any relation to measures to curb the land used.

The indicator only describes 'use of soil' through sealing but no other type of use. To enable us to make more extensive statements about 'use of soil', the LA 1a indicator provides additional information.

To create better data bases, for example for the assessment of the use of land, the operative implementation of the concepts from LISA (Land Information System Austria) is currently being prepared within the framework of the ÖREK partnership. Within the next

few years, it should provide improved and more precise data on soil coverage and land use.

1.3.3 Acidification and eutrophication

Approximately 59% of the territory of Austria harbours habitats that are sensitive towards nitrogen deposition. Nitrogen deposition in 2010 exceeded critical loads (CL) at 66% of these sites. This is an improvement compared to 2005, and models predict that as soon as emission reductions measures are implemented, this will further improve and only 47% will still exceed the CL by 2020. The situation is similar in Natura 2000 sites, with approximately 54% of the sites still exceeding the CL by 2020. The average nitrogen CL exceedance in 2010 was 2.5 kg N/ha/year with a maximum at 14.4 kg N/ha/year. The aim is to reduce these levels to 1.5 and 12.3, respectively.

Table 2: Percentages of areas exceeding nitrogen Critical Loads in sensitive habitats in Austria and in Natura 2000 sites. AAE values (Average Accumulated Exceedance) for 2005 are based on real measurements, data for 2010 partly measured and modelled and data for 2020 modelled. Nitrogen deposition in each model grid cell is used for calculation of the AAE of the critical loads, which is the area-weighted average of exceedances accumulated over all ecosystem points in a grid cell. The total area of ecosystems exposed to exceedances in a country is expressed as a percentage of the total country area.

Sensitive habitats	Area [km ²]	AAE 2005 > 0 [%]	AAE 2010 > 0 [%]	AAE 2020 > 0 [%]
Austria	49,430	95	66	47
Natura 2000	10,545	98	73	54

1.3.4 Invasive alien species in Austria

The inventory of alien, non-indigenous species in Austria was updated in 2009. Numbers of alien species have increased for plants and animals since 2002 due to new arrivals and introductions but also due to collection of previously overlooked data. Data on lower plants and fungi have not changed. Austria is part of the European Network on Invasive Alien Species (NOBANIS) where data are available online (www.nobanis.org).

Table 3: Number of known alien species in Austria

Groups of organisms	Total species number in Austria	Alien Species (total)	Alien Species (established)	Alien Species (invasive and potentially invasive)*
Vascular plants	4,060	1,300	ca. 300	35
Animals	ca. 45,000	ca. 650	ca. 350	46

*Action Plan on Invasive Alien Species in Austria (2004).

The national focal point of "Neobiota" at the Environment Agency Austria (Umweltbundesamt) organised two national conferences (2009: Alien Species and Climate Change; 2013: Alien Species and Health) to provide summaries of the scientific state-of-the-art information on these subjects. Exhibitions were on display at natural history museums and brochures and guidelines were published by different stakeholders (e.g. National Railway Company, horticultural societies, and botanical gardens) to raise public awareness.

Austria has contributed to international activities at the policy level with regard to the forthcoming EU regulation on invasive alien species and participated in several scientific efforts (e.g. DAISIE, COST Action Alien Challenge). On behalf of the German Agency for Nature Conservation a risk assessment method was developed (German-Austrian Black List Information System, GABLIS) and tested with fish but not yet applied to a wider set of alien species in Austria.

A recent study on the aquatic alien species in Austria documented 95 alien plants, most of which had been introduced as ornamentals or as plants for aquaria and ponds. Approximately half of the species are established, 11 are considered invasive, competing with native species and reducing the stability of river banks and hence increasing erosion, while 7 are considered potentially invasive. A recently spreading invader with potentially great negative impacts is the Green Cabomba, an aquatic perennial herbaceous plant native to North America and sold for aquaria. An increase in the numbers of aquatic alien animals in lowland rivers and lakes has been documented and currently includes 74 benthic invertebrates, 7 species of which are considered invasive, 14 potentially invasive and 12 potentially invasive under the influence of future climate change as well as 10 potentially invasive or invasive fish. Some of the alien benthic species are reproducing at a very high rate, completely replacing native species, e.g. *Corbicula* clams or some crustacean species. Water pollution, habitat deterioration and increasing water temperatures due to climate change support opportunistic alien species.

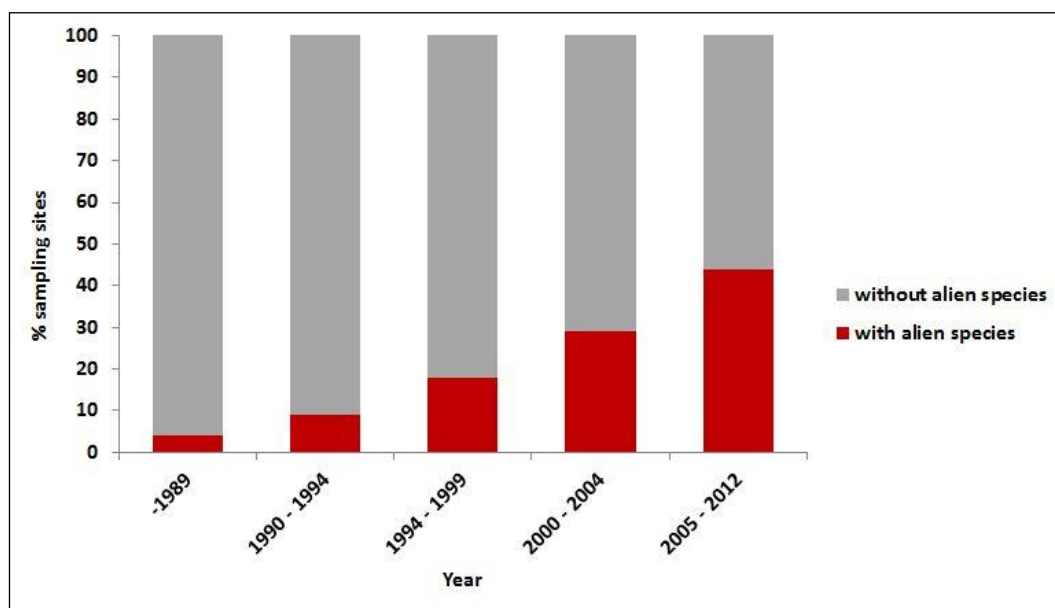


Figure 12. Percentages of standardised stratified sampling sites with or without alien benthic invertebrate species in Austria since 1989. Source: University of Natural Resources and Applied Life Sciences Vienna.

Management and control measures are being implemented in protected areas and against selected species (e.g. Asian long-horned beetle; ragweed, ragweed.boku.ac.at)

Box 3: Case study: Neobiota-Management in the Biosphere Reserve Wienerwald

Between 2011 and 2014, the Austrian State Forests have been carrying out comprehensive containment attempts (including method testing) against five alien plant species (Japanese knotweed, Giant knotweed, Black locust, Giant hogweed, Himalayan balsam) in the Biosphere Reserve Wienerwald. These campaigns are being accompanied by cost-benefit-analyses, monitoring of success and the production of information materials for public relation work. The aim of the project is to develop an Alien Species Strategy for the Biosphere reserve.

within LIFE+-projects and via other financing instruments.

1.3.5 Pressures and threats according to the Habitat Directive

Within the National Article 17 Report of the Habitat Directive, invasive species, afforestation and the removal of deadwood, natural succession and water management constructions were the most often mentioned pressures for habitats. Most often mentioned pressures for species were pollutants, water management structures, drainage of wetlands, and agricultural intensification (Fig. 8). Considerable differences between groups are evident, e.g. amphibians are particularly affected by roads and fragmentation, chemical pollution and drainage of wetlands, while e.g. bats suffer from building renovations and environmental toxins and beetles from clear-cutting, the removal of deadwood and changes in forest tree composition. The attribution of the pressures of species and biotype types to broader ecosystems revealed some general pattern but also has limitations. Firstly, the pressures were selected by experts who had to choose from a given list of pressures, and secondly, they only refer to the Habitat Directive species and habitats and therefore may not represent the full picture of biodiversity pressures in Austria.

Table 4: Main pressures attributed to species and habitats of the Habitat Directive characteristic for broader ecosystems (National Report according to Art. 17 Habitat Directive).

Broad Ecosystems (selection)	Main pressures
Peat bogs, Fens	Grazing, Nitrogen deposition, Fertilisation, Succession, Abandonment of use, Forestation, Change of hydrological regime
Natural and near-natural grassland	Abandonment of use, Forestation, Fertilisation, intensive Grazing
Forests	Change of tree species composition, Clear cutting, Deadwood removal, Invasive species, Pollutants
Freshwater	Change of hydrological regime, Invasive species, Sand- and gravel removal, Pollutants
Cultural landscape	Invasive species, Abandonment of use, Intensive grazing, Forestation, Change of hydrological regime

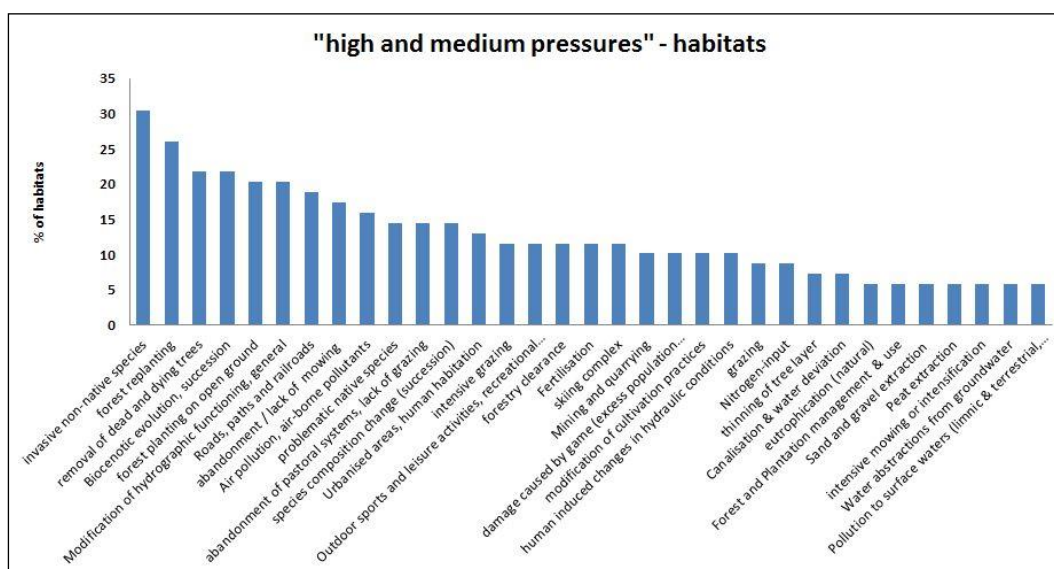
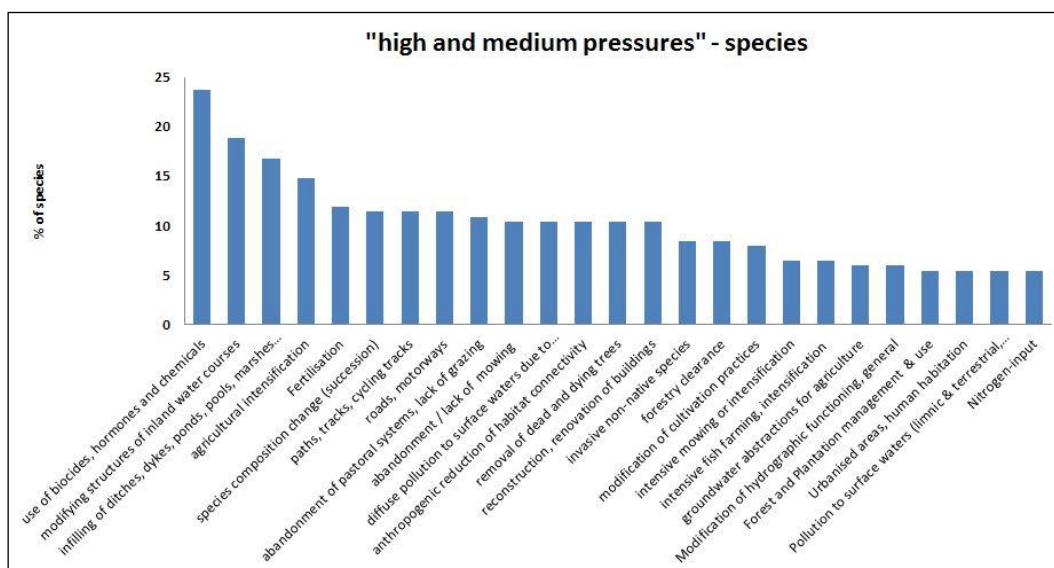


Figure 17: High and medium pressures for species (above) and habitats (below) of the Habitat Directive (National Report according to Art. 17 Habitat Directive).

1.3.6 Light pollution

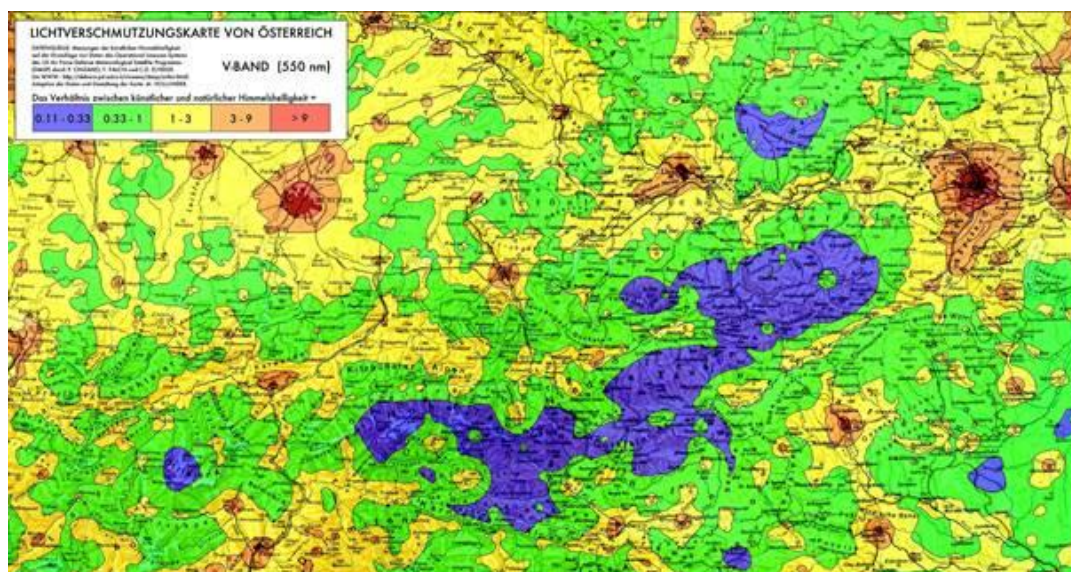


Figure 13: Data source: Measurements of the artificial sky brightness based on data from the Operational Linescan System of the US Air Force Defense Meteorological Satellite Program (DMSP) by P. CINZANO, F. FALCHI and C. D. ELVIDGE (<http://debora.pd.astro.it/cinzano/dmsp/artbri.html>).
Adaptation of data and map design: M. HOLLUNDER (Inst. of Astronomy of the University of Vienna)

The map of light pollution in Austria shows the ratio between artificial and natural sky brightness in the V band (550 nm). Night-time lights dazzle nocturnal animals sensitive to light and affect their sense of direction. Night-time lighting leads to:

- Death of many insects (they head towards the lights obsessively until they die from exhaustion or burn to death)
- Orientation problems for nocturnal animals (insects; birds, in particular migratory birds)
- Disturbance of the rhythm of life (e.g. feed intake, reproduction, egg deposition)
- For Austria's butterflies, of which approx. 85 % are active during the night, even the local and regional extinction of species has been observed.

High-pressure sodium lamps emitting yellow light are significantly less attractive to insects than merely energy-saving gas discharge lamps are. The Province of Tyrol is an excellent example as regards retrofitting and the optimisation of operating time, beam angle, height of the light, and lamp housing; several municipalities retrofitted their lighting systems with the support of the Federal Province. Also in Vienna efforts are taken to shift towards this system step by step.

1.4 What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

A national qualitative expert survey (BMLFUW, 2013) asking for the relevance of different land cover types for performing related ecosystem services demonstrated the importance of various reasons for changes of ecosystem-services. It was confirmed that changes of habitats, usage type as well as usage intensity may seriously affect biodiversity and that the modification of habitats and usage type may highly affect water regulation.

		Cause of change	Habitat change or change in the type of use (sealing, straightening of river banks, river bank renaturation, ...)	Change in intensity of exploitation (higher/lower number of cuts in grassland, clearing of the landscape, extensification of exploitation, abandonment of stocking of Alpine pastures, browsing by game...)	Stress due to emissions of pollutants and nutrients or light, waste	Climate change	Invasive species
Ecosystem services							
Provisioning	Arable crops, fruits, vegetables						
	Farm animals						
	Timber and other biotic materials for producing energy and materials						
	Drinking water and water for industrial purposes, use of water for producing energy from utilisable groundwater and surface water						
Culture and nature	Eco-environment and its importance for recreation, well-being, identity Landscape, local surroundings, spiritual places						
	Biological diversity (wilderness, diversity of species and breeds, ...)						
Regulation and maintenance	Regulation of the natural biological cycles (pollination, seed dispersal, pest/ disease control, ...)						
	Regulation of the microclimate including wind, humidity etc. and of the global climate						
	Detoxification and purification of water, soil and air for quality assurance and noise control						
	Regulation of mass flows (erosion control, protection against avalanches and mudflow)						
	Water regulation (water reservoirs, water level equalization,...)						

very high
 high
 moderate
 not applicable

Figure 14: Qualitative assessment of the importance of different causes for changes in ecosystem services. Interviews were conducted with experts on biological diversity and persons interested in this subject; the answers of 27 persons were considered in the evaluation. Source: BMLFUW, 2013.

