



Supplemental Information on National Woodland Owner Survey 2011-2013 Two-page Summary Reports

This document provides explanations of the data sources, graphics, and summaries presented in the 41 national, regional, and state National Woodland Owner Survey 2011-2013 two-page research note summary reports (Research Note NRS-206 through Research Note NRS-246). All of these research notes can be accessed at www.nrs.fs.fed.us/pubs/.

We provide general information as well as definitions and details for understanding and interpreting the tables and figures in these research notes. On page 6 of this document, we provide additional resources and references for the National Woodland Owner Survey (NWOS).

General Information

The National Woodland Owner Survey (NWOS) data summarized in this series of research notes were collected between 2011 and 2013. The population of interest for these reports is family forest ownerships with at least 10 acres of forest land in a state or region. Additional results will be released for family forest ownerships with 1-9 acres of forest land and for other groups of private forest ownerships.

The term family, as used in family forest ownerships, includes families, individuals, trusts, and estates and corresponds to the Forest Inventory and Analysis "individual or family" ownership category (OWNER CLASS=45; Woudenberg et al. 2010). An ownership is a legal entity that is composed of one or more owners or individuals.

Forest is defined by the U.S. Forest Service as "land with at least 10 percent cover (or equivalent stocking) by live trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. To qualify, the area must be at least 1.0 acre in size and 120.0 feet wide" (Woudenberg et al. 2010) with additional definitional detail provided in Woudenberg et al. (2010) and the Forest Inventory and Analysis (FIA) field manual (U.S. Forest Service 2012). This definition was simplified for the NWOS questionnaire to:

Wooded land includes:

- Woods, woodlots, timberland, and forests
- Land at least 1 acre in size, 120 feet wide, and has at least 10 trees per acre
- Land at least 1 acre in size, where trees were removed and trees will grow again

Wooded land does not include:

- Christmas tree farms, orchards, or nurseries
- Land that is mowed for lawn

The terms forest land, woodland, and wooded land, as used by the NWOS, imply the same land use (forest land as defined by the U.S. Forest Service), but the specific term used depends on the audience. The goal is to use the term most often used by the intended primary audience. Through interactions with landowners, the terms woodland and wooded land were deemed most appropriate, but for forestry professionals, the term used most often is forest land.

The estimates reported are based on a random sample of family forest ownerships. Their responses were used to generate the population level estimates shown. The sample sizes, i.e., number of sample points owned by respondents, are indicated in the paragraph at the top of each report. Because it is a sample, and not a complete enumeration, there is uncertainty associated with the estimates. These uncertainties are presented in terms of the standard errors, abbreviated as SE and depicted as error bars in the charts. Detailed information about the sampling and estimation techniques can be found in Butler et al. 2016a.

Comparisons to the previous, 2002-2006, NWOS results (Butler 2008) should be made with caution. Butler (2008) reported statistics for family forest ownerships, inaccurately labeled owners, with 1+ acres of forest land and the 2011-2013 data focus on family forest ownerships with 10+ acres. There have also been some slight changes in the estimation algorithms used. As a consequence, the 2002-2006 have been reprocessed and are published in Butler et al. 2016b. Additional notes on making comparisons are included in Butler et al. 2016a, as the wording and/or formatting of some questions changed.



Tables and Figures

The underlying data for all tables and charts can be found in Butler et al. 2016b. All values are for population level estimates derived from the sample of ownerships in each state/region. As such, there is sampling error associated with estimates that is quantified by the standard errors (SE) and the error bars that graphically represent them. The error bars represent 68 percent confidence intervals around the values.

The pyramid graphs in Figures 3 through 11 are used to simultaneously display the population estimates in terms of ownerships and area. The bars on the left-hand side of the graphs represent the percentage of family forest ownerships with 10+ acres in the state/region that correspond to that specific attribute or row (e.g., own 10-49 acres of forest land). The right-hand sides represent the same categories, but the percentages are in terms of the forest land in the domain of interest.

Table 1: Forest land in state/region of interest by ownership category. Forest area estimates come from the U.S. Forest Service, Forest Inventory and Analysis program (FIA; www.fia.fs.fed.us). The specific dates for the inventory data underlying the estimates are listed in Butler et al. 2016b. The ownership categories reported in Table 1 are a collapsed version of the 16 ownership categories, mostly public agencies, recorded by FIA (U.S. Forest Service 2012). The categories correspond to FIA ownership categories and codes as follows:

Table 1 Categories	FIA Ownership Category (OWNER CLASS)
Family	Individual and family, including trusts, estates, and family partnerships (45)
Corporate*	Corporate (41)
Tribal**	Native American (Indian) within reservation boundaries (44)
Other private	Nongovernmental conservation and natural resources organizations (42); Unincorporated partnerships, associations, and clubs (43)
Federal	National Forest (11); National Grassland and/or Prairie (12); Other U.S. Forest Service land (13); National Park Service (21); Bureau of Land Management (22); U.S. Fish and Wildlife Service (23); Departments of Defense/Energy (24); Other federal (25)
State	State (31)
Local	Local, including county, municipal, etc. (32); other nonfederal public (33)

*Including timber investment management organizations (TIMOs) and real estate investment trusts (REITs)

**Tribal is only included in the national and regional tables. These acres are included in the other private category in other summaries due to many states having only a few number of tribes with forest land.

