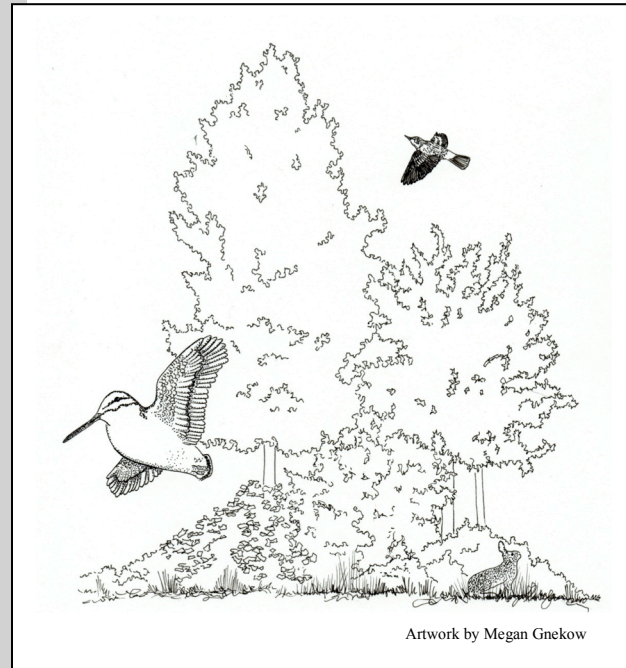

New York's Southern Tier Landowners' Management for Early Successional Forest Habitat: Attitudes, Barriers, and Motivations



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EXECUTIVE SUMMARY

Background

Early successional forest habitats and species reliant on this habitat are in decline in New York State and throughout the Northeast. Shrublands and early successional forest habitats (ESH) can be defined as those sites with persistent shrubs or seedling to sapling-sized trees that are typically a response to some form of disturbance (Litvaitis, 2003). Active forest management can provide ESH in areas where there is no longer sufficient natural disturbance to produce enough ESH for wildlife dependent upon this type of habitat. Even-aged timber management techniques (e.g., group selection or clearcutting) are thought to be one of the most effective means for creating ESH. While the creation and maintenance of ESH is a critical conservation goal on both public and private lands, private lands are a key contributor given that over three-quarters of New York's forests are under private ownership.

Research Objectives

To inform education and outreach that supports landowners who seek to manage for ESH, the New York State Department of Environmental Conservation (NYSDEC) identified a need for research into private landowners' attitudes and behaviors related to ESH. In response, a project Contact Team composed of Cornell University researchers and NYSDEC staff was formed. The objectives for the research project were to:

- 1) Explore the state of knowledge and outreach related to ESH among experts working with private forest landowners.
- 2) Understand private forest landowner behavior, attitudes, knowledge, motivating factors, and constraints for different types of forest management practices on their lands.
- 3) Develop a typology of private forest landowners to inform engagement approaches for early successional habitat management.

Methods

The research focused on the Southern Tier region of New York State, which includes Chautauqua, Cattaraugus, Allegany, Steuben, Schuyler, Chemung, Tompkins, Cortland, Tioga, Broome, Chenango, Otsego, and Delaware counties. This region is heavily forested, and the majority of the forestlands are privately owned. This area was selected because the NYSDEC staff on the ESH project Contact Team determined it to be an area with limited ESH and ample mature forest where ESH could be created through forest management.

A mixed methods research approach incorporated both qualitative and quantitative phases: interviews of 29 professionals who specialize in research, outreach or management of ESH (experts); interviews of 32 landowners and a focus group with 6 landowners; and a mail survey with a sample of 2,500 landowners, of which 43% (n=1,036) responded. Data collection occurred from September 2009 to January 2011. Analyses of landowner responses to the mail survey compare small landowners (10-49 acres owned in the Southern Tier) to large landowners

(50 or more acres owned in the Southern Tier). The landowners were then segmented into 4 types based upon their past and future patch cutting behavior (i.e., “adoption” of the behavior): 1) non-adopters, 2) potential adopters, 3) past adopters, and 4) continuing adopters.

Summary of Results

Interviews with professionals and landowners. Defining ESH and its optimal characteristics for wildlife is a challenge even for professionals in the field. This definitional lack of clarity may impede the systematic achievement of ESH-related goals and objectives, or at least require greater clarification in their articulation. Yet, most experts do think of ESH as part of an ecological process that can be successfully created by people through land management techniques, primarily even-aged silvicultural practices such as clearcutting or patch cutting. This view of ESH and how to create it is not as prevalent among landowners – even among those currently managing for ESH. Far more landowners think of reverting fields when referring to ESH than do experts, and few landowners thought of ESH management as an ecological process. Most of the cutting undertaken by landowners we interviewed was thinning (a type of uneven-aged management that does not tend to result in forest regeneration that creates quality ESH) and not the patch cutting or clearcutting thought by professionals as more effective in creating ESH. Further, some of the interviewed landowners are not cutting at all yet believe their actions will effectively create ESH.

Landowners are largely undertaking ESH management to create wildlife diversity and habitat on their property, and many do this, at least in part, to increase the population of game species of interest. Fewer landowners discussed non-game species of interest on their property. Landowners believe they could be best assisted in their ESH management activities on their land by outreach/education and financial assistance.

Mail survey of landowners. The survey results provided additional information on landowner attitudes, behavior, constraints, and potential programs to encourage forest management for ESH. Approximately one-third of the sample was small landowners (10-49 acres) and two-thirds were large landowners (50 or more acres).

Generally, landowner respondents held more positive attitudes toward mature forest than other land cover types (including ESH types of young forest, shrublands, etc.). In the last ten years, over two-thirds of landowners had cut single trees throughout their property (which does not tend to create ESH), whereas about a third had cut at least ½-acre or larger patches of trees that they then allowed to regenerate (which is more likely to create ESH). Their intentions for future cutting followed this pattern as well: landowners were more likely to cut single trees throughout their property than a patch of trees in the next five years. These behaviors are consistent with landowners’ attitudes. More landowners believed that cutting single trees scattered throughout their land is better for their land and for wildlife than is cutting a patch of trees.

Landowners perceived few constraints to cutting (in general) on their land, with time being the most commonly invoked barrier. Further, many landowners indicated that learning that patch cutting benefits wildlife would increase their likelihood to cut patches of trees on their land as

would receiving financial assistance or tax reduction. Yet, none of the existing information sources for managing one's land for wildlife influence landowners much.

In addition to these general trends that hold true for both small and large landowners, there were some slight differences between small (10-49 acres) and large (50 or more acres) landowners. Most notably, as compared to small landowners, large landowners may be more predisposed to cut trees to create or maintain ESH, and easier to reach with communications or other programs.

Landowners were segmented into four types of patch cut adopters based on their past behavior and likely future behavior: 1) non-adopters (had not conducted patch cuts in the past ten years nor do they intend to in the future; 37%), 2) potential adopters (had not conducted patch cuts but have some intention to do so in the future; 25%), 3) past adopters (had conducted patch cuts but do not have an intention to do so in the future; 5%), and 4) continuing adopters (had conducted patch cuts and have some intention to do so in the future; 23%). For outreach efforts, the greatest result would likely come from targeting potential adopters because they noted some interest in managing for ESH in the future but had not done so in the past. Continuing adopters are likely to continue their current management approach without support; and non-adopters and past adopters are unlikely to pursue management for ESH in the future. For potential adopters, time and money were greater barriers for them than they were for past and non-adopters. Finding a market for forest products, skilled help in conducting ESH, knowledge about ESH, and support for ESH management activities were greater issues for potential adopters than for the other three types. Thus, initiatives aimed at reaching potential adopters should focus on their identified needs of knowledge and advice or financial incentives and equipment related to ESH.

Conclusion

Currently, the majority of landowners do not show a propensity for ESH (particularly the shrublands element of ESH, as opposed to young forest) or the primary cutting approach that creates it (even-aged management). Yet, landowners are not resistant to cutting in general and report few barriers preventing them from doing so. The issue is that they largely believe that cutting single trees scattered throughout their property is better both for their land and for wildlife than is cutting patches of trees. In this vein, many landowners indicate that if they learned that cutting patches of trees benefited wildlife they would be more likely to do so. Additionally, financial support appears to be another means to address barriers identified by landowners to cut patches of trees to create ESH. A segment of landowners who we describe as potential adopters are those most in need of these types of support. The findings of this study can inform future programs to educate private landowners about ESH management and/or identify existing programs that may assist them.

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INTRODUCTION

In eastern forests, a crucial wildlife conservation issue is the decline of early successional forest habitat and associated species (North American Bird Conservation Initiative, 2009; NYSDEC, 2006). Shrublands and early successional forest habitats (ESH) can be defined as sites with persistent shrubs or seedling to sapling-sized trees that are typically a response to some form of disturbance (Litvaitis, 2003). Currently ESH and its obligate species are in decline in the Northeast. Taxa declining due to loss of ESH include plants (Latham, 2003), birds (Dettmers, 2003; Rosenberg & Burger, 2008), mammals (Fuller & DeStefano, 2003; Litvaitis, 1993; 2001); and reptiles (Kjoss & Litvaitis, 2001). Examples of such species include Golden-winged Warbler, American Woodcock, New England Cottontail, and other important game and non-game species.

Managing for ESH: A Need in New York State

The New York State, Comprehensive Wildlife Conservation Strategy (CWCS) highlights ESH as a habitat in need of conservation attention:

Early successional forest and shrubland habitats are also in serious decline throughout the State. Land development is reducing habitat, natural succession is turning many of these habitats into forests, and shrublands are sometimes converted into agricultural fields. A traditional source of shrubland habitat has been the succession of abandoned farm pasture and crop fields into shrublands. The rate of farmland abandonment has slowed from peak rates in the mid-20th century, further reducing the potential for new habitats to form. There is a critical need to increase active management for these habitats and the species that rely on them (NYSDEC, 2006, p. 58-59).

Given the situation in New York, as is true as well throughout much of the northeast, active intervention and management is often promoted to create and maintain sufficient ESH to sustain wildlife populations that rely on it (Brooks, 2003). Active management (e.g., cutting) can provide ESH where restrictions on natural disturbance (e.g., windthrow, beaver flowages, wildfires) limit habitat creation through natural processes. Silvicultural practices vary in their effectiveness for creating ESH. Uneven-aged or selection approaches remove single or small groups of trees. These approaches often do not remove enough of the forest canopy to allow in adequate light for regeneration. In contrast, even-aged management (e.g., group selection or clearcutting), which involves clearing all of the trees in the area, is more likely to result in ESH.

ESH on Private Lands

Although the creation and maintenance of ESH has been identified as a critical conservation goal on both public and private lands, private lands are a key contributor given that 77% of New York's 18.6 million acres of forestlands is privately owned (Butler, 2008). According to Forest Inventory and Analysis data from 1946-1998, most of the seedling-sapling timberland was held in private ownership (Trani, Brooks, Schmidt, Rudis, & Gabbard, 2008). Specifically, New York had 16% of its timberland in seedling-sapling (the average for the Northeastern region as well) with about 90% of this forest type occurring on private lands.

The New York State CWCS emphasizes the role of private landowners in ESH conservation, making the connection to a need for education and outreach:

Perhaps the most serious threat to these habitats and the species that rely on them is the lack of adequate management due to misconceptions about the benefits of sustainable forestry practices for wildlife. Much of New York State's forest lands are in private ownership, making public outreach and education an important tool in addressing this threat (NYSDEC, 2006, p.58-59).

Understanding the Human Dimensions of Private Landowners and ESH

To inform education and outreach that assists landowners' ESH management, the New York State Department of Environmental Conservation (NYSDEC) identified a need for research into private landowners' attitudes and behaviors related to ESH. Research focusing on the human dimensions of ESH is limited (Gobster, 2001). Gobster suggests people's responses to ESH can be predicted from existing research on timber (e.g., the importance of ESH tree species) and non-timber forest products (e.g., uses of berries, roots, etc., from ESH species), visual and aesthetic perceptions (e.g., preferences for large, mature overstory trees with lush understory and open midstory and negative attitudes toward clearcutting), and recreational use. Yet, he argues that our understanding of landowners' decision-making about this habitat and the management activities that create it is incomplete.

Responding to this deficit, Enck & Brown (2006) found that residents of the Great Northern Forest of the northeastern United States generally held positive attitudes toward early successional (defined as "0-20 years" in the survey) and late successional (defined as "100+ years" in the survey) stages of forest. Yet, in comparison, 37% of landowners held attitudes that were more positive toward late successional than early successional stages, and only 12% of landowners held attitudes that were more positive toward early successional than late successional stages. In addition to the more positive attitudinal responses to late successional forest, emotions were more positive towards late successional than early successional forest (Enck & Odato, 2008). Residents in the Great Northern Forest with positive attitudes toward ESH and use of timber management to sustain it also tended to hold positive beliefs about habitat and timber management in general. The authors also found that residents were largely unaware that ESH is declining. Another study on the HD of ESH, conducted focus groups with engaged landowners in the Northeast, suggesting that messaging about a diversity of wildlife requiring a diversity of habitats would be most effective for encouraging management activities for ESH (Case, Seng, & Christoffel, 2009).

Types of Landowners

Linking landowners' ESH-related attitudes and behavior to subsequent behavioral change requires understanding how landowners differ on key characteristics that drive their behaviors. There is little utility in understanding only the average landowner (Tuttle & Kelley, 1981); rather, understanding landowner types can inform programs that seek to influence landowners' forest management intentions and behaviors. Segmentation, or building typologies, helps

researchers and practitioners better understand the breadth of landowners and target programs, messages, and outreach approaches.

One of the first landowner typologies (Tuttle & Kelley, 1981) was based upon wildlife habitat improvement activity adoption -- non-adopters, low adopters, medium adopters, and high adopters. This typology fostered understanding of landowner wildlife management activities. The authors note the value of landowner typologies in educational program development. They argue for a future methodology that splits landowners into groups based on observed or likely habitat management behaviors: actual market (already adopted activities), potential market (receptive to adopting), and nonmarket (unlikely to adopt without large and long-term educational efforts). This approach helps inform programs to both retain those landowners who are undertaking the behavior and recruiting those landowners who may be likely to undertake the behavior. However, this typology strategy (or similar ones) has yet to be applied specifically to ESH management behaviors.

Research Objectives

The primary objectives of this project were defined by the project Contact Team composed of Cornell University researchers and NYSDEC staff as:

- 1) Explore the state of knowledge and outreach related to ESH among experts working with private forest landowners.
- 2) Understand private forest landowner behavior, attitudes, knowledge, motivating factors, and constraints for different types of forest management practices on their lands.
- 3) Develop a typology of private forest landowners to inform engagement approaches for early successional habitat management.

METHODS

This study employs sequential mixed qualitative and quantitative research methods. Mixed methods approaches have been recommended for effective research on private landowners (Bliss & Martin, 1989; Hodgdon, Cusack, & Tyrrell, 2007). Specifically, the suggested sequence for qualitative research and survey (Bliss & Martin, 1989) includes first using interviews to identify core concepts that later are adapted to use in survey instruments. Surveys may also verify patterns across a population and test hypotheses about relationships between concepts. Finally, the survey may also identify subpopulations that can be studied more intensively via subsequent qualitative research.

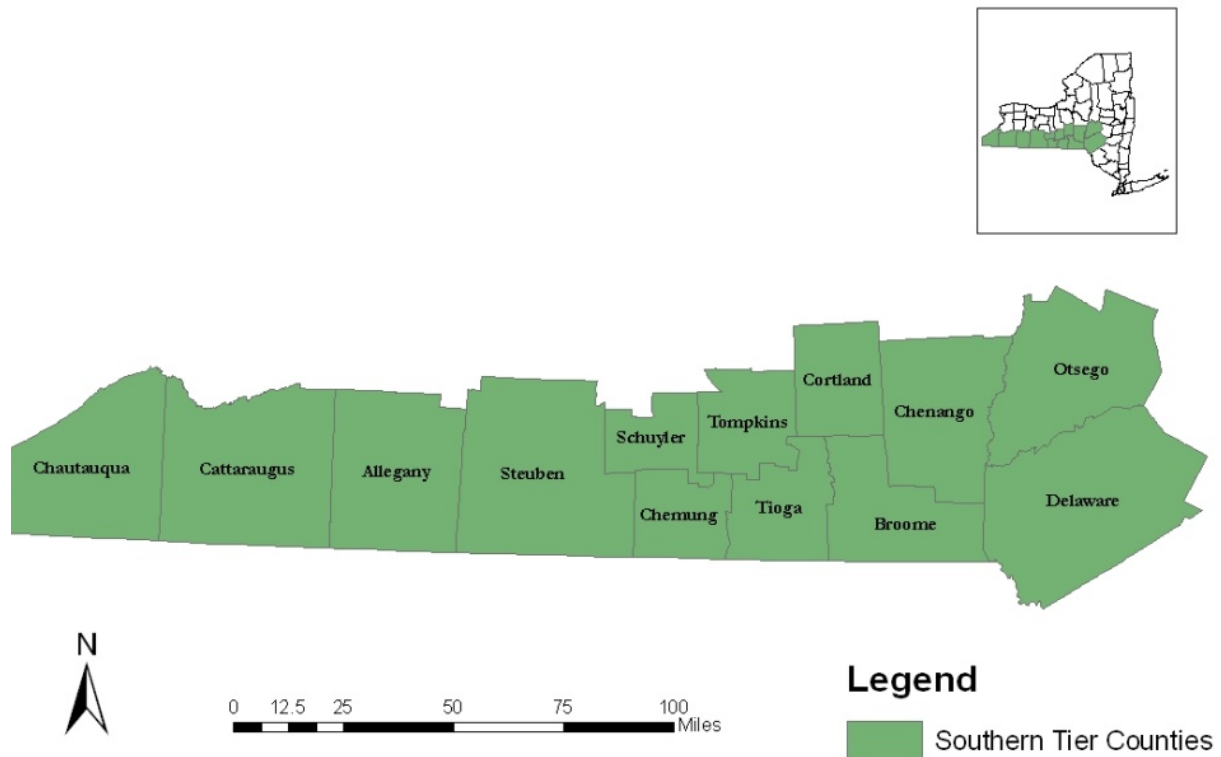
Accordingly, this study first employed qualitative research methods including interviews with subject matter experts – professionals who specialize in research, outreach, or management for ESH. Then the qualitative research focused on landowners, with interviews of landowners experienced in ESH management and a focus group with landowners inexperienced in ESH management. Each of these qualitative steps informed the subsequent stages of research. All of the qualitative findings then informed the design of the questions and response options in a mail survey. All of the phases of research were reviewed, under protocol 1006001472, by the Cornell

University Office of Research Integrity and Assurance and qualified for Exemption from the Institution Review Board.

Study Area

Our research focused on the heavily forested Southern Tier region of New York State. The Southern Tier includes Chautauqua, Cattaraugus, Allegany, Steuben, Schuyler, Chemung, Tompkins, Cortland, Tioga, Broome, Chenango, Otsego, and Delaware counties (see map below). This area was selected because the NYSDEC staff on the ESH project Contact Team determined it to be an area with limited ESH and ample mature forest where patches could be created through forest management. In the exploratory phase of our work, landowner interviews were conducted in the 13 Southern Tier counties as well as the neighboring. Our subsequent mail survey was strictly limited to the 13 Southern Tier counties. Of the forest lands in this region, the majority are privately owned.

Figure 1. New York State’s Southern Tier counties included in this study.



Expert Interviews

We conducted semi-structured interviews with conservation professionals in forestry, extension, and wildlife (n = 29) in fall 2009 to develop an understanding of ESH and associated human dimensions research needs. Experts were identified through snowball sampling, starting with those known to the researchers: members of the New York State Department of Environmental Conservation Contact Team, Cornell Cooperative Extension forestry contacts, and the Conservation Science Department at the Cornell Lab of Ornithology. Additional contacts with experience in early successional habitat (ESH) conservation and/or working with private landowners were identified by the interviewees. Twenty-four interviews were conducted on the telephone, and five were conducted in person.

The interview questions (Appendix B) explored professionals' knowledge of ESH management needs and approaches, perceived challenges to such management, guidance for subsequent human dimensions research with private landowners, and existing outreach tools and resources.

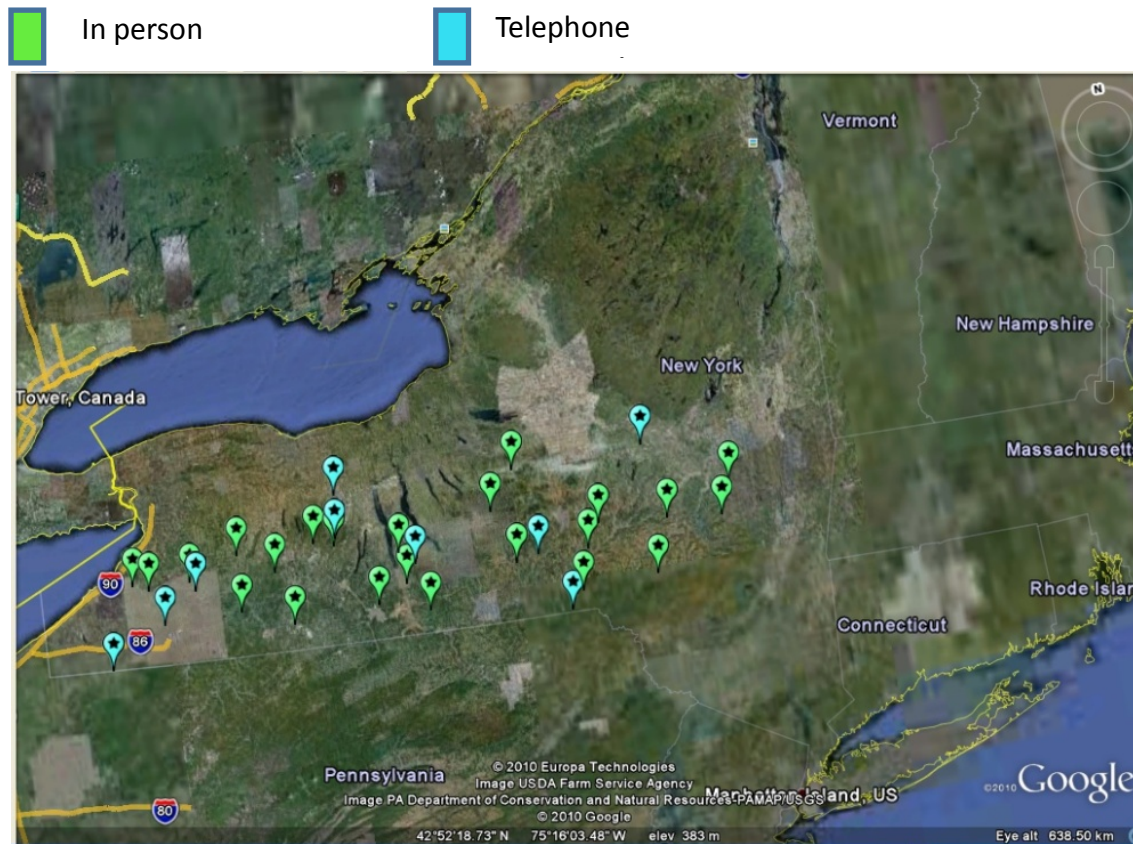
The responses to the questions were typed by the interviewer while the interview was being conducted. Data analysis was conducted using Atlas TI, through the process of thematic coding, where codes are identified and defined by reading the interview transcripts.

Landowner Interviews & Focus Group

To better understand the experience of those who were undertaking ESH activities on their land we conducted semi-structured interviews with 32 landowners in the Southern Tier or surrounding counties of New York State. These landowners reported they had experience managing for ESH. Because the expert interviews emphasized understanding landowners' attitudes and knowledge as a need for human dimensions research, we addressed the beliefs, attitudes, norms, and behaviors expressed by these individuals who had adopted ESH management. We were also interested in their perceived barriers for ESH management, support they received for management, and perceptions of other landowners' forest management behavior.

We recruited interviewees via a listserv announcement distributed to NY Master Forest Owner volunteers, NY Forest Owners Association members, members of Audubon chapters in New York, Natural Resource Conservation Service's program participants in ESH-related programs in Western NY, and National Wild Turkey Federation members. Our email recruitment included a request for individual, family, or club landowners who manage for ESH (defined as areas with grasses, shrubs, and up to small trees) on their property. Twenty-two interviews were conducted in person and ten were conducted via the telephone (see Figure 2 for locations of each type of interview). Interviews were conducted during spring 2009.

Figure 2. Map of landowner interviewees' land locations.



A semi-structured interview approach followed a relatively standardized protocol (Appendix B) with some flexibility for additional prompts, allowing us to pursue some question areas with greater depth. The questions addressed how landowners initiated ESH management activities on their land, their perceived support in this process, their management activities, and their likelihood of continued engagement. Our interviews explored the role of wildlife in landowners' goals for their land, their motivations for investing in wildlife habitat management, and their perceived challenges and successes. The interviews were digitally audio-recorded and later transcribed. Qualitative analysis of the interviews was conducted with thematic coding using Atlas Ti. Following the interviews, the landowners who wished to take the researcher on a walk of their property did so. On these walks, landowners showed the interviewer the ESH management activities they had undertaken on their land and explained their management strategies and outcomes. The interviewer also took photographs when permission was granted to do so. While the woods walks components were not analyzed, seeing the land and learning more from landowners in a casual setting provided the researcher with a deeper understanding of the property and the circumstances, allowing more information for thematic code development.

To better understand private landowners who are **not** currently managing for ESH but may have a propensity to do so, we conducted a focus group with those who own over 10 acres of woodland in New York and have an interest in wildlife, but who are not currently managing for ESH. The focus group was conducted at the New York State DEC office in Cortland, New York

(Cortland County) on July 22, 2010 from 7:00-8:30pm. We recruited participants through an email request to Audubon New York local chapters, Cayuga Birder listserv, Finger Lakes Land Trust, Ruffed Grouse Society, National Wild Turkey Federation, and Quality Deer Management Association. In exchange for participation, we offered wildlife and forest management printed manuals and brochures to participants. At the focus group we offered refreshments. Six people participated.

The focus group emphasized questions related to landowner participation in forest management and wildlife management on private lands (including activities as well as motivations and attitudes/value orientations that lead to them), perceived barriers to participation in ESH management and attitudes towards the role of private lands in wildlife conservation (Appendix B). We also asked about preferred sources and types of information and interest in outreach program participation. The focus group discussion was digitally audio-recorded and transcribed.

Landowner Mail Survey

Sampling

We conducted a mail survey of a stratified random sample of landowners in the Southern Tier of New York. The study population was defined as landowners of parcels of at least 10 acres of land in one of the thirteen Southern Tier counties of our study area. The project team determined that 10 acres should be the minimum criteria for property ownership size given current New York State DEC policies for forest management support. We drew our sample from tax code records obtained from the New York Department of Taxation and Finance Office of Real Property (ORP) Tax Services.

Past research has found that the amount of forested land owned influences forest owner attitudes, behaviors, and intentions (Butler, 2008). Accordingly, we sought to ensure that our sampling approach would provide us with an adequate number of responses from landowners of various size forests. Specifically, we drew our sample from two sampling frames to ensure large ownerships would be adequately represented. According to Butler (2008), 63% of NY woodland owners own a total of 1-9 acres; 28% own 10-49 acres; 6% own 50-99 acres; 4% own 100-499 acres; less than 1% own 500 acres or more. Thus, private forest ownership in New York State is disproportionately weighted toward people with small landholdings. To ensure an adequate number of large landholders in the sample, we created two distinct sampling frames based on parcel size: those who owned parcels of 50 acres or more in addition to those who owned parcels of 10-49 acres. From each sampling frame, we mailed surveys to 1,250 potential respondents (2,500 total).

We limited the selection of questionnaire recipients to parcels with Office of Real Property (ORP) tax codes that might include private forest landowners. We included land defined as agricultural vacant land (105), rural residence with acreage (240), primary residential, also used in agricultural production (241), estate (250), seasonal residences (260), rural (320), abandoned agricultural land (321), residential vacant land over 10 acres (322), and other rural vacant lands (323). We also included land designated as private wild and forest lands except for hunting and fishing clubs (910), forest land under section 480 of the real property tax law (911), forest land

under section 480-a of the real property tax law (912), and private hunting and fishing clubs (920). For our sample of landowners with parcels of 50 or more acres we also included lands defined by additional agricultural property codes, including livestock and products (110), dairy products (112), cattle, calves, and hogs (113), sheep and wool (114), other livestock: donkeys and goats (116), horse farms (117), and field crops (120). We included these additional agricultural lands for larger parcels given that agricultural lands in New York often have woods on a large portion of their land (USDA, 2007)—up to 50% if part of this tax code. Thus, for the larger parcels, a substantial acreage could be woods (25 acres or more). For a more complete explanation of how properties within these codes are defined, see <http://www.orps.state.ny.us/assessor/manuals/vol6/ref/prclas.htm>. We excluded properties that were business names, given our interest in individual or family forest owners.

Survey design and measurement

The mail survey instrument (Appendix B) examined landowners' behavioral intentions and past behavior (across all parcels of their land) to create a patch cut (of at least ½ acre) or conduct thinning – to compare even-aged and uneven-aged management. The former tends to lead to ESH, and the latter does not. The study team was interested in comparing these two types of behaviors. The survey instrument also measured indicators of behavior, attitudes, knowledge, motivations, and constraints for forest management practices described above. Before being finalized, the survey instrument was reviewed by the project Contact Team members, other natural resource social scientists, and landowners.

