

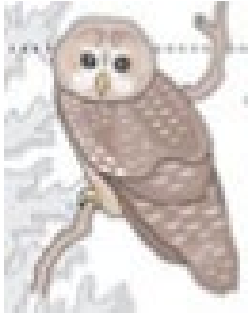
A photograph of a forest with tall, slender trees and a lush green undergrowth. The text is overlaid on the right side of the image.

# EU-level assessments on forest biodiversity

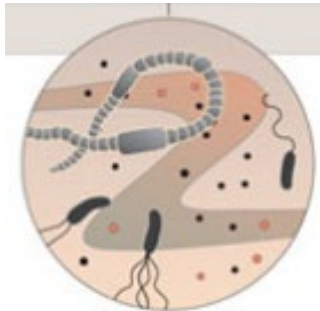
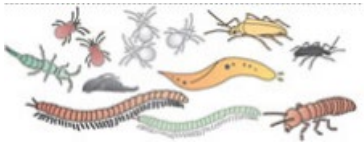
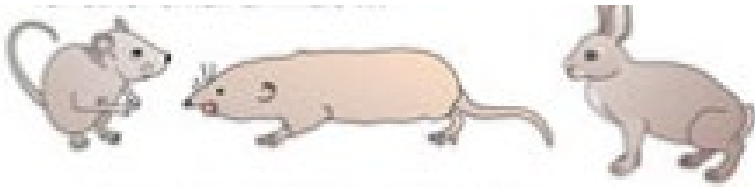
On behalf of Annemarie Bastrup-Birk  
European Environment Agency

Elena Osipova/Annemarie Bastrup-Birk// Forest biodiversity seminar, KSLA / April 19<sup>th</sup> 2023





Unknown number of  
species  
8 – 100 million globally ???



# Forest biodiversity includes

- All life forms and the ecological processes
- Trees, plants, animals, microorganisms incl. genetic diversity
- Ecosystem, landscape, species, population and genetic

Globally  
~60 082 tree  
species

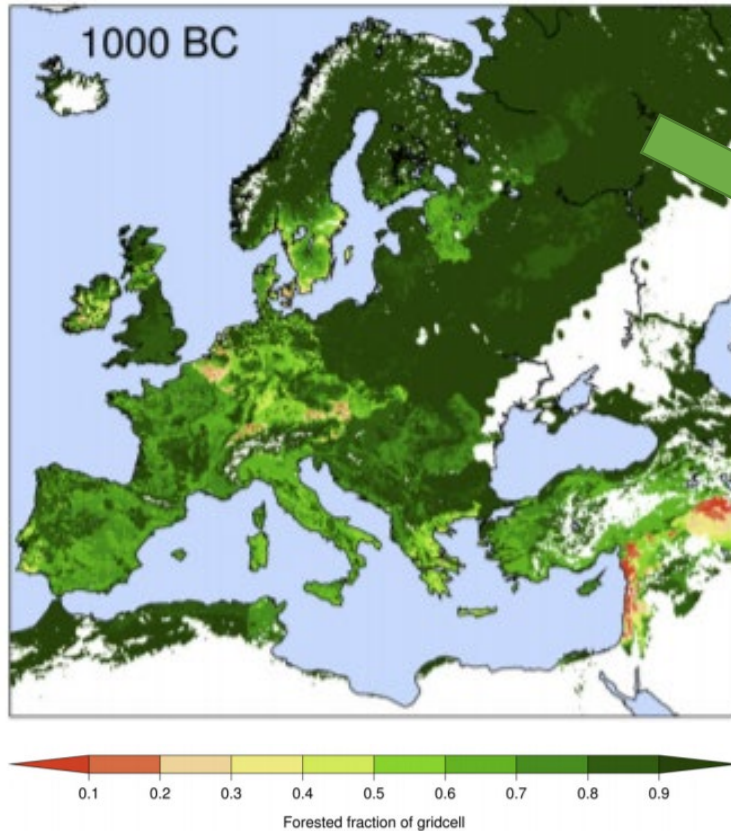
Red LIST in  
Europe ~866  
tree species

Global Red  
List  
20 334 tree  
species

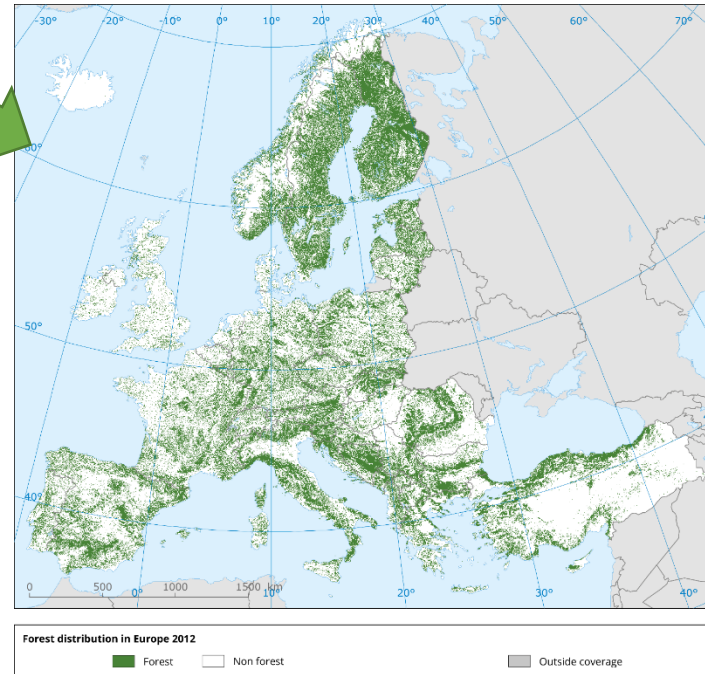


# Forest area in Europe

The forest distribution 1000 BC



The forest distribution 2018



Statistics 2015-2020 from FAO, UNECE, Forest Europe, Copernicus, Corine..

