

Moose appetite for deciduous trees counteracts warming effects

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Credit: AI-generated image ([disclaimer](#))

Fast-growing deciduous trees can respond more quickly to a warmer climate than conifers, so climate change will influence the composition of forests through increased deciduous tree growth. But deciduous species are also the most vulnerable to browsing.

"We studied how moose modify the climatic effect on boreal trees on two continents," says biologist Katariina Vuorinen, who defended her dissertation earlier this year.

Vuorinen took her doctorate at NTNU, focusing on herbivore browsing in 47 demarcated sites in Norway and 15 sites in Canada.

Many assistants supported her in taking the annual spring measurements in the relevant areas.

Moose prefer deciduous species

Vegetation growth in fenced areas where moose were excluded was compared with the surrounding vegetation. The researcher modeled causal relationships that took into account different climatic factors, various [tree species](#), competition between tree species, tree height, time, food availability and presence of herbivores as well as browsing intensity.

Reduced growth

Moose browsing led to less growth in rowan and [birch trees](#) in Canada and in birch and pine in Norway. In Canada, rowan grew 12 cm less and birch 13 cm less than in the fenced-in plots. In Norway, birch grew 8 cm less and pine 3 cm less than in similar exclusion plots.

Vuorinen concluded that moose browsing counteracts the effect of a [warmer climate](#) on forest growth. But her research also shows that the foraging impact varies depending on other factors in each ecosystem, such as snow, which protected the trees from browsing moose.



Fences protected vegetation plots from browsing to provide researchers with a basis for comparison. Credit: Katariina Vuorinen

More information: Katariina E. M. Vuorinen et al, Cool as a moose: How can browsing counteract climate warming effects across boreal forest ecosystems?, *Ecology* (2020). [DOI: 10.1002/ecy.3159](https://doi.org/10.1002/ecy.3159)

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