



EVOLTREE, a network of researchers for researchers

What's EVOLTREE?



EVOLTREE stands for EVOLution of TREEs as drivers of terrestrial biodiversity

The overall goal of the EVOLTREE Network is to link four major disciplines, Ecology, Genetics, Genomics and Evolution, to address global issues that European forests are currently facing, such as environmental changes and erosion of biodiversity.

The origins



A Network of Excellence in FP6

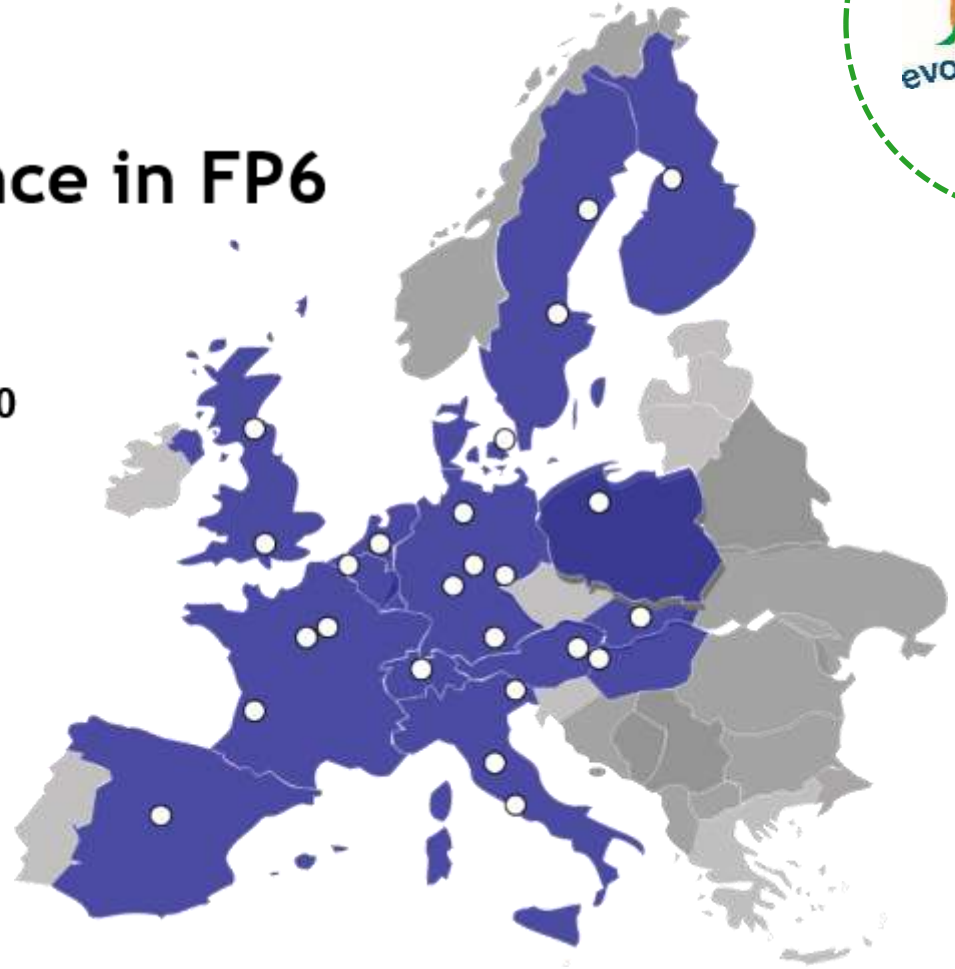
15 Countries, 25 Partners

228 Scientists

April 2006- September 2010

14.3 M€

50% of the budget was
allocated to Integration
Activities across
partners



The current network



After the EU-funded NoE, EVOLTREE became a European Research Group (ERG), self-funded by its Members and operating under the umbrella of EFI

We are now in the
Phase 4 of the Network
(2023-2026)

Currently 22 organisations
from 17 European
countries are part of
EVOLTREE!

