Forestry & Wildlife Program
DIVISION OF EXTENSION
UNIVERSITY OF WISCONSIN–MADISON

Midwest and Northeast Forests Extension Climate Change Community of Practice: Needs Assessment Survey Report

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Abstract

We conducted a survey of 71 Extension educators, specialists, and university faculty in the Northeast and Midwest U.S. who all work in the intersection of climate change and forestry. The survey assessed the landscape of climate-related Extension forestry programming and approaches to climate change communication. Most respondents (94%) are at least somewhat confident in their ability to have productive conversations about climate change with their audiences (private woodland owners and foresters/natural resource professionals), but only 21% are extremely confident. Notably, 71% of respondents underestimate how concerned private woodland owners are about climate change. The most common climate-change related topic already covered by respondents' programming is changes in forest health and invasive species (85% of respondents). Most respondents have not covered but are interested in covering Traditional Ecological Knowledge (73%) and tree seed collection or preservation (69%) in future programming. The biggest successes in delivering climate-related forestry content come from promoting active forest management and talking indirectly about climate change, whereas the greatest challenges relate to funding, institutional barriers, and audiences' climate skepticism or politically charged viewpoints. The results of the survey will inform the creation of a community of practice to support Midwest and Northeast Extension staff in climate-related forestry outreach by fostering networking, resource-sharing, and learning opportunities for participants across states.

Acknowledgements

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Introduction

In spring 2025, the University of Wisconsin–Madison Extension conducted a survey of Extension educators, agents, and university faculty with Extension appointments in the Northeast and Midwest U.S. The survey respondents all work at the intersection of climate change and forestry with private landowners, foresters, and/or natural resource professionals (NRPs).

We designed the survey to assess the landscape of climate-related Extension forestry programming, attitudes related to climate change and climate change communication, and ways Extension professionals across the region can learn from each other in a community of practice (CoP). We sent the survey (open April 4 through April 25) to 149 people, of whom 71 responded (48% response rate). Respondents represented a variety of positions across Extension. Although there are not consistent types of positions across the region, generally 41% were Educators (agent, field specialist, local, regional), 37% were Specialists (statewide, faculty, research), 7% were Program Managers or Program Leaders, and 15% were other (program coordinators, communications, diagnostic).

Survey respondents had many projects in various states within the Northeast and Midwest, but WI, MI, and NY were the most-represented states (Figure 1). 61 respondents indicated they worked in just one state, while the remaining 10 respondents indicated they had work or collaborations in multiple states. In the map below, these 10 respondents are included in the tallies for all the states they listed.

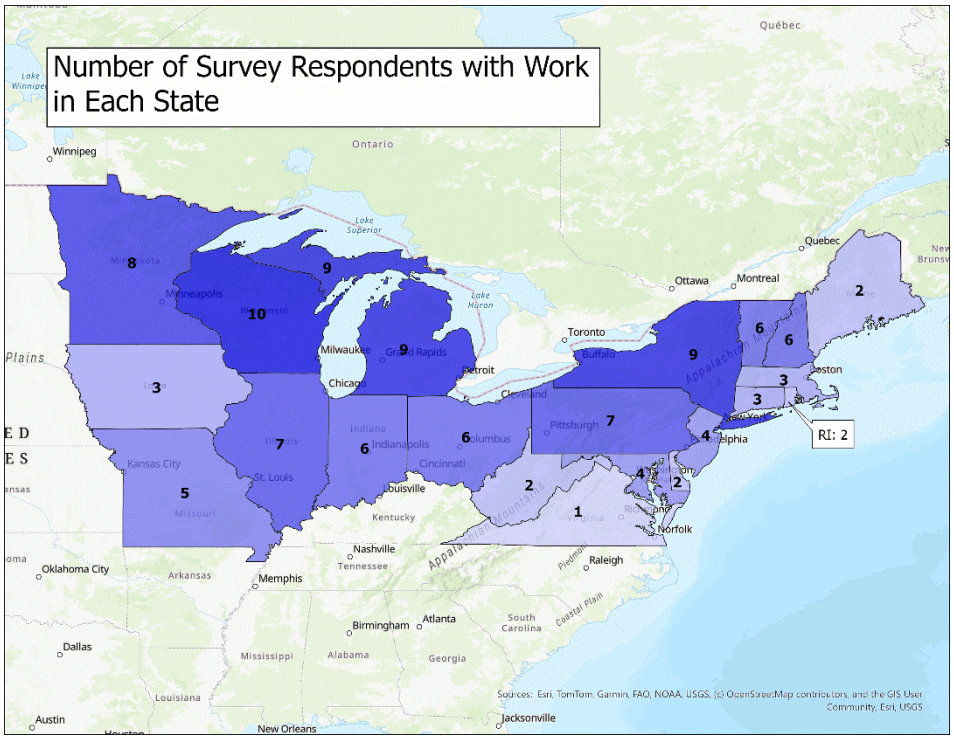


Figure 1: Map of survey respondents

Introduction

The results of this survey will guide the creation of a CoP that will aim to share resources, lessons, and best practices to more effectively address climate change adaptation and mitigation in forestry across the Northeast and Midwest.

The survey results are summarized below in the following sections:

We also provide supplementary material in the appendices.

- Appendix 1: Respondents' favorite outreach materials related to forest climate change impacts, adaptation, and mitigation.
- Appendix 2: Selected free responses about 2024 programming, successes, and challenges integrating climate change considerations into forestry outreach
- Appendix 3: Full survey instrument

If you have questions about the survey results or the CoP, please contact Keith Phelps (keith.phelps@wisc.edu) and Scott Hershberger (scott.hershberger@wisc.edu).

I. Engagement on climate change

We asked several questions to gauge respondents' current engagement with climate change issues in their work. Respondents first indicated their familiarity with the USDA Northern Forests Climate Hub. Most respondents (89%) were familiar with this resource, and slightly over half (54%) had used its resources or attended its events (Figure 2).

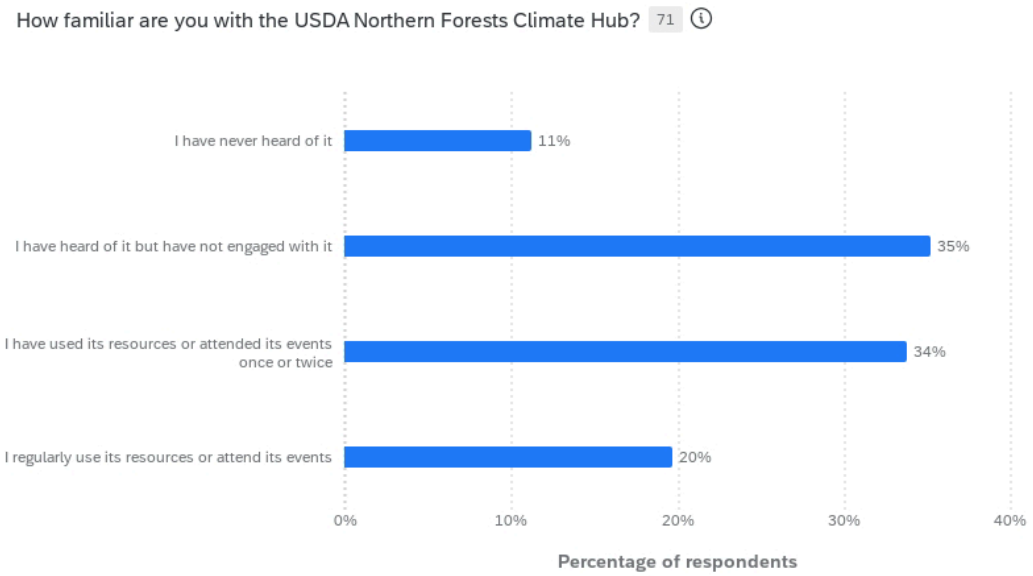


Figure 2: Familiarity with the Northern Forests Climate Hub

89% of respondents work with private woodland owners, 93% work with foresters/NRPs, and 85% work with both audiences (Figure 3). 49% of respondents indicated they work with other audiences such as communities, governments/municipalities, master naturalist/master gardeners or extension volunteers, and industry professionals.

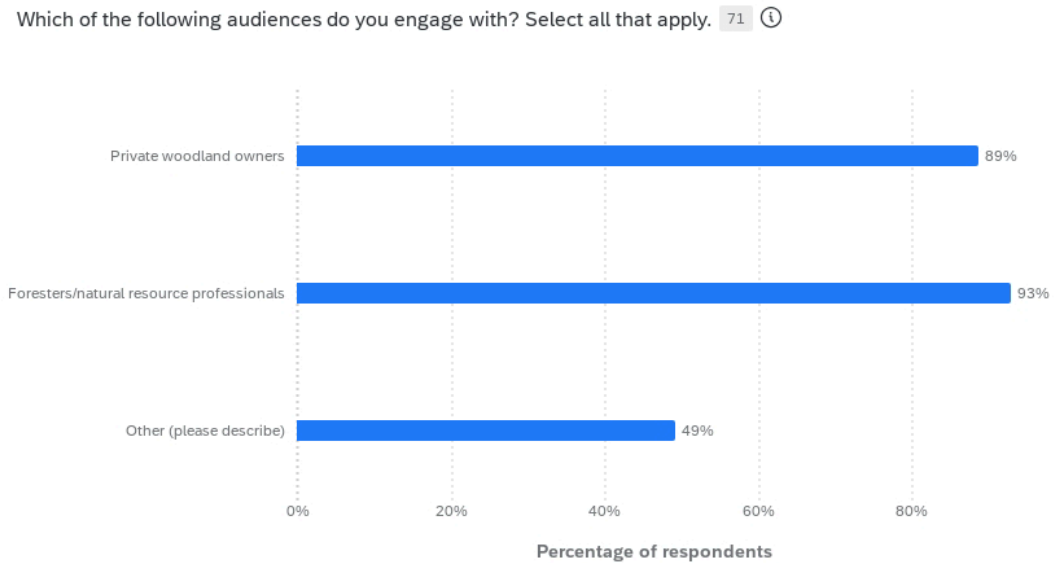


Figure 3: Audiences

Most respondents (94%) are somewhat confident (41%), very confident (32%), or extremely confident (21%) in their ability to have a productive conversation with their audiences about climate change-related issues. Slightly fewer, but still a strong majority (86%), are somewhat confident (43%), very confident (23%), or extremely confident (20%) in their ability to offer their audiences science-based recommendations about climate change-related issues (Figure 4). When we separated responses by region (Northeast vs Midwest), we found no meaningful differences in the distributions of respondents' levels of confidence.

