



European
Environment
Agency

The inventory of the Carpathian Virgin forests

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Harmonisation of forest typologies

Integration of the **crosswalk between national forest types and EUNIS habitats** classification for Ukraine plots

N	EUNIS	Ukrainian forestry types in English	Ukrainian forestry types in Ukrainian
1	F2.46 Carpathian [Pinus mugo] scrub	<p>Frequently:</p> <ul style="list-style-type: none"> Damp Mountain Pine woodland/scrub on oligotrophic soils (B3 - Cr). <p>Rare and fragmented:</p> <ul style="list-style-type: none"> Damp Mountain Pine woodland/scrub on oligotrophic soils (A3 - Cr) 	<p>Часто:</p> <ul style="list-style-type: none"> Вологий гірськососновий суббір (B3 - Cr), <p>Рідко та фрагментарно:</p> <ul style="list-style-type: none"> Вологий гірськососновий бір (A3 - Cr)

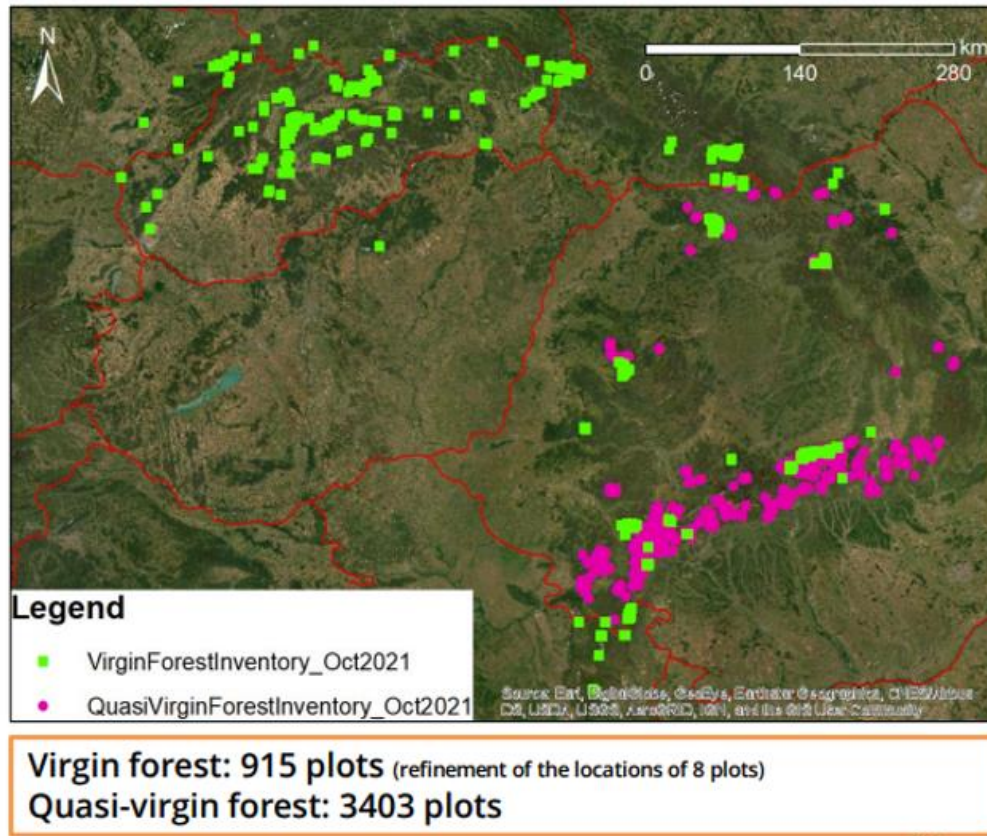
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Integration of updated RO "official" Virgin and Quasi-virgin inventory



Virgin forest and quasi-virgin forest inventory of the Carpathians (KEO), version 2, December 2021

Finalisation for the COP in October



- Include new data from
- Ukraine
- Poland
- Other countries
- Baseline ready before summer for consultation, ready for presentation at the COP in October
- Expansion can take place according to new incoming datasets

