



Certified or not: NIPF owners' attitude towards the Swedish forest policy and nature conservation

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Certified or not: NIPF owners' attitude towards the Swedish forest policy and nature conservation

Certifierad eller inte: Enskilda skogsägares attityd till svensk skogspolitik och naturvård

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Abstract

Sweden's forest policy is built upon the concept of *freedom with responsibility*, where production and environment are equally valid. Half of Sweden's productive forest is owned by non-industrial private forest owners (NIPF owners), making them crucial players in managing these forests from economic, ecologic, and social perspectives. In response to today's changing climate and biodiversity loss, Sweden has established the environmental goal *Living forests*, to protect and preserve the Swedish forest along with its vital ecosystem services. In addition to the Swedish forestry act, which all forest owners must adhere to, forest owners can certify their property. Currently, half of the productive forest land is certified, imposing stricter requirements than the mandatory forestry act, ensuring greater consideration for the environment. This study aims to understand if there is a difference in attitude towards Swedish forest policy and the level of knowledge about nature conservation between certified and non-certified NIPF owners. Given the high percentage of forest land owned by NIPF owners, it is relevant to investigate how they perceive their role in forest policy. The analysis is based on a survey with responses from Swedish NIPF owners, representing all NIPF owners in Sweden. The survey questions are based on the Theory of Planned Behavior (ToPB) to better understand NIPF owners' behavior and actions. Chi-square tests are used to examine significant difference regarding knowledge and attitude towards nature conservation between certified and non-certified NIPF owners. Results indicate that certification status influence NIPF owners' attitudes and knowledge; there is a significant difference in responses between certified and non-certified NIPF owners in Sweden. In conclusion, both groups demonstrate good knowledge of nature conservation and believe that the Swedish forest policy is sufficient for sustainable forest management and preserve biodiversity.

Keywords:

FSC, PEFC, freedom, responsibility, the Theory of Planned Behavior, chi-square test, biodiversity

Sammanfattning

Sveriges skogspolitik är uppbyggt på konceptet *frihet under ansvar*, där produktion och miljö är i jämvikt. Hälften av Sveriges produktiva skogsmark ägs av enskilda skogsägare, vilket gör dem till en viktig aktör inom skogsbruket ur ekonomiska, ekologiska och sociala perspektiv. På grund av dagens klimatförändringar och förlust av biologisk mångfald har Sverige utformat miljökvalitetsmålet *Levande skogar* för att skydda och bevara svensk skog och dess vitala ekosystemtjänster. Utöver skogsvårdslagen, som alla skogsägare måste följa, har skogsägare möjlighet att certifiera sin skogsfastighet. För närvarande är ungefär hälften av den produktiva skogsmarken certifierad, vilket innebär att den marken har striktare krav än skogsvårdslagen för att säkerställa en ökad hänsyn till miljön. Denna studie syftar till att förstå om det finns en skillnad i attityder till svensk skogspolicy samt kunskapsnivå gällande naturvård mellan certifierade och icke-certifierade enskilda skogsägare. Givet den stora andelen enskilda skogsägare är det relevant att undersöka hur de ser på sin roll kopplat till skogspolitiken. Analysen är baserad på en enkät med svar från svenska enskilda skogsägare, som representerar hela Sveriges enskilda skogsägare. Enkätens frågor är baserad på Theory of Planned Behavior (ToPB) för att bättre kunna förstå enskilda skogsägares beteende och agerande. Chi-två test används för att undersöka om det finns en signifikant skillnad i kunskap och attityder till naturvård mellan certifierade och icke-certifierade enskilda skogsägare. Resultaten indikerar att certifieringsstatus påverkar enskilda skogsägares attityder och kunskap; det finns en signifikant skillnad i svarsfrekvens mellan certifierade och icke-certifierade enskilda skogsägare i Sverige. Sammanfattningsvis visar båda grupperna goda kunskaper om naturvård och anser att den svenska skogspolitiken är tillräcklig för hållbar skogsförvaltning och bevarande av biologisk mångfald.

Nyckelord:

FSC, PEFC, frihet, ansvar, the Theory of Planned Behavior, chi-square test, biologisk mångfald

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Abbreviations

CCF	Continuous Cover Forestry
FSC	Forest Stewardship Council
NIPF	Non-industrial private forest
PEFC	Programme for the Endorsement of Forest Certification
ToPB	Theory of Planned Behavior

1. Introduction

In an era where our planet faces climate change the forest plays an important role for climate change mitigation and biodiversity. Forests have the unique ability to provide carbon storage, preserve water and air quality. Many species depend on these forest environments, which are currently in decline. Besides ecological values, forests also provide social and economic benefits such as recreation, food, timber production, and bioenergy. Climate change is threatening the forests and its ecosystems, therefore, it is crucial to maintain the resilience and stability of the world's forests to combat climate change and ensure these ecosystem services are preserved for future generations (Pan et al. 2011; Gauthier et al. 2015; Kuuluvainen et al. 2017).

Sweden, situated in northern Europe, consists of 70 percent forest cover most of its part in the boreal region (Skogsstyrelsen n.d.b). The boreal forest have a vital strength towards climate change (FAO,UNECE 2021; Skogsstyrelsen 2022a). Regardless of Sweden's only 28 million hectare (Mha) forestland, Sweden stands as the fourth highest exporter globally, following Canada (347 Mha), Russia (815 Mha) and the United States (310 Mha) in terms of exported wood products, which include timber, paper and pulpwood (FAO 2020; Riksskogstaxeringen 2023; Skogsindustrierna 2024). The high production of wood products indicating an intensive forest management approach, underscoring the critical role of Sweden's forest policy in biodiversity and ecosystem conservation efforts (Skogsstyrelsen 2020b). The Swedish forestry act ("Skogsvårdslagen" in Swedish), established in 1903 (most recent update in 1993), implies that both production and environment hold equal importance with consideration to social and cultural values. In contrast to the law before 1993, the revised law is built upon the principle of *freedom with responsibility*. This freedom evolves from a less detailed forest policy with few mandatory governmental regulations entailing that forest owners hold the responsibility to fulfil intentions of forest policy (KSLA 2009; Skogsstyrelsen 2022b). In Sweden half of the forest is owned by non-industrial private forest (NIPF) owners (KSLA 2015), highlighting their significant role in forest management and conservation, underlining the importance of their attitudes and actions in shaping forest policy and conservation efforts.

The nature conservation aspect of forest policy is known as the Swedish forest model, which aims to regulate forest management for sustainable yield for future generations. It considers economic, ecological, and social aspects, aligning with Swedish environmental goals and the UN sustainability goals. The model is based on two laws, Environmental Code and Swedish forestry act, section 30 (KSLA 2015). The environmental Code aims for sustainable development and protect the nature for future generation. The Forestry Act contains laws, regulation and general advises specified for forest owners.

In Sweden 67 percent of the 23,5 Mha productive forest are certified with one or two of the main certification systems used in Sweden: Forest Stewardship (FCS) and Programme for the Endorsement of Forest Certification (PEFC)(Skogsstyrelsen n.d.a). The purpose of these certification systems is to ensure sustainable forest management for future generations which includes higher standards with environmental considerations. Certified forest products also entail a higher market value, which serves as a motivating factor for NIPF owners to pursue certification. (FSC 2019; PEFC 2024b).

Due to the high percentage of NIPF owners and the climate-related difficulties we encounter globally, there is a need for a greater understanding about the NIPF owners' attitude towards the Swedish model and nature conservation to ensure a resilient forest. To understand NIPF owners' attitude towards nature conservation in Swedish forest, a survey was designed based on Theory of planned Behavior by Ajzen (1985). Ajzen explains that understanding people's attitude is significant for understanding behavior, which is based on certain background factors. Understanding NIPF owners' behavior is relevant since their action of managing forest have a significant impact on nature conservation in Sweden.

2. Purpose

Today, certification serves as a complement to Swedish forest policy. The question is whether the criteria associated with certification should be integrated as a standard in Swedish policy. The purpose of this study is to understand if there are differences between certified and non-certified NIPF owners' attitude toward and knowledge of nature conservation and Swedish forest policy. This is addressed by the following hypothesizes:

- If NIPF owners are non-certified, they are less familiar with the meaning of the term *General consideration*, compared to certified NIPF owners.
- If NIPF owners are non-certified, they are less familiar with the meaning of the term *Living forests*, compared to certified NIPF owners.
- If NIPF owners are certified, they believe that NIPF owners can determine conservation efforts without the state involved, to a larger degree than non-certified NIPF owners.
- If NIPF owners are certified, they report higher confident that the Swedish model for environmental consideration in forestry ensures biodiversity in the forest, compared to non-certified NIPF owners.
- If NIPF owners are certified, they believe they have enough knowledge and information to make decisions concerning conservation measures on their forest property, compared to non-certified NIPF owner.

3. Background

3.1 The Swedish forests

Swedish forestlands cover about 70 percent of the land area, in total about 28 Mha. Of these, 23,5 Mha are productive forest land, and 5,0 Mha are non-productive forest land, such as mire and alpine areas. About 80 percent of Sweden's forestland is located in the boreal region and therefore dominated by coniferous forest (82 percent), where Scots pine (*Pinus sylvestris*) accounts for 39 percent of the forest cover, followed by Norway spruce (*Picea abies*) at 39 percent, and Silver birch (*Betula pendula*) at 12 percent, making them the predominant species. The remaining 20 percent of the forested area lies within the nemoral zone in the south of Sweden and is primarily composed of European beech (*Fagus sylvatica*), Oak (*Quercus* spp.), European aspen (*Populus tremula*), and Black alder (*Alnus glutinosa*) (Riksskogstaxeringen 2023).

The most common age class in Swedish forests is between 41- 60 years (16,7 percent of the area). In Sweden, 3,5 Mha forest is classified as "old forest", which is forests older than 140 years and represents 12,7 percent of the total forest land in Sweden. These forests are important due to their high natural values which many species rely upon.

Deadwood is a key measure of biodiversity, about 50 percent of the red listed species are dependent on deadwood and such environment for nutrition, habitat or nesting (Skogsstyrelsen 2020a). Between 2005-2023 the total volume of deadwood increased from 205 million m³ to 274 million, a total increase of 30 percent, alpine areas excluded (Riksskogstaxeringen 2023)

3.2 Forest management system

The most well-known and applied management system among NIPF owners in Swedish forestry is even aged monocultural silvicultural system. It is cyclic and

refers to clearcutting and re-planting, including pre-commercial thinning and commercial thinning while forests are growing (Skogsstyrelsen 2022a). This silvicultural system has been predominantly used during the 20th and 21st century, mainly due to its economic benefits. Wood production has been and still is contributing to Swedish economy. Sweden ranks as the fourth largest exporter of wood and pulp, however only with one percent of the world's forests (KSLA 2015; Lindahl et al. 2017; Skogsindustrierna 2024). The long history of even-aged silvicultural system in Sweden has created monocultural forests, where the most common age is between 41-60 (16.7 percent). These forests results in less deadwood and old forest (older than 140 years) which has caused lack of important environments for many species (Naumov et al. 2018; Hertog et al. 2022). The loss of biodiversity and the negative impacts of climate change on forests have heightened the demands and expectations. Continuous Cover Forestry (CCF), also referred to as 'clear-cut-free forestry', is being discussed and seen as an alternative method to the traditional even-aged silvicultural system. CCF is classified as a more ecologically sustainable management practice in contrast to the even-aged system. For example, studies have concluded that CCF is more beneficial to the diversity of ectomycorrhizal fungi and the variety of dead wood types (Hertog et al. 2022).

3.3 Ownership of forest in Sweden

In Sweden, private forest owners are the main owner (56 percent) and is categorised into; non-industrial private forest owners (NIPF owners) (50 percent) and other private forest owner such as church (6 percent). Followed by the private companies (25 percent), state-owned companies (14 percent), state (3 percent) and municipalities and county council (2 percent). Around 90 000 NIPF owners are members of a forest owner association. The purpose of a forest owners' association is to strengthen the market position of private forest owners and enhance their ability to receive equitable value for their timber (KSLA, 2015).

3.4 Non-industrial private forest (NIPF) owners

In Sweden, NIPF owners collectively own and manage about 50 percent of Sweden's productive forest land and produce around 60 % of the harvest volumes. The average size of a property for NIPF owners is around 50 hectares (KSLA 2015). NIPF owners can also own forest together as a form of co-ownership, about 3 million hectares is owned by at least one male and one female (Skogsstyrelsen 2023a).

3.4.1 Categorized NIPF owners based on motivation

To gain further insights into NIPF owners in Sweden, it is crucial to recognize the diverse aims and objectives regarding their property among different forest owner groups. According to Miguel Rivi re (2016), who utilized the same survey and dataset as in this study, five main owner groups could be identified. These five are: Production oriented owners, Passive owners, Traditionalists, Multi-objective owners and ultimately Recreationists. The key difference between these groups is their goal with the forest, which also influence management practices and level of engagement (fig. 1). Production oriented owners' main goal is production and economical profit from the forest, this group had a majority of 80 percent male owners. Passive owners do not have specific goal with their forest and are usually not very active in their property. Traditionalists are owners that mainly have heritage the property and the goal is to keep the forestland in the family to next generation. In contrast to the production-oriented owner, the Traditionalists have the highest rate of female owners, 29,5 percent. The Multi-objective owners, focus on more than one perspective, here both environment and production are out of interest. This group tends to live close to their forests, also here is a majority of male owners, 81 percent. The last mentioned group, Recreationists are described as younger than the other groups and a high 95 percent visit their forest more than once a month mainly for recreation purpose (Rivi re 2016). The owner groups can be connected to the ToPB since the groups are founded from backgrounds factors and attitudes towards policy, forest management and nature conservation. To comprehend the divergent goals is crucial for understanding the variations in forest owners' objectives, which in turn influences their attitudes towards policy and nature conservation.

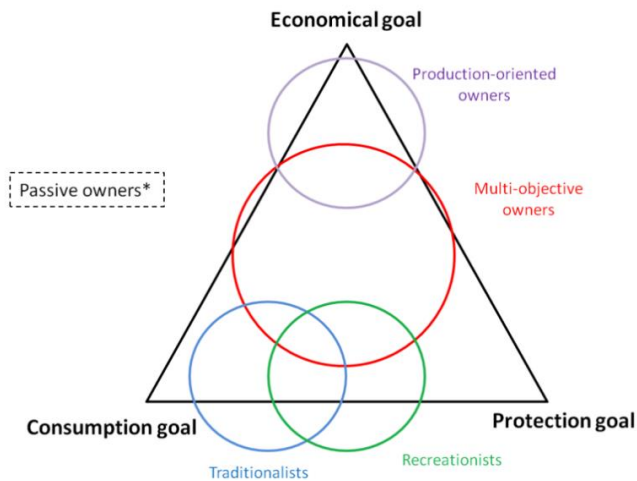


Figure 1. Illustrates a triangle with three main different goals: economical, consumption and protection. The five owner groups are placed where they have their primary goals (Rivière 2016).

3.5 Forest policy in Sweden

The first forestry act was established in 1903, stating that owners were required to replant after harvesting. Today, the law balance two major goals; production and environmental goals, where ecologic, economic, and social values are taken into consideration. This was stated 1993 in the revised law. Forest management are mainly regulated by the Forestry Act but also by the Environmental Code (Skogsstyrelsen 2023b). The Environmental Code states that a consultation must be done if the action significantly alters the natural environment (Miljöbalk (1998:808) kap 12.6§). The Forestry Act contains laws and vague mandatory regulations, with associated general advice. For example, the regulation encourages to leave trees on clearcuts, but does not specify how many. For instance, forest owners should take general consideration in forest management related to nature- and cultural conservation, as indicated by section 30 and regulation 7:8 in the Swedish forestry act (1979:429) (Skogsstyrelsen 2022b).

“30§ The Government, or public authority designated by the Government, may issue regulations on the degree of respect to be extended to nature conservation and cultural heritage preservation interests in connection with forest management, as regards the form and size of felling areas, regeneration methods, the retention of individual trees and groups of trees, fertilization, drainage, and the routing of forest roads...”

"7:8 During all logging activities, consideration for species, cultural environments, and the landscape should be taken, leaving behind shrubs and individual trees, tree clusters, and dead trees."

Due to the few and vague laws and regulations, the Swedish policy is often referred to as *freedom with responsibility*. Johansson et al. (2009) claims that it can be difficult and challenging to meet the environmental goals by using the principle *freedom with responsibility* (Johansson & Keskitalo 2014). On the contrary, Swedish forest owners perceive their freedom to be restricted due to the forest- and environmental regulations and laws (Danley 2018).

3.6 The Swedish forestry model

The Swedish model for conservation consists of three parts – formal protection, voluntary set aside and general consideration. It is regulated by the Swedish Forestry Act and Environmental code (KSLA, 2009). In this study, predominantly general consideration will be studied.