Membership of
EVOLTREE has
evolved but many of the
foundation members
are still part of it



Consiglio Nazionale
delle Ricerche



INSTITUTO
SUPERIOR DE
AGRONOMIA
Universidade de Lisboa



INSTITUUT
NATUUR- EN
BOSONDERZOEK



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN



UK Centre for
Ecology & Hydrology



UPPSALA
UNIVERSITET



Instituto Nacional de Investigación
y Tecnología Agraria y Alimentaria



UNIVERSITY OF HELSINKI



Executive Committee



Coordinator: Santiago C. González-Martínez, France

Past Coordinator: Antoine Kremer, France



Members of ExCom:

Christian Rellstab, Switzerland

Stephen Cavers, UK

Marjana Westergren, Slovenia

Katri Kärkkäinen, Finland

Lucian Curtu, Romania

Delphine Grivet, Spain



UK Centre for
Ecology & Hydrology



Instituto Nacional de Investigación
y Tecnología Agraria y Alimentaria



Administrating Institute:

Lidwina Koop, EFI

Michele Bozzano, EFI



Webinars

(Christian Rellstab, WSL; Stephen Cavers, UKCEH; Santiago C. González-Martínez, INRAE)



A total of 15 webinars in 2020-2022, with a dedicated [YouTube channel](#)

| Year | Series title | Number of webinars |
|---------------|--|---|
| 2020 (Fall) | Polygenic adaptation | 4 |
| 2021 (Spring) | Adaptation to climate change | 4 |
| 2021 (Fall) | Genomics in practice | 4 |
| 2022 (Fall) | Genetic and genomic approaches to studying communities | 3 (main talk + flash talk by early-career scientists) |

Next series planned for November 2023!

YouTube channel



S'abonner



EVOLTREE Network

@evoltreenetwork2096 355 abonnés · 40 vidéos

En savoir plus sur cette chaîne >

ACCUEIL

VIDÉOS

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Diffusions en direct terminées



EVOLTREE Online Seminar:
Sara Branco Fungal diversit...

78 vues · Diffusé il y a 5 mois



EVOLTREE Online Seminar:
Jaime Huerta-Cepas...

108 vues · Diffusé il y a 6 mois



EVOLTREE Online Seminar:
Thomas Whitham...

163 vues · Diffusé il y a 6 mois



EVOLTREE Online Seminar:
Louis Bernatchez "Genomic...

207 vues · Diffusé il y a 1 an



EVOLTREE Online Seminar:
Emily Latch "Genomic data...

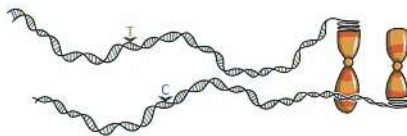
228 vues · Diffusé il y a 1 an



EVOLTREE Online Seminar:
Rebecca Jordan "Building...

247 vues · Diffusé il y a 1 an

Genetic architecture of human complex traits



Nasa Sinnott-Armstrong



Sahin Naqvi



Evan Boyle



Yang Li



Xuanyao Liu



Yuval Simons

Online Seminar series on Polygenic Adaptation (EVOLTREE) Oct 2020

zoom

EVOLTREE Webinar: Jonathan Pritchard 'Architecture and adaptation of human complex traits' → 828 views!

Activities

Training

(Marjana Westergren, SFI)



- Two to four training courses including summer schools per year, organised by EVOLTREE partners as in-kind contribution to the network
- EVOLTREE members can get expenses from the training course reimbursed up to 600 Euros!
- Funding scheme was interrupted during covid19, but EVOLTREE granted 4 early-career scientists in 2021 and 10 in 2022

Two Summer Schools planned for 2023, with 3 additional courses coming in Fall

| | |
|--|--|
|  FROM 07/08/2023 TO 11/08/2023 | 11th Summer School on Scientific Writing, Reviewing, and Publishing 📍 Planica, Slovenia 'Scientific Writing, Reviewing, and Publishing: Measures to protect and monitor forest genetic... |
|  FROM 30/07/2023 TO 04/08/2023 | Summer School: Modelling Assisted Migration to adapt forests and ecosystem services to climate change 📍 Forestry Training Centre Traunkirchen (BFW), Austria The Summer School is open to MSc, & Ph.D. students, and Post-Docs in forest research and related disciplines. For further information: Flyer |

