FORGENIUS
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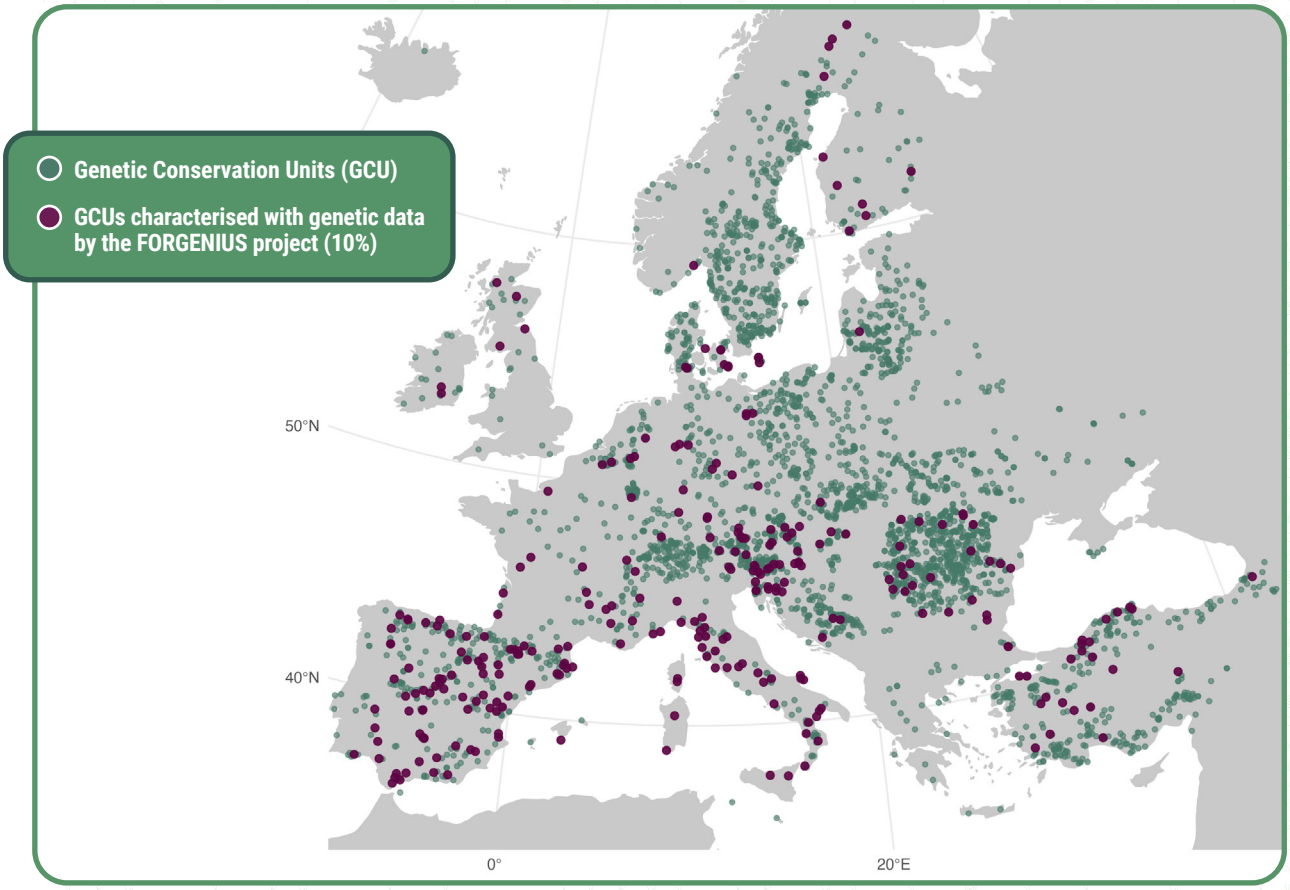
Tools to strengthen Europe's forest genetic resources conservation for climate resilience

European forests face unprecedented pressures from climate change, pests and diseases, wildfires, floods, and land-use change. While forest policies increasingly recognise the need for resilience and biodiversity, forest genetic resources (FGR), the foundation of forest adaptation, remain largely overlooked.