~40% of  
the land



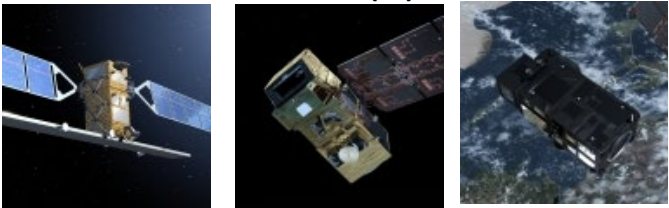
Reporting processes	Forest biodiversity (-related) indicators
Habitats Directive	Range of species and habitats   Area covered by the species and habitats within its range   Structure and functions and status of typical species   Prospects
Protected areas	Protected Annex 1 forest habitats and species   Natura2000   CDDA
EEA/PECBMS	Common forest birds   Living Planet Index   Tree cover density   Forest cover and type   Forest connectivity
Forest Europe	Diversity of tree species   Regeneration   Naturalness   Introduced tree species   Deadwood   Genetic resources   Forest fragmentation   Protected forests   Common forest bird species
FAO/FRA	Forest area designated primarily for biodiversity conservation
ICP Forests	Flora Europae species   abundance and cover Layers: <u>moss layer</u> , <u>herb layer</u> (all non-ligneous irrespective of height, and the ligneous only if $\leq 0.5\text{m}$ height), <u>shrub layer</u> (only ligneous and all climbers) $> 0.5\text{ m}$ and $\leq 5\text{ m}$ height, <u>tree layer</u> (only ligneous and all climbers) $> 5\text{ m}$ height.
ESTAT/LUCAS	Forest cover (broadleaved, coniferous, mixed)   Shannon evenness index
IUCN	Threatened species



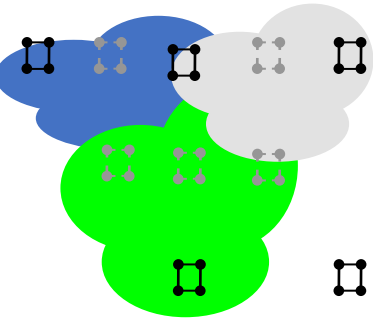
# EU forest information: actors and instruments



Sentinels 1 and 2 (3)



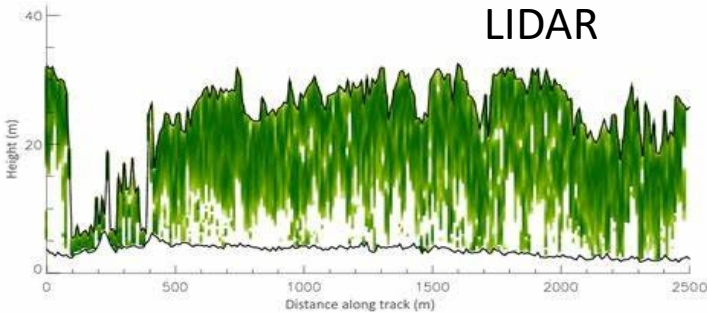
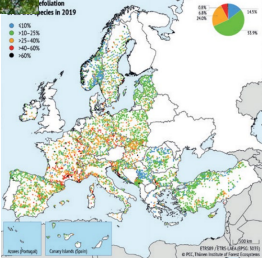
NFIs ~ 500 000 plots



Statistics

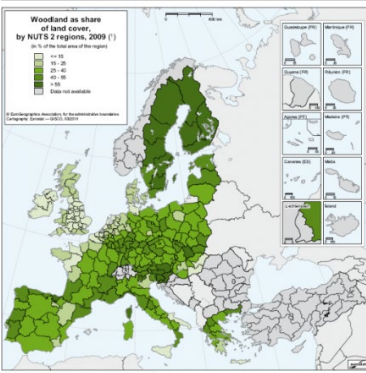


~ 8 000 plots  
(Level I+II)

