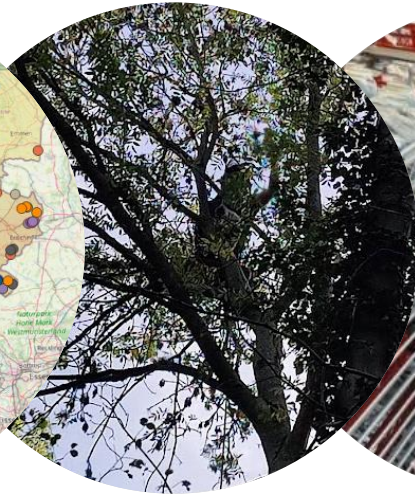
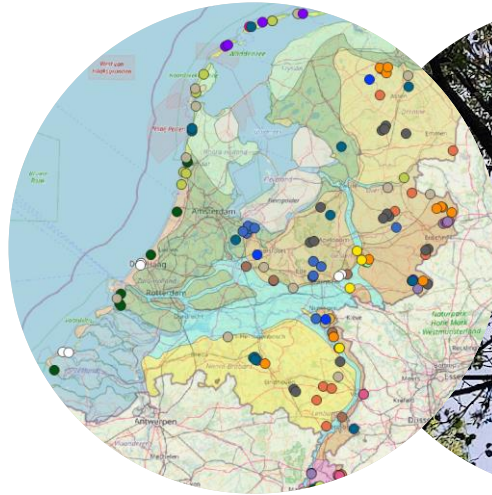


# Complementarity of nature conservation and genetic resource conservation: autochthonous trees and shrubs

Centre for Genetic Resources, the Netherlands (CGN)

Seppe De Mits 15-03-2023





# What is natural? What is a “wild” tree in the Netherlands?



Photo: Donar Reiskoffer

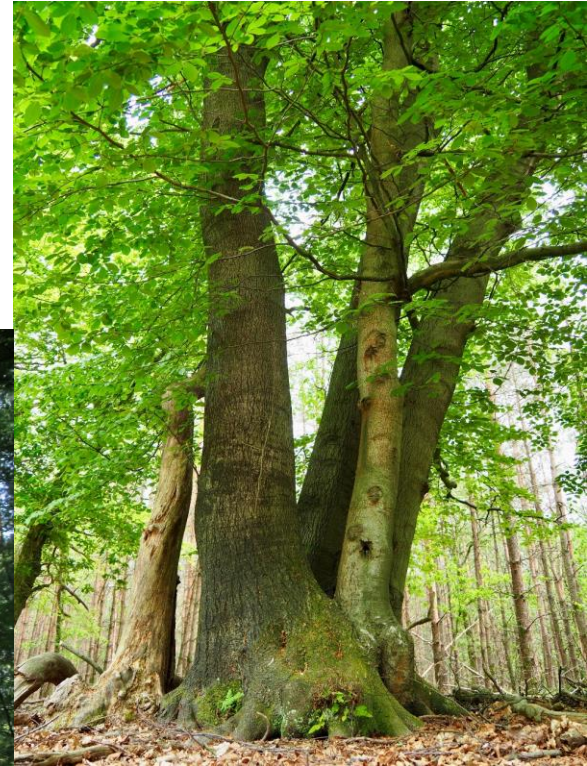
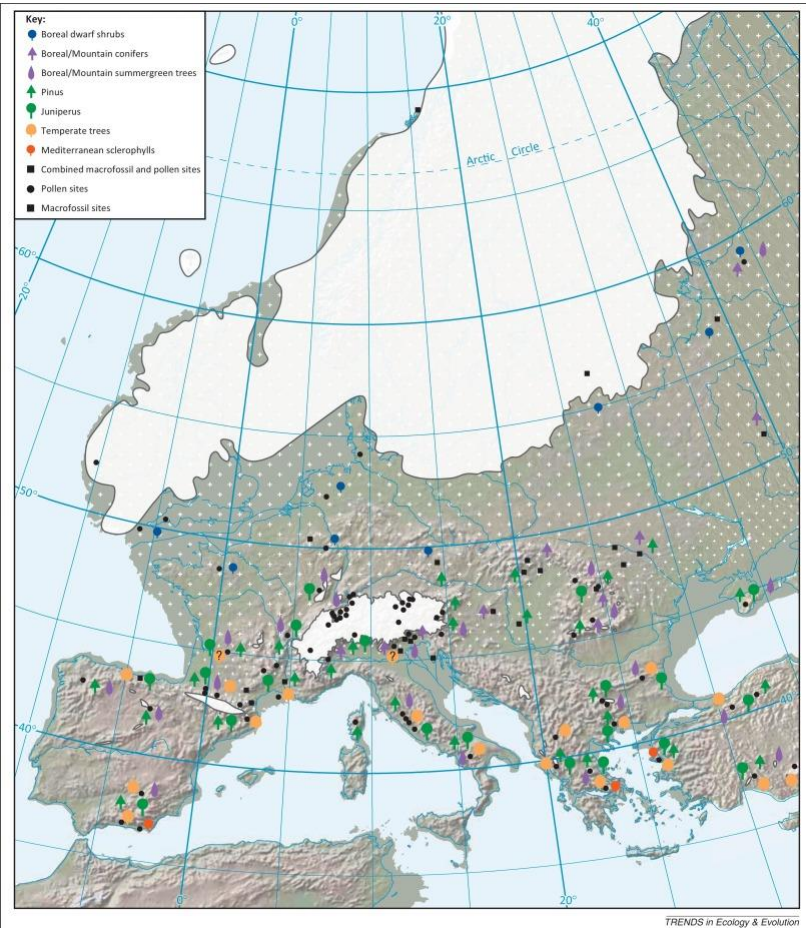


