



UNIVERSITY OF
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What variables make a young forest stand more vulnerable to ungulate browsing occurrence?

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An aerial photograph showing a group of reindeer in a dense forest. The reindeer are dark-colored and stand out against the green and brown foliage. They are scattered across the frame, with some in the foreground and others further back. The forest appears to be a mix of coniferous and deciduous trees.

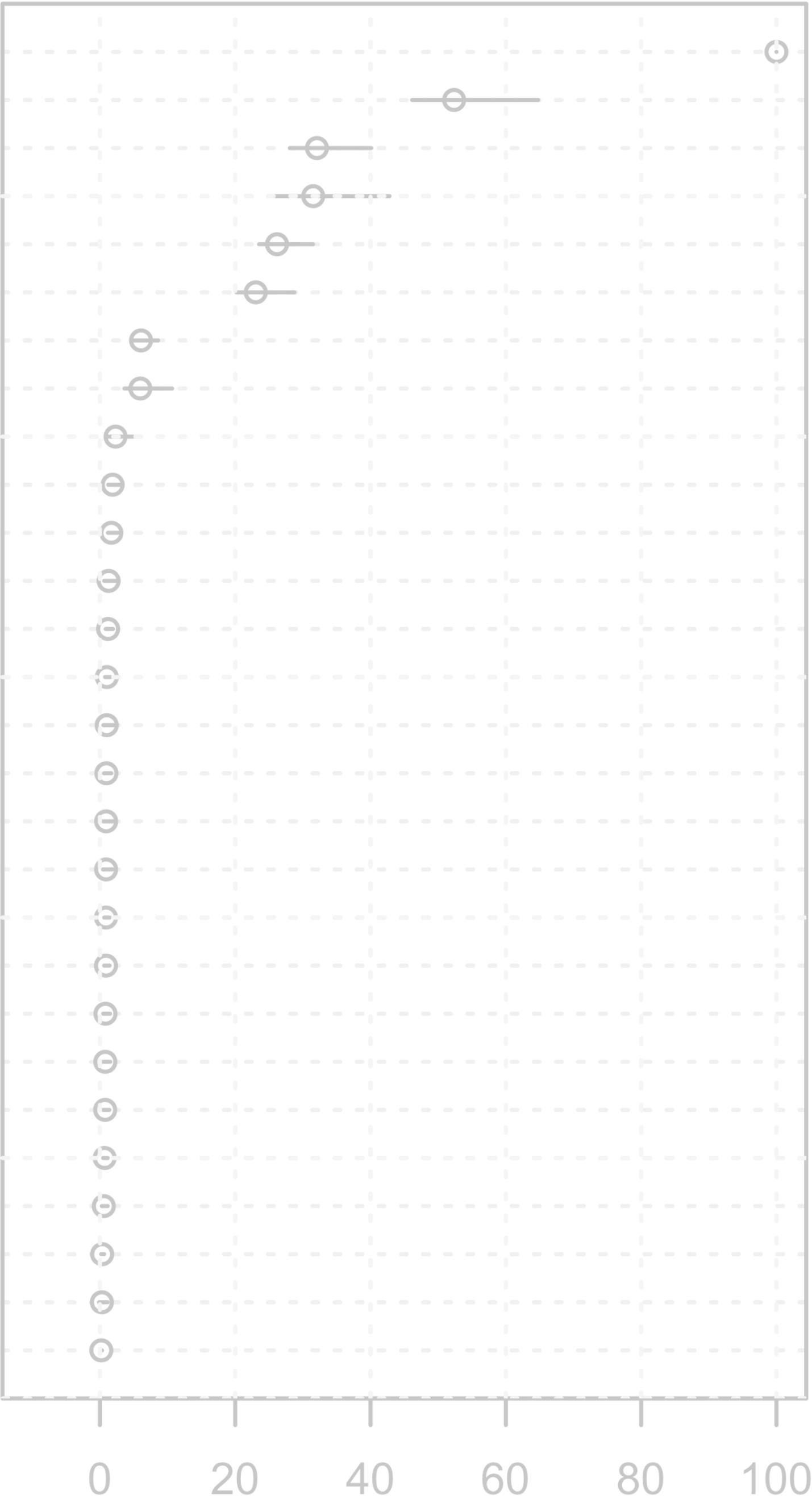
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Variables

