Study explores 100 year increase in forestry diseases

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As ash dieback disease continues to threaten common ash trees across Europe, new research in the *Journal of Quaternary Science* explores the historic impact of forest diseases to discover if diseases played a significant factor in vegetation change.

The study explores how large-scale pathogen outbreaks were much more infrequent in the past, which suggests the human role in transporting pathogens to new locations, such as the international seed trade, is a major factor.

"The temperate and boreal forests of Europe and North America have been subject to repeated pathogen outbreaks over the last 100 years," said Martyn Waller from Kingston University. "Palaeoecology can, potentially, offer a long-term perspective on such disturbance episodes, providing information on their triggers, frequency and impact."

"Connections between climate change and biological trends are often difficult to establish from short-term studies. This paper looks at the fossil evidence available to reconstruct outbreaks of fungal pathogens (such as ash dieback) and insect defoliators over the last 10,000 years, both in terms of their frequency and their influence on vegetation composition," said Waller. "The albeit limited evidence currently available supports a link with abrupt climate change and it is likely that in the past the interaction between climate change and such pathogens produced long-term changes in abundance of tree taxa in the forests of North America and Europe."

More information: Martyn Waller, Drought, disease, defoliation and death: forest pathogens as agents of past vegetation change, Journal of Quaternary Science, DOI: 10.1002/jqs.2631

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