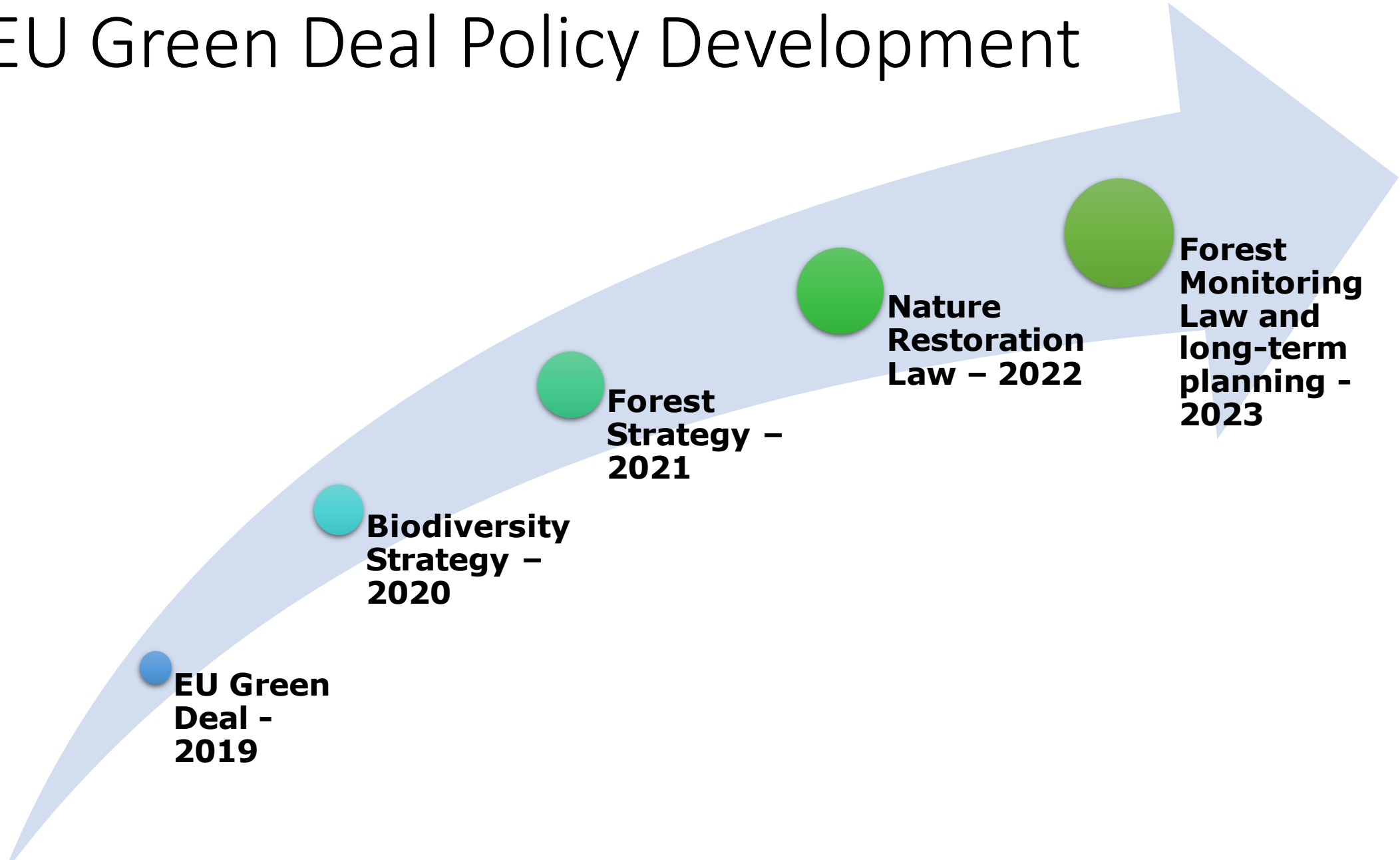
State of work

- Official data on virgin, quasi-virgin and other old-growth forests in the region integrated in the inventory,
- Quasi-forest Carpathian wide layer using peer-reviewed data sources
- Layers included in the EEA map viewer developed for the Carpathian Convention
- Region-wide indicators on sustainable forest development