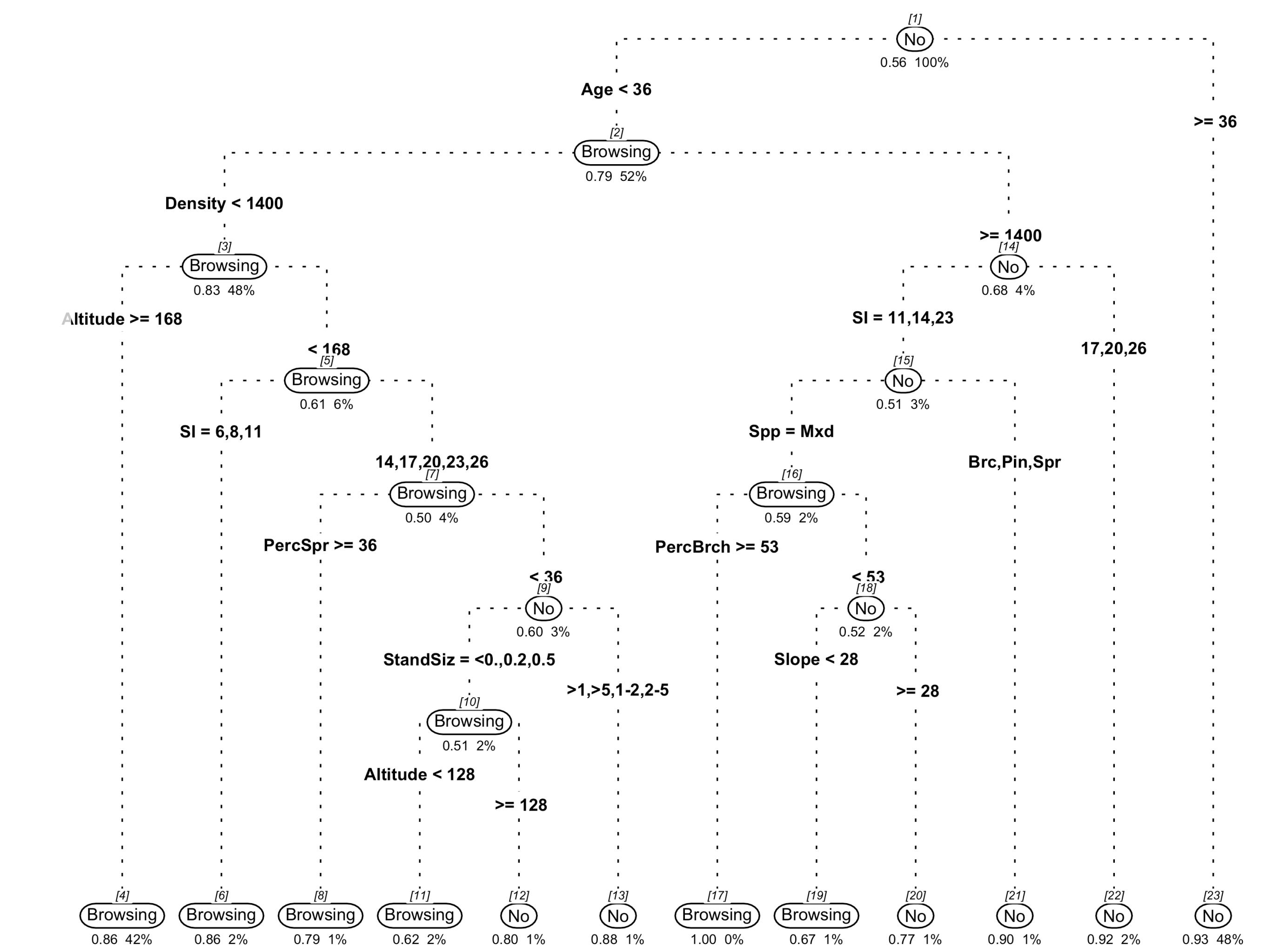
Age
 Development class
 Basal area
 Stand size
 Density
 Diameter
 Altitude
 Previous treatment
 Gini
 Pine percentage
 Slope
 Height
 Site index
 Dominant specie
 Population on stand edge
 Crown cover
 Soil depth
 Slope orientation
 Spruce percentage
 Steepness
 Shannon
 Deciduous percentage
 Distance to stand edge
 Birch percentage
 Slope longitude
 Relief
 Conifer percentage
 Soil type



