

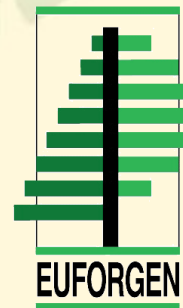


Pan-European strategy for genetic conservation of forest trees: state of knowledge

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Outline of the strategy

- Objectives
- Methods (& Results discussed)
- Implementation
- Role of Key Actors in the conservation of FGR in a changing climate



Objectives of the strategy for genetic conservation of forest trees

What do we propose to conserve

Ultimate goal is the conservation of forest genetic resources at the level of the species distribution ranges through dynamic conservation methods maintaining evolutionary processes within tree populations

Targeted level of genetic conservation is at pan-European level

Overall goal: to maintain **adaptive and neutral** genetic diversity of forest trees at pan-European level

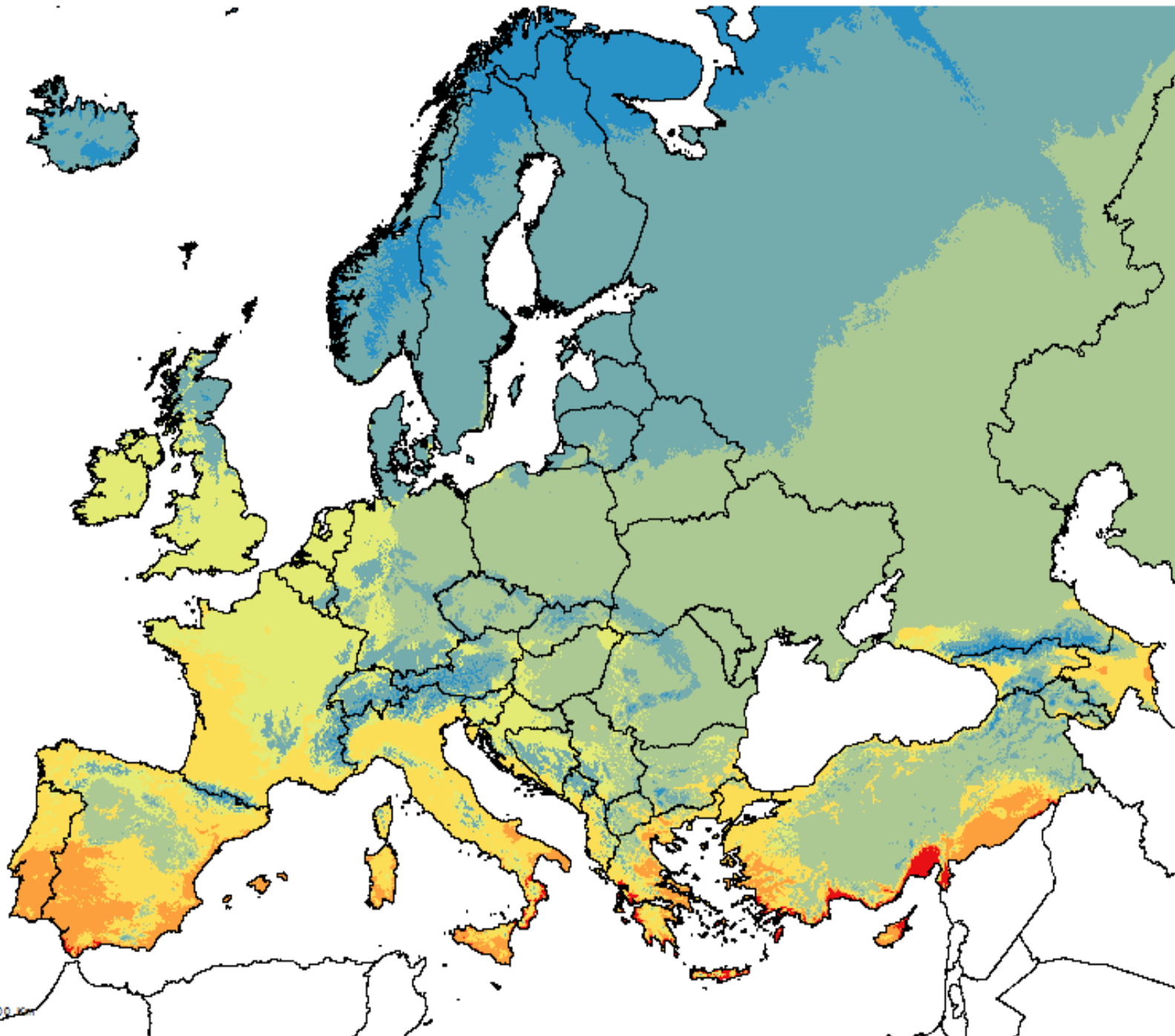
Aim to create pan-European network of units using climatic stratification of Europe as a **proxy** for the distribution of **adaptive diversity**

