

Biodiversity first:

How European forests can help tackle the climate crisis

Photo: Eva-Lotta Hultén

The European Union (EU) has pledged to become carbon neutral by 2050. This will require us to both drastically reduce greenhouse gas emissions and to increase *negative emissions* (see box). **The cheapest, most effective, and most readily available way to do this is to protect and restore forests and other natural ecosystems, but that is not currently happening.**

The European Union must recognise that its climate policies are not having the desired impact and ensure that new policies under the European Green Deal incentivise nature restoration.

This briefing outlines the issues the EU must solve, explains why biodiverse forests are so important and concludes with specific changes that should be made to ongoing policy processes.

The three issues the EU must solve:

1 Increased harvesting is significantly degrading EU Forests

Increased harvesting has had dire consequences for EU forest health and devastated biodiversity. Increased demand for timber has led to trees being harvested at an ever younger age¹ and from more biodiverse areas. This means that even forests in protected areas are becoming degraded.²

Previously biodiverse forests have also been turned into fast growing tree monocultures. To satisfy wood demand an area larger than Greece³ (14.5 million hectares) has been converted to plantations which are more vulnerable to climate shocks such as the forest fires of 2017. In addition, there are millions of hectares of planted single-species forests that are not officially registered as plantations.⁴

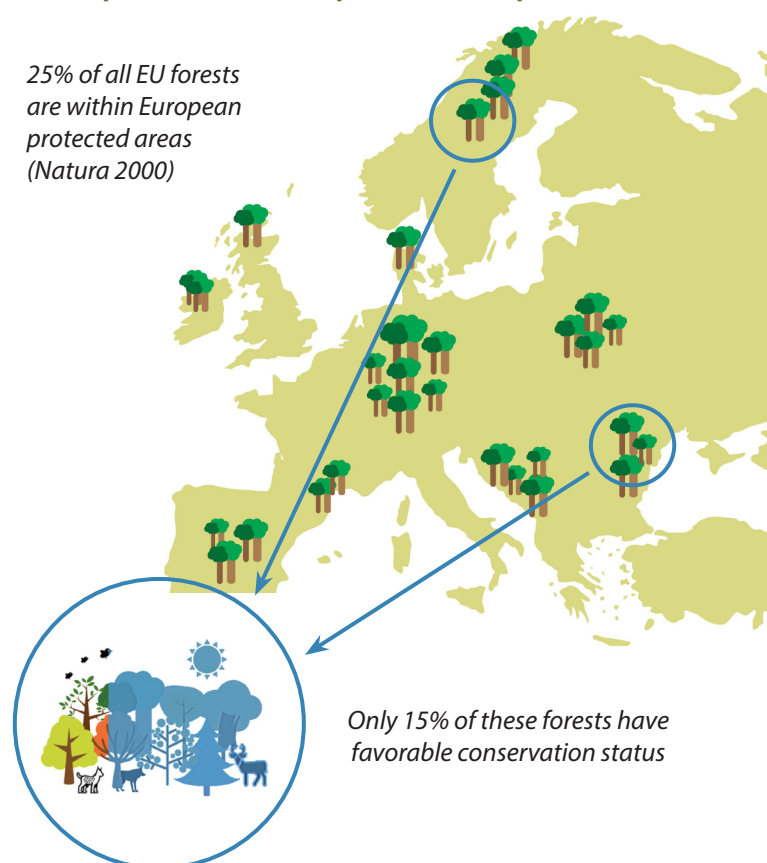
What are Negative Emissions?

Negative Emissions is one of the terms used by climate scientists in the Intergovernmental Panel on Climate Change (IPCC) for human activities that remove carbon dioxide from the atmosphere. Other terms include *Carbon Dioxide Removal* (CDR) and *Greenhouse Gas Removal* (GGR).

The term *net negative emissions* is used by the IPCC to describe a situation where the planet absorbs more greenhouse gases than it emits.

Graph 1. Health of European forests in protected areas

25% of all EU forests are within European protected areas (Natura 2000)



¹ Over half of the productive forests in Sweden are young, less than 60 years. In France, 50% of trees are less than 60 years old and 79% are less than 100 years old.

