

Focali Brief: 2015:01

What is the preference of Swedish forestry stakeholders - biodiversity or production goals?

Healthy and productive forests benefit us all, but what are the priorities of those directly managing our Swedish forests? This brief presents a comparison of the preferences of key stakeholders regarding Swedish forest management and biodiversity protection. According to the Swedish Forest Act production and environmental goals should be regarded as equally important. Our study finds that forest owners, public forestry officials and employees at industrial forestry companies and forest owners' associations prefer management practices that promote production rather than biodiversity protection.

BIODIVERSITY protection on private forest land is a complex policy area where several legitimate competing interests and actors influence the outcome (Gritten et al., 2013). Two key stakeholders are the general public and forest owners, and these two groups often have different interests and values concerning the importance attached to production on the one hand and biodiversity on the other. In order to design effective policies for protection of forest biodiversity and ecosystem services, a good understanding of the preferences of forest owners and the public is needed.

Forest policies in Sweden and elsewhere are largely implemented through personal communication between forest owners, public forestry officials and employees at industrial forestry companies and forest owners' associations. It is therefore likely that over time an understanding between these groups is developed, narrowing the gap in preferences (Kindstrand et al., 2008). In Sweden, forest owners generally have less contact with public officials today than a few years ago, and instead more contact with employees at industrial forestry companies, and forest owners' associations (Jönsson and Gerger Swartling, 2014). Insights into the preferences of private and public sector employees involved in forestry are crucial in order to understand con-

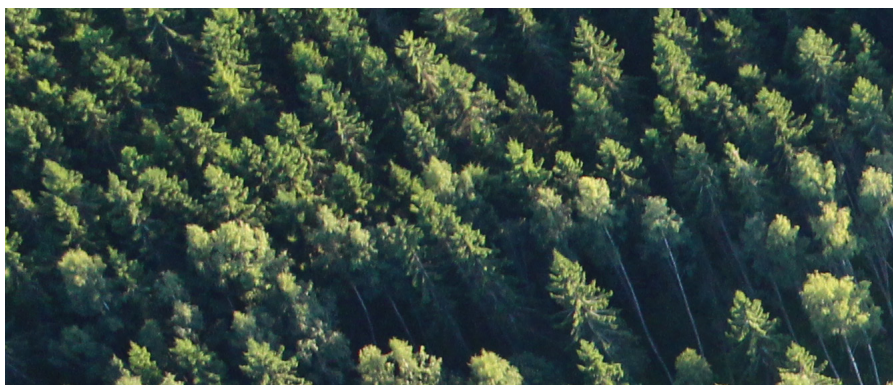


Photo: Anna Nordén

sequences for biodiversity protection, as they work directly with how forest management is carried out in practice.

A brief history of Swedish forestry legislation

In Sweden, timber and pulpwood production is an important source of income with a total production value in 2011 of 23 billion EUR, which was 2.2% of GDP (Swedish Forest Agency, 2014). The national Forest Act adopted in 1903 was focused on supporting economic profitability and timber supply. It

recommended clear felling and the planting of Norway spruce or Scots pine as monocultures (i.e. where one tree species is planted over a wide area and for a number of years), as the best way. The strategy resulted in a substantial increase in the Swedish forest volume during the 20th century, greatly benefiting the national economy (Ekelund and Hamilton, 2001).

In addition, during the same period, private landowners formed forest owners' associations aiming to balance the financial power of large industrial companies. Acting as producer cooperatives, the associations became important players in timber price negotiations. They also became important as forest management advisors for their members and key promoters of the "high-production" paradigm (Brukas and Sallnäs, 2012).

However, clear felling and planting with monocultures generates low biodiversity. It was concerns about this that led to the passage of the current Swedish Forest Act in 1993. The Act states that production and environmental goals should be of equal importance. To reach this an alternative to clear

About this brief

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falling could be to have a more diverse forest landscape, with a mix of different tree species and uneven ages.

