



# **Attitudes towards protection of biodiversity in forests**

**– a case study of forest owners in Skåne, Sweden**

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## **Preface**

This study is a part of a joint Nordic project financed by the Nordic Council of Ministers and the Norwegian Ministry of Environment. Universities from Denmark, Finland, Norway and Sweden take part and at least one bachelor or master thesis is going to be produced within the project in each of the countries. A base of hypotheses and questions for the inquiry, common for the joint project, was used.

It was carried out at the Southern Swedish Forest Research Centre, Swedish University of Agricultural Sciences as thesis for a Master of Science diploma with a major subject in forestry. Professor Leif Mattsson and professor Ola Sallnäs supervised the work. Thank you for your indefatigable work with my drafts and later manuscripts, both in the creation of the questionnaire and later with the final report. Claes Kindstrand helped me with the practicalities around sending the questionnaires and reminders, thank you for your assistance.

The staff at the County Board of Skåne, the County Forestry Board of Södra Götaland and the Swedish Environmental Protection Agency contributed with the contacts to the forest owners. Many thanks to the staff at these organisations for their work with providing me names and addresses of forest owners that were suitable for the study.

The ones that have put most work and effort into this study are the respondents of the questionnaire. They contributed with their valuable time, without which the study would not have been possible to carry out. I would therefore like to express my gratitude to you for your contribution.

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## 1. Summary

The focus of nature protection through area protection in Swedish forests has for a long time been on boreal, subalpine and alpine areas. Large areas have of this reason been protected in northern Sweden, while the protection of forest in southern Sweden, and especially in the temperate zone, have been almost neglected. Only 2,5 per cent of the land area in the southernmost county in Sweden, the county of Skåne, has some kind of protection today and considerably less of the forest is protected. Some possible reasons for this distorted balance of share of protected forest between northern and southern Sweden are:

- The large share of state-owned forest in northern Sweden has facilitated the work with area protection.
- The large share of forest owned by non-industrial private forest owners in southern Sweden and the relatively small estates in southern Sweden has been a hindrance in the implementation of area protections.
- The long history of land use in southern Sweden has made it difficult to find areas with high nature values for protection, and these areas are very often scattered in the landscape.

The need of protection of biodiversity in the forests of southern Sweden is largely due to the long history of land use. Southern Sweden has much more threatened species than northern Sweden, not only due to the land use history, but also due to the generally higher number of species in the south.

The area of protected forest has however increased much in Skåne during recent years and many private forest owners have been involved in this process. The County Forestry Board of Södra Götaland has been the most active authority in the number of concerned estates and thereby influenced forest owners. The County Board of Skåne and the Swedish Environmental Protection Agency have implemented some new nature reserves and national parks. These areas are usually of larger size but concern in relation to their size fewer estates and thereby there are less forest owners influenced. The encroachment of these forms of protection is however most often to be considered of larger magnitude than the habitat protection and nature conservation agreements that are implemented by the County Forestry Board. This is not only due to the larger size of the areas but also due to differences in the forms of agreements.

A large number of private forest owners have been influenced by the implementation of area protection of forest, and there is a lack of knowledge how the forest owners perceive these processes, even though some studies have been performed in the field. This study is a part of a joint Nordic project with the task “to study effects of various policy instruments and develop proposals concerning the development of policies within the field”.

A questionnaire, consisting of a set of questions in common for the joint project with some adjustments for regional differences and completed with a set of questions specific for this study, was sent to 241 addressees in Skåne. The addressees were private forest owners or previous private forest owners who had been involved in a process with the objective of an area protection of forest in the form of one or more of the protection types below:

- National park
- Nature reserve

- Habitat protection
- Nature conservation agreement

The real response rate was 53 per cent and for another ten per cent the reason for absence of answers is known. The average age of the respondents was 58 years and 78 per cent were men. Most respondents had purchased their estate, often in combination with inheritance and gift. The respondents were rather independent of their income from the forestry on the estate. The average share of income from the forestry on the estate was 15 per cent while the median was much lower with five per cent. Still most of the respondents valued commercial wood the highest among the goods from their forest. Another important good was recreation. The change in share of income from the forestry on the estate after the area protection was implemented was small. The largest loss of income had the respondents with the 25 per cent highest shares of income from the forest. These respondents had on average ten per cent less of their income from the forestry on the estate after the area protection was implemented.

Most respondents associated the concept biodiversity with species and ecosystems and/or with conservation of nature. A majority had the opinion that the owner of the land also is owner of the biodiversity, while they did not consider this ownership to imply an economical responsibility of preserving it. Most respondents thought that the state should have the main economical responsibility of the protection of forest. Many were satisfied with how large share of the forest that was protected in the Swedish private forest, and many more wanted the area of protected forest to increase than wanted it to decrease. However, they were not willing to protect forest without compensation.

The type of compensation that was preferred by most respondents was a yearly compensation, only 31 per cent wanted a once-and-for-all payment. The once-and-for-all payment is the today most common way of compensating the landowners for the encroachment of an area protection and 82 per cent of the respondents for whom the protection process was completed had also gotten this kind of compensation. Many also wanted new land in exchange, which was only realised in one case, and is maybe often less feasible due to small size of the area. The respondents preferred agreements with the authorities where they remained owner of the land and the rights following it. Also this is in contrast to what is most common, the authorities usually buy the land or the right to use the land. They also wanted to be involved in the management of the protected areas, the only form of agreement that today involves the landowner in the management is the nature conservation agreements.

The respondents that had been involved in the protection process to a large extent were in general more satisfied with it. Among the respondents that had been involved to a very or rather large extent there were 86 and 72 per cent, respectively, satisfied with the process, while the corresponding figure among the ones that had been involved to a very small extent was 8 per cent. The County Forestry Board had succeeded better than the County Board and the Environmental Protection Agency in involving the forest owner into the process. Thereby there were also more of the respondents satisfied with the process among the ones that had their main contact with the County Forestry Board. An underlying cause of this can be that the County Forestry Board's work usually concerns smaller areas, but it can also be so due to that the County Forestry Board has a long tradition and experience of contact with and education of forest owners.

A majority of the respondents did not consider the compensation they had received to cover the economic losses of forest production due to the protection. Many of the respondents who

considered themselves to be self-active in their forestry, did not consider the compensation to cover the loss of employment. Just a few of the respondents had made some changes in the management of the remaining part of their forest due to the implementation of the area protection. Neither changes positive to biodiversity nor changes negative to biodiversity were made at any considerable extent.

The addressees were given 17 statements to which they were going to respond, to what extent they agreed with the statements. The statements concerned protection of biodiversity in general, protection of biodiversity in forest, and protection of biodiversity in the respondent's forest. There was no significant difference in attitude of the respondents due to which of the categories the statement belonged. The respondents were positive to nature protection, independent of what level it concerned. But it has to be mentioned that the statements concerning protection of biodiversity on the respondents own estate included the condition that the respondent was fully compensated for the encroachment. However, when the answers were analysed in relation to different characteristics of the respondents there were some differences found. Which sex the respondent belonged to was of importance for the level of agreement when the statement concerned protection of biodiversity in general. Women were more positive towards protection of biodiversity in general than men. No difference of this kind was found when the statement concerned protection of biodiversity on the estate of the respondent.

The characteristics most important for how the forest owner responded to the statements concerning protection of biodiversity on his or her estate were:

- General education
- Membership of an environmental organisation
- Size of forest
- Income from the forestry on the estate
- Share of own work on the estate
- Felling per hectare

Some characteristics were correlated with the size of the forest. Sex, income from the forestry on the estate and share of own work on the estate showed a correlation with the size of forest. The most important characteristics for the respondents' attitudes towards protection of biodiversity were characteristics closely connected with the intensity of the management of the forest on the estate. Many of these characteristics were also correlated with the size of the forest.

## 2. Sammanfattning

Tyngdpunkten i det svenska naturskyddet har länge legat i de boreala, subalpina och alpina delarna av Sverige. Stora områden har därmed skyddats i norra Sverige, medan skyddet av skog i södra Sverige till stor del har förbisetts. Bara 2,5 procent av landarealen och en betydligt mindre del av skogen i Skåne är idag skyddad. Några anledningar till snedvridningen av skyddad skog mellan södra och norra Sverige är:

- Den stora andelen av statligt ägd skog i norra Sverige har underlättat processen med naturskydd där.
- Den stora andelen skog som ägs av privata enskilda skogsägare och den relativt stora ägosplittringen i södra Sverige har varit ett hinder i reservatsbildning och naturskyddsarbetet.
- Markanvändningen i södra Sverige har pågått under längre tid än i de norra delarna av landet. Detta har försvårat arbetet med att finna områden lämpliga för reservatsbildning.

Den tidsmässigt långa och intensiva markanvändningen i södra Sverige har gjort behovet av skydd av biodiversiteten i skogsbruket stort. Södra Sverige har många fler hotade arter än norra Sverige. Detta beror inte enbart på den tidsmässigt långa markanvändningen utan också på ett generellt större antal arter i södra Sverige.

Arealen skyddad skog har ökat i Skåne under de senaste åren och många privatskogsägare har blivit involverade i den här processen. Skogsvårdsstyrelsen Södra Götaland har varit den mest aktiva parten vad gäller antalet skogsägare som har varit involverade i deras arbete med biotopskydd och naturvårdsavtal. Länsstyrelsen Skåne och Naturvårdsverket har infört ett flertal nya naturreservat och nationalparker. Dessa är oftast arealmässigt större men berör färre fastigheter i förhållande till sin areal och därmed också ett mindre antal skogsägare. Intrånget av naturreservat och nationalparker är oftast mer omfattande än när det gäller biotopskydd och naturvårdsavtal. Detta beror inte enbart på att områdena i dessa fall oftast är större men också på skillnader i avtalsformerna.

Ett stort antal privata enskilda skogsägare har berörts av införandet av olika former av arealskydd för skydd av biologisk mångfald. Det föreligger en brist på kunskap hur de privata skogsägarna ser på dessa frågor, även om det har utförts en del studier på området. Den här studien är en del av ett samnordiskt projekt med syftet att studera effekterna av olika politiska verktyg i genomförandet av den skogliga miljöpolitiken och utveckla förslag till utvecklingen av policy inom området.

Ett frågeformulär skickades till 241 adressater i Skåne. Adressaterna var enskilda privata skogsägare som hade varit berörda av en process med målsättningen att en eller flera av nedanstående skyddsformer skulle införas på deras mark. Frågeformuläret bestod av en bas av frågor som var gemensamma för det Nordiska projektet. Dessa anpassades dock till regionala förhållanden och kompletterades med ytterligare ett antal frågor av relevans för denna studie. De skyddsformer som var aktuella var:

- Nationalpark
- Naturreservat
- Biotopskydd
- Naturvårdsavtal



Den verkliga svarsfrekvensen var 53 procent och i ytterligare tio procent av fallen var orsaken till uteblivet svar känd. Medelåldern på respondenterna var 58 år och 78 procent var män. De flesta respondenterna hade förvärvat sin fastighet genom köp, ofta i kombination med arv och gåva. De var relativt oberoende av inkomsterna från skogsbruket på fastigheten, andelen av respondenternas inkomst som kom från skogsbruket på fastigheten var i genomsnitt 15 procent medan medianvärdet endast var fem procent. Men de värderade ändå avsaluvirke som den i särklass största nyttan med sin skog, den näst viktigaste nyttan med deras skogsfastigheter var rekreation. Inkomsten från skogsbruket på fastigheten sjönk i allmänhet mycket litet i samband med införandet av skyddet. Den största sänkningen av inkomst från skogsbruket hade de som från början uppgett en inkomstandel större än den tredje kvartilen. Dessa fick i genomsnitt tio procent mindre av sin inkomst från skogsbruket på fastigheten efter det att skyddet hade införts.

De flesta respondenter associerade begreppet biologisk mångfald med arter och ekosystem och/eller naturskydd. En majoritet ansåg att ägaren av marken också är ägare till den biologiska mångfalden. Men betydligt färre ansåg att det var markägaren som skulle ha det största ekonomiska ansvaret för skyddet av denna. De flesta respondenterna tyckte att det var staten som skulle ha det ekonomiska huvudansvaret. Många var nöjda med hur mycket skog som var skyddad i det svenska privatskogsbruket och det var fler som tyckte andelen skyddad skog skulle öka än som tyckte den skulle minska. De var dock inte i någon större utsträckning beredda att skydda skog utan ersättning.

De flesta respondenter föredrog en årlig kompensation för införandet av arealskydd istället för ett engångsbelopp, vilket är den vanligaste formen av kompensation idag. 82 procent av de respondenter som fått någon av de skyddstyper som var ifråga för studien införda på sin mark hade också fått ett engångsbelopp i ersättning. Flera föredrog markbyte, men detta var endast förverkligat i ett fall. Det kan bero på att detta ofta är mindre realistiskt då arealen av skydden är liten, vilket också var fallet i majoriteten av fallen i den här studien. Respondenterna föredrog avtal med myndigheterna där de behåller både äganderätten till marken och bruksrätten till denna. Också detta skiljer sig mot vad som är vanligast idag, nämligen att myndigheten köper marken eller rätten att bruka denna av skogsägaren. De ville också bli involverade i skötseln av områdena i större utsträckning, den enda avtalsform som idag förutsätter en involvering av markägaren är naturvårdsavtal.

Huvuddelen av respondenterna ansåg inte att ersättningen täcker det ekonomiska förlusterna av uteblivet skogsbruk på den skyddade arealen. Många av dem som ansåg sig som självverksamma ansåg inte heller att förlusten av inkomster från eget arbete på fastigheten ersattes fullt ut. Endast ett fåtal hade gjort några ändringar i skötseln av fastigheten i övrigt på grund av införandet av skyddet. Varken ändringar positiva eller negativa för den biologiska mångfalden hade gjorts i någon större utsträckning.

Respondenterna fick svara på i vilken utsträckning de höll med om 17 stycken påståenden. Påståendena berörde skydd av den biologiska mångfalden generellt sett, skydd av den biologiska mångfalden i skogen och skydd av den biologiska mångfalden i respondentens egen skog. Det fanns inga signifikanta skillnader i respondenternas attityd beroende på kategori av påståenden. Man var positiv till skydd av den biologiska mångfalden oavsett vilken nivå som avsågs. Det bör noteras att påståendena rörande skydd av den biologiska mångfalden på respondentens egen fastighet innebar att denne skulle ersättas fullt ut för intrånget. Svaren på påståendena analyserades mot olika karakteristika hos respondenterna. Vilket kön respondenten tillhörde var av betydelse för dennes åsikt beträffande skydd av

biologisk mångfald i allmänhet. Kvinnor var i allmänhet mer positiva till detta än män. När påståendena gällde respondentens egen skog kunde ingen skillnad mellan könen iakttas.

De viktigaste karaktäristika hos respondenten för dennes attityd till skydd av biologisk mångfald på den egna fastigheten var:

- Generell utbildningsnivå
- Medlemskap i miljöorganisation
- Storlek på skog
- Inkomst från skogsbruket på fastigheten
- Självverksamhet
- Avverkningsnivå

Några karaktäristika var korrelerade med storleken på respondentens skog. Kön, inkomst från skogsbruket på fastigheten och självverksamhet korrelerade med storleken på skogen. De viktigaste karaktäristika för respondentens attityd till skydd av biologisk mångfald på den egna fastigheten var nära relaterade till intensiteten av skogsbruket på fastigheten av vilka flera också var korrelerade med storleken på respondentens skog.

### 3. Introduction

Southern Sweden has for a long time been overlooked in the work with protection of forests for nature conservation (Riksrevisionsverket 1998). One reason for this is a scarcity of forest areas with high nature values due to the long history of land use. But also the large share of private land divided into small estates in southern Sweden has influenced the protection process. The area of unexploited forests in Europe is unevenly distributed with 20 per cent left in the boreal zone and only 2 per cent and 0,2 per cent, respectively, for the hemiboreal and nemoral zones (Angelstam & Andersson, 2001).

The total number of red-listed species in Sweden is, according to the red list from 2000, 4120 species (Gärdenfors, 2000). Southern Sweden has the exceptionally largest share of the red-listed species in relation to the size of its area. The reasons for this are according to Gärdenfors (1997):

- There are generally more species in southern than in northern Sweden.
- Forests with the “selected valuable broadleaved<sup>1</sup>” tree species are more species rich than other forests.
- The land use has been more intensive in southern Sweden than in the northern parts.
- The share of protected forest is much smaller in southern Sweden than in northern Sweden.

Due to this more focus is now put on protection of forest in southern Sweden. The area of habitat protection in Skåne, the southernmost county in Sweden, has more than doubled between 1999 and 2002 and the land area of national parks has increased from 279 hectares in 1997 to 1902 hectares in 2001. Much of the past and the future implementations of protection of forest have been done and have to be done on land owned by non-industrial private forest owners (Skogsstyrelsen, 2003).

Management of natural resources can always bring conflicts (Hallgren, 2003). It is therefore important that the knowledge about the preferences of the forest owners concerning nature conservation in the form of area protection increases. This knowledge can be used to avoid the conflicts in future preservation processes through adaptation of the different forms and methods for nature conservation and means of information to the forest owners.

The purpose of the work presented here is to increase the knowledge about how the forest owners of Skåne perceive the following issues:

- Protection of nature in general
- Protection of forest on their estates
- Which values associated with forest ownership the forest owners appreciate most.
- What kind of compensation for the encroachment and what kind agreements with the authorities the forest owners have a preference to.

1) The so-called selected valuable broadleaved tree species are treated specially by the legislation to secure their persistence in the landscape. They are: *Acer* spp, *Carpinus betulus*, *Fagus sylvatica*, *Fraxinus excelsior*, *Prunus avium*, *Quercus* spp, *Tilia cordata*, *Ulmus* spp (Skogsstyrelsen, 2001)

This study will also give a review of earlier research within the field of forest owners' characteristics, demography and opinions about biodiversity and different measures to protect and enhance biodiversity.

Emphasis will be put on the legal methods of protecting forest, which is in the main focus of the joint Nordic project (see preface). Even though there are of course other measures in the Swedish work with protection of biodiversity in forests that are of importance.

In the following chapter (no. 4), a review of how the work with area protection in Sweden is conducted will be presented. The different forms of protection are listed and briefly described in chapter 5. A short description of the forest ownership structure in Sweden can be found in chapter 6. One chapter (no. 7) is spent on who the private forest owners of Sweden are-the characteristics and demography, and how they perceive nature conservation, both in general and specifically on their land. The description of where and how this study was performed can be found in chapter 8 and 9, and the results of the inquiry is presented and discussed in chapter 10. Finally, conclusions are made in chapter 11.

#### **4. The features of nature conservation in Swedish forests**

Since 1993 Sweden has a forest policy with two objectives, the production objective and environmental objective, which should be given equal importance (Ekelund & Dahlin, 1997). The SLOSS<sup>2</sup>-controversy describes the problems of knowing whether biodiversity is best protected by creating large but few continuous nature reserves or by a larger number of smaller reserves (Hansson & Larsson 1997). This complex of problems was clarified in three alternative strategies for nature conservation that were considered in the policy process:

1. The landscape should be divided into two categories; a rather large area of nature reserves, and land used mainly for production purposes without restrictions.
2. Smaller areas of nature reserves than in strategy 1, the rest of the forests are managed with varying intensity.
3. A smaller area of nature reserves than in strategy 1. The rest of the forests are managed with about the same intensity over the whole area, where also a multiple use strategy is applied.

Sweden has chosen the third strategy; the main reasons for this being (Ekelund & Dahlin, 1997):

- The area of old-growth forests is small.
- Small "islands" or patches in the managed landscape contain most of the environmental values.
- A large share of the forest is privately owned.
- The estates are relatively small.
- Large continuous nature reserves could violate the right of public access in some areas while the remaining intensively managed landscape could be less suitable for recreation purposes.

- 2) Single Large Or Several Small

There is an uneven distribution of protected forests in Sweden between the subalpine areas in northern and western Sweden, and the southern part of the country. Even though the chosen strategy implies a somewhat smaller area of nature reserves than in strategy 1, the area of protected forest needs to be increased (Angelstam & Andersson, 2001). The committee of forest policy in 1992 estimated the need of forest reserves to be 15 per cent of the productive forestland below the subalpine forest. This figure was estimated to be possible to decrease with 50 per cent if the environmental considerations in the forestry practises increased considerably (Miljövårdsberedningen, 1997). The Swedish Environmental Protection Agency states in a report in 1997 that no ecologically indisputable quantitative estimations have been done (Naturvårdsverket 1997). Estimations from 2001 presents figures of the need of forest reserves, grading from 8 to 16 per cent with a north-south gradient, figures that are based on the total area of the landscape. The known threshold values for extinction of vertebrates are between 10 per cent and 30 per cent. In the estimations of need of reserves the threshold value was set to 20 per cent, which is considered to be somewhat more than the average threshold value for vertebrates (Angelstam & Andersson, 2001; Miljövårdsberedningen, 1997).

## **5. Different forms of area protection for nature conservation in forests**

The measures available to the authorities to protect forest areas are:

- National park
- Nature reserve
- Habitat protection
- Area for protection of animals and plants
- Nature conservation agreement
- (Nature management area)
- Woodland key-habitat
- Low-productive forested land

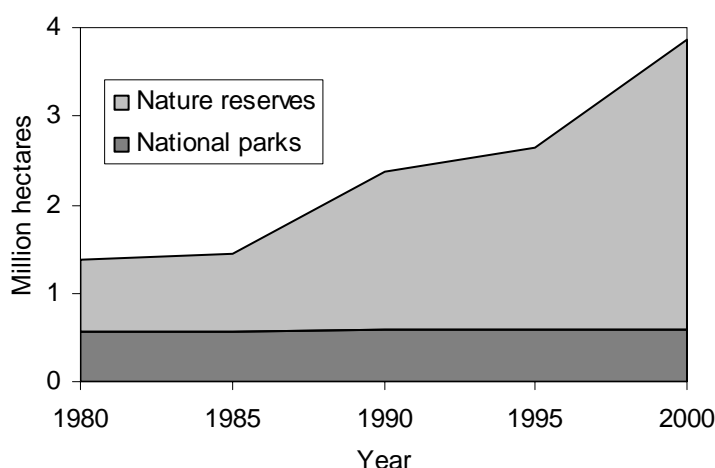
### *5.1 National park*

National parks are usually large continuous areas implemented to protect a landscape and are a very old model of nature protection, the first national park in Sweden was established in 1909. The objective with a national park is that the landscape should be protected in its natural state or in a close to natural condition. National parks are implemented only on land owned by the state and the major decisions concerning national parks are taken by the parliament (Miljövårdsberedningen, 1997; Miljöbalken). The total area of national parks including water was 692 503 hectares in the end of 2002, 91 per cent of this is located in the alpine or subalpine regions in Norrbotten, the northernmost county in Sweden (Carles & Lundin, 2003). The development in area during the last two decades is shown in figure 1.

### *5.2 Nature reserve*

Nature reserves are a protective measure of areas with high values for nature conservation, beauty or importance for recreation. The area can be owned both by the state and by individuals. The government should compensate the owner if the regulations of the reserve severely obstruct the present land use. The nature reserves are implemented by the county

board or the municipalities (Miljövårdsberedningen, 1997; Miljöbalken). The Environmental Protection Agency is responsible for purchasing the land when the infringement is of such magnitude that this is implied. Also other forms of compensation require an approval from the Environmental Protection Agency (Riksrevisionsverket, 1998). About 80 per cent of the land included in nature reserves is owned by the government through the Environmental Protection Agency and when it comes to forestland it is explicitly most common that the Environmental Protection Agency buys the land. The reason for this is, according to Riksrevisionsverket (1998) that most of the forest reserves are left for free development and the cost of the infringement thereby is close to the value of the land. The main part of the 3 976 438 hectares (including water) of nature reserves are located in the alpine and subalpine regions, the three counties of Norrbotten, Västerbotten and Jämtland have 86 per cent of the area of nature reserves in Sweden (Carles & Lundin, 2003). Every nature reserve should have its own management plan, even though this is not always the case (Riksrevisionsverket, 1998). Not all reserves have protection of forest as its main goal. Due to this the forest of some reserves has weak or totally lacks protection (Carles & Lundin, 2003). The development in area during the last two decades is shown in figure 1.



**Figure 1.** The development of the land area of national parks and nature reserves in Sweden from 1980 until 2000 (Skogsstyrelsen, 2003).

### 5.3 Habitat protection

The decision to implement a habitat protection in an area is taken by the county forestry boards. The habitat protection intends to protect small areas inhabited by threatened species against harmful management (Miljövårdsberedningen, 1997) and there is an upper limit at 5 hectares (Naturvårdsverket, 1997). The first habitat protection areas were implemented in 1994 and in the end of 2002 the total area was close to 8400 hectares of productive forestland (Skogsstyrelsen, 2003).

### 5.4 Area for protection of animals and plants

The county boards or the municipalities can decide to execute an area of protection of animals and plants if needed for threatened species and/or species sensitive to disturbance. The protection is limited both in area and time of the year, for example place and season for

breeding. The protection can prohibit for example hunting, fishing and/or public access to the area (Skogsstyrelsen, 2000; Miljöbalken).