Past courses (2021-2022)



| Date | Event | Location |
|----------------|---|--------------------|
| September 2022 | Symposium: Future PhDs for Future Forests | Göttingen, Germany |
| August 2022 | Training: "Novel forest tree breeding for tolerance to abiotic and biotic stress" organised by "TolerantTree" and EVOLTREE | Nødebo, Denmark |
| August 2022 | Summer school: "Scientific writing, reviewing and publishing and forest genetic monitoring knowledge transfer into practice" | Kočevje, Slovenia |
| June 2022 | B4EST short course: Polygenicity and population genetics | Lisbon, Portugal |
| February 2022 | Five-day winter school on Genomics of Environmental Adaptation | WSL, Switzerland |
| August 2021 | Summer school on scientific writing, reviewing and publishing & Forest genetic monitoring knowledge transfer into practice | Pokljuka, Slovenia |
| February 2021 | Genomics of Environmental Adaptation | WSL, Switzerland |

Funding initiatives

(Delphine Grivet, INIA-CSIC)



Capacity building – OPPORTUNITY calls: A call for projects (up to 10,000 EUR) which can include any kind of work related to genetic and genomic studies on forest ecosystems

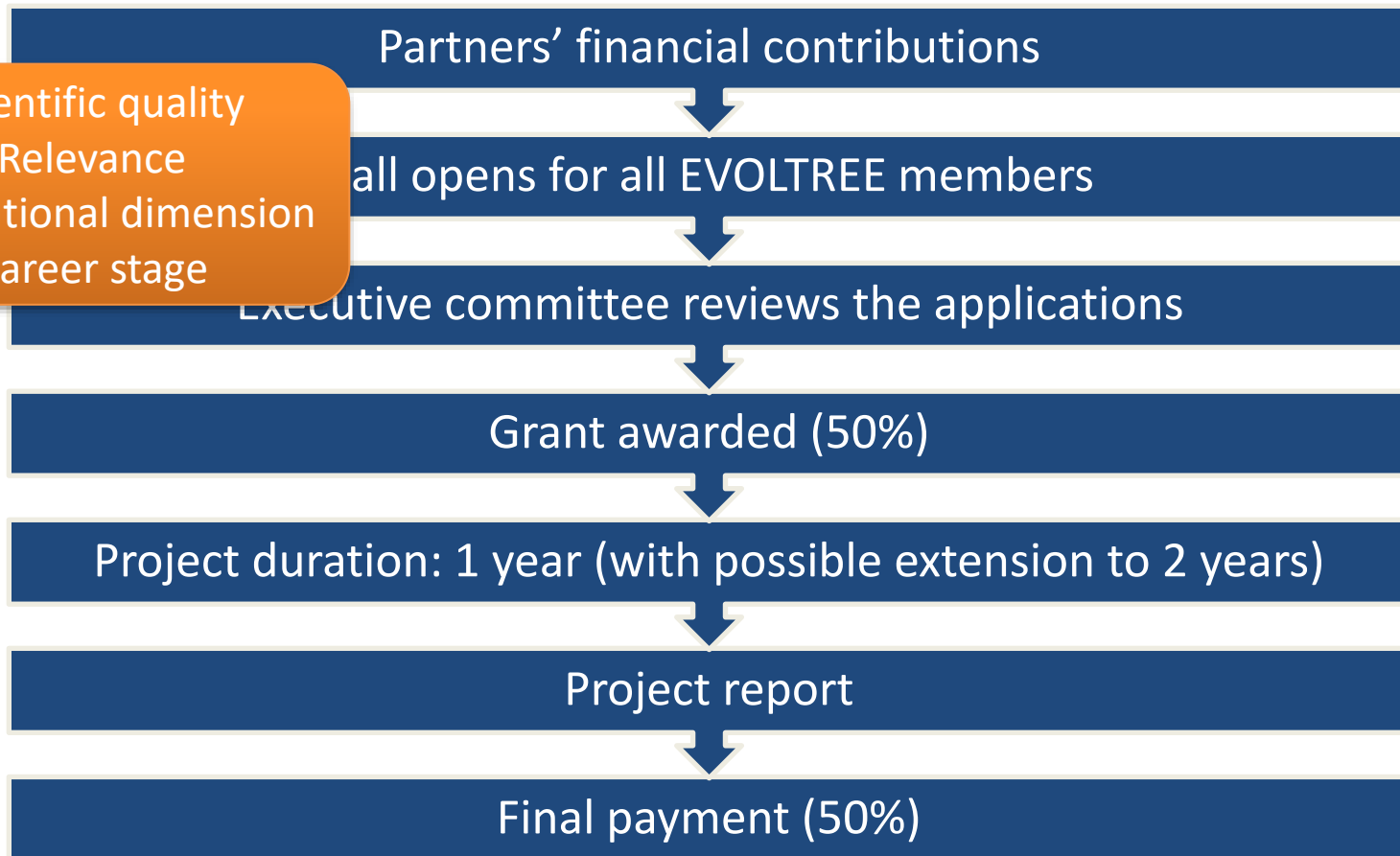
| Grantee | Project title | Country |
|-------------------------------|---|-------------|
| Jose Alberto Ramirez Valiente | Understanding the factors driving species diversification in the roburoid oak complex | Spain |
| Domen Finžgar | EVOLTREE databases & R | Slovenia |
| Lindsay Flynn Banin | Intra- and interspecific leaf trait variation, decomposition processes and the 'home-field advantage' in European woodlands | UK |
| Sonja Kujala | Convergent adaptation in northern <i>Pinus sylvestris</i> and <i>Picea abies</i> ?-Genotyping the Evoltree ISS Punkaharju | Finland |
| Christian Rellstab | OAKID2-Transferability and phylogenetic extension of species-diagnostic SNP markers in European white oak species | Switzerland |

