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Project: AdaptForRes Proactive Forestry Protection Measures: Understanding historical invasive pest dynamics using a novel data rescue protocol

Invasive species have cut down Ireland's forestry. Dutch Elm Disease devastated the native Wych Elm population in the 1970s, and now the emergence of Ash Dieback in 2012 threatens our ash tree population. Is this widespread damage always going to happen when a pest shows up?

We wanted to get to the root of the problem: what helps a pest outbreak, and what can we do to stop one? We gathered annual forestry reports going back to the 1970s from across both Northern Ireland and the Republic of Ireland, which were often the last copy of this historical information. We scraped these reports to see when pest outbreaks happened on the island and made the validated data [publicly available](#). We used this data with weather maps in statistical models to see what promotes pest introductions and eradications on the island.

We found that surveying increases the likelihood of finding a pest outbreak early, which improves our chances of stopping them, and we found that our control measures in the past were effective against insects, but not for other pests. Surprisingly, there was no evidence that weather fluctuations impacted either introduction or eradication. Our data collection approach could be used in other regions with similar weather to us like the UK and France, improving our understanding of why they lay down their roots, and how we can shade ourselves from widespread damage in the future.

