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European Regional Development Fund

EUROPEAN UNION

A Transnational Cooperation for Sustainable Use Management of Non-Native Trees in Urban, Peri-Urban and Forest Ecosystems in the Alpine Region

ALPTREES

Economic Opportunities & Risks of Non-native Tree Species In The Forest Value Chain

EUROMONTANA Webinar, 27th of May 2021
Pädagogische Hochschule Steiermark

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Native trees refer to tree species of natural, post-glacial forest development in the Alpine Space region.

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Non-native trees (NNT) also known as “non-indigenous”, “alien”, “introduced”, “allochthonous” or “exotic” trees, refer to tree species, breeds or hybrids in the Alpine Space region, whose presence there is as a result of human activity, due to intentional or accidental introduction.

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Neophytes include NNT introduced to the Alpine Space intentionally or unintentionally that became naturalized there after 1492, when Christopher Columbus arrived in the New World and the Columbian Exchange began.

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Non-invasive trees refer to NNT that do not show or suggest any negative impact so far, or their effects are unknown.

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Cedrus libani A. Rich (Lebanon cedar)

Safe NNT that currently pose no risks

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Pseudotsuga menziesii (Mirb.) Franco (Douglas-fir)

NNT that can pose risks in some environmental contexts, but are safe in other environments

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Safe NNT that currently pose no risks

Pseudotsuga menziesii (Mirb.) Franco (Douglas-fir)

NNT that can pose risks in some environmental contexts, but are safe in other environments

Prunus serotina Ehrh. (black cherry)

NNT expected to pose high risks and that cannot be controlled by specific management measures

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Non-native trees in the Alpine Space

- In total **526 NNT** are currently growing in **forests and urban** areas in the Alpine Space

- **67%** are currently being cultivated exclusively in cities

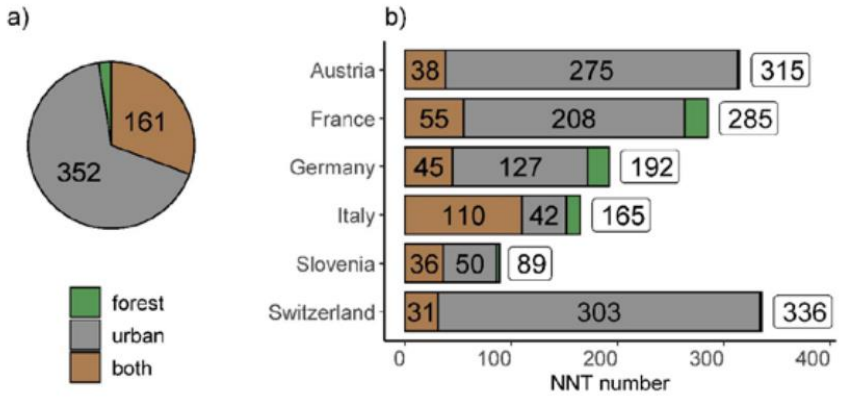
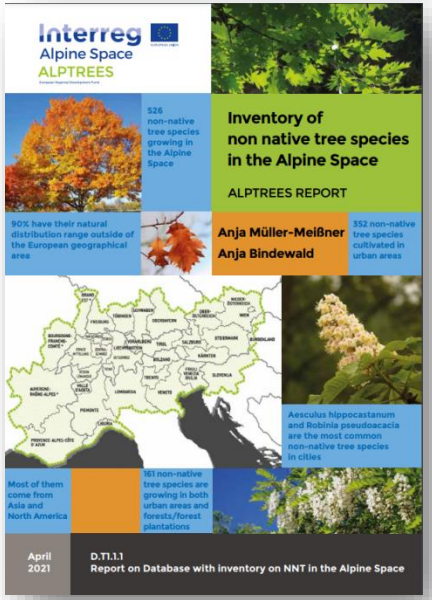