The approach: through dynamic conservation units (DCU's), that were appointed by all European countries in the framework of the EUFGIS project

Legend

- Extremely cold - ABCDF
- Cold and moist - EG
- Cool and dry - HI
- Cool and moist - J
- Warm and moist - K
- Warm and dry - L
- Hot and moist - M
- Hot and dry - N

0 250 500 1,000 km





Methods

– ***Selection of pilot tree species***

- *Grouped on basis of geographical distribution (**wide or restricted**)*
- *And ecological appearance (**stand-forming or scattered**)*

– ***Ranking of units for the establishment of the core network***

- *Ensure minimum level of genetic conservation at range-wide level*
- *Goal within distribution range per species **one DCU/environmental zone/country***

– ***Assessment of genetic conservation status of the pilot tree species***

- *To assess status information EUFGIS portal will be used (based on minimum requirements and descriptors)*

– ***Identification of gaps in dynamic conservation efforts***

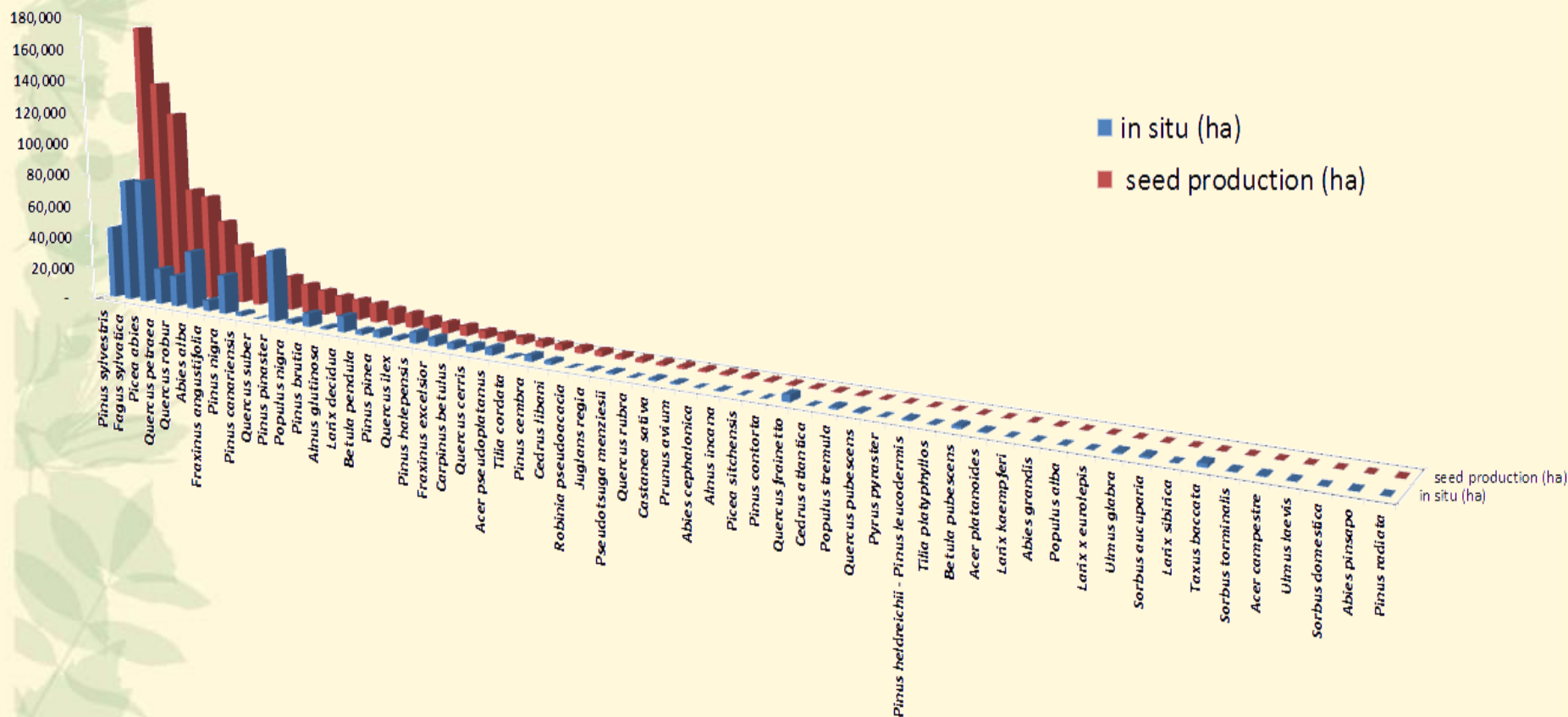
- *Gaps in adaptive diversity: “country x zone” approach*
- *Gaps in neutral diversity: “area of interest” approach (migration routes, refuge areas, contact zones)*



