



FACTS AND FIGURES

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Definitions

Coppice – silvicultural method where the regeneration is vegetative as the shoots come from the stumps and form the new forest. The rotation cycle is short, usually 1-40 years, which means that the trees never reach their full height. In coppice forestry tree species with good ability to stump shoot formation are used, for example, willow, oak, hazel and alder. In Denmark coppice forestry is not very widespread.

Coppice forest - forest that regenerates through shoots from the stump of the felled tree. In Denmark coppice was formerly a common silvicultural system in alder, oak and ash. The system was particularly widespread in Funen and among small forest owners. The system allows for a continuous, steady production of firewood, poles, fencing and similar assortments from even a small piece of forest.

In Denmark coppice is now rare, but, for example, in large parts of Europe coppice is widespread. Mechanized coppice forestry has been introduced as energy forest has been established.

Energy forests are plantations of hardwoods with rapid juvenile growth, harvested for use as wood fuel. In Denmark willows are the most used species and the rotation is commonly three years. Energy forests have mostly been planted on former agricultural land. The production is approximately 7 tonnes of dry matter per ha. In 1995 there were approx. 500 ha of energy forest in Denmark.

Gyldendals large lexicon, translated:

http://www.denstoredanske.dk/Natur_og_miljø/Skovbrug/Skovdyrkning

Lavskov, skovdriftsform, hvor skovforyngelsen sker ved stævning (vegetativ foryngelse), idet støddene fra de fældede træer sætter stødskud, der vokser op til ny skov. Omdriftstiden er lav, som oftest 1-40 år, hvorfor træerne aldrig når deres fulde højde. Til lavskov benyttes træarter med god evne til stødskuddannelse, fx pil, eg, hassel og rødde. I Danmark er lavskovsdrift kun lidt udbredt. Se også skovdyrkning og stævningsskov.

Stævningsskov, skov, der forynges gennem stødskud, dvs. skud fra stubben af det fældede træ; d.s.s. lavskov. I Danmark var stævningsskov tidligere en almindelig driftsform, bl.a. i rødde, eg og ask. Driftsformen var særlig udbredt på Fyn og blandt småskovsejere. Driftsformen giver mulighed for et løbende, jævnt udbytte af ved til brænde, pæle, hegnsmateriale og lignende småeffekter fra selv et lille stykke skov.

I Danmark er stævningsskov nu sjælden, men fx i store dele af Europa er stævningsdrift vidt udbredt. Mekaniseret stævningsdrift har fået fornyet aktualitet i form af energiskov.

Energiskov, plantage af løvtræer med hurtig ungdomsvækst, som høstes til brug ved energiproduktion. I Danmark anvendes piletræer, der hugges til flis hvert tredje år, hvorpå de vokser op igen. Energiskove plantes bl.a. på braklagte jorder. Produktionen udgør årligt ca. 7 t tørstof pr. ha; i 1995 var der ca. 500 ha energiskov i Danmark.

Legal Framework

There is a definition of short rotation coppice in the COMMISSION REGULATION (EC) No 1120/2009 of 29 October 2009 on the implementation of the single payment scheme in Title III of Council Regulation (EC) No 73 / 2009, which establishes common rules for the direct support schemes available to farmers:

“Short rotation coppice” means areas planted with those tree species of CN code 0602 90 41 that consist of woody, perennial crops, the rootstock or stools remaining in the ground after harvesting, with new shoots emerging in the following season and that are contained in a list to be drawn up by Member States from 2010 of the species which are appropriate for use as short rotation coppice and their maximum harvest cycle.

(<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:316:0001:0026:EN:PDF>)

Statistics

In the Danish forest statistics, ancient management forms cover about 22,000 ha. The proportion of coppice is estimated to be about 6,000 ha of which only few hundred ha is managed the traditional way. Some plantings along roads and railroads are managed as coppice, but we don't have statistics on these areas.

Typology

Simple coppice	Limited use
Coppice with standards	Not practised
Pollarding	Limited use
Short rotation coppice	<i>Salix</i>
Other types	Narrow wind break barriers (2-4 m) that are harvested every 30-40 years

Images



DESCRIPTION

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Traditional coppice

As in most of Europe, systematic cutting of trees with the purpose of obtaining regrowth from the stumps has been an important part of agriculture and silviculture for thousands of years. Old murals in some Danish churches show the cutting of branches with leaves for fodder.

