



Dissimilar framings of forest biodiversity preservation: Uncertainty and legal ambiguity as contributing factors



Ylva Ugglå^{a,*}, Maria Forsberg^{b,c}, Stig Larsson^d

^a School of Humanities, Education and Social Sciences, Örebro University, SE 701 82 Örebro, Sweden

^b Faculty of Law, Uppsala University, Box 256, SE 751 05 Uppsala, Sweden

^c Swedish Biodiversity Center, Swedish University of Agricultural Sciences, Box 7007, SE 750 07 Uppsala, Sweden

^d Department of Ecology, Swedish University of Agricultural Sciences, Box 7044, SE 750 07 Uppsala, Sweden

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ABSTRACT

Controversies over forestry and environmental issues, including biodiversity, are common. Theory suggests that uncertainty may play a major role in framing biodiversity and its preservation. This paper examines written statements on biodiversity preservation published by two major Swedish organizations, i.e., the Swedish Forest Industries Federation and the Swedish Society for Nature Conservation, with different interests in forest use. Frame analysis suggests that when the actors pursue a certain policy course, both biodiversity-related uncertainty and lack of regulatory clarity are important factors contributing to dissimilar framings. This case study supports the general understanding that biodiversity-related uncertainty can have important implications for biodiversity preservation, in this case, via forest policy and legislation. Scientific uncertainty may allow actors with dissimilar interests in an issue to justify their standpoints. To successfully manage forest biodiversity in the future, legal frameworks must increasingly find ways to accommodate scientific uncertainty, and models must be developed in which stakeholders' diverging interests and values address uncertainties via dialogue.

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1. Introduction

Loss of biodiversity in forest ecosystems is a major global concern, and there is a common understanding that forest biodiversity is under immense pressure (Freer-Smith and Carnus, 2008). Although various stakeholders strongly support biodiversity preservation, there are frequent controversies concerning forestry and biodiversity preservation (Bergseng and Vatn, 2009; Eriksson, 2012; Götmarm, 2009). Forest conflicts arise from issues such as what constitutes appropriate management and the balance between resource use and biodiversity preservation. Increased emphases on environmental issues, including biodiversity, and on the cultural and social values attached to forests are heading for collision with traditional forestry (Eckerberg and Sandström, 2013). It comes as no surprise that actors representing forest interests such as forestry and nature conservation have conflicting views of biodiversity preservation.

Various interest groups' dissimilar understandings of forest biodiversity preservation can be understood as collective action frames, that is, "schemata of interpretation" that "render events or occurrences meaningful and thereby function to organize experiences and guide action" (Benford and Snow, 2000: 614). In conflict studies, frame theory

has proved helpful in elucidating "how people can have alternative understandings of the same problem without abandoning the idea that there is a real problem about which to disagree" (Sandström et al., 2013: 125). These alternate understandings, however, do not arise in a structural or cultural vacuum: various contextual factors constrain or facilitate certain framings of an issue (Benford and Snow, 2000).

This paper examines how two major organizations with different interests in Swedish forests, i.e., the Swedish Forest Industries Federation (SFI) and the Swedish Society for Nature Conservation (SSNC), frame the issue of biodiversity preservation in their formal statements. These organizations are two central actors actively concerned with the governing of Swedish forestry (Hysing and Olsson, 2008). As the SFI and the SSNC represent Swedish forest owners and nature conservation interests, respectively, they unsurprisingly have diverging understandings of biodiversity preservation reflecting the different interests that they represent. However, important factors contribute to the organizations' dissimilar framings of the issue. In this paper we focus on two such factors, i.e., uncertainties related to biodiversity and lack of clarity in the regulatory framework.

This paper consists of seven sections, starting with this introduction. Section 2 discusses uncertainties related to biodiversity. Section 3 introduces Swedish forestry policy. Section 4 presents the empirical material and theoretical framework. Section 5 examines the stakeholders' views of forestry and biodiversity management. Section 6 analyzes the actors' framings of forest biodiversity preservation with regard to uncertainty

* Corresponding author.

E-mail addresses: ylva.uggla@oru.se (Y. Ugglå), Maria.Forsberg@jur.uu.se, maria.forsberg@slu.se (M. Forsberg), stig.larsson@slu.se (S. Larsson).

and the legal framework. Section 7 presents and discusses the conclusions of the study.

2. Uncertainty

Uncertainty is a key feature of the scientific method. When dealing with complex systems and high decision stakes, such as biodiversity preservation, uncertainty must be made explicit (Ravetz, 1999). This knowledge condition, however, is not always clearly articulated. Instead, policy-makers often call for better knowledge or some “kind of plausibility ‘proof’” (van Asselt and Vos, 2006: 317), entailing a paradoxical situation: while the inability to produce precise evidence is widely acknowledged, policy-makers call for more and better knowledge as a basis for decision-making (cf. Jasanoff, 1994; Yearley, 2005). Uncertainty regarding natural resource management has been categorized in several ways (Regan et al., 2002; Brugnach et al., 2008; Kujala et al., 2013). In this paper, we follow Regan et al.’s (2002) widely accepted classification of uncertainty as epistemic or linguistic, when attempting to elucidate the importance of uncertainty in framing biodiversity and its preservation in forest systems. We note, as have others (e.g., Kujala et al., 2013), that epistemic and linguistic uncertainty can overlap. Importantly, for the purpose of managing biodiversity, these two types of uncertainty are likely additive.