Results

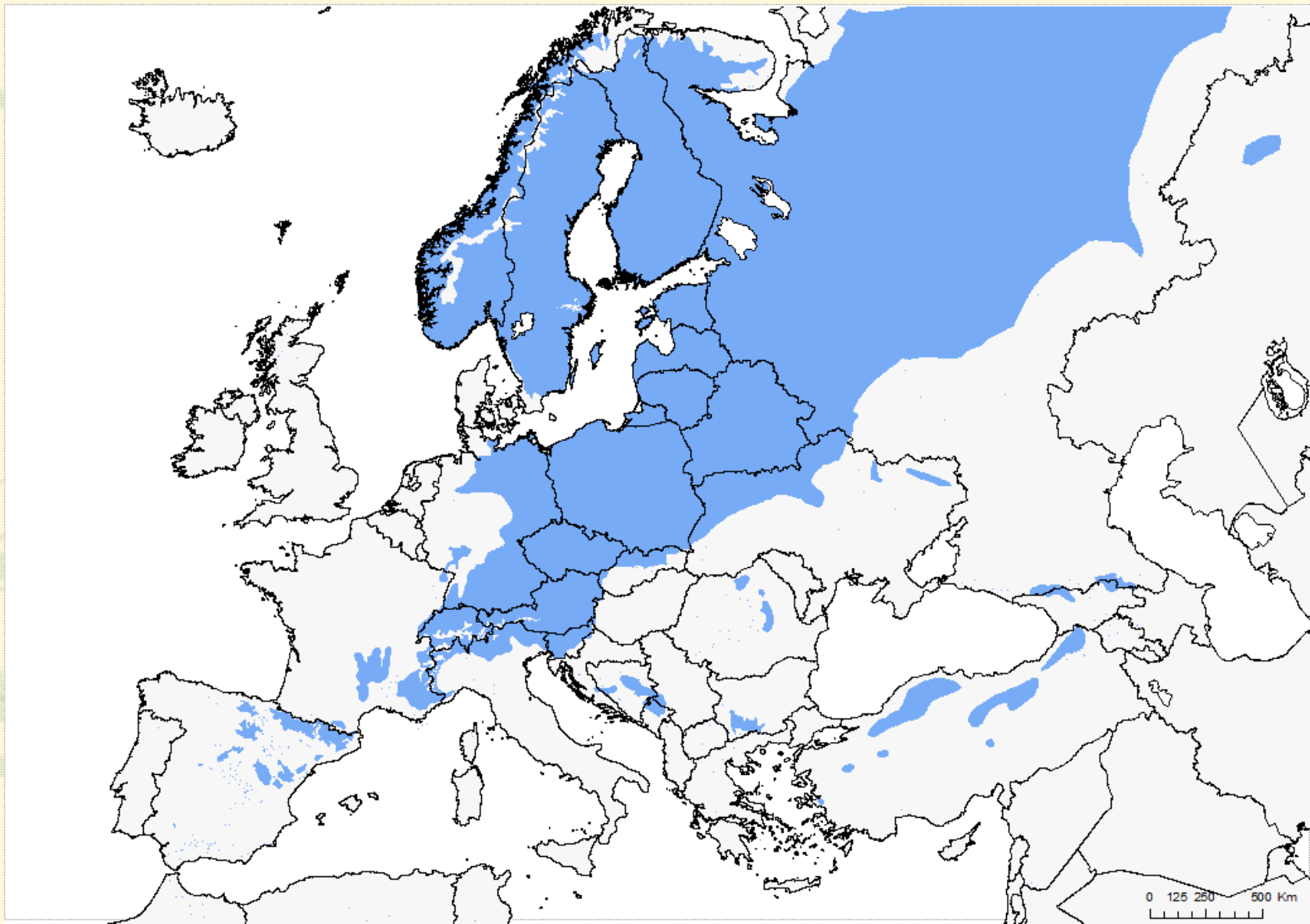
- *Selection of the groups of species*
- *Tentative units for the establishment of the core network :*
- *Assessment of genetic conservation status of the pilot tree species*
- *Assessment of available genetic data on the selected species populations of the core network*
- **Identification of gaps**
 - *Gaps in adaptive diversity: “country x zone” approach*

Hectares of *in situ* gene conservation and of seed production in 2014 (top 60 species)