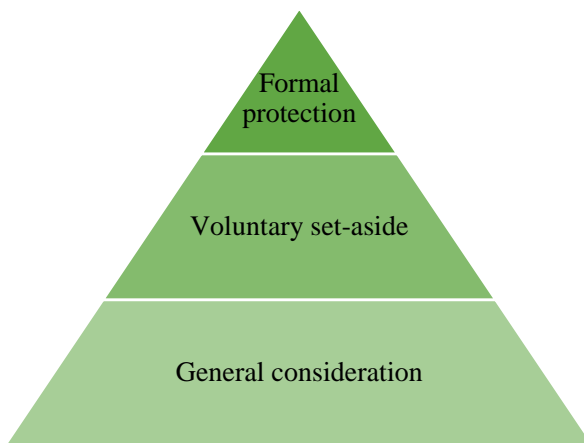


Figure 2. Illustrates the Swedish model for nature conservation, divided into formal protection, voluntary set-aside and general consideration.

General consideration - When managing forest, it is important to consider the species that are bound to that environment. A forest owner is obligated to take general consideration according to section 30 in the Forestry Act. However, the Forestry Act does not specify the extent to which general considerations should be made. The general consideration includes different kind of actions. Consideration such as buffer zones in riparian zones, leave standing trees and tree species that naturally occur on the site, protecting water ways, and limit the size of clear-cuts. General consideration also includes to avoid damage forest land and preserve valuable cultural environments. Forest owners should sustainably manage the forest and provide a good yield, and consider nature, natural heritage.

Voluntary set asides - As a forest owner, there is a certain expectation to protect the productive forest through voluntary set-aside, it is a part of *freedom with responsibility*. For certified owners, there is a requirement to voluntarily set aside a minimum of five percent (FSC 2019; PEFC 2024b).

Formal protection – Forests of particular value, e.g., high biodiversity values, habitats for endangered species are formally protected, currently 8.9 percent of the forest land. Formal protection may be either productive or non-productive forest land and implies that the land is protected by laws, agreement, and regulations. The most common formal protected forests are within national parks, nature reservations and habitat conservation areas (Naturvårdsverket n.d.)

3.7 Sweden's environmental goal "Living forests"

The forest is important for a lot of species which are dependent on this environment. It is also essential for recreation and providing renewable resources. On April 25, 1999, the 15 environmental quality objectives were established by the Swedish parliament. Today, there are 16 environmental quality objectives, the 16th was implemented in 2005 (Sveriges miljömål 2021). The Swedish environmental objectives include a generation goal, 16 environmental quality objectives and milestone targets. The 12th environmental quality objective is *Living forests*, which the Swedish Parliament defined as,

"The value of forests and forest land for biological production shall be protected while preserving biodiversity, cultural heritage values, and social values." (Sveriges miljömål - Levande skogar 2023)

The indicators for *Living forests* are the Swedish model (formal protection, voluntary set-asides, general consideration), old forest, nesting birds, environmental consideration in forestry and the structure of forest landscapes. To reach the goal *Living forests* a long-term conservation of the forest such as formal protection and voluntary set-aside in forest with high natural values is a crucial effort. The measures being taken today demonstrate a positive impact in the environment. However, more policy instrument is necessary to attain the goal *Living forests* and prevent the loss of biodiversity (Sveriges miljömål 2023).

3.8 Certification

Certification is a voluntary supplement contract available for forest owners where the purpose is to manage the forest in sustainable direction with particular

regulations that go beyond The Forestry Act (1979:429) and the Environmental code (1998:808). The goal is sustainable management where production, environment and social aspects are in balance. Certified forest products offer a market advantage, which can influence forest owners to choose certification. In Sweden there are two main certification systems: Forest Stewardship (FCS) and Programme for the Endorsement of Forest Certification (PEFC). In 2022, Sweden had 14,8 million hectares of certificated forestland which represent 67 percent of the total productive forest. Of this, 75 percent held a double certification (Skogsstyrelsen n.d.a).

The certification systems have different standards, but they have several criteria in common. One of them is a higher degree of general consideration and 5 percent set asides with different nature aspects. Another aspect in common is long-term planning and frequently follow up at the property. There are also group-certification, which is a good alternative for forest owners with smaller properties since there is less administrative paperwork for the owner. This group certifications are organized through a term often referred to as umbrella organizations for forest certification, for instance forest corporations (FSC 2024; PEFC 2024c).

Keskitalo and Liljenfeldt (2014) describe communication as one of the most essential factors for a functioning certification system. This is because forest management action often involves many individuals, and information may be lost. They also emphasize the importance of certification for higher quality in nature conservation, but criticized whether it is possible to see a difference in conservation between a certified forest and non-certified forest. Another study indicated that certification is a supplement to Swedish forestry policy since it includes higher standards with more specific guidelines. However, national nature conservation should not depend solely on certification since not all forest land are certified (Johansson & Keskitalo 2014).

3.8.1 Forest Stewardship Council (FSC)

The Swedish Forest Stewardship Council (FSC) is founded from the international membership organization FSC that focus on sustainable forest management with three perspectives: economical, ecological and social. The global FSC was established in 1993 after the UN congress in Rio de Janeiro 1992. FCS is a non-government profit-less organization with over 80 member countries. The main stakeholders are sustainable management of the world's forests, dialogue, and collaboration between interest groups of the forest. The standard contains 10 principles which are focused on preventing deforestation, protecting indigenous rights, favourable labour conditions, preserve biodiversity, quality of water and

carbon storage. The standards are the base rules that need to be followed by the forest owner (FSC n.d.).

FSC Sweden was initiated 1996 and is founded on the same principles and criteria as the global FSC with indicators that are adjusted to the conditions in Sweden. To be approved, these indicators must be followed by the certificate holder, thereby ensuring that the principles and criteria are met. FSC is a third party independent of both the buyer and the seller of the forest materials (FSC 2019).

3.8.2 Programme for the Endorsement of Forest Certification (PEFC)

PEFC, Programme of the Endorsement of Forest Certification is based on the Lisbon Declaration, which emerged from the Third Ministerial Conference on the Protection of Europe's Forests in June 1998. PEFC is a non-profit organization and was formally established in 1999 (PEFC 2024b, n.d.). In contrast to FSC, PEFC was developed with the aim of being adapted to small-scale family forest owners. Its primary objective was to create a system of active and responsible forest management that accommodated national standards (Svenska PEFC n.d., PEFC 2024b, n.d.). In parallel with FSC, PEFC also focuses on sustainable forest management in balance with production, environment, and social aspects. The main difference between these standards is as mentioned that PEFC centers the small-scale forest owner. Normally small-scale owners use group certification via an umbrella organization to avoid paperwork.

PEFC Sweden was founded in 2000 and is structured with six partial standards which include descriptions of the certification system for forest management, entrepreneurs, and wood supply within Sweden. Standard number two, *Forest management standard*, contains specific guidelines of how to manage the Swedish forest in a sustainable way with environment, production and social aspects included (PEFC 2024b).

4. The Theory of Planned Behavior

Ajzen (1991) outlined the Theory of Planned Behavior (ToPB) as the prediction of human behavior and aims at understanding the background of peoples' intentions, attitudes toward behavior, to explain the behavior itself. Thus, the theory tries to find the factors that impact the willingness towards that lead to a certain behavior.

Ajzen found that the three main aspects that affect an individual's willingness to act are: Individual - intelligence and general attitude, Social - gender, age, income and education and Information - media, knowledge, and experience. The background factors are the base of an individual's behavior and are categorized into three types of beliefs: behavioral beliefs, normative beliefs, and control beliefs. Thereby influence the intentions: attitudes, subjective norm, and perceived behavioral control. All the aforementioned shapes the individual's actual behavior (fig. 3), representing the intention set in action. The theory assumes that external factors are included, for example: money limitations, physical or psychological barriers (Ajzen 1991).

The ToPB helps to understand how the background factors are linked to NIPF owners' attitude towards nature conservation and the motivation behind decision-making regarding their forest. The survey is designed through intentions and beliefs, where each survey questions belongs to different beliefs, the attitude towards it, the norms from society, and under the given circumstances of each NIPF owners. This helps to investigate the reasons behind the behavior of NIPF owners and the possible obstacle there is towards the policy.

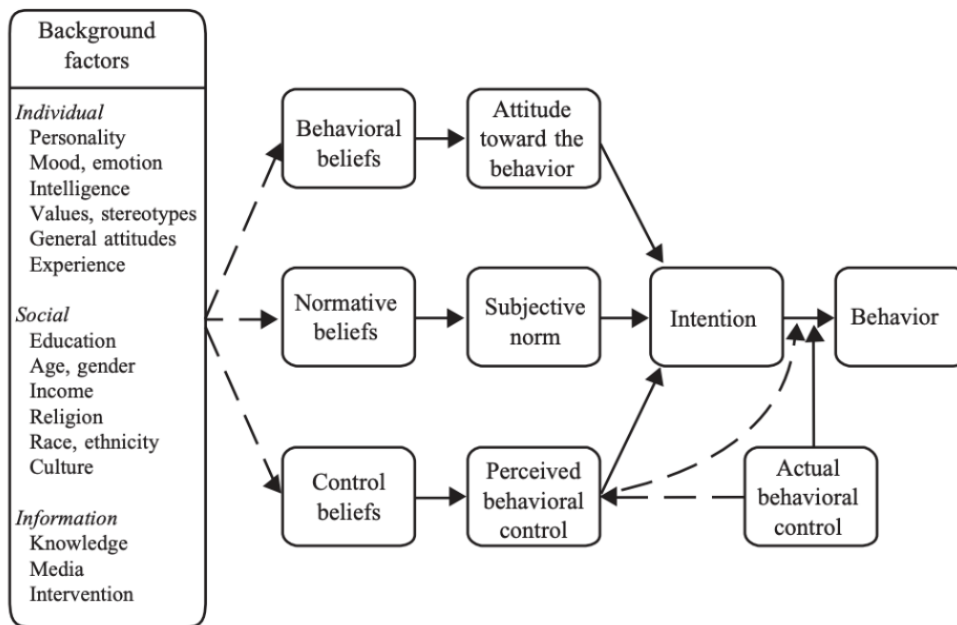


Figure 3. Theory of planned behaviour (Ajzen, 2005)

Beliefs

Based on the factor's individual, social and information, the ToPB has constructed three main *beliefs* (Ajzen 1991):

- *Behavioral beliefs* are based on the individual's principles and expectations regarding outcomes of their actions. It relates to how the person believes that a certain behavior would impact themselves or others. This then influences *the attitude toward the behavior*.
- *Normative beliefs* are primarily focused on others' beliefs and expectations. Including social norms and how other people will react and think regarding the individual's behavior. This thereby results in *the subjective norm*.
- *Control beliefs*, refer to the individual's perspective regarding their ability to perform a certain action. This is known as *the perceived behavioral control*, reflecting whether they believe they have control and can succeed with the action.

Three different types of intention

In Ajzen (1991) it is explained that the intention play a central role and must be known to predict behavior. This leads to three determining factors:

- *Attitude toward the behavior*, the attitude reflects a person's positive or negative assessment of performing a certain behavior, and the outcome of the behavior.
- *Subjective norm*, this is the social pressure, what other might think about a certain opinion. This affect whether or not to perform a certain behavior.
- *Percived behavioral control*, this relates to a person's opportunities to perform a behavior. This will instant affect the behavior and the intention to perform it.

Finally, as mentioned the beliefs and intentions conclusively lead to the actual behavior.

5. Methodology

5.1 Process of the survey

The postal survey was developed in 2014, with the purpose to examine self-reported attitudes towards nature conservation in Swedish forestry. It was written in Swedish and distributed to NIPF owners throughout the entire country. The survey was developed within the research project “General consideration”, funded by the Future Forests Program, led by Associate Professor Camilla Widmark. To cover various aspects, it was constructed by both natural and social science researchers, using the Theory of Planned Behavior (ToPB) as a starting point. The survey included five main sections: forest property questions, questions regarding Swedish environmental work, questions on sources for information, questions on future management of forest estates and general background information.

The selection of respondents was based on the number of forest owners in each county. The selected number of owners in each county reflected the proportion of the total Swedish forest owners, only landowners with properties of five hectares or larger were surveyed. The survey was distributed to 2987 forest owners out of the selected sample of 3000. Out of these 2987 forest owners, 1296 completed and returned the survey, while 32 were returned blank. This led to a response rate of 43.7 percent. The empty and non-useful data were left out, meaning that 1260 responses were used in this analyzis.

It was important to analyze the spread of the response rate, the number of distributed surveys, and the number of responded surveys, since the response rate was less than 50 percent without systematic non-responses. Hence, this survey represented the whole population. The variance fluctuated on average between minus one to one percent (table 1). Out of the 21 counties, seven counties exhibited a response rate one percent lower than the actual proportion of forest owners, another seven counties showed a response rate one percent higher, while an additional six counties demonstrated the same response rate as the true share of forest owners. One county distinguished itself with a difference of minus two percent, and two percent of the respondents did not fill in which county the forest property was located.

Table 1. The responses from NIPF owners.

County	Tot. number of forest owners	Share of total nr. of forest owners	Nr. of respondents for each county	Nr. of respondents answered	Share of answered surveys	Variance between survey response rate and total forest owners
Blekinge	7292	2%	53	18	1%	-1%
Dalarna	41346	10%	299	125	10%	0%
Gotland	5882	1%	43	22	2%	1%
Gävleborg	18867	5%	136	49	4%	-1%
Halland	11395	3%	83	43	3%	0%
Jämtland	24960	6%	182	94	7%	1%
Jönköping	21719	5%	158	75	6%	1%
Kalmar	17340	4%	125	60	5%	1%
Kronoberg	19475	5%	142	78	6%	1%
Norrbottn	27522	7%	201	73	6%	-1%
Skåne	16929	4%	123	60	5%	1%
Stockholm	8352	2%	61	20	2%	0%
Södermanland	6612	2%	48	19	1%	-1%
Uppsala	7922	2%	58	20	2%	0%
Värmland	32608	8%	237	95	7%	-1%
Västerbotten	34736	8%	253	113	9%	1%
Västernorrland	22934	6%	164	59	5%	-1%
Västmanland	6190	2%	45	11	1%	-1%
Västra Götaland	55849	14%	405	158	12%	-2%
Örebro	10776	3%	79	34	3%	0%
Östergötland	12529	3%	90	38	3%	0%
Not provided a county				32	2%	
Total	411235		29871	1296		

5.2 Selection of data

Each question was analyzed based on the responses. No answers were removed and was not included in the analysis. Questions where only one answer was allowed but respondents provided multiple answers were excluded from the analysis. Each question where multiple answers were allowed, each answer was treated separately. In question B4 and question B5, response options with similar meanings were grouped together and counted as one group in the analysis, each question separately. This was done to facilitate data management. See Appendix 1 for the original Swedish version of the survey and Appendix 2 English version.

Part B of the survey addressed Swedish forest policy.

B4: How familiar are you with the following ecological concepts?

B44 General consideration

B45 Living forests

Each alternative could be answered by five options:

Good knowledge - Fairly good knowledge - Heard about it - No knowledge

For the question regarding *General consideration* and *Living forests*, 1210 and 1207 responses were utilized respectively. Alternative *Good knowledge* and *Fairly good knowledge* were combined into one group. This gives question B4 three alternatives: *Good knowledge*, *Heard about it* and *No knowledge*. Question B4 can be linked to control beliefs in the Theory of Planned Behavior, as it aims to understand the level of knowledge reported by NIPF owners. This connection extends to perceived behavioral control, representing an individual's ability to utilize the information into practical action, for example in their forest management.

B5: To what extent do you agree with the following statements about environmental measures in Swedish forestry?

B51 Landowners alone cannot take care of conservation, it is the state responsibility

B53 I feel confident that the Swedish model for environmental considerations in forestry secures biological diversity in forests.

Each alternative could be answered by five options:

Strongly agree - Agree – Disagree - Strongly disagree – No opinion

For questions in B5, subsections B51 had 1184 responses utilized and B53 had 1186 responses. For B5, *Strongly agree and Agree* were combined into one group, and *Disagree* and *Strongly Disagree* were also combined. This gives three alternatives: *Agree, Disagree* and *No opinion*. Within the framework of the ToPB, question B5 is related to both control and behavior beliefs by addressing the attitude towards Swedish forest policy. B51 focuses on NIPF owners' capability to engage in nature conservation, directly tied to perceived behavioral control. However, B53 primarily addresses attitude towards the Swedish model and beliefs regarding preservation of biological diversity. Additionally, normative beliefs influence NIPF owners' attitudes regarding B5.

Part C of the survey addressed knowledge and information.

C2: Do you think you have enough knowledge and information to make decisions concerning conservation measures on your forest property?