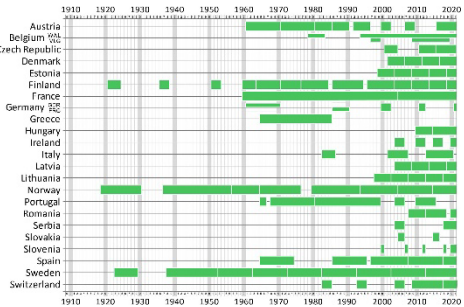


LUCAS woodland  
~ 80 000 plots

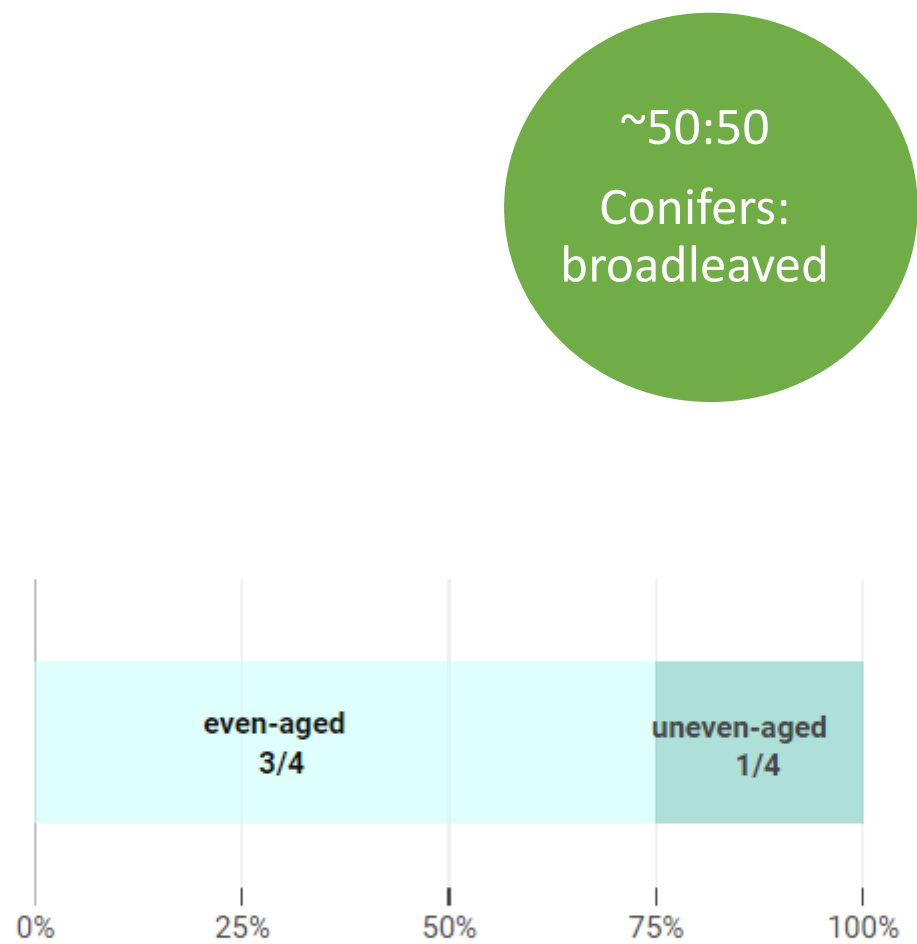
Forest ecosystem  
condition



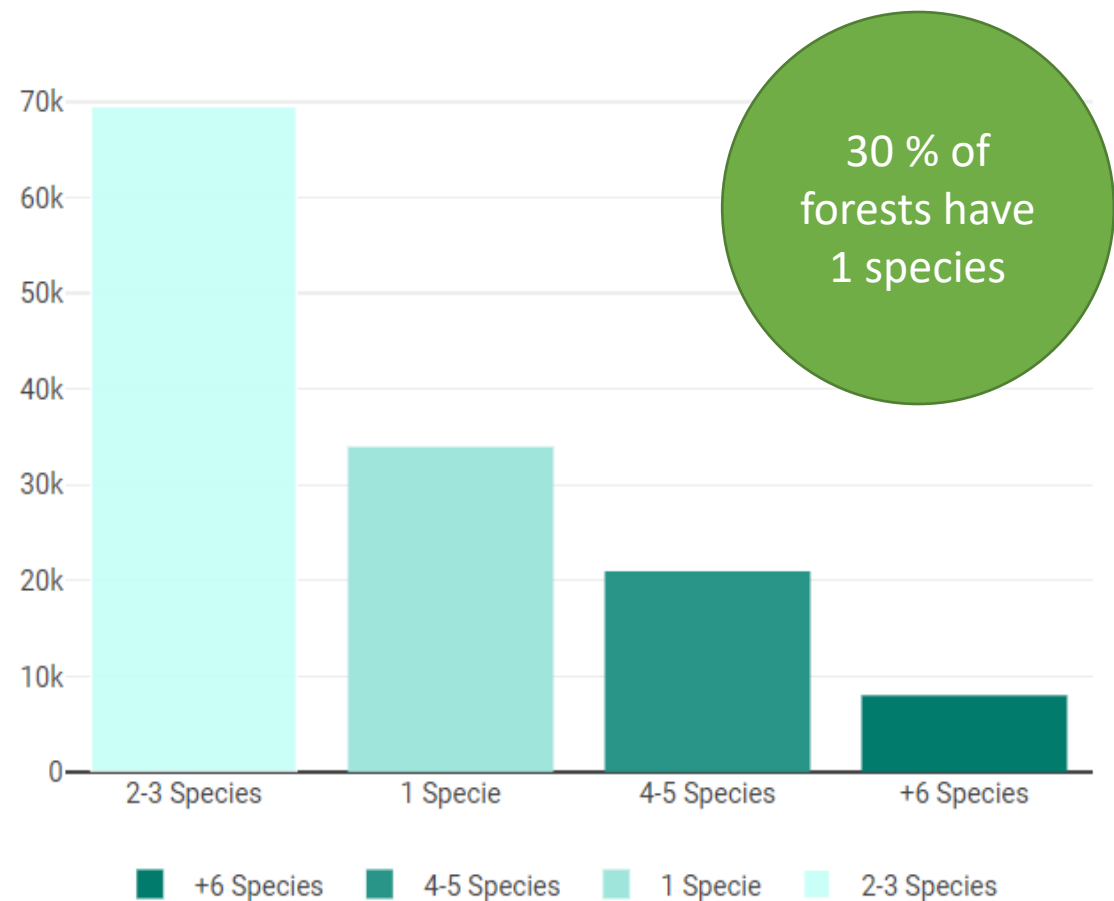
European Environment Agency



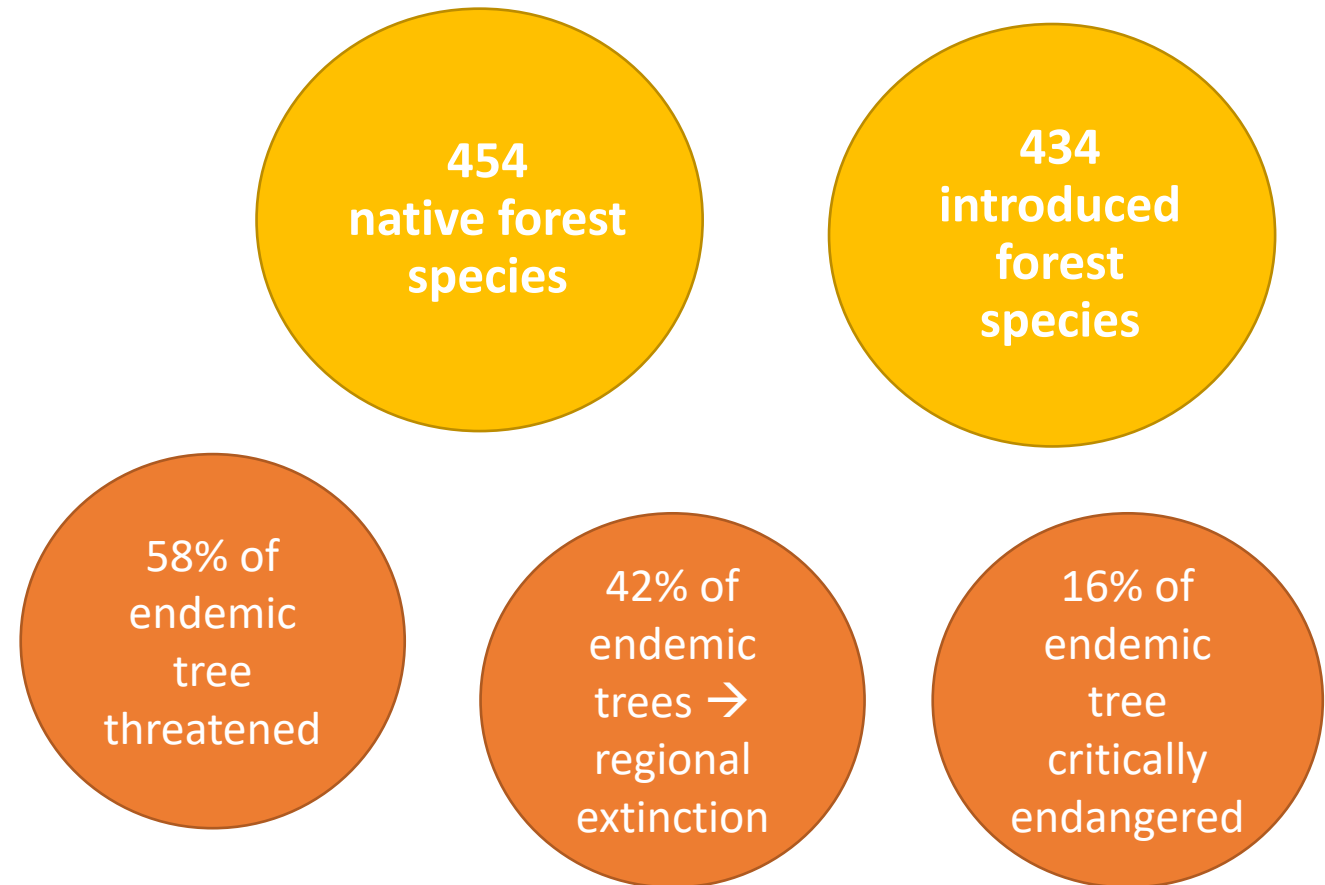
# Forest biodiversity monitoring: what aspects are we monitoring



