



Decomposing climate dependency of forest dynamics

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Forest simulation models have proved extremely useful in understanding forest dynamics by scaling from tree-level processes to landscape scales, but typically contain no climate dependency in their subprocesses. Forest inventory databases may be used to investigate the role of climate on tree-level processes, and the climate drivers of geographical ranges of different species, by making a space-for-time substitution. We demonstrate the value of inventory data for determining the climate drivers of forest processes. By scaling up from individual demographic rates using a forest simulation model, parameterised for mainland Spain, we determine the key climate dependencies driving emergent forest properties, allowing defensible predictions of the impacts of climate change.