Data collection

Data were collected from November 2010 to January 2011 using mail-back questionnaires following a modified Tailored Design Method approach (Dillman, Smyth, & Christian, 2009) consisting of four mailings: cover letter and questionnaire, reminder postcard, cover letter and replacement questionnaire, and reminder postcard. One to two weeks passed between each of the mailings.

In total, 1,036 individuals responded to the survey (521 from the 10-49 acre strata; 514 from the 50 acre or more strata). After accounting for undeliverable surveys, the overall response rate was 43% (44% response rate from owners in the strata of 10-49 acres and 43% from owners in the strata of 50 acres or more).

Telephone Survey Non-response Bias Check

A telephone survey non-response check was administered by the Survey Research Institute at Cornell University (SRI) to a random sample of 50 non-respondents from each stratum in an effort to identify any non-response bias. The telephone survey included a subset of items from the mail survey to compare respondents and non-respondents. If the two groups differed substantially, then it would be necessary to weight the mail survey data to ensure it would be representative of the population. A list of 1,322 non-respondent names and addresses was provided to SRI; 645 of these records were identified as part of the 10-49 acres stratum and 677 were part of the 50 or more acres stratum. SRI identified non-respondent telephone numbers using whitepages.com. This search yielded telephone numbers for 250 members of the sample.

Data collection was conducted from January 11 to January 16, 2011. A total of 100 interviews was completed (50 in each group).

Analysis

Analysis was conducted using SPSS 19.0. Frequencies and means were calculated for each item (see Appendix A). Means for large and small landowners were compared using independent sample t-tests and Chi-square. Significant differences between the groups at the $p < .05$ are noted. To design the landowner typologies based on adoption behavior, we assigned participants to one of four categories based upon current behavior and future behavioral intentions: (1) those who have not conducted patch cuts in the past and have no likelihood of doing so in the future [non-adopters]; (2) those who have conducted patch cuts in the past but have no likelihood of doing so in the future [past adopters]; (3) those who have not conducted patch cuts in the past but report at least a “slight” likelihood of doing so in the future [potential adopters]; and (4) those who have conducted patch cuts in the past and report at least a “slight” likelihood of doing so in the future [continuing adopters]. Means for adopter types were compared using one-way ANOVAs with Dunnett’s T3 pot-hoc comparison. Significant differences between the groups at the $p < .05$ are noted, as well as which groups are different from each other.

RESULTS

Expert Interviews

Interviews conducted with 29 experts (as described earlier) provided insight into the state of knowledge and outreach related to ESH.

Knowledge of ESH

Definition of ESH. Experts we interviewed primarily defined ESH as part of the ecological process of regeneration or succession, often mentioning a specific stage or phase (Table 1). For example, one expert explained: *“Any type of habitat that requires disturbance in order for the habitat to be maintained over time.”* Some references were more detailed, as another expert explained: *“Concepts of ecological succession...where after significant disturbance you have transition of one type of habitat to another. A gradient, a seamless transition. In NY, start at the beginning: bare soil, forbs and grasses, herbaceous species, then woody, then mature trees, and then climax forest. Then the climax forest would have disturbance and open habitat--could be a large disturbance (hurricane or fire)--and then start over.”* Interviewees also frequently equated ESH with a named habitat type, such as grasslands or shrublands, or the type of vegetation in it (e.g., woody growth, shrubs).

Despite the common characteristics of the definition, some experts acknowledged that ESH is challenging to define. The least frequently mentioned aspects of the definition included the tree size (e.g., within a certain diameter at breast height [DBH]), the wildlife found in ESH, the age of trees in ESH, and the amount of canopy cover.

Table 1. Themes for experts' definition of early successional habitat (n = 26).*

| | |
|-------------|-----------------------------|
| <i>Most</i> | Ecological process (19) |
| | Habitat type (14) |
| <i>Some</i> | Vegetation type (12) |
| | Defining is a challenge (9) |
| | Management approach (8) |
| <i>Few</i> | Canopy cover (5) |
| | Tree age (5) |
| | Wildlife (4) |
| | Tree size (3) |

*Ordered by frequency of number of experts mentioning theme.

Optimal Characteristics of ESH for Wildlife. Experts commonly referenced a diversity of wildlife and vegetative species as part of the optimal characteristics of ESH for wildlife (Table 2), such as: *“For wildlife in general...diversity of species composition (forbs, grasses, shrubs, young trees) and also having diversity of species structure (low lying vegetation to those that are more structurally solid). To give a broad base of species in the habitat they need from ground nesting birds to those that nest up higher.”*

Despite the prevalence of this theme, most experts also explained that it was a challenge to answer this question. They explained that it depends on the particular wildlife species managed for, such as *“Habitat specific, species specific...depending on where are in the state. What works for Bobwhite Quail in southern part of state, won't work for Woodcock or Brown Thrasher....”* The challenge may come from differences in property characteristics instead, as one expert explained: *“Every property is different. ‘There isn't one magic formula,’ I tell landowners.”*

Other characteristics included structural diversity (i.e., horizontal and vertical forest stand structure), a planned approach to management (including a management plan to attract desired wildlife or management that includes rotation for ESH), pioneer tree species, habitat needs (e.g., food and cover), and native vegetation (as opposed to exotic).

Table 2. Themes for experts' perceptions of the optimal characteristics of ESH for wildlife (n = 25).*

| | |
|-------------|---|
| <i>Most</i> | Diversity of wildlife & vegetative species (15) Depends on wildlife species (13) Challenge to answer (13) |
| <i>Some</i> | Structural diversity (7) |
| <i>Few</i> | Planned management (6) Pioneer tree species (6) Habitat needs (food, cover) (6) Native species (5) |

*Ordered by frequency of number of experts mentioning theme.

Creation or Maintenance of ESH

Success in Creation or Maintenance of ESH. Our expert interviewees primarily identified successful ESH with specific techniques used for its creation, most commonly some type of cutting and less commonly natural means of regeneration or burning. References to cutting sometimes referred to the equipment itself, as this expert stated: *“Hydroaxes, chainsaws, heavy equipment. You can only do so much if just chainsaws. Bigger equipment is more effective to get more land.”* Many experts seemed to believe that cutting was a simple way to success with assured results: *“If you do cutting, species will come.”*

Expert interviewees also frequently mentioned the role of financial underpinnings of ESH success on private lands (through incentives or markets), as one expert stated: *“Landowners listen when you pay. There are two kinds of landowners...those who own 25 acres or less for their own enjoyment (hunting, recreation, small food plot but not primary source of income) and those with more land who use as primary source of income and can make money with rental, grow beef, hay, sheep, etc. Since it's their primary income, they need to make money to do this work on their land.”* Additionally, species-specific approaches and forest planning were often-mentioned ingredients for success (Table 3).

Table 3. Themes for experts' perceptions of what leads to successful creation of ESH (n = 27).*

| | |
|-------------|--|
| <i>Most</i> | ESH creation techniques (21) |
| <i>Some</i> | Economics of ESH (10) Species specific (10) Forest planning (10) Support landowner (7) Management (7) |
| <i>Few</i> | Awareness and attitudes of ESH (5) Habitat needs (3) Agency involvement (2) Demonstration (2) Easy (1) |

*Ordered by frequency of number of experts mentioning theme.

Challenges to ESH Creation. Experts overwhelmingly believed landowner knowledge deficits and attitudes impeded ESH creation (Table 4). They emphasized the challenge of landowners' perceptions of the appearance of ESH and clearcutting, as an expert stated: *“Getting people past the initial visual impact from a cut forest. We have more mature forest in the East than we’ve ever had. But it is the big one [challenge]. Emotional response to the timber industry is pitiful. Visual, emotional attachment.”* Experts felt landowner knowledge was lacking related to how ESH management will turn out, how to manage for it, and what makes a healthy forest. One expert explained: *“It is a struggle to get landowners to cut; current mindset is it is best to leave land.”* Similarly, another noted: [Landowners are] *“loathe to cut anything. Cut a tree, kill a chipmunk.”* Economic challenges were also referenced by many experts, including landowner costs of management maintenance, or the lack of a financial market for wood products.

Table 4. Themes for experts' perceptions of the challenges to ESH creation (n = 27).*

| | |
|-------------|---|
| <i>Most</i> | Landowner knowledge and attitudes (21) |
| <i>Some</i> | Economic (11) Ecological (7) Management (7) |
| <i>Few</i> | Communication (5) Spatial landscape (2) |

*Ordered by frequency of number of experts mentioning theme.

Human Dimensions Research Needs

Needs for ESH Research. Expert interviewees identified many human dimensions research needs, reflecting their perception that people’s attitudes and lack of knowledge were the greatest challenges to ESH conservation. The human dimensions research needs most commonly referenced landowner attitudes (Table 5), including attitudes towards aesthetics of ESH, the amount of land a landowner is willing to have as ESH, clearcutting, ESH management activities, the necessity of ESH management activities, the wildlife agency, neighbor cooperation, preservation vs. conservation, and types of wildlife species. Also perceived as lacking was research on persuasion and attitude change mechanisms to encourage ESH management. Experts tended to believe that if the attitudes of landowners were better known, then communications with landowners about managing for ESH would be enhanced. One explains: *“If we could find out the root problem or concern that landowners have that would be behind why they don’t like brush or why they think a cut looks bad or why they think it would hurt species, then it would be easier to talk about how ESH benefits species.”* Experts also commonly discussed the need to study landowner knowledge, including knowledge of clearcuts, forests, management activities and wildlife and their habitat needs.

Table 5. Themes for human dimensions research needs (n = 22).*

| | |
|-------------|--|
| <i>Most</i> | Landowner attitudes (21) Persuasion (14) |
| <i>Some</i> | Landowner knowledge (11) Priorities for property (10) Constraints to behavior (9) Incentives (8) Source of Information (6) |
| <i>Few</i> | Best management practices (5) Non-landowner groups (4) Economics (4) Evaluate effects (3) Expectation of results (3) Differences of types of Landowners (2) Landowner norms (2) |

*Ordered by frequency of number of experts mentioning theme.

Summary

Experts we interviewed largely considered ESH to be part of an ecological process. Yet, many also found it challenging to define. Similarly, while the optimal characteristics included a diversity of plants and wildlife, experts tended to find optimal characteristics difficult to articulate because what might be considered “optimum” depends on particular management

objectives. Many believed there are well-established creation techniques for creating ESH, with cutting being the most successful mechanism. Yet, they also found forest planning, financial gain, and species-specific goals to be critical to successful creation and maintenance of ESH. The greatest challenge was believed to be landowner knowledge and attitudes. In this vein, the greatest human dimensions research need expressed was better understanding of landowner attitudes and how to influence them.

Landowner Interviews & Focus Group

Interviews were conducted with 32 landowners who self-identified as currently managing for ESH. Additionally, a focus group was conducted with a group of six landowners who did not identify as managing for ESH.

Landowner Interviewee Characteristics

The landowner interviews provided insights into the common characteristics of those managing for ESH on their lands. It should be noted that site visits to approximately two-thirds of these properties revealed a broad range in the extent of ESH management including clearcuts with successful, extensive regeneration, leaving fields to regenerate with limited success, and thinning with limited regeneration. Thus, landowners engaged in ESH management represent a spectrum from those undertaking a great deal of active management to those with passive management.

Proximity to Woodlot. More than half of the landowners we interviewed lived on their land. Very few considered themselves to live there part of the year or seasonally. The remaining respondents were absentee landowners that did not live on their land.

Goals and Priorities for Woodlands. Landowners overwhelmingly described wildlife habitat as a goal or priority for their woodlands. As one landowner explained, *“Well, my number one goal is to make it more sustainable for the habitat. Naturally, I’m a hunter so I want the land to be as healthy and productive as it can be to fostera good mix and healthy herds of animals, whatever’s there. There’s a pretty good mix there now, so I want to do what I can to make it better and promote the birds and small game and big game to live there.”* Also cited frequently as a goal were timber products to sell. This goal was often linked to the desire for financial gain as another landowner articulated: *“Obviously I want to try to manage the timber as well so I can, you know, get that kind of financial aspect.”* Additional goals of importance to landowners were hunting or fishing, outdoor recreation not associated with wildlife, farming, forest products other than timber, and activities to improve the land (Table 6).

Table 6. Landowners' goals for their woodland (n = 32).*

| | |
|-------------|--|
| <i>Most</i> | Wildlife habitat (23) |
| <i>Some</i> | Timber products to sell (15) Hunting or fishing (9) |
| <i>Few</i> | Non wildlife-related recreation (8) Farming or agriculture (6) Non-timber forest products (4) Improvement (4) General recreation (3) Demonstration (3) Experiential learning (3) Pass off to heirs (3) Timber products for family use (3) Maintaining the land (2) Wildlife observation (2) Bird watching (1) Enjoy the scenery (1) Investment (1) Land conservation (1) Solitude (1) |

. *Ordered by frequency of number of experts mentioning theme.

Outdoor Recreation. Landowner interviewees revealed the types of outdoor recreation they engage in on their woodland and elsewhere. Hiking was most common followed by hunting. A large portion of the landowners also referred to their land management activities as recreation. The remaining array of activities was undertaken by a small number of landowners (Table 7).

Table 7. Landowner outdoor recreation activities (n = 32).*

| | |
|-------------|---|
| <i>Most</i> | Hiking (20) Hunting (17) |
| <i>Some</i> | Land management activities (12) |
| <i>Few</i> | Fishing (8) Wildlife watching (8) Other (7) Skiing/snowshoeing (7) Camping (5) Canoeing/kayaking/rowing (4) Off-roading (3) Educating (3) Learning (3) Swimming (3) Birdwatching (2) Photography (2) Snowmobiling (1) Horseback Riding (1) |

*Ordered by frequency of number of experts mentioning theme.

Incentives or Easements for Property. Less than half of our interviewees participated in incentive programs or had easements on their properties. Landowners participated in an array of Natural Resource Conservation Service programs and general, unnamed tax incentive programs (Table 8). Yet, no single program had more than a few landowners participating. Even more notably, the majority of these incentives and easements are not specifically targeted toward ESH.

Table 8. Landowner participation in incentive and easement programs (n = 32).*

| | |
|------------|--|
| <i>Few</i> | Incentive: Wildlife Habitat Incentives Program (4) Incentive: Forest Land Enhancement Program (4) Incentive: Stewardship Incentive Program (3) Incentive: Environmental Quality Incentives Program (3) Tax break: 480A (3) Incentive: Other (2) Incentive: Unnamed cost sharing program (1) Incentive: Conservation Reserve Program (1) Incentive: Landowner Incentive Program (1) Incentive: Unnamed timber stand improvement (1) Incentive: Unnamed watershed forestry program (1) Incentive: Unnamed wildlife habitat (1) Tax break: Other (1) Tax break: Write off expenses (1) Wind (1) Gas (1) Agricultural easement on taxes (1) Oil (1) |
|------------|--|

*Ordered by frequency of number of experts mentioning theme.

Types of Wildlife on Property. When asked what types of wildlife they have on their property, all landowners mentioned at least one game animal but not all landowners mentioned at least one non-game animal. Many landowners named species that are ESH specialists. Yet, it is notable that ten landowners did not name any species on their property that are ESH specialists despite these landowners self-identifying as managing for ESH on their lands. This lack of ESH wildlife mentioned may partially be due to the variability in the extent of ESH management witnessed on these properties during the site visits.

Landowners and ESH

Definition of ESH. Landowners interviewed most commonly defined ESH according to some type of vegetation, such as a tree or bush species (Table 9). Following that, many landowners referred to an old field or an abandoned field or a field regenerating on its own. As a landowner explained, “...it would be abandoned farmland, so it would be open, and it would slowly revert to something like brushy and early successional pioneer species of trees. And where that ends up is driven by further manipulation and the constituent species that are involved.” Some landowners also referred to the type of management activity needed to create ESH. There was also recognition among some landowners that ESH is part of an ecological process and reliant on disturbance. These references tended to be less technical than those of the experts, such as this quote from another landowner: “And it’s a natural progression of very small things getting a little bigger, and then they overtake. And then the small things are dying out into the medium range.”

Table 9. Landowners' associations with the term ESH (n = 32).*

| | |
|-------------|--------------------------|
| <i>Most</i> | Vegetation type (20) |
| <i>Some</i> | Field (15) |
| | Management approach (10) |
| | Ecological process (9) |
| <i>Few</i> | Canopy cover (8) |
| | Tree size (7) |
| | Wildlife type (6) |
| | Tree age (5) |
| | Habitat type (2) |

*Ordered by frequency of number of experts mentioning theme.

Activities for ESH. Landowners discussed various management activities that they undertake that they believe create ESH (Table 10). The activities mentioned by the greatest number of landowners were thinning and planting, followed by brush-hogging and mowing. Few landowners referred to clearcutting, removing invasive plants, or letting fields revert. Building brush piles, hinging/girdling trees, bulldozing, creating enclosures to protect young growth from deer or tubing young trees, and releasing apple trees by cutting competing trees and shrubs were also mentioned.

Table 10. Landowner ESH management techniques (n = 31).*

| | |
|-------------|--|
| <i>Some</i> | Thin (13) |
| | Plant (12) |
| | Brush-hog/mow (11) |
| <i>Few</i> | Remove invasives (6) |
| | Clearcut (6) |
| | Natural processes/Letting field go (6) |
| | Build brush piles (5) |
| | Hinge/girdle (4) |
| | Bulldoze (2) |
| | Create enclosures (2) |
| | Tree release (1) |

*Ordered by frequency of number of experts mentioning theme.

Landowner Interest in ESH. Landowner interviewees explained why they want ESH on their land and what they are trying to achieve. Most were doing so to maintain or enhance wildlife diversity and habitat on their land. A landowner explained his understanding of ESH as a need for wildlife: “Well, you know, wildlife needs that variety. That’s the biggest thing. It needs the variety of different ages of forest, let me put it that way. So that’s what we’re trying to maintain here.” The next most prominent response was to attract wildlife to hunt. Another landowner

linked the habitat needs with attracting wildlife for hunting: “*Nesting, food, cover, yeah. And you know obviously attraction for, for hunting.*” (Table 11).

Table 11. Landowner motivations for ESH on their land (n = 28).*

| | |
|-------------|------------------------------------|
| <i>Most</i> | Wildlife diversity/habitat (20) |
| <i>Few</i> | Attract wildlife to hunt (6) |
| | Aesthetics (4) |
| | ESH belongs (4) |
| | Enjoyment/place to walk around (3) |
| | Forest product income (2) |
| | Unintentionally occurred (2) |
| | Attract wildlife for watching (1) |
| | Doesn't want ESH (1) |
| | Improvement of woodland (1) |

*Ordered by frequency of number of experts mentioning theme.

Where Landowners First Heard About ESH. When asked about how they first learned about ESH, landowners most commonly mentioned some type of literature or written material. They also named a variety of non-profit organizations and universities as their sources —more commonly than they named a government agency. Other responses given are shown in Table 12.

Table 12. Landowners' information sources where first heard about ESH (n = 32).*

| | |
|-------------|------------------------------------|
| <i>Some</i> | Literature (15) |
| | NGO (12) |
| | University/College (12) |
| <i>Few</i> | Government organization/Agency (8) |
| | Exposure (7) |
| | School (5) |
| | General classes/seminars (3) |
| | Other landowners (3) |
| | None (2) |
| | Web-based (2) |
| | Private wildlife consultant (1) |
| | Rural Landowner Workshop (1) |
| | Television program (1) |
| | Listserves (1) |

*Ordered by frequency of number of experts mentioning.

Barriers to ESH Management. The majority of landowners we interviewed perceive at least some barriers to engaging in ESH work, while a number do not perceive any barriers. Among barriers most commonly mentioned were the physically challenging nature of the work,

difficulty controlling results, and lack of time (Table 13). Financial and technical (money or equipment) barriers were mentioned less often.

Table 13. Landowner barriers to ESH management (n = 31).*

| | |
|-------------|----------------------------|
| <i>Some</i> | None (11) |
| | Physically challenging (8) |
| | Control (8) |
| <i>Few</i> | Time (7) |
| | Money (5) |
| | Decision-making (3) |
| | Equipment (3) |
| | Difficult to get help (2) |
| | Long-term results (1) |

*Ordered by frequency of number of experts mentioning theme.

Agency Support of ESH. Landowners expressed many ideas for how agencies might support them in creating ESH. The most prominent response for how agencies could support landowner creation of ESH was outreach and education (for example, ESH specific information, expert advice), followed by financial assistance (including tax breaks and incentives). Many additional ideas surfaced from just a few landowners, such as labor or equipment or recognition (Table 14).

Table 14. Potential agency actions (n = 32).*

| | |
|-------------|---------------------------------|
| <i>Most</i> | Outreach and education (17) |
| <i>Some</i> | Financial assistance (14) |
| <i>Few</i> | Labor (3) |
| | None (3) |
| | Learning about programs (3) |
| | Knowledgeable professionals (2) |
| | Equipment (1) |
| | Help finding a forester (1) |
| | Encouragement (1) |
| | Recognition (1) |
| | Resources in one place (1) |

*Ordered by frequency of number of experts mentioning theme.

Landowner Focus Group

We faced a challenge in recruiting landowners that were not participating in ESH management to participate in focus groups. The landowners who responded tended to have more knowledge and experience with ESH (although not all of them), despite our recruitment letter calling for those without experience. Additionally, we sought an even mix of hunters and wildlife watchers but

only one member of the focus group was not a hunter. Thus, our focus group provided us with minimal additional insights beyond what we found in the landowner interviews (as the characteristics of the participants are not dissimilar to the interviewees) and thus we did not conduct extensive analysis of the focus group data.

We highlight here a few useful insights from the focus group as to how landowners not engaged in ESH management might differ from those that are purposively managing for ESH. First, we learned that those who are not managing for ESH may include those who recently moved to the Southern Tier from the New York City metro area, those who believe their land is too small; those who are more interested in the quick returns in attracting wildlife that food plots can offer; those who are so informed that they are reluctant to take action as they believe that results may be compromised by poor regeneration or invasive species; or those who are still gathering information and likely to act soon. Second, ESH did not tend to be called such by this group. Instead, it was referred to as “browse”, “shelter”, or “edge”. Third, the barriers to ESH management that they referenced were similar to what we had heard from the landowner interviews: cost, equipment, time, advice, education, and attitudes. We did hear an additional barrier of not having enough land to manage for ESH. Fourth, their information sources were also similar to the landowner interviews but with more of an emphasis on resources at Cornell University. The information sources they cited were web, email, written materials, landowner workshops, timber companies, Cornell Cooperative Extension, the NYSDEC, Cornell Lab of Ornithology, Cornell Vet School, and conservation organizations.

Summary of Interviews and Focus Groups

In review, qualitative research with landowners revealed that those who believe they are conducting ESH vary greatly in the extent to which they are actually doing so. While cutting is their primary activity to create ESH, it is often limited thinning, rather than cutting approaches (in patches or clearcuts) that experts believe succeeds in creating ESH. Further, many landowners who are not cutting nevertheless believe their actions will create ESH. Also divergent between landowners and experts is the definition of ESH, which is much more technical for experts and much more focused on vegetation type and old fields reverting for landowners. Landowners we talked with are largely undertaking ESH management to create wildlife diversity and habitat on their property. Many of these landowners—even among those currently participating in ESH management—experience some barriers to ESH management. Landowners believe they could be best assisted by outreach/education and financial assistance, even though participating landowners do not themselves experience these as important barriers.

Landowner Mail Survey Results

Landowner Profile

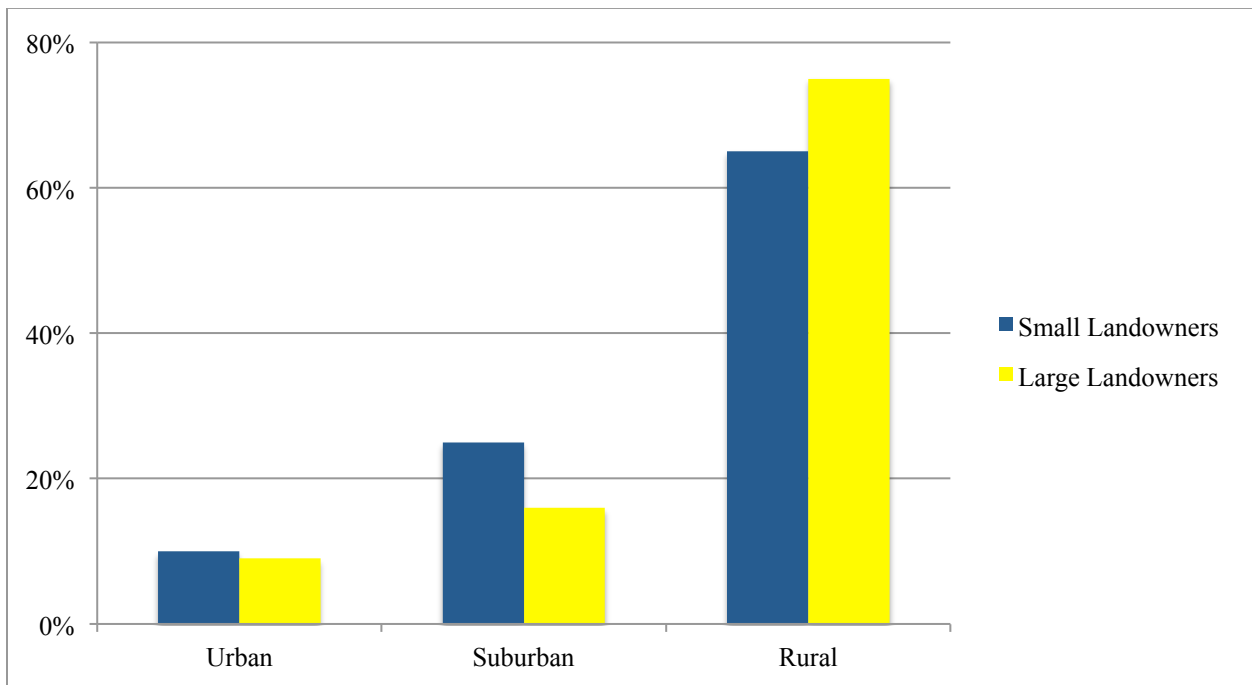
Thirty-three percent of responding landowners (n= 343) owned 10-49 acres in total (across all parcels owned) in the Southern Tier (“small landowners”), while 67% (n = 686) owned 50 acres or more (“large landowners”). Given that landowners’ reported parcel sizes did not always correspond to the sampling strata (i.e., 20% of those from small size strata did not report owning a parcel under 49 acres) and many landowners owned multiple parcels, landowners were

reassigned to groups for analysis based upon their reported total acreage from the survey. The average acreage owned for small landowners was 25 acres, compared to 175 acres for large landowners. More small landowners owned only one parcel in the Southern Tier (83%) than large landowners (60%). Only 13% of small landowners owned two parcels and another 4% owned three or more parcels. In comparison, 21% of large landowners owned two parcels, and 19% owned three or more parcels.

Small landowners had owned their land (averaged across all parcels) for an average of 19 years, while large landowners had owned their land an average of 25 years. More of the large landowners lived on at least one of the parcels they owned in the Southern Tier (62%) than the small landowners (53%). Overall, the average distance of their place of residence from their land (across all parcels owned) was greater for small landowners (74 miles) than it was for large landowners (66 miles).

The majority of landowners lived in rural areas—with more large landowners (75%) reporting living in rural areas compared to small landowners (65%). In contrast, more small landowners live in suburban areas (25%) than do large landowners (16%). An equally low percentage of landowners live in urban areas (10% of small landowners; 9% of large landowners; Figure 3).

Figure 3. Primary residence of large and small Southern Tier landowners.



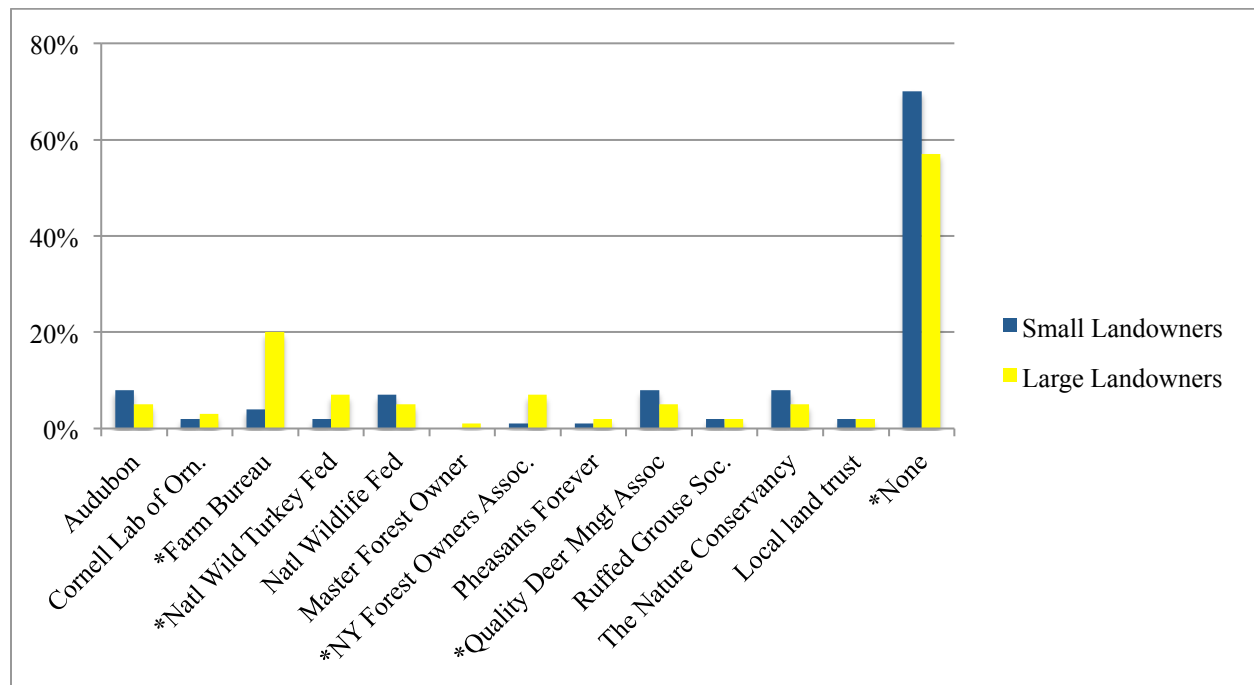
Statistically significant difference in distribution of residence by small and large landowners according to Pearson Chi-square, $p < .05$.

