



UNIVERSITY OF
EASTERN FINLAND



Marie Skłodowska-Curie
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Integrating the risk of natural disturbances into forest management using NFI data in Norway

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Models and decision Support tools for integrated Forest policy development, understanding change and associated Risk and Uncertainty



NIBIO
NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH

Risk Assessment

Characterization Damage occurrence Damage

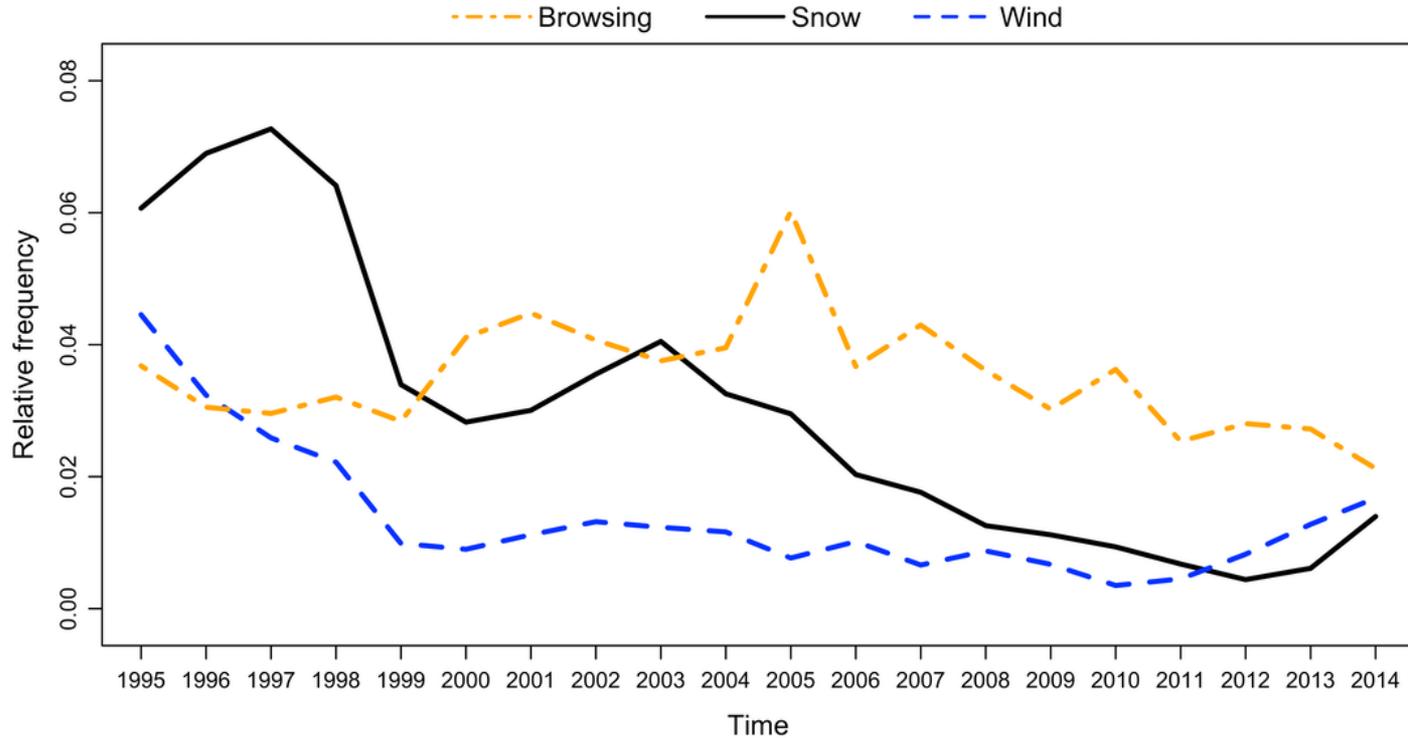


Risk Management

Optimization



Snow, wind and browsing were the most frequent damages

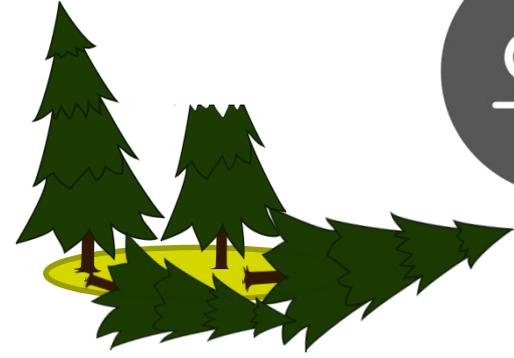


Step 1:

Damage occurrence

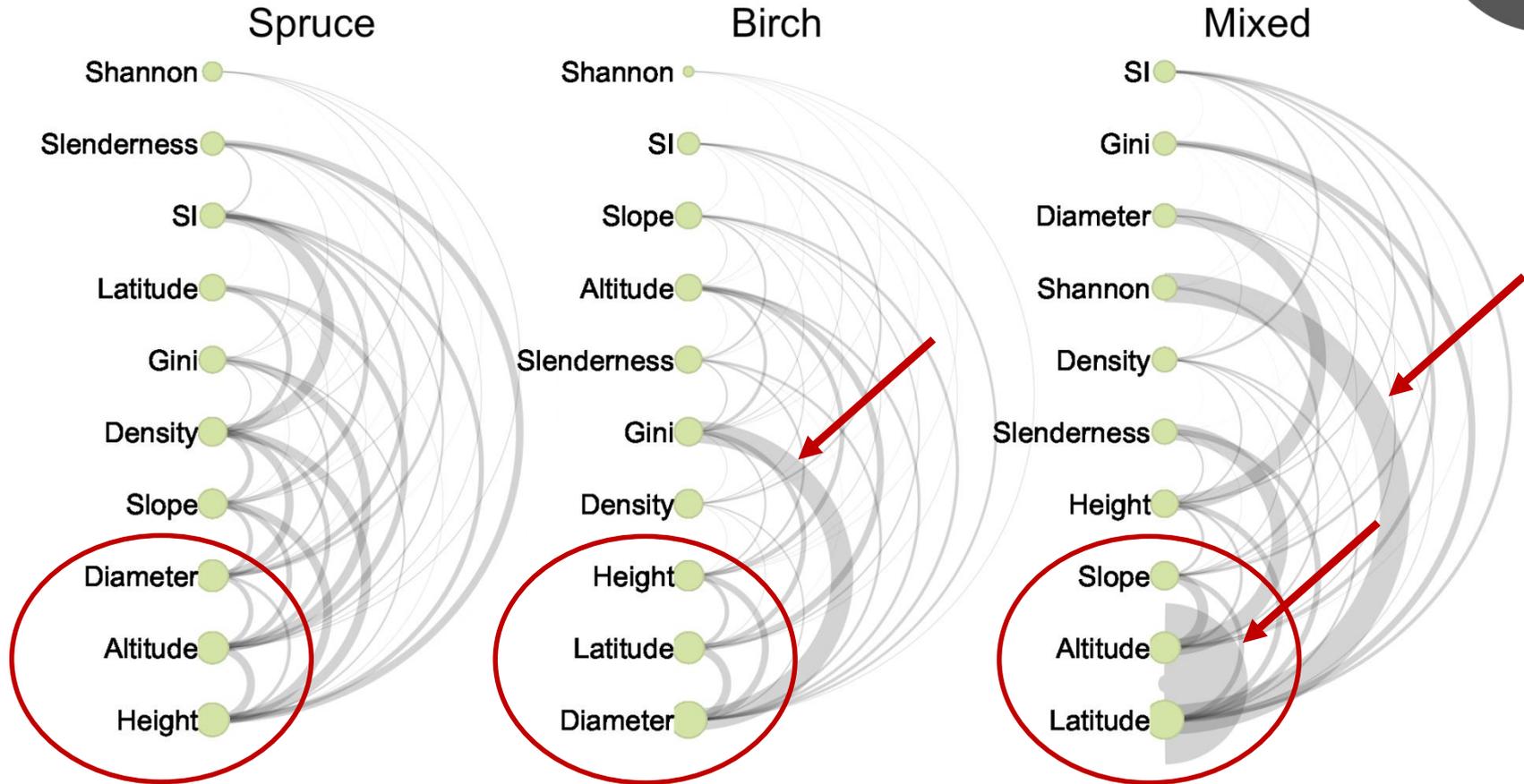


Undamaged



Damaged

The main variables associated with snow and wind damage occurrence

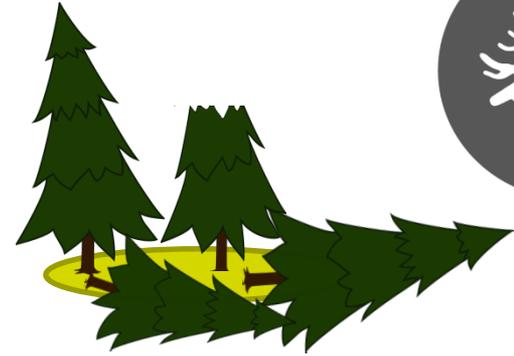


Step 1:

Damage occurrence