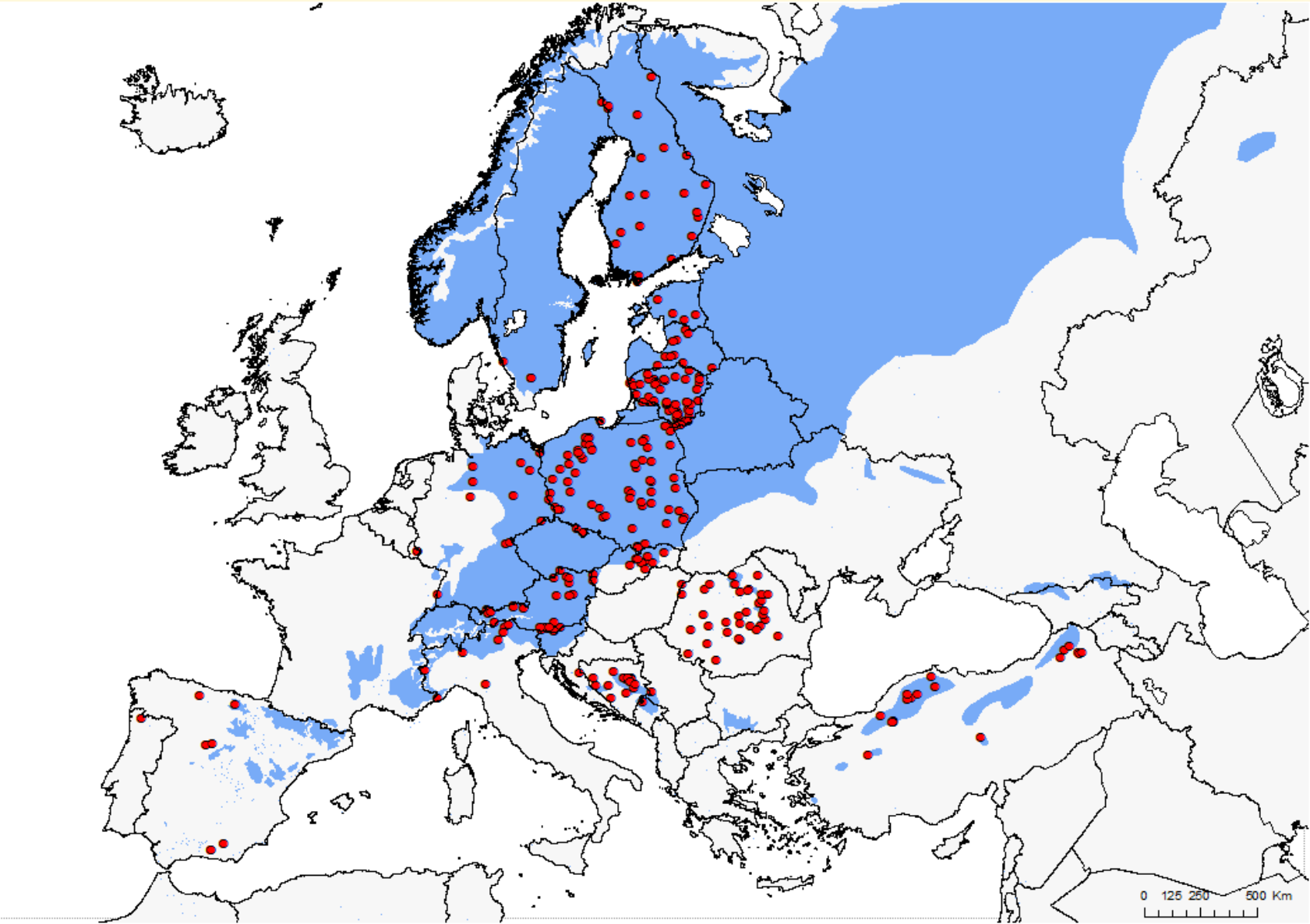




Pinus sylvestris



Pinus sylvestris