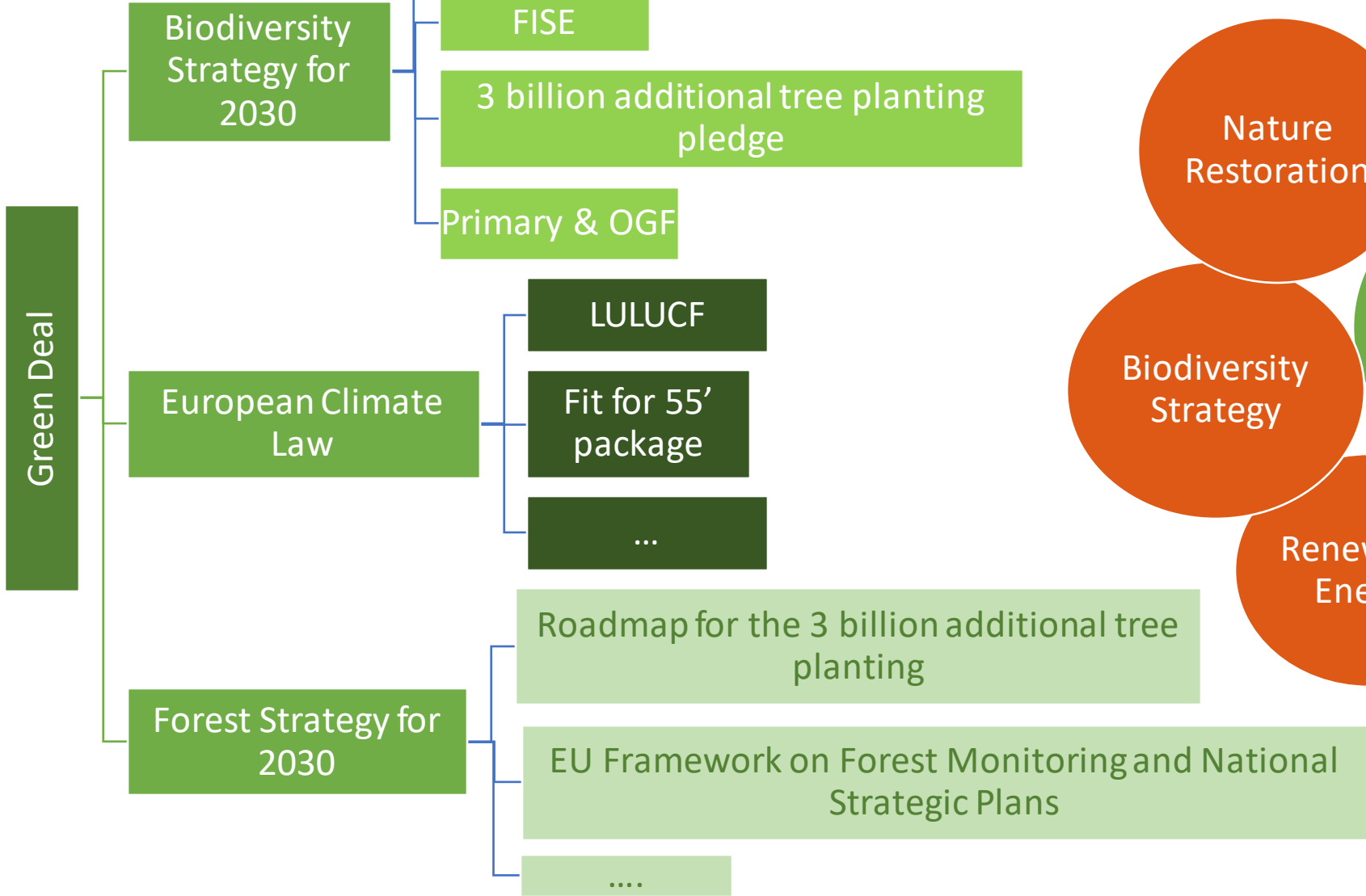
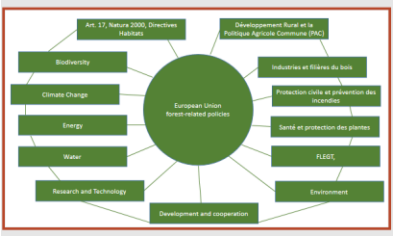
Open questions to clarify whether solved

- Q1: How often to update the virgin and quasi-virgin forest
- Q2: Validation of updated datasets? E.g. sharing a short document by country (map + table) if relevant, is it to be validated by parties or the WG on forest?
- Q3: Interest in enlarging the database on well conserved forest in the Carpathian Mountains from trusted entities/organization by creating a “non-official data” on well conserved forest (OGF) in the Carpathians?

