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Criteria and Indicators for the Determination of Sustainable Forestry in Austria

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Foreword

PEFC Austria (PEFC: Programme for the Endorsement of Forest Certification schemes) is a national organisation with the purpose of facilitating sustainable forest management through sustainable forest management certification and labelling of wood products. Consumers can trust that products carrying the PEFC label are made of raw material from sustainably managed forests, from recycling and/or non-controversial sources. PEFC Austria is a work group responsible for the standard setting and the administration of the Austrian PEFC scheme. PEFC Austria standards are developed within an open and transparent procedure based on consensus and supported by consultation of a variety of stakeholders. Since 1999, PEFC Austria is full member of PEFC International whose strict endorsement procedure guarantees international recognition.
To improve the readability, the male form is used for all denominations of persons. It refers to all genders.

Introduction

The below set of criteria and indicators for SFM is for assessing SFM at regional level and at holding level (individual holding or groups of holdings).

The catalogue of criteria and indicators for SFM assessment has been elaborated in three steps:

a) Analysis of legal regulations on SFM in Austria
b) Analysis of existing catalogues of criteria and indicators for SFM and elaboration of criteria and indicators for SFM in Austria
c) Analysis of existing official forest-related sources

ad a) Analysis of legal regulations on SFM in Austria

Numerous laws that cover the ecological and social aspects of forestry have direct or indirect influence on forest management. This legal framework characterises the standard of forest management in Austria.

Especially the following legal bases have been taken into consideration:

- Austrian Forest Act of 1975 (in its current amended version)
- Provincial laws on hunting
- Provincial laws on nature protection
- Laws on water rights
-
- Forestry propagation law (Federal Law Gazette No.. 110/2002)
- Land Labour Law (Federal Law Gazette No. 287/1984)

ad b) Analysis of existing catalogues of criteria and indicators for SFM and elaboration of criteria and indicators for SFM in Austria

The catalogue of criteria and indicators was elaborated on the basis of the 6 “Pan-European Criteria and Indicators” as well as on the “Pan-European Operational Level Guidelines”, adopted and endorsed, respectively, at the Third Ministerial Conference on the Protection of Forests in Europe in June 1998 in Lisbon/Portugal.

The following catalogues of criteria and indicators for SFM served as reference for the analysis and elaboration of the Austrian criteria and indicators (in brackets the respective abbreviations used in the following):

- Testing of Criteria and Indicators for Sustainable Forest Management in Austria within the International CIFOR Project, special report, July 1996 (A-1 (CIFOR))
- Technical bases for applicants and auditing bodies to verify the compliance with requirements that are necessary for a quality label for timber and wood products from sustainably managed forests (A2)
- Pan-European Forest Certification – Criteria, Recommendations and Indicators for Sustainable Forest Management at Regional Level in Germany – 2nd Draft, 13-06-1999 (PEFC-D)
- Draft Finnish Forest Certification Standards (Finland), 04-05-1999
- German FSC-Standards Guidelines for Sustainable Forest Management; Working group Germany; Adopted version, 13-04-1999 (FSC-D)
- Swedish FSC Standards for Forest Certification, 24-09-99 1997 (FSC-S)
- WWF Score Cards 1998 (WWF)
- UK Woodland Assurance Scheme, May 1999 (UKWAS)
- The “Living Forests“ Standards on Sustainable Norwegian Forestry, March 1998 (Nor)

ad c) Analysis of existing official forest-related data sources

In Austria, there is a multitude of monitoring systems, investigations of independent scientific institutions and diverse sets of statistics. They are suitable for documenting SFM in Austria. Such monitoring systems, investigations and statistics are above all:

- Austrian Forest Inventory
- Other monitoring systems of the Federal Research Centre for Forests
- Forest Development Plan
- Danger Zone Map
- Study on the naturalness of forest stands
- Official statistics
- Alpine Convention / Mountain Forest Protocol

The results of the analysis of the catalogues of criteria and indicators for SFM, of Austria’s legal regulations and of the official data sources can be found in the background paper to this catalogue.

A project team headed by Dr. Ewald Rametsteiner as commissioned by PEFC elaborated the original catalogue of criteria and indicators. The revisions (PEFC AT ST 1002:2017) were made by an expanded team of experts including Mag. Franz Maier, DI Dr. Peter Weinfurter and DI Dr. Kurt Ramskogler. The current version was reviewed and approved by the PEFC expert committee consisting of DI Dr. Peter Weinfurter (forestry), DI Dominik Bancalari (forestry), DI Karl Jäger (forestry) and DI Thomas Schenker (environmental group) after the working group phase.

Some indicators have observation periods, which exceed the reporting period. The availability of data shall be considered for the drafting and evaluation of the reports.

1 Scope

This document defines of criteria and indicators of the Austria PEFC-system on regional level (group certification in natural growth regions – part A) and on level and for individual certification of the group certification in general (part B).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

- PEFC AT ST 1001 PEFC-Standard for Sustainable Forest Management in Austria

3 Definitions

3.1 Criterion: is defined as main focus and aspect with regard to the contents of SMF assessment, criteria 1–6 of the pan-European criteria
3.2 Subcriterion: element or relevant aspect within a criterion, preferably identical wording as the Pan-European Operational Level Guidelines
3.3 Description: further specification or more detailed explanations of the subcriterion, where relevant identical wording as the Pan-European Operational Level Guidelines
3.4 Indicator: concrete assessment object which serves as evidential sign for the existence or non-existence of the respective aspect
3.5 Unit: unit to be assessed in fact
3.6 Legal bases: relevant laws including paragraphs with headings (for detailed description see document “Analysis of Existing Sets of Criteria and Indicators and Analysis of Laws and Public Databases on Forest-Related Aspects in Austria)” (Appendix 1A)
3.7 Sources: short description of the sources – for a more detailed description see document “Analysis of Existing Sets of Criteria and Indicators and Analysis of Laws and Public Databases on Forest-Related Aspects in Austria)” (Appendix 1A); mostly not relevant for individual holding/group assessment
3.8 Comment: discussion or explanation

4 Structure of the catalogue

The structure of the catalogue orientates itself at the six criteria adopted at the Helsinki Conference. Under each criterion subcriteria are listed, these are to be surveyed by indicators.

The below tables of the catalogue of criteria and indicators for SFM are structured as follows:

1.x	
Subcriterion	
Description	
Comment	

Indicator: 1.1.a		
Content of report	*Unit*	*Source*

Obeying general and forest-related laws is considered to be a minimum requirement and thus has not been formulated as separate indicator for sustainability in forest management.

Application of the biodiversity index:
Alternatively or in addition to the indicators the biodiversity index can be applied for evaluation and target setting, particularly for criterion 4 - Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems.
The biodiversity index is determined for Austria. The evaluation and target setting shall be done together for all natural regions.[1]

5 Criteria and Indicators for assessing sustainable forest management in Austria

5.1 Catalogue for assessing sustainable forest management for group certifications in natural growth regions (part A)

Many criteria for sustainability are only suitable for larger areas. In order to not discriminate against the numerous private small-forest owners among the approx. 145,000 Austrian or 12 million European forest owners, PEFC developed a regional-level approach to certification, capturing very well the forest-owner structures of Central Europe.

[1] Quelle: Website BFW 2015 (http://bfw.ac.at/db/bfwcms.web?dok=8384

Part A

Criteria and Indicators for Assessing Sustainable Forest Management in Austria for group certification in natural growth regions

Table 1: Overview: Criteria and indicators for assessing sustainable forest management in Austria –group certification in natural growth regions

No.	Criterion	Subcriterion	Number of Indicators (in brackets: thereof not relevant to the system)
1	**Forest Resources**	1. Forest Inventory 2. Growing stock 3. Age Structure and/or Diameter Distribution	5 2 1
2	**Health and Vitality**	1. State of forest soil 2. Loss of needles or leaves 3. Forest damage	2 (2) 1 (1) 4 (3)
3	**Productive Functions**	1. Timber increment and felling 2. Non-wood products 3. Infrastructure services 4. Managed forests 5. Management Methods	1 2 1 2 5
4	**Biological Diversity**	1. Structural diversity 2. Threatened species 3. Forest genetic resources 4. Protected Forests	11 1 1 2
5	**Protective Function**	1. Maintenance and improvement of the protective function 2. Water protection function 3. Protective forests	2 1 1
6	**Socio-Economic Functions**	1. Characteristics and significance of the forest sector 2. Recreational services 3. Professional education; research 4. Health and safety at work and working conditions 5. Public relations 6. Cultural values	5 3 (1) 3 2 (2) 3 2
∑	**6 criteria**	**24 subcriteria**	**62 indicators**

The indicators 2.1.a, 2.1.b, 2.2.a, 2.3.a, 2.3.b, 2.3.d, 6.2.b, 6.3.a and 6.3.b mentioned in chapter 3.1 cannot be influenced by the forest management in the region and therefore are not relevant to the system.

5.1.1 Criterion 1. Maintenance and appropriate enhancement of forest resources and their Contribution to Global Carbon Cycles (A)

5.1.1.1 Forestry inventory (A)

1.1	**Forest Inventory**
Subcriterion	Forest management planning shall aim to maintain or to increase forest area to an extent adapted to the region, and to maintain and enhance the quality of the economic, ecological, cultural and social values of forest resources, including soil and water.
Description	Forest areas are those areas which are defined as such according to the Austrian Forest Law of 1975 Art. 1 (Forest; Definition of Terms) and Art. 2 (Windbreaks, etc.) and according to the guidelines of the Austrian Forest Inventory.
Comment	This subcriterion refers only to the forest area. Other aspects of sustainable forest management with reference to economic, ecological, cultural and social values are dealt with in the specific criteria 3, 4 and 6.