Fraxinus excelsior



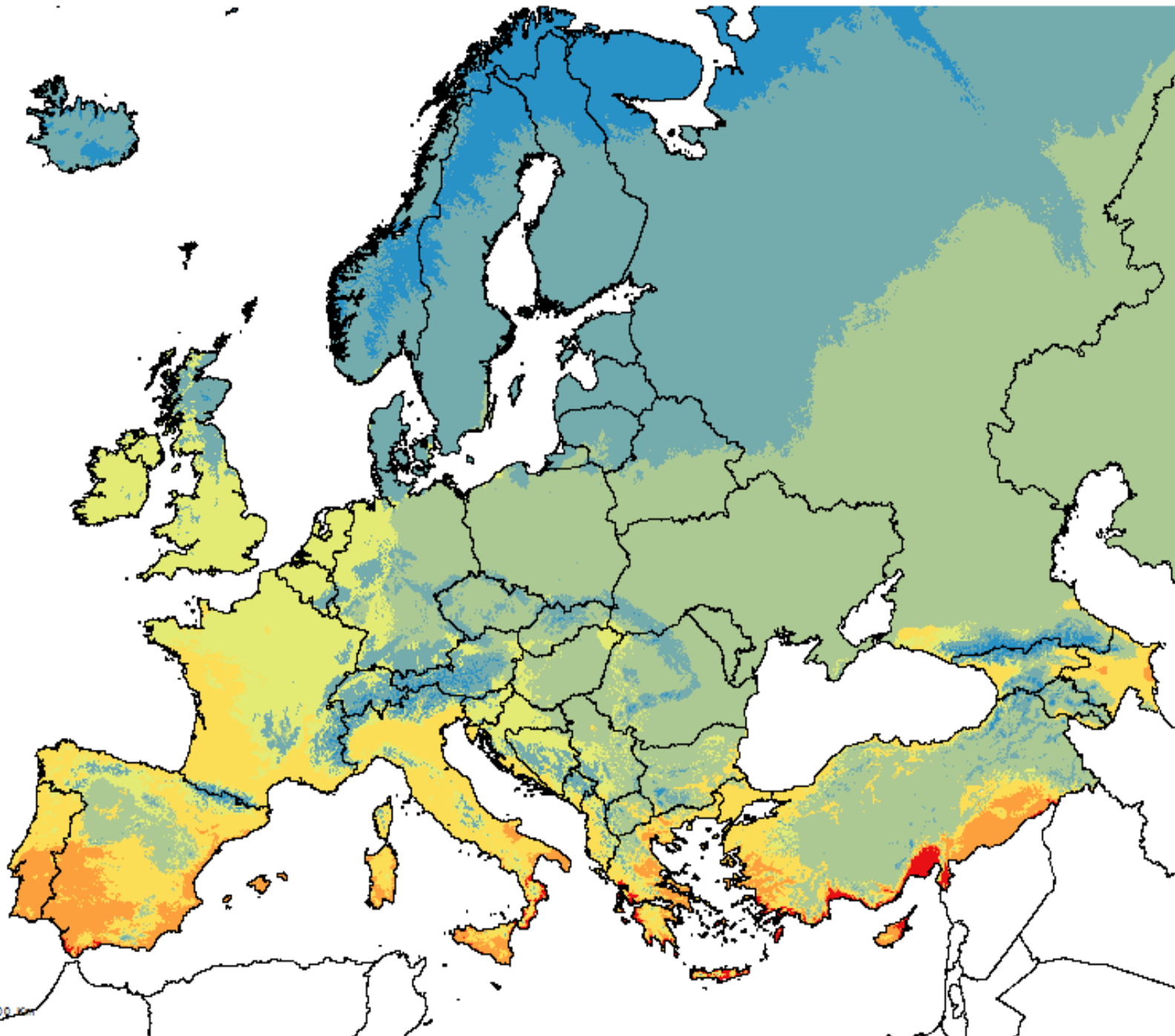
Fraxinus excelsior



