



## FACTS AND FIGURES

Martin Kühmaier

### Definitions

**Coppice:** even-aged stands consisting of trees and shrubs that regenerate wholly or mainly vegetatively (sprout or root shoot).

*Niederwald: Gleichaltriger Bestand aus Bäumen und Sträuchern, die sich ganz oder überwiegend vegetativ (Stockausschlag, Wurzelbrut) verjüngen.*

**Short rotation coppice:** Plantation of fast-growing trees or shrubs, with the aim to produce wood as a renewable resource in a short rotation period.

*Kurzumtriebsfläche: Anpflanzung schnell wachsender Bäume oder Sträucher mit dem Ziel, innerhalb kurzer Umtriebszeiten Holz als nachwachsenden Rohstoff zu produzieren.*

### Legal Framework

1. There is no specific legal framework for coppice forests in Austria.
2. Short rotation coppices (SRCs) with a rotation period of up to 30 years are not classified as forests (Austrian Forest Act 1975 in the amendment of 2002 § 1a. (5)).
3. Dibbling of forest plants and cuttings on previously agricultural land is not considered afforestation if the owner reports within one year after planting to the district administrative authority that these forest plants will be used in the short term with a rotation period of up to 30 years (Austrian Forest Act 1975 in the amendment of 2002 § 1a. (5)).

### Statistics

Coppice forests	93,000 ha	2.3 % of forest area in Austria
Short rotation coppice*	2,236 ha	On agricultural land

Sources: BFW Waldinventur 2009, Agrarstrukturerhebung 2013

\* SRCs are grown following the quantitative order: *Populus, Salix, Robinia* (Jürgen Kern)

### Typology

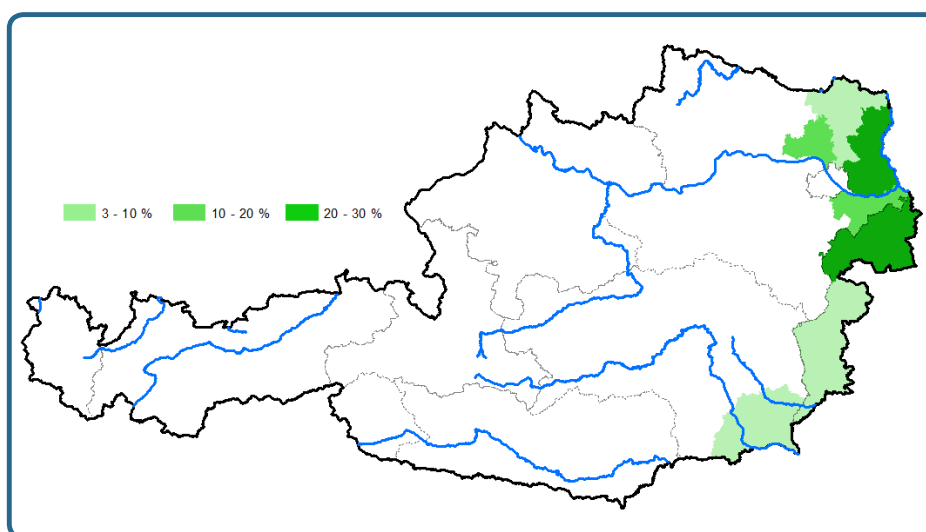
<b>Simple coppice</b>	Traditional natural forest regeneration method still practised in the Eastern part of Austria. Large parts have been transformed into high forests in the past decades.
<b>Coppice with standards</b>	Same as above
<b>Pollarding</b>	Practised in historic wood pastures until the beginning of the 20 <sup>th</sup> century as cattle fodder, especially <i>Fraxinus excelsior</i> .
<b>Short rotation coppice</b>	Practised as an agricultural alternative, using <i>Populus</i> and <i>Salix</i> .

## Images



## MAP

Martin Kühmaier



Map with the distribution of the most relevant coppice areas in Austria, shown as a percentage of the total coppice area (Data source: BFW Waldinventur 2009)

## DESCRIPTION

Eduard Hochbichler and Karl Stampfer

In Austria, coppice forests presently cover an area of about 100,000 ha or 2.3% of the total forested area. Approximately 75,000 ha belong to the “land-coppice system” and 25,000 ha are part of coppice forests in the alluvial plains.

Approximately 90% of coppice forests are concentrated in the eastern part of Austria, in the regions of Burgenland and Lower Austria (main growth zone “Sommerwarmer Osten“; oak-hornbeam forest type; average rainfall 450 to 600 mm with dryer periods in spring and

autumn; average annual temperature is 9.3 C (Killian et al., 1994). In this region the trees have a high potential for sprouting (Krapfenbauer, 1983).

