What makes a forest stand more vulnerable to snow and wind damage?

Olalla Díaz-Yáñez,

Blas Mola-Yudego, Jose Ramón González-Olabarria, Timo Pukkala

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SuFoRun

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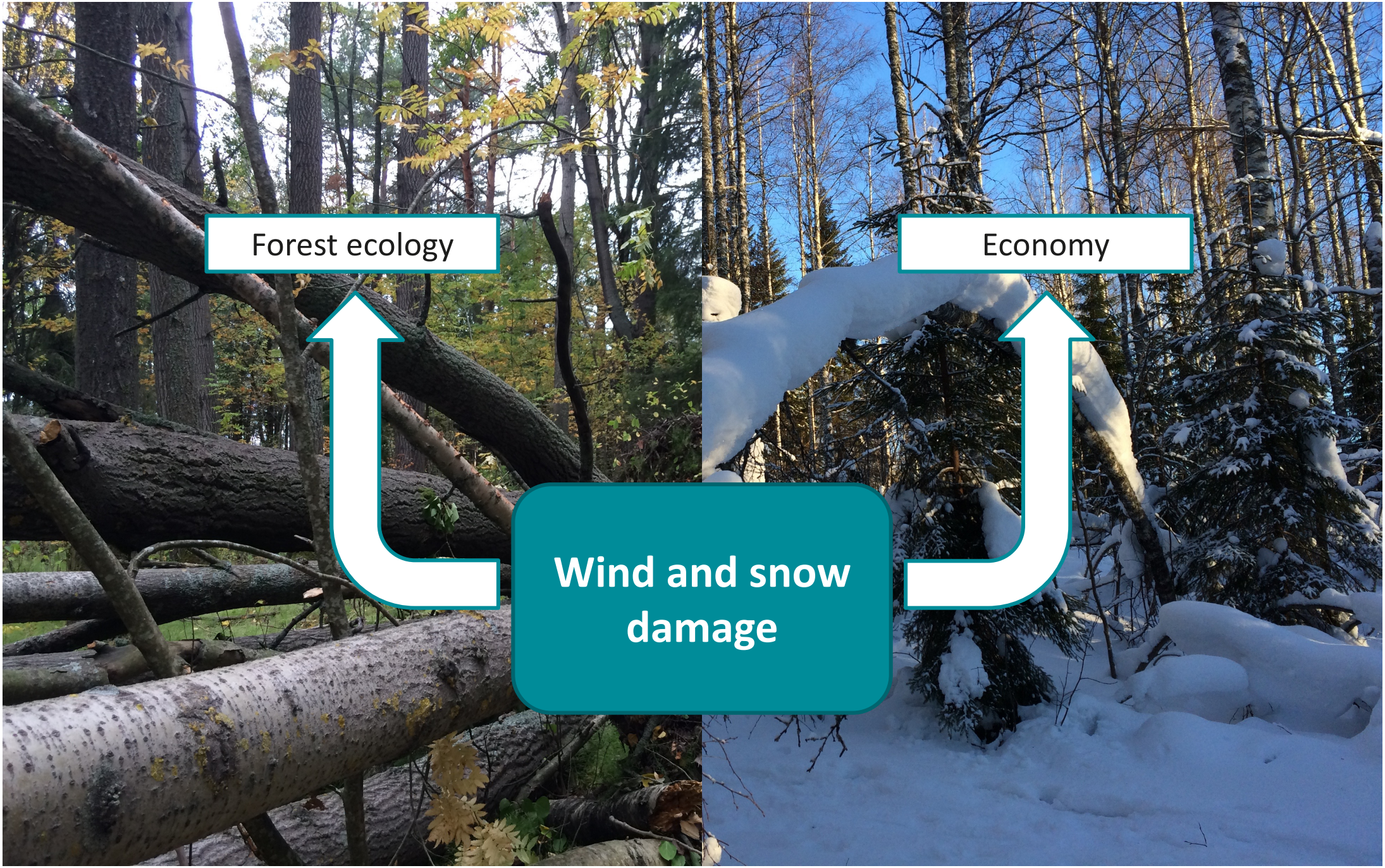
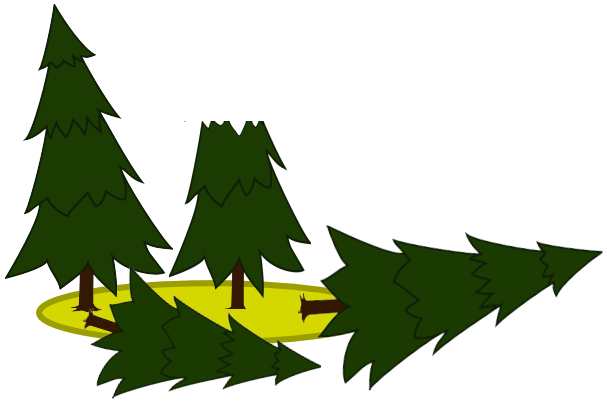