## Forest species in Europe



# Forest species in Europe

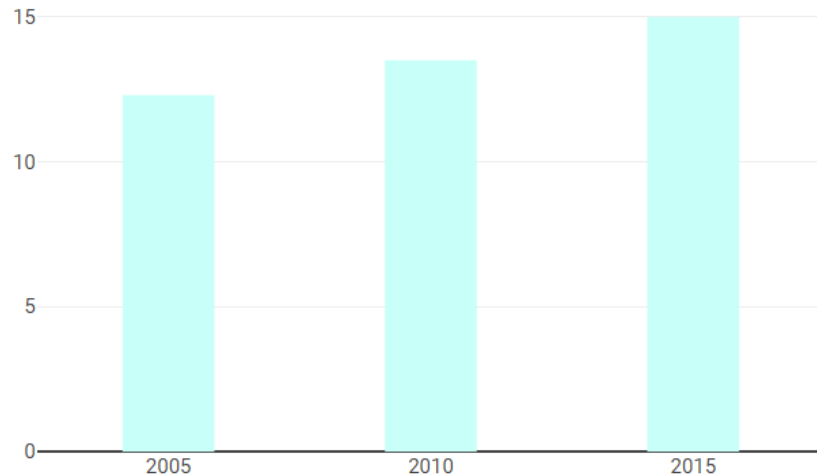


*IUCN, 2019; EFI, 2022*



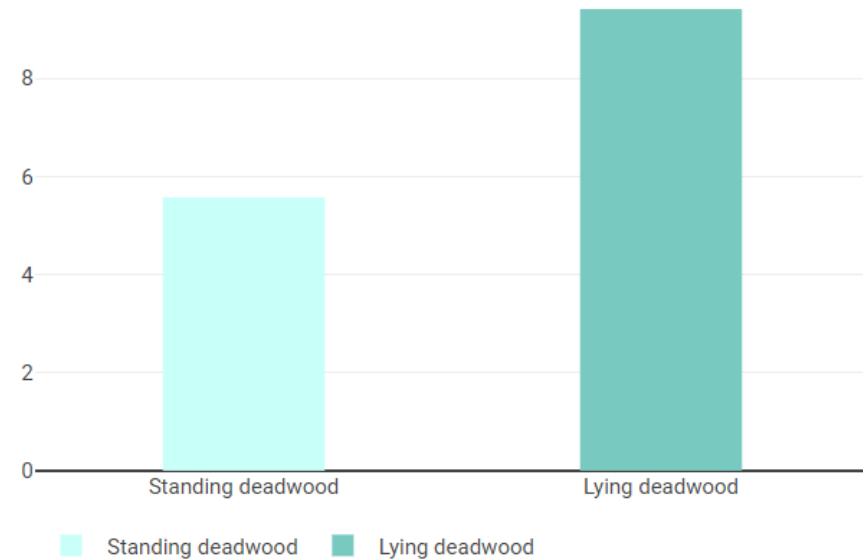
# Forest deadwood

**Increase in total deadwood 2005-2015, m<sup>3</sup>/ha**



Forest Europe, 2020

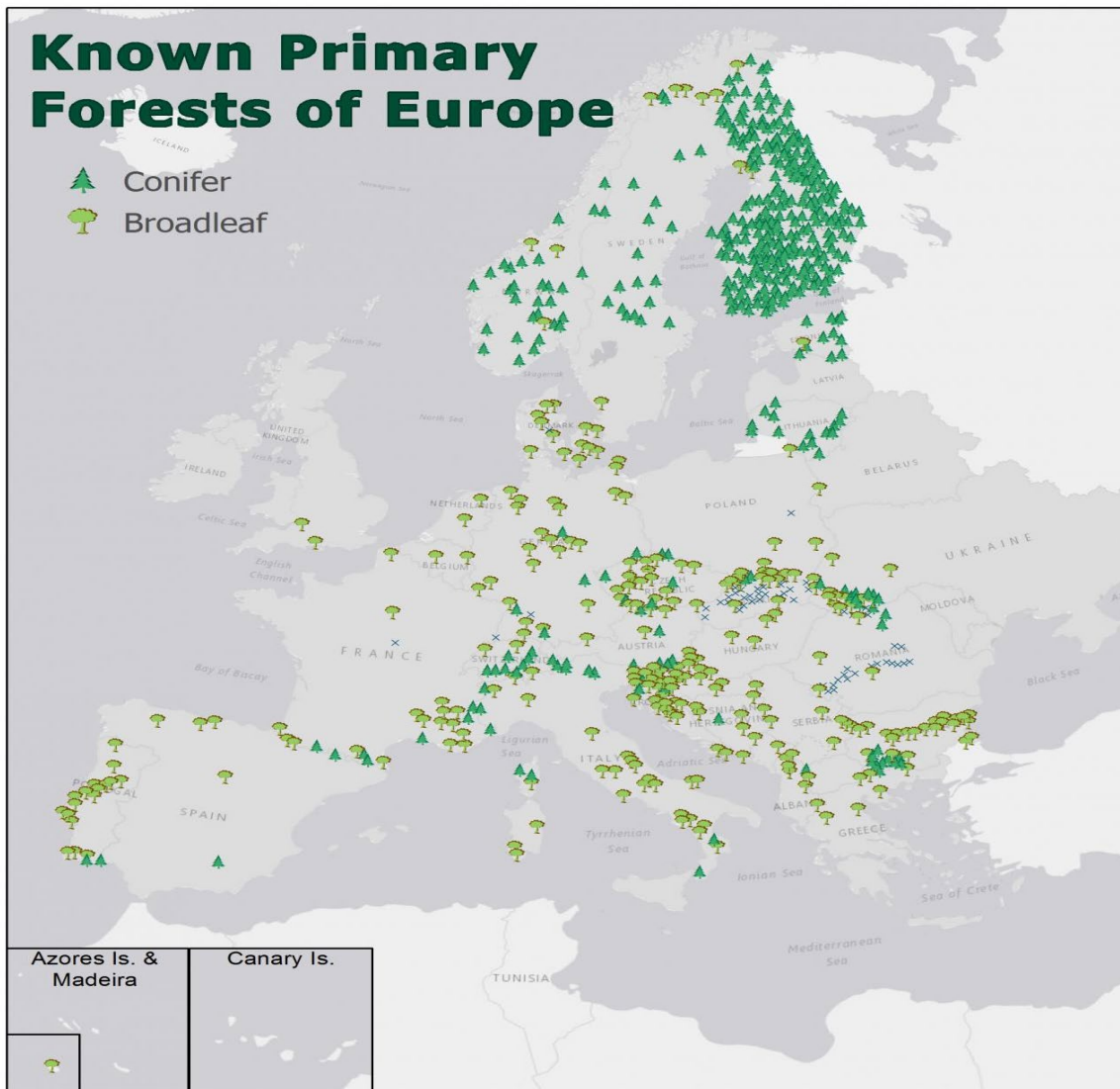
**Average deadwood Europe's forests in 2015, m<sup>3</sup>/ha**



European Environment Agency







**1.4 million ha (~2-4% of all forests)**

(JRC, 2021)

# Forest naturalness

About 3-5% of the forest is undisturbed

Forests cover ~50 % of the Natura 2000 sites

## Forests inside and outside of Natura 2000 network

In 2018, about 39% of the EU27 land surface was covered by forests (~158 Mha out of ~403 Mha).