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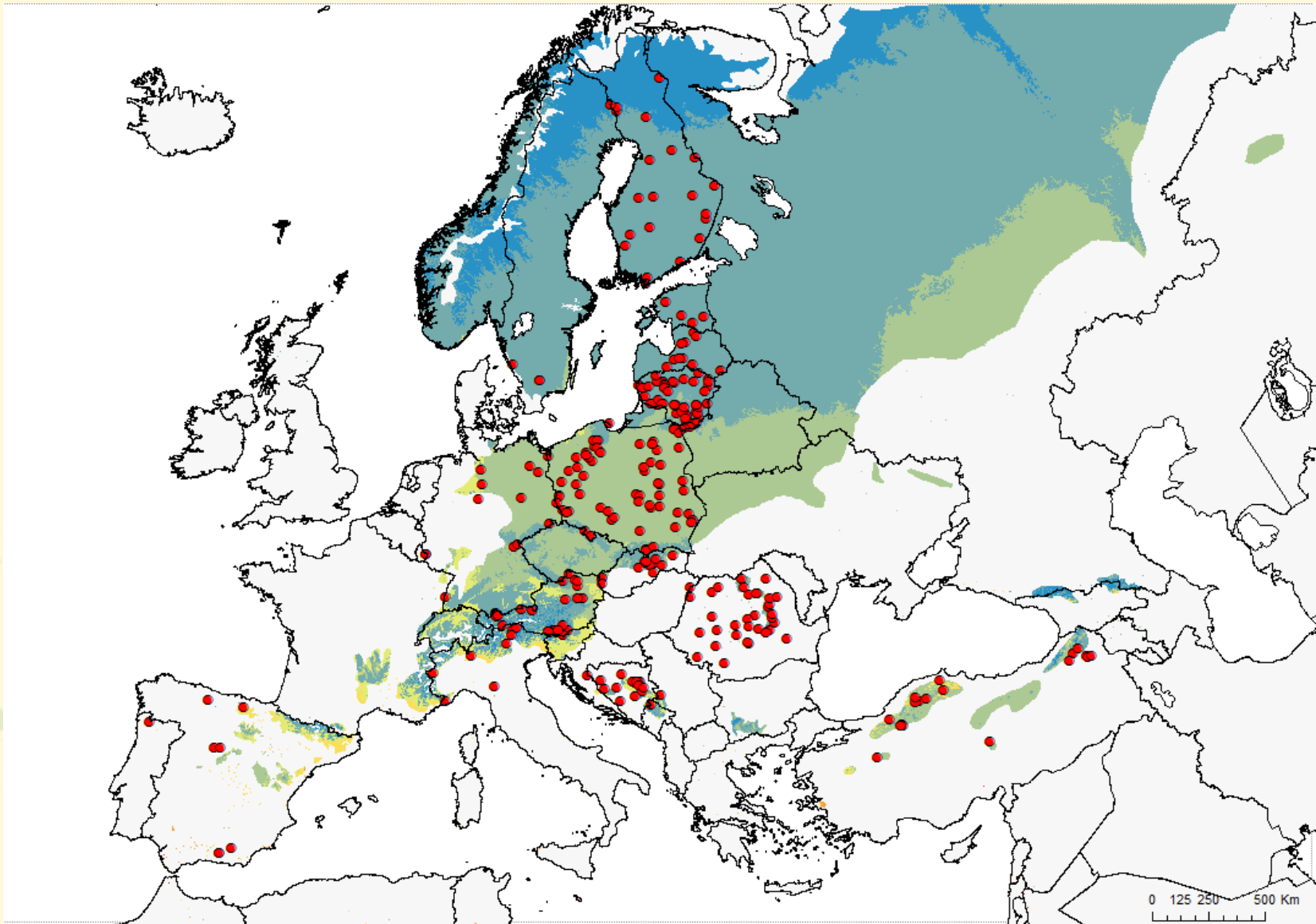