- Yes
- No
- I don't know

Total answers used for C2 were 971, 184 answered *I don't know* and 135 did not answer the question. The responses of NIPF owners regarding their perception of possessing sufficient knowledge for managing their property with natural considerations are linked to control beliefs in the ToPB. This linkage indicates if the individual believes that they have control and can succeed with natural consideration when managing the forest.

5.3 Survey data in relation to official data

This study uses the same dataset as Rivière (2016), who compared survey data with official statistics from 2015. It reveals that in 2015, 38.4 percent of the forest was owned by female proprietors, in contrast to 61.6 percent owned by male proprietors. Figure 4 indicates a significant underrepresentation of female respondents in the survey data, by 22.1 percent. Rivière (2016), also clarifies the representation of forest property size in the survey compared to actual data from 2015 (fig. 5). In figure 5, it can be observed that larger properties are overrepresented in this survey, and smaller properties (6-20 hectare) are underrepresented.

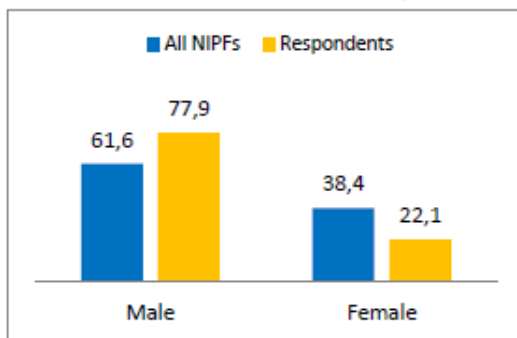


Figure 4. Comparison between the official data of all NIPF owners and the number of responses to this survey (Rivière 2016). Values represent the share in percent for each category.

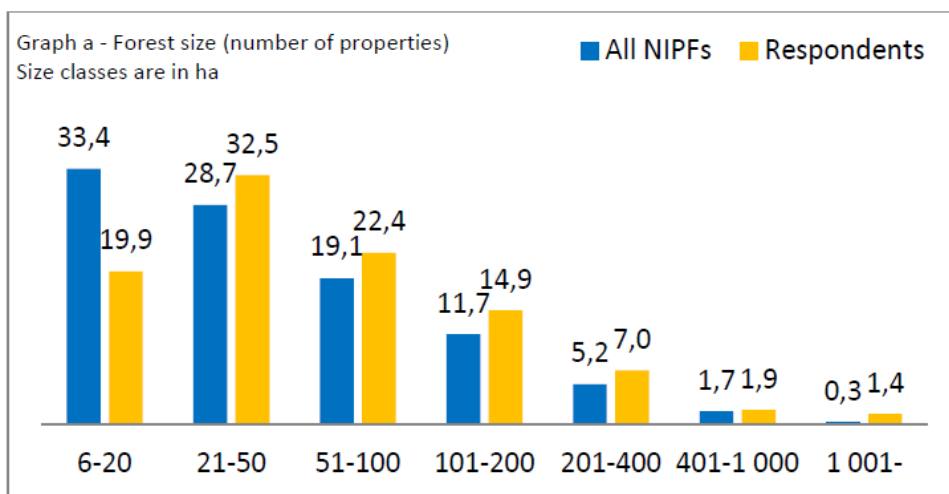


Figure 5. Comparison of property size (number of properties) between the official data of all NIPF owners and the number of responses to this survey (Rivière 2016). Values represent the share in percent for each category.

5.4 Analyzing data

Out of the 1260 responses received, respondents were categorized into two groups: certified NIPF owners (359 respondents) and non-certified (647 respondents), excluding non-answered or *I don't know* answers. This categorization formed the basis of this study. These two groups were analyzed with each of the five questions (B44, B45, B51, B53, and C2) from the survey to examine if there were any significant relationships between certification status and attitudes towards the Swedish forest policy, as well as NIPF owners' knowledge level. Additionally, background factors such as age, gender, property size, forest owner association membership, and frequency of property visits were analyzed in relation to each question. This investigation aimed to uncover potential influencing factors on the attitudes and responses of NIPF owners. Ajzen (2005) indicated that background

factors form the basis of an individual's intention and actual behavior, thus underscoring the importance of examining these variables in this study.

5.5 Chi-square test

In this study, the central question addressed was whether the certification status of NIPF owners influences their attitude toward Swedish forest policy, conservation and their level of knowledge. To answer this, a dependent Chi-square test developed by Karl Pearson was used (Howell 2011; Singhal & Rana 2015). Since there are two categories – certification and survey response - a contingency table Chi-square test was used. The table contains the frequencies of the number of certified NIPF owners answering each alternative for each question and the same for non-certified NIPF owners. The Chi-squared test calculates expected distribution of the two factors and if there are any significant association between the two factors. The expected frequencies are then statistically compared with the observed frequencies and the given p-value. A significant value was determined to 5 percent ($\alpha=5$ percent).

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

Figure 6. O= observed, E= Expected. (Singhal & Rana 2015).

H0: There is no significant association between the certification status of non-industrial private forest (NIPF) owners and their responses in the survey regarding Swedish forest policy, conservation, and their level of knowledge.

HA: There is a significant association between the certification status of non-industrial private forest (NIPF) owners and their responses in the survey regarding Swedish forest policy, conservation, and their level of knowledge.

5.5.1 Sidak method

The Sidak method was employed to calculate and adjust the significance level (α') for each test. This adjustment minimizes the risk of false positives, ensuring the reliability and validity of the statistical analyses conducted. Since the NIPF owners answering multiple questions, the tests are dependent on each other. This methodological approach is crucial in controlling the overall false positives rate across all tests, thereby enhancing the robustness of the findings and ensuring the accuracy of the conclusions drawn (Abdi 2007).

6. Results

6.1 Background information

Based on the survey responses, this section presents key background information about the NIPF owners' respondents (table 2). Most of the respondents are 65 years or older (47.5 percent) and only 18.8 percent are between 18-50 years old. Note that 76.1 percent are male, and 23.9 percent are female, which is lower than the actual percentage of female forest owners in Sweden (38.4 percent). Property size is divided into three groups: small (5-50 hectares), representing 52.6 percent; medium (51-200 hectares), representing 37.2 percent; and large (201 hectares and above), representing 10.2 percent. It is important to note that only NIPF owners with properties of 5 hectares or larger were selected for the survey. Among respondents who answered yes or no to the question if certified, 35.7 percent hold certification. There is a marginal difference in membership within forest owner associations, with 50.6 percent of respondents being members. 12.1 percent occasionally visit their forest property, while 48.2 percent visit between 1 to 5 times a week or every day, and 39.7 percent visit between 1 to 5 times a month.

Table 2. Background variables, n=total answers.

Variables	Categories	Percentage
Age (n=976)	18-50 years old	18.8
	51-65 years old	33.4
	65+ years old	47.8
Gender (n=960)	Male	76,1
	Female	23.9
Property size (n=986)	Small: 5-50 hectares	52.6
	Medium: 51- 200 hectares	37.2
	Large: >201 hectares	10.2
Certification (n=1006)	Non-certified	64.3
	Certified	35.7
Forest owner association membership	Member	50.6
	Non-member	49.4

(n=974)		
Frequency of property visits	Weekly	48.2
	Month	39.7
(n=915)	Occasionally	12.1

Note: No answers and *I don't know* responses were removed from the dataset, the sum of proportion for each variables equals 100 percent.

6.2 Analyze results

The significant level of the Chi-square tests was set to 5 percent. All five tests had p-value lower than 5 percent, indicating statistical significance for each test. To ensure that there were no false results, the significance level was adjusted with the Sidak method. The adjusted significant level was calculated to be approximately $\alpha' \approx 0.2262$, based on p-values from the five tests. The results reveal that each of the five tests has a p-value lower than the adjusted significant level.

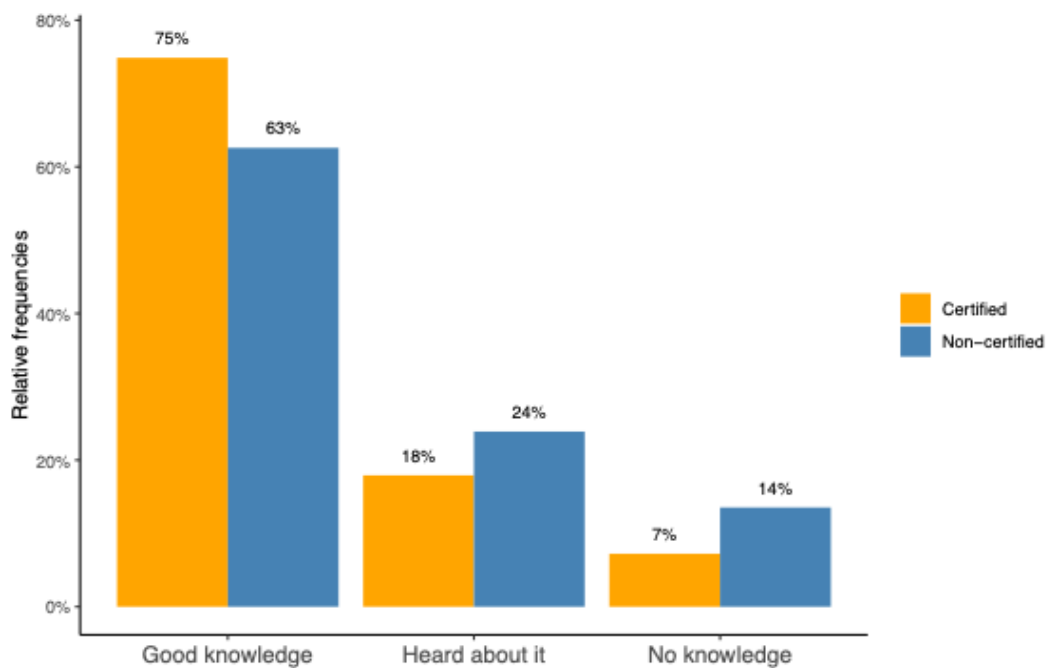


Figure 7. Question B44, how familiar are forest owners of the term General consideration. P-value = $2.568 \times 10^{-4} < \text{adjusted significant level } 0.2262$.

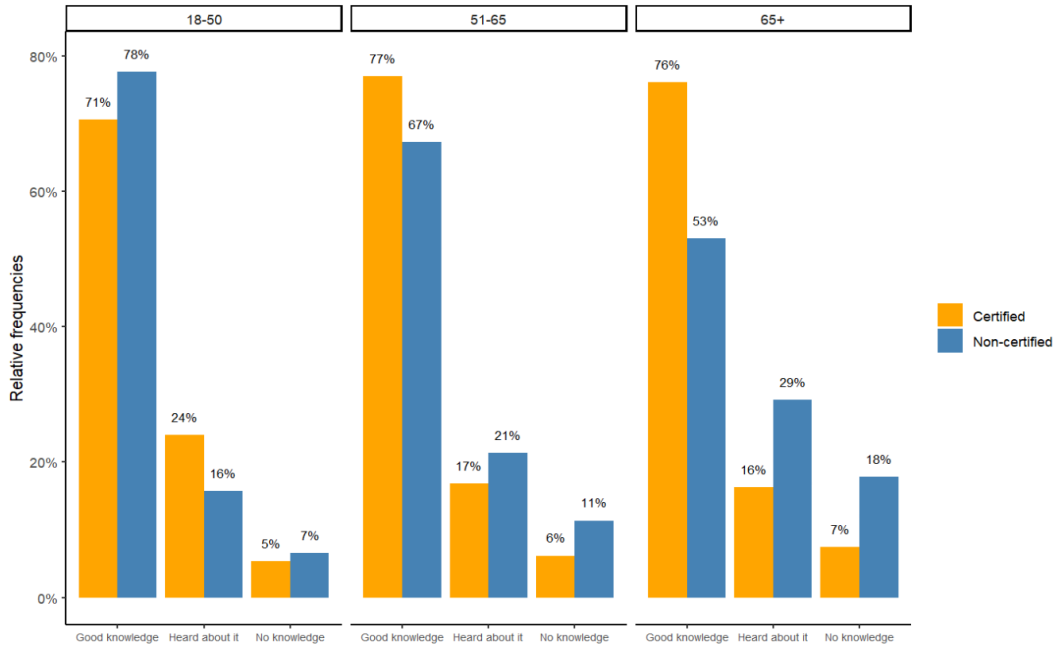


Figure 8. Question B44, how familiar are forest owners of the term *General consideration*. The answers divided into three age categories.

Question B44 (fig.7) concerns how familiar forest owners are with the term *General consideration*. Certified are significantly ($p\text{-value} = 2.568 \times 10^{-4}$), more familiar with the concept *General consideration* indicating that non-certified have less knowledge regarding *General consideration*. However, the general pattern shows that the majority of certified (75 percent) and non-certified (63 percent) NIPF owners claims *Good knowledge* about the concept *General consideration*. Total number of answers for question B44, 346 were certified NIPF owners and the rest, 628 were non-certified.

Comparing question B44 and certification to the age, it was shown that the percentage of respondents indicating *Good knowledge* was lower among the non-certified individuals aged 65+, in contrast to the other age groups (fig. 8). Moreover, a difference in responses between genders was observed, with non-certified female expressing less *Good knowledge*. Membership and the frequency of property visits for B44 and B45 did not appear to correlate with NIPF owners' certification status. Finally, for both B44 and B45, large forest owners tend to have more *Good knowledge* in contrast to small and medium-size forest owner.

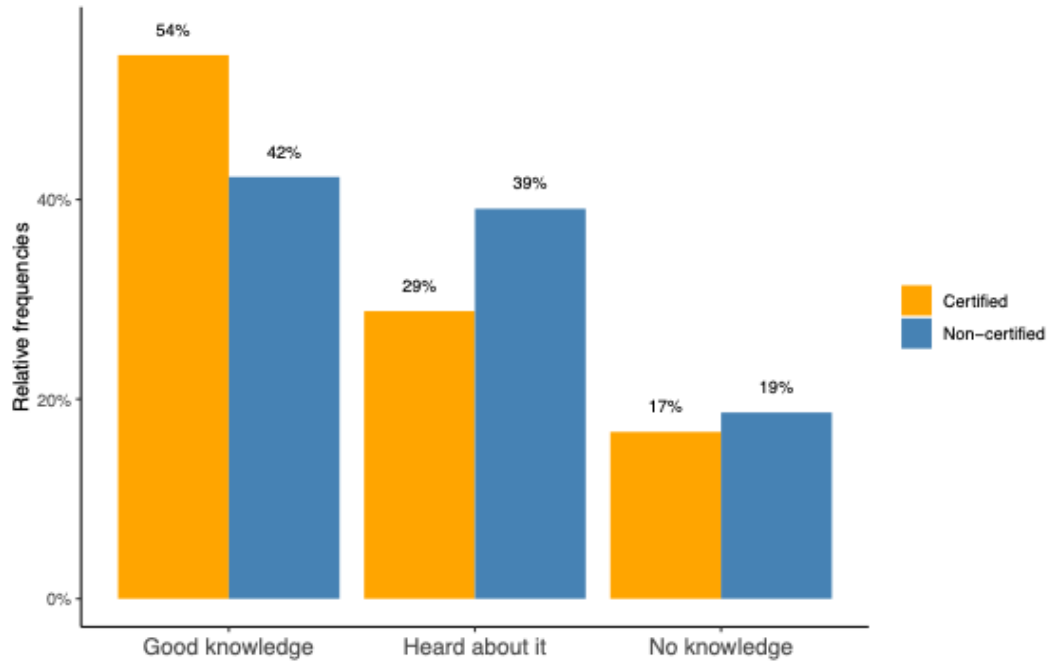


Figure 9. Question B45, how familiar are forest owners of the term Living forests. P-value = $8.088 \times 10^{-4} < \text{adjusted significant level } 0.2262$.

Question B45 (fig. 9) addresses the familiarity of forest owners with the term *Living forests*. Non-certified NIPF owners are significantly ($p\text{-value} = 8.088 \times 10^{-4}$) less familiar with the concept *Living forests*, compared to certified NIPF owners. The number of answers on question B45 were 974, certified were 347 and non-certified 627. About half part of both certified (54 percent) and non-certified (42 percent) NIPF owners have *Good knowledge* the term *Living forests*. As shown, the responses for both certified and non-certified individuals follow a linear trend, indicating a more evenly distributed set of answers for the alternative's *Good knowledge*, *Heard about*, *No knowledge*. For the answer *No knowledge* 17 percent were certified and 19 percent non-certified.

Certain backgrounds factors were found to influence question B45 and NIPF owners. Among NIPF owners aged 65+, fewer non-certified respondents indicated having *Good knowledge*, while more non-certified respondents indicated having *No knowledge*. Fewer non-certified female believe they possess *Good knowledge*.

