

INDIANA RESIDENTS' PERCEPTIONS OF WOODLAND MANAGEMENT

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Abstract.—A 2009 telephone survey of 1,402 Indiana adults was conducted to assess opinions regarding woodland management. Forty-eight percent said they were “very concerned” about the health and productivity of Indiana’s woodlands, and 45 percent, “somewhat concerned.” Almost half (47 percent) thought that the state’s woodlands are held in about “equal government and private ownership,” and 26 percent thought most woodlands are “government” owned (in fact, roughly 85 percent of the state’s forest lands are privately owned). When informed that “Indiana’s State Forest System makes up about 3 percent of Indiana woodlands,” a majority (55 percent) thought that this amount was “not enough,” and 39 percent, “about right.” Forest practices receiving majority approval were: “removing some trees to protect Indiana woodlands from spread of disease and wildfire” (95 percent), “harvesting Indiana trees for woodland management if overseen by professional foresters” (85 percent), “harvesting Indiana trees to improve places for wildlife to live” (82 percent), “advising Indiana private landowners on how many and what kinds of trees they might harvest and sell” (70 percent), and “harvesting Indiana trees to make lumber or other wood products that we use” (61 percent). Majority agreement was given to the statement, “Indiana woodlands should be managed for a balance of wood products that we use, and other benefits like recreation, wildlife, and good water quality” (88 percent). Nearly three-fourths (72 percent) agreed with the statement, “The amount of forested land in Indiana is shrinking,” and respondents identified “urban sprawl” as the highest-ranking threat to Indiana woodlands.

INTRODUCTION

Forestry professionals have long been interested in public opinions about woodland management in the United States. Insights into the “human dimensions” of forest conservation help managers integrate public perceptions into forestry programs and focus outreach strategies and messages about forest management. However, public opinions about how forests are managed are complex and lack homogeneity across stakeholders and geographic regions. Citizen sentiment on forest management ranges from indifference to

zealotry and from staunch support for certain forest practices to strident opposition (Witter and Jahn 1998).

Several studies across the United States show that the public values non-commodity benefits of forests more than economic benefits. For instance, residents in Vermont ranked aesthetic, recreational, and ecological values as most important in forest management, and economics as one of the least important (Manning et al. 1999). In a study of southern states, Tarrant et al. (2003) found that people valued aesthetic qualities, such as clean air and scenic beauty, much more than wood production. Research also indicates that people are more supportive of various forest management techniques if the goals are focused on alleviating ecological concerns. For example, a national study of public opinions revealed that a majority of people favored management strategies that protect old growth

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forests and wildlife habitats over commodity-based strategies (Shindler et al. 1993).

A number of studies have attempted to better understand consumer attitudes towards certified forest products, though they did not investigate public perception of certified forest management (Ozanne and Smith 1998, Ozanne and Vlosky 2003). Hubbard and Bowe (2005) found that some forest firms perceived they gained increased credibility with the public after becoming certified. In addition, in a series of reports about sustainable forest management, Sheppard et al. (2004) stated that sustainable forest management should also be sustainable in a social sense, and thus incorporate the public's values into management.

Indiana supports an impressive forest resource that is valuable both for its ecological benefits and for the commodity-based opportunities it provides. "The Indiana forest products industry is the sixth largest manufacturing industry in the state, employing over 56,000 people. Forest-based manufacturing provides \$3.5 billion in value-added and \$7.9 billion in value of shipments to Indiana's economy each year. It ranks first nationwide in the production of wood office furniture, wood kitchen cabinets, and hardwood veneer, along with several other products. As small family-owned businesses, wood products companies average less than 50 employees and play an important role in rural communities" (Indiana Department of Natural Resources 2007).

Because of the social and economic importance of Indiana woodlands, an in-depth, contemporary assessment of Indiana residents' forest values and opinions about forest management was needed to explore such topics as residents' opinions about issues of sustainability, acceptable forest practices, and trust in state and federal government to manage woodlands. The Division of Forestry (DoF) in the Indiana Department of Natural Resources (DNR) contracted with Purdue University, Department of Forestry and Natural Resources (DFNR), to measure Indiana

residents' perceptions of woodland management, specifically,

- opinions about active forest management on public and private lands,
- perceptions of what constitutes "sustainable" forest management,
- sentiments toward forest values in woodland management (e.g., aesthetics versus economics),
- awareness and perceptions of "certified sustainable forests" (e.g., are people more accepting of forest management if it is certified sustainable),
- trust in government regarding forest management,
- perceptions of selected forest management practices, and
- environmental values orientations.