In Austria, some studies on ecosystem services are available or still ongoing; however, efforts in research as well as in policy have to be carried out to better understand ecosystem services and the impacts of a declining biodiversity on society. Ecosystem services are usually dependent on a variety of species. In some circumstances, higher species richness provides more ecosystem services and, through redundancy, protects ecosystem functions against failure under altered conditions. Cultural ecosystem services are hard to quantify. For many ecosystem services, data are only available for a special context, if at all. Among several ecosystem services delivered by biodiversity, natural pest control and pollination are the best documented and the most relevant for ensuring food provision in the coming decades.

The core objective of COIN (Cost of Inaction: Assessing the costs of climate change for Austria) funded by the Austrian Climate Research Program (ACRP) is to assess the costs of climate change for public and private budgets in Austria and the scope of any information where full assessment is not yet possible. One of the aspects that will be further described is the potential impacts of climate change, in particular the effects of increasing temperatures on pest antagonists and pollinators will be described. Temperature changes lead to species range shifts which cause the reshuffling of assemblages and the decoupling of community interactions, followed by an impairment of pest control and pollination services. The effects are strongly modulated by socio-economic factors, particularly the development of semi-natural elements in agricultural landscapes. An expansion of semi-natural area may mitigate the effects of climate change; a reduction could exacerbate the climatic effects due to the loss of migration corridors and stepping stone habitats.

For any future assessments of the impact of change in biodiversity for ecosystem services and the socio-economic and cultural implications of this impact, the foundations for welfare-related environmental indicators will have to be elaborated. The Environment Agency Austria (Umweltbundesamt, 2011) has established an inventory of Final Ecosystem Services in the Austrian agricultural sector. The benefits these goods and services provide for society are divided into four groups – health, security, natural diversity and their economic value. In this way, human well-being is taken into account as well as the economic input of ecosystem services. The aim of this study was to demonstrate the complex relationship between agriculture and ecosystem services in order to show how important these services are, particularly in view of e.g. the implementation of the future Common Agricultural Policy.

Another survey focussing on grassland ecosystem services has made and substantial progress and increased the ability to make informed decision on the sustainability of grasslands ecosystem services. Considerations regarding the sustainable use of ecosystem services also requires a full implementation not only of all benefits provided by ecosystems but also of all costs connected with ecosystem management and conservation (ETC on Biological Diversity, 2011).

In 2011, three Austrian regions in different landscapes (Alps, foothills of the Alps, lowlands) started a project cooperation called MUFLAN to develop regional action programmes for a multi-functional, ecologically optimised use of landscape and environment resources. The common project has succeeded in developing integrated resource planning and application-oriented approaches for a sustainable landscape development in the three pilot regions. The developed action programme reveals and describes the multi-functionality and the connectivity of the landscape services and the

landscape functions and provides a sound review of an efficient future use of environmental resources. Common instructions were devised concerning the sustainable development in these areas.

The approach involving economic assessments of biodiversity and ecosystem services is currently being discussed as an appropriate instrument to counteract the loss of biodiversity and the resulting loss of ecosystem services.

(www.umweltbundesamt.at/aktuell/publikationen/publikationssuche/publikationsdetail/?pub_id=2022).

The overall aim of the Central Europe TCP project TransEco-Net is a comprehensive inventory and the protection of ecological networks and their natural and cultural heritage (2009-2012). The project partners elaborated, analysed and assessed parts of the Central European network regarding trans-boundary connectivity and existing gaps, land use changes since the end of the 18th century, the ecological functionality of landscapes and services they provide to society as well as the national planning tools, regulations and transnational cooperation initiatives dealing with ecological networks. Amongst others, the structural functionality of landscapes was assessed and pressures on species and habitats were investigated by considering the current status of protected areas, international agreements and regional nature conservation measures. Moreover, based on appropriate geodata, the partners prepared predictive models reflecting the future development of landscape functionality, in particular regarding habitat connectivity and the distribution of target species.

To ensure an intact biodiversity and the functioning of ecosystem services in the Alps, there is a requirement for long-term landscape planning, new methods of co-operation between the various stakeholders and decision-makers as well as preventive measures. The greenAlps project is based on the Econnect (ETC Alpine Space, 2008-2011) and recharge.green (ETC Alpine Space, 2012-2015) projects, amongst others. From 2008 to 2011, Econnect investigated how the ecological network in the Alpine space could be improved via concrete measures and gave already concrete policy recommendations. The ongoing recharge.green project is developing instruments to evaluate biodiversity and the services of ecosystems in the Alps in relation to the production of renewable energy. The aim of greenAlps (ETC Alpine Space, 2013-2014) is to improve the framework conditions for sustainable, efficient European environmental policies that will protect and maintain nature in the Alps.

1.5 What are possible future changes for biodiversity and their impacts?

Demographic development and land consumption

According to a forecast by Statistics Austria, the population of the country will have risen to 8.69 million people (+3%) by 2020, to 8.99 million people (+ 7%) by 2030 and to 9.37 million (+11%) by 2060. Development will vary substantially among Austrian provinces - Vienna and Lower Austria will grow the most, followed by Burgenland. http://www.statistik.at/web_en/statistics/population/demographic_forecasts/population_forecasts/index.html This means that the regions in the Eastern part of Austria will have to deal with additional pressures due to further demands for buildings and infrastructure. However, these areas are those with a relatively bad biodiversity situation, as e.g. shown by the results of the Article 17 report of the Habitat Directive and Article 12 of the Bird Directive (see Chapter 1.2). In addition to direct land consumption, the competition for area particularly in this region, among other factors, will increase as the need for space for production of food and energy is growing. This might have negative

Box 4:

Urbanisation is still a key driver of environmental change. However, it also provides opportunities for "greening" cities. The initiative "Smart Cities – Intelligent Cities in Europe" (www.smartcities.at) provides an overview of projects funded by the Climate and Energy Fund Austria. A "Smart City" is a city seeking to address public issues via information and communication technology-based solutions on the basis of a multi-stakeholder, municipally based partnership. Within Europe, Austria is among the countries with the highest proportion of Smart Cities. Vienna was listed as the world's number one Smart City in 2011 and ranked fourth in the European list of Smart Cities of 2012. Projects include infrastructure, energy and mobility as well as all aspects of urban development.

The main objectives concerning Europe 2020 targets are:

- to reduce emissions significantly and in the long term create a zero emission city with zero emission buildings as standard,
- to reduce energy consumption significantly so in the long term there will be nearly zero energy standards in new and existing buildings by 2020,
- to increase the use of energy from renewable sources significantly,
- to raise awareness throughout the wider public about the responsible use of resources,
- to give citizens an active role,
- to promote multi-modal transport systems by improving the public transport network, enhancing networking between individual transport carriers, and significantly reducing individual motorized transport,
- to position Vienna as a model European environmental city and a leading European center for research and technological development on an international level.

effects on biodiversity.

Climate change

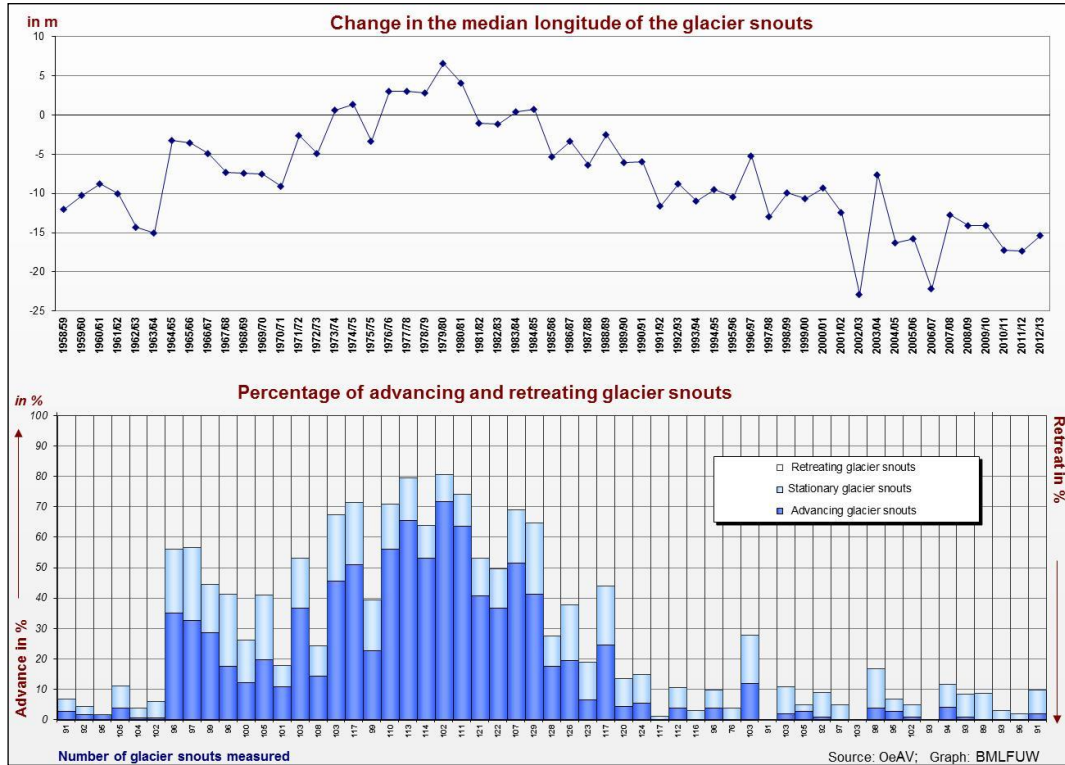
Climate change is considered one of the most important future pressures for biodiversity. Since the mid-19th century, records indicate an increase in the average annual temperature in Austria of about 2 °C, which is significantly above the global temperature rise of 0.76 °C. For the Alpine region, the assumptions of the "moderate" scenario A1B indicate an annual increase in temperature of about 4 °C by 2100 relative to the period 1961–1990. Warming is particularly expected in summer and winter; precipitation scenarios downscaled from global climate models indicate that the total annual precipitation for the Alpine region should remain largely constant, although it is expected to shift from the summer months to the winter months. According to regional climate change models, a further increase is to be expected for this century resulting into an up-shifting of vegetation belts.

Habitat distribution models for different IPCC scenarios have shown a high climatic risk for mire ecosystems in Austria towards the end of the 21st century, with rain-fed bog ecosystems being the most threatened.

Species distribution models of range-restricted species that are endemic to Austria have shown a similar high risk of extinction. The expected upward shift of trees due to climate warming is supposed to be a major threat to range-restricted high altitude species by shrinking the area of their suitable habitats. Projections show that areas of endemism of different taxonomic groups will, on average, experience a 77% habitat loss even under the weakest climate change scenario (+1.8 °C by 2100). Endemics occurring at the rather low peripheral mountain chains of the Eastern Alps, which have not been glaciated during the Pleistocene, are particularly prone to tree line expansion.

The following graph shows an advance of the glaciers starting in the early 1960s. Since then a retreat has been observed that was particularly strong in 2003 and 2007. Glaciers are habitats where only few, well-adapted organisms live. The glacier flea (*Isotoma saltans*) occurs in and on glaciers throughout the year. Inside the glacier it does not have any competitors or enemies, only on the outside *Mitopus glacialis* can be a danger to it. In the future, however, glacial retreat might become its worst enemy.

Extent of glaciers



Definitions:

A change in the longitude of the glacier snouts by ± 1 m is called stationary

Glacier forelands are extremely dynamic habitats where, little by little, different plants and animals begin to appear. Due to the glacial retreat the area of the glacier forelands increases, which first leads to an increase in the number of species, but in fact is the sign of a change in the course of which the highly specialised rare species are irretrievably displaced. Climate change leads to an average temperature rise in Europe. As a result, Alpine plants might advance also towards nival zones which have so far been reserved for cushion plants, moss and lichen. This movement would limit the habitat of these specialists. Endemic species would be most severely threatened by the migration of Alpine species to higher altitudes. The disappearance of their habitat leads to their complete extinction and thus to an irretrievable loss of biodiversity. Surveys conducted on Austrian peaks indicate an increase in the number of species. The thermophilous species appear to advance more rapidly than the nival plants become extinct but at the Schrankogel (Ötztaler Alpen, 3496 m) declines have already been observed at the lower altitudinal limits for species distribution (Pauli et al., 2007). Therefore, the increase in the number of species must be considered a signal of a very dangerous trend.

Box 5: Anticipated Future Effects of Climate Change based on Climate Scenarios for Austria

Area for Action - Ecosystem/Biodiversity:

- Increase in annual mean temperatures
- Higher temperatures lead directly to a lengthened growing season and thus to an earlier beginning and a later end of plant transpiration
- Increase in the frequency of droughts
- Changes in the amount of precipitation and its seasonal distribution: a decrease in the frequency of precipitation during summer months and an increase in winter months
- Heat stress in plants, especially in combination with droughts
- Probable decrease in groundwater supply and thereby increased drought stress in southern and Eastern Austria
- Increased risk of reduction in biodiversity
- Changes in species composition
- Decrease in the amounts of snow at lower and middle elevations; reduced certainty of snow
- Decrease in ice and frost days
- Increase in water temperatures, above all during summertime droughts
- Shifts in area boundaries along elevation and moisture gradients
- Changes in species composition in biotic communities and biotopes
- Loss of habitats and species
- Spread of new invasive species (alien species)

Source: Austrian Strategy for the Adaptation to Climate Change. Part 1 – Context. May 2012.

**THE NATIONAL BIODIVERSITY
STRATEGY AND ACTION PLAN, ITS
IMPLEMENTATION, AND
MAINSTREAMING OF BIODIVERSITY**



2 THE NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN, ITS IMPLEMENTATION, AND MAINSTREAMING OF BIODIVERSITY

2.1 What are the biodiversity targets set by your country?

The new National Biodiversity Strategy 2020+ is expected to be finalised in October 2014. The CBD Strategic Plan for Biodiversity 2010-2020 and the EU Biodiversity Strategy 2020 provide the basis for the new strategy. It will comprise five main areas of action: (1) Knowledge and acknowledgement of biodiversity, (2) Sustainable use of biodiversity, (3) Reduction of biodiversity pressures, (4) Conservation and development of biodiversity and (5) Alert to a global biodiversity loss. The strategy will focus on twelve objectives which are divided into specific, measurable targets wherever possible and appropriate.

Table 5: Areas of action, objectives and targets (including time limits) of the Austrian Biodiversity Strategy related to the Aichi Biodiversity Targets

Objective	Specific target (to be met in 2020/2020+/-...)	Aichi Target
Area of action Knowledge and acknowledge biodiversity		
1 People are aware of the values of biodiversity	Appreciation of biodiversity in society has increased (2020) Additional partners of different sectors support biodiversity Increased participation of affected public society in biodiversity relevant projects	1, 2, 4
2 Biodiversity research and monitoring are extended	Knowledge of biology and ecology of species and habitats as well as taxonomic issues is extended (2020+) Knowledge of interrelations between human activities and biodiversity has increased (2020+) Data of status and trends of species and habitats as well as pressures and conservation measures are available (2019, 2020+) Findings and data are considered in political decisions	19
Area of action Sustainable use of biodiversity		
3 Agriculture and forestry support conservation and improvement of biodiversity	Increase of areas with biodiversity-related agri-environmental measures (2020) The conservation status of habitats and species that depend on, or are influenced by, agricultural and forestry management are measurably improved compared to the reference scenario 2010 (2020) Improved development of the Farmland Bird Index (2020) Total stock of rare livestock breeds is stable to slightly rising Number of bee hives has increased to 400,000 (2020) Amount of deadwood, especially in the previously low-rated natural areas of the Alpenvorland, Mühl- und Waldviertel and in the Eastern parts is increased (2020+) Traditional knowledge is obtained (2020).	7, 13
4 Game and fish stocks are adapted	Forestry hunting dialogue continues (2014) Population numbers and structures for hoofed game are	6, 7

to carrying capacity/habitats	<p>adapted as best as possible to natural environment conditions (2020+)</p> <p>Wild claims situation is improved (2020+)</p> <p>Acceptance of carnivores in society is increased (2020+)</p> <p>Conservation status of Habitats Directive species of fish and aquatic habitat types is improved by 50% and 100%</p> <p>Status of threat in a minimum of 15% of fish species is improved (2020+);</p> <p>Good condition or good ecological potential according to the Water Framework Directive are 2015 or 2021/2027 reached;</p> <p>Fishing sector is sustainable (2020+).</p>	
5 Tourism and leisure activities are in line with biodiversity objectives	<p>Biodiversity objectives are integrated into tourism policies and guidelines (2020+)</p> <p>Cooperation between tourism and nature conservation is enhanced (2020)</p>	
Area of action Reduce biodiversity pressures		
6 Energy supply is biodiversity-friendly	<p>Suitability or exclusion areas for wind power are defined Austrian-wide (2020)</p> <p>Renewable energy out of biomass is provided increasingly out of waste and by-products as far as appropriate (cascading use) (2020+)</p> <p>Use of hydropower only ecologically at suitable locations and adapted to ecological requirements (2020+)</p> <p>Illumination systems are altered to biodiversity-friendly systems (2020)</p>	8
7 Pollution is reduced	<p>Exceedance of critical loads is reduced (2020)</p> <p>Surface water and groundwater have a good chemical status by 2015 or 2021/2027 according to the Water Framework Directive</p>	8
8 Negative impacts of invasive alien species are reduced	<p>EU Regulation for IAS is implemented (2019) and regulations for Neobiota in relevant EU-frameworks according to the EU biodiversity strategy are implemented</p> <p>Information on alien species are up-dated (2019)</p> <p>Awareness for alien species is increased (2020+)</p>	9
9 Incentives endangering biodiversity including subsidies are eliminated or altered	<p>Relevant financial incentives are adapted to meet biodiversity-friendliness requirements (2020+)</p>	3
Area of action Conserve and develop biodiversity		
10 Conservation status of species and habitats is improved	<p>Conservation status of 36% of habitats and 17% of species of the Habitat Directive improved by 2020 compared to 2007 (2020)</p> <p>Status is "secure" or improved for 78% of bird species under Birds Directive (2020)</p> <p>Acceptance for Natura 2000 has increased in selected stakeholder groups including land users (2020)</p> <p>Status of threat is improved according to a priority setting</p>	5, 10, 11, 12, 14, 15