Most landowners responding to the survey were male (78% of small landowners; 84% of large landowners). The majority of the landowners had some college/technical school or less (50% for both small and large landowners). A similar number of small and large landowners had associates or college undergraduate degrees (29% of small landowners; 31% of large

landowners) and graduate or professional degrees (20% of small landowners; 19% of large landowners).

A majority of landowners (70% of small landowners; 57% of large landowners) did not belong to any wildlife or land conservation organizations (Figure 4). The most common organization for large landowners was the Farm Bureau (20%), suggesting a strong intermixing of forest and agriculture. In contrast, none of the organizations stood out as being as popular for small landowners. The greatest membership among small landowners was with Audubon Society (8%) and The Nature Conservancy (8%).

Figure 4. Wildlife or land organization membership of large and small landowners.

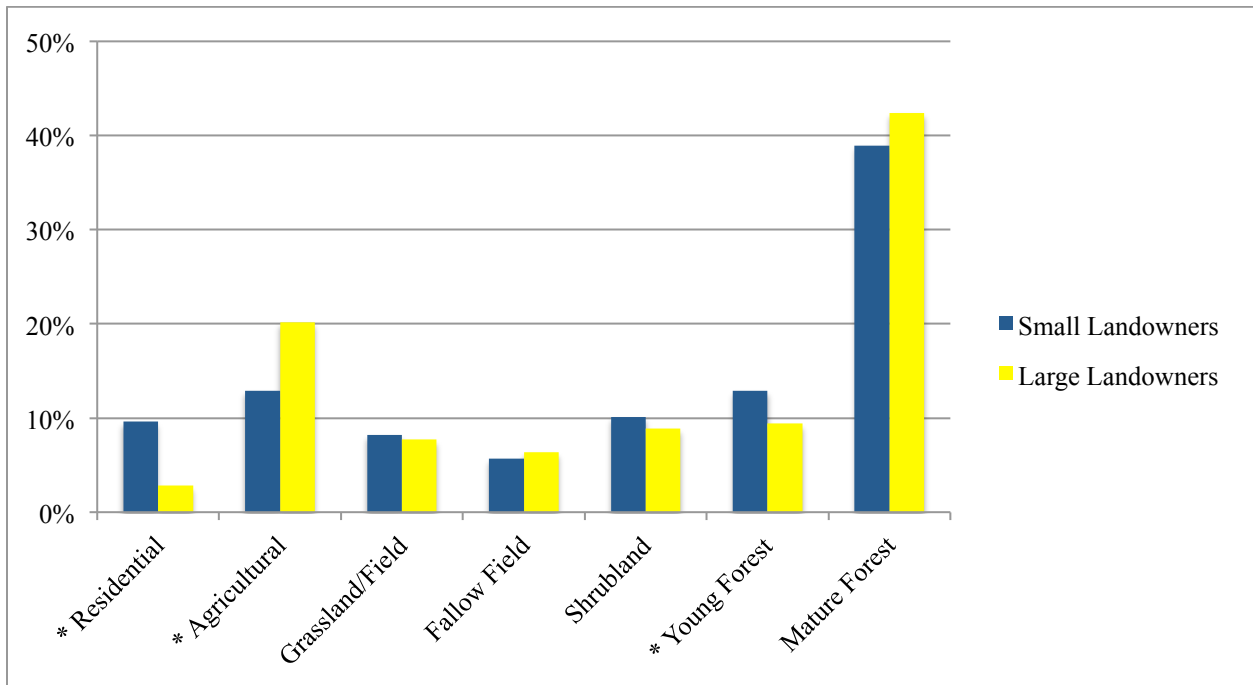


*Statistically significant difference between large and small landowners at $p < .05$.

Land Composition

The most common type of cover on survey respondents' land was mature forest (39% for small landowners; 42% for large landowners). The next most prominent land type for large landowners was agricultural land (20%), while for small landowners it was young forest (13%) and agricultural land (13%). As might be expected, small landowners had a greater percentage of residential land than did large landowners (10% as compared to 3%; Figure 5).

Figure 5. Average percent of total land owned by large and small landowners for each land type.



Note those whose acreage in the various land types summed to a total acreage that differed by more than 10% from their total acreage in land parcels were removed from analysis.

*Statistically significant difference between large and small landowners at $p < .05$.

Landowners preferred forest over other land types, with mature forest being most preferred (33% of small landowners and 38% of large landowners wanted more of this land type) followed by young forest (31% of small landowners; 29% of large landowners). Nearly as preferred was agricultural land (26% of small landowners and 31% of large landowners wanting more). Yet, for all land types, the majority of landowners wanted the same amount of that land type as they already had. The type of land that the most landowners indicated that they would like less of was shrubland (30% of small landowners; 35% of large landowners) followed by fallow field (21% of small landowners; 28% of large landowners) and young forest (17% of both small and large landowners), all categories that are strongly related to ESH (Figures 6 and 7).

Figure 6. Small landowner (10-49 acres) preferences for future land composition.

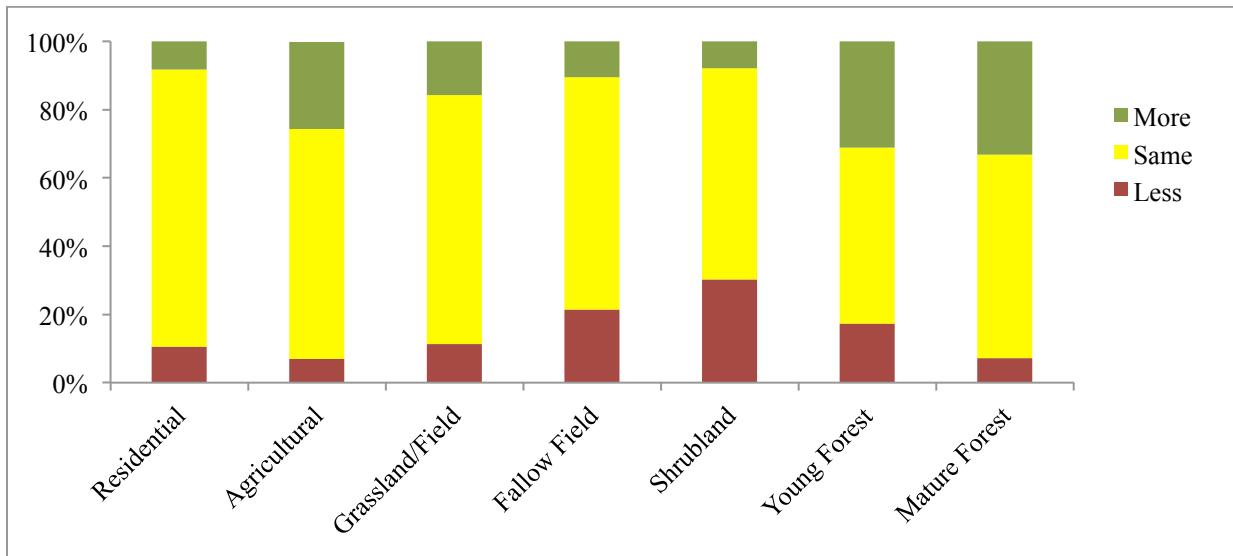
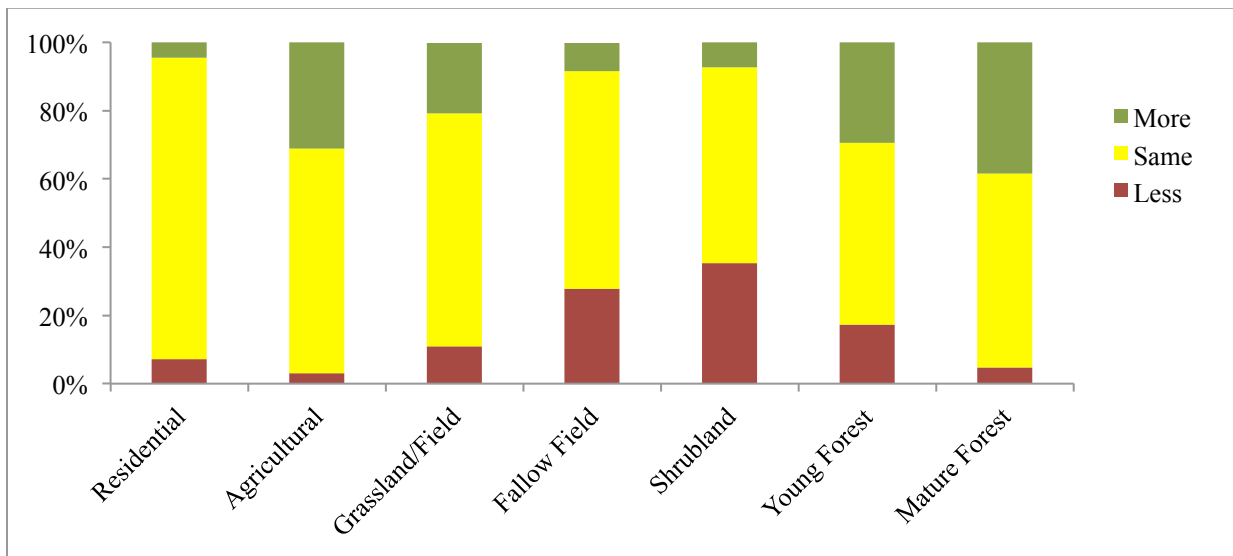
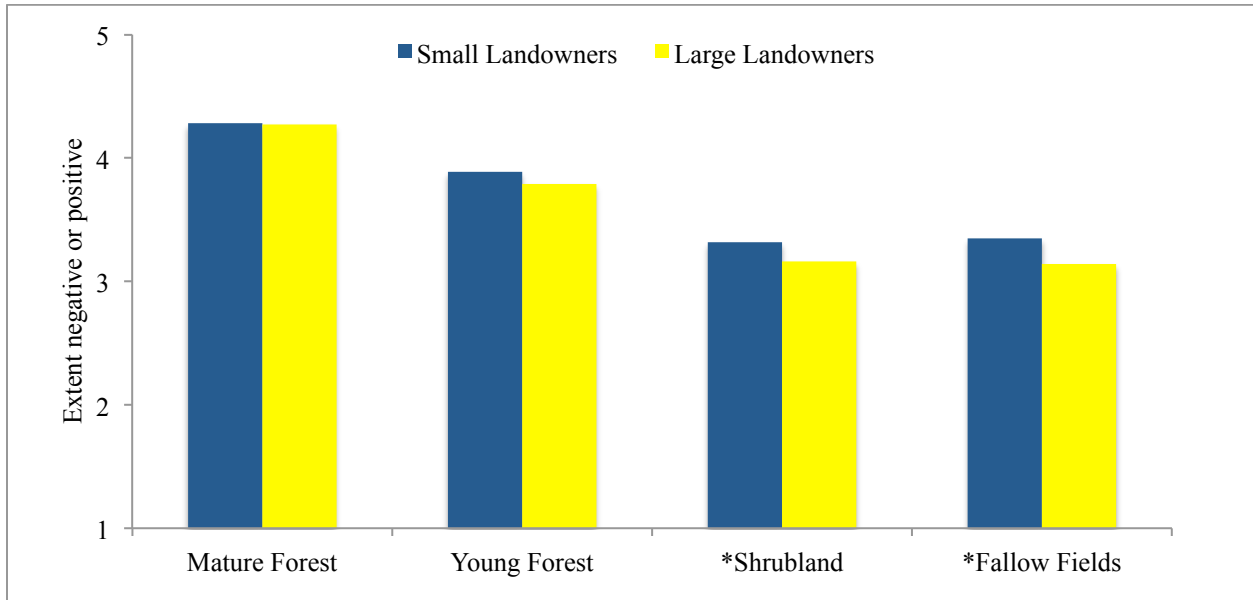


Figure 7. Large landowner (50 acres or more) preferences for future land composition.



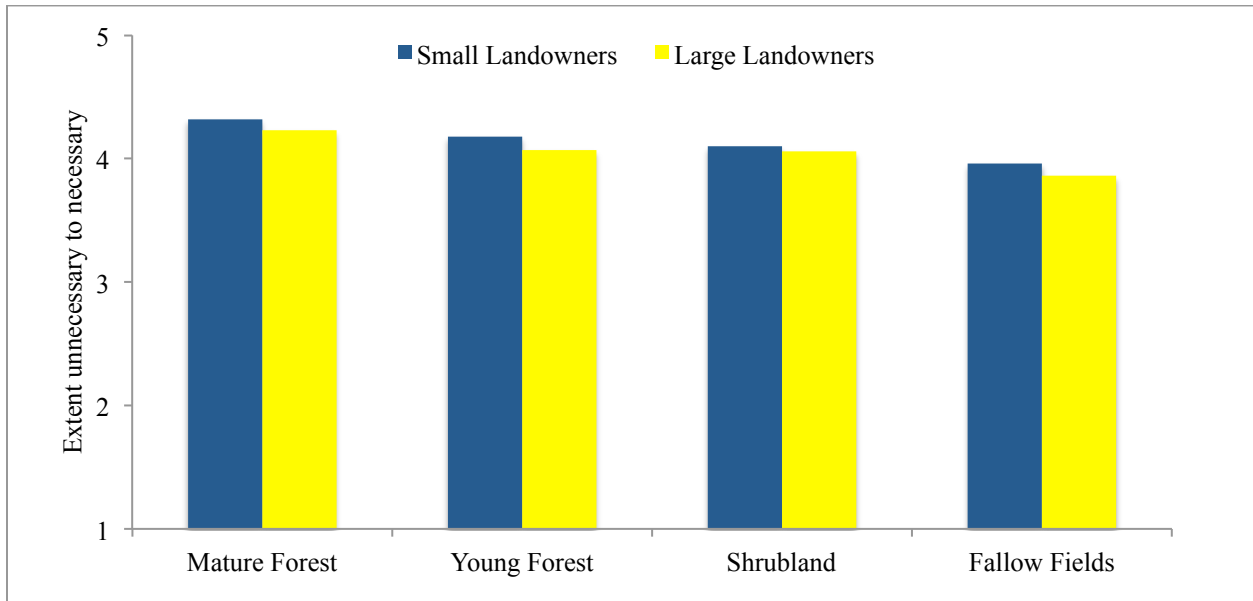
Landowners had the most positive attitudes toward mature forest and the least positive attitudes toward fallow fields and shrublands (Figure 8). Yet, when it came to how necessary landowners felt land types were for wildlife conservation, the distinction between their attitudes toward mature forest and other land types was not as strong (Figure 9). It therefore appears that the perceived necessity of shrublands and fallow fields for wildlife conservation is not playing a key role in overall preference for the land types. These trends were consistent for small and large landowners with large landowners having just slightly less positive attitudes toward shrubland and fallow fields.

Figure 8. Large and small landowner attitudes toward land types.



For mean calculations, items coded as 1=Very Negative, 2=Negative, 3=Neither, 4=Positive, 5=Very Positive
 *Statistically significant difference between large and small landowners at $p < .05$.

Figure 9. Large and small landowner attitudes toward land types for wildlife conservation.



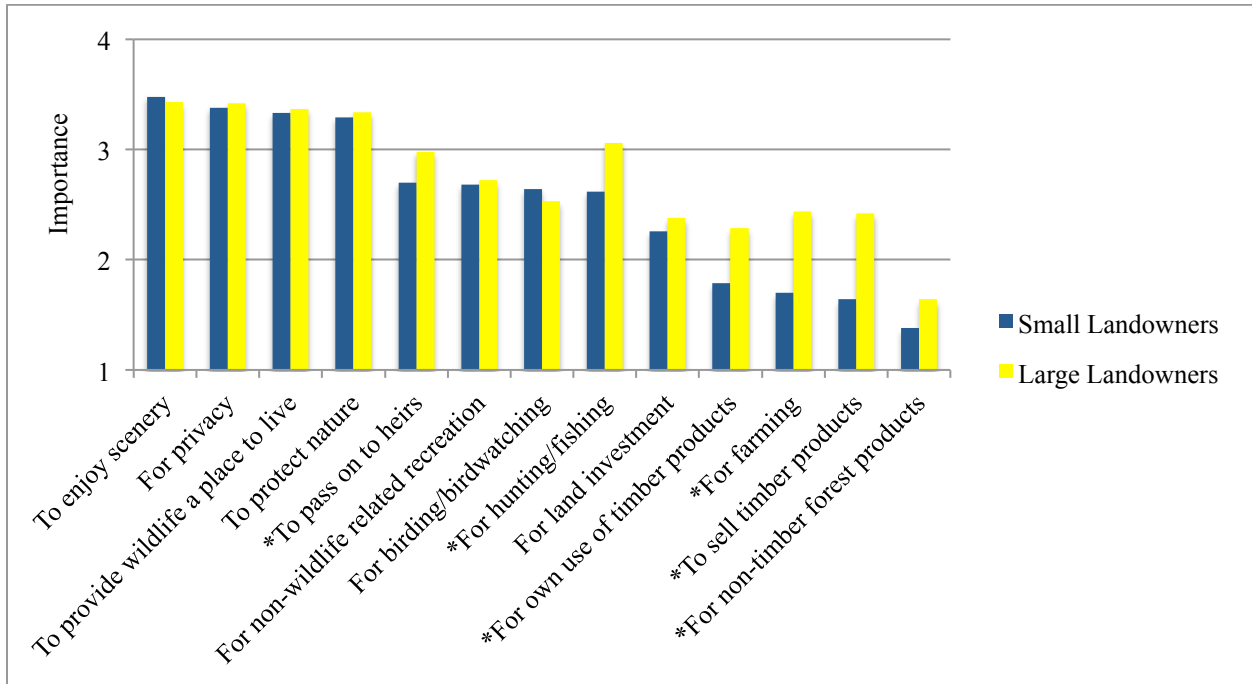
For mean calculations, items coded as 1=Very Unnecessary, 2=Unnecessary, 3=Neither, 4=Necessary, 5=Very Necessary
 No statistically significant differences between large and small landowners at $p < .05$.

Landowner Motivations

The most important landowner motivations for owning land in the Southern Tier included: “to enjoy scenery”, “for privacy”, “to provide wildlife a place to live”, and “to protect nature” (Figure 10). Small and large landowners were in agreement on these motivations. These groups

of landowners differed, however, with respect to other motivations. Large landowners found the following motivations more important than did small landowners: “to pass on to heirs”, “for hunting and fishing”, “for own use of timber products”, “for farming”, “to sell timber products”, and “for non-timber forest products”.

Figure 10. Large and small landowner motivations for owning land in the Southern Tier.

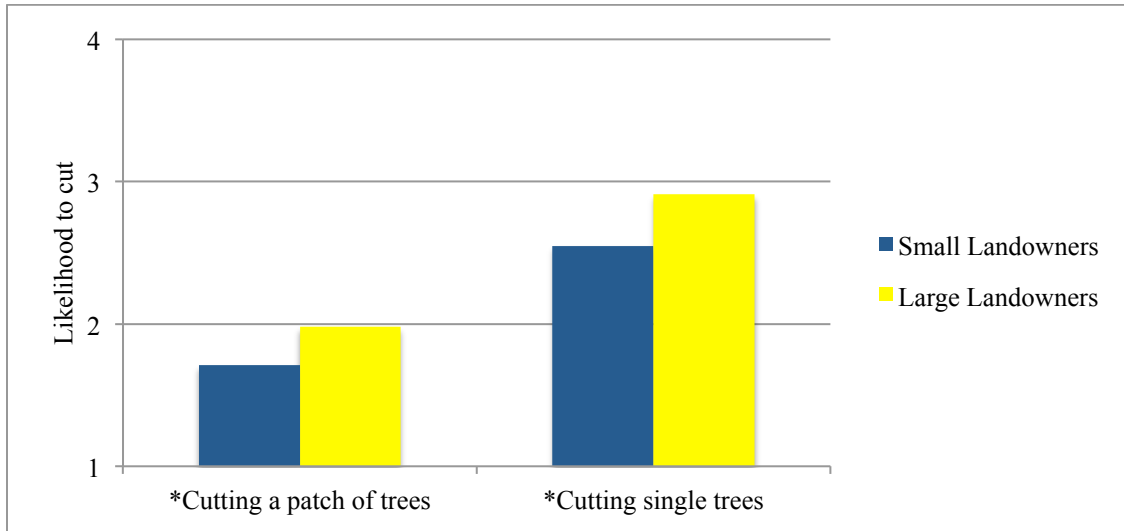


For mean calculations, items coded as 1=Not at all important, 2=Slightly important, 3=Moderately important, 4=Very important
 *Statistically significant difference between large and small landowners at $p < .05$.

Landowner Forest Cutting Behavior

Landowners’ history of cutting patches of trees versus cutting single trees was consistent with their assessment of the forest landscape: 80% of large landowners and 70% of small landowners had cut single trees in the past ten years, whereas only 35% of large landowners and 21% of small landowners had cut patches. Similarly, they reported far more likelihood, on average, to cut single trees on their land in the next five years than to cut patches of trees (Figure 11).

Figure 11. Large and small landowner likelihood of cutting behaviors in the next five years.

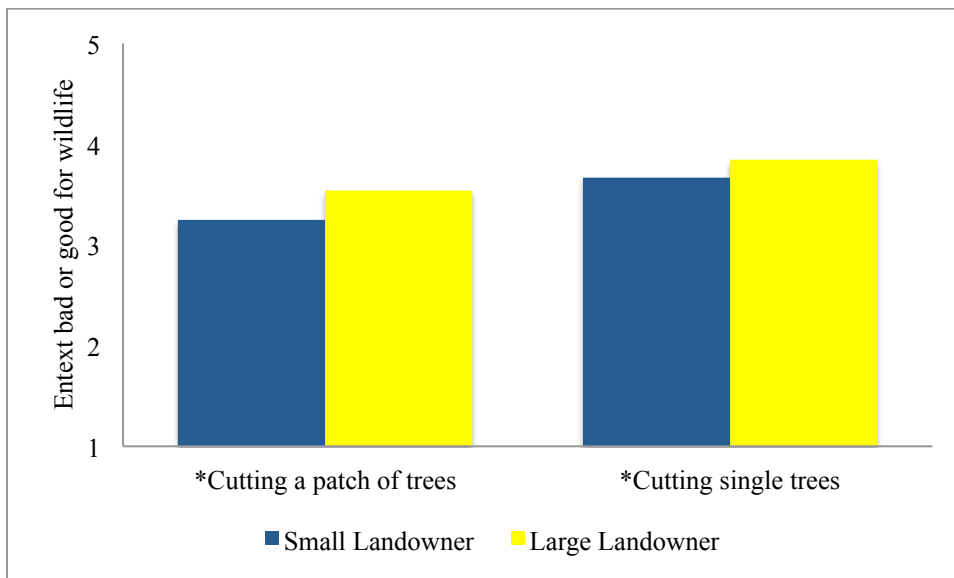


For mean calculations, items coded as 1=Not at all likely, 2=Slightly likely 3=Moderately likely, 4=Very likely
 *Statistically significant difference between large and small landowners at $p < .05$.

Landowner Attitudes toward Types of Cutting

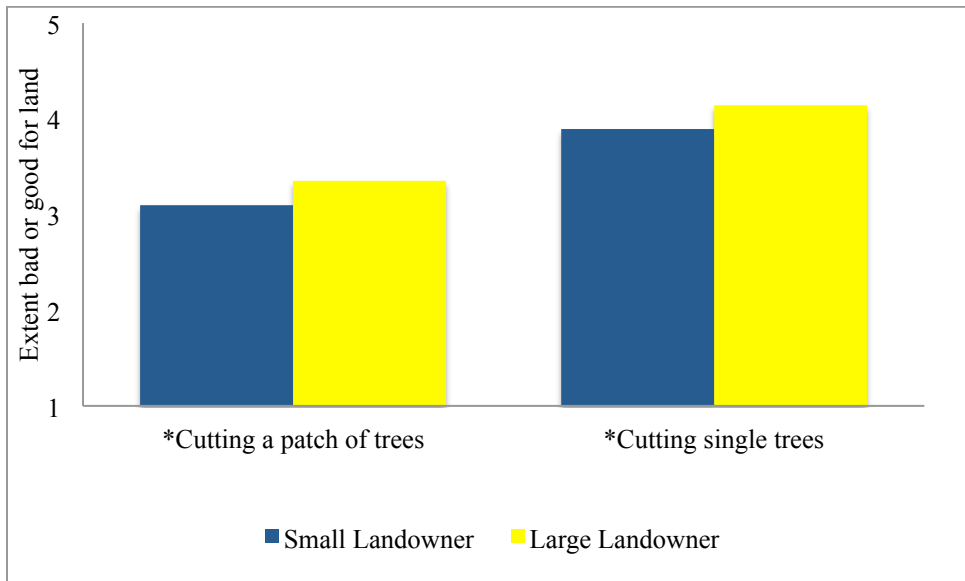
Similar to the patterns in their past behavior and future behavioral intentions, landowners believed that cutting single trees was better for wildlife than cutting patches of trees (Figure 12), even though they recognize the importance of ESH land types for wildlife, as seen in Figure 11 above, and have wildlife-related goals on their property (Figure 10). Likewise, they felt the same about the benefit of cutting approaches for their land (Figure 13). These patterns held for small and large landowners with large landowners seeing slightly more benefit to both types of cutting than small landowners.

Figure 12. Large and small landowners' perceived benefit of cutting activities for wildlife.



For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good
 *Statistically significant difference between large and small landowners at $p < .05$.

Figure 13. Large and small landowners' perceived benefit of cutting activities for land.

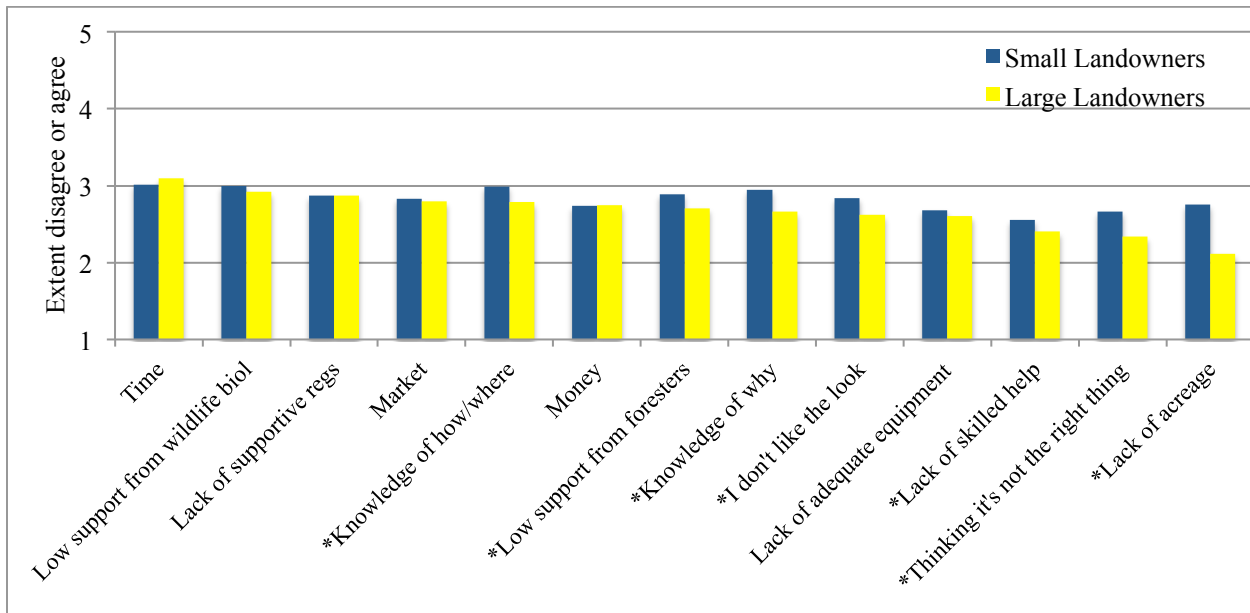


For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good
 *Statistically significant difference between large and small landowners at $p < .05$.

Cutting on Private Land: Barriers, Incentives, and Information Sources

Generally, landowners did not perceive that any barriers greatly limited the extent to which they cut their forest (note: any type of cutting), with all barriers (e.g., lack of money, market or knowledge) being between “neutral” and “disagree” on average (Figure 14). There were differences between small and large landowners, with small landowners reporting that some of the limitations affected them to a greater extent than did the large landowners (i.e., lack of acreage, knowledge of how/where, knowledge of why, low support from foresters, thinking it’s not the right thing, and not liking the look of cutting on their land).

Figure 14. Large and small landowners' barriers to cutting on their land.

