Towards a comprehensive Europe-wide map and database of primary and old-growth forests: Who is filling the gaps?

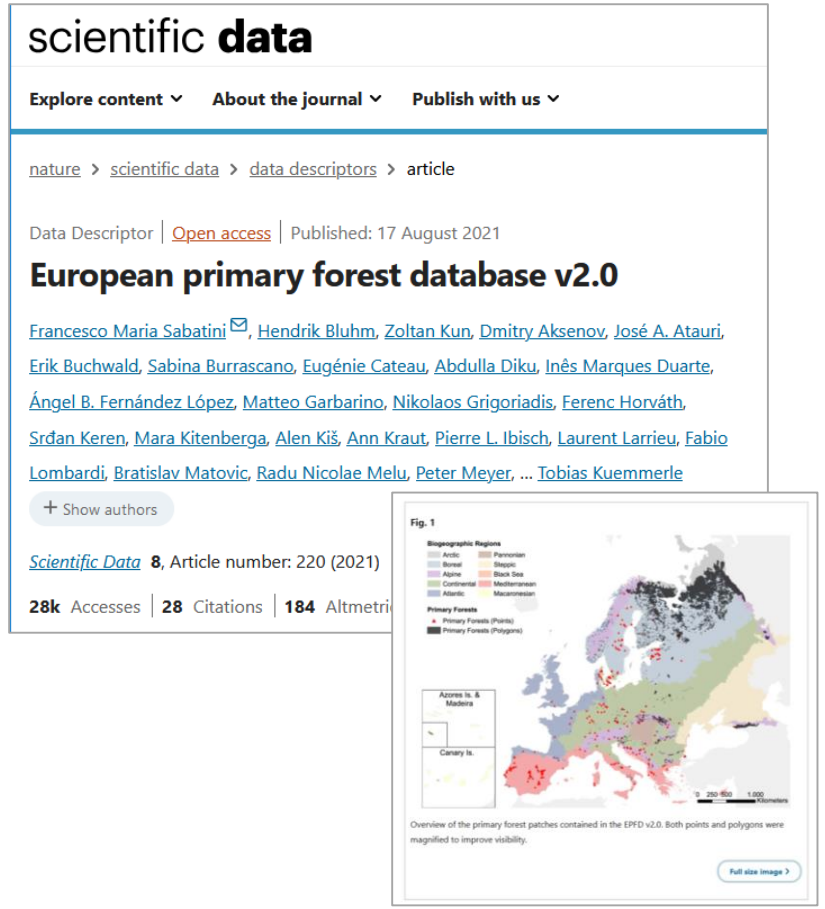
José I. Barredo – Forests and Bioeconomy Unit, JRC

02/10/2024 - Final Conference of LIFE PROGNOSES
Characteristics and Ecosystem Services of European Old-Growth Forests

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Primary and old-growth forests in Europe

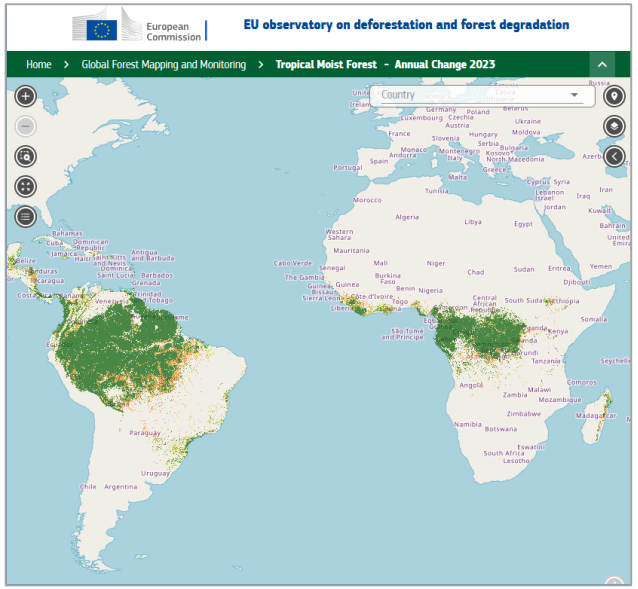
- Valuable information and data on these forests have been published in the European Primary Forest Database (EPFD 2.0; Sabatini et al. 2021)
- The EPFD 2.0 represents a European-wide effort, compiling data from 48 different field-based datasets of primary forests
- It contains >18,000 patches, representing 3.7 Mha (excluding the Russian Federation), across 33 European countries



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Primary and old-growth forests in Europe