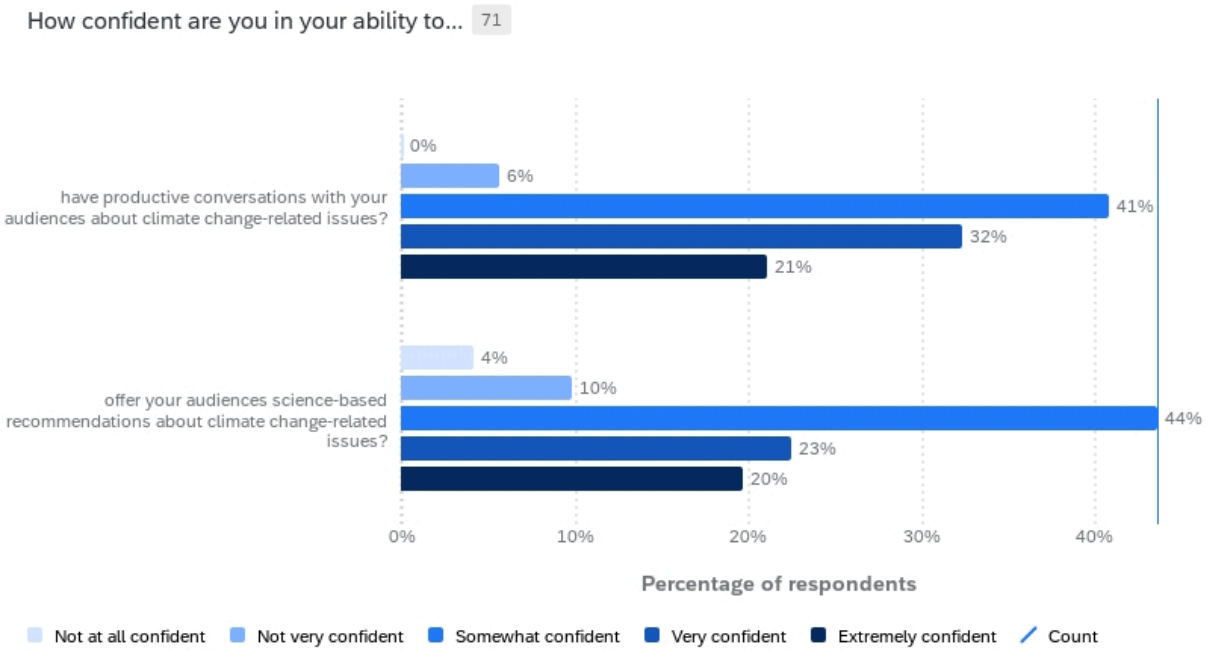


Figure 4: Confidence in outreach

II. Past and future climate-related programming

We asked several questions about respondents' existing climate-related programming, desired outcomes for 2025 programming, and the outreach materials they use or would like to have in the future.

Respondents most commonly indicated that they have covered changes in forest health or invasive species (85%) or extreme weather events (58%) in Extension programs (see full list in Figure 5). Other topics mentioned in write-in responses included wood products, urban forestry, deer browse, mycorrhizae and soil health, the biodiversity crisis, forest succession processes, land protection, maple sap flow, and planting trees on former agricultural lands. Each of these was mentioned by only one or two respondents.

Among topics that respondents have not covered but are interested in covering, Traditional Ecological Knowledge (73%) and tree seed collection or preservation (69%) were the most popular. Changing winter conditions and forest harvest operations had the highest percentage (24%) of respondents indicating they have not covered the topic in current programming and are *not* interested in covering it in future programs. However, for every topic listed on the survey, the respondents who have not covered but are interested in covering it outnumbered those who have not covered and are *not* interested in covering it.

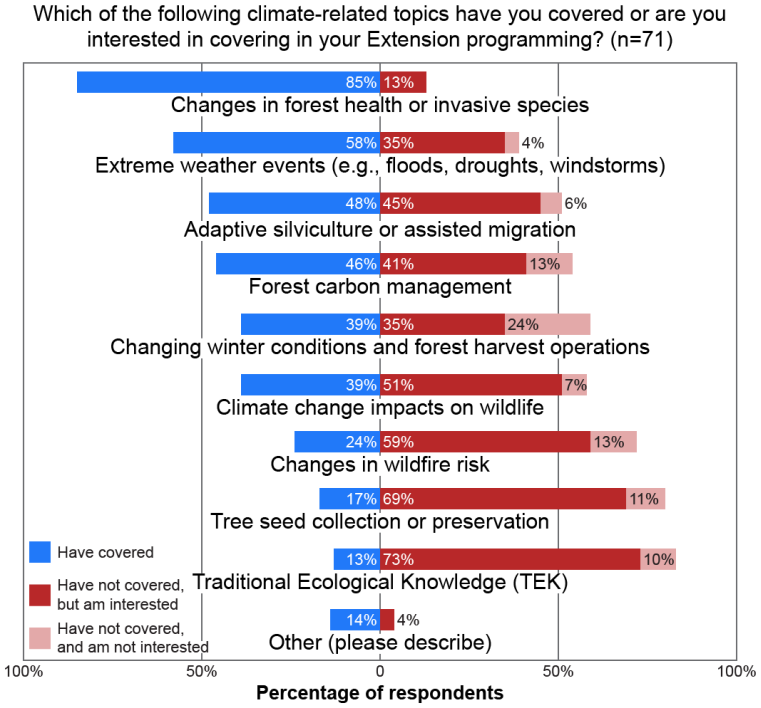


Figure 5: Topics covered in programming

Past and future climate-related programming

The most common programmatic materials created for current Extension forestry programming related to climate change are in-person events (81% of respondents), webinars (74%), and written educational materials (69%) (see full list in Figure 6). The most common programmatic materials that respondents have not created but would like to create for future programming are decision-support tools (63%), multimedia (60%), and community science projects (53%). The programmatic materials for which the highest percentage of respondents indicated that they have not created and would *not* be interested in creating were interactive online discussions (21%) and academic research (20%). However, for every modality listed, the respondents who have not created but are interested in creating that modality far outnumbered those who have not created and are *not* interested in creating that modality.

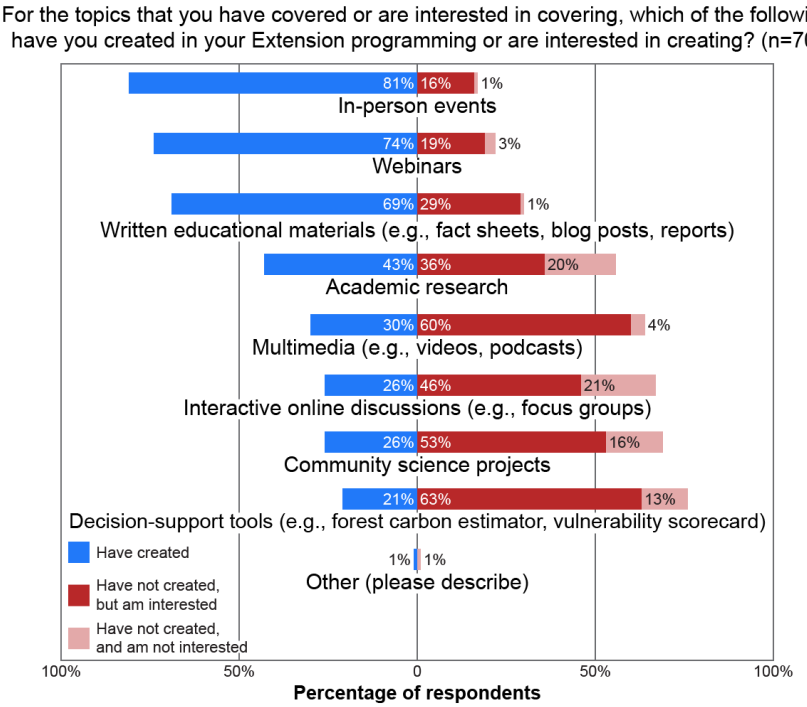


Figure 6: Modalities of programming

When we asked respondents to describe any climate-related programming they conducted in 2024, we received 55 free-form responses (see selected responses in Appendix 2). Consistent with prior questions, respondents most commonly indicated developing content on forest management and resilience topics. Respondents described creating content on climate adaptation in forest management, managing for biodiversity, assisted migration, seed collection, and wildfire management. Some respondents had also worked with forest health and invasive species content, oak decline, emerging health threats, and pest range shifts. Forest carbon content was also popular, as many respondents described creating baseline literacy content for forest carbon markets in the form of fact sheets, workshops, and webinars.

Many respondents described participating in or spearheading training around climate change. For example, some respondents described providing better guidance on climate change-related topics for Master Woodland Owners and foresters (and supplying continuing education credits). One respondent mentioned having great success in an online course that sought to prepare Extension educators to answer landowner questions about forest carbon markets. Finally, some

individuals mentioned creating targeted outreach for particular audiences, such as women landowners, maple syrup producers, academic/research professionals, and Master Naturalists, among others.

Again consistent with the prior questions, popular modalities described in the free-form responses were presentations, webinars, and workshops. Respondents also mentioned fact sheets and guidebooks, mostly on forest carbon or assisted migration/planting recommendations. Two respondents mentioned creating forest resilience or climate-smart forestry guidebooks for Northeast states. Other responses focused more on integrating mentions of climate change into existing programming, such as woodlot management, private landowner courses, or other broader forestry topic presentations. One respondent mentioned creating a series of podcasts and blogs that covered many different climate change topics.

When asked which outcomes they hope to achieve with their climate-related programming in 2025, respondents most often indicated a desire to help people implement climate-resilient practices (71% of respondents), increase awareness of climate change impacts (65%), and incorporate climate-resilient practices into forest management plans (64%) (see full list in Figure 7). In fact, 39% of respondents selected all three of these outcomes. Overall, 65% of respondents selected at least three desired outcomes. In write-in responses, providing information on carbon programs (without specifically recommending them), increasing understanding of the importance of mass timber production, incorporating silvopasture into farms, and tree planting in former agricultural lands were each mentioned by one respondent.

Only 8% of respondents indicate that they don't plan to do any climate change-related programming in 2025, which is unsurprising given that the survey recruitment email mentioned climate change several times. This percentage would likely be higher among non-respondents.

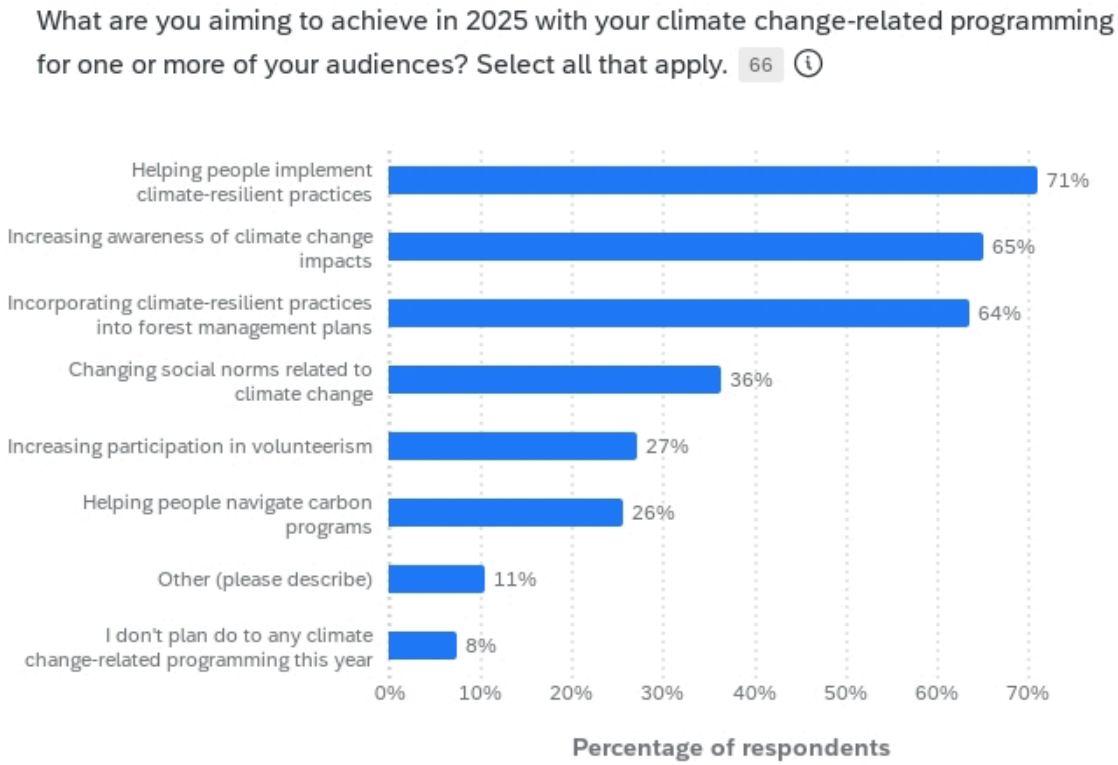


Figure 7: Desired outcomes

Past and future climate-related programming

We next asked respondents to list materials that they typically provide to their audiences related to forest climate change impacts, adaptation, and/or mitigation. 39 respondents answered this question. Generally, respondents indicated that they liked various fact sheets, articles, and guidebooks. Northern Institute of Applied Climate Science (NIACS) resources (e.g. climate change field guides, adaptation workbooks) were listed 9 times. In particular, the NIACS Landowner Forest Resilience Assessment scorecards were mentioned 5 times. Appendix 1 lists all specific outreach materials mentioned by respondents. We can use this as a starting point to grow a larger resource list with the CoP.

