

## FACTS AND FIGURES

Halil Barış Özel and Murat Ertekin

### Definitions

Coppice - a forest that has a sprout origin/background and that is destined to be regenerated by sprouts, for harvests of small and medium-sized wood.

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(1) Coppice Forests - Even-aged stands consisting of trees and shrubs (mainly: *Quercus* spp., *Carpinus betulus*, *Castanea sativa*, *Alnus glutinosa*) that regenerate wholly or mainly vegetatively (as sprouts or root shoots) and are harvested in small clearcuts (0.5-1 ha) in short rotations of 20-40 years.

(1) *Baltalık Orman: Farklı yaştaki ağaç ve çalılardan (Meşe, Gürgen, Kestane, Kızılağaç) oluşan, meşcere bazında (0.5-1 ha) 20-40 yıllık periyotlarla tıraşlama kesimleri vejetatif (kök ve kütük sürgünü) yolla gençleştirilen ormanlardır.*

(2) Short rotation coppice: Plantations of fast-growing trees or shrubs (mainly *Populus* spp., *Salix* spp., and *Eucalyptus* spp.), with the aim of producing wood as a renewable resource in several short rotation periods (5-15 years each).

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(2) *Kısa süreli baltalıklar: Hızlı büyüyen ağaç ve çalılardan (kavak, söğüt ve okaliptus) oluşan, odun üretimi amacıyla kısa rotasyon süreyle (5-15 yıl) işletilen plantasyonlardır.*

### Legal Framework

There is a 40-50 year rotation for coppice of *Quercus petraea*, *Q. robur*, *Fagus orientalis*; oak coppice has a density of 2,500-4,200 trees per ha, and 15 to 25 m height.

Coppice forestry, as all other forestry, is regulated mainly by two legal acts:

- 1) Turkish Forestry Law
- 2) Forest Management Plan of Regional Directorate 2010-2020

Turkish oak forests cover 5,150,000 ha and are generally state owned; it is the main coppice species. The management of these coppice oak forests is intensive, with a clear cutting cycle of about 20 years.

### Rotation Period

Minimum rotation period: 8 years for poplar, willow; 15 years for eucalyptus; 20 years for oak. Maximum rotation period: coppice forests older than 50 years must be converted to high forest. Short rotation coppice is seen as agriculture. It is defined as: Woody biomass plantation of willow, and poplar with the aim to produce woody biomass. It is harvested at least every 5-10 years.

## Statistics

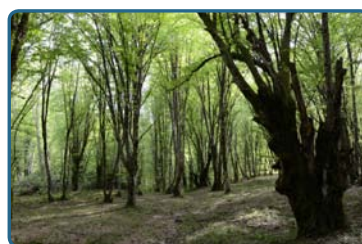
In 2010 there were 21,537,091 ha of forest in Turkey, 4,874,712 ha of which were coppice (23%). The growing stock of coppice was only 6% of the total for forest (78,509,363 m<sup>3</sup>), while the annual increment of coppice accounted for 10% (3,881,926 m<sup>3</sup>) of the total. The trend is clearly towards a decrease of coppice area, growing stock and annual increment.

Republic of Turkey Ministry of Forestry and Water Affairs (2013). *Forestry Statistics 2011*. Turkish Statistical Institute, Printing Division, Ankara ISBN 978-605-4610-18-1 <https://www.ogm.gov.tr/ekutuphane/Istatistikler/Orman%C4%B1%C4%B1k%20%C4%B0statistikleri/Orman%C4%B1%C4%B1k%20%C4%B0statistikleri%202011.pdf>

## Typology

<b>Simple coppice</b>	Small clearcuts, rotation 20-40 years
<b>Coppice with standards</b>	Yes - standards often of oak
<b>Pollarding</b>	Only in gardens, roadsides and urban streets
<b>Short rotation coppice</b>	<i>Populus</i> spp., <i>Salix</i> spp., <i>Eucalyptus</i> spp.
<b>Other types</b>	Conversion of coppices to high forest, especially oak and beech

## Images



Productive coppice of oriental beech (*Fagus orientalis* Lispky.) (left) and degraded coppice of European Hornbeam (*Carpinus betulus* L.) (right) in the Western Black Sea Region

## DESCRIPTION

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The main coppice product in Turkey is firewood, especially in rural villages. The coppice forests are damaged by fire, storm and snow but there are no risk assessments for them. The coppice forests are comprised of *Fagus orientalis*, *Sorbus torminalis*, *Sorbus domestica*, *Alnus glutinosa*, *Acer pseudoplatanus*, *Robinia pseudoacacia*, *Carpinus orientalis*, *Carpinus betulus*, *Platanus orientalis*, *Quercus petraea*, *Quercus robur* and *Castanea sativa* (Fig. 1).