- The Amazonian or Congo primary forests are better known than our own European primary forests
- The Amazonian and Congo forests, among others, are systematically monitored due to the risk of deforestation and degradation



- But also our European primary and old-growth forests are at high risk of degradation and destruction



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Data gaps in primary and old-growth forests

- EPFD 2.0 baseline data
- Estimated extent in the EU between 1.4 to 3.2 Mha*
  2% of EU's forest area
- Comparison between EPFD 2.0 and FAO's Global Forest Resources Assessment (FRA)
- Mapping deficit of 4.4 Mha in EU (~size of the NL)
  - SE, IT, BG, DK, RO, … →



Source: https://publications.jrc.ec.europa.eu/repository/handle/JRC124671

Mapping deficit

FAO-FRA EPFD 2.0

Country	Forest area 2020 [1,000 ha]	Forest undisturbed by man (Forest Europe, 2020): In forest [1,000 ha]	In other wooded land [1,000 ha]	In forest and other wooded land [1,000 ha]	Primary forests (FAO, 2020) [1,000 ha]	Primary forests (Sabatini et al. 2020a) [1,000 ha]
Austria	3,881	63	55	118	63	15.2
Belgium	689	0	0	0	0	0.3
Bulgaria	3,833	704	0	704	704	56.9
Croatia	1,922	7	0	7	7	9.6
Cyprus	173	13[a]	ND	13	ND	0.0
Czech Republic	2,668	10	ND	10	10	12.8
Denmark	625	21	3	24	21	1.7
Estonia	2,421	52	2	55	52	0
Finland	22,409	203	11	214	203	2,814.6[c] *
France	16,836	30[a]	0	30	ND	12.3
Germany	11,419	0	0	0	0	14.3
Greece	3,903	ND	ND	ND	ND	1.9
Hungary	2,061	0	ND	0	0	0.3
Ireland	755	ND	ND	ND	0	0.0
Italy	9,297	93	0	93	93	8.7
Latvia	3,391	17	0	17	17	4.8
Lithuania	2,187	27	0	27	27	32.0
Luxembourg	89	0	ND	ND	0	0.0
Malta	0	0	0	0	0	0.0
Netherlands	365	0	0	0	0	0.1
Poland	9,420	0	ND	0	0	22.4
Portugal	3,312	24[a]	ND	24	24[a]	16.4
Romania	6,901	165	0	165	165	70.0
Slovakia	1,922	11	0	11	11	13.1
Slovenia	1,248	34	17	50	34	9.5
Spain	18,551	ND	ND	ND	ND	10.3
Sweden	27,980	2,249	1,075	3,324	2,249	37.8[c]
Total EU	**158,258**	**3,723**	**1,163**	**4,886**	**3,679**	**3,165[d]**
% of forest	**100**	**2.35**	**-**	**2.71[b]**	**2.32**	**2.0**

4.4 Mha

Source: https://publications.jrc.ec.europa.eu/repository/handle/JRC124671

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- Mapping deficit in EU of 4.4 Mha (~size of the NL)
  - SE, IT, BG, EE, DK, RO, …
- Comparability issues: forest mask and definition
- EPFD 2.0 potential primary forests in SE: 2.4 Mha



Source: https://publications.jrc.ec.europa.eu/repository/handle/JRC124671

Protection status of primary and old-growth forests

- Within the EU, the EPFD 2.0 includes 3.2 Mha of primary and old-growth forests
- 93% are within Natura 2000 sites, and
- 87% are in strictly protected areas (IUCN categories Ia, Ib and II)
- The protection status of the estimated 4.4 million hectares (Mha) in the mapping deficit is **unknown**, posing a major risk for the conservation of these areas

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More about the extent of primary and old-growth forests

The extent of primary forests in Finland

Source (year)	Area (ha)	Notes
FAO-FRA (2020)	200,000	FAO's FRA reporting 2020
EPFD 2.0 (2021)	2,814,600	No forest mask
EPFD 2.0 (2021)	1,772,600	Forest mask 30 m (Senf and Seidl, 2021)
Finnish Nature Panel (2021)*	~1.6 million	Using National Forest Inventory data

*Kotiaho et al. (2021). Metsäluonnon turvaava suojelun kohdentaminen. Suomen Luontopaneelin julkaisuja. https://luontopaneeli.fi/briefly-in-english/

