Summary Report Conference Life Prognoses
October 2nd, 2024 – Bruges

Authors: Ruth Vanhaecht, in coordination with the conference speakers and panelists

Introduction

The European Union has taken significant steps to address the pressure put on the European ecosystems and seize their functioning to mitigate climate change: key initiatives such as the *European Green Deal* and the EU *Biodiversity Strategy* offer a framework for reshaping how we interact with our natural landscapes. During the Life Prognoses Conference, we focused on how these efforts apply specifically to old-growth forests.

The Importance of Old-Growth Forests

Real primary forests, never touched or significantly altered by humans, are extremely rare in Europe. They are often confined to remote mountainous areas. In contrast, old-growth forests may have been managed in the past, but had the opportunity to evolve for a sufficiently long period of time in the absence of human interventions and hereby developed structural characteristics that are similar to those of primary forests. Primary and old-growth forests, together, are among the most ecologically complex and biodiverse ecosystems we have and serve as habitats for many highly specialized species. The towering old trees and large amounts and diversity of dead wood in old-growth forests create an ecosystem that supports both plant and animal life, much of which cannot survive in younger, managed forests where these typical structures are scarce or absent.

Furthermore, old-growth forests store large amounts of carbon, playing a pivotal role in mitigating climate change. They store this carbon, both in the living and dead biomass and in the soil, and their preservation is essential if we are to meet global carbon reduction targets.

However, these forests are still threatened and disappearing due to logging, construction of new infrastructure, lack of information on their location, weak protection, fragmentation, poor connectivity, new pests and invasive species, and climate change. The urgency to protect what remains and to restore what has been lost has never been clearer.

The Role of the European Green Deal and the Biodiversity Strategy

In 2019, the *European Green Deal*, a cornerstone of the EU's sustainability strategy was introduced. The Green Deal sets the ambitious goal of making Europe the first climate-neutral continent by 2050. One of the key ideas of the Green Deal is working *with* nature to safeguard our health and that of the planet by focusing on the protection and restoration of valuable ecosystems.

The Biodiversity Strategy makes this idea concrete by setting a target of 30 % of the land and sea surface of the European Union that should fall under protective management. 10 % of this area should be strictly protected and primary and old-growth forests should all be included into this strictly protected category. By definition, strict protection requires that natural processes and dynamics of the ecosystem prevail. In forests, this means in practice that Member States are expected to map their primary and old-growth forests, and protect them from future interventions including wood harvests .

In order to put into practice this principle decision, the commission, with the input of the Member States and stakeholder associations, developed a guidance document called, 'the Guidelines for Defining, Mapping, Monitoring, and Strictly Protecting EU Primary and Old-growth Forests'.

These guidelines are only a beginning; what follows is national and regional-level implementation, an effort that is in progress at the moment starting with identifying old-growth forests and protecting them adequately. In the end, no conservation can be done without sound science and public support. Providing *both* to enhance support old-growth forest protection in Europe is what the LIFE Prognoses Project was developed for.

The LIFE Prognoses Project

The LIFE Prognoses project is an initiative funded by the EU's LIFE program and specifically tailored to address the knowledge gaps hindering the implementation of the envisaged old-growth forest protection: the lack of a comprehensive Europe-wide definition, the lack of a set of indicators and thresholds for identification, knowledge gaps on tools, including remote sensing, to delineate patches of old-growth etc. Furthermore, the project also tackles the controversy and possible local resistance to strict protection by addressing and involving the different stakeholders at the local, but also at the European level. The fifteen core partners of Life prognoses are governmental and research institutions, universities, national parks, and local communities; LIFE Prognoses exists of a consortium that has the means and expertise to create a framework where science can directly inform policy, ensuring that conservation efforts are both scientifically sound and adaptable to the realities on the ground.

The Conference Programme

The aim of this conference was, on the one hand, to share the scientific methods and results of the project (focus of the morning programme) and, on the other hand, to initiate an in-depth discussion among the experts involved in designing protection strategies for old-growth (focus of the afternoon programme). The afternoon programme started with presentations from three different perspectives on old-growth forest protection: European policy, the contribution of science, and the implementation of advocated protection in the field. The presentations were followed by a panel discussion where the speakers, together with other experts, elaborated on the topic through moderated questions and questions from the audience.

In this summary report, the main insights and conclusions of the conference will be presented.

Session 1: Scientific insights of the Life Prognoses project

Here follows a short synopsis of every presentation; more information can be found on the project website where the slides for the respective presentations can be downloaded:

https://lifeprognoses.eu/outputs-of-the-project/

Old-growth forests and old-growthness: a gradient

Often, the forest assessed is not fully old-growth, neither the absolute contrary. The evolution from managed forest to what is fully old-growth is a gradual process. To address this gradual character, the idea of 'old-growthness' has been developed: forests show a certain degree of old-growthness.