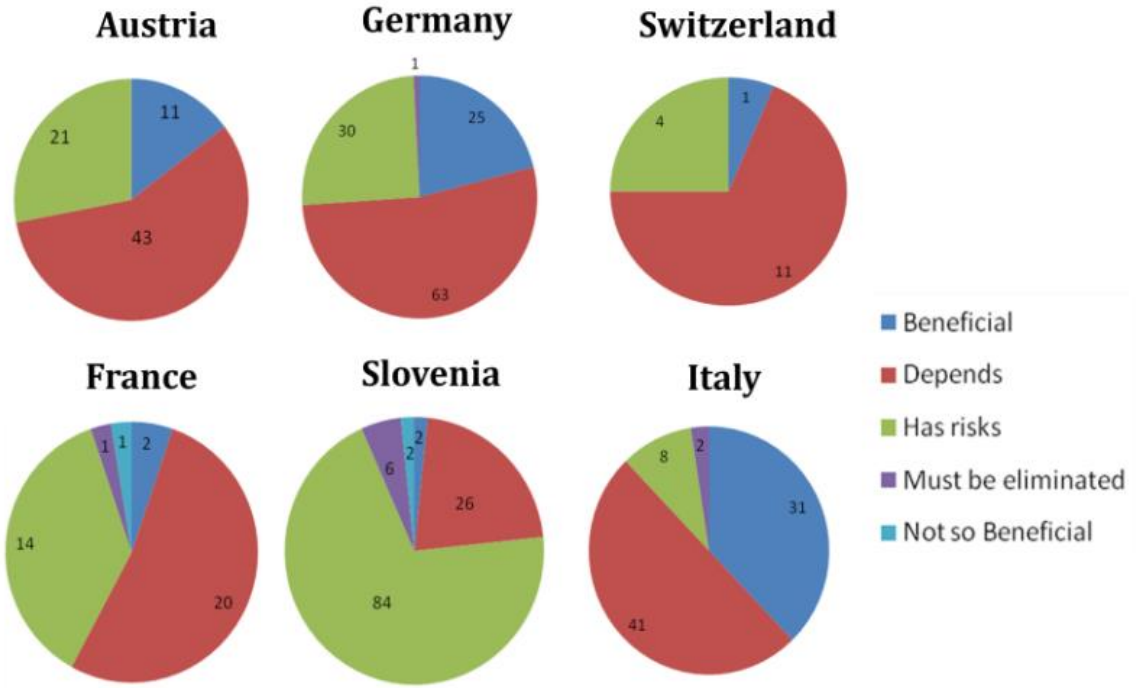
Figure 6 NNT growing in forests, cities or both forests and cities a) across the entire Alpine Space region, b) for the individual countries in the Alpine Space. The box contains the total number of NNT in each case.

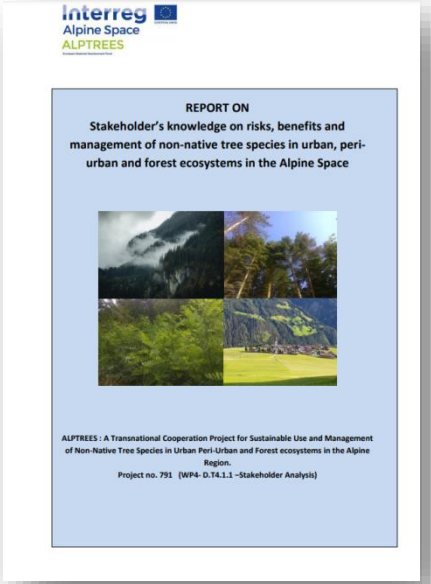
- Most NNT from **Asia** (248, i.e. 53%), **North America** (180, i.e. 39%)



https://alpine-space.eu/projects/alptrees/deliverables/d.t1.1.1-alptrees_report-on-database-with-inventory.pdf