Selected socioeconomic characteristics of respondents were to be assessed as well.

METHODS

The DFNR contracted with DJ Case & Associates (DJ Case) to help with survey development and analysis. The DNR, DFNR, and DJ Case survey team agreed that, because the population of interest was Indiana's general public, a telephone survey was the preferred methodology. The survey team developed a "Table of Specifications and Survey Item Pool" that listed survey objectives and specific question wording (or "items") that might illuminate each objective. Survey drafts were shared among the team in an iterative process. Seventeen different versions were considered through the refinement process, resulting in a survey instrument ready for pre-testing.

Though many question and wording nuances were considered in the survey development process, one deserving special mention was agreement within the survey team that the term "woodland" should accompany the word "forest," and in many cases,

supplant it. “Woodland” has proven its merit as a descriptive term in the U.S. Department of Agriculture, Forest Service’s “National Woodland Owner Survey” (U.S. Forest Service 2011). The survey team agreed that “woodland” has intuitive meaning and appeal as a term to supplement “forest” and also serves as a descriptive stand-alone term.

Delve, a market research firm with call centers and focus group facilities in 10 major U.S. cities, administered the telephone pre-test by random-digit-dialed (RDD) selection to 25 English-speaking Indiana adults, 18 years and older. DJ Case listened to a sub-sample of these interviews and consulted with the survey team on survey modifications apparently needed, as well as on survey strengths (such as the pre-test respondents’ clear understanding of the term “woodland”). Then the 25-question survey was finalized and interviewing began.

Completed telephone interviews (RDD) totaled 1,402 interviews (687 males and 715 females), with an average interview length of 15 minutes. There were 3,346 “refusals to participate,” yielding a cooperation rate of 30 percent.

Every survey is subject to non-response bias, so there was the question of how well this sample represented the adult population of Indiana, 18 years and older. Respondents were compared to known Indiana population distributions for gender, residence by metropolitan/non-metro area, age, and education. Survey respondents tended to represent Indiana statewide gender and metro/non-metro distributions. However, younger adults were under-represented and older adults were over-represented; lower education levels were under-represented and higher education levels were over-represented. A weight was applied that combined the actual Indiana distributions for age and educational attainment to normalize the dataset for these variables.

The following narrative summarizes a detailed survey report prepared for the Indiana DoF² (Amberg 2010). Post-normalization results are presented for statewide results. Odds ratios are reported in those instances where the likelihood ratio chi-square statistic was significant at or beyond the 0.05 level. The odds ratio is the ratio of the odds of a condition occurring in one group to the odds of it occurring in another group.

RESULTS

When asked “How interested are you in Indiana’s fish, forests, wildlife, and the out-of-doors?”, 50 percent of Indiana adults said they are “very interested,” 40 percent, “somewhat interested,” and 10 percent, “not interested”. Respondents were asked whether they or any members of their households participated in selected outdoor-related activities (Fig. 1).

Household outdoor activities mentioned by majorities of respondents were “visiting an Indiana state forest” (79 percent), “fishing or hunting in Indiana woodlands” (71 percent), and “gathering mushrooms, nuts, or berries from woodlands” (51 percent). Forty-three percent said that they or household members had “cut/collected trees for firewood,” and about 1 in 10 respondents said s/he or a household member actually had “worked in the wood products industry.”

Of special interest was the large number of respondents (nearly 80 percent) saying they had visited an Indiana State Forest. They were asked, “Could you tell me the name of the State Forest you visited?” A majority (60 percent) offered names of properties

² Amberg, S.M. 2010. Indiana residents’ perceptions of woodland management: “Indiana woodland monitor 2009 (IWM-09)”. A final report to Jack Seifert and the Indiana Division of Forestry. In cooperation with D.J. Case and Associates, Mishawaka, IN. 255 p.

