Forest biodiversity and the Green Deal

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The EU Green Deal and Forests

- **New EU Biodiversity Strategy** (under development) (Protected Area Network, Nature Restoration Plan)
- **New EU Forest Strategy** (not yet started)
- Aims at improving the quality of European forests and at expanding their area

Protected Area Network

- **At least 30% of the land** (an extra 4%) **should be protected in the EU, one third of this under strict protection**
- **Areas of very high biodiversity value** or potential, and most vulnerable to climate change, and remaining **primary and old-growth forests** should be granted special care in the form of **strict protection**.
- **Effectively manage all protected areas**, defining clear conservation objectives and measures, and monitoring them appropriately

EU Nature Restoration Plan: commitments by 2030

- **Binding EU nature restoration targets** are proposed in 2021 and significant areas of degraded and carbon-rich ecosystems are restored.
- **Habitats and species** under the Habitats and Birds Directives show **no deterioration in conservation trends and status**. At least 30% of those which are not in favourable conservation status will reach such status or at least show a positive trend.
- At least **10% of utilised agricultural area** is in high-diversity landscapes, like buffer strips, … or landscape features (hedges, non-productive trees, … etc.)**,** support of **agroforestry**
- **Three billion additional trees are planted** in the EU **by 2030**.

What are forest biodiversity challenges?

- Climate change impacts
- New pests and diseases
- Land use changes
- Forest harvesting
- Impacts of surrounding land use (e.g. pesticides)
- Man-made changes to forest structure and composition (secondary conifer forest, lack of old forest structures)
- Abandoning of historical forest/land-use practices
- Eutrophication
- Invasive species

And how can they be addressed?

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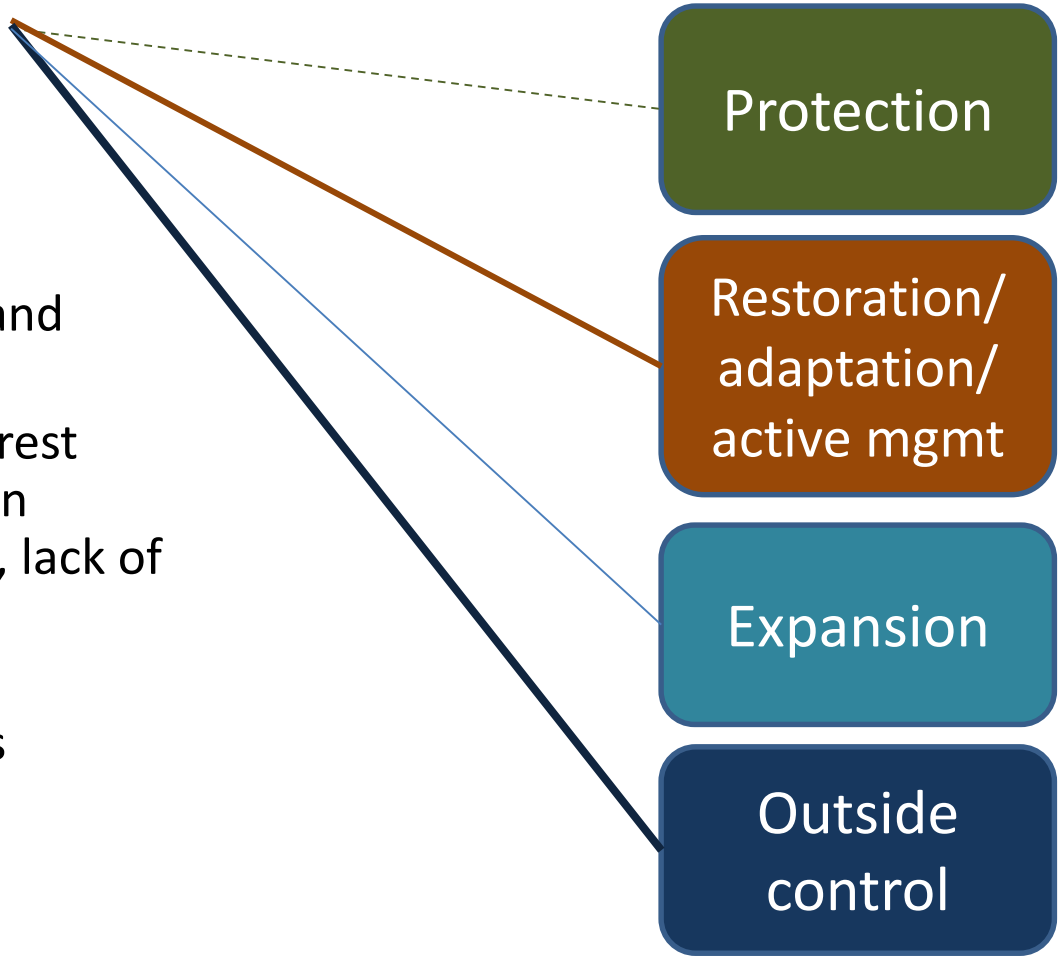