Coppice forestry was the common silvicultural method in the peasant's forests. The products were fencing, fodder, firewood, charcoal, hoops, shanks, clogs etc. Until wire fencing took over around the 1880s, fencing was a quite important product from coppice forestry.

It is assumed that the area of coppice forestry has declined in the period from 1600 to 1800, along with the destruction of the forests in general, but the decline was not a result of there being no need for the products from the coppice forests. That happened later on.

After the law on conservation of the forests in 1805, the land was divided into agricultural land and forests. Before that the two land uses were more mixed. In any case coppicing continued in the forests, because the peasants had the right to cut simple forest and forest in their ownership. Around 1830 the production of agricultural fodder, such as clover and turnips, reduced the need for fodder from the coppice forests, but these survived as a niche silvicultural system at least until the beginning of 1900.

Coppice forestry gradually lost economic importance as other products replaced those from the coppice forests, and many coppice forests grew up to normal high forest. Marks of the old coppice system can still be seen as stumps and crooked growth in stands of old trees.

There is a renewed interest in old silvicultural systems and among these also coppice forestry,

because the old systems often create habitats for endangered species.

In the Danish Nature Forest Strategy from 1994 it was stated that the area with old silvicultural systems should be expanded to at least 4000 ha in 2000, and subsidies were introduced in order to reach this goal.

Today there is around 6,000 ha of old coppice forests, but only a few hundred ha is managed as coppice forestry. Especially in state forests, coppice has been reintroduced. Some other coppice forests are conserved by law or because of interest from the land owner.

Coppice forestry is type no. 91 in the Danish system of forest development types. These types describe the long term goal of the desired forest development.

The Danish system describes four different **coppice forest types**:

1. Oak coppice forests.

Oak, aspen, birch, rowan, hazel.

2. Hazel coppice forests.

Hazel, ash, oak, alder, maple, thorn, elder.

3. Alder coppice forests; Swamp forests

Alder, ash, birch, willow.

4. Energy forests.

Different clones of willow and poplar.

The three upper types are historic types of coppice forests, while the fourth is the modern version introduced in Denmark in the 1980s.

Short Rotation Coppice

Short Rotation Coppice (SRC) is slowly finding its way into Danish agriculture. It is believed that some 2,000 ha of mainly willow plantations exist. There is one main supplier of cuttings, planting and harvesting equipment in the North

of Jutland. This grower alone owns more than 200 ha of plantations.

The shoots are cut mechanically in the cut and chip method and the chips are delivered to nearby district heating plants. Since normal

wood for energy from forests and landscape elements is becoming scarce in Denmark because of the high demand, it is likely that SRC will increase in area in the years to come.

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FORESTRY REGULATIONS

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There are approximately 610,000 ha of forest in Denmark covering about 14.5% of the land area (FRA 2015). Conifers take up 50% of total forest land and deciduous species just over 46%; the remaining forest land remains bare of trees or the types of trees are unspecified. Sixty-eight percent of the forest area is privately owned and there are about 29,000 forest owners in Denmark. A survey in 2000 showed that 91 % of properties are less than 20 ha in size. Danish state forests (110,000 ha) are managed by the **Nature Agency (Naturstyrelsen)**, which is part of the Danish Ministry of Environment and Food (Miljø- og Fødevarerministeriet). It also manages 90,000 ha of light, open areas such as meadows and moors. It has 18 regional offices that supervise private forests to ensure compliance with the Forest Act and to administer grant schemes.

Uncontrolled felling reduced forest cover to 2-3% in Denmark by the early 1800s. A **Forest Act** was adopted in 1805 which banned forest

clearance and encouraged afforestation. A forest reserve obligation (fredskov) was introduced to secure future wood supplies. This led to the majority of private forests and all public forests in Denmark being designated as forest reserves, in total about 90% of Danish forests. These are regulated by the Forest Act under a sustainable forest management regime that pays regard to economic, ecological and social factors. The 2002 **National Forest Programme** advocated close-to-nature management and this has been the practice in all Danish state forests and many municipal ones since 2005, replacing the previous age-class forestry management method. However this type of management has not been so readily accepted in privately-owned forests. State-owned forests are **certified** according to both the FSC and PEFC standards.

In the transition to close-to-nature management, **19 ‘forest development types’** have been described that set objectives for the composition and structure of individual stands.

These include **4 historic types**:

- coppice forest
- forest pasture
- forest meadow and
- unmanaged forest

There is a tradition of coppicing and pollarding in eastern Denmark, particularly on Funen, Langeland, Lolland and Als where there are different types of very species-rich coppice forests. Hazel coppice occurs frequently but over 40 species of trees and shrubs can be found. In Jutland, oak scrub with some aspen has been used in the past for grazing and pollarding. Many oak forests were cut down during WW2 and no felling has since taken place although there is some scrub that is still pollarded.