Forest ecology
Economy
Wind and snow damage

Step 1:

Damage occurrence

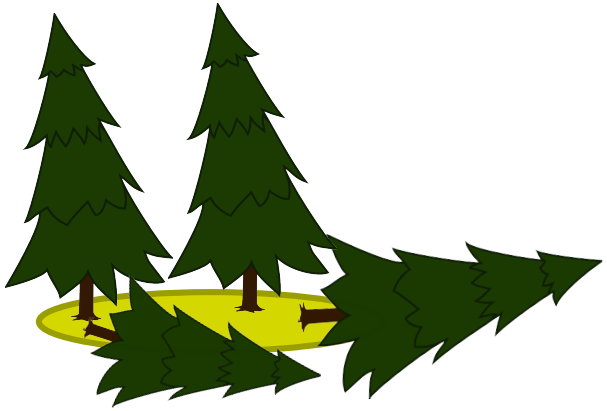
Undamaged



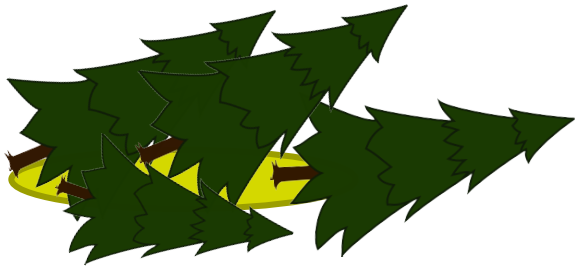
Damaged

Step 2:

Damage level



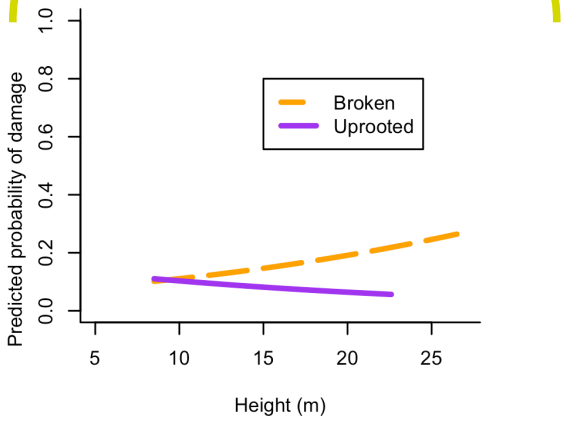
Lower damage level



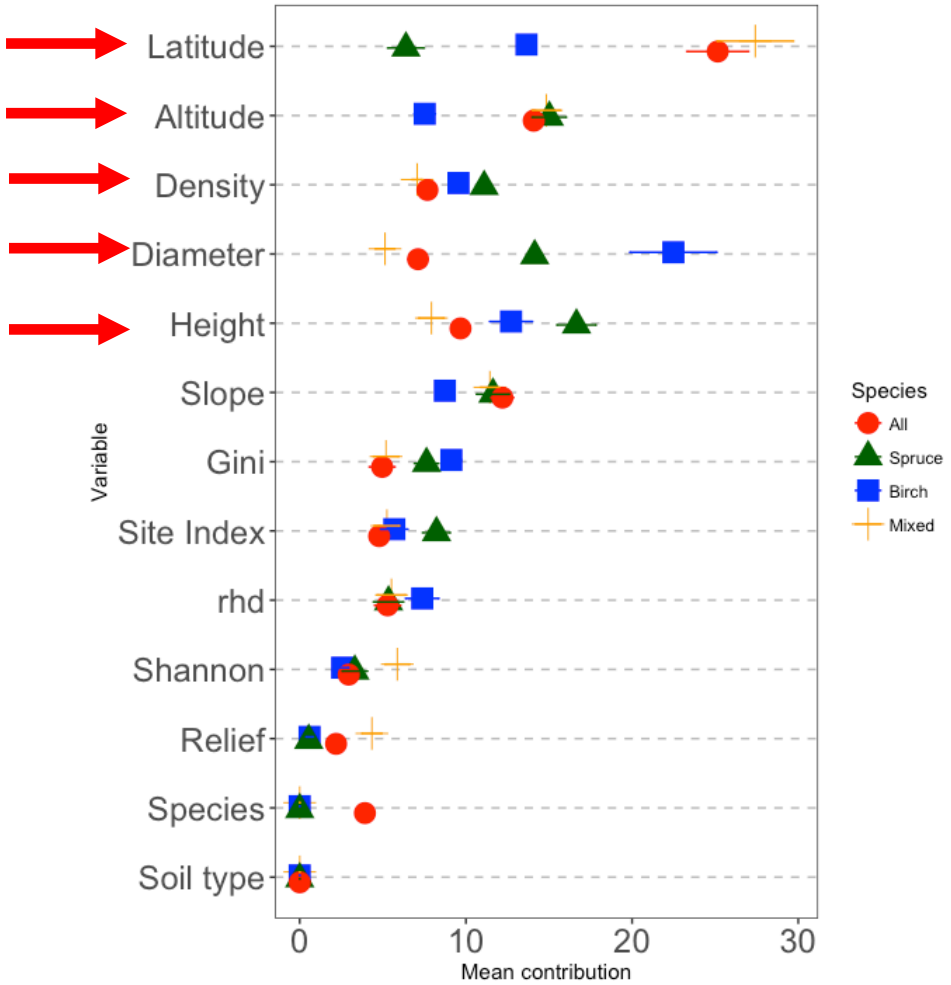
Higher damage level

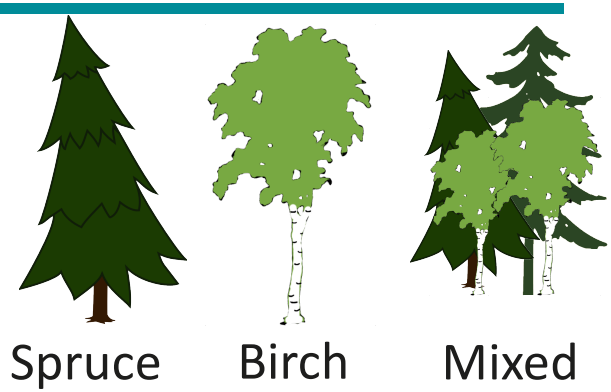
