

# Forestry in Germany

## 1. Introduction

Germany ranks among the densely wooded countries in Europe. Around 11,4 million hectares corresponding to one third of the national territory are covered with forests. In regional terms, the proportion of woodland cover varies widely, ranging from 11 % in Schleswig-Holstein to over 42 % in Rhineland-Palatinate and Hesse. Forests increased by more than 1 million hectares in Germany over the past five decades. The timber stocks in Germany account for 336 m<sup>3</sup> per hectare, with the annual timber increment totalling around 76 million m<sup>3</sup>. The timber growth is 11.2 m<sup>3</sup> / ha per year or 121.6 million m<sup>3</sup> per year. Hence, Germany occupies a leading place compared with other European countries. (Third national Forest Inventory 2014).

## 2. Tree species composition

Today's forests are no longer primeval forests, but production forests shaped by humans. As a potentially natural vegetation form, beech forest communities would prevail in German forests and cover around 74 % of the forest area. Oak forest communities represent the second largest group of natural forest communities and would account for 18 % of the forest area.

The historical development of forestry explains why German forests are today composed of 60 % coniferous forests and around 40 % deciduous forests. In the past few decades, more importance had been attached to regeneration with site-adapted tree species. The efforts to shape the composition of forest tree species in a more semi-natural way have been crowned with success. Approx. 73 % of German forests nowadays consist of mixed stands. Spruce accounts for the largest share among the tree species (28 %), followed by pine (23 %), beech trees (15 %) and oak trees (10 %). The tree species proportions vary and depend on the specific natural features and site conditions as well as on different historic developments. Large-scale forest zones can be found in Germany: pine trees abound in the north of Germany, deciduous trees prevail in the lower mountain ranges and coastal areas and southern Germany is rich in spruce trees.

**tree species proportions**  
 (% according to the 3rd National Forest Inventory 2014)

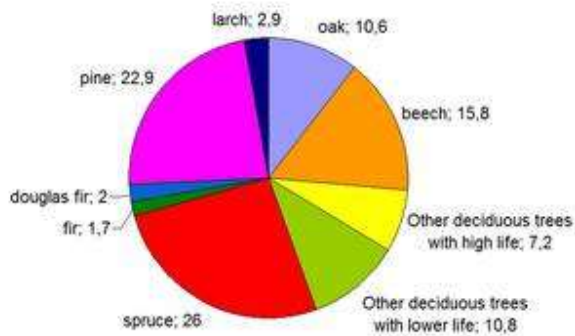


Fig.1: Tree species composition in Germany (3<sup>rd</sup> national Forest Inventory 2014)

### 3. Who owns the forests?

The Federal Republic of Germany is a federal state. Responsible for the forests are mainly the federal countries (Länder). While the Federal Government merely sets the forest policy framework, the Länder are responsible for the formulation and implementation of concrete forest policy targets. Private persons, corporate entities (notably municipalities) and the state, i.e. mainly the Länder, own woodlands.

48% of the 11.4 million hectares of forest in Germany are private forests. 29% of forests are owned by Countries, 19% owned by corporations and 4% owned by the state. There are strong regional differences. The share of the private forest ranges from 24% in Hesse to 67% in North Rhine-Westphalia. Private forest often predominates in the sparsely populated rural areas. The State Forest-share is between 17% in North Rhine-Westphalia and 50% in Mecklenburg-Vorpommern. The largest part of today's state forests form formerly sovereign Forests and secularized monastery property. The Corporate forest has a share in Rhineland-Palatinate of 46%, in Brandenburg about 7%, in Lower Saxony and Saxony-Anhalt around 9%. In densely populated metropolitan areas the proportion it often particularly high. The private forest in Germany is predominantly small structured and fragmented. About half of the private forest area shareholdings with less than 20 hectares. Only 13% of private forest have a size of more than 1,000 hectares. The number of corporative and private forest owners in Germany is about 2 million.