According to the site conditions, coppice (15–30 year rotation); coppice with reserves (underwood 20-30 year rotation; reserves 40-60 years) and coppice-with-standards management (underwood 20-30 years; overwood 100-120 years) have been a widespread silvicultural practice in the eastern part

of Austria for centuries. Oak and valuable broad-leaved trees were/are favoured in overwood. Periodic changes of forest management objectives, influenced by the purpose of optimisation and performance of forestry systems (coppice system vs. high forest system) and decreasing demand for firewood and/or catastrophic events, such as the colonisation of the parasitic mistletoe *Loranthus europaeus*, have led to different structured stands in the forest enterprises over the last 40 years (Kriszl and Müller 1989; Tiefenbacher 1996; Hochbichler 1997; Hagen 2005).

These trends have decreased the relevance of coppice and coppice-with-standards and fostered the promotion of valuable broadleaved trees other than oak. However, demand for valuable hardwood and biomass (energy wood) has increased interest in these silvicultural

systems once again. Restoration, conversion and transformation strategies are discussed, in order to improve the natural and economic performance (Hochbichler 1993).

For vigorous coppice sites (top height >24m) a “high forest character” system is now recommended, while for moderate sites (top height 18-24 m) a coppice with reserves and/or coppice-with-standards system is advised. For drier, less vigorous sites a simple coppice system is suggested. Silvicultural recommendations for coppice forest management, based on ecological and economic aspects, were developed for various silvicultural strategies (coppice, coppice-with-standards with different percentage canopy cover of the overwood and high forest) and operations (Hochbichler 2008; Hochbichler et al. 2013).

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## FORESTRY REGULATIONS

Jenny Mills and Peter Buckley

Austria's first comprehensive forest law in 1852 introduced the obligation to manage forests sustainably. The 1975 **Forest Act**, amended in 2002, includes general rules for sustainable forest management applying to publicly- and privately-owned forest and gives executive directives for the nine Austrian provinces.

Clearcuts of more than 2 ha are not permitted except under certain circumstances. In protection forests the maximum clearcut area permitted is 0.2 ha. Final cuts of immature trees of less than 60 years are forbidden, although a lower limit may be given for fast-growing trees. All clearcuts of more than 0.5 ha must be approved by the Forest Authority regardless of forest type, to limit detrimental effects on the soil and adjacent forest stands. Reforestation through natural regeneration should take place within 10 years, but can be extended in adverse conditions.

In addition to the Forest Act, some Federal Provinces have **forest ordinances**, which include regulations for timber production. There is **no national act on the protection of nature**, which is regulated through separate Acts for each of the nine provinces.

**National Park Laws** and **Hunting and Fishery Laws**, and the **Environmental Liability Law** also impact on forestry and biodiversity.

Austria's **Forest Development Plan (FDP)** covers all the country's forests and is used to assess forest functions in the public interest in terms of its key functions: economic, protective, beneficial, and recreational. The Plan is revised every 10 years by the forest authority and includes requirements for the treatment of forests during that period.

There is no general obligation for public or private forest owners to prepare a **Forest Management Plan (FMP)**, but most publicly-owned forests are likely to have one. All forest enterprises of over 1,000 ha need to submit an FMP if they want a subsidy from the rural development programme. FMPs are also required for public and private areas with special protection such as Natura 2000 sites, national parks and conservation areas. About 43 % of the Austria's **Natura 2000 sites** are in forest areas.

Both **FSC and PEFC certification systems** operate in Austria, but by far the largest area is certified under the PEFC scheme.

The Alps cover about three-quarters of Austria's total area. The Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, BMLFUW) estimates that 19.3 % of Austrian forests serve a protection role.

Protection against torrents and avalanches is included in the Austrian Constitution as a responsibility of the Federal Government. The Forest Act ensures that this task is dealt with by the **Forest Engineering Service in Torrent and Avalanche Control** (Forsttechnischen Dienstes für Wildbach- und Lawinenverbauung, WLW, also known as die.wildbach), an office of BMLFUW, which analyses and assesses hazards and risks, plans and conducts preventive and protective measures.

A **Protection Forest Strategy** was adopted in 2002. The 'Protection through Forests Initiative' (Initiative Schutz durch Wald – ISDW) began in 2007. Tasks required by the Forest Act include the preparation of hazard zone plans, which

describe the intensity and extent of all hazards due to torrents and avalanches as a basis for control measures. Engineering techniques are only used if necessary to ensure the success of the silvicultural methods adopted.

The 2002 amendments to the Forest Act redefined the term **‘Schutzwälder’ (protection forest)** into two types:

**‘Standortschutzwälder’**, which protect the location on which they stand from erosion by wind, water or gravity and therefore require special treatment to protect the soil and vegetation and to ensure reforestation. These areas include forests on shifting sand and karst, sites liable to serious erosion or landslides, and forests on rocky ground or shallow soils where tree regeneration may be difficult.

**‘Objektschutzwälder’** are forests that protect people, human settlements, infrastructure or agricultural land against natural hazards, such as avalanches, rocks, stones, landslides, or damaging environmental influences, and which require special treatment in order to achieve and secure their protective effect.

The owners of ‘standortschutzwälder’ must manage them in accordance with local conditions so that their preservation and stability is ensured. This can be financed by timber production, whereas the cost of the necessary management measures in ‘objektschutzwälder’ is financed by public funds or payments by those who benefit from the protection.

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