When we asked what additional outreach materials (topics and/or modalities) would most enhance respondents' ability to support their audiences, we received 39 free-form responses. The two most popular topics mentioned were forest resilience and management (14 responses) and forest carbon program summary or overview information (6 responses). On forest resilience and management, most respondents expressed a desire for materials that discuss application of techniques or hands-on management approaches to forest resilience or climate adaptation in forestry. Two respondents also indicated interest in regionally or habitat-specific materials for forest resilience.

For outreach modalities, respondents were most interested in having short form videos (14 responses) or fact sheets (14 responses). One respondent expressed a desire for usable PowerPoint templates around forest adaptation and planting recommendations. Another respondent indicated interest in having data that would track thinned versus unthinned stands to compare carbon and other forest product benefits.

One respondent indicated a need for stories around observable forest changes: “Stories from professional foresters about the changes they've seen over their careers (anything from tree diversity, changes in invasives, types/number of properties they're managing, what motivates them to continue their work).”

Finally, one respondent also emphasized that outreach materials should “include information about keeping forests as forests to sustain their many benefits.”

III. Attitudes about climate change and climate change communication

We asked respondents to rate their personal level of concern about climate change in the context of their work on a 5-point scale from "no concern" (1) to "great concern" (5). Based on their audiences, we also asked respondents to guess the average level of concern about climate change among woodland owners and/or foresters/NRPs in their state.

Respondents tend to be highly concerned about climate change (Figure 8), with an average rating of 4.26 (SD=0.96). More than three-quarters (77%) of respondents gave a rating of at least 4, and 43% chose the maximum possible rating.

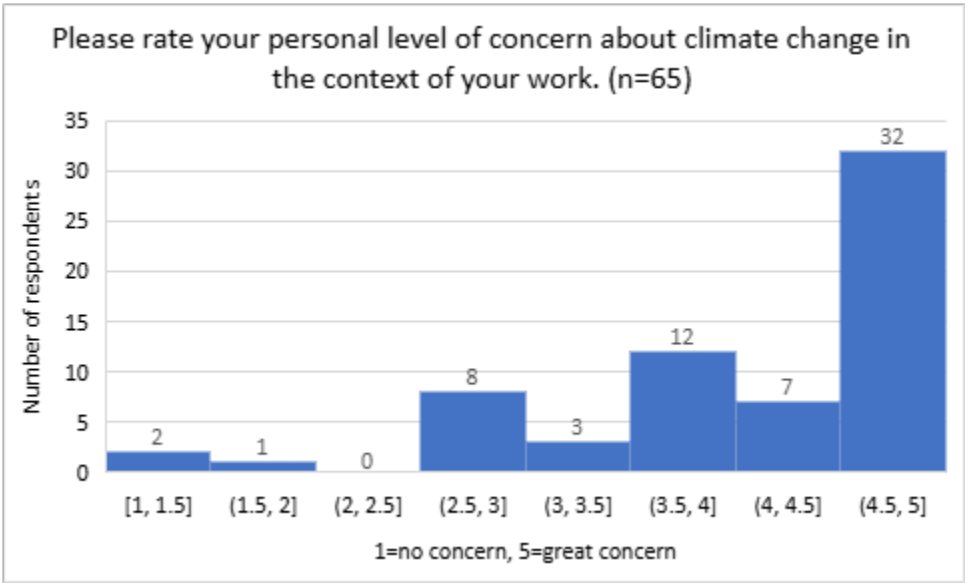


Figure 8: Respondents' concern about climate change

Numerous studies have revealed that people typically underestimate others' level of concern about climate change and level of support for climate action (e.g., Andre et al., 2024; Rare, 2024; Sparkman et al., 2022). To see if Extension professionals also exhibit this *pluralistic ignorance*, we compared each respondent's estimate of the average level of concern about climate change among woodland owners in their state to the 2018 National Woodland Owner Survey data for the average level of concern among woodland owners (with at least one acre of wooded land) in the respondent's primary state.

We were able to conduct this analysis for 56 respondents (we excluded those who did not give estimates, one who did not indicate a primary state in which they work, and one from Rhode Island, for which the NWOS does not provide state-level data).

Figure 9 shows the results. Each column represents a specific state, with the black square indicating the NWOS measurement of the average level of concern about climate change *among woodland owners in that state*. Each circle represents one survey respondent's estimate of the average level of concern about climate change among woodland owners in their state. For example, in Wisconsin, 6 respondents gave underestimates (red circles), while only 1 gave an overestimate (blue circle).

All in all, 71% of respondents—including a majority in most states—underestimated woodland owners' concern about climate change in their state. The average underestimate was 0.28 points on the five-point scale (SD=0.71). Woodland owners' concern may have increased since 2018, so the mismatch between Extension professionals' perceptions and the reality may be even larger than measured here.

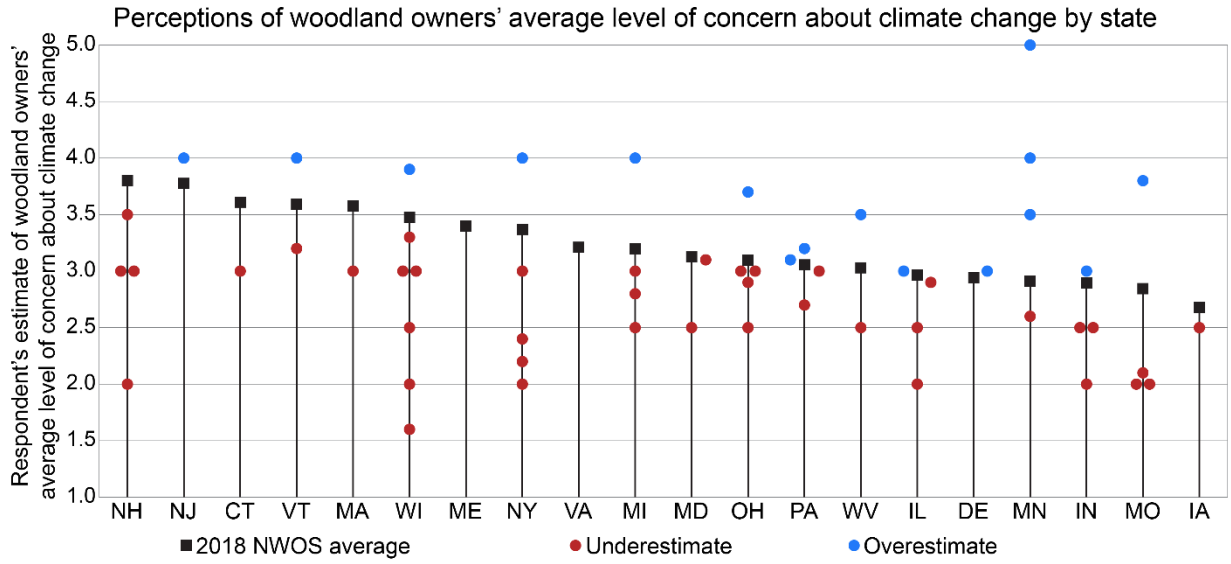


Figure 9: Woodland owners' concern about climate change—perceptions vs reality

Separately from the comparison to NWOS data, we also wanted to know if there was any relationship between Extension professionals' own concern and their perceptions of woodland owners' concern. Looking at the same 56 respondents, the correlation between respondents' own level of concern and the perceived level of concern of woodland owners was r=0.49. That is, more concerned respondents tended to perceive that woodland owners are also more concerned, but the relationship was weak (Figure 10).

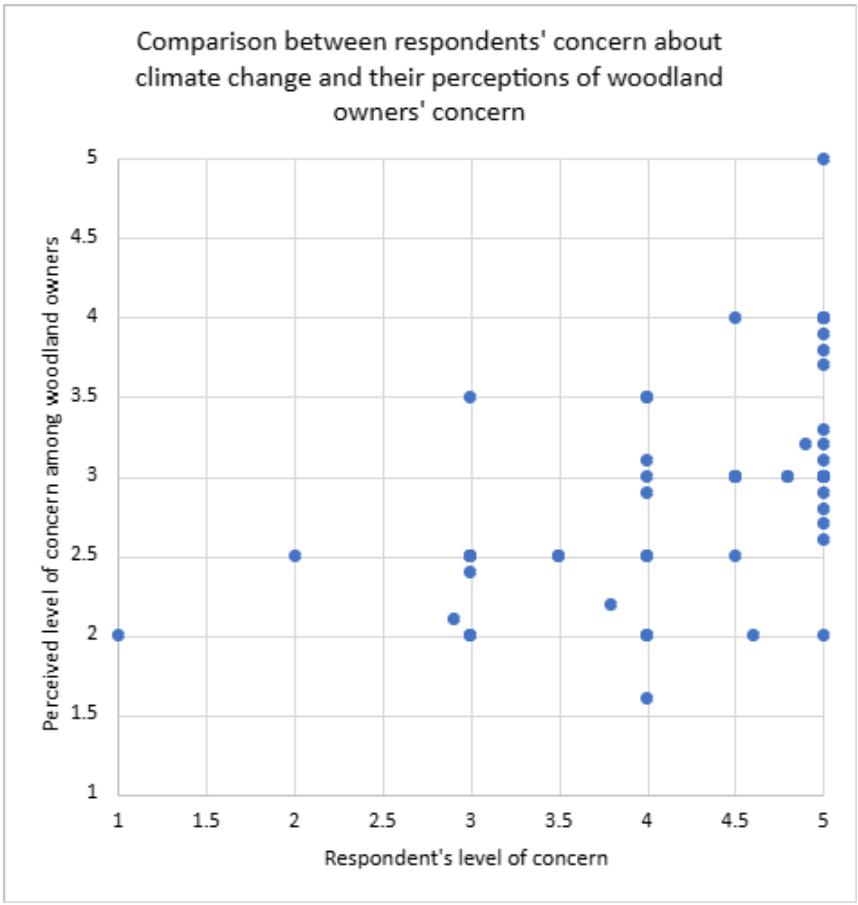


Figure 10: Respondents' concern and perceptions of woodland owners' concern about climate change

Respondents tended to guess that foresters/NRPs in their state are more concerned about climate change (M=3.64) than they guessed that woodland owners are (M=2.93). Of the 54 respondents who provided estimates for both audiences, 76% perceive that foresters/NRPs are more concerned than woodland owners. The correlation between respondents' own level of worry and the perceived level of worry of foresters/NRPs was only r=0.38. Slightly less than half (45%) of respondents rated foresters'/NRPs' level of concern as at least a 4 on the 5-point scale (Figure 11).