² <https://www.eea.europa.eu/publications/soer-2020>

³ <https://www.fern.org/news-resources/the-shocking-truth-about-eu-forests-in-numbers-2020/>

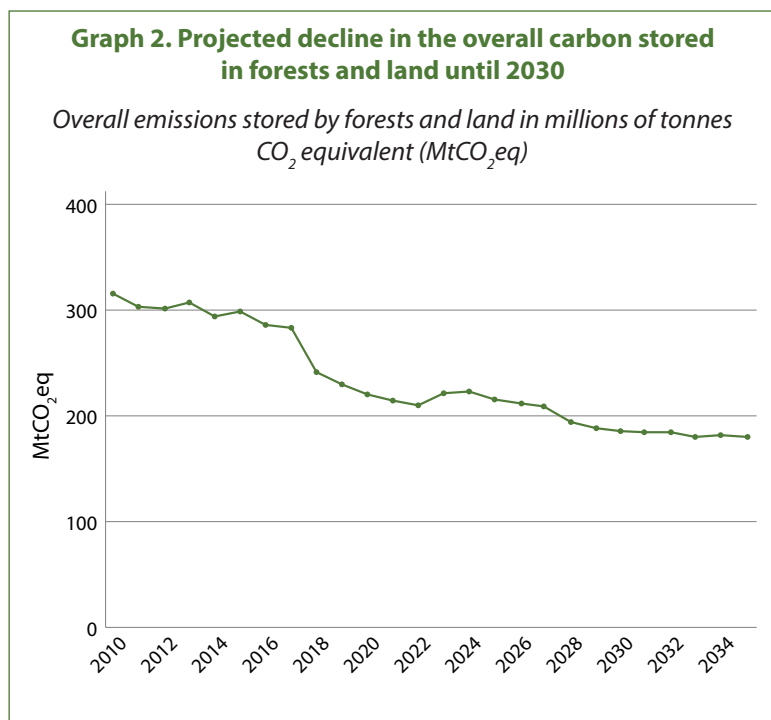
⁴ <https://www.europarl.europa.eu/factsheets/en/sheet/105/the-european-union-and-forests>

2 The carbon sink is declining because forest harvesting is increasing

Although tree cover is increasing, **EU forests' capacity to remove carbon dioxide (CO₂) has been significantly declining since 2015 and this trend is set to continue.**

Until 2015, EU land was able to remove around seven per cent of total EU emissions (about 300 million tonnes (Mt) of CO₂ equivalent (CO₂eq)).⁵ According to the European Environmental Agency (EEA),⁶ **by 2030 the same land area will be removing 40 per cent less CO₂e** (dropping to -185MT in 2030).⁷ See Graph 2.

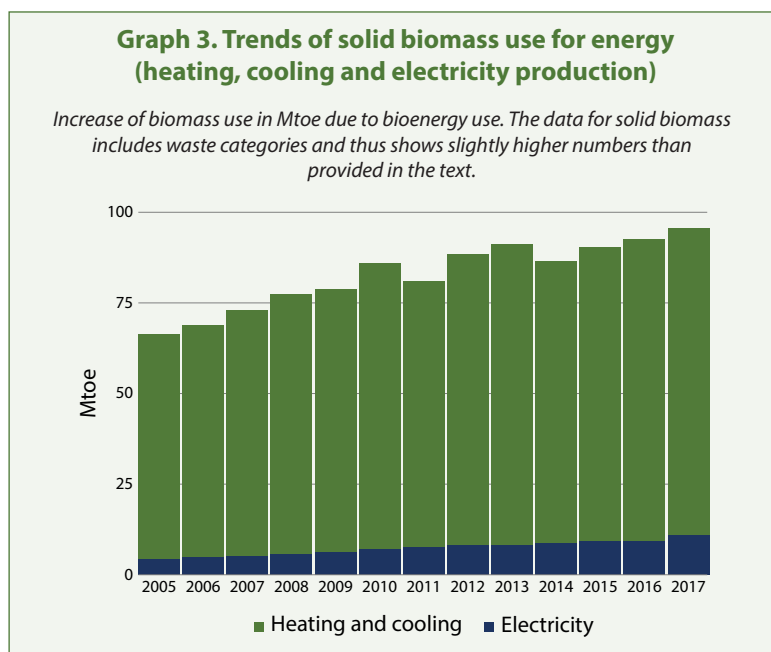
The European Commission has shown that recent decreases in carbon storage is partly due to an increase in harvesting.⁸ Increasing demand for wood has been partly driven by the growing use of forest biomass as a substitute for fossil fuels. Since 2001, this has been supported by the EU's renewable energy policy, which is the legal basis for national renewable energy support mechanisms.^{9,10}