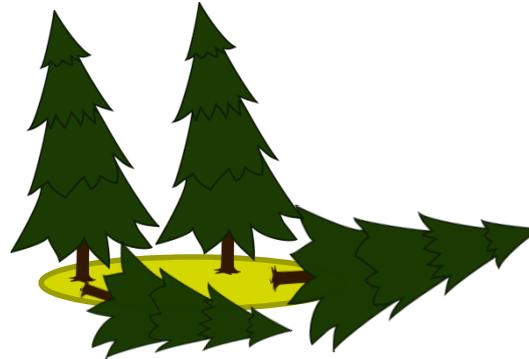
Undamaged



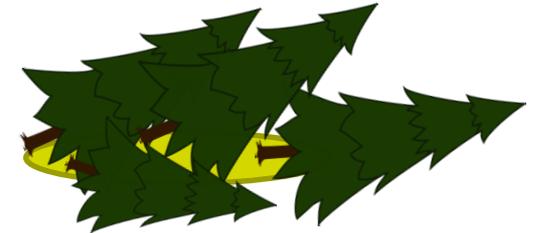
Damaged

Step 2:

Damage level

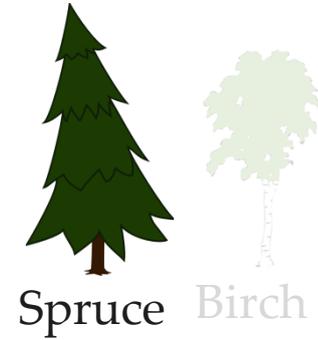
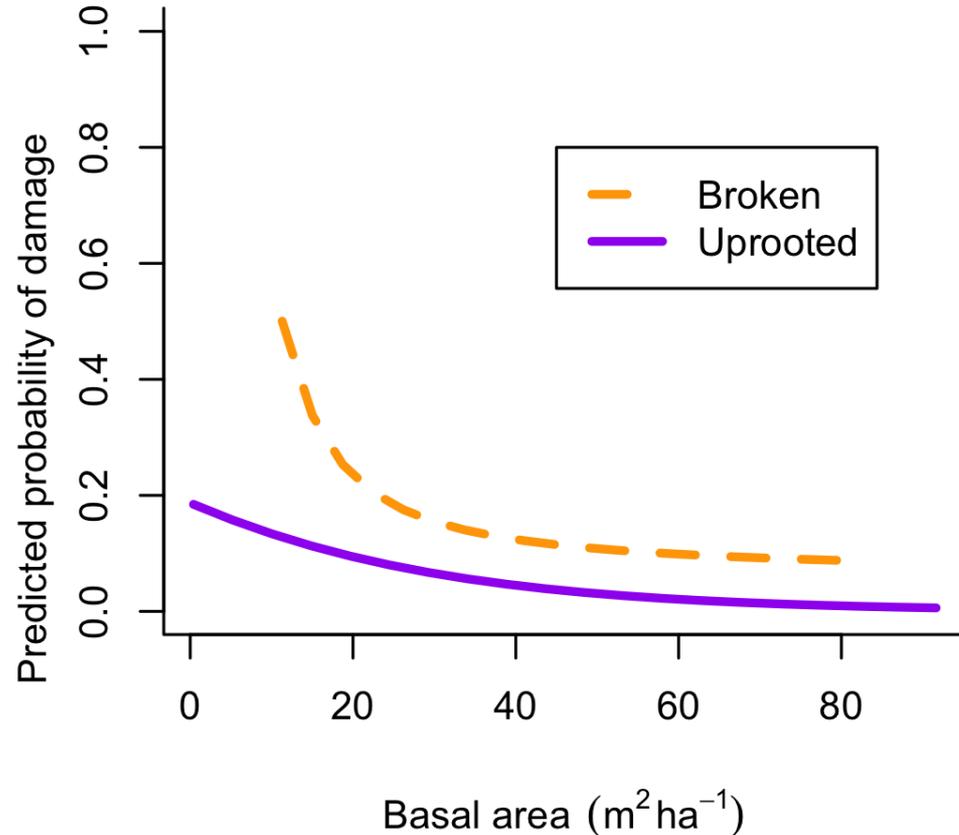