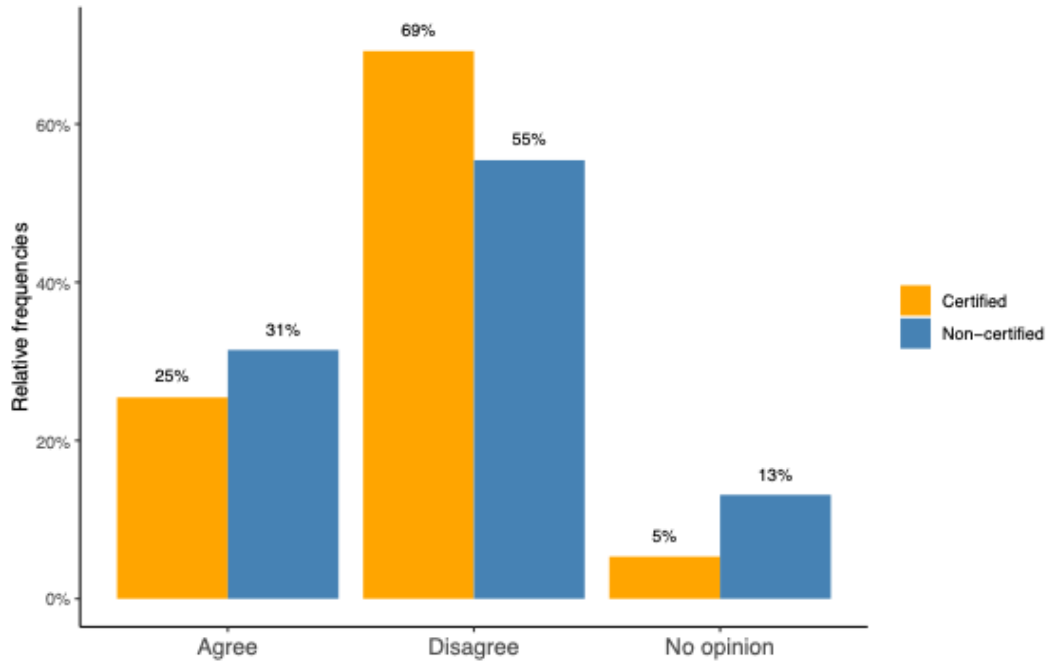


Figure 10. Question B51, to what extent do you agree with the following statements about environmental measures in Swedish forestry? Landowners alone cannot take care of conservation; it is the state's responsibility. P-value = 1.367×10^{-5} < adjusted significant level 0.2262.

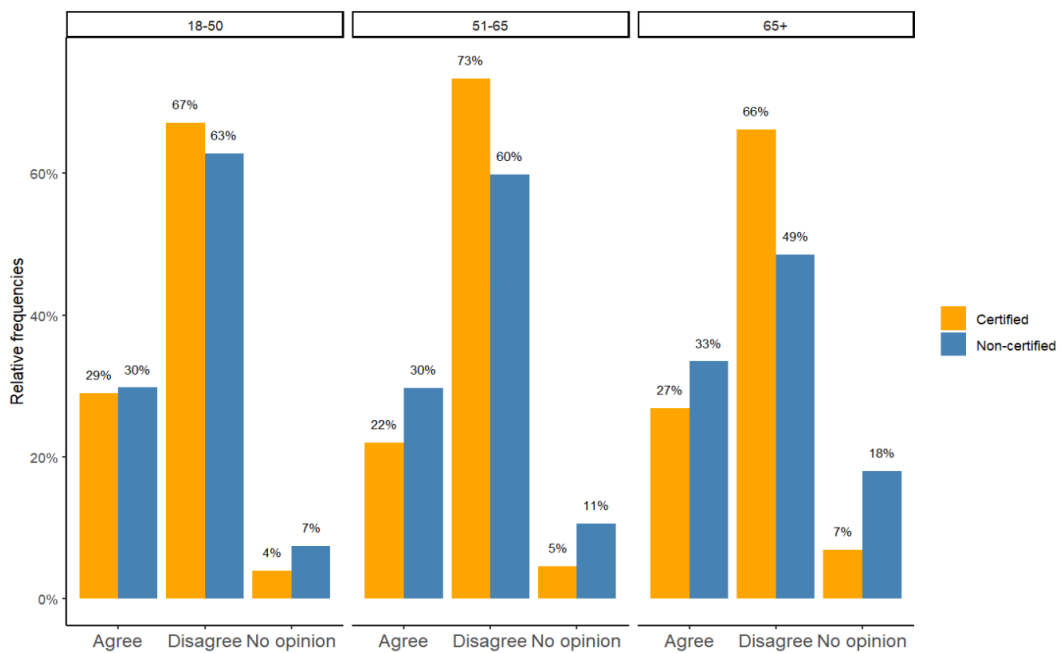


Figure 11. Question B51, to what extent do you agree with the following statements about environmental measures in Swedish forestry? Landowners alone cannot take care of conservation; it is the state's responsibility. The answers divided into three age categories.

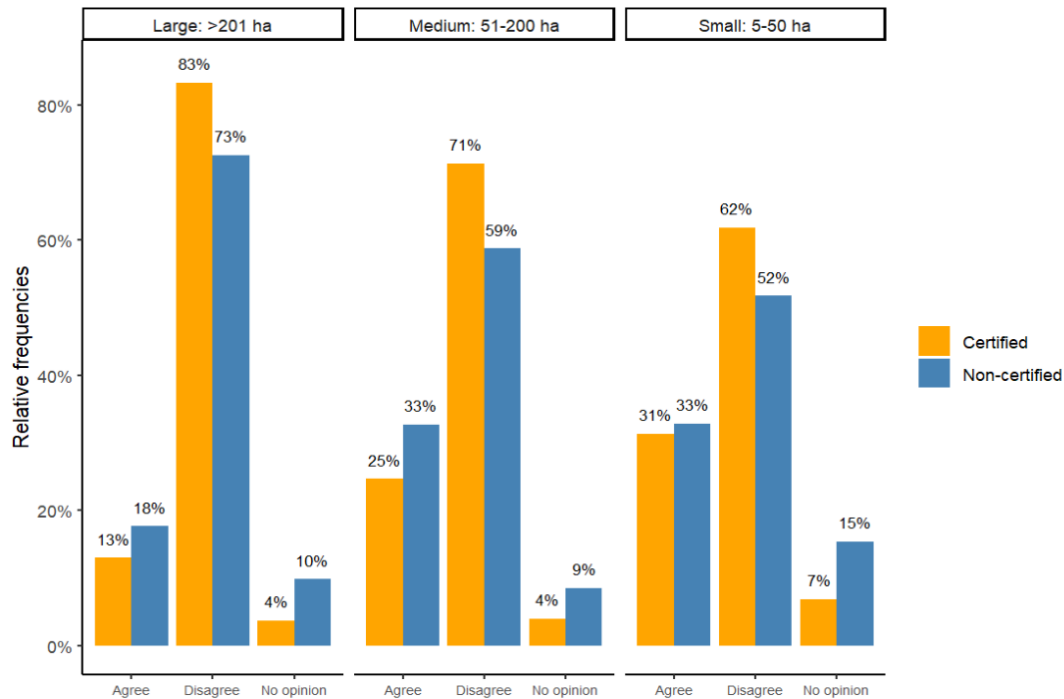


Figure 12. Question B51, to what extent do you agree with the following statements about environmental measures in Swedish forestry? Landowners alone cannot take care of conservation; it is the state's responsibility. The answers divided into three property size categories.

In question B51 (fig. 10), participants were asked about their agreement with statements regarding environmental measures in Swedish forestry. Specifically, respondents were queried on their perspective regarding the role of landowners versus the state in conservation efforts. As illustrated in figure 10, both certified (69 percent) and non-certified (55 percent) *Disagree* that it is the state's responsibility concerning environmental measures, which indicates that certified NIPF owners tends to believe that landowners can take care of conservation by themselves ($p\text{-value} = 1.367 \times 10^{-5}$). Although the majority *Disagree*, a larger proportion of non-certified NIPF owners than certified NIPF owners *Agree* that the state should be responsible. Twice as many non-certified (13 percent) answered *No opinion*, which may suggest that certified (5 percent) are more versed in the subject. The total number of responses to question B51 was 955, with 338 certified and 617 from non-certified NIPF owners.

In question B51 the majority for the age classes *Disagreed*. However, the proportion of responses differs more between certified and non-certified in age 65+ (fig. 11). According to the results more male NIPF owners, both certified and non-certified answer *Disagree* Regardless of whether NIPF owners are certified or not, there is no apparent difference in their responses to the question of membership in forest owners' associations.

Moreover, forest property size indicates having an impact on question B5. Among both certified and non-certified large forest owners, a great number respond *Disagree*. However, more small forest owners respond *Agree* in contrast to the other two categories: large and medium-sized (fig. 12). Additionally, there was no responses in *No opinion* for certified NIPF owners visiting their property occasionally.

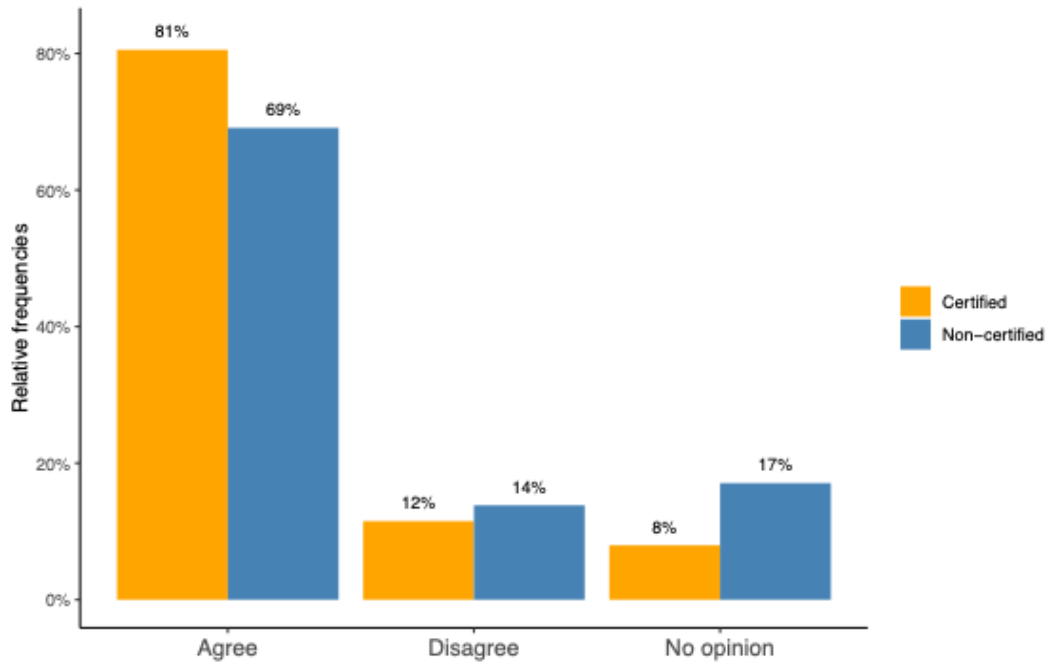


Figure 13. Question B53, to what extent do you agree with the following statements about environmental measures in Swedish forestry? I feel confident that the Swedish model for environmental considerations in forestry secures biological diversity in forests. P-value = $1.294 \times 10^{-4} < \text{adjusted significant level } 0.2262$.

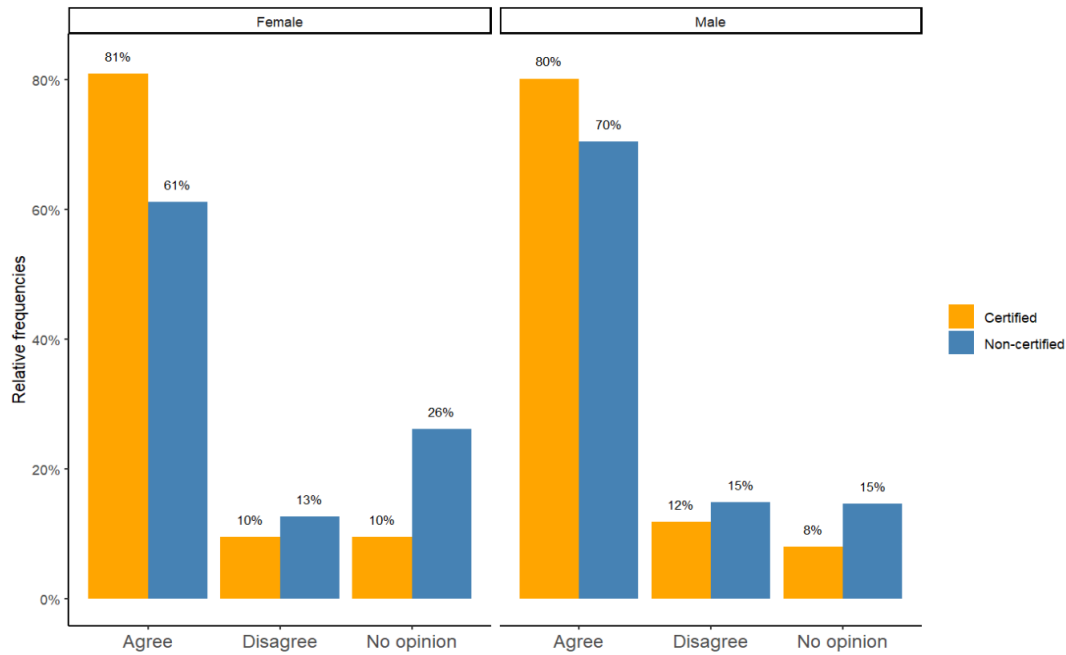


Figure 14. Question B53, to what extent do you agree with the following statements about environmental measures in Swedish forestry? I feel confident that the Swedish model for environmental considerations in forestry secures biological diversity in forests. The answers divided into female and male.

In Question B53 (fig. 13), respondents were asked to express their confidence in the effectiveness of the Swedish model in safeguarding biological diversity within forest ecosystems. The number of certified responses was 339, and non-certified responses were 615, resulting in a total of 954 responses for question B53. According to the answers in question B53 (fig. 13), most of both certified (81 percent) and non-certified (69 percent) NIPF owners express confidence in the Swedish forestry model's ability to preserve biodiversity in the forest. However, the results indicate that certified NIPF owners show greater confidence that the Swedish model secures biodiversity compared to non-certified NIPF owners ($p\text{-value} = 1.294 \times 10^{-4}$).

More female NIPF owners answered *No opinion* in question B53 than male NIPF owners (fig. 14). Certified in age 65+ (84 percent) seem to *Agree* more than age 18-50 (76 percent) and 51-65 (76 percent), and therefore feel confident that biodiversity is secured by the Swedish model for environmental considerations. In question B53, both certified and non-certified forest owners who are members of a forest owners' association are more likely to *Agree*, compared to those who are non-members of an association. The frequency of visits to their property by certified and non-certified NIPF owners does not seem to affect the answer to question B53. Finally, there are more certified large forest owners that *Agree* (95 percent) in contrast to medium-sized (75 percent) and small (82 percent) forest owners.

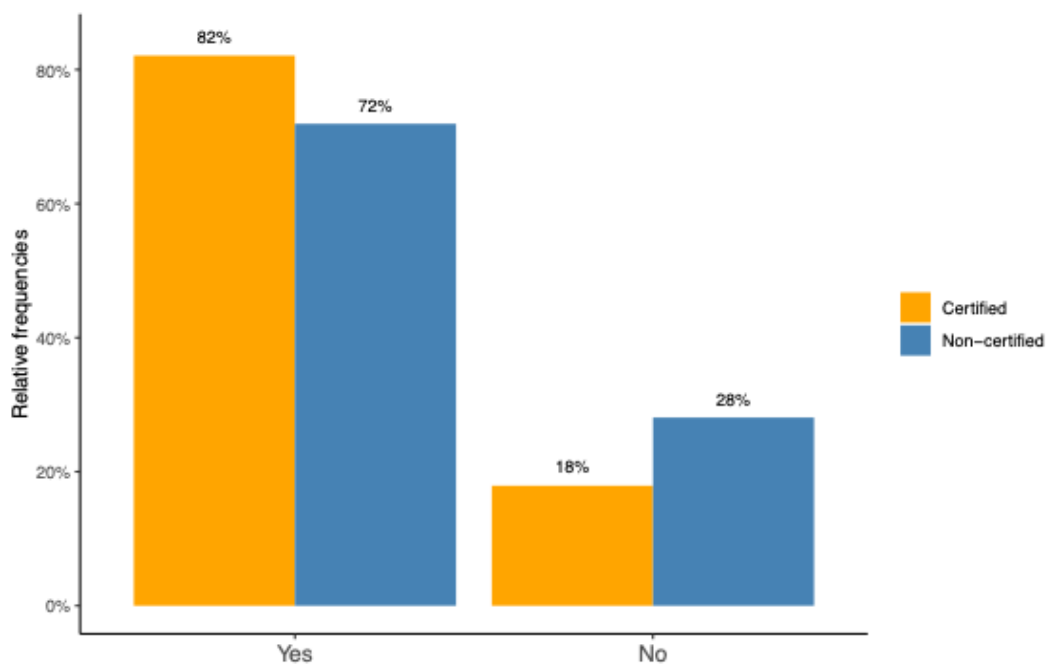


Figure 15. Question C2, do you think you have enough knowledge and information to make decisions concerning conservation measures on your forest property? P-value = 1.664×10^{-3} < adjusted significant level 0.2262.