### *5.5 Nature conservation agreements*

Nature conservation agreement is an agreement according to civil law between the landowner and the government represented by the county forestry boards. It is used when an area need special management to maintain its nature values. The agreement is limited in time to maximum 50 years and to a certain area (Skogsstyrelsen, 2000; Miljövårdsberedningen 1997). This kind of protection commenced to be implemented in 1994, and in 2002 the total area of productive forestland with nature conservation agreements exceeded 16500 hectares (Skogsstyrelsen, 2003).

### *5.6 Nature management areas*

This possibility to protect nature ended with the new environmental code in 1999 but the protections implemented before this date remains legitimate. This type of protection was utilized in similar cases as the nature reserves but the restrictions should not considerably obstruct the present land use. This kind of protection is therefore a weaker protection than nature reserves. (Skogsstyrelsen, 2000; Miljövårdsberedningen, 1997).

### *5.7 Woodland key-habitats*

Between 1993 and 1998 an inventory of woodland key-habitats was performed on all private forestland, owned by non-industrial owners. The National Board of Forestry and the county forestry boards carried out this inventory (Kjellin, 2001). Until 2002 over 45 000 key-habitats with a total area of 114 000 hectares productive forestland was registered (Skogsstyrelsen 2003). The definition of a woodland key-habitat is an area with such characteristics that it can be expected to find red-listed species there (Nitare 2000). The large industrial forest owners are performing a similar inventory on their forest, which is planned to be completed in the end of 2003 (Kjellin, 2001). The forest owner is obliged to consult the county forestry boards before taking forestry measures in a registered key-habitat.

### *5.8 Low-productive forested land*

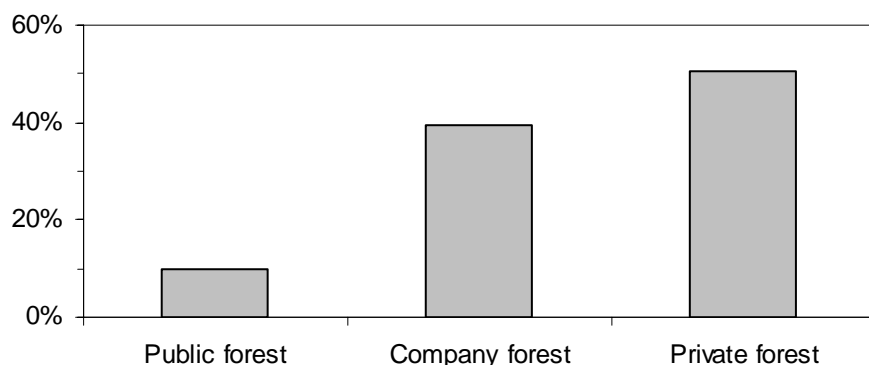
Forest is considered to be low productive when the average annual production is less than 1 cubic metre per hectare and the forest cover is more than 10 percent. Only single trees are allowed to be cut on these areas and the removal of the trees should not considerably change the character of the environment. Draining and fertilisation is additionally prohibited. Three point four million hectares is concerned in Sweden according to the definition above (Miljövårdsberedningen, 1997).

### 5.9 Voluntarily set-aside forest

The definition of a voluntarily set-aside forest is an area larger than 0,5 hectare where activities that can damage the area's nature or culture values should not be performed. The set-asides should not be a result of an agreement with a governmental organisation but can be included in areas for certification by an independent organisation. The area of voluntary set-aside forest was in 2002, 810 000 hectares, according to a study performed by the National Forestry Board (Wirtén et al, 2001). About one third of the set asides done by the industrial forest owners has no documented nature values today but is presumed to have so in the future. Since no agreement is signed between the forest owner and the government concerning these areas are the possibilities to conduct an influence over the management insignificant. The management may possibly change, for example when the owner of the estate changes. There are also uncertainties about the timescale and management of these areas. Many set-asides are done for a short period and in many areas the nature values are damaged by an improper management (Wirtén et al, 2001).

## 6. Forest ownership in Sweden

The non-industrial private forest owners own 51 per cent of the productive forestland (Danielsson et al, 2002), the remaining 49 per cent (figure 2) is divided between public forest and forest owned by a few large industrial owners.

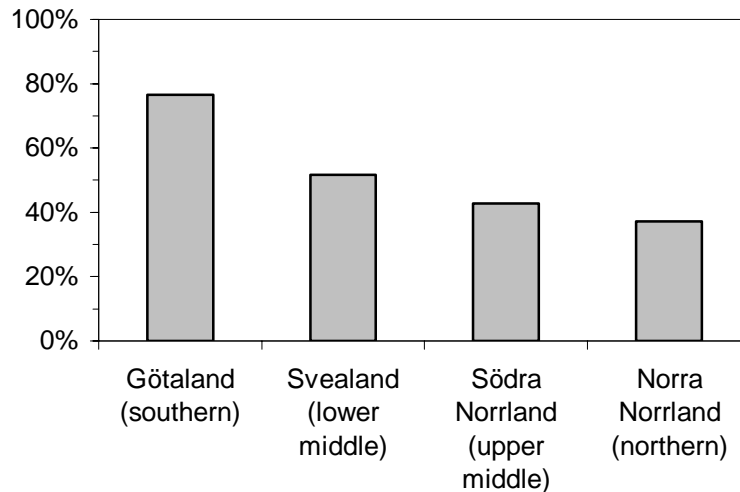


**Figure 2.** The ownership distribution of the productive forestland in Sweden.

The share of non-industrial private forest is decreasing with increasing latitude and the state and industrial owners dominate in the north (figure 3) (Skogsstyrelsen, 2000). The number of units of utilization<sup>3</sup> is about 240 000 and the number of owners is about 350 000 which is about 4 per cent of the Swedish inhabitants (Danielsson et al, 2002). The average non-industrial private estate in Sweden has about 45 hectares of productive forestland. In the county of Skåne the estates are significantly smaller with only about 25 hectares of productive forestland on average.

3) A unit of utilisation is all areas owned by one owner within the same municipality.





**Figure 3.** The share of forest owned by non-industrial private forest owners by regions.

## 7. Non-industrial private forest owners - characteristics, opinions and behaviour

### 7.1 General characteristics

The average age among non-industrial private forest owners in Sweden is according to several studies between 53 and 55,5 years (Flemberg & Henrysson, 1996; Lidestav & Nordfjell, 2002; Danielsson, 1998). 38 per cent of the forest owners are women and the share of female owners is biggest in the county of Stockholm (Danielsson et al, 2002).

The general trend among private forest owners in Sweden is that a decreasing share of them live on their estate. Today only 49 per cent live on their estate all year round and 19 per cent stay on their estate only when having leisure time (Lidestav & Nordfjell, 2002). However, many live relatively close to the estate, almost four out of five live within 30-kilometre from their estate (Danielsson, 1998). The number of owners per estate is increasing. Only 29 per cent own the estate by themselves, the rest share the ownership with their family, or as in a few per cent of the cases, with a non-relative. The most common way to acquire forest is by inheritance or acquisition from relatives or family (Lidestav & Nordfjell, 2002). Only about 15 per cent of the forest estates reach the open market according to Lidestav and Nordfjell (2002) and about one third according to Danielsson (1998).

To most of the non-industrial private forest owners in Sweden forestry is of little economical importance, about 60-70 per cent estimates that less than 10 per cent of the accumulated incomes of their household come from the forestry on their estates (Danielsson et al, 2002). Still, 62 per cent consider the incomes from the forestry to be very important or important (Törnqvist, 1995). The income from the forest is less important to most forest owners than possibilities to extract firewood and non-monetary values like recreation and housing environment. But still, more than 75 per cent of the forest owners considered wood as important or very important in a study by Mattsson et al. (2004). Among the recreational activities, hunting is one of the most important.

Large forest owners tend to value their forest incomes higher than minor ones. The owners of small estates give instead other goods more importance. Planting and pre-commercial

thinning are, except more administrative activities like planning and bookkeeping, the activities that the forest owners or someone in their family perform most frequently themselves without hired labour (Flemberg & Henrysson, 1996; Lidestav & Nordfjell, 2002). The incentives for self-activity among forest owners are, according to Törnqvist (1995), economy, tradition and management:

- Economy - the forest owner gets compensation for his own work in the form of saved costs of contractors.
- Tradition – by self-activity the forest owner can maintain a certain level of practical knowledge and be able to maintain a tradition of management.
- Management – the forest owner looks upon his forest as his own garden and self-activity is a way of keeping the control over it.

Most of the non-industrial private forest owners collaborate with an advisory part in their forestry and more than half of the owners cooperate with more than two parties. Most common is to take advice from a forestry adviser from the county forestry boards. More than 70 per cent (Törnqvist, 1992) has contact with the county forestry boards for this purpose. 35 per cent considered that they had a close and long-lasting cooperation with the county forestry boards (Gabrielsson, 2004). Other important advisors are organisations dealing with wood supply for the industry (Törnqvist, 1992). The county forestry boards are the most important parties also when it comes to information about nature conservation, 68 per cent get information from the forestry board. The second most important source of information is the forest owners' associations, 41 per cent get information about nature conservation from a forest owners' association (Flemberg & Henrysson, 1996).

About 90 000 forest owners, with 6 million hectares of forest are members of a forest owners' association (Skogsstyrelsen, 2003). The forest owners' associations are important cooperation organisations for many forest owners (Gabrielsson, 2003). The average estate of the member of a forest owners' association is bigger than the average estate in the country. The members of forest owners' associations are more often than other forest owners living on their estate and more of them combine their forestry with agriculture. They are also more active in the practical forestry activities on the estate (Lidestav & Nordfjell, 2002).

## *7.2 Attitudes to nature protection*

According to Fahlstedt (2003) 94 per cent of the forest owners in the county of Gotland are positive to and consider that it is important to abstain from forestry in forests with high nature values. A study from the counties of Jönköping and Västerbotten (Flemberg & Henrysson, 1996) showed a similar result and 86 per cent of the forest owners were positive to set aside forest for nature conservation. This study found a north-south gradient in the acceptance of set-aside area, the forest owners in the northernmost county, Västerbotten, were more positive than the owners in the county of Jönköping.

Two studies, Lidestav & Nordfjell (2002) and Lidestav (2000), focused on whether the forest owners are positive to exclude forest from forestry activities with or without compensation. 29 and 34 per cent, respectively, were negative to leave part of their forest from forestry if they were not compensated with money or new forestland. 30 and 48 per cent, respectively, of the forest owners declared them willing to set aside 1-5 per cent of their productive forestland without compensation and 9 per cent were not disposed to protect forest even if they would be

compensated with money or new land. The owners were more positive to set aside larger areas if they were compensated with new land instead of money. There are small or no differences between female and male owners in the willingness to set aside land for nature protection, but significantly more women were uncertain about their attitude to the question (Lidestav, 2000).

How large share of the productive forestland that the forest owner is willing to set aside varies not much between owners of small, intermediate and large amount of forest (Lidestav, 2000; Lidestav & Nordfjell, 2002). According to Lidestav (2000), 62 per cent of the forest owners thought that the state should carry the economical burden with protection of forest. Significantly more men (81 per cent) than women (42 per cent) answered that the state should have the main responsibility of protecting forest.

Forest owners that have their main occupation within the agriculture or forestry on their estates are less positive to set aside forest for nature conservation. 22 per cent of these forest owners do not want to set aside any land, compared to 12 per cent among owners with other main occupation (Flemberg & Henrysson, 1996). A study by Stenseke (2001) about values in the rural landscape supports this, she found that biodiversity is relatively more important to non-farmers and especially among people that have moved in to the landscape. This is somewhat contradictory to the results of a study by Karppinen and Hänninen (2000) in Finland, which implies that the population in the sparsely populated northern parts of Finland is more positive to forest conservation than the population in the more densely populated southern Finland. But they comment that their results are in conflict with results of previous studies. Non-industrial private forest owners have a more emotional relation to their estate than large industrial owners (Riksrevisionsverket, 1998) and forest owners that live on their estate appear to value their forest higher. A significantly larger share among of the forest owners that live on their estate (in the county of Gotland), than among those who do not, were unsatisfied with the economical compensation for habitat protection and nature conservation agreements (Fahlstedt 2003).

Among the forest owners in the study by Fahlstedt (2003), 56 per cent were positive to habitat protection and nature conservation agreements as way of protecting their forest. Only 30 per cent considered the compensation to be in proportion to the infringement. This differs from the results of a study in the county of Västra Götaland where 65 per cent of the forest owners with habitat protection thought the economical compensation to be reasonable or high (Berggren, 2004). Berggren (2004) studied how forest owners with habitat protection on their land look upon the Västra Götaland County Forestry Board's work with implementation of this kind of protection. She found no significant correlation between the attitudes toward the County Forestry Board's work and the percentage of the estate that was protected. Neither did she find any relationship with the size of the economical compensation. The right of self-determination is the most common reason among these forest owners to be negative to implementation of more habitat protections on their estates. Other important reasons to be negative to more habitat protection were (Berggren, 2004):

- The forest owner thinks the economical compensation is too low.
- The forest owner thinks it is enough that he or she considers nature conservation in his forestry.
- The forest owner thinks there is enough protection of biodiversity.
- The forest owner thinks that his or her children should be able to use the land for production of timber.

Many (20 per cent) of the forest owners with a positive attitude towards more habitat protections on their land claimed themselves to be positive due to a personal interest of nature conservation. Other important reasons to be positive to more habitat protection were (Berggren, 2004):

- The forest owner is proud to have woodland key-habitats on his or her land.
- The habitat protection is a very small share of the forest owner's total forest area.
- The forest owner gets capital without cutting the forest (when compensated).
- The forest owner was positively surprised that there are such high nature values on his/her land.

In the study by Lidestav (2000) 52 per cent of the forest owners were of the opinion that the protection of woodland key-habitats is an efficient way to preserve biodiversity in the forest, while 9 per cent were negative to the efficiency of woodland key-habitats for preservation of biodiversity. 71 per cent had the opinion that the economical loss with key-habitats on their estate was inconsiderable or moderate, and 61 per cent thought that the restriction of the right of disposition was inconsiderable or moderate. When scrutinising these results one have to consider that the average-sized woodland key-habitat is only about 3 hectare and the median area is even smaller 1,4 hectare (Skogsstyrelsen, 2003). Karlsson (2001) makes the conclusion from her study of forest owners with woodland key-habitat in Roslagen, that there is no direct relation between to what extent the forest owners' economy is depending on the forestry and the owners' opinions of key-habitats. She suggests that it is more depending on emotional values than economy.

The Environmental Protection Agency is of the opinion that the landowners most often wants to sell their land to the government when they are informed that a nature reserve is going to be established. The report from Riksrevisionsverket (1998) claims that there are many factors that influence the landowners' opinions towards whether they want to sell their land or be compensated for the infringement. The factors mentioned in that report are, how large area is influenced by the reserve, how the area is delimited, how long the land has been owned by the owner's family or relatives and how old the forest is. They also remark that even if it is so that the agreement with the Environmental Protection Agency is on voluntary basis, it can influence the landowners' decisions, if he or she knows that it is the policy of the Environmental Protection Agency to first of all buy the land.

In a study by Statsskogsutredningen (2002) there were 192 forest owners asked what they wanted to do with their land when they got the decision that it was going to be a nature reserve or a national park. About 40 per cent wanted to sell their land to the state, about 5 per cent of these told that they wanted to use the money to purchase new land. 20 per cent preferred new land in exchange and 24 per cent wanted to keep the land and get compensation for the encroachment. 13 per cent did not want to sell their land to any price. The study does not tell anything about if the landowner at this state was informed of which options of compensation were available. When the level and kind of compensation was settled, 57 per cent of the landowners declared themselves satisfied. More than 25 per cent got the information that their land was going to be a nature reserve or a national park from some other source than the responsible authorities. 65 per cent were satisfied with the way the authorities had handled the process after the landowners had been informed that a nature reserve or a national park was going to be established.

In 2002 an interview was made with 12 landowners in the county of Dalarna that had been concerned by the formation of nature reserves (Hämberg, 2002). Most of the landowners accepted the idea that the society creates nature reserves, but were critical to the way that reserves are implemented and the lack of possibilities for the landowners to influence the decision. They also thought that there was a lack of understanding from the authorities to the way of living in sparsely populated areas, with hunting, fishing and outdoors life. A report from the Environmental Protection Agency points out the importance of communication and social skills among the representatives of the authorities, but also concludes that all conflicts are not solved through dialog. This is because of the fact that some forms of land use exclude each other (Naturvårdsverket, 2003).

## 8. Study area

In the present study, the geographical study area was chosen to be Skåne. Skåne is the southernmost county in Sweden and also among the smallest ones with regard to the area. The landscape is dominated by agricultural land on the plains in the southwest and east. The percentage of forest cover is gradually increasing from the southwest to the northeast, where forests dominate. While conifers dominate in the north, the broadleaves and particularly the “selected valuable broadleaved”<sup>4</sup> tree species increase in share the further we come to the south (table1).

**Table 1.** Standing stock of different tree species in the forest Sweden and Skåne (per cent of the total standing stock) (Skogsvårdsstyrelsen Södra Götaland, 2002).

Tree species	Skåne	Sweden
Scots pine <sup>1</sup>	10,6	38,7
Norway spruce <sup>2</sup>	46,9	43,4
Birch <sup>3</sup>	9,9	10,6
Alder <sup>4</sup>	4,9	1,2
Oak <sup>5</sup>	5,8	0,9
Beech <sup>6</sup>	15,8	0,6
Other selected valuable broadleaves <sup>7</sup>	2,6	0,1
Other broadleaves <sup>8</sup>	2,3	2,2
Dead and wind thrown trees	1,2	2,1
<b>Sum</b>	<b>100</b>	<b>100</b>

Notes to table1.

- 1) Pinus sylvestris (larch (Larix spp.) and Lodgepole pine (Pinus contorta) also included).
  - 2) Picea abies
  - 3) Betula pendula and Betula pubescens
  - 4) Alnus glutinosa and Alnus incana
  - 5) Quercus petraea and Quercus robur
  - 6) Fagus sylvatica
  - 7) Ulmus spp., Fraxinus excelsior, Tilia cordata, Acer platanoides, Carpinus betulus and Prunus avium.
  - 8) Populus tremula, Salix caprea, Sorbus aucuparia and other broadleaves.
- 4) The so-called selected valuable broadleaved tree species are treated specially by the legislation to secure their persistence in the landscape. They are: Acer spp, Carpinus betulus, Fagus sylvatica, Fraxinus excelsior, Prunus avium, Quercus spp, Tilia cordata, Ulmus spp (Skogsvårdsstyrelsen 2001)

The northern border of the nemoral zone goes through the northern parts of the county and coincides with the northern limit of distribution for some of the most demanding broadleaved tree species (Angelstam & Andersson, 2001; Miljöförhållanden, 1997). The southern limit of the natural distribution of Norway spruce (*Picea abies*) has been said to run through the northern parts of the county. However, ecologists question this and argue that it can be found naturally further to the south. Norway spruce is very important for forestry all over Skåne and in many parts of the county it dominates the ligneous vegetation (table 1).

Skåne is one of the most densely populated counties in Sweden with 1,1 million inhabitants. The land area is about 1,1 million hectares (11 035 km<sup>2</sup>) (table 2). Most people live in densely built-up areas, more sparsely populated areas has only 13,6 inhabitants per square kilometre (Statistiska Centralbyrån, 2004).

**Table 2.** Some facts about the population size, area and forest area of Skåne and Sweden (Statistiska Centralbyrån, 2004; Skogsvårdsstyrelsen Södra Götaland, 2002).

	<b>Skåne</b>	<b>Sweden</b>	<b>unit</b>
Area	1,1	44,1	million hectares
Population	1,1	8,9	persons
Citizens per km <sup>2</sup>	104	22	persons
Forest	0,35	22,6	million hectares
Forest per capita	0,3	2,5	hectare

Skåne has about 350 000 hectare of productive forest (table 2) divided on 10 600 holdings. The average estate in Skåne has about 25 hectare of productive forestland and private persons own about 80 percent of the forest. Table 3 show the number of reserves in Skåne and the total land area of these reserves in the end of 2002, note that national parks, nature reserves and nature management areas include agricultural land.

**Table 3.** The area of protected land in Skåne in the end of 2002, divided into form of protection and relation to the total land area of Skåne (Skogsvårdsstyrelsen, 2003; Carles & Lundin, 2003)

<b>Protection</b>	<b>nr</b>	<b>Area (ha)</b>	<b>%</b>
Habitat protections	183	341 <sup>1</sup>	<<0,1
Nature conservation agreements	36	266 <sup>1</sup>	<<0,1
Nature reserves	148	16 587 <sup>2</sup>	1,5
National parks	3	1902 <sup>2</sup>	0,2
Nature management areas	10	6177 <sup>2</sup>	0,6
Area for protection of animals and plants	61	1768 <sup>2</sup>	0,2
<b>Sum</b>	<b>441</b>	<b>27 041</b>	<b>2,5</b>

Notes to table 3.

- 1) Forestland (including also low productive forestland).
- 2) Total land area (including also agricultural land and low productive forestland).

## 9. Methodology

### 9.1 *The questionnaire*

In the present study, a mail questionnaire was used to collect data. The aim for the size of the respondent group was set to be about 150 persons, which with a response rate of 60 percent gives a desirable sample of 250 persons. The reason for choosing a questionnaire delivered by mail instead of telephone interviews was the time available. The questionnaire included a set of questions that were in common for all the studies within the Nordic project (see preface). This set of questions was translated from English to Swedish and adjusted to Swedish conditions. The main adjustments that were made were adaptations within the fields of responsible authorities, forms of protection and compensation to the landowner. The order of the questions was also changed to correspond to the target group of respondents. The questionnaire was completed with a number of questions that mostly concerned the forest owners' opinions about protection of biodiversity in general. The number of questions was 63, some of them with sub-questions. The questionnaire can be seen in appendix 1 (chapter 13, section 13.3). The questionnaire form started with a textbox with general instructions how to fill in the form. Later in the form more specific instructions preceded each question that was considered to need a deeper explanation to be comprehensible. The questionnaire was divided into two main parts, one that all respondents should answer, with questions concerning:

- Personal characteristics like age, sex and education.
- Characteristics of the estate like total size, forested area, economy and the intensity of forestry activities on the estate.
- The forest owner's attitudes toward protection of biodiversity in general and specifically on his or her estate.
- Questions concerning the attitudes towards the protection process on their estate.

The second part was meant for the forest owners who had reached an agreement with the authorities about implementation of an area protection on their estate. Three main ways of answering was used in the form. The most common way was questions where the respondent should mark one or several fixed alternatives. Often there was also space for the respondent to create an own alternative. The second most common type of question was where the respondent should mark on a scale. A five-graded Likert scale was used when the respondent should give their attitude towards a statement, and a scale marked from 0 to 100 percent with intervals of ten was used when the respondent should give a share of some total. The third way was when the respondent could develop his opinion in a few words or sentences. Most of the questions were of qualitative character even though some questions like age of respondent and sizes of different areas can be considered as quantitative (Stenhag, 2001).

Together with the questionnaire followed a letter that introduced the respondent into the aims of the study and gave very brief instructions how to fill in the questionnaire. The letter can be seen in appendix 1 (chapter 13, section 13.1). It was decided to send only one reminder because of lack of time, but to include a new questionnaire and reply envelope in this reminder. The questionnaire was sent by mail the first time at the 14<sup>th</sup> of January 2004. The reminder was sent two weeks later at the 28<sup>th</sup> of January 2004. It was sent to the addressees that had not until this date answered with a form or notified by phone or mail that they could not or did not want to answer the questions. Together with the reminder followed a new letter that more than the first one stressed the importance of the respondents' participation in the study. This letter can be seen in appendix 2 (chapter 13, section 13.2). Both letters

emphasized that the respondents' answers would be treated anonymously and that no individual answers should be possible to connect to an individual respondent. The respondent was not supposed to write his or her name on the completed form. A code was given to the addressees and marked on the questionnaire to make it possible to separate the addressees, who lingered with his or her answers, from the rest, and send reminders to them.

## *9.2 Target group*

The target group of the study was non-industrial private forest owners who had been involved in a process with protection of a forested area on their land. Also previous owners were included to certify that also the persons that not any longer own their estate due to this protection was integrated in the study. The target persons should have been involved in a way that they had received an offer of implementation of an area protection on their land or faced a taken decision of such. Thereby is it not necessarily so that the target persons have an area protection on their estate, but they have in some way adopted an attitude to the implementation of an area protection. The area protection can be implemented or on its way to be implemented. It is also possible that the process has been rejected for various reasons and that no area protection will be implemented. Four types of area protection were covered in the study:

- National park
- Nature reserve
- Habitat protection
- Nature conservation agreement

These four types can all imply an obstacle of normal forestry and land use depending on the objectives of the protection. The degree of obstruction varies with the rules of the specific area, but all except nature conservation agreements most often implies a considerable obstacle. Additionally, national parks are only implemented on land owned by the state, why the previous owner is excluded from the land use.