There are about 36 million ha forest area inside Natura 2000 network.

(FISE, 2023)

# What is covered from the Art. 17 reporting

233 habitat types – 3,295 submitted assessments from MS

1,389 non-bird species – 8,098 submitted assessments from MS (including forest species)

More than 78,000 people involved in the collection of information

81 habitat types under the group of **'Forests'** – 25 of priority

- Forests of boreal Europe (8)
- Forests of Temperate Europe (37)
- Mediterranean deciduous forests (13)
- Mediterranean sclerophyllous forests (10)
- Temperate mountainous coniferous forests (3)
- Mediterranean and Macaronesian mountaineous coniferous forests (10)

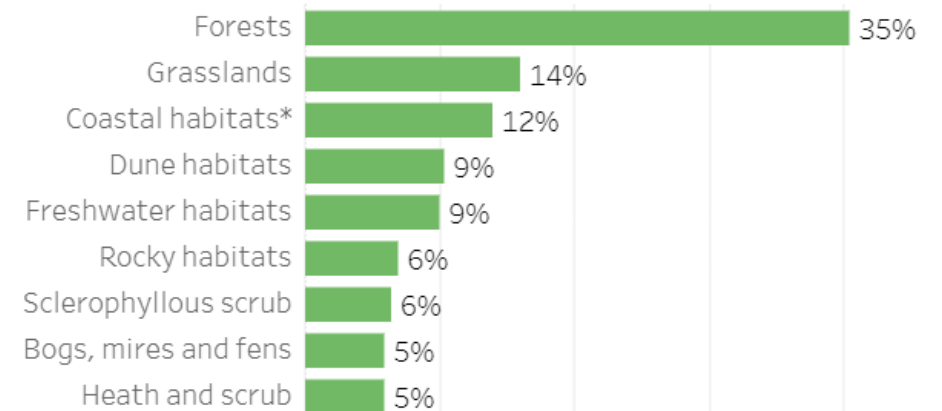
## Not a comprehensive typology of EU forest habitats

Nearly 0,5 million km<sup>2</sup> (appr. 30% of the total forest area in EU 27)

- Appr 32% of the area covered by all Annex I terrestrial habitats
- Appr 35% of the Annex I forest area reported by Member States is included in Natura 2000

Share of **habitat** groups protected by the Habitats Directive (Annex I)

(selected country: **All**)





# Information provided and conservation status assessment

## Information provided through Art. 17 reporting

- Distribution data and maps
- Range and trends
- Population/area size & trends
- Habitat of the species / structure and functions of habitat (condition) & trends
- Pressures & threats (activities)
- Conservation measures
- Future prospects
- Proportion & trends in Natura 2000
- Hunting/exploitation/collection
- Conservation status

One assessment for each Art 17 habitat / species per national / EU regional level (**so number of assessments > number of habitat / species**)

## Parameters for assessing conservation status:

Species	Habitats
Range	Range
Population	Area
Habitat of the species	Structure and functions
Future prospects	Future prospects

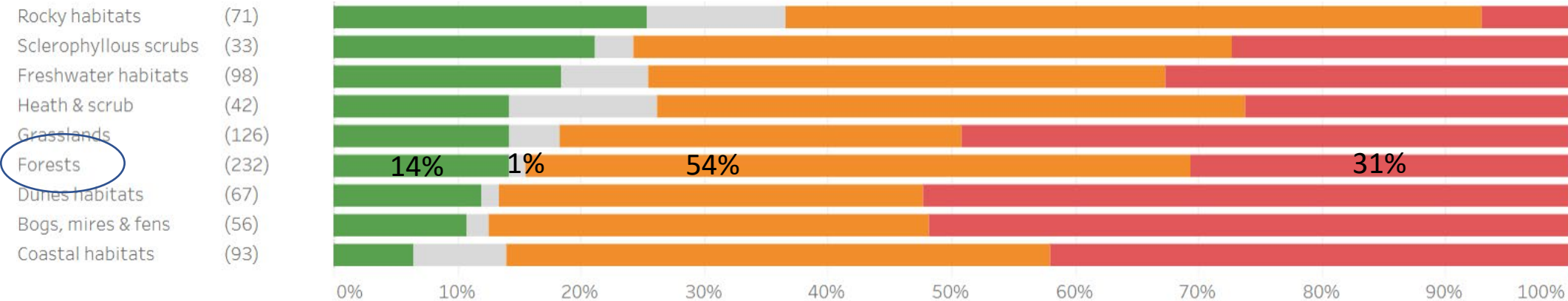
Status of parameters	All favourable or three favourable and one unknown	Two or more unknown combined with favourable or all unknown	One or more inadequate but no bad	One or more bad
Overall assessment of CS	Favourable (FV)	Unknown (XX)	Unfavourable – Inadequate (U1)	Unfavourable – bad (U2)

Overall conservation status is assessed from the combination of the parameters’ assessments