Step 1: Damage occurrence

Step 2: Damage level

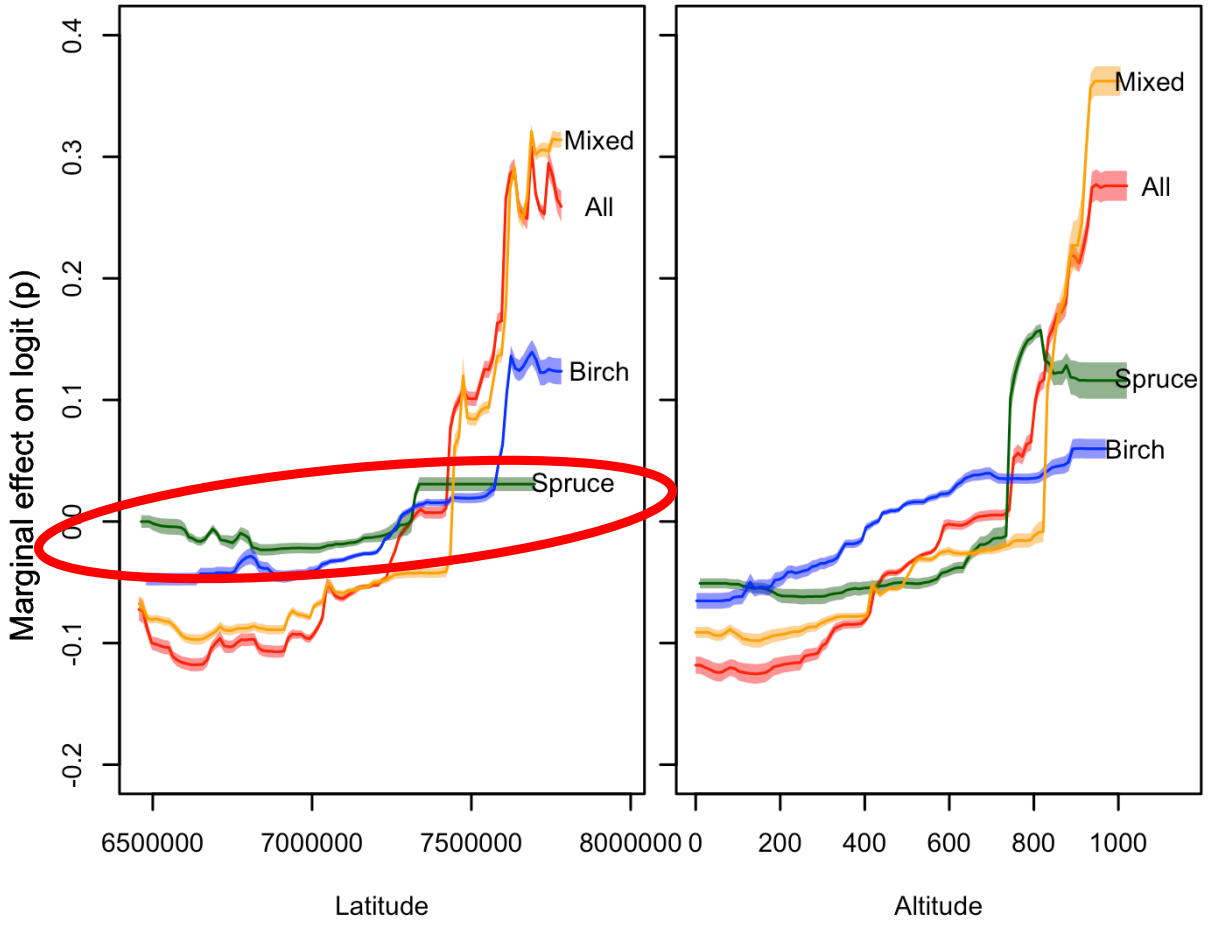


The main variables associated to damage occurrence are consistent across all the models