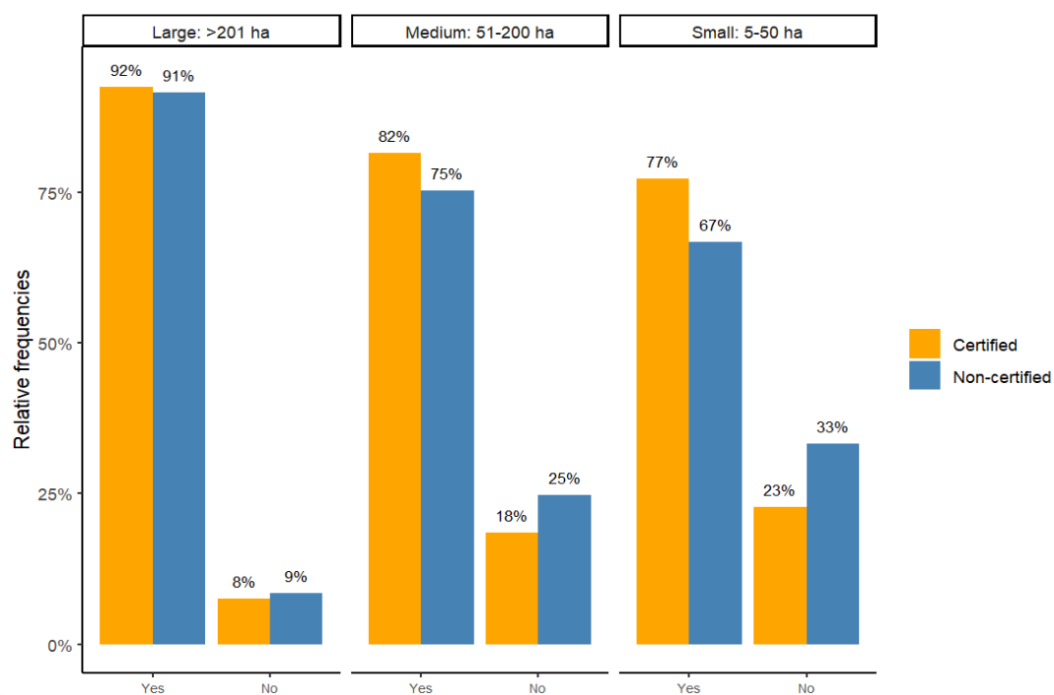


Figure 16. Question C2, do you think you have enough knowledge and information to make decisions concerning conservation measures on your forest property? The answers divided into three property size categories.

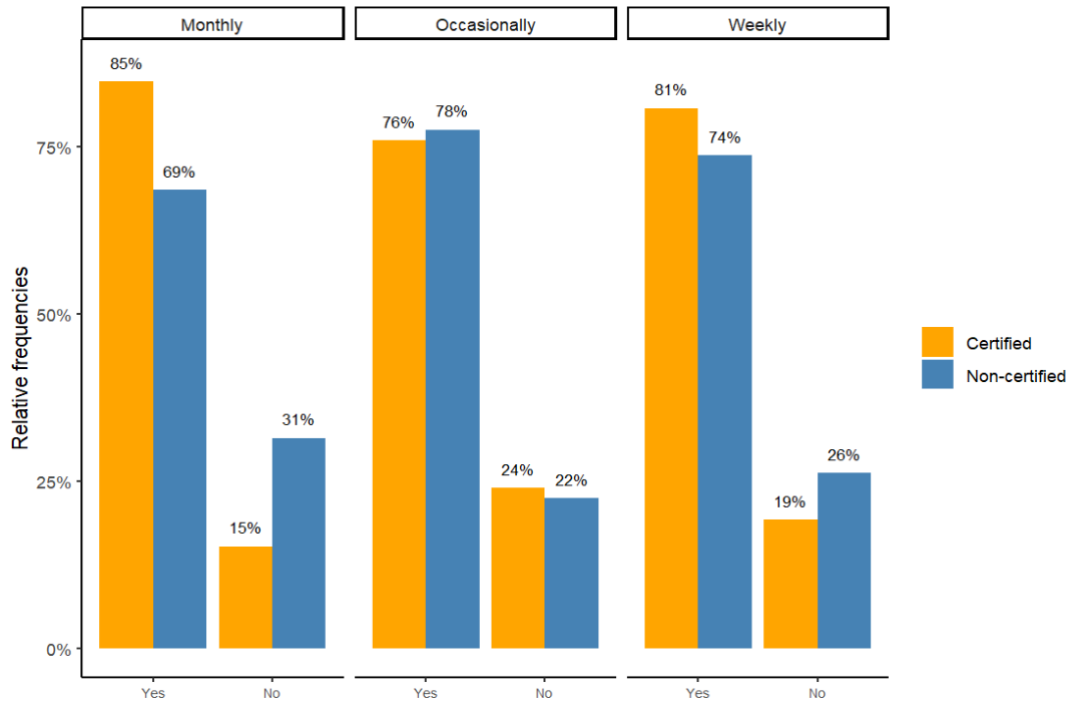


Figure 17. Question C2, do you think you have enough knowledge and information to make decisions concerning conservation measures on your forest property? The answers divided into three categories based on frequency of property visits.

Figure 15 depicts the results of Question C2, which investigates participants' perceptions of their preparedness to make decisions regarding conservation measures on their forest property. Figure 15 reveals that certified and non-certified NIPF owners' assets they have enough knowledge and information for decision-making concerning conservation on their forest property. Out of the 296 certified, 82 percent answered *Yes* in contrast to the non-certified (72 percent), the total share of responses were 791. The result in question C2 highlight that non-certified NIPF owners tend to respond *No* more frequently than certified NIPF owners ($p\text{-value} = 1.664 \times 10^{-3}$).

Out of the age class 65+ (95 percent), are more confident in their knowledge and information, compared to the (78 percent) in age class 51-65 and (77 percent) in age class 18-50 and. Female NIPF owners have indicated *No* more frequently in response to question C2 compared to male NIPF owners. Regardless of whether the forest owners are certified or not, large forest owners have responded *Yes* more often, compared to small and medium-sized forest owners. Furthermore, certified members and NIPF owners who engage in monthly property visits have indicated more confident regarding knowledge and information in decision-making.

7. Discussion

All results for each question in this study demonstrate a significant contrast between certified and non-certified NIPF owners regarding their attitudes towards Swedish forest policy and nature conservation. Since the survey was sent out to and answered by a representative sample of Swedish NIPF owners, the results can to some extent be generalized to all Swedish NIPF owners. However, Rivière (2016), using the same data, showed that female were underrepresented in the survey, compared to NIPF owners data from 2015. Additionally, forest owners with large properties were overrepresented, this might be due to a higher level of interest in answering the survey among those who own large forest areas. It is important to understand that many variables affecting an individual's intention and beliefs (Ajzen & Fishbein 2005).

The results for the question whether the forest owner or the state is responsible for conservation measurements shows a significant difference between certified and non-certified NIPF owners attitude. About 70 percent of the certified NIPF owners *Disagree* that the forest owner cannot take decisions regarding conservation alone, while only half of the non-certified NIPF owners *Disagree*. This indicated that there is a difference in attitude towards who holds the nature conservation responsibility in the Swedish forestry policy. Since freedom with responsibility lacks of structured and clear guidelines there could be some difficulties to interpret (Löfmarck et al. 2017), although NIPF owners value their freedom highly. On the other hand certification does include higher standards for nature conservation, but there is a risk in relying on certification for Swedish forest conservation, giving that only about half of the productive forest is certified (Keskitalo & Liljenfeldt 2014). Some forest owners state that it is difficult implying various management actions due to strong silviculture system used in Sweden (Löfmarck et al. 2017). CCF is one managing system that would has potential to increase the consideration of other forest values, like recreation and conservation (Hertog et al. 2022)

The results show a significant difference between certified and non-certified NIPF owners regarding their knowledge for each concept: *General consideration* (B44) and *Living forest* (B45). Certified forest owners indicate having greater knowledge for both *General consideration* and *Living forests*. In the Forestry act section 30, a

forest owner is obligated to take some kind of general consideration when final felling. Since the Forestry Act applies whether a forest owner is certified or not, one can argue that both should be familiar with this concept. However, certification means that forest owner is bound to take more responsibility while managing the forest. This could explain why 12 percent of certified NIPF owners consider that they have more *Good knowledge* than non-certified. In contrast to the concept *General consideration* fewer NIPF owners claimed to have *Good knowledge* about *Living forests*. Nevertheless, there is a significant difference between certified and non-certified, where certified believe they have more *Good knowledge*. Approximately 20 percent of NIPF owners answered *No knowledge* of the term *Living forest*, which constitutes a significant proportion. This lack of awareness regarding environmental goals could be seen as problematic, especially giving the current pressures on forest and its ecosystem services (Kuuluvainen et al. 2017; Löfmarck et al. 2017). The concept of *Living forests* encompasses guidelines and goals for achieving sustainable forest management, outlining how the forest should be maintained. In some cases, it is possible that forest owners might not be acquainted with the specific term *Living forests* but are versed in the principles of sustainable management and the essence of the concept. These two questions are connected to the control beliefs, how forest owners consider and value their knowledge regarding these concepts (Ajzen & Fishbein 2005).

The analysis revealed a significant difference between certified and non-certified for the question if the Swedish model secures biodiversity or not. As Ajzen (2005) states, behavioral control determines how people, NIPF owners in this case, assess their ability and whether the outcome of their actions is sufficient to ensure biodiversity. The majority of certified and non-certified expressed that the Swedish model secures biodiversity in forests. However, a higher share of non-certified forest owners does not agree that the Swedish model secures biodiversity than certified owners. Despite this, non-certified have chosen not to be certified and therefore have not taken the additional conservation that could improve the biodiversity in the forest. This does not imply that non-certified forest owners are neglecting general consideration or nature conservation. Other factors, such as administrative paperwork, can influence NIPF owners' decisions regarding certification (FSC 2024; PEFC 2024c). Additionally, it can be more difficult for the state to monitor and account for the nature conservation being taken of non-certified NIPF owners in Sweden (Danley 2018).

Regarding the question if NIPF owners believe that they hold enough knowledge about conservation to take decisions on their forest property (C2), there were a significant difference between certified and non-certified NIPF owners. 10 percent more of the certified NIPF owners claimed that they have enough knowledge. This indicates that certification of forest property does provide the forest owner with

more knowledge and confidence to make decisions regarding nature conservation on their property. Regardless of certification status, results revealed a substantial influence of property size on both response rates and the perceived knowledge level among owners concerning decisions regarding general consideration. Notably, larger properties exhibited a discernibly higher level of knowledge among NIPF owners. The contrast was particularly notable among non-certified owners, exhibiting a 24 percent disparity between large and small properties. One of the key-aspects in FCS and PEFC is long-term planning and frequent follow up. This might give the certified forest owner more insight and knowledge about their property due to the higher qualifications. The umbrella organizations are suitable for NIPF owners with smaller properties, partly because of less administrative work (PEFC 2024a), although this might lead to reduced knowledge and less insight. C2 correlates with control behavior in Ajzen (2005) and the results indicates that certified NIPF owners are more likely to believe that they are capable of managing their forest with conservation measures.

7.1 Methodological Critique

The survey is based on responses from individuals, meaning that all answers are self-assessed by the respondents. Therefore, it is challenging to ascertain whether the forest owners have answered truthfully. Moreover, there is a risk that forest owners may not fully understand the question or the specific terminology used, even if they are familiar with the concept being described. Since the survey is anonymous and completed by participants in the privacy of their homes, there is no risk of coercion, which encourages honest responses.

In the study, background factors were analyzed alongside the certification status and survey questions. Age, gender and property size tended to have impact on NIPF owners' attitude towards the questions. Explained in Theory of Planned Behavior, an individual's beliefs and attitudes evolves from society, experiences and abilities (Ajzen 1991). This may affect the level of knowledge and information that NIPF owners possess, leading to different attitudes and behaviors regarding forest policy and nature conservation in Sweden.

8. Conclusion

Swedish non-industrial private forest owners have few regulatory and mandatory laws and manage their forest through *freedom with responsibility*. Despite this, 67 percent of Sweden's forestland is certified, indicating a commitment to nature conservation that go beyond the requirements of the Forestry Act and the Environmental code. The study represents all NIPF owners in Sweden and interpret that certified NIPF owners often perceive themselves as possessing greater knowledge and confidence in their ability as forest owners to undertake nature conservation compared to non-certified owners. Since NIPF owners own about half of the productive forest in Sweden and therefore hold great impact on the environment and biodiversity. Sweden's ability to reach environmental goals is dependent on *freedom with responsibility* and with certification as a voluntary supplement. Rivière's results illustrated that there are five different types of forest owner divided based on what main purpose they own their forest property. This might affect the attitude of the forest owner but have not been covered in this study. Future studies should analyze whether the Swedish policy is sufficient concerning nature conservation, or if there is a need for more governmental regulations, taking into consideration the potential impact of these five owner categories on attitudes and behaviors.

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Appendix 1



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

– kunskap för en hållbar utveckling



Future Forests

Påminnelse: Naturvård i svenskt skogsbruk



Undersökningen du håller din i hand är en del av ett projekt som syftar till att ta reda på vad svenska skogsägare tycker om naturvård i skogen. Enkäten skickades ut till 3 000 privata skogsägare i hela Sverige under november/december 2014 och nu skickar vi påminnelse till de som inte svarat enkäten.

Förutsättningarna för att förena naturvård och skogsbruk är en fråga som diskuteras i samhället idag. Det är också högaktuellt inom forskningen, inte minst inom forskningsprogrammet Future Forests. De privata skogsägarna äger omkring femtio procent av den svenska skogen och utgör en viktig grupp när det gäller skogsskötsel och naturvård. Vi vet dock fortfarande väldigt lite om hur skogsägare ser på naturvård i samband med skogsbruk och hur naturvård utförs idag. Kunskapen om de privata

skogsägarnas inställning till naturvård är en viktig pusselbit för framtida beslut om naturvård. Därför är dina svar viktiga.

Vi hoppas att du kan tänka dig fylla i enkäten, då den är viktig för att förstå privata skogsägares inställning till skogsskötsel och naturvård. Vi hoppas du kan avsätta ca 30 minuter för att svara på enkäten. Känns det svårt att svara på någon fråga, markera hellre "vet inte" än att lämna frågan tom. Har du redan skickat in ditt svar ber vi dig att bortse från den här påminnelsen.

Resultaten av studien kommer att redovisas i bland annat Future Forests tidskrift "Skog och framtid" under våren 2015, för att komma dig som skogsägare till dels. Får du inte redan tidskriften, registrera dig på Future Forests hemsida.

Om du vill kan du fylla i enkäten via internet (det går fortare), använd länken nedan och ange den kodsifra som finns på nedre vänstra hörnet på svarskuvertet. Numret används enbart för att skicka eventuell påminnelse.

www.slu.se/naturvard

Dina svar kommer att behandlas anonymt och enskilda svar kommer inte att kunna urskiljas när resultatet av enkäten redovisas. Vi behöver ditt svar senast **9 januari**.

Om du har frågor är du välkommen att ringa, 090-786 85 96, eller skicka email: camilla.widmark@slu.se.

Tack för din medverkan!
Ditt svar är viktigt!

Umeå 2014-11-25




Camilla Widmark

Forskare, Institutionen för Skogsekonomi

Här ställer vi frågor om din skogsfastighet, ditt ägande och varför du valt att äga skog. Om du äger flera fastigheter, besvara frågorna utifrån den fastighet som nämns på adressetiketten på kuvertet.

För varje fråga, markera ett svarsalternativ, utom i de fall då vi särskilt ber om flera alternativ.

A1: Hur ser fastighetens ägarförhållande ut?

- Ensam ägare
- Äger tillsammans med min partner
- Delat ägarskap 
- 2 ägare
- 3 ägare
- 4 eller fler ägare
- Ägs av ett dödsbo

A11: Hur fattas beslut om åtgärder på fastigheten?

- Jag är huvudansvarig
- Annan person är huvudansvarig
- Alla ägare har ungefär lika stort ansvar

A2: Hur länge har du varit ägare till fastigheten?

- 0 – 5 år
- 6 -10 år
- 11-15 år
- 16 – 20 år
- 21 år -
- Vet inte

A3: Hur förvärvade du fastigheten?