# Conservation status and trends – EU level

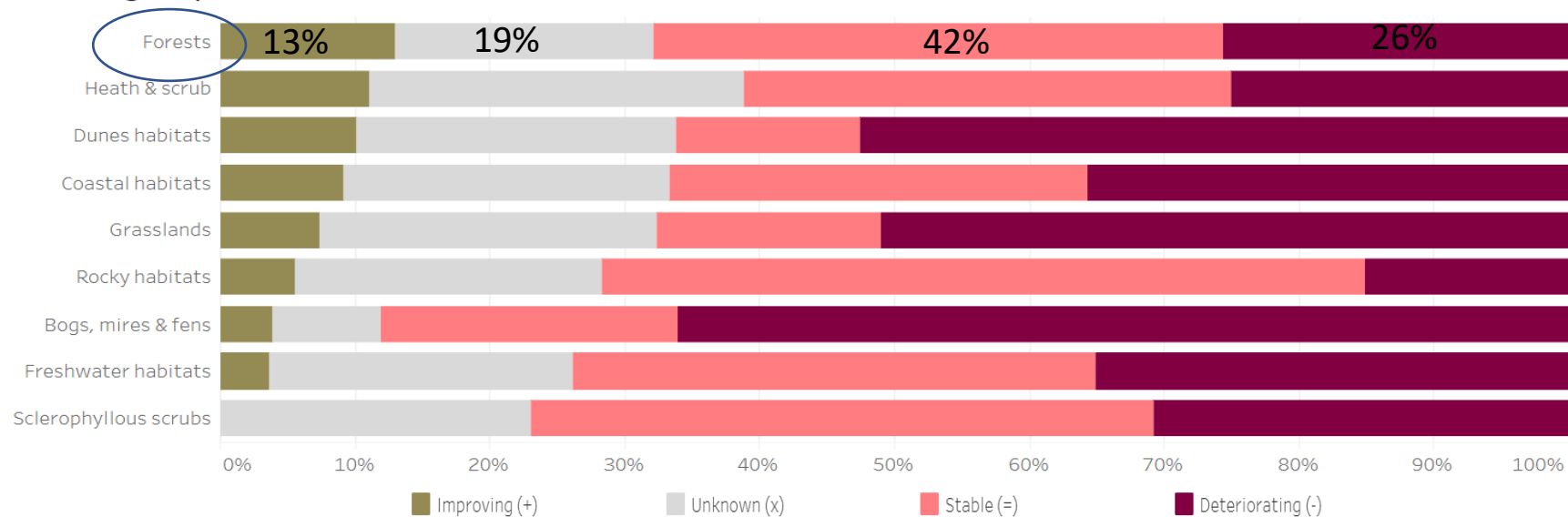
2013-2018

Conservation status



Habitat groups 2013-2018

Trends of habitats not in good status

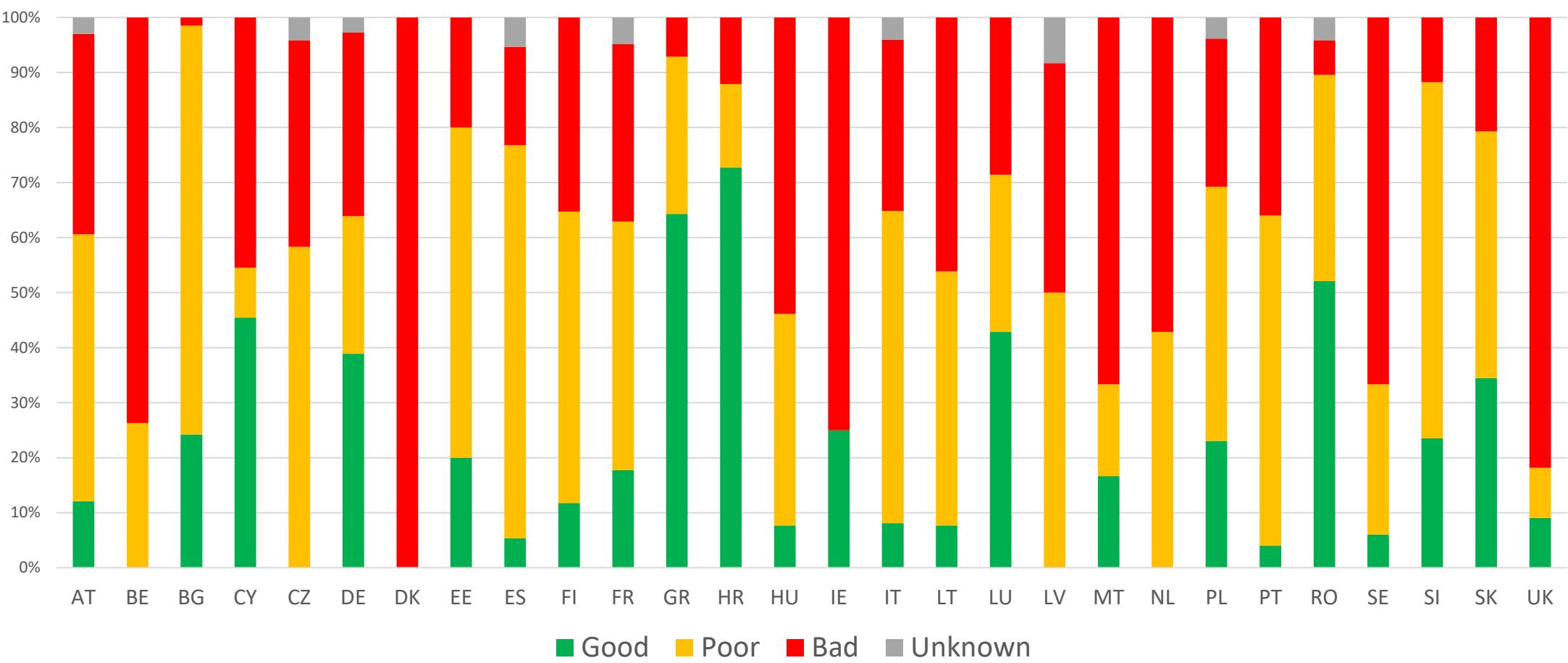


Refers to number of assessments, not area of habitats





# Conservation status of forests by Member State



Refers to number of assessments, not area of habitats

# Habitat condition

- Habitat condition (good/ not good / unknown) is referring to **the structure and functions** of a habitat type.
- Assessment of habitat condition is not identical to the assessment of conservation status

The parameter Structure and functions is:

- Bad** if more than 25 % of the habitat type area is in bad condition
- Good** if more than 90% of the habitat type area is in good condition (recommended value) and the short-term trend in area in good condition is stable or increasing
- Unknown** if more than 75 % of the habitat type area has 'unknown' condition