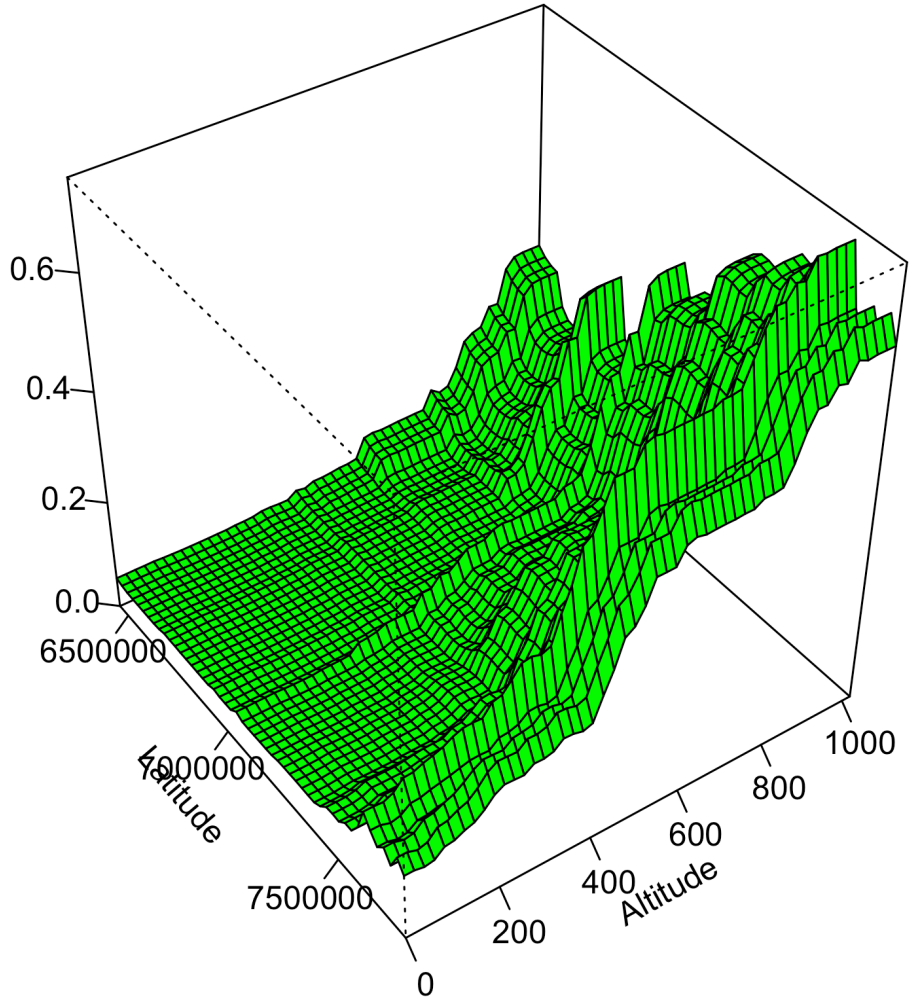




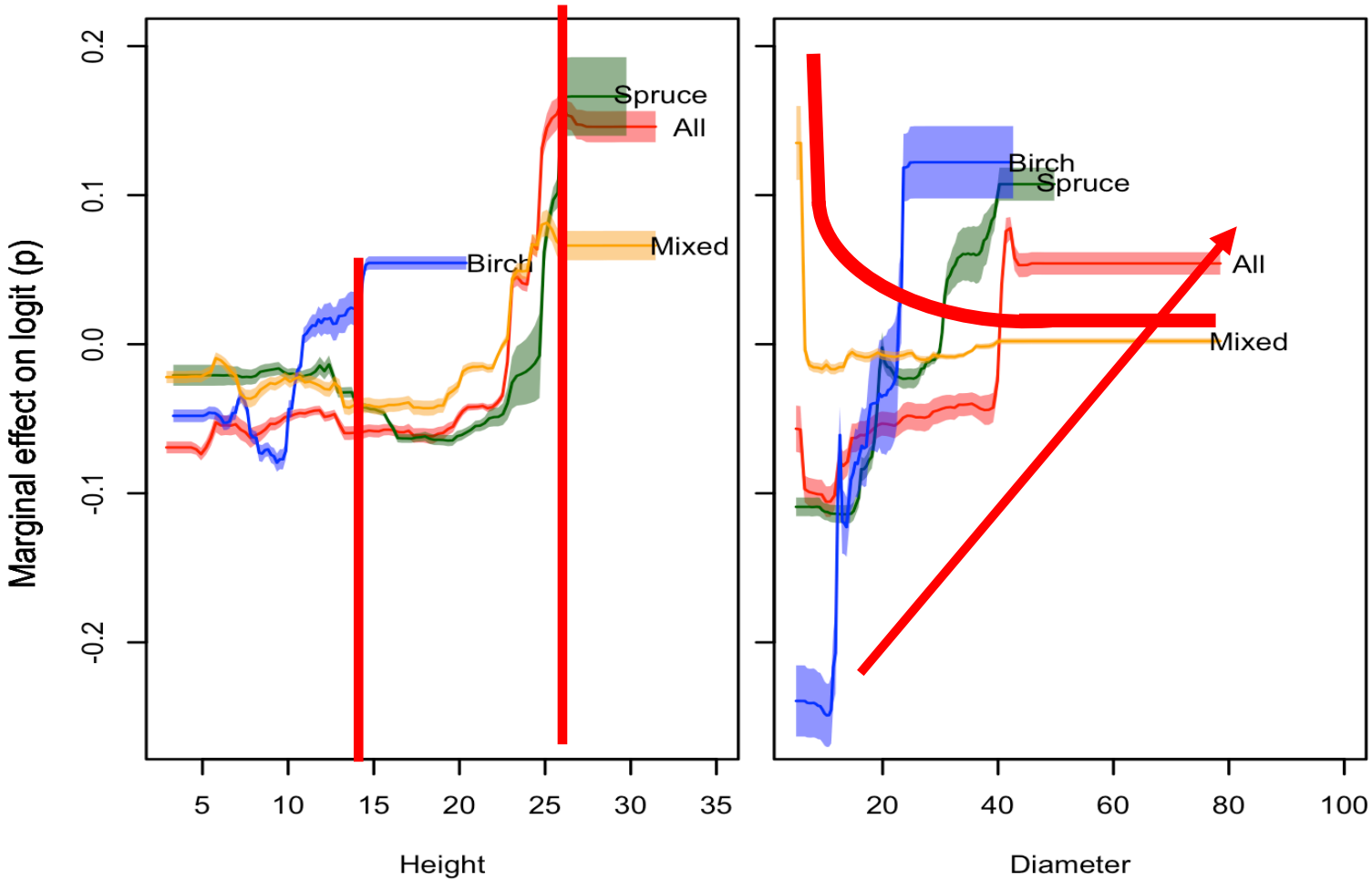
Altitude and latitude did not affect equally all the species



Latitude and altitude combined effect shows that an increase in altitude have more effect