## *9.3 Gathering of contacts*

Names and addresses of the private forest owners that the questionnaires were sent to were gathered through contacts with the County Board of Skåne, the Swedish Environmental Protection Agency and the County Forestry Board of Södra Götaland. These organisations are later mentioned in the text as the County board, Environmental Protection Agency and County Forestry Board. An extract from the list of cases of habitat protection and nature conservation agreements was received from the head-office of the County Forestry Board in Kristianstad. This list was completed through contacts with the environmental specialists at the three districts in Skåne. The Environmental Protection Agency provided names and addresses of forest owners involved in implementation of national parks and nature reserves. These persons have either been compensated for an encroachment of their estate or sold all or part of their estate to the government. The County Board completed the list with a few persons that are concerned in an ongoing process, the number of this was inconsiderable, though.



#### *9.4 Limitation of the target group*

Since the target group of the study was non-industrial private forest owners, a few names that obviously belonged to companies were excluded. Also four names with foreign address were excluded of practical reasons. One contact person was chosen when more than one owner was living on the same address, and the questionnaire was sent only to this person. When there were more than one owner of an estate, and these were living on different addresses, they were treated as separate respondents. The size of the sample was limited by how long time had passed since they were involved in the protection process. The addresses from the County Forestry Board was divided into calendar year and the addresses from the Environmental Protection Agency and the county board was divided into budget year, from first of July until last of June the following year. This way of division lasted until the end of 1996, which implies that the last budget year of 1995/1996 contains 18 months. To get an appropriate number of addressees, the limitation in time was set to be owners with cases from the calendar year of 1996 from the County Forestry Board and from the financial year of 1995/1996 from the Environmental Protection Agency. Thereby some of the cases from the Environmental Protection Agency were somewhat older than those from the County Forestry Board. The questionnaire was sent to totally 241 persons, of which the contacts from the County Forestry Board constituted the main part with 176 persons.

#### *9.5 Registration of answers*

The incoming data of the respondents' answers were registered in the spreadsheet program Microsoft Excel. The respondents' names and addresses were handled separately from their answers and only their code initially followed their answers into the database. Later the data was analysed totally separated from the codes.

#### *9.6 Hypothesis testing*

Hypothesis testing was used to analyse if differences between attitudes among respondents of different categories were significant. One sided hypothesis testing was used uniformly. If the sample is small ( $n < 30$ ) is it precondition that the distribution of the values around the average is normally distributed and without skewedness. In most of the cases in this study where hypothesis testing was used, were the samples of more than 30 and the shape of the distribution was not considered. In the rest of the cases a normal distribution were assumed. Another precondition is that the standard deviations of the samples that are going to be compared should be similar. The difference between the standard deviations should not be more than 50 per cent of the lower of these two values. Four levels of significance were used and displayed with stars in the following way (table 4).

**Table 4.** Levels of significance used in the testing of hypothesis in this study.

Significance per cent	Z	
0,1	3,09	***
1	2,33	**
5	1,64	*
10	1,28	(*)

The significance in per cent indicates with what security it can be claimed that one average or a proportion is higher than another. A significance of 10 per cent says with 90 per cent security that one value is higher than the one that it is compared with. The hypotheses that are in common for the whole project can be read in appendix 4 (chapter 13, section 13.4).

### *9.7 Division of respondents into categories*

The respondents were divided into categories depending on their personal characteristics and the characteristics of their estate, the forest and the forestry on the estate and the protection process they had been involved in. The average, median and quartile values were used for the division when the characteristics were of a continuous type, like age, income, size of forest, etc. More than one way of division into categories were used in the analysis of the continuous characteristics, these are mentioned as sets of categories in the text. In some cases two or more similar categories were grouped together to create a sample of enough size for the statistical analysis.

## **10. Results and discussion**

### *10.1 Response rate*

Of the 241 questionnaires that were dispatched a total number of 153 or 63 per cent (table 5) were returned in some form. Of these questionnaires 14 were returned due to unknown addressees and the forwarding of mail had been cancelled. Most of these addressees were from old cases of protection. 139 respondents answered in some way, which makes a total rate of response of 58 per cent and 127 or 53 per cent returned a questionnaire that was filled in.

**Table 5.** The number of respondents and rates of response in total answers, filled in questionnaires and addressee unknown.

	<b>Number</b>	<b>%</b>
Respondents	139	58
Addressee unknown	14	6
<b>Sum</b>	<b>153</b>	<b>63</b>
Filled in forms	127	53

The reason is known in most of the cases where the respondent has returned the questionnaire unfilled. A common reason for not responding was that the respondent considered him/her self to be prevented from answering the questions due to illness or high age. In some cases the addressee was deceased and relatives returned the questionnaire. This can also be the reason in some of the cases when the addressee was unknown, but this is of course speculation. A few addressees returned the questionnaire with a notification that they were not interested to take part in the study and some also notified this by telephone contact. Not all of the returned filled in forms were complete, the rate of response of each question is shown and discussed later, question by question. Due to the limited time frames of this project, no follow up was made on either the 6 per cent where the addressee was unknown or the ones (37 per cent) where no answer was received.

## 10.2 Characteristics of the respondent group

The respondents in this study were of somewhat higher age than in the studies mentioned earlier in this report (see chapter 7, section 7.1), the average age was 58 years and the median 60 years (table 6). The age distribution varied between the extreme values of 30 and 86 years.

**Table 6.** The average, median, minimum and maximum age of the respondent group.

Central and extreme values	Age
Average	58
Median	60
Min	30
Max	86

Since there is no information about the age distribution in the group of addressees, conclusions cannot be made about how well the respondents represent the total group of addressees in the question of age. Maybe older people are more disposed to answer this kind of questionnaires due to different reasons. Many of them can for example have retired from work and thereby have more time available. The following discussion is based on the assumption that the respondents are representative for the whole group.

The somewhat higher age among the respondent group than among forest owners in general can be related to several causes. There can be differences due to age in attitude towards the forms of nature protection that are in the focus of this study. Maybe elder forest owners are more disposed to make agreements of this kind with the authorities. It is also possible that the nature values have a correlation with the age of the forest owner. This is supported by a positive correlation between the forest owner's age and the number of old trees on his or her estate that was found in a study by Götmark et al. (2000).

22 per cent of the respondent group was women (table 7), which is less than the country average among forest owners (see chapter 7, section 7.1). It is also less than the rate of women among the whole group of addressees, which was estimated to about 27 per cent.

**Table 7.** The sex distribution of the respondent group in number and share of female and male.

Sex	Number	%
female	28	22
male	99	78

A reason for the low share of women in the whole group of addresses can be that when limiting the target group, choosing one addressee when several were living on the same address, no concern was made about the sex of the addressee chosen. Another reason can be that men have answered the questionnaires addressed to women, this has been noticed in several cases when recording the answers. Presumably it is then husbands or other male relatives of the addressee that has filled in the form.

The largest group of respondents according to level of education was the one with university education as their highest level of education, 59 respondents or 46 per cent (table 8) had

studied at university level. The groups with elementary or college school as highest level of education was 22 and 28 per cent respectively.

The number of respondents with university education is much higher than the average for the whole population of Sweden between 16-74 years of age, which is 13-14 per cent depending on the length of the education (Statistiska Centralbyrån, 2004). There are several conceivable reasons for this difference:

- The share with university education is larger among Swedish forest owners than among the Swedish population in general.
- The share with university education is larger among the respondent group than among the Swedish population in general.
- The share with university education is larger in the respondent group than in the population of forest owners or former forest owners in this study.

Which of the reasons above is the cause of the divergence is hard to say. However, it may be likely that a person with university education has to a larger extent an interest of and a willingness to participate in this kind of study, but more than one reason can of course interact to the difference.

**Table 8.** The number and share of respondents with a certain type of school as their highest level of education.

Education	Number	%
Elementary school	28	22
College	35	28
University	59	46
Other	4	3
Answer missing	1	1

Many of the respondents, 45 per cent (table 9), had no education in forestry. 31 per cent had taken part in some shorter courses in forestry and 17 per cent had forestry education from secondary schools, like forestry or agriculture schools. Only 5 per cent had studied forestry at university level, which can be put into relation with the total share of respondents with university education (46 per cent).

**Table 9.** The number and share of respondents with a certain type of education as their highest level of forestry education.

Forestry education	Number	%
No education	57	45
Single courses	39	31
College	22	17
University	6	5
Other	2	2
Missing	1	1

A majority, 59 per cent (table 10), of the respondents live on their estates, which is more than the share that has grown up there (44 per cent). 31 per cent has grown up on the estate and now also lives there.

**Table 10.** The number and share of respondents that have grown up on or live on the estate and those who have both grown up and live on their estate.

	Grown up on the estate		Live on the estate		Both grown up and live on the estate	
	Number	%	Number	%	Number	%
yes	56	44	75	59	40	31
no	68	54	52	41	84	66
missing	3	2	0	0	3	2

The level of membership in associations, either concerned with the interests of landowners like ownership rights or with nature conservation, was high. More than 70 per cent (table 11) of the respondent group was member in an organisation like this. The largest organisation is the Federation of Swedish Farmers with 58 per cent. 18 per cent were members in the Swedish Society for Nature Conservation.

**Table 11.** The total number of respondents that are members in one or more organisations relevant for this study and the number and share for each organisation. One respondent can be member in more than one organisation, that is why the sum is more than 100 per cent.

Organisation	Number	%
Any organisation relevant for the study	92	72
Federation of Swedish Farmers	74	58
Forest Owners' Association	50	39
Swedish Society for Nature Conservation	23	18
World Wide Fund for Nature	12	9
Other	9	7
Missing	35	28

The Federation of Swedish Farmers is very close connected with the Forest Owners' Association, it is therefore most likely common that forest owners in general, and especially those that are also farmers, are members of both organisations. And even if they are only members of the Forest Owners' Association, they might consider themselves to be members of the farmers' federation by their membership in the Forest Owners' Association. Another explanation of the rather high proportion of respondents in the study that answered that they were members of the farmers' federation can be that many of the respondents are farmers, but this can not be revealed by the study.

Almost 90 per cent (table 12) of the respondents had acquired knowledge about biodiversity to some extent. Most of them (61 per cent) had obtained this knowledge on their own, but a large share (40 per cent) had taken part in courses and acquired their knowledge that way. Contact with the County Forestry Board and County Board was mentioned by some respondents as an important way of increasing their knowledge about biodiversity.

**Table 12.** How many of the respondents had acquired knowledge about biodiversity and how they had achieved this knowledge.

Acquired knowledge through	Number	%
All different ways	113	89
Courses	51	40
On their own	78	61
Other way	9	7
Missing	14	11

The value of the knowledge about biodiversity that the respondent has acquired on his or her own can of course be discussed, as well as the definition of knowledge about biodiversity. Literally, everyone who has gone through primary school, or just know the names of a few plants or animals, can be said to have acquired knowledge about biodiversity. Due to this the respondents that have gone through some courses or education in the subject are separated from the rest in the further analysis. The respondents are divided by those who have been actively educated in the subject and those who have not.

### *10.3 Characteristics of the estates and the forestry on the estates*

The average estate and forest of the respondent group was 282 and 177 hectares, respectively, and the median estate and forest was 80 and 50 hectares, respectively (table 13). The average size and share of forest on the estates was much bigger than the average of Skåne (see chapter 8).

There was a large difference between the average and the median, both in total size of the estate and the size of forest. A large difference can also be seen between the minimum and maximum values. The differences between the average and median values indicate a skewedness in the distribution, with majority of small estates, and a few, for the county exceptionally big estates.

**Table 13.** Total size of the respondents' estates, total size of forest and share of forest on the estates.

	Total size of the estate	Size of forest	Share of forest
	Hectare	Hectare	%
Average	282	177	67
Median	80	50	73
Min	2	0,5	2
Max	6500	4500	100
Missing	1	4	6

Not only the average size of the respondents' forests, but also the median size of forest is exceptionally large for the study area. The study does not reveal why the respondents have more forest than other forest owners in the county of Skåne. But maybe is it so that large estates have a larger chance to contain areas with high nature conservation values, not only by random, but also by differences in management. Maybe the chance is bigger on a relatively

big estate, than on a smaller one, that some areas are left unaffected from forestry or are more extensively managed. It is also possible that there are some differences in number of owners per estate in relation to the size of the estate or the forest. This could imply that the arithmetic averages of the estates in the study are less representative.

Most of the respondents, 50 per cent, have bought their estate. Another 18 per cent have acquired the estate through purchase in combination with inheritance and gift (table 14). Almost 20 per cent have inherited the estate and 13 per cent have gotten the estate as a gift.

18 per cent has marked more than one alternative on the question how they have acquired their estate. The most common combination of alternatives was purchase combined with inheritance (12 per cent), but also purchase together with both inheritance and gift occurred in a few cases. The reason why some respondents have marked more than one alternative can be that they had problem with fixing the boundaries between the different alternatives. Some respondents can for example have bought their estate from parents or relatives at a price lower than the market price. They can also have bought it from an estate of a deceased, in which they were part owners.

**Table 14.** How the respondent group has acquired their estates, in some cases more than one alternative was marked.

<b>Acquirement of the estate</b>	<b>Number</b>	<b>%</b>
Purchase	63	50
Purchase + Inheritance	15	12
Purchase + Gift	5	4
Purchase + Inheritance + Gift	3	2
Inheritance	24	19
Gift	17	13
Missing	0	0
<b>Sum</b>	<b>127</b>	<b>100</b>

The respondents were asked how large share of their household's income comes from the forestry on their estate, the average share was 14 per cent and the median 5 per cent (table 15). The respondents perform in average 27 per cent (median 10 per cent) of the work in the forest themselves without hired labour. In both these questions the answers varied between 0 and 100 per cent. The average felling per hectare during the last ten-year period was 37 m<sup>3</sup> (median 33 m<sup>3</sup>), with variation between 0 and 142 m<sup>3</sup>.

The difference between the average and median values in share of income and own work indicates that a majority of the respondents are moderately independent of the incomes from their forestry. While there are a few which are to a quite large extent dependent of the forestry incomes. The same pattern can be seen in the extent to what the respondents work in their forest, most of the respondents do very little, while a few perform almost all the work themselves. The average felling is 3,7 m<sup>3</sup> per hectare and year, which is much lower than the average increment of 8,4 m<sup>3</sup> per hectare and year, in the county (Skogsvårdsstyrelsen Södra Götaland, 2002). The variation between minimum and maximum values is considerable with 142 m<sup>3</sup> per hectare during a 10-year period. This can be explained by the size of the forest properties in the study (median 50 hectare). Small estates very often have an uneven flow of felling.

**Table 15.** The share of the income of the respondents' households that come from the forestry of the respondents estates and the share of the forestry activities that the respondents carry out themselves. The activity of felling on the estates of the respondents during the last 10 years, in m<sup>3</sup> and m<sup>3</sup> per hectare.

	Income from forest	Own work	Felling	
	%	%	m <sup>3</sup>	m <sup>3</sup> /hectare
Average	14	27	8138	37
Median	5	10	1500	33
Min	0	0	0	0
Max	100	100	250000	142
Missing	6%	5%	19%	23%

There was a considerable difference between the average felling per hectare during the last ten-year period and the average increment in the region. If the estates are representative for the region the average felling is less than half of the increment. There are some possible explanations to this difference, one explanation can be that most timber is measured in solid volume under bark or top-end volume under bark. The volume asked for in the questionnaire was standing volume, and this volume is about 15-50 per cent higher than the volume from the measures mentioned above. It is also possible that estates with a lower intensity of felling contains higher nature values and thereby have a bigger chance to be involved in the kind of protections in focus of this study.

Rather many respondents did not answer the question about felling during the last ten-year period. Maybe there are many forest owners who do not know this due to different reasons, the estate can for example have changed owner during this period, or someone else than the owner can have conducted the management during parts of, or the whole period.

#### *10.4 Values in the respondents' forest*

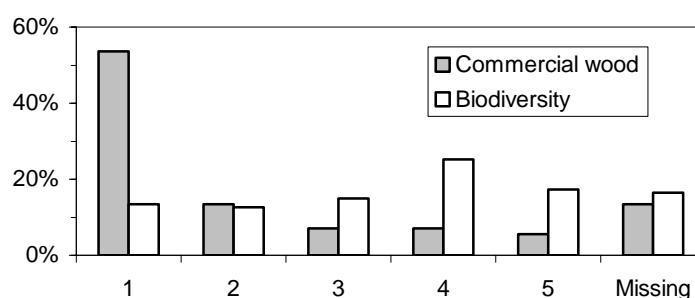
A large majority of the respondents value commercial wood highest of the goods from their forest, 54 per cent (table 16) thought that commercial wood was the most important (0,1 per cent significance). The good that second most of the respondents valued as number one was recreation with 21 per cent. Many also appreciated household wood, 24 per cent valued this as the second most important good.



**Table 16.** Which goods the respondents valued the most. Each good was valued by the respondent from 1 to 5, where 1 was the most important and 5 the least important.

	1	2	3	4	5	Missing
	%	%	%	%	%	%
Commercial wood	54%***	13%	7%	7%	6%	13%
Household wood	15%	24%	17%	9%	19%	16%
Hunting & Fishing	13%	14%	20%	13%	20%	20%
Recreation	21%	13%	18%	21%	13%	13%
Biodiversity	13%	13%	15%	25%	17%	17%

The commercial wood was valued much higher than the biodiversity (figure 4), 54 and 13 per cent, respectively, valued these goods as the most important with their forest. And 42 per cent valued biodiversity at 4<sup>th</sup> or 5<sup>th</sup> place on the five-graded scale.



**Figure 4.** How the respondents valued the commercial wood and biodiversity from their estates. Each good was valued by the respondent from 1 to 5, where 1 was the most important and 5 the least important.

The study does not tell whether the incomes from the commercial wood is the main factor that makes the respondents value it so high, or if there can also be other reasons. Other factors except economy, which could make the commercial wood important for the forest owner, can be similar to the other incentives for self-activity, tradition and management, given by the study by Törnqvist (1995) (see chapter 7, section 7.1). A factor that can have influenced these results is the average size of the forests of the respondents, which was concluded to be larger in this study than the average of the county (see chapter 10, section 10.3). This can be of importance since larger forest has shown to give the economic goods from the forestry more importance for the owner (see chapter 7, section 7.1). This is of course important for how the forest owner perceive different types of compensation for implementation of area protection. If the economy were the most important factor, can it then be concluded that the forest owner would be most satisfied with a one-time payment? Or are there also other factors influencing the satisfaction with the compensation, like continuity in the flow of income or security of investments? These issues will be further discussed later in this chapter.

### 10.5 The respondents' opinions about biodiversity and nature protection

The respondents were given an open question concerning their thoughts about the concept of biodiversity and the answers were categorised into five different categories:

- A diversity of species and ecosystems.
- Conservation of nature and management for nature conservation.
- Relations with conservation authorities and bureaucracy.
- Economical consequences of nature conservation – both positive and negative.
- Answers not possible to categorise.

Species and ecosystems were the most common way of answering, 44 per cent thought about this (table 17). 36 per cent thought about conservation of nature and in many cases the answer was a combination of the two. Eight per cent was thinking about their relation with authorities and experienced bureaucracy, and 6 per cent thought about the economy of themselves or the society. The written answers can be seen in appendix 5 (chapter 13, section 13.5).

**Table 17.** What the respondents think about when they hear the concept biodiversity, the answers to this open question was categorised into 5 different categories. Many answers matched more than 1 category, why the sum is more than 100 per cent.

Category	Number	%
Species and ecosystems	56	44
Conservation	46	36
Relation with conservation authorities	10	8
Economical considerations	7	6
Not possible to categorise	6	5
Missing	29	23

Even though this question was a so-called open-ended question where the respondent had to formulate the answer him or her self, the answering frequency was rather high. 77 per cent of the respondents answered this question. Most of the respondents gave answers that were in some way connected to the definition given by Hunter (1990), “the diversity of life in all its forms and at all its levels of organisation”. Many also thought about conservation of biodiversity, while very few thought about the protection of their own forest and with their relation with the authorities. The concepts of biodiversity and conservation of biodiversity is of course very closely connected for many forest owners, especially the ones that like in this study has been involved in a protection process.

Many (49 per cent) of the respondents consider the property owner to be the owner of the biodiversity (table 18). Another eight per cent thinks that the property owner owns the biodiversity together with the society or other. 25 per cent thought that the society alone is the owner. Some respondents stated their own alternative, common such were:

- Everyone is the owner.
- Cannot be owned.
- Future generations are the owners.

The additional answers can be seen in full length in appendix 7 (chapter 13, section 13.7).

**Table 18.** Who the respondents consider is the owner of the biodiversity.

Owner	Number	%
Property owner	62	49
Property owner & society	6	5
Property owner & other	1	1
Property owner, society & other	2	2
Society	32	25
Society & other	1	1
Other	16	13
Missing	7	6
<b>Sum</b>	<b>127</b>	<b>100</b>

A large majority, 72 per cent, of the respondents thought that the main economical responsibility of protection of biodiversity in forest should be with the state (table 19). This is somewhat more than in the study by Lidestav (2000), in this study 62 per cent (see chapter 7, section 7.2) of the respondents were of the opinion that the state should have the main economical responsibility. Only 18 per cent thought that the forest owners alone should have the main responsibility.

**Table 19.** Who the respondents consider should have the main economical responsibility of the protection of forest from normal forestry.

Responsible	Number	%
Forest owners	23	18
State	91	72
Forest owners & state	6	5
Other	4	3
Missing	3	2
<b>Sum</b>	<b>127</b>	<b>100</b>

A large share of the respondents (49 per cent) considered the property owner to be the owner of the biodiversity, but only 18 per cent thought that the forest owners should have the main economical responsibility. Consequently the respondents do not consider the responsibility of preserving the resource to be connected with the ownership of it. They can also have other objectives with the resource than preserving it, and considering the state to be responsible to compensate them if the objectives of the society diverge from their objectives. The way of answering the two questions can also be related to the individual order of the questions. The first question, which the respondent think is the owner of the biodiversity, does not imply that there is a cost connected with the ownership. While the second one, who the respondent think have the economical responsibility for preserving the biodiversity, implies a cost for the party they consider responsible. It is also possible that the respondent consider the first question to be of a very theoretical nature, with some risk of hypothetical biases in the answers (Perman et al., 1996). The second question may imply more strategic biases, due to the fact that the respondents consciously or unconsciously may try to affect the results of the study in a direction that is favourable to him- or herself (Perman et al., 1996).

Most of the respondents (42 per cent) thought that the amount of protected private forest in Sweden is appropriate. More respondents thought that the protected forest should increase than thought that it should decrease (table 20). 35 per cent thought that the protection should

increase or increase much, while, only 16 per cent thought that the protection should decrease or decrease much.

**Table 20.** The respondents' opinions about how much forest that should be protected in the Swedish private forestry.

<b>The protected forest should:</b>	<b>Number</b>	<b>%</b>
Increase much	11	9
Increase	33	26
Not change	53	42
Decrease	18	14
Decrease much	2	2
Missing	10	8
<b>Sum</b>	<b>127</b>	<b>100</b>

A majority (72 per cent) of the respondents are not willing to protect forest against normal forestry without economical compensation (table 21). 26 per cent said that they are willing to set aside forest for biodiversity protection without economical compensation. The share of forest the respondents are willing to protect varies between 0,5 and 33 per cent, with an average of 7,4 per cent and a median of 5 per cent. Most of the respondents that were unwilling to protect forest for nature conservation stated economical reasons or ownership issues as motives for being negative to this, the answers can be read in appendix 8 (chapter 13, section 13.8).

**Table 21.** The number of respondents that are willing to protect the biodiversity in forest by set-asides from normal forestry without economical compensation. The average, median, minimum and maximum values of the share of the forest area that the respondents are willing to protect.

	<b>Willing</b>	<b>Not willing</b>	<b>Missing</b>	<b>Sum</b>
Number	33	91	3	127
%	26	72	2	100
	<b>%</b>			
Average protection	7,4			
Median protection	5			
Min protection	0,5			
Max protection	33			

The construction of the question can imply some confusion about if the protection in focus is of legislative or voluntary character. It is possible that some of the respondents that were willing to set aside forest interpreted the question as if it concerned voluntary protection. This can have an equalising effect on the proportions of the two groups and maybe result in a somewhat larger group of respondents that were positive to protection without compensation. In a study by Götmark et al. (2000) there were not any differences in attitude due to the magnitude of encroachment of the protection, if the infringement was not compensated. The respondents of that study were as negative towards buffer zones with less encroachment as they were towards reserves with more, unless they were compensated. This suggests that the form of protection is of less importance to how the respondents answer the question, if the forest owner is willing to protect forest without compensation, than if it concerns protection with compensation.

Yearly compensation is the most preferred form of compensation, 47 per cent chose this alternative when answering the question what form of compensation they would prefer if an area protection of biodiversity were implemented on their land (table 22). 31 per cent preferred a once-and-for-all-payment and 26 per cent wanted new land in exchange. Some respondents preferred a combination of the different alternatives or answered that it depended on the specific case.

**Table 22.** Which form of compensation the respondents has a preference to. Some respondents chose more than one alternative, that is why the sum is more than 100 per cent.