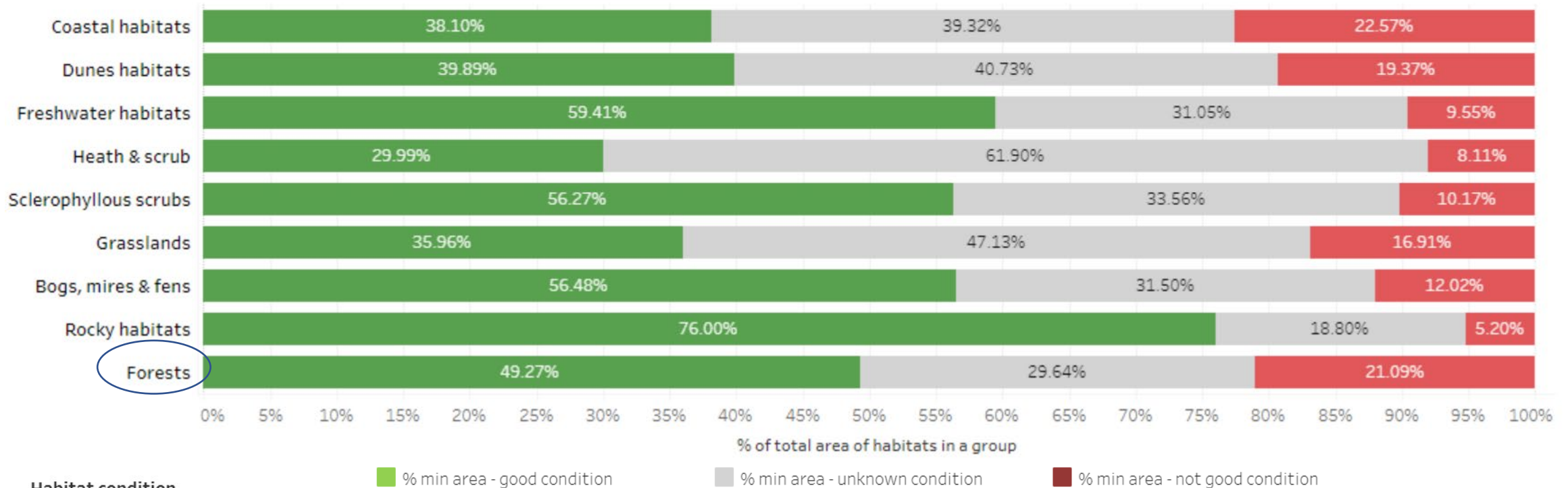
1 STRUCTURE AND FUNCTIONS			
6.1 Condition of habitat	a) Area in good condition	Minimum	In km <sup>2</sup>
		Maximum	In km <sup>2</sup>
	b) Area in not-good condition	Minimum	In km <sup>2</sup>
		Maximum	In km <sup>2</sup>
	c) Area where condition is not known	Minimum	In km <sup>2</sup>
		Maximum	In km <sup>2</sup>
6.2 Condition of habitat Method used	Select one of the following methods: a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available		
6.3 Short-term trend of habitat area in good condition Period	2013 - 2024 (rolling 12-year time window) or period as close as possible to it. The short-term trend is to be used for the assessment of structure and functions		
6.4 Short-term trend of habitat area in good condition Direction	Select one of the following: a) stable b) increasing c) decreasing d) uncertain e) unknown		
6.5 Short-term trend of habitat area in good condition Method used	Select one of the following methods: a) Complete survey or a statistically robust estimate b) Based mainly on extrapolation from a limited amount of data c) Based mainly on expert opinion with very limited data d) Insufficient or no data available		
6.6 Typical species	Has the list of typical species changed in comparison to the previous reporting period?  <input type="checkbox"/> YES <input type="checkbox"/> NO  If yes, provide the updated list as an additional spreadsheet and fill field 6.7		
6.7 Typical species Method used	If the list or the methodology has changed, describe method(s) used to assess the status of typical species as part of the overall assessment of structure and functions		
6.8 Additional information	Other relevant information, complementary to the data requested under fields 6.1–6.7		
	Free text		



# Condition of habitats

Refers to number of assessments, not area of habitats

Proportion of habitat area reported with good, not-good and unknown habitat condition



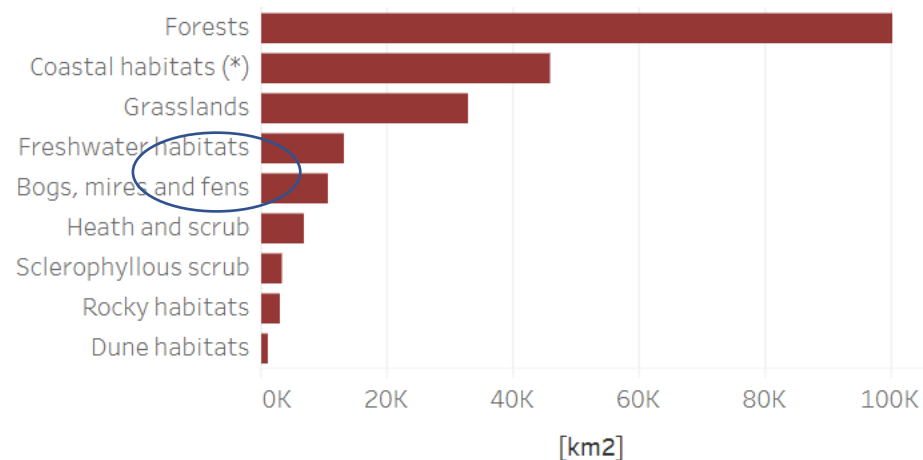
- % of assessments with good habitat condition of forests is higher than the % of assessments with favourable conservation status (which is 14%)
- unknown condition is much higher than unknown conservation status



# Restoration needs of forest habitats is based on condition

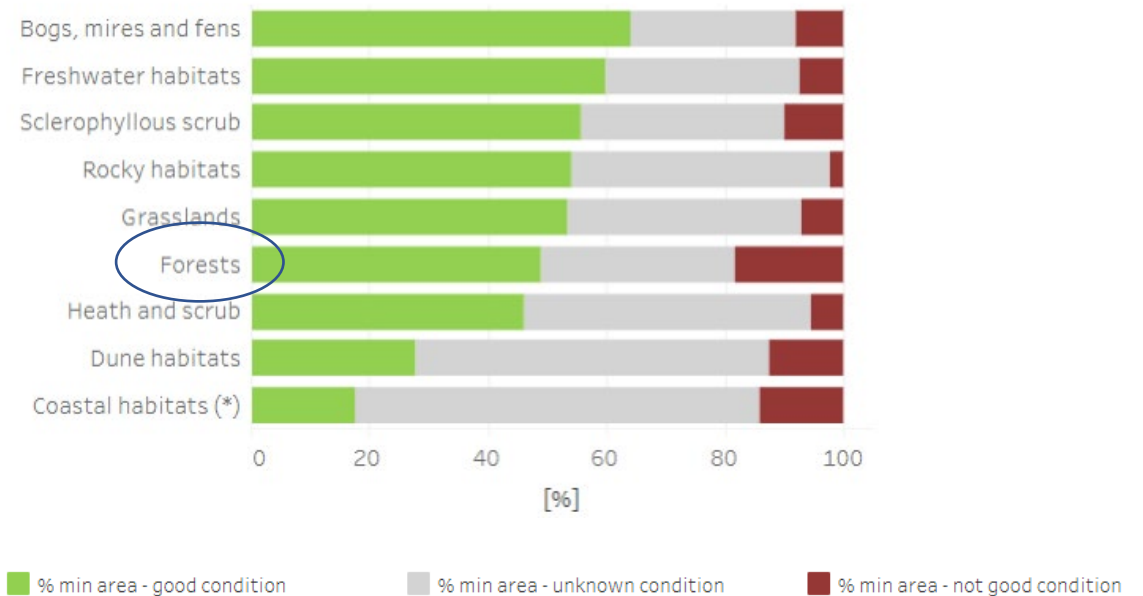
Habitats' area in not good condition

Selected country: All, region: All



Percentage of habitats' area in good, unknown and not good condition

Selected country: All, region: All



- Restoration should be accompanied by improvement in future prospects (i.e. pressures / measures)
- The actual habitat area in need of restoration is likely to be much bigger - many Favourable Reference Values were unknown and not counted

The UK is excluded from calculations

European Environment Agency



# Report and on-line products

EEA Report | No 10/2020

## State of nature in the EU Results from reporting under the nature directives 2013-2018

ISSN 1977-8449



### State of nature in Europe: a health check

Europe's nature is experiencing a serious and continuing decline. The challenge to protect it is urgent, and significant additional efforts are needed to reverse the current trend.