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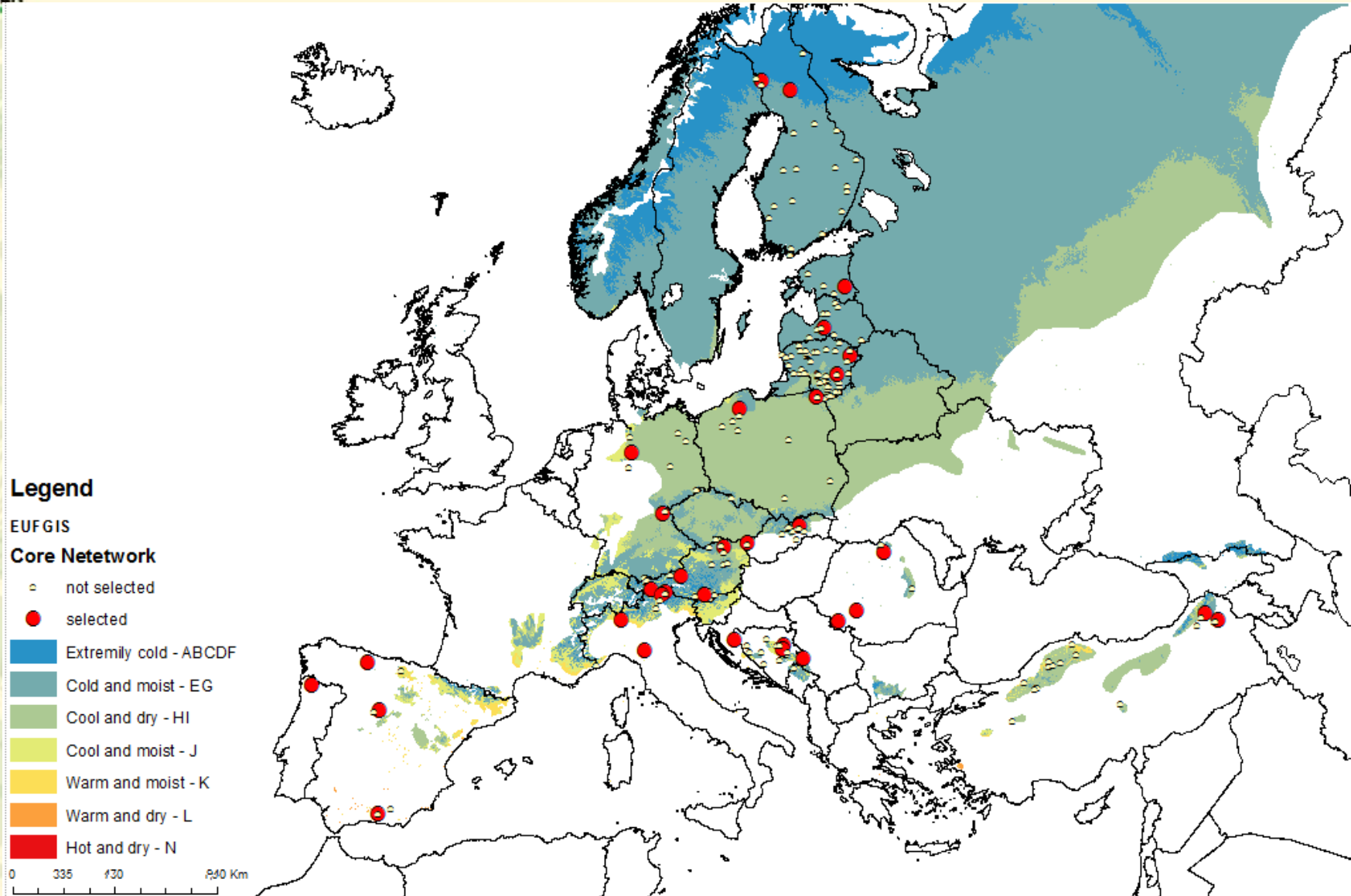




