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POSITION PAPER

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**Strictly Protecting Forests
in the European Union**

Introduction

The EU Biodiversity Strategy for 2030, adopted in May 2020, sets the objective of establishing a coherent Trans-European Nature Network to legally protect at least 30% of EU territory, of which at least one-third (10% of land and 10% of sea) is to be under strict protection. The EU Council of Ministers has welcomed these targets, which are coherent with the global biodiversity commitment adopted in December 2022, where more than 190 countries adopted a global biodiversity agreement¹ to protect and conserve at least 30% of the world by 2030, making it the largest conservation commitment in history.

The EU Biodiversity Strategy 2030 also highlights the need to protect forests as they are fundamental for biodiversity, climate and water regulation, and several other provisions. It identifies several measures related to forests, including defining, mapping, monitoring, and strictly protecting the remaining primary and old-growth forests.

Primary² and old-growth forests are not clearly defined in legally binding EU law, and it is left to the prerogative of national legislation to describe them. Furthermore, EU legislation neither specifies how to identify these types of forests in the EU. In mid-2023, the European Commission intends to propose legislation to standardise the monitoring of forests, including mapping primary and old-growth forests. However, there is a growing debate in the EU about what should be considered primary and old-growth forests. This is particularly concerning where EU Member States are weakening the definition in national legislation and applying weak methodologies for defining primary and old-growth forests to continue business as usual.

Nevertheless, through voluntary pledges, Member States are to set out the areas to be protected, including forests under strict protection. These pledges will be revised by the European Commission, together with experts at biogeographical seminars. This position paper will therefore provide recommendations for defining primary and old-growth forests and the methodology for identifying strictly protected old-growth and primary forests.

State of forests in the EU

Forested areas comprise around 158 million hectares covering 37.7 % of the EU's land area. There are 14 categories of forests in Europe (e.g. boreal forest, alpine forest, floodplain forest) and 78 different forest types³ (e.g. Spruce and spruce-birch boreal forest, Mediterranean yew stands, fluvial forest etc.). The range of forest types reflects Europe's geoclimatic diversity. Their occurrence depends on the area's climate, soil, altitude and topography. The majority of EU forests are privately owned (approximately 60% of forested land) rather than publicly owned (40%).

In the EU, about 2-3% of forests are primary forests. Primary and old-growth forests are the richest forest ecosystems that remove carbon from the atmosphere while storing significant carbon stocks.

In Europe, forest management has controlled forest dynamics over multiple centuries. Despite an increase in forested area in the past decade, 85%⁴ of forest habitats (protected by the Habitat's

¹ UN CBD agreement

² The Renewable Energy Directive does explain what types of forests these could be but not in detail

³ Barbati, A., Marchetti, M., Chirici, G. and Corona, P., 2014. European Forest Types and Forest Europe SFM indicators: Tools for monitoring progress on forest biodiversity conservation. *Forest Ecology and Management*, 321, pp.145-157.

⁴ The 4.8% of unknown status is grouped as unfavourable.

Directive) are in unfavourable conservation status.⁵ Furthermore, 58% of all native European tree species are threatened with extinction.⁶ The biggest threat to forests in the EU are forestry activities, including removing deadwood, clear-cutting and removing old trees.⁷

Different management regimes in Europe

Safeguarding forests requires safeguarding several components. However, one fundamental aspect is the succession that forest habitats need to experience. Forest succession is the change in vegetation that a forest will experience over time in the same area where the vegetation is replaced in a series of stages, usually following some type of disturbance. Natural occurring forest fires, for example, allow the forests to undergo this succession by allowing pioneering species to first build up nutrients in the soil, allowing other species to step in. The continuous change in species assemblage progresses with the years, creating particularities in the forest ecosystem that change over time. Different wildlife is dependent on specific types of forest succession assemblages.

Foresters in Europe utilise a range of different management measures. However, the emphasis on growth and yield of forest management threatens biodiversity. For example, forest management in Europe is skewed toward even-aged assemblages⁸. Clearcutting, for example, is still common in Europe and is highly destructive to nature because it creates large patches of disturbances. The total area of forests 'clear-cut' harvested in the EU in 2016-2018 was 49% higher than in 2011-2015, with an average increase of patch size by 34%.⁹ Other practices such as selective cutting, shelterwood thinning, seed tree cutting, and timber thinning, are also used in Europe. If applied correctly, some practices can be close to nature forestry (CNF). The management approach in CNF can be applied to commercial forests to use as little human intervention as possible while upholding the forest as an ecological system that needs to undergo this succession. Forests that apply CNF would still be logged for commercial purposes but mimic more natural forests.