Such changes would rely on forest owners fully supporting the dual production and biodiversity priorities that are embodied in the law. Given that there are economic trade-offs between forest productivity and biodiversity, however, it is likely that forest owners would require compensation for the opportunity costs of a more biodiverse forest. Such compensation, however, would only be a realistic policy alternative if there was broader public support for biodiversity. In other words, policies to achieve the two goals of the Swedish Forest Act will be dependent on the attitudes and priorities of a range of actors. In order to create better understanding of these attitudes we conducted a choice experiment.

Agency and employees at industrial forestry companies and forest owners' associations. To help respondents visualize the outcome of each alternative, pictures were used. Figure 1 contains an example of a choice card presented to the respondents.

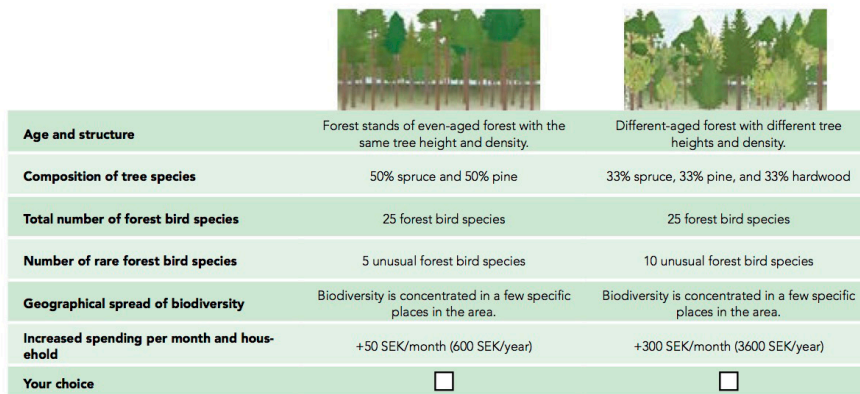
According to the results (see Figure 2), there is a demand for biodiversity protection and biodiversity-promoting forest management practices: citizens have a positive valuation of all forest characteristics considered in the choice experiment (e.g., number of total and rare forest bird species, geographical spread of biodiversity, and forest diversity in terms of age, structure, and tree species). Moreover, the general public's valuation of these attributes is higher than that of forest owners, implying that there is room to compensate

Results also show how forest owners are a diverse group of actors and a range of different preferences are found, indicating a large range of variation in the potential productivity loss if biodiversity protection measures were adopted. This implies that an efficient policy design should have incentives that vary across forest owners in order to promote participation by those whose forests have a higher biological value.

Forest with high diversity in terms of tree species is highly valued by both forest owners and public officials. One reason for this might be that such a forest provides storm and pest protection. Even though such preferences could be driven by production goals there are positive spillovers to forest biodiversity.

Forestry officials favor production goals

Even though production and environmental goals should be regarded as equally important according to the Swedish Forest Act, we find that forest owners, public forestry officials and employees at industrial forestry companies and forest owners' associations prefer management practices that promote production rather than biodiversity protection (see the negative valuation of a more diverse forest in terms of age and structure, a result of moving away from clear felling, in Figure 2). The fact that this bias in preferences is particularly evident for private sector employees might lead to a continuous focus on production rather than biodiversity protection as forest owners currently have more contact with private companies and forest owners' associations than they do with public officials.



Exchange Rate: 9.5 SEK /EUR in January 2015.

Figure 1: An example of a choice card presented to the respondents (Nordén et al., 2015).

The study - a choice experiment

The aim of our study was to examine the extent to which the involved actors treat production and biodiversity goals with equal importance. To examine preferences for forest management outcomes and make comparisons of their relative importance between different stakeholders the willingness to pay was estimated using a choice experiment. The willingness to pay (WTP) is the maximum amount an individual is willing to pay to procure a good or avoid something undesirable.

In the choice experiment the respondents were asked to make repeated choices between two different productive forest scenarios shaped by alternative forest management practices, and thereby make trade-offs between management outcomes, biodiversity indicators, and costs. The choice experiment involved citizens, non-industrial private forest owners, public forestry officials at the Swedish Forest

forest owners for the potential productivity losses that management practices promoting biodiversity could implicate (see the gap in WTP between citizens and forest owners in Figure 3).