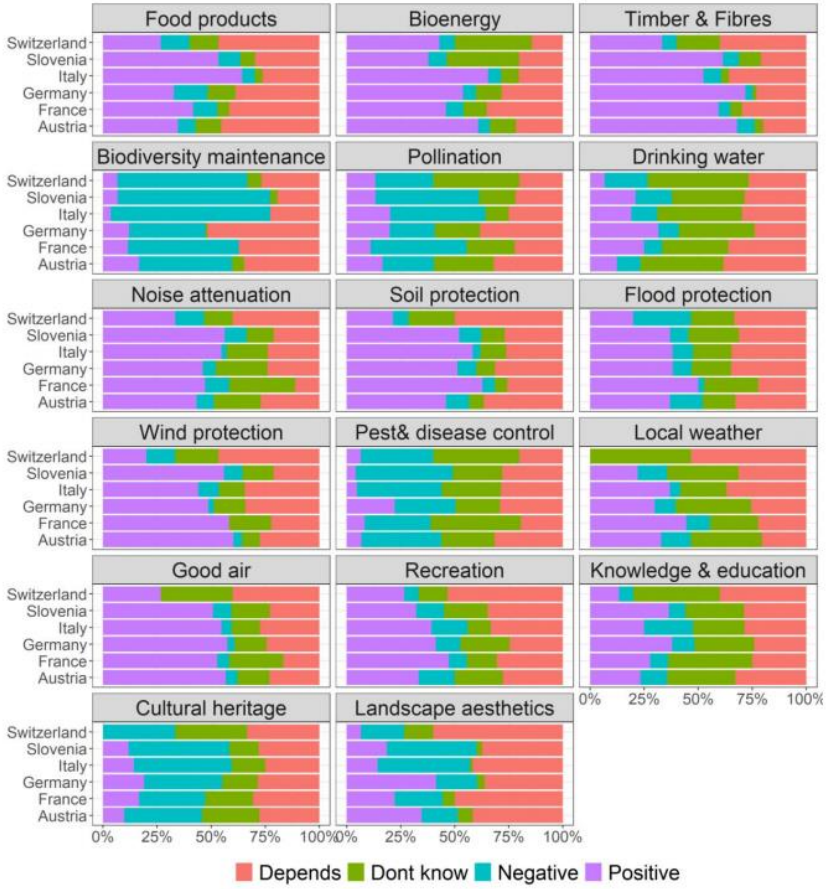
Stakeholder survey / Perception on NNTs

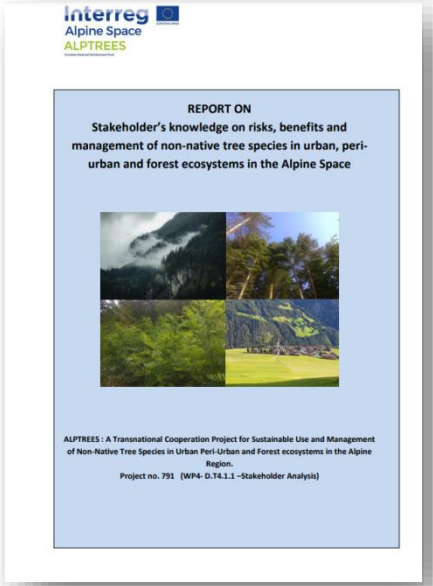




https://alpine-space.eu/projects/alptrees/deliverables/d.t.4.1.1-stakeholder-analysis-report.pdf

Stakeholder survey / Ecosystem services





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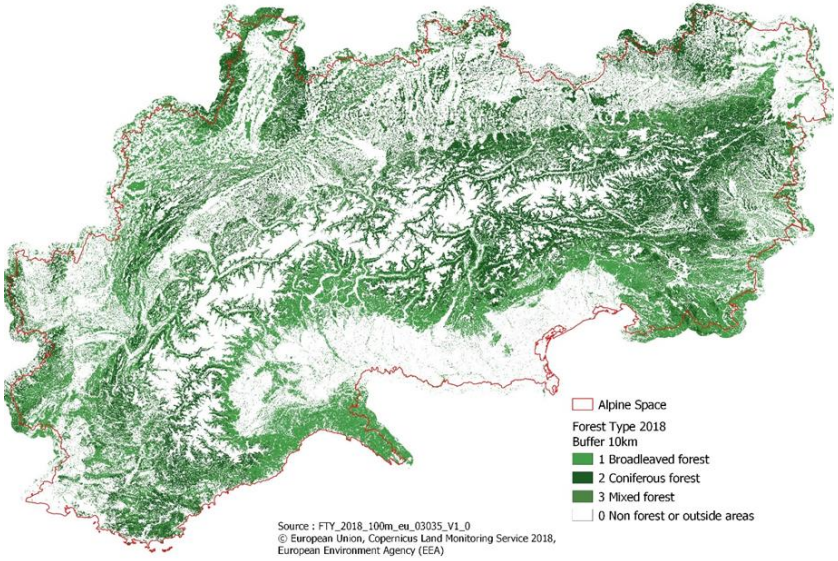
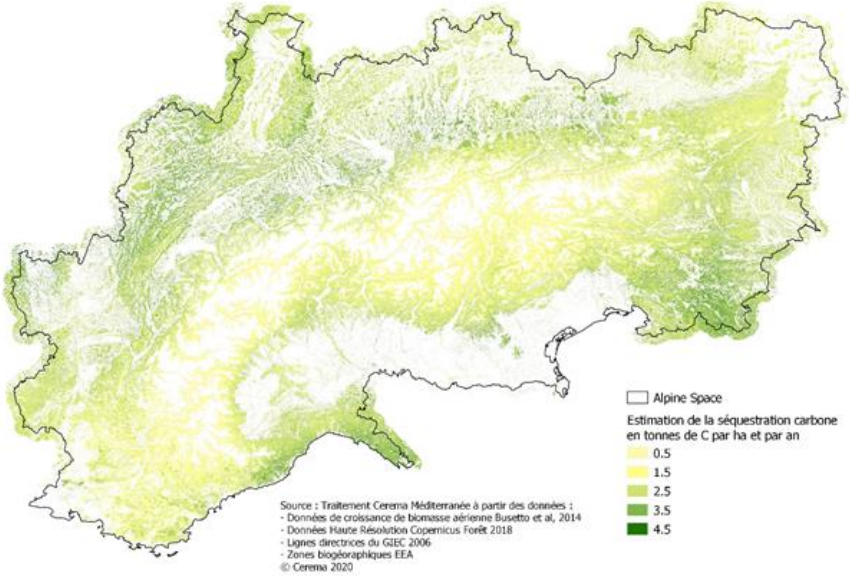
Ecosystem services assessment