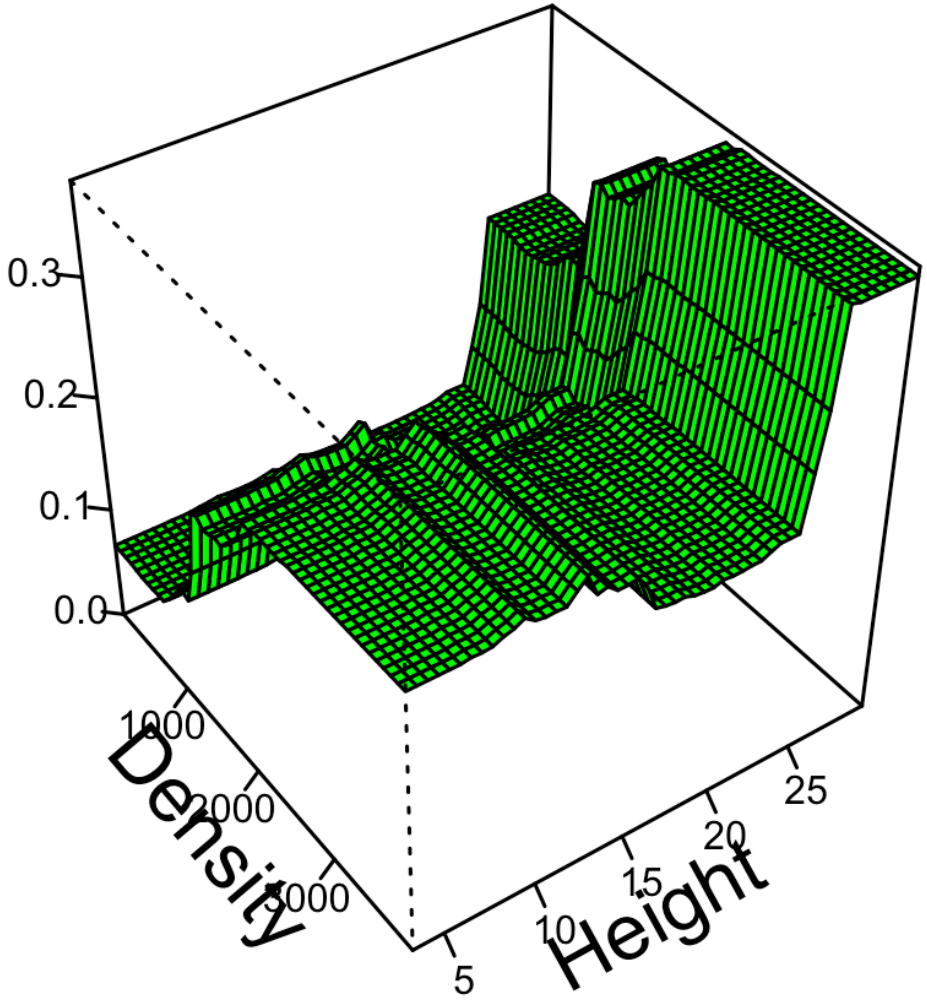


Height and diameter are the most important forest condition variables in all the occurrence models

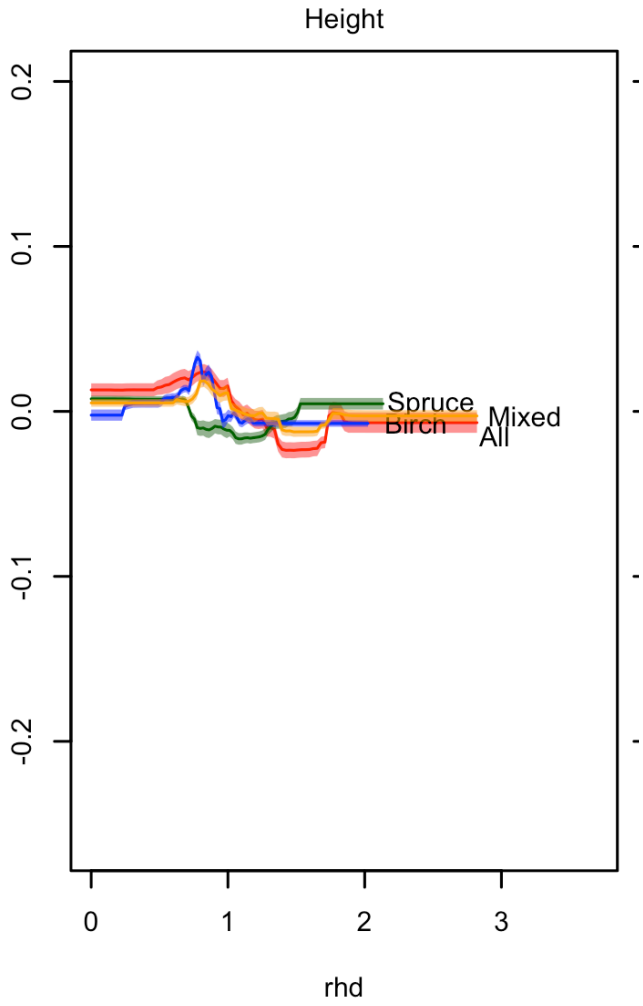


Height and diameter are the most important forest condition variables in all the occurrence models