Pinus sylvestris



Pinus sylvestris





Number of country x zone areas, with units (and without units)

- Assessment of genetic conservation status of the species
- Identification of gaps in conservation efforts

	Countries			Environmental Zones			Country x Env. Zone		
	Total	With units	Without units	Total	With Units	Without Units	Total > 50 km ²	With units	Without units
<i>Pinus sylvestris</i>	33	17	16	6	5	1	97	33	64
<i>Fraxinus excelsior</i>	41	15	26	7	4	3	147	24	123



Implementation of the genetic conservation strategy

The appointment of additional units in areas identified as gaps remains a national responsibility

The management of genetic conservation units and the implementation of the genetic conservation strategy is an ongoing process

- Climate change**
- Monitoring of the progress made**
- Revision of the strategy**



EUFORGEN Working Group on FGR conservation and climate change

Title: “Developing Approaches to the conservation of FGR in Europe in the Context of Climate Change”

1. Introduction
2. State of Knowledge
3. Recommendations for management of Genetic Conservation Units
4. Recommendations for development of complementary *ex situ* approaches (with assisted migration as one possibility)
5. Recommendations for research
6. Conclusions and overall recommendations



Role of Key Actors in the conservation of FGR in a changing climate

- **Countries** (national responsibility)
- **European Commission** (international responsibility & policy)
- **EUFORGEN** (coordinating function in the implementation of the genetic conservation strategy at pan-European level)



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Thank you for your attention