Despite the efforts to uphold more ecologically sustainable forms of forestry, forests still need undisturbed areas to sustain themselves and wildlife, particularly primary and old-growth forests. Primary forests can have different successional stages and have no known intervention by humans or where the last significant human intervention was long enough ago to have allowed the re-establishment of natural species composition, structures and processes. Old-growth forests are late-succession forests which have had some type of human intervention but developed the structures and species normally associated with old primary forests.

⁵ EEA, 2020, State of nature in the EU - Results from reporting under the nature directives 2013-2018, a b

⁶ Rivers, M., Beech, E., Bazos, I., Bogunić, F., Buira, A., Caković, D., Carapeto, A., Carta, A., Cornier, B., Fenu, G. and Fernandes, F., 2019. *European red list of trees*. International Union for Conservation of Nature and Natural Resources (IUCN).

⁷ EEA, 2020, 'Habitats and species: main pressures and threats', (<https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/habitats-and-species-main-pressures>) accessed February 18, 2021.

⁸ Réka Aszalós et al, Natural disturbance regimes as a guide for sustainable forest management in Europe, *Ecological Applications* (2022).

⁹ Ceccherini, G., Duveiller, G., Grassi, G., Lemoine, G., Avitabile, V., Pilli, R. and Cescatti, A., 2020. Abrupt increase in harvested forest area over Europe after 2015. *Nature*, 583(7814), pp.72-77.

Definitions and identification of primary and old-growth areas

Different terms have been used globally in different forums to define primary and old-growth forests. However, forests across the world differ substantially from forests in Europe. To identify these forests in Europe, an operational definition of primary and old-growth forests is needed. The EU does not have a definition written in legislation, leaving it up to Member States to define this. They have, however, established guidelines¹⁰ in how the term can be defined. The guidelines, however, apply a definition where in theory, these sites are already protected – particularly where logging is not taking place. Furthermore, as these are guidelines, they are not legally binding nor applied by EU Member States.

It is of EuroNatur's opinion that old-growth forests should not be defined by visible recent human interventions. For example, Romania is known to have large patches of old-growth forests. However, there is currently a high level of progressive logging that, over time, can lead to large clear-cut areas. Progressive logging is heavily degrading forest habitats. However, in many cases, the characteristics of the old-growth forests remain, and with time the forest can restore itself. These areas of forest should still be considered as old-growth forests.

EuroNatur's perspective of primary and old-growth forest

Primary forests in Europe are mainly unaltered forests with natural dynamics, naturally regenerating, composed of native species, and have no visible signs of human activity or where the last significant human intervention was long enough ago as to have allowed the re-establishment of natural species composition, structures and processes.

Old-growth forests in Europe are late-successional forests with known human intervention with features associated with primary forests such as deadwood and old trees approaching their natural longevity.

Mapping of European forests has been difficult, for many reasons, including the lack of a legally binding definition, but also from the lack of harmonised forest monitoring and reporting and missing systematic inventories.¹¹ This has made data analysis incoherent as often different scales, baseline data, definitions, data types, temporal dimensions etc. are different. This includes, for example, some countries reporting polygons of lakes and rivers in forested areas as forests while others not reporting those.

¹⁰ Commission Staff Working Document 2023. Commission Guidelines for defining, mapping, monitoring and strictly protecting EU Primary and Old-growth forests. [https://ec.europa.eu/transparency/documents-register/detail?ref=SWD\(2023\)62&lang=en](https://ec.europa.eu/transparency/documents-register/detail?ref=SWD(2023)62&lang=en)

¹¹ Barredo, J., Brailescu, C., Teller, A., Sabatini, F.M., Mauri, A. and Janouskova, K., Mapping and assessment of primary and old-growth forests in Europe, EUR 30661 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-34230-4, doi:10.2760/797591, JRC124671

EuroNatur recommended methodology for mapping forests

Methodologies for mapping primary and old-growth forests should make use of both remote sensing data and field data. Remote sensing methods are important to initially screen areas that then need to be complemented with ground-level data for validation of the mapping results. Mapping of primary and old-growth forests needs to therefore have the following methodology:

Remote sensing data

Earth data can be collected via sensors (e.g. satellites) and can include vegetation data by providing images or heat maps. To use these images, they need to be processed and masked to extract the relevant information.