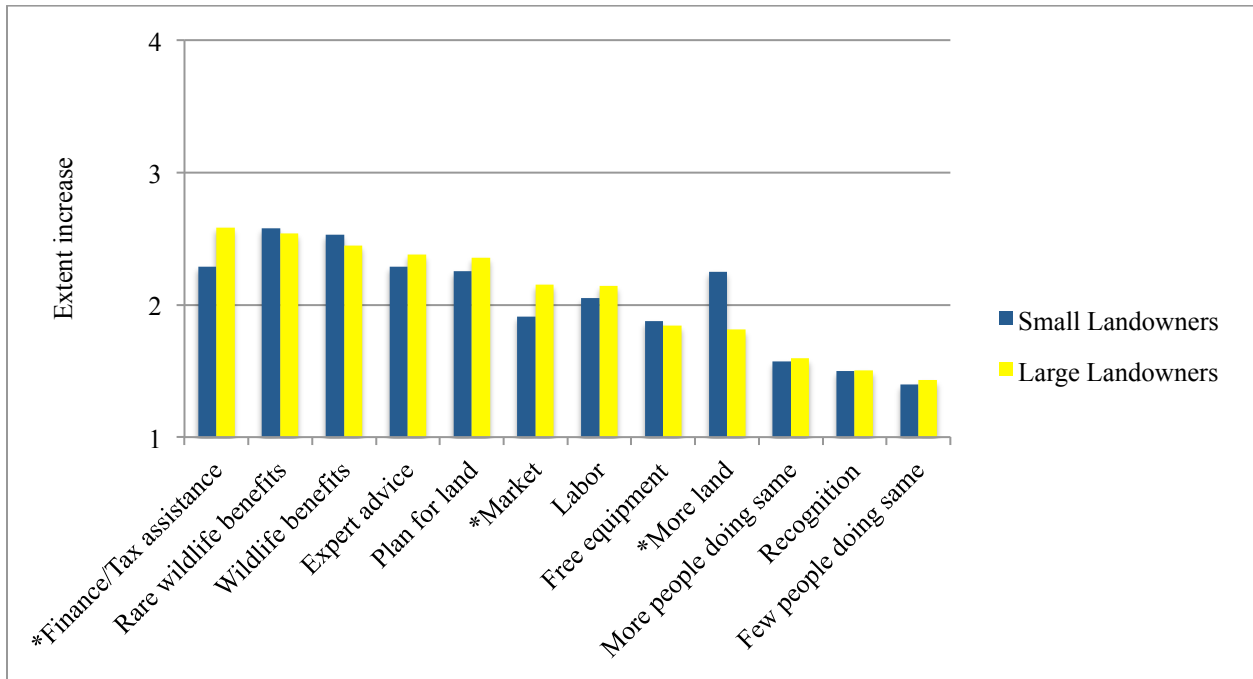


For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neither, 4=Agree, 5 = Strongly Agree.

*Statistically significant difference between large and small landowners at $p < .05$.

The three suggested factors that would most increase landowners' likelihood of cutting additional patches of trees on their land are financial or tax assistance, learning that the activity benefits rare wildlife, or learning that the activity benefits wildlife generally (Figure 15). Least influential factors included social influences: finding that few people in their area were doing so, earning recognition from a state agency or nonprofit, or finding more or fewer people in their area doing so. In general, few of the listed factors would result in increased landowner willingness to cut patches of trees. Differences existed between small and large landowners: small landowners were less interested in financial or tax assistance or a product market than large landowners. In contrast, small landowners reported they would be more likely to cut than did large landowners if they had more land.

Figure 15. Large and small landowners' assessment of factors that would influence their willingness to cut patches.



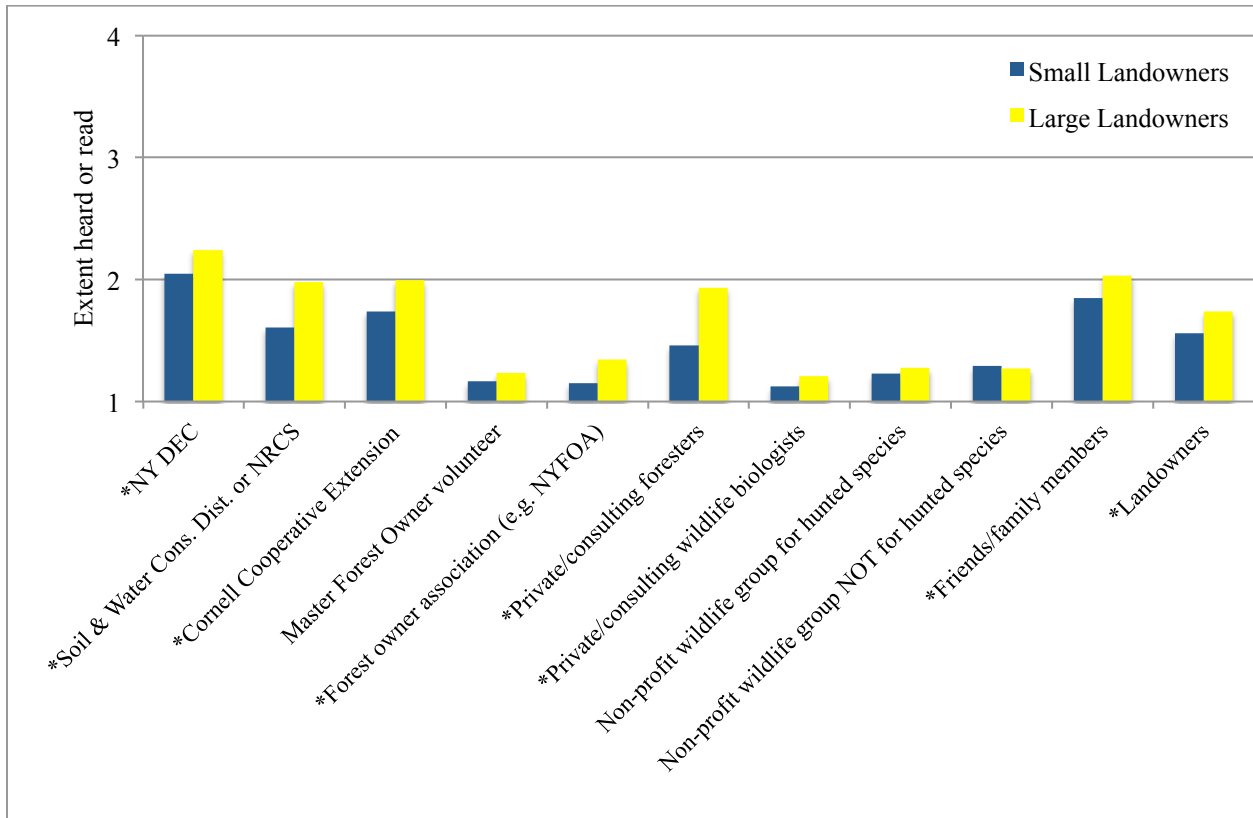
For mean calculations, items coded as 1=Not increase, 2=Slightly increase, 3=Moderately increase, 4=Greatly increase.
 *Statistically significant difference between large and small landowners at $p < .05$.

Information Sources

Most landowners reported that they had not heard or read much about wildlife and land management (Figure 16). The information source that landowners reported seeing or hearing from the most was the NYSDEC. Also relatively more common were friends and family, Cornell Cooperative Extension, and private/consulting foresters. Private/consulting wildlife biologists were the source landowners saw or heard from the least. Yet, small landowners tended to have heard or read less from all information sources considered than did large landowners.

Similarly, none of these sources had more than a slight influence on landowners, on average. Further, nearly all of the information sources had a greater influence on large landowners than they did on small landowners (Figure 17).

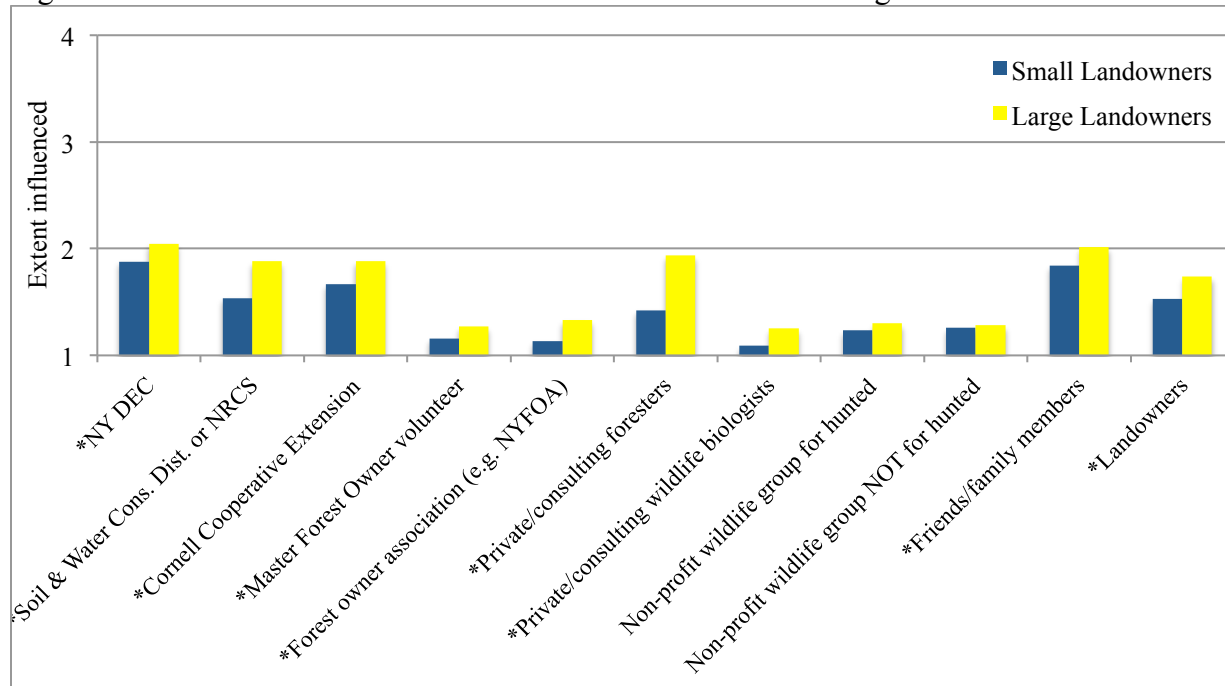
Figure 16. Sources from which large and small landowners heard or read information about wildlife and land management.



For mean calculations, items coded as 1=None, 2=A little, 3=Some, 4=A lot.

*Statistically significant difference between large and small landowners at $p < .05$.

Figure 17. Extent to which these information sources influenced large and small landowners.



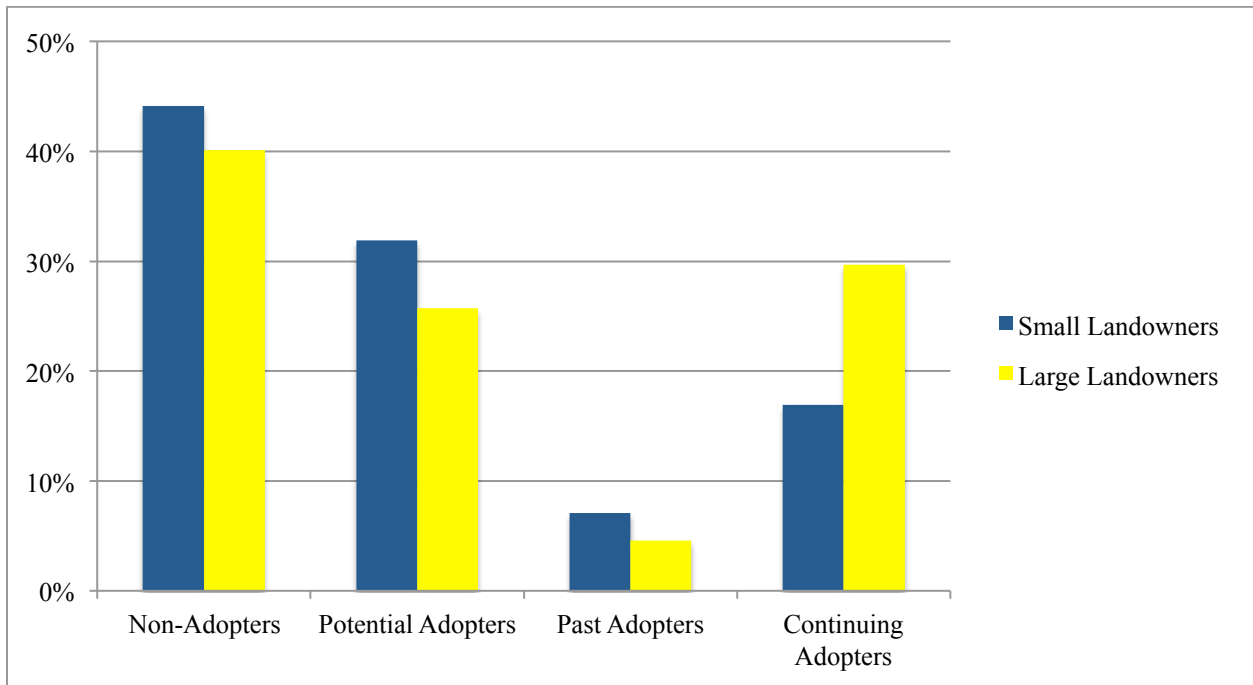
For mean calculations, items coded as 1=None, 2=A little, 3=Some, 4=A lot.

*Statistically significant difference between large and small landowners at $p < .05$.

Landowner Patch Cut Adopter Types

A typology of private forest landowners was created based upon their past and future potential for adopting patch cutting behavior. This typology is intended to help target outreach for early successional habitat management. We found that the largest group of landowners--44% of small landowners and 40% of large landowners--was “non-adopters” of patch cuts, having not conducted the behavior in the past ten years and indicating no likelihood of doing so in the next five years. The smallest group of landowners--7% of small landowners and 5% of large landowners--was “past adopters”, having conducted the behavior in the past but indicating no likelihood of doing so in the future (suggesting some dissatisfaction with their past experience with patch cuts). Yet, 32% of small landowners and 26% of large landowners were “potential adopters”, having not conducted the behavior in the past but indicating at least some likelihood to do so in the future. Only 17% of small landowners compared to 30% of large landowners were “continuing adopters”, having conducted the behavior in the past and indicating likelihood to do so in the future. While we summarize the differences between these types of landowners by combining the two sizes of landowners (due to small numbers in each type when divided by size), it should be noted that the distribution by landownership size does differ (Figure 18 below).

Figure 18. Percentage of large and small landowners by patch cut adopter types.



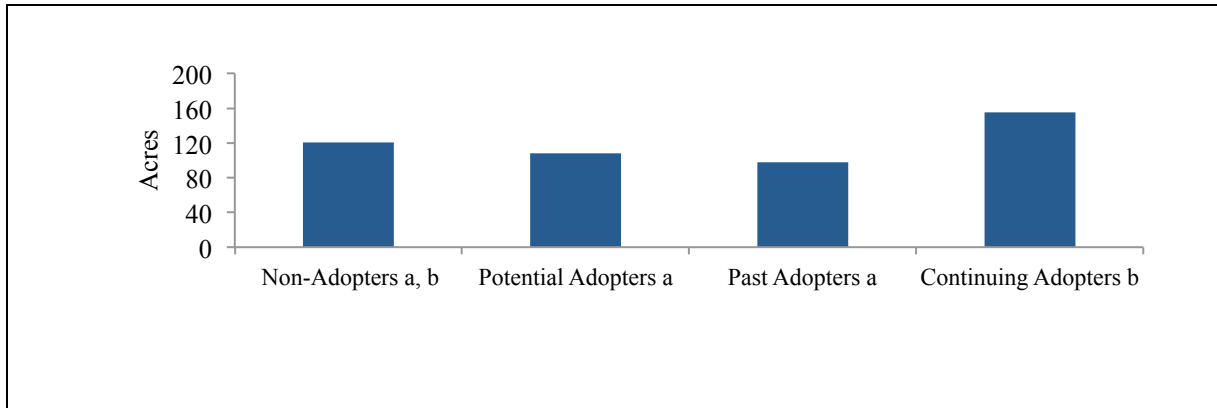
Statistically significant difference in distribution of patch cut adopter types by small and large landowners according to Pearson Chi-square, $p < .05$.

Landowner Characteristics by Patch Cut Adopter Types.

There are some notable differences in landowner characteristics across our four adopter types. Notably, the continuing adopters own more land than the other three adopter types (Figure 19). A slightly higher percentage of non-adopters than other types live in rural areas, and a slightly higher percentage of potential adopters live in suburban areas (Figure 20). Regarding education, more past adopters, more so than other types, have completed some college or technical school, and a higher percentage of potential adopters have a graduate/professional degree (Figure 21).

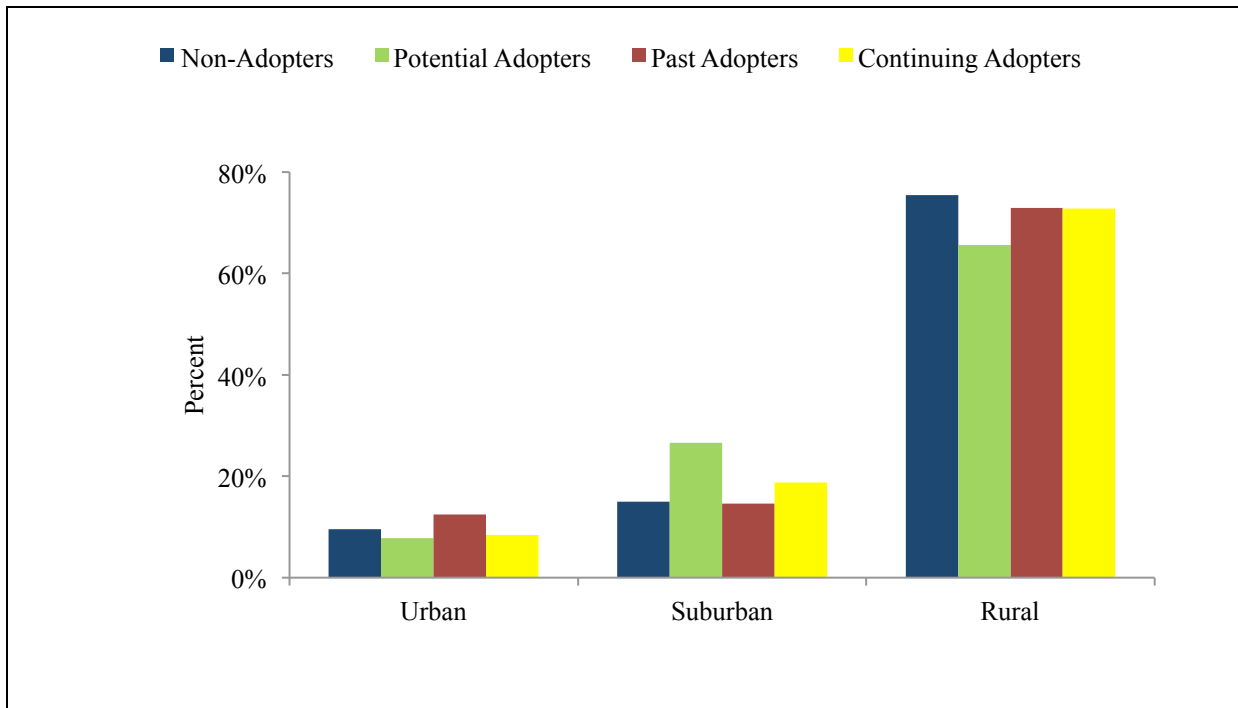
The proportion of land in mature forest also differed by patch cut adopter type (Figure 22). Past adopters and continuing adopters had the most mature forest on their property (50% of their land on average) with non-adopters having the least mature forest (38%). The amount of young forest on their property did not differ across types.

Figure 19. Mean total acres owned by patch cut adopter types.



Means that do not share subscripts differ at $p < .05$ in the Dunnett's T3 ANOVA post-hoc comparison.

Figure 20. Place of primary residence by patch cut adopter types.



Statistically significant according to Pearson Chi-square, $p < .05$. Statistically significant difference in distribution of residence by patch cut adopter types according to Pearson Chi-square, $p < .05$.

Figure 21. Level of education by patch cut adopter type.

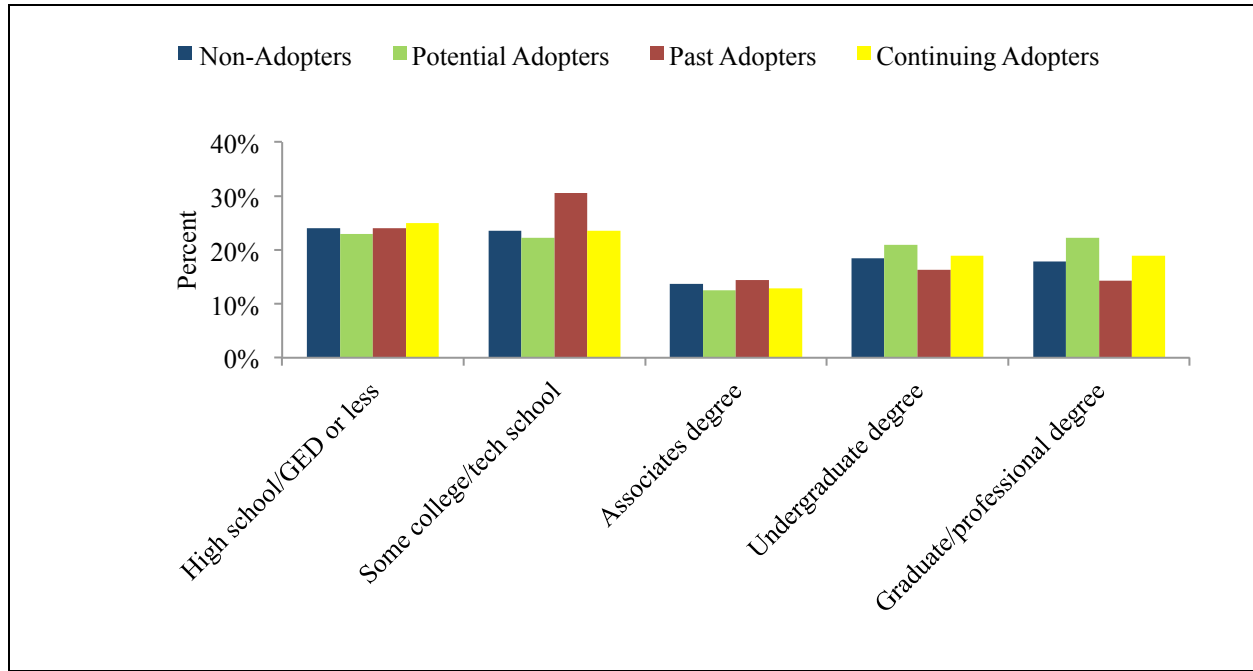
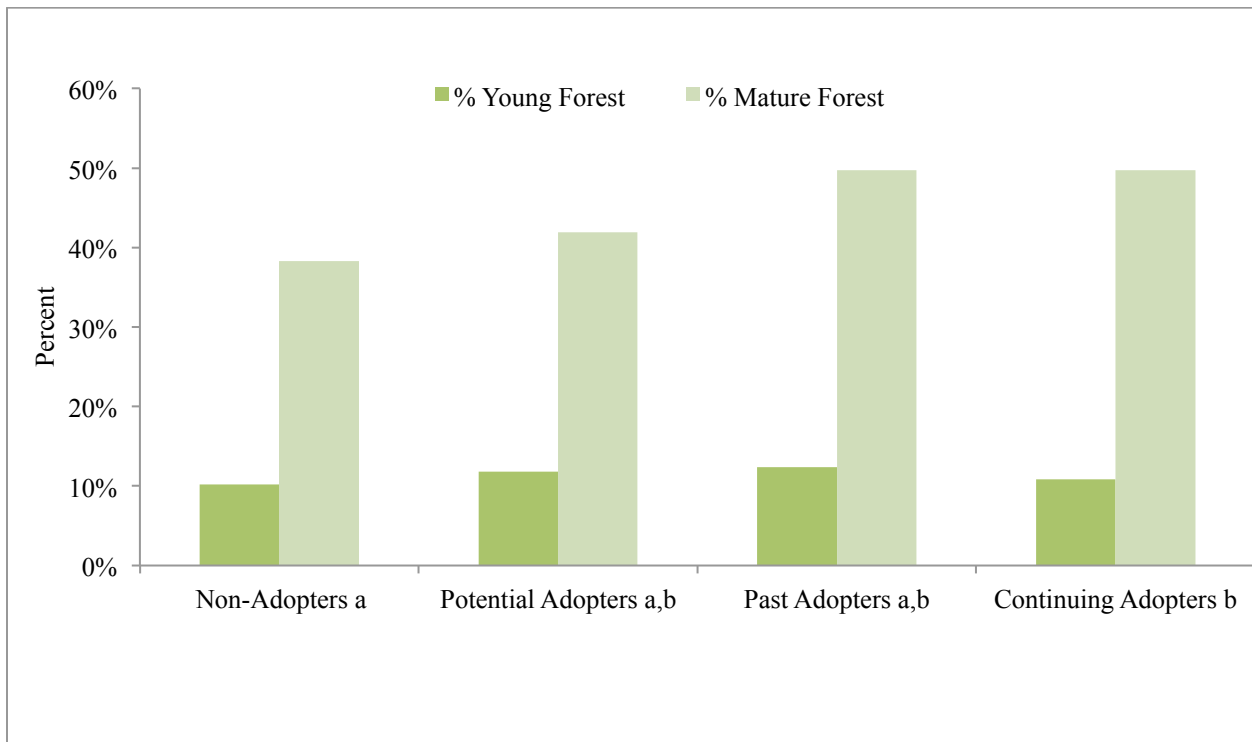


Figure 22. Forest land composition (percent of total land) by patch cut adopter types.



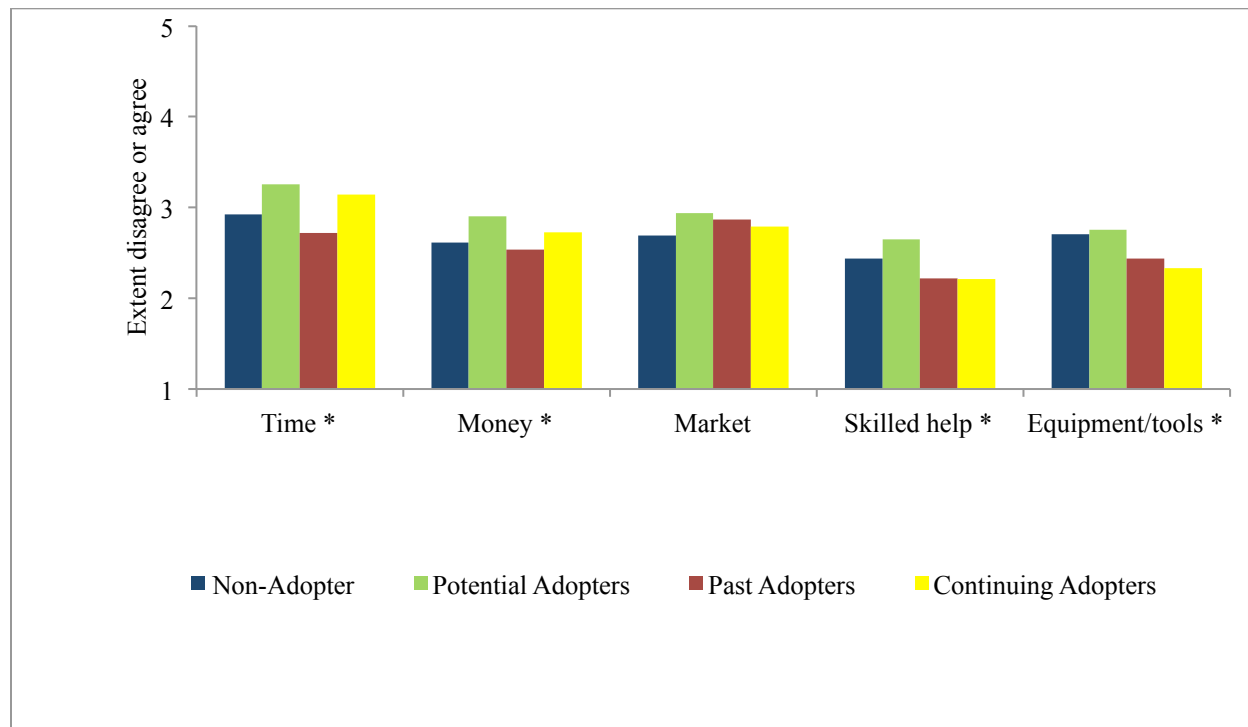
For mature forest, means that do not share subscripts differ at $p < .05$ in the Dunnett's T3 ANOVA post-hoc comparison. There was no statistically significant differences for young forest.

Cutting on Private Land: Barriers, Incentives, and Information Sources by Adopter Types

Perceived barriers to cutting differed by adopter type (Figures 23 and 24). Time and money were more of an issue for potential and continuing adopters than it was for other 3 types. Finding a market for products from cutting was slightly more of an issue for potential adopters, as was a lack of skilled help. Lastly, equipment and tools were more of an issue for potential and non-adopters than the others. Similarly, a lack of knowledge and support was more of an issue for potential adopters and, to a lesser degree, non-adopters than the other types. In contrast, non-adopters were more likely to be fundamentally opposed, rather than experiencing constraints, believing that cutting is not the right thing to do or they do not like the look of it.

All of the influences on patch cutting behavior had more impact on the willingness of potential and continuing adopters than the other types (Figure 25). Yet, the patch cut adopter types all followed the same pattern for which factors would most increase their willingness: those related to knowledge and advice (i.e., advice from an expert, plan calling for activity, learning the activity benefits wildlife or rare wildlife) were most influential, those related to financial and physical (i.e., financial assistance or tax reduction, borrowing equipment, receiving labor) were the next most influential, and the social approaches (found more people doing it, found less people doing it, earning recognition) were least influential.