### 4. Silviculture objectives in Germany

The task of German silviculture consists in shaping forests in such a way that timber is being efficiently produced, that the biological productive base of forests is being maintained and improved and that the services rendered by forests remain usable by humans in a sustainable manner. The multitude of objectives of silvicultural management – depending on

the respective site – has resulted in a multitude of silvicultural operations, that is in differentiated treatment and regeneration methods.

The following principles are generally pursued today:

- conserving and establishing structurally diverse and close-to-nature mixed forests,
- planting of site-adapted and stable tree species and provenances,
- utilisation of natural regeneration where soil and previous stand allow it,
- largely dispensing with clear-cuttings,
- multi-storied forest structure, if possible, to make maximum use of soil and air space,
- adapting the intensity of silvicultural treatment to individual stands,
- stand-conserving wood harvesting,
- maintaining soil fertility and increasing it, if possible,
- using foreign tree species only after having examined the beneficial effect of their use in ecological and economic terms.

The aim is to implement close-to-nature forest management throughout Germany. This objective has in Germany already generated an increasing proportion of structurally diverse mixed stands, long regeneration periods and natural rejuvenation methods. Forest management largely dispenses with clear-cuttings.

High forest management is the predominant silvicultural system in Germany. The stands are either naturally or artificially regenerated at the end of a long production period (80 to 300 years depending on the tree species). Plenter forests (variable/multi-aged forests) constitute a type of forest that is close to nature. Here, trees of different age classes stand side by side. Regeneration takes place more or less on a continuous basis. Selective cutting use or group-selection cutting are carried out in plenter forests. Natural regeneration can develop or already existing regeneration can be used in the spaces opened up by cutting. The “plenter idea” with forest management by individual trees (single-stem working) and multi-storied forest structure has had a stimulating effect on many other silvicultural methods over many decades. In the UK we would refer to Plenter forests as CCF.

Coppice forests and coppice-with-standards forests are rare today, but they are interesting in historical as well as in ecological terms. They are, inter alia, based on a regeneration of stands at intervals of a few decades by means of coppice shoots and root suckers. As far as the appearance of stands is concerned, these coppice stands and coppice-with-standards stands clearly differ from high forests. This type of management was widespread in the Middle Ages in particular and served to cover the requirements of tanning wood and fuel wood.

## 5. Forestry - an important economic factor in Germany

The forest and timber industry, including processing and paper as well as printing and publishing, accounts for nearly 1,3 million jobs with an annual turnover of about 170 billion Euro. Small- and medium-sized forest-based enterprises play a major role in rural employment structures.

## 6. Forest Development Types

A Forest Development Type is a long-term vision of how species composition and structure of a forest stand is intended to develop.

The concept encourages greater use of mixed-species stands and a wider variety of stand structures. It also promotes better use of site adapted species and natural regeneration.

Please watch: [https://www.youtube.com/watch?v=9Xm9dd\\_rrHI](https://www.youtube.com/watch?v=9Xm9dd_rrHI)

## 7. Forestry in Saxony

Saxony is covered in 520,000ha woodland which corresponds to 28.3% of its territory. Woodland ownership is split between the following types of ownership:

Ownership	Area in ha	Area in %
Landeswald (owned by the federal state of Saxony)	205,358	39.4
State Forest	21,469	4.1
Corporate Forest	42,896	8.2
Woodland owned by the church	10,427	2.0
Private woodland	240,858	46.3
<b>Total</b>	<b>520,984</b>	<b>100</b>

The most common tree species is spruce with 35% and pine with 31%. In total 70% of the woodlands comprise of coniferous species. Most common broadleaf species are birch (7%), oak (6%) and beech (3%). 72% of all woodland stands are younger than 80 years. Mature stands (>80 years) comprise of 27% spruce.

Since 2017 more than 11,5 mio m<sup>3</sup> of timber has been damaged either by Ips typographus (around 50%) or storm and snow events. More than 82,000 ha woodland has been damaged so far, which is 17% of the total woodland cover in Saxony. In 2021 Ips typographus damaged 1.5 mio m<sup>3</sup> of timber.