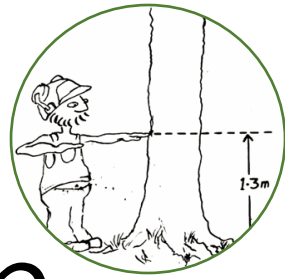
EU Green Deal Policy Development



Targets of the environmental acquis, the EU Green Deal and its flagship strategies



Nature Restoration Law



Standing deadwood

Lying deadwood

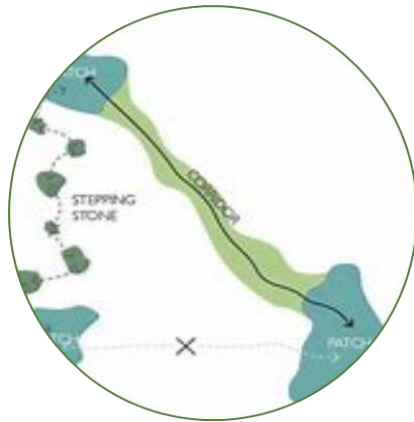
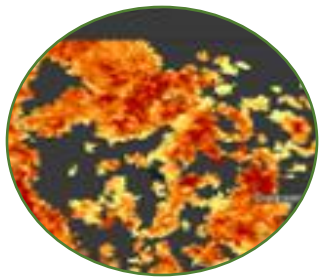


Share of forests with uneven-aged structure

Common forest bird index



Forest connectivity



Stock of organic carbon (soil?)



Forest restoration indicators

Forest connectivity

Definition

Connectivity of forests is the inverted value of the degree of fragmentation of coherent forest shown within a range [0, 100]% for each forest grid cell considering a local neighbourhood of 10 hectares, or 31x31 pixels, around the given forest grid cell.

The methodology used is called Forest Area Density (FAD), as adopted in the 8th EAP.

It is calculated from the map layers produced for this indicator and divided into five classes for visual representation;

very low (coverage 0 – <10%), low (coverage 10 – <40%), intermediate (coverage 40 – <60%), high (coverage 60 – <90%), and very high (coverage 90 – 100%).