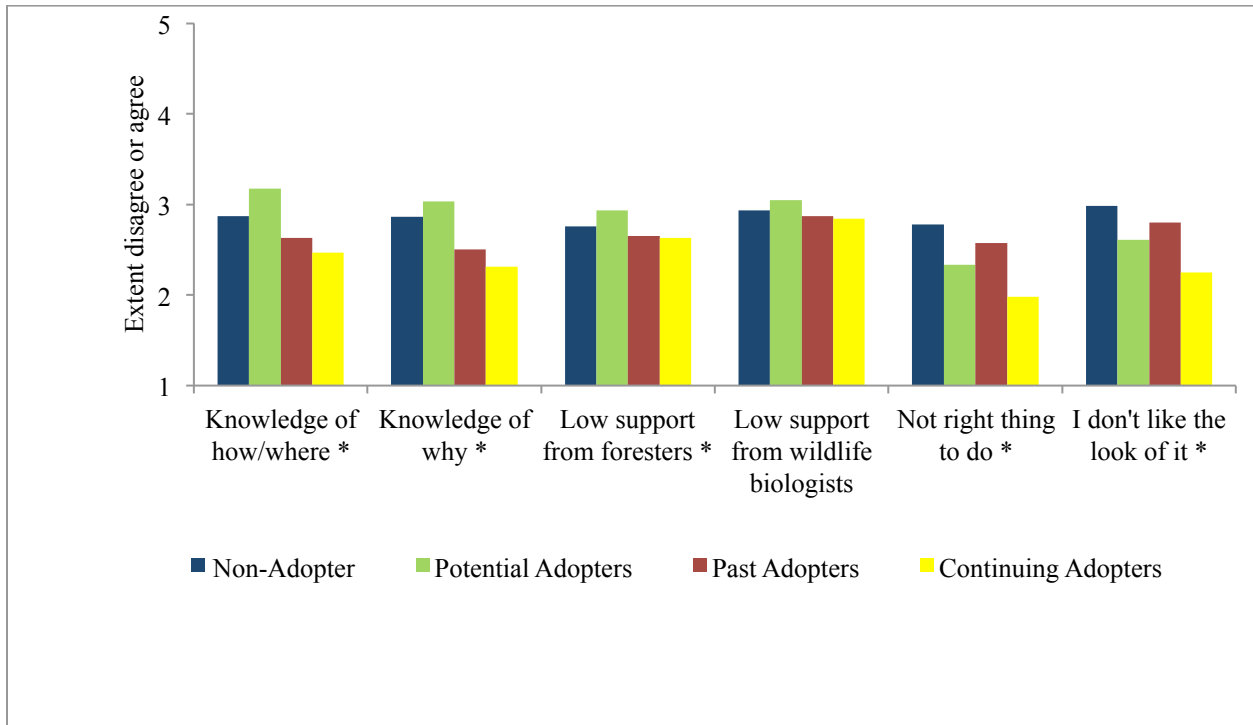
Figure 23. Landowners' perceived limits to cutting* items related to financial or physical resources by patch cut adopter type.



For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

*Statistically significant differences between adopter types at $p < .05$.

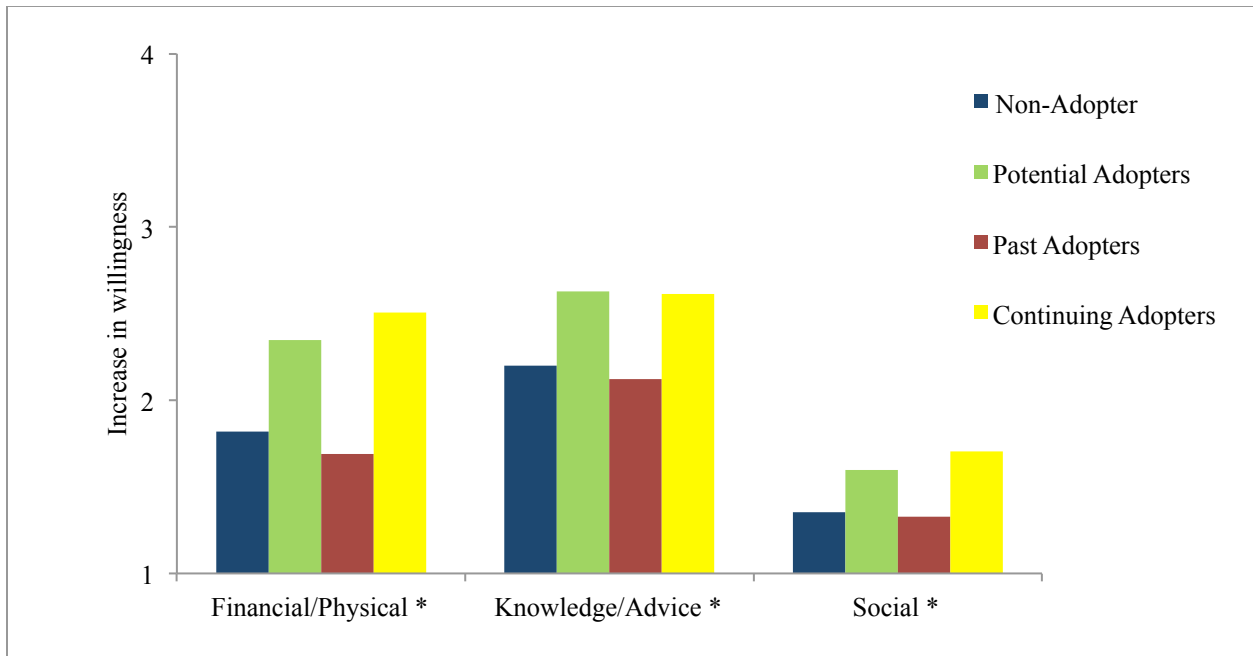
Figure 24. Landowners' perceived limits to cutting items related to knowledge, support, and aesthetics by patch cut adopter type.



For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

*Statistically significant differences between adopter types at $p < .05$.

Figure 25. Influences on increasing landowner willingness to cut by patch cut adopter types.



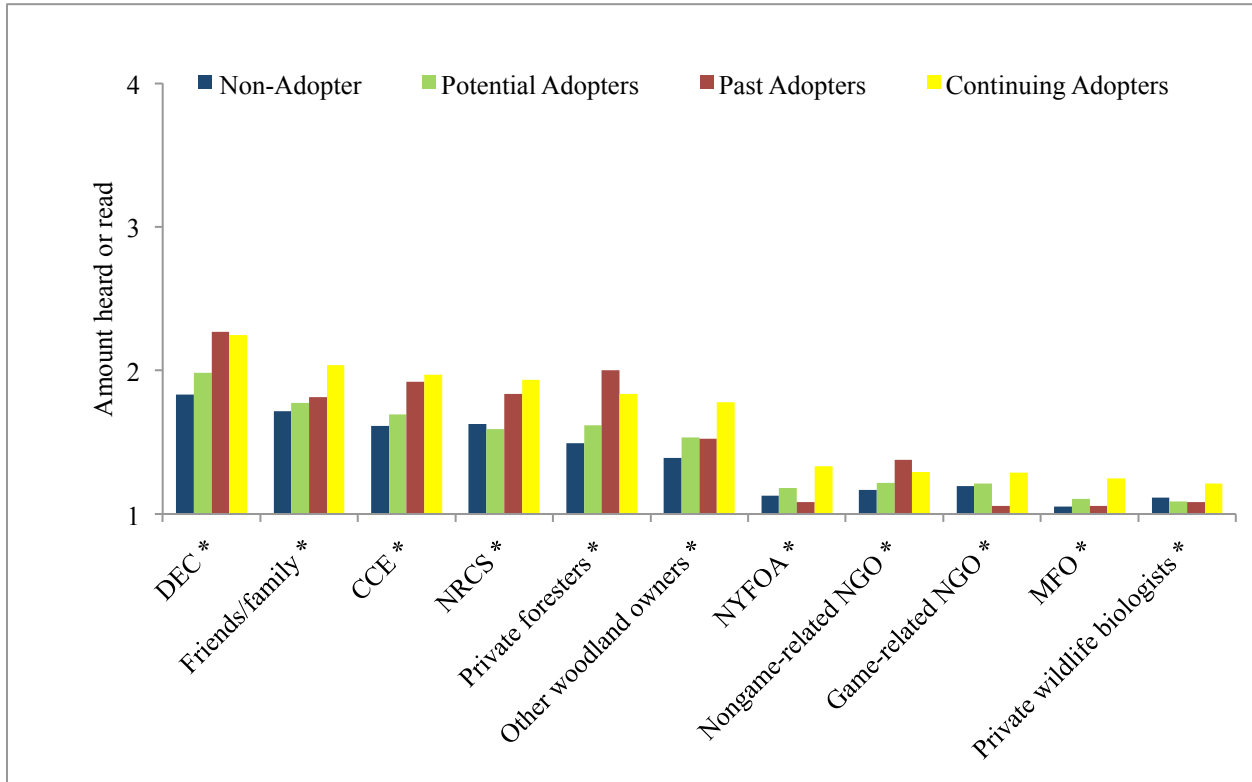
For mean calculations, items coded as 1=Not increase, 2=Slightly increase, 3=Moderately increase, 4=Greatly increase

*Statistically significant differences between adopter types at $p < .05$.

Information Sources for Patch Cut Adopter Types.

The patch cut adopter types varied in their exposure to information sources (Figure 26), with continuing adopters having more exposure to all sources than non or potential adopters. Additionally, past adopters had higher levels of exposure to some of the more common sources, than did non-adopters and potential adopters: NYSDEC, NRCS, CCE (Cornell Cooperative Extension), and private foresters.

Figure 26. Landowner exposure to information sources by patch cut adopter types.



For mean calculations, items coded as 1=None, 2=A little, 3=Some, 4=A lot

*Statistically significant differences between adopter types at $p < .05$.

Summary

One third of the sample ($n = 343$) owned 10-49 acres in the Southern Tier, while two-thirds ($n = 686$) owned 50 acres or more. Small landowners owned fewer parcels, had not lived on their land as long, and were less likely to live on their land than were large landowners. Large landowners were more likely to belong to wildlife and/or land conservation organizations. Landowners' properties were characterized by primarily mature forest (about 40% for both size landowners), followed by agricultural land and young forest. While the majority of landowners indicated they would like the composition of their land cover to stay the same, if they wished for change in land cover composition in the future, they tended to desire more mature forest, young forest and agricultural land and less shrubland and fallow field (early stage precursors of ESH). Generally, landowners had more positive attitudes toward mature forest than any other land type. Providing wildlife habitat and protecting nature was very important to many landowners. Large

landowners were more motivated by hunting and fishing, farming, and timber than were small landowners.

Far more landowners (70% of small landowners; 80% of large landowners) had cut single trees throughout their woods (which does not tend to create ESH) than had cut patches of trees (which tends to create ESH). Fewer small landowners (21%) than large landowners (35%) had cut patches. Their intentions for future cutting followed this pattern as well, with more landowners intending to cut single trees throughout their woods than patch cut and large landowners expressing greater likelihood to do both types of cutting than small landowners.

These behavioral intentions closely track landowners' attitudes. More landowners believed that cutting single trees scattered throughout their land is better for their land and wildlife than cutting patches of trees. Large landowners were slightly more positive about both types of cutting than were small landowners.

Overall, landowners encountered few barriers to cutting trees on their land. Among those articulating barriers, lack of time was the most common. Small landowners did perceive the limitations for their cutting to be somewhat greater than did large landowners, especially lack of acreage, knowledge, support from foresters, and thinking it is the right thing to do. Yet, on average, all of these barriers fell between "neutral" and "disagree." The factors that would be most effective for influencing landowner willingness to cut patches include learning that patch cutting benefits wildlife or rare wildlife or receiving financial assistance or tax reduction (suggesting a role for education and outreach programs as well as policy initiatives or incentive programs that might enhance patch cutting related behavior). Large landowners were slightly more influenced by financial/tax assistance and finding a market than were small landowners. The information sources that landowners currently have the most contact with are the NYSDEC, and friends and family. Yet, no information source currently appears to influence many landowners. Small landowners have even less exposure to or influence from wildlife and land management information than do large landowners.

Landowners were segmented into four types of patch cutters based on past behavior and future intended behavior: non-adopters, potential adopters, past adopters, and continuing adopters. Large landowners were more likely to be continuing adopters than were small landowners; and the reverse was the case for potential adopters. The types differed on some key landowner characteristics: continuing adopters owned more land, and potential adopters were more likely to be suburban residents and have a higher level of education than other types of landowners. Continuing adopters and past adopters had the greatest percentage of their land in mature forest, suggesting a connection between abundant mature forest and behavior tied to the creation of ESH. The types did not differ, however, on the percentage of their land in young forest.

The perceived barriers to cutting differed across types of landowners. Time and money were greater issues for potential and continuing adopters. Finding a market for products from cutting, skilled help, knowledge, and support were all greater issues for potential adopters than the other types. Non-adopters were more likely to believe that cutting was not the right thing to do and they did not like the look of it, suggesting fundamental opposition and hence, a more limited role for incentives, assistance, etc. Study results show that for potential adopters, programs that

provide knowledge and advice or address basic needs (such as financial and equipment) would have the greatest influence on their likelihood to manage their lands for ESH. Landowner programs that address basic needs, knowledge, and advice will have a similarly great impact on continuing adopters but likely to a lesser degree than the other types.

CONCLUSIONS AND RECOMMENDATIONS

The findings of this study can be used to inform programs focused on the decisions of private landowners to undertake ESH management. Natural resource professionals in New York and the Northeast confirmed an important need for research examining human dimensions issues such as landowner knowledge, attitudes and perceived barriers to ESH management. Experts who currently work on ESH conservation—and with forest landowners more generally—believed that the greatest challenge to ESH conservation was landowner knowledge and attitudes about ESH and suggested human dimensions research could provide insights into landowner attitudes and how to conduct education and outreach given these attitudes.

In exploring the state of knowledge and outreach related to ESH among experts, we found some additional challenges aside from landowner knowledge and attitudes. We learned that even experts find it difficult to define ESH. Also, experts found the optimal characteristics for wildlife challenging to identify because they vary by species of interest. This definitional lack of clarity may impede the systematic achievement of ESH-related goals and objectives, or at least require greater clarification in their articulation. Experts largely think of ESH as part of an ecological process that can be successfully created through well-established land management techniques, primarily clearcutting or cutting patches. This view of ESH as part of an ongoing ecological process and the emphasis on cutting for establishing and maintaining ESH is not as prevalent among landowners – even those currently managing for ESH. More of the landowners that we talked to than experts think of reverting fields (a passive creation technique for ESH that may be less effecting than patch cutting in creating ESH) when referring to ESH. Site visits with landowners revealed that those who believe they are creating ESH vary greatly in the extent to which they are actually doing so. While cutting is their primary activity to create ESH, most of the cutting done by landowners to create ESH is actually thinning and not the even-aged silvicultural techniques of patch or clearcutting needed to effectively create ESH. Further, some landowners are not cutting but somehow—perhaps tied to the reverting field strategy noted above—believe their activities will create ESH. This disconnect between landowners and experts and what management activities landowners believe create ESH will likely need to be considered in outreach and incentive program development.

Interviews with landowners conducting ESH management also offered insights into factors motivating their behavior and ways agencies and organizations might further support them. Landowners are undertaking ESH management tended to be interested in creating wildlife diversity and habitat on their property, and many do this, at least in part, to increase the population of game species of interest. Landowners believe they could be best assisted by agencies and organizations through outreach/education and financial assistance. This aligns with how experts believe they can support the activities of landowners as well.

Results from our quantitative mail survey suggest both small and large landowners had more positive attitudes toward mature forest than toward other land types (including ESH types of

young forest, shrublands, etc.). They tended to be satisfied with the amount of mature forest, young forest, and shrublands currently on their land. Those who wanted change preferred more mature and young forest and less shrublands, indicating some resistance to increasing the amount of the earlier stage of ESH on their land relative to other types of land cover. Landowners' experience and future interest in cutting activities followed this same trend. Many more landowners had cut single trees throughout their property (which does not tend to create ESH) than had cut patches of trees (which tends to create ESH). Their intentions for future cutting followed the pattern of past cutting, with landowners indicating a much higher likelihood to cut single trees throughout their property in the next five years than patches of trees. Thus, for the majority of landowners, future management activities are not currently focused on even-aged harvesting treatments that would create forest openings for ESH.

These cutting behaviors are consistent with landowners' attitudes about cutting. More landowners believed that cutting single trees scattered throughout their land is better for their land and wildlife than is cutting a patch of trees. Thereby, we found that landowners have relatively less interest in ESH than other habitat types, are less likely to cut patches than they are to cut single trees, and a likely rationale through their attitudes that this behavior (even-aged management) is not neither good for their land nor wildlife. The experts' perception that landowners' knowledge and attitudes are a challenge to ESH management on private lands appears to be confirmed with these findings.

Landowners perceived few constraints to cutting (in general) on their land, with time being the most often invoked barrier. Yet, many landowners indicated that education about the benefit of patch cutting to wildlife would increase their likelihood to cut patches of trees on their land as would receiving financial assistance or tax reduction. These results corroborated what we found in the landowner interviews, indicating that landowners considering even-aged management activities would benefit from a paired communications emphasis on the benefits of this type of management to wildlife and provision of financial support.

Such support and education might be delivered through the information sources with which landowners currently have the most contact: the NYSDEC and friends and family. However, none of the current information sources has a particularly strong influence on landowners' beliefs, thus it is advisable to consider how sources of information might be more effective. From past research, we know that landowners are most receptive to information and messages from trusted sources and the trusted source varies by landowner. Thus, a coordinated effort among multiple organizations and agencies will be needed to reach a breadth of landowners.

Overall, we did not find strong differences between small and large landowners. Although large landowners had a larger proportion of their land in agriculture and were slightly more likely to own their land for reasons of hunting and fishing, timber products, and farming, their most important motivations, such as wildlife habitat, were similar to those of small landowners. However, large landowners were less constrained in their ability to cut. They had somewhat more experience with both types of cutting and more willingness to cut in the future. They also reported they would be slightly more influenced by financial/tax assistance and markets in cutting patches on their land (although increasing their knowledge about the benefits of cutting for wildlife was most important for both large and small landowners). Large landowners

reported hearing or reading slightly more from many of the information sources than did small landowners. Not only does this information better reach large landowners, it had more influence on them than on small landowners. Thereby, while large landowners may be easier to reach and more likely to conduct ESH management, with the trend of increasing parcelization and smaller landowners, attention to improving mechanisms to reach out to small landowners may be advisable.

The typology of patch cut adopters developed from the survey results offers additional insights for education and outreach. Potential adopters are the most receptive group for information about ESH; past and non-adopters are unlikely to undertake the behavior, even with concerted education and incentive efforts. Continuing adopters are already undertaking the behavior and will likely continue; thus, outreach could potentially reinforce their behavior or expand the extent of the practice. However, outreach efforts that focus on this group may only result in marginal increases, as is often the case when “preaching to the choir.” Yet, for programs seeking to increase ESH, continuing adopters could be cultivated as ambassadors for ESH conservation among their fellow landowners.

Potential adopters tended to have a higher level of education. Time and money were a greater issue for them than past and non-adopters. Finding a market for forest products, skilled help conducting management, knowledge about wildlife benefits from cutting, and professionals’ support were all greater issues for potential adopters than all of the other types. To reach potential adopters, outreach programs that provide knowledge and advice or address basic needs (such as financial and equipment) will likely have the greatest impact.

In summary, these results highlight that significant conservation of ESH on private lands requires coordinated and strategic efforts to reach out to landowners and highlight the benefits of ESH. Currently, the majority of landowners do not show a propensity for ESH (particularly the shrublands element of ESH, as opposed to young forest) or the primary cutting approach that creates it (even-aged management). Yet, landowners are not resistant to cutting in general and report few barriers to doing so. The issue is that they largely believe that cutting single trees scattered throughout their property is better for their land and for wildlife than is cutting patches of trees. In this vein, many landowners indicate that if they learned cutting patches of trees benefited wildlife they would be more likely to do so. Additionally, financial support appears to be another means by which to encourage some landowners to cut patches of trees to create ESH. A segment of landowners who we describe as potential adopters could be most interested in messages and management activities related to ESH.

Recommendations to Support Landowners Interested in ESH Management

Policymakers, private lands wildlife biologists, educators, and private lands foresters all have key roles in supporting landowners' interest in ESH management. Based on our research findings, we provide recommendations for each of these groups.

For agency leadership and policymakers:

1. Recognize and build on the strong importance of wildlife and wildlife habitat to private landowners, which is in line with NYS DEC goals of enhanced wildlife habitat on private lands.
2. Given that lack of supportive regulation was the third greatest barrier to landowners and recognizing the connection between wildlife habitat outcomes and the forest management practices that create them, resist policies that restrict sustainable forest management practices that benefit wildlife.
3. Where possible, provide funding to educational and outreach programs for landowners interested in learning more about managing their lands for wildlife (e.g., private lands wildlife biologists or extension or ESH species-specific initiatives). These programs could cover information on ESH, associated wildlife, and how patch cutting activities benefit wildlife.
4. Explore the potential to adjust existing programs for tax reductions for forest management (e.g., 480A) to include activities that create ESH and support wildlife.
5. Provide funding to financial assistance and incentive programs that aid landowners in ESH management.
6. Given the general lack of awareness of the linkages between forest cutting practices, ESH, and wildlife outcomes, develop demonstration sites on public and other types lands to show examples of appropriate management for ESH and the benefits to wildlife.

For private lands wildlife biologists:

1. For those organizations who consider ESH on private lands important, biologists may help communicate ESH benefits for wildlife when working with landowners. Become familiar with ESH conservation needs, species, and management activities to support landowners with goals of sustaining wildlife diversity and creating wildlife habitat.
2. Recognize and build on the strong importance of wildlife and wildlife habitat to private landowners. Most landowner interests in wildlife may also be associated with hunting and/or wildlife watching, influencing which ESH species may be most of interest to them. Prepare communications with landowners accordingly about what *specific* wildlife species (game and non-game) interest them and ways to jointly achieve sustainable timber management for ESH and wildlife goals.
3. Come to a shared understanding, among professionals, of how ESH management prescriptions vary depending on wildlife species of interest. Be able to communicate these needs and how to best accomplish them on a private landowners' property.

4. Utilize educational tools and materials that support landowners interested in ESH – available from Cornell Cooperative Extension, Natural Resource Conservation Service, and many wildlife conservation NGOs.
5. Provide on-the-ground advice to landowners considering cutting patches of trees for ESH as to how and where to effectively manage for ESH, given that not every property is appropriate for ESH management. Build/maintain relationships with foresters who work with private landowners as they have connections with many landowners who may be interested in ESH and associated wildlife on their lands.

For educators and outreach specialists:

1. Recognize and build on the strong importance of wildlife and wildlife habitat to private landowners. Develop a multi-faceted range of educational materials for landowners on ESH benefits for wildlife, showing wildlife that landowners are interested in managing for and that utilize ESH. Connect landowners with financial and technical assistance programs to aid in habitat management. Distribute materials through NYSDEC, foresters, wildlife biologists, Cooperative Extension, and trained volunteers.
2. Focus on “potential adopters” with educational programs related to ESH conservation, the required management activities, finding markets for such activities, and how to take advantage of programs for financial assistance and other support.
3. Consider in messaging that landowners currently have less interest in shrublands on their property than young forest and mature forest.
4. Cultivate “continuing adopters” as ambassadors to share their experiences about the benefits of ESH to wildlife—given the reliance of landowners on friends and family as an information source about management. In some areas, landowner associations and trained landowner volunteers may provide a venue to share information about ESH and other wildlife habitat conservation needs.
5. Provide training that helps foresters and loggers better incorporate management for ESH into their practices and planning for those landowners interested in such wildlife species. To minimize the ecological challenges cited in our expert interviews, include information on how characteristics of a landowner’s property (where it is in the state, surrounding land uses and habitat types, soil types, slope, amount of invasive species, deer pressure) might make ESH more or less advisable on a property.
6. Utilize educational tools and materials about programs that support landowners interested in ESH –available from Cornell Cooperative Extension, Natural Resource Conservation Service, and many wildlife conservation NGOs. Many of these resources are catalogued at www.landownerhabitatdecisions.org.

For private lands foresters:

1. Recognize and build on the strong importance of wildlife and wildlife habitat to private landowners. Recognize the crucial value of wildlife to many private forest landowners. Become familiar with ESH conservation needs, species, and management activities to support landowners who seek to sustain wildlife diversity, and create wildlife habitat for game and non-game species. Foresters should realize that more landowners are

interested in these activities than interested in owning land for financial gain from timber products.

2. Utilize educational tools and promotional materials about programs that support landowners interested in ESH –available from Cornell Cooperative Extension, Natural Resource Conservation Service, and many wildlife conservation NGOs. Many of these resources are catalogued at www.landownerhabitatdecisions.org.
3. Learn what existing and emerging markets can be linked to landowners interested in ESH management through clearcutting or cutting patches to ensure it is financially feasible.
4. Develop marketing strategies that utilize the desired sources of information on wildlife benefits from cutting activities. For example, have copies of brochures to share with clients.
5. To minimize the ecological challenges cited in our expert interviews, be aware of how characteristics of a landowner’s property (where it is in the state, surrounding land uses and habitat types, soil types, slope, amount of invasive species, deer pressure) might make ESH more or less advisable on a property.
6. Build relationships with wildlife biologists and wildlife conservation organizations to stay well-informed about the large proportion of landowners with such goals for their property.

