

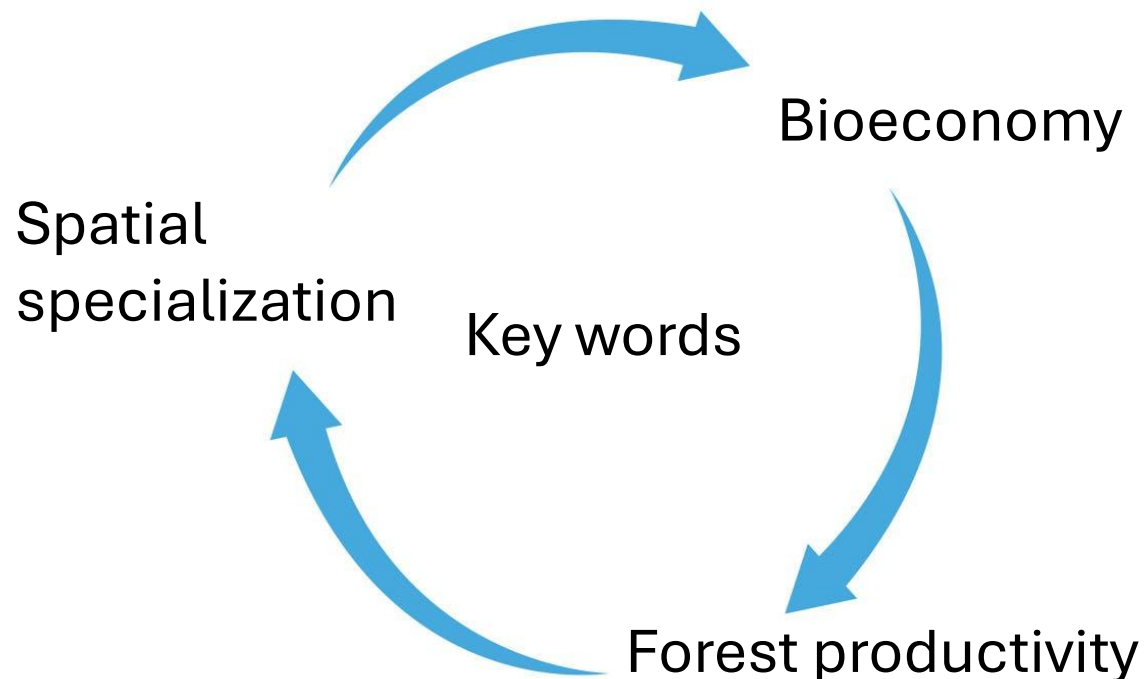


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Economic and biodiversity trade-offs in the Forest Sector

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Climate change, permanent loss of forest (deforestation) and use of non-renewable resources are interlinked causes for global negative biodiversity trends





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EU Bioeconomy strategy

- Recognition of production
- Recognition of R&D
- Lack of recognition of importance of functioning bioenergy market for early thinnings (and thus formation of resilient stands)



Bioeconomy



Summary: limited focus on **primary productivity of the forests** (supply of raw material).

- For the functioning bioeconomy, we need increased local/regional forest productivity:
 - allowing to reduce harvest-to-increment ratio without affecting the availability of raw material
 - allowing to allocate more land for other purposes without affecting the availability of resources

We will have to produce more with less – just not with less wood, but with less land

Spatial specialization: globally



➤ To areas with less deforestation.

Globally deforestation (long-term conversion to other land uses) are driven by pasture expansion, followed by cropland and non-timber plantations. Most forest cover losses (71%) are not permanent: they reflect temporary disturbances such as plantation rotation, shifting agriculture, forestry operations, and fires and natural disturbances that enable regrowth.