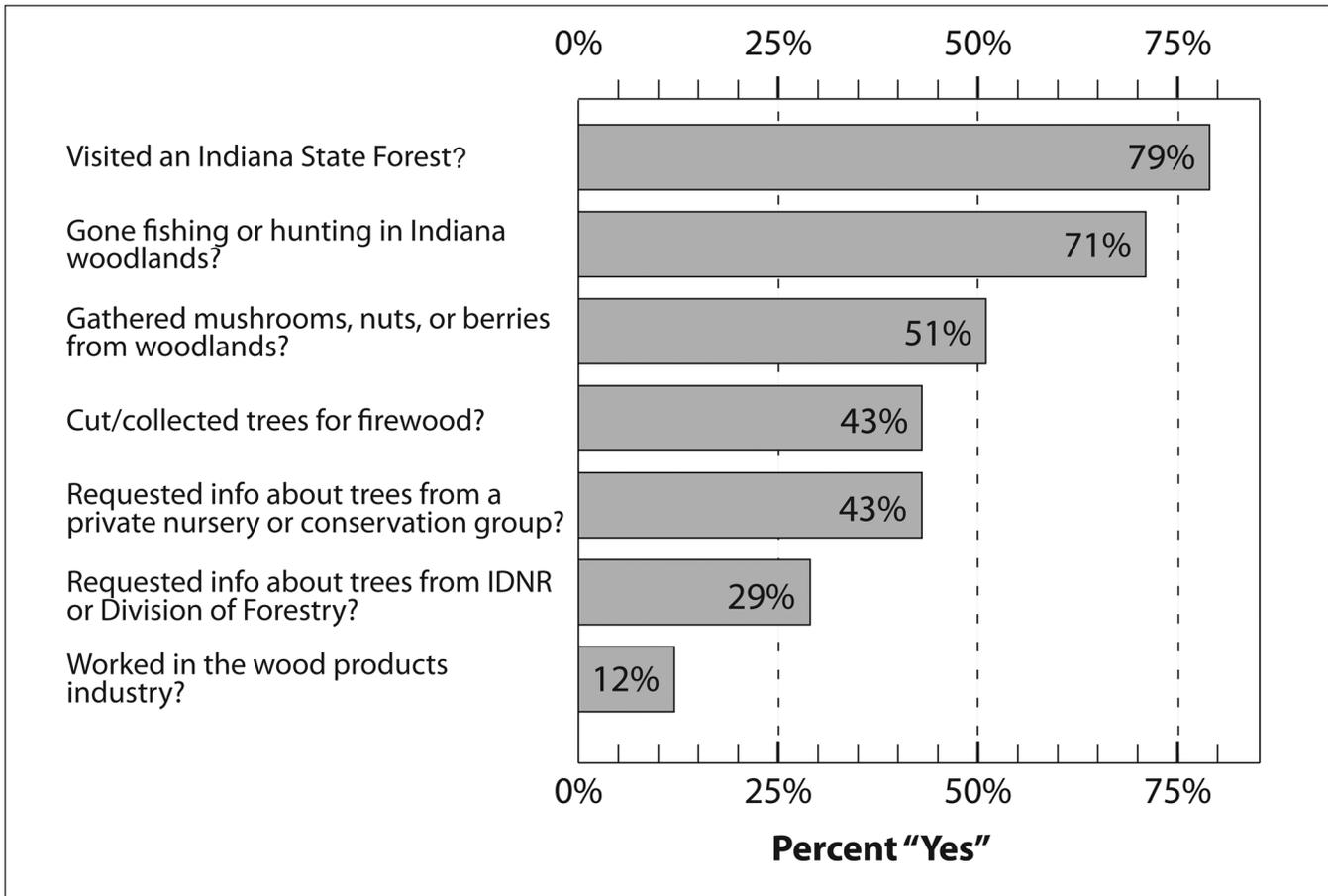


Figure 1.—Percentage of surveyed Indiana residents who answered yes to the question, “Have you or any member of your household...” (n~1,360).

not managed by the DoF, though many were administered by the DNR, such as Indiana State Parks. Fourteen percent correctly offered the name of at least one DoF property. Nine percent named the “Hoosier” National Forest, managed by the U.S. Forest Service, and 17 percent could not remember the name of the area visited.