The Old Growth Indicator (OGI)

To assess old-growthness in a comprehensive way, indicators of multiple structural characteristics are measured such as the amount of lying and standing deadwood, the presence of very large trees, the vertical and horizontal structural diversity etc. The characteristics receive a relative score based on the measured indicators and are aggregated in a weighted sum. The result of this is a value between 0 and 1: the old-growth indicator.

The virtues of and limitations of remote sensing for old-growth forest identification

The protection of old-growth forest relies on the identification of such patches. The area that is supposed to be investigated for this is vast and includes remote locations (e.g. in mountainous regions). Remote sensing techniques can offer an invaluable tool to advance the process of identification given their potential for wide coverage and supposing the availability of sufficiently detailed data. We developed methods relying on remote sensing to identify old-growth from satellite imagery. The results are promising and can serve as an indication of which patches should be looked at more closely.

Carbon stock in European old-growth forests

We collected below-ground carbon samples and derived the above-ground carbon stock from the dendrometric data including dead wood. The aim is to compare the carbon stock of unmanaged (old-growth) to managed forests, which is immediately complicated by the large ranges due to biogeographical covariates. Further research is done to account for the impact of the biogeographical determinants.

Structural aspects of European old-growth forests promoting biodiversity

Structural aspects such as lying and standing deadwood and the presence of tree-related microhabitats are shown to support specialised species and therefore promote a strictly dependent kind of biodiversity that otherwise could not persist. Our data confirmed that unmanaged forests have a greater diversity and absolute abundance of such structures, confirming the conviction that old-growth forests are important for European biodiversity in general.

European old-growth forests promoting recreation and tourism

Although it is believed that protection necessarily results in a loss of financial income, the decrease in wood production revenues could be (partially) offset by revenues from tourism and recreation. To get insight into this assumed potential, questionnaires were conducted to

measure peoples preference for visiting old-growth forests compared to (visibly) managed ones.

Session 2: The Science-Policy Interface

EU policy and guidelines regarding the mapping and strict protection of primary and old-growth forests

An overview was given of the EU policy and envisaged timeline towards the strict protection of our European old-growth forests.

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

Strict protection relies on identifying what should be protected. The Commission developed 'the Guidelines for Defining, Mapping, Monitoring, and Strictly Protecting EU Primary and Old-growth Forests' together with representatives of the Member States and NGOs. The Joint Research Centre (JRC) brought together the already available mapping material about these forests (mainly building on the EPFD V2.0 from Sabatini and co-workers). However, the available mapping material indicates that there is much unknown primary and old-growth forests left in Europe. Moreover, discrepancies exist between the maps and the primary and old-growth forests surface area countries report to have. In the path towards protection, the Member States will fill these gaps in the mapping on a national level. For this process, they can develop their strategy aligned with the developed guidelines.

Priority actions for the conservation of primary and old-growth forests in Europe.

For those who will be responsible for identifying, mapping and implementing strict protection of old-growth forests, the deadline of 2029 may appear to be fast approaching. However, given the ongoing disappearance of these forests due to logging and other factors, it cannot happen quickly enough. The European Forest Institute reviews the literature about old-growth forest ecology and policy to distil priority actions to guarantee these forests' preservation. A paper about this topic has already been published in 2021: https://blog.efi.int/takeaways-from-efi-study-on-protecting-old-growth-forests-for-future-eu-forest-policy/

At the moment the EFI is drafting a second paper on this topic, expected to be published soon: https://efi.int/

From policy to practice: technical, practical and socio-economic challenges regarding the implementation of EU policy on old-growth forests: the case of the Walloon Region (Southern Belgium).

In the end, all that is decided on a scientific and political level, should be implemented on the ground. The implementation is often confronted with (practical) obstacles. However rigorously formulated, the guidelines still leave a significant work in converting the indicators into concrete parameters and in establishing thresholds. The case of Wallonia, the Southern region of Belgium was presented to illustrate the challenge of implementing the politico-scientific guidelines while taking into account technical, practical and socio-economic considerations.

Session 3: Panel discussion

The panel brought together experts from different domains (e.g. policy-making, science, and on-the-ground implementation) to explore the obstacles and opportunities regarding the

implementation of strict protection of old-growth forests in Europe. The critical discussion yielded actionable insights and recommendations to guide member states and stakeholders in implementing these interconnected policies effectively and equitably. Here follows a summary of the central topics discussed and the corresponding conclusions and (policy) recommendations.