Seq_carbone_buffer10km = 0,47 x Croiss_biomass_tot_buffer10km

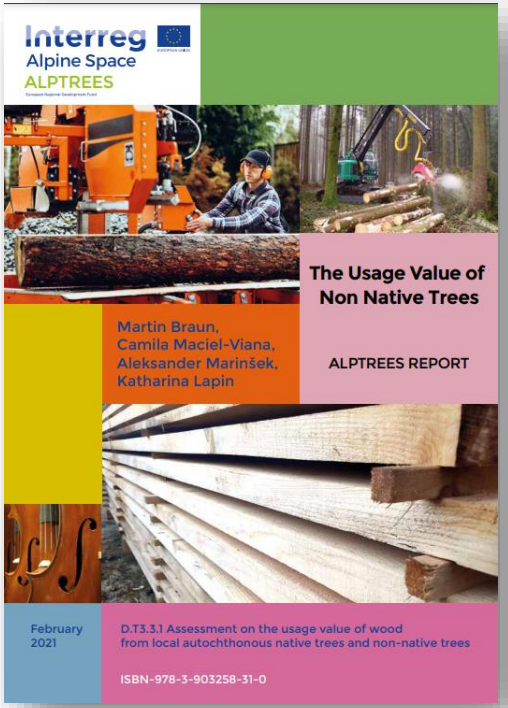


Forest_2018 et ***Forest_2018_buffer_10km*** rasters are obtained by reclassifying ***Forest_type_2018*** and ***Forest_Type_2018_buffer_10km*** in 2 classes : 0 : Non forest or outside areas ; 1 :Forest.

The Usage Value of Non Native Trees

photo: Eric Meier, www.wood-database.com

Figure 3:
left - Red oak (Quercus rubra) in the forest stand,
right - veneer sample of its wood



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The Usage Value of Non Native Trees