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APPENDIX A. ADDITIONAL TABLES OF LANDOWNER SURVEY RESULTS

1. What are the characteristics of the parcel(s) of land you own in the Southern Tier of New York State? The Southern Tier includes Chautauqua, Cattaraugus, Allegany, Steuben, Schuyler, Chemung, Tompkins, Cortland, Tioga, Broome, Chenango, Otsego, and Delaware counties. *(Complete one row for each parcel of land you own.)*

Small (10-49 acres) Landowner Responses

| Parcel in Southern Tier | How many acres? | How many years owned? | How far do you live (miles) from the parcel? |
|--------------------------------|-------------------------------|-------------------------------|--|
| 1 | <i>n=343, M=22.18, Mdn=20</i> | <i>n=340, M=19.75, Mdn=18</i> | <i>n=335, M=73.85, Mdn=0</i> |
| 2 | <i>n=57, M=16.04, Mdn=14</i> | <i>n=55, M=15.49, Mdn=13</i> | <i>n=54, M=49.43, Mdn=1</i> |
| 3 | <i>n=14, M=16.86, Mdn=15</i> | <i>n=14, M=16.86, Mdn=15</i> | <i>n=13, M=14.08, M=5</i> |
| 4 | <i>n=5, M=6.20, Mdn=2</i> | <i>n=5, M=16.40, Mdn=12</i> | <i>n=5, M=23.40, Mdn=12</i> |
| 5 | <i>n=0, M= -, Mdn=-</i> | <i>n=0, M=-, Mdn=-</i> | <i>n=0, M=-, Mdn=-</i> |

Large (50 or more acres) Landowner Responses

| Parcel in Southern Tier | How many acres? | How many years owned? | How far do you live (miles) from the parcel? |
|--------------------------------|--------------------------------|-------------------------------|--|
| 1 | <i>n=686, M=125.81, Mdn=91</i> | <i>n=655, M=26.09, Mdn=23</i> | <i>n=668, M=65.69, Mdn=0</i> |
| 2 | <i>n=275, M=76.96, Mdn=50</i> | <i>n=263, M=22.42, Mdn=18</i> | <i>n=269, M=49.45, Mdn=1</i> |
| 3 | <i>n=132, M=51.99, Mdn=30</i> | <i>n=128, M=20.83, Mdn=15</i> | <i>n=127, M=40.76, M=1</i> |
| 4 | <i>n=59, M=57.75, Mdn=55</i> | <i>n=58, M=19.40, Mdn=15</i> | <i>n=58, M=54.02, Mdn=1.5</i> |
| 5 | <i>n=29, M=54.38, Mdn=35</i> | <i>n=29, M=18.24, Mdn=16</i> | <i>n=29, M=95.41, Mdn=3</i> |

2. **About how many acres of each of the following types of land do you own in the Southern Tier?**
 (Note: a picture of the land types is below.) $n=1033$

Small (10-49 acres) Landowner Responses

| Land types | About how many acres owned? (write a number in each box) |
|--|--|
| Residential (lawn, gardens, buildings, paved) $n=343$ | $M=2.31, Mdn=2.00$ |
| Agricultural (crop fields, Christmas trees, hay fields mowed more than once annually) $n=343$ | $M=3.87, Mdn=0$ |
| Grassland or field regularly mowed every 1-3 years $n=343$ | $M=2.02, Mdn=0.0$ |
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) $n=342$ | $M=1.81, Mdn=0.0$ |
| Shrubland (more than 25% brush) $n=340$ | $M=2.72, Mdn=0.0$ |
| Young forest (most trees with trunks less than 4" in diameter) $n=336$ | $M=3.37, Mdn=0.0$ |
| Mature forest $n=336$ | $M=9.94, Mdn=8.00$ |
| Other (please specify) _____ $n=$ | $M=, Mdn=$ |

Large (50 or more acres) Landowner Responses

| Land types | About how many acres owned? (write a number in each box) |
|---|--|
| Residential (lawn, gardens, buildings, paved) $n=684$ | $M=4.10, Mdn=2$ |
| Agricultural (crop fields, Christmas trees, hay fields mowed more than once annually) $n=684$ | $M=45.24, Mdn=15$ |
| Grassland or field regularly mowed every 1-3 years $n=684$ | $M=14.0, Mdn=2.0$ |
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) $n=681$ | $M=10.23, Mdn=0.0$ |
| Shrubland (more than 25% brush) $n=681$ | $M=12.9, Mdn=0.0$ |
| Young forest (most trees with trunks less than 4" in diameter) $n=674$ | $M=13.46, Mdn=5.0$ |
| Mature forest $n=677$ | $M=65.91, Mdn=44.0$ |
| Other (please specify) _____ $n=$ | $M=, Mdn=$ |

3. **How would you like your land to change in the future?** Refer back to Question 2 to compare what you want in the future with the amount you currently have. *(Check one box for each row.)*

Small (10-49 acres) Landowner Responses

| Land types | Compared to now, I'd like my land to have... |
|---|---|
| Residential (lawn, gardens, buildings, paved) <i>n=277, M=1.98</i> | <input type="checkbox"/> Less 29 (10.5%) <input type="checkbox"/> Same 225 (81.2%) <input type="checkbox"/> More 23 (8.37%) |
| Agricultural (crop fields, Christmas trees, hay fields mowed more than once annually) <i>n=231, M=2.19</i> | <input type="checkbox"/> Less 16 (6.9%) <input type="checkbox"/> Same 156(67.5%) <input type="checkbox"/> More 59 (25.5%) |
| Grassland or field regularly mowed every 1-3 years <i>n=221, M=2.05</i> | <input type="checkbox"/> Less 25 (11.3%) <input type="checkbox"/> Same 161(72.9%) <input type="checkbox"/> More 35 (15.8%) |
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) <i>n=210, M=1.89</i> | <input type="checkbox"/> Less 45 (21.4%) <input type="checkbox"/> Same 143 (68.1%) <input type="checkbox"/> More 18 (7.9%) |
| Shrubland (more than 25% brush) <i>n=228, M=1.78</i> | <input type="checkbox"/> Less 69 (30.3%) <input type="checkbox"/> Same 141 (61.8%) <input type="checkbox"/> More 18 (7.9%) |
| Young forest (most trees with trunks less than 4" in diameter) <i>n=237, M=2.14</i> | <input type="checkbox"/> Less 41 (17.3%) <input type="checkbox"/> Same 122 (51.5%) <input type="checkbox"/> More 74 (31.2%) |
| Mature forest <i>n=277, M=2.26</i> | <input type="checkbox"/> Less 20 (7.2%) <input type="checkbox"/> Same 165 (59.6%) <input type="checkbox"/> More 92 (33.2%) |
| Other (please specify) _____ <i>n=12, M=2.17</i> | <input type="checkbox"/> Less 2 (16.7%) <input type="checkbox"/> Same 6 (50.0%) <input type="checkbox"/> More 4 (33.3%) |

Large (50 or more acres) Landowner Responses

| Land types | Compared to now, I'd like my land to have... |
|---|--|
| Residential (lawn, gardens, buildings, paved) <i>n=595, M=1.97</i> | <input type="checkbox"/> Less 43 (7.2%) <input type="checkbox"/> Same 526 (88.4%) <input type="checkbox"/> More 26 (4.4%) |
| Agricultural (crop fields, Christmas trees, hay fields mowed more than once annually) <i>n=589, M=2.28</i> | <input type="checkbox"/> Less 18 (3.1%) <input type="checkbox"/> Same 387 (65.7%) <input type="checkbox"/> More 184 (31.2%) |
| Grassland or field regularly mowed every 1-3 years <i>n=543, M=2.10</i> | <input type="checkbox"/> Less 60 (11.0%) <input type="checkbox"/> Same 371(68.3%) <input type="checkbox"/> More 112 (20.6%) |
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) <i>n=521, M=1.81</i> | <input type="checkbox"/> Less 145(21.1%) <input type="checkbox"/> Same 332 (48.4%) <input type="checkbox"/> More 44 (6.4%) |
| Shrubland (more than 25% brush) <i>n=541, M=1.72</i> | <input type="checkbox"/> Less 191 (35.5%) <input type="checkbox"/> Same 311 (57.5%) <input type="checkbox"/> More 39 (7.2%) |
| Young forest (most trees with trunks less than 4" in diameter) <i>n=558, M=2.12</i> | <input type="checkbox"/> Less 97 (17.4%) <input type="checkbox"/> Same 297 (53.2%) <input type="checkbox"/> More 164 (29.4%) |
| Mature forest <i>n=633, M=2.34</i> | <input type="checkbox"/> Less 30 (4.4%) <input type="checkbox"/> Same 360 (56.9%) <input type="checkbox"/> More 243 (38.4%) |
| Other (please specify) _____ <i>n=44, M=2.39</i> | <input type="checkbox"/> Less 4 (9.1%) <input type="checkbox"/> Same 19 (43.2%) <input type="checkbox"/> More 21 (47.7%) |

4. **Would you say your general attitude toward each of these land types is positive, negative, or neutral?** (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Activities | Very Negative | Negative | Neither | Positive | Very Positive |
|---|----------------------|-----------------|------------------------------|------------------------------|------------------------------|
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) <i>n</i> =297, <i>M</i> =3.35 | 9 (3.0%) | 35 (11.8%) | 129 (43.4%) | 91 (30.6%) | 33 (11.1%) |
| Shrubland (more than 25% brush) <i>n</i> =296, <i>M</i> =3.32 | 9 (3.0%) | 51 (17.2%) | 106 (35.8%) | 95 (32.1%) | 35 (11.8%) |
| Young forest (most trees with trunks less than 4" in diameter) <i>n</i> =295, <i>M</i> =3.89 | 4 (1.4%) | 15 (5.1%) | 57 (19.3%) | 153 (51.9%) | 66 (22.4%) |
| Mature forest <i>n</i> =308, <i>M</i> =4.28 | 1 (0.3%) | 6 (1.9%) | 40 (13.0%) | 121 (39.3%) | 140 (45.5%) |

For mean calculations, items coded as 1=Very Negative, 2=Negative, 3=Neither, 4=Positive, 5=Very Positive

Large (50 or more acres) Landowner Responses

| Activities | Very Negative | Negative | Neither | Positive | Very Positive |
|---|----------------------|-----------------|------------------------------|------------------------------|------------------------------|
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) <i>n</i> =629, <i>M</i> =3.14 | 34 (5.4%) | 129 (20.5%) | 232 (36.9%) | 183 (29.1%) | 5 (8.1%) |
| Shrubland (more than 25% brush) <i>n</i> =625, <i>M</i> =3.16 | 37 (5.9%) | 129 (20.6%) | 204 (32.6%) | 207 (33.1%) | 48 (7.7%) |
| Young forest (most trees with trunks less than 4" in diameter) <i>n</i> =620, <i>M</i> =3.79 | 7 (1.1%) | 2 (3.7%) | 160 (25.8%) | 331 (53.4%) | 99 (16.0%) |
| Mature forest <i>n</i> =656, <i>M</i> =4.27 | 5 (0.8%) | 6 (0.9%) | 85 (13.0%) | 269 (41.0%) | 291 (44.4%) |

For mean calculations, items coded as 1=Very Negative, 2=Negative, 3=Neither, 4=Positive, 5=Very Positive

5. How necessary or unnecessary do you believe the following types of land are for wildlife conservation? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Activities | Very Un- necessary | Un- necessary | Neither | Necessary | Very Necessary |
|--|-----------------------|------------------|---------------|------------------------------|------------------------------|
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) <i>n</i> =310, <i>M</i> =3.96 | 8 (2.6%) | 16 (5.2%) | 42 (13.5%) | 158 (51.0%) | 86 (27.7%) |
| Shrubland (more than 25% brush) <i>n</i> =314, <i>M</i> =4.10 | 7 (2.2%) | 13 (4.1%) | 25 (8.0%) | 166 (52.9%) | 103 (32.8%) |
| Young forest (most trees with trunks less than 4" in diameter) <i>n</i> =313, <i>M</i> =4.18 | 8 (2.6%) | 4 (1.3%) | 24 (7.7%) | 165 (52.7%) | 112 (35.8%) |
| Mature forest <i>n</i> =316, <i>M</i> =4.32 | 10 (3.2%) | 3 (0.9%) | 16 (5.1%) | 135 (42.7%) | 152 (48.1%) |

For mean calculations, items coded as 1=Very Unnecessary, 2=Unnecessary, 3=Neither, 4=Necessary, 5=Very Necessary

Large (50 or more acres) Landowner Responses

| Activities | Very Un- necessary | Un- necessary | Neither | Necessary | Very Necessary |
|--|-----------------------|------------------|--------------|------------------------------|-------------------|
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) <i>n</i> =653, <i>M</i> =3.86 | 29 (4.4%) | 51 (7.8%) | 53 (8.1%) | 370 (56.7%) | 150 (23.0%) |
| Shrubland (more than 25% brush) <i>n</i> =641, <i>M</i> =4.06 | 18 (2.8%) | 32 (5.0%) | 38 (5.9%) | 358 (55.9%) | 195 (30.4%) |
| Young forest (most trees with trunks less than 4" in diameter) <i>n</i> =636, <i>M</i> =4.07 | 15 (2.4%) | 18 (2.8%) | 45 (7.1%) | 386 (60.7%) | 172 (27.0%) |
| Mature forest <i>n</i> =657, <i>M</i> =4.23 | 14 (2.1%) | 15 (2.3%) | 43 (6.5%) | 319 (48.6%) | 266 (40.5%) |

For mean calculations, items coded as 1=Very Unnecessary, 2=Unnecessary, 3=Neither, 4=Necessary, 5=Very Necessary

6. To what extent do you agree or disagree with each of the following statements about your land?
(Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Thoughts about your land | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|--|-------------------|--------------|---------------|------------------------------|------------------------------|
| It is my favorite place to be. <i>n</i> =326, <i>M</i> =4.28 | 3 (0.9%) | 7 (2.1%) | 46 (14.1%) | 109 (33.4%) | 161 (49.4%) |
| For the things I enjoy most, no other place can compare. <i>n</i> =322, <i>M</i> =3.89 | 4 (1.2%) | 29 (9.0%) | 59 (18.3%) | 136 (42.2%) | 94 (29.2%) |
| Everything about it is a reflection of me. <i>n</i> =319, <i>M</i> =3.77 | 4 (1.3%) | 22 (6.9%) | 92 (28.8%) | 127 (39.8%) | 74 (23.2%) |
| I feel happiest when I am there. <i>n</i> =319, <i>M</i> =4.05 | 3 (0.9%) | 12 (3.8%) | 54 (16.9%) | 146 (45.8%) | 104 (32.6%) |
| It is the best place to do the things I enjoy. <i>n</i> =321, <i>M</i> =3.99 | 2 (0.6%) | 16 (5.0%) | 63 (19.6%) | 143 (44.5%) | 97 (30.2%) |
| I feel that I can really be myself there. <i>n</i> =322, <i>M</i> =4.21 | 3 (0.9%) | 3 (0.9%) | 38 (11.8%) | 156 (48.4%) | 122 (37.9%) |

For mean calculations, items coded as 1=Strongly Disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strong Agree

Large (50 or more acres) Landowner Responses

| Thoughts about your land | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|--|-------------------|--------------|----------------|------------------------------|------------------------------|
| It is my favorite place to be. <i>n</i> =664, <i>M</i> =4.44 | 3 (0.5%) | 12 (1.8%) | 54 (8.1%) | 216 (32.5%) | 379 (57.1%) |
| For the things I enjoy most, no other place can compare. <i>n</i> =656, <i>M</i> =4.12 | 6 (0.9%) | 34 (5.2%) | 110 (16.8%) | 229 (34.9%) | 277 (42.2%) |
| Everything about it is a reflection of me. <i>n</i> =655, <i>M</i> =3.90 | 9 (1.4%) | 39 (6.0%) | 147 (22.4%) | 273 (41.7%) | 187 (28.5%) |
| I feel happiest when I am there. <i>n</i> =657, <i>M</i> =4.23 | 4 (0.6%) | 17 (2.6%) | 88 (13.4%) | 265 (40.3%) | 283 (43.1%) |
| It is the best place to do the things I enjoy. <i>n</i> =660, <i>M</i> =4.19 | 5 (0.8%) | 25 (3.8%) | 78 (11.8%) | 285 (43.2%) | 267 (40.5%) |
| I feel that I can really be myself there. <i>n</i> =662, <i>M</i> =4.28 | 5 (0.8%) | 10 (1.5%) | 76 (11.5%) | 274 (41.4%) | 297 (44.9%) |

For mean calculations, items coded as 1=Strongly Disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strong Agree

7. People own land for many reasons. How important are the following as reasons for why you own your land in the Southern Tier? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Reasons you own your land | Not at all important | Slightly important | Moderately important | Very important |
|--|------------------------------|-----------------------------|------------------------------|------------------------------|
| To enjoy the scenery <i>n</i> =325, <i>M</i> =3.48 | 5 (1.5%) | 25 (7.7%) | 103 (31.9%) | 190 (58.8%) |
| To protect nature <i>n</i> =325, <i>M</i> =3.29 | 12 (3.7%) | 42 (12.9%) | 112 (34.5%) | 159 (48.9%) |
| To provide a place for wildlife to live <i>n</i> =326, <i>M</i> =3.33 | 11 (3.4%) | 38 (11.7%) | 109 (33.4%) | 326 (51.5%) |
| For land investment (e.g., sale in the future) <i>n</i> =322, <i>M</i> =2.26 | 93 (28.9%) | 95 (29.5%) | 91 (28.3%) | 43 (13.4%) |
| For privacy <i>n</i> =325, <i>M</i> =3.38 | 15 (4.6%) | 29 (8.9%) | 97 (29.8%) | 184 (56.6%) |
| To pass land on to my heirs <i>n</i> =325, <i>M</i> =2.70 | 59 (18.2%) | 79 (24.4%) | 85 (26.2%) | 101 (31.2%) |
| For production of timber products <u>for sale</u> <i>n</i> =325, <i>M</i> =1.64 | 185 (56.9%) | 83 (25.5%) | 46 (14.2%) | 11 (3.4%) |
| For production of timber products for <u>my family's</u> <u>use</u> <i>n</i> =325, <i>M</i> =1.79 | 154 (47.4%) | 102 (31.4%) | 53 (16.3%) | 16 (4.9%) |
| For non-timber forest products (e.g., maple syrup) <i>n</i> =323, <i>M</i> =1.38 | 234 (72.4%) | 63 (19.5%) | 19 (5.9%) | 7 (2.2%) |
| For farming <i>n</i> =324, <i>M</i> =1.70 | 194 (59.9%) | 64 (19.8%) | 36 (11.1%) | 30 (9.3%) |
| For hunting or fishing <i>n</i> =325, <i>M</i> =2.62 | 98 (30.2%) | 46 (14.2%) | 63 (19.4%) | 118 (36.3%) |
| For birding or birdwatching <i>n</i> =323, <i>M</i> =2.63 | 54 (16.7%) | 87 (26.9%) | 103 (31.9%) | 79 (24.5%) |
| For recreation that isn't wildlife related <i>n</i> =321, <i>M</i> =2.68 | 50 (15.6%) | 77 (24.0%) | 120 (37.4%) | 74 (23.1%) |
| Other (please specify): <i>n</i> =33, <i>M</i> =3.85 | 0 (0.0%) | 0 (0.0%) | 5 (15.2%) | 28 (84.8%) |

For mean calculations, items coded as 1=Not at all important, 2=Slightly important, 3=Moderately important, 4=Very important

Large (50 or more acres) Landowner Responses

| Reasons you own your land | Not at all important | Slightly important | Moderately important | Very important |
|--|------------------------------|------------------------------|------------------------------|------------------------------|
| To enjoy the scenery <i>n</i> =662, <i>M</i> =3.43 | 11 (1.7%) | 62 (9.4%) | 219 (33.1%) | 370 (55.9%) |
| To protect nature <i>n</i> =653, <i>M</i> =3.34 | 14 (2.1%) | 79 (12.1%) | 233 (35.7%) | 327 (50.1%) |
| To provide a place for wildlife to live <i>n</i> =654, <i>M</i> =3.37 | 17 (2.6%) | 78 (11.9%) | 203 (31.0%) | 356 (54.4%) |
| For land investment (e.g., sale in the future) <i>n</i> =659, <i>M</i> =2.38 | 188 (28.5%) | 166 (25.2%) | 173 (26.3%) | 132 (20.0%) |
| For privacy <i>n</i> =667, <i>M</i> =3.42 | 27 (4.0%) | 57 (8.5%) | 191 (28.6%) | 392 (58.8%) |
| To pass land on to my heirs <i>n</i> =664, <i>M</i> =2.98 | 86 (13.0%) | 126 (19.0%) | 170 (25.6%) | 282 (42.5%) |
| For production of timber products <u>for sale</u> <i>n</i> =663, <i>M</i> =2.42 | 156 (23.5%) | 200 (30.2%) | 182 (27.5%) | 125 (18.9%) |
| For production of timber products for <u>my family's</u> <u>use</u> <i>n</i> =661, <i>M</i> =2.92 | 186 (28.1%) | 190 (28.7%) | 190 (28.7%) | 95 (14.4%) |
| For non-timber forest products (e.g., maple syrup) <i>n</i> =655, <i>M</i> =1.64 | 385 (58.8%) | 158 (24.1%) | 73 (11.1%) | 39 (6.0%) |
| For farming <i>n</i> =659, <i>M</i> =2.44 | 205 (31.1%) | 126 (19.1%) | 158 (24.0%) | 170 (25.8%) |
| For hunting or fishing <i>n</i> =662, <i>M</i> =3.06 | 94 (14.2%) | 96 (14.5%) | 147 (22.2%) | 325 (49.1%) |
| For birding or birdwatching <i>n</i> =657, <i>M</i> =2.53 | 134 (20.4%) | 183 (27.9%) | 200 (30.4%) | 140 (21.3%) |
| For recreation that isn't wildlife related <i>n</i> =656, <i>M</i> =2.72 | 106 (16.2%) | 149 (22.7%) | 225 (34.3%) | 176 (26.8%) |
| Other (please specify): <i>n</i> =64, <i>M</i> =3.73 | 0 (0.0%) | 1 (1.6%) | 15 (23.4%) | 48 (75.0%) |

For mean calculations, items coded as 1=Not at all important, 2=Slightly important, 3=Moderately important, 4=Very important

8. We're interested in knowing your views about the **management of land and wildlife** (as we define on the inside front cover). To what extent do you agree or disagree with each of the following? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Views about land and wildlife | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|---|--------------------------|------------------------------|----------------|------------------------------|-----------------------|
| Land should be managed so that people benefit. <i>n=314, M=3.53</i> | 16 (4.7%) | 34 (10.8%) | 75 (23.9%) | 146 (46.5%) | 43 (13.7%) |
| Trees and plants have value, regardless of people's uses for them. <i>n=329, M=4.34</i> | 5 (1.5%) | 3 (0.9%) | 3 (1.5%) | 177 (53.8%) | 139 (42.2%) |
| People's needs should take priority over conservation of the <u>land</u> . <i>n=327, M=2.40</i> | 62 (19.0%) | 133 (40.7%) | 82 (25.1%) | 40 (12.2%) | 10 (3.1%) |
| Land, and the plants and trees on it, should be left to exist naturally without being managed by people. <i>n=326, M=2.71</i> | 28 (8.6%) | 132 (40.5%) | 92 (28.2%) | 55 (12.3%) | 19 (4.0%) |
| Wildlife should be managed so that people benefit. <i>n=325, M=3.23</i> | 25 (7.7%) | 65 (20.0%) | 79 (24.3%) | 121 (37.2%) | 35 (10.8%) |
| Wildlife have value, regardless of people's uses for them. <i>n=329, M=4.30</i> | 4 (1.2%) | 7 (2.1%) | 9 (2.7%) | 176 (53.5%) | 133 (40.4%) |
| People's needs should take priority over conservation of <u>wildlife</u> . <i>n=328, M=2.30</i> | 71 (21.6%) | 140 (42.7%) | 79 (24.1%) | 25 (7.6%) | 13 (4.0%) |
| Wildlife should be left to exist naturally without being managed by people. <i>n=329, M=2.79</i> | 27 (8.2%) | 131 (39.8%) | 79 (24.0%) | 68 (20.7%) | 24 (7.3%) |
| Wildlife benefits from management by people. <i>n=325, M=3.68</i> | 8 (2.5%) | 18 (5.5%) | 84 (25.8%) | 176 (54.2%) | 39 (12.0%) |
| Land benefits from management by people. <i>n=327, M=3.73</i> | 7 (2.1%) | 19 (5.8%) | 69 (21.1%) | 193 (59.0%) | 39 (11.9%) |
| To benefit wildlife, land is best left untouched. <i>n=325, M=2.71</i> | 31 (9.5%) | 129 (39.7%) | 86 (26.5%) | 62 (19.1%) | 17 (5.2%) |
| Generally, cutting trees on the land is good for wildlife. <i>n=327, M=3.24</i> | 17 (5.2%) | 62 (19.0%) | 94 (28.7%) | 133 (40.7%) | 21 (6.4%) |

For mean calculations, items coded as 1=Strongly Disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly Agree

Large (50 or more acres) Landowner Responses

| Views about land and wildlife | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|---|--------------------------|------------------------------|----------------|------------------------------|-----------------------|
| <u>Land</u> should be managed so that people benefit. <i>n=655, M=3.67</i> | 27 (4.1%) | 57 (8.7%) | 145 (22.1%) | 305 (46.6%) | 121 (18.5%) |
| <u>Trees and plants</u> have value, regardless of people's uses for them. <i>n=664, M=4.38</i> | 3 (0.5%) | 4 (0.6%) | 26 (3.9%) | 335 (50.5%) | 296 (44.6%) |
| People's needs should take priority over conservation of the <u>land</u> . <i>n=662, M=2.48</i> | 107 (16.2%) | 269 (40.6%) | 174 (26.3%) | 87 (13.1%) | 25 (3.8%) |
| <u>Land, and the plants and trees on it</u> , should be left to exist naturally without being managed by people. <i>n=661, M=2.34</i> | 96 (14.5%) | 355 (53.7%) | 123 (18.6%) | 66 (10.0%) | 21 (3.2%) |
| <u>Wildlife</u> should be managed so that people benefit. <i>n=661, M=3.37</i> | 46 (7.0%) | 109 (16.5%) | 143 (21.6%) | 278 (42.1%) | 85 (12.9%) |
| <u>Wildlife</u> have value, regardless of people's uses for them. <i>n=661, M=4.27</i> | 7 (1.1%) | 12 (1.8%) | 38 (5.7%) | 340 (51.4%) | 264 (39.9%) |
| People's needs should take priority over conservation of <u>wildlife</u> . <i>n=663, M=2.44</i> | 133 (20.1%) | 251 (37.9%) | 165 (24.9%) | 84 (12.7%) | 30 (4.5%) |
| <u>Wildlife</u> should be left to exist naturally without being managed by people. <i>n=663, M=2.60</i> | 88 (13.3%) | 289 (43.6%) | 135 (20.4%) | 103 (15.5%) | 48 (7.2%) |
| <u>Wildlife</u> benefits from management by people. <i>n=664, M=3.74</i> | 17 (2.6%) | 56 (8.4%) | 134 (20.2%) | 335 (50.5%) | 122 (18.4%) |
| <u>Land</u> benefits from management by people. <i>n=657, M=3.95</i> | 7 (1.1%) | 27 (4.1%) | 96 (14.6%) | 389 (59.2%) | 138 (21.0%) |
| To benefit wildlife, land is best left untouched. <i>n=662, M=2.44</i> | 100 (15.1%) | 311 (47.0%) | 138 (20.8%) | 84 (12.7%) | 29 (4.4%) |
| Generally, cutting trees on the land is good for wildlife. <i>n=659, M=3.64</i> | 12 (1.8%) | 76 (11.5%) | 155 (23.5%) | 312 (47.3%) | 104 (15.8%) |

For mean calculations, items coded as 1=Strongly Disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly Agree

9. The following are activities some landowners might do (or have others do for them) on their land. Which of these have you done in the last 10 years, and which are you likely to do in the next 5 years? (Check one box in each row and column.)

Small (10-49 acres) Landowner Responses

| Activities | Have you done this activity in the <u>last 10 years</u>? | How likely are you to do the activity in the <u>next 5 years</u>? |
|--|---|--|
| Cut a patch of trees (at least ½ acre) where all or most of the trees were removed (to open the canopy) and plants and trees were allowed to grow back <i>n=304, n=315</i> | <input type="checkbox"/> Yes 72 (23.7%) <input type="checkbox"/> No 232 (76.3%) <input type="checkbox"/> I do <u>not</u> own land with woods. 20 | <input type="checkbox"/> Not at all 163 (47.5%) <input type="checkbox"/> Slightly 99 (31.4%) <input type="checkbox"/> Moderately 33 (10.5%) <input type="checkbox"/> Very 20 (6.3%) |
| Cut single trees scattered throughout all or a part of your woodland <i>n=312, n=314</i> | <input type="checkbox"/> Yes 219 (63.8%) <input type="checkbox"/> No 93 (27.1%) <input type="checkbox"/> I do <u>not</u> own land with woods. 16 | <input type="checkbox"/> Not at all 56 (17.8%) <input type="checkbox"/> Slightly 104 (33.1%) <input type="checkbox"/> Moderately 80 (25.5%) <input type="checkbox"/> Very 74 (23.6%) |

Large (50 or more acres) Landowner Responses

| Activities | Have you done this activity in the <u>last 10 years</u>? | How likely are you to do the activity in the <u>next 5 years</u>? |
|--|---|--|
| Cut a patch of trees (at least ½ acre) where all or most of the trees were removed (to open the canopy) and plants and trees were allowed to grow back <i>n=653, n=649</i> | <input type="checkbox"/> Yes 228 (34.9%) <input type="checkbox"/> No 425 (65.1%) <input type="checkbox"/> I do <u>not</u> own land with woods. 7 | <input type="checkbox"/> Not at all 293 (45.1%) <input type="checkbox"/> Slightly 167 (25.7%) <input type="checkbox"/> Moderately 98 (15.1%) <input type="checkbox"/> Very 91 (14.0%) |
| Cut single trees scattered throughout all or a part of your woodland <i>n=661, n=655</i> | <input type="checkbox"/> Yes 528 (79.9%) <input type="checkbox"/> No 133 (20.1%) <input type="checkbox"/> I do <u>not</u> own land with woods. 8 | <input type="checkbox"/> Not at all 77 (11.8%) <input type="checkbox"/> Slightly 164 (25.0%) <input type="checkbox"/> Moderately 154 (23.5%) <input type="checkbox"/> Very 260 (39.7%) |

10. How bad or good do you believe these activities are for your land? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Activities | Very Bad | Bad | Neither | Good | Very Good |
|---|-----------------|---------------|------------------------------|------------------------------|------------------|
| Cutting a patch of trees (at least ½ acre) <i>n</i> =330, <i>M</i> =3.10 | 20 (6.2%) | 64 (19.7%) | 125 (38.5%) | 97 (29.8%) | 19 (5.8%) |
| Cutting single trees scattered throughout the woods <i>n</i> =330, <i>M</i> =3.89 | 2 (0.6%) | 11 (3.3%) | 66 (20.0%) | 193 (58.5%) | 58 (17.6%) |

For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good

Large (50 or more acres) Landowner Responses

| Activities | Very Bad | Bad | Neither | Good | Very Good |
|---|-----------------|----------------|------------------------------|------------------------------|------------------|
| Cutting a patch of trees (at least ½ acre) <i>n</i> =663, <i>M</i> =3.35 | 35 (5.3%) | 110 (16.6%) | 212 (32.0%) | 200 (30.2%) | 106 (16.0%) |
| Cutting single trees scattered throughout the woods <i>n</i> =665, <i>M</i> =4.14 | 4 (0.6%) | 5 (0.8%) | 103 (15.5%) | 333 (50.1%) | 220 (33.1%) |

For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good

11. How bad or good do you believe these activities are for wildlife? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Activities | Very Bad | Bad | Neither | Good | Very Good |
|---|-----------------|---------------|------------------------------|------------------------------|------------------|
| Cutting a patch of trees (at least ½ acre) <i>n</i> =329, <i>M</i> =3.25 | 19 (5.8%) | 56 (17.1%) | 114 (34.8%) | 102 (31.1%) | 37 (11.3%) |
| Cutting single trees scattered throughout the woods <i>n</i> =328, <i>M</i> =3.67 | 3 (0.9%) | 9 (2.7%) | 128 (39.0%) | 142 (43.3%) | 46 (14.0%) |

For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good

Large (50 or more acres) Landowner Responses

| Activities | Very Bad | Bad | Neither | Good | Very Good |
|---|-----------------|---------------|----------------|------------------------------|------------------|
| Cutting a patch of trees (at least ½ acre) <i>n</i> =660, <i>M</i> =3.54 | 31 (4.7%) | 91 (13.8%) | 170 (25.8%) | 225 (34.1%) | 143 (21.7%) |
| Cutting single trees scattered throughout the woods <i>n</i> =658, <i>M</i> =3.84 | 5 (0.8%) | 14 (2.1%) | 191 (29.0%) | 317 (48.2%) | 131 (19.9%) |

For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good

12. How common is it that other landowners in your area do these activities? (Check one choice for each row.)

Small (10-49 acres) Landowner Responses

| Activities | Not at all Common | Slightly Common | Moderately Common | Very Common | Don't Know |
|---|--------------------------|-----------------------------|--------------------------|------------------------------|-------------------|
| Cutting a patch of trees (at least ½ acre) <i>n=235, M=2.19</i> | 72 (30.6%) | 73 (31.1%) | 64 (27.2%) | 26 (11.1%) | 96 |
| Cutting single trees scattered throughout the woods <i>n=242, M=3.20</i> | 13 (5.4%) | 43 (17.8%) | 68 (28.1%) | 118 (48.8%) | 87 |

For mean calculations, items coded as 1=Not at all common, 2=Slightly common, 3=Moderately common, 4=Very common

Large (50 or more acres) Landowner Responses

| Activities | Not at all Common | Slightly Common | Moderately Common | Very Common | Don't Know |
|---|------------------------------|------------------------|--------------------------|------------------------------|-------------------|
| Cutting a patch of trees (at least ½ acre) <i>n=501, M=2.19</i> | 172 (34.3%) | 133 (26.5%) | 126 (25.1%) | 70 (14.0%) | 164 |
| Cutting single trees scattered throughout the woods <i>n=544, M=3.26</i> | 34 (6.3%) | 74 (13.6%) | 154 (28.3%) | 282 (51.8%) | 544 |

For mean calculations, items coded as 1=Not at all common, 2=Slightly common, 3=Moderately common, 4=Very common

13. When it comes to the activities you do on your land, how important to you are the opinions of each of the following groups? (Check one box for row.)