A dash in Table 1 means no sample points fell on forested land owned by individuals, groups, or agencies in the indicated ownership category. This does not mean there is no forest land owned by this ownership category in the geographic area being summarized, but due to the random nature of the sample, the area, if it does exist, should be relatively small.

The forest area for family forest ownerships in Table 1 does not match the estimate listed at the top of the second column on the first page under the heading "Characteristics of Family Forest Ownerships with 10+ acres". This is because the Table 1 estimate includes all ownership with 1+ acres of forest land and the other estimate is for ownerships with 10+ acres of forest land. Starting with the second column on the first page, all subsequent estimates are for family forest ownerships with 10+ acres of forest land.

The data in Table 1 come from Table XX-1 (2013), where XX indicates the state, region, or nation abbreviation, in Butler et al. 2016b.

Figure 1. Percentage of forest land in state/region of interest by ownership category. This figure presents the data in Table 1 of these reports in percentage terms. The colors represent the grouping of ownership categories into broader ownership categories: private (family, corporate, tribal, and other private) and public (federal, state, and local) and are the same groupings and colors depicted in the map in Figure 2.

Figure 2. Private and public forest land across the state/region of interest. This map represents a collapsing of the ownership categories from the spatial product produced by Hewes et al. (2014a, 2014b) to show the general distribution

of private and public forest land across the state/region of interest. The categories are collapsed in order to display the map at the resolution used in the report. The map was produced using a Thiessen polygon approach to interpolate between sample points of known forest ownership and intersection with spatial data layers depicting public, primarily federal and state, forest ownership (Butler et al. 2014).

Area and number of family forest ownerships. The numbers included under the heading “Characteristics of Family Forest Ownerships with 10+ acres” represent the estimated area and estimated number of family forest ownership with 10+ forested acres in the state/region of interest. As stated above, the forest land area value listed here does not match that in Table 1 because Table 1 includes estimates of all forest land that is at least 1 acre in size and the value here is an estimate for all family forest land that is at least 10 acres in size. The area and number of ownerships data come from the totals listed in Table XX-6 (2013) in Butler et al. 2016b.

Figure 3. Size of forest holdings. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) by size of the ownership’s forest holdings in a state/region. The data in this figure come from Table XX-6 (2013) in Butler et al. 2016b.

Figure 4. Forest land is part of home or farm. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) according to whether the forest land is near (within 1 mile) of an owners’ primary home, farm, both, or neither. The data in this figure come from Table XX-8 (2013) in Butler et al. 2016b.

Figure 5. Forest land tenure. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) by length of land tenure. Land tenure is for how long the current ownership/owner has owned the land. The data in this figure come from Table 11 in Butler et al. (2016b).

Figure 6. Reasons for owning. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) by reasons for owning forest land. Respondents were asked to rate each potential reason for owning forest land on a 5-point Likert scale. The scale was labeled as very important, important, moderately important, of little importance, and not important and there was also a “not applicable” option for each potential reason for owning. The percentages reported are population level estimates for those who responded as very important or important. The structure of this question means more than one option could be selected as very important or important, and often it was. The data in this figure come from Table XX-9 (2013) in Butler et al. 2016b.

The categories in Figure 6 are shorthand for the wording actually used in the questionnaire. The “other” category in Table XX-9 (2013), based on the semi-open-ended “other (please specify)” option was not included in the chart because it was selected very infrequently in most states. The actual questionnaire wording is:

Figure 6 Categories	Questionnaire Wording
Beauty	To enjoy beauty or scenery
Nature	To protect nature or biological diversity
Water	To protect water resources
Wildlife	To protect or improve wildlife habitat
Investment	For land investment
Home	Is part of my home site/primary residence
Cabin	Is part of my cabin or vacation home site
Farm	Is part of my farm or ranch
Privacy	For privacy
Family	To raise my family
Legacy	To pass land on to my children or other heirs
Firewood	For firewood
Timber	For timber products, such as logs or pulpwood
NTFPs	For nontimber forest products with regional examples provided
Hunting	For hunting
Recreation	For recreation

Figure 7. Landowner concerns. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) by landowner concerns for their forest land. Respondents were asked to rate each potential concern for their forest land on a 5-point Likert scale. The scale was labeled as great concern, concern, moderate concern, of little

concern, and no concern and there was also a “not applicable” option for each concern. The percentages reported here are population level estimates for those who responded as great concern or concern. The structure of this question means more than one concern could be selected as a great concern or concern, and often it was. The data in this figure come from Table XX-28 (2013) in Butler et al. (2016b).