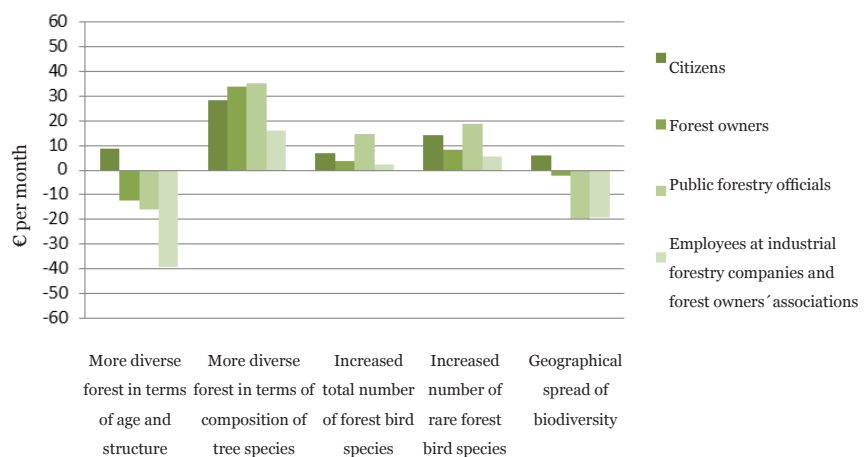


Figure 2: The mean willingness to pay in € per month for different forest characteristics estimated for each stakeholder separately (Nordén et al., 2015).

Policy recommendations

Interestingly, although public officials have higher preferences for biodiversity than their private sector counterparts, they also tend to prefer management practices that promote production. This conflict may have negative consequences for biodiversity protection, as public officials work directly with regulations and guidelines to impact how forest management is carried out in practice. This finding suggests that the Swedish Forest Act may need to be complemented by clearer enforcement tools in order to better reflect the prioritization of environmental goals alongside production targets.

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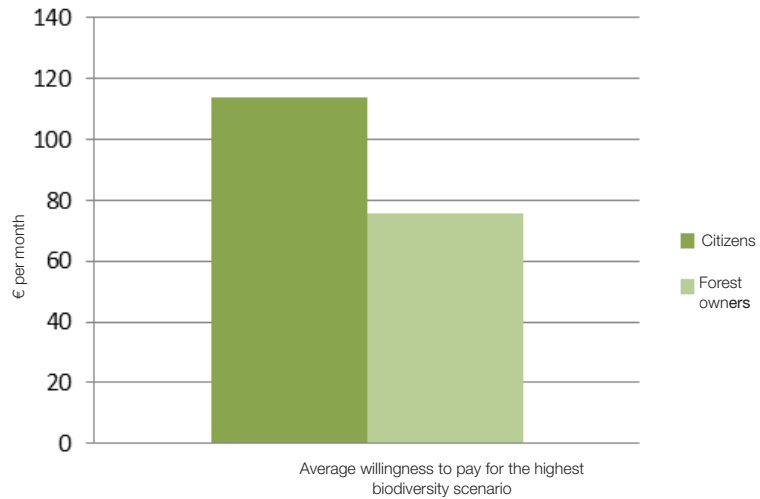


Figure 3: Results from the choice experiment showing total mean willingness to pay in € per month for the highest biodiversity scenario compared to business as usual for citizens and forest owners (Nordén et al., 2015).

Key policy messages

- Swedish citizens value biodiversity protection more highly than forest owners implying that there is room for compensation.
- Even though the Swedish Forest Act regards production and environmental goals as equally important, we find that forest owners, public forestry officials and employees at industrial forestry companies and forest owners' associations prefer management practices promoting production rather than biodiversity protection.
- High production preferences among managing and regulating stakeholders might lead to a continuous focus towards production rather than biodiversity protection.



Photo: Anna Nordén



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