Effect

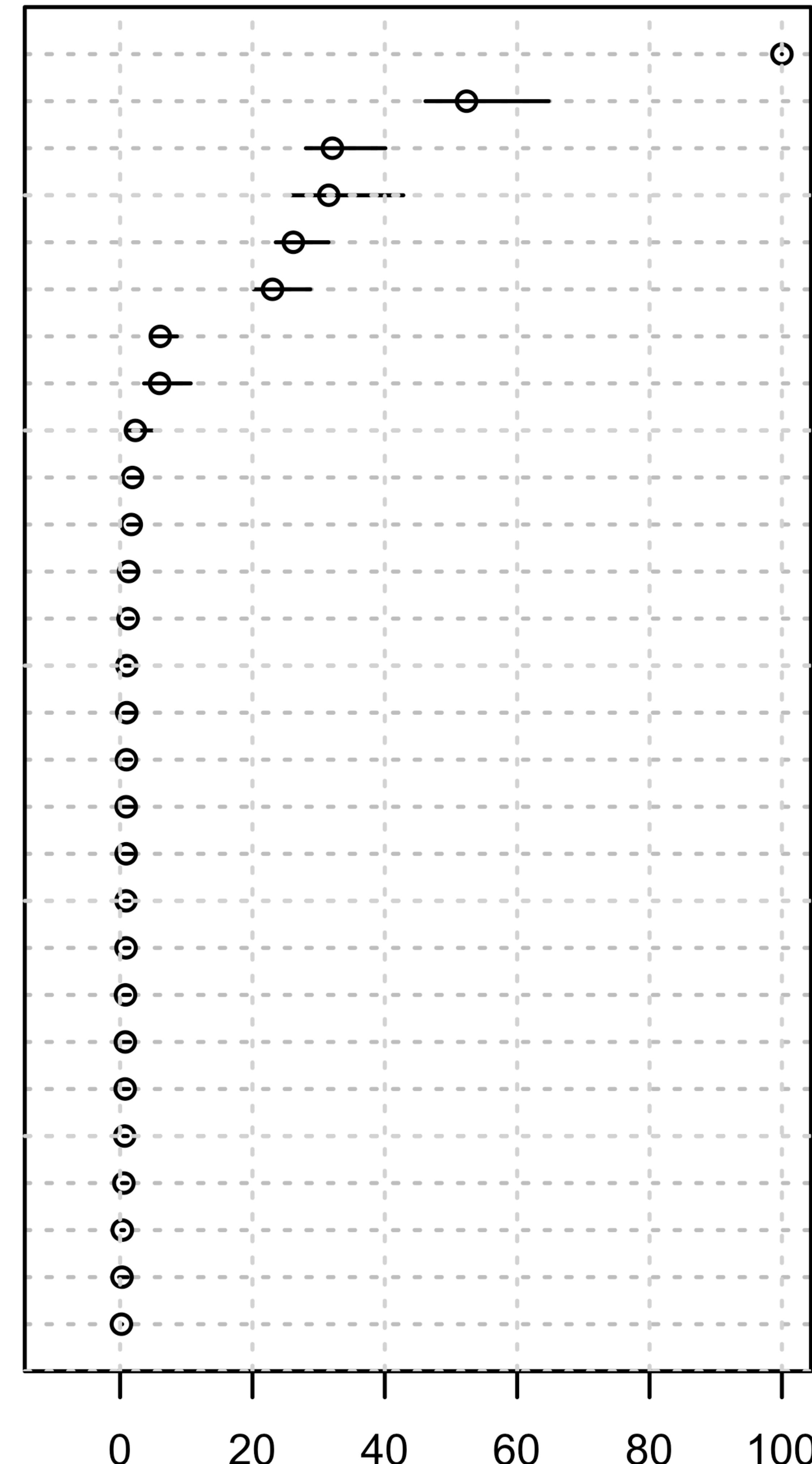


Model



Variables describing composition, site or management are helpful to evaluate vulnerability to browsing damage

- Age
- Development class
- Basal area
- Stand size
- Density
- Diameter
- Altitude
- Previous treatment
- Gini
- Pine percentage
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- Height
- Site index
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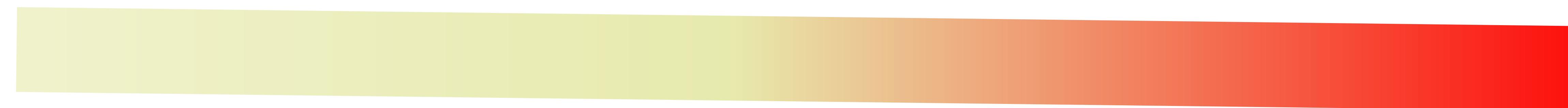
High tree density decreases the probability of browsing damage occurrence