Respondents were asked how familiar they were with the Indiana DoF. A majority of respondents (58 percent) said they were “not familiar” with the DoF, while 37 percent were “somewhat familiar” and only 5 percent were “very familiar.” When asked, “What first comes to mind when you think of the Indiana Division of Forestry” (without any prompt), 80 percent of respondents offered an answer. The

most frequent response was “forest management,” yet only 29 percent of respondents offered this seemingly obvious answer.

Respondents also were asked to rate the job that the Indiana DoF is doing in providing services for Indiana. In total, 57 percent responded either “excellent” (11 percent) or “good” (46 percent), with 23 percent rating performance as “fair,” 4 percent “poor,” and 15 percent “don’t know.” A large majority (74 percent) of the small group (5 percent) that said they were “very familiar” with the DoF rated the Division’s performance as “excellent” or “good.”

Of interest is whether Indiana residents know who owns the state’s woodlands. A plurality (47 percent)

thought most of Indiana's woodlands are held in about equal ownership by private/corporate owners and government; 26 percent responded "government," 18 percent, "private," and 9 percent, "don't know." In fact, roughly 85 percent of Indiana's forest lands are privately owned, with the balance in federal (12 percent) and state (3 percent) ownership (Sierra Business Council 2011). Similarly interesting is whether Hoosiers think that the state owns enough forested land. When informed that "Indiana's State Forest System makes up about 3 percent of Indiana's woodlands," a majority (55 percent) said they thought that the amount was "not enough," with 39 percent indicating the amount was "about right."

Respondents were asked how concerned they are about the long-term health and productivity of Indiana's woodlands. Nearly half (48 percent) indicated they were "very concerned," almost as many (45 percent) said "somewhat concerned," and only 7 percent said "not concerned."

The degree of Hoosiers' concern for the long-term health of Indiana's woodlands varied by selected background variables. The odds of respondents' saying they were "very concerned" (versus "somewhat/not concerned") were:

- larger by a factor of 1.7 for those owning ≥ 1 wooded acre (0.4 ha) than those who do not,
- larger by a factor of 1.5 for that group who purchased lumber or wood products for home improvement in the last 5 years than those who did not,
- larger by a factor of 1.3 for residents of southern Indiana than residents of northern Indiana,
- larger by a factor of 1.3 for Hoosiers older than 44 years versus those 44 years and younger, and
- larger by a factor of 1.3 for Indiana residents who say they are liberal-leaning than those who are conservative/conservative-leaning.

Survey participants were presented a list of ways that woodlands might be managed, and asked to indicate their approval or disapproval. Near-unanimity (95 percent) existed for removal of some trees to protect Indiana woodlands from disease and wildfire. Majority support also was given to:

- harvesting Indiana trees if overseen by professional foresters (85 percent),
- harvesting trees to improve wildlife habitat (82 percent),
- advising private landowners on how many and what kinds of trees they might harvest and sell (70 percent), and
- harvesting trees to make lumber or other wood products we use (61 percent).

Respondents seemed ambivalent about the idea of "importing wood products from other states and countries instead of harvesting Indiana trees," with 48 percent approval. There was very low approval (18 percent) of "cutting Indiana trees to make room for new homes."

Arguably, one of the most important questions in the survey, at least from the standpoint of contemporary forest management and wood products in Indiana, was the public's sentiment toward "harvesting Indiana trees to make lumber or other wood products that we use" (61 percent approval). The odds of respondents' saying they "approved" of harvesting Indiana trees to make lumber or other wood products that we use (versus "disapproved") were:

- larger by a factor of 3.1 for those who purchased lumber or wood products for home improvement in the last 5 years than those who did not,
- larger by a factor of 1.9 for Indiana households that cut or collected firewood than those that did not,
- larger by a factor of 1.7 for households with a member who worked in the wood products industry,

- larger by a factor of 1.7 for men than women,
- larger by a factor of 1.5 for Hoosiers residing outside of metropolitan counties than those residing in metro counties,
- larger by a factor of 1.4 for Hoosiers describing themselves as “conservative/conservative-leaning” than those describing themselves as “liberal/liberal-leaning,”
- larger by a factor of 1.4 for respondents describing their residences as “rural” than “urban” residents,
- larger by a factor of 1.4 for Hoosiers owning ≥ 1 wooded acre (0.4 ha) than those who do not, and
- larger by a factor of 1.3 for residents of southern Indiana than northern Indiana.

