



## Deliverable summary D5.1

### Review of eradication programmes for forest pests and pathogens in Europe

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<b>PU</b> Public	<b>PU</b>
<b>CI</b> Classified, as referred to Commission Decision 2001/844/EC	
<b>CO</b> Confidential, only for members of the consortium (including the Commission Services)	

## 1. Summary

Although the decision to attempt the eradication of an invasive population is still controversial, both the number of programmes and their rate of success have increased dramatically over the last two decades. In the present study, an analysis of European eradication programmes against emerging and invasive forest Pests and Pathogens (PnPs) was conducted. The main goal was to provide information and identify key criteria for the establishment of guidelines for the eradication of forest PnPs. This report is accompanied by a comprehensive database with detailed information concerning the eradication attempts against forest PnPs in Europe over the last decades.

Information on eradication campaigns targeting emerging and invasive PnPs of trees and forests in Europe (invertebrates, nematodes, viruses, bacteria and fungi) was collected, starting in 1945 until June 2019. Data was obtained from online databases and from scientific and grey literature, including works published in scientific journals, conference proceedings, presentations, books and National and Regional Plant Protection Organizations eradication or other technical reports, pest alerts and press releases. Simple and multiple logistic regressions were used to assess factors influencing eradication success. Arthropods and pathogens (nematode, bacteria, virus and fungi) were analysed separately and grouped together.

A total of 351 eradication campaigns against forest pests and pathogens in Europe were documented (180 for arthropods and 171 for pathogens). Concluded programmes account for approximately 70% of the cases, with an overall success rate of 60.5%. With simple logistic regression taxonomic group, host type, location, extent of the infested/contaminated area, detection site, control and monitoring methods used, climate, response time and public education emerged as main factors that significantly influenced the outcome of eradication programmes. Using multiple regression analyses, only the taxonomic group, host type, climate, detection site and extent of the infested/contaminated area maintained a significant association with the outcome of a programme. Eradication attempts were more likely to be successful: against arthropods when compared to fungi; against pest and pathogens of broadleaves than for pests and pathogens attacking conifers or citrus; on Continental climates than on Mediterranean climates; on confined (nurseries and glasshouses) and urban or peri-urban environments than on orchards and woodland; and for outbreaks whose infested/contaminated areas did not exceed one hectare. For arthropods alone, after multiple regression analysis, the spatial extent of the outbreak was the only factor significantly affecting the outcome of eradication campaigns, with increasing area of presence reducing the chance of success. On the other hand, for pathogens, in addition to area, the detection site also maintained a statistically significant association with the outcome of eradication incursions, with higher probability of success in confined environments than in open fields (orchards and woodland).