	<p>(2020+)</p> <p>A quantitatively adequate, functional habitat connectivity is established (2020+)</p> <p>15% of degraded ecosystems are improved or restored (2020+)</p> <p>Natural processes take place in 2% of Austria's total area (2020+)</p> <p>Climate mitigation measures are set, measures of the Austrian Climate Change Adaptation Strategy in relation to biodiversity are implemented (2020)</p>	
<p>11</p> <p>Biodiversity and ecosystem services are taken into account in spatial planning</p>	<p>Daily land consumption is significantly reduced (2020+)</p> <p>Regional thresholds for land consumption are defined (2020)</p> <p>Priority areas for ecological functions (green infrastructure) are taken into account and are implemented in local and regional spatial planning (2020+)</p> <p>Ecological permeability is significantly increased for main roads (2020)</p>	<p>2, 5</p>
<p>Area of action Secure global biodiversity</p>		
<p>12</p> <p>Contribution to conserve global biodiversity is done</p>	<p>Nagoya Protocol is ratified (2014)</p> <p>Proportion of biodiversity related funding in percent of the public development cooperation (ODA) is increased (2020+)</p> <p>Awareness of the impact of consumption on biodiversity and resources is strengthened (2020+)</p> <p>Capacity building for avoiding GMOs and for constituting an agriculture that is sustainable and adapted to local constraints in developing countries has been carried out (2020)</p>	<p>16, 18, 20</p>

2.2 How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

In 2012, a participatory process was initiated by the Austrian Federal Ministry for Agriculture, Forestry, Environment and Water Management and the Austrian Provinces aimed at developing a new strategy. The Environment Agency Austria has been commissioned to organise a series of specific workshops and to prepare a draft strategy. An evaluation of the former strategy has been carried out as well. The draft strategy has been discussed within the National Biodiversity Commission consisting of representatives of all relevant ministries, authorities of the Austrian provinces, land owner associations, universities, NGOs etc. There is a principal commitment of all sectors for the implementation of Austria's biodiversity targets. The Biodiversity Commission was recently constituted and will work actively on the implementation and act as a nation-wide coordination group.

The objectives and specific targets of the strategy were formulated to meet the 2020 Aichi Targets. Additionally, the EU Biodiversity Strategy 2020 was taken into account with a focus on the implementation of the Habitat and Bird Directive. There are specific targets and measures formulated for all relevant sectors such as agriculture and forestry, hunting and fishery, tourism, energy supply, spatial planning, companies as well as the general public and private households including awareness raising measures. For all targets, the authority or authorities responsible for taking measures have been determined.

A prioritisation process with regard to species and habitats was launched using Red List and national responsibility criteria; it is intended to lead to spatially explicit management guidance.

2.3 What actions has your country taken to implement the Convention since the Fourth Report and what have been the outcomes of these actions?

Protected areas

Approximately 27% of the territory of Austria is protected under various nature conservation categories: 16% as Natura 2000 sites, national parks or nature conservation areas, and 12% as less strictly protected sites, such as landscape conservation areas or biosphere parks.

*Table 6: Protected Areas in Austria, Source: Ninth (2010) and Tenth (2013) Environmental Control Report of the Environment Agency Austria ("Umweltkontrollbericht"). Data from 2014 were provided by Environment Agency Austria and Ämter der Landesregierungen Österreichs. *Data from 2013, **overlapping areas are excluded.*

Category	Number (2009/2012/2014)	Area (km ²) (2009/2012/2014)	% of national territory (2014)
National Parks (IUCN II)	6 / 6 / 6	2,353 / 2,373 / 2,373	2.8
Natura 2000 Sites	159 / 185 / 191	11,557 / 10,373 / 11,343	13.5
Nature Conservation Areas	442 / 452 / 454	2,992 / 3,005 / 3,024	3.6
Landscape Conservation Areas	247 / 246 / 247	12,696 / 12,477 / 12,337	14.7
Nature and landscape conservation areas	4 / 4 / 4	506 / 506 / 506	0.6
Protected parts of landscapes	347 / 345	86 / 85	0.1
Nature parks	48 / 49 / 50	4,143 / 4,098 / 4,139	4.9
Ramsar sites	19 / 22*	1,380 / 1,261*	1.5
Biosphere parks	6 / 3 / 3	1,525 / 1,433 / 1,433	1.7
Other conservation areas	40 / 42 / 42	1,507 / 1,483 / 1,483	1.8
Total			28**

The implementation of the Habitats and Birds Directives of the European Union is continuing. Responsible for the implementation of Natura 2000 in Austria are the federal regions (Länder). Management plans and local administrators have been appointed for some but not all sites.

Within the prioritised action framework (PAF) for Natura 2000 prepared for the EU Multiannual Financing Period 2014-2020, the strategic priority in relation to Natura 2000 is laid on enhancing and promoting the positive effects of Natura 2000 measures in other policy fields such as sustainable tourism, creating new jobs and reacting to climate

change so as to be better able to make use of new financing options in connection with these positive synergy effects. Priority measures are described and assigned to the target species and habitats or Natura 2000 sites.

In implementing the Ramsar Convention on Wetlands of International Importance, since the last national report, three new Ramsar Sites have been designated in Austria: Autertal/St. Lorenzener Hochmoor (Carinthia), Güssinger Teiche (Burgenland) und Wilder Kaiser (Tyrol). By the end of 2013, Austria had designated 22 Ramsar Sites with an area of 126,141 hectare. More Info:

www.umweltbundesamt.at/umweltsituation/naturschutz/sg/ramsar_gebiete/

An Austrian Floodplain Strategy (Auenstrategie) and a Wetland Strategy (Feuchtgebietsstrategie) are currently in preparation.

At the Federal Province level, several concepts, guidelines and strategies are being continuously developed or updated. The Nature Conservation Charta of Lower Austria, for example, focuses on regional conservation activities for species and habitats, the support of protected areas and on landscape features outside of protected areas. Cooperation with agriculture, forestry, hunting and fishery as well as with tourism is described as essential. The Charta is the commitment of the province of Lower Austria to ensure up-to-date, integrative nature conservation, with an emphasis on joint development for nature and people for the next 15 years. In the nature conservation concept for Lower Austria specific targets have been formulated for all of its 26 regions.

https://www.noelgov.at/bilder/d54/Naturschutzcharta_Datei_zum_Download.pdf,

https://www.noelgov.at/bilder/d54/Naturschutzkonzept_NEU_2.pdf

Upper Austria has developed guidelines for 41 regions differentiated according to their landscape characters. On the basis of a comprehensive analysis of the status quo and development scenarios, an extensive list of measures was elaborated. These guidelines are presented in a user-friendly way via the internet.

www.landoberoesterreich.gv.at/cps/rde/xchg/ooe/hs.xsl/nala_DEU_HTML.htm

In addition, also "wilderness areas" are being discussed in particular in the context of the Austrian National Park Strategy but also by some NGOs in Austria regarding the European Wilderness Preservation System.

Protection of species diversity

Several species protection projects have been continued or started since 2010. These include re-introduction programs (e.g. Northern Bald Ibis, Bearded Vulture, Ural Owl) and specific species protection projects (e.g. Great Bustard, Saker Falcon, Imperial Eagle).

- The Great Bustard (*Otis tarda*) is a globally threatened species. The global population totals approximately 50,000 individuals, with about 2,400 living in Central Europe. Collisions of immature and adult birds with overhead power lines were the most significant mortality factor in Austria for many years. Within the first LIFE Project (2005-2010), 47.4 km of medium voltage power lines were undergrounded and 153 km high voltage power lines marked. The main aim within the LIFE+ Project (2010-2015) is the continuation of these measures in other areas, i.e. creating larger power line-free areas in combination with habitat management. More information: www.grosstrappe.at/indexe.html
- Nesting support measures for Saker Falcons (*Falco cherrug*) by BirdLife Austria, the Research Institute of Wildlife Ecology of the University of Veterinary Medicine

Vienna and the Austrian Power Grid AG helped improving the population trend for the species since 2010: 26 breeding pairs raised 37 young birds in 2012.

- In 2011, for the first time since 200 years, Imperial Eagles successfully reproduced again in the Donau-Auen National Park. The protection of large and high but strong trees in undisturbed areas that can serve as aeries is one goal within a co-financed cross-border project within the European Regional Development Fund.
- The main objective of the LIFE+ project "Reason for Hope" (2014-2019) is the reintroduction of the critically endangered Northern Bald Ibis (*Geronticus eremita*) in Europe as a migratory bird, including a migration tradition. In 2019, the population should reach a minimum of 120 migratory birds to exceed the Minimum Viable Population Size. The majority of birds will be electronically monitored by GPS trackers, particularly during their migration journeys. Genetic screening will optimise genetic variability. Human-led migrations with hand-raised juveniles will be performed using juvenile birds from sedentary free-flight colonies and zoo colonies. Public relations activities, the continuation of persistent media coverage and the increasing presence of the species are designed to raise awareness and establish the bird as a flagship species for animal protection, for sustainable land use and for the value of biodiversity.
- CORO-SKAT (Conservation of Raptors and Owls) is an Austrian-Slovakian Project for the cross-border protection of storks, raptors and owls, financed by the European Regional Development Fund, the Lower Austria Federal Province and the Slovak Ministry of Construction and Regional Development. More information: www.birdlife.at/coro-skat/

Austrian Rural Development Programme (ÖPUL)

The Austrian Agri-Environmental Programme (ÖPUL) plays a major role in conserving biodiversity. Agri-environmental and ecological forestry measures promote management methods which protect biodiversity. The graph shows that on about 10% of the agriculturally utilised area, measures to safeguard the diverse appearance of the cultivated land and the cultural characteristics of the countryside are being carried out with the help of subsidies. Since 2001, the measures aimed at the maintenance of meadow orchards and the support of small-scale structures have been promoted as independent measures under the programme (before, they were part of the measure "Tending of ecologically valuable areas").

The year 2007 marked the start of a new programme planning period (RD 07-13); it brought about a revision of the programme to promote agricultural production methods compatible with the requirements of the protection of the environment, extensive production and maintenance of the countryside. Experience from earlier periods shows that this often leads to the abandonment of farms but can also result in a temporary withdrawal from the environmental programme. The decline of areas observed in 2000 and 2007 clearly demonstrates this fact. In the course of the programme period, the areas involved in nature conservation measures increased.

The new Rural Development Programme (2014-2019) has been developed recently and will come into force after its adoption by the European Commission in 2015.

In 2012, 21,352 Austrian farms operated under the organic scheme on an area of 553,230 hectares, accounting for 19.6% of the agriculturally utilised area. This is a slight decrease (1% and 0.7%, respectively) compared to the preceding year. The share of organic farms in the total number of holdings is 16.5%. In 2011, the share of organic food in total food sales in the fresh food sectors of supermarkets (not including cereal products) amounted to about 7% in Austria. Organic shares in food retail trade increased by 18.7% in terms of values from 2009 to 2010.

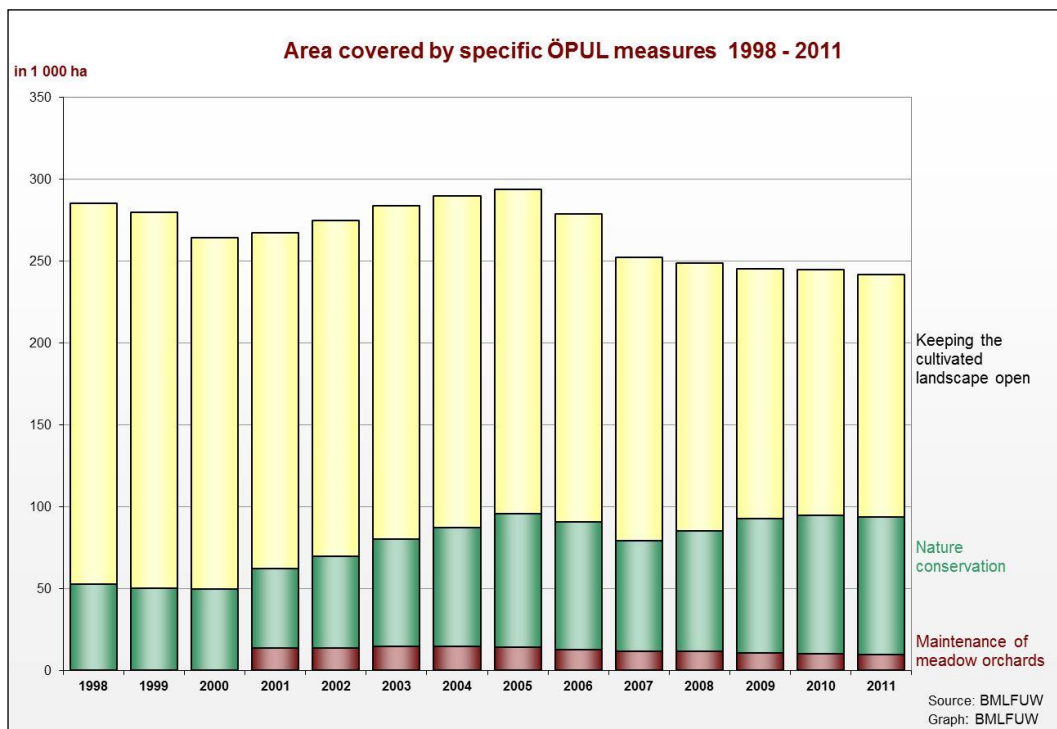


Figure 21: Data source: Integrated Administration and Control System (IACS), BMLFUW.

Definitions:

The following measures of the Austrian ÖPUL Agri-Environment Programme are taken into account:

"Keeping the cultivated landscape open"; "Maintenance of meadow orchards"; "Small-scale structures"; "Tending of ecologically valuable areas", "Creation of new landscape elements" were summarised under the heading "Nature Conservation".

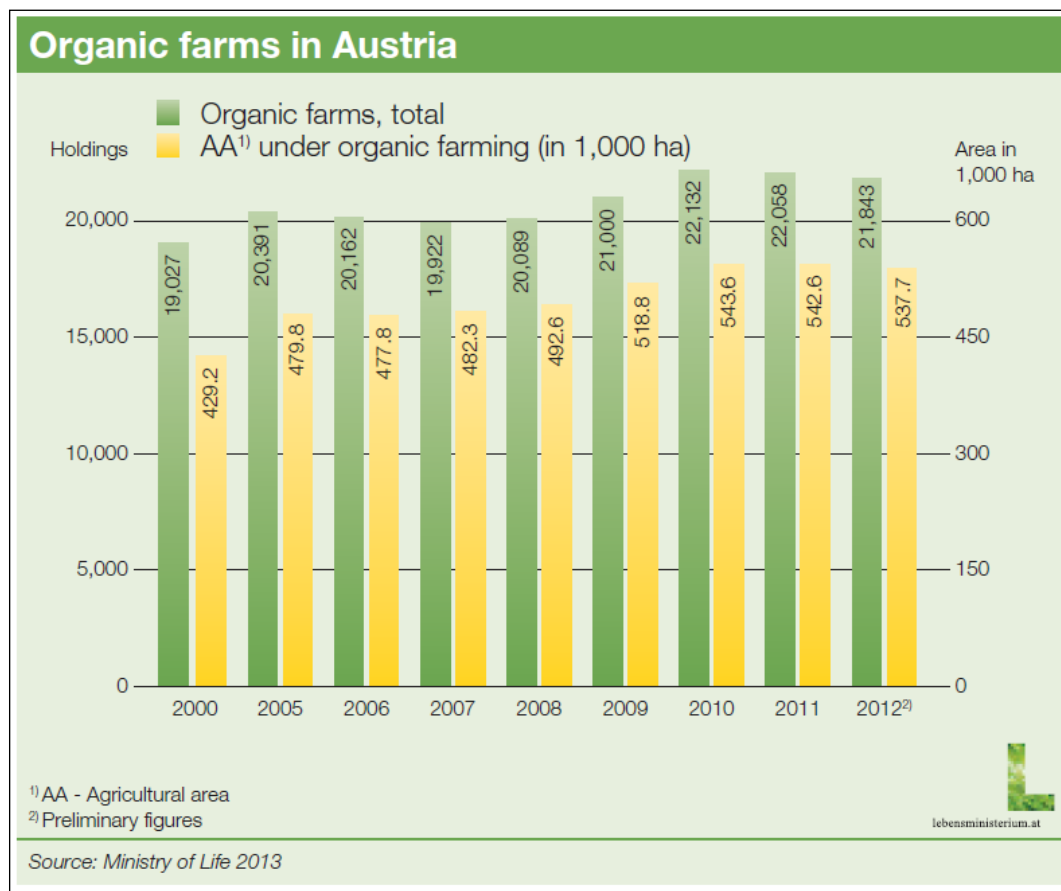


Figure 22: Absolute numbers of organic farms. Data source: BMLFUW, AMA.