Respondents were asked to express agreement or disagreement with each of several statements about the importance of Indiana woodlands and management of these woodlands. Hoosiers agreed that:

- “Indiana woodlands should be managed for a balance of wood products that we use, and other benefits like recreation, wildlife, and good water quality” (88 percent),
- “If I hear an Indiana forest is being managed as a certified green forest, I get the idea it’s being wisely managed for future generations” (76 percent), and
- “The amount of forested land in Indiana is shrinking” (72 percent).

Respondents disagreed that:

- “Indiana woodlands are valuable only if they produce jobs and income for people” (74 percent).

As a group, respondents generally were ambivalent about the statements:

- “Indiana woodlands should be left untouched for humans” (49 percent disagreed, 33 percent agreed, 18 percent were neutral/don’t know),
- “The ways we manage Indiana woodlands today usually hurt the environment in the long-run” (33 percent disagreed, 36 percent agreed, 31 percent were neutral/don’t know), and
- “In Indiana, our future wood needs will be met because we’re growing more than enough trees to replace the ones we’re harvesting” (42 percent disagreed, 27 percent agreed, 31 percent were neutral/don’t know).

These findings also can be portrayed using “mean score analysis” (Fig. 2), which produces a “word anchor” that can be assigned to each statement based on the rounded mean score of responses. In this case, mean score analysis confirmed that respondents:

- agreed that
 - Indiana woodlands should be managed for a balance,
 - “certified green forest” gives the idea of forests for the future,
 - the amount of Indiana forested land is shrinking;
- were neutral that
 - woodland management today usually hurts the environment,
 - Indiana woodlands should be untouched by humans,
 - Indiana is growing enough trees to replace those harvested;
- disagreed that
 - Indiana woodlands are valuable only for jobs and incomes.