Lower damage level

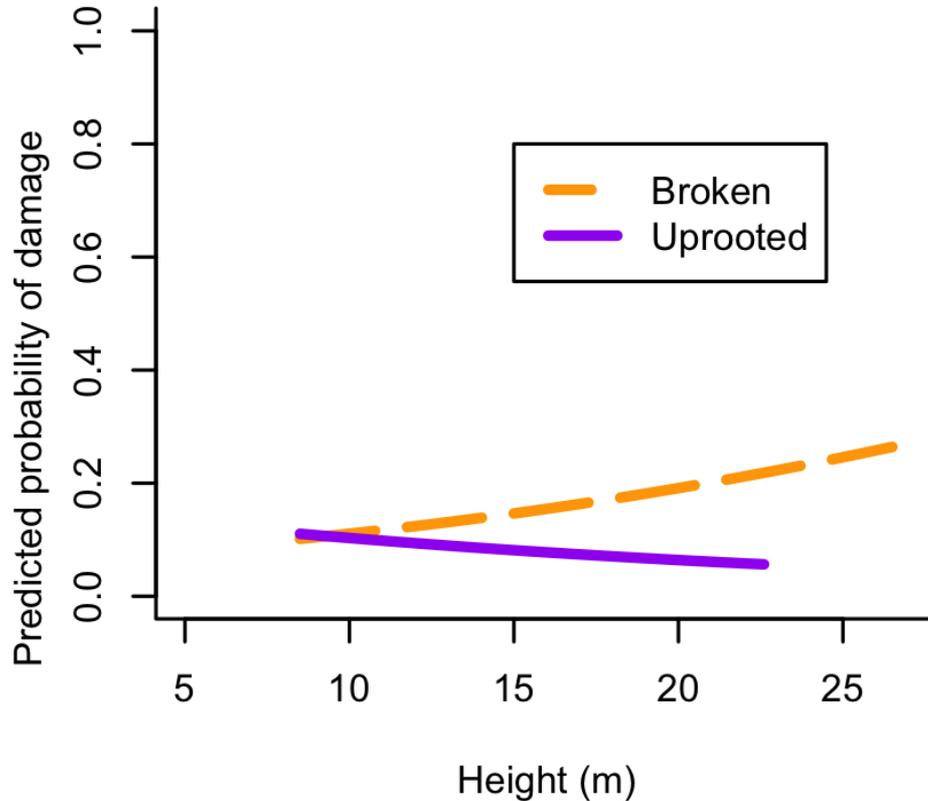


Higher damage level

Increasing basal area is associated with a reduction in the tree vulnerability to be damaged