Agricultural budget

In 2012 2,132 million Euros from the EU, from federal and provincial funds were spent on agriculture and forestry. As the determination of the areas of Alpine pastures is still under way, a comparison with the preceding year is possible only to a limited extent. Smaller amounts were granted in Pillar 2 of the CAP, in particular in Axis 1 due to smaller grants for investment support. In Axis 3, Quality of Life and Diversification, the amount paid out decreased by 16% compared to 2012. Also in Axis 4, fewer payments were carried out than in the preceding year. For payments for measures funded exclusively from the national agricultural budget, only minor reductions over 2011 were recorded. Under the first pillar of the CAP (market organisation), 734 million Euros were granted to 111,556 farms and over 100 enterprises of the food industry. Based on 2.10 million payment claims, 108,635 holdings received single farm payments of altogether 608.2 million Euros in 2012 (as of May 2013). A total amount of 94.8 million Euros was transferred to 48,519 suckler cow farms and 34,941 dairy farms in 2012. Within the framework of the Rural Development Programme (Pillar 2 of the CAP) 1,104 million Euros (of which 534 million Euros were EU funds) were spent on approximately 124,500 farms and about 4,250 other applicants. This amount accounted for about 50% of the expenses in the agricultural budget of 2012. Distribution by axis including LEADER: 74% of the funds were allocated to Axis 2 with the two measures of highest budgetary significance: 'Compensatory allowance for less-favoured areas' and the Agri-Environmental Programme (ÖPUL). 14% were available for Axis 1. 10% were paid on Axis 3 measures; the remaining amount was shared between Axis 4, Technical Assistance, and community initiatives. – In 2012, 110,274 holdings with an AA of 2.17 million hectares (not including Alpine pastures and mountain meadows) participated in the Agri-Environmental Programme (ÖPUL). This accounts for 76% of all Austrian farms and for 89% of Austria's total AA. A total amount of 526.33 million Euros was paid out (as of May 2013). – 90,177 farms – 64,436 of them mountain farms – received compensatory allowances (CA) of altogether 239 million Euros. 1.36 million hectares of land (not including Alpine pastures and mountain meadows) were managed by CA farms; for this measure, these account for approx. 62% of Austria's AA (as of May 2013).

Austrian Climate Change Adaptation Strategy

The objective of the Austrian Climate Change Adaptation Strategy that was adopted in 2012 is to avoid the adverse effects of climate change on the environment, society and the economy and to fully utilise any opportunities that may arise. The Austrian adaptation strategy is to be seen in the context of sustainable development, aiming to ensure the country's economically efficient, socially equitable, and ecologically sound future development. It is therefore embedded in, and related to, other strategies and programmes from different sectors and a cross-cutting issue. A first updated version of the Austrian adaptation strategy is envisaged for the end of 2015.

The social aspects and consequences of climate change and adaptation measures should also be integrated into the implementation of existing programmes and initiatives such as the ÖSTRAT Work Programme 2011ff, the Austrian Climate Initiative "Klima:aktiv" and the Climate Alliance (Klimabündnis).

The klima:aktiv pakt2020 is Austria's climate pact created by the Austrian Ministry of Agriculture, Forestry, Environment and Water Management. The obligation to put integrated concepts into practice and the long-term commitment of partners up to the

year 2020 has created a unique group of pioneering businesses. The CO₂-savings target for 2020 is set at more than 1.3 million tons of CO₂.

Global Strategy for Plant Conservation (GSPC) 2011-2020

At COP10, a consolidated update of the Global Strategy for Plant Conservation (GSPC) 2011-2020 was adopted. A national working group led by the Botanical Garden, University of Vienna, was prepared with regard to reaching the targets of the previous period, developing the "Roadmap 2011-2020" for further implementation of the Strategy in Austria by 2020. While some targets have been successfully achieved, others have not. A calculation of the costs for implementing selected targets of the Strategy amounted approx. 86.000 Euros annually.

Activities for genetic diversity

Genetic diversity constitutes a central element of biological diversity, guaranteeing opportunities for adapting to changing environmental conditions (e.g. climate change, diseases) as well as providing food security. We still do not know enough about the genetic diversification of wild living organisms, although new and increasingly efficient technologies may help provide better data in the future. Genetic diversity is usually considered in safeguarding old local varieties of crops, vegetables, fruits and domesticated animals. There is a wide public and political acceptance to support local varieties in local and private cultivation farming, with earmarked funds being offered. For example, more than 500,000 people have signed a petition against the (later rejected) new EU seed regulation.

The project Green Heritage II is aimed at securing the production resources of the Austrian forestry and timber industry on a sustainable basis. The focus is placed on the validation of molecular genetic markers for production-relevant parameters for spruce. Spruce is the most important tree species in Austria due to its high economic and ecological value. Its productivity and resilience are massively affected by stress factors caused by climate change. Existing phenotypic, climatic and molecular biological data on the drought and sprouting behaviour of spruce are used to assess selected Austrian spruce stands for their suitability as future seed sources.

The preservation of a high genetic diversity of forest tree species is an imperative to ensure the adaptation capacity in view of climate change. The goal is that forest stands of high genetic value should be represented as much as possible in all growth areas. To

Box 6:

Arche Noah was established in 1990 to work for conserving seeds and heirloom varieties. Hundreds of members of ARCHE NOAH act as private "seed savers" by cultivating endangered varieties in their home gardens and taking permanent care of them. They provide seeds to other seed savers, and study and develop their varieties. ARCHE NOAH in a responds to the loss of agro-biodiversity with a positive vision and numerous activities. (www.arche-noah.at/english/about-arche-noah)

conserve genetic diversity of forest tree species in Austria 339 gene reserve areas (9,400 ha) and a seed bank are available.

Various data banks (incl. gene banks) have been established contributing to the in-situ preservation of agricultural biodiversity in particular, including medicinal herbs:

[http://www.genbank.at/;](http://www.genbank.at/)

<http://www.genbank.at/nc/ages-heilkraut/hinweis.html?zurueck=ages-heilkraut.html;>

[http://www.ages.at/ages/landwirtschaftliche-sachgebiete/pflanzengenetische-ressourcen/pflanze-des-monats/pflanze-des-monats-juli-malve/;](http://www.ages.at/ages/landwirtschaftliche-sachgebiete/pflanzengenetische-ressourcen/pflanze-des-monats/pflanze-des-monats-juli-malve/)

[http://www.ages.at/index.php?id=19752&L=0&sword_list\[\];](http://www.ages.at/index.php?id=19752&L=0&sword_list[];)

[http://www.baes.gv.at/pflanzensorten/oesterreichische-beschreibende-sortenliste/;](http://www.baes.gv.at/pflanzensorten/oesterreichische-beschreibende-sortenliste/)

[http://www.ages.at/ages/landwirtschaftliche-sachgebiete/saat-und-pflanzgut/biosaatgut/bio-saatgutdatenbank/;](http://www.ages.at/ages/landwirtschaftliche-sachgebiete/saat-und-pflanzgut/biosaatgut/bio-saatgutdatenbank/)

[http://www.ages.at/ages/landwirtschaftliche-sachgebiete/bienen/pollenanalyse-pollendatenbank-pollen-des-monats/\)](http://www.ages.at/ages/landwirtschaftliche-sachgebiete/bienen/pollenanalyse-pollendatenbank-pollen-des-monats/)

Restoration of functional connectivity

Habitat fragmentation is considered one of the most important threats to the continuous survival of many populations due to reproductive isolation, decreasing effective population sizes and therefore increasing local stochastic extinction events. The European Commission has adopted a Green Infrastructure Strategy (COM(2013) 249 final) that aims to reconnect fragmented natural areas, improve their functional connectivity, encourage a better use of nature-based approaches to tackle climate change and improve resource efficiency through more integrated spatial planning and the development of multifunctional zones that are capable of delivering benefits to both biodiversity, the land user, and to society at large. Green Infrastructure is also a vital component of the EU Biodiversity Strategy (COM(2011) 244 final). Since 2010, several projects have been continued or initiated, aiming to improve connectivity and reduced fragmentation in Austria.

The corridor between the Alps and the Carpathians is a traditional migration route for wildlife, e.g. deer, lynx, or bear. In the framework of an ongoing project (AKK Centrope 2009-2012 "Implementation of measures along the Alps-Carpathians passage in the region Centrope"), exemplary activities such as spatial planning and habitat management are employed to enable and ensure the migration and genetic exchange between wild animal populations. It aims to establish unrestricted passages for wild animals in the border region between Slovakia Austria, to foster trans-sectorial activities to secure ecological networks and to strengthen awareness of the importance of undisturbed green areas and eco-friendly land consumption. More information: www.alpenkarpatenkorridor.at/

Within this project, the Austrian motorway company ASFINAG fulfilled parts of its obligation stemming from the "Habitat Connectivity" directive (released by the Federal Ministry of Transport, Innovation and Technology) to install wildlife overpasses above existing motorways. One wildlife overpass was built in 2013 and one is currently being built (2014). A feasibility study for another four overpasses to restore other important wildlife corridors in Austria is being carried out at the moment.

Austria contributes approx. 1,300 km to the European Green Belt. Valuable habitats along the former Iron Curtain form a large habitat network that supports an impressive

number of rare and endangered animal and plant species. The Austrian League for Nature Conservation (Naturschutzbund) coordinates land purchase, management activities and public awareness. The annual Green Belt Camp along the river Malsch brings together volunteers from Austria and the Czech Republic to collaborate in management activities. Within the initiative "Natura 2000 erleben am Grünen Band", six new Natura Trails were established between 2010 and 2012. More information: www.natura2000amgruenenband.at/

Austria contributes to the European "GreenNet"-project that aims to support and strengthen policies, strategies and approaches to safeguard the Green Belt ecological network. It focuses on legally non-protected or less-protected ecologically valuable areas in the Central European Green Belt. The development and implementation of a joint transnational strategy for managing and securing these areas as stepping stones will be developed as a basis for the closure of gaps between protected areas. More information: www.greennet-project.eu/

The biodiversity of the Green Belt is particularly high in the March-Thaya-Auen (Morava-Thaya floodplains). A recently conducted project aims at preserving biodiversity in the floodplains by "wise use" management by developing of a bilateral protection concept and organising cross-border activities while respecting the protective guidelines, establishing and intensifying communication structures between regional and local authorities, land users, and NGOs and informing and raise public awareness. More information: www.march-thaya-auen.at/projekte/ramsar-skat/

Within the "Restoration of the Lower Morava Floodplains" Life+ project, ambitious restoration measures will be implemented between 2011 and 2017. The aim of the project is to restore near-natural river dynamics in the Lower Morava floodplains as well as to foster land-use practices that preserve biodiversity and to specifically preserve endangered species and habitat types. Cut-off river branches will be reconnected, artificial riprap and traverse barriers will be removed and a framework for a sustainable, cross-border fisheries management developed. In the floodplain area, the objectives focus on the extensification of land use by converting cropland into grassland, including grassland management by traditional grazing (e.g. Konik horses), and on the invasion of alien species (Maple Ash, *Acer negundo*) control. Specific measures for the preservation of typical and highly endangered habitats and species (e.g. Storks, Kites, Eagles, Common Tern, European Weather Loach, Triops) will be implemented. More information: www.life-march.at

Within the "Traisen" Life+ project, the lower reaches of the river Traisen between Traismauer and Zwentendorf are to be replenished with a lively floodplains landscape, including the restoration of habitat for typical wetland flora and fauna, the re-connection with the surrounding countryside and bodies of water in the wetlands, and improving fish accessibility and traversability. More information: www.life-traisen.at/lt/en/project-life-traisen

Within the "Mostviertel-Wachau" Life+ project (2009–2014), it is planned to continue and expand previous successful efforts to restore floodplain habitats and improve fish habitats in the Ybbs river, the mouth of the Pielach river and the Wachau region. More information: www.life-mostviertel-wachau.at/

The largest Life+ project (14 million Euros) in Austria, the "Danube Network", aims to improve fish habitat and accessibility in the Danube through the construction of new bypass channels by 2017. More information: www.life-netzwerk-donau.at/ld/en/project-life-danube-network

The last few years have seen a large number of nature reserves being established in Burgenland and neighbouring Hungary. Within the European Territorial Co-operation Interreg programme (ETZ AT-HU), the "PaNaNet" project aims to establish a network of nature and national parks in Burgenland and West-Hungary and to develop a regional nature tourism network. The goal of the project is to increase acceptance and to inform the population of the importance of reserves for its quality of life and for the economy. www.panenet.eu

The Neusiedler See-Seewinkel and Fertő-Hanság areas are two of the most important nesting areas of migratory birds in Europe. Cross-border cooperation in exploring the economic and scientific potential of bird watching and monitoring including the management of natural resources is the goal of the European Territorial Co-operation (ETZ AT-HU) Interreg programme titled "Vogelwarte Madárvárta Neusiedler See – Hanság: Building and expanding the bird watching infrastructure in the Hungarian—Austrian Ramsar sites of Lake Fertő and the Hanság".

The focus of the "Ausseerland" (2013-2019) LIFE+ project, coordinated by the Austrian State Forest Enterprises (Österreichische Bundesforste AG), is on improving structural diversity, including a high share of deadwood, in the forests within the region such as the N2K-sites "Dachstein Plateau" and "Totes Gebirge", as well as on improving the function of ecological corridors between the mountainous areas, e.g. by creating a "grouse habitat network" for wood grouse and black grouse through the development of "stepping stones" between the two N2K sites on some 300 ha. Accordingly, the "Mitterndorfer habitat network" will be created, a system consisting of peatlands and wetlands, 150 ha of which will be nominated for inclusion in the Natura 2000 network after restoration. Furthermore, species-specific activities will be carried out, e.g. to support stone crayfish, yellow-bellied toad, Italian crested newt, bullhead and other freshwater fish. More information: www.oebf.at

Food quality and control in Austria

A new initiative called "Lebensmittel sind kostbar" ("Food is precious") was launched in 2013 by the Ministry for Agriculture, Forestry, Environment and Water Management. Approximately 157,000 tons of packed and unpacked foodstuffs and food waste are disposed of as residual waste in Austria every year, worth some 300 Euros per household and year. A careful handling of food – in households as well as in food production, trade and restaurants – is considered an urgent necessity for financial reasons but also for ethical and social considerations and for securing resources. The initiative is aimed at achieving a sustainable avoidance and reduction of food waste in close cooperation with the economy, with consumers, municipalities and social institutions. By the end of 2016, a 20% reduction is to be achieved.

At present, 8 Protected Designations of Origin (PDO) and 5 Protected Geographical Indications (PGI) for agricultural products and foodstuffs which are produced, processed and prepared in Austria are registered. Detailed information can be retrieved from the website www.traditionelle-lebensmittel.at. The national register of "Traditional Austrian Food" describes the traditional knowledge inherent in foodstuff anchored in Austria for at least 3 generations and currently contains more than 200 entries.

Mobility Management

The goal of the National Action Programme for Mobility Management ("klimaaktiv mobil") is to reduce CO₂ emissions, to promote environmentally friendly and energy efficient mobility and to stimulate new innovative business opportunities and green jobs. klimaaktiv mobil is run by the Austrian Federal Ministry of Agriculture and Forestry, Environment and Water Management and supported by the Austrian Chamber of Commerce, the Austrian Association of Cities and Towns and the Austrian Association of Municipalities as part of the implementation of the Austrian Climate Strategy and the EU Climate and Energy Package.

During its first period (2007 to 2012), klimaaktiv mobil has achieved successful results: more than 2.900 project partners are reducing around 530.000 tons of CO₂ per year. klimaaktiv mobil was nominated as one of the five top nominees of the European Public Service Award in 2009 (EPSA) and awarded as European Best Practice.

More information: <http://www.klimaaktiv.at/english/mobility.html>

The ACCESS2MOUNTAIN project aims to achieve durable, environmentally friendly tourism as well as to ensure accessibility and connection to, between and in sensitive regions of the Alps and the Carpathians. With the long-term perspective of increasing sustainable tourist mobility, railway and multimodal connections will be improved and attractive offers created via pre-investment measures, pilot activities, and investments.

More information: www.access2mountain.eu/en/project/default.html

The TRANSDANUBE project aims at developing sustainable mobility along the Danube by promoting train, bus, bike and ship transport to disseminate the concept of sustainable tourism in the whole Danube region. The project contributes to the implementation of the European Strategy for the Danube Region.

More information: www.transdanube.eu

Resource Efficiency

In Austria, the politically approved common social objectives can be found in the National Strategy for Sustainable Development (NSTRAT, BMLFUW 2002) and in the Austrian Strategy for Sustainable Development – Scope of Action for the Federal Government and the Provinces (ÖSTRAT, BMLFUW 2010), as well as in the ÖSTRAT Work Programme, adopted in August 2011. Enacted by the Council of Ministers, the elaboration of a new national sustainability strategy (NSTRAT neu) of the federal government started in October 2011.

The participative process of developing an Austrian Energy Strategy ("Energierstrategie Österreich") was carried out from 2009 to 2011. It aimed at developing a sustainable energy system which provides energy services in the future. The Energy Strategy indicates strategic priorities and measures to achieve these objectives by the year 2020 and guarantees that energy can be provided and used in an environmentally compatible, safe and affordable way.

By elaborating and implementing the energy efficiency package, the Federal Government and the Provinces have created the legal framework for a number of detailed measures. The generation of electricity from renewables is to experience a significant expansion, utilising the potential of hydropower, wind power, biomass and photovoltaics as well a waste heat (district heating in cities and the use of biomass in rural areas). A vital condition for reaching the reduction target is the adoption of a Federal Climate Protection Act with clearly set responsibilities. By implementing the Energy Strategy, up to 80,000 jobs could be safeguarded and newly created.

The Ministry of Agriculture, Forestry, Environment and Water management has commissioned a scientific study on energy autarky for Austria by 2050 ("Energieautarkie für Österreich 2050"). Calculations show that energy autarky is technically feasible and represents a conclusive overall concept from which everybody will benefit: humans, the environment, climate, labour market, and the Austrian economy.