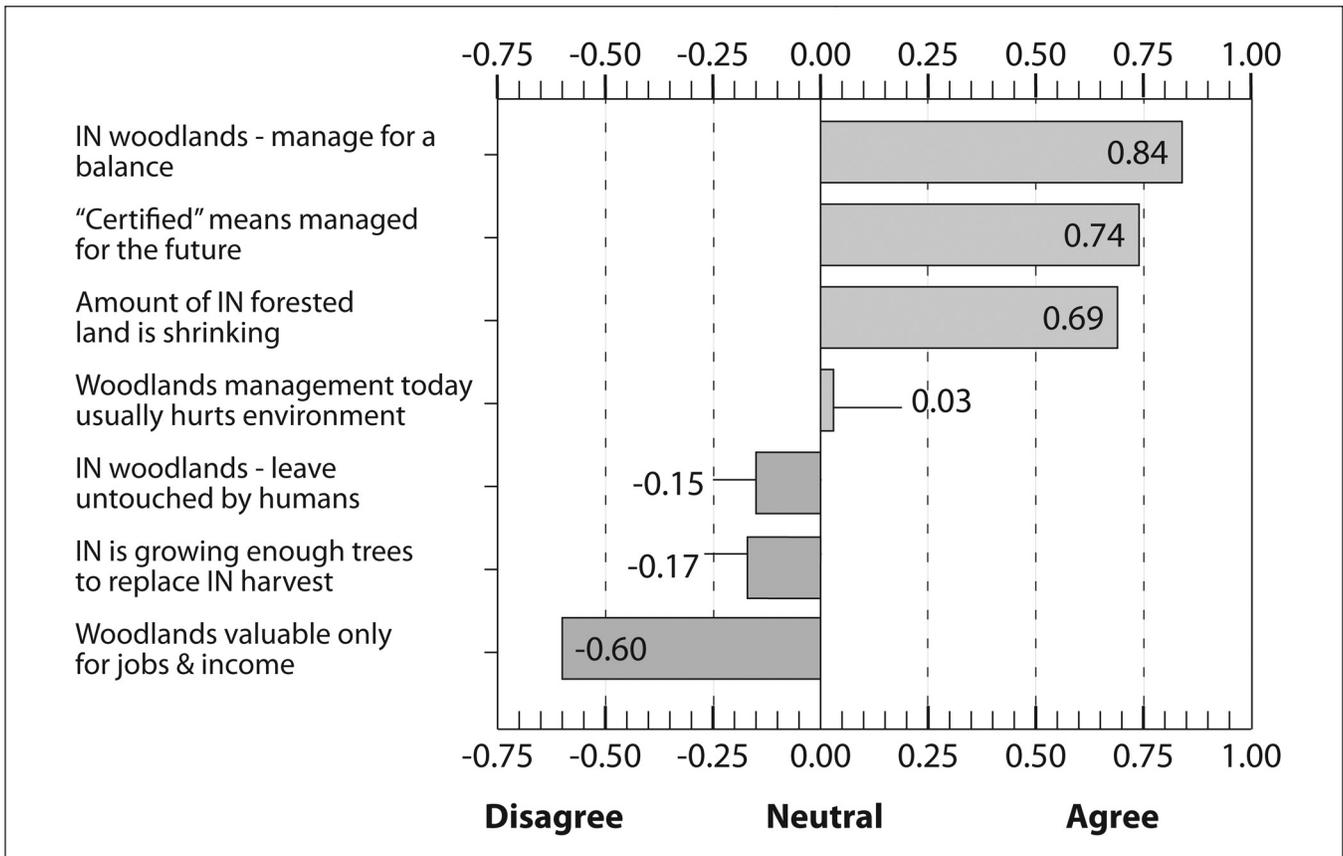


Figure 2.— Surveyed Indiana residents' degree of agreement with seven statements about Indiana woodlands: ". . . please tell me if you agree, disagree, or are neutral," where -1 = "disagree," 0 = "neutral," and +1 = "agree." Agree range = 0.50 to 1.00; Neutral range = -0.49 to +0.49; Disagree range = -0.50 to -1.00 (n~1,320).

The topic of "certified green forests" was pursued at some length with respondents. They were asked, "If you've heard the term 'certified green forests,' in a few words, could you please tell me what the term means?" Though the term "certified green forests" appealed to respondents, most (68 percent) were unable to offer a meaning of the phrase. Of the few able to provide an answer, most frequently mentioned was the idea that such forests are managed for "green" or environmentally friendly products (14 percent), or more simply, that the forests are wisely or well managed (7 percent).

Respondents were asked their opinions of the severity of each of nine possible threats to Indiana woodlands. Mean score analysis revealed that "urban sprawl" and "air and water pollution" were the two highest-rated

threats, followed closely by "insects or plant diseases." On average, however, none of these qualified in the minds of respondents as a "high threat" to Indiana woodlands, but rather as "medium threats" (Fig. 3). All nine possible threats fell in the "medium threat" range, on average. The bottom of the list was shared by "unplanned forest fires" and "planned or prescribed fires." "Climate change" was near the bottom of the threat list, indicating that the issue has not registered as a serious matter in the opinion of the Indiana adult population.

Among the most revealing questions in the survey was one asking respondents to identify the person or experience that most influenced their sentiments about woodland management and timber harvest. Among the 1,402 responses provided was "can't answer".

