

RESIPATH: Responses of European Forests and Society to Invasive Pathogens

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Participants



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Budget: 3 815 105 €



Invasive species threat European forests



Exponential increase of invasive forest pest and pathogens in EU (Santini et al. 2013)



Objectives of the call

Themes

T1: Demonstrating and characterising the impacts

T2: Understanding mechanisms and levers for mitigating and/or reversing the impacts

T4: Biological invasions and publication

T5: Biological invasions and adaptation

Workpackages

- WP1: Sustainability of forest populations under attack
 - **WP2**: Adaptation of trees to novel forest pathogens
 - WP3: Mechanisms of hybridisation
 - **WP4**: Detection and monitoring
 - WP5: Social perception of forest invaders



Demonstrating and characterising the impacts (T1)









Tree mortality and sustainability (WP1)





Monetary estimation of impact







Beyond adaptation (T5)



Can we predict the likelihood of adaptation?

Timing of mortality



Ash dieback





Mortality affecting young trees



Dutch elm disease



Mortality affecting adult trees



Powdery mildew in Oak



Mortality affecting very young trees



Alder Phytophthora





Mortality affecting middle sized trees



Mechanisms of hybridisation (WP4)







Pathogens need to infect to mate



Mechanisms of hybridisation (WP4)

Frequency of hybrid isolates:

Nurseries > Rivers > Forests



Molecular detection of hybrids





Early detection targeting pathways (WP4)







- Passive trap
- Cyclonic trap
- Ionic trap
- Filter paper







Social perception (WP5)





Social perception (WP5)





Output

- Mortality threshold to predict changes in current structure
- Costs of invader to society
- Do we need to start a resistance breeding program?
- Are nurseries a threat?
- Is it feasible to establish early detection systems?
- What is the social perception of tree mortality?