

Structural diversification of forests – Forest manager perspectives: Evidence review

Resilience of future forests may be enhanced by diversifying the structure of even-aged, single-species plantations intended to be clearfelled. While events such as storms, pest and disease outbreaks, and wildfires will affect forest structure, management decisions of forest managers can have a significant impact over time. The rapid evidence review summarised here considers the evidence about forest manager attitudes towards, and decision-making in relation to, diversification of forest management. It serves to help policy-makers and practitioners better understand some of the challenges to diversifying forest structure.

Methodology

Twenty two studies were reviewed, the majority (16) of which were conducted in the UK and other European countries, with the remainder from North America. Publication years were from 2012 to 2024, inclusive. The review addressed questions such as:

- What are the drivers and motivators behind forest managers' decisions to introduce changes to silvicultural practices that may alter forest structure?
- What barriers may prevent forest managers from introducing changes to silvicultural practices that diversify forest structure and what challenges are present?
- What enablers are needed to address the challenges and barriers?

Drivers of change, barriers to implementing change, and enablers for addressing the barriers are summarised below. Excerpts from the full review are included for further illustration.

Drivers of change

Values (including environmental, personal, social, and cultural): Decision-making processes are influenced by multiple interacting values as well as a combination of personal knowledge and individual perceptions.

Experiences of changing climatic conditions and severe weather events: Forest managers may introduce changes to their forest management practices following experience of an extreme event or having witnessed changing conditions over time (e.g. in weather patterns).

Forest ownership (public versus private): If forest managers consider the introduction of diversification into forest management to be risky, then the public forest sector may be more able to diversify because it is potentially larger and better able to absorb risks. Alternatively, private sector forest owners may be more able to diversify as they are less likely to be constrained by bureaucracy and public opinion.

This review has been carried out as part of a Defra-funded project (through the Centre for Forest Protection funding stream) investigating how to enhance forest resilience through stand structural complexity, with a particular focus on drought resilience.

Work package 2 of the project is focused on understanding the perspectives of forest managers, specifically their perceptions and experience of diversifying forest structure, especially in the context of drought resilience.

Perceptions of threat and risks: There is well documented evidence that risk perceptions impact on decision-making and behavioural choices. Forest managers with higher levels of concern about risks from climate change are more likely to already be implementing adaptation measures in their forest management activities than managers with less concern.

Being reactive or proactive: Some forest managers adopt a 'wait until something happens' perspective before implementing change, while others proactively introduce change.

Barriers to implementing change

Legislative and institutional constraints: Forest managers report experiencing legislative or regulatory constraints that make it difficult for them to implement change. For example, some foresters refer to nature conservation rules that they see as restricting adaptation or diversification of forest management. There were also reports of institutional barriers to implementing desired forest management diversification.

Long-term management plans: Forestry is a long-term activity, and thus forest management plans are long term. This can act as a barrier to changes in management as forest managers report being constrained by existing plans and restricted in their options for diversifying, particularly where their management is tied to grant agreement specifications.

Uncertainty: When it is hard to accurately predict future change and resulting impacts, some managers are reluctant to implement change for an uncertain future.

Public and wider stakeholder opinion: Some forest managers are fearful of public perceptions and potential opposition to certain management activities, particularly in locations where their management activities are visible to members of the public or other non-forestry stakeholders.

Financial issues: Costs, unpredictable markets, lack of financial resources, and low levels of investment in the forest sector were all found to act as barriers to diversification.

Resources: Other resources were frequently referred to as barriers to action by forest managers, including lack of time, human resources, and labour.

Lack of information, including scientific information: Forest managers report that a barrier to diversifying their forest management for future threats and conditions centres around a lack of relevant scientific and other information relating to how to manage for those threats.

Individual and subjective views: When it comes to diversifying forestry activities the literature revealed a few studies addressing factors such as worldviews, risk aversion, and the individual mind-set of some forest managers.

Enablers for addressing barriers

Knowledge exchange and demonstration:

- Studies highlighted the need for more and better knowledge dissemination, knowledge exchange, communication, and information campaigns. Practical forest demonstration plots would also be useful for enabling more forest managers to see examples of diversification in place.

Communication tools and skills development:

- To overcome potential opposition from non-forestry landowners or members of the public, forest managers highlighted the need for better ways of communicating. They wanted access to more tools and suitable means of messaging to communicate with non-forest sector stakeholders about what forest management changes were being implemented and why.

Policy, regulation, government support:

- Forest managers wanted to see reform of systems of land tenure where these restricted management decisions.
- They wanted greater flexibility in regulations that they felt were restricting their management decisions.
- Workforce development programs are needed to address the lack of knowledge and workforce experience.
- Additional governmental support, either in the form of financial support or policy frameworks, is important to overcome some of the barriers faced by forest managers seeking to diversify forest management systems.

The findings from this review have informed the design of empirical research with forest managers and forestry stakeholders, in the form of interviews (reported in a Research Note) and a stakeholder workshop.

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