Yet climate resilience starts at the genetic level. Collaboration between policy makers, researchers, and forest managers can help unlock the potential of genetic resources as a foundation for adaptation and resilience. The FORGENIUS Horizon 2020 project supports this collaboration by advancing tools, science, and data to manage, conserve, and characterise FGR across Europe.

- **Forest genetic diversity** is essential for the long-term resilience and productivity of European forests in a changing climate.
- **European countries,** under the FOREST EUROPE mandate coordinated by European Forest Genetic Resources Programme (EUFORGEN), are conserving FGR through the Genetic Conservation Unit (GCU)[1] network and in line with the FGR Strategy for Europe[2].
- **The GCU network** forms the backbone of long-term strategies to conserve the genetic diversity for resilient and adaptable forests.
- **High-level policy support and dedicated funding** is needed to complete the full picture for GCU at national level.



[1] A Genetic Conservation Unit (GCU) is a forest area that is formally designated to the protection of forest genetic resources (FGR) of one or more forest tree species. It is established to allow the full cycle of natural processes to occur with the conservation objective of dynamically conserving the evolutionary potential of the population.

[2] www.euforgen.org/FGRS4E

How has FORGENIUS made a difference?

Upgraded infrastructure for data storing, decision making, and monitoring

FORGENIUS upgraded EUFGIS, the pan-European information system that supports genetic conservation efforts. This enhanced data quality, interconnectivity, and user accessibility, creating a lasting infrastructure for decision making and monitoring.

Tools to characterise the conserved genetic diversity

FORGENIUS developed remote sensing data interpretation to characterise all Genetic Conservation Units (GCU) with climatic and environmental data. FORGENIUS also developed protocols and sampling strategies enabling it to fully characterise 10% of them with genetic data, extrapolated from intensive sampling, lab work, and bioinformatic analysis.

European Information System on Forest Genetic Resources (EUFGIS)

What is EUFGIS?

EUFGIS is a platform coordinating information on more than 3,000 GCUs, for more than 100 forest tree species, across 30+ countries.

Why is EUFGIS needed?

EUFGIS aligns genetic conservation across Europe and offers evidence-based decision making for FGR.

How is EUFGIS managed?

EUFGIS is managed by the EUFORGEN Programme in cooperation with the EUFGIS National Focal Points (NFP) and is hosted by the European Forest Institute (EFI).

How did FORGENIUS contribute to EUFGIS?

FORGENIUS expanded EUFGIS with genomic, phenotypic, and environmental data, spatial tools, and user-friendly interfaces.

How does this support implementation of the FGR Strategy for Europe?

Through the upgrades made to EUFGIS and the advanced GCU characterisation, FORGENIUS contributed to the implementation of the Key Commitments 3-7 and 20 of the FGR Strategy for Europe.

EUFGIS

What can policy makers do?

Allocate national funding and coordinate through competent authorities

Dedicate resources within national forestry or biodiversity programmes for the characterisation of GCU, and assign clear responsibility to relevant authorities (in the field) and to National Focal Points to ensure consistent implementation.

Adopt FORGENIUS protocols and build technical capacity

Formally adopt the FORGENIUS characterisation framework and invest in training programmes and technical support to ensure standardised and effective data collection across regions.

Utilise monitoring systems and integrate results into policy

Use existing indicators/verifiers (EUFORGEN monitoring/conservation[3]) to regularly evaluate progress on GCU characterisation, update national and EUFGIS databases, and ensure results inform climate adaptation strategies, biodiversity planning, and forest management policies.

[3] https://www.euforgen.org/forest-genetic-resources/conservation

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This policy brief has been produced by the EU-funded FORGENIUS project. If you would like to contact the project coordination team, please send an email to: **info@forgenius.efi.int**

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