We do not have state-level data on foresters'/NRPs' level of concern about climate change, so we cannot determine whether respondents' perceptions are accurate on this question.

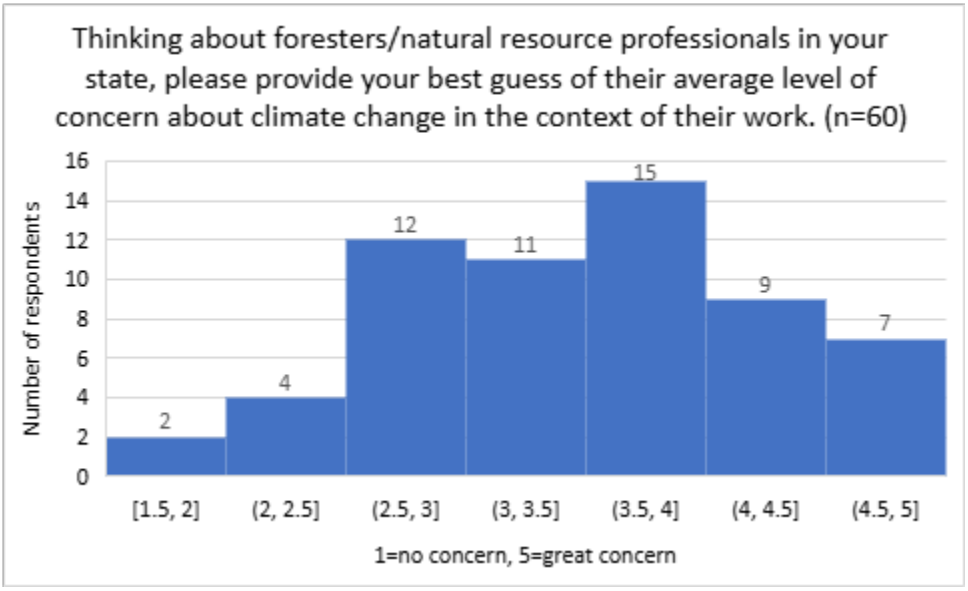


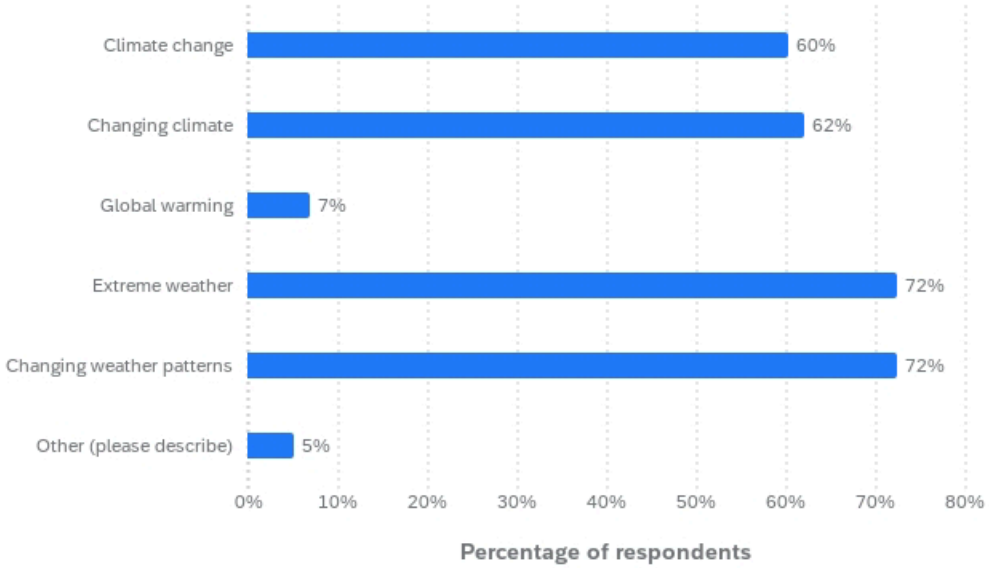
Figure 11: Perceptions of foresters'/NRPs' concern about climate change

Given the political polarization around climate change, one challenge that Extension forestry professionals potentially face is deciding how to refer to the broad concept of climate change. When engaging with landowners, respondents are most likely to use the phrases "extreme weather patterns" (72%) or "extreme weather" (72%), though "climate change" (60%) and "changing climate" (62%) are also common (Figure 12). More than half (57%) of respondents selected at least three phrases that they use with landowners.

When engaging with foresters/NRPs, respondents are most likely to say "climate change" (78%) or "changing climate" (65%) (Figure 12). Regardless of audience, respondents are unlikely to use the phrase "global warming". Three respondents gave write-in answers:

- One uses "changing conditions" with landowners and foresters/NRPs
- One uses "changing harvest timing" with landowners
- One uses "weather related impacts" with loggers.

When you are engaging with woodland owners, which of the following phrases are you most likely to use to refer to the concept of climate change? Select all that apply. 58



When you are engaging with foresters/natural resource professionals, which of the following phrases are you most likely to use to refer to the concept of climate change? Select all that apply. 60

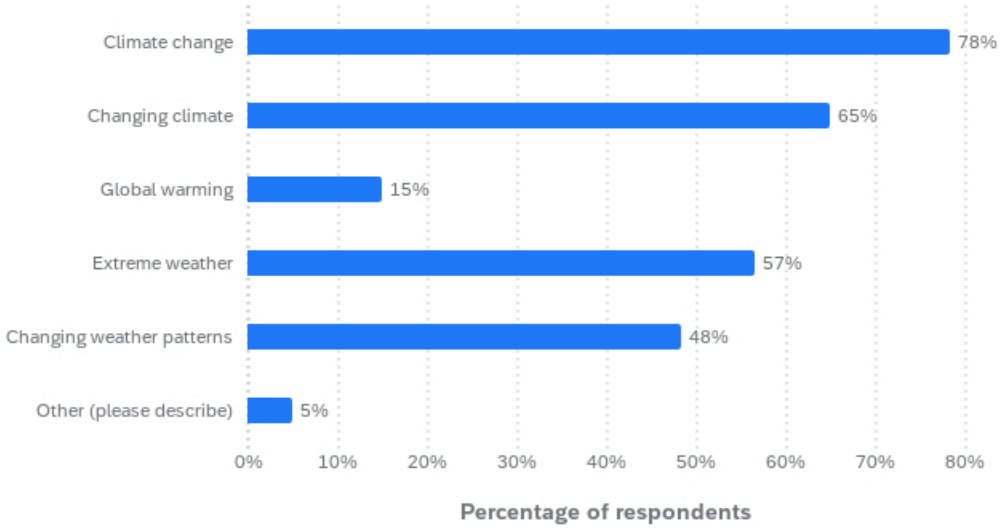


Figure 12: Terms used to refer to climate change with woodland owners (top) and foresters/NRPs (bottom)

We also wanted to know if the terms that respondents use to refer to climate change would vary with their level of confidence in having productive conversations about climate change-related issues with their audiences. We found that respondents were much more likely to use the phrase "climate change" if they were very or extremely confident in their communication skills than if they were not very or somewhat confident in their communication skills. This result held true both for woodland owner audiences and for forester/NRP audiences (Figure 13). No substantial differences emerged based on communication confidence for any of the other terms included in the list.

At least two possible explanations could account for the confidence-based disparities. Either respondents who are more confident in their communication have found skillful ways to use the term "climate change" without alienating their audience, or respondents who are more confident in their communication tend to work with audiences who are already more receptive to the term "climate change" (or a combination of both explanations).

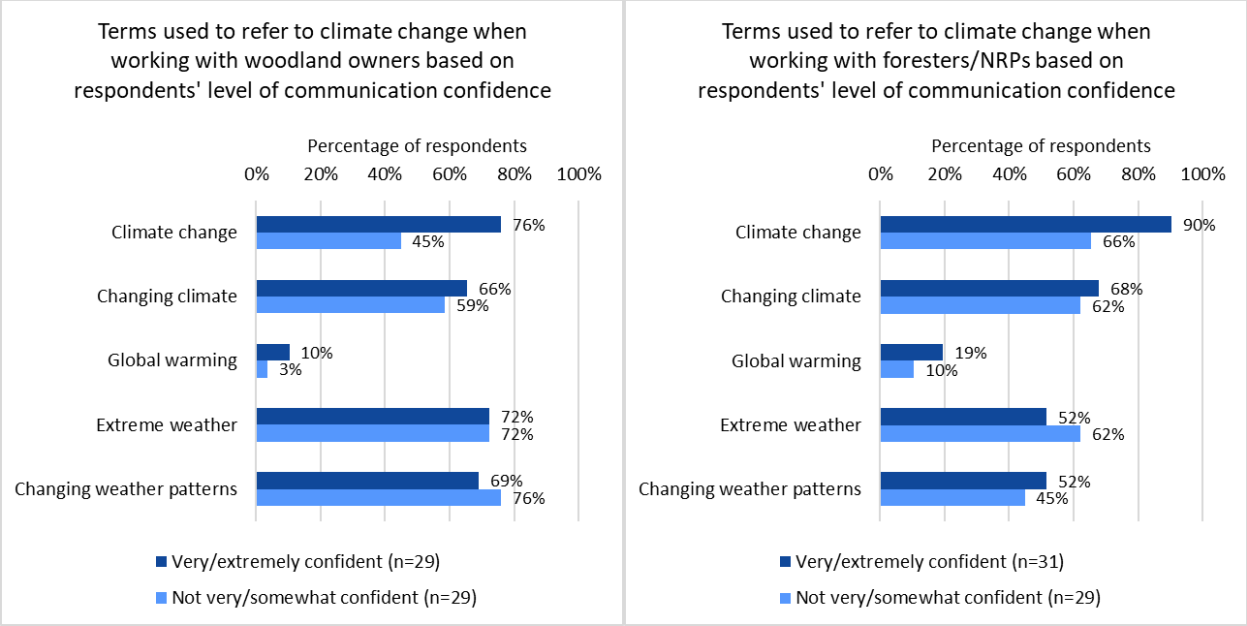


Figure 13: Terms used to refer to climate change with woodland owners (left) and foresters/NRPs (right) by level of communication confidence

IV. Successes and challenges of programming that addresses climate change

When asked to describe their biggest successes around integrating climate change into their work, 41 respondents wrote free-from answers (see selected responses in Appendix 2). We identified 8 common themes (Figure 14):

- Promoting active land/forest management (10 related responses)
- Discussing climate change indirectly or embedding it in other forestry topics (7 responses)
- Assisted migration (4 responses)
- Integrating climate change into existing Extension efforts (4 responses)
- Connecting climate change with invasive species/pests (4 responses)
- Small group discussions (3 responses)
- Facilitating small group discussions (3 responses)
- Interested audiences (3 responses)