Compensation	Number	%
Once-and-for-all- payment	39	31
Yearly compensation	60	47
Change of land	33	26
Other	5	4
Missing	9	7

A majority of the respondents preferred another form of payment than a once-and-for-all-payment, which is the most common form of compensation when area protection is implemented (Riksrevisionsverket, 1998). The form of compensation that is practically feasible is very much dependant on the size and form of the protection. Change of land is of course less feasible when small areas like habitat protections are implemented, than when whole estates are influenced by a nature reserve. A reason why the respondents prefer yearly compensation to once-and-for-all-payment can be that they consider income from capital to be more risky and that they prefer a stable income. In many of the cases of protection the respondents of this study have been involved in, the area of protection, and thereby the compensation, was relatively small (see chapter 10, section 10.7). This can have affected the answer if the respondent related to his own case, which is not unlikely, when answering this question. The respondent can have considered the sum to be too small to reinvest in real estate and thereby preferred a more stable income with similarities to the income from forestry.

The addressees were asked which kind of agreement they prefer when an area protection is going to be implemented. Most respondents prefer agreements where the landowners keep the ownership and the right to use the land but are economically compensated for adjustments in the management according to an agreement with the state (table 23). 63 per cent preferred this kind of agreement. The second most accepted alternative was agreements where the rights to use the land is transferred to the state for a limited period of time and the landowner is fully economically compensated.

**Table 23.** What kind of agreements for protection of biodiversity through area protection the respondents prefer. Some respondents chose more than one alternative, why the sum is more than 100 per cent.

Agreement types	Number	%
Agreements where the ownership of the area is transferred to the state and the landowner is fully compensated.	11	9
Agreements where parts of the right to use the land, for example the right to fell trees, are transferred to the state for all future and the landowner is fully compensated.	12	9
Agreements where parts of the right to use the land, for example the right to fell trees, are transferred to the state for a limited time, maximum 50 years, and the landowner is fully compensated for the loss of income during the period.	21	17
Agreements where parts of the right to use the land, for example the right to fell trees, are transferred to the state for a limited time, maximum 15 years, with a compensation that is lower than the loss of income during the period.	5	4
Agreements where the landowner is economically compensated for a management adapted to nature conservation.	80	63
Voluntary set-asides without compensation from the state.	3	2
Missing	6	5

The most common types of agreements used in implementation of area protection are that the state buys the land or the right to use the land (Riksrevisionsverket, 1998). Only 18 per cent of the respondents preferred this kind of agreements. Most respondents seem to prefer types of agreements where they keep the ownership of the land and are involved in the management in one or another way. This is also supported by Thorell (2003), who concluded that the non-industrial private forest owners in her study, “tended to emphasise their own role in forest conservation”. The respondents of this study also preferred yearly compensation, like a land rent, instead of a once-and-for-all-payment (see earlier this section). These kinds of agreements are used to a very small extent, if at all, in today’s implementation of area protection. The respondents are neither interested to any larger extent in “buying” a shorter period of agreement with less compensation. There can of course be many interpretations of what “full compensation” is. A forest owner can, except yield of present land use, also include an estimated increase in future yield and yield of altered land use. It is also possible that he or she includes non-monetary values that are important for him or her, but are hard to value in monetary units.

#### *10.6 Characteristics of the respondents’ protection processes*

Most respondents (61 per cent) had contact with only one organisation during the process of implementation of an area protection in their forest (table 24). 24 per cent had contact with two organisations and only seven per cent had been involved with more than two parties.

**Table 24.** Number of parties or organisations that the respondents had contact with during the protection process.

<b>Number of parties or organisations</b>	<b>Number</b>	<b>%</b>
1	78	61
2	31	24
3	6	5
4	3	2
Missing	9	7
<b>Sum</b>	<b>127</b>	<b>100</b>

The most common organisation that the respondents had contact with during the protection process was the County Forestry Board, 79 per cent had contact with this organisation (table 25). The second largest party was the County Board with 20 per cent and after that the Environmental Protection Agency with 13 per cent. Many respondents (18 per cent) had also had contact with an external consultant, hired either by the authorities or by themselves.

**Table 25.** Parties or organisations that were involved in the protection of the respondents forest. Many respondents had contact with more than one organisation, why the sum is more than 100 per cent.

<b>Party or organisation</b>	<b>Number</b>	<b>%</b>
Swedish Environmental Protection Agency	17	13
County Board of Skåne	26	20
Municipality	2	2
County Forestry Board of Södra Götaland	100	79
External consultant	23	18
Other	2	2
Missing	9	7

The addressees were asked what confidence they have in different authorities' work with the implementation of the environmental forest policy. The authorities, which work they were going to value, were:

- The Swedish Environmental Protection Agency
- The County Board (Skåne)
- The municipalities
- The County Forestry Board of Södra Götaland

The respondents showed significantly more confidence in the County Forestry Board's work with implementation of the environmental forest policy, than with the other authorities' work (table 26). They had the least trust in the municipalities, which were much lower in confidence than both the Environmental Protection Agency and the County Board. Significant differences were found between all average values except between the Environmental Protection Agency and the County Board, which were very close in confidence.

**Table 26.** The respondents' confidence in different authorities' way of implementing the environmental forest policy. The respondents answered on a five-graded scale, where one meant no confidence at all, and five meant full confidence. The Z-values and stars show where there are significant differences between the averages.

	County Forestry Board	Environmental Protection Agency	County Board	Municipalities
Average	3,79	2,83	2,73	1,98
Median	4,00	3,00	3,00	2,00
Missing	14	24	22	25
Standard deviation	0,99	1,09	1,08	0,92
n	113	103	105	102
Z (County Forestry Board)		6,79	7,52	13,88
Z (Envir. Protection Agency)	***		0,61	6,00
Z (County Board)	***	-		5,41
Z (municipalities)	***	***	***	

There are some considerable differences both regarding the commission of the authorities in focus of this study and the way they organise their work. The County Forestry Board is responsible for the implementation of the habitat protections and the nature conservation agreements. Both the habitat protections and the nature conservation agreements are usually relatively small in their area extent and the nature conservation agreements can be considered the type of protection with the lowest level of infringement among the protection types in this study. The Environmental Protection Agency and the County Board work with the nature reserves and national parks, which in most cases are of larger area and of larger encroachment. This has to be taken into consideration when analysing the results above. The County Forestry Board has a more decentralised organisation than the Environmental Protection Agency and the County Board, which can be one reason why the County Forestry Board receive a higher confidence from the respondents. There are many municipalities in the county of Skåne and the respondents were asked to judge their confidence for their own municipality. The figures in the table above can therefore give an unfair judgement considering single municipalities.

Most respondents (37 per cent) felt that they had been involved in the protection process before a proposal of area protection was given, but after the estate was surveyed for nature values (table 27). Only 17 per cent was involved before the estate was surveyed for nature values. More than 20 per cent felt that they had not been involved at all and 16 per cent was only involved just before the decision was taken.

**Table 27.** At what time the respondent was involved in the protection process.

At what time the respondent was involved	Number	%
Before the estate was surveyed for nature values	22	17
Before the proposal for an area protection was made	47	37
Before the decision of area protection was taken	20	16
Not involved	27	21
Missing	11	9
<b>Sum</b>	<b>127</b>	<b>100</b>



The actual kind of involvement is of course very individual. The respondents that answered that they had not been involved at all may feel this way because of an experienced lack of influence. The issue about to what extent the respondents felt involved in the process is treated later in this chapter. It is also possible that the respondents have been informed that a survey of nature values was going to take place on their estate, but do not consider this as an involvement.

The respondents that had their main contact with the County Forestry Board felt that they were involved in the protection process on an earlier stage than those that had their main contact with the County Board and the Environmental Protection Agency. 44 per cent of the respondents that had contact with the County Forestry Board felt that they had been involved before the proposal was made (table 28). This was 19 per cent more than the ones that had contact with the County Board and the Environmental Protection Agency. This difference was significant on the 5 per cent level. Significantly fewer respondents considered that they had not been involved at all, among the ones that had their main contact with the County Forestry Board.

**Table 28.** The time of involvement of respondents that had their main contact either with the County Board and the Environmental Protection Agency, or with the County Forestry Board.

	County Board & Environmental Protection Agency	County Forestry Board	Z	Sign.
	%	%		
Before the estate was surveyed for nature values	11	21	-1,15	
Before the proposal for an area protection was made	25	44	-1,71	*
Before the decision of area protection was taken	25	14	1,27	
I was not involved	29	16	1,35	(*)
Missing	11	4		

46 per cent thought that they were allowed to take part in the protection process to a rather large or very large extent (table 29). 24 per cent answered that they had rather little or very little influence on the process and 14 per cent said that they had no influence at all. The most common way of involvement was that the respondent had possibilities to influence the bordering of the area (see appendix 11, chapter 13, section 13.11, for all the answers).

**Table 29.** To what extent the respondent felt that they were allowed to take part in the protection process.

Degree of involvement	Number	%
Very large extent	14	11
Rather large extent	44	35
Rather small extent	18	14
Very small extent	13	10
Not at all	18	14
Missing	20	16
<b>Sum</b>	<b>127</b>	<b>100</b>

The respondents who had their main contact with the County Forestry Board answered with higher frequency that they had been able to take part in the protection process to a large extent, than those who had their main contact with the County Board or Environmental Protection Agency. 56 and 25 per cent, respectively, said that they were involved to a large extent (table 30). This difference was significant on the 1 per cent level. A significant (5 per cent level) difference was also found among those who did not feel that they had been involved at all. The County Board and the Environmental Protection Agency had 14 per cent more of those cases than the County Forestry Board.

**Table 30.** The degree of involvement of respondents that had their main contact either with the County Board and the Environmental Protection Agency, or with the County Forestry Board.

	County Board & Environmental Protection Agency	County Forestry Board		
Degree of involvement	%	%	Z	Sign.
Large extent	25	56	-2,59	**
Small extent	29	24	0,42	
Not at all	25	11	1,69	*
Missing	21	9		

Many respondents were satisfied with how the protection process had affected them, 44 per cent were satisfied to a very large or rather large extent (table 31). 19 per cent was rather or very unsatisfied and 26 per cent was neither satisfied nor unsatisfied. The most common reasons for being satisfied with the protection process were (the answers can be seen in appendix 9, chapter 13, section 13.9):

- The respondent was satisfied that the area became well protected and will maintain its nature values.
- The respondent felt that he or she had been able to influence the result of the protection process.
- The respondent felt that he or she had gotten sufficient information from the authorities and that the process had been fast and flexible.

The most common reasons for being unsatisfied with the protection process are (the answers can be seen in appendix 9, chapter 13, section 13.9):

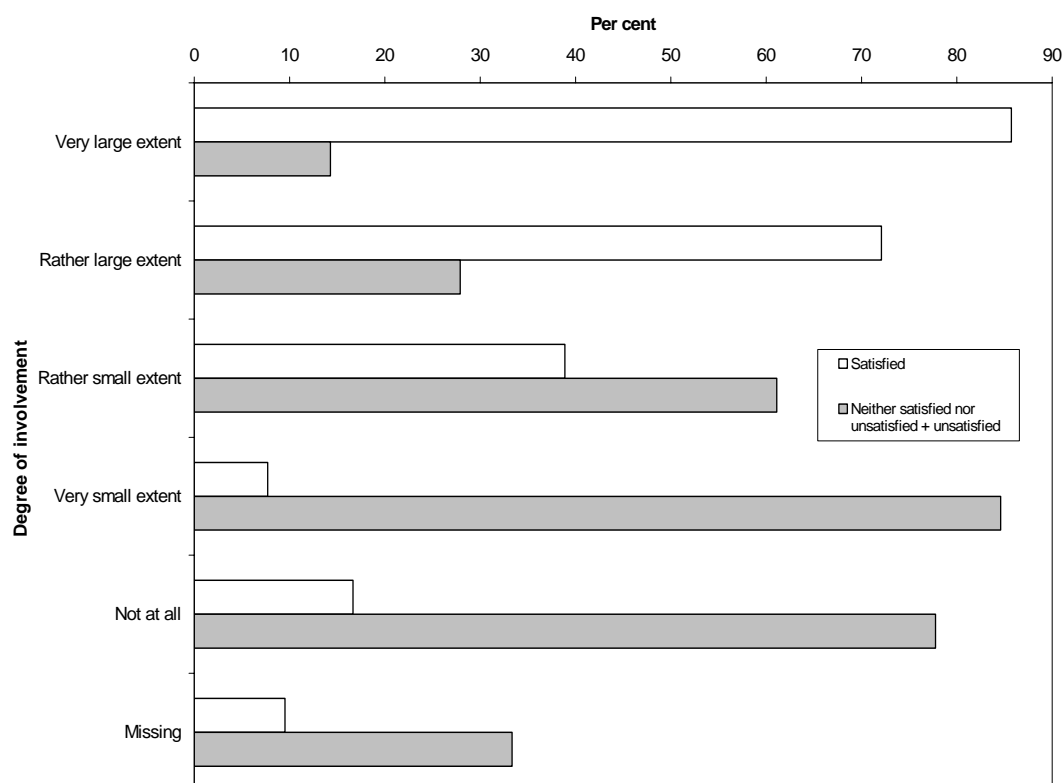
- The respondent was unsatisfied with the economical compensation.
- The respondent thought that the process had violated his or her ownership rights.
- The respondent was unsatisfied with the information from the authorities.
- The respondent felt that he or she could not influence the result of the process.

The respondents were also given opportunity to suggest how the protection process can be improved. Many answered that they wanted a better dialog with the authorities and that the pricing of the compensation should be more market adjusted (the answers can be seen in appendix 10, chapter 13, section 13.10).

**Table 31.** To what degree the respondent was satisfied with how the protection process affected him or her.

Degree of satisfaction	Number	%
Very satisfied	20	16
Rather satisfied	36	28
Neither satisfied nor unsatisfied	33	26
Rather unsatisfied	15	12
Very unsatisfied	9	7
Missing	14	11
<b>Sum</b>	<b>127</b>	<b>100</b>

The respondents' satisfaction with how the protection process affected them was to a large extent correlated with to what extent they felt that they had been involved in the process. Among the respondents that said that they had been involved to a large or rather large extent, 86 and 72 per cent, respectively, were satisfied with the process (figure 5, table 32). The corresponding figures for the ones that felt that they were involved to a rather small or very small extent were 39 and 8 per cent. The most unsatisfied with the process were the respondents that had not been involved at all or been involved to a very small extent, 78 and 85 per cent, respectively, of these were either, neither satisfied nor unsatisfied with the process, or unsatisfied with it. The differences were significant in all cases except one, due to too low value of the proportion of satisfied respondents (table 32).



**Figure 5.** How many respondents that were respectively, satisfied or unsatisfied and neither satisfied nor unsatisfied, with how the protection process affected them in relation to what degree they felt involved in the process.

**Table 32.** Values and significances from figure 5. The lack of significance in the case of respondents with an involvement to a very small extent relates to the low proportion of satisfied respondents.

	Satisfied	Neither satisfied nor unsatisfied + unsatisfied		
Number	56	57		
<b>Degree of involvement</b>	<b>%</b>	<b>%</b>	<b>Z</b>	<b>Sign.</b>
Very large extent	86	14	7,59	***
Rather large extent	72	28	4,70	***
Rather small extent	39	61	-2,36	**
Very small extent	8	85	-8,20	-
Not at all	17	78	-6,50	***
Missing	10	33	-3,10	**

More respondents were satisfied with the protection process among those that had their main contact with the County Forestry Board than among those who had their main contact with the County Board or the Environmental Protection Agency. 54 per cent of the respondents that had the County Forestry Board as the main contact were satisfied with the protection process (table 33). The corresponding figure for the County Board and the Environmental Protection Agency was 25 per cent. This difference was significant on the 1 per cent level. More respondents were also clearly unsatisfied with the process among those who had the main contact with the County Board and Environmental Protection Agency. Here the difference was significant on the 5 per cent level.

**Table 33.** The level of satisfaction with the protection process among respondents, that had either their main contact with the County Board and the Environmental Protection Agency, or with the County Forestry Board.

	County Board & Environmental Protection Agency	County Forestry Board		
<b>Satisfaction with the process</b>	<b>%</b>	<b>%</b>	<b>Z</b>	<b>Sign.</b>
Satisfied	25	54	-2,55	**
Neither satisfied nor unsatisfied	32	26	0,57	
Unsatisfied	32	15	1,88	*
Missing	11	4		

No significant difference in satisfaction with the protection process was found between the respondents that have received a relatively high level of compensation and those who got relatively less (table 34).

**Table 34.** The level of satisfaction with the protection process among respondents that has stated how large the compensation was, in relation to the size of the compensation. The group of respondents was divided at the median compensation, in a lower and upper half.

Satisfaction with the process	Upper half	Lower half
	Number	Number
Satisfied	18	18
Neither satisfied nor unsatisfied	9	8
Unsatisfied	4	5

No division into different categories of protection was done when analysing the answers to the question above. The level of encroachment of the different cases of protection is neither known nor included in the analysis. Different types of protection imply different levels of encroachment and a compensation that is higher than the average can be low when related to the encroachment, and vice versa.

Many of the respondents (43 per cent) thought that the protection process had not changed their understanding of the need of nature protection and 32 per cent answered that they had acquired a larger understanding during the process (table 35). Only ten per cent were of the opinion that they had less understanding after the process than before.

**Table 35.** How the protection process affected the respondents' understanding of the need of nature protection.

	Number	%
Increased much	13	10
Increased somewhat	28	22
Did not alter	54	43
Decreased somewhat	2	2
Decreased much	10	8
Missing	20	16
<b>Sum</b>	<b>127</b>	<b>100</b>

More respondents of those who had their main contact with the County Forestry Board than those who had contact with the County Board and Environmental Protection Agency thought they had increased their understanding of nature protection during the protection process. 38 and 21 per cent (table 36), respectively, thought that they had acquired a larger understanding, this difference was significant on the ten per cent level.

**Table 36.** To what extent the protection process has lead to a changed understanding of the need of nature protection among the respondents, that had either their main contact with the County Board and the Environmental Protection Agency, or with the County Forestry Board.

	County Board & Environmental Protection Agency	County Forestry Board		
	%	%	Z	Sign.
Increased understanding	21	38	-1,52	(*)
No change	46	44	0,21	
Decreased understanding	14	9	0,78	
Missing	18	9		

The County Forestry Board has succeeded better than the County Board and the Environmental Protection Agency, both in involving the forest owners into the protection process and in informing them about the reasons for the protection and thereby increasing their comprehension of nature protection. The reasons for this is on the edge of the scope of this study, but one can speculate about reasons associated with differences in tradition how to approach the forest owners. There is also a considerable difference in the average area of the protections the different authorities work with. The nature conservation agreements and especially the habitat protections that are implemented by the County Forestry Board are usually much smaller than the nature reserves and national parks that are implemented by the County Board and the Environmental Protection Agency (see next section of this report for averages of the protections in this study). This can of course influence how the respondents have apprehended the protection process and explain some of the difference between the authorities.

### *10.7 Features of the protections*

The largest group (52 per cent) of respondents were those who had a habitat protection implemented on their estate or previous estate (table 37). 20 per cent had a nature conservation agreement on their estate and 11 per cent of the respondents' estates were concerned by a national park or nature reserve. Some respondents had more than one form of area protection on their estate, a common combination was habitat protection and nature conservation agreement.

**Table 37.** The distribution of different kinds of area protection among the respondents. One respondent can have more than one type of protection implemented on his or her land, therefore the sum is more then 100 per cent.

Protection form	Number	%
National park	4	3
Nature reserve	10	8
Habitat protection	66	52
Nature conservation agreement	25	20
No protection	29	23
Missing	6	5

The number of respondents, whose estate were concerned by national park or nature reserve, were rather low in relation to how many that stated that their main contact during the protection process was the County Board or the Environmental Protection Agency (see previous section). 25 respondents answered that they had their main contact with one of these two organisations, while only 14 responded that their estate was concerned by a national park or a nature reserve. There can be different reasons for this divergence, but a part of it can probably be explained by that respondents have either misinterpreted the question in the way that they did not believe that it concerned them, or they just did not know what happened to the estate after they sold it to the Environmental Protection Agency. This is supported by the fact that some respondents answered “no” to the question if the whole or part of the estate was concerned by any protection, but remarked that the estate was sold to the authorities. A couple of these respondents also answered the following questions, concerning the protection on their estate.

The average area protected by habitat protection among the respondents was 2,9 hectare (table 38). In some cases the respondents can have more than one habitat protection on his or her land, because of this fact the area is not to be compared with any mean values extracted from table 3 in chapter 8 of this report. The same is valid for the average area of protection among the respondents with nature conservation agreement that was somewhat larger with 5,6 hectare. In some cases the respondents had both a habitat protection and a nature conservation agreement on their land. The explicitly largest area of protected forest was among the respondents with nature reserve or national park on their land or previous land. Here the average area was 67,5 hectare, although with a large variation. The area of forest protected by nature reserve and national park varied between 0,7 and 200 hectare. As mentioned above, it was relatively common that habitat protection was combined with nature conservation agreement at the same estate. 10 respondents answered that they had both of these types of protection and the average area protected on these estates was 17,4 hectare.

**Table 38.** Centrum and extreme values of the forest area (hectare) that was protected on the respondents land divided on type of protection.

	<b>Nature reserve and national park</b>	<b>Habitat protection</b>	<b>Nature conservation agreement</b>	<b>Habitat protection and nature conservation agreement</b>
Number	11	52	13	8
Average	67,5	2,9	5,6	17,4
Median	60,0	2,0	4,3	12,2
min	0,7	0,3	2,0	2,5
max	200,0	17,5	20,0	46,0
Missing	2	1	2	2

Many (30 per cent) of the respondents considered the increment (timber production) of the protected forest to be equal to the increment on the rest of the forest (table 39). 26 per cent answered that the increment was lower or much lower on the protected land and 8 per cent thought that it was higher or much higher.

**Table 39.** The increment of the forest on the protected area in relation to the rest of the respondents forest.

<b>Increment</b>	<b>Number</b>	<b>%</b>
Much lower	11	9
Lower	21	17
Equal	38	30
Higher	8	6
Much higher	2	2
Missing	47	37
<b>Sum</b>	<b>127</b>	<b>100</b>

A large share of the respondents did not answer this question, the reasons can of course be several. But it is likely so, that many respondents had problem to estimate this, especially if they did not have an updated forest management plan. In some cases the protection concern all of the respondents forest, in which case the question is of course irrelevant.

The average income from the forestry on the respondents' estates decreased after the protection was implemented (table 40). The relative difference of income before and after the implementation was small between the average of the whole group and the average of the 25 per cent highest incomes (above the third quartile). Among the respondents with the 25 per cent lowest values (lower than the first quartile) of income before the implementation the change was inconsiderable. All of the changes were of low significance.

**Table 40.** The average income that the respondents got from the forestry on their estates before and after the protection was implemented. Averages of the whole population of respondents with a protection, the 25 per cent highest values (above the third quartile) and the 25 per cent lowest values (below the first quartile).

	<b>Before</b>	<b>After</b>	
Number	70	62	
	<b>%</b>	<b>%</b>	<b>Z</b>
Average	15,31	11,71	0,60
Upper 25 %	40,87	31,28	1,14
Lower 25 %	1,78	1,61	0,08

A large majority (82 per cent) of the respondents, with some kind of forest protection on their land were compensated with a once-and-for-all payment (table 41). Only one got a yearly compensation and one got new land. Of the seven that did not get any compensation, one stated that he or she did not want any compensation. The reason why the others did not get any compensation is unknown, but it is possible that in some more cases they did not want any compensation



**Table 41.** The type of compensation the respondents got when the area protection was implemented on their land.

Type of compensation	Number	%
Once-and-for-all payment	75	82
Yearly compensation	1	1
Change of land	1	1
Other	7	8
Missing	7	8
<b>Sum</b>	<b>91</b>	<b>100</b>

Once-and-for-all payment was the most common kind of compensation, 82 per cent got this kind of compensation. This is to be compared with the fact that only 31 per cent had a preference to this kind of compensation (see section 5 in this chapter). 47 per cent had a preference to yearly compensation, but only one had in reality gotten this. Change of land was popular among the respondents, but this was also very uncommon in reality. The large majority of respondents with rather small habitat protections are of course affecting these results. It is possible that the number of respondents that was compensated with new land would have increased with a larger share of nature reserves and national parks.

There is anyhow a noteworthy difference between the types of compensation that is preferred by the respondents and how it is done in practise. The strategy from the authorities appears to be to buy the land. It can be discussed how economically (and conservational) effective the work with small habitat protections is. Even in the cases where free development is the objective, some management is often needed to maintain and develop the nature values of the reserves. The landowners would, with their knowledge and in some cases equipment, be a valuable resource in this management. Maybe it could be better both for the biodiversity and the forest owner if larger areas were protected, with the ownership remaining with the private owner, but with a more variable management inside the reserve and the landowner included in this management. The nature conservation agreement is an agreement type containing many of the characteristics described above, and maybe this could be used in more cases of protection of biodiversity in forest.

Many of the respondents (49 per cent) do not think that the economic compensation for the implementation of the area protection on their land covered the economic loss of this implementation (table 42). A majority, 59 per cent (38 per cent of the whole group of respondents with area protection), of those who considered them to be self-active in their forestry activities did not think that the compensation covered the loss of employment. Only two of the respondents could think of any other source of income that the compensation did not cover. One of those specified his or her answer as firewood, the other one left it unspecified.

**Table 42.** If the respondents consider the compensation to cover the economic losses of forest production and income from self-activities. If there are other sources of income from the forest that the respondent does not consider the compensation to cover.

