

REFORCE - Resilience mechanisms for risk adapted forest management under climate change

CONTEXT

There is mounting evidence that climate change will have drastic impacts on European forests with degradation of both ecosystems functions and ecosystems services. In this context, there is an increasing interest in developing new management approaches fostering resilience. Such approaches should encompass the wide range of functions and services provided by forests, building on the concept of multifunctional forestry which is now widely implemented in European policy. Applying the concept of 'management for resilience' in the real world is however currently extremely rare, mainly because of the lack of a sound scientific understanding of forest resilience.

MAIN OBJECTIVES

The aim of REFORCE is to enhance the scientific basis for successfully managing forest resilience to climate change. To achieve this aim, REFORCE will produce a set of new products and knowledge related to ecological resilience (resistance and recovery) to disturbance (droughts, bark beetle, windstorms) using up-to-date remote sensing data, forest inventory data and forest dynamics models at stand and landscape scales. It will also pursue concrete links to socio-ecological forest resilience by exploring how the economic environment, specifically the development of virtual markets, affects the efficient exploitation of marketed and non-marketed ecosystem services, and by exploring decision variables such as the value of information or the perception of risk on the readiness of forest managers to adapt their management to foster resilience.

MAIN ACTIVITIES

REFORCE will:

- develop recommendations for operational forest resilience measures in multifunctional forestry
- map the resilience of forest productivity to climatic events across Europe and North-East Canada with remote sensing, and identify gradients of resilience within and between regions
- analyze ecological mechanisms of forest resilience that can be influenced by management on short- and long time-scales, with mechanistic and empirical models informed by monitoring data
- evaluate approaches to managing resilience, including the risk reduction potential of coordinated risk management in multi-owner landscapes using mechanistic forest models and economic analyses
- foster the implementation of resilience management by co-developing management alternatives with local stakeholders and by developing strategies for efficient communication between scientists and decision makers.



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€ 776 250

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