Last modified 15 Apr 2021 — 4 min read

The health of Europe's nature is at Europe — all vital to our well-being farming and forestry, and pollution biodiversity continues to decline at habitats found not to have a good reverse current trends and to ensu

#### Reporting period 2013-2018

The products from the 3rd reporting period are available here:

- The State of Nature in the EU (leaflet)
- The State of Nature in the EU (brochure)
- Press release
- The state of nature in the European Union – Report on the status and of species and habitat types protected by the Birds and Habitats Direct Commission report, 20 pages)
- State of nature in the EU - Results from reporting under the nature dire (EEA report, 140 pages)
- National summary dashboards (online)
- National summaries (pdf)
- EEA-webpage on State of Nature 2020
- Data-quality scoreboard (Member States)
- Timeliness of submission scoreboard (Member States)
- Reference portal for reporting under Article 17 of the Habitats Directive for the period 2013-2018

Explore the State of Nature data!

Click up the conservation status (and much more) of habitats & species

<https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu>

[https://ec.europa.eu/environment/nature/knowledge/rep\\_habitats/index\\_en.htm](https://ec.europa.eu/environment/nature/knowledge/rep_habitats/index_en.htm)





# | EU Biodiversity Strategy for 2030



Protect Nature



Enable Transformative  
Change



Restore Nature



EU For An Ambitious  
Global Agenda

European Fr



## Overarching objective

- Contribution to i.a. international commitments
- By 2030 → restoration measures will cover 20% of EU's land and sea
- By 2050 → measures in place for all ecosystems in need of restoration

## Restoration targets

Protected  
Habitat Types  
(Annex I HD)



Habitats of  
protected  
species (BHD)



Marine  
Habitats  
(beyond HD)



Urban  
ecosystems



River  
connectivity



Pollinators



Agro-  
ecosystems



Forest  
ecosystems





# | Forest ecosystems targets (Art. 10)



Put in place **restoration** measures necessary to enhance forest biodiversity **in addition to Art 4**

Achieve an **increasing trend in indicators** (until satisfactory levels are achieved):

- Standing deadwood;
- Lying deadwood;
- Share of forest with uneven age structure;
- Forest connectivity;
- Common forest birds index;
- Stock of organic carbon.





# Possible components of a forest information system

EUROPEAN LEVEL

Welcome to FISE

Database

ReportNet  
3.0 tool

QA/QC

MEMBER COUNTRIES

Upscaling to 50 x 50 km<sup>2</sup> / NUTS3 / other region /  
national level

Harmonisation of variables towards internationally  
agreed reference definition

Field data  
(NFI, ICP, other)

Spatial explicit  
information

Integrating field  
and remote sensing  
information

Other statistics

QA/QC

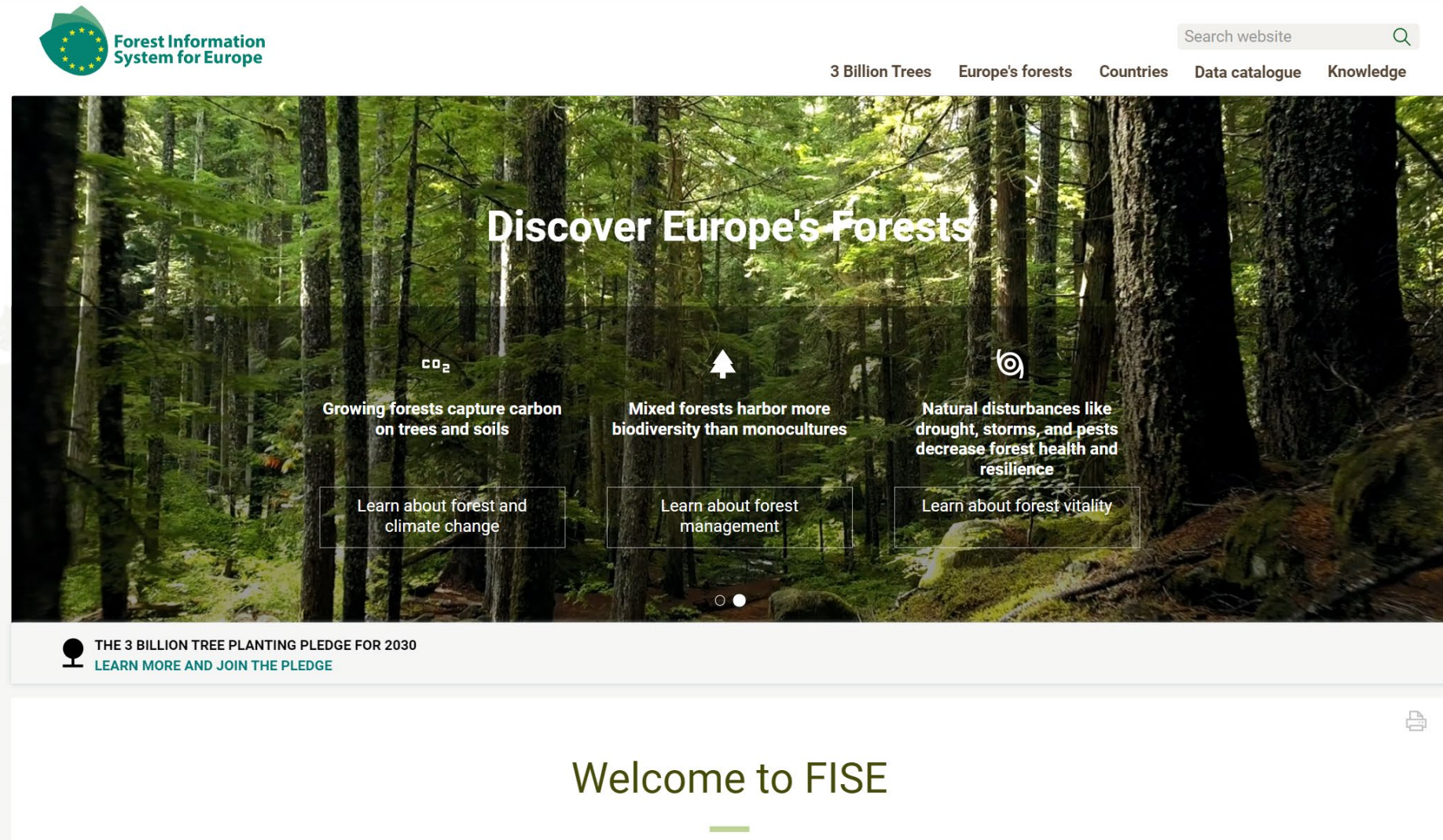
QA/QC

QA/QC

an European Agency



# Reporting and dissemination: Forest Information System for Europe (FISE)







# Thank you

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[Annemarie.Bastrup-Birk@eea.Europa.eu](mailto:Annemarie.Bastrup-Birk@eea.Europa.eu)