Indicator: 1.1.a **Total forest area of the region**		
Content of report	*Unit*	*Source*
Forest area	1000 ha	BFW[2]: ÖWI

Indicator: 1.1.b **Forest area classified according to forest communities, ownership and age structures**		
Content of report	*Unit*	*Source*
Forest area	1000 ha	BFW: ÖWI

Indicator: 1.1.c **Forest area per capita and changes**		
Content of report	*Unit*	*Source*
Forest area / capita	ha	BFW: ÖWI
Change / decade	%	

Indicator: 1.1.d **Proportion of forest area to total area**		
Content of report	*Unit*	*Source*
Share	%	BFW: ÖWI

[2] **Abbreviations: see Chapter 4**

Indicator: 1.1.e **Land-use categories**		
Content of report	*Unit*	*Source*
Share	%	Statistik Austria
Comment: This indicator serves, above all, to describe the situation of the region. The main land-use categories are: • Forest areas • Agricultural areas • Urban areas		

5.1.1.2 Growing stock (A)

1.2	**Growing stock**
Subcriterion	Growing stock in forests should be maintained or increased both in quality and quantity.
Description	Growing stock refers to the total volume of standing timber in a production forest (commercial forest and protection forest with commercial yield).

Indicator: 1.2.a **Extent of and changes in the *total growing stock***		
Content of report	*Unit*	*Source*
Growing stock (total and classified according to forest communities)	1000 Vfm[3]	BFW: ÖWI (growing stock according to silvicultural system and type of ownership; total given in 1000 ha)
Change (total and classified according to forest communities	%	

[3] Vfm (“Vorratsfestmeter”) – cubic metre of standing timber

Indicator: 1.2.b **Extent of and changes in the *mean growing stock***		
Content of report	*Unit*	*Source*
Growing stock (classified according to forest communities)	Vfm / ha	BFW: ÖWI (growing stock according to silvicultural system and type of ownership; and volume per ha)
Change (classified according to forest communities)	%	

5.1.1.3 Age Structure and/or diameter distribution (A)

1.3	**Age Structure and/or Diameter Distribution**
Subcriterion	--
Description	--

Indicator: 1.3.a. **Scale and Change of Age Structure or Corresponding Distribution of Growth Classes**		
Content of report	*Unit*	*Source*
Growing stock according to age and growth classes	1000 Vfm	BFW: ÖWI (growing stock according to silvicultural system and type of ownership; stock according to age classes and BHD classes
Growing stock according to age and growth classes	Vfm / ha	
Change	%	
Comment: The distribution is only according to age group in commercial forests. In the ÖWI, trees are classified according to age group.		

5.1.2 Criterion 2. Maintenance of forest ecosystem health and vitality (A)

5.1.2.1 State of the forest soil (A)

Evaluations of the nutrient balance of the forest soil, the needles and leaves were conducted in the course of the soil inventory and the forest damage observation system in the scope of the ICP forest. They are subject to the following decrees: VO (EWG) No. 1091/94 und No. 3528 (Deposition measurements and state of the forest soil); VO (EWG) No. 1696/87 (Needle and leaf analyses).

2.1	**State of the Forest Soil**
Subcriterion	The state of health of forests and nutrient balance of soil and foliage in a region should be documented.
Description	---
Comment	This subcriterion serves above all to show factors which cannot be influenced by regional forest management, but which have considerable influence on it.

Indicator: 2.1.a **Changes in nutrient balance and acidity over the past 10 years in the region**		
Content of report	*Unit*	*Source*
Changes	Degree of CEC saturation	BFW: WBS
Change	pH value	
Comment: Nutrient balance and soil acidity are neither surveyed by permanent nor by periodical sampling networks. The existing data refers to a single survey of the period 1989-95.		

Indicator: 2.1.b **Nutrient balance and changes in nutrient balance of foliage in the region**		
Content of report	*Unit*	*Source*
Nutrient balance	Mg / g foliage	BFW : WBS Bioindicator network
Change in nutrient balance	%	

5.1.2.2 Loss of Needles or Leaves (A)

2.2	**Loss of Needles or Leaves**
Subcriterion	
Description	---
Comment	

Indicator: 2.2.a. **Changes in serious defoliation of forests using the UN/ECE and EU defoliation classification (classes 2, 3 and 4) over the past 5 years**		
Content of report	*Unit*	*Source*
Changes	%	BFW: WBS (crown opening-up; crown condition)

5.1.2.3 Forest damage (A)

2.3	**Forest Damage**
Subcriterion	Forest management shall ensure health and vitality of forests and rehabilitate degraded forest ecosystems. Especially abiotic, biotic and anthropogenic factors that affect health and vitality are to be monitored.
Description	Following influences on health and vitality are considered in this subcriterion: Abiotic factors: • Storm (blowdowns, stem und tree crown damage) • Snow (incl. avalanches, snow damage, glazed frost) • Fire (forest fires, lightning stroke) • Rockfall • Mud flow Biotic factors: • Insects • Phytopathogenic causes • Game • Grazing stock Anthropogenic factors: • Forest management (e.g. harvesting damages) • Deposits of airborne pollutants
Comment	This subcriterion serves above all to show factors which in many cases cannot be influenced by regional forest management, but which have considerable influence on it. Potential influences on health and vitality of forest ecosystems by anthropogenic factors are also dealt with in criterion 3 (road construction), criterion 4 (structural diversity) and in criterion 6 (tourism).

Indicator: 2.3.a. **Average annual area damaged by *abiotic* causes and volume harvested from these areas**

Content of report	*Unit*	*Source*
Average forest area	ha / year	BML: Forest statistics (damage in forests; damage caused by storm, snow, avalanches, rime and landslide; damage caused by forest fires and other abiotic damage) BFW (damaged area and volume of damaged timber)
Volume	Vfm / year	
Change vs previous report	%	
Comment: Damaged means influenced by abiotic causes.		

Indicator: 2.3.b. **Average annual area damaged by *biotic* causes and volume harvested from these areas**		
Content of report	*Unit*	*Source*
Average area	ha / year	BML: Forest statistics (damage in forests; biotic damage caused by beetles and other insects; damaged area and volume of damaged timber; damaged areas and damaged timber document areas where regeneration would not be possible without protecting single trees or whole forest areas; devastation of forests), BFW: ÖWI (fraying damage – stem number of growing stock area according to silvicultural system and type of ownership, new annual fraying damage and use of frayed stems, regeneration areas with browsing damage; protection forest after pastoral use; extent of forest area affected by grazing; damaged area and amount of damaged timber)
Volume	Vfm / year	
Change vs previous report	%	
Amount of stems	Number	
Share of total stem number	%	
Share of damaged regeneration	%	
Amount of grazing stock	Number	
Comment: Damaged means influenced by biotic causes.		

Indicator: 2.3.c. **Average annual area damaged by *anthropogenic* causes and volume harvested from these areas**		
Content of report	*Unit*	*Source*
Average Area	ha / year	BML: Forest statistics (damage in forests, damage caused by wood harvesting)

Volume	Vfm / year	BFW (with WBS) and UBA (total volume airborne pollutant deposits)
Change vs previous report	%	
Comment: Damaged means influenced by anthropogenic causes.		

Indicator: 2.3.d. **List of authorized pesticides and fertilisers**		
Content of report	*Unit*	*Source*
Availability	yes/no	BFW; Austrian Chamber of Commerce
Comment: The actual type and volume of chemical substance deposits has not been documented and cannot be evaluated (www.bfw.ac.at/400/1243).		

5.1.3 Criterion 3. Maintenance and Encouragement of Productive Functions of Forests (wood and non-wood) (A)

5.1.3.1 Timber increment and felling (A)

3.1	**Timber increment and felling**
Subcriterion	The harvesting level of wood shall not exceed a rate that can be sustained in quantity and quality in the medium and long term.
Description	---

Indicator: 3.1.a **Balance between growth and removals over the past 10 years**		
Content of report	*Unit*	*Source*
Proportion of growth to removal	%	BFW: ÖWI (Increment in 1000 Zuwachs in 1000 Vfm, total annual utilization in 1000 Vfm, according to type of logging operation; utilization / hectare; annually, according to type of logging operation)

5.1.3.2 Non-wood products (A)

3.2	**Non-wood products**
Subcriterion	The harvesting level of non-wood products shall not exceed a rate that can be sustained in the medium and long term. In addition, the offer of marketable services should be maintained or increased.
Description	Non-wood products are, *inter alia*: • Hunting, game • Other non-wood forest products such as Christmas-tree cultures[4], cork, berries, branches of trees used for decorational purposes, utilisation of resin, cutting of dwarf pines (*pinus mugo*) for purposes such as oil etc., game fencing, forest litter utilisation, water, rock quarries, recreation, etc. Best use should be made of the harvested forest products, with due regard to nutrient offtake. Gravel and rock quarries should be quarried in a way that keeps negative effects on and possible destruction of the environment low. Game management shall be carried out in a way that does not threaten ecologically, economically and socio-economically sustainable forest management. However, in many cases especially silviculturists of small forests have hardly any influence on game management.
Comment	Up to now, there is only small knowledge of sustainable management of non-wood products.

[4] According to the Austrian Forest Law (in its current ammened version) Art. 1 para. 5 Christmas-tree cultures are not defined as forests.

Indicator: 3.2.a. **Total amount and value of hunting and hunting products**		
Content of report	*Unit*	*Source*
Amount of culled game divided according game species	Number / year	Provincial hunting associations (hunting statistics); district administration
Changes in numbers	%	

Indicator: 3.2.b. **Total amount of and changes in other marketable non-wood forest products**		
Content of report	*Unit*	*Source*
Total amount, classified according to non-wood product categories	Weight, length and surface units	BML: Forest statistics[5]
Change in amount	%	
Comment: Stone quarries, gravel quarries, mining, arboretum, biomass, fuelwood plantations, water, touristic areas (ski slopes, climbing routes, etc.), leasing, etc.		