Small (10-49 acres) Landowner Responses

| Groups of people | Not at all Important | Slightly Important | Moderately Important | Very Important |
|--|------------------------------|------------------------------|------------------------------|------------------------------|
| My family <i>n=332, M=2.92</i> | 50 (15.1%) | 63 (19.0%) | 82 (24.7%) | 137 (41.3%) |
| My friends <i>n=332, M=2.11</i> | 120 (36.1%) | 92 (27.7%) | 82 (24.7%) | 38 (11.4%) |
| Nearby landowners <i>n=333, M=2.14</i> | 101 (30.3%) | 114 (34.2%) | 88 (26.4%) | 30 (9.0%) |
| Forest professionals <i>n=331, M=2.56</i> | 80 (24.2%) | 62 (18.7%) | 113 (34.1%) | 76 (23.0%) |
| Wildlife professionals <i>n=332, M=2.66</i> | 66 (19.9%) | 61 (18.4%) | 125 (37.7%) | 80 (24.1%) |

For mean calculations, items coded as 1=Not at all important, 2=Slightly important, 3=Moderately important, 4=Very important

Large (50 or more acres) Landowner Responses

| Groups of people | Not at all Important | Slightly Important | Moderately Important | Very Important |
|---|------------------------------|------------------------------|------------------------------|------------------------------|
| My family <i>n</i> =673, <i>M</i> =3.09 | 65 (9.7%) | 103 (15.3%) | 210 (31.2%) | 295 (43.8%) |
| My friends <i>n</i> =669, <i>M</i> =2.19 | 205 (30.6%) | 203 (30.3%) | 192 (28.7%) | 69 (10.3%) |
| Nearby landowners <i>n</i> =667, <i>M</i> =2.05 | 226 (33.9%) | 237 (35.5%) | 151 (22.6%) | 53 (7.9%) |
| Forest professionals <i>n</i> =664, <i>M</i> =2.71 | 104 (15.7%) | 161 (24.2%) | 225 (33.9%) | 174 (26.2%) |
| Wildlife professionals <i>n</i> =669, <i>M</i> =2.66 | 116 (17.3%) | 163 (24.4%) | 221 (33.0%) | 169 (25.3%) |

For mean calculations, items coded as 1=Not at all important, 2=Slightly important, 3=Moderately important, 4=Very important

14. How bad or good do these groups of people think cutting a patch of trees (at least ½ acre) where all or most of the trees were removed would be for your land? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Groups of people | Very Bad | Bad | Neither | Good | Very Good | Don't Know |
|---|---------------|---------------|------------------------------|---------------|---------------|------------|
| My family <i>n</i> =236, <i>M</i> =2.89 | 29 (12.3%) | 48 (20.3%) | 97 (41.1%) | 45 (19.1%) | 17 (7.2%) | 83 |
| My friends <i>n</i> =205, <i>M</i> =2.97 | 11 (5.4%) | 38 (18.5%) | 111 (54.1%) | 36 (17.6%) | 9 (4.4%) | 115 |
| Nearby landowners <i>n</i> =192, <i>M</i> =2.94 | 10 (5.2%) | 36 (18.8%) | 108 (56.3%) | 31 (16.1%) | 7 (3.6%) | 128 |
| Forest professionals <i>n</i> =191, <i>M</i> =3.24 | 16 (8.4%) | 31 (16.2%) | 68 (35.6%) | 43 (22.5%) | 33 (17.3%) | 191 |
| Wildlife professionals <i>n</i> =190, <i>M</i> =3.23 | 18 (9.5%) | 31 (16.3%) | 65 (34.2%) | 41 (21.6%) | 35 (18.4%) | 130 |

For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good

Large (50 or more acres) Landowner Responses

| Groups of people | Very Bad | Bad | Neither | Good | Very Good | Don't Know |
|---|---------------|----------------|------------------------------|------------------------------|------------------------------|------------|
| My family <i>n</i> =516, <i>M</i> =3.10 | 53 (10.3%) | 110 (21.3%) | 175 (33.9%) | 90 (17.4%) | 88 (17.1%) | 135 |
| My friends <i>n</i> =451, <i>M</i> =3.16 | 30 (6.7%) | 76 (16.9%) | 194 (43.0%) | 95 (21.1%) | 56 (12.4%) | 197 |
| Nearby landowners <i>n</i> =391, <i>M</i> =3.11 | 20 (5.0%) | 64 (16.1%) | 203 (51.1%) | 73 (18.4%) | 37 (9.3%) | 245 |
| Forest professionals <i>n</i> =403, <i>M</i> =3.54 | 26 (6.5%) | 70 (17.4%) | 80 (19.9%) | 114 (28.3%) | 113 (28.0%) | 239 |
| Wildlife professionals <i>n</i> =401, <i>M</i> =3.64 | 24 (6.0%) | 61 (15.2%) | 76 (19.0%) | 114 (28.4%) | 126 (31.4%) | 241 |

For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good

15. How bad or good do these groups of people think cutting single trees scattered throughout all or a part of your woodland would be for your land? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Groups of people | Very Bad | Bad | Neither | Good | Very Good | Don't Know |
|---|-------------|--------------|------------------------------|------------------------------|---------------|------------|
| My family <i>n</i> =253, <i>M</i> =3.66 | 4 (1.6%) | 10 (4.0%) | 94 (37.2%) | 106 (41.9%) | 39 (15.4%) | 70 |
| My friends <i>n</i> =218, <i>M</i> =3.56 | 2 (0.9%) | 7 (3.2%) | 103 (47.2%) | 80 (36.7%) | 26 (11.9%) | 106 |
| Nearby landowners <i>n</i> =197, <i>M</i> =3.51 | 2 (1.0%) | 7 (3.6%) | 101 (51.3%) | 63 (32.0%) | 24 (12.2%) | 126 |
| Forest professionals <i>n</i> =203, <i>M</i> =3.78 | 3 (1.5%) | 11 (5.4%) | 66 (32.5%) | 70 (34.5%) | 53 (26.1%) | 120 |
| Wildlife professionals <i>n</i> =199, <i>M</i> =3.71 | 2 (1.0%) | 11 (5.5%) | 75 (37.7%) | 66 (33.2%) | 45 (22.6%) | 125 |

For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good

Large (50 or more acres) Landowner Responses

| Groups of people | Very Bad | Bad | Neither | Good | Very Good | Don't Know |
|--|--------------|--------------|------------------------------|------------------------------|------------------------------|------------|
| My family $n=545$, $M=3.97$ | 10 (1.8%) | 10 (1.8%) | 145 (26.6%) | 202 (37.1%) | 178 (32.7%) | 110 |
| My friends $n=472$, $M=3.78$ | 11 (2.3%) | 6 (1.3%) | 172 (36.4%) | 172 (36.4%) | 111 (23.5%) | 183 |
| Nearby landowners $n=428$, $M=3.71$ | 6 (1.4%) | 7 (1.6%) | 182 (42.5%) | 144 (33.6%) | 89 (20.8%) | 223 |
| Forest professionals $n=443$, $M=4.19$ | 5 (1.1%) | 6 (1.4%) | 75 (16.9%) | 172 (38.8%) | 185 (41.8%) | 206 |
| Wildlife professionals $n=405$, $M=4.04$ | 4 (1.0%) | 10 (2.5%) | 88 (21.7%) | 165 (40.7%) | 138 (34.1%) | 243 |

For mean calculations, items coded as 1=Very Bad, 2=Bad, 3=Neither, 4=Good, 5=Very Good

16. To what extent do you feel you are able to get the following activities done on your land (if you decide to do so)? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Activities | Not at all Able | Slightly Able | Moderately Able | Very Able |
|---|-----------------|---------------|-----------------|------------------------------|
| Cutting a patch of trees (at least ½ acre) $n=325$, $M=2.87$ | 55 (16.9%) | 61 (18.8%) | 80 (24.7%) | 129 (39.7%) |
| Cutting single trees scattered throughout the woods $n=325$, $M=3.33$ | 28 (8.6%) | 30 (9.2%) | 75 (23.1%) | 192 (59.1%) |

For mean calculations, items coded as 1=Not at all Able, 2=Slightly Able, 3=Moderately Able, 4=Very Able

Large (50 or more acres) Landowner Responses

| Activities | Not at all Able | Slightly Able | Moderately Able | Very Able |
|---|-----------------|----------------|-----------------|------------------------------|
| Cutting a patch of trees (at least ½ acre) $n=658$, $M=3.05$ | 81 (12.3%) | 110 (16.7%) | 165 (25.1%) | 302 (45.9%) |
| Cutting single trees scattered throughout the woods $n=660$, $M=3.48$ | 29 (4.4%) | 47 (7.1%) | 165 (25.0%) | 419 (63.5%) |

For mean calculations, items coded as 1=Not at all Able, 2=Slightly Able, 3=Moderately Able, 4=Very Able

17. Do you agree or disagree that the following action would benefit wildlife in the following areas?
(Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Cutting a patch of trees (at least ½ acre) on my land would benefit wildlife.... | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Don't Know |
|---|------------------------------|-----------------|----------------|-----------------------------|---------------------------|-----------------------|
| on my property. <i>n=274, M=3.05</i> | 36 (13.1%) | 56 (20.4%) | 71 (25.9%) | 80 (29.2%) | 31 (11.3%) | 49 |
| on properties neighboring mine. <i>n=255, M=3.12</i> | 29 (11.4%) | 49 (19.2%) | 68 (26.7%) | 80 (31.4%) | 29 (11.4%) | 68 |
| in my local area. <i>n=253, M=3.19</i> | 29 (11.5%) | 43 (17.0%) | 63 (24.9%) | 86 (34.0%) | 32 (12.6%) | 69 |

For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly agree

Large (50 or more acres) Landowner Responses

| Cutting a patch of trees (at least ½ acre) on my land would benefit wildlife.... | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Don't Know |
|---|------------------------------|-----------------|----------------|------------------------------|---------------------------|-------------------|
| on my property. <i>n=580, M=3.42</i> | 61 (10.5%) | 95 (16.4%) | 104 (17.9%) | 181 (31.2%) | 139 (24.0%) | 79 |
| on properties neighboring mine. <i>n=529, M=3.41</i> | 45 (8.5%) | 82 (15.5%) | 120 (22.7%) | 174 (32.9%) | 108 (20.4%) | 129 |
| in my local area. <i>n=518, M=3.37</i> | 45 (8.7%) | 79 (15.3%) | 130 (25.1%) | 165 (39.1%) | 99 (19.1%) | 139 |

For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly agree

18. Do you agree or disagree that the following action would benefit wildlife in the following areas?
(Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Cutting single trees scattered throughout the woods on my land would benefit wildlife.... | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Don't Know |
|--|------------------------------|-----------------|----------------|------------------------------|---------------------------|-----------------------|
| on my property. <i>n=284, M=3.64</i> | 10 (3.5%) | 31 (10.9%) | 62 (21.8%) | 128 (45.1%) | 53 (18.7%) | 41 |
| on properties neighboring mine. <i>n=263, M=3.59</i> | 8 (3.0%) | 30 (11.4%) | 70 (26.6%) | 110 (41.8%) | 45 (17.1%) | 59 |
| in my local area. <i>n=263, M=3.60</i> | 7 (2.7%) | 28 (10.6%) | 72 (27.4%) | 111 (42.2%) | 45 (17.1%) | 60 |

For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly agree

Large (50 or more acres) Landowner Responses

| Cutting single trees scattered throughout the woods on my land would benefit wildlife.... | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Don't Know |
|--|--------------------------|-----------------|----------------|------------------------------|-----------------------|-------------------|
| on my property. <i>n=596, M=3.84</i> | 20 (3.4%) | 33 (5.5%) | 119 (20.0%) | 273 (45.8%) | 151 (25.3%) | 65 |
| on properties neighboring mine. <i>n=533, M=3.71</i> | 16 (3.0%) | 31 (5.8%) | 152 (28.5%) | 224 (42.0%) | 110 (20.6%) | 126 |
| in my local area. <i>n=533, M=3.68</i> | 16 (3.0%) | 38 (7.1%) | 153 (28.7%) | 222 (41.7%) | 104 (19.5%) | 127 |

For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly agree

19. Do you agree or disagree that the extent to which you cut on your land is limited by the following factors? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Factors | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|---|--------------------------|------------------------------|------------------------------|------------------------------|----------------------------|
| I don't have enough time. <i>n=318, M=3.02</i> | 28 (8.8%) | 84 (26.4%) | 87 (27.4%) | 93 (29.2%) | 26 (8.2%) |
| I don't have enough money. <i>n=319, M=2.74</i> | 34 (10.7%) | 100 (31.3%) | 118 (37.0%) | 50 (15.7%) | 17 (5.3%) |
| I don't have a market for products. <i>n=316, M=2.83</i> | 30 (9.5%) | 87 (27.5%) | 122 (38.6%) | 60 (19.0%) | 17 (5.4%) |
| I don't have enough knowledge about <u>how</u> and where to cut. <i>n=321, M=2.99</i> | 31 (9.7%) | 95 (29.6%) | 67 (20.9%) | 102 (31.8%) | 26 (8.1%) |
| I don't have enough knowledge about <u>why</u> to cut. <i>n=321, M=2.94</i> | 32 (10.0%) | 97 (30.2%) | 75 (23.4%) | 91 (28.3%) | 26 (8.1%) |
| I don't have someone skilled enough to do the work. <i>n=321, M=2.55</i> | 49 (15.3%) | 135 (42.1%) | 62 (19.3%) | 61 (19.0%) | 14 (4.4%) |
| I don't have adequate equipment or tools to do the work. <i>n=320, M=2.68</i> | 46 (14.4%) | 121 (37.8%) | 64 (20.0%) | 67 (20.9%) | 22 (6.9%) |
| I don't have enough support from foresters. <i>n=320, M=2.89</i> | 22 (6.9%) | 73 (22.8%) | 163 (50.9%) | 42 (13.1%) | 20 (6.3%) |
| I don't have enough support from wildlife biologists. <i>n=319, M=3.00</i> | 16 (5.0%) | 62 (19.4%) | 169 (53.0%) | 51 (16.0%) | 21 (6.6%) |
| I don't have supportive state and local regulations. <i>n=317, M=2.87</i> | 24 (7.6%) | 57 (18.0%) | 183 (57.7%) | 43 (13.6%) | 10 (3.2%) |
| I don't have enough acreage. <i>n=320, M=2.75</i> | 39 (12.2%) | 112 (35.0%) | 81 (25.3%) | 65 (20.3%) | 23 (7.2%) |
| I don't think it is the right thing to do. <i>n=323, M=2.67</i> | 40 (12.4%) | 116 (35.9%) | 101 (31.3%) | 44 (13.6%) | 22 (6.8%) |
| I don't like the look of it. <i>n=321, M=2.84</i> | 32 (10.0%) | 93 (29.0%) | 114 (35.5%) | 59 (18.4%) | 23 (7.2%) |
| Other (please specify _____) <i>n=9, M=4.11</i> | 2 (22.2%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 7 (77.8%) |

For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly agree

Large (50 or more acres) Landowner Responses

| Factors | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|---|-------------------|------------------------------|------------------------------|------------------------------|-----------------------------|
| I don't have enough time. <i>n=641, M=3.09</i> | 57 (8.9%) | 153 (23.9%) | 166 (25.9%) | 203 (31.7%) | 62 (9.7%) |
| I don't have enough money. <i>n=641, M=2.75</i> | 76 (11.9%) | 202 (31.5%) | 205 (32.0%) | 124 (19.3%) | 34 (5.3%) |
| I don't have a market for products. <i>n=639, M=2.80</i> | 61 (9.5%) | 198 (31.0%) | 216 (33.8%) | 138 (21.6%) | 26 (4.1%) |
| I don't have enough knowledge about <u>how</u> and <u>where</u> to cut. <i>n=649, M=2.78</i> | 103 (15.9%) | 208 (32.0%) | 119 (18.3%) | 164 (25.3%) | 55 (8.5%) |
| I don't have enough knowledge about <u>why</u> to cut. <i>n=646, M=2.66</i> | 103 (15.9%) | 238 (36.8%) | 118 (18.3%) | 149 (23.1%) | 38 (5.9%) |
| I don't have someone skilled enough to do the work. <i>n=648, M=2.40</i> | 123 (19.0%) | 287 (44.3%) | 118 (18.2%) | 95 (14.7%) | 25 (3.9%) |
| I don't have adequate equipment or tools to do the work. <i>n=648, M=2.61</i> | 117 (18.1%) | 247 (38.1%) | 101 (15.6%) | 140 (21.6%) | 43 (6.6%) |
| I don't have enough support from foresters. <i>n=641, M=2.71</i> | 77 (12.0%) | 177 (27.6%) | 271 (42.3%) | 88 (13.7%) | 28 (4.4%) |
| I don't have enough support from wildlife biologists. <i>n=643, M=2.92</i> | 61 (9.5%) | 117 (18.2%) | 313 (48.7%) | 117 (18.2%) | 35 (5.4%) |
| I don't have supportive state and local regulations. <i>n=637, M=2.87</i> | 61 (9.6%) | 116 (18.2%) | 338 (53.1%) | 88 (13.8%) | 34 (5.3%) |
| I don't have enough acreage. <i>n=643, M=2.12</i> | 160 (24.9%) | 312 (48.5%) | 122 (19.0%) | 34 (5.3%) | 15 (2.3%) |
| I don't think it is the right thing to do. <i>n=644, M=2.34</i> | 133 (20.7%) | 260 (40.4%) | 175 (27.2%) | 53 (8.2%) | 23 (3.6%) |
| I don't like the look of it. <i>n=635, M=2.62</i> | 95 (15.0%) | 207 (32.6%) | 207 (32.6%) | 97 (15.3%) | 29 (4.6%) |
| Other (please specify _____) <i>n=25, M=4.40</i> | 0 (0.0%) | 0 (0.0%) | 4 (16.0%) | 7 (28.0%) | 14 (56.0%) |

For mean calculations, items coded as 1=Strongly disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly agree

20. To what extent would any of the following conditions increase your willingness to cut more patches of trees (at least ½ acre) on your land than you do now? (Check one box for each row.)

Small (10-49 acres) Landowner Responses

| Would your willingness increase if you... | Not Increase | Slightly Increase | Moderately Increase | Greatly Increase |
|---|------------------------------|-----------------------------|-----------------------------|------------------|
| received financial assistance or tax reduction? <i>n</i> =323, <i>M</i> =2.29 | 116 (35.9%) | 69 (21.4%) | 67 (20.7%) | 71 (22.0%) |
| found a market for the cut wood? <i>n</i> =321, <i>M</i> =1.91 | 159 (49.5%) | 68 (21.2%) | 57 (17.8%) | 37 (11.5%) |
| received advice by an expert on the activity? <i>n</i> =320, <i>M</i> =2.29 | 99 (30.9%) | 81 (25.3%) | 89 (27.8%) | 51 (15.9%) |
| had a plan for your land that called for such cuts? <i>n</i> =321, <i>M</i> =2.26 | 111 (34.6%) | 69 (21.5%) | 89 (27.7%) | 52 (16.2%) |
| could borrow free equipment? <i>n</i> =320, <i>M</i> =1.88 | 173 (54.1%) | 57 (17.8%) | 47 (14.7%) | 43 (13.4%) |
| could receive labor to conduct the activity? <i>n</i> =322, <i>M</i> =2.05 | 148 (46.0%) | 63 (19.6%) | 57 (17.7%) | 54 (16.8%) |
| learned that the activity benefits wildlife? <i>n</i> =320, <i>M</i> =2.53 | 71 (22.2%) | 86 (26.9%) | 86 (26.9%) | 77 (24.1%) |
| learned that the activity benefits rare wildlife? <i>n</i> =317, <i>M</i> =2.58 | 70 (22.1%) | 76 (24.0%) | 89 (28.1%) | 82 (25.9%) |
| found more people doing it in your area? <i>n</i> =319, <i>M</i> =1.57 | 203 (63.6%) | 63 (19.7%) | 39 (12.2%) | 14 (4.4%) |
| found that very few people were doing it in your area? <i>n</i> =315, <i>M</i> =1.40 | 231 (73.3%) | 49 (15.6%) | 28 (8.9%) | 7 (2.2%) |
| earned recognition from the state agency or a non- profit? <i>n</i> =320, <i>M</i> =1.50 | 221 (69.1%) | 55 (17.2%) | 27 (8.4%) | 17 (5.3%) |
| owned more land? <i>n</i> =311, <i>M</i> =2.25 | 121 (38.9%) | 59 (19.0%) | 63 (20.3%) | 68 (21.9%) |

For mean calculations, items coded as 1=Not increase, 2=Slightly increase, 3=Moderately increase, 4=Greatly increase

Large (50 or more acres) Landowner Responses

| Would your willingness increase if you... | Not Increase | Slightly Increase | Moderately Increase | Greatly Increase |
|--|------------------------------|--------------------------|------------------------------|-------------------------|
| received financial assistance or tax reduction? <i>n=658, M=2.58</i> | 169 (25.7%) | 138 (21.0%) | 149 (22.6%) | 202 (30.7%) |
| found a market for the cut wood? <i>n=648, M=2.15</i> | 246 (38.0%) | 149 (23.0%) | 161 (24.8%) | 92 (14.2%) |
| received advice by an expert on the activity? <i>n=652, M=2.38</i> | 182 (27.9%) | 163 (25.0%) | 184 (28.2%) | 123 (18.9%) |
| had a plan for your land that called for such cuts? <i>n=651, M=2.36</i> | 188 (28.9%) | 165 (25.3%) | 176 (27.0%) | 122 (18.7%) |
| could borrow free equipment? <i>n=648, M=1.84</i> | 353 (54.5%) | 117 (18.1%) | 105 (16.2%) | 73 (11.3%) |
| could receive labor to conduct the activity? <i>n=651, M=2.14</i> | 264 (40.6%) | 140 (21.5%) | 137 (21.0%) | 110 (16.9%) |
| learned that the activity benefits wildlife? <i>n=645, M=2.45</i> | 163 (25.3%) | 164 (25.4%) | 183 (28.4%) | 135 (20.9%) |
| learned that the activity benefits rare wildlife? <i>n=642, M=2.54</i> | 152 (23.7%) | 149 (23.2%) | 183 (28.5%) | 158 (24.6%) |
| found more people doing it in your area? <i>n=646, M=1.59</i> | 397 (61.5%) | 147 (22.8%) | 69 (10.7%) | 33 (5.1%) |
| found that very few people were doing it in your area? <i>n=645, M=1.43</i> | 462 (71.6%) | 110 (17.1%) | 50 (7.8%) | 41 (3.6%) |
| earned recognition from the state agency or a non- profit? <i>n=647, M=1.51</i> | 435 (67.2%) | 125 (19.3%) | 59 (9.1%) | 2 (4.3%) |
| owned more land? <i>n=638, M=1.81</i> | 365 (57.2%) | 96 (15.0%) | 109 (17.1%) | 68 (10.7%) |

For mean calculations, items coded as 1=Not increase, 2=Slightly increase, 3=Moderately increase, 4=Greatly increase

21. From which of these sources have you heard or read about land management for wildlife and how much have the sources influenced your beliefs? (Check one box in each row and column.)

Small (10-49 acres) Landowner Responses

| Information sources about management for wildlife | How much have you heard or read from this source? | How much has this source influenced you? |
|---|--|--|
| NY Department of Environmental Conservation <i>n=330, n=283</i> | <input type="checkbox"/> None 128 (38.8%) <input type="checkbox"/> A little 84 (25.5%) <input type="checkbox"/> Some 93 (28.2%) <input type="checkbox"/> A lot 25 (7.6%) | <input type="checkbox"/> None 137 (48.4%) <input type="checkbox"/> A little 59 (20.8%) <input type="checkbox"/> Some 71 (25.1%) <input type="checkbox"/> A lot 16 (5.7%) |
| Soil and Water Conservation District or Natural Resource Conservation Service <i>n=329, n=277</i> | <input type="checkbox"/> None 202 (61.4%) <input type="checkbox"/> A little 64 (19.5%) <input type="checkbox"/> Some 54 (16.4%) <input type="checkbox"/> A lot 9 (2.7%) | <input type="checkbox"/> None 184 (66.4%) <input type="checkbox"/> A little 45 (16.2%) <input type="checkbox"/> Some 40 (14.4%) <input type="checkbox"/> A lot 8 (2.9%) |
| Cornell Cooperative Extension <i>n=326, n=277</i> | <input type="checkbox"/> None 170 (52.1%) <input type="checkbox"/> A little 80 (24.5%) <input type="checkbox"/> Some 67 (20.6%) <input type="checkbox"/> A lot 9 (2.8%) | <input type="checkbox"/> None 160 (57.8%) <input type="checkbox"/> A little 59 (21.3%) <input type="checkbox"/> Some 48 (17.3%) <input type="checkbox"/> A lot 10 (3.6%) |
| Master Forest Owner volunteer <i>n=321, n=263</i> | <input type="checkbox"/> None 291 (90.7%) <input type="checkbox"/> A little 12 (3.7%) <input type="checkbox"/> Some 13 (4.0%) <input type="checkbox"/> A lot 5 (1.6%) | <input type="checkbox"/> None 242 (92.0%) <input type="checkbox"/> A little 8 (3.0%) <input type="checkbox"/> Some 5 (1.9%) <input type="checkbox"/> A lot 8 (3.0%) |
| Forest owner association (e.g., NY Forest Owners Association) <i>n=328, n=272</i> | <input type="checkbox"/> None 293 (89.3%) <input type="checkbox"/> A little 22 (6.7%) <input type="checkbox"/> Some 11 (3.4%) <input type="checkbox"/> A lot 2 (0.6%) | <input type="checkbox"/> None 248 (91.2%) <input type="checkbox"/> A little 15 (5.5%) <input type="checkbox"/> Some 5 (1.8%) <input type="checkbox"/> A lot 4 (1.5%) |
| Private/consulting foresters <i>n=326, n=276</i> | <input type="checkbox"/> None 239 (73.3%) <input type="checkbox"/> A little 39 (12.0%) <input type="checkbox"/> Some 33 (10.1%) <input type="checkbox"/> A lot 15 (4.6%) | <input type="checkbox"/> None 214 (77.5%) <input type="checkbox"/> A little 22 (8.0%) <input type="checkbox"/> Some 25 (9.1%) <input type="checkbox"/> A lot 15 (5.4%) |
| Private/consulting wildlife biologists <i>n=327, n=272</i> | <input type="checkbox"/> None 301 (92.0%) <input type="checkbox"/> A little 15 (4.6%) <input type="checkbox"/> Some 8 (2.4%) <input type="checkbox"/> A lot 3 (0.9%) | <input type="checkbox"/> None 257 (94.5%) <input type="checkbox"/> A little 8 (2.9%) <input type="checkbox"/> Some 4 (1.5%) <input type="checkbox"/> A lot 3 (1.1%) |
| Non-profit wildlife group related to hunted species (e.g., Ruffed Grouse Society) <i>n=329, n=276</i> | <input type="checkbox"/> None 282 (85.7%) <input type="checkbox"/> A little 22 (6.7%) <input type="checkbox"/> Some 22 (6.7%) <input type="checkbox"/> A lot 3 (0.9%) | <input type="checkbox"/> None 239 (86.6%) <input type="checkbox"/> A little 13 (4.7%) <input type="checkbox"/> Some 20 (7.2%) <input type="checkbox"/> A lot 4 (1.4%) |
| Non-profit wildlife group NOT related to hunted species (e.g., Audubon) <i>n=328, n=275</i> | <input type="checkbox"/> None 266 (81.1%) <input type="checkbox"/> A little 33 (10.1%) <input type="checkbox"/> Some 25 (7.6%) <input type="checkbox"/> A lot 4 (1.2%) | <input type="checkbox"/> None 230 (83.6%) <input type="checkbox"/> A little 22 (8.0%) <input type="checkbox"/> Some 20 (7.3%) <input type="checkbox"/> A lot 3 (1.1%) |
| Friends/family members <i>n=328, n=280</i> | <input type="checkbox"/> None 151 (46.0%) <input type="checkbox"/> A little 91 (27.7%) <input type="checkbox"/> Some 71 (21.6%) <input type="checkbox"/> A lot 15 (4.6%) | <input type="checkbox"/> None 135 (48.2%) <input type="checkbox"/> A little 70 (25.0%) <input type="checkbox"/> Some 60 (21.4%) <input type="checkbox"/> A lot 15 (5.4%) |

| | | |
|---|---|---|
| Other woodland owners $n=328$, $n=279$ | <input type="checkbox"/> None 200 (61.0%) <input type="checkbox"/> A little 80 (24.4%) <input type="checkbox"/> Some 40 (12.2%) <input type="checkbox"/> A lot 8 (2.4%) | <input type="checkbox"/> None 178 (63.8%) <input type="checkbox"/> A little 59 (21.1%) <input type="checkbox"/> Some 36 (12.9%) <input type="checkbox"/> A lot 6 (2.2%) |
| Other (_____) $n=14$, $n=14$ | <input type="checkbox"/> None 1 (7.1%) <input type="checkbox"/> A little 0 (0.0%) <input type="checkbox"/> Some 8 (57.1%) <input type="checkbox"/> A lot 5 (35.7%) | <input type="checkbox"/> None 1 (7.1%) <input type="checkbox"/> A little 1 (7.1%) <input type="checkbox"/> Some 7 (50.0%) <input type="checkbox"/> A lot 5 (35.7%) |