3 The EU is already using more wood for energy than it planned

European Member States originally envisaged that by 2020, they would use would use 73.6 million tonnes oil equivalent (Mtoe) of forest biomass for heating, cooling and electricity production.¹¹ In 2016, the use of forest biomass for energy had already reached 82 Mtoe.¹² This is concerning, as the assumption that the use of forest biomass leads to a net reduction in greenhouse-gas emissions is not generally valid¹³, and depends on scale of deployment and the type of feedstock used.¹⁴ In order to reach climate neutrality by 2050, the EU's Long-Term Climate Strategy foresees the forest sector providing much less wood for bioenergy production – between 60 and 65 Mtoe.¹⁵

Currently, EU policies don't provide restrictions on the level or type of forest biomass feedstocks that can be used for energy production to adequately prevent an increase in forest harvests.



⁵ <https://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2019>

⁶ <https://www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends-6/assessment-3>, this figure can be updated with the final numbers found in the National Energy and Climate Plans

⁷ <https://www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends-6/assessment-3>

⁸ See Commission Report 'Preparing the ground for raising long-term ambition, EU Climate Action Progress Report 2019, SWD (2019) 599 final

⁹ Renewable Electricity Directive 2001/77/EC, Renewable Energy Directive 2009/28/EC (revised in 2018: Directive (EU) 2018/2001)

¹⁰ Beyond the EU's renewable energy directives and related national renewable energy support mechanisms, the use of forest biomass benefits from regulatory support through the EU Emissions Trading System, the Energy Taxation Directive and indirectly through the Energy Efficiency Directive (support to cogeneration), and from EU funding programmes, including the European Regional Development Fund and the EU Cohesion Fund, which spent almost Euro 3 billion on bioenergy between 2007–2020.

¹¹ https://ec.europa.eu/energy/sites/ener/files/2014_biomass_state_of_play_.pdf, p. 17

¹² See Scarlat N., et al, Brief on biomass for energy in the EU (Joint Research Centre, 2019)

¹³ See Commission SWD (2016) 418 Impact Assessment on Sustainability of Bioenergy for the Recast of the Renewable Energy Directive

¹⁴ See e.g. Robert Matthews, et al Review of Literature on biogenic carbon and LCA of forest bioenergy (Forest Research, 2014)

¹⁵ https://ec.europa.eu/clima/sites/clima/files/docs/pages/com_2018_733_analysis_in_support_en_0.pdf, p.183

To achieve carbon neutrality by 2050, the EU should re-direct support for the use of forest biomass for heat and power. To decarbonise the energy sector, a stronger long-term sectoral approach is needed, with specific attention to demand reduction and the integration of more innovative technologies, notably in the heating sector.

A reduction of biomass use for energy would allow for the restoration of natural ecosystems and a more circular wood-use. Success should be measured by looking at the size and health of our forests as well as the forests' ability to remove CO₂.

Why biodiverse forests can help tackle the climate crisis

The latest research shows that the EU could triple the amount of CO₂ its land removes if forests are protected and restored. European Commission research shows that by 2050, 500 Megatons of CO₂ equivalent (MtCO₂e)¹⁶ could be being removed each year, but other studies project show that it could be up to 1,000¹⁷ or even 1,200 MtCO₂e.¹⁸ As long as such efforts were coupled with strong carbon emission reductions, forest restoration would be enough to achieve EU carbon neutrality, even before 2050.

In addition to storing more carbon,¹⁹ **natural biodiverse forests have been shown to be more resilient²⁰** to the natural disturbances that will increase due to the climate crisis (such as storms, pests, diseases²¹ and droughts.²²) This is because the more complex and diverse a system is, the less fragile it is to shocks.

What is forest restoration?

The International Union for the Conservation of Nature (IUCN) defines forest landscape restoration as “the ongoing process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes.”²³ Such a definition clearly excludes the planting of monocultures.

Using case studies from Germany²⁴ and France²⁵ academics laid out the forest strategies that are most beneficial for the climate and nature. They prioritise the following:

- Natural regeneration, with increased protection of diverse forests.
- Assisted regeneration where tree seedlings in forested areas are protected.
- Assisted regeneration where naturally-distributed tree seedlings are able to grow without human disturbance, and where trees of all ages are protected and preserved.
- Improved forest management where the impact of logging is reduced by letting trees grow older and avoiding clear cuts. This also benefits local economies as it supplies quality timber which is currently imported.
- Reforestation where single species plantations are transitioned to multiple species plantations adapted to the local geography.