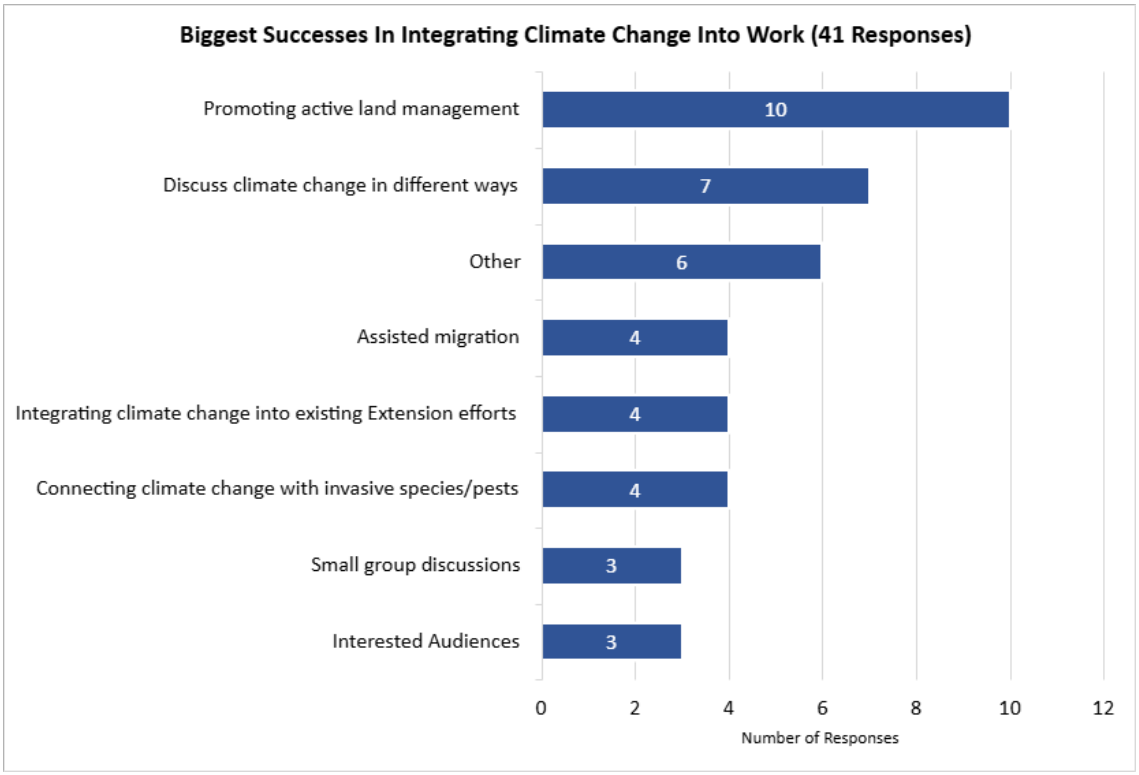


Figure 14: Successes

Many of the responses shared two similar emphases or interests: interest in education and outreach (training volunteers, public talks, embedding climate change in existing programming) and practical applications (invasive species management, assisted migration, incorporating climate data into forest planning).

Although this question was about successes, some respondents did indicate challenges related to constraints in their role, such as reframing language for skeptical audiences and institutional barriers.

In the next question, we received 51 free-form responses about respondents' biggest challenges in integrating climate change in their work (see selected responses in Appendix 2). We identified 6 common themes (Figure 15):

- Funding or bureaucratic challenges (11 responses)
- Climate skepticism or politically charged viewpoints (11 related responses)
- Lack of resource capacity (e.g. labor, time, staff) (9 responses)
- Lack of basic or specific climate change recommendations (8 responses)
- Lack of audience concern for climate change (3 responses)
- Forest carbon program uncertainty (3 responses)

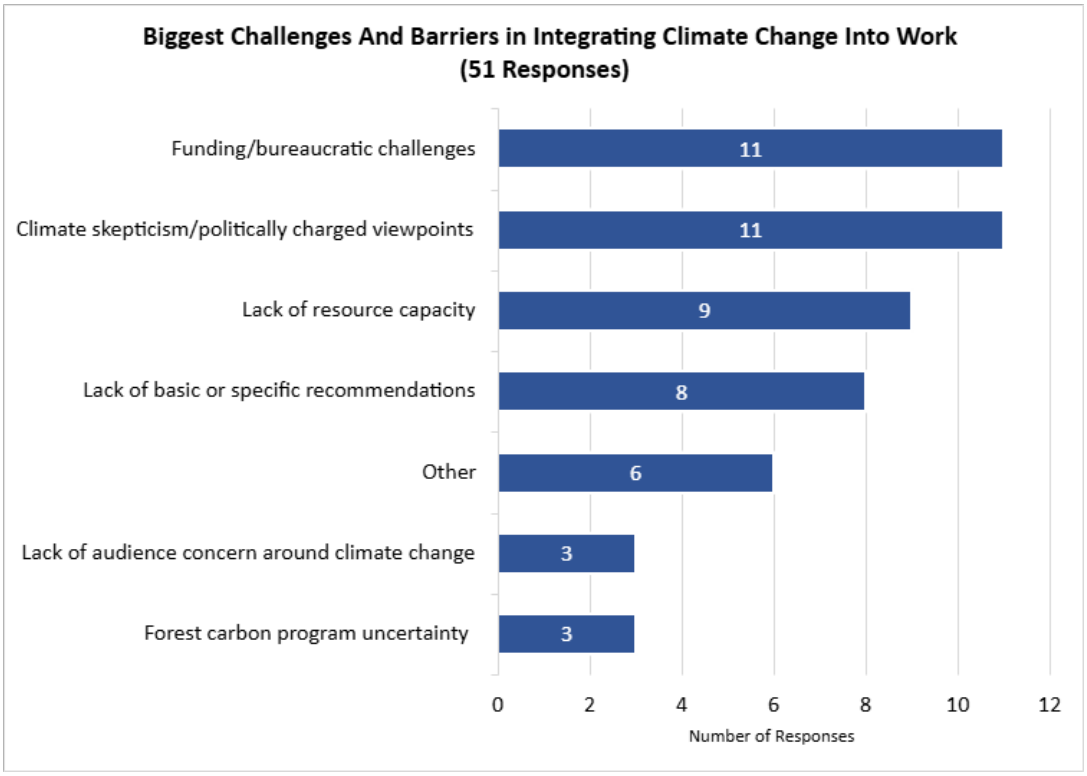


Figure 15: Challenges and barriers

Overall, the challenges heavily skew toward political and institutional difficulties. Many respondents expressed concerns around limited funding, staffing, and increased workloads which could hamper their ability to effectively implement climate change programming. In addition, many respondents remarked that politically charged words like "climate change" can trigger audience sensitivity or disengagement—even if they were engaged on changes in woods, invasive species increases, or other topics before the triggering words were uttered.

Finally, 8 people named a lack of "clear tools," "resources," or "guidance" as a barrier. These responses give a clear vision into some of the work the CoP can do—creating better climate change guidance to help our colleagues interact with their audiences.

V. Engaging with a community of practice

In the final section of the survey, we asked respondents to indicate their preferred methods of engaging with the CoP, including both synchronous and asynchronous options.

Among synchronous options, the most popular choice by far was "presentations/trainings by experts in climate change and forestry" (74% of respondents). "Synchronous Zoom meetings every 1-2 months" and "flash talks by participants about climate-related programming and resources" appealed to about half of respondents (Figure 16). In write-in responses, six respondents suggested in-person gatherings at conferences, at each other's outreach events, or at field days led by experts.

Among asynchronous options, the most popular choice by far was "creating a central online hub of climate-related Extension forestry materials" (72% of respondents). "Email listserv for participants to contact each other" appealed to 45% of respondents. In a write-in response, one respondent suggested collaborating with the North Central Climate Collaborative to share information and strategies.

Just 15% of respondents indicated an interest in *only* synchronous ways of engaging, and just 6% of respondents indicated an interest in *only* asynchronous ways of engaging. This suggests that the community of practice would best serve participants by including both synchronous and asynchronous formats.

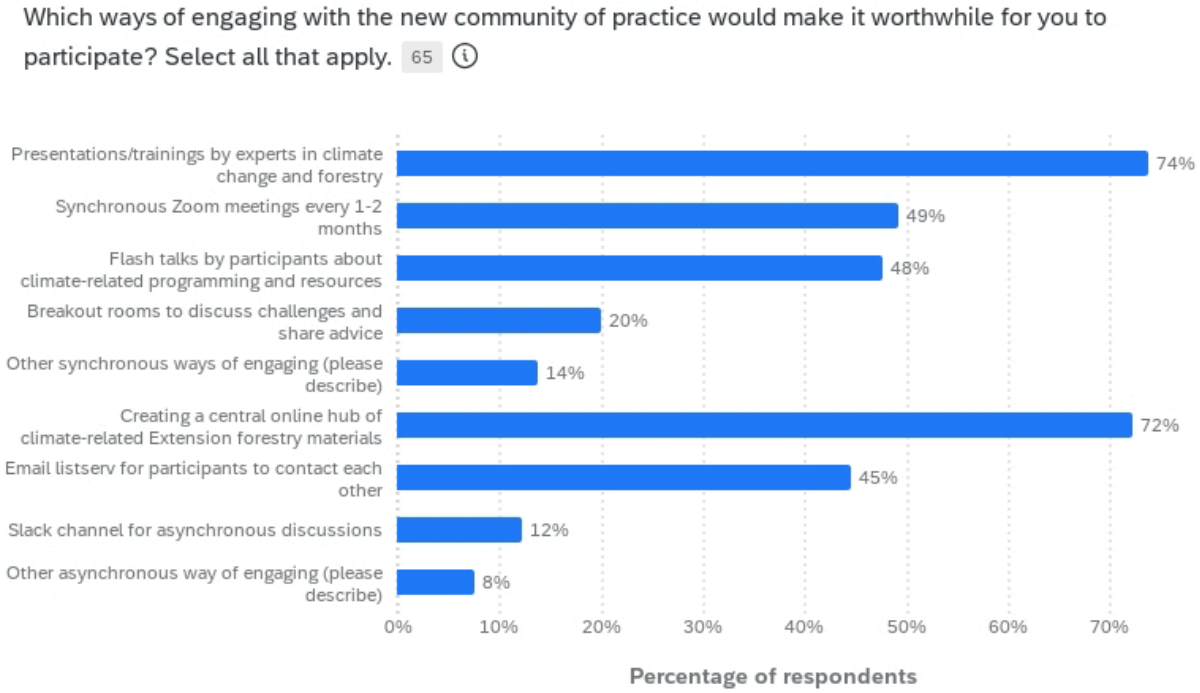


Figure 16: Ways of engaging with the CoP

We also asked in a free-form format what else the CoP could do to overcome barriers in integrating climate change into Extension work. Out of the 21 responses, many indicated the CoP should provide a support system for Extension professionals to discuss current cultural and political difficulties with climate change work. Supporting relationship-building across states was also mentioned as important, with multiple respondents interested in knowing what other states were doing and/or exploring collaborative funding opportunities.

Some respondents expressed that having general guidance on climate change Extension programming would be helpful, consistent with the previously mentioned challenge of "lack of basic or specific recommendations." Others recommended providing basic forestry knowledge for CoP participants and promoting unified messaging around climate change.

