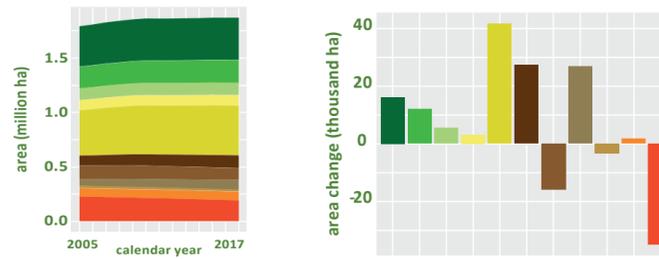


## Forest area and growing stock

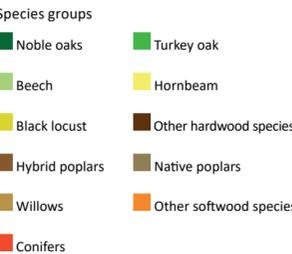
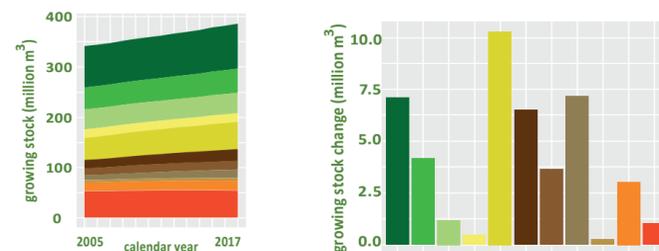
Summary figures on forests		Standing volume	386.0 million gr. m <sup>3</sup>	Initial planting in afforestations	0.6 thous. ha
Registered forest land area	2057.3 thous. ha	Annual increment	13.0 million gr. m <sup>3</sup>	Area where reforestation was started	15.9 thous. ha
Area of forest sub-compartments	1940.1 thous. ha	Total felling volume	7.6 million gr. m <sup>3</sup>	Reforestation obligation after final cut	21.1 thous. ha
Forest cover (forest ratio)	20.9 percent	Final cut volume	5.0 million gr. m <sup>3</sup>	Area where regeneration has been finished	20.4 thous. ha

## Change of area occupied by tree species



Species composition has been changing slightly in the Hungarian forests: area of non-indigenous hybrid poplars and pines has been decreasing whereas black locust, native poplars and other hardwood species have been spreading.

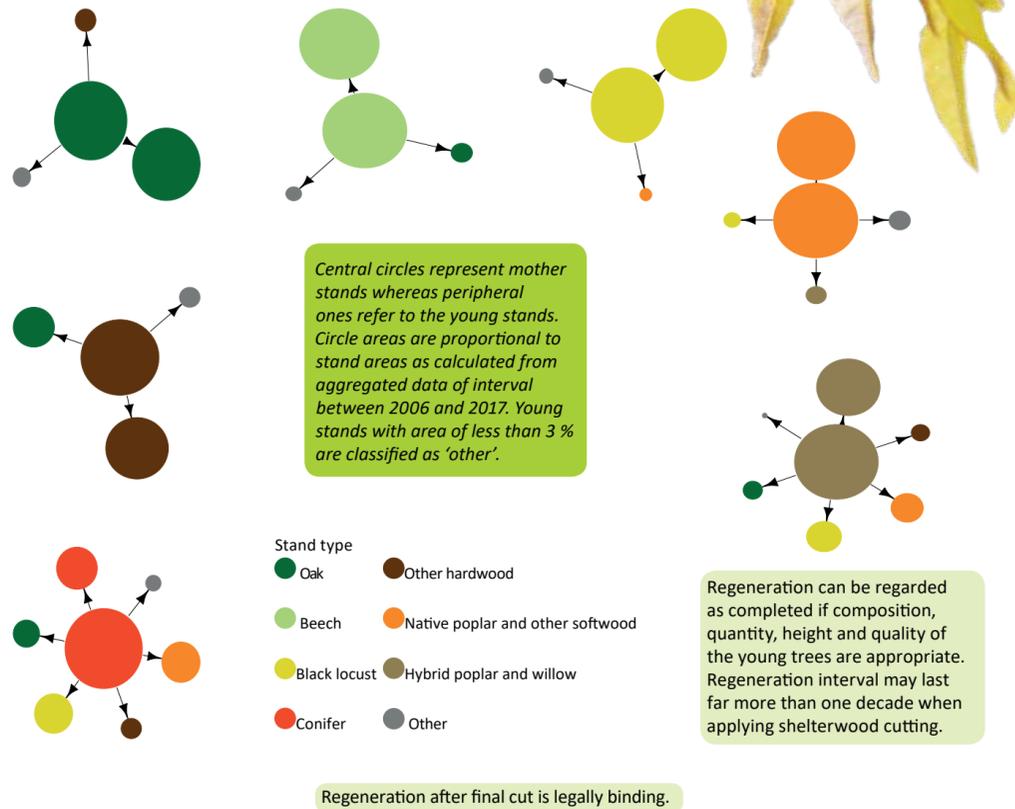
## Growing stock change by tree species



Growing stock has been steadily increasing in the past years.