There are coppice forests on the north and northwest slopes and on the 500-650m altitude gradient level. Productivity is generally very low, but the highest volume increment is found

for *Fagus orientalis*, *Alnus*, *Salix*, *Platanus* and *Populus* coppice near rivers as a gallery forest type. *Buxus* coppice is used for hand-made kitchenware, but this coppice type is currently in a degraded state.



Figure 1. *Castanea sativa* coppice in Turkey

There is no regeneration programme for coppice forests undertaken by the General Directorate of Forests in Turkey. The public forest service strives to convert all current coppice to high forests. However, this is not a successful conservation measure and is adding to the area of degraded coppice forest annually. There is potential for coppice forests to be used for energy but there have not been any studies on this subject; specific clones would be required. Coppice forests near rivers are damaged because of water pollution in Turkey. This caused the destruction of about 500 hectares of *Platanus* coppice forest between 2008 and 2014.

Coppice forest vegetation is continually being destroyed. Research has shown that about 130 plant species have been lost from the coppice forest resource in Turkey. Coppice is necessary for the long-term productivity of the forest but breeding and silvicultural planning is required. Protected stands to be converted to coppice forests should be properly identified in Turkey. Coppice forests should be protected for ecology as the ecological balance has been damaged over a long period of both legal and illegal harvesting.

## FORESTRY REGULATIONS

Murat Ertekin

The **General Directorate of Forestry** (GDF) was established in 1869. From this date, forests seen as a source of income were protected by the law; the GDF began to sell forests to domestic and foreign traders. Forestry directorates were established in the countryside with the aim of protecting forest and regulating sales. **Forestry Law No.3116**, enacted in 1937, was revolutionary in that private sector forest management was terminated and management by the state began. In this context, forestry directorates were subject to a new assessment: these were named “forest directorates” (32 units) in 1937 and the “forest infirmary authority” in 1944. Since 1937 “**Forest Sub-District Directorates**”, known as “forest district chieftaincy”, have been created under different forest directorates. The **State Forest District Directorate** was initiated within the framework of Law No.4767, enacted in 1945, in the provincial organization (Gümüş, 2013).

In 1956, the present **Forest Law** (numbered 6831) was enacted and has been modified many times since then. It defines the principles

of forest land use and types of ownership and quality: forest ownership types are defined as State Forests, forests belonging to the public legal entities and private forests. In the Republic of Turkey, all affairs concerning State Forests or the places regarded as State Forests are handled or organized by the GDF. All forests owned by parties other than the State are subject to the inspection of the GDF in accordance with the provisions of the aforementioned Turkish Forest Law 6831. Articles 26 to 44 state that production and harvesting in forests can only be done by the State itself in State Forests and only in compliance to management plans.

### General forest ownership for Turkey:

- Publicly owned forest: 21,678,134 ha (99.9%)  
... of which simple coppice: 4,417,542 ha
- Privately owned forest: 18,000 ha (0.83 %)  
... all of which is simple coppice: 18,000 ha

Turkey has some short rotation coppice forests of different species:

- 2,500 ha *Eucalyptus camadulensis* and *E. grandis* (publicly owned)
- 6,500 ha Poplar plantation (Privately owned)

## Legal framework in relation to coppice

(1) **Coppice Forests:** even-aged stands consisting of trees and shrubs (mainly: *Quercus* spp., *Carpinus betulus*, *Castanea sativa*, *Alnus glutinosa*) that regenerate wholly or mainly vegetatively (as sprouts or root shoots) and are harvested in small clear cuts (0.5-1 ha) in short rotations of 20-40 years.

(2) **Short rotation coppice:** plantations of fast-growing trees or shrubs (mainly *Populus* spp., *Salix* spp., and *Eucalyptus* spp.), with the aim of producing wood as a renewable resource in several short rotation periods (5-15 years each).

**Art. 298/2014 - Technical principles of silvicultural applications;** prepared by Ministry of Forestry and Water Affairs, General Directorate of Forestry according to the Turkish Forest Law (Law 6831):

(1.1.2.2) The high forest (monoculture or mixed forest) regeneration system is applied to the natural regeneration of all forests.

(1.1.4) Exceptions to 1.1.2.2 are stands of short rotation coppice with fast-growing species,

stands on floodplain areas, other coppice forest regeneration systems and those that apply artificial regeneration or the clear cutting system. The size of clear-cutting (including coppice) coupes is a maximum of 3-5 ha.

(1.1.4.1) and (1.1.4.2) Specifications include:

(i) Calculation of annual allowable cut for management units treated as coppice: 20 year period for *Quercus* spp., *Carpinus betulus*, *Castanea sativa*, *Alnus glutinosa* stands and 5-10 year period for poplar, eucalypt and willow plantations.

(ii) 20-year management plans for compartments treated as coppice for: exploitable coppice stands reaching the rotation age (coppice cuttings), or non-/pre-exploitable coppice stands with tending operations for coppice stands to regenerate artificially.

(iii) Rules for the conversion of coppice forests to high forests: conversion by coppice ageing (total cessation of coppice cuttings) and conversion by coppice replacement and planting.

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