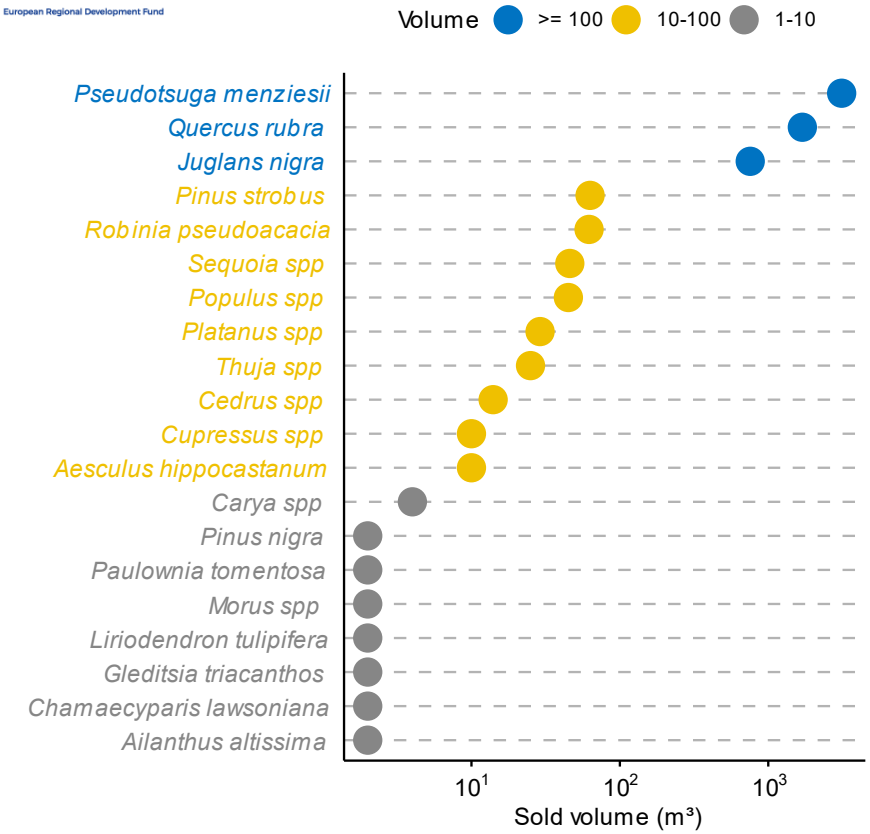


Figure 2:
left - Douglas fir (Pseudotsuga menziesii) in the forest stand and its needles and cone
right - veneer sample of Douglas fir

The Usage Value of Non Native Trees

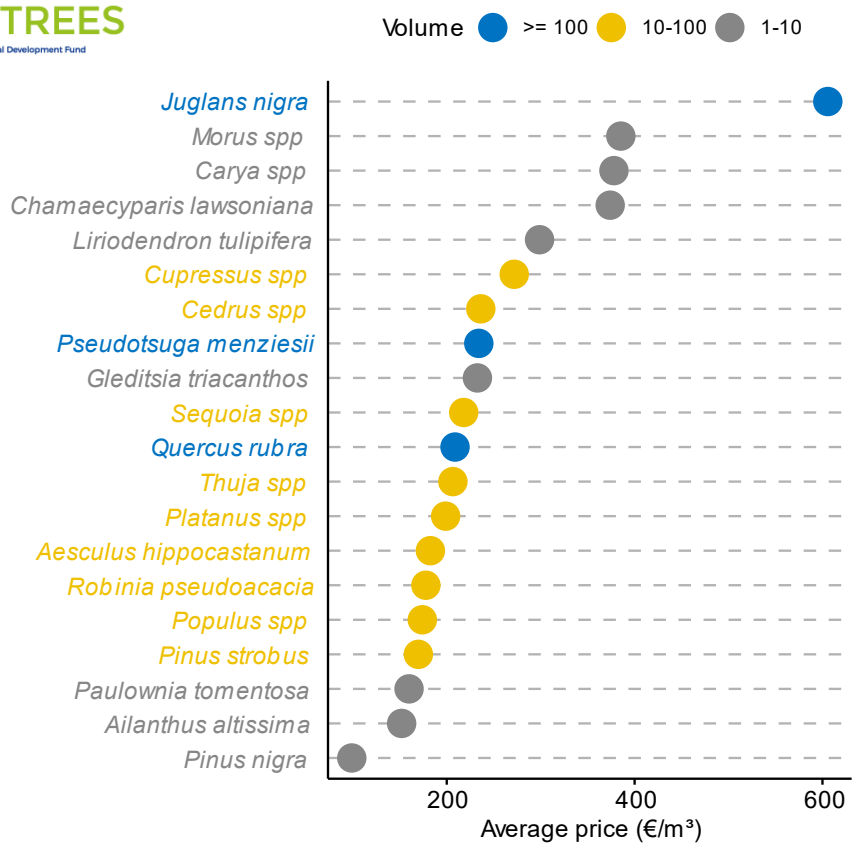


Figure 5: Left - Black walnut (Juglans nigra) in the forest stand, right - veneer sample of its wood