The latest version of the Forest Law (Legislative Decree no. 678 of 14 June 2013, with changes imposed by § 3 of Law no. 86 of 28 January 2014) prescribes the use of forest reserve land. Guidance on the interpretation of the Law is given on Naturstyrelsen's website (<https://www.retsinformation.dk/forms/r0710.aspx?id=175267>). The Law does not require forest management planning at the level of individual properties, although this will, presumably, be carried out when applications are made for PEFC or FSC certification. Owners are not required to apply for logging permits or to notify the authorities before logging begins.

Some of the Forest Law provisions are:

- Areas must be stocked with trees that form, or within a reasonable period of time (up to 10 years) will form, a connected forest of standard trees. This excludes areas needed for forest management, such as roads, storage spaces, loading docks, firebreaks, forest nurseries, etc. and the other exceptions mentioned below.
- Harvesting, except thinning, may not take place before the vegetation or the individual tree has reached the age or dimension where it is mature and ready to harvest. This applies to

single trees in uneven-aged forests or to stands of even-aged trees. Exceptions to this rule are mentioned below. Clear-cuts should be avoided where possible. A border of deciduous trees and shrubs on the external edges of forest reserve areas must be preserved; the width of these will vary depending on local circumstances. Safety considerations will dictate treatment of forest which also has a role as 'protection forest', e.g. for railways and roads.

- Coppicing can be carried out on up to 10% of a forest reserve without a derogation. Animal husbandry is prohibited, but forest grazing is permitted on 10% of a forest reserve provided any fencing does not prevent public access where the Nature Protection Act allows it. It is expected, although not required by the Law, that such operations are carried out where there is a historical tradition for this type of forestry or for cultural reasons. This applies to species, such as hazel, alder, ash and oak but also to other suitable species where they have been traditionally coppiced locally and also includes pollarding of willow.

The 10% is calculated from the total area of each forest reserve including any non-vegetated areas. One owner's property may contain several forest reserve areas and in such cases the 10% applies to each individual area. However, if they are physically separated from each other, the 10% areas cannot be aggregated and the coppicing or grazing carried out in only one of them.

A dispensation to allow coppicing or forest grazing on more than 10% of a forest reserve area may be given if traces of this type of management can be found on the forest reserve area. This could be the case for many properties with old coppice that dates back hundreds of years and where it is desirable for whole forest areas of, typically, 1 to 5 ha to be coppiced.

The 10% rule also applies to growing Christmas

trees and other greenery, as long as this is short-term, i.e. the trees must not be grown to maturity. The area to be planted must not affect valuable or vulnerable habitats and they must be surrounded by a belt of hardwood trees.

In addition to the areas that can lawfully be without woodland, **open natural areas** can be established for up to 10% of a forest area in order to promote nature and landscape values, cultural and biological diversity. This could include forest meadows or protected natural areas, and areas under natural succession but it excludes areas planted with agricultural crops, fruit trees, berry bushes, flower production, etc. Any deforestation necessary to open a natural area may be subject to an **Environmental Impact Assessment** if it might significantly affect important habitat areas. There is an obligation to report any proposed deforestation for EIA screening, regardless of whether it is on a forest reserve or not. Other open areas may be permitted if required by the **Nature Protection Act** or the **Buildings Preservation Act**.

The Forest Law includes provisions to conserve oak scrub forest (4,725 ha), which is found especially in central and western Jutland. Alder

carrs may be subject to the Nature Protection Act and designated as a priority habitat under the EU Habitats Directive. Also, lakes, bogs, heaths, salt marshes, meadows and biological commons that belong to the forest reserves and are not covered by the Nature Conservation Act must not be drained, planted or otherwise altered.

The Forest Act and Nature Protection Act require that some operations in **Natura 2000** areas, which would otherwise be allowed under the Forest Act, be notified to the relevant authorities before implementation, so that an assessment can be made as to whether they could lead to habitat deterioration or disturbance to species for which the site has been designated. This includes coppicing. If necessary, conditions will be agreed with the owner if possible or imposed if not. The obligation to notify is independent of whether there is a Natura 2000 plan or management plan. Activities that require a derogation from the Forest Act or other legislation need not be notified because an assessment in relation to Natura 2000 protection will be made when the derogation application is processed.

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