For other principles to achieve good restoration read Fern's briefing [Protect & Restore](#).

16 https://ec.europa.eu/clima/sites/clima/files/docs/pages/com_2018_733_analysis_in_support_en_0.pdf, p. 186

17 EU Calc scenario with ambitious land use trajectories

18 <https://www.nature.com/articles/s41558-019-0591-9>

19 <https://www.nature.com/articles/ncomms7707>

20 https://www.researchgate.net/profile/Masumi_Hisano/publication/318343219_Biodiversity_as_a_solution_to_mitigate_climate_change_impacts_on_the_functioning_of_forest_ecosystems/links/5b748f9f92851ca65063c027/Biodiversity-as-a-solution-to-mitigate-climate-change-impacts-on-the-functioning-of-forest-ecosystems.pdf

21 <https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2745.12317>

22 <https://www.nature.com/articles/ncomms7707>

23 <https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration>

24 <https://www.greenpeace.de/sites/www.greenpeace.de/files/publications/20180228-greenpeace-oekoinstitut-forest-vision-methods-results.pdf>

25 <https://www.fern.org/news-resources/forest-management-and-climate-change-a-new-approach-to-the-french-mitigation-strategy-2078/>

Conclusion

To be carbon neutral by 2050, the EU needs an ambitious plan to reduce emissions, a long-term vision for ecologically resilient forests and a plan to jointly address the climate and biodiversity crises. This will mean steering clear of unproven climate solutions which would have a disastrous impact on nature.²⁶

Recommendations

The EU must protect and restore its forests and other natural ecosystems. Concretely, this means prioritising the following activities over simple tree-planting:

1. **Preserving the few remaining old-growth forests**
2. **Restoring the health of over-harvested forests**
3. **Diversifying the age and species mix of plantations.**

We also have these specific recommendations for how to ensure key elements of the European Green Deal deliver for the climate and biodiversity:

The EU Climate Law

- **Commit to tripling the natural carbon sink by 2050:** The Climate Law should prioritise ecosystem restoration, with the aim of both removing CO₂ from the atmosphere and future-proofing EU land to adapt to a hotter climate.
- **Link climate and biodiversity objectives:** This will prevent disastrous measures such as bioenergy subsidies. The 2050 carbon neutrality goal should be aligned with environmental objectives and evaluated in light of the latest scientific conclusions on biodiversity, such as the 2019 [IPBES](https://ipbes.net/global-assessment) report.²⁷

The Biodiversity Strategy

- **Include binding objectives for natural ecosystems restoration:** By 2021, the European Commission should propose a legal instrument including a binding target for Member States to restore 30 per cent of their land and sea territories.
- **Include a European Restoration Plan:** The Commission should promote the creation of European and national restoration plans (presently absent in Member State forestry planning), with funding for actions to protect and restore forest land.

- **Account for nature's contribution to 2050 climate goals:** Existing reporting frameworks such as the Governance Regulation and the Climate Monitoring Mechanism could be used to report on the contribution being made by ecosystem restoration.

Forest strategy

- **Include an assessment of Sustainable Forest Management:** The last forest strategy did nothing to achieve the transformative change the sector needs.²⁸ The new strategy must include ways to ensure forest management supports biodiversity objectives.
- **Focus on restoration rather than afforestation:** Biodiversity is in decline globally. This can only be turned around by protecting and restoring standing forests, not by simply planting young saplings. Targets should prioritise protecting and improving existing forests.

Review of climate policies for 2030

In 2021, the European Commission will evaluate other climate related policies. These evaluations should propose revisions to:

- **Ensure emissions from the use of forest biomass are accounted for:** Emissions from burning forest biomass are not adequately captured by the EU's emissions accounting framework. This should be urgently resolved, both for domestically sourced biomass and imports.
- **Reduce subsidies for bioenergy:** Subsidies for the use of forest biomass for energy should be restricted and redirected to reducing energy demand and alternative renewable energy technologies.
- **Promote more sustainable, efficient and longer lived uses of wood.**

²⁶ <https://www.fern.org/news-resources/six-problems-with-beccs-57/>

²⁷ <https://ipbes.net/global-assessment>

²⁸ <https://www.fern.org/fileadmin/uploads/fern/Documents/Fern-Forest-Strategy-Statement.pdf>