- Two new grantees (from Spain & Sweden) in 2021-2022
- **A new call will be launched in June 2023!**

OPPORTUNITY calls



Scientific quality
Relevance
International dimension
Career stage



Funding initiatives

(Delphine Grivet, INIA-CSIC)



Conference Grants: Ten grants of up to 800 EUR are available each year to help fund student participation in any relevant international scientific conference

You can apply for this grant if:

- you belong to an **EVOLTREE partner lab**;
- you are a student;
- your abstract has already been accepted by the event organisers **BEFORE** applying for this grant;
- the content of your presentation or poster is related to EVOLTREE research topics;
- you agree to display the EVOLTREE logo in your presentation or poster
- you agree to provide a PDF of your presentation or poster and a short report about your participation at the event - along with a photo or two - to publish in these web pages and in the newsletter.

The EVOLTREE Events page gives an indicative list of upcoming conferences and events; however, this list is not exhaustive.



Working Groups



Working Groups (WGs) are established ad-hoc by decision of the EVOLTREE Governing Board. The mission of WGs is to address a specific topic identified as of special relevance for the EVOLTREE network.

There are currently 3 active WGs:

- **Shaping the Funding Environment** – Stephen Cavers (UKCEH)
- **Databases** – Antoine Kremer & François Ehrenmann (INRAE)
- **Bi-annual EVOLTREE Conference** – Felix Gugerli (WSL)

Shaping the Funding Environment

(Stephen Cavers, UKCEH)



- Horizon-scanning exercises (as in e.g., Sutherland et al. 2020 TREE)

Review

A Horizon Scan of Emerging Global Biological Conservation Issues for 2020

William J. Sutherland,^{1,*} Maria P. Dias,^{2,3} Lynn V. Dicks,^{1,4} Helen Doran,⁵ Abigail C. Entwistle,⁶ Erica Fleishman,⁷ David W. Gibbons,^{8,9} Rosie Hails,¹⁰ Alice C. Hughes,¹¹ Jonathan Hughes,¹² Ruth Kelman,¹³ Xavier Le Roux,^{14,15} Becky LeAnstey,¹⁶ Fiona A. Lickorish,¹⁷ Luke Maggs,¹⁸ James W. Pearce-Higgins,^{1,19} Lloyd S. Peck,²⁰ Nathalie Pettorelli,²¹ Jules Pretty,²² Mark D. Spalding,²³ Femke H. Tonneijck,²⁴ Jonathan Wentworth,²⁵ and Ann Thornton¹

- Coordination for project Calls and other international initiatives
- Production of Opinion/Review/Short Note papers

WG to be relaunched in Fall/Winter 2023 with a writing workshop, good time to join!