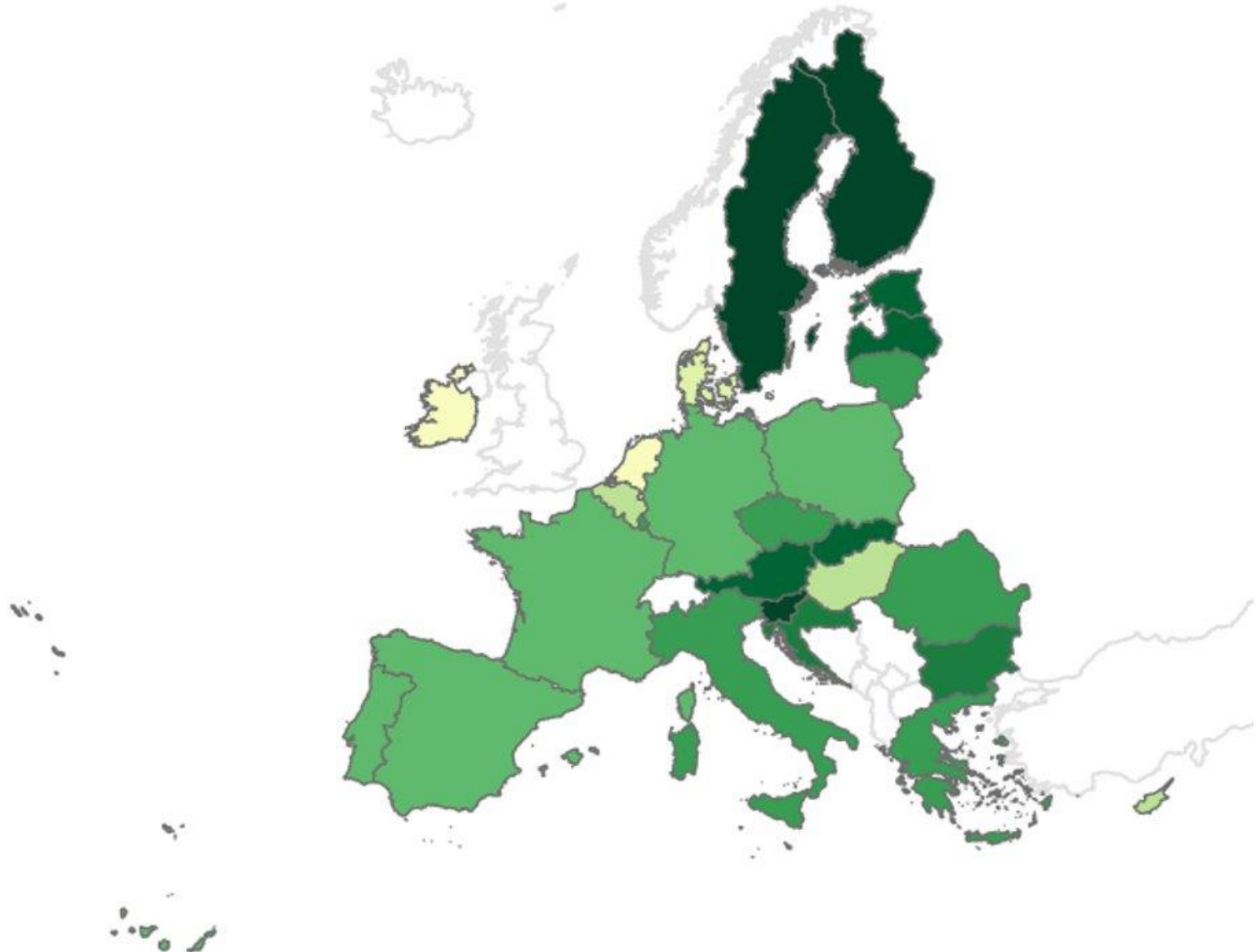
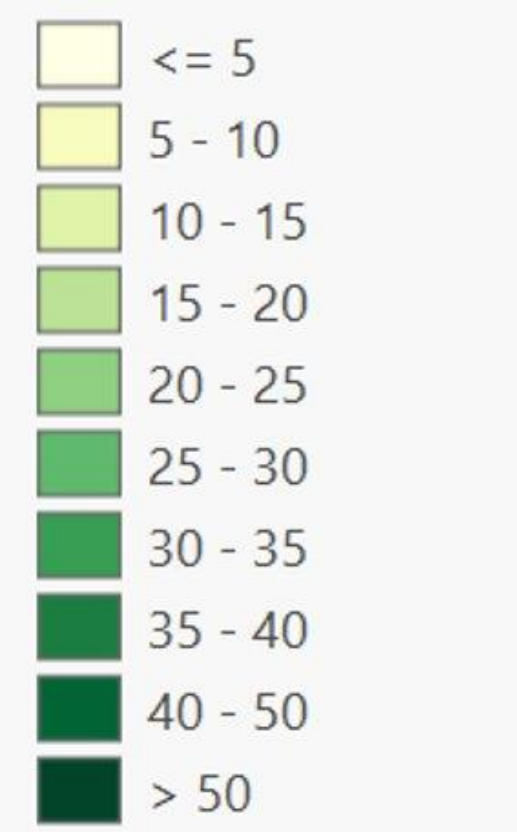
The final EU-wide map of Forest Connectivity is based on the FAO compliant 10 m forest type map complemented with the woody vegetation map (EEA).

The computation is carried out with the free, open-source, and peer-reviewed JRC software [GuidosToolbox Workbench](#), [Vogt et al., 2022](#).