VI. Discussion and next steps

Taken together, the survey results indicate a high level of interest among Extension forestry professionals in the Northeast and Midwest in further integrating climate change into their outreach and connecting with colleagues across the region. Many respondents desire a CoP that provides a sense of community, builds working relationships, and results in better collaboration and unified climate change messaging across states.

Extension forestry professionals tend to be highly concerned about climate change, to underestimate how concerned woodland owners are about climate change, and to perceive that foresters/NRPs are more concerned about climate change than woodland owners are. Respondents tend to find success when they address climate change indirectly through the lens of specific forestry topics, with an emphasis on active forest management. Depending on the context, they often use phrases like "extreme weather," "changing weather patterns," or "changing climate" instead of "climate change." Respondents are more likely to use the phrase "climate change" if they are more confident in their communication skills or if they are engaging with foresters/NRPs.

Within the umbrella of forest resilience, many Extension professionals already conduct outreach on changes in forest health, invasive species, and extreme weather events. Current programs rarely cover Traditional Ecological Knowledge, tree seed collection, or changes in wildfire risk, but respondents are interested in pursuing those topics. The CoP could prioritize discussions around these latter topics. Additionally, many Extension professionals still feel like they don't have sufficient evidence-informed recommendations on best management practices for climate resilience. Although more scientific research is certainly needed, the CoP could be a venue for participants to learn about existing research findings and establish consistent messaging on forest management recommendations.

Many Extension professionals have developed successful and robust programming related to forest carbon management, while many other respondents are interested in the topic but have not yet engaged with it much. Here, the CoP could connect less experienced educators with more experienced ones to help people create state-specific forest carbon programming without reinventing the wheel. The CoP could make similar connections between less experienced and more experienced educators on tree seed collection and other topics.

Across the region, current Extension forestry climate-related programming commonly includes in-person events, webinars, and written educational materials. Programs typically have the goal of increasing the audience's knowledge about climate change impacts, helping people plan and enact climate-resilient practices, or both. Based on the gaps identified, the CoP could help

participants create more multimedia resources (such as short-form videos), decision-support tools, community science projects, and fact sheets to support these desired outcomes.

This survey points to some barriers that cannot be easily overcome with a CoP alone, such as politically charged views on climate change as well as limited funding and organizational capacity. Still, the CoP can help participants discuss their experiences with these barriers and share resources that may help.

Given these conclusions, here are our big-picture next steps:

1. Begin convening the CoP by creating an email listserv for participants to contact each other and holding synchronous Zoom meetings every 1-2 months.
2. Invite experts to give presentations/trainings at those synchronous meetings.
3. Secondarily, invite CoP participants to give flash talks on their work at those synchronous meetings.
4. Build out a central online hub of climate-related Extension forestry materials. The favorite outreach materials identified by survey respondents (Appendix 1) provide a great start, and we can continue compiling materials as part of steps 1, 2, and 3.
5. Once the CoP is established, discuss relevant conferences and other opportunities for in-person gatherings of the CoP.

Appendix 1: Outreach materials mentioned by survey respondents

- USDA Northern Forests Climate Hub https://forestadaptation.org/
    - Climate change predictions for individual tree species https://forestadaptation.org/tree-species-risks
    - Climate change field guides (Northern WI included as an example) https://forestadaptation.org/field-guide-northern-wisconsin
    - Keep Forests Healthy - A Tool to Assess Resilience, Health and Productive [Scorecard] (adapted by/for several states, WI included as an example)

      https://woodlandinfo.org/wp-content/uploads/sites/383/2025/02/Protect-Your-Woods-for-Tomorrow-scorecard-and-actions.pdf

    - Tribal Adaptation Menu https://forestadaptation.org/tribal-climate-adaptation-menu
- USDA Midwest Climate Hub (more agriculture-focused)
    - Assessing the Impacts of Climate Change on Midwest Agriculture https://www.climatehubs.usda.gov/hubs/midwest/topic/assessing-impacts-climate-change-midwest-agriculture
- USFS Tree Atlas site
    - https://www.fs.usda.gov/nrs/atlas/tree/
- New Jersey Department of Environmental Protection
    - Natural and Working Land Strategy https://dep.nj.gov/climatechange/mitigation/nwls/
- Illinois Nature Conservancy Climate Assessment
    - https://www.nature.org/content/dam/tnc/nature/en/documents/IL_Climate_Assessment_2021.pdf
- New York Watershed Agricultural Council's Forestry Program
    - Mywoodlot https://www.mywoodlot.com/interests/climate-change-and-my-woods/
- Michigan State University
    - Forest Carbon and Climate Program (FCCP) Open Resource Library https://www.canr.msu.edu/fccp/FCCP-ORL/
    - BeLEAF it or Not! Forestry short form videos https://www.youtube.com/c/beleafitornot
- University of Massachusetts and University of Vermont
    - Forest carbon publication https://site.uvm.edu/tdamato/files/2021/03/Catanzaro-and-DAmato-2019-Forest-Carbon.pdf
- University of Minnesota
    - Creating climate-ready woodlands https://extension.umn.edu/forestry/creating-climate-ready-woodlands
    - Collecting tree seed https://extension.umn.edu/creating-climate-ready-woodlands/collecting-tree-seed
- University of New Hampshire

    - Taking Action for Wildlife 1 https://www.takingactionforwildlife.org/resource-library/climate-change-wildlife
    - Taking Action for Wildlife 2 https://www.takingactionforwildlife.org/sites/default/files/media/2024-11/wildlife-and-climate-5-ways_june-2022.pdf
- University of Vermont
    - Securing Northeast Forest Carbon Program https://northeastforestcarbon.org/
    - A Guide to Forest Carbon in the Northeast https://web.uri.edu/rhodeislandwoods/wp-content/uploads/sites/2078/A-Guide-to-Forest-Carbon-in-the-Northeast.pdf
    - 12 Steps for Climate Resilience https://www.vermontwoodlands.org/wp-content/uploads/2023/01/Climate_12Steps_Flyer_logos-1-1.pdf
- Penn State Forest Owner Carbon and Climate Education (FOCCE)
    - https://sites.psu.edu/focce/
    - https://extension.psu.edu/how-to-manage-forests-for-carbon-an-introduction-for-family-forest-owners
    - https://extension.psu.edu/what-do-forest-carbon-sequestration-and-storage-mean
    - https://extension.psu.edu/how-much-should-i-be-paid-to-manage-forest-carbon
    - https://extension.psu.edu/what-is-selling-forest-carbon-like-three-landowners-experiences
    - https://extension.psu.edu/what-should-i-think-about-before-signing-a-forest-carbon-contract
- Ohio State University
    - Phenology calendar https://weather.cfaes.osu.edu/gdd/
- University of Wisconsin–Madison
    - WICCI Forest Carbon Bulletins https://wicci.wisc.edu/forestry-working-group/
    - Maple syrup adaptation menu https://maple.extension.wisc.edu/adaptation-menu/
    - Climate learning hub https://woodlandinfo.org/learn/climate/
    - Forest carbon learning hub https://woodlandinfo.org/learn/climate/carbon/
- Purdue University
    - Got Nature blog https://www.purdue.edu/fnr/extension/got-nature-blog/
- University of Massachusetts
    - Forest Carbon Guidebook https://masswoods.org/sites/default/files/pdf-doc-ppt/Forest%20Carbon%202022.pdf
    - Forest Resiliency Guidebook https://masswoods.org/sites/masswoods.net/files/Forest-Resiliency.pdf
    - Protecting Your Legacy Estate Planning Guidebook https://masswoods.org/sites/default/files/pdf-doc-ppt/PYL-Revised-2020.pdf

Appendix 2: Free responses on programs, successes, and challenges

Selected free responses on 2024 programming

Reforestation

"2 in person events, 1 webinar about reforestation of former agricultural lands to public, forestry professions, and in-service training for Extension professionals. Blog posts. "

"I helped deliver tree seed collection trainings, and delivered webinars on the multiple roles that volunteers and land managers can fill to contribute to a seed collection network. (Mostly retooling training for 2025)"

Forest health/invasives

"Presentations on climate change and urban forestry, climate change and invasive species, and managing forests in the context of climate change"

"Series of podcasts and blogs on climate change - many different aspects. In-person presentation to green professionals and landowners covering invasive species & CC. Master Naturalist course sessions on climate impacts. Completed facilitator training to implement a Climate Stewards program statewide"

"I took the lead on organizing an EAB and ash symposium and field day for an audience of practitioners; I held a webinar on the Family Forest Carbon Program; I recruited cliamte-change related content for a broader research and practice symposium; and I organized climate and carbon listening sessions as part of our needs assessment series to help us guide future programs."

"Presentations (in person, zoom) on climate change & invasive forest pests (multiple pests, multiple talks/webinars); winter weather and insect pest management; forest assisted migration (pop expansion, range expansion) & host tree resistance to major pests"

"invasive species: what new exotics are becoming established in the state and future conditions that will enable their spread. oak decline and rapid white oak mortality: factors that have led to their increase in observance and management practices to help mitigate"

"Delivered two to three talks focused on climate adaptive forestry in the wake of HWA related hemlock mortality."

Forest carbon

"Wrote several articles for area publication, several forest carbon related workshops. Incorporate climate information into landowner programs to include them as factors impacting our forests."

"Published Extension document on climate adaptation for woodland owners. Building a Master Woodland Owner course that includes climate change material. Several collaborative efforts (FOCCE with Penn State, and RREA grant to develop a carbon calc tool for landowners) aimed at helping people navigate carbon programs."

"I did a series of webinars on climate-smart silviculture, land transition, an 6-part series on climate change/forest carbon, a 4-part series on climate change/forest carbon, a bunch of stuff on invasive species"

"In 2024, the library of extension articles was increased from 24 to 33 articles, three of which are in Spanish language. The articles have so far received over 168,000 views. We also gave a total of 44 extension talks some of which were webinar series hosted by FOCCE and a handful of invited talks. These events reached over 2,000 + landowners and professionals nationwide. Impact data suggests that the talks were well organized, successful in information transfer, compelling, relevant for informing management decisions, and promoted healthy discussions. In the Fall we developed an online course called "Teaching Forest Owners about Carbon Incentives: A Training Series." The course prepared educators to answer landowner questions about carbon markets and was delivered over five weeks using a reverse classroom format. The course utilized the educator guidebook which contains resources for building an extension program on forest carbon topics and links to tools and resources produced by the USDA Climate Hubs and USFS. Pre and post-testing data indicates participants experienced a significant increase in confidence towards delivering educational content on forest carbon market topics. A total of 5 participants completed all the surveys and received certification. Future actions include developing strategies that increase rates of completion and establishing a grants program to support extension program delivery. In the Fall we hosted a live webinar series for landowners. The program "Forest Owner Carbon and Climate Education Online Series for Landowners" included six modules, over three weeks. Some of the largest impacts associated with this method were a better understanding of the elements of carbon credits and markets and an understanding of the contractual obligations. Here is our website https://sites.psu.edu/focce/ and annual report https://bpb-us-e1.wpmucdn.com/sites.psu.edu/dist/1/148505/files/2025/04/Final-2024-Annual-Report-FOCCE.pdf"

"Webinar presentation on assisted migration, facilitated strategic planning with the MSU Forest Carbon & Climate Program, shared Climate Change Field Guides with program audiences"

"Guide to Forest Carbon in the Northeast; 12 Steps to Resilience: Managing Your Forest with Climate Change in Mind; Four part series on climate change impacts to forests in Northern Woodlands Magazine; Four part series on carbon and forests in Northern Woodlands Magazine; Securing Northeast Forest Carbon; Northeast Silviculture Institute: Carbon and Climate Module"

"Series of facts sheets on Carbon and Sugarbush management. Workshops cover water management, business operations"

Forest resilience/management

"Workshop on wildfire preparedness, workshop on spruce budworm outbreak impacts and factors including climate change"

"Just about every program we offer touches on climate change and adaptation in some way. For NR professionals, our ecosystem silviculture series, our research and practice review, field workshops, and webinars routinely address these topics. For our woodland owner focused content, our climate ready woodlands content is very focused on adaptation, our new tree seed collection program too, our TIPS (terrestrial invasives participatory science) and other offerings as well."