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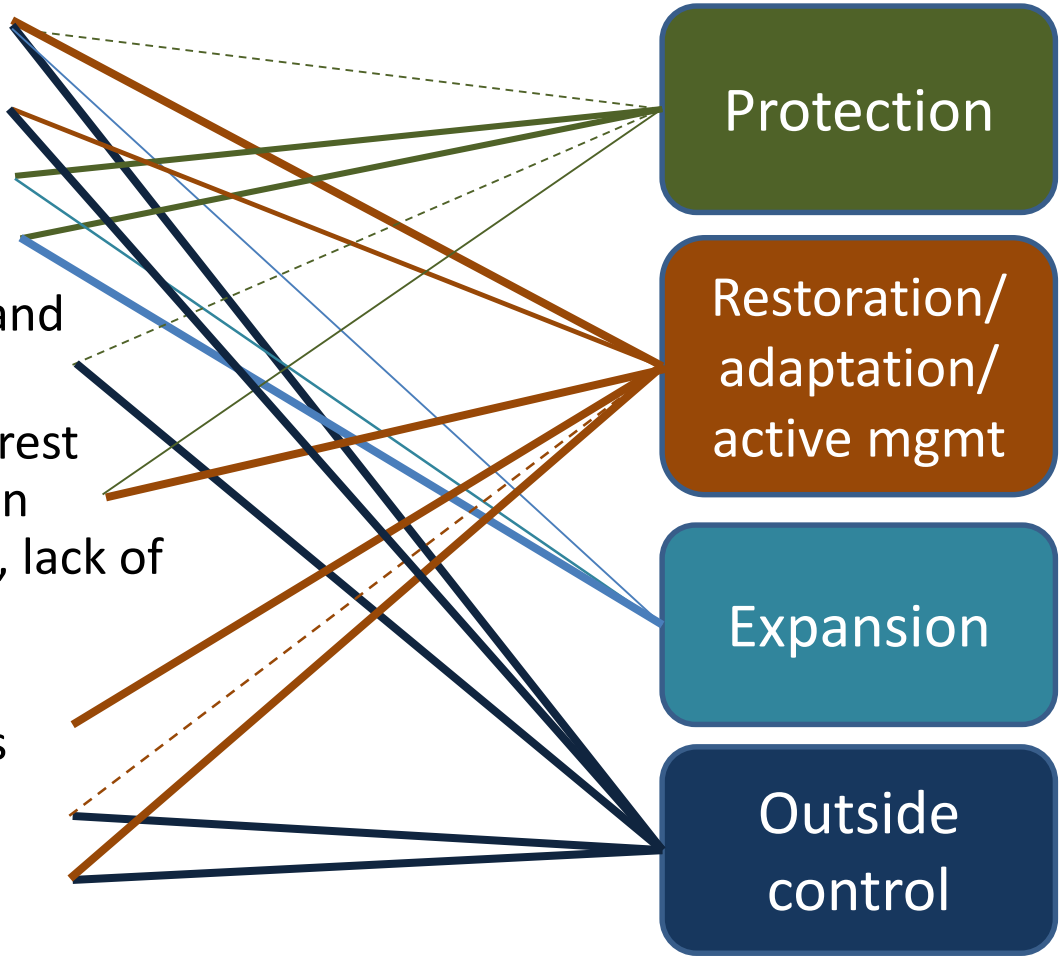