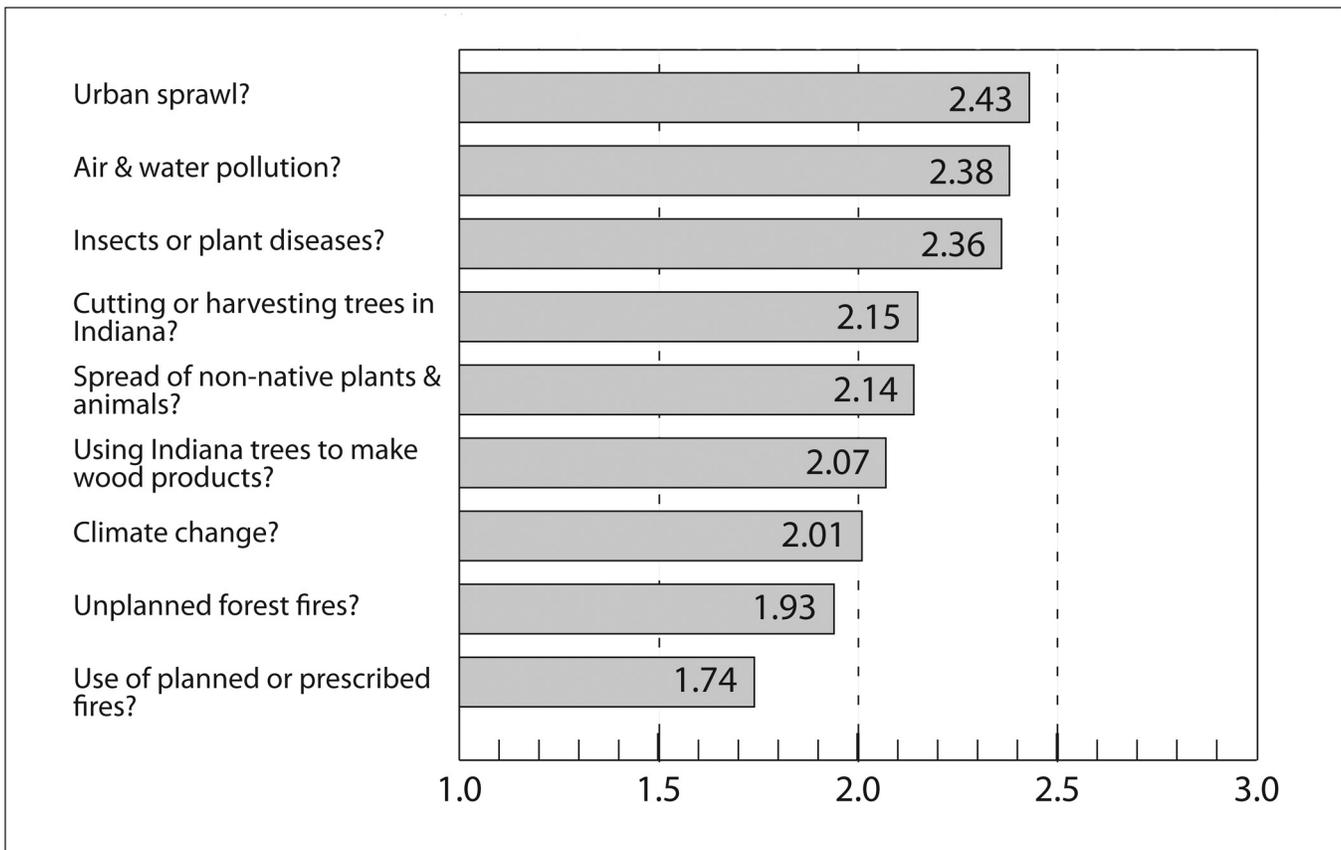


Figure 3.— Surveyed Indiana residents' responses to questions, "Do you think each of the following represents a high, medium, or low threat to today's Indiana woodlands," where 1 = "low threat," 2 = "medium threat," 3 = "high threat," or "don't know". The answer "don't know" was eliminated for purposes of this analysis. High threat range = 2.50 to 3.00, Medium threat range = 1.50 to 2.49, Low threat range = ≤ 1.49 (n~1,330).

These data presented an analytical challenge because the open-ended statements were diverse in context, and reduction or categorization of the responses might result in loss of depth and richness of answers. For purposes of data reduction and summarization, however, each response was read individually and grouped into one of ten general categories (Table 1).

Thirty-one percent of respondents implied or stated that their woodland values were rooted in their lifestyles (Table 1), essentially, values virtually inseparable from their personal identities and how they think as individuals. These values generally grew from early life experiences and training—family activities, memories at a specific outdoor place, hiking,

Table 1.—Categorization of open-ended responses to: "Briefly, what person or experience would you say most influenced your sentiments about woodland management and timber harvest?"