Ecological Footprint

The ecological footprint is a tool for determining and illustrating the land required and the resources consumed. The Ministry of Agriculture, Forestry, Environment and Water Management has set up an online Ecological Footprint Calculator for Austria (<http://www.mein-fussabdruck.at/>) that can be used by anyone wishing to find out about the amount of ecological resources his/her lifestyle requires. The basis of the calculation is the footprint of an "average Austrian". Thus the results are valid only for people living in Austria. A person's individual resource consumption is determined by various questions on housing, mobility, food and general consumption.

2.3.1 Communication and awareness raising

The campaign **vielfaltleben** was launched in 2009 by the Ministry of Agriculture, Forestry, Environment and Water Management in cooperation with many partner organisations – in particular nature and environment NGOs - and has grown ever since. Some 50 species protection projects have been implemented across Austria, contributing to the improvement of the status of more than 500 threatened species and their habitats, e.g. restoring habitats for amphibians in the March-Thaya-floodplains and establishing aeries for saker falcons. A national network of local governments contributing to the conservation of biodiversity has been established. To date, more than 140 municipalities which are members of the **vielfaltleben** network have been addressing more than 600,000 residents. According to information from the Austrian Naturschutzbund, a total of 5 million people have been reached by means of the campaign. 45,000 people received the campaign newsletter; 55,000 persons visited the website, with a total of 1.7 million hits. Every year, a "Week of Biodiversity" is being organised in cooperation with more than 100 partners, staging more than 200 events on biodiversity across Austria. Many other events have been carried out aiming at strengthening the awareness of society on biodiversity. A national conference on "Biodiversity and Health" was organised.

More information: www.vielfaltleben.at

More information: <http://natur-vielfalt.at/gesundheit/home>

National Parks Austria campaign: The Austrian National Parks Strategy proposes and increased public presence of National Parks Austria. Therefore, a joint communication of similarities of the National Parks and the specific features is seen as a purposeful contribution. So far, National Parks have been presented mainly on regional level.

4,500 visitors were counted on the GEO Days of Species Diversity held in Austria's National Parks. About 74,000 students visited the National Parks in 2008; more than half a million visitors were counted in information centres and at exhibitions.

The campaign has the three main communication objectives:

- To significantly increase public awareness of "National Parks Austria" as a nationwide brand in the general public and decision makers;

- To strengthen the positive image of the Austrian national parks
- To extend the tools for awareness raising for National Parks Austria

More information: www.nationalparksaustria.at/

Through its activities, the Austrian National Rural Network called "Netzwerk Land" supports the goals and key topics of rural development. Since 2009, more than 100 events have been organised. The main objectives are:

- To facilitate the exchange of experience and knowledge between the different actors involved in rural development
- To coordinate and collect information at local, national and European level
- To avoid any unnecessary duplication of work, the network will build on previously established organisations and networks specialising in the different 'axes'

The operational tasks of the network include:

- To develop transferable innovative and instructive practices in rural development
- To organise the exchange of experience and knowledge
- To produce training programmes for Local Action Groups (LAGs)
- To provide technical assistance for interregional and transnational cooperation

More information: www.netzwerk-land.at/englisch

Activities fostering biodiversity awareness

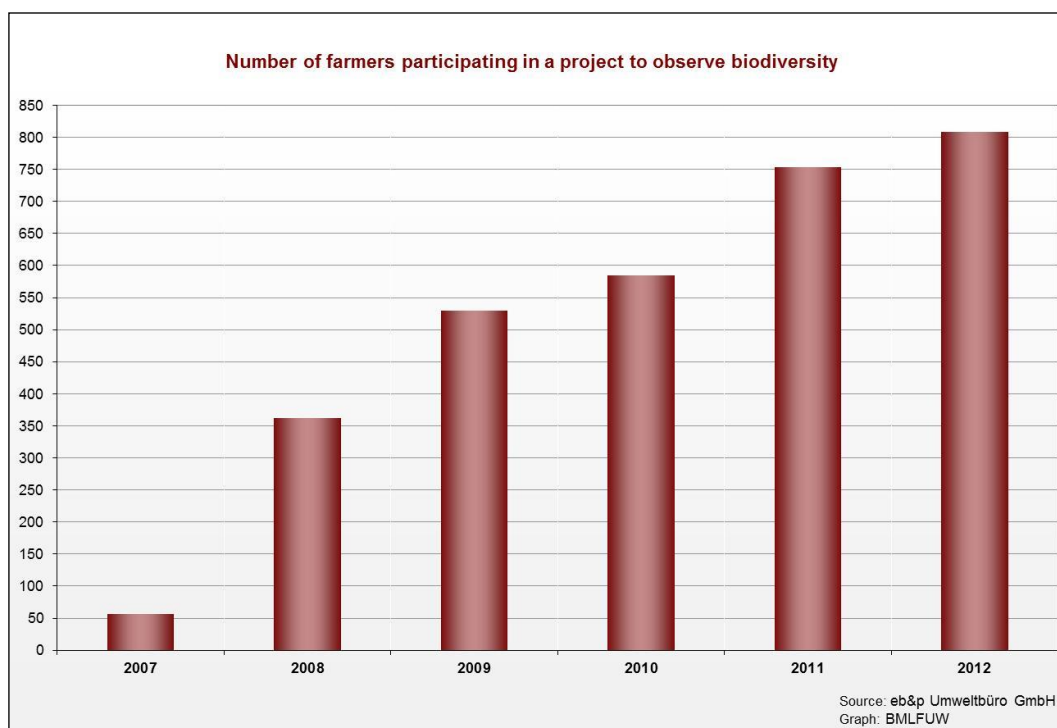


Figure 16: Number of farmers participating in a project to observe biodiversity

In view of their great importance for the preservation of biodiversity, the indicator is to cover measures and offers which foster the awareness of biodiversity as such and enhance people's awareness of the great importance of its maintenance. The graph illustrates farmers' participation in a project involving rough meadows where specific management measures have to be taken and the occurrence of certain plant species has to be observed. Participants are compensated for their additional burden. The project promotes the awareness of the connection between management and biological diversity (www.biodiversitaetsmonitoring.at). Well-informed farmers are more motivated to carry out measures of relevance to biodiversity. The share of participants should therefore be increased further.

2.3.2 Institutional and cooperative mechanisms

National Biodiversity Commission

The Ministry for Agriculture, Forestry, Environment and Water Management reorganised the National Biodiversity Commission in 2014. Its agenda is to deal with all issues related to the national implementation of the Convention on Biological Diversity. One of its main tasks is the implementation of the new Austrian Biodiversity Strategy 2020 and Beyond. In the commission all relevant ministries, representatives of the provinces, the Environment Agency Austria, land owner associations, municipalities, hunting and fishery organisations, national parks, the Federal Research and Training Centre for Forests,

Natural Hazards and Landscape, the Austrian Agency for Health and Food Safety, the Bundesamt für Wasserwirtschaft, science as well as NGOs are represented.

National Parks Austria Committee

A committee was established with representatives of federal and provincial authorities, the national parks and NGOs to foster and support the conservation and development of the Austrian national parks in 2010. The committee elaborates and fosters the implementation of the Austrian national parks strategy and aims at providing support for Austrian wide or joint projects of our national parks.

Austrian Forest Dialogue ("Österreichischer Walddialog")

The Austrian Forest Dialogue was launched in 2003 to cope with the manifold interests regarding the utilisation of forests. It is a major contribution to the implementation of the Austrian Sustainability Strategy, the Austrian Protection Forest Strategy and other programmes by the Ministry of Agriculture, Forestry, Environment and Water Management and the EU Forest Strategy (COM(2013)659 final).

The key implementing tool of the Austrian Forest Dialogue is the Work Programme. It is a "living document" that is being continuously developed. At present, the Work Programme comprises 125 individual measures; 65% of them have already been implemented or are in the process of implementation. Another important part of the Forest Programme is the set of indicators of the Austrian Forest Dialogue which presently consists of 70 individual indicators. The indicators are used to check to which extent the goals set out in the Forest Programme are being achieved. By means of these indicators, actions which may be necessary to ensure and optimise sustainable forest management can be identified.

In 2012, the Forest & Hunting-Dialogue committed itself to the "Mariazell Declaration" ("Mariazeller Erklärung"), aiming to achieve a balanced and sustainable forest and wildlife management. Among the activities is an objective assessment of the impacts of wildlife (e.g. grazing) in forests with the intention to halt and reverse any negative trends.

A position paper on bark beetle management in protected areas was developed by the advisory board of the National Parks Austria in 2013. Conflicts between process-oriented conservation measures in protected areas may arise with legislation and economic interests outside the protected areas. The Austrian Forestry Act requires that active control measures be taken, in particular where adjacent production forests and forests with a protective function for infrastructures and buildings are in immediate danger of being affected.

The project 'Network Natural Forests' (Netzwerk-Naturwald) is a trans-provincial cooperation initiated by Kalkalpen National Park in collaboration with the Gesäuse National Park and the Dürrenstein Wilderness Area. The platform established within the project consists of representatives of the protected areas, landowners, municipalities and other decision makers.

More information: www.netzwerk-naturwald.at/

National Natura 2000 Platform

The Platform was initiated by the Federal Ministry for Agriculture, Forestry, Environment and Water Management. It brings together authorities responsible for the implementation of the EU Directives on Nature Protection with the aim of exchanging information and facilitate coordinated actions.

Development of the Land Information System Austria (LISA)

The overall aim of LISA is to provide current and detailed geospatial information on the status and development of land cover and land use in Austria to public authorities and the private sector. LISA reduces the existing lack of information of different special fields such as spatial planning, forestry, agriculture, water and natural hazard management as well as environmental protection and conservation. Deficits in available data such as oversized scales, an insufficient informational content of object classes, a lack of international standardisation and topicality will be cleared up thanks to LISA data sets. The first mapping will be available in 2018, with a minimum mapping unit of 25 m².

More information: <http://www.landinformationssystem.at/en-us/lisa/overview.aspx>

Other platforms, such as the **Working Group of the Provincial Governments on Nature Protection** also contribute to the implementation of the CBD.

Baseline data

Austria has been an Associate Country Participant of the Global Biodiversity Information Facility (GBIF) since 2001. GBIF Austria, the national 'Participant Node', is available at www.gbif.at and currently hosts more than 4 million records on the distribution of more than 40.000 species from 16 distributed data holders. Approximately 130,000 records are added each year.

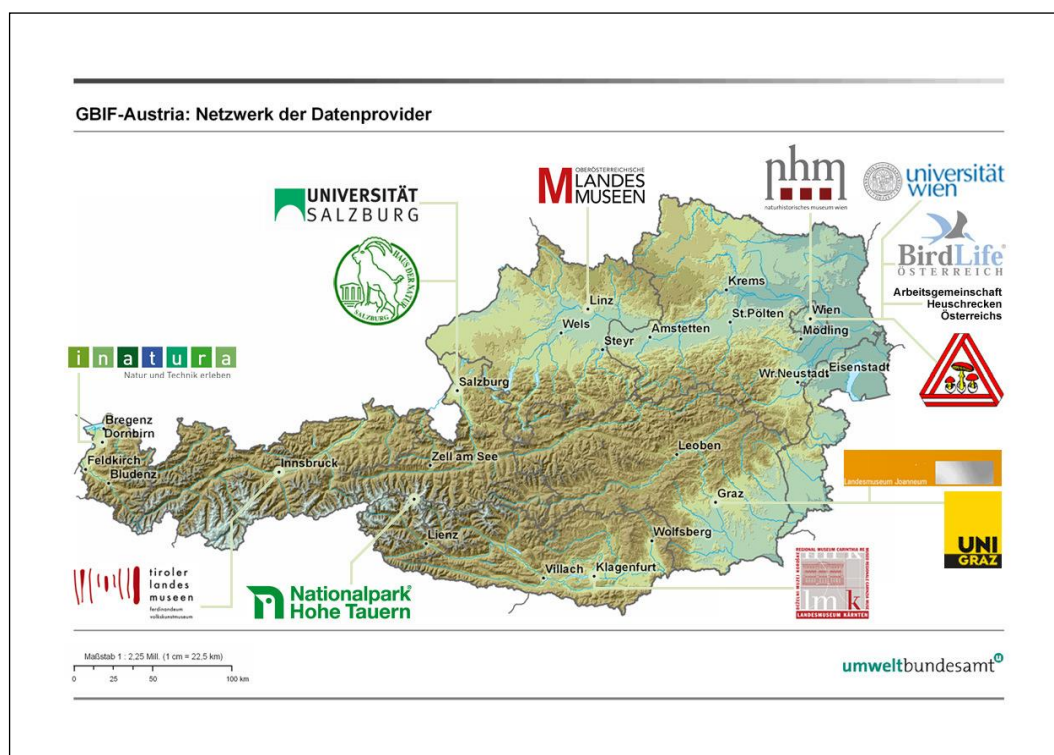


Figure 17: Austrian data providers for GBIF Austria

In 2012, the Austrian Barcode of Life initiative (ABOL) was founded as a collaborative project of several scientific institutions with the objective of registering all species occurring throughout the country (animals, plants, fungi) by means of DNA bar-coding. To record the diversity taxonomically and to make the obtained information accessible for scientific research and practical use is one of the primary aims of ABOL. An important prerequisite for this endeavour is the development of a data base connecting genetic identifiers with taxonomically reliably determined reference specimens. As is the case with similar global and national projects, ABOL will take a decisive step towards exploring and finally guaranteeing biodiversity. Objectives of the initiative are: (1) to record the current biodiversity in Austria both at the level of species and at the level of intraspecific diversity as measured by genetic marker sequences; (2) to enhance the significance of taxonomic research and collection-based research and to boost collaboration between scientists from various institutions using various methodological strategies; (3) to enhance the visibility of research on biodiversity in Austria, which will contribute to its value in the public view and to opinion formation concerning the conservation of nature; (4) to develop reliable, fast and reasonably priced bar-coding methods for certain applications of determining species from unknown samples.

Furthermore, the following data banks provide important information on biodiversity:

- www.emart.at (data bank for implementation of Art. 11 FFH-Directive and Art. 17 FFH-Directive)
- www.ornitho.at (data on birds)
- www.naturbeobachtung.at (data on species provided by "citizens science" and crosschecked by scientists)

2.3.3 Austrian Development Cooperation

The Austrian Development Cooperation (ADC) supports countries in Africa, Asia, South Eastern and Eastern Europe as well as the Caribbean in their sustainable development. The Federal Ministry for Europe, Integration and Foreign Affairs is planning ADC strategies and programmes. The Austrian Development Cooperation aims at reducing poverty, conserving natural resources and promoting peace and human security in partner countries. Long-term programmes and projects support help towards self-help. The ultimate goal is to bring about a sustainable improvement in conditions of life. The Austrian Development Agency (ADA), the operational unit of ADC, is implementing these together with public institutions, non-governmental organisations and enterprises as well as other public actors.

The Strategic Guideline on Environment & Development in Austrian Development Policy was released in 2009 in collaboration with the Ministry of Agriculture, Forestry, Environment and Water Management, the Ministry for European and International Affairs, the Ministry of Finance and other relevant ministries and subordinate agencies and actors from civil society, the private sector and research. The Guidelines aim to provide guidance to all public Austrian actors engaged in environment and development cooperation.

The expenditures of the Austrian Development Cooperation in relation to the protection of global biodiversity are given in Table 7.

Table 7: Expenditures (in Mio Euros) of the Austrian Development Cooperation in order to meet the target of protection of global biodiversity.

I. Projects OEZA/ADA															
CBD-Marker	2006		2007		2008		2009		2010		2011		2012		
	Commitments	%	Commitments	%	Commitments	%	Commitments	%	Commitments	%	Commitments	%	Commitments	%	
CBD specific (Marker 2)	6.14	6.03%	5.90	5.57%	11.83	10.80%	12.92	13.20%	3.59	3.91%	5.54	7.41%	3.71	5.10%	
CBD integrated (Marker 1)	5.94	5.84%	4.24	4.00%	6.95	6.34%	8.34	8.52%	6.65	7.24%	6.23	8.34%	7.97	10.96%	
Total (Marker 1 + 2)	12.08	11.88%	10.14	9.58%	18.78	17.13%	21.26	21.72%	10.24	11.15%	11.77	15.75%	11.67	16.07%	
Total weighted (Marker 1 = 50%)	9.11		8.02		15.30		17.09		6.91		8.65		7.69		
No target (Code = 0)	81.43	80.03%	85.53	80.76%	85.16	77.70%	69.02	70.49%	74.40	81.02%	55.93	74.86%			
Not included (Code = X)	8.24	8.10%	10.24	9.67%	5.66	5.16%	7.63	7.79%	7.19	7.83%	7.01	9.39%			
Total OEZA (ODA-relevant)	101.75	100.00%	105.91	100.00%	109.60	100.00%	97.90	100.00%	91.82	100.00%	74.71	100.00%	72.65	100.00%	
II. Bilateral ODA total															
	2006		2007		2008		2009		2010		2011		2012		
	Commitments	%	Commitments	%	Commitments	%	Commitments	%	Commitments	%	Commitments	%	Commitments	%	
CBD specific (Marker 2)	6.18	0.72	6.61	0.67	12.26	1.40	13.44	3.48	4.22	0.84	6.17	1.59	4.06	0.74	
CBD integrated (Marker 1)	5.94	0.69	4.24	0.43	9.97	1.14	8.39	2.17	8.15	1.62	7.00	1.80	8.02	1.46	
Total (Marker 1 + 2)	12.12	1.41	10.85	1.10	22.23	2.54	21.83	5.65	12.37	2.46	13.18	3.39	12.08	2.20	
Total weighted (Marker 1 = 50%)	9.15		8.73		17.24		17.64		8.30		9.67		8.07		
No target (Code = 0)	212.68	24.75	252.27	25.42	275.76	31.42	181.07	46.91	458.84	91.27	343.73	88.59	284.16	51.72	
Not included (Code = X)	634.60	73.84	729.46	73.49	579.59	66.04	183.07	47.43	31.54	6.27	31.07	8.01	253.20	46.08	
Total bilateral ODA	859.40	100.00%	992.58	100.00%	877.58	100.00%	385.97	100.00%	502.75	100.00%	387.98	100.00%	549.44	100.00%	
III. Austrian contribution to GEF (1/3 allocated for Biodiversity)															
	2006	2007	2008	2009	2010	2011	2012								
	7.11	9.69	9.69	3.75	3.75	10.20	12.00								

2.3.4 Climate Change Research

With the launch of the Austrian Climate Research Programme (ACRP) within the Climate and Energy Fund, an important conceptual and institutional framework for supporting research questions on issues of climate change and adaptation was established in Austria. Over the past four years, this programme has sought to explore the effects generated by climate change and to create a scientific basis for future-oriented decisions in politics, business, and society. Since 2007, 74 projects have been commissioned, with a budget of over € 12 million. Important contributions are also made by the BMWF research programme proVISION. This programme investigates the effects of climate change on ecosystems, spatial development, and quality of life. In June 2011, the Climate Change Centre Austria, organised in the form of an association, was formally established. Numerous universities and non-academic research institutions have already confirmed their participation.