Climate change impacts

- Ca. 37 – 45% of protected areas in mediterranean, temperate and boreal forest biomes will face **novel climatic conditions** in 2070 under an optimistic CC scenario (RCP 4.5)
- „revising current conservation policy towards pro-active biodiversity management”
- “overcome the static applications of spatial conservation” (Hoffmann et al. 2019)

New pests and diseases

European Red List of Trees

Malin Rivers, Emily Beech, Ioannis Bazos, Faruk Bogunić, Antoni Buira, Danka Caković, André Carapeto, Angelino Carta, Bruno Cornier, Giuseppe Fenu, Francisco Fernandes, Pere Fraga i Arguimbau, Pablo García-Murillo, Martin Lepší, Vlado Matevski, Félix Medina, Miguel Menezes de Sequeira, Norbert Meyer, Vlastimil Mikolášˇ, Chiara Montagnani, Tiago Monteiro-Henriques, José Naranjo-Suárez, Simone Orsenigo, Antoaneta Petrova, Alfredo Reyes-Betancort, Tim Rich, Per Harald Salvesen, Isabel Santana-López, Stephan Scholz, Alexander Sennikov, Luljzim Shuka, Luís Filipe Silva, Philip Thomas, Angelo Troia, José Luis Villar, and David Allen

42% of European tree species have a high risk of extinction

European Commission | IUCN | RED LIST | SSC Species Survival Commission

OIKOS

Research

Tree diversity is key for promoting the diversity and abundance of forest-associated taxa in Europe

doi: 10.1111/oik.06290

Evy Ampoorter, Luc Barbaro, Hervé Jactel, Lander Baeten, Johanna Boberg, Monique Carnol,

Dieback of European Ash, Photo: ZALF

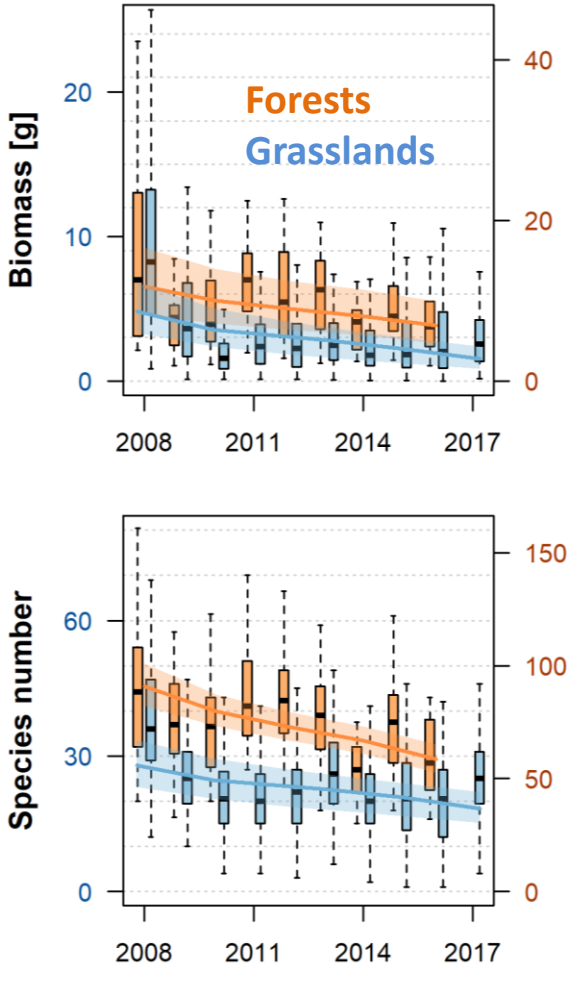
Impacts of surrounding land use

Article

Arthropod decline in grasslands and forests is associated with landscape-level drivers