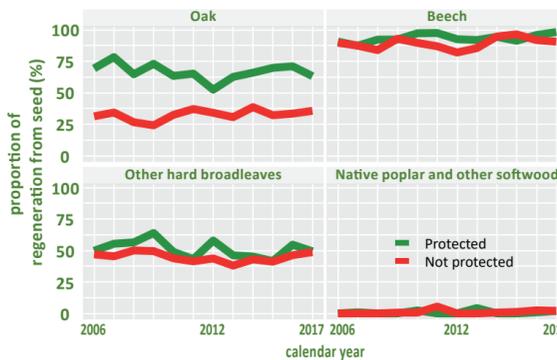
## Forest regeneration

Regeneration can be a stand transformation method aiming to create stands better fit to the site conditions.



## Forest regeneration, afforestation

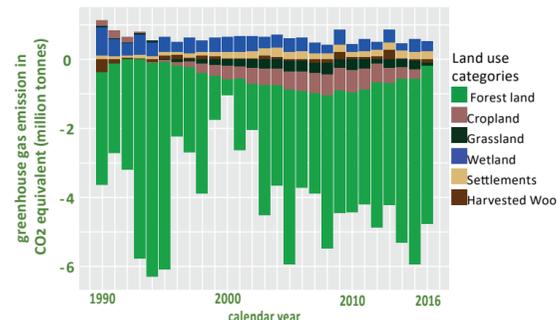
### Natural regeneration from seed in native stands



Applicability of natural regeneration methods depends on site conditions and species attributes. Most of beech and protected oak forests are regenerated naturally.

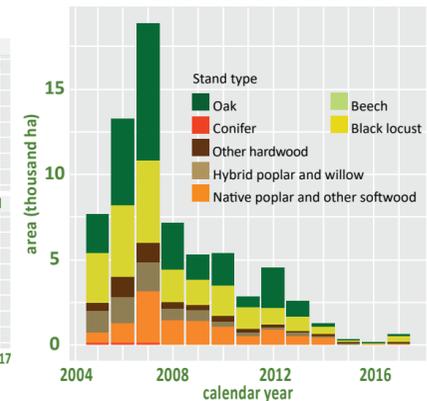
### Climate change mitigation

#### Greenhouse gas emission in the land use sector



By adsorbing large quantity of greenhouse gases year by year, forests play a key role in mitigation of climate change.

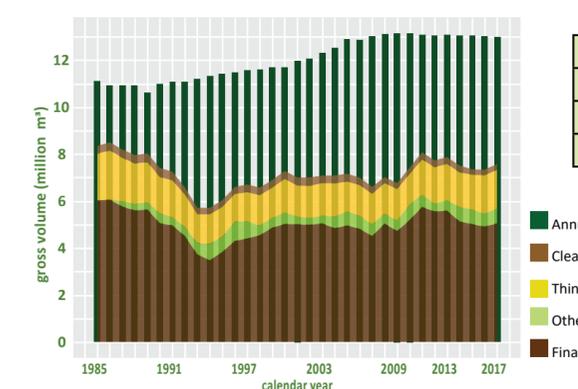
### Area of new afforestations



Although area of afforestations carried out after 1990 is less than 10% of total forested land area, due to the intense growth, CO<sub>2</sub> removal per area is much higher here.

## Harvest

### Annual increment and harvested volume



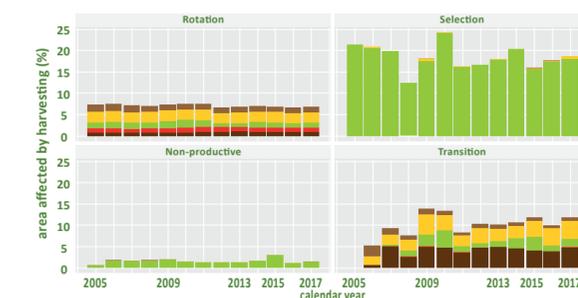
### Area by silvicultural systems

Rotation system	1766.6 thousand ha
Selection system	21.7 thousand ha
Non-productive system	77.8 thousand ha
Transition system	74.0 thousand ha

Annual increment has been exceeding cut volume for a long time which is an indicator of sustainable forest management.