Unit of measure

10 hectares

Forest connectivity as percentage of interior or dominant forest (> 50% forest coverage).

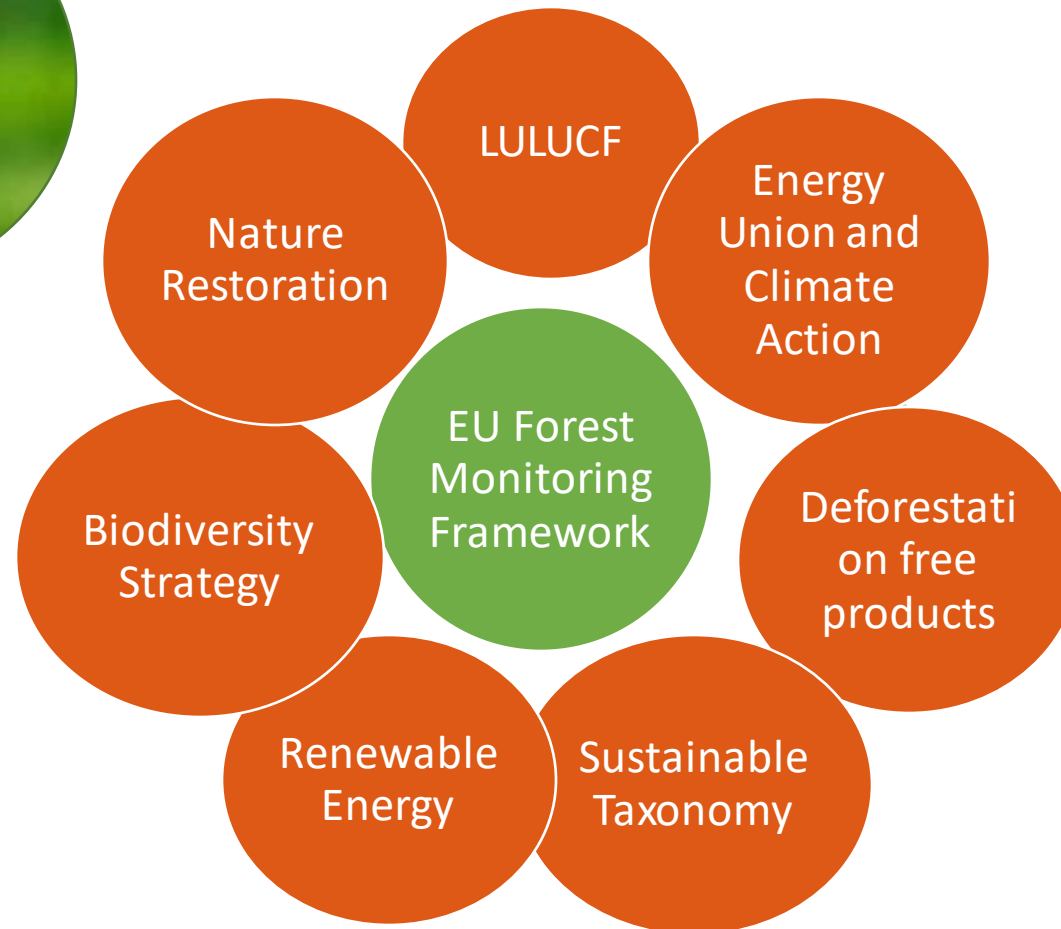
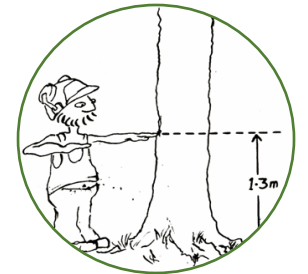
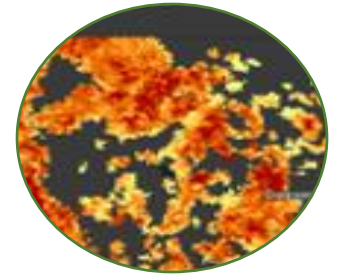


Forest Monitoring and long-term planning Law

About 20-25 forest monitoring indicators



Primary and old-growth forests (identification and location)