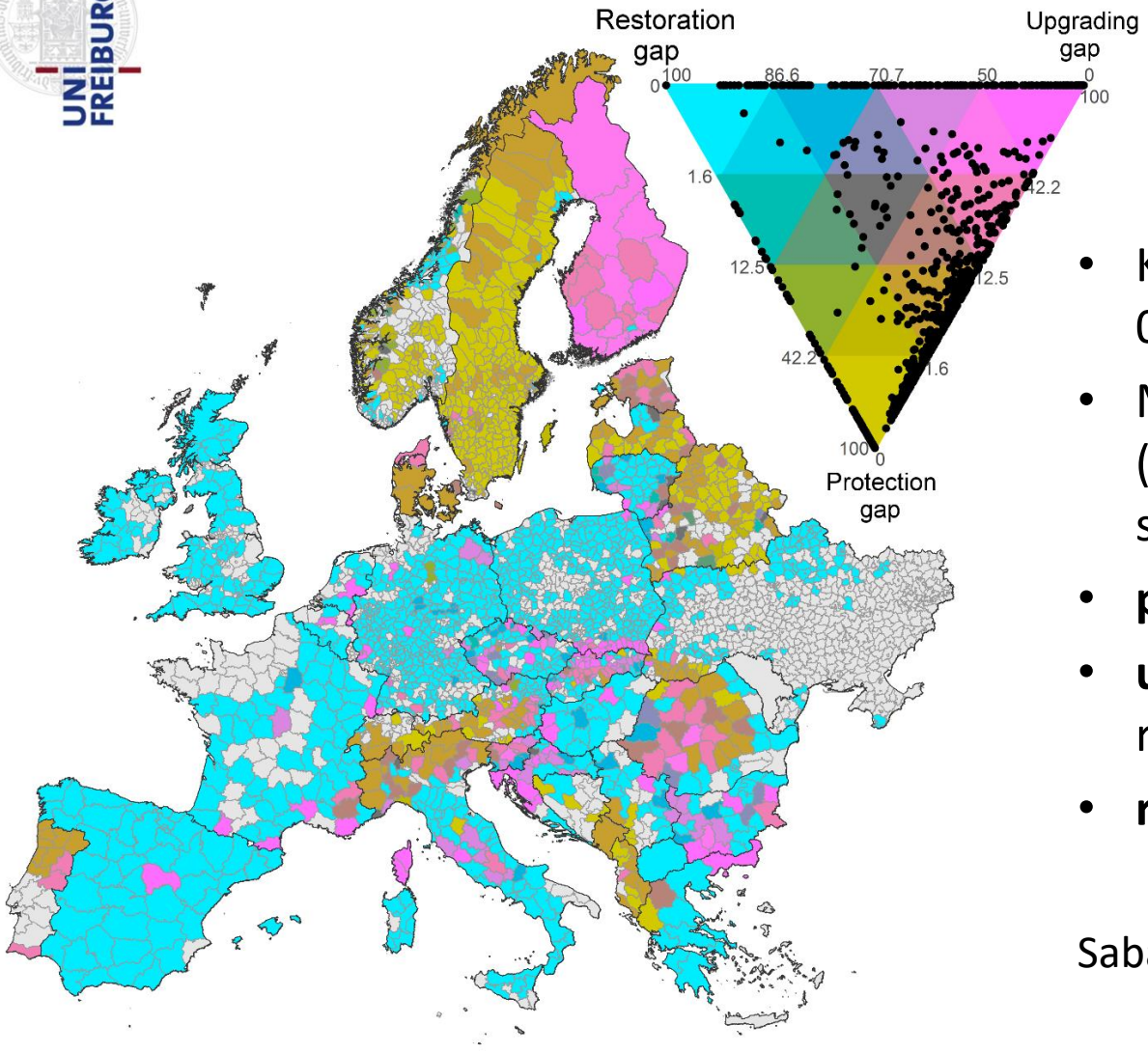
https://doi.org/10.1038/s41586-019-1684-3
Received: 8 February 2019
Accepted: 16 September 2019