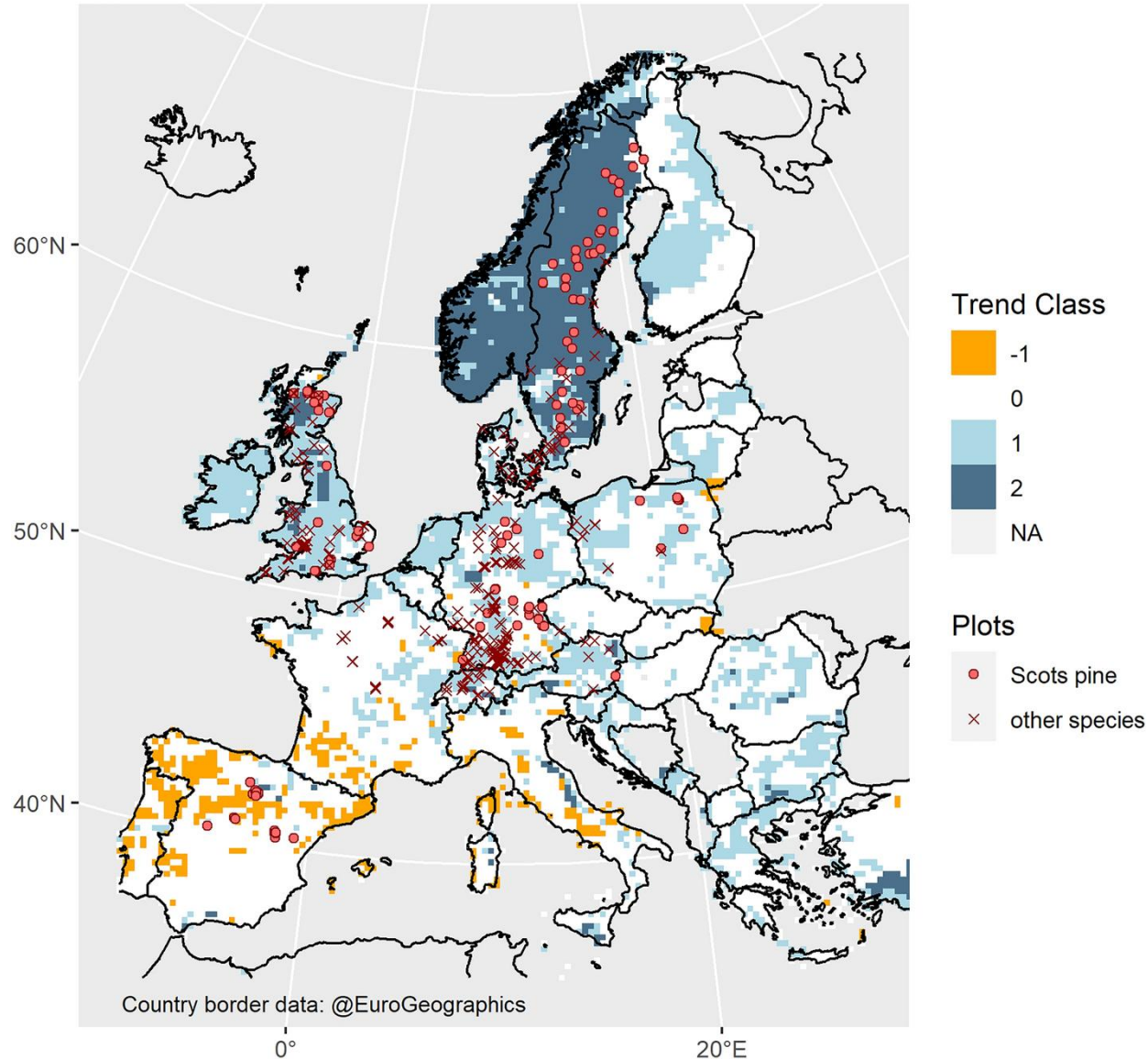
Conti S. (2026) High-resolution tracking of global tree cover loss drivers. Nature Sensors

To ensure full picture, balance of point-wise forest cover loss and forest cover gain over medium-term must be observed

Spatial specialization: regionally



Trend Classes / All Plots



To areas with

- higher share of forest (and less people);
- positive forest productivity trends due to climate changes

Production forest will have to adapt to higher-risk environment

Pretzsch H. et al. (2023) Forest growth in Europe shows diverging large regional trends. Scientific Reports(Nature)



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Spatial specialization: nationally

- It is plausible;
- But in many cases not without changes in legislation and management practice
- Effect on biodiversity (optimal allocation) must be analyzed at a landscape scale, not stand scale.

Example – Spain: mature native trees are essential for supporting forest specialist bird species, but mature eucalyptus trees fail as substitutes for them. At the same time eucalyptus stands cover 3% of forest area and ensure 32% of wood consumed by national paper industries.

Is heaving these plantations at the forest landscape a right balance?

García-Fernández et al. (2025) Eucalyptus cover as the primary driver of native forest bird reductions: Evidence from a stand-scale analysis in NW Iberia. Forest Ecology and Management.

We will have to produce more with less – just not with less wood, but with less land, to ensure biomass and biodiversity