The Usage Value of Non Native Trees

Figure 36: Paulownia beehive, Tomasoni, Italy

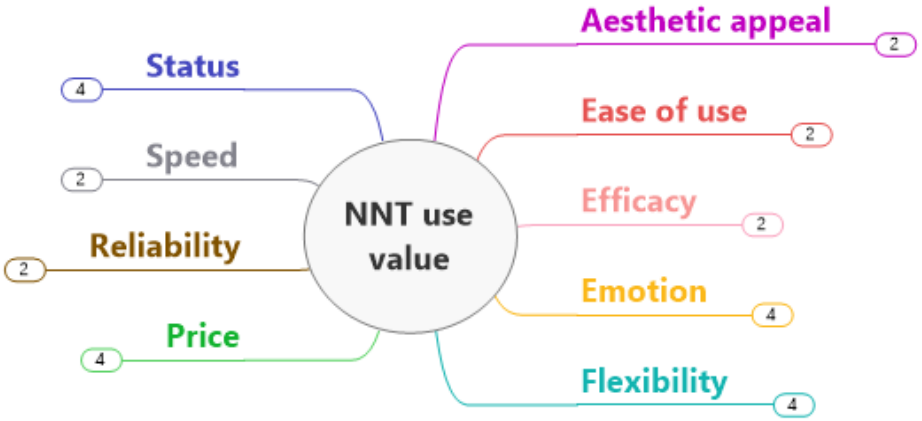
Figure 37: Paulownia smartphone speaker amplifiers, Tomasoni, Italy

Figure 35: Robinia parquet flooring. Advertised with children's toys to illustrate its durability, Weitzer, Austria

The Usage Value of Non Native Trees

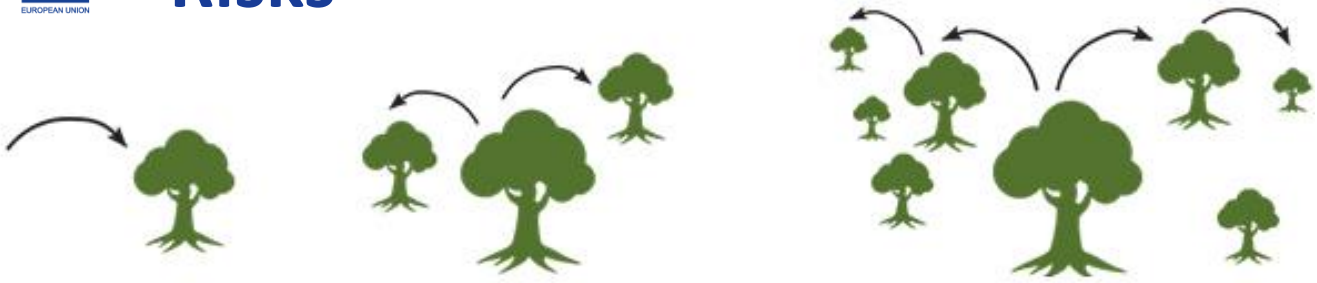
- **Economic benefits** have been collected by some active actors.
- There is interest in **keeping or increasing economic benefits** yielding.
- Some of the NNT wood values have been wasted. There is space for value adding **(quality, marketing, research).**

- Costumers' requests have **indirect impact on the utilization** of NNT wood.



- There are **gaps in the supply chain**.
- NNT wood availability, acquisition and manufacturing are **scattered**.
- Volumes of NNT wood applied in the production are **minimal**.
- NNT wood species occupy **production´s niches.**

Risks



PHASE	introduction	establishment and reproduction	spreading and causing damage
NAME	alien species	naturalized alien species	invasive alien species

Alien species are all living being, which are transported by humans (on purpose or not on purpose) outside their native range, which could not be reached without the help of humans.

Invasive alien species: …threaten biodiversity, ecosystems or the way we live

Risks

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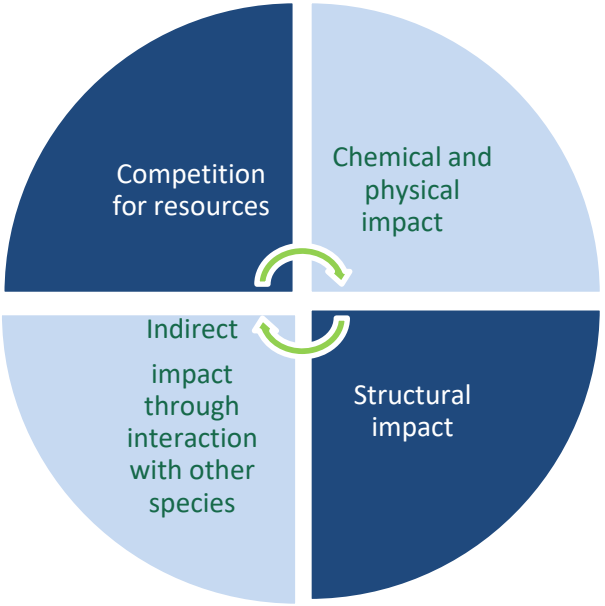
Risks