Sebastian Seibold[1,2*], Martin M. Gossner[3], Nadja K. Simons[1,4], Nico Blüthgen[4], Jörg Müller[2,5], Didem Ambarli[1,6], Christian Ammer[7], Jürgen Bauhus[8], Markus Fischer[9], Jan C. Habel[1,10], Karl Eduard Linsenmair[11], Thomas Nauss[12], Caterina Penone[9], Daniel Prati[9], Peter Schall[7], Ernst-Detlef Schulze[13], Juliane Vogt[1], Stephan Wöllauer[12] & Wolfgang W. Weisser[1]



- Even in forests, arthropods biomass and species number decreased by 41% and 36%, respectively over 10 years
- Declines were not driven by forest management intensity
- Call for habitat management at landscape scale and across land-use forms

Seibold et al. 2019

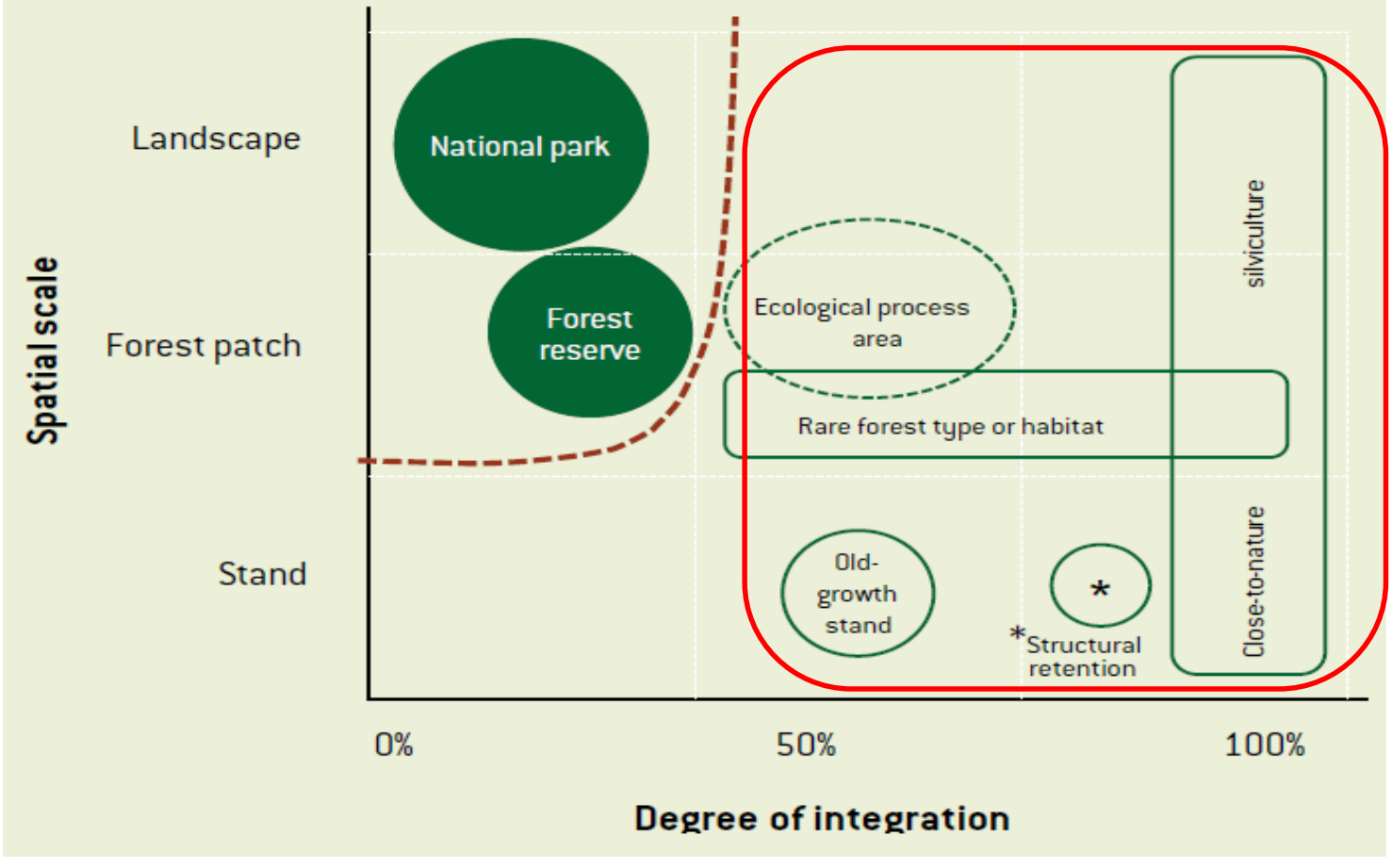


Protecting old-growth forests

- Known primary forests covers 0.7% of Europe's forest area.
- Most of these are protected (89%), but only 46% of them strictly.
- **protection gaps** (unprotected)
- **upgrading gaps** (outside strict reserves)
- **restoration gaps**

Sabatini et al. 2018 & unpublished

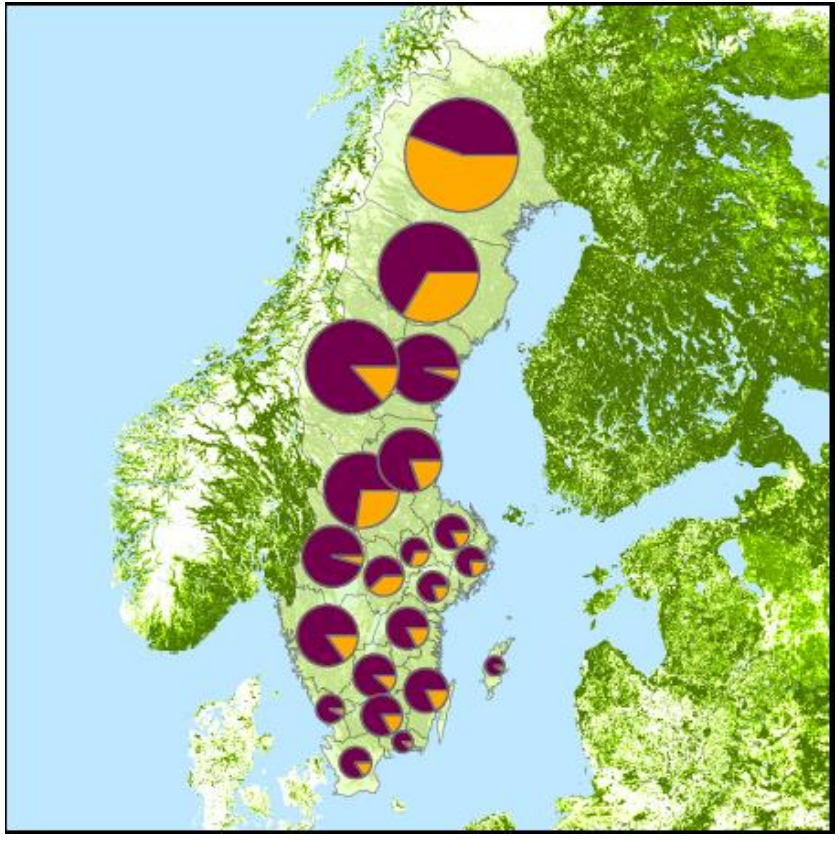
Biodiversity-smart forestry means use of smart conservation instruments in cultural landscapes