	Yes		No		Missing		Sum
	Number	%	Number	%	Number	%	
Economic loss	33	36	45	49	13	14	91
Own work	24	26	35	38	32	35	91
Other sources	2	2	69	76	20	22	91

Only eight per cent of the respondents with an area protection had made some changes in the management of the remaining part. Examples of changes that was mentioned by the respondents is forest certification and more concerns about biodiversity protection as well as more technical changes due to changes in availability of parts of the forest (the answers to this question can be seen in appendix12, chapter 13, section 13.12).

**Table 43.** The number of respondents with an area protection that has changed the management on the remaining part of the estate.

Changes in management	Number	%
Yes	7	8
No	70	77
Missing	14	15
<b>Sum</b>	<b>91</b>	<b>100</b>

Most of the respondents had not made any changes in the management of their remaining forest after the area protection was implemented. This can be looked upon from different angles out of a conservational point of view. It can, on the one hand be considered positive that the landowners have not intensified the management on the remaining land to compensate for the loss of production that potentially occurred by the implementation of the protection. But on the other hand not many changes positive to the biodiversity have occurred either. Most of the reserves in this study are patches in an intensively managed landscape, and maybe it is a prerequisite with some changes in the management of the surrounding areas for them to keep their nature values.

### *10.8 The respondents' opinions about biodiversity and nature protection – an analysis of which characteristics influence how the respondents look upon biodiversity and nature protection*

The questionnaire contained a question (nr 17, see appendix 3, chapter 13, section 13.3) with sub-questions about the respondents' thoughts about biodiversity, protection of biodiversity in general and on their estates. The respondents were given 17 statements and were supposed to clarify their position towards these statements. They did this by marking to what extent they agreed with the statement on a five-graded scale, where five was the highest level of agreement with the statement and one the lowest. The questions and percentage of answers in each category can be seen in appendix 6 (chapter 13, section 13.6).

The answers of the 17 statements were analysed in relation to 14 different variables of characteristics among the respondents and the respondents' estates. For a more detailed explanation of how this was done, see chapter 9, section 9.7. Here only those statements and categories where significant differences were observed are presented.

The differences between the categories are in general small. The presentation of the results in the following three sub-sections is mostly meant as base and an introduction to the compilation and the analysis of the material in the thereafter-following section. It is therefore important that the reader here does not go too much into details of divergences in specific statements, but look for the general trends.

#### *10.8.1 Statements concerning biodiversity and protection of biodiversity in general*

Significantly more of the respondents without education in forestry than those with, agreed upon the statement 17a "The biodiversity should be protected because of potential future economical value" (table 44). The same dissimilarity was found between those who live on their estate and those who do not. The significance is here somewhat lower, but still reaches the five per cent level.

**Table 44.** Level of agreement with the statement 17a "The biodiversity should be protected because of potential future economical value".

Variable	Category	Average	Standard deviation	n	Z	Significance
Forestry education	Yes	2,71	1,22	66	2,55	**
	No	3,29	1,22	51		
Lives on the estate	Yes	2,82	1,28	71	1,80	*
	No	3,23	1,20	47		

More women than men agreed upon the statement "It is unethical that species become extinct because of human activities" (table 45). The share of female respondents that answered this particular question was small (n=25), that is why the significance is somewhat below the five per cent level. There was also a relationship between the size of the forest area owned by the respondent and the level of agreement with this statement. Respondents with smaller forest area tended to agree more with the statement. The share of income from the forestry on the estate and the felling per hectare seem to be of importance for the level of agreement with this

statement. Both a higher income from the forestry and more intensive logging correlated with a lower concurrence.

**Table 45.** Level of agreement with the statement 17b “It is unethical that species become extinct because of human activities”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Sex	Female	4,40	0,76	25	1,62	(*)
	Male	4,07	0,93	96		
Size of forest (hectare)	0-24	4,38	0,70	34	2,11	*
	25-	4,05	0,96	85		
Size of forest (hectare)	0-49	4,35	0,80	55	2,34	**
	50-	3,97	0,96	64		
Income from the forestry on the estate (per cent)	0-5	4,24	0,88	68	1,60	(*)
	10-	3,96	0,94	48		
Income from the forestry on the estate (per cent)	0-10	4,25	0,85	80	2,17	*
	15-	3,83	1,00	36		
Felling per hectare (m <sup>3</sup> )	0-20	4,41	0,84	32	2,39	**
	21-	3,95	0,95	64		
Felling per hectare (m <sup>3</sup> )	0-36	4,25	0,96	51	1,71	*
	37-	3,93	0,89	45		

Only one case of significance was found when analysing the answers to the statement “All species have a right to exist for their own sake”. Respondents with a more intensive felling in their forest seem to agree less with this statement (table 46). However, it was only in one set of categories that significance was found (see chapter 9, section 9.7 for explanation). High significance was found also in other cases, but due to large differences in standard deviation these results are of low reliability, and that is why they are not mentioned further here.

**Table 46.** Level of agreement with the statement 17c “All species have a right to exist for their own sake”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Felling per hectare (m <sup>3</sup> )	0-20	4,26	0,96	31	1,78	*
	21-	3,86	1,14	64		

Significantly more women than men disagreed with the statement “Extinction of species is not a big environmental problem” (table 47). Also education in forestry showed a correlation with the agreement of this statement. Those with forestry education agreed more upon that the extinction of species is not a big problem, than those without forestry education. Size of forest, income from the forestry and felling intensity also showed correlation. But it has to be mentioned that it was only in one set of categories each on these variables that any significance was observed.

**Table 47.** Level of agreement with the statement 17d “Extinction of species is not a big environmental problem”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Sex	Female	1,67	1,01	24	1,89	*
	Male	2,30	1,25	93		
Forestry education	Yes	2,43	1,32	67	2,73	**
	No	1,84	1,01	49		
Size of forest (hectare)	0-99	2,08	1,23	79	1,38	(*)
	100-	2,42	1,23	36		
Income from the forestry on the estate (per cent)	0-10	2,03	1,22	79	2,03	*
	15-	2,51	1,17	35		
Felling per hectare (m <sup>3</sup> )	0-20	1,88	1,13	32	1,99	*
	21-	2,39	1,27	61		

Important variables for how much the respondents agreed with the statement “It is important to protect biodiversity for coming generations” were size of forest and share of income from the forestry on the estate (table 48). Also intensity of the felling activities showed significance, but only in one set of categories. Respondents with less forest agreed more with the statement than those with more. The same pattern can be seen in share of income from the forestry on the estate, the ones with the highest share of income from the forestry agreed less with the statement than those with a smaller share of income from the forestry.

**Table 48.** Level of agreement with the statement 17e “It is important to protect biodiversity for coming generations”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Size of forest (hectare)	0-24	4,62	0,65	34	2,01	*
	25-	4,33	0,86	86		
Size of forest (hectare)	0-49	4,60	0,68	55	2,47	**
	50-	4,25	0,88	65		
Size of forest (hectare)	0-99	4,54	0,72	83	2,51	**
	100-	4,11	0,94	37		
Income from the forestry on the estate (per cent)	0-5	4,50	0,74	68	1,82	*
	10-	4,21	0,92	48		
Income from the forestry on the estate (per cent)	0-10	4,54	0,71	80	2,83	**
	15-	4,03	0,97	36		
Felling per hectare (m <sup>3</sup> )	0-20	4,63	0,66	32	2,41	**
	21-	4,23	0,90	64		

The following variables and categories gave a significant higher agreement with the statement “Measures to protect biodiversity depopulates rural areas” (table 49).

- Forestry education
- Large forest
- Acquisition of the estate through purchase
- Large share of the income from the forestry on the estate
- Large share of the work in the forest done by the respondent

- Intensive felling on the estate

The female respondents agreed less with the statement than the male respondents. Observe that significance was only found in one set of categories each for the variables share of own work on estate and felling per hectare.

**Table 49.** Level of agreement with the statement 17g “Measures to protect biodiversity depopulates rural areas”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Sex	Female	1,63	0,92	24	1,86	*
	Male	2,27	1,30	95		
Forestry education	Yes	2,29	1,36	68	1,48	(*)
	No	1,96	1,09	50		
Size of forest (hectare)	0-24	1,88	1,14	33	1,52	(*)
	25-	2,25	1,30	84		
Size of forest (hectare)	0-49	1,87	1,16	53	2,22	*
	50-	2,38	1,30	64		
Size of forest (hectare)	0-99	2,04	1,25	80	1,35	(*)
	100-	2,38	1,28	37		
Acquirement of the estate	Purchase	2,31	1,39	58	1,41	(*)
	Inherit or gift	1,98	1,10	61		
Income from the forestry on the estate (per cent)	0-5	1,87	1,14	68	3,04	**
	10-	2,58	1,32	48		
Income from the forestry on the estate (per cent)	0-10	1,85	1,13	80	4,06	***
	15-	2,86	1,29	36		
Share of own work on the estate (per cent)	0-25	2,02	1,22	81	1,68	*
	30-	2,47	1,33	34		
Felling per hectare (m <sup>3</sup> )	0-20	1,94	1,08	32	1,44	(*)
	21-	2,30	1,33	63		

The respondents without forestry education agreed less with the statement “We should put the resources in countries where these can have a bigger effect on the biodiversity, instead of in Sweden” than those with forestry education (table 50). The more forest the respondent had the more he or she agreed with the statement. The same relation was observed between the respondents that were very active in felling and those who were less active, but significant difference was here only found in one set of categories. Respondents that did a larger share of the work in the forestry on their estates themselves agreed less with this statement.

**Table 50.** Level of agreement with the statement 17h “We should put the resources in countries where these can have a bigger effect on the biodiversity, instead of in Sweden”.

Variable	Category	Standard		n	Z	Significance
		Average	deviation			
Forestry education	Yes	2,32	1,19	68	1,31	(*)
	No	2,06	1,00	50		
Size of forest (hectare)	0-49	1,96	1,00	53	2,14	*
	50-	2,39	1,16	64		
Size of forest (hectare)	0-99	2,06	1,02	80	1,82	*
	100-	2,49	1,24	37		
Share of own work on the estate (per cent)	0-10	2,46	1,19	61	2,64	**
	15-	1,93	0,97	54		
Share of own work on the estate (per cent)	0-25	2,31	1,16	81	1,58	(*)
	30-	1,97	1,00	34		
Felling per hectare (m <sup>3</sup> )	0-20	1,94	1,01	32	1,86	*
	21-	2,37	1,14	63		

#### 10.8.2 Statements concerning biodiversity and protection of biodiversity in forest and forestry in general

Only low significance differences were observed in the variables education, forestry education and size of forest in relation to the level of agreement towards the statement “It is more important to protect forest for outdoor life than for biodiversity” (table 51). All these three categories were significant on the ten per cent level. General education on the higher level seemed to give a lower level of agreement with this statement and forestry education had the same relation. Respondents without forestry education thought to a larger extent that it was more important to protect forest for outdoor life than for biodiversity, than those with such education. Five per cent significance was observed between the respondents with a large share of own work in the forestry on their estates and those with a smaller share. The smaller this share was, the more the respondent agreed with the statement.

**Table 51.** Level of agreement with the statement 17f “It is more important to protect forest for outdoor life than for biodiversity”.

Variable	Category	Standard		n	Z	Significance
		Average	deviation			
Education	Lower	2,44	1,34	57	1,36	(*)
	Higher	2,15	0,97	62		
Forestry education	Yes	2,15	1,05	68	1,28	(*)
	No	2,43	1,30	51		
Size of forest (hectare)	0-99	2,14	1,12	81	1,51	(*)
	100-	2,49	1,19	37		
Share of own work on the estate (per cent)	0-10	2,52	1,22	61	2,30	*
	15-	2,04	1,07	55		
Share of own work on the estate (per cent)	0-25	2,41	1,19	81	1,66	*
	30-	2,03	1,10	35		

The respondents that had grown up on their estate as well as those who had inherited or received the estate as a gift, agreed less with the statement “It is important to protect the biodiversity in the forest”, than those who had not grown up there or the ones that had purchased the estate (table 52). Members of environmental organisations agreed more with the statement than those who were not members in any organisation of that kind. Respondents that owned less forest agreed more with the statement than those who owned more. Income from forestry, share of own work and felling per hectare showed also differences, but only in one set of categories per variable.

**Table 52.** Level of agreement with the statement 17i “It is important to protect the biodiversity in the forest”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Grown up on the estate	Yes	4,17	0,83	52	1,52	(*)
	No	4,41	0,84	66		
Member of environmental organisation	Yes	4,59	0,73	29	2,48	**
	No	4,23	0,84	91		
Size of forest (hectare)	0-49	4,44	0,84	54	1,60	(*)
	50-	4,20	0,81	65		
Size of forest (hectare)	0-99	4,38	0,81	82	1,28	(*)
	100-	4,16	0,87	37		
Acquirement of the estate	Purchase	4,42	0,87	60	1,45	(*)
	Inherit or gift	4,20	0,79	61		
Income from the forestry on the estate (per cent)	0-10	4,41	0,77	80	2,20	*
	15-	4,03	0,91	36		
Share of own work on the estate (per cent)	0-10	4,20	0,85	61	1,43	(*)
	15-	4,42	0,81	55		
Felling per hectare (m <sup>3</sup> )	0-20	4,53	0,76	32	2,10	*
	21-	4,17	0,85	64		

The male respondents agreed more with the statement “It is better to cut the forest on a sustainable level concerning timber production, than to protect biodiversity” than the female (table 53). This was also one of few statements where any significant differences due to age were found. The group of respondents older than 60 years disagreed more with the statement than the younger ones. Respondents with forestry education and those who live on their estate both agreed more with the statement than the ones without this kind of education and those who did not live on their estates. Members of environmental organisations were more negative to this statement than others. Increased size of forest, higher share of income from the forestry on the estate and higher intensity of felling on the estate, all correlated with a larger agreement with this statement. The felling intensity showed significant differences only in one out of two sets of categories.



**Table 53.** Level of agreement with the statement 17j “It is better to cut the forest on a sustainable level concerning timber production, than to protect biodiversity”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Age (years)	30-59	2,69	1,10	62	1,65	*
	60-	2,35	1,17	55		
Sex	Female	2,13	1,12	24	1,78	*
	Male	2,64	1,12	94		
Forestry education	Yes	2,81	1,05	68	3,00	**
	No	2,18	1,15	49		
Lives on the estate	Yes	2,69	1,17	70	1,80	*
	No	2,31	1,06	48		
Member of environmental organisation	Yes	2,28	1,10	29		
	No	2,60	1,14	88		
Size of forest (hectare)	0-24	2,27	1,15	33	1,56	(*)
	25-	2,64	1,11	83		
Size of forest (hectare)	0-49	2,25	1,11	53	2,59	**
	50-	2,78	1,10	63		
Size of forest (hectare)	0-99	2,39	1,16	80	2,25	*
	100-	2,86	0,99	36		
Income from the forestry on the estate (per cent)	0-5	2,31	1,07	68	2,88	**
	10-	2,91	1,14	47		
Income from the forestry on the estate (per cent)	0-10	2,30	1,08	79	3,76	***
	15-	3,11	1,06	36		
Felling per hectare (m <sup>3</sup> )	0-20	2,19	1,03	32	2,22	*
	21-	2,71	1,21	63		

Women were more negative than men to the statement “As long as the forest owner manages his or her forest according to the principles of “Grönare Skog<sup>5</sup>” no other measures to protect biodiversity are needed” (table 54). Respondents with higher general education were more sceptical to this statement, while those with forestry education agreed more with it. Members of agricultural or forestry organisations believed more that the “Grönare Skog” principles can be enough to protect biodiversity than non-members. Respondents who had taken part in some kind of courses about biodiversity believed more than others that it is enough with the principles. Larger size of forest, larger share of the income from the forestry on the estate and higher intensity of felling, all showed a significantly higher average agreement.

5) “Grönare Skog” was a campaign run by the National Board of Forestry and the County Forestry Boards with the objective of educating forest owners in nature conservation in forestry.

**Table 54.** Level of agreement with the statement 17k “As long as the forest owner manages his or her forest according to the principles of "Grönare Skog<sup>5</sup>" no other measures to protect biodiversity are needed”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Sex	Female	3,00	1,29	24	2,17	*
	Male	3,72	1,19	94		
Education	Lower	3,89	1,23	56	2,84	**
	Higher	3,26	1,17	61		
Forestry education	Yes	3,85	1,17	67	2,70	**
	No	3,24	1,24	50		
Member of agricultural or forestry organisation	Yes	3,78	1,19	81	2,66	**
	No	3,14	1,23	37		
Acquirement of knowledge about biodiversity	Courses	3,79	1,23	47	1,52	(*)
	No courses	3,44	1,23	71		
Size of forest (hectare)	0-24	3,16	1,37	32	2,00	*
	25-	3,70	1,15	84		
Size of forest (hectare)	0-49	3,29	1,36	52	2,05	*
	50-	3,77	1,08	64		
Income from the forestry on the estate (per cent)	0-5	3,25	1,24	67	3,38	***
	10-	4,00	1,10	47		
Income from the forestry on the estate (per cent)	0-10	3,25	1,26	79	4,98	***
	15-	4,26	0,85	35		
Felling per hectare (m <sup>3</sup> )	0-20	3,21	1,32	33	2,06	*
	21-	3,77	1,17	62		
Felling per hectare (m <sup>3</sup> )	0-36	3,41	1,37	51	1,45	(*)
	37-	3,77	1,05	44		

The group of respondents younger than 60 years agreed more with the statement “Forestry is an important source of employment in the society” than the respondents that were equal to or older than 60 years (table 55). Respondents with higher general education believed less than others that forestry is an important source of employment, while the respondents with forestry education agreed more than others with the statement. The significance in these three cases was only on the ten per cent level. Significantly more (0,1 per cent level) of the members of agricultural or forestry organisations agreed with the statement than non-members. Larger size of forest, larger share of income from the forestry on the estate, higher share of own work in the forestry and more intensive felling, all correlated with the opinion that the forest is an important source of employment in the society. A significance of the felling intensity has to be rejected due to too large divergence between the standard deviations. The variable share of own work in the forestry on the estate showed only significant differences in one set of categories.

**Table 55.** Level of agreement with the statement 17l “Forestry is an important source of employment in the society”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Age (years)	30-59	4,51	0,78	63	1,62	(*)
	60-	4,25	0,94	56		
Education	Lower	4,49	0,78	57	1,28	(*)
	Higher	4,29	0,93	62		
Forestry education	Yes	4,50	0,80	68	1,63	(*)
	No	4,24	0,93	51		
Member of agricultural or forestry organisation	Yes	4,64	0,69	81	4,51	***
	No	3,87	0,95	39		
Size of forest (hectare)	0-24	4,09	0,91	33	2,21	*
	25-	4,49	0,83	85		
Size of forest (hectare)	0-49	4,13	0,96	53	2,83	**
	50-	4,58	0,73	65		
Income from the forestry on the estate (per cent)	0-5	4,24	0,92	68	2,40	**
	10-	4,60	0,74	48		
Income from the forestry on the estate (per cent)	0-15	4,25	0,89	80	2,87	**
	20-	4,69	0,71	36		
Share of own work on the estate (per cent)	0-25	4,32	0,92	81	2,06	*
	30-	4,63	0,65	35		
Felling per hectare (m <sup>3</sup> )	0-36	4,22	0,94	51	2,53	**
	37-	4,64	0,71	45		

Significantly fewer women than men agreed with the statement “The forest is a renewable resource that first of all should be used for timber production” (table 56). Respondents that have forestry education, have grown up on the estate, live on the estate or are members of an agricultural or forestry organisation, all agreed more with the statement than others. Larger size of forest, larger share of their income from the forestry on the estate and more intensive felling also correlated with a higher level of agreement. But the difference in felling was only significant in one set of categories.

**Table 56.** Level of agreement with the statement 17m “The forest is a renewable resource that first of all should be used for timber production”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Sex	Female	2,96	1,20	24	2,08	*
	Male	3,57	1,12	94		
Forestry education	Yes	3,67	1,07	66	2,18	**
	No	3,20	1,22	51		
Grown up on the estate	Yes	3,58	1,09	52	1,36	(*)
	No	3,29	1,20	63		
Lives on the estate	Yes	3,63	1,12	71	2,14	*
	No	3,17	1,17	47		
Member of agricultural or forestry organisation	Yes	3,65	1,16	80	2,91	**
	No	3,03	1,05	38		

Table continues on the next page

**Table continues from the previous page**

Size of forest (hectare)	0-24	2,81	1,09	32	3,88	***
	25-	3,69	1,09	84		
Size of forest (hectare)	0-49	2,96	1,10	52	4,39	***
	50-	3,84	1,04	64		
Size of forest (hectare)	0-99	3,30	1,16	80	2,16	*
	100-	3,78	1,07	36		
Income from the forestry on the estate (per cent)	0-5	3,20	1,15	66	2,94	**
	10-	3,81	1,07	48		
Income from the forestry on the estate (per cent)	0-15	3,17	1,16	78	4,68	***
	20-	4,08	0,87	36		
Felling per hectare (m <sup>3</sup> )	0-20	3,22	1,10	32	1,63	(*)
	21-	3,62	1,18	63		

Members of an agricultural or forestry organisation agreed more with the statement "The forest is the most important as a source of income for the society" than non-members (table 57). Members of an environmental organisation agreed less with the statement than those who were not members of such an organisation. Respondents who had inherited the estate or gotten it as a gift agreed more with the statement than those who had bought it. A connection was observed between larger size of forest, larger share of income from the forestry on the estate and higher felling intensity, and a higher level of agreement with the statement. Although felling intensity only showed a significant divergence in one out of two sets of categories.

**Table 57.** Level of agreement with the statement 17n "The forest is the most important as a source of income for the society".

Variable	Category	Average	Standard deviation	n	Z	Significance
Member of agricultural or forestry organisation	Yes	3,44	1,18	81	2,26	*
	No	2,97	1,00	38		
Member of environmental organisation	Yes	2,93	1,26	30	1,95	*
	No	3,40	1,08	88		
Size of forest (hectare)	0-24	3,03	1,13	33	1,56	(*)
	25-	3,39	1,13	84		
Size of forest (hectare)	0-49	3,02	1,10	53	2,40	**
	50-	3,52	1,13	64		
Size of forest (hectare)	0-99	3,15	1,16	81	2,17	*
	100-	3,61	1,02	36		
Acquirement of the estate	Purchase	3,12	1,15	59	1,67	*
	Inherit or gift	3,47	1,13	60		
Income from the forestry on the estate (per cent)	0-5	3,04	1,04	68	2,67	**
	10-	3,62	1,19	47		
Income from the forestry on the estate (per cent)	0-15	3,00	1,09	79	4,28	***
	20-	3,89	1,01	36		
Felling per hectare (m <sup>3</sup> )	0-20	2,97	1,10	33	1,66	*
	21-	3,37	1,13	63		

### 10.8.3 Statements concerning biodiversity and protection of biodiversity in the forest and forestry of the respondents' estates

Members of environmental organisations and respondents who had acquired knowledge about biodiversity through courses were more positive towards the statement “I accept measures to protect biodiversity in my forest if I am fully compensated”, than non-members and those who had acquired knowledge about biodiversity in other ways or not at all (table 58). Respondents who had bought their estate were more positive to the statement than the ones who inherited it or received it as a gift. A difference was also observed between respondents with a high felling intensity and a lower, the more intensive felling the higher agreement with the statement. But this divergence was only significant in one out of two sets of categories.

**Table 58.** Level of agreement with the statement 17o “I accept measures to protect biodiversity in my forest if I am fully compensated”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Member of environmental organisation	Yes	4,50	0,90	30	1,59	(*)
	No	4,12	1,11	89		
Acquirement of knowledge about biodiversity	Courses	4,51	0,82	49	2,65	**
	No courses	4,03	1,17	71		
Acquirement of the estate	Purchase	4,35	1,10	60	1,29	(*)
	Inherit or gift	4,10	1,02	60		
Felling per hectare (m <sup>3</sup> )	0-36	4,06	1,23	52	1,62	(*)
	37-	4,40	0,84	45		

The respondents with higher education disagreed more with the statement “I object measures to protect biodiversity in my forest because of a declining value of the forest for coming generations” than the ones with lower education (table 59). A clear difference was also observed between members and non-members of environmental organisations. The non-members agreed more with the statement than the members. Larger size of forest, larger share of income from the forestry on the estate, share of own work on the estate and higher felling intensity per hectare, all showed a correlation with a higher level of agreement with the statement. But significant differences were found only in one set of categories per variable and the significance was in all cases, except share of income, also low.