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In the meantime…

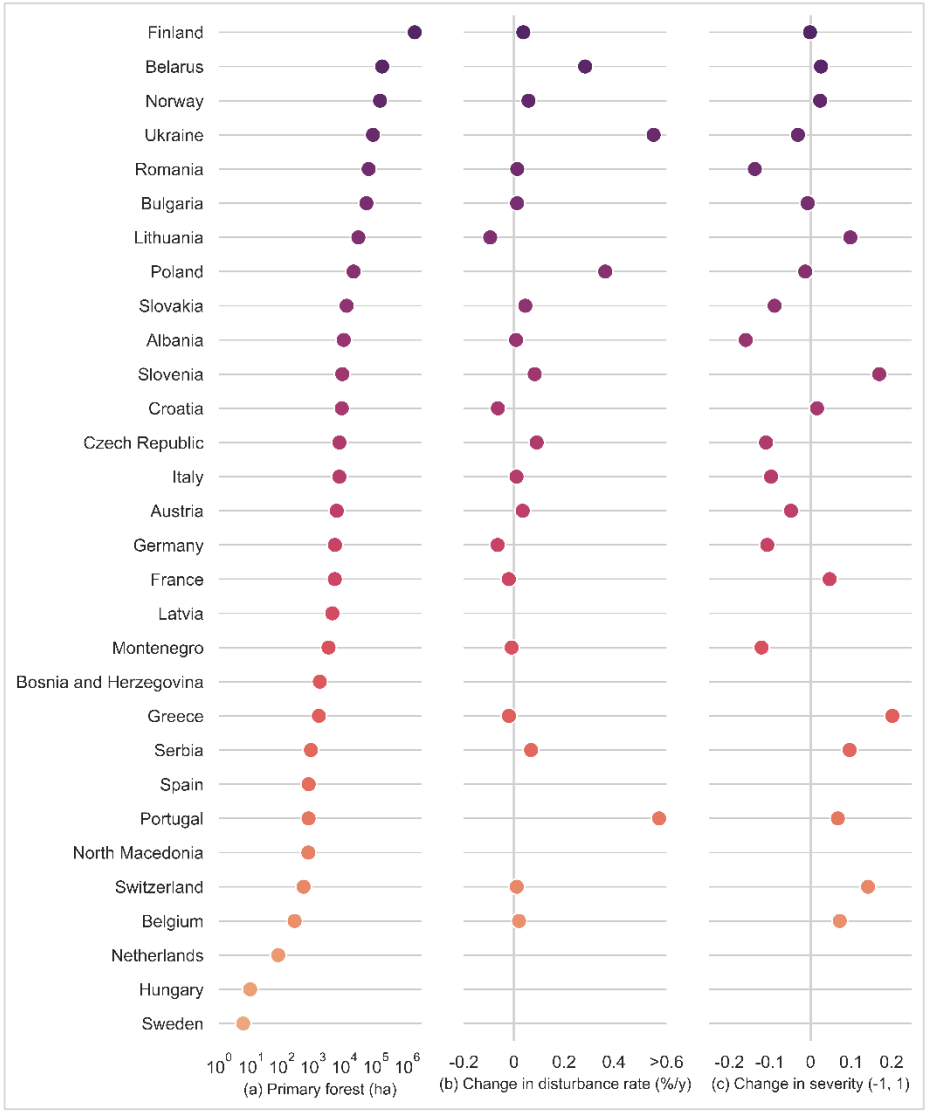
Increasing evidence of continuous destruction of these forests across the EU

Barredo et al. (2024) Assessing disturbances in surviving primary forests of Europe. Conservation Biology (in press)

Accounted for 2.9 Mha* of potential primary forests in Europe, which are almost entirely in the EU, i.e. BG, SE, RO

Total documented + potential in EU is 4.9 Mha*

* Calculated using a forest mask



Source: Barredo et al. (2024) Assessing disturbances in surviving primary forests of Europe. Conservation Biology (in press). doi: 10.1111/cobi.14404.

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Next steps - Who is filling the gaps?



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COMMISSION STAFF WORKING DOCUMENT

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

4. MAPPING

The mapping of primary and old-growth forests should take place once the methodology for their identification and mapping has been developed at the national level. This methodology should be based on the definitions, criteria and indicators in this document. Remote-sensing data could be used in the first stage for pre-screening potential areas, in combination with in-situ data and modelling techniques. The mapping will need to be coordinated at national level to ensure consistency and comparability. At a minimum, Member States who have already identified their primary and/or old-growth forests should cross-check with the criteria and indicators in this document, and, if necessary, refine their mapping.

Thank you

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