

Typology of European Coppice Forests

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Coppice forests are an important component of European woodlands, with over 20 million ha of the productive forests in Europe being managed as coppice (UN/ECE-FAO, 2000, cited in Zlatanov and Lexer, 2009). Over millennia, the development of coppice forests has been influenced by many factors, such as regional climate, eco-physical conditions, wood market requirements and owners' interests. This has led to a very large variety of coppice forests in terms of their distribution, structure, legal status and management.

This document describes the basic types of coppice in Europe: simple coppice, coppice with standards, selection coppice, pollarding, and short rotation coppice (Figures 1 to 5), the latter being a more recent phenomenon. It is important to note that the above-mentioned diversity of coppice in Europe can never be captured in a categorisation. In practice, there are no distinct boundaries between types and within each type there are exceptions to each described element. Nevertheless, *coppice* is a common denominator of all these types, and there are typical “trends” to be found across Europe.

The five coppice types and their most important characteristics are summarised in the following figures and table.



Figure 1. Simple coppice of sweet chestnut
(Photo: D. Rossney)



Figure 2. Coppice with standards
(Photo: V.N. Nicolescu)

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Table 1. Typology of European coppice forests

	Simple coppice (fig. 1)	Coppice with standards (fig. 2)	Coppice selection (fig. 3)	Pollarding (fig. 4)	Short rotation coppice (fig. 5)
Definition	A coppice system in which all shoots in a stand are cut at each felling (Nieuwenhuis 2000)	A coppice system in which selected stems are retained as standards at each felling to form an uneven-aged overstorey which is removed selectively on a rotation constituting some multiple of the coppice rotation (Burley et al. 2004)	A coppice system in which only selected shoots of merchantable size are cut at each felling (Nieuwenhuis 2000)	A coppice system in which the crowns of trees are cut back, in a more or less systematic fashion, with the object of producing close heads of shoots (pollards) (Burley et al. 2004, modified)	Production of woody biomass, generally on agricultural land, by regenerating new stems from the stump or roots after harvesting and relying on rapid growth, generally over a 1 to 5 year cycle (ISO EN 16559)
Regeneration method	Stool shoots, root suckers	Stool shoots and seeds	Stool shoots	Stem shoots (at various heights)	Cuttings (willow, poplar) or seedlings (eucalypt, black locust) followed by stool shoots
Structure	Even-aged	Uneven-aged	Uneven-aged	Even-aged	Even-aged
Species	Most broadleaved species: oaks, sweet chestnut, hornbeam, linden, eucalypts, ash, alders, black locust, poplars, birch, European beech, hazel	<i>Upper storey (standards):</i> oaks, elms, ash, sycamore, Norway maple, wild cherry, wild service tree, service tree, black walnut, pines, larches <i>Lower storey (coppice):</i> hornbeam, field maple, European beech, linden, sweet chestnut, hazel	European beech, holm oak	Poplars, willows, ash, plane-tree, beech, chestnut, mulberry, oaks, linden, elms, black locust, maples, hornbeam, hazel	Willows, poplars, black locust, eucalypts

(Table 1 continued)

	Simple coppice (fig. 1)	Coppice with standards (fig. 2)	Coppice selection (fig. 3)	Pollarding (fig. 4)	Short rotation coppice (fig. 5)
Typical rotation period	15 – 30 years	15 – 30 years (coppice)	15 – 30 years	1 – 5 years (up to 25)	1 – 5 years
Potentially occurring in the forest vegetation types... (according to EEA, 2007)		4. Acidophilous oak and oak-birch forest (types 4.1 and 4.2) 5. Mesophytic deciduous forest (types 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7) 6. Beech forest (types 6.2, 6.5, 6.6, 6.7) 7. Mountainous beech forest (types 7.1 and 7.8) 8. Thermophilous deciduous forest (types 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8) 9. Broadleaved evergreen forest (type 9.1), 14. Plantations and self-sown exotic forest (type 14.2)			Not applicable; mostly on agricultural land
Size of product	Small-sized roundwood	Small-sized roundwood and timber	Roundwood of different sizes	Small-sized roundwood	Small-sized (whole) stems
Wood products	Firewood, charcoal, industrial roundwood, basketry, hoops, fascines, pea and bean sticks, fencing, poles, tannin, tool handles...	See simple coppice + timber	See simple coppice + timber	See simple coppice + sometimes timber (historically used as fodder)	Wood chips, pulp, basketry, fencing
Management options		Commercial exploitation Conversion Restoration			Commercial exploitation
		Maintenance for biodiversity and as an element of landscape and culture			



Figure 3. Coppice selection with European beech
(Photo: O. Cardoso)



Figure 4. Pollard of white willow
(Photo: V.N. Nicolescu)



Figure 5. Willow clone treated as short rotation coppice (Photo: V.N. Nicolescu)

References

- Burley, J., Evans, J., Youngquist, J.A. (2004). *Encyclopaedia of forest sciences*. Elsevier and Academic Press, Amsterdam-Boston-Heidelberg, vol. 4, pp. 1873-1928.
- ISO EN 16559: *Solid biofuels. Terminology, definitions and descriptions*. International Organization for Standardization, Geneva, Switzerland.
- EEA (2007). *European forest types. Categories and types for sustainable forest management reporting and policy*. 2nd edition. EEA Technical report No. 9/2006, European Environment Agency, Copenhagen, 111 pp.
- Nieuwenhuis, M. (2000). *Terminology of Forest Management*. IUFRO World Series Vol. 9-en. IUFRO 4.04.07 SilvaPlan and SilvaVoc.
- Zlatanov, T., Lexer, M.J. (2009). *Coppice forestry in south-eastern Europe: problems and future prospects*. *Silva Balcanica* 10(1), pp. 5-8.

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