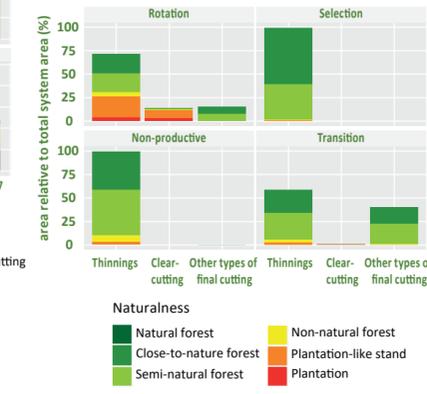
Ecological aspects play a more and more important role in forest management as indicated by the low proportion of clear-cutting in more natural stands.

### Distribution of area affected by harvesting by systems



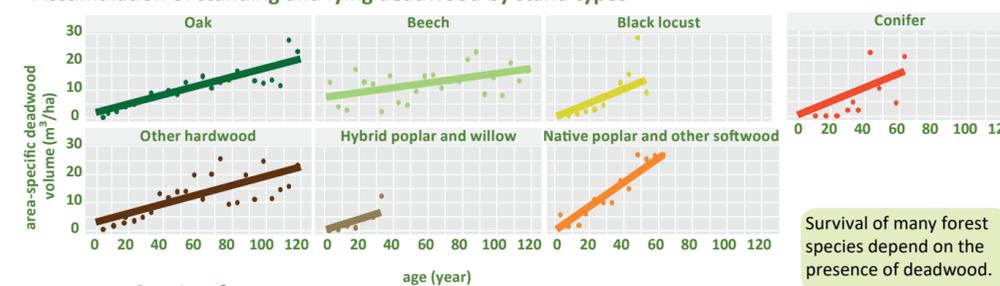
Rotation and selection systems have different spatial and temporal scale. In the latter case harvests of low intensity are carried out more frequently on larger areas. Thus, annual area affected by harvesting operations is higher.

### Distribution of harvesting types by systems and naturalness categories



## Deadwood accumulation

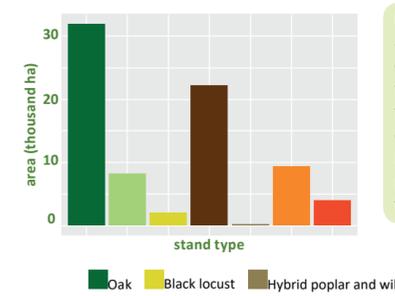
### Accumulation of standing and lying deadwood by stand types



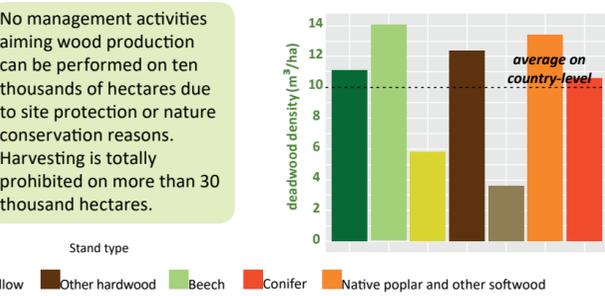
Survival of many forest species depend on the presence of deadwood.

### Non-productive forests

#### Stand types of non-productive forests



#### Average density of deadwood by stand types

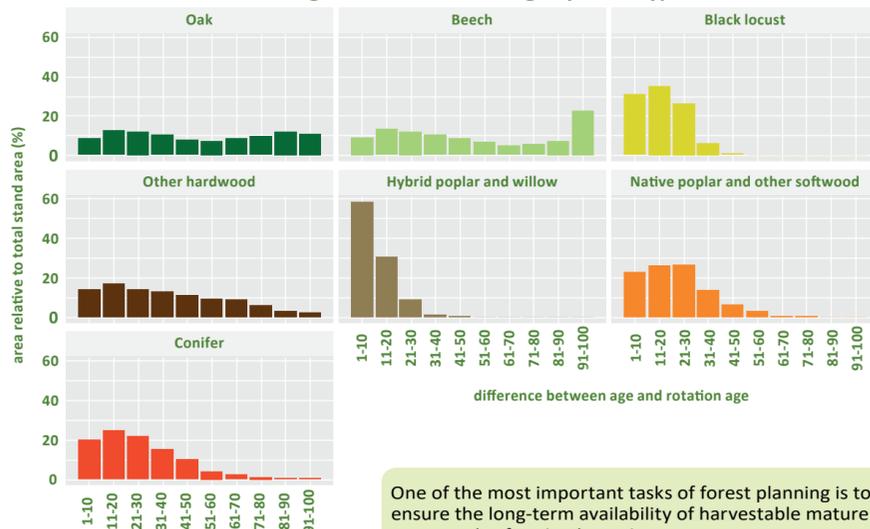


No management activities aiming wood production can be performed on ten thousands of hectares due to site protection or nature conservation reasons. Harvesting is totally prohibited on more than 30 thousand hectares.