5.1.3.3 Infrastructure services (A)

3.3	**Infrastructure Services**
Subcriterion	Marketable infrastructure services should be maintained and/or increased.
Description	Marketable infrastructure services should only be offered to the extent that sustainable forest management is not jeopardized in ecological, economic and socioeconomic terms.
Comment	The marketing of non-wood products offers the prospect of high financial potential for the forest industry, however this is difficult to evaluate.

Indicator: 3.3.a **Kind and amount of merchandised services**		
Content of report	*Unit*	*Source*
Total amount of services	Total number	Regional data available
Amount of services divided according to kind	number	
Comment: Contractual nature protection, consulting, forest pedagogy, industrial logging operations, tourism infrastructure, etc.		

5.1.3.4 Forest Management Systems (A)

3.4	**Forest Management Systems**

[5] Wooded areas which are not defined as forest according to the Austrian Forest Law Art. 1 para. 5 (fuelwood areas, tree nurseries, seed plantations, Christmas-tree cultures, walnut and chestnut tree plantations).

Subcriterion	The forest management system shall embrace a regionally adapted survey of the situation, which is as detailed as possible, as well as mapping and forest management plans based on them and on voluntary management guidelines for their implementation. In the following, further surveys should be carried out periodically and their results should be considered in turn when elaborating new management plans.
Description	In detail, the management system includes following fields: 1. Detailed inventory and mapping of forest resources are provided by the Austrian Forest Inventory and other instruments. They can be complemented by inventories on regional characteristics. 2. Forest management planning shall aim to maintain or increase forest and other wooded areas, and enhance the quality of the economic, ecological, cultural and social values of the forest resources, including soil and water. Basis for forest management is the Austrian Forest Development Plan. In addition, it is recommended to elaborate regionally adapted and assessable objectives and appropriate plans for their implementation, taking into account existing planning in the fields of land use and nature protection. 3. Voluntary management guidelines exist in form of the “Pan-European Operational Level Guidelines for Sustainable Forest Management”, which can be used on a voluntary basis. It is recommended to adapt these to regional conditions or to elaborate or use similar instruments. 3. A survey of the forest resources and an assessment of their management shall be carried out periodically, and their results shall, in turn, be used in the planning. This corresponds with the continuous improvement of the planning.

Indicator: 3.4.a ***Management plans, Management guidelines* and percentage of forest areas managed according to plans or guidelines**		
Content of report	*Unit*	*Source*
Availability of plans (WEP[6]; regional plans), Silvicultural plan (WAF), Management plans "Natura 2000," other regional plans	yes/no	BML[7]: WEP; WAF Regional plans
Description of • management objectives • and regional focuses in planning		
Proportion of forest area managed according to plans to total forest area	%	
Comment: The basis for management planning is the Austrian Forest Management Plan (WEP). By using the Austrian Forest Inventory and the Austrian Forest Management Plan, it should be possible to tell whether the plans listed above are to be used, in addition.		

Indicator: 3.4.b **Inventory, mapping, monitoring, evaluation and feed back into the planning**		
Content of report	*Unit*	*Source*
Availability of maps, inventory and monitoring, and description of further regional data	yes/ no; descriptive	BML BFW Statistik Austria UBA
Comment: Detailed inventory and mapping of forest resources is provided by the Austrian Forest Inventory and other instruments and hence basically exist. If necessary, they are to be complemented by surveys of specific conditions of a region.		

[6] **WEP** ("Waldentwicklungsplan") – Forest Development Plan

[7] **BMLFUW** ("Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasser) – Federal Ministry of Agriculture and Forestry, Environment and Water; address see Chapter 4

5.1.3.5 Management practices (A)

3.5	**Management practices**
Subcriterion	Regeneration, tending and harvesting operations shall be carried out in time and in a way that does not reduce the productive capacity of the site.
Description	Adequate infrastructure, such as roads, skid tracks or bridges, shall be planned, established and maintained to ensure efficient delivery of goods and services while at the same time minimising negative impacts on the environment. With due regard to management objectives, measures shall be taken to balance the pressure of animal populations and grazing on forest regeneration and growth as well as on biodiversity.

Indicator: 3.5.a **Proportion of harvesting forms and harvested volumes**		
Content of report	*Unit*	*Source*
Shares	%	BFW: ÖWI
Volume	1000 Vfm	
Comment: Harvesting forms acc. Austrian Forest Inventory (ÖWI) are, *inter alia*: • Regeneration felling • Thinning • Fellings in small areas (Kleinflächennutzung)		

Indicator: 3.5.b **Recommended tending measures (according to ÖWI)**		
Content of report	*Unit*	*Source*
Forest area	1000 ha	BFW: ÖWI
Shares	%	

Indicator: 3.5.c. **Cleared areas given in hectares and percents in relation to forest areas where regeneration is possible or necessary**		
Content of report	*Unit*	*Source*
Forest area	1000 ha	BFW: ÖWI
Share	%	

Indicator: 3.5.d. **Road density and changes**		
Content of report	*Unit*	*Source*
Road density	m / ha	BML: Forest statistics (investment in forest property: hauling installations; road inventory) BFW: ÖWI
Length	km	
Change	%	

5.1.4 Criterion 4. Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems (A)

5.1.4.1 Diversity of genes, species and ecosystems (A)

4.1	**Diversity of genes, species and ecosystems**
Subcriterion	Forest management practices shall promote a diversity of both horizontal and vertical structures such as uneven-aged stands and the diversity of species such as mixed stands, as far as this is feasible and reasonable.
Description	Natural regeneration shall be preferred, provided that the tree species ad their genetic characteristics meet the desired regeneration target. For reforestation and afforestation, origins of native species and local provenances that are well adapted to site conditions shall be preferred, where appropriate. Only those introduced species, provenances or varieties shall be used whose impacts on the ecosystem and on the genetic integrity of native species and local provenances have been evaluated, and if negative impacts can be avoided or minimised. Forest management practices shall, where appropriate and sensible, promote a diversity of both horizontal and vertical structures, such as mixed-age stands and the diversity of species, such as mixed stands. Where appropriate, the practices should also aim to maintain and restore landscape diversity. Standing and fallen dead wood, hollow trees, old groves and rare tree species shall be left in quantities and distribution necessary to safeguard biological diversity, taking into account the potential effect on health and stability of forests and on surrounding ecosystems.

Indicator: 4.1.a **Combination of Tree Species**		
Content of report	*Unit*	*Source*
Forest area divided according to forested areas With one, two or three dominating forest species; mixed stands	ha	BML: Forest statistics BFW: - Hemerobia study - List of endangered forest biotopes - ÖWI (structural characteristics, incorporation of AKL, tree species, bushes, woody plants and their dominance)
Percentage	%	

Indicator: 4.1.b **Rejuvenation types**		
Content of report	*Unit*	*Source*
Rejuvenation area in uniform-age and mixed-age stands, classified according to rejuvenation type	ha	BFW: ÖWI
Percentage	%	

Indicator: 4.1.c **Natural state of the forest stand (Hemerobia) and changes**		
Content of report	*Unit*	*Source*
Forest area / naturalness degree	1000 ha	BFW: • Study on the naturalness of forest stands • ÖWI: (Natural forest communities: Potential natural forest communities) All management forms, except wooded areas without commercial yield, are assessed.
Forest area / naturalness degree	%	
Change	%	

Indicator: 4.1.d **Non-native tree species**		
Content of report	*Unit*	*Source*
Forest stands which include non-indigenous tree species	ha	BML: Forest statistics BFW: ÖWI (Tree species; Survey of age classes and structures, tree species, shrubs, wooden plants and their dominance)
Percentage of total stand	%	

Indicator: 4.1.e **Proportion of dead wood: standing or fallen, divided according to diameter and quality as well as changes**		
Content of report	*Unit*	*Source*
Soil coverage (minimum dbh <= 10 cm)	%	BFW: • Study on the naturalness of forest stands • ÖWI
Volume (of dead wood with minimum dbh > 10 cm)	m^3	
Degree of degradation (minimum dbh = 10 cm)	%	
Comment: The following is included in the inventory: Dead standing trees, dead and fallen woody plants, above-ground parts of root stocks, forgotten woodpiles and logs; origin of deadwood.		

Indicator: 4.1.f **Proportion of structured stands in total forest area (one-layer, two-layer, multi-layer stands)**		
Content of report	*Unit*	*Source*
1/10 of total canopy cover	1/10	BFW: ÖWI
Shares	%	BFW: ÖWI

Comment: Vertical and horizontal structures often depend on the respective development stage of a forest ecosystem. For example, naturally grown forests can eventually have a one-layer structure in their optimum phase. The state, depending on the development phase of the forest, has to be pointed out appropriately.

Indicator: 4.1.g **Fragmentation (by roads, rails, etc.) and corridors (windbreaks, hedges, etc.)**		
Content of report	*Unit*	*Source*
Length	km	BFW: ÖWI

Indicator: 4.1.h **Borderlines (within the forest area and between wooded and non-wooded areas)**		
Content of report	*Unit*	*Source*
Length	km	BFW: ÖWI

Indicator: 4.1.i **Proportion of old-growth forest stands, reserved trees**		
Content of report	*Unit*	*Source*
Shares	%	BFW: ÖWI
Comment: Share of old-growth forest stands (> 80 years) and of shrubs in a production forest in %.		