Box 7: Case study - Adaptive Management Strategies for the Austrian Federal Forests

Results show that the vulnerability of the ÖBf to the consequences of climate change will drastically increase, especially in the second half of the twenty-first century. While the proportion of highly vulnerable forest stock in the period of 2001–2020 is only 5.9% of the total, 39.6% of forests were classified as highly vulnerable in the second half of the twenty-first century. In particular, locations with lower water supplies in calcareous sub-soil will be negatively affected. However, sites at higher elevations could benefit from the effects of climate change.

Based on the results, the ÖBf's internal silviculture guidelines were revised. Since the completion of the project, internal training and workshops have ensured that its findings continue to be communicated to a wider audience.

A newsletter on climate change adaptation has been prepared and made available (www.klimawandelanpassung.at/ms/klimawandelanpassung/de/newsletterregistrierung/kwa_archiv/), providing practical information for governmental decision makers, interest groups. In recent years, several Austrian web platforms were launched with the intent to transfer information from politics and research to the general public. Well worth mentioning is the website of the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (www.bmlfuw.gv.at/umwelt/klimaschutz/klimapolitik_national/anpassungsstrategie) which reports on the ongoing political process on adaptation to climate change at the national level.

In November 2010, the climate research department of the Central Institute for Meteorology and Geodynamics (ZAMG) opened an information portal on the subject of climate change (www.zamg.ac.at/cms/de/klima/informationsportal-klimawandel). This platform seeks to present sound scientific information on climate change in an understandable form.

2.4 How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

Bringing biodiversity into the mainstream

In order to support a coordinated and harmonized approach at the national level, Austrian Strategy for the Adaptation to Climate Change (2012) provides recommendations in 14 areas for action, with 'Ecosystems/Biodiversity' being one of the areas (Fig. 28). The recommendations are described in more detail in an Action Plan.

Tourism is an important and still increasing economic sector in Austria (7.4% of GDP in 2012) that can have negative impacts on the environment (infrastructure needs, activities). Pristine nature and unaffected habitats are seen as an important competitive advantage for destinations that often are situated in Alpine regions and close to protected areas. The loss of biodiversity, therefore, will have a direct negative impact on tourism. This is also acknowledged in the most recent national strategy for tourism (2010), but biodiversity goals are not explicitly integrated into this strategy which has focusses more on economic aspects.

The transport of goods and people is of high significance to society and economy, yet causes considerable impact on the environment due to land use, fragmentation, pollution and noise. The national Transport Plan (2012) formulates goals and guidelines of the Austrian transportation policy leading up to 2025. It aims, for example, to reduce greenhouse gases by 6% to 2020 and up to 19% by 2025 and to reduce NO_x and particulate matter emissions. The "Electromobility in and from Austria" Action Plan (2012) formulates measures to advance e-mobility in Austria. Increasing use of renewable energy and better energy efficiency will contribute to environmental and climatic targets. The "Cycling" masterplan (2011) describes measures to advance cycling and enhance the share of bicyclist in Austria.

Nr.	Title	Objective	Key Actors
3.10.4.1	Improving the knowledge base through research on the effects of climate change on ecosystems/biodiversity	Advancement of knowledge on the effects of climate change on ecosystems and biodiversity as a basis and support for the implementation of potential measures.	Federal government (BMWF, BMLFUW), state governments, academic and non-academic research institutions, ZAMG, Austrian Academy of Sciences, FWF, Climate and Energy Fund (ACRP, Austrian Climate Research Programme)
3.10.4.2	Increased consideration of climate change in existing monitoring systems and further establishment of monitoring and early-warning systems	Continuation, adjustment, extension, and consolidation of existing or evolving environmental monitoring networks with the overall aim of identifying the effects of climate change on species, habitats, and ecosystem services and applying this information in early-warning systems.	BMWF, BMLFUW, state governments, NGOs, BFW, ÖAW, FWF, universities, Environment Agency Austria, Austrian Climate Research Programme (ACRP), Long Term Ecological Network (LTER), museums (e.g., Zobodat)
3.10.4.3	Integration of climate change into nature conservation concepts	Consideration of the effects of climate change and representation of potential needs for action in nature conservation concepts.	State governments, BMLFUW
3.10.4.4	Strengthening of knowledge transfer on the importance of biodiversity and ecosystems for climate change adaptation in training and increased public relations efforts	Increased integration of the importance of biodiversity for adaptation to climate change of society in education and accelerated public relations efforts.	State governments (nature conservation departments), land users, biodiversity research institutes, NGOs, Ministry of Science, universities, training facilities for the relevant interest groups (e.g., agricultural and forestry training institutions), nature park academies, associations
3.10.4.5	Perpetuation of extensive land use in mountainous and Alpine elevations and in selected locations	Protection of the traditional cultural landscape as a sanctuary for respective species.	EU, BMLFUW, state governments (nature conservation departments), land users, land owners, NGOs, interest groups, agricultural authorities, municipalities, LFZ Raumberg-Gumpenstein, tourism associations
Nr.	Title	Objective	Key Actors
3.10.4.6	Adjustments of offers for leisure and vacation activities	Management and adjustment of leisure activities that threaten biodiversity in favour of sustainable activities.	Associations, businesses, and professionals in the tourist industry, cable-car industry, land owners, protected area administrations, educational institutions, NGOs, interest groups, general public
3.10.4.7	Adjustment in the design of public and private open spaces in residential areas to objectives of nature conservation and climate change effects	Creation of areas of retreat for animal and plant species (including rare and threatened species), improvement of the local climate in populated areas, increase in water retention, adjustment of the design of green spaces to climate change (e.g., selection of species and varieties).	Building owners, municipalities, architects, garden owners, real estate developers, parks departments, educational institutions, Eco Counselling, "Aktion Natur im Garten", BMG, BMLFUW
3.10.4.8	Strengthening of threatened populations and species	Reducing the hazardous situation of species threatened by climate change through restocking or ex-situ conservation (including seed and gene banks).	Land users, associations, conservation departments, protected area administrations, universities, botanical gardens, Environment Agency Austria
3.10.4.9	Maintenance and facilitating the embedding and connectivity of protected areas and habitats	Facilitating the connectivity of habitats and protected areas through the integration of buffer zones and corridors to increase the probability of survival of populations and species, and conservation of the natural value of protected areas under conditions of climate change.	BMLFUW, BMWF, state governments (nature conservation departments), protected area administrations, land owners, NGOs, interest groups, district agricultural authorities, ÖAW, academic and non-academic research institutions, Environment Agency Austria, NGOs, spatial planning authorities
3.10.4.10	Protection of wetland habitats by ensuring the quality and quantity of groundwater and by raising the water storage and retention capacity of landscapes	Protection of wetland habitats by ensuring adequate groundwater quality and quantity under conditions of climate change, and increasing the water storage and retention capability through runoff-retarding measures.	BMLFUW, state governments, land owners, energy producers, water suppliers, interest groups, agricultural authorities, spatial planning, NGOs, ÖBf, universities
3.10.4.11	Promotion of restoration of waters, reinforcement of an integrated watershed management, and prevention of substantial warming of water bodies	Combined flood and biodiversity protection through restoration and a comprehensive treatment of water bodies, as well as the prevention of their substantial warming.	BMLFUW, state governments (nature conservation departments), land owners, energy producers, water management associations, industry, interest groups (e.g., fisheries), NGOs, BOKU, Environment Agency Austria, state hydraulic engineering departments, Via Donau
3.10.4.12	Conservation of ecosystem services in sustainable land use and nature conservation	Awareness-raising regarding ecosystem services in all affected areas under the precondition of sustainable land use and in nature conservation (e.g., contribution to water retention, flood protection, biodiversity, drinking-water formation, CO ₂ binding, etc.) to promote sustainable land use and strengthen nature conservation.	Federal and state governments (nature conservation departments), interest groups/associations, land users, NGOs, agricultural and forestry authorities
3.10.4.13	Consideration of ecosystems/biodiversity issues in a global context	Reduction of indirect negative effects on biodiversity worldwide.	Federal and state governments, ADA, municipalities, industry, Global Responsibility – Platform for Development and Humanitarian Aid, ANRICA (Austrian Natural Resources Management and International Cooperation Agency)

Figure 24: Recommendations for measures within the thematic area 'Ecosystems/Biodiversity' of Austrian Strategy for the Adaptation to Climate Change (2012).

Spatial planning is likely to be the most important sector in need of biodiversity mainstreaming. The goal of the national Sustainability Strategy (2002) to reduce the daily loss of land-use to 2.5 hectares by 2010 has not been achieved, and land-use rates are still above 22 hectares per day. The Austrian Spatial Development Concept (2011) acknowledges the rising consumption of space for transport and settlement and the overuse of natural and cultural resources rooted in the economy which results in a loss of biodiversity in some regions and increased uniformity of cultural landscapes. The Action Plan (ÖREK 2011) within the concept includes selected proposals for action considered important; unfortunately, biodiversity is not explicitly included.

Within the FORNE-Initiative („FORschung für Nachhaltige Entwicklung‘), the Ministry of Education and Women's Affairs, the Ministry for Transport, Innovation and Technology and the Ministry of Agriculture, Forestry, Environment and Water Management are cooperating to strengthen coherent research activities within the national Sustainability Strategy.

A national Action Plan for Corporate Social Responsibility (CSR) is in preparation. It calls for the responsibility of enterprises for their impacts on society.

The aim of the Austrian Energy Strategy (2010) is to develop a sustainable energy system that makes energy services available for private consumption as well as for businesses in the future whilst implementing EU rules. It is foreseen that the renewable energy share of gross final energy consumption will increase from 24.4% (2005) to 35.5% (2020). It also aims to stimulate economy and create ‘green jobs’.

The Austrian Action Plan on Resource Efficiency (REAP) (2012) aims to increase resource efficiency to decouple the environmental impact of material use from economic growth. Although resource efficiency of the Austrian economy is increasing continuously, there still are potentials for improvement, especially in construction waste recycling, the prevention of food waste, the processing of biogenous waste and in the recovery of phosphorous and rare metals from a variety of waste streams.

The Austrian Strategy for Education for Sustainable Development (2008) aims to support a transformation of awareness toward sustainability among teachers and learners alike and also to interlink the actors involved. It is rooted in the goals of the UN Decade of Education for Sustainable Development (2005-2014); the final national report is expected in 2014.

2.5 How fully has your national biodiversity strategy and action plan been implemented?

The National Biodiversity Strategy 2005 was evaluated in 2013 using a questionnaire with the goal of gathering knowledge and experiences of Austrian biodiversity stakeholders as well as on the availability of a profound assessment of the application for the development of the new **Austrian Biodiversity Strategy 2020 and Beyond**. The results of the evaluation show that stakeholders consider the Strategy as very relevant for their field of activities. The Strategy serves as a sound argumentation basis for the implementation of measures, although the majority considered the Strategy in general as well as in some activities as very comprehensive. The targets are clearly formulated, and very ambitious. The action plans are considered as appropriate instruments for specifying the objectives and developing measures. In spite of the outstanding initiatives (e.g. Vielfalt**leben**-campaign; naturbeobachtung.at; biodiversity monitoring with farmers), the awareness of biodiversity needs to be strengthened in many parts of the society.

As far as the preservation of biodiversity was concerned, in-situ objectives and measures have been partly achieved. Particularly effects of climate change need to be taken into consideration and funding improved. Also stronger efforts are needed regarding the protection of species. In terms of landscape conservation, the fragmentation of habitats continues to be major problem, while positive developments were locally observed concerning alien species.

Depending on the respective sector or branch, great differences emerge when it comes to targets achievement and implementation of measures for the sustainable use of biodiversity. For instance, measures related to buffer zones between different landscape types need to be improved.

In the fishery sector, improvement are occurring as a result for measures promoting free fish migration. In tourism, positive steps have been taken towards information and awareness-raising in tourist regions as well as towards the inclusion of sustainable development in education.

The following main conclusions and general recommendations have emerged for the preparation of the new Austrian Biodiversity Strategy 2020 and Beyond:

- The number of objectives and measures will be manageable and eventually prioritised
- Indicators of success and time perspectives will be included
- Responsibilities of implementation will be defined
- Duration until 2020 and beyond
- An Evaluation Committee will be established
- Necessary financial resources will be considered



**PROGRESS TOWARD THE 2015 AND
2020 AICHI BIODIVERSITY TARGETS
AND CONTRIBUTIONS TO RELEVANT
2015 TARGETS OF THE MILLENNIUM
DEVELOPMENT GOALS**

3 PROGRESS TOWARD THE 2015 AND 2020 AICHI BIODIVERSITY TARGETS AND CONTRIBUTIONS TO RELEVANT 2015 TARGETS OF THE MILLENNIUM DEVELOPMENT GOALS

3.1 What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?¹

Progress and contributions to each Aichi Target during the 5th reporting period 2011-2014 are summarised below.

Aichi Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, the Aichi Target 1 will correspond to the objective: People are aware of the values of biodiversity, with the following specific targets:

- Appreciation of biodiversity in society has increased (2020)
- Additional partners of different sectors support biodiversity (2020+)

Knowledge about species, habitats, their often complex dependencies and their significance for human well-being are considered crucial to their conservation. This knowledge must be transferred from science and experts to the general public, stakeholders and policy makers alike. Only a deeper understanding of the complexities will guide personal, business and political decisions that promote a sustainable use of natural resources and their conservation for future generations.

The report "Zustand und Bedeutung der biologischen Vielfalt in Österreich" by the Ministry of Agriculture, Forestry, Environment and Water Management (2013) presents an analysis of 21 indicators from different sectors (species and habitats, forests, alps, cultural landscape, water, soil, nature conservation, fragmentation) and provides a differentiated pattern of the state of biodiversity in Austria.

Governmental, non-governmental and cooperative campaigns (e.g. **vielfaltleben**) will be continued, cross-sectoral platforms established (e.g. business and biodiversity), and these will contribute to an increase of the value of biodiversity in society. Examples of public awareness raising campaign have been given in chapters 2.3.3, 2.3.5, 2.3.7 and 2.3.8.

¹ The targets and objectives of the new National Biodiversity Strategy 2020 and Beyond are use here. However, the Strategy was still under discussion within the National Biodiversity Commission when this report was prepared. Hence, the targets and objective may be altered and the final ones might read differently.

Aichi Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 2 partly corresponds to the objectives: People are aware of the values of biodiversity and Biodiversity and Ecosystem services are taken into account in spatial planning, with the following specific targets:

- Additional partners of different sectors support biodiversity (2020+)
- An ecological infrastructure is implemented in spatial planning (2020+)

Appropriate spatial planning is crucial to safeguarding biodiversity. Between 2009 and 2012, the amount of land being used remained high, at 22.4 hectares/day. According to the Austrian sustainability strategy, the increase of additional land being used every day for building and transport purposes is to be reduced to a maximum of 2.5 hectares. The Austrian conference on spatial planning (ÖREK) 2011 recommends that flood retention areas and floodplains as well as open land or green areas of high natural value should be kept free of encroachments and that existing hazard zone plans should be incorporated into law. Measures designed to allocate land for building purposes are being pursued in nearly all of the federal provinces. In some of the federal provinces, the designation of floodplains and retention areas has already been incorporated into spatial planning regulations. In order to preserve important ecosystem services and green infrastructure, priority sites need to be defined and designated. See Chapter 2.3.5 for more details.

Possibilities for the incorporation of biodiversity aspects into national accounting and reporting systems are under discussion.

Aichi Target 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimise or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 3 corresponds to the objective: Financial incentives with negative impacts on biodiversity are avoided, with the following specific target:

- Relevant incentives including subsidies are being adapted to become biodiversity-friendly (2020+)

Beside legal requirements, incentives and the allocation of subsidies allow the monitoring, timing and steering of measures. Some subsidies may have unwanted negative side effects for biodiversity and should be suspended or reduced. The Strategy suggests that several measures should be worked out in the near future, e.g. the development of criteria to identify subsidies that are harmful to biodiversity and proposes

to analyse impacts of subsidies (including socio-economic aspects) and develop incentives for the conservation and sustainable use of biodiversity.