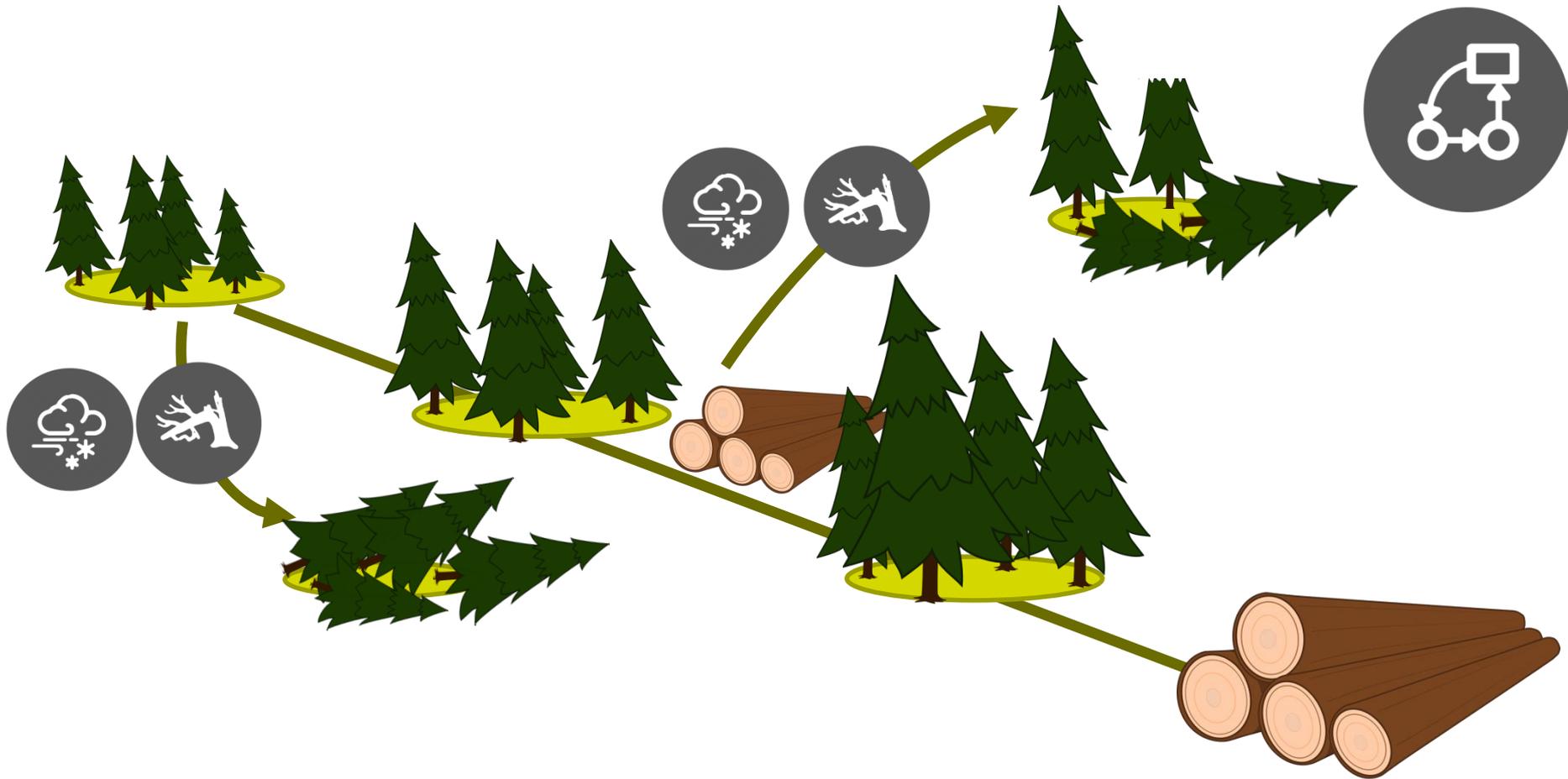
Increasing height is associated with increasing probability for a tree to be broken