Indicator: 4.1.j **Proportion of shrubs in the stand**		
Content of report	*Unit*	*Source*
Forest area	1000 ha	BML: Forest statistics BFW: • Study on the naturalness of forest stands • ÖWI
Shares	%	

Indicator: 4.1.k **Biological diversity of wildlife**		
Content of report	*Unit*	*Source*
Number of bird species	Number	Birdlife: “Important Bird Areas“ (IBAs) Breeding Birds Monitoring
Proportion of regional to national population		
Comment: Breeding birds monitoring only began in 1999, inventory trend estimations are available		

5.1.4.2 Threatened species and types of biotopes (A)

4.2.	**Threatened species and Types of Biotopes**
Subcriterion	Forest management shall protect and maintain rare and threatened wild animal and plant species.
Description	Threatened species can be found in following reference lists: IUCN, EU Birds and Habitats Directives, List of Endangered Types of Forest Biotopes, other red lists, Species or nature protection decrees passed by the individual provinces

Indicator: 4.2.a. Number **of threatened species and changes**		
Content of report	*Unit*	*Source*
Amount	number	BML, UBA: National programmes on the protection of species FFH and Birds and Habitats Directives UBA: List of Endangered Species, etc. (www.roteliste.at) IUCN, national reports of the Biodiversity Convention
Changes	%	
Comment: There is little data available on this indicator. For example, lists of threatened species are not complete in some provinces.		

5.1.4.3 Protection and use of forest genetic resources (A)

4.3.	**Protection and use of forest genetic resources**
Subcriterion	A high variability of tree species shall be maintained and promoted.
Description	In order to maintain genetic diversity, gene reserve forests shall be represented, if possible several times, within their natural habitat in each forest community, striving a good distribution throughout growth and altitudinal zones. Forest management shall be carried out in a way that stands containing forest genetic resources are maintained. A high genetic variability of tree species is unrestrictedly maintained so that genetic diversity ensures full adaptiveness of forests to changing environmental conditions now and in future. Forest genetic resources are: • Gene reserve forests (gen reserves, gen-conservation stands) • Small stand areas (clumps, groups of trees) and individual trees • Seed collection stands • Seed plantations (seed banks, clone archives)
Comment	The aim is to define autochton forest areas (3-5 % of Austria's total forest area); in the final phase 115,000 to 195,000 ha of gene reserve forests should be registered.

Indicator: 4.3.a. **Areas and changes in proportion of stands managed for protection and utilisation of forest genetic resources (genetic pool forests, seed collection stands, etc.)**		
Content of report	*Unit*	*Source*
Forest area	ha	BML: Forest statistics[8] BFW: Register of gene reserve forests UBA: Register of protected areas: extent of biogenetic reserves
Changes	%	
Distribution throughout growth and altitudinal zones	%	

[8] Information on the extension of the programme on "Maintenance of Genetic Diversity of Forest Tree Species.

5.1.4.4 Protected forests (A)

4.4	**Protected Forests**
Subcriterion	Forestry operations in representative, rare and vulnerable forest ecosystems shall be carried out in a way that maintains the characteristics of • strictly protected forest reserves and • other forest ecosystems worth protecting.
Description	1. Strictly protected forest reserves are those areas, which are protected by law or contract. Those are the forests included in protection categories 1.1 (main protection goal of biodiversity - active interventions are not allowed) and 1.2 (main protection goal of biodiversity – minimal interventions are allowed) according to MCPFE. These two classes correlate with UICN I and II (I Strict Nature Reserve / Wildlife Preserve; II National Park). 2. Other forest ecosystems worthy of protection are included in MCPFE protection categories 1.3 (main protection goal of biodiversity – protected by active management), as well as 2 (main protection goal of landscapes and specific natural elements), or the provincial nature protection bylaws, in as far as they do not belong to IUCN categories I and II. Protected regions of Europe according to the Natura 2000 network are also included. 2.1. Protected areas of national significance National protected forest areas are defined by the present provincial laws on nature protection and are classified according inter alia to following categories: • National parks • Nature reserve (with focus on protection and maintenance of natural and sustainable ecosystems or ecosystem complexes with a high abundance of species and great structural diversity) • Landscape conservation area (areas of outstanding beauty or characteristics and/or with special recreational value) • Protected landscape segments (small landscape segments or cultural landscapes that are characteristic of particular landscapes) • Natural monuments (outstanding individual features of nature which are worth of protection because of their economic or cultural importance for a landscape or a village/town, e.g. small moors, gorges, rock formations) Furthermore, special provincial legislation (biosphere park, e.g.) is to be taken into consideration. 2.2. Protected areas of international significance Protected areas of international significance are those areas which serve for implementing the EU Habitats Directives (FFH Guidelines and Bird Protection Guidelines) or International Convention (i.e. World Heritage Convention and Ramsar Convention) as well as the areas defined in the “Important Bird Areas” (IBAs).

	Forest management shall take into account protected, rare, sensitive or representative forest ecosystems such as riparian areas and wetland biotopes, areas containing endemic species and habitats of threatened species, as defined in recognised reference lists, as well as endangered and protected genetic *in situ* resources. Special key biotopes in the forest such as water sources, wetlands, rocky outcrops and ravines shall be protected or, where appropriate, restored when damaged by forest practices.
Comment	The individual areas of the above categories cannot be added up because of existing overlapping in protected areas. Es bestehen insbesondere zu den „sonstigen schützenswerten Ökosystemen“ derzeit wegen der Zersplitterung des Naturschutzrechtes auf nationaler Ebene keine vollständig einheitlichen Kategorien. Die hier getroffene Kategorisierung ist damit als vorläufig anzusehen.

Indicator: 4.4.a

Area and change in area of *strictly protected forest reserves* (MCPFE Categories 1.1 and 1.2 or IUCN categories I and II)

Content of report	*Unit*	*Source*
Area or forest area, if possible	ha	UBA: Register of protected areas
Change	%	
Comment: Natural Forest Reserves are also included here.		

Indicator: 4.4.b.

Area and change in area of *other forest ecosystems worth protecting* (MCPFE categories 1.3 and 2, or according to the provincial nature protection bylaws, in as far as they are not included in IUCN categories 1 and II)

Content of report	*Unit*	*Source*
Area, if possible, forest area	ha	UBA: Register of protected areas, ÖROK[9]; Provincial laws on nature protection Birdife: IBAs[10]
Change	%	
Comment: This also includes biotope protection forests according to the Forest Protection Act 1975 (in the currently valid version), for which an exemption has been granted.		

[9] **ÖROK** (“Österreichische Raumordnungskonferenz”) = Austrian Conference on Regional Planning

[10] See publication “Important Bird Areas in Österreich“, BMUJF (Austrian Federal Ministry of the Environment, Youth and Family).

5.1.5 Criterion 5. Maintenance and Appropriate Enhancement of Protective Functions in Forest Management (notably soil and water) (A)

5.1.5.1 Maintenance and enhancement of protective function (soil) (A)

5.1	**Maintenance and enhancement of protective function (soil)[11]**
Subcriterion	Forest management shall aim to maintain and enhance protective functions of forests for society particularly in those areas that fulfil special protective functions (protection from soil erosion).
Comment	Areas with special protective functions can be found in the Forest Development Plan.

Indicator: 5.1.a **Extent and percentage of forest areas managed primarly for soil protection as well as changes**		
Content of report	*Unit*	*Source*
Area	1000 ha	BFW: ÖWI (Protection forest according to property structures, accessability, soil movement, development stage, grazing and stand stability) BML: WEP
Share in total forest area	%	
Changes	%	

Indicator: 5.1.b **Decomposition and development stages as well as stability of stands**		
Content of report	*Unit*	*Source*
Stability levels given in hectares / total (soil) protection area	ha	BFW
Comment: Accessible protection forest without commercial yield is considered in this indicator.		

[11] Protection forest without commercial yield is not considered (exception: indicator 5.1.b: accessible protection forest without commercial yield).

5.1.5.2 Maintenance and continuous enhancement of the welfare function; particularly water protection function (A)

5.2	**Maintenance and continuous enhancement of the welfare function; particularly water protection function**
Subcriterion	Forest management shall aim to maintain and enhance welfare functions of forests for society particularly in those areas which fulfil a special water protection function (protection of water resources).
Description	Special care shall be given to forest management practices on forest areas with water protection function to avoid adverse effects on the quality and quantity of water resources. Inappropriate use of chemical or other harmful substances or inappropriate silvicultural practices influencing water quality in a harmful way shall be avoided.
Comment	Areas with special welfare functions, particularly water protection function (headwaters protection) are listed as such in the Forest Development Plan. There is no data on the current state of those forests that fulfil a special water protection function, but a register of those areas which might be affected by residual waste is available at the Austrian Federal Environment Agency UBA.

Indicator: 5.2.a **Extent and proportion of forest area primarily managed for water protection as well as changes**		
Content of report	*Unit*	*Source*
Area	1000 ha	UBA: Register of water protection areas
Share in total forest area	%	
Changes	%	

5.1.5.3 Protection of Infrastructure and against elemental forces (A)

5.3.	**Protection of Infrastructure and against elemental forces**
Subcriterion	The protective effect shall be maintained and improved for forest stands, which protect the infrastructure and managed natural resources against elemental forces, and which have been decreed protective forest stands by the authorities.
Description	---

Indicator: 5.3.a **Extent and proportion of forest areas primarily managed for protection against elemental forces as well as changes**		
Content of report	*Unit*	*Source*
Area	1000 ha	BML: Forest statistics (notifications of authority)
Share in total forest area	%	
Changes	%	

5.1.6 Criterion 6. Maintenance of other Socio-Economic Functions and Conditions (A)

5.1.6.1 Characteristics and significance of the forest sector (A)

6.1.	**Characteristics and significance of the forest sector**
Subcriterion	Forest management shall aim to respect the multiple functions of forests for society, have due regard to the role of forestry in rural development, and especially consider new opportunities for employment in connection with the socio-economic functions of forests.
Description	---

Indicator: 6.1.a. **Property Ownership Aspects**		
Content of report	*Unit*	*Source*
Number of forestry operations according to categories of size	Number	BML: Forest statistics Statistik Austria: Agricultural Structure Survey
Number of forestry operations according to property ownership aspects	Number	
Share	%	
Change / year	%	
Comment	Property rights and land tenure arrangements are clearly defined, documented and established in the Austrian Land Register (Grundbuch).	