- Genom arv/generationsskifte
- Genom gåva
- Genom köp av förälder eller släkting
- Genom köp på marknaden

A4: Hur ofta besöker du i genomsnitt din fastighet under ett år?

- Aldrig
- Minst 1 gång per dag
- Mellan 1 – 5 gånger per vecka
- Mellan 1 – 5 gånger per månad

Del A – Frågor om din skogsfastighet



Enstaka tillfällen, någon gång månad

Enstaka tillfällen, någon gång per år

A41: Om du besöker din fastighet, ange de viktigaste anledningarna?

Ange max 3 anledningar.

- Bär- och svampplockning
- Friluftsliv (gå med hunden, promenera, utflykt.)
- Jakt/fiske
- Naturvårdsåtgärder (såsom restaurering av vattendrag, fågelliv och växtliv)
- Produktionsinriktade åtgärder (såsom planering, röjning, gallring och avverkning)
- Annat: _____

A5: I vilken kommun är din fastighet i huvudsak belägen? _____

A6: Hur stor är din fastighet? _____ ha

A7: Är fastigheten certifierad?

Ja Nej Vet inte



A71: Enligt vilken standard?

Flera svar är möjliga

- Enligt FSC
- Enligt PEFC
- Annat: _____

A8: Är du medlem i en skogsägarförening?

Ja Nej Vet inte



A81: Vilken förening är du medlem i?

Flera svar är möjliga

- Norra skogsägarna Södra
- Skogsägarna norrskog LRF Skogsägarna
- Mellanskog Annan: _____



A82: Varför blev du medlem i en skogsägarförening?

Rangordna påståenden, notera att det bara ska finnas en 5:a, en 4:a, en 3:a osv.

	Viktigaste anledning			Minst viktiga anledning		
	5	4	3	2	1	
Ekonomi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Del A – Frågor om din skogsfastighet

Information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gemenskap	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rådgivning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tradition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Annat:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

A9: Har du tecknat en separat försäkring för din fastighet?

Ja Nej

A91: Varför har du valt att inte teckna en separat försäkring?

Flera svar möjliga

- Jag anser att det är för dyrt.
- Det finns ingen försäkring som täcker det jag vill försäkra mig mot.
- Jag har inte tänkt på att jag kan försäkra fastigheten.
- Annat: _____

Del A – Frågor om din skogsfastighet

A10: Har din fastighet under de senaste 10 åren drabbats av storm eller brand.

I så fall, hur stor del av din fastighetsareal uppskattar du påverkades?

Om ja, ange vilken/vilka och till vilken utsträckning

Nej

Ja



Stormfällning

>
75 %

50-
75 %

25-
50 %

< 25 %

Brand

>
75 %

50-
75 %

25-
50 %

< 25 %

A11: Hur ser din fastighet ut?

Uppskatta hur stor andel av din fastighet består av:

	Ungskog, ej avverknings- mogen skog	Avverknings- -mogen skog	Impediment	Frivillig avsättning	Omfattas av naturvårds- avtal/ biotopskydd
0 %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1-10 %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11-30 %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31-50 %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51-70 %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71-90 %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
91 % -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vet inte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Annat: _____ uppskattat till _____ %

A12: Har några åtgärder skett inom fastigheten under de senaste 5 åren?

Ja

Nej

Vet inte



A121: Vilka åtgärder har skett?

Flera svar är möjliga

Avverkning

Plantering

Del A – Frågor om din skogsfastighet

- | | | | |
|--------------------------|-------------------------|--------------------------|--------------|
| <input type="checkbox"/> | Frivilliga avsättningar | <input type="checkbox"/> | Röjning |
| <input type="checkbox"/> | Gallring | <input type="checkbox"/> | Skogsdikning |
| <input type="checkbox"/> | Gödsling | | |
| <input type="checkbox"/> | Annat: _____ | | |

Del A – Frågor om din skogsfastighet

A13: Hur ställer du dig till följande påståenden om din skogsfastighet?

Markera ett alternativ per påstående.

	M ycket viktigt	Ganska viktigt	Gansk a oviktigt	Helt oviktigt	Saknar uppfattning
Inkomster från fastigheten ger regelbunden inkomst för konsumtion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet används för att finansiera större investeringar (såsom bil, hus, maskiner etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet ger mig ekonomisk trygghet för ålderdomen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet skapar sysselsättning för mig och/eller min familj.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min skogsfastighet är en bra investering för framtiden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag får brännved för husbehov från min fastighet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag vill förvalta skogen för nästa generation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag vill ha tillgång till bär- och svampplockning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet är en del av min närmiljö som jag tillbringar tid i.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet ger mig jakt och/eller fiskemöjlighet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skogen ger mig en meningsfull syssla i form av skogsarbete på min fritid.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet ger mig möjligheten till friluftsliv (såsom vandra, utflykter, jogga).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I skogen på min fastighet kan jag koppla av vilket ger mig möjlighet att varva ner och fundera.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet erbjuder mig möjlighet att bidra till biologisk mångfald, skydda kulturlämningar (exv. torpruiner) och vattenkällor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet erbjuder mig skönhetsupplevelser.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min fastighet gör att jag kan hålla kontakt med min hembygd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Min skogsfastighet ger mig möjlighet att föra en familjetradition vidare.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Del B – Frågor om svensk skogspolitik

Här ställer vi frågor om din inställning till svensk skogspolitik relaterat till miljöfrågan.

För varje fråga, markera ett svarsalternativ, utom i de fall vi särskilt ber om flera alternativ.

B1: Hur ställer du dig till följande påståenden om miljöpolitik i Sverige?

Markera ett alternativ per påstående

	In stäm mer starkt	Instämmer	Tar avstånd	Tar starkt avstånd	Har ingen uppfattning
Folk oroar sig för mycket om hur människor skadar miljön och för lite om ekonomisk tillväxt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Den moderna vetenskapen kommer att lösa våra miljöproblem utan att vi behöver förändra vårt levnadssätt särskilt mycket.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Miljöproblem är något jag oroar mig över ofta.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag anser att det är viktigt att alla är med och bidrar till miljöarbetet för att framtida generationer ska få en förbättrad miljö.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Många påståenden om miljöhot (såsom klimatförändringar) är överdrivna.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Det är ingen idé att jag gör vad jag kan för miljön om/när inte andra också gör det.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag tycker att det är svårt att avgöra om mitt sätt att leva är bra eller skadligt för miljön.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag gör utifrån egen kunskap, vad jag kan för bättre miljö, även om det kostar pengar och tar längre tid.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag anser att riksdag/regering borde göra mer för att värna om miljön genom att stifta lagar även om det begränsar möjligheten till självbestämmande.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag anser att individer och företag själva bör fatta beslut om sitt miljöarbete.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B2: Hur ställer du dig till följande påståenden om naturvård i skogen?



Oavsett ägare, ska all skog och skogsmark omfattas av samma regler för naturvård.

Del B – Frågor om svensk skogspolitik

- Enbart skog och skogsmark som ägs av staten bör omfattas av regler för naturvård. För övriga bör inga regler finnas, det är upp till enskilda ägare att fatta beslut om naturvård.
- Enbart skog och skogsmark som ägs av privata skogsägare och skogsbolag bör omfattas av regler för naturvård. För statligt ägd mark bör inga regler finnas, det är upp till staten att fatta beslut om naturvård.

Del B – Frågor om svensk skogspolitik

B3: Vad anser du om behovet av att skydda biologisk mångfald i privata skogar?

- Skyddet av skogarna borde ökas från det nuvarande
- Den nuvarande nivån av skydd är lämplig
- Det har redan skyddats för mycket skog
- Har ingen uppfattning

B4: Beskriv hur väl du känner till innebörden av följande:

Markera ett alternativ per påstående

	Känner väl till innebörden	Känner till innebörden i stora drag	Har hört talas om det	Har ingen vetskap om det
Begreppet biologisk mångfald	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biotopskyddsområde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frivilliga avsättningar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generell hänsyn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Miljömålet "Levande skogar"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naturreservat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naturvårdsavtal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nyckelbiotop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rödlistade arter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Den svenska modellen för skogsbruk bygger på tre pelare för naturvård; formella avsättningar, frivillig avsättning och generell hänsyn. Målet är att se till att den biologiska mångfalden över hela landet säkras samtidigt som skogsproduktion och sociala värden värnas (se bild på enkätens framsida).

De formella avsättningarna är avtal och kan innefatta exempelvis naturreservat, naturvårdsavtal eller biotopskydd.

Den individuella skogsägaren kan göra frivilliga avsättningar av skog med höga miljövärden på mindre områden (0,5 – 20 ha). Det som lämnas kan ha höga naturvärden, kulturmiljövärden och/eller sociala värden. Idag finns ca 1 350 000 ha skog frivilligt avsatt i Sverige.

Dessutom bör alla skogsägare ta generell hänsyn vid avverkningar (enlig Skogsvårdslagen §30). Det kan vara att spara värdefulla träd och trädjungar, skapa död ved eller att undvika markskador vid vatten. Ca 10 % av virkesvolymen lämnas i genomsnitt vid avverkning.

Del B – Frågor om svensk skogspolitik

I Sverige har vi också 16 miljömål, varav ett behandlar skogen, "Levande skogar", som bland annat syftar till att skydda gammal skog, främja skapandet av död ved, fågelliv, forn- och kulturlämningar och lövrik skog. Miljömålen beslutades av riksdagen 1999 och utvärderas kontinuerligt.

Källa: www.skyddadskog.se

Del B – Frågor om svensk skogspolitik

B5: Hur ställer du dig till följande påståenden om miljöarbete inom svenskt skogsbruk?

Markera ett alternativ per påstående

	Instämmer starkt	Instämmer	Tar avstånd	Tar starkt avstånd	Har ingen uppfattning
Ensamma markägare kan inte avgöra naturvård, det måste vara statens ansvar att naturvård kommer till stånd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alla skogsägare bör ta sitt ansvar i miljöarbetet för att stärka biodiversitet i skog och mark för framtida generationer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag känner mig trygg att svenska modellen för miljöhänsyn i skogsbruket säkrar biologisk mångfald i skogen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Svenska modellen för skogsbruk är för odetaljerad och vag för att vara tillräcklig för att nå upp till svenska miljömål.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Svensk miljöpolitik reglerar miljöhänsynen i skogsbruket för hårt vilket påverkar den individuella skogsägarens valfrihet i val av skötselmetoder.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Riksdagens miljömål "Levande skogar" är tillräckligt reglerade för att nå svenska miljömål.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B6: Hur ställer du dig till följande påståenden om generell hänsyn enligt den svenska modellen (Skogsvårdslagen §30)?

Markera ett alternativ per påstående

	Instämmer er starkt	Instämmer	Tar avstånd	Tar starkt avstånd	Har ingen uppfattning
Den generella hänsynsparagrafen är för svagt reglerad för att bidra till att svenska miljömål uppnås.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Markägaren är den som bär huvudansvaret för att generell hänsyn tas vid avverkning på min fastighet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rådgivande organ, såsom skogsstyrelsen eller skogsägarförening är huvudansvarig för att generell hänsyn tas vid avverkning på min fastighet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Del B – Frågor om svensk skogspolitik

Virkesköpare och/eller entreprenörer är huvudansvariga för att generell hänsyn tas vid avverkning på min fastighet.

Del B – Frågor om svensk skogspolitik

B7: Omfattas din fastighet i helhet eller delvis av biotopskydd, naturvårdsavtal eller naturreservat?

- Ja Nej Vet inte

B71: Vad är din inställning till det skydd som inrättats på din fastighet?

- Mycket positiv
 Delvis positiv
 Delvis negativ
 Mycket negativ
 Har ingen uppfattning

B72: Vem tog initiativ till att inrätta ovanstående skydd på din fastighet?

- Du själv som ägare
 Länsstyrelsen
 Kommunen
 Skogsstyrelsen
 Annan: _____

B73: Har du fått ekonomisk ersättning för ovanstående skydd?

- Ja Nej Vet inte

B731: Vad fick du i ersättning och vilken karaktär hade den?

- Engångsbelopp
 Årlig ersättning
Ersättning _____kr

var:

B732: Är du nöjd med ersättningen?

- Ja
 Nej
 Vet inte

B74: Vilket var ditt motiv till att ingå ovanstående avtal?

Flera svar är möjliga

- För min egen skull.
 För kommande generationers skull.
 För grannars och besökares skull.
 För att ta mitt samhällsansvar för att bevara naturvärden.
 Av ekonomiska skäl.
 Tvingade beslut av annan part.
 Annat: _____

B8: Har du gjort avverkning eller gallring under de senaste 5 åren?

- Nej Ja

Del B – Frågor om svensk skogspolitik

Om du har gjort avverkningar eller gallringar de senaste 5 åren, vänligen svara på de tre följande frågorna.
Om inte, fortsätt till avdelning C.

Del B – Frågor om svensk skogspolitik

B9: Om du har gjort avverkning eller gallring de senaste 5 åren, gjorde du någon frivillig avsättning?

- Nej Ja Vet inte

B91: Av vilken anledning gjorde du frivilliga avsättningar?

Flera svar är möjliga

- Det är höga naturvärden på den delen av fastigheten
 Vill skydda kulturmiljön
 Av estetiska skäl, det ser bra ut
 För kommande generationers skull
 För grannars och besökares skull
 För att ta mitt samhällsansvar för att bidra till bättre miljö
 Annat: _____

B92: Hur länge avser du att behålla din frivilliga avsättning?

- 0-5 år 10-15 år Vet inte
 5-10 år 15 år eller mer Har inte planerat hur länge än

B93: Om du inte gjorde några frivilliga avsättningar, varför inte?

Flera svar är möjliga

- Det finns inga naturvärden att skydda på den delen av fastigheten.
 Det är ekonomiskt olönsamt att göra avsättningar.
 Jag har för liten kunskap för att kunna bedöma vad som är värt att skydda.
 Jag har redan gjort frivilliga avsättningar på andra delar av min fastighet.
 Annat: _____

B94: Om du gjort avsättningar vid avverkning/gallring, uppskatta hur mycket lägre din nettointäkt blev jämfört med om du inte gjort avsättning.

- 1 – 5 % lägre nettointäkt 16 – 20 % lägre nettointäkt
 6 – 10 % lägre nettointäkt 21 – 25 % lägre nettointäkt
 11 – 15 % lägre nettointäkt 25 % eller mer lägre nettointäkt
 Vet inte

Del B – Frågor om svensk skogspolitik

B10: Om du gjort avverkning eller gallring de senaste 5 åren, tog du någon generell hänsyn?

Nej Ja Vet inte

B101: Vilken hänsyn tog du?

Flera svar är möjliga

- Aktivt undvikta markskador i närheten av vattendrag/myrar
- Beaktat sociala värden
- Lämnat träd eller trädgrupper
- Skapat död ved
- Annat: _____

B102: Vilket är ditt motiv till att ta generell hänsyn?

Flera svar är möjliga

- Av estetiska skäl, det ser bra ut
- Det är tvingande enligt lag
- För att ta mitt samhällsansvar för att bidra till bättre miljö
- För grannars och besökares skull
- För kommande generationers skull
- Vill skydda kulturmiljön
- Annat: _____

B103: Om du inte tog någon generell hänsyn, varför inte?

Flera svar är möjliga

- Det finns inga naturvärden att skydda på den delen av fastigheten.
- Det är ekonomiskt olönsamt att ta generell hänsyn.
- Jag har för liten kunskap för att kunna bedöma vad som är värt att skydda.
- Jag har redan tagit generell hänsyn på andra delar av min fastighet.
- Annat: _____

B104: Om du tagit generell hänsyn vid avverkning/gallring, uppskatta hur mycket lägre din nettointäkt blev jämfört med om du inte tagit generell hänsyn.

- 1 – 5 % lägre nettointäkt
- 6 – 10 % lägre nettointäkt
- 11 – 15 % lägre nettointäkt
- 16 – 20 % lägre nettointäkt
- 21 – 25 % lägre nettointäkt
- 25 % eller mer lägre nettointäkt
- Vet inte

Del C – Frågor om information

I den här delen vill vi veta hur du får information och vilken information du har om naturvård i skogsbruket.

För varje fråga, markera ett svarsalternativ, utom i de fall då vi särskilt ber om flera alternativ.

C1: När jag tar beslut om hur jag ska sköta min fastighet

Markera ett alternativ per påstående	Inst ämmer starkt	Instämmer	Tar avstånd	Tar starkt avstånd	Har ingen uppfattning
är det viktigt att veta hur fastigheterna runt min sköts (exv. planer för avverkning och trädslagsval).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
är det viktigt att förstå vilka ekonomiska konsekvenser olika åtgärder har/får.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
är det viktigt att veta grannarnas inställning till naturvård.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
är det viktigt att följa de trender och influenser som är mest populära i samhället för tillfället.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
tar jag alltid rådgivning från Skogsstyrelsen, skogsägarförening eller LRF skogsägarna.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
är det viktigt att jag har den senaste informationen om forskning kring naturvård och skogsvård.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C2: Anser du att du har tillräckligt med kunskap och information för att fatta beslut om din skogsfastighet med avseende på naturvård?