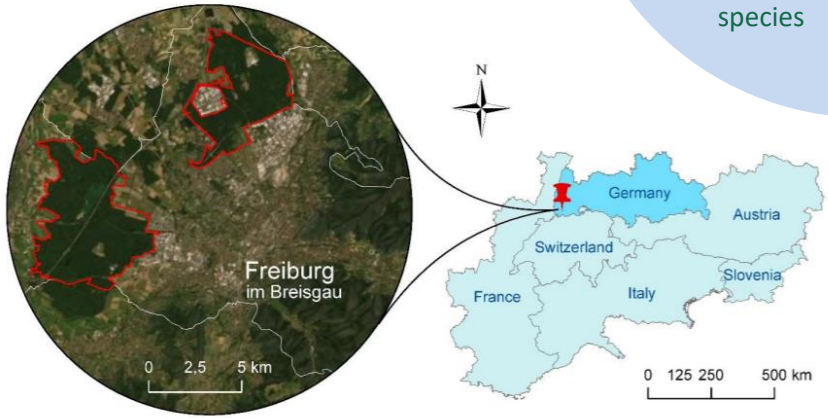


Figure 1 *Location of the studied forest area in the lowlands of the Alpine Space near the city of Freiburg in south-west Germany.*

Figure 6 *Red oak occurrence in semi-natural oak-hornbeam forest stands (habitat type 9160) near the city of Freiburg, south-west German: a) high cover of red oak saplings and b) seedlings, c) natural regeneration of red oak, and d) adult red oak.*

Semi-natural oak-hornbeam forests (European Union habitat type 9160)

https://alpine-space.eu/projects/alptrees/deliverables/alptrees_d.t1.2.1-report-on-field-survey_fva_31-03-2021_final.pdf

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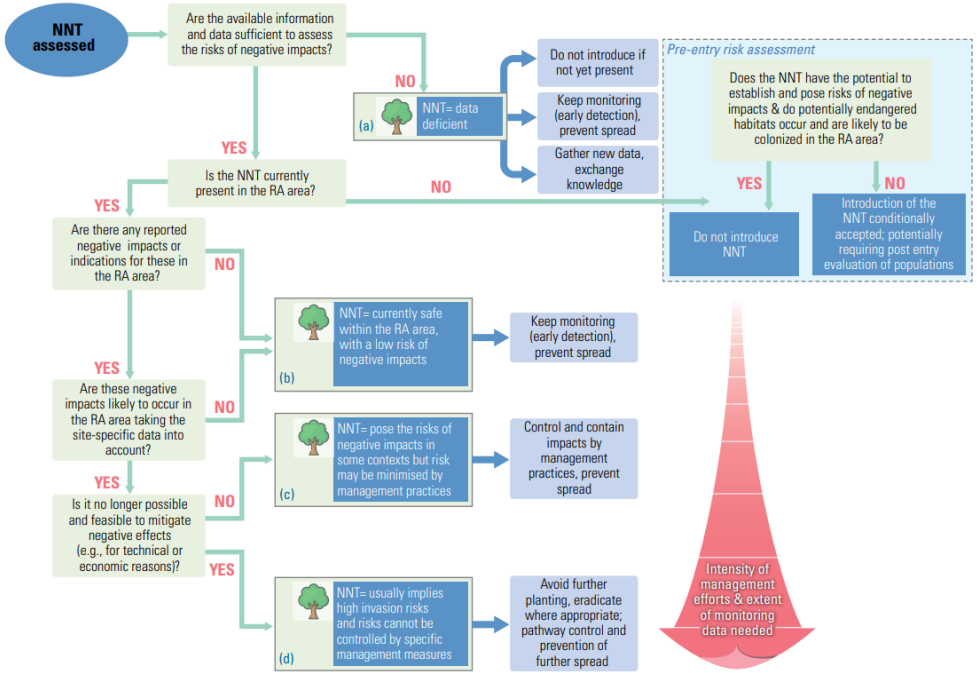
Risk assessments