Brussels, 20.3.2023
SWD(2023) 62 final

COMMISSION STAFF WORKING DOCUMENT

**Commission Guidelines for Defining, Mapping, Monitoring and Strictly Protecting EU
Primary and Old-Growth Forests**

Primary forests	Old-growth forests
Naturally regenerated forest	Natural regeneration dynamics
Native tree species	Native tree species
No clearly visible indications of human activities No known significant human intervention	Signs of former human activities may be visible , but they are being gradually phased out
Ecological processes are not significantly disturbed	Ecological processes are not significantly disturbed
<ul style="list-style-type: none"> • Natural forest dynamics • Natural age structure • • Occurrence of dead wood • • Natural tree species composition • Natural regeneration processes (repetition) • • • • • Area is large enough to maintain its natural ecological processes 	<ul style="list-style-type: none"> • Natural dynamics • Natural processes/dynamics of late seral-developmental phases in primary or undisturbed forests of the same type • Large and diverse dead wood/ Old trees or trees reaching senescent stage, veteran trees (repetitive) • • • Natural structures/structural complexity. several decades of natural development without evident human intervention (repetitive) • Habitat tree, microhabitats, presence of habitat-trees •

Option 1

CRITERIA & INDICATORS FOR SELECTION OF NATURAL FORESTS IN THE CARPATHIANS

A1 Criterion: Naturalness		
Indicators:		Defining:
A1.1	Species composition	Forests formed of native/autochthonous tree species according to potential natural forest types.
A1.2	Structure	Cyclic ecosystems with complex structures, which include <u>all stages of small development circles</u> (some phases may be present only in small areas) in a <u>mosaic structure</u> (horizontal) and <u>vertically layered</u> , Occurrence of trees with exceptional dimensions according to the site conditions and species, and <u>signs of physiological decline</u> .
A1.	Deadwood	Presence of deadwood (lying and standing) at all stages of
A2 Criterion: Area & Delimitation		
Indicators:		Defining:
A2.1	<u>Area of forest plot</u>	Minimum 20 ha.
A2.2	<u>Shape of forest plot</u>	Minimum distance between any two opposite boundary points does not decrease below 200 m.

Option 2

CRITERIA & INDICATORS FOR SELECTION OF NATURAL FORESTS IN THE CARPATHIANS⁴

All the main indicators and at least two complementary indicators need to be met.

A1 Main		
Indicators:		Defining:
A1.1	Native Species	Composed of native species. However, the presence of a small number of Non-native trees should not disqualify a forest from being designated
A1.2	Deadwood	Characterised by a high proportion and diversity of standing and lying deadwood. The amount and type of deadwood can vary greatly between natural forests depending on the forest type, the local environmental conditions and
A1.3	Old or large trees	Often characterised by a high volume of standing trees relative to earlier development stages for the given forest type and local growing conditions and by the
A2 Complementary		
Indicators:		Defining:
A2.1	<u>Stand origin</u>	Most natural forest stands originate from natural regeneration, but some sown or planted forests can meet the definition, if given enough
A2.2	<u>Structural complexity</u>	Natural forests are generally characterised by structural complexity. This can include a multi-layer canopy structure, horizontal structural
A2.3	<u>Habitat trees</u>	Natural forests are often characterised by the high density and high diversity of tree related microhabitats. These are defined as a 'distinct, well delineated structure occurring on living or

⁴ Harmonized with the „Indicators for Old Growth Forests”, Guidelines for Defining, Monitoring and Protecting EU Primary and Old-Growth Forests - SWD(2023) 62 final, European Commission