Indicator: 6.1.b. **Share of the forest sector at the gross national product (GNP) and changes**		
Content of report	*Unit*	*Source*
Share in GNP	%	Statistik Austria
Change / year	%	

Indicator: 6.1.c **Amount, proportion of and changes in the employment rate in forestry, especially in rural areas (employees in forestry, wood harvesting and wood industry)**		
Content of report	*Unit*	*Source*
Amount of people	number	BML: Forest statistics; BFW: ÖWI; Statistik Austria WIFO[12]
Share	%	
Change / year	%	

Indicator: 6.1.d **Proportion of renewable resources (wood, bark, etc.) in energy supply**

[12] **WIFO** ("Wirtschaftsforschungsinstitut") – Austrian Institute of Economic Research

Content of report	*Unit*	*Source*
Share in energy supply	%	BMWA[13]: Energy report Regional data
Comment: Up to now, there is no data on national level available.		

Indicator: 6.1.e **Economic situation of forestry**		
Content of report	*Unit*	*Source*
Descriptive		Forest report; Report on the State of Agriculture in Austria (“Grüner Bericht”)

5.1.6.2 Recreational services (A)

6.2	**Recreational services**
Subcriterion	Forest area shall be provided and maintained to an extent and in conditions that ensures the recreational function of forests for forest visitors.
Description	Adequate public access to forests for the purpose of recreation shall be provided taking into account the respect for the ownership rights and rights of others, the effects on forest resources and ecosystems, as well as he compatibility with other functions of the forest.

Indicator: 6.2.a **Forest area with public access given in percentage of total forest area**		
Content of report	*Unit*	*Source*
Share in total forest area	%	BML: Forest statistics (Recreation forest by notification of forest authority; Extent of prohibited areas - BFI[14], forest area according to register) BFW: ÖWI Statistik Austria (inhabitants – census region)
Comment: In Austria forest is generally accessible to the public. The indicator serves to show this fact in the international context.		

[13] **BMWA** (“Bundesministerium für wirtschaftliche Angelegenheiten”) – Federal Ministry of Economic Affairs

[14] **BFI** (“Bezirksforstinspektion”) – district forest authority

Indicator: 6.2.b **Forest area with special recreational function (recreation forest, nature parks) and changes**		
Content of report	*Unit*	*Source*
Forest area	1000 ha	BML: Forest statistics (Recreation forest by notification of forest authority; Extent of prohibited areas – BFI, forest area according to register); UBA: Register of protected areas; laws on nature protection
Share in total forest area	%	

Indicator: 6.2.c **Extent of cycling and horse-riding paths, trails and fitness training paths, etc.**		
Content of report	*Unit*	*Source*
Length	km / km^2	provincial governments; tourist associations; provincial chambers of agriculture; alpine associations
Comment: This indicator refers only to non-merchandised recreational services. This concerns particularly cycling paths, for which contractual regulations regarding liability exist; merchandised services see subcriterion 3.3.		

5.1.6.3 Professional education, research (A)

6.3	**Professional education, research**
Subcriterion	Forest managers, contractors, employees and forest owners should permanently continue their training in relation to sustainable forest management. The quality level of professional education shall be maintained and enhanced respectively.
Description	---

Indicator: 6.3.a **Share of graduates in forestry, foresters, forst wardens, skilled forest workers, etc. in a region and changes**		
Content of report	*Unit*	*Source*
Number of people	number	BML: Forest statistics (employees in forestry at district level) Statistik Austria (comprehensive censuses, number of inhabitants, in course of a census flats households, people and working places are counted); Survey of agrarian structures
Changes	%	

Indicator: 6.3.b **Kind and number of courses in which employees/workers, forest owners and forest managers participate annually** (especially in relation to sustainable forest management)

Content of report	*Unit*	*Source*
Number of registrations	number	Registration forms of forestry training centres (FAST)
Number of participants	number	FAST
Type and number of offered courses (description)	number	Courses of Chamber of Agriculture; FAST

Indicator: 6.3.c **Investments in forest-related projects**		
Content of report	*Unit*	*Source*
Volume of Investments	€	BML; projects supported by the Austrian Industrial Research Promotion Fund (FFF)

5.1.6.4 Health and safety at work and working conditions (A)

6.4	**Health and safety at work and working conditions**
Subcriterion	Working conditions shall be safe, and guidance and training in safe working practice should be provided.
Description	---

Indicator: 6.4.a **Number of annual reports of and change in accidents in the field of forestry**		
Content of report	*Unit*	*Source*
Number of reports	number	General Accident Insurance Company (AUVA); Social Insurance Institution for the Self-Employed (SVS)
Changes	%	

Indicator: 6.4.b **Number of employees/workers, forest owners and forest managers who annually participate in first aid courses or courses on working techniques**		
Content of report	*Unit*	*Source*
Number of participants	number	AUVA; FAST

5.1.6.5 Public awareness – public relations (A)

6.5	**Public awareness – public relations**
Subcriterion	Public relations should communicate knowledge of forests, initiate communication, promoting confidence in forestry, clarifying its achievements, problems and concerns and making these concerns more acceptable.
Description	---

Indicator: 6.5.a **Number of educational events, forest demonstration paths, demonstration forests, field trips of schools, etc. as well as visitors/participants**		
Content of report	*Unit*	*Source*
Number of visitors/participants	number	FAST; BFI; LWK
Number of events (description)	number	

Indicator: 6.5.b **Expenses for and number of publications, brochures and other promotional activities**		
Content of report	*Unit*	*Source*
Expenses	given in € 1000	BML (Division of Public Relations; Forest report; LWK; FHP; ProHolz); Regional data
Publications	number	

Indicator: 6.5.c **Number of people with professional education in forest pedagogic**		
Content of report	*Unit*	*Source*
Number of courses on forest pedagogic	number	FAST; BFI; LWK
Number of people	number	

5.1.6.6 Cultural values (A)

6.6	**Cultural values**
Subcriterion	Sites with recognised specific historical, cultural or spiritual significance shall be protected, maintained or managed in a way that takes due regard of the significance of the site.
Description	---

Indicator: 6.6.a **Areas of cultural significance and changes**		
Content of report	*Unit*	*Source*
Area	ha	UBA: Register of protected areas; Provincial governments
Share in total forest area	%	
Changes	%	

Indicator: 6.6.b **Number and kind of individual monuments and changes**		
Content of report	*Unit*	*Source*
Number and kind of individual monuments	number	Provincial governments; Austrian Agency for the Protection of Historical Monuments
Changes	%	

5.2 Criteria and indicators for assessing sustainable forest management for the group certification in general and the individual certification (part B)

The below chapter includes criteria and indicators for assessing sustainable forest management in Austria for the group certification in general and the individual certification. Table 2 shows the amount of criteria and associates indicators following the division of criteria elaborated in the follow-up of the Helsinki Conference.

Part B

Criteria and Indicators for Assessing Sustainable Forest Management in Austria for the group certification in general and the individual certification

Table 2: Overview: Criteria and Indicators for Assessing Sustainable Forest Management in Austria – for the group certification in general and the individual certification (part B)

No.	Criterion	Subcriterion	Number of Indicators (in brackets: thereof not relevant to the system)
1	**Forest Resources**	• Forest Inventory • Growing stock • Age Structure	4 2 1
2	**Health and Vitality**	• State of Forest Soil • Loss of Needles or Leaves • Forest Damage	2 (2) 1 (1) 6 (2)
3	**Productive Functions**	• Timber increment and felling • Non-wood products • Infrastructure services • Forests with Management Planning • Management Planning Procedure	1 2 2 2 5
4	**Biological Diversity**	• Structural diversity • Endangered Species • Forest genetic resources • Protected Forests	9 1 1 2
5	**Protective Function**	• Protection forest • Water conservation forest • Protective forest by law	2 1 1
6	**Socio-Economic Functions**	• Significance of the forest sector • Recreational services • Professional education; research • Health and safety at work and working conditions • Public relations • Cultural values	2 3 (1) 1 (1) 2 2 2
∑	**6 criteria**	**24 subcriteria**	**57 indicators**

The indicators 2.1.a, 2.1.b, 2.2.a, 2.3.a, 2.3.b, 6.2.b and 6.3.a mentioned in chapter 3.2 cannot be influenced by the forest management at individual or group level and therefore are not relevant to the scheme.

5.2.1 Criterion 1. Maintenance and Appropriate Enhancement of Forest Resources and their Contribution to Global Carbon Cycles (B)

5.2.1.1 Forest inventory (B)

1.1	**Forest Inventory**
Subcriterion	Forest management planning shall aim to maintain or to increase forest area, and to maintain and enhance the quality of the economic, ecological,

	cultural and social values of forest resources, including soil and water.
Description	Forest areas are those areas that are defined as such according to the Austrian Forest Law of 1975 Art. 1 (Forest; Definition of Terms) and Art. 2 (Windbreaks, etc.) and according to the guidelines of the Austrian Forest Inventory.
Comment	This subcriterion refers only to the forest area. Other aspects of sustainable forest management with reference to economic, ecological, cultural and social values are dealt with in the specific criteria 3, 4 and 6.

Indicator: 1.1.a **Total forest area of the holding/the group**	
Content of report	*Unit*
Forest area	ha

Indicator: 1.1.b **Forest area classified according to forest and vegetation types, ownership and age structures**	
Content of report	*Unit*
Forest area	ha

Indicator: 1.1.c **Proportion of forest area to total area of the holding/the group**	
Content of report	*Unit*
Proportion	%

Indicator: 1.1.d **Land-use categories**	
Content of report	*Unit*
Shares	ha
Comment: This indicator serves, above all, to describe the situation of the holding/the group. The main land-use categories are: • Forest areas • Agricultural areas • Other areas	

5.2.1.2 Growing stock (B)

1.2.	**Growing stock**
Subcriterion	Growing stock in forests should be maintained or increased both in quality and quantity.
Description	Growing stock refers to the total volume of standing timber in a production forest (commercial forest and protection forest with commercial yield).