Step	Aim
Pre-risk assessment	Identify the needs, motivations and goals of the SSRA.
1 STEP Definition of the risk assessment (RA) area	Provide a geo-referenced and spatially explicit map of the RA area.
2 STEP Identification of the current and potential occurrence of NNT	Identify the presence of currently or potentially occurring NNT in the RA area.
3 STEP Collation of relevant and available knowledge on NNT	Collate relevant knowledge on ecology, extent and distribution, management and impact.
4 STEP Inventory of site-specific habitat features important for nature conservation value	Identify the relevant site-specific habitat features important for the nature conservation value of the RA area that might be affected by NNT.
5 STEP Generation of site-specific knowledge on the risks posed by NNT in the RA area	Generate new evidence concerning the spatial extent and impact of the NNT on the habitat features.
6 STEP Assessment of the current and potential impact of NNT in the RA area	Assess the negative impact of NNT on the RA area based on the knowledge collected in the previous steps.
7 STEP Development of management recommendations	Develop a plan for management measures regarding NNT under consideration of legislation and management goals
8 STEP Conclusion of the SSRA	Summarize the results of the SSRA for further communication, including justification, full applied methodology, reference list, and limitations of the results.

Economic Opportunities

Economic Opportunities

RISKS ← Non-Native Trees → BENEFIT

Economic Opportunities

Forest Management

Public Communication

Timber trade & import

Environmental Education

Carpeter, wood worker

Conservation Management

Tree nurseries

Plant health experts

Renewable energy

IT Development (Monitoring)

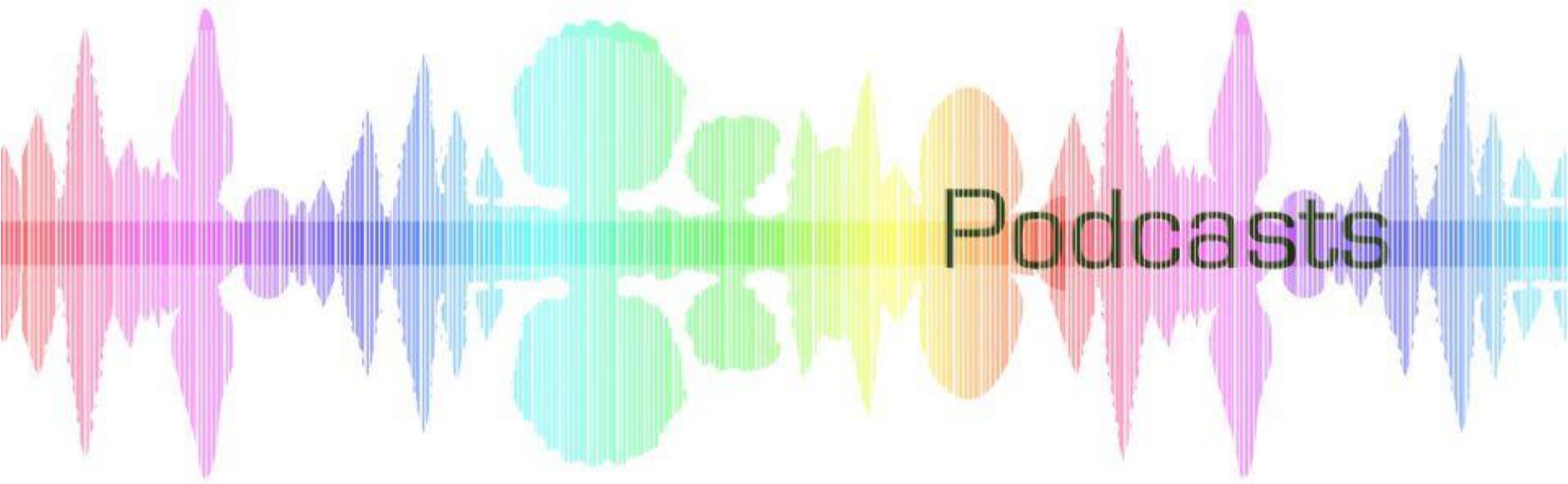
Art & Crafts

Environmental Consultant

Timber Industry (niche products)

RISKS ← **Non-Native Trees** → **BENEFIT**

ALPTREES podcast series



Link to the ALPTREES Podcasts:
https://www.alpine-space.eu/projects/alptrees/en/home/podcast

ALPTREES Project:
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LP BFW – Katharina Lapin // katharina.lapin@bfw.gv.at

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THANK YOU!






Thank you! Grazie! Merci! Hvala! Danke!

Dr. Katharina Lapin [katharina.lapin@bfw.gv.at]

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