Spruce

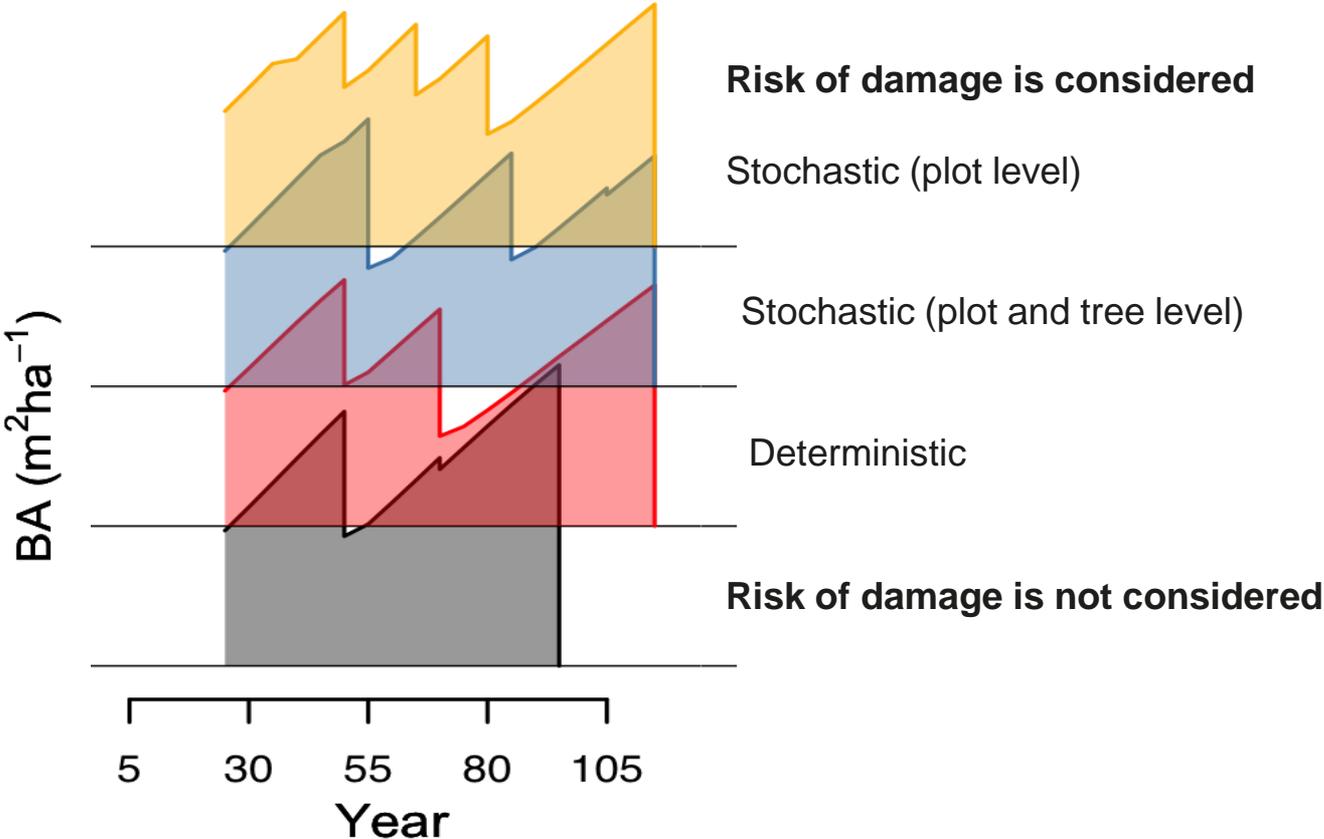


Mixed

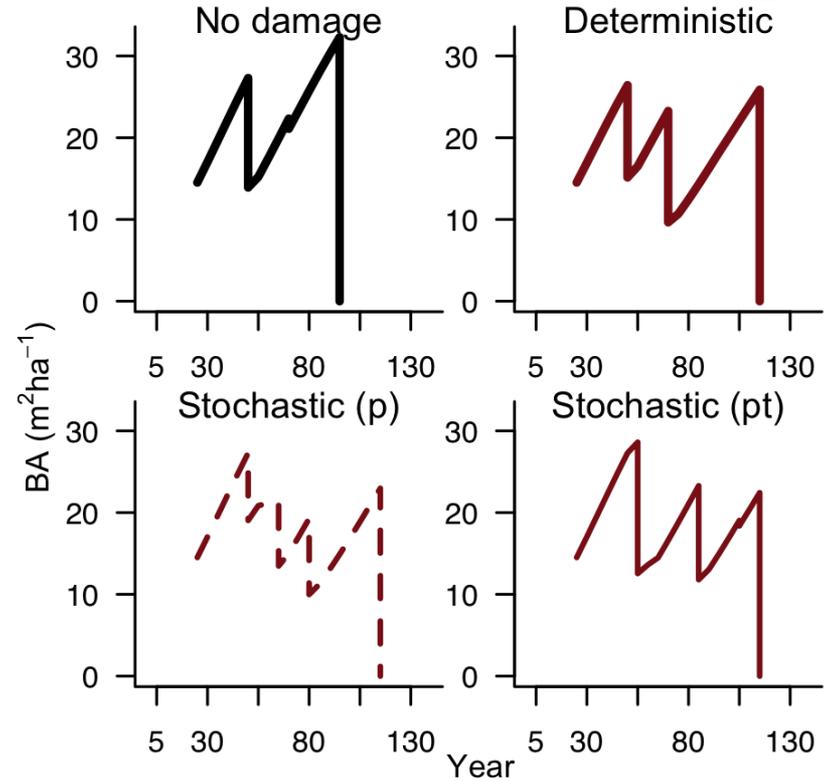
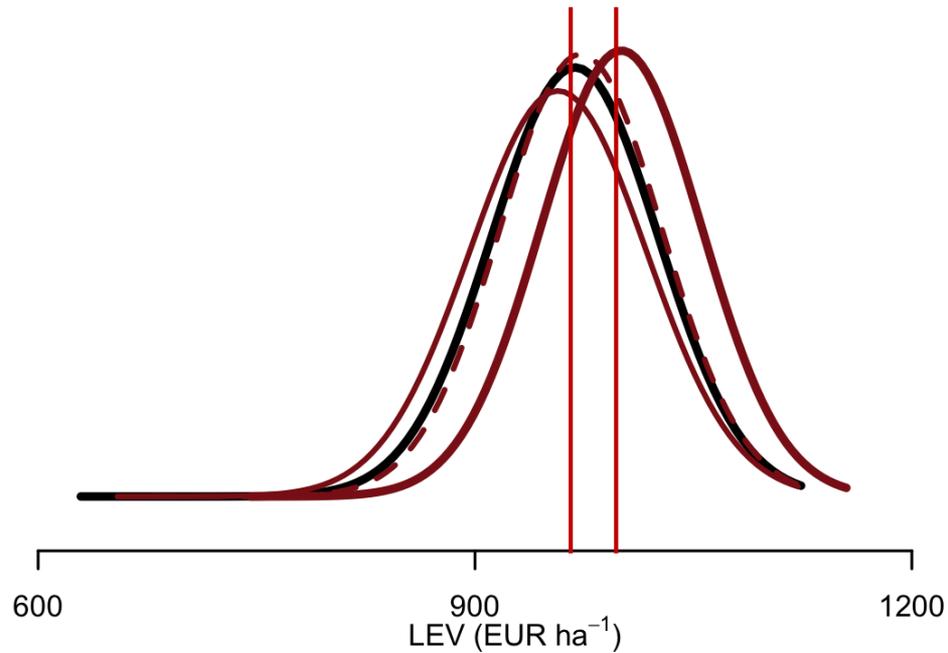




Risk consideration on a Spruce dominated stand have an effect on the optimal management



Considering the risk perception of the forest manager





NFI data can be used to integrate natural disturbances into forest management



Considering the risk of damage from snow and wind, could increase revenues



It would be easy to incorporate other consideration in the simulator and help managers to take more informed decisions

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