Indicator: 1.2.a. **Extent of and changes in the *total* growing stock**	
Content of report	*Unit*

Growing stock	Vfm[15]
Change	%

Indicator: 1.2.b. **Extent of and changes in the *mean* growing stock**	
Content of report	*Unit*
Growing stock	Vfm / ha
Change	%

5.2.1.3 Age Structure and/or diameter distribution (B)

1.3	**Age Structure and/or Diameter Distribution**
Criterion	--
Description	--

Indicator: 1.3.a **Extent of and changes in the age structure or respective distribution of stand development stages**	
Content of report	*Unit*
Growing stock divided according to age structure and development stages	Vfm
Growing stock divided according to age structure and development stages	Vfm / ha
Change	%

[15] **Vfm** (“Vorratsfestmeter”) – cubic metre of standing timer

5.2.2 Criterion 2. Maintenance of Forest Ecosystem Health and Vitality (B)

5.2.2.1 State of the forest soil (B)

2.1	**State of the Forest Soil**
Subcriterion	Health condition of forests and nutrient balance of soil and foliage in a region should be documented.
Description	---
Comment	This subcriterion serves above all to show factors which cannot be influenced by regional forest management, but which have considerable influence on it. The nutrient balance of soil and foliage is monitored by the Soil Condition Inventory and the Forest Damage Monitoring System (WBS) within ICP Forests. They are subjected to following regulations: deposition measurements and soil condition: EWG regulation no. 1091/94 and no. 3528 (measurement of deposits and state of the forest soil); EWG regulation no. 1696/87 (foliage analyses).

Indicator: 2.1.a **Changes in nutrient balance and acidity over the past 10 years in the region**	
Content of report	*Unit*
Change	degree of CEC saturation
Change	pH value
Source: BFW: WBS	
Comment: Nutrient balance and soil acidity are neither surveyed by permanent nor by periodical sampling networks. The existing data refers to a survey of the period 1989-95.	

Indicator: 2.1.b **Nutrient balance and changes in nutrient balance of foliage in the region**	
Content of report	*Unit*
Nutrient balance	mg / g foliage
Change in nutrient balance	%
Source: BFW: WBS; Bioindicator network	

5.2.2.2 Loss of needles or leaves (B)

2.2	**Loss of Needles or Leaves**
Subcriterion	--
Description	--
Comment	--

Indicator: 2.2.a **Changes in serious defoliation of forests using the UN/ECE and EU defoliation classification (classes 2, 3 and 4) over the past 5 years**	
Content of report	*Unit*
Changes	%
Source: BFW: WBS (crown opening-up; crown condition)	

5.2.2.3 Forest damage (B)

2.3	**Forest Damage**
Subcriterion	Forest management shall ensure health and vitality of forests and rehabilitate degraded forest ecosystems. Especially abiotic, biotic and anthropogenic factors that affect health and vitality are to be monitored.
Description	Following influences on health and vitality are considered in this subcriterion: Abiotic factors: • Storm (blowdowns, stem und topbreaks) • Snow (incl. avalanches, snowbreak, glazed frost) • Fire (forest fires, lightning stroke) • Rockfall • Mud flow Biotic factors: • Insects • Phytopathogenic causes • Game • Grazing stock Anthropogenic factors: • Forest management (e.g. harvesting damages) • Deposition of air pollutants The reference period should be 5 years, if not otherwise indicated.
Comment	This subcriterion serves above all to show factors which in many cases cannot be influenced by forest management, but which have considerable influence on it. Potential influences on health and vitality of forest ecosystems by anthropogenic factors are also dealt with in criterion 3 (road construction), criterion 4 (structural diversity) and in criterion 6 (tourism).

Indicator: 2.3.a **Average annual area damaged by *abiotic* factors and volume harvested from these areas**	
Content of report	*Unit*
Average forest area	ha / year
Volume of harvested wood	Vfm / year and %
Comment: Damaged means influenced by abiotic causes.	

Indicator: 2.3.b **Average annual area damaged by *biotic* factors and volume harvested from these areas**	
Content of report	*Unit*
Average area	ha / year
Volume of harvested wood	Vfm / year and %
Amount of stems	number
Share of total stem number	%
Share of damaged regeneration	%
Amount of grazing stock	number
Comment: Damaged means influenced by biotic causes.	

Indicator: 2.3.c **Average annual area damaged by *anthropogenic* factors and volume harvested from these areas**	
Content of report	*Unit*
Average forest area	ha / year
Volume of harvested wood	Vfm / year and %
Comment: Damaged means influenced by anthropogenic causes.	

Indicator: 2.3.d **Average annual area treated with pesticides**	
Content of report	*Unit*
Forest area	ha / year

Indicator: 2.3.e **Amount of traps against insects that are injurious to forests (e.g. trap trees, pheromon traps)/ biotic damages in the previous year**	
Content of report	*Unit*
Amount of traps / biotic damages in the previous year	number / year / ha or Vfm

5.2.3 Criterion 3. Maintenance and Encouragement of Productive Functions of Forests (wood and non-wood) (B)

5.2.3.1 Timber Increment and Felling (B)

3.1	**Timber Increment and Felling**
Subcriterion	The harvesting level of wood shall not exceed a rate that can be sustained in quantity and quality in the medium and long term.
Description	---

Indicator: 3.1.a **Balance between growth and removals over the past 10 years**	
Content of report	*Unit*
Yield	Vfm
Growth	Vfm
Proportion of growth to removal	%

5.2.3.2 Non-wood products (B)

3.2	**Non-wood products**
Subcriterion	The harvesting level of non-wood products shall not exceed a rate that can be sustained in the medium and long term.
Description	Non-wood products are, *inter alia*: • Hunting, game • Other non-wood forest products such as Christmas-tree cultures[16], cork, berries, branches of trees used for decorational purposes, utilisation of resin, cutting of dwarf pines (Pinus mugo) for purposes such as oil etc., game fencing, forest litter utilisation, water, stone quarrying, recreation, etc. The harvesting level of wood and non-wood products shall not exceed a rate that can be sustained in the long term (Sustainability). Best use should be made of the harvested forest products, with due regard to nutrient offtake. Gravel and stone quarrying should be quarried in a way that keeps negative effects on and possible destruction of the environment low. Game management shall be carried out in a way that does not and will not threaten ecologically, economically and socio-economically sustainable forest management.
Comment	Marketing non-wood products presents a great financial potential for the forest industry.

[16] According to the Austrian Forest Law (in its current ammened version) Art. 1 para. 5 Christmas-tree cultures are not defined as forests.

Indicator: 3.2.a **Total amount of and changes in hunting and hunting products**	
Content of report	*Unit*
Amount of culled game divided according to game species	number / year
Changes	%

Indicator: 3.2.b **Total amount of and changes in other marketable non-wood forest products**	
Content of report	*Unit*
Total volume according to non-wood product categories	Weight, length and area dimensions
Change of amount	%
Comment: Stone quarrying, gravel quarrying, mining, arboretum, fuelwood plantations, water, touristic areas (ski slopes, climbing routes, etc.) leasing, etc. Wooded areas which are not defined as forest according to the Austrian Forest Law Art. 1 para. 5 (fuelwood areas, tree nurseries, seed plantations, Christmas-tree cultures, walnut and chestnut tree plantations).	

5.2.3.3 Infrastructure Services (B)

3.3	**Infrastructure Services**
Subcriterion	The marketable infrastructure services available should be maintained or expanded.
Description	Marketable infrastructure services shall only be made available to an extent, which will not endanger sustainable forest management in ecological, economic or socioeconomic terms.

Indicator: 3.3.a **Type and Volume of Marketable Infrastructure Services**	
Content of report	*Unit*
Type and Number of Services	number
Comment: Contractual nature protection, consulting, forest pedagogy, holdings, touristic infrastructure, etc.	

Indicator: 3.3.b **Ratio of Wood Products / Non-wood Products**	
Content of report	*Unit*
Ratio of Turnover	%

5.2.3.4 Forests with management plans (B)

3.4	**Forests with Management Plans**
Subcriterion	The forest management system shall embrace an as detailed as possible survey of the situation, as well as mappings and forest management plans based on them and on voluntary management guidelines for their implementation. In the following, further surveys shall be carried out

	periodically and their results shall be considered in turn when elaborating new management plans.
Description	In detail, the management system includes following fields: 1. Detailed inventory and mapping, adapted to holding-, group-size and situation, of forest resources are to be established and maintained. 2. Forest management planning should aim to maintain or increase forest and other wooded areas, and enhance the quality of the economic, ecological, cultural and social values of the forest resources, including soil and water. Appropriate and detailed objectives and management planning are to be elaborated on the basis of the situational survey. 3. Voluntary management guidelines exist in form of the "Pan-European Operational Level Guidelines for Sustainable Forest Management", which can be used on a voluntary basis. It is recommended to take these as a reference or adapt them to conditions (holding/group). 4. A survey of the forest resources and an assessment of their management should be carried out periodically, and their results should, in turn, be used in the planning. This corresponds with a continuous improvement of the planning.

Indicator: 3.4.a **Management plans and Management Guidelines**	
Content of report	*Unit*
Availability	yes/no
Description of • management objectives and • holding focuses in planning (holding/group)	
Comment: Appropriate and detailed objectives and management planning are to be elaborated on the basis of the situational survey. Further recommendations concerning the contents of management plans could be taken e.g. from the voluntary "Pan-European Operational Level Guidelines for Sustainable Forest Management".	

Indicator: 3.4.b **Inventory, mapping, evaluation and feeding back into the planning**	
Content of report	*Unit*
Availability of maps and inventory data	yes/no
Comment: Detailed inventory and mapping, adapted to size and conditions (of the holding/group), of forest resources are to be established and maintained. Further recommendation with regard to the content can be found in the voluntary "Pan-European Operational Level Guidelines for Sustainable Forest Management". Results of the forest inventory and their evaluation should continuously be considered in the planning.	