Ja Nej Vet inte



C21: Hur har du skaffat dig information och hur viktig är informationskällan?

Markera de du använder, och markera de du använder utifrån hur relevant information du anser källan är.

	Mest relevant		Minst relevant		
	5	4	3	2	1
Skogsinriktade tidskrifter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dagstidningar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Radio/TV	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kunskapsöverföring från tidigare generation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Samtal med grannar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Samtal med övriga ägare (om flera ägare finns)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rådgivning av Skogsstyrelsen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rådgivning av skogsägarförening eller LRF skogsägarna	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nyhetsbrev från forskningsorganisation (exv. SLU, Skogforsk)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Virkesköpare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Del C – Frågor om information

Skogsbranschens utbildningar

Miljöorganisationer

Annat: _____

Del D – Frågor om inställning till framtida naturvård och skogsbruk

I det här avsnittet ställer vi frågor om framtida naturvård generellt och på din fastighet. Vi ställer också frågor kring olika möjliga alternativa skötselmetoder.

För varje fråga, markera ett svarsalternativ, utom i de fall då vi särskilt ber om flera alternativ.

D1: Anser du att det i framtiden generellt behöver avsättas mer eller mindre av följande naturvårdsåtgärder enligt svenska modellen för skogsbruk för att Sverige ska nå upp till miljömålen?

Markera ett alternativ per påståenden

	Behöver avsättas mycket mer	Behö ver avsättas mer	Dagens avsättningar är tillräckliga	Behöver avsättas mindre	Behöver avsättas mycket mindre	Har ingen upp- fattning
Biotopskyddsområden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frivilliga avsättningar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generell hänsyn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naturreservat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naturvårdsavtal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

D2: Om du skulle satsa arbete eller andra resurser inom en 5-års period för att förändra din skogsfastighet på någon av nedanstående punkter, vilken skulle du satsa på?

- | | |
|---|--|
| <input type="checkbox"/> Tillväxt av timmer | <input type="checkbox"/> Mångfald av växter och djur |
| <input type="checkbox"/> Möjlighet till jakt | <input type="checkbox"/> Den estetiska upplevelsen, "skönhetsupplevelse" |
| <input type="checkbox"/> Möjlighet till rekreation och friluftsliv, utöver jakt | <input type="checkbox"/> Annat: _____ |
| <input type="checkbox"/> Inget | |

D3: Skulle du kunna tänka dig att avsätta en större del, eller hela din fastighet för någon form av naturvård i framtiden (såsom biotopskydd, naturvårdsavtal, naturreservat), göra frivilliga avsättningar eller utöka den generella hänsynen vid avverkning?

- Ja Nej Vet inte

D31: Varför kan du inte tänka dig det?

Flera svar är möjliga

- Det finns redan tillräckligt skog som skyddats i Sverige
- Jag vill fortsätta med ett aktivt skogsbruk på min fastighet.
- Finns inga objekt som är värdefulla att spara.
- Jag vill inte binda beslutanderätten för fastigheten för nästa ägare.
- Jag har inte tillräcklig kunskap för att fatta ett sådant beslut.
- Jag anser att förlusterna är för stora för mig som ägare.
- Jag anser att kunskapen om effekterna av avsättningar är för låg.
- Fastigheten är för liten.
- Annat: _____

D4: Det har uppskattats att klimatförändringar inverkar på mängden växt-, svamp- och insektsskador samt mängden stormskador. Hur tror du att sådana skador kommer att uppstå och utvecklas inom din fastighet under kommande 10 år?

- | | | | |
|-----------------------|---|-----------------------|---------------------------|
| <input type="radio"/> | Skadorna ökar märkbart | <input type="radio"/> | Skadorna minskar något |
| <input type="radio"/> | Skadorna ökar något | <input type="radio"/> | Skadorna minskar märkbart |
| <input type="radio"/> | Jag kommer inte att se någon förändring | <input type="radio"/> | Har ingen uppfattning |

D5: Hur ställer du dig till följande påståenden om yttre faktorer som kan påverka din fastighet?

Markera ett alternativ per påstående

	Instäm mer starkt	Instäm mer	Tar avstånd	Tar starkt avstånd	Har ingen uppfattning
Skogens stormkänslighet är en naturhändelse som jag som skogsägare inte kan skydda mig mot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allt tyder på att vårt klimat förändras, vilket jag måste ta hänsyn till när jag planerar åtgärder i min skog.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skogens känslighet för brand är en naturhändelse som jag som skogsägare inte kan skydda mig mot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Nu ställer vi några frågor om alternativa skötselmetoder.

D6: När du planerar förnygring överväger du andra trädslag än de som traditionellt växt där?

Ja

D61: Vilken är den viktigaste anledningen?

Flera svar är möjliga

- Att förnygra med hybridlärk eller contorta ger mig en högre lönsamhet än med traditionella trädslag.
- Att förnygra med hybridlärk eller contorta ger mig en snabbare avkastning än med traditionella trädslag.
- Att förnygra med löv där det traditionellt växt barrträd, ökar stormfasthet eller är viktigt av andra naturvårdande skäl.
- Det är högre lönsamhet att förnygra med barrträd än med lövträd, då produktionen är högre med barrträd.
- Att förnygra med gran istället för tall är viktigt för att minska betesskador.
- Skogen ser bättre ut och är trevligare att besöka om lövträd växer där istället för barrträd.
- Skogen ser bättre ut och är trevligare att besöka om contorta växer där istället för löv eller traditionella barrträd växer där.
- Annat: _____

Nej

C62: Vilken är den viktigaste anledningen?

Flera svar är möjliga

- Jag vet för lite om vilka effekter en förnygring med hybridlärk eller contorta skulle få för min fastighet.

- Att plantera lövträd medför stor risk för skador (betningsskador eller insekter).
- Jag anser att en föryngring med hybridlärk eller contorta är negativt för biodiversiteten.
- Jag vet för lite om vilka effekter en föryngring med lövträd istället för barr skulle få för min fastighet.
- Av tradition planterar jag samma trädslag som alltid varit på fastigheten.
- Klimatförändringar påverkar inte barrträden, så det finns ingen anledning att plantera contorta istället.
- Lövträd ger mig inte samma avkastning som barrträd gör.
- Snabbväxande hybridlärk eller contorta ger lägre avkastning jämfört med nuvarande trädslagsval.
- Annat: _____

D7: Använder du dig av hyggesfria metoder (sk. kontinuitetsskogsbruk) på din fastighet?



Ja, jag använder hyggesfria metoder vid avverkning



D71: Vilken är den/de viktigaste anledningarna till detta?

Flera svar är möjliga

- Av ekonomiska skäl.
- Jag anser att naturvården blir med hyggesfri metod.
- Landskapet blir vackrare utan hygge.
- Mindre risken för katastrofer (stormfällning/brand) med hyggesfri metod.
- Annat: _____



Nej, jag använder mig inte av hyggesfria metoder



D72: Vilken är den viktigaste anledningen?

Flera svar är möjliga

- Jag kan för lite om metoden för att det ska vara ett alternativ.
- Det finns för lite information/forskning om metoden.
- Metoden ger lägre avkastning jämfört med trakthyggesbruk.
- Landskapet blir vackrare med blandning av hygge och skog.
- Mindre risk för katastrofer (stormfällning/brand) med trakthyggesbruk.
- Av ekonomiska skäl, jag behöver avkastningen.
- Av tradition har vi alltid använt trakthyggesbruk.
- Annat: _____

D8: Använder du dig av förlängda eller förkortade omloppstider på något av dina bestånd på din fastighet?

Dvs. kortare eller längre tid innan avverkning sker, jämfört med vad som är bäst ur ekonomiskt perspektiv.



Ja, överhållning med mellan 1 – 20 år.



Ja, överhållning med 20 år eller mer.



Nej



D81: Vilken är den viktigaste anledningen?

Flera svar är möjliga

- För att skydda kulturmiljön eller förstärka naturvården.
- För att producera sågvirke av stora dimensioner.
- För att bidra till att bromsa klimatförändringarna, genom att lagra kol i skogen.
- För att jag vill ha kvar möjligheten till jakt, eller bär- och svampplockning.
- För kommande generationers skull, de får avgöra hur fastigheten ska förvaltas.
- För grannarna och besökarnas skull.
- Jag vill ta mitt samhällsansvar för att bidra till en bättre miljö.
- Jag vill inte avverka, jag tycker om min fastighet som den är.
- På inrådan av skoglig rådgivare.

Annat: _____

Ja, förkortning med mellan 1 – 20 år.



Ja, förkortning med mer än 20 år.



Nej

D82: Vilken är den viktigaste anledningen?

Flera svar är möjliga

- För att få snabbare ekonomisk avkastning från min fastighet.
- För att minska risken för sjukdomar och insektsangrepp (exempelvis rotröta).
- För att minska risken för stormfällning eller brand.
- För att snabbare kunna möta förändringar i efterfrågan på skogsråvara.
- Jag tror att klimatförändringarna gör att skogen växer fortare vilket gör att omloppstiden kan kortas utan att försämra ekonomisk avkastning.
- På inrådan av skoglig rådgivare.
- Annat: _____



Nej, jag använder varken förlängd eller förkortad omloppstid.



D83: Vilken är den/de viktigaste anledningarna till att du inte använder förlängd eller förkortad omloppstid?

Flera svar är möjliga

- Förlängd omloppstid eller förkortad omloppstid är ekonomiskt olönsamt.
- Förlängd omloppstid gör att skogen blir oframkomlig och otillgänglig för att vistas i, eller jaga, eller plocka bär- och svamp.
- Jag anser inte att klimatförändringar kan påverka skogsbruket i så stor utsträckning att förkortad omloppstid kan bli ekonomiskt lönsamt.
- Jag kan för lite om förlängd eller förkortad omloppstid för att det ska vara ett alternativ.
- Jag tror inte att förkortad omloppstid ger något skydd mot storm, brand, sjukdomar eller insektsangrepp.
- Jag tror att förkortade omloppstider ger en sämre naturvård jämfört med min nuvarande omloppstid.
- Jag tror inte förlängd omloppstid ger högre miljövärden.
- Annat: _____

Nu ställer vi två liknande frågor med olika antagande. Vi undrar här hur du skulle agera utifrån dessa antagande.

D9: Scenario 1.

När du planerar för din fastighet i framtiden (tänk 5-10 års sikt), vilka av nedanstående alternativ kan du tänka dig genomföra, utan ekonomisk kompensation?

Flera alternativ är möjliga

- Aktivt undvika markskador i närheten av vattendrag/myrar, restaurera redan förstörda vattendrag
- Beakta sociala värden
- Frivillig avsättning under en kortare tidsperiod (maximalt 10 år)
- Frivillig avsättning under evig tid
- Lämna träd eller trädgrupper
- Skapa död ved
- Ta initiativ till biotopskyddsområde
- Ta initiativ till naturvårdsavtal
- Annat: _____
- Inget av alternativen

D10: Scenario 2.

När du planerar för din fastighet i framtiden (tänk 5-10 års sikt), vilka av nedanstående alternativ kan du tänka dig göra, om du får ekonomiska kompensation?

Ange också vilken ekonomisk kompensation du anser att du MINST vill ha för att genomföra åtgärden.

Flera alternativ är möjliga

Andel av förlust som täcks av kompensation

100 % 75-99% 50-74% 25-49% 1-24% 0%

- | | 100 % | 75-99% | 50-74% | 25-49% | 1-24% | 0% |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> Aktivt undvika markskador i närheten av vattendrag/myrar, restaurera redan förstörda vattendrag | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Beakta sociala värden | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Frivillig avsättning under en kortare tidsperiod (maximalt 10 år) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Frivillig avsättning under evig tid | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Lämna träd eller trädgrupper | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Skapa död ved | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Ta initiativ till biotopskyddsområde | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Ta initiativ till naturvårdsavtal | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Annat: _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Inget av alternativen | | | | | | |

Slutligen behöver vi veta lite mer om dig. För varje fråga, ange ett svarsalternativ.

E1: Kön

Kvinna
Man

E2: Ålder

18-40 år
41-50 år
51-65 år
65 - år

E3: Var bodde du under uppväxttiden och var bor du nu?

	Nuvarande boendeort	Ort under uppväxttiden
På landsbygd (i glesbygd)	<input type="radio"/>	<input type="radio"/>
I mindre tätort mindre än 50 000 invånare	<input type="radio"/>	<input type="radio"/>
I tätort 50 000 – 100 000 invånare	<input type="radio"/>	<input type="radio"/>
I tätort med 100 000 – 250 000 invånare	<input type="radio"/>	<input type="radio"/>
I tätort med över 250 000 invånare	<input type="radio"/>	<input type="radio"/>
Inte i Sverige	<input type="radio"/>	<input type="radio"/>

E4: Bor du på fastigheten?

Ja

Nej

Ja, fast
boende
 Ja,
fritidsboen
de

Nej, men inom samma kommun

Nej, inte i samma kommun

Nej, det finns inga byggnader på
skogsfastighet

E5: Hur många personer består ditt hushåll av?

1

2

3

4

5 eller fler

Av dessa är _____ under 20 år.

E6: Vilken är din högsta utbildning?

- Grundskola
- Gymnasieskola/folkhögskola
 - Inriktad mot jord- eller skogsbruk
 - Inriktad mot biologi
 - Annan inriktning
- Högskola/Universitet
 - Inriktad mot jord- eller skogsbruk
 - Inriktad mot biologi
 - Annan inriktning

**E7: Vilken är din huvudsakliga
sysselsättning?**

- Anställd
- Studerande
- Driver eget lantbruk
 - Enbart skogsbruk
 - Jord- och skogsbruk
- Driver eget företag
(ej skog- eller jordbruk)
- Arbetslös
- Pensionär

**E8: Ungefär hur stor del av din nettoinkomst har, under de senaste 5 åren,
kommit från skogsinkomster?**

- 0 – 5 %
- 5 – 25 %
- 25 – 50 %
- 50 % -
- Vet inte

Övriga kommentarer:

TACK FÖR DIN MEDVERKAN!

Appendix 2

Part A - Questions about your forest property

A1: What is the ownership regime of your property?

- I am the sole owner
- Joint ownership with my partner
- Shared ownership :
 - Two owners
 - Three owners
 - Four or more owners
- Own by an estate

A11: How are decisions made concerning the management of your property?

- I am the main decision maker
- Another person is the main decision maker
- All owner have approximately the same weight in decision making

A2: For how long have you own the property?

- 0-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 20+ years
- I don't know

A3: How did you acquire the property?

- By inheritance
- It was given to me
- I purchased it from parents/relatives
- I purchased it on the market

A4: How often do you visit your property?

- Never
- At least once a day
- Between 1-5 times a week

- Between 1-5 times a month
- Occasionally, once a month
- Occasionally, once a year

A41: If you visit your property, what are the main reasons? (3 answers max)

- Berry or mushroom picking
- Outdoor activities
- Hunting or fishing
- Conservation measures (stream restoration, etc)
- Management operations
- Other: _____

A5: In which municipality is your property located?

A6: Which is the size of your property (ha) ?

A7: Is your property certified?

- Yes

A71: Under which scheme?

- FSC
- PEFC
- Other: _____

- No
- I don't know

A8: Are you member of a forest owner association?

- Yes

A81: Which association are you a member of?

- Norra skogsägarna
- Skogsägarna norrskog
- Mellanskog
- Södra
- LRF Skogsägarna
- Other: _____

A82: Why are you a member of a forest owner association? (most important-least important 5-1)

- economic reasons
- information
- community
- advice
- tradition

- other: _____
- No
- I don't know

A9: Have you subscribed to a separate insurance for your property?

- Yes
- No

A91: why haven't you subscribed to a separate insurance?

- I think it is too expensive
- There is no insurance covering what I want to get covered for
- I haven't thought about insuring my property
- Other: _____

A10: Has your property suffered from storm or fire damage in the last ten years? If yes, how big a part of your property was damaged?

- No
- Yes

Storm damage:

- >75%
- 50-75%
- 25-50%
- <25%

Fire damage:

- >75%
- 50-75%
- 25-50%
- <25%

A11: What kinds of forest is your property made of?

Choices: 0% - 1 to 10% - 11 to 30% - 31 to 50% - 51 to 70% - 71 to 90% - 91+%

- Don't know

- Young forest not ready for harvesting
- Forest ready for harvesting
- Wasteland
- Voluntary set-aside area
- Reserve or biotope protection status
- Other: _____

A12: Have you performed any management operation in your property in the last five years?

- Yes

A121: Which operations?