Photo: Paul Copini

# What is a “wild” tree in the Netherlands?



- Last Glacial Maximum: around 20.000 years ago
- Refugia

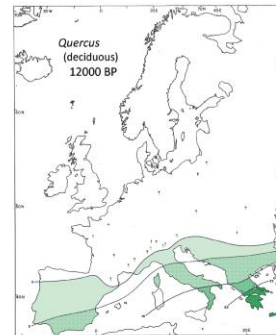
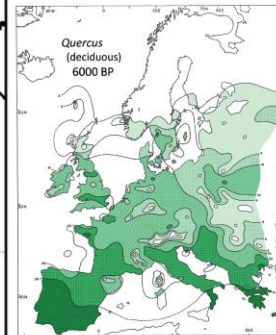
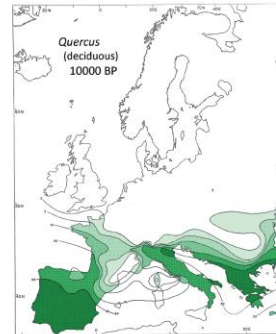
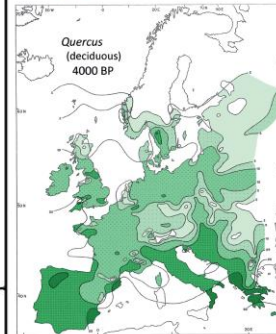
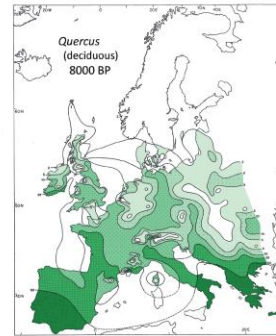
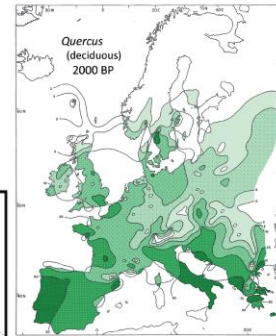
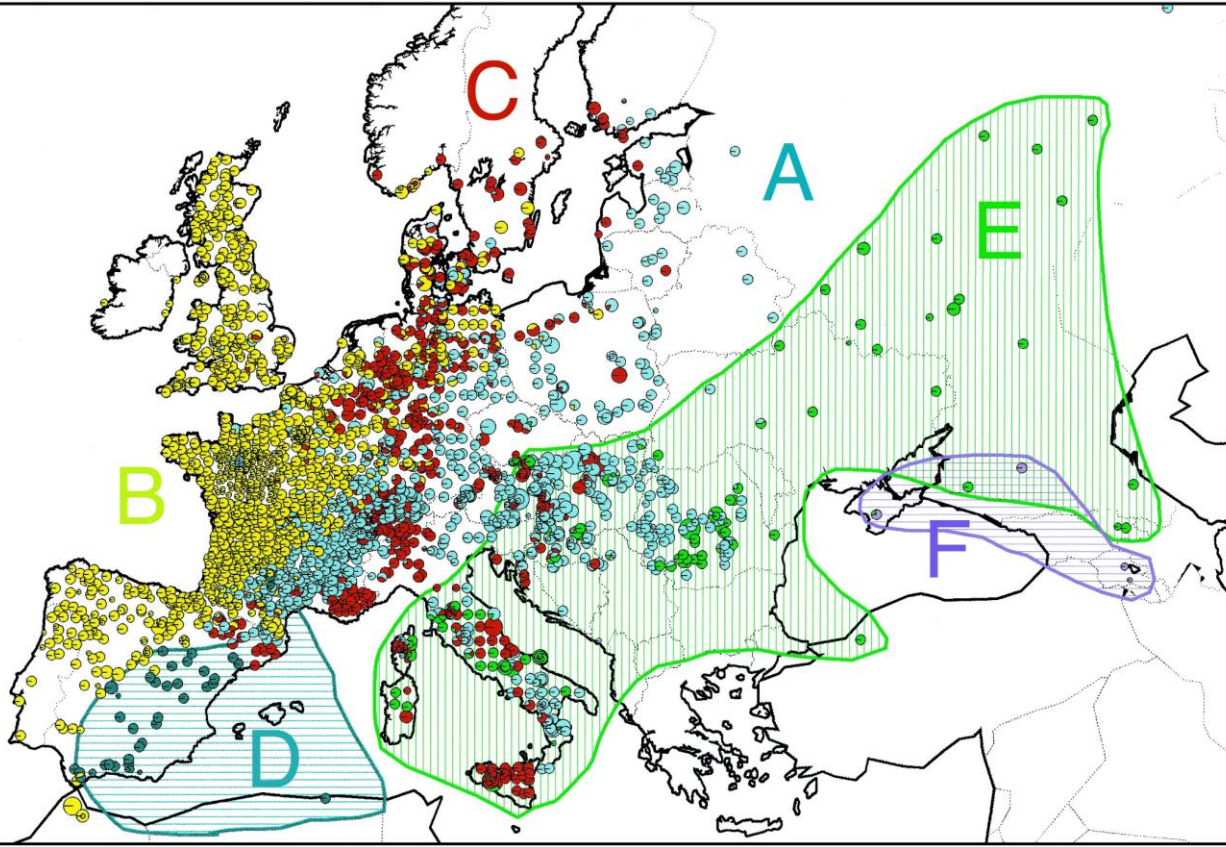
European paleoenvironments during the Late Pleniglacial. From Tzedakis et al. (2013)



# What is a “wild” tree?

Modified from Huntley and Birks (1989)

Petit et al. (2002)



# The importance of genetic variability





# The importance of genetic variability

## Adaptation of trees and forests to climate change: the importance of genetic variability

BiodivErsA Policy

Brief (2014)

### Main findings

- Tree species within (semi-)natural forests contain significant genetic variation.
- Variable environmental conditions, such as temperature, light availability and drought intensity maintain and promote genetic diversity within and between (semi-)natural forests, even at short spatial scales.
- High genetic variation in forest tree populations allows for more rapid adaptation to climate change.