5.2.3.5 Management procedures (B)

3.5	**Management Procedures**
Subcriterion	Regeneration, tending and harvesting operations shall be carried out in time and in a way that does not reduce the productive capacity of the site.
Description	Adequate infrastructure, such as roads, skid tracks or bridges, shall be planned, established and maintained to ensure efficient delivery of goods and services while at the same time minimising negative impacts on the environment. With due regard to management objectives, measures shall be taken to balance the pressure of animal populations and grazing on forest regeneration and growth as well as on biodiversity.

Indicator: 3.5.a **Proportion of harvesting forms and harvested volumes**	
Content of report	*Unit*
Shares	%
Volume	Vfm
Comment: Harvesting forms are, *inter alia*: • Single tree removal • Regeneration felling	

Indicator: 3.5.b **Recommended tending measures (according to ÖWI)**	
Content of report	*Unit*
Forest area	ha
Share	%
Comment: list particular tending measures, e.g. thinning, etc.	

Indikator: 3.5.c **Cleared areas given in hectares and percents in relation to of forest areas where regeneration is possible or necessary**	
Content of report	*Unit*
Forest ares	ha
Share	%

Indikator: 3.5.d **Road density and changes**	
Content of report	*Unit*
Road density	m / ha
Length	km
Change	%

Indicator: 3.5 e **Average area annually fertilised (incl. initial fertilisation in connection with reforestation)**	
Content of report	*Unit*

Forest area	ha / year

5.2.4 Criterion 4. Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems (B)

5.2.4.1 Diversity of genes, species and ecosystems (B)

4.1	**Diversity of genes, species and ecosystems**
Subcriterion	Forest management practices shall promote a diversity of both horizontal and vertical structures such as uneven-aged stands and the diversity of species such as mixed stands, as far as this is feasible and reasonable.
Description	Natural regeneration shall be preferred, provided that tree species ad their genetic characteristics meet the desired regeneration target. For reforestation and afforestation, origins of native species and local provenances hat are well adapted to site conditions shall be preferred, where appropriate. Only those introduced species, provenances or varieties should be used whose impacts on the ecosystem and on the genetic integrity of native species and local provenances have been evaluated, and if negative impacts can be avoided or minimised. Forest management practices shall, where appropriate and sensible, promote a diversity of both horizontal and vertical structures such as uneven-aged stands and the diversity of species such as mixed stands. Where appropriate, the practices should also aim to maintain and restore landscape diversity. Standing and fallen dead wood, hollow trees, old groves and rare tree species shall be left in quantities and distribution necessary to safeguard biological diversity, taking into account the potential effect on health and stability of forests and on surrounding ecosystems.

Indicator: 4.1.a **Extent and proportion of the average annual natural regeneration area in the total regeneration area**	
Content of report	*Unit*
Forest area	ha
Share	%

Indicator: 4.1.b **Proportion of dead wood: standing or fallen, divided according to diameter and quality as well as changes**	
Content of report	*Unit*
Soil coverage (minimum dbh <= 10 cm)	%
Volume (of dead wood with minimum dbh > 10 cm)	m^3
Degree of degradation (minimum dbh = 10 cm)	%
Comment: Following is taken into the inventory: dead-standing trees, dead and fallen wooden plants, overground parts of root-stocks, forgotten woodpiles and logs; origin of deadwood.	

Indicator: 4.1.c **Fragmentation (by roads, rails, etc.) and corridors (windbreaks, hedges, etc.)**	
Content of report	*Unit*
Length	km

Indicator: 4.1.d **Borderlines (within the forest area and between wooded and non-wooded areas)**	
Content of report	*Unit*
Length	km

Indicator: 4.1.e **Proportion of old-growth forest stands, reserved trees**	
Content of report	*Unit*
Shares	%
Comment: Share of old-growth forest stands (> 80 years) and of shrubs in a production forest in %.	

Indicator: 4.1.f **Proportion of mixed-forest areas and changes**	
Content of report	*Unit*
Shares	%
Change	%

Indicator: 4.1.g **Proportion of structured stands in total forest area (one-layer, two-layer, multi-layer stands)**	
Content of report	*Unit*
Shares	%
1/10 of total canopy cover	1/10
Change	%

Indicator: 4.1.h **Proportion of shrubs in the stand**	
Content of report	*Unit*
Forest area	ha
Shares	%

Indicator: 4.1.i **Percentage of indigenous and introduced tree species and their proportion to each other**	
Content of report	*Unit*
Area	ha
Shares	%
Proportion	%

5.2.4.2 Endangered species and types of biotopes (B)

4.2	**Endangered Species and Types of Biotopes**
Subcriterion	Forest management shall take consideration of rare or endangered species of wild animals or plants.
Description	Endangered animal or plant species were taken from the following reference lists: IUCN, Flora & Fauna Habitat Guidelines, Bird Protection Guidelines, List of Endangered Forest Biotopes, other lists of endangered species, and the provincial nature protection bylaws

Indicator: 4.2.a **Amount of threatened species and changes**		
Content of report	*Unit*	*Source*
Amount	number	BML, UBA: National programmes on the protection of species FFH and Birds and Habitats Directives UBA: Red list (www.roteliste.at) IUCN, national reports for the Biodiversity Convention
Changes	%	
Comment: There is little data on this indicator. For example, red lists of threatened species are not complete in some provinces.		

5.2.4.3 Protection and use of forest genetic resources (B)

4.3	**Protection and use of forest genetic resources**
Subcriterion	A high variability of tree species shall be maintained and promoted.
Description	Forest management shall be carried out in a way that maintains stands containing forest genetic resources are maintained. A high genetic variability of tree species is maintained so that genetic diversity ensures full adaptation of forests to changing environmental conditions now and in future. Forest genetic resources are: • Gene reserve forests (genetic reserves, genetic conservation stands) • Small stand areas (clumps, groups of trees) and individual trees • Seed collection reserves • Seed plantations (seed banks, clone archives)

Indicator: 4.3.a **Areas and changes in proportion of stands managed for protection and utilisation of forest genetic resources (gene reserve forests, seed collection reserves, etc.)**	
Content of report	*Unit*
Forest area	ha
Changes	%

5.2.4.4 Protected forests (B)

4.4	**Protected Forests**
Subcriterion	Forestry operations in representative, rare and vulnerable forest ecosystems shall be carried out in a way that maintains the characteristics of o strictly protected forest reserves and o other forest ecosystems worth protecting
Description	1. Strictly protected forest reserves are those areas which are protected by law or contract. These include the areas classified as IUCN categories I and II (I: strict nature reserve/wilderness area, II: national park). 2. Other forest ecosystems worth protecting are areas defined as such by provincial nature-protection laws, if not already included in IUCN categories I and II. These are those areas included in the international categories of protected areas according to the Birds and Habitats Directives and “Important Bird Areas” of the European Nature 2000 network. 2.1. Protected areas of national significance National protected forest areas are defined by the present provincial laws on nature protection and are classified according to following categories: • National parks • Nature reserve (with focus on protection and maintenance of natural

	and sustainable ecosystems or ecosystem complexes with a high abundance of species and great structural diversity) • Landscape conservation area (areas of outstanding beauty or characteristics and/or with special recreational value) • Protected landscape segments (small landscape segments or cultural landscapes that are characteristic of particular landscapes) • Natural monuments (outstanding individual features of nature which are worth of protection because of their economic or cultural importance for a landscape or a village/town, e.g. small moors, gorges, rock formations) Furthermore, special provincial legislation (Biosphere Parks, protected areas, e.g.) is to be taken into consideration. 2.2. Protected areas of international significance Protected areas of international significance are those areas which serve for implementing the EU Habitats Directives (FFH-Guidelines, as well as Bird Protection Guidelines) or international conventions (World Heritage Convention and Ramsar Convention, e.g.) as well as the areas defined in the “Important Bird Areas” (IBAs). Forest management shall take into account protected, rare, sensitive or representative forest ecosystems such as riparian areas and wetland biotopes, areas containing endemic species and habitats of threatened species, as defined in recognised reference lists, as well as endangered and protected genetic *in situ* resources. Special key biotopes in the forest such as water sources, wetlands, rocky outcrops and ravines should be protected or, where appropriate, restored when damaged by forest practices
Comment	The individual areas of the above categories cannot be added up because of existing overlapping in protected areas. On a national scope, the categories are not completely harmonized at present, in particular the "other ecosystems worthy of protection," due to the fragmentation of the environmental protection act. Hence, the above categories are to be considered as preliminary categories. With regard to SFM at holding/group level, it seems more appropriate to ensure future maintenance of threatened species by protecting their habitats.

Indicator: 4.4.a **Area and change in area of *strictly protected forest reserves* (MCPFE Categories 1.1 and 1.2 or IUCN categories I and II)**	
Content of report	*Unit*
Forest area	ha
Change	%
Comment: This also includes natural forest reserves.	

Indicator: 4.4.b **Area and change in area of *other forest ecosystems worth protecting* (MCPFE-categories 1.3 and 2, or according to the provincial nature protection by laws, in as far as they are not included in categories IUCN I and II)**	
Content of report	*Unit*
Forest area	ha
Change	%
Source: provincial laws on nature protection, Austrian Conference on Regional Planning (ÖROK), Birdlife: IBAs	
Comment: *This also includes biotope protection forests according to the Forest Act of 1975 (in the currently valid version), for which no exemptions have been granted.*	

5.2.5 Criterion 5. Maintenance and Appropriate Enhancement of Protective Functions in Forest Management (notably soil and water) (B)

5.2.5.1 Maintenance and enhancement of protective function (soil) (B)

5.1	**Maintenance and enhancement of protective function (soil)[17]**
Subcriterion	Forest management shall aim to maintain and enhance protective functions of forests for society particularly in those areas which fulfil special protective functions (protection from soil erosion).
Comment	Areas with special protective functions can be found in the Forest Development Plan.