"presentation to Indiana woodland owners conference on climate smart forestry"

"UMN Climate-Ready Woodlands program: regionally-specific recommendations of native trees and plants that are projected to be resilient with climate change, as well as refugia management

recommendations. This includes the online interface, and many in-person and online workshops."

"Delivered a 1.5 hour long talk about climate change impacts on New Hampshire forests for a local group; incorporated climate change into other programming focused on about invasive species management, general forest ecology, timber harvesting, and tree care."

"Every topic within forestry touches on the added stressors caused by climate change and ways to reduce amplifying negative stressors; my programs are focused on strategies for best practices in forestry & land care and mention climate change added stressors where applicable as well as the Biodiversity crisis."

"Demonstration tours of climate-adaptive forest management sites, and related maps and written materials. Academic talks and posters eralted to cliamte-adpative forest management sites for academic conferences and meetings of proffessional foresters. "

"Climate-smart forestry training for RI NRCS field staff and integration into technical assistance for NRCS customer landowners in RI. With partners, developed guide for Rhode Island natural resource professionals on "Managing Forests for Climate Resiliency in Rhode Island. Extension/outreach related to Southern New England Exurban Oak Adaptive Silviculture for Climate Change replicate research site"

"We piloted an advanced forest stewardship program for professionals and Extension volunteers. We adapted materials from the Woodland Stewards program from PA and Cornell."

"Our annual forest resilience field day at Cornell's Arnot Forest is held the last Thursday of September to showcase current applied research projects related to sustainable forest management."

"In addition to the Rutgers Environmental Steward Program, we launched a pilot program last year to further train extension volunteers, contractors, and stewardship professionals on science-based forest assessment for proper stewardship. Within this program and the Environmental Steward Program we address climate change impact on forest ecosystems."

Selected free responses on successes in climate-related programming

Promoting active land management

"There are pockets/groups of individuals that are taking action - most landowners are ag-focused so changing climate to a crop producer is critical and is interested in information for all land types on their property. Green/Natural resource industry folks in Illinois are attending CC sessions in greater numbers to be prepared to respond to landowners."

"Emphasizing the importance of planning and active management to develop healthy, diverse and resilient forests more suited to deal with future uncertainties. Using temperature and precipitation data to allow audiences to draw their own conclusions about climate trends."

"Many forestland owners are now involved or prepared to discuss and engage (in some way) in adaptation efforts concerning climate change."

"Being able to provide specific recommendations that people can use to improve the resilience of their woodlands, regardless of acreage. It's easy to talk about climate change impacts, but providing actual recommendations has been really helpful for improving woodland owners' awareness of and management for climate change."

"Promoting the growth of young locally native species and larger/wider deer barrier protection so to promote rain interception as well and stormwater infiltration instead of runoff. Also helping folks to identify the native seedlings they already have, invasive seedlings that can be manually removed, and not just defaulting to planting which are typically genetic clones or may be non-native species."

"Grant leading to establishment of an Adaptive Silviculture for Climate Change Network replicate research site and related extension activities. Journal of Forestry "field note" and other publications on a climate-adaptive forestry project initiated 10 years ago. Increasing recognition and integration of climate change in forest management plans and implementing on-the-ground practices"

Discuss climate change in different ways

"Talking about it in terms of specific disturbances and the role of forests as a natural climate solution."

"We no longer have climate-change focused days, but rather integrate climate change discussions into all of our field days and symposia. We found anecdotally for some of our audience that it was an easier sell to a forester's supervisor to attend a "mesic hardwood field day" than a "forest adaptation field day" even if the discussion would be almost exactly the same, because the former helped them do their job as a whole better while the latter was perceived to have a more niche application. A huge chunk of our audience are public land managers who have to manage for multiple varied goals and having discussion points on climate change and adaptation efforts as part of our events helps us both with the quality of events but also allows us to have more contact days for covertype-specific field tours: e.g. 4 summer field days across the state focused on different plant communities or forest types (e.g. 2 mesic hardwood, 2 fire dependent) rather than multiple permutations of forest type/climate change topics (e.g. 1 climate change in mesic hardwood systems, 1 climate change in fire-dependent systems, 1 mesic hardwood field day, 1 fire-dependent field day)."

"Speaking generally about changing weather patterns and what we can perceive with our own senses."

"talking about tangible impacts of climate change without saying the words climate change."

"When addressing the topic, I make it a small part of something larger. Climate chnage isn't the focus, but it helps explain why we care about the topic of the program. For example, when talking about rain gardens, I ask folks if they've noticed that we get bigger deluges/intense rain than in the past. Point out the challenge that comes with climate change but provide some solutions! Always try to keep an eye toward small steps we can take as individuals."

"Relating to audiences inclined to see climate change as a non-issue by highlighting changes in weather patterns and operational conditions that effect them every day, even if I have to leave out talk of future projections."

"Discussing weather extremes in terms of promoting resiliency and overall woodland health, introducing to woodland owners to research (current and emerging)"

Assisted migration

"I am encouraged by the number of landowners and researchers looking at assisted migration experiments to introduce nearby species to enhance diversity in the face of forest stressors."

"Large scale assisted migration project with the state DNR"

"Considering and executing climate appropriate species for adaptation,resistance and resilience"

Connecting climate change with invasive species/pests

"Sharing how phenology can help as pest timing changes in a warming world"

"Taught a graduate student seminar on forest assisted migration in relation to climate change; Studied hemlock woolly adelgid & winter survival - presented talks and published 2 papers showing current and projected areas suitable for invasion"

"Probably when we talk about invasive species and the environmental factors (short- and long-term) that are enhancing their spread."

Small group discussions

"1:1 conversations with landowners focused on managing for climate resilience and being able to point to specific local examples of the effects of climate change (extreme weather events, insects/disease, etc.)"

"I think organizing peer groups discussions on CC and carbon has had the largest impact on clients, because they are so early in their learning journey."

"I think in general my biggest success have been having one-on-one or small group conversations about climate change. I can have respectful conversations with people that don't necessarily agree that its real but the listen and we the conversation on good terms which I hope means they will listen to me in the future."

Interested audiences

"I've had people from all 50 states and other countries come to my programing on climate change, so people very much care"

"I am increasingly asked to provide talks and presentations to the communities throughout Ohio and the Midwest, averaging about 75 engagements per year. Leading efforts in Ohio to integrate programming and increase curriculum with Extension educators throughout the state with a cohort dedicated to developing materials that help them answer some of these questions and concerns. Funded to strengthen ties between Extension and the USDA Climate Hubs to deliver that regional knowledge to local communities and increasing our shared approaches across 1862s, 1890s (HBC), and 1994s (Tribal). Working with NIACS on the 10-week Ag and Natural Resources cohort several years ago. I continue to hear success stories from participants that Patricia Leopold and I led here in Ohio."

Selected free responses on challenges in climate-related programming

Funding/bureaucratic challenges

"Lack of funding for relevant research on climate change and forest insect issues; Lack of coordinated and long-term approach to designing and implementing FAM trials; Lack of attention by climate change scientists who seem to ignore invasive insect and pathogen issues that exacerbate and accelerate problems with warming temps and changes in precip."

"The DNR is slower to change than most individual audience member, so trying to partner is harder at the organizational level, since their policies run counter to assisted migration (but there are great people inside pushing for it)"

"Current federal administration changes including funding freezes, attempts to scrub scientific understanding and word usage, and limiting data access. "

"funding! HA! I've worked for 20 years, mostly half time bc there was never enough funding but I'm totally committed. However, our most recent terminated contract (this month) is very real and totally unprecedented contractual breaking. "

"The grant I was giving talks for last year was funded through the CASC system, which is under immediate threat. I also engaged regularly with the NE RISCC, which is also supported by the CASC system. If we lose the CASC, all of my forest and climate work will stop."

Climate skepticism/politically charged viewpoints

"If you lead with "CLIMATE" in your title, it can be a turnoff. So, embedding it (not hiding it) in programs on forest health, silviculture, etc, etc."

"Not knowing the best ways to talk with private landowners, being scared about changing cultural norms around the topic."

"Here in Indiana, there are some folks who will stop listening if the words "climate change" are mentioned. There are also some folks who believe climate change is normal and there's nothing to worry about. It's crazy to think that climate change is a controversial topic!"

"Anti-climate science policies of federal administration (Executive Orders etc. starting in 2025). Skepticism or fatalism from some audiences about prospects for planning and practices intended to address climate change making a difference"

"Missouri is a very red state. Have to be very careful engaging both landowners AND legislators. That is why I do not use (and also encourage my team not to use) trigger words like 'global warming' and 'climate change'."

Lack of resource capacity

"My knowledge of these topics is rather basic, could use some deeper understanding and clearer talking points. Also, our overall capacity to deliver programming in climate change topic(s)."

"The biggest challenge is finding the balance between climate smart management and economic benefits for the private landowner."

"availability of foresters and loggers who can perform management work other than high grade sawtimber harvests"

"1. Time and resources. 2. Forest carbon programs have been poorly designed and executed."

Lack of basic or specific recommendations

"Lack of material explaining the carbon forestry topics using common language that anyone can understand."

"I think we are still in the early stages of this. A lot of what is out there for ideas and practices are really still experimental. I think it can be challenging for people who want to try things like assisted migration to find good seedling and seed sources."

"I would like to hear what landowners would want to learn about climate change from Extension. Do they want climate classes? Do they want classes to just learn about it, or do they want actionable classes? (workshops/ tools/ outside time) "

"I haven't taken the time to translate climate information into useful bits that can be added to forestry outreach. It is a mammoth of a subject, and I almost feel like I'm interpreting another language to make it relevant and straightforward to my audiences. Also, I hold back out of fear of how to handle difficult questions and situations. I'm nervous about derailing my regular forestry outreach by opening a can of worms if an audience were to push back on climate science."

"As climate change is unpredictable and uncertain, specific mitigation actions are hard to promote. Promoting diversity, generally, in the face of uncertainty is the easiest."

"A lot of people want to know what to do on their land. They want to know if they should be doing assisted migration, increasing biodiversity, etc. Having more actionable guidelines for landowners would be nice. "

"Climate change is such a huge and all-encompassing issue that it can be hard to wrap your mind around it and know where to even start, and where to draw the line of what is feasible to cover in our programming. Also, Facebook considers it to be a political issue, which has so far prevented us from running Facebook ads promoting our climate-related resources."

Lack of audience concern around climate change

"Still large segments of the population that not very concerned about climate change currently in IL, especially in rural areas, unless it connects to ag."