**Table 59.** Level of agreement with the statement 17p “I object measures to protect biodiversity in my forest because of a declining value of the forest for coming generations”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Education	Lower	2,46	1,39	56	1,41	(*)
	Higher	2,13	1,17	62		
Member of environmental organisation	Yes	1,76	1,15	29	2,71	**
	No	2,49	1,31	89		
Size of forest (hectare)	0-49	2,11	1,27	53	1,61	(*)
	50-	2,50	1,32	64		
Income from the forestry on the estate (per cent)	0-15	2,09	1,18	80	2,61	**
	20-	2,80	1,41	35		
Share of own work on the estate (per cent)	0-25	2,20	1,26	81	1,57	(*)
	30-	2,63	1,40	35		
Felling per hectare (m <sup>3</sup> )	0-20	2,06	1,20	33	1,61	(*)
	21-	2,49	1,34	63		

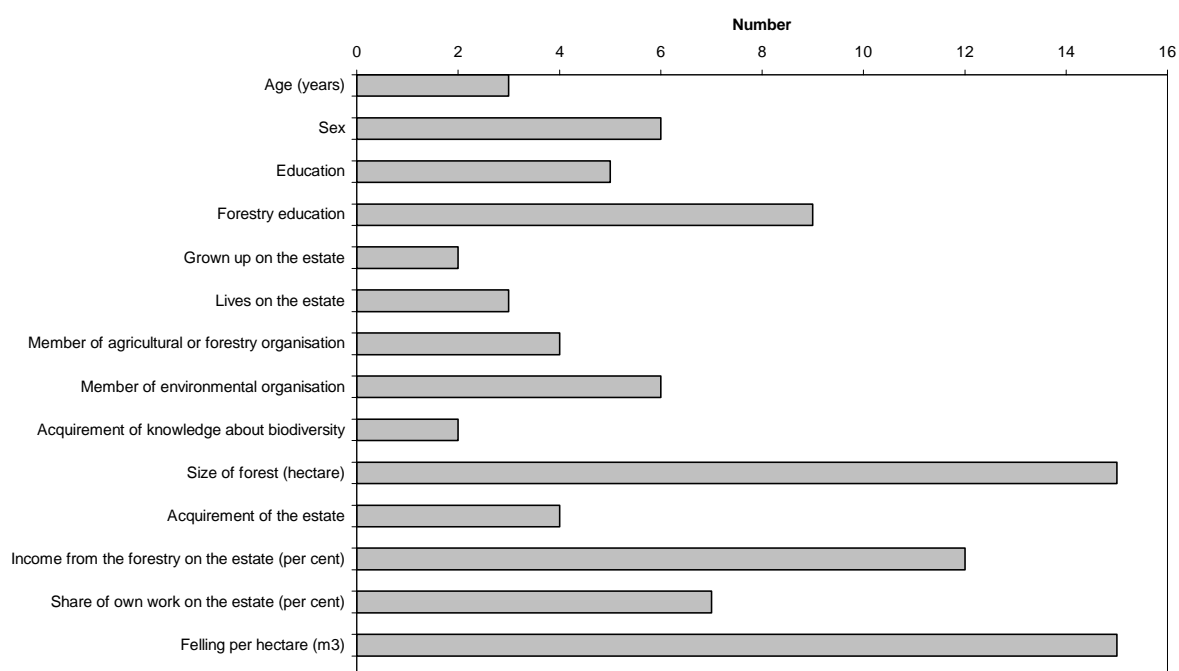
The category of respondents with a higher age agreed more with the statement “I object measures to protect biodiversity in my forest because it is not a good way to manage a renewable resource” than the group of younger respondents (table 60). Higher education and membership in an environmental organisation correlated with a lower level of agreement with the statement. Larger forest, larger share of income from the forestry, share of own work in the forestry and higher felling intensity per hectare gave a higher level of agreement with the statement. But it was only in the share of income, the significance was found in more than one set of categories.

**Table 60.** Level of agreement with statement 17q “I object measures to protect biodiversity in my forest because it is not a good way to manage a renewable resource”.

Variable	Category	Average	Standard deviation	n	Z	Significance
Age (years)	30-49	2,09	0,93	32	1,78	*
	50-	2,48	1,28	84		
Education	Lower	2,57	1,33	54	1,69	*
	Higher	2,19	1,05	62		
Member of environmental organisation	Yes	2,10	1,21	29	1,36	(*)
	No	2,45	1,18	87		
Size of forest (hectare)	0-49	2,12	1,20	52	2,14	*
	50-	2,59	1,14	63		
Income from the forestry on the estate (per cent)	0-5	2,14	1,09	66	2,42	**
	10-	2,68	1,24	47		
Income from the forestry on the estate (per cent)	0-15	2,08	1,05	78	3,89	***
	20-	3,00	1,21	35		
Share of own work on the estate (per cent)	0-25	2,25	1,14	79	1,45	(*)
	30-	2,63	1,33	35		
Felling per hectare (m <sup>3</sup> )	0-20	2,00	1,05	32	2,14	*
	21-	2,52	1,21	62		

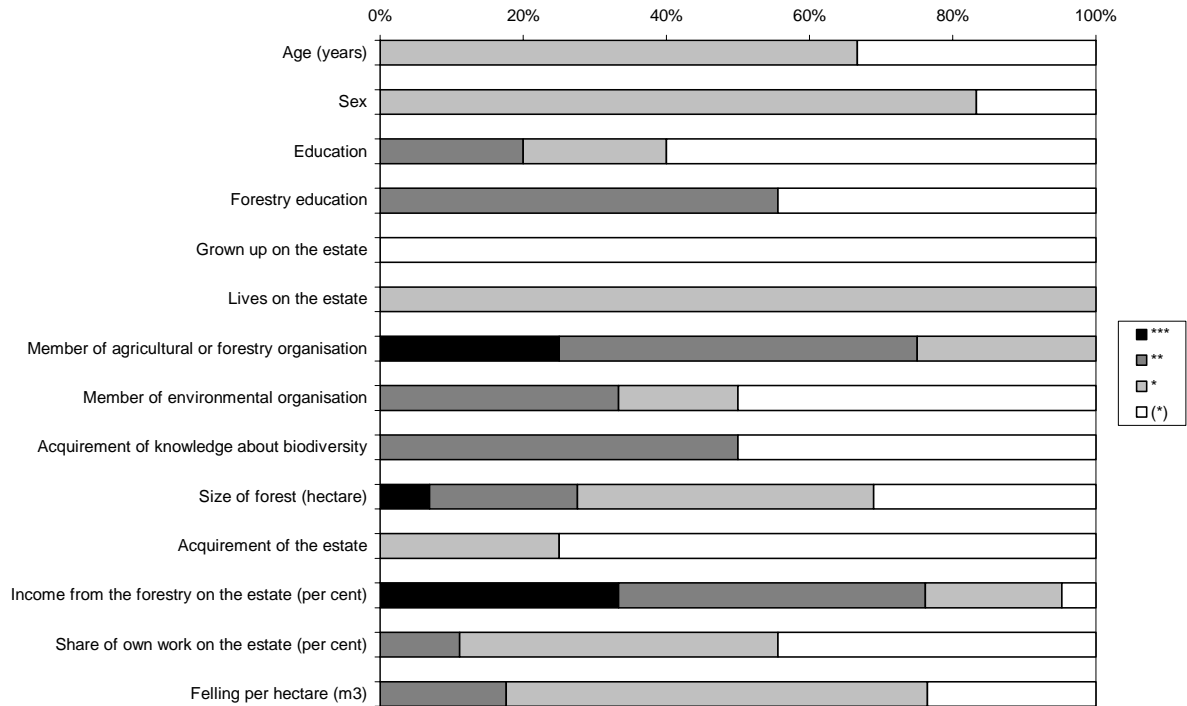
### 10.9 The respondents' opinions about biodiversity and nature protection – the characteristics that were the most important

The data in previous sections was analysed characteristic by characteristic to see in which case most significances were found. Most significant differences were found in size of forest (15 statements), income from the forestry on the estate (12 statements) and felling per hectare (15 statements). But in many of the significant cases with felling per hectare the significance was only found in one of the two sets of categories (figure 6). Significant differences were also often found between the respondents with some kind of education in forestry and the ones without this type of education.



**Figure 6.** Number of statements with significant differences within the 14 characteristics of the respondents and the respondents' forests or estates.

The data was also sorted by the level of significance. Among the characteristics with the most significant cases, income from the forestry on the estate was the one that showed the highest significance (figure 7). 76 per cent of the statements with significance reached the 1 percent level and 33 percent reached the 0,1 percent level. The two variables that showed significance in the highest number of cases in the figure above, size of forest and felling per hectare, differed in the level of significance. Size of forest had a higher amount of cases with high significance. The third highest bar in the figure above, income from the forestry on the estate, showed the highest significance of all variables.



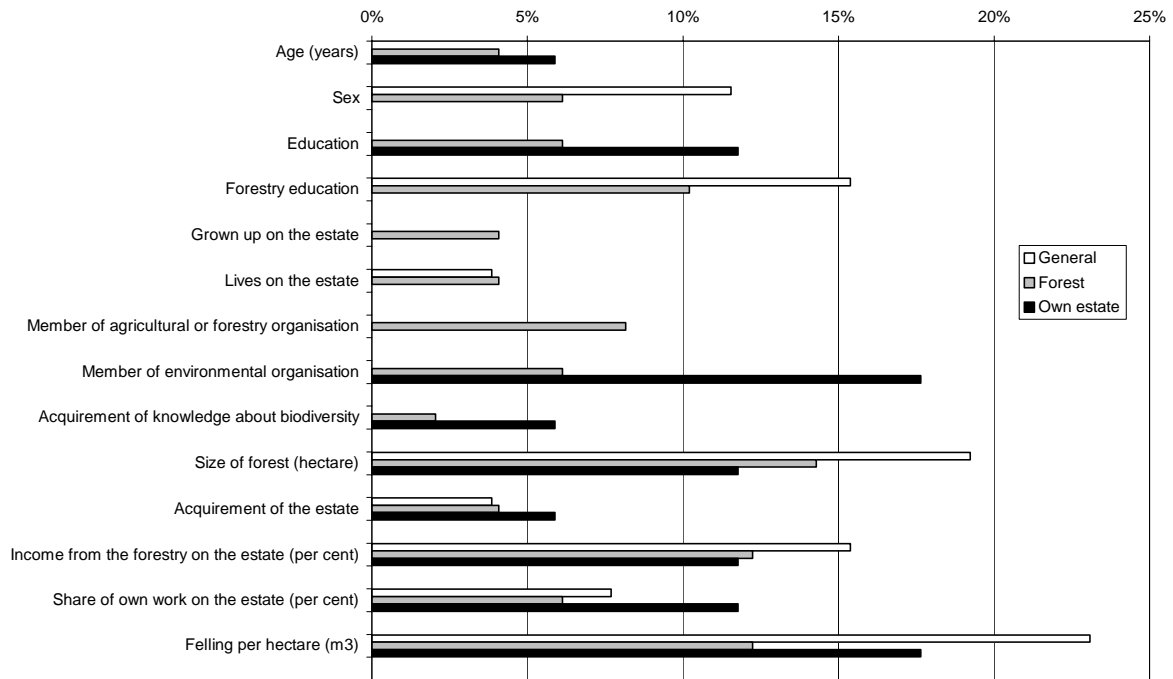
**Figure 7.** Share of the different significance levels (0,1, 1, 5, 10 per cent) within the characteristics where such were found

The statements in question 17 were divided into three groups depending on if they concerned:

- Biodiversity and protection of biodiversity in general
- Biodiversity and protection of biodiversity in forest and forestry in general
- Biodiversity and protection of biodiversity in the forest and forestry of the respondents' estates.

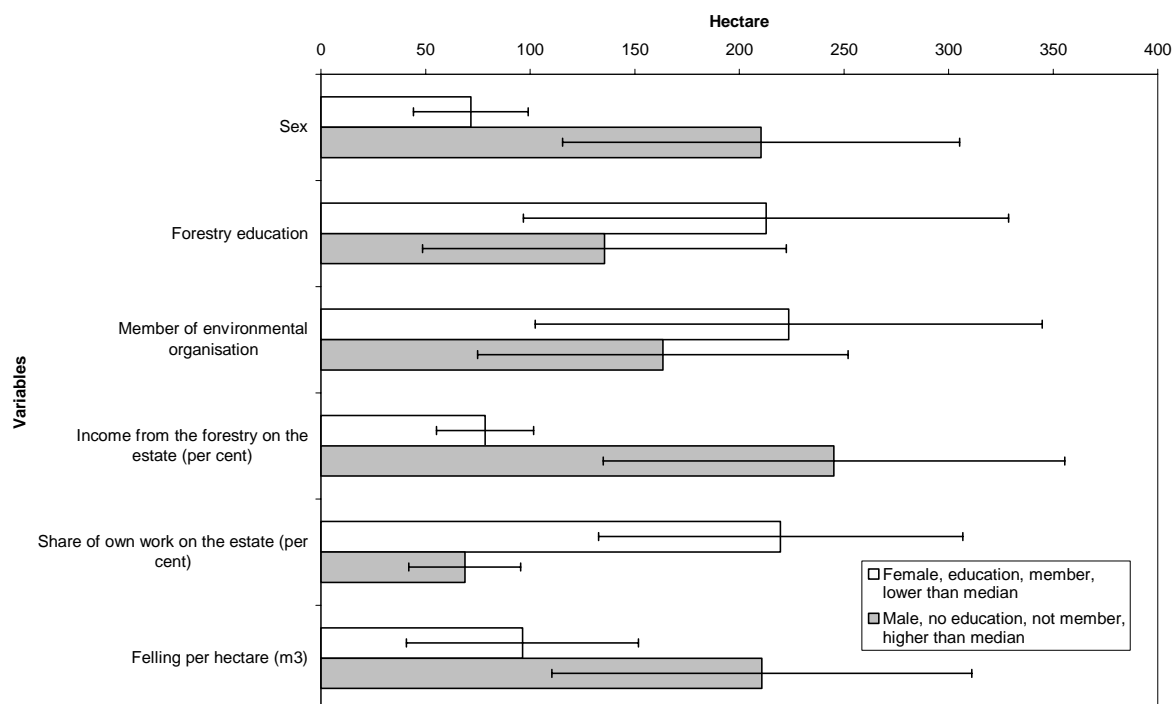
Size of forest, income from the forestry and felling per hectare were important for all the three groups of statements (figure 8). Sex, forestry education, income from the forestry on the estate, size of forest and felling per hectare were important for the attitudes toward biodiversity in forest and in general. Neither sex nor forestry education played any significant role for the respondents' attitudes towards nature protection on their land. The most important characteristics for the respondents' attitudes towards protection of biodiversity on their own land was if the respondent was a member of an environmental organisation and how much he or she was felling per hectare during the last ten year period.





**Figure 8.** Share of the significances within three groups of statements, concerning biodiversity and protection of biodiversity in general, biodiversity and protection of biodiversity in forest and forestry, biodiversity and protection of biodiversity in the forest and forestry of the respondents' estates.

The six variables with the second to seventh largest number of significant cases in figure 6 were chosen for a control of correlation with the variable with the highest number of significant cases, size of forest. Sex, income from the forestry on the estate and share of own work in the forestry showed significant differences in size of forest between different categories. Hypothesis testing was not admitted due to the large divergence in the standard deviations. But the 90 per cent confidence intervals still indicates that the relation between the averages can be considered statistically proved. The female respondents owned on average less forest than the male respondents (figure 9, table 61). Income from the forestry on the estate correlated positively with size of the forest. The respondents with a higher share of the income from the forestry on the estate owned in average more forest. Respondents that performed a smaller share of the work on the estate themselves owned relatively less forest.



**Figure 9.** Average size of forest within four categorised variables with 90 per cent confidence interval.

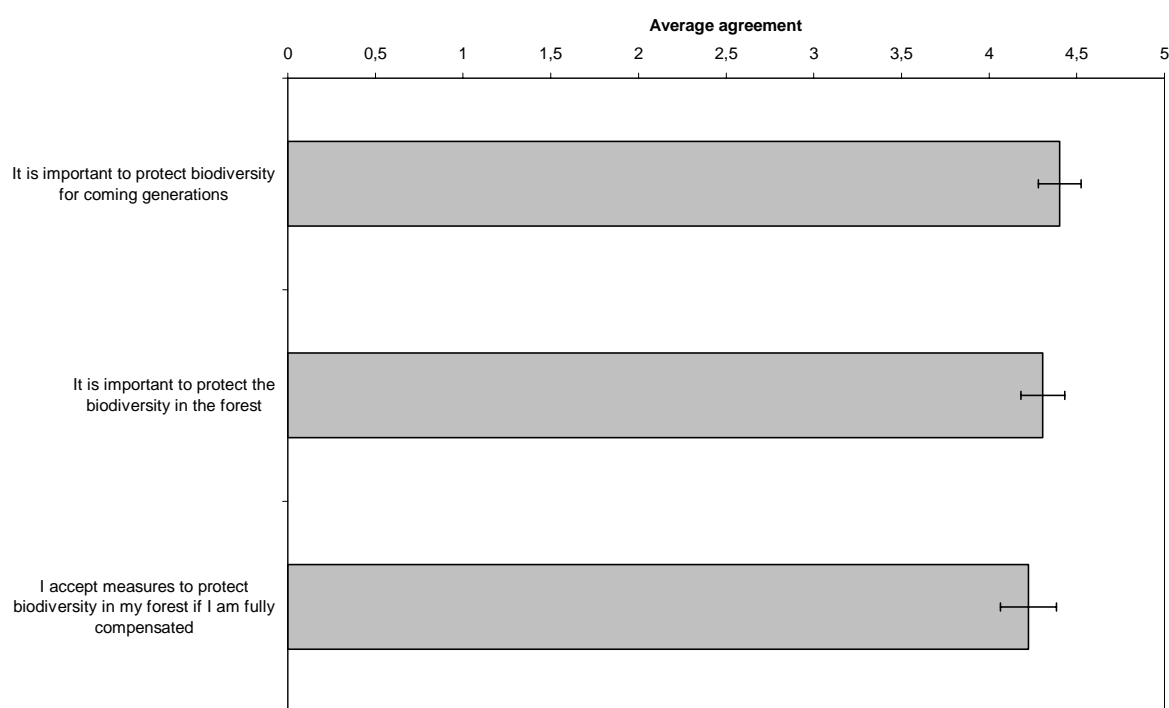
**Table 61.** The averages and confidence intervals from figure 9.

Variable	Category	Number	Average	Standard deviation	Confidence 90 % (±)
Sex	Female	27	72	87	27
	Male	98	210	571	95
Forestry education	Yes	67	213	578	116
	No	57	136	399	87
Member of environmental organisation	Yes	29	224	397	121
	No	98	163	533	88
Income from the forestry on the estate (per cent)	0-5	70	78	118	23
	10-	49	245	469	110
Share of own work on the estate (per cent)	0-10	64	220	423	87
	15-	57	69	123	27
Felling per hectare (m <sup>3</sup> )	0-33	50	96	238	55
	37-	49	211	427	100

The low number of female respondents in combination with the skewed distribution of size of forest indicates that the difference between the sexes in this case should be treated with some scepticism. But the confidence interval still is giving some assurance of the significance of the relation between the averages. The smaller the share of own work in the forestry was, the larger was the size of the forest. Both large size of forest and large share of own work in the forestry correlated with a larger negativism toward protection of biodiversity in the forest. The attitudes of respondents with a large share of own work in the forestry can therefore be assumed to be more independent of the size of the forest than the other variables. But it must

be remembered that the scale to which the respondent answered how much work he or she performed himself or herself in the forestry was relative to the total amount of work that was done in the forest. It is possible that the results would have been different if the answers were in relation to the total amount of labour performed by the respondents or in hours per year or equivalent.

There was no significant difference in attitude among the respondents towards protection of biodiversity, depending on if the statement concerned protection of biodiversity in general, protection of biodiversity in forest in general or was specified to the respondent's forest. There was no significant difference in average agreement with three statements belonging to the three categories (figure 10). This is somewhat contradictory to the study by Götmark et al. (2000), which states that "If non-specific questions about the environment are posed, the answers of respondents may be more supportive of conservation than if the questions deal with sacrifices for the respondents". It should be noted that the statement concerning protection of biodiversity on the respondent's estate included the precondition that the landowner was fully compensated for the encroachment.



**Figure 10.** Average agreement with three statements concerning protection of biodiversity in general, protection of biodiversity in forest and protection of biodiversity in the respondent's forest. 90 per cent confidence intervals.

## 11. Conclusions

The respondents were in general positive to protection of biodiversity. Only small differences were found depending on if the question concerned protection of biodiversity in general or was more specified to protection of biodiversity in the forest of the respondent. Most of the respondents thought that it is the state that should carry the main economic responsibility for protection of forest. But many thought that no other measures to protect biodiversity were needed in the forest if the forest was managed according to the principles of “Grönare Skog”. This indicates that there can be a conflict, not in if the biodiversity is going to be protected or not, but in what measures that are needed to protect it.

Differences in attitude were found between different categories of respondents. The personal characteristics were of less importance than the characteristics of the forest and the forestry of the respondents' estates. The personal characteristics that showed some importance were sex, level of education, forestry education and if the respondents were members of an agricultural or forestry organisation, or if he or she was member of an environmental organisation. Women were in general more positive to protection of biodiversity than men, but sex was only significant in attitudes concerning biodiversity and protection of biodiversity in general. There were also significant differences in which variables were important for the attitude between three categories of statements. No differences were found due to sex concerning protection in the respondent's own forest and personal characteristics were more important for the respondents' attitudes concerning biodiversity in general than it was when it concerned protection of biodiversity on the respondents land.

The most important variables for the respondents' opinions about biodiversity and protection of biodiversity in general were:

- Sex
- Forestry education
- Size of forest
- Income from the forestry on the estate
- Felling per hectare

The most important variables for the respondents' opinions about protection of biodiversity in forest and forestry in general were:

- Forestry education
- Size of forest
- Income from the forestry on the estate
- Felling per hectare

The most important variables for the respondents' opinions about biodiversity and protection of biodiversity in the forest and forestry of the respondents' estates were:

- General education
- Membership of an environmental organisation
- Size of forest
- Income from the forestry on the estate
- Share of own work on the estate
- Felling per hectare

Sex, incomes from the forestry on the estate, share of own work in the forest and felling per hectare correlated with the size of forest. Men owned on average more forest than women in the study and the higher the share of the income the respondents got from the forestry on the estate, the more forest he or she had. Also felling per hectare showed a positive correlation with forest size, while share of own work was negatively correlated. A remark has to be made on how the work in the forest was measured, which is further discussed in chapter 10, section 10.9.

The earlier and the more intensively the forest owners had been involved in the protection process, the more satisfied was he or she with the process as a whole. There were differences in opinion about the process depending on if the respondents had their main contact with the County Board and the Environmental Protection Agency or with the County Forestry Board. The respondents that had their main contact with the County Forestry Board felt that they had been involved in the process on an earlier stage and to a larger extent. These respondents were also more satisfied with process as a whole. The County Forestry Board had also succeeded better in the extension of the forest owners' knowledge about biodiversity, more respondents of this category felt that they had achieved a better understanding during the process. Many of these results can probably be related to the County Forestry Board's tradition and experience of the work with counselling and education of private forest owners. But it can also be related to the fact that the County Forestry Board generally work with smaller areas than the County Board and the Environmental Protection Agency, which can be assumed to effect the forest owner to a smaller extent.

Most respondents preferred types of compensation and agreements for protection of biodiversity in their forest where he or she continues to be forest owner, either through that they keep the ownership of the forest or that he or she is compensated with new land. They also wanted an active role in the management of the protected areas. Yearly compensation was preferred to a once-and-for-all payment.

It can be concluded by this study that the forms of implementation of area protection that are used today diverge considerably from the preferences of the landowners. When the landowner wants to keep the ownership and right to use the land, the authorities want to buy the land or the rights that belong to it. When the forest owner wants to be compensated with new land or with yearly payments, the authorities offer only a once-and-for-all payment.

There is a need of flexibility in the forms and methods of implementation of area protection to avoid conflicts and make the processes going smoothly and with as little friction between the parties as possible. There would be advantages in a more frictionless process for all involved parties. Conflicts are of course trying, both economically and emotionally, for all parties, but especially for the forest owner.

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## 13. Appendices

### 13.1 Appendix 1, accompanying letter

#### **Bästa skogsägare eller före detta skogsägare!**

Kraven på att skogsmark ska skyddas för att bevara den biologiska mångfalden har ökat, både från myndigheterna och från allmänheten. Cirka 80 procent av skogsmarken i Södra Sverige ägs av privatpersoner och fastigheterna är relativt små. Det är därför viktigt att ta till vara de erfarenheter och synpunkter angående metoderna för att skydda den biologiska mångfalden som ägarna till dessa fastigheter besitter.

På Institutionen för Sydsvensk Skogsvetenskap vid Sveriges Lantbruksuniversitet arbetar vi därför med en undersökning för att klargöra hur privatskogsägarna i Skåne ser på dessa frågor. Undersökningen genomförs som ett examensarbete på magisternivå och är en del i ett samnordiskt projekt finansierat av Nordiska Ministerrådet.

Du är en av 250 skogsägare eller före detta skogsägare vilka får ett **frågeformulär** hemskickat. Vi har valt att vända oss till Dig vars fastighet har varit ifråga för bildande av områdesskydd i form av naturvårdsavtal, biotopskydd, naturreservat eller nationalpark. Ditt namn och Din adress har vi fått från Länsstyrelsen, Naturvårdsverket eller Skogsvårdsstyrelsen.

**För att kunna dra säkra slutsatser från undersökningen är det mycket viktigt att så många som möjligt svarar - därför är just Dina svar av mycket stor betydelse.**

Vi ber Dig att fylla i frågeformuläret och skicka det till oss så snart Du kan, helst **inom en vecka**. Du använder Dig av det bifogade svarskuvertet, så Du behöver inte betala porto.