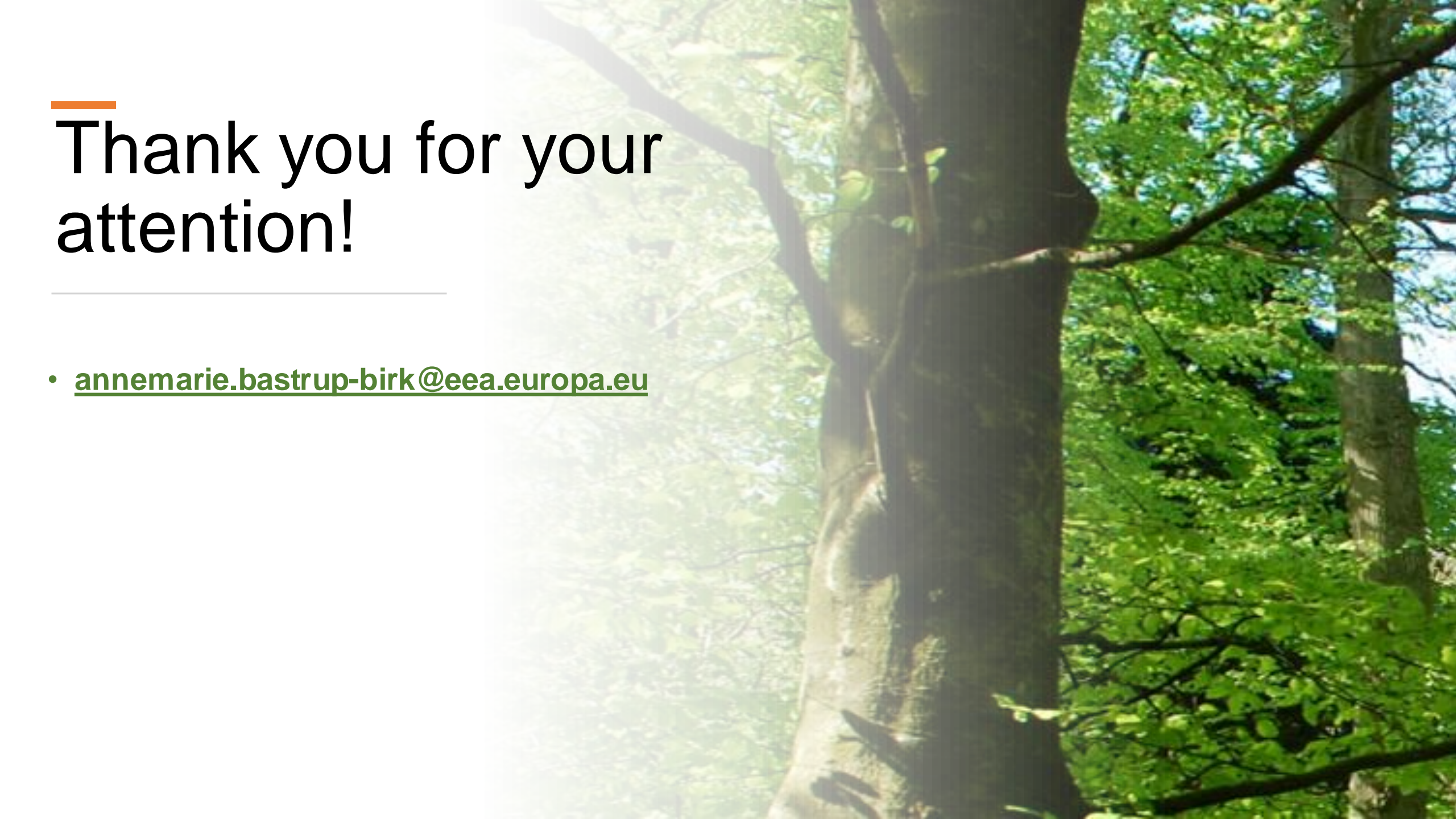
Other possible relevant activities

- ETC BE working on the task for the EEA to take over some of the work of the ETC DI at European level on primary and OGF
- If agreed with the WG on Forests of the Carpathian Convention
 - to update of the virgin and quasi-virgin official forest datasets
 - Check of non-official forest datasets
 - Check of the Greenpeace report on the Carpathian forest loss is high
- EEA and the JRC are developing a forest connectivity indicator for the 8th EAP
 - further improvement by adding small woody features as connectors
- Connections to Nature Restoration Law

Next steps

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- Baseline including new official data from Ukraine and Poland
 - Consultation
 - Presentation at the COP in October 2023
 - Creation of a non-official layer on virgin and quasi-virgin forests?
 - 2024: Workshop EEA, CCS (ETC BE, WG Forests)
 - Update according to new definitions?





Thank you for your
attention!

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