Databases

(Antoine Kremer & François Ehrenmann,
INRAE)



TreePop

The TreePop database stores, besides information concerning association population, passport data,...



QuercusMap

The QuercusMap database applications allow to manage phenotypic and genotypic data used for the...



PinusMap

The PinusMap database applications allow to manage phenotypic and genotypic data used for the...



PopulusMap

The PopulusMap database is similar to the QuercusMap database, but hosting data for *Populus*. It...



CMap

The CMap databases store genetic and comparative maps for the genus *Quercus*, *Pinus* and *Populus*. In...



(GD)² database

The (GD)² database (Georeferenced Database of Genetic Diversity) contains genetic and georeferenced...

Interoperable with
GnplS & EUFGIS
(EUFORGEN
Genetic
Conservation Unit
database)

(GD)² database (Fagaceae)



Populations & Datasets

Populations on a map [Display](#)

Number of populations : 6574

Search for populations

► By species [Search](#)

► By country [Search](#)

Datasets [Display](#)

Number of datasets : 73

A dataset contains data that are compatible. Most of the time, a dataset = one published survey.

Markers [Display](#)

Number of markers : 653

Search tools

GD² - EUFGIS [Search](#)

Number of gd² populations : 6574

Number of eufgis units : 2117

GD² (geo-referenced data on genetic diversity) and EUFGIS (geo-referenced information on the conservation of forest genetic resources in Europe) databases are linked using the TAPIR protocol. The link is possible between populations, species and coordinate of each database.

Plot your populations [Plot](#)

Load your populations (csv file format) on a map to show the closest GD² populations and haplotypes which are the most represented in an area.

Genetic data

Plot Allelic/Haplotypic frequencies [Plot](#)

[Plot](#)

Display on a map the allelic or haplotypic frequencies for a given species and a given marker.

Plot Genotypic frequencies [Plot](#)

Display on a map the genotypic frequencies for a given species and a given marker.

Plot Diversity measures [Plot](#)

Display on a map the genetic diversity measures for available diversity indices*, species and marker(s).