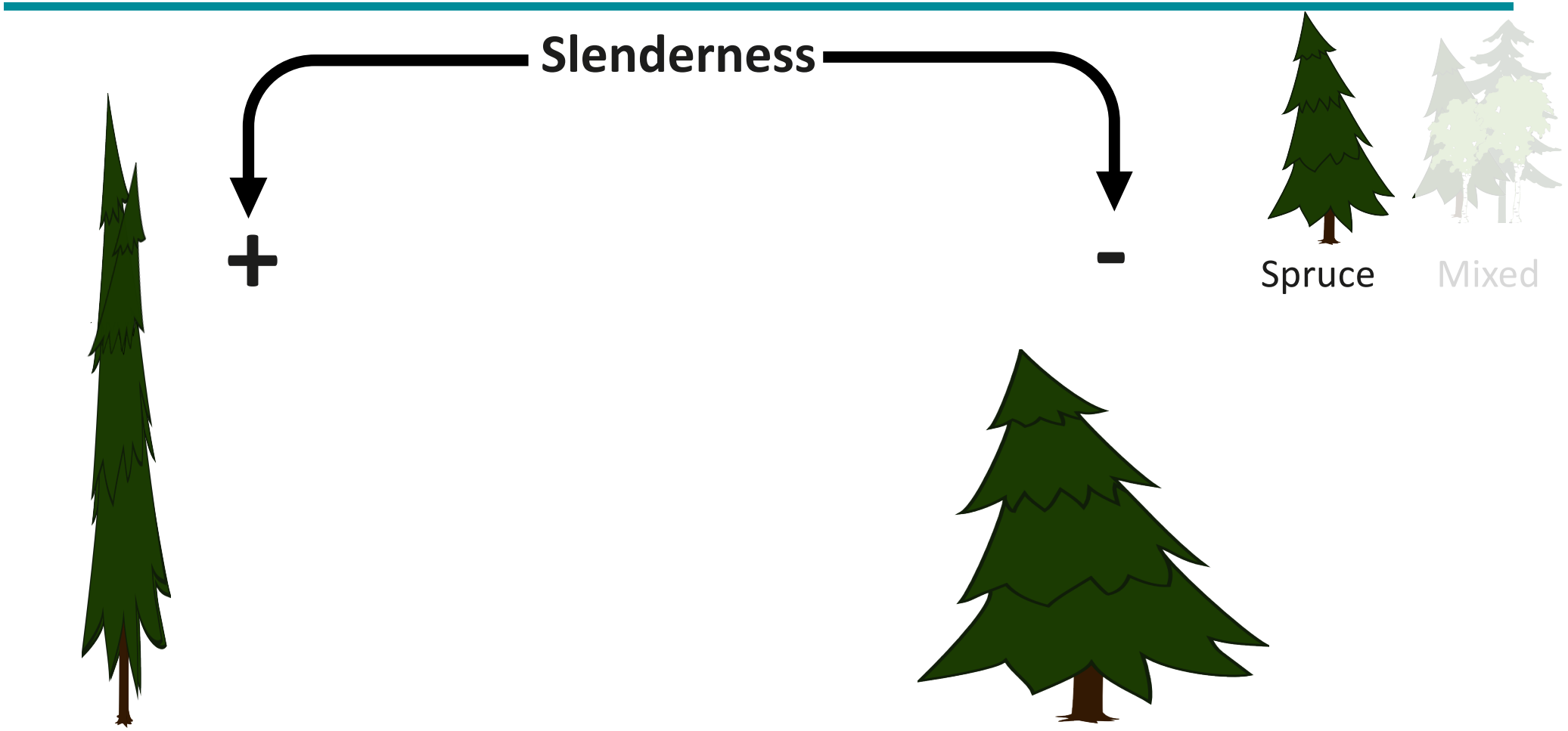
Spruce



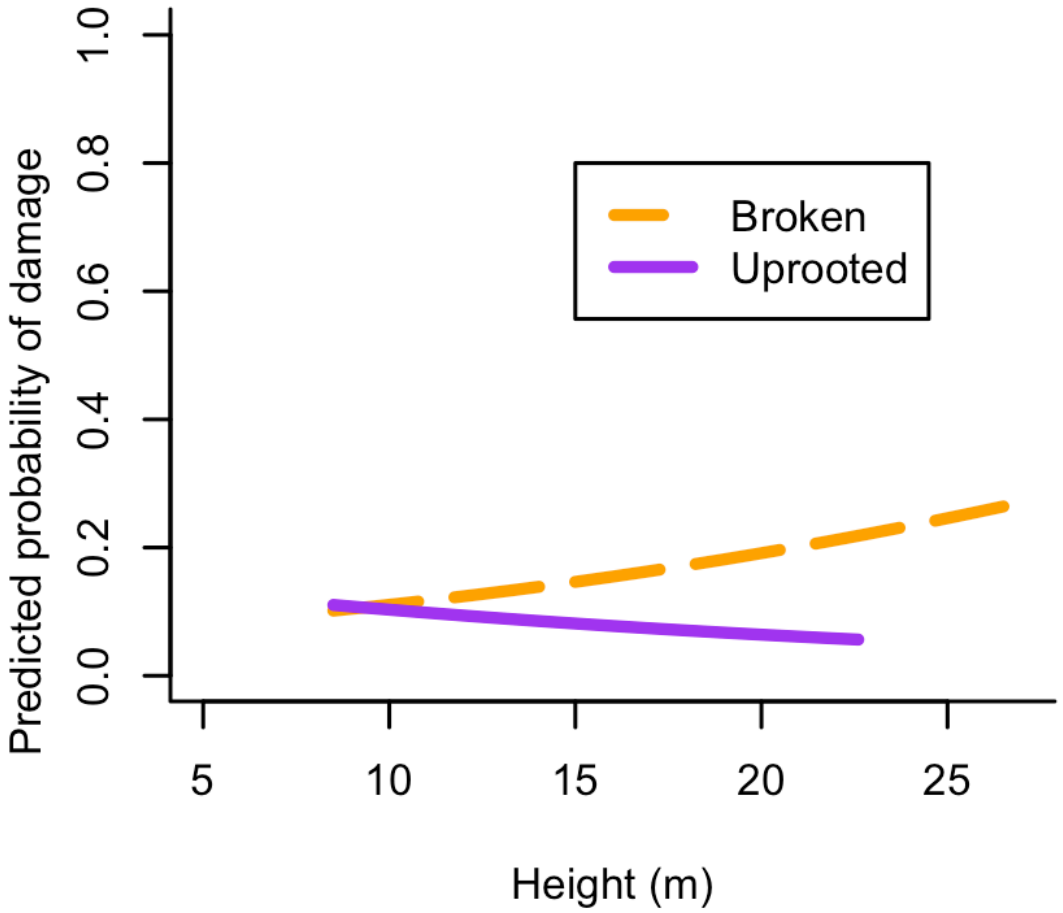
Slenderness

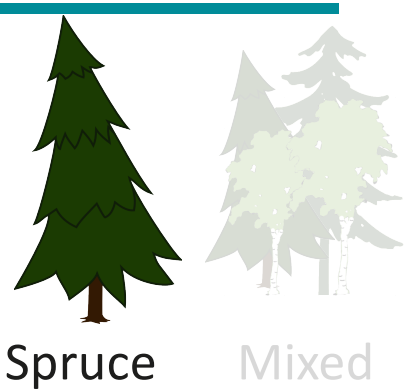


Slender trees are more prone to break than uproot

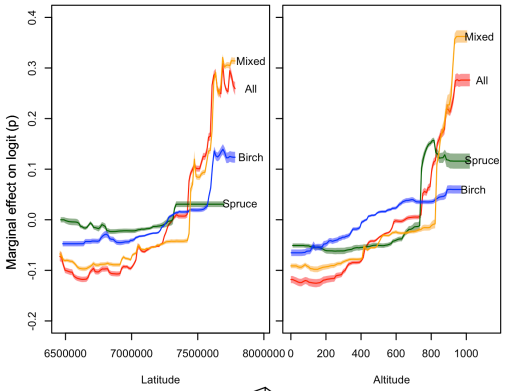


Increasing height is associated with increasing probability for a tree to be broken

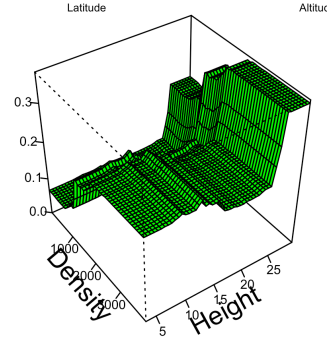




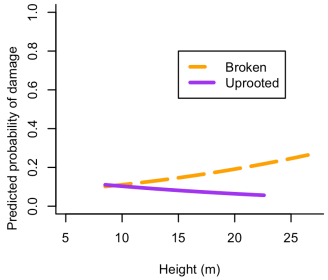
Altitude and latitude did not affect equally the probability of occurrence for all the species and their combined effect shows a higher effect on altitude.



Height and diameter are the most important forest condition variables in all the models predicting damage occurrence and the height relation with density is specially relevant on Spruce stands.



Increasing slender and tree height is associated with increasing probability for a tree to be broken in a damaged stand.



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