Indicator: 5.1.a **Extent and percentage of forest areas managed primarily for soil protection as well as changes**	
Content of report	*Unit*
Forest area	ha
Share in total forest area of the holding/group	%
Changes	%

Indicator: 5.1.b **Decomposition and development stages as well as stability of stands**	
Content of report	*Unit*
Stability levels given in hectares / total (soil) protection area	ha

[17] Protection forest without commercial yield is not considered (exception: indicator 5.1.b: accessible protection forest without commercial yield).

5.2.5.2 Maintenance and continuous enhancement of the welfare function; particularly water protection function (B)

5.2	**Maintenance and continuous enhancement of the welfare function; particularly water protection function**
Subcriterion	Forest management shall aim to maintain and enhance welfare functions of forests for society particularly in those areas which fulfil a special water protection function (protection of water resources).
Description	Special care shall be given to forest management practices on forest areas with water protection function to avoid adverse effects on the quality and quantity of water resources. Inappropriate use of chemical or other harmful substances or inappropriate silvicultural practices influencing water quality in a harmful way shall be avoided.
Comment	Areas with special welfare functions, particularly water protection function (protection of headwaters) are listed as such in the Forest Development Plan (WEP) There is no data on the current state of those forests that fulfil a special water protection function, but a register of those areas which might be affected by residual waste is available at the Austrian Federal Environment Agency UBA.

Indicator: 5.2.a **Extent and proportion of forest area primarily managed for water protection as well as changes**	
Content of report	*Unit*
Forest area	1000 ha
Share in the total forest area of the holding/group	%
Changes	%

5.2.5.3 Protection of Infrastructures and against elemental forces – protective forest by law (B)

5.3	**Protection of Infrastructures and against elemental forces – protective forest by law**
Subcriterion	The protective function of forest areas that are defined by law as protective forests shall be maintained and enhanced.
Description	---

Indicator: 5.3.a **Extent and proportion of forest areas primarily managed for protection against elemental forces as well as changes**	
Content of report	*Unit*
Area	1000 ha
Share in the total forest area of the holding/group	%
Changes	%

5.2.6 Criterion 6. Maintenance of other Socio-Economic Functions and Conditions (B)

5.2.6.1 Significance as an employer (B)

6.1	**Significance as an Employer**
Subcriterion	Forest management shall aim to respect the multiple functions of forests for society, have due regard to the role of forestry in rural development, and especially consider new opportunities for employment in connection with the socio-economic functions of forests.
Description	---
Comment	Property rights and land tenure arrangements are clearly defined, documented and established in the Austrian Land Register (Grundbuch).

Indicator: 6.1.a **Proportion of and changes in the employment rate of the holding/group**	
Content of report	*Unit*
Number of employees/workers	number
Change	%
Comment: Employees and workers should be divided into: • permanent work force • seasonal worker • external work force	

5.2.6.2 Recreational services (B)

6.2	**Recreational services**
Subcriterion	Forest area shall be provided and maintained to an extent and in conditions that at best ensures the recreational function of forests for forest visitors.
Description	Adequate public access to forests for the purpose of recreation shall be provided taking into account the respect for the ownership rights and rights of others, the effects on forest resources and ecosystems, as well as he compatibility with other functions of the forest.

Indicator: 6.2.a **Forest area with public access**	
Content of report	*Unit*
Proportion of forest area with public access to total forest area of the holding/group	%
Comment: In Austria forest is generally accessible to the public. The indicator serves to show this fact in the international context.	

Indicator: 6.2.b **Forest area with special recreational function (recreation forest, nature parks) and changes**	
Content of report	*Unit*
Forest area	ha
Changes	%

Indicator: 6.2.c. **Extent of cycling and horse-riding paths, trails and fitness training paths, etc.**	
Content of report	*Unit*
Length	km
Density of cycling and horse-riding paths, trails, etc.	km / km^2
Changes	%
Comment: This indicator refers only to non-merchandised recreational services. This concerns particularly cycling paths, for which contractual regulations regarding liability exist; merchandised services see subcriterion 3.3.	

5.2.6.3 Professional education, research (B)

6.3	**Professional education, research**
Subcriterion	Forest managers, contractors, employees and forest owners should permanently continue their training in relation to sustainable forest management. The quality level of professional education shall be maintained and enhanced respectively.
Description	---

Indicator: 6.3.b **Number and kind of courses in which employees/workers, forest owners and forest managers participate annually** (especially in relation to sustainable forest management)	
Content of report	*Unit*
Number of participants	number

5.2.6.4 Health and safety at work and working conditions (B)

6.4	**Health and safety at work and working conditions**
Subcriterion	Working conditions shall be safe, and guidance and training in safe working practice should be provided.
Description	---

Indicator: 6.4.a **Kind and number of annual reports of accidents and changes**	
Content of report	*Unit*
Number of reports	number
Changes	%

Indicator: 6.4.b **Number of employees/workers, forest owners and forest managers who annually participate in first aid courses or courses on working techniques**	
Content of report	*Unit*
Number of participants	number

5.2.6.5 Public awareness – public relations (B)

6.5	**Public awareness – public relations**
Subcriterion	Public relations should communicate knowledge of forests, initiate communication, promoting confidence in forestry, clarifying its achievements, problems and concerns and making these concerns more acceptable.
Description	---

Indicator: 6.5.a **Number of educational events, forest demonstration paths, demonstration forests, field trips of schools etc.**	
Content of report	*Unit*
Number of events	number
Number of participants	number

Indicator: 6.5.b. **Expenses for and number of publications, brochures and other promotional activities**	
Content of report	*Unit*
Costs	€
Number of publications	number

5.2.6.6 Cultural values (B)

6.6	**Cultural values**
Subcriterion	Sites with recognised specific historical, cultural or spiritual significance shall be protected, maintained or managed in a way that takes due regard of the significance of the site.
Description	Protection, maintenance and continuous enhancement of sites of special cultural significance.

Indicator: 6.6.a **Areas of cultural significance and changes**	
Content of report	*Unit*
Area	ha
Changes	%

Indicator: 6.6.b **Number and kind of individual monuments and changes**	
Number of individual monuments	number
Changes	%

Appendix

Addresses

Federal Ministry of Agriculture, Forestry, Regions and Water Management
(Bundesministerium für Land- und Forstwirtschaft, Regionen und Wasserwirtschaft (BML))
Stubenring 1
1010 Vienna
www.bml.gv.at

Austrian Research Centre for Forests
(Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und Landschaft (BFW))
Seckendorff-Gudent-Weg 8
1131 Vienna
www.bfw.ac.at

Austrian Conference on Spatial Planning
(Österreichische Raumordnungskonferenz (ÖROK))
Fleischmarkt 1
1010 Vienna
www.oerok.gv.at

Statistics Austria - Federal Institution under Public Law
(Statistik Austria – Bundesanstalt Statistik Österreich)
Guglgasse 13
1110 Vienna
www.statistik.at

Environment Agency Austria
(Umweltbundesamt Gesellschaft mit beschränkter Haftung (UBA-GmbH))
Spittelauer Lände 5
1090 Vienna
www.umweltbundesamt.at

Abbreviations

AUVA	Allgemeine Unfallversicherungsanstalt (General Accident Insurance Company)
BFI	Bezirksforstinspektion (district forest authority)
BGBL	Bundesgesetzblatt (Federal Law Gazette)
bhd	breast height diametre
BFW	Federal Research and Training Centre for Forests, Natural Hazards and Landscape (Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und Landschaft BFW)
BML	Bundesministerium für Land- und Forstwirtschaft, Regionen und Wasserwirtschaft (Federal Ministry of Agriculture, Forestry, Regions and Water Management)
BMUJF	Bundesministerium für Umwelt, Jugend und Familie (Federal Ministry of the Environment, Youth and Family)
BMwA	Bundesministerium für wirtschaftliche Angelegenheiten (Federal Ministry of Economic Affairs)
CIFOR	Centre for International Forestry Research
EEC	European Economic Community
EU	European Union
FAST	Forstliche Ausbildungstätten (Forestry training centres)
FFF	Forschungsförderungsfonds (Austrian Industrial Research Promotion Fund)
fm	Festmeter (cubic metre of roundwood)
FHP	Kooperationsplattform Forst Holz Papier (Cooperation platform Forest, Timber and Paper)
FSC-D	Forest Stewardship Council Germany
GNP	Gross National Product
IBAs	Important Bird Areas
ICP Forests	International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests
ITTO	International Tropical Timber Organisation
IUCN	International Union for Conservation of Nature
LLWK	Landes-Landwirtschaftskammer (Provicial Chamber of Agriculture)
LWK	Landwirtschaftskammer (Chamber of Agriculture)
MCPFE	Ministerial Conference on the Protection of Forests in Europe
NschG	Naturschutzgesetz (Nature Protection Law)
ÖROK	Österreichische Raumordnungskonferenz (Austrian Conference on Regional Planning)
ÖWI	Österreichische Waldinventur (2016/21) (Austrian Forest Inventory)
PEFC	Programme for the Endorsement of Forest Certification Schemes
PEFC-D	PEFC Deutschland
SFM	Sustainable Forest Management
SVS	Sozialversicherungsanstalt der Selbständigen (Social Insurance Institution for the Self-Employed)
UBA	Umweltbundesamt (Environment Agency Austria)
UKWAS	United Kingdom Woodland Assurance Scheme

Vfm	Vorratsfestmeter (cubic metre of standing timber
WBS	Waldschadenbeobachtungssystem (Forest Damage Monitoring System)
WEP	Waldentwicklungsplan (Forest Development Plan)
WIFO	Wirtschaftsforschungsinstitut (Austrian Institute of Economic Research)
WWF	World Wide Fund for Nature