- felling
 - voluntary set-aside
 - thinning
 - fertilization
 - planting
 - clearing
 - forest draining
 - other: _____
- No
 - I don't know

A13: How do you feel concerning the following statements when thinking of your property?

Choices are: very important - important- rather unimportant - completely unimportant - no opinion

- Revenue for the forest is a source of regular income (for consumption)
- My property is used to finance bigger investments
- My property gives me economic stability for when I am old
- My property creates employment for me and my family
- My property is a good investment for the future
- I get firewood for my household from my forest
- I want to pass on the forest to the next generation
- I want to have access to berries and mushroom picking
- My property is part of the local environment where I spend time
- My property gives me access to fishing and hunting
- My property gives me a meaningful free-time occupation with forest work
- My property gives me possibilities for outdoor activities
- My property gives me the opportunity to relax and think
- My property offers me the possibility to protect biodiversity, cultural heritage sites and water sources
- My property offers me an aesthetics experience
- My property enables me to keep contact with my house
- My property gives me the opportunity to continue the family tradition

PART B - About Swedish forest policy

B1: To what extent do you agree with these statements concerning environmental issues?

Choices are: Strongly agree - agree - disagree - strongly disagree - no opinion

- People worry too much about damages caused to the environment and too little about economic growth/activities

- Modern sciences will solve our environmental problems without us needing to really change our lifestyle
- I don't worry much about environmental problems
- I consider that it is important to get everyone involved in environmental issues so that the next generation gets a better environment to live in
- Many statements about the environment are exaggerated
- There is no point in me doing anything for the environment if no else is doing it
- I think it is difficult to know if my lifestyle is good or harmful to the environment
- I do what I think is best for the environment, even if it costs money or takes more time
- I think the parliament/government should do more to protect the environment by writing laws, even if it limits people's free decisions
- I think individual people and companies should make their own decisions concerning the environment.

B2: To what extent do you agree with the following statements concerning conservation in forests?

- Regardless of the ownership, all forests and woodlands should be submitted to the same rules concerning conservation
- Only forests own by the state should be submitted to conservation rules. Other owners should be free to take their own decision concerning conservation.
- Only forests own by private owners or companies should be submitted to rules concerning conservation. For public forests, it is up to the state to make its own decision regarding conservation.

B3: What is your opinion on biodiversity protection in private forests?

- Protection of forests should be increased
- The current level of protection is appropriate
- There is too much protection
- No opinion

B4: How familiar are you with the following ecological concepts?

Choices are: good knowledge - fairly good knowledge - heard about it - no knowledge

- Biodiversity
- Habitat area
- Voluntary set-aside
- General considerations
- Sustainable forestry

- Nature reserve
- Wildlife conservation
- Key habitat
- Red-listed species

B5: To what extent do you agree with the following statements about environmental measures in Swedish forestry?

Choices are: SA - A - D -SD - NO

- Landowners alone cannot take care of conservation, it is the state's responsibility.
- All forest owners should take environmental measures to improve biodiversity in forests for next generations
- I feel confident that the Swedish model for environmental considerations in forestry secures biological diversity in forests.
- The Swedish model for forestry is too vague and unfocused to be efficient and reach environmental goals
- Swedish environmental policy rules are too restrictive, which limits individual owners' freedom of choice.
- The parliament's environmental goal of "sustainable forests" is adequately regulated to reach Swedish environmental goals.

B6: To what extent do you agree with the following statements about general considerations according to the Swedish model?

Choices are: SA - A - D -SD - NO

- The general considerations paragraph is too weak to contribute to reaching the environmental goals.
- The landowner is the one who bears responsibility for taking general considerations during harvestings on my property.
- The advising institution (either the Swedish forest agency or a forest owner company) is responsible for general considerations being taken during harvesting on my property.
- Timber buyers or entrepreneurs are responsible for general consideration being taken during harvesting on my property.

B7: Is your property partly or totally subjected to/composed of a habitat protection zone, a conservation agreement or a nature reserve?

- Yes

B71: What is your general opinion about the protection scheme on your property?

- Very positive
- Partly positive
- Partly negative

- Very negative
- No opinion

B72: Who took the initiative to apply such a protection scheme on your property?

- Yourself (the owner)
- County administration
- The municipality
- The Swedish forest agency
- Other: _____

B73: Did you get any economic compensation?

- Yes

B731: What kind of compensation did you get and how much?

- One time payment
- Yearly installment
- Amount: _____

B732: Are you satisfied with the compensation?

- Yes
- No
- I don't know
- No
- I don't know
- No
- I don't know

B8: Have you done any harvesting or commercial thinning in the last five years?

- Yes
- No

B9: If you have done any harvesting/thinning in the last 5 years, did you do any voluntary set-aside?

- No
- Yes

B91: For what reason did you do voluntary set-aside?

- There is a high natural value in that part of the property
- I want to protect the cultural environment
- For esthetical reasons
- For the next generations

- For the neighbours and visitors
- To take responsibility/actions to contribute to a better environment

B92: For how long do you intend to maintain this set-aside?

- 0-5 years
 - 5-10 years
 - 10-15 years
 - 15+ years
 - I don't know
 - I haven't decided yet
- I don't know

B93: If you didn't do any set-aside, why not?

- There was no natural value to protect on that part of the property
- Set-asides are not economically profitable
- I have too little knowledge to assess what should be protected
- I already have some set-asides on other parts of my property
- Other: _____

B94: If you did set-asides during your operations, please estimate how much lower has your income been compared to a situation where you wouldn't have done set-asides?

- 1-5% lower
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- 25%+
- I don't know

B10: If you performed felling/thinning in the last five years, did you take any general consideration?

- No
- Yes

B101: Which considerations did you take?

- Avoid soil damage close to water sources and swamps
- Consider social values
- Left trees or tree groups
- Create dead wood
- Other: _____

B102: What was the reason for taking general considerations?

- Aesthetics
 - It is required by the law
 - Personal responsibility to contribute to a better environment
 - For neighbours and visitors
 - For the next generations
 - To protect cultural heritage
 - Other: _____
-
- I don't know

B103: If you didn't take GC, why not?

- The was no natural value to protect on that part of the property
- Set-asides are not economically profitable
- I have too little knowledge to assess what should be protected
- I already have t
- aken some GC on other parts of my property
- Other: _____

B104: If you took GC during your operations, please estimate how much lower has your income been compared to a situation where you wouldn't have done set-asides?

- 1-5% lower
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- 25%+
- I don't know

PART C - Questions about information

C1: When I make decisions on how to manage my property

Choices are: SA - A - D - SD - NO

- It is important to know what is happening on nearby properties
- It is important to understand first which can be the economic consequences of each measure
- It is important to know the neighbours' attitudes towards conservation
- It is important to follow the trend and influence which are currently the most popular in society.
- I always seek advice from the Swedish forest agency, owners associations and forest companies.

- It is important for me to have to latest information from research in conservation and forestry.

C2: Do you think you have enough knowledge and information to make decisions concerning conservation measures on your forest property?

- Yes

C21: How did you get this information and how important were the information sources?

Choices are 5 to 1 (most to least relevant)

- Forestry magazines
- Daily newspapers
- Radio/TV
- Internet
- Knowledge transfer from the last generation
- Talks with neighbours
- Talks with other owners
- Advice from the Swedish forest agency
- Advice from owners associations or forest companies
- News from research organizations
- Timber buyers
- Forest sector education
- eNGOs
- Other: _____
- No
- I don't know

C3: Would you be interested to join neighbour owners to develop a more comprehensive approach which would be suitable for conservation, either through protected areas or voluntary set-asides?

- I would absolutely be interested in cooperating
 - I could take the initiative for such a cooperation
 - Yes, but only if someone else takes the initiative
- I would probably be interested in cooperating
- I would be interested, but there is nothing worth protecting on my property
- I am not interested in cooperating
- I don't know

C4: If you have done any harvesting/thinning in the last five years, did you seek advice from anyone?

- Yes, from the SW forest agency
- Yes, from forest owners associations
- Yes, from the federation of forest owners associations

- Yes, from a forest company
- Yes, from timber buyers
- Yes, from _____
- No

C5: In case of a storm or fire occurring on your property, whom would you most likely seek advice from?

- I need no advice

Choices are: 5 to 1 (most likely to least likely) - not suitable to give advice

- Another owner
- Another owner of the same property
- SW forest agency
- Forest owners association
- Fed. of owners association
- Timber buyer
- County government
- Municipality
- Other, _____

PART D - About the future of conservation and forestry

D1: In the future, do you think that more or less effort should be put into the following conservation measures so that Sweden can reach its environmental goals?

Choices are: Need much more - Need more - Current situation is fine - Need less - Need much less - No opinion

- Habitat protection areas
- Voluntary set asides
- General considerations
- Nature reserves
- Wildlife conservation

D2: In the next 5 years, if you were to invest time or resources in your property, which of the following aspects would you want to improve?

- Timber production
- Possibility to hunt
- Possibility for recreation and outdoor activities besides hunting
- Diversity of plants and animals
- Aesthetics
- None
- Other: _____

D3: Would you be willing to dedicate a bigger part or all of your property to any kind of nature conservation in the future (such as habitat protection, nature reserve, etc), voluntary set-asides or broaden general considerations taken during felling?

- Yes
- No

D31: Why wouldn't you be willing to do so?

- There are already enough protected woods in Sweden
- I want keep active forestry practices in my property
- There is nothing valuable to protect
- I don't want to put constraints on the next owner's decision making
- I don't have enough knowledge to make such a decision
- I think the losses would be too important for myself as an owner
- I think knowledge on the efficiency of set-asides is not good enough
- My property is too small
- I don't know

D4: It has been proven that climate change affects the amount of plants, insects and mushrooms and the amount of storm damage. How do you think such changes will affect your property in the years to come?

- Damage will increase significantly
- Damage will increase a bit
- Damage will decrease a bit
- Damage will decrease significantly
- I don't think any change will occur
- No opinion

D5: To what extent do you agree with the following statements about external factors which can affect your property?

Choices are: Strongly agree - agree - disagree - strongly disagree - no opinion

- The sensitivity of forests to storm damage is a natural fact which I, as a forest owner, cannot protect myself from.
- There is strong evidence that our climate is changing, and I must take that into consideration when I plan forestry operations on my property.
- The sensitivity of forests to fire damage is a natural fact which I, as a forest owner, cannot protect myself from.

D6: When you prepare for regeneration, do you consider using new species?

- Yes

D61: What are the main reasons?

- Regenerating with hybrid larch or contorta gives me higher profitability than with traditional species.
- Regenerating with hybrid larch or contorta gives me a faster yield than with traditional species.
- Regenerating with broadleaves where there are conifers increases resiliency to storm damage and is important for conservation.
- There is a higher profitability when regenerating with conifers than with broadleaves, and the production is greater.
- Regenerating with fir instead of pine is important to decrease damage from browsing.
- The forest looks nicer and is more enjoyable to visit with broadleaves than with conifer species.
- The forest looks nicer and is more enjoyable to visit with contorta than with broadleaves or the traditional conifer species.
- No

D62: What are the main reasons?

- I don't know enough about the consequences regenerating with hybrid larch or contorta would have on my property.
- Planting broadleaves increases the risk of damage (insects or browsing).
- I think that regenerating with hybrid larch or contorta has a negative effect on biodiversity.
- I don't know enough about the consequences regenerating with broadleaves instead of conifers would have on my property.
- I traditionally regenerate using the same species that have always been in the forest.
- Climate change does not affect conifers, so there is no reason to plant contorta instead.
- Broadleaves does not give me the same yield as conifers do.
- Fast growing species such as hybrid larch or contorta give lower yields than species I am currently using.

D7: Do you use methods with no clearcuts (ie continuous cover forestry / selective forestry) on your property?

- Yes

D71: Which are your main reasons?

- Economical reasons.
- I believe that not using clear cuts is better for preserving nature.
- The landscape becomes nicer with no clear cuts.
- There is less risk (fire/storm) when using no clear cuts.
- Other: _____

- No

D72: Which are your main reasons?

- The forest is too small for it to be a viable alternative.
- There is not enough information and research about these methods.
- Such a method gives lower yields than clear felling.
- The landscape is nicer with a mixture of clear cuts and forests.
- There is less risk of catastrophes (fire/storm) with clear cutting.
- We have traditionally always used clear felling.
- Other: _____

D8: Do you use shorter or longer rotation periods on some parts of your forest property (ie performing the final harvest after a shorter or longer time compared to the economic optimum)?

- Yes, I use longer rotations of 1-20 years.
- Yes, I use longer rotations of more than 20 years.

D81: Which are your main reasons?

- To protect the cultural environment or improve conservation.
- To produce logs of bigger dimensions.
- To contribute to climate change mitigation by sequestering carbon in the soils.
- Because I want to keep access to the resource of mushrooms, berries and game.
- So that the next generations can decide how to manage the property.
- For neighbours and visitors.
- I want to take responsibility and contribute to a better environment.
- I don't want to harvest, I like my forest the way it is.
- I follow the advice I was given.
- Other: _____
- No.

- Yes, I use shorter rotation of 1-20 years.
- Yes, I use shorter rotations of more than 20 years.

D82: Which are your main reasons?

- To harvest and get income faster.
- To lower the risk of insect or game damage.
- To lower the risk of storm or fire damage.
- To adapt to and meet the demand from the forest sector faster.

- I think that climate change makes trees grow faster, which enables shorter rotations while minimizing economic losses.
- I follow the advice I was given.
- Other: _____
- No.
- No, I use neither shorter nor longer rotation periods.

D83: Which are your main reasons?

- Shortening or lengthening rotation periods is not economically profitable.
- Lengthening rotation periods makes the forest become impracticable and inaccessible, and it is impossible to pick mushrooms and berries there.
- I don't think climate change can influence forestry to the point that shorter or longer rotation periods would become economically profitable.
- I don't know enough about rotation periods lengths to know if it would be a viable alternative.
- I don't think that shortening rotations periods can protect the forest from fires, storms, insects or game damage.
- I think that shortening rotation periods makes conservation worse than with my current management.
- I don't think that longer rotation periods improves the environment.
- Other: _____

PART D - Questions conservation and forestry in the future

D9: Scenario 1.

When you plan the management of your property for the future (5-10years from now), which of the following alternatives would you adopt without economic compensation?

- Avoid soil damage close to streams and mires, and restore destroyed streams.
- Take into account social values.
- Voluntary set-aside over a short period (maximum 10 years).
- Voluntary set-aside over an unlimited period.
- Leaving trees or tree groups.
- Create dead wood.
- Take the initiative to create a habitat protection area.

- Take initiatives towards wildlife conservation.
- Other: _____
- None of the above.

D10: Scenario 2.

When you plan the management of your property for the future (5-10years from now), which of the following alternatives would you adopt if you get economic compensation?

Choices of compensation are: 100% - 75/99% - 50-74% - 25/49% - 1/24% - 0%

- Avoid soil damage close to streams and mires, and restore destroyed streams.
- Take into account social values.
- Voluntary set-aside over a short period (maximum 10 years).
- Voluntary set-aside over an unlimited period.
- Leaving trees or tree groups.
- Create dead wood.
- Take the initiative to create a habitat protection area.
- Take initiatives towards wildlife conservation.
- Other: _____
- None of the above.

PART E - Background information

E1: Gender:

- Male
- Female

E2: Age:

- 18-40 years old.
- 41-50 years old.
- 51-65 years old.
- 65+ years old.

**E3: Where did you live during your childhood and where do you live now?
(same choices for both)**

- In a rural area.
- In an urban area with less than 50 000 inhabitants.
- In an urban area with 50 000 - 100 000 inhabitants.
- In an urban area with 100 000 - 250 000 inhabitants.
- In an urban area with more than 250 000 inhabitants.
- Not in Sweden.

E4: Do you live on your property?

- Yes
 - Yes, as a primary residence.
 - Yes, during my free time / secondary residence.
- No
 - No, but I live in the same municipality.
 - No, I live in another municipality.
 - No, there are no buildings on my property.

E5: How many people live in your residence (including yourself)?

- 1
- 2
- 3
- 4
- 5+

Of which _____ are under 20 years old.

E6: What is your level of education?

- Primary school
- High school
 - Oriented towards soil/agricultural sciences.
 - Oriented towards biology.
 - Other field.
- College/University
 - Oriented towards agriculture or forestry.
 - Oriented towards biology.
 - Other field.

E7: What is your main occupation?

- Employee.
- Student.
- I run my own farm.
 - Forest farm only.
 - Forestry and agriculture both.
- I run my own company (other than forestry or agriculture).
- Unemployed.
- Retired.

E8: Over the last five years, to what extent did forestry contribute to your total income?

- 0-5%
- 5-25%

- 25-50%
- 50+%
- I don't know.

Other comments:

Publishing and archiving

- <https://libanswers.slu.se/en/faq/228318>.

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