Det kodnummer som finns uppe till höger på frågeformuläret är endast till för att vi ska veta vilka som har svarat och därmed inte behöva skicka påminnelse till dessa.

Dina svar kommer att behandlas anonymt och ingen kommer att kunna se i sammanställningarna vad just Du har svarat.

Om Du har några frågor är du välkommen att höra av dig till Per-Ola Hedwall (telefon och e-post, se nedan).

**Tack på förhand för Din medverkan!**

Bästa hälsningar!

Per-Ola Hedwall  
Magisterstuderande

Leif Mattsson  
Professor

Ola Sallnäs  
Professor

tel: 044 - 44 394  
070 - 560 37 38

e-post:  
[f0perhed@stud.slu.se](mailto:f0perhed@stud.slu.se)

### *13.2 Appendix 2, accompanying letter for the reminder*

#### **Bästa skogsägare eller före detta skogsägare – en liten påminnelse!**

För en tid sedan fick Du ett frågeformulär som vi bad Dig besvara. Vi hade vid senaste hopsummeringen av de besvarade frågeformulären inte fått något svar från Dig. Vi är medvetna om att det är lätt att glömma bort en sådan här sak och att det kan vara svårt att få tiden att räcka till.

Det är meningen att resultaten av undersökningen ska komma till nytta för privatskogsbruket. **Det är därför mycket viktigt att så många som möjligt från alla grupper av skogsägare eller före detta skogsägare svarar - därför ber vi Dig att svara, även om Du inte känner Dig särskilt insatt i eller intresserad av frågeställningarna.**

Om Du redan har svarat (men svaret ej har nått oss ännu) kan Du naturligtvis bortse från denna påminnelse.

Som vi nämnde i förra brevet så är Du en av cirka 250 skogsägare eller före detta skogsägare som får hemskickat ett frågeformulär. Ditt namn och din adress har vi fått från Länsstyrelsen, Naturvårdsverket eller Skogsvårdsstyrelsen. Dina svar kommer att behandlas helt anonymt och ingen kommer att kunna se i sammanställningarna vad just Du har svarat. Det kodnummer som finns uppe till höger på frågeformuläret är endast till för att vi ska kunna se vilka som har svarat och därmed inte skicka påminnelse till dessa.

Vi skickar med ett nytt frågeformulär och svarskuvert om de tidigare skulle ha kommit bort. Observera att svarskuvertet är frankerat så Du behöver inte betala porto.

Om Du har några frågor är Du välkommen att höra av Dig till Per-Ola Hedwall (telefon och e-post, se nedan).

#### **Ett stort tack på förhand för Din medverkan i undersökningen!**

Bästa hälsningar!

Per-Ola Hedwall  
Magisterstuderande

Leif Mattsson  
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## Frågeformulär

**till skogsägare och före detta skogsägare vars fastighet har varit ifråga för bildande av någon form av områdesskydd.**

**Läs detta innan Du börjar svara på frågorna!**

- Om Du ej längre är ägare till fastigheten ber vi Dig svara utifrån de förhållanden som rådde strax före och efter ägarskiftet.
- Med områdesskydd avser vi: Nationalpark, naturreservat, biotopskydd eller naturvårdsavtal.
- Om Du inte vet exakt svar är det bättre att Du svarar ungefärligt än inte alls.

**Vi börjar med några frågor om Dig själv.**

**1. Vilket år är Du född?**

1	9		
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**2. Är Du kvinna eller man?**

- ☐ Kvinna  
☐ Man

**3. Vilken eller vilka av följande utbildningar har Du?**

- ☐ Grundskola  
☐ Gymnasium  
☐ Universitet/Högskola  
☐ Annan → **Vilken?**
-

**4. Har Du någon skoglig utbildning?**

☐ Nej

☐ Ja → **Vilken eller vilka?**

☐ Kortare kurs arrangerad av Skogsvårdsstyrelsen eller skogsägareförening et c.

☐ Jordbruks-, skogsbruks- eller naturbruksgymnasium

☐ Universitet/Högskola

☐ Annan? → **Vilken?**

---

**5. Är Du uppvuxen på fastigheten?**

☐ Ja

☐ Nej

**6. Bor Du på fastigheten?**

☐ Ja

☐ Nej → Jag har cirka \_\_\_\_\_ kilometer från bostaden till min fastighet.

**7. Är Du medlem i någon eller några av nedanstående organisationer?**

☐ LRF

☐ Skogsägareförening

☐ Naturskyddsföreningen

☐ WWF

☐ Annan organisation aktiv i miljöfrågor? → **Vilken?**

---

**8. Hur har Du förvärvat kunskap om biologisk mångfald?**

☐ Kurser/utbildningar

☐ På egen hand

☐ Annat sätt? → **Hur?**

---

## Nu några frågor om din fastighet.

### 9. Hur stor är Din fastighet?

*Om fastighetens areal minskat genom att mark styckats av till naturreservat eller nationalpark vill vi att Du anger arealen innan avstyckningen skedde.*

Cirka: \_\_\_\_\_ hektar

### 10. Hur stor del av arealen är skogsmark?

*Om fastighetens areal minskat genom att mark styckats av till naturreservat eller nationalpark vill vi att Du anger arealen innan avstyckningen skedde.*

Cirka: \_\_\_\_\_ hektar

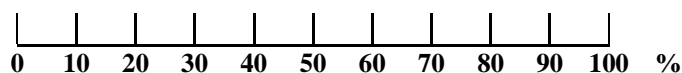
### 11. Hur har Du förvärvat fastigheten?

- ☐ Köp
- ☐ Arv
- ☐ Gåva

### 12. Hur stor del av Ditt hushålls inkomster före skatt har kommit från skogsbruket på fastigheten under de senaste tio åren?

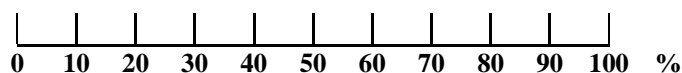
*Om del av eller hela fastigheten ingår i någon form av områdesskydd ber vi dig svara utifrån de förhållanden som rådde innan områdesskyddet infördes.*

*Ange med ett kryss på procentskalan nedan.*



### 13. Hur stor del av arbetsinsatsen med avverkning och skogsvård utför Du själv eller familjemedlem utan inhyrd arbetskraft?

*Ange med ett kryss på procentskalan nedan.*



- 14. Hur många skogskubikmeter har avverkats på fastigheten under de senaste tio åren?**

Cirka: \_\_\_\_\_ skogskubikmeter

- 15. Vilken tycker Du att är den viktigaste nyttan för Dig med Din skog?**

*Rangordna alternativen från 1 till 5, där 1 är det viktigaste och 5 det minst viktiga.*

	<b>Virke</b>
	<b>Husbehovsved</b>
	<b>Jakt/Fiske</b>
	<b>Rekreation</b>
	<b>Miljö för biologisk mångfald</b>

**Här några frågor som rör Dina tankar om biologisk mångfald.**

- 16. Kan du kort ange vad Du främst tänker på då Du hör begreppet biologisk mångfald?**

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**17. Nedan följer ett antal påståenden.**

*Sätt ett kryss för vart och ett av dessa påståenden vid det svarsalternativ (1, 2, 3, 4 eller 5) som Du tycker bäst överensstämmer med Din åsikt.*

		Instämmer <u>inte alls</u> med påståendet			Instämmer <u>helt och hållet</u> med påståendet	
		1	2	3	4	5
<b>a</b>	Den biologiska mångfalden ska skyddas därför att den kan få ett framtida ekonomiskt värde.					
<b>b</b>	Det är oetiskt att arter utrotas på grund av mänskliga aktiviteter.					
<b>c</b>	Alla arter har rätt att existera för sin egen skull.					
<b>d</b>	Utdöendet av arter är inget stort miljöproblem.					
<b>e</b>	Det är viktigt att bevara den biologiska mångfalden för kommande generationer.					
<b>f</b>	Det är viktigare att skydda skog för att främja friluftslivet än för att bevara den biologiska mångfalden.					
<b>g</b>	Åtgärder för att bevara den biologiska mångfalden gör att landsbygden avfolkas.					
<b>h</b>	I stället för att arbeta med artbevarande i Sverige bör vi satsa resurserna i länder där effekten på den biologiska mångfalden kan bli större.					
<b>i</b>	Det är viktigt att skydda den biologiska mångfalden i skogen.					
<b>j</b>	Det är bättre att avverka skogen på en produktionsmässigt uthållig nivå än att skydda den biologiska mångfalden.					
<b>k</b>	Så länge skogsägaren sköter skogen enligt principerna för till exempel ”Grönare Skog” behövs inga ytterligare skyddsåtgärder.					
<b>l</b>	Skogsbruket är en viktig källa till sysselsättning i samhället.					
<b>m</b>	Skogen är en förnyelsebar resurs som främst ska användas för virkesproduktion.					
<b>n</b>	Skogen är viktigast som en inkomstkälla för samhället.					
<b>o</b>	Jag accepterar skyddsåtgärder i min skog mot full ersättning för att bevara den biologiska mångfalden i den svenska skogen.					
<b>p</b>	Jag är emot skyddsåtgärder på min fastighet därför att värdet för framtida generationer sjunker.					
<b>q</b>	Jag är emot skyddsåtgärder på min fastighet därför att det inte är ett bra sätt att utnyttja en förnyelsebar resurs.					

18. Vem anser Du är ägare till den biologiska mångfalden?

- ☐ Fastighetsägaren
  - ☐ Samhället
  - ☐ Annan → Vem?
- 

19. Var tycker Du det största ekonomiska ansvaret för att undanta skogsmark från normalt skogsbruk skall ligga?

- ☐ Hos skogsägarna
  - ☐ Hos staten
  - ☐ Annan → Vilken?
- 

20. Vad är Din åsikt beträffande omfattningen av skyddet av den biologiska mångfalden i det svenska privatskogsbruket?

- ☐ Andelen skyddad skog bör ökas mycket.
- ☐ Andelen skyddad skog bör ökas något.
- ☐ Andelen skyddad skog är lagom.
- ☐ Andelen skyddad skog bör minskas något.
- ☐ Andelen skyddad skog bör minskas mycket.

21. Är Du villig att avsätta skog för naturskyddsändamål utan ekonomisk ersättning?

- ☐ Nej
- ☐ Ja → Jag är villig att avsätta \_\_\_\_\_ % av arealen utan ekonomisk ersättning.

22. Om Du svarade nej på föregående fråga - varför är Du inte villig att avsätta skog utan ekonomisk ersättning?

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23. Vid införande av skydd med ersättning från staten - vilken form av ersättning skulle Du föredra?

- ☐ Engångsersättning
  - ☐ Årlig ersättning
  - ☐ Markbyte
  - ☐ Annan ersättning? → **Vilken?**
- 

24. Vilket alternativ anser Du vara den bästa formen av områdesskydd för den biologiska mångfalden?

- ☐ Avtal där äganderätten **helt** övergår till staten för **all framtid** med full ekonomisk ersättning.
- ☐ Avtal där **delar** av bruksrätten, till exempel rätten att avverka skog övergår till staten för **all framtid** med full ekonomisk ersättning.
- ☐ Avtal där **delar** av bruksrätten, till exempel rätten att avverka skog övergår till staten för en begränsad tid, **maximalt 50 år**, med ersättning för de förlorade inkomsterna under tidsperioden.
- ☐ Avtal där **delar** av bruksrätten, till exempel rätten att avverka skog övergår till staten för en begränsad tid, **maximalt 15 år**, med en ersättning som är betydligt lägre än de förlorade inkomsterna under tidsperioden.
- ☐ Avtal där skogsägaren ersätts ekonomiskt av staten för en **naturvårdsanpassad skötsel** enligt en skötselplan.
- ☐ **Frivilliga** avsättningar utan ekonomisk ersättning.

**Här några frågor om hur det gick till när Din fastighet var aktuell för bildande av områdesskydd.**

**25. Vilken eller vilka organisationer hade Du kontakt med när din fastighet var aktuell för skydd?**

- ☐ Naturvårdsverket
  - ☐ Länsstyrelsen
  - ☐ Kommunen
  - ☐ Skogsvårdsstyrelsen
  - ☐ Utomstående konsult (tex. skogsägareförening, värderingskonsult)
  - ☐ Annan? → Vilken?
- 

**26. Vilken av organisationerna i ovanstående fråga hade Du mest kontakt med?**

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**27. Vilket förtroende har Du för följande organisationer när det gäller genomförandet av den skogliga miljöpolitiken?**

*Sätt ett kryss för var och en av nedanstående organisationer vid det svarsalternativ (1, 2, 3, 4 eller 5) som Du tycker bäst överensstämmer med din åsikt.*

		<u>Inget alls</u> förtroende			<u>Mycket stort</u> förtroende	
		1	2	3	4	5
<b>a</b>	Naturvårdsverket					
<b>b</b>	Länsstyrelsen					
<b>c</b>	Kommunen					
<b>d</b>	Skogsvårdsstyrelsen					

**28. Vid vilken tidpunkt blev Du involverad i skyddsprocessen?**

- ☐ Innan fastigheten blev inventerad på naturvärden.
- ☐ Innan förslaget till bildandet av skydd blev framlagt.
- ☐ Innan beslutet om bildandet av skydd togs.
- ☐ Jag blev inte alls involverad.

**29. Hur nöjd är Du med skyddsprocessen?**

- ☐ Jag är mycket nöjd.
- ☐ Jag är ganska nöjd.
- ☐ Jag är varken nöjd eller missnöjd.
- ☐ Jag är ganska missnöjd.
- ☐ Jag är mycket missnöjd.

**30. Vad är det huvudsakliga skälet till att Du är nöjd/missnöjd med skyddsprocessen?**

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**31. Om Du är missnöjd med skyddsprocessen - hur kan den förbättras?**

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**32. Hur mycket tycker Du att Du fick ta del i skyddsprocessen.**

- ☐ Jag fick ta mycket stor del i skyddsprocessen.
- ☐ Jag fick ta ganska stor del i skyddsprocessen.
- ☐ Jag fick ta ganska liten del i skyddsprocessen.
- ☐ Jag fick ta mycket liten del i skyddsprocessen.
- ☐ Jag fick inte alls ta del i skyddsprocessen.

**33. Om Du tycker att Du fick ta del i skyddsprocessen - hur fick Du ta del i denna?**

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**34. Hur tycker Du att skyddsprocessen påverkade Din förståelse för naturskydd?**

- ☐ Den gav mig mycket större förståelse för naturskydd.
- ☐ Den gav mig något större förståelse för naturskydd.
- ☐ Den påverkade inte min förståelse för naturskydd.
- ☐ Den gav mig något mindre förståelse för naturskydd.
- ☐ Den gav mig mycket mindre förståelse för naturskydd.

**35. Är någon del av eller hela fastigheten skyddad genom nationalpark, naturreservat, biotopskydd eller naturvårdsavtal?**

☐ Nej → **Gå direkt till fråga 47**

☐ Ja → **Vilket eller vilka?**

☐ Nationalpark

☐ Naturreservat

☐ Biotopskydd

☐ Naturvårdsavtal

**Om Du svarade Nej på föregående fråga kan Du gå direkt till fråga 47**

**Till sist några frågor till Dig vars fastighet eller del av fastighet är skyddad genom nationalpark, naturreservat, biotopskydd eller naturvårdsavtal.**

**36. Hur många hektar skogsmark är skyddade på fastigheten?**

Cirka: \_\_\_\_\_ hektar

**37. Hur hög är tillväxten på den skyddade delen i förhållande till fastigheten i övrigt?**

☐ Tillväxten är mycket lägre på den skyddade delen än på fastigheten i övrigt.

☐ Tillväxten är något lägre på den skyddade delen än på fastigheten i övrigt.

☐ Tillväxten är ungefär lika stor på den skyddade delen som på fastigheten i övrigt.

☐ Tillväxten är något högre på den skyddade delen än på fastigheten i övrigt.

☐ Tillväxten är mycket högre på den skyddade delen än på fastigheten i övrigt.

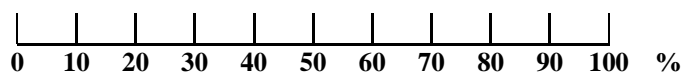
**38. Var fastigheten i Din ägo när skyddet infördes?**

☐ Ja

☐ Nej

39. Hur stor del av Ditt hushålls inkomster före skatt har kommit från skogsbruket efter att skyddet infördes?

Ange med ett kryss på procentskalan nedan.



40. Vilket slags ersättning för skyddet fick Du?

- ☐ Engångsersättning
- ☐ Årlig ersättning
- ☐ Markbyte
- ☐ Annan ersättning? → Vilken?

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41. Täcker ersättningen hela den ekonomiska förlusten av den skogsproduktion som gick förlorad när skyddet infördes?

- ☐ Ja
- ☐ Nej

42. Om Du är självverksam – täcker ersättningen även förlorade inkomster från eget arbete på fastigheten?

- ☐ Ja
- ☐ Nej

43. Finns det andra källor till inkomst från skogen som ersättningen inte täcker?

- ☐ Nej
- ☐ Ja → Vilken/vilka?

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**44. Hur stor var ersättningen?**

Ersättningen var cirka: \_\_\_\_\_ kronor per hektar

**45. Om Du inte är nöjd med ersättningen - hur mycket skulle Du ha fått för att bli nöjd?**

Jag skulle ha fått cirka: \_\_\_\_\_ kronor per hektar

**46. Om områdesskydd införts på en del av Din fastighet - har Du som en effekt av detta ändrat skötselrutinerna på fastigheten i övrigt?**

☐ Nej

☐ Ja → Vilka förändringar har Du gjort?

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**47. Om du vill så får Du gärna kommentera undersökningen eller Dina svar nedan.**

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**Ett stort tack för Din medverkan!**

**Skicka tillbaka frågeformuläret i det portofria svarskuvertet.**

### *13.4 Appendix 4, hypotheses*

#### 1. Characteristics of forest owners:

- a) The higher the level of education the more positive the owner is towards preserving biodiversity
- b) The younger the forest owner is, the more positive s/he is towards preserving biodiversity
- c) Membership in nature conservation organisations implies more positive attitudes towards biodiversity preservation
- d) Forest owners living in urban areas have a more positive attitude towards biodiversity protection.

#### 2. Perception of values related to the goods from/use of the forest:

- a) Forest owners emphasise the value of forests in the production of timber higher than that of biodiversity (should one distinguish between: on own property - in general?)
- b) Forest owners emphasise the value of forest for the creation of local economic activity higher than that of biodiversity (on own property, in general)
- c) Forest owners emphasise the role of forests in delivering renewable resources in the form of energy and/or fibres over that of delivering biodiversity (on own property - in general?)
- d) Forest owners see few conflicts between sustainable forestry and the preservation of biodiversity (on own property/in general) The more positively the forest owner perceives the value of biodiversity as compared to other values in the forest, the more positive s/he is towards preserving biodiversity in own forests
- e) Forest owners mean that the forest certification schemes in use at present are sufficient for taking care of biodiversity protection

#### 3. The economic importance for the owner:

- a) The higher the economic importance of the forest is for the owner, the more negative s/he will be towards biological preservation - especially in own forests (measured as part of total income)
- b) The higher the economic importance of the forest is for the owner, the more s/he perceives the forest as a production resource (confer 2 a-c)

#### 4. Characteristics of the protection process

- a) The greater emphasis of owners' participation in the process of formulating the protection scheme, the more positive the owner is towards preservation in own forest
- b) If the forest owner trusts the authority/organisation/person that handles the process towards them, their attitude to preservation in own forest is more positive.
- c) The earlier the forest owner is brought into the process, the more positive s/he is towards preservation in own forest
- d) Contracts create more positive attitudes towards preservation in own forest as compared to mandated solutions

## 5. Characteristics of the compensation

- a) Forest owners demand full compensation
- b) High conflict exists over what full compensation implies
- c) Compensation in kind (exchanging forest properties) is favoured to monetary compensation especially among individual owners (as opposed to institutional owners)
- d) Compensation in kind creates more positive attitudes towards preservation on own land
- e) Yearly compensation is favoured over a one shot compensation

## 6. Property rights issues

- a) Forest owners perceive biodiversity to be their property
- b) Forest owners perceive the conflict foremost to be a property rights conflict
- c) Forest owners accept to take action that supports the preservation of biodiversity on their forest land without compensation as long as it can be combined with normal economic activity (i.e., they are willing to set aside some smaller areas for preservation, leave some dead trees, etc.)
- d) Some forest owners accept to set aside parts of their forests for biodiversity protection without compensation
- e) Institutional owners and owners of large properties are more positive to biodiversity preservation than other forest owners

## 7. Adaptation to policy measures

- a) If a substantial part of a property is preserved for biodiversity, it reduces harvests and investments in forestry on the remaining forest property
- b) If a substantial part of a property is preserved for biodiversity, forest owners in areas with economically marginal forests tend to quit forestry altogether



### 13.5 Appendix 5, answers to question 16

- Ett rikt växt/djurliv.
- Naturens fria utveckling men ändå i en samklang med människor som brukare med respekt.
- Förvaltning av naturresurser från förfäderna = mångfalden.
- Att värna om djur/växter i naturen.
- Mossor lavar mm.
- Artrikedom.
- Olikåldrig skog. Löv och barr.
- Fin fauna och flora.
- Att skogen lever och utvecklas med alla dess träd och växter, samt djurlivet.
- Marker som är artrika.
- Skog eller annan mark som lämnas/vårdas så att djur/insekter trivs och förökas. Floran har en bred artrikedom pga. – gynnsamma förhållanden.
- Bevara sällsynta arter.
- Utdöende djur och växter.
- Politisk klåfingrighet.
- Olika arter av djur och växter.
- Djur och växtlighet i mångfald.
- En överdriven idé.
- Mossor, lavar, förmultnade träd och småkryp.
- Inskränkningar och möjligheter i skogsbruket.
- Biologisk mångfald är mycket viktigt. Det är en del i det roliga och intressanta ansvaret det innebär att äga skog. Att förvalta det väl. Även mycket viktigt ur ekologisk synvinkel.
- Varsamt hanterad skog och miljö.
- Att alla växter kommer till sin rätt.
- Att naturliga förutsättningar får råda på alla plan.
- Bestånd med flera trädslag och växter, våtmarker.
- Ett begrepp uppfunnet av tjänstemän som inte har någon erfarenhet av hur skogsmarken utvecklats historiskt sett.
- Att jag och länsstyrelsen har olika uppfattning.
- Bevarande av utrotningshotade växter i gammal slätteräng.
- Bevara naturen så hel som möjligt.
- Varierad växtflora.
- Säreigna arter.
- Tillvarata och bevara gammal "trollskog".
- Djurvård.
- En natur och miljö där allt och alla har möjlighet att leva.
- Ett begrepp skapat av folk som ej har någon större förankring i verkligheten och som i regimen nuvarande form går i dess ledband.
- Att RRV I sin rapport "skyddas värdefull natur..." kom fram till att begreppet bio. Mångfald är ett attitydmål som Naturvårdsverket hanterar dåligt.
- Död ved + lavar.
- Främja för artens naturliga plats bevarande.
- Välskött skog och mark. Kombination av skog och mark.
- Teori.
- Mångfald av växter/djur levande eller döda ger balans mellan skade/nytt-insekter.

- Gammal natur (skog-myr-fjäll-og allt det som gör att naturen fungerar, helst utan mänsklig påverkning).
- Framtid.
- Långsiktigt bevarande av naturen.
- Biologisk mångfald är grunden mycket positivt, men begreppet används av naturfundamentalister på ett sätt som äventyrar skogligt mångbruk. Uttrycket används ofta tillsammans med "lämnas för fri utveckling" på sätt som snarast tyder på biologisk enfald.
- Bevara natur.
- En natur som är både vacker och bra där människor och djur kan njuta av livet tillsammans.
- Olika typer av skog.
- Tillfredställande diversitet i flora och fauna.
- Biologiskt rika marker och vatten. Många spännande arter.
- Insekter, småkryp.
- Samspelet i naturen med särskilt känsliga områden.
- Alla arter får utvecklas fritt.
- På artnivå.
- Naturen får sköta sig själv utan ingrepp från människan.
- Arternas fortlevnad.
- Område med olika växtarter.
- Kontinuitet av skog och mark.
- Ivaretagelse av dyre-og plantearter i kombinasjon med ökonomisk drift av eiendommen.
- Urskog.
- Byråkrati. Levande djurarter i flertal olika åsikter hos s.k. kunnigt folk.
- Begreppet har positiv laddning, men om kraven från myndigheterna och miljöorganisationer. Blir hårdare och konsekvenserna för skogsägare blir svårare och uppfattas som orimliga, kan begreppet få omvänd laddning.
- Insekter, mossor, lavar.
- Som bank för framtida generationer av växter och djur och människor. Balans i alla organismers förhållande till varandra det vill säga vår överlevnad i ett framtida perspektiv.
- Att bevara växter och djur i naturlig miljö.
- Att inga skogsmaskiner fördärvar marken. Samt att man slipper jobba i skogen, samt behöver inte plantera nytt.
- Skapa en miljö som gynnar flertalet arter i växt och djurlivet. Dock prioriterar jag arter som har ekonomiskt värde för godsets utveckling. Är mindre intresserad av snytbaggas till exempel.
- Nej.
- Att se till att det finns biotoper som skyddar hotade arter utan att min ekonomi blir lidande.
- Fritt växande skog.
- Ett område där man tar hänsyn till allt.
- Sällsynta växter.
- Artrikedom.
- Möjlighet att växa och frodas för olika växter och djur.
- Naturvård.
- Att naturen är rikt varierad med många olika arter både vad det gäller växt och djurliv.
- Växter, svampar, örter, insekter.