# Forest genetic resources in the Netherlands

- So what does this knowledge mean for genetic resource conservation?
- 1850: only 1% of the Netherlands was forested
- 2017-2021: 11% (NBI7)
  - Dutch Forest Genetic Resources are rare!
  - Old forests and landscape elements



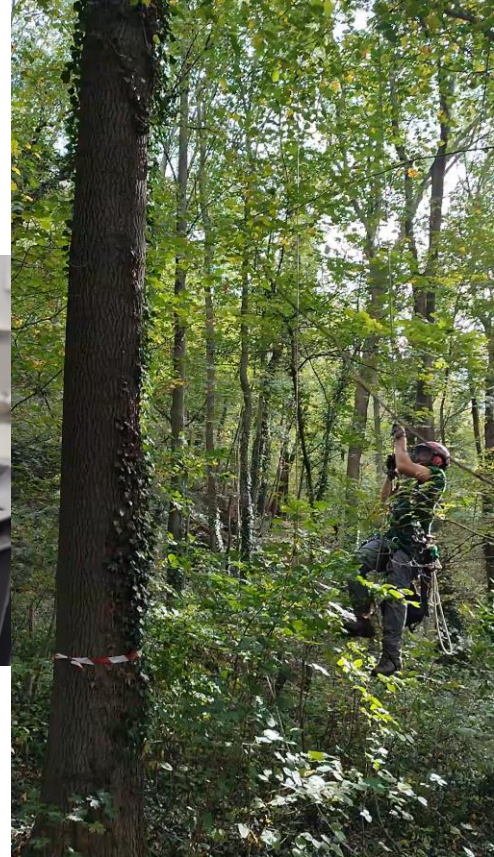
# CGN: WOT-programme genetic resources 2022-2026

- *In situ*
  - Conservation of genetic resources in (semi-)natural populations
  - Genetic Conservation Units (EUFORGEN)





# CGN: WOT-programme genetic resources 2022-2026



## ■ *Ex situ*

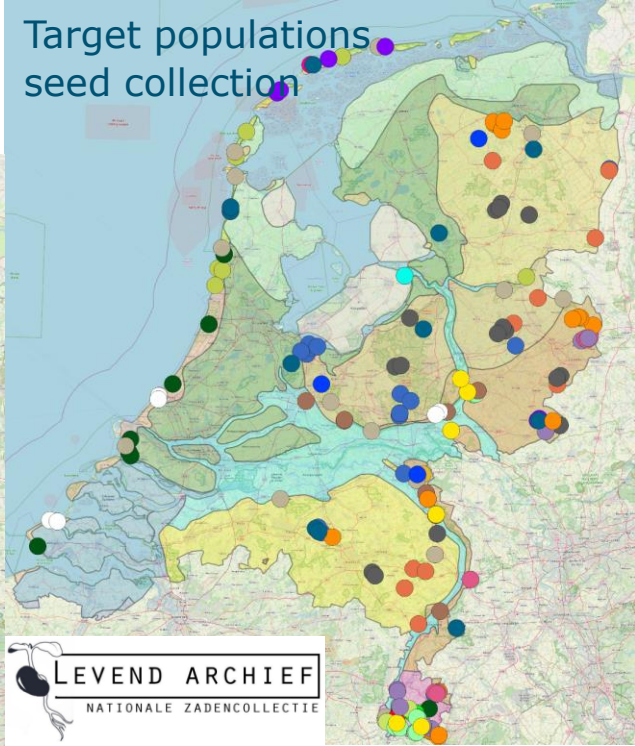
- Living gene bank:  
Roggebotzand (SBB)
- Seed bank: starting 2022

# CGN: WOT-programme genetic resources 2022-2026

Living gene bank collection



Target populations seed collection



In situ locaties (GCU)

