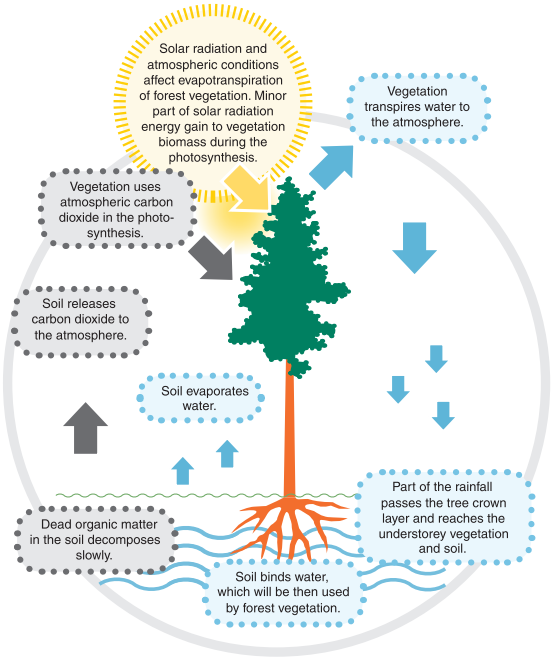
Climforisk

How does climate change influence forest growth and forest damages?

In forests, the severity of many expected climate change impacts depend on the ability of the vegetation to absorb water from the soil. The present Climforisk project will put together available data and models, so as to predict and estimate the effects of climate change on forest growth and forest damages.

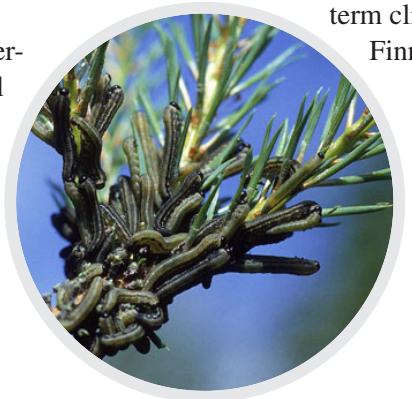
Forest are the most important natural resource in Finland. In addition to raw material provided by forests, forests are also significant carbon storages and essential reserves of biodiversity.



Climate change will influence forest growth, the rate of carbon sequestration by forests, and the vulnerability of forests to damage. Prediction of these changes is already timely, as the forest practices of today will be reflected in the structure and function of forests for decades to come.

Even modest changes in average temperature and rainfall can lead to significant changes in the vulnerability of forests to damage. This is further emphasized by the complicated population dynamics of damaging agents such as insects and pests.

During the last few decades, Finnish forests have been intensively and extensively studied and monitored. This Climforisk Life+ project will utilize the data created by the previous studies, creating more comprehensive knowledge about the impacts of annual climatic variability and long-term climate change on Finnish forests.



Pine sawfly (Neodiprion sertifer) can cause extensive damages especially in the dry heath forests and during the dry growing season.

Objectives

- To create comprehensive understanding of spatial distribution of forest biomass and leaf area index by compiling available field data of Finnish forest environment with satellite images.
- To provide predictions of forest carbon and water balances with the compilation of available forest data, climatological data and forest growth models.
- To recognize the features that increase or decrease the probability of different types of forest damages, and to estimate how these features might change in the future.
- To identify the areas most sensitive to changes in carbon sinks and in the occurrence of forest damage.

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Climate change induced drought effects on forest growth and vulnerability (Climforisk)

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