Processing and masking should include clouds, cloud shadow, water and snow/ice in optical satellite imagery. Masking methods can include Fmask (“Function of mask” implemented in FORCE), ATCOR (“Atmospheric Correction”) and Sen2Cor (“Sentinel-2 Correction”) which use rules based on physical properties which have very similar accuracy.¹²

Ground data

Vegetation surveys are an important component for validating remote sensing data. Vegetation sampling should take place at the site level to verify the correctness of remote sensing classification, especially in very dense forests. This is particularly important for the 1:5,000 to 1:25,000 mapping scale.¹³ Vegetation sampling requires comparing sampled data with baseline data (i.e. a vegetation key). This key should be built using data from historical vegetation surveys (prior to 1990). Vegetation sampling should not be used only on its own since the site-specific sampling does not provide sufficient information as to the extent of occurrence of the vegetation type including whether it is the main forest type.

Guidelines to strictly protect of forests

The IUCN guideline¹⁴ defines strict nature reserves as areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. The European Commission sets guidance¹⁵ on protected areas to enable Member States to reach the targets in the Biodiversity Strategy 2030. It further defines strictly protected areas as areas designated to conserve and/or restore the integrity of biodiversity-rich natural areas with their underlying ecological structure and supporting natural environmental processes. In strictly protected forests, this would mean that any activity that would interfere with the natural processes, or threaten the overall ecological structure and functioning of the forest, would not be permitted.

¹² Zekoll, V., Main-Knorn, M., Alonso, K., Louis, J., Frantz, D., Richter, R. and Pflug, B., 2021. Comparison of masking algorithms for sentinel-2 imagery. *Remote sensing*, 13(1), p.137.

¹³ Nickel, S., Schröder, W. and Völksen, B., 2019. Validating the map of current semi-natural ecosystem types in Germany and their upscaling using the Kellerwald-Edersee National Park as an example. *Environmental Sciences Europe*, 31(1), pp.1-20.

¹⁴ Dudley, N. (Editor) (2008). *Guidelines for Applying Protected Area Management Categories*. Gland, Switzerland: IUCN. x + 86pp. WITH Stolton, S., P. Shadie and N. Dudley (2013). *IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types*, Best Practice Protected Area Guidelines Series No. 21, Gland, Switzerland: IUCN. xxpp.

¹⁵ SWD(2022) 23. Commission Staff Working Document. Criteria and guidance for protected areas designations.

EuroNatur list of activities in strictly protected forests

Given the specific function to nature of strictly protected forests, any form of extractive activity should be prohibited in these areas. This includes the removal of deadwood and ground foliage. Nevertheless, some activities will be allowed. Given the misunderstandings surrounding strictly protected areas and in order to ensure strict protection is correctly applied in primary and old-growth forests, the following is the list of the only activities that can take place in strictly protected forests:

- Scientific research;
- Rescue and protection from natural disasters (e.g. wildfires, flooding, landslides)
- Non-intrusive control of invasive alien species (e.g. trapping American minks);
- Non-intrusive installations;
- Non-intrusive and strictly controlled recreational activities (e.g. hiking within a designated path);
- Activities necessary for the restoration of the natural values of the areas in question;
- Small-scale subsistence resource use for indigenous people.

Human interventions outside strictly protected forests can also severely degrade the natural processes of forests. For example, nitrate input into a river can severely affect strictly protected rivers down the stream. It is, therefore, essential to consider reducing activities outside strictly protected forests that can significantly change the natural processes of the site, such as the impact of hydropower plants on water levels and fundamentally changing strictly protected riparian forests.

Recommendations

With the right policies, protecting primary and old-growth forests is possible. But this requires political will to ensure that the primary and old-growth forest patches are protected in strict reserves and are connected by managed buffer zones and corridors with CNF approaches. Therefore, governments will need to ensure that:

1. Primary and old-growth forests are adequately defined under national law;
2. Primary and old-growth forests are identified and mapped in a standardised and transparent approach and protected through a national inventory;
3. Monitoring scheme of primary and old-growth forests are established in a standardised format that includes satellite and field surveys;
4. Extractive activities are restricted in primary and old-growth forests by including an exhaustive list of allowed activities under national law.

Primary and old-growth areas under strict protection must continue achieving the expected conservation results. Therefore, these forest areas must be large enough to ensure undisturbed natural processes occur. In countries in Europe that have lost all their primary and old-growth forests, strict protection should be applied to forests that have the potential to become old-growth, particularly for restoring specific habitat types.



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