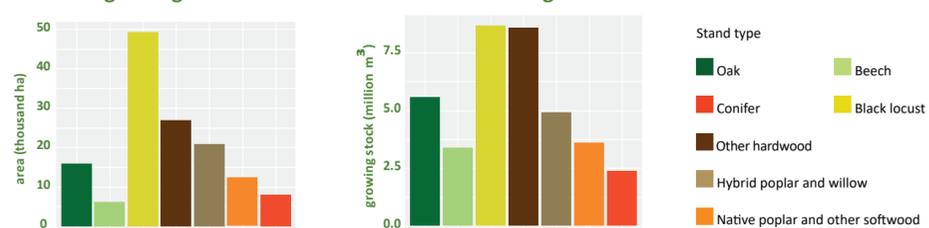
Organisational structure – Forest administration			
Prime Minister's Office	First instance authority	County Government Offices (10)	Department of Agriculture
	Second instance authority	Pest County Government Office	Department of Food Chain Safety, Land Registry, Plant Protection and Soil Conservation, Forestry
Ministry of Agriculture	Department of Forest Management		Section of State Forest Management
			Section of Forest Administration
	Department of National Park and Landscape Protection		Section of Private Forest Management
	National Food Chain Safety Office		Forestry Directorate
		Directorate of Plant Production and Horticulture	Department of Forestry and Energy Reproduction Materials

## Current stand age and rotation age

### Difference between rotation age and current stand age by stand types



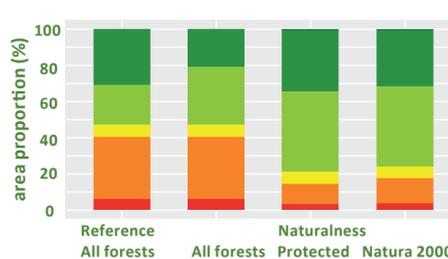
### Area and growing stock of forest stands over rotation age



Forests which are older than their planned rotation age cover 139 thousands hectares. Their growing stock amounts to 37 million m<sup>3</sup>. Moreover, on 99 thousand hectares, there are forests where final cut is not planned at all. These comprise non-productive forests and forests of selection system. Their growing stock is 24 million m<sup>3</sup>.

## Naturalness, forestry systems

### Forest naturalness



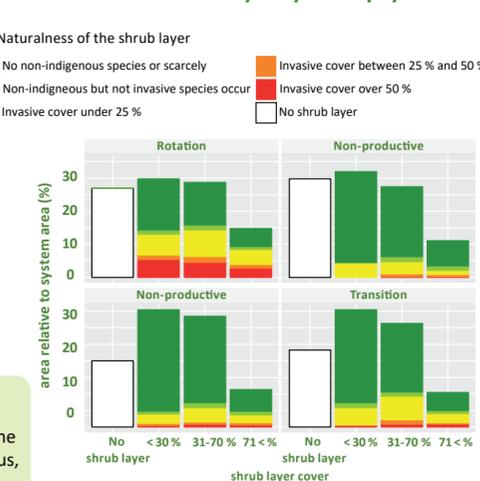
Forest naturalness reflects the proportion of non-indigenous species. Non-natural forests, plantation-like stands and plantations are originated from afforestations carried out in the past century (amounting to approximately one million ha). Thus, their large area does not refer to degradation.

The new forest law defines 'reference naturalness' as a minimum threshold which must be reached or maintained by management.

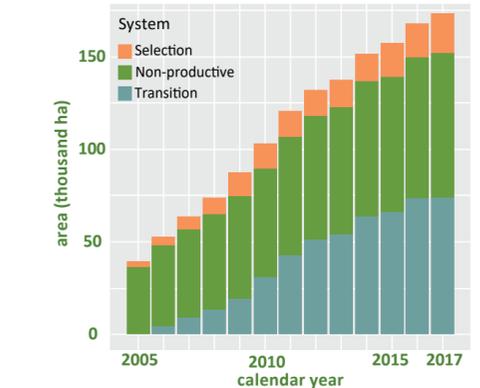
### Non-rotation systems

Selection system means that harvests are carried out frequently but only in small patches. The aim of the transition system can be either to switch from rotation to selection system or to maintain continuous forest cover. In forests of non-productive system, no management activities are performed.

