Study could help recreate ancient woods

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(PhysOrg.com) -- Researchers from the University and the Forestry Commission studied remnants of the ancient Caledonian pine forests in the Scottish Highlands.

They hoped to build a clearer picture of how wild pine forests grow.

Scientists used computer models to work out how best to manage the transformation of even-aged, planted pine forests into wild woodland, with trees of a more natural variety of ages and sizes.

They found that frequent, limited thinning of a pine plantation will transform it into a wild forest twice as quickly as simply letting it grow wild.

Forests covered much of Scotland after the last ice age.

"This research will be a valuable aid to plantation owners who want to help their forests develop the characteristics of Caledonian pine wildwood for the landscape and biological diversity benefits that this can provide," said Dr. Bob McIntosh, Director of Forestry Commission Scotland.

Many trees were lost when the growing population began to use forests for fuel and timber and to make space for crops, livestock and settlements.

Now only a few small remnants of the original ancient forests remain,

and a number of plant and animal species that once lived in native forests have disappeared from the landscape.

Researchers hope that a better understanding of how forests react to different intensities and types of management intervention will be of benefit.

The new insight will enable authorities to facilitate the return of natural woodland and benefit the species that thrive in it.

The study was published in the journals *Ecological Modelling and* Forest Ecology and Management.

It was supported by the Forestry Commission, the Scottish Government and the Engineering and Physical Sciences Research Council.

"We are now able to better understand how natural forests are shaped, and how our wild woodlands could develop in future. Our findings will support the conversion of managed wooded plantations into forests like those that existed many hundreds of years ago," said Professor Graeme Ackland, School of Physics and Astronomy.

Provided by University of Edinburgh

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