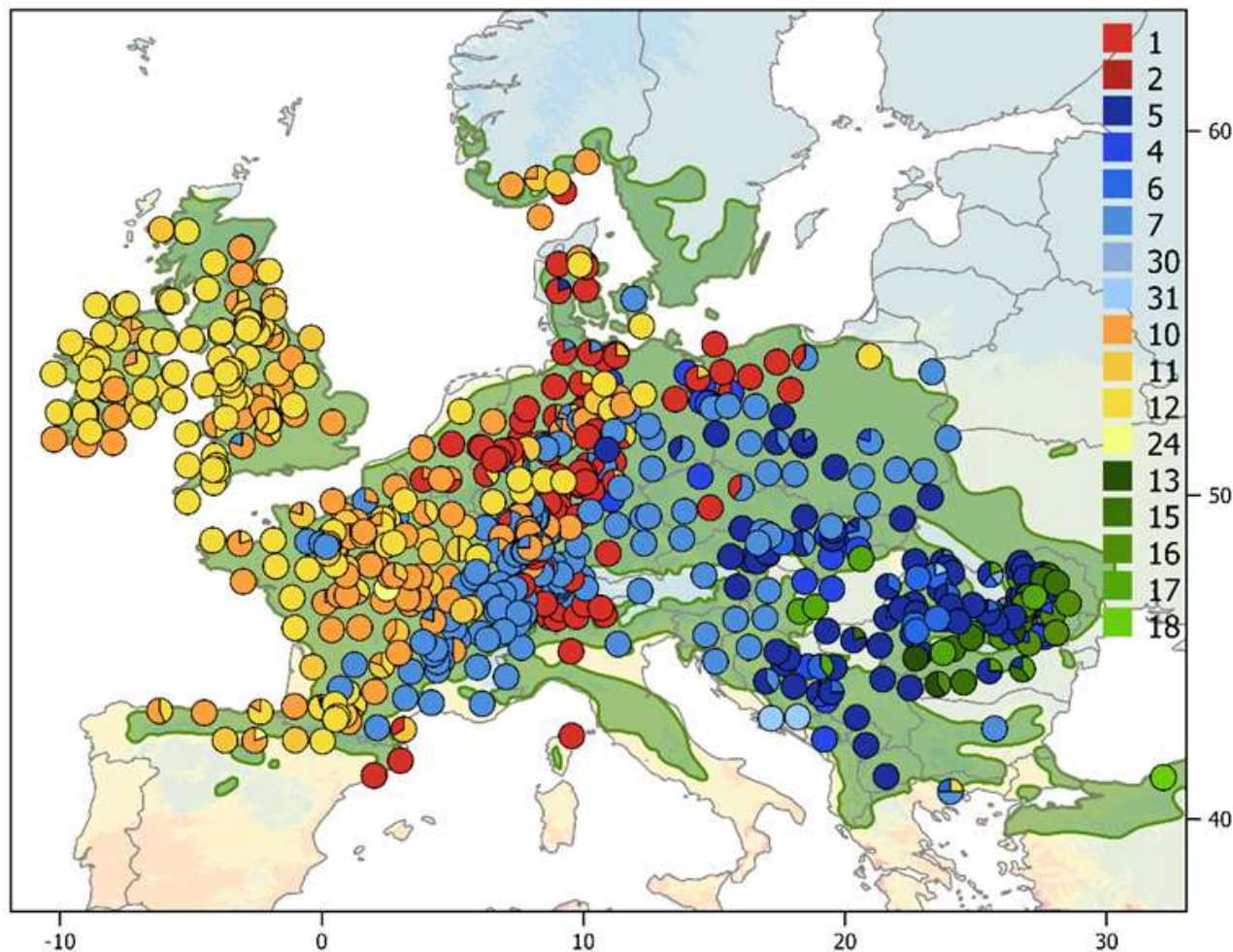
* Diversity indices are *H_o* (Observed heterozygosity), *H_e* (Expect heterozygosity), *P* (Polymorphism rate), *A* (Allelic diversity) and *F_{is}*, *Fit* (Inbreeding coefficients)

During the first 6 months of 2023, 2,602 different users called the website and viewed 24,483 pages

(GD)² database (Fagaceae)

Example:

Quercus petraea



Bi-annual EVOLTREE Conference

(Felix Gugerli, WSL)



First EVOLTREE Conference 2021

14/09/2021

The first EVOLTREE Conference took place 14-17 September 2021. The 4-day conference on the topic of "Genomics and Adaptation in Forest Ecosystems" brought together over 130 scientists.



Tree Genetics & Genomes (2022) 18:12
<https://doi.org/10.1007/s11295-022-01542-1>

SHORT COMMUNICATION

Genomics and adaptation in forest ecosystems

Charalambos Neophytou¹ · Katrin Heer² · Pascal Milesi³ · Martina Peter⁴ · Tanja Pyhäjärvi⁵ · Marjana Westergren⁶ · Christian Rellstab⁴ · Felix Gugerli⁴

Received: 19 December 2021 / Revised: 30 January 2022 / Accepted: 31 January 2022
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Deadline for Abstract submission 15 June 2023 !

EVOLTREE Conference 2023

(Lucian Curtu, UNITBV)



Resilient forests for the future

September 12-15, Brasov, Romania

1. Climate resilient forests
2. Community genomics
3. Evolutionary genomics
4. Innovative methods and approaches
5. Conservation genomics
6. Tree breeding and sustainable use of forest genetic resources



EVOLTREE Conference 2023

(Lucian Curtu, UNITBV)



Example of Sessions:



Session 1: Climate resilient forests

Chair: Dr. Katharina Birgit Budde, Georg-August University, Göttingen, Germany

Keynote speaker: Associate Professor Dr. Jill Hamilton, Pennsylvania State University, USA

Title of presentation: Hybrid zones as model systems to examine the genomic basis for climate adaptation