### Naturalness of shrub layer by forestry systems

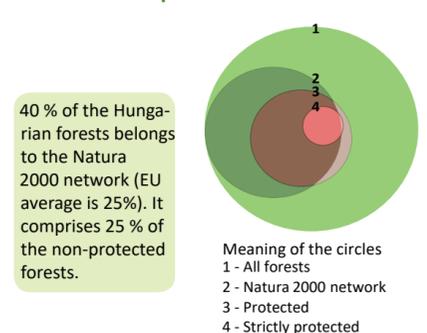


Shrub layer is an important indicator of processes endangering forest naturalness.

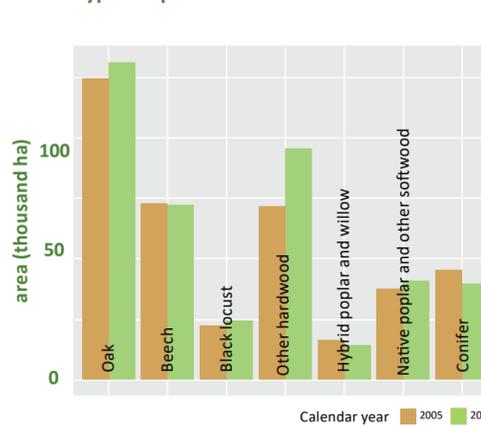


## Nature conservation

### Distribution of protected and Natura 2000 forests



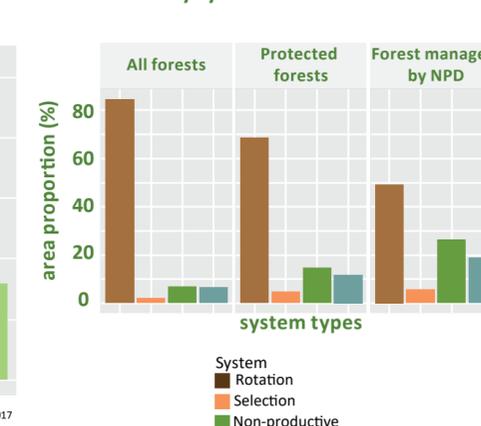
### Stand types of protected forests



Management of protected forests may aim to replace non-indigenous species with native species. The extent of this process is declared in conservation management plans which have been created for 7 % of protected forests.

Protected		Natura 2000 network	Area	
Protected	Strictly protected		thousand ha	%
+	+	+	72	3.5
+	+	-	2	0.1
+	-	-	40	1.9
+	-	+	345	16.8
-	-	+	417	20.3
-	-	-	1181	57.4

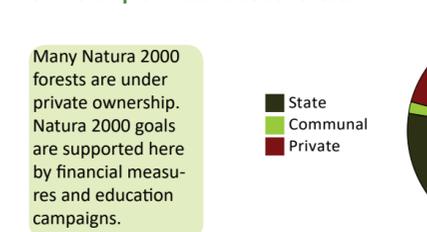
### Area of forestry systems



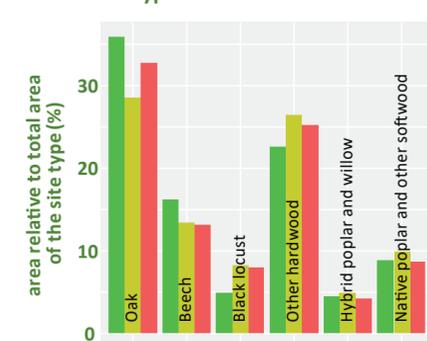
Proportion of non-rotation systems is highest in forests managed by national park directorates (NPD).

## Natura 2000 forests

### Ownership of Natura 2000 forests



### Tree stand types of Natura 2000 forests



### Natura 2000 site type



The Birds Directive aims to protect all wild bird species naturally occurring in the European Union, whereas the Habitats Directive ensures the conservation of rare habitat types and other species.

The Hungarian forests comprise 13 Natura 2000 habitat types out of which 6 belong to priority habitat types. The latter term means that member states take special efforts to preserve them.

### Habitat types in Natura 2000 forests

In Natura 2000 forests, management must be in line with Natura 2000 goals. This is ensured by the impact analysis of the forest management plans performed on 90 thousand hectares of Natura 2000 forests annually.



# Forest resources and forest management in Hungary, 2017

This leaflet is based on data of the National Forestry Database and Forest Monitoring and Observation System