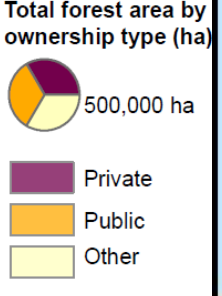


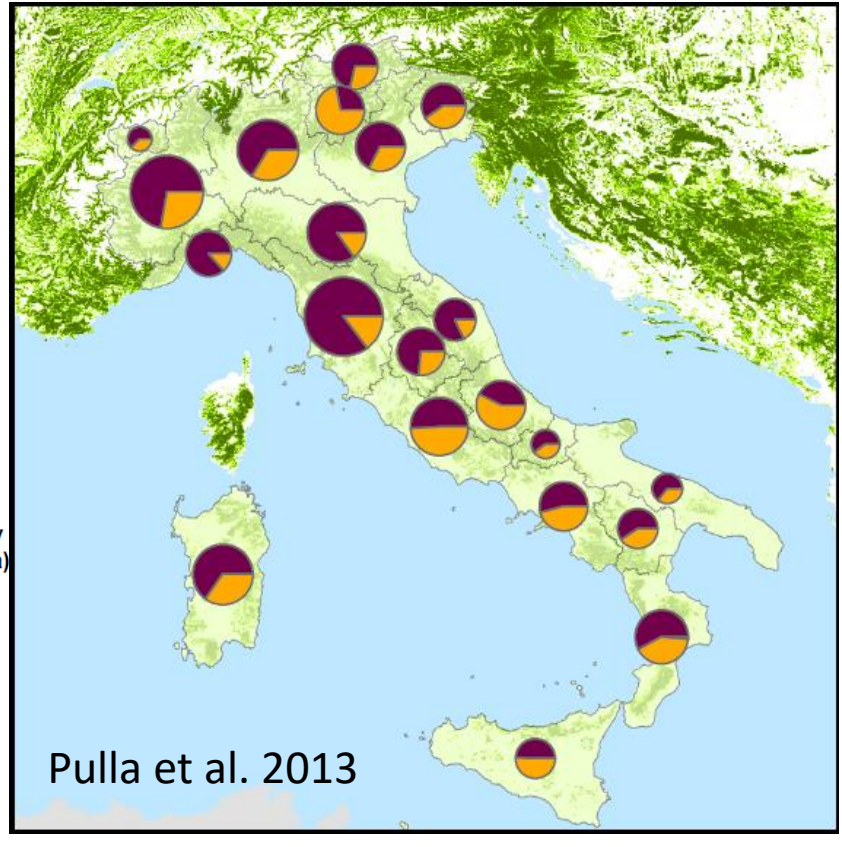
Requires all forest owners and significant support

Bollmann and Braunisch 2013

To promote biodiversity we need people who want to do it – across the landscape







Summary

1. Pressures from external drivers on forest biodiversity need to be reduced (climate, biosecurity)
2. Increasing strictly protected areas in forests (relatively small, spatially static) will be of limited success for biodiversity conservation given the challenges ahead
3. Active management and restoration is required to provide habitats and maintain ecosystem functionality across the forested landscape
4. Bringing trees and forests back into the agricultural land could improve biodiversity there and reduce pressure on forests

Recommendations

1. Protect, restore and connect biodiversity hotspots
2. Increase adaptive capacity and restore biodiversity and ecosystem functioning of **all** forests
3. Provide incentives to forest owners to engage in forest restoration and conservation (outcome oriented, flexible instruments)
4. We need a new model of forest management
   (overcoming conflict between biodiversity and economy)


Thank you for your attention!
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