Large (50 or more acres) Landowner Responses

| Information sources about management for wildlife | How much have you heard or read from this source? | How much has this source influenced you? |
|---|--|---|
| NY Department of Environmental Conservation <i>n=666, n=602</i> | <input type="checkbox"/> None 182 (27.3%) <input type="checkbox"/> A little 197 (29.6%) <input type="checkbox"/> Some 230 (34.5%) <input type="checkbox"/> A lot 57 (8.6%) | <input type="checkbox"/> None 232 (38.5%) <input type="checkbox"/> A little 158 (26.2%) <input type="checkbox"/> Some 164 (27.2%) <input type="checkbox"/> A lot 48 (8.0%) |
| Soil and Water Conservation District or Natural Resource Conservation Service <i>n=660, n=589</i> | <input type="checkbox"/> None 282 (42.7%) <input type="checkbox"/> A little 158 (23.9%) <input type="checkbox"/> Some 173 (26.2%) <input type="checkbox"/> A lot 47 (7.1%) | <input type="checkbox"/> None 286 (48.6%) <input type="checkbox"/> A little 134 (22.8%) <input type="checkbox"/> Some 122 (20.7%) <input type="checkbox"/> A lot 47 (8.0%) |
| Cornell Cooperative Extension <i>n=660, n=592</i> | <input type="checkbox"/> None 260 (39.4%) <input type="checkbox"/> A little 191 (28.9%) <input type="checkbox"/> Some 163 (24.7%) <input type="checkbox"/> A lot 46 (7.0%) | <input type="checkbox"/> None 275 (46.5%) <input type="checkbox"/> A little 148 (25.0%) <input type="checkbox"/> Some 131 (22.1%) <input type="checkbox"/> A lot 38 (6.4%) |
| Master Forest Owner volunteer <i>n=646, n=572</i> | <input type="checkbox"/> None 553 (85.6%) <input type="checkbox"/> A little 46 (7.1%) <input type="checkbox"/> Some 36 (5.6%) <input type="checkbox"/> A lot 11 (1.7%) | <input type="checkbox"/> None 486 (85.0%) <input type="checkbox"/> A little 34 (5.9%) <input type="checkbox"/> Some 34 (5.9%) <input type="checkbox"/> A lot 18 (3.1%) |
| Forest owner association (e.g., NY Forest Owners Association) <i>n=655, n=583</i> | <input type="checkbox"/> None 517 (78.9%) <input type="checkbox"/> A little 72 (11.0%) <input type="checkbox"/> Some 46 (7.0%) <input type="checkbox"/> A lot 20 (3.1%) | <input type="checkbox"/> None 465 (79.8%) <input type="checkbox"/> A little 59 (10.1%) <input type="checkbox"/> Some 42 (7.2%) <input type="checkbox"/> A lot 17 (2.9%) |
| Private/consulting foresters <i>n=652, n=583</i> | <input type="checkbox"/> None 320 (49.1%) <input type="checkbox"/> A little 123 (18.9%) <input type="checkbox"/> Some 143 (21.9%) <input type="checkbox"/> A lot 66 (10.1%) | <input type="checkbox"/> None 294 (50.4%) <input type="checkbox"/> A little 98 (16.8%) <input type="checkbox"/> Some 124 (21.3%) <input type="checkbox"/> A lot 67 (11.5%) |
| Private/consulting wildlife biologists <i>n=654, n=578</i> | <input type="checkbox"/> None 575 (87.9%) <input type="checkbox"/> A little 35 (5.4%) <input type="checkbox"/> Some 32 (4.9%) <input type="checkbox"/> A lot 12 (1.8%) | <input type="checkbox"/> None 503 (87.0%) <input type="checkbox"/> A little 25 (4.3%) <input type="checkbox"/> Some 29 (5.0%) <input type="checkbox"/> A lot 21 (3.6%) |
| Non-profit wildlife group related to hunted species (e.g., Ruffed Grouse Society) <i>n=658, n=581</i> | <input type="checkbox"/> None 551 (83.7%) <input type="checkbox"/> A little 48 (7.3%) <input type="checkbox"/> Some 44 (6.7%) <input type="checkbox"/> A lot 15 (2.3%) | <input type="checkbox"/> None 485 (83.5%) <input type="checkbox"/> A little 39 (6.7%) <input type="checkbox"/> Some 36 (6.2%) <input type="checkbox"/> A lot 21 (3.6%) |
| Non-profit wildlife group NOT related to hunted species (e.g., Audubon) <i>n=659, n=582</i> | <input type="checkbox"/> None 551 (83.6%) <input type="checkbox"/> A little 52 (7.9%) <input type="checkbox"/> Some 42 (6.4%) <input type="checkbox"/> A lot 14 (2.1%) | <input type="checkbox"/> None 481 (82.6%) <input type="checkbox"/> A little 54 (9.3%) <input type="checkbox"/> Some 30 (5.2%) <input type="checkbox"/> A lot 17 (2.9%) |
| Friends/family members <i>n=658, n=589</i> | <input type="checkbox"/> None 246 (37.4%) <input type="checkbox"/> A little 196 (29.8%) <input type="checkbox"/> Some 165 (25.1%) <input type="checkbox"/> A lot 51 (7.8%) | <input type="checkbox"/> None 232 (39.4%) <input type="checkbox"/> A little 162 (27.5%) <input type="checkbox"/> Some 150 (25.5%) <input type="checkbox"/> A lot 45 (7.6%) |
| Other woodland owners <i>n=655, n=586</i> | <input type="checkbox"/> None 337 (51.5%) <input type="checkbox"/> A little 162 (24.7%) <input type="checkbox"/> Some 136 (20.8%) <input type="checkbox"/> A lot 20 (3.1%) | <input type="checkbox"/> None 312 (53.2%) <input type="checkbox"/> A little 131 (22.4%) <input type="checkbox"/> Some 124 (21.2%) <input type="checkbox"/> A lot 19 (3.2%) |

| | | |
|---|---|--|
| Other (_____) <i>n</i> =27, <i>n</i> =25 | <input type="checkbox"/> None 4 (14.8%) <input type="checkbox"/> A little 1 (3.7%) <input type="checkbox"/> Some 4 (14.8%) <input checked="" type="checkbox"/> A lot 18 (66.7%) | <input type="checkbox"/> None 2 (8.0%) <input type="checkbox"/> A little 0 (0.0%) <input type="checkbox"/> Some 4 (16.0%) <input checked="" type="checkbox"/> A lot 19 (76.0%) |
|---|---|--|

BACKGROUND INFORMATION

Small (10-49 acres) Landowner Responses

22. Which wildlife or land organizations are you a member of? *n*=292

- Audubon 22 (7.5%)
- Cornell Lab of Ornithology 6 (2.1%)
- Farm Bureau 13 (4.5%)
- Local land trust (please specify _____) 5 (1.7%)
- National Wild Turkey Federation 7 (2.4%)
- National Wildlife Federation 19 (6.5%)
- Master Forest Owner volunteers 0 (0.0%)
- New York Forest Owners Association 4 (1.4%)
- Pheasants Forever 3 (1.0%)
- Quality Deer Management Association 5 (1.5%)
- Ruffed Grouse Society 4 (1.4%)
- The Nature Conservancy 24 (8.2%)
- Other (please specify _____) 23 (7.9%)
- NONE 205 (70.2%)**

23. Are you male or female? (Check one) *n*=335 **Male 262 (78.2%)** Female 73 (21.8%)

24. In what year were you born? *n*=328 19 ____ *M*=50.80, *Mdn*=51

25. Is your primary residence: (Check one) *n*=334 Urban 34 (9.9%) Suburban 83 (24.9%)
 Rural 217 (65.0%)

26. What is the highest level of formal education you have completed? (Check one) *n*=335

- Less than high school 5 (1.5%)
- High school diploma/G.E.D. 79 (23.6%)
- Some college or technical school 84 (25.1%)**
- Associate's degree 38 (11.3%)
- College undergraduate degree (e.g., B.A., B.S.) 61 (18.2%)
- Graduate or professional degree (e.g., M.S., Ph.D., M.D.) 68 (20.3%)

If you would be interested in further communication about wildlife habitat programs for landowners and/or opportunities for contributing your thoughts further as part of a discussion group, please provide your contact information here. (Including your name here will NOT compromise the confidentiality of your other responses. It will be kept in a separate list).

Send me information about: *n*=337

- programs for landowners. 198 (58.8%)
- participating in a discussion group. 22 (6.5%)

APPENDIX B. INSTRUMENTS

Expert Interview Instrument
Landowner Interview Instrument
Landowner Focus Group Instrument
Landowner Mail Survey Instrument

Expert Interview Instrument

What work do you with forest management, research, or outreach?

How would you define early successional habitat (ESH)?

Specifically, how does your job involve work with ESH?

What have you seen work in creating/restoring ESH?

What has not worked in creating/restoring ESH?

What are the optimal characteristics of ESH for wildlife?

What challenges are there to ESH restoration and conservation?

What risks (perceived or actual) are there for landowners in ESH restoration and conservation?

What human dimensions research do you think would be useful?

How do you think it would be best to find landowners for our research?

What outreach products have you created/seen for landowners? Do you have copies I could get?

Who else would you recommend I speak with?

Landowner Interview Instrument

I'm interested in learning a little bit more about the background of the land you own and how you came to own it....

Ownership history: How did you get your woodland parcel? How long have you owned it? Do you own it with any one else?

Characteristics of woodlands: How large is your woodland parcel? About what percentage of your parcel is wooded? How would you describe your woodlands?

Familiarity with woodlot: How close do you live to your woodland parcel (in miles)? How much time do you spend there?

Goals and priorities: What are your goals and priorities on your woodlot?

Programs on woodlot: Have you ever considered incentive programs or easements for your property? Why/why not?

Recreation: What types of outdoor recreation do you enjoy on your woodland? Elsewhere?

Wildlife: What types of wildlife do you have on your property? Which do you most prefer and why? Why do you think they are there?

Wildlife changes: Have you seen the amount or number of wildlife change on your property over time? Why? *How have you noted the changes? Which wildlife?*

I understand that you have managed your property for early successional habitat (ESH; or that land with grasses, shrubs, bushes, and small trees).

Story of ESH: I am interested to hear the story of how this came about. Can you share that with me?

Definition of ESH: When I say early successional habitat, what comes to mind? Are you thinking about any wildlife species in particular? Any plant species in particular? Any treatments in particular?

Activities of ESH: What work did you have to undertake to manage the ESH?

Motivations for ESH: Tell me more about why you wanted this on your land and what you are trying to achieve with ESH.

Source of Info for ESH: Tell me about how you heard of this type of management. Who convinced you to undertake it? What about their information convinced you? How had you felt about it previously?

Support for ESH: Did you have any conversations or support from foresters or wildlife biologists? Who did they work for? What type of support did they provide?

Ease of ESH: Was managing for ESH challenging?

Success of ESH: Tell me about how you feel about how it turned out and how the results compared to what you expected. *What did you look for to decide if it was successful? Did you notice any changes in wildlife (which?)? How was this different/same as what you expected?*

Tell me about how it could've gone better.

Tell me about changes you have noticed on your land as a result of this management.

Support of agency to ease: Tell me about what was difficult. What could a management agency do to make it easier or more desirable for you to do more of this work in the future?

Future plans for ESH: Tell me about your future plans along these lines. Would you do more ESH management? Why? Why not?

Norms and ESH: Do you have a sense of what others think about your management for ESH? Have friends, family, or neighbors commented on what you have done?

Coordination on ESH: Have you ever coordinated with your neighbors on land management? How?

Other Landowners and ESH: Do you have any thoughts on why more landowners aren't doing similar work on their land?

Comparison to other activities: What other types of land management have you conducted (including harvesting or removing trees)? Why? How did it compare?

Anything else to add...

Landowner Focus Group Instrument

Welcome/Introduction

Good afternoon. My name is Ashley Dayer. I am a graduate student at Cornell University. Assisting me is (insert name) who is also from Cornell University. Thanks for coming to our session today. As we mentioned in our email communications with you, Cornell University is conducting a study of private woodlands management for wildlife, particularly early successional forest habitat. We are asking you to take part because you are a woodland owner in the New York State. The interview and a short follow-up survey at the close of our session will include questions about your woodland, your experiences with and thoughts about land management, your familiarity with early successional habitat management practices, and your interests in managing for wildlife on your land.

In the process of the focus group we will ask some open-ended questions. It will be of benefit to us to use an audio-recorder, so that we can listen to the discussion and transcribe the full details later. As we mentioned in our email, it is your right to opt out of being recorded. Participation in this interview is voluntary and anonymous. The names of the participants and their identifying characteristics will not be linked with any specific comments provided as part of this study. If you would like a copy of the study report, we would be pleased to send it to you upon request. The session today will last for about an hour and 15 minutes, followed by a short survey that will take you less than 15 minutes. Before we begin, let's discuss our approach for today's session.

Guidelines

- There are no right or wrong answers. We want to know your opinions. This is not a quiz!
- I'll ask a question, and then we will go around the circle so that each person can give their response.
- Please feel free to share any ideas you have and be honest.
- Please be respectful of the thoughts and opinions of others.
- Please turn off your cell phones.
- If you need to leave, please let my assistant know. We do hope that all of you will be able to stay for the entire session.

Opening

First, let's go around the circle so that everyone can tell us your name and where in the state you are from.

Now we will begin our discussion.

Question Guide

1. How do you see private woodlands contributing to wildlife conservation in the state?
 - In what ways?
 - How does this compare to public lands?
2. What types of activities do you think it takes for wildlife conservation to be effective in a private landowner's woods?

3. Have you undertaken any of these activities in your woods? Why or why not?
4. Are there other activities that you undertake in your woods that you do NOT see as part of wildlife conservation?
5. What would encourage or discourage landowners from undertaking these activities for conservation?
6. What could an agency or organization do to aid landowners in undertaking activities for wildlife conservation in their forests?
7. Have you ever heard of early successional forest habitat?
 - If so, what have you heard about it?
 - Could you define it?
8. Has anyone considered managing for ESH on their land? Why? Why not?
9. How do you receive your information about forests and wildlife conservation activities?
 - Which sources do you trust?
 - Do you like how you receive information or would you prefer a different means?
 - Have you ever interacted with wildlife biologists? If so, what might they help you with?
10. Lastly, we are interested in how you would envision your ideal land to own for wildlife habitat in the southern tier of New York. On this 8X11 sheet of paper we are passing around, we'd like you to map (or sketch and label) how you'd envision that land. You can either work on this now or take one of these self-addressed and stamped envelopes to work on your map at home and mail it back to me. As with all of our previous questions, there is no right or wrong answer. We're interested in your thoughts and ideas as a landowner in the southern tier.

Wildlife Habitat in New York's Southern Tier: A Survey of Landowners



Cornell University
Human Dimensions Research Unit



Artwork by Megan Gnekow

The purpose of this survey is to learn more about why you own land, your activities on your land, and the kinds of wildlife habitat you want on your land. Even if you aren't very interested in wildlife, we still would like you to answer the questions and return the questionnaire so the results better represent *all* landowners in the Southern Tier. Results from the survey will be helpful in preparing educational materials, services, and programs that will benefit landowners in your area.

In this questionnaire, **wildlife** means all types of wild animals that are not domesticated, including reptiles, amphibians, birds, and mammals. **Management** means taking actions on your land to influence trees and other plant cover, or wildlife. Some **examples of management activities** are harvesting firewood or timber, making a trail, mowing a field, planting a food plot, putting up nest boxes, or improving habitat for wildlife.

Please complete this questionnaire as soon as you can, place it in the envelope provided, and drop it in any mailbox; return postage has been covered.

Your participation in this survey is voluntary, but we encourage you to respond. Hearing back from as many people as possible will ensure that the results of the survey are valid and adequately represent the perspectives of landowners. Please be assured that your identity will be kept strictly confidential and your responses will never be associated with your name.

THANK YOU FOR YOUR HELP!

**This survey is a cooperative effort of the
New York State Department of Environmental Conservation,
Cornell University Department of Natural Resources
Human Dimensions Research Unit, and
Cornell Cooperative Extension.**

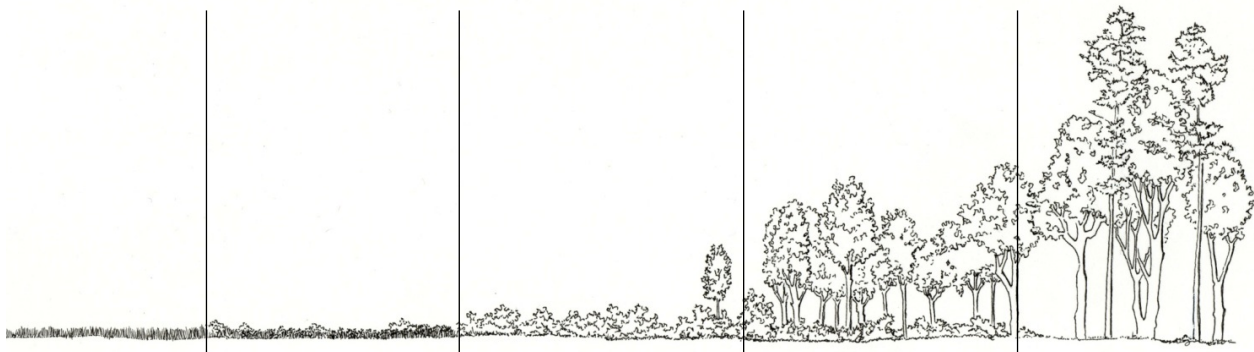
1. **What are the characteristics of the parcel(s) of land you own in the Southern Tier of New York State?** The Southern Tier includes Chautauqua, Cattaraugus, Allegany, Steuben, Schuyler, Chemung, Tompkins, Cortland, Tioga, Broome, Chenango, Otsego, and Delaware counties. *(Complete one row for each parcel of land you own.)*

| Parcel in Southern Tier | How many acres? | How many years owned? | How far do you live (miles) from the parcel? |
|-------------------------|-----------------|-----------------------|--|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

2. **About how many acres of each of the following types of land do you own in the Southern Tier?** *(Note: a picture of the land types is below.)*

| Land types | About how many acres owned? <i>(write a number in each box)</i> |
|---|--|
| Residential (lawn, gardens, buildings, paved) | |
| Agricultural (crop fields, Christmas trees, hay fields mowed more than once annually) | |
| Grassland or field regularly mowed every 1-3 years | |
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) | |
| Shrubland (more than 25% brush) | |
| Young forest (most trees with trunks less than 4" in diameter) | |
| Mature forest | |
| Other (please specify) _____ | |

Grassland Fallow field regenerating Shrubland Young forest Mature forest



3. **How would you like your land to change in the future?** Refer back to Question 4 to compare what you want in the future with the amount you currently have. *(Check one box for each row.)*

| Land types | Compared to now, I'd like my land to have... |
|---|---|
| Residential (lawn, gardens, buildings, paved) | <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> More |
| Agricultural (crop fields, Christmas trees, hay fields mowed more than once annually) | <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> More |
| Grassland or field regularly mowed every 1-3 years | <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> More |
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) | <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> More |
| Shrubland (more than 25% brush) | <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> More |
| Young forest (most trees with trunks less than 4" in diameter) | <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> More |
| Mature forest | <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> More |
| Other (please specify) _____ | <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> More |

4. **Would you say your general attitude toward each of these land types is positive, negative, or neutral?** *(Check one box for each row.)*

| Activities | Very Negative | Negative | Neither | Positive | Very Positive |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Shrubland (more than 25% brush) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Young forest (most trees with trunks less than 4" in diameter) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Mature forest | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

5. **How necessary or unnecessary do you believe the following types of land are for wildlife conservation?** *(Check one box for each row.)*

| Activities | Very Unnecessary | Unnecessary | Neither | Necessary | Very Necessary |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Fallow fields that have not been grazed, mowed, or planted in more than 3 years (less than 25% brush) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Shrubland (more than 25% brush) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Young forest (most trees with trunks less than 4" in diameter) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Mature forest | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

6. To what extent do you agree or disagree with each of the following statements about your land?
(Check one box for each row.)

| Thoughts about your land | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| It is my favorite place to be. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For the things I enjoy most, no other place can compare. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everything about it is a reflection of me. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel happiest when I am there. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| It is the best place to do the things I enjoy. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel that I can really be myself there. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

7. People own land for many reasons. How important are the following as reasons for why you own your land in the Southern Tier? (Check one box for each row.)

| Reasons you own your land | Not at all important | Slightly important | Moderately important | Very important |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| To enjoy the scenery | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| To protect nature | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| To provide a place for wildlife to live | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For land investment (e.g., sale in the future) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For privacy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| To pass land on to my heirs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For production of timber products <u>for sale</u> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For production of timber products for <u>my family's use</u> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For non-timber forest products (e.g., maple syrup) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For farming | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For hunting or fishing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For birding or birdwatching | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| For recreation that isn't wildlife related | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other (please specify): | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8. We're interested in knowing your views about the management of land and wildlife (as we define on the inside front cover). To what extent do you agree or disagree with each of the following? (Check one box for each row.)

| Views about land and wildlife | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Land should be managed so that people benefit. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Trees and plants have value, regardless of people's uses for them. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| People's needs should take priority over conservation of the land. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Land, and the plants and trees on it, should be left to exist naturally without being managed by people. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildlife should be managed so that people benefit. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildlife have value, regardless of people's uses for them. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| People's needs should take priority over conservation of wildlife. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildlife should be left to exist naturally without being managed by people. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildlife benefits from management by people. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Land benefits from management by people. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| To benefit wildlife, land is best left untouched. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Generally, cutting trees on the land is good for wildlife. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

9. The following are activities some landowners might do (or have others do for them) on their land. Which of these have you done in the last 10 years, and which are you likely to do in the next 5 years? (Check one box in each row and column.)

| Activities | Have you done this activity in the last 10 years? | How likely are you to do the activity in the next 5 years? |
|--|--|--|
| Cut a patch of trees (at least 1/2 acre) where all or most of the trees were removed (to open the canopy) and plants and trees were allowed to grow back | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> I do <u>not</u> own land with woods. | <input type="checkbox"/> Not at all <input type="checkbox"/> Slightly <input type="checkbox"/> Moderately <input type="checkbox"/> Very |
| Cut single trees scattered throughout all or a part of your woodland | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> I do <u>not</u> own land with woods. | <input type="checkbox"/> Not at all <input type="checkbox"/> Slightly <input type="checkbox"/> Moderately <input type="checkbox"/> Very |

10. How bad or good do you believe these activities are for your land? (Check one box for each row.)

| Activities | Very Bad | Bad | Neither | Good | Very Good |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Cutting a patch of trees (at least ½ acre) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cutting single trees scattered throughout the woods | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

11. How bad or good do you believe these activities are for wildlife? (Check one box for each row.)

| Activities | Very Bad | Bad | Neither | Good | Very Good |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Cutting a patch of trees (at least ½ acre) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cutting single trees scattered throughout the woods | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

12. How common is it that other landowners in your area do these activities? (Check one choice for each row.)

| Activities | Not at all Common | Slightly Common | Moderately Common | Very Common | Don't Know |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Cutting a patch of trees (at least ½ acre) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cutting single trees scattered throughout the woods | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

13. When it comes to the activities you do on your land, how important to you are the opinions of each of the following groups? (Check one box for row.)

| Groups of people | Not at all Important | Slightly Important | Moderately Important | Very Important |
|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| My family | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My friends | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Nearby landowners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Forest professionals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildlife professionals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

14. **How bad or good do these groups of people think cutting a patch of trees (at least ½ acre) where all or most of the trees were removed would be for your land?** (Check one box for each row.)

| Groups of people | Very Bad | Bad | Neither | Good | Very Good | Don't Know |
|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| My family | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My friends | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Nearby landowners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Forest professionals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildlife professionals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

15. **How bad or good do these groups of people think cutting single trees scattered throughout all or a part of your woodland would be for your land?** (Check one box for each row.)

| Groups of people | Very Bad | Bad | Neither | Good | Very Good | Don't Know |
|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| My family | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My friends | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Nearby landowners | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Forest professionals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildlife professionals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

16. **To what extent do you feel you are able to get the following activities done on your land (if you decide to do so)?** (Check one box for each row.)

| Activities | Not at all Able | Slightly Able | Moderately Able | Very Able |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| Cutting a patch of trees (at least ½ acre) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cutting single trees scattered throughout the woods | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

17. **Do you agree or disagree that the following action would benefit wildlife in the following areas?** (Check one box for each row.)

| Cutting a patch of trees (at least ½ acre) on my land would benefit wildlife.... | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Don't Know |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| on my property. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| on properties neighboring mine. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| in my local area. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

18. Do you agree or disagree that the following action would benefit wildlife in the following areas?
(Check one box for each row.)

| Cutting single trees scattered throughout the woods on my land would benefit wildlife.... | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Don't Know |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| on my property. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| on properties neighboring mine. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| in my local area. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

19. Do you agree or disagree that the extent to which you cut on your land is limited by the following factors? *(Check one box for each row.)*

| Factors | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| I don't have enough time. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have enough money. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have a market for products. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have enough knowledge about <u>how</u> and <u>where</u> to cut. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have enough knowledge about <u>why</u> to cut. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have someone skilled enough to do the work. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have adequate equipment or tools to do the work. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have enough support from foresters. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have enough support from wildlife biologists. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have supportive state and local regulations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't have enough acreage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't think it is the right thing to do. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I don't like the look of it. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other (please specify _____) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

20. To what extent would any of the following conditions increase your willingness to cut more patches of trees (at least ½ acre) on your land than you do now? (Check one box for each row.)

| Would your willingness increase if you... | Not Increase | Slightly Increase | Moderately Increase | Greatly Increase |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| received financial assistance or tax reduction? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| found a market for the cut wood? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| received advice by an expert on the activity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| had a plan for your land that called for such cuts? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| could borrow free equipment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| could receive labor to conduct the activity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| learned that the activity benefits wildlife? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| learned that the activity benefits rare wildlife? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| found more people doing it in your area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| found that very few people were doing it in your area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| earned recognition from the state agency or a non-profit? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| owned more land? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

21. From which of these sources have you heard or read about land management for wildlife and how much have the sources influenced your beliefs? (Check one box in each row and column.)

| Information sources about management for wildlife | How much have you heard or read from this source? | How much has this source influenced you? |
|---|--|--|
| NY Department of Environmental Conservation | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Soil and Water Conservation District or Natural Resource Conservation Service | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Cornell Cooperative Extension | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Master Forest Owner volunteer | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Forest owner association (e.g., NY Forest Owners Association) | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Private/consulting foresters | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Private/consulting wildlife biologists | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Non-profit wildlife group related to hunted species (e.g., Ruffed Grouse Society) | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Non-profit wildlife group NOT related to hunted species (e.g., Audubon) | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Friends/family members | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Other woodland owners | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |
| Other () | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot | <input type="checkbox"/> None <input type="checkbox"/> A little <input type="checkbox"/> Some <input type="checkbox"/> A lot |

BACKGROUND INFORMATION

22. Which wildlife or land organizations are you a member of?

- Audubon
- Cornell Lab of Ornithology
- Farm Bureau
- Local land trust (please specify _____)
- National Wild Turkey Federation
- National Wildlife Federation
- Master Forest Owner volunteers
- New York Forest Owners Association
- Pheasants Forever
- Quality Deer Management Association
- Ruffed Grouse Society
- The Nature Conservancy
- Other (please specify _____)
- NONE

23. Are you male or female? (Check one) Male Female

24. In what year were you born? 19_____

25. Is your primary residence: (Check one) Urban Suburban Rural

26. What is the highest level of formal education you have completed? (Check one)

- Less than high school
- High school diploma/G.E.D.
- Some college or technical school
- Associate's degree
- College undergraduate degree (e.g., B.A., B.S.)
- Graduate or professional degree (e.g., M.S., Ph.D., M.D.)

If you would be interested in further communication about wildlife habitat programs for landowners and/or opportunities for contributing your thoughts further as part of a discussion group, please provide your contact information here. (Including your name here will NOT compromise the confidentiality of your other responses. It will be kept in a separate list).

Send me information about:

- programs for landowners.
- participating in a discussion group.

Name: _____

Email: _____

Mailing Address: _____

Thank you for your time and effort!

To return this questionnaire, place it in the envelope provided, and drop it in the mail
(return postage has been covered).

Please use this back page for any additional comments you wish to make.