Trees are foundation and keystone species in forest ecosystems and contribute to numerous ecosystem services, such as habitat for associated species, soil formation and water regulation but also timber products. Global climate change is rapidly advancing, especially with respect to long-lived species, such as forest trees. Within the lifetime of a single tree, mean annual temperature is currently expected to rise by 2 -4°C. Apart from that, natural disturbance events, such as prolonged drought periods, heat waves, wind throws, as well as pest and pathogen outbreaks, are likely increasing. Here, resilience refers to the capacity of a forest ecosystem to tolerate and recover from such perturbations while maintaining a similar functioning and structure. Many factors, including species-specific characteristics, biotic interactions as well as management practices, influence forest resilience. Understanding the complex underlying mechanisms and processes affecting forest resilience is therefore crucial to develop suitable mitigation and adaptation strategies. In this interdisciplinary session we encourage contributions from various fields, such as forest genetics and genomics, silviculture, ecology and pathology, to foster a joint discussion about strategies to maintain and enhance forest resilience in the face of global climate change.

Intensive Study Sites (Egbert Beuker, LUKE)



Blizyn

Country: Poland
Elevation: 320m



Calderona-Espadán

Country: Spain
Elevation: 300m



Loire

Country: France
Elevation: 85m



Punkaharju

Country: Finland
Elevation: 90m



Valais

Country: Switzerland
Elevation: 1.250m



Ventoux

Country: France
Elevation: 800m

Punkaharju - Punkaharju

Geography

Country: Finland
Lat/Lon: 029°19' E/61°48' N
Elevation: 90m
Total Area: 1,100ha

Ecology

Climate: Boreal
Ecosystem: untouched / intensively managed
Model & Target Tree Species: Abies, Acer, Alnus, Betula, Larix, Picea, Pinus, Populus, Prunus, Quercus, Salix, Sorbus, Tilia

Legal status

Ownership: public
Partner: Luke - Luke - Natural Resources Institute Finland
Protection: includes nature reserve / gene conservation units (P. sylvestris, A. platanoideis, T. cordata)
Relation to other networks:
was part of the ICP-Forests Level 2 monitoring network (historic data available).

8 ISSs, kept as “static” network

Communications



- Twitter account
<https://twitter.com/evoltreeNW>
- YouTube channel
<https://www.youtube.com/channel/UCla0sRgIK9UUPYp5Ks8hwFA>
- New webpage!
<https://www.evoltree.eu/>
- Slack (coming soon)

We are searching for volunteers to help with communication activities! May be YOU?

Communications



Slack

the EVOLTREE slack was put in place but for the moment this is still in an experimental phase used by the Executive Committee.



EVOLTREE slack

evoltreeslack.slack.com

Twitter

the following persons are in charge of the twitter activities:

- *Santiago C. González-Martínez*: general issues
- *Christian Rellstab*: webinars and conference
- *Marjana Westergren*: Training opportunities
- *Delphine Grivet*: Opportunity Call

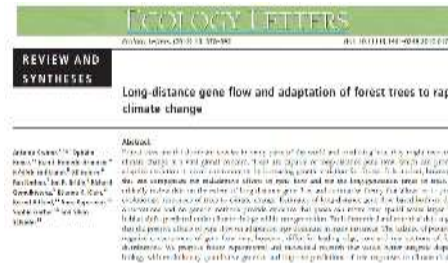


evoltree
[@evoltreeNW](https://twitter.com/evoltreeNW)

Over 1,000 followers!



Good previous experience!



PhD students to boost networking



- The most recent call for this action is now **closed**.
- The next call for applications will open on **30 May 2023**.

[Check the upcoming call for MSCA Doctoral Networks 2023](#) ➔

How to get involved?



- If your organisation is an EVOLTREE member, you are entitled to apply for EVOLTREE grants
- But not only that:
 - ❖ You can join a Working Group
 - ❖ Or contribute to the organisation of a Summer School, webinar or one of the EVOLTREE Conferences
 - ❖ You can help with Communications activities
 - ❖ Also, bring your own initiatives to the ExCom, we are happy to hear new ideas!

Join us!



Many thanks!