Aichi Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 4 corresponds to the objective: People are aware of the values of biodiversity and the specific target:

- Additional partners of different sectors support biodiversity (2020+)

A measure of the strategy is aiming at the establishment of a cross-sectoral platform "business and biodiversity" as proposed by a workshop held in 2013 (www.business-and-biodiversity.at). The aims of the platform would be to sensitise and support the business sector with regard to the needs of biodiversity conservation and to inform conservationists regarding the needs of different businesses. Investments into biodiversity can pay off for everybody.

More details on activities regarding the sustainable use of resources can be found in chapter 2.3.6.

Aichi Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation are significantly reduced.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 5 corresponds to the objective: The observation status of species and habitats has improved, with the following specific targets:

- The conservation status of 36% of habitats and 17% of species of the Habitat Directive in relation to 2007 are improved (2020)
- The status of threat according to priority setting is improved (2020+)
- A quantitatively adequate, functional habitat connectivity is established (2020+)
- 15% of degraded ecosystems have improved or are being restored (2020+)

Re objective: Biodiversity and ecosystem services are taken into account in spatial planning, with the following specific targets:

- Ecological infrastructure is implemented in spatial planning (2020+)
- Un-fragmented areas and migration corridors are preserved (2020)
- Ecological permeability has significantly increased for main roads (2020)

Species and habitat conservation measures are the traditional instruments in the management toolbox. Most activities are executed at the local or federal province level, funded by different sources including EU support. A selection of species protection success stories is provided in chapter 2.3.3. Reducing fragmentation and improving

functional connectivity is an agreed goal at the European level. A selection of activities to restore functional connectivity of habitats is provided in chapter 2.3.5.

Aichi Target 6: By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 6 corresponds to the objective: Game and fish stocks are adapted to carrying capacity/habitats, with the following specific targets:

- The fishing sector is sustainable (2020+)

There are only some 50 professional fishers and maybe more than 200,000 private anglers active in Austria. The national demand for fish consumption cannot be covered by far. Only approximately 5% is covered by local aquaculture (see Aichi Target 7) and the largest part (>90%) has to be imported. In 2010, the import volume exceeded 61,000 t of which about 9,000 t was freshwater fish. Fishery policy in Austria is determined by EU Common Fishery Policy. and its prime goal is to maintain the natural diversity of species and the genetic variability of the fish fauna (e.g. by restoring endangered species).

Aichi Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 7 corresponds to the objective: Game and fish stocks are adapted to carrying capacity/habitats, with the following specific targets:

- The fishing sector is sustainable (2020+)

In order to satisfy its demand, Austria depends, to a large extent, on imports of marine and freshwater fish. In recent years, Austria has consistently developed a high-quality fish production. The "Aquaculture 2020" strategy should give a strong impetus to considerably increasing the production of Austrian freshwater fish.

The strategy has the following goals:

- Raising the rate of self-sufficiency for freshwater fish from presently about 34% to 60% by the year 2020. This corresponds to a production increase by 2,400 tonnes to 5,500 tonnes annually.
 - Trout production: Increase from 2,200 t to 4,000 t
 - Carp pond farming: Increase from 750 t to 1,000 t
 - Recirculation systems: Increase from 150 t to 500 t

The "Aquaculture 2020" strategy presents a package of measures that will make an important contribution to the expansion of Austrian aquaculture.

Aichi Target 7 is also corresponding to the objective: Agriculture and forestry support conservation and improvement of biodiversity, with the following specific targets:

- Increase of areas with biodiversity-related agri-environmental measure by 5% (2020)
- Improvement of the conservation status of 100% of the habitats and 50% of the species of the Habitat Directive in agricultural landscapes and forests compared to 2007 (2020)
- 50% of status reviews of bird species of agricultural landscape and forests in 2020 show a stable or improved condition
- The status of threat to 15% of species of agricultural landscape and forests is improved (2020+)
- Turnaround in Farmland Bird Index (2020)
- Amount of deadwood, especially in the previously low-appointed natural areas of the Alpenvorland, Mühl- und Waldviertel and in the Eastern parts is increased (2020+)

More information can be found in chapters 1.2, 1.3, and 2.3.

Aichi Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 8 corresponds to the objective: Pollution is reduced, with the following specific targets:

- The exceedance of critical loads is reduced (2020)
- Surface water and groundwater will have a good chemical status by 2015 or 2021/2027

For more information on groundwater pollution in Austria see Chapter 1.3, on acidification and eutrophication see Chapter 1.3.5 and on light pollution see Chapter 1.3.6.

Aichi Target 9: By 2020, invasive alien species and pathways are identified and prioritised, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 9 corresponds to the objective: Negative impacts by invasive alien species are reduced, with the following specific targets:

- EU Regulation for IAS is implemented (2019)
- National information on alien species is updated (2019)
- Awareness for alien species is increased (2020+)

Invasive alien species (IAS) are non-indigenous species "whose introduction and/or spread threaten biological diversity". In Austria, more than 2,000 alien species have been documented, approximately 90 of which were considered invasive based on expert

opinion in 2004. This amount may have increased recently due to new invaders (e.g. the Asian ladybird *Harmonia axyridis*) or changed if based on a standardised risk assessment methodology. National data and European data suggest a further increase in the near future, further promoted by other drivers of environmental change such as climate change and land-use change. The analysis of pressures and threats of listed habitats of the Habitat Directive has shown that IAS are the most important factor for current and future deterioration. Much progress has been achieved in the last years regarding awareness raising (public exhibitions and conferences, media coverage, dissemination to relevant practitioners, production of leaflets and flyers), scientific research (number of publications increased) and IAS management (control measures and eradication campaigns on the ground, specifically in protected areas).

The new EU regulation on IAS will definitely further change the attitude towards IAS in Europe but will need some years to unfold its full powers. More details on IAS can be found in chapter 1.3.3.

Aichi Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimised, so as to maintain their integrity and functioning.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 10 is related to the objective: Conservation status of species and habitats is improved, with the following specific targets:

- Climate mitigation measures are set, measures of the Austrian Climate Change Adaptation Strategy in relation to biodiversity are implemented (2020)
- A quantitatively adequate, functional habitat connectivity is established (2020+)

for Austria, it is expected that average annual temperatures will increase leading up to 2100 by 2.5-5.5°C and that precipitation will shift from summer to winter. The sooner adaptation measures are taken, the more likely they will be successful. The Austrian Climate Change Adaptation Strategy was adopted in 2012. It aims to avoid the adverse effects of climate change on the environment, society, and the economy and to fully utilise any opportunities that may arise. A first updated version is envisaged for the end of 2015. An advance of the integration of climate change issues into existing strategies from different sectors (e.g. tourism, research) at the national level is needed.

Climate change is a challenge for the resilience and survival of many ecosystems and species. Some may disappear, some may move if they can keep track and find suitable corridor networks, some may profit and increase their range. Stable ecosystems and healthy populations (including high genetic diversity) are generally seen as more resilient against disturbances. While there is little information about the vulnerability of specific species, vulnerable habitats are more easily to identify: glaciers (see Chapter 1.5), forests, wetlands, running waters. Some habitats provide carbon storage (mires, old forests) and are relate to Aichi Target 15.

For more information on the national climate change adaptation strategy see Chapters 2.3.1 and 2.3.12.1.

Box 8: Anticipated future effects of climate change based on climate scenarios for Austria

Area for Action: Ecosystem/Biodiversity

- Increase in annual mean temperatures
- Higher temperatures lead directly to a lengthened growing season and thus to an earlier beginning and a later end of plant transpiration
- Increase in the frequency of droughts
- Changes in the amount of precipitation and its seasonal distribution: a decrease in the frequency of precipitation during summer months and an increase in winter months
- Heat stress in plants, especially in combination with droughts
- Probable decrease in groundwater supply and thereby increased drought stress in southern and Eastern Austria
- Increased risk of reduction in biodiversity
- Changes in species composition
- Decrease in amount of snow in lower and middle elevations; reduced certainty of snow
- Decrease in ice and frost days
- Increase in water temperatures, above all during summertime droughts
- Shifts in area boundaries along elevation and moisture gradients
- Changes in species composition in biotic communities and biotopes
- Loss of habitats and species
- Spread of new invasive species (alien species)

Source: Austrian Strategy for the Adaptation to Climate Change. Part 1 – Context. May 2012.

Aichi Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 11 corresponds to the objective: Conservation status of species and habitats is improved, with the following specific targets:

- The conservation status of 36% of habitats and 17% of species of the Habitat Directive in relation to 2007 is improved (2020)
- A quantitatively adequate, functional habitat connectivity is established (2020+)
- 15% of degraded ecosystems are improved or restored (2020+)

Approximately 27% of the territory of Austria is protected under various nature conservation categories: 16% as Natura 2000 sites, national parks or nature conservation areas and 12% as less strictly protected sites, such as landscape conservation areas or biosphere parks.

In 2013, the high level of water quality was confirmed (e.g. 99% of bathing localities fulfil EU water quality standards) according to the 10th Austrian State of the Environment Report. Water pollution prevention is largely connected to waste water treatment. For running waters, the need for improving the structure of bodies of water and their hydrology was emphasised, as currently only one third of Austrian rivers fulfil EU Water Framework Directive criteria. Remediation priorities up to 2015 include measures for the removal of barriers to fish migration and improving the structures of bodies of water, e.g. by restoring them to their natural state. An expansion of hydroelectric power generation is not entirely compatible with the ecological targets and should take into account the requirements of the Water Framework Directive.

Aichi Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 12 corresponds to the objective: Conservation status of species and habitats is improved, with the following specific targets:

- The status of threats to species is improved according to a priority setting (2020+)

Some other specific targets may also partly qualify here:

- The conservation status of 36% of habitats and 17% of species of the Habitat Directive in relation to 2007 is improved (2020)
- For 78% of bird species, the status is "secure" or improved (2020)
- A quantitatively adequate, functional habitat connectivity is established (2020+)
- Natural processes take place at 2% of Austria's total area (2020+)

According to a priority setting exercise in 2014, specific measures will be developed and executed. Genuine improvements have recently been documented for selected species of the Habitat Directive, e.g. Wildcat (*Felis sylvestris*), Yellow-bellied toad (*Bombina variegata*), Waldsteppen-Beifuß (*Artemisia pancicii*) and Bodensee-Vergissmeinnicht (*Myosotis rehsteineri*).

Red lists are an accepted instrument to validate the threat status over time. Although such lists are available for selected groups at the national or federal level, more groups of high indicator value either await first completion of red list assessments or are in need of an update. The most recent red lists have estimated that e.g. 37% of mammals, 36% of breeding birds and approx. 60% of the amphibians, reptiles and fish are endangered. Regarding the results of the Article 17 report of the Habitat Directive and Article 12 of the Bird Directive see Chapter 1.2.

The development of role model landscapes, the identification of specific target regions and areas, will further help focus on the most urgent and promising species, habitats and regions across Austria.

Aichi Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species is maintained, and strategies have been developed and implemented for minimising genetic erosion and safeguarding their

genetic diversity.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 13 corresponds to the objective: Agriculture and forestry support conservation and improvement of biodiversity, with the following specific targets:

- The total stock of rare livestock breeds is stable to slightly rising (2020)
- The number of bee hives has increased to 400,000 (2020)

Local varieties of cultivated plants and farmed animals are increasingly popular in Austrian society. The sustainable use of these local breeds is supported by measures at the governmental, retail trade and private levels. Some 4,900 farmers have joined the ÖPUL "Conservation of rare breeds of farm animals" campaign, ensuring the conservation of 31 endangered breeds in Austria. The Austrian Association for Rare Endangered Breeds (ÖNGENE) aims to survey the endangered breeds, take action for their conservation (in private farms, agricultural schools, research institutes, ex-situ conservation) and support scientific work on the genetical structure and the adaptability to changing environments.

Austrian botanic gardens started documenting their ex situ collections of Austrian rare and endangered plant species in 2003 in order to establish a coordinated approach to secure all Austrian threatened species ex situ in botanic gardens (in living collections as well as in seed banks). Recent results (2010) showed that 779 of the 1,798 endangered species are present in ex situ collections, 406 of those with documentation of their origin.

The diversity of local and regional varieties of plants and animals, and hence genetic diversity, has decreased over the last decades. There are governmental and private attempts and campaigns to restore accessibility of such breeds and secure traditional knowledge for future generations but the danger of losing traditional knowledge in various fields of expertise is still imminent (related to Aichi Target 18).

Aichi Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 14 corresponds to the objective: Conservation status of species and habitats is improved, with the following specific targets:

- The conservation status of 36% of habitats and 17% of species of the Habitat Directive in relation to 2007 improved (2020)
- The status of threat according to priority setting is improved (2020+)
- 15% of degraded ecosystems are improved or restored (2020+)
- Natural processes take place at 2% of Austria's total area (2020+)

Nature delivers ecosystem goods and services that are crucial for human life. Fertile soils, drinking water availability, natural disaster protection and the recreational benefits we obtain from nature are the basis for the quality of our lives. Increasing pressure on the environment leads to a reduction of these services. It is thus important to show how valuable these goods and services are and to raise public awareness, as has been

attempted in the Millennium Ecosystem Assessment and with the TEEB Initiative (The Economics of Ecosystems and Biodiversity).

Based on the work of the Swiss Federal Office for the Environment, the Environment Agency Austria has established an inventory of Final Ecosystem Goods and Services in the Austrian agricultural sector. The applied classification was suggested by the Millennium Ecosystem Assessment and the Common International Classification of Ecosystem Goods and Services (CICES).

The benefits these goods and services provide for society are divided into four groups – health, security, natural diversity and their economic value. In this way, human well-being is taken into account as well as the economic input of Ecosystem Goods and Services.

A methodology has been developed for the operationalisation of ecosystem services through welfare-significant environmental indicators. These indicators identify measureable "flow" units (i.e. units per year) to represent the trend of the indicator. The indicators were taken from the Swiss inventory and complemented by agriculture-related indicators.

The study demonstrated the complex relationship between agriculture and ecosystem services. Many of these goods and services are obtained as by-products of sustainable and resource-efficient agricultural land management. Often they are so-called public goods with no economic value but considered valuable by society. The concept of Ecosystem Goods and Services can help raise awareness of natural resources and their sustainable management.

Aichi Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 15 corresponds to the objective: Conservation status of species and habitats is improved, with the following specific targets:

- The conservation status of 36% of habitats and 17% of species of the Habitat Directive in relation to 2007 is improved (2020)
- The status of threat according to priority settings is improved (2020+)
- 15% of degraded ecosystems are improved or restored (2020+)
- Natural processes take place at 2% of Austria's total area (2020+)
- Climate mitigation measures are set, measures of the Austrian Climate Change Adaptation Strategy in relation to biodiversity are implemented (2020)

Resilient ecosystems including their full set of species and genetic diversity are particularly relevant under climate change scenarios (see also Aichi Target 10). The Austrian Climate Change Adaptation Strategy was adopted in 2012. It aims to avoid the adverse effects of climate change on the environment, society, and the economy and to fully utilise any opportunities that may arise. A first updated version is envisaged for the end of 2015. Species and habitat protection and restoration (including all Habitat Directive and Water Framework Directive sites and species) will enhance the resilience of ecosystems (see also Aichi Target 12).

The conservation and restoration of carbon stocks-rich ecosystems relate to forests and mires. Large natural habitat areas are rare in Europe (only 1-2%) and under risk. The Austrian National Park Strategy calls for an increasing amount of dedicated, adequate, wilderness areas within all National Parks over the next 20 years. The possibilities to increase unmanaged forest areas need to be further worked out. In addition to be beneficial for biodiversity, the restoration of mires provides further benefits (e.g. ecosystem services). Any reduction of other pressures (e.g. nitrogen deposition, alien species) will support resilience of carbon-stock ecosystems.

Aichi Target 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation is in force and operational, consistent with national legislation.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 16 corresponds to the objective: Contribution to conserve global biodiversity is achieved, with the specific target:

- Nagoya Protocol is ratified (2014)

Austria has signed the Nagoya Protocol in 2011 and its ratification is expected in 2014 or 2015.

Aichi Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

The new Biodiversity Strategy Austria 2020+ will be adopted soon. It is aiming at implementing the targets of the Strategic Plan for Biodiversity 2010-2020 and the EU Biodiversity Strategy. The strategy comprises five main areas of action:

- Knowledge about, and acknowledgement of, biodiversity
- Sustainable use of biodiversity
- Reduce biodiversity pressures
- Conservation and development of biodiversity
- Alert to a global biodiversity loss

The strategy focuses on twelve objectives divided into specific, measurable targets if possible and appropriate. The objectives and specific targets are listed in Part II of this report. The National Biodiversity Commission will be constituted by the Ministry of Agriculture, Forestry, Environment and Water Management in 2014. It aims to streamline and improve coordination and information exchange between all partners, specifically addressing possible synergies for reporting obligations. It will evaluate the implementation of the Strategy based on the included parameters in 2020. Several parameters are part of existing monitoring programmes and already available, whereas some still need methodological development. Data gaps need to be filled. The activities of the Biodiversity Commission itself will be evaluated externally in 2020.

Aichi Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 18 corresponds to the objective: Agriculture and forestry support conservation and improvement of biodiversity, with the following specific targets:

- The total stock of rare livestock breeds is stable to slightly rising (2020)
- The number of bee hives has increased to 400,000 (2020)
- Traditional knowledge is retained (2020)

Austria has no indigenous and local communities as understood by the Convention. Traditional knowledge (although no accepted definition is available) within the meaning of cultural heritage and agricultural knowledge is important for biodiversity in Austria. Traditional knowledge regarding the conservation and sustainable use of biodiversity in Austria is related to traditional land-use practices, such as Alpine pasture farming or keeping rare breeds of local varieties of animals or plants (e.g. the Carniolan honey bee, *Apis mellifera carnica*).