The categories in Figure 7 are shorthand for the wording actually used in the questionnaire. The “other” category in Table XX-28 (2013), based on the semi-open-ended “other (please specify)” option, was not included in the chart because it was selected very infrequently in most states. The actual questionnaire wording is:

Figure 7 Categories	Questionnaire Wording
Air pollution	Air pollution
ATVs	Damage or noise from off road vehicles
Animal damage	Damage from animals
Development	Development of nearby lands
Drought	Drought or lack of water
Climate change	Global climate change
Taxes	High property taxes
Invasive plants	Invasive plant species
Legacy	Keeping land intact for future generations
Vandalism	Misuse of wooded land, such as vandalism or dumping
Trespass	Trespassing or poaching
Insects	Unwanted insects or diseases
Water pollution	Water pollution
Wildfire	Wildfire
Storms	Wind or ice storms

Figure 8. Landowner age. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) by age of the primary forest owner. Primary forest owner is defined as the demographics for “Owner 1.” The data in this figure come from Table XX-32 (2013) in Butler et al. 2016b.

Figure 9. Activities in the past 5 years. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) by selected activities associated with their forest land that occurred in the previous 5 years. Excluding the “none of the above” option, respondents could select multiple options. The data in this figure come from Table XX-16 (2013) in Butler et al. 2016b.

The categories in Figure 9 are shorthand for the wording actually used in the questionnaire. The actual questionnaire wording is:

Figure 9 Categories	Questionnaire Wording
Cut trees for sale	Cut and/or removed trees for sale
Cut trees for own use	Cut and/or removed trees for own use
NTFPs	Collected nontimber forest products
Fuels reduction	Reduced fire hazard
Prescribed fire	Controlled burn/prescribed fire
Invasives	Eliminated or reduced invasive plants
Insects	Eliminated or reduced unwanted insects or diseases
Roads	Road construction or maintenance
Trails	Trail construction or maintenance
Wildlife habitat	Improved wildlife habitat
Grazing	Livestock grazing
None of the above	None of the above

Figure 10. Likely activities in the next 5 years. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) by selected activities that are likely to occur in the subsequent 5 years. Respondents were asked to rate the likelihood of each activity occurring on their forest land in the subsequent 5 years on a 5-point Likert scale of extremely likely, likely, undecided, unlikely, or extremely unlikely. The percentages reported here

are population level estimates for those who responded the activity was extremely likely or likely to occur. The structure of this question means more than one activity could be selected as extremely likely or likely, and often it was. The “none of the above” response was calculated as respondents who responded that none of the activities were extremely likely or likely to occur in the subsequent 5 years. The data in this figure come from Table XX-17 (2013) in Butler et al. 2016b.

The categories in Figure 10 are shorthand for the wording actually used in the questionnaire. The “other” category in Table XX-17 (2013), based on the semi-open-ended “other (please specify)” option, was not included in the chart because it was selected very infrequently in most states. The actual questionnaire wording is:

Figure 10 Categories	Questionnaire Wording
Cut trees for sale	Cut and/or removed trees for sale
Cut trees for own use	Cut and/or removed trees for own use
NTFPs	Collected nontimber forest products
Fuels reduction	Reduced fire hazard
Prescribed fire	Controlled burn/prescribed fire
Invasives	Eliminated or reduced invasive plants
Insects	Eliminated or reduced unwanted insects or diseases
Roads	Road construction or maintenance
Trails	Trail construction or maintenance
Wildlife	Improved wildlife habitat
Grazing	Livestock grazing

Figure 11. Management activities. This figure represents the estimated percentages of family forest ownerships and forest land (10+ acres) having a written forest management plan, having received forest management advice, having participated in cost-share, certification, or property tax programs, and having a conservation easement. The “none of the above” option was calculated as respondents who responded that they have participated in none of these activities. The data in this figure come from Tables XX-13 (2013), XX-19 (2013), XX-20 (2013), XX-21 (2013), XX-22 (2013), and XX-25 (2013) in Butler et al. 2016b.

The categories in Figure 11 are shorthand for the wording actually used in the questionnaire. Definitions and, where feasible, examples of cost-share programs, green certification programs, tax programs, and conservation easements were provided in the questionnaire. The questionnaire wording is:

Figure 11 Categories	Questionnaire Wording
Manage. plan	Written management or stewardship plan
Cost share	Cost-share program
Certification	Green certification
Tax program	Programs that defer, reduce, or eliminate property taxes
Easement	Development rights can be sold or voluntarily given away
Advice	Advice/information about care, management, or protection of wooded land

Additional Resources

The NWOS web site (www.fia.fs.fed.us/nwos) contains links to the two-page summaries described here, the underlying tables, and additional results and background materials.

The NWOS Table Maker tool (<http://apps.fs.fed.us/fia/nwos/tablemaker.jsp>) can be used to make customized data retrievals.

Full copies of the actual survey instrument can be downloaded at: www.fia.fs.fed.us/nwos/quest

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How to Cite this Document

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