An estimate of the biodiversity (be it genetic, species, or ecosystem diversity) of any given area is almost invariably associated with epistemic uncertainty, such as parameter uncertainty, measurement error, or model uncertainty (Regan et al., 2002). Epistemic uncertainty, in principle, can be reduced. However, because almost all natural populations display considerable spatial and temporal variation in density, accurately determining their status and therefore estimating biodiversity in much detail is costly. This means that epistemic uncertainty will almost always be present and constitute a potential difficulty when interpreting biodiversity data and, therefore, when developing preservation strategies (Haila et al., 2014).

When managing forest biodiversity preservation, considerable linguistic uncertainty will usually be added to the epistemic uncertainty present in the knowledge base. Successful models of biodiversity preservation must include methods to monitor and evaluate management actions. A common strategy is to use indicators, or proxies, that are easier to observe and quantify than biodiversity itself—the ultimate management target. In Swedish forest management, proxies such as red-listed species or “signal species” are commonly used in identifying and preserving habitats of particular value (Hansson, 2001). A general problem with proxies, however, is knowing with enough certainty what they indicate. For example, interest groups may disagree on how many red-listed species must be present in a particular system, how many individuals of a particular species are necessary to maintain a viable population, whether current density will sustain itself in the future, and the extent to which the occurrence of red-listed species, or other proxies, is really informative about the functional diversity of an ecosystem. These important questions all entail considerable linguistic uncertainty, such as vagueness, context dependence, ambiguity, and indeterminacy, according to the Regan et al. (2002) classification.

We note that there may also be a third source of uncertainty—decision-making uncertainty—that has recently been much discussed (e.g., Ascough et al., 2008). Such uncertainty likely contributes to considerable disagreement among actors when biodiversity preservation becomes operational (Kujala et al., 2013). The present study, however, focuses on uncertainty in a framing context, so we are mainly concerned with epistemic and linguistic uncertainty.

3. Swedish forestry policy

Forestry-related businesses are important for the Swedish economy. Of Sweden’s total land area of 40.8 million ha, 22.5 million ha are covered by productive forests (defined as producing more than 1 m³

wood per hectare and year). The great majority of this area is privately owned, either by small forest landowners (currently numbering about 300,000) or by major timber companies. Swedish forestry policy assumes that timber extraction in forestry operations can be combined with environmental protection, for example, by preserving habitats of particular value for biodiversity. This formula has been developed within the political system and constitutes the basis of the Swedish Forestry Act (SFA, 1979:429). The Forestry Act is based on two principles: first, environmental protection should be given the same priority as woody biomass production and, second, forest management is to be governed by “freedom with responsibility.” This means that the role of the state is primarily to provide information, advice, and recommendations (Appelstrand, 2012; Proposition, 1992/93:226: 38f). The SFA therefore provides only a basic set of minimum standards. Governed by these principles, forest owners are, relative to the SFA, relatively free to exercise their ownership prerogatives.

In addition, voluntary standards in the form of certification systems, i.e., of the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC), have become important. These systems specify what the certification agencies consider acceptable, which often leads to standards that extend the compulsory rules (Johansson and Lidestav, 2011). By upholding these standards, forest owners go beyond mere compliance with the legislated minimum standards.

The current Swedish forest policy is often referred to as the “Swedish Forestry Model,” which was initially well received by both the environmental movement and the forestry sector. The possibility of continuing traditional forestry operations while taking environmental values into account seemed promising at the time that the Model was first implemented. The Model implies that environmental protection, including biodiversity preservation, can be recognized and managed within the frame of “freedom with responsibility,” which forest owners recognized as an important step away from central regulation.

In recent decades, however, new environmental legislation and policy goals have been established that affect forest owners. Since the Forestry Act was reformed in 1993 and the “freedom with responsibility” model introduced, the Swedish parliament has adopted non-legally binding Environmental Quality Objectives to guide progress towards sustainable development. The two objectives of obvious relevance to forestry are “Living Forests” and “A Rich Diversity of Plant and Animal Life.” Sweden has also become a member of the EU, which entails the obligation to implement European Union (EU) legislation such as the Habitats Directive (92/43/EEC). Furthermore, the Swedish Environmental Code (SEC, 1998:808) has been adopted with the objective of promoting sustainable development. The Code amalgamates 16 acts on the protection and use of natural resources. The Swedish Forestry Act (SFA, 1979:429) was omitted from the Code, mainly because several rules in the Act do not serve the Code’s single purpose of promoting sustainable development. Accordingly, the Swedish Forestry Model now coexists with EU law and national environmental legislation.

4. Empirical material and theoretical framework

The two organizations dealt with here, i.e., the Swedish Forest Industries Federation (SFI) and the Swedish Society for Nature Conservation (SSNC), are central actors in the current debate on forestry and biodiversity preservation in Sweden. The two organizations can be seen as competing collective actors that seek to influence both policy formulation and implementation within the policy domain of forestry (Hysing and Olsson, 2008: 731). The SFI is a major trade and employers’ organization for the pulp, paper, and wood industries, representing many paper manufacturers, sawmills, and associated companies. Its task is to strengthen the competitiveness of enterprises and promote the increased use of wood-based products (SFI, 2015). The SSNC, established in 1909 and having over 200,000 members, is the oldest and largest non-profit environmental organization in Sweden, with a long tradition

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