Influence	Number	Percent
My lifestyle	432	31
"Resource professionals"	238	17
Family member	210	15
News media	152	11
Can't answer	151	11
Travel/witnessing good and bad	81	6
Self-taught	66	5
Conservation-environ. groups	37	3
Friend/neighbor	32	2
Classified forests	3	trace
Total	1,402	100

camping, Scouting, fishing, collecting and burning fuel wood—though some respondents referenced more recent epiphanies about the importance of nature. Seventeen percent were influenced by a resource professional; that is, they were employed in natural resource management, influenced by a relative or acquaintance in park or resource disciplines, schooled in natural resources, mentored in resource studies by teachers or professors, or knew farmers or loggers/mill operators who made their living on the land. Additionally, they reported being exposed to formal professional outreach, such as university extension, DNR publications, soil and water district contacts, political contacts, National Guard training, or Smokey Bear.

Other pivotal people or experiences included family members (15 percent), news media (11 percent), exposure through travel to good and bad examples of forest management (6 percent), conservation and environmental groups (3 percent), and friends and neighbors (2 percent); a few respondents mentioned their participation in the DNR's Indiana Classified Forest and Wildlands Program (Table 1).

Objectives of the Indiana Woodland Monitor 2009 are italicized below and were to assess Hoosiers':

- *Opinions on active forest management on public and private lands, and trust in government regarding forest management.* Indiana residents are generally unknowledgeable about who owns the state's woodlands, with almost half thinking that Indiana forests are in equal public and private ownership. However, roughly half say they are "very concerned" (and most others, "somewhat concerned") about the long-term health and productivity of Indiana's woodlands. A large majority would support efforts to advise private landowners on how many and what kinds of trees they might harvest and sell. A majority think that the 3 percent of Indiana's woodlands in State Forest management is not enough, even though most say they are "not familiar" with the Indiana DoF, and when asked what first comes to mind when they think of the DoF, few indicate that the agency has something to do with looking after trees.
 - *Perceptions of what constitutes "sustainable" forest management, and importance of different forest values in forest management (e.g., aesthetics versus economics).* "Sustainable" forest management in the minds of Hoosiers appears to mean balancing forest benefits. A large majority supports harvesting Indiana trees for woodland management if overseen by professional foresters, but fully one-third would prefer that the state's woodlands be untouched by human hands. According to our survey, Hoosiers are essentially imploring, "Do what you need to do, including harvesting Indiana trees for lumber or other wood products that we use, but do it professionally with an eye toward forests for the future."
- There is strong indication that the Indiana citizenry's acceptance of the full gamut of forest values reflects the sentiment of Indiana's forest landowners. In a study of family forest owners in north-central Indiana, Ross-Davis (2006) identified three distinct landowner types: (1) "Forest Managers," who attributed importance to diverse values with regard to owning their forests and were most likely to have harvested trees from their land in the past, (2) "New Forest Owners," who owned their properties for the least amount of time and attributed importance to diverse ownership motivations with the exception of producing timber, and (3) "Passive Forest Owners," who owned the smallest forested areas and attributed importance only to enjoying the scenery of their woodlands.
- *Awareness and perceptions of "certified sustainable forests" (e.g., Are people more accepting of forest management if it is certified sustainable?).* The phrase "certified green forest" gives Hoosiers the idea that the forest

is being managed for future generations, so whatever “certified green forest” is, they are reassured. However, other than this vague impression, Hoosiers generally do not have a clear understanding of the phrase. Moreover, Indiana residents indicate that they think the amount of forested land in the state is shrinking, and many perceive that not enough trees are being grown to replace trees harvested.

- *Types of forest management which are socially acceptable.* A majority of Indiana residents support tree harvest to protect Indiana woodlands from spread of disease and wildfire, to improve places for wildlife to live, and to produce lumber and wood products. The citizenry is divided on the idea of importing wood products from other states and countries instead of harvesting Indiana trees, but Hoosiers roundly reject the thought of cutting Indiana trees to make room for new homes, describing the greatest threat to Indiana woodlands as “urban sprawl.” Near the bottom of Hoosiers’ list of woodland threats is “climate change.”
- *Environmental values orientations.* As a citizenry, Hoosiers acknowledge the utilitarian values of the state’s woodlands, while expecting to see the all-important balance between wood products and other benefits, such as recreation, wildlife, and good water quality. Without doubt, the Indiana public considers what the DoF does to be important and relevant, but the citizenry lacks a well-defined idea of who does it.

ACKNOWLEDGMENTS

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