- Så många växter och djur som möjligt på en liten yta, gärna rödlistade.
- Senaste modenycken.
- Intressant skog.
- Att inte staten ska lägga sig i detta. Jordägare och skogsägare har skött skog och mark i 1000 år på ett utmärkt sätt utan klåfingriga myndigheter.
- Betydelsen av att bevara ett artrikt djur och växtliv.
- Naturgiven flora och fauna.
- Djur, träd, Buskar + mindre växter, vatten.
- Skydda arter.
- Precis vad det innebär.
- Att vi har en skyldighet att driva vår verksamhet så att utrotningshotade växter och djur skyddas.
- God naturvård.
- Natur med många olika djur och växter.
- Bevarande av fauna, flora och landskapsbild, naturmiljöer till rimlig kostnad.
- Hjälpa till att bevara så många arter som möjligt i sin naturliga miljö.
- Frihet, uppmuntran, ansvar för ägare och brukare av skog.
- Just mångfald.
- Återskapande av de naturliga naturvärden som rådde innan senare tiders tuffa kapitalistiska värderingar blev helt gällande.
- Blandning av löv och barrskog, ängar, brukat och obrukat. Utan skötsel och betning/brukning minskar den biologiska mångfalden.
- Alla växter och insekter ska kunna leva.
- Stor artrikedom.
- Pappersexercis och miljöpartister.

13.6 Appendix 6, answers to question 17

		Totally disagree with the statement			Totally agree with the statement		
17		1	2	3	4	5	Missing
		%	%	%	%	%	%
<b>a</b>	The biodiversity should be protected because of potential future economical value.	11	25	27	14	16	7
<b>b</b>	It is unethical that species become extinct because of human activities.	0	7	12	37	39	5
<b>c</b>	All species have a right to exist for their own sake.	3	6	16	28	40	6
<b>d</b>	Extinction of species is not a big environmental problem.	38	19	19	13	3	8
<b>e</b>	It is important to protect biodiversity for coming generations.	1	0	16	23	57	4
<b>f</b>	It is more important to protect forest for outdoor life than for biodiversity.	28	33	21	6	7	6
<b>g</b>	Measures to protect biodiversity depopulate rural areas.	41	20	15	13	5	6
<b>h</b>	We should put the resources in countries where these can have a bigger effect on the biodiversity instead of in Sweden.	31	29	22	8	4	6
<b>i</b>	It is important to protect the biodiversity in the forest.	0	3	13	30	49	5
<b>j</b>	It is better to cut the forest on a sustainable level concerning timber production, then to protect biodiversity.	23	18	36	11	5	7
<b>k</b>	As long as the forest owners manage his or her forest according to the principles of "Grönare Skog" no other measures to protect biodiversity are needed.	7	11	23	25	27	7
<b>l</b>	Forestry is an important source of employment in the society.	0	3	14	20	57	6
<b>m</b>	The forest is a renewable resource that first of all should be used for timber production.	6	13	31	23	21	7
<b>n</b>	The forest is the most important as a source of income for the society.	7	13	35	22	17	6
<b>o</b>	I accept measures to protect biodiversity in my forest if I am fully compensated.	4	3	12	24	51	6
<b>p</b>	I object measures to protect biodiversity in my forest because of a declining value of the forest for coming generations.	34	24	17	11	8	6
<b>q</b>	I object measures to protect biodiversity in my forest because it is not a good way to manage a renewable resource.	29	20	28	11	5	8

### *13.7 Appendix 7, additional answers to question 18*

- Kommande generationer.
- Alla-globalt. Samhället låter för snävt.
- Alla tillsammans.
- Kan ej ägas, ansvaret bör vara samhällets.
- Alla.
- Den som betalar.
- Ingen eller alla.
- Fastighetsägaren är egentligen förvaltare av den biologiska mångfalden "Jorden är herrens och vad därpå är" Ps 24:1.
- Alla.
- Ingen - eller alla, den som är här och nu är den vi har.
- Det finns ingen ägare.
- Alla.
- Alla.
- Nuvarande och kommande generationer av människor och djur.
- Kommande generationer.
- Alla har ett gemensamt ansvar.
- Framtiden.
- Naturen.
- De i mångfalden ingående komponenterna.
- Ägare??

### *13.8 Appendix 8, answers to question 22*

- Arealen är för liten.
- Alla ska bära ekonomiska bördor när det gäller naturskydd.
- Staten kan gott ersätta skogsägaren till en viss del.
- Det är ett ansvar för staten. Ska inte belasta enskilda. De store skogsägarna har större ekonomiska möjligheter att avsätta skog.
- När mark tas ur produktion bör ersättning utgå.
- Följer redan nu skötsel av skogen enligt grön skogsbruksplan.
- Vi lever på vår fastighet, och hoppas så kunna göra.
- Ingen ska behöva avstå från ekonomisk ersättning.
- Vill ha bättre betalt.
- Skog är dyr i inköp. Höga skatter. Höga omkostnader och löner. Dalande virkespriser.
- Som markägare skall jag kunna använda resurserna på ett för mig lämpligt sätt.
- Äganderätten måste följas, ägaren måste ha kompensation för ekonomiskt eller annat bortfall.
- Äganderätten.
- En fantastisk dum fråga. Därför att jag har köpt den och betalat ränta och planterat och varit rädd om naturen. Det är min personliga egendom att samhället går in att beslagta är kriminellt, det är rån.
- Alla måste få en skälig ersättning för något man inte får röra.
- Markägaren skall inte stå för detta utan staten – samhället.
- Det är hela samhällets intresse. Alla har glädje och nytta av det. Varför skall då den enskilde skogsägaren ta den ekonomiska bördan.
- Om skog avsätts är det hela samhällets ansvar och inte enskilda personers ansvar.

- Jag har mina ekonomiska åtagande mot andra.
- Ersättning skall ske till fastighetsägaren baserad på marknadsmässiga villkor.
- Intrång i min skog skall ersättas.
- Har avsatt 5 % genom PEFC-certifiering. Tycker det är tillräckligt.
- Behöver pengarna.
- Inkomsten minskar.
- Det är en ekonomisk fråga.
- Statens ansvar.
- Vem avstår ekonomiska värden. Självklart måste skadan och intrånget ersättas fullt ut.
- Området kan ej användas produktivt på samma sätt = begränsning.
- Min skog, min mark, därför vill jag ha viss ersättning.
- Ersättning för uppkomna kostnader.
- Viss ekonomisk ersättning bör utgå eftersom brukandet av skogen till timmer, virke, massaved, brännved och andra företag förhindras.
- Har ej ekonomisk möjlighet.
- Staten vet inte vad den gör. Statens ersättning för markintrång i Sverige är bara hälften så stor som i utlandet.
- Det ska staten betala eller ännu bättre, avsätta ur sina egna skogar.
- Jag känner ansvar för min egen skogs bevarande. Anser nu staten att jag inte kan sköta den på bästa sätt, så vill jag ha ersättning. Men jag slipper helst inblandning av staten. Jag skövlar inte min skog!
- Om staten beslutar om avsättning måste staten ersätta. Äganderätten är viktig.
- Skogen är kapital vill ha ränta på mitt kapital.
- Pengar kan inte ersätta natur, pengar kan endast brukas en gång - träden växer hela tiden.
- Vill du ge bort din bil till din granne.
- Bevarandet av en gemensam resurs skall inte bekostas av den enskilde.
- Det ekonomiska ansvaret vilar på hela samhället, det kan inte bäras av en liten grupp.
- Svårare vid försäljning.
- Jag är beredd att avsätta utan ersättning mindre arealer om jag är med och bestämmer själv.
- Inte råd.
- Hypotetisk fråga. Det är fråga om vilken del. Bästa produktionsekarna eller blötaste sumpskogen.
- Jag tycker att det ska ligga på statens ansvar.
- Helt ekonomisk.
- Varför ska privata skogsägare avsätta skog utan ersättning.
- Jag har köpt skogsmarken till fullt marknadspris och lånat pengar för att finansierat köpen. Jag behöver ha mina räntekostnader täckta.
- Skogen är en del av min inkomst. Jag förstår inte varför jag ska ge bort något av den.
- Uten ersättning blir det mindre det mindre intresse bland skogseiere og dårliger kvalitet.
- p.g.a. ekonomiska skäl.
- Delvis levebröd. Intrång.
- Samhället bör ta sitt ansvar.
- Behöver pengar.
- Ingen annan gör något gratis.
- Jag vill själv sköta min skog som jag äger. Det blir ekonomisk förlust.
- Även en skogsägare behöver inkomst. Ni som har gjort det här formuläret har säkert inkomst. Men jag fyller i det gratis, eller?

- Eftersom det hela tiden kommer på lagar så anser jag att staten också ska kompensera fastighetsägarna.
- Räcker med den hänsyn vi redan tar.
- Därför att jag har betalt för skogen en gång i tiden. Dessutom avsätter jag skog som jag sedan inte kan använda.
- För tillfället, med tanke på min ekonomiska situation.
- Tycker att alla som har möjlighet att se i naturen skall hjälpa den enskilde så att det kan vara kvar.
- För intrång.
- Skulle våra förebilder i samhället ex. Skandiadirektörer osv göra det?
- Har man betalt för skogen så anser jag att man åtminstone skall få kompensation för den delen.
- Äger för lite.
- Därför att jag måste betala räntor och amorteringar. Sådana saker måste hela samhället ställa upp på.
- Jag vill ha årlig ersättning för att sköta den del som avsätts för naturändamål.
- Intrång i ägande och brukanderätten.
- Skog = investering - skall ge avkastning.
- Det kan inte vara rimligt att avsätta dyrt förvärvat skogsmark på välgörenhetsbasis.
- Eftersom skogen har ett ekonomiskt värde, som tillhör mig, förutsätter jag att en rättvis ersättning utgår för eventuella intrång i min äganderätt.
- Samhället tar in en stor del av min familjs inkomst som skatt. I ett högskatteland vill jag också ha något tillbaka.
- Jag har redan sålt min skog till staten genom naturvårdsverket.
- Biologisk mångfald är samhällets ansvar.
- Om skogen är av värde och jag betalt för skogen ser jag ingen anledning att skänka bort den.
- Det är statens/samhällets ansvar.
- Det blir ekonomiskt bortfall.

### *13.9 Appendix 9, answers to question 30*

- Skötselplanen är bra. Trevligt med en fin beskrivning av fastigheten både historiskt och nutid.
- Det gick snabbt och smidigt. Bra karta. Bra motivering.
- Långsam process. Bristande dialog. Många olika personer involverade. Otydliga besked. Löften bryts.
- Inget strul.
- Nöjd därför att skyddet var och är av stort personligt intresse.
- Dåliga villkor, dålig ek. Ersättning.
- Jag var med i skyddsprocessen.
- Kan inte själv påverka processen.
- Jag fick bestämma själv om jag ville gå med på det. Vet dock ej vad som hänt om jag sagt nej.
- Jag fick bestämma själv om jag ville gå med eller inte.
- Därför att jag är rädd om skogen de är en reserv för en fastighet.
- Att jag gjort min skyldighet och avsatt en bit mark.
- Dålig information.
- För lite delaktighet. Fick strida för rättvis ersättning.

- Hade skött det på ungefär samma sätt som efter skyddsprocessen.
- Information och deltagande är obefintligt.
- Jag kontaktade Länsstyrelsen för markbyte. Funkade bra men det tog ganska lång tid (4 år) att slutföra.
- Att man utan att fråga markägaren mutar in ett område och betalar en viss summa där staten sen tar tillbaka 30 %.
- Skogsvårdsstyrelsen upphörde.
- Pengar.
- Bevarandet av översilningsäng.
- Informationsbrist från myndigheter.
- Skyddandet av trollskogen.
- Jag är inte involverad.
- Det upplevdes som tidigare generationers arbete på fastigheten uppskattades. Personalen från SVS var mycket trevliga och berättade på ett mycket informativt sätt vikten av att skydda denna bit skogsmark.
- Det är ren konfiskation av skog och äganderätt, värre än i kommunistländerna på 40-talet.
- Jag gläds över att området kommer att bevaras orört.
- Ingen mening att ha en skog som man inte får göra något i.
- Låg ersättning.
- Det var inte förhandlingsbart - det var – ”take it or leave it”.
- Jag gläder mig åt att inte skogsindustrin hunnit hugga ner skogen och att jag fått en rimlig ersättning.
- Att skyddet består.
- Sköttes proffsigt och bra.
- Bra diskussioner med SVS.
- Inga oklarheter.
- Den dåliga svenska myndighetskulturen. Beslut tas över huvudena på inblandade. Tvingande. Hot om expropriation.
- Jag tycker att ersättningen motsvarar inte verkligheten.
- All gran borttagen. Stora kalhyggen.
- PGA delaktighet i skyddsprocessen.
- Mycket bra support och stöd från xxx SVS Kristianstad.
- Eftersom allt är nytt så är det bra hittills.
- God dialog og saksbehandling.
- Priset.
- Det har gått smidigt.
- Dålig ersättning.
- God information.
- Att ingen kontakt tagits med mig innan.
- Jag är nöjd, men jag har inte varit i skogen sen jag fick ersättning.
- Kommunens förhållningssätt.
- Samarbetet fungerade.
- Blir fin natur.
- Jag håller med om behovet och valet av område på min mark.
- Jag tog själv kontakt med SVS då min mark finns med på "skogens pärlor".
- Allt har fungerat bra från förslag till beslut om skydd.
- Jag är missnöjd med ersättningen.
- Bra personal.
- Ingen hänsyn till att skogen redan var välskött.



- Processen är fortfarande inte klar, trots att ansökan legat på länsstyrelsens bord i ca 1 år.
- Att skogen är skyddad för framtida exploatering.
- Betalningen skulle varit årsvis.
- Inte tillfrågad.
- Skyddsområdet utvecklas väl.
- Länsstyrelsens agerande. Håller inte vad de säger.
- En öppen dialog.
- Staten har inte rätt att ta min skog.
- Jag kan inte förlika mig med den gällande avtalsformen biotopskydd.
- God information.
- Följer inte självklara marknadsmässiga regler.
- Enkelt.
- Bra information.
- Överhuvudtaget sett.
- Vi fick god information om de skyddsvärda delarna på fastigheten. Samtidigt respekterades vår avsikt att vidta vissa skyddsåtgärder på frivillig basis.
- Vi fick god information om vilka biotoper som borde skyddas och resultatet av processen blev bra.
- Processen har gått snabbt och full enighet föreligger om skyddet.
- Tack vare våra egna ansträngningar att finna bytesmark fick vi till sist en anständig lösning.
- Att skogen ska hållas i bra skick.
- Vi blev överens med SVS var gränserna skulle vara.
- Den ekonomiska.
- Stora värden sparas.

### *13.10 Appendix 10, answers to question 31*

- Information och kommunikation ytterligare förbättras.
- Bättre villkor för markägaren.
- Markägaren skall vara delaktig i beslutsprocessen.
- Bättre information, markägare måste involveras.
- Erfarna skogsägare klarar den biten betydligt bättre än erfarna tjänstemän.
- Mer statliga medel.
- Bättre information och personlig kontakt.
- Bli involverad i skyddsprocessen.
- I samråd mellan ägare SVS.
- Naturvårdsanpassad skötsel.
- Högre ersättningen.
- Förhandlingar - med myndigheten för diverse lösningar ut ifrån personliga omständigheter.
- Myndigheterna bör visa samma ödmjukhet som de kräver av markägarna.
- Bättre ersättning och inte fullt så stränga regler.
- Det är för sent.
- Genom att markägaren själv får gå in och göra en naturvårdsanpassad skötsel.
- Bättre prissättning.
- Markägaren bör vara med.
- Låt SVS som besitter erforderliga fackkunskaper sköta detta.

- Mer personlig kontakt.
- Högre ersättning.
- Ändra sitt makthavarbemötande.
- Slopa länsstyrelsen.
- Bättre kontakt med SVS.
- Respekt och acceptans för de som brukat skogen och skapat de värden som finns där.
- En vettig dialog.
- Ett avtal med årlig ersättning för ett skydd under 30 år där fastighetsägaren kan ha en aktiv roll i att skydda biotopen.
- Större förståelse för markägarens ekonomiska situation.
- Pressar på ett snabbt beslut.
- Betala inte enbart för skogen.

### *13.11 Appendix 11, answers to question 33*

- Dialog och diskussioner under utredning och plan. Av skötselplan. Sämre inf. Efter remissvar (kanske beroende på personalbyte).
- Många sammankomster och möten, men långsam process, fortfarande pågående. Besluten - vem agerar.
- Började med den allmänna inventeringen av biotoper (nyckelbiotoper).
- Utan insyn.
- Fick vara med och titta på vilka delar som skulle vara med och vilka som ej skulle vara med.
- Fick möjlighet att vara med och se vilka delar som skulle vara med.
- Genom SVS.
- Samtal.
- Biotopskyddet kom till på mitt eget initiativ.
- Diskussion via telefon.
- Många personer från SVS genomgick området. Det gjordes upp planer och jag fick hela tiden vara med vid skogsvandringar och min uppfattning efterfrågades.
- Tycka om gränsdragning samt värdering.
- Besök i skogen.
- Fick reda på vad som skulle skyddas kunde påverka kant mot väg.
- Med att skriva under - acceptera det framlagda.
- Skriftväxling.
- Medverkande.
- Jag initierade processen.
- SVS.
- Diskutera mina förslag med SVS.
- Information, rundvandring/visning.
- Endast en presentation av fastighetsregleringen vid ett möte. Svårt att få kartkopior. Inget om skötsel eller t.ex. Biologisk mångfald.
- Svara på om jag ville ha ersättning eller inte.
- Disk. om gränsdragning mellan biotopskydd och avtal samt avtalets bestämmelser.
- XXX förklarade väldigt pedagogiskt ute i skogen vilka naturvärden där fanns och tog god tid på sig att få mig att förstå dessa.
- Genom samtal om vad allt innebar för mig som markägare.
- Diskussion och genomgång på plats.
- Finne områden som var aktuella.

- Utsättning gränser, uppvisning av naturvärden.
- Samtal, korrespondens.
- Gemensam genomgång av området med tjänsteman och ägare.
- Det var ständig kommunikation under hela processen.
- Bestämma lite grann vilka träd som skulle tas med.
- Jag blev tillfrågad vad jag tycker.
- Personal var ute en gång och vi inspekterade området gemensamt.
- Vi fick information kring skyddsprocessen (skriftligt och muntligt).
- Vara med när området gjordes.
- Bra information.
- Jag medverkade.
- Genom samråd med SVS.
- Diskussion kring antal år och ersättning.
- Utformning, gränsdragningar.
- Se ovan, sedan gjorde man en ekonomisk värdering som var "ett faktum".
- Ett möte med rep. Från SVS och länsstyrelsen där skyddet kunde diskuteras och motiveras.
- Bra information och genomgång på fastigheten.
- Jag tog själv initiativet. SVS kände mycket dåligt naturvärdena på min fastighet.
- Personliga kontakter med SVS.
- Har själv varit med om att markera ut området.
- Konsulterad hela tiden från och med den ursprungliga nyckelbiotopskarteringen.
- Bra information och genomgång på fastigheten.
- Bra information före och noggrann genomgång på fastigheten om vad som skulle göras.
- Deltog i inventering, diskussion med SVS i olika faser.
- Eget intresse.
- Kallelse till informationsmöte när beslutet i praktiken redan var taget.
- Naturvårdsverket meddelade att det skulle bli skyddat område.
- Diskussionen.
- Lämnade synpunkter och kommentarer, fick vissa samband förklarade.
- Info från SVS.
- Många egna initiativ.

### *13.12 Appendix 12, additional answers to question 46*

- Certifierad skog.
- Avstått från avverkning av ett skifte som skulle vara intressant att skydda.
- Jag måste använda mig av grannens väg för att komma till min skog på andra sidan av biotopskyddet.
- Jag har kontaktat SVS för vilka åtgärder som skall göras. Men det är inte lika roligt att arbeta med den delen.
- Där skall stämplas före huggning.
- Hade tidigare miljöcertifierat fastigheten.
- Miljövänliga oljor, fordon mm.

### 11.13 Appendix 13, comments to the inquiry and the answers

- Vet inte vad ni menar, vilken skyddsprocess.
- Lätthanterligt formulär. Vill tilläga att fastigheten fortfarande står under utredning, vilket ibland påverkat svaren. Vet ej hur jag skulle svarat på vissa frågor när allt är beslutat.
- Är tacksam att ej behöva delta i fler undersökningar.
- Flera av frågorna svåra att besvara när de inte relateras till vilken typ av skogsmark det är frågan om.
- Det känns som en tillfredsställelse att vi har bidragit med en liten del för att bevara den biologiska mångfalden. Detta tack vare att tidigare generationer sparat gammelskogen.
- Det var femton år sedan jag lämnade driften varför svaren ej är helt pålitliga.
- Om förhållanden före 1997-och senare som ägare (efter avstyckningen) hänvisas till SVS i Kristianstad.
- Det är fel att alla fastigheter skall avsätta areal till naturskydd då det som bör skyddas inte följer fastighetsgränser.
- Om myndigheten planerar att utföra områdesskydd på en fastighet är det viktigt ägaren blir informerad innan åtgärden bestäms.
- Fastigheten är såld 1998.
- I angivna summor ingår värdet av virkesbeståndet.
- Skogsägarna är mycket mottagliga för realistiska råd och anvisningar. Men motståndare till att skogsmark konfiskeras helt enligt öststatsmaner. Jag kommer själv så länge jag lever att bekämpa dylika metoder.
- Jag anser mig inte vara rätt person att svara på många av ovannämnda frågor.
- Marken försåld 1994.
- Jag välkomnar sådana undersökningar, hoppas det ger positiva resultat.
- Förhandlingar om bytesmark för att inrätta nationalpark på 190 ha av min ursprungliga fastighet är för invecklade för att kommentera här.
- Ljöljligt att äga skog men ändå inte. Jag hade bevarat det som är värt någon ändå.
- För liten vikt på de praktiska frågorna som kommer - inte idag - men om 10 år. Att staten tar skatt av ersättningen är en skam.
- Skyddet avser ett alkärr som är mycket sankt. Tillväxten är god men kostnaden för avverkning skulle nog oftast överstiga virkesvärdet.
- Skogen var i dåligt skick på alla vis då vi tog över. Det är vi själva som tagit fram olika biotoper och skyddat dessa.
- Jobbar som entreprenör (maskin) i skogen är mycket insatt i skogscertifiering, tycker det är mycket positivt.
- Förutom nämnda fast. Har jag en annan med c. 7 ha skog.
- Jag tycker nog att ett biotopskyddsområde skall skötas på ett naturvårdsanpassat sätt. Skogen lär nog inte se så bra ut om 20-30 år.
- Skyddsprocessen ej klar.
- Jag har inte varit involverad i denna process och har därmed ingen relevant uppfattning.
- Ersättningen per hektar motsvarar virkesvärdet jag skulle fått om jag avverkat. Framtida tillväxt i skogen uteblir. Man skall ha klart för sig att växelbruk är vad naturen behöver i stället för att ensidigt bevara något. Självfallet skall insekterna också leva, men kanske inte ensidigt på ett så likaleders stort område.
- Svårt att ge en riktig bild av min situation med kryssfrågor. Frågorna på sid.5 är för ledande för att ge en objektiv bild.

- Vi har fått ett skriftligt erbjudande. Vi har skickat tillbaks vad vi kan tänka oss att gå med på ett avtal. Därefter har vi inte fått någon kontakt.
- En del frågor tycker jag konstigt formulerade.
- Det är bra att ni frågar.
- Svårt för mig att svara. Vi sålde av en liten skogslott, jag vet inte om den nu utgör naturreservat. Frågor om ersättning handlar om ersättning för skydd? Inte försäljning?
- Jag skulle se mycket positivt på en förändring av biotopskydd. Årlig ersättning på marknadsmässig grund under förslagsvis 30 år därefter nytt beslut. Skyddet skulle då inte minska värdet på fastigheten och ägaren kunde ges en aktiv roll i skyddet.
- Samhället måste ta större ekonomiskt ansvar för naturvården.
- Föredrar kortare avtalstid med en årlig ersättning.
- Biotopskyddet genomförs under första halvan av 2004.
- Jag vill gärna ta del av undersökningens resultat. Det har tagit mig cirka 1 timme att besvara enkäten.  $250 \text{ personer} * 1 \text{ timme} * 300 \text{ kr/timme} = 75000 \text{ kr}$  i frivilligt arbete.
- Många frågor.
- Jag tycker det är svårt att svara på många av frågorna eftersom jag redan sålt den till Naturvårdsverket för att den skall vara skyddad på något sätt.
- Den biologiska mångfalden får inte bli något akademiskt självändamål. Den måste sättas i relation till bevarande av kulturlandskapet och att uppmuntra friluftsliv för ungdomar. Minska tjänstemannastyret baserat på experter och statistik.