The target is also related to Target 16 and the ratification of the Nagoya Protocol and therefore connected to the Objective: Contribution to conserve global biodiversity is done as soon as activities are executed outside Austria. Austrian companies are active in biodiversity-rich countries, and it is intended that projects such as hydropower plants have to fulfil the same environmental quality standards during construction and operation as if located in Austria. Particular care is taken if any influence on indigenous people and traditional knowledge may be involved.

Aichi Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 19 corresponds to the objective: Biodiversity research and monitoring are extended, with the following specific targets:

- The knowledge of biology and ecology of species and habitats as well as taxonomic issues is expanded (2020+)
- The knowledge of interrelations between human activities and biodiversity has increased (2020+)
- Data of status and trends of species and habitats as well as pressures and conservation measures are available (2019, 2020+)

Solid scientific knowledge of the targets of protection (species and habitats and their complex abiotic and biotic interactions as well as ecosystem functions), the pressures and threats to their long-term survival, the services they provide for human well-being and the values they may represent for society are pivotal to make evidence-based decisions. Communication and transfer of knowledge to the adequate recipient is essential and integrated in the Objective: People are aware of the values of biodiversity (Aichi Target 1, see above).

Although biodiversity research and mediation have a strong significance in Austria at University and other levels (e.g. in protected areas, natural history museum, educational organisations, NGOs), a lack of funding is apparent and improvement needed. This is also true regarding elements such as land cover documentation, species and habitat monitoring activities and the application of restoration measures.

Efforts to share and transfer distributional data are undertaken within GBIF Austria, currently providing more than 4 million records on the distribution of more than 40.000 species from 16 distributed data holders.

Aichi Target 20: By 2020, at the latest, the mobilisation of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilisation should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties

Within the new Austrian Biodiversity Strategy 2020 and Beyond, Aichi Target 20 corresponds to the objective: Contribution to conserve global biodiversity is done, with the following specific targets:

- Biodiversity-related funding within the Austrian Development Cooperation is increased (2020+)
- Awareness of the impact of consumption and use of natural resources on biodiversity is strengthened (2020+)

The full implementation of the Strategic Plan for Biodiversity 2011-2020 needs increased and better allocation of financial resources from all sources, including national contributions to global biodiversity targets. It is envisaged that synergies with other funding sources (e.g. climate change mitigation and adaptation) and reducing the effects of harmful subsidies will benefit biodiversity. Cooperation with the business and private sectors are increasingly implemented (e.g. Public Private Partnerships – PPP, Payment for Ecosystem Services – PES).

The unsustainable use of resources is a major driver of global biodiversity loss. Changes in national consumer behaviour (e.g. increase use of local products) and production efficiency (e.g. water and energy consumption) will contribute to safeguard biodiversity. Supporting bilateral environmental measures and conservation projects in partner countries lies within the responsibility of the Austrian Development Agency (ADA), which is the operational unit of the Austrian Development Cooperation (ADC; Österreichische Entwicklungszusammenarbeit OEZA). Some 500 programmes and projects are implemented each year and in 2011, 17% of these activities were related directly to conserve and protect biodiversity (e.g. funding for biological farming, biological pest

control, alternative energy production, waste water treatment, low emission production technologies in the retail business, appropriate forestry practices, the preservation of the traditional uses of medicinal herbs, and efforts to conserve these biological resources). For a detailed compilation of the financial investments see Chapter 2.3.10.

In 2009, the Environment and Development Guide, jointly developed by the Foreign Ministry and the Ministry of the Environment was adopted by the Council of Ministers. The objective of the Guide is to further integrate environmental protection in development cooperation and to support developing countries in the sustainable use of natural resources in favour of poor population groups and in adapting to the impact of global climate change. The guide was reviewed and critically evaluated in 2013. While the establishment of the "Plattform Umwelt und Entwicklung" is generally considered useful and appropriate for information exchange, several recommendations for improvement were suggested, and their implementation will be discussed in 2014.

Since 2012, cooperation with the Österreichische Entwicklungsbank AG (Development Bank of Austria) has been providing additional financial investments for business partnerships and projects of private companies in developing countries and emerging markets.

Austria joins the European Commission and other international donor countries and foundations in making strategic investments that assist developing countries to achieve the goals and targets in the Strategic Plan for Biodiversity 2011-2020 agreed in Nagoya, Japan, in 2010. In 2013, the Austrian government provided a funding package worth 1.6 million Euros through the LifeWeb Initiative (<http://lifeweb.cbd.int>) to help implement the CBD in four countries:

- Democratic Republic of Congo: Rehabilitation of the Yangambi Biosphere Reserve. 431,000 Euros to conduct baseline biodiversity assessments, develop stronger management planning involving local communities and building the capacity of ranger patrols. The Yangambi Biosphere Reserve is very important from a biodiversity perspective as it harbours 32,000 species of trees and provides habitat for bonobo monkeys, Okapi and the Nile crocodile.
- People's Democratic Republic of Lao: Strengthening and enlarging the Protected Area System of Eastern Bolikhamxay Province. 500,000 Euros to build community outreach efforts and strengthen anti-poaching control in a location that plays an important strategic role in Eastern Bolikhamxay, linking three conservation forests including Phou Chom Voy PPA, Phou Sithone ESCA and Nam Kading National Protected Area.
- Bangladesh: Protection of threatened river dolphins in Sundarbans Mangrove Forest. 318,000 Euros to conserve the Ganges River dolphin, at imminent risk of extinction and Irrawaddy dolphins, highly threatened due to numerous threats by humans through the establishment of a protected area network in waterways of the Sundarbans mangrove forest.
- Ethiopia: Protection and restoration of wild coffee species and the Yayu forest where they are growing. 368,000 to protect the genetic diversity of wild coffee varieties in Western Ethiopia through forest protection, restoration of degraded lands and promotion and marketing of forest coffee products.

3.2 What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015

targets of the Millennium Development Goals in your country?

The adoption of the Environment and Development Guide of the Foreign and Life Ministries in the Council of Ministers in 2009 was a milestone in achieving policy coherence in environmental protection and development and has contributed to the eight Millennium Development Goals (MDGs), specifically to MDG7 (Ensuring Environmental Sustainability). The objective of the politically non-binding Guide is to further integrate the topic of environmental protection in development cooperation and to support developing countries in the sustainable use of natural resources in favour of poor population groups and in adapting to the impact of global climate change. In 2011, 17% of the projects funded by the Austrian development cooperation (OEZA) provided a concrete contribution to the preservation of biodiversity.

4 APPENDICES

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

Contracting Party	AUSTRIA
National Focal Point	
Full name of the institution	Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management
Name and title of contact officer	Dr. Andrea Nouak
Mailing address	Stubenbastei 5, A-1010 Vienna / Austria
Telephone	+ 43 51522 1616
Fax	
Email	Andrea.Nouak@bmlfuw.gv.at
Contact officer for national report (if different from above)	
Full name of the institution	Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management
Name and title of contact officer	Gabriele Obermayr
Mailing address	Stubenbastei 5, A-1010 Vienna / Austria
Telephone	+ 43 51522 1407
Fax	
E-Mail	Gabriele.Obermayr@bmlfuw.gv.at
SUBMISSION	
Signature of officer responsible for submitting national report	Gabriele Obermayr m.p.
Date of submission	August 2014

4.2 Appendix II - Process of preparation of national report

The first draft of the 5th National Report was prepared and coordinated by the Environment Agency Austria (Umweltbundesamt GmbH) on behalf of the Ministry of Agriculture, Forestry, Environment and Water Management. It was submitted, discussed and revised during meetings with representatives of the Ministry and the newly established National Biodiversity Commission.

National reports and information have been used to prepare this report, specifically

- Zustand und Bedeutung der biologischen Vielfalt in Österreich, Wien 2013
- Indicator report for Monitoring Sustainable Development in Austria (2013)
- Austrian Reports Article 17 EU Habitat Directive and Article 12 EU Bird Directive (2013)
- Green Report (2013)
- 10th State of the Environment Report (2013)

4.3 Appendix III - Further sources of information

Alpine Convention (2013): Nachhaltiger Tourismus in den Alpen. Alpenzustandsbericht. Innsbruck, 148 p.

Berger, R. & Ehrendorfer, F. (2011, Eds.) Ökosystem Wien. Die Naturgeschichte einer Stadt. Böhlau, Vienna, 744 p.

BFW – Federal Research and Training Centre for Forests, Natural Hazards and Landscape (2011): Waldinventur 2007/09. BFW Praxisinformation 24, 32 p.

BFW – Federal Research and Training Centre for Forests, Natural Hazards and Landscape (2013): Österreichische Waldinventur – Der Wald rund um die Nutzungen. BFW Praxisinformation 32, 48 p.

Bieringer, G. & Wanninger, K. (2011): Handlungsprioritäten im Arten- und Lebensraumschutz in Niederösterreich. Report commissioned by the Lower Austrian Government, St. Pölten, 169 p.

BMEiA – Federal Ministry for European and International Affairs (2009): Strategischer Leitfaden Umwelt und Entwicklung. Section VII – Österreichische Entwicklungs- und Ostzusammenarbeit, Vienna, 48 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2005): Weiterentwickelte Österreichische Strategie zur Umsetzung des Übereinkommens über die biologische Vielfalt. Vienna, 94 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2005-2010): Rote Listen gefährdeter Tiere Österreichs. Grüne Reihe Volume 14, Part 1–4, Böhlau, Vienna.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2006): Monitoring Nachhaltiger Entwicklung in Österreich. Indikatoren für Nachhaltige Entwicklung. Vienna, 197 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2006): Österreichisches Waldprogramm. Vienna, 83 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2008): Nachhaltige Waldwirtschaft in Österreich. Österreichisches Waldprogramm 2008. Vienna, 59 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2010): Österreichische Nationalpark-Strategie. Vienna 28 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2011): ÖSTRAT – Österreichische Strategie Nachhaltige Entwicklung Arbeitsprogramm 2011ff of the Federal Government and Federal Provinces. Vienna, 63 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2012) Aquakultur 2020 – Österreichische Strategie zur Förderung der nationalen Fischproduktion. BMLFUW, Vienna, 16 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2012): Die österreichische Strategie zur Anpassung an den Klimawandel. Vienna, Part 1 – Kontext, 134 p., Part 2 – Aktionsplan, 442 p.

BMLFUW – Federal Ministry of Agriculture, Forestry, Environment and Water Management (2013): Grüner Bericht 2013. Bericht über die Situation der österreichischen Land- und Forstwirtschaft. Vienna, 342 p.

BMVIT – Federal Ministry of Transport, Innovation and Technology (2012) Gesamtverkehrsplan für Österreich. Vienna, 78 p.

BMWFJ & BMLFUW (Federal Ministry for Economy, Family and Youth & Federal Ministry of Agriculture, Forestry, Environment and Water Management) (2010): Energiestrategie Österreich. Vienna, 140 p.

BMLFUW, BMUUK & BMWF (2008): Österreichische Strategie zur Bildung für nachhaltige Entwicklung.

Federal Chancellery (2011): Der Weg zum Innovation Leader. Strategie der Bundesregierung für Forschung, Technologie und Innovation. Vienna, 49 p.

Egger, G., Michor, K., Muhar, S. & Bednar, B. (2009): Flüsse in Österreich. Lebensadern für Mensch, Natur und Wirtschaft. StudienVerlag, Innsbruck, 311 p.

Enigl, M. & Koller, B. (2003): Kulturpflanzenvielfalt. Entstehung & Gefährdung, Fallbeispiele aus Österreich. Eigenverlag, Schiltern, 60 p.

Essl, F. & Egger, G. (2010): Lebensraumvielfalt in Österreich – Gefährdung und Handlungsbedarf. Zusammenschau der Roten Listen gefährdeter Biotoptypen Österreichs. Naturwissenschaftlicher Verein für Kärnten und Umweltbundesamt GmbH, 109 p.

Essl, F. & Rabitsch, W. (2002): Neobiota in Österreich. Federal Environment Agency, Vienna, 432 p.

Essl, F. & Rabitsch, W. (2004): Österreichischer Aktionsplan zu gebietsfremden Arten (Neobiota). Federal Ministry of Agriculture, Forestry, Environment and Water Management, Vienna, 28 p.

Essl, F., Rabitsch, W. (2013): Biodiversität und Klimawandel. Auswirkungen und Handlungsoptionen für den Naturschutz in Mitteleuropa. Springer, Heidelberg, 458 p.

Fiala, I. (2013): Indikatoren-Bericht zur Biodiversität in Österreich. May 2013. Federal Ministry of Agriculture, Forestry, Environment and Water Management, Vienna, 49 p.

Forstner, M., Reimoser, F., Lexer, W., Heckl, F. & Hackl, J. (2006): Nachhaltigkeit der Jagd. Prinzipien, Kriterien und Indikatoren. avBuch, Vienna, 132 p.

Forum Umweltbildung im Umweltdachverband (2013): Bildung für nachhaltige Entwicklung. Jahrbuch 2013.

Fuchshuber, B. & Kiehn, M. (2007): Globale Strategie zur Erhaltung der Pflanzen (GSPC). Umsetzung in Österreich. "Roadmap 2010 und darüber hinaus". Report commissioned by the Federal Ministry of Agriculture, Forestry, Environment and Water Management, Vienna, 38 p.

Götzl, M. (2003): Die österreichischen Sammlungen und Datenbanken zur Artenvielfalt. Eine interdisziplinäre Studie im Rahmen der Global Biodiversity Information Facility. Federal Ministry of Education, Science and Culture, Vienna, 185 p.

IEEP – Institute for European Policy (2013): The economic benefits of the Natura 2000 Network. Report to the European Commission, Brussels, 76 p.

Kohler, B., Laßnig, C. & Zika, M. (2011): Wildnis in Österreich? Herausforderungen für Gesellschaft, Naturschutz und Naturraummanagement in Zeiten des Klimawandels. Österreichische Bundesforste, Purkersdorf, 68 p.

Mirtl, M., Bahn, M., Battin, T., Borsdorf, A., Englisch, M., Gaube, V., Grabherr, G., Gratzner, G., Haberl, H., Kreiner, D., Richter, A., Schindler, S., Tappeiner, U., Winiwarter, V. & Zink, R. (2010): "Next Generation LTER" in Österreich – Zu Lage und Ausrichtung von prozessorientierter Ökosystemforschung, Biodiversitäts- und Naturschutzforschung sowie sozio-ökologischer Forschung in Österreich. LTER-Austria Series 1, Vienna, 52 p.

Moser, D. & Ellmauer, T. (2009): Konzept zu einem Monitoring nach Artikel 11 der Fauna-Flora-Habitat-Richtlinie in Österreich. Report commissioned by the Liaison Office of the Federal Provinces, Vienna, 130 p.

ÖROK – Austrian Conference on Spatial Planning (2011): Österreichisches Raumentwicklungskonzept ÖREK 2011. Resolution of 4 August 2011, Vienna, 104 p.

Pauli, H., Gottfried, M., Reiter, K., Klettner, C. & Grabherr, G. (2007): Signals of range expansions and contractions of vascular plants in the high Alps: observations (1994–2004) at the GLORIA master site Schrankogel, Tyrol, Austria. *Global Change Biology* 13: 147-156

Rabitsch, W. & Essl, F. (2009): Endemiten – Kostbarkeiten in Österreichs Pflanzen- und Tierwelt. Naturwissenschaftlicher Verein für Kärnten und Umweltbundesamt, Klagenfurt and Vienna, 924 p.

Austrian Council for Research and Technology Development (2009): Strategie 2020. Austrian Council, Vienna, 88 p.

Sauberer, N., Moser, D. & Grabherr, G. (2008): Biodiversität in Österreich. Räumliche Muster und Indikatoren der Arten- und Lebensraumvielfalt. Bristol-Stiftung, Zürich, Haupt, Bern, 313 p.

Schibany, A., Berger, M., Dachs, B., Ecker, B., Egel, J., Gassler, H., Gottschalk, S., Leitner, K.-H., Müller, B., Rammer, C., Reiner, C., Streicher, G. & Zahradnik, G. (2013): Österreichischer Forschungs- und Technologiebericht 2013. Lagebericht gem. §8(1) FOG über die aus Bundesmitteln geförderte Forschung, Technologie und Innovation in Österreich. Report commissioned by the BMWF, BMVIT, BMWFJ, Vienna, 208 p.

Suske, W., Bieringer, G. & Ellmauer, T. (2011): Natura 2000 und Artenschutz. Empfehlungen für die Planungspraxis beim Bau von Verkehrsinfrastruktur. ASFINAG Bau Management GmbH, 170 p.

Tiefenbach, M., Drabosenig, A., Erler, A., Hasler, V. & Sonderegger, G. (2013): Set der Pflichtindikatoren für die Evaluierung des Nationalpark-Managements. BMLFUW, Vienna.

ÖTE – Ökologischer Tourismus in Europa (2013): Praxisleitfaden Tourismus & Biologische Vielfalt. Umsetzungsstrategien zur erfolgreichen Förderung von Naturtourismus und Entwicklung von Naturerlebnis im Tourismus. Bonn, 44 p.

Federal Environment Agency (2013): Zehnter Umweltkontrollbericht. Umweltsituation in Österreich. REP-0410, Federal Environment Agency, Vienna, 288 p.

Federal Environment Agency (2013): Ausarbeitung des österreichischen Berichtes gemäß Art. 17 FFH-Richtlinie, Berichtszeitraum 2007-2013. Report commissioned by the Liaison Office of the Federal Provinces, Vienna.

Umweltdachverband (2012): Abbau umweltschädlicher Subventionen in Österreich. Report, Umweltdachverband, Vienna, 12 p.

Forest Dialogue (2009): Arbeitsprogramm des Österreichischen Waldprogramms. As of 11/2009. www.walddialog.at

Note: Some of the mentioned publications/texts are also available in English.