High density



Low density

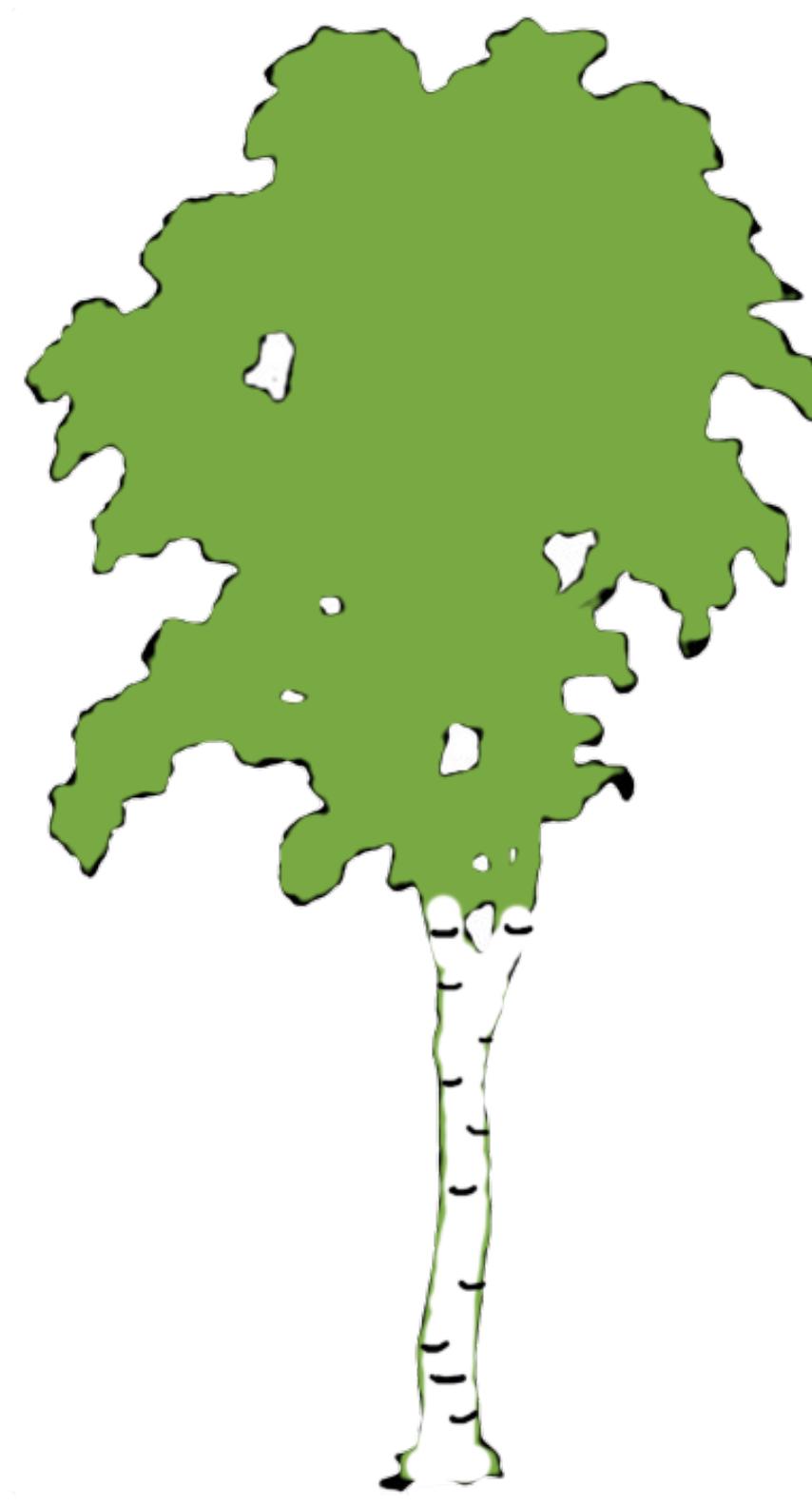


$<1400 \text{ trees ha}^{-1}$

Birch, pine and mixed dominated stands
are more favorable to browsing than spruce



Spruce



Birch



Pine



Mixed



Stand size did not indicate a clear predictive effect

>1 ha, 1-2 ha, 2-5 ha, >5 ha

Large stands

<0.2 ha, 0.2-0.5 ha, 0.5-1 ha

Small stands




Previous treatments applied on the stand influence the probability of browsing damage

thinnings



Predictive model



What to consider when taking management decisions?

Low stand densities increases the probability of browsing damage occurrence



Birch, Pine and mixed dominated stands are more favorable to browsing



Stand size also affects the probability of browsing damage occurrence

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