Central Topics and Key Takeaways

Synergies between Policies

The Nature Restoration Law (NRL) and the EU Biodiversity Strategy's goal of 10% strict protection (of 30% surface area under a protective management regime) are interconnected and can be mutually supportive. Restoration measures, including strict protection, must align with member states' habitat conditions and broader carbon storage targets like LULUCF (Land Use, Land-Use Change, and Forestry).

Focus on Reserve Size

Should creating larger strict reserves be a priority to capture natural disturbance regimes, and how feasible is this across European countries? Should we instead focus on a mixture of small, medium, and large reserves?

We should prioritize a mixture of reserve sizes: large reserves for natural disturbance regimes, medium-sized patches, and small "stepping stones" to ensure biodiversity and connectivity.

Timber Production and Conservation

How can Europe reconcile increasing demands for timber with expanded strict forest protection and closer-to-nature forestry, while avoiding offshoring production to regions with less oversight on sustainability?

First of all, it is implausible that the limited forest area that will fall under strict protection will impact the production of wood. If reductions in timber harvest would occur due to increased protection, there are various ways in which this can be offset. We should focus on efficient wood use (e.g., reducing biomass burning of hardwoods), additional planting in non-ecologically sensitive areas, and additional timber production by developing rigorous close-to-nature forestry practices in ecologically valuable areas.

Risk and Disturbance management in Strict Reserves

How should increasing climate-related disturbances (e.g., fires, drought, insect outbreaks) be addressed in strictly protected areas? And how can strict protection policies account for risks to surrounding communities, such as avalanches or wildfires? Should measures such as sanitary logging, wildfire suppression, or active restoration be allowed? And how might this affect public acceptance of conservation measures?

Active restoration measures are not permissible in strictly protected areas, but should be encouraged to foster old-growth forest structures in managed forests. While strict reserves should allow for natural disturbances, interventions for public safety (e.g., wildfire suppression, disaster management) should be permissible, especially to safeguard the local communities' support for strict reserves. The specific interventions allowed depend on national legislation and on the typical risks and hazards tied to the local context.

Private Land and Conservation Challenges

How can member states work with private landowners to identify and conserve old-growth forests located on private lands? What mechanisms, including compensation payments or land purchase schemes, could encourage cooperation?

Achieving the 10% strict protection goal is feasible but requires clear definitions of "strict protection" and funding mechanisms, especially to address private landowner compensation. Solutions for compensation needs include voluntary set-asides with financial support, direct purchase of land for protection using public or EU funds, and innovative funding such as carbon credits tied to conservation outcomes.

Mapping and Monitoring

Significant deficits exist in mapping primary and old-growth forests (OGFs) in the EU. Advances in tools like remote sensing, habitat mapping, and field verification can address these gaps. We should encourage better use of existing data and tools (e.g., EPFD V2.0 Sabatini's database) while prioritizing areas with connected habitats.

Next Steps to Further Implementation of Strict Protection by 2029

To achieve the ambitious goal to strictly protect all old-growth forests by 2029, urgent action is crucial. We formulate some next steps based on the conclusions from the panel discussion:

- o Expedite applications for technical support instruments for mapping and inventory efforts (deadline imminent).

- o Conduct member-state-level screenings to assess progress and identify gaps.

- o Strengthen compensation frameworks for private landowners by 2029.

- o Encourage reporting and verification of additionally planted areas (connected to the 3-billion-tree target) while focusing on quality restoration outcomes.

Research Priorities to Support Effective Implementation

Scientific research can provide insight into potential courses of action and their consequences. Research conducted with the aim to support the implementation of old-growth protection in Europe should focus on the following questions:

- o Quantify the impacts of strict protection on timber supply and ecosystem services.

- o Study the feasibility of creating larger, interconnected reserves in densely urbanized regions.

- o Investigate long-term resilience of forests under increased disturbance regimes.

- o Develop effective frameworks for integrating private land into conservation efforts.

Policy Actions to Support Effective Implementation

Policy actions and measures can address the obstacles member states experience on their path to strict protection. Policies to support effective implementation of strict protection should be designed to tackle the following obstacles:

- o Expand capacity-building initiatives, in the first place to foster exchange between member states about the identification of old-growth patches based on the proposed old-growth indicators. Member states should be able to find support with each other

for the translation of the European-wide guidelines to a concrete mapping framework for their specific national context.

o Increase outreach to forest owners and stakeholders, emphasizing financial and ecological benefits.

o Leverage existing funds, e.g. Natura 2000 funds, to facilitate voluntary and compensated protection schemes.