"Many landowners and professionals are, from my experience, only moderately engaged with the topic and it does not score highly in their considerations for setting management goals and actions. "

"Getting people to care. The people who come to climate-focused programs are of course going to be interested/concerned about climate change. But there are many people who don't attend those programs and climate change might not even be on their radar."

Forest carbon program uncertainty

"There is an interest from landowners but few if any valid carbon programs are available in our region so they are demanding information on programs that aren't available. If they are available they are untested or have flaws so I have been slow or hesitant to talk about them."

"Estimating carbon is very complicated. Concerns on carbon programs incentivizing emissions by offset buyers rather than mitigating it. "

"It hasn't been as challenging as I might have expected (so far) but expect it will become more so given the current political climate and administration's approach to climate change. Forest carbon is a challenging topic for many folks to grasp and in some cases it seems putting too much focus on carbon could derail opportunities for good forest management that incorporates climate resilience, biodiversity, meeting local needs, etc."

Other

"Reaching a broad audience. My numbers are good for extension, but pitiful for reaching the whole land-base"

"A lot of climate change practices might not be framed in the context of climate change by the forester. They may not be thinking of implementing resistance treatments in the context of the ASCC framework, but rather "giving the forester that comes after me more options". With that in mind, soliciting sites or treatments as part of planning for a field tour can be challenging and by extension asking foresters to talk about their reasoning when our goal is to draw out some discussion related to climate change. One decision, like increasing species diversity, could be framed in many valid, forward-thinking ways irrespective of climate change impacts. As another example, on the Great Lakes Silviculture Library, the capability of filtering case studies by ASCC treatment (resistance/resilience/transition) is not well utilized because foresters often aren't explicitly designing their prescription with that framework in mind."

"lack of understanding on exactly how the models are developed and which models will work the best. There is so much uncertainty behind these predictions."

"Folks planting or wanting to plant species that are non-native to our state in the name of climate change for assisted migration, but will cause habitat loss for the biodiversity we have now that is at risk and will be further stressed by loss ground to species not native to our state."

Appendix 3: Full survey instrument

Start of Block: Block 1

The University of Wisconsin–Madison Extension and partners are interested in deepening our support for forestry Extension professionals across the twenty states within the Midwest and Northeast (CT, DE, IA, IL, IN, MA, MD, ME, MI, MN, MO, NH, NJ, NY, OH, PA, RI, VT, WI, WV). To do so, we are convening a community of practice centered around integrating climate change into Extension outreach to woodland owners and natural resources professionals working in forested settings. We aim to share outreach materials, best practices, and lessons learned across Extension programs and partner organizations to more effectively address climate change adaptation and mitigation topics in our work.

To learn about your needs and help launch this community of practice, we are asking you to fill out this survey. The survey will help us assess the landscape of climate-related Extension forestry programming, potential knowledge gaps the group can address, and ways to improve our communication efforts around climate change. Your responses are anonymous, though you may be identifiable based on your answers. **The survey should take around 8-10 minutes to complete.** Thank you for participating!

Please complete the survey by the end of the day Friday, April 25, 2025.

If you have any questions, please reach out to Keith Phelps (keith.phelps@wisc.edu).

Q1. What is your current role in Extension?

_____

Q2. In which state or states do you currently work?

_____

_____

_____

Page Break

We are now going to ask you some questions about your engagement around climate change.

Q3. How familiar are you with the USDA Northern Forests Climate Hub?

- ○ I have never heard of it
- ○ I have heard of it but have not engaged with it
- ○ I have used its resources or attended its events once or twice
- ○ I regularly use its resources or attend its events

Q4. Which of the following audiences do you engage with? Select all that apply.

- ☐ Private woodland owners
- ☐ Foresters/natural resource professionals
- ☐ Other (please describe) _____

Q5. How confident are you in your ability to...

	Not at all confident	Not very confident	Somewhat confident	Very confident	Extremely confident
have productive conversations with your audiences about climate change-related issues?	○	○	○	○	○
offer your audiences science-based recommendations about climate change-related issues?	○	○	○	○	○

End of Block: Block 1

Start of Block: Block 2

In this section, we are going to ask about Extension programming that you have been involved in. When we use the word **programming**, we mean one-off events, series of events, multimedia materials, or written materials (like blog posts or fact sheets for landowners)—**anything that you have created** for your audiences.

Q6. Which of the following climate-related topics have you covered in your Extension programming or are interested in covering in future programming?

	Have covered	Have not covered, but am interested	Have not covered, and am not interested
Changes in forest health or invasive species	○	○	○
Changes in wildfire risk	○	○	○
Forest carbon management	○	○	○
Adaptive silviculture or assisted migration	○	○	○
Climate change impacts on wildlife	○	○	○
Changing winter conditions and forest harvest operations	○	○	○
Extreme weather events (e.g., floods, droughts, windstorms)	○	○	○
Traditional Ecological Knowledge (TEK)	○	○	○
Tree seed collection or preservation	○	○	○
Other (please describe)	○	○	○

Page Break

Q7. **For the topics on the previous page that you have covered or are interested in covering**, which of the following have you created in your Extension programming or are interested in creating?

	Have created	Have not created, but am interested	Have not created, and am not interested
Webinars	○	○	○
Interactive online discussions (e.g., focus groups)	○	○	○
In-person events	○	○	○
Written educational materials (e.g., fact sheets, blog posts, reports)	○	○	○
Multimedia (e.g., videos, podcasts)	○	○	○
Decision-support tools (e.g., forest carbon estimator, vulnerability scorecard)	○	○	○
Community science projects	○	○	○
Academic research	○	○	○
Other (please describe)	○	○	○

Page Break

As a reminder, when we use the word **programming**, we mean one-off events, series of events, multimedia materials, or written materials—**anything that you have created** for your audiences.

Q8. Please provide a brief description of any programming related to climate change for woodland owners, foresters, and/or natural resource professionals that you delivered in 2024.

_____

_____

_____

_____

_____

Q9. What are you aiming to achieve **in 2025** with your climate change-related programming **for one or more of your audiences**? Select all that apply.

- ☐ Increasing awareness of climate change impacts
- ☐ Incorporating climate-resilient practices into forest management plans
- ☐ Helping people implement climate-resilient practices
- ☐ Helping people navigate carbon programs
- ☐ Increasing participation in volunteerism
- ☐ Changing social norms related to climate change
- ☐ I don't plan do to any climate change-related programming this year
- ☐ Other (please describe)

_____

End of Block: Block 2

Start of Block: Block 3

For the next two questions, think about **outreach materials** such as fact sheets, articles, decision-support tools, maps, videos, etc. These could be resources created by your university's Extension service or any other organization.

Q10. Do you have any favorite **outreach materials** you typically provide to your audiences related to forest climate change impacts, adaptation, and/or mitigation? List up to 5.

- ○ Outreach material 1 _____
- ○ Outreach material 2 (optional) _____
- ○ Outreach material 3 (optional) _____
- ○ Outreach material 4 (optional) _____
- ○ Outreach material 5 (optional) _____

Q11. What additional **outreach materials** would most enhance your ability to support your audiences? Feel free to mention topics, modalities, or both—whatever first comes to mind.

_____

_____

_____

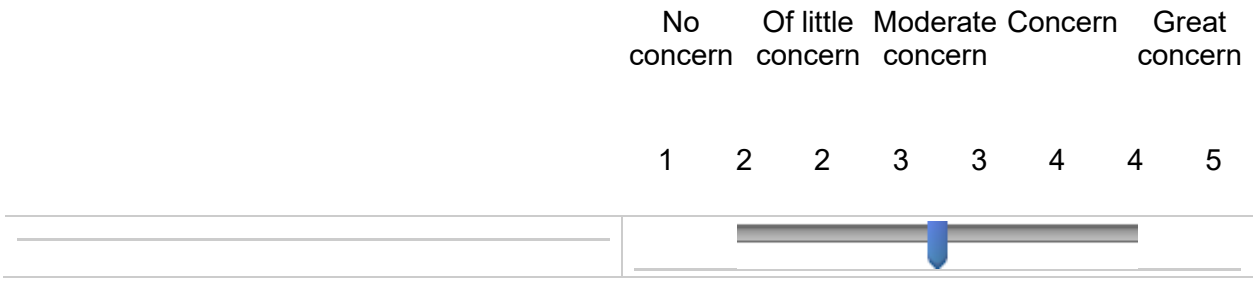
_____

_____

End of Block: Block 3

Start of Block: Block 4

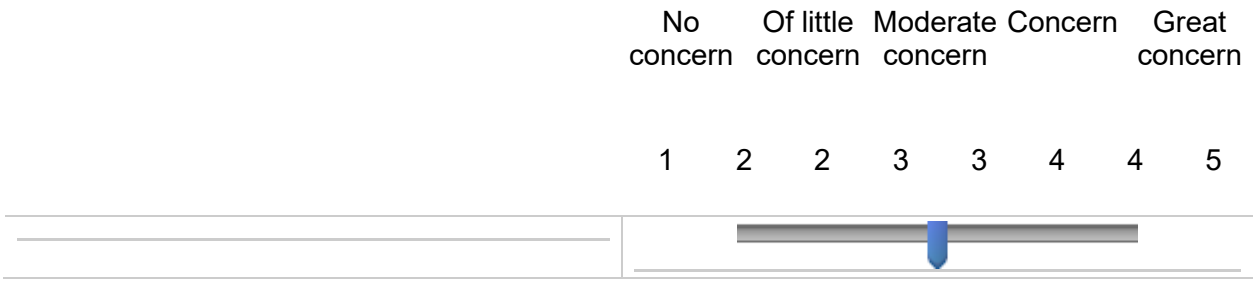
Q12. Please rate **your personal level of concern** about climate change in the context of your work (1=no concern, 5=great concern).



Display this question:

If Q4. Which of the following audiences do you engage with? Select all that apply. = Private woodland owners

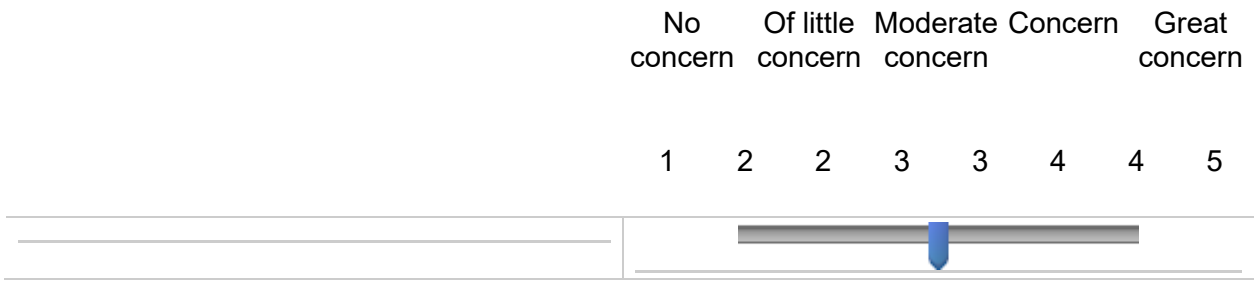
Q13a. Thinking about **woodland owners in your state**, please provide your best guess of their **average level of concern** about climate change in the context of their wooded land (1=no concern, 5=great concern).



Display this question:

If Q4. Which of the following audiences do you engage with? Select all that apply. = Foresters/natural resource professionals

Q13b. Thinking about **foresters/natural resource professionals in your state**, please provide your best guess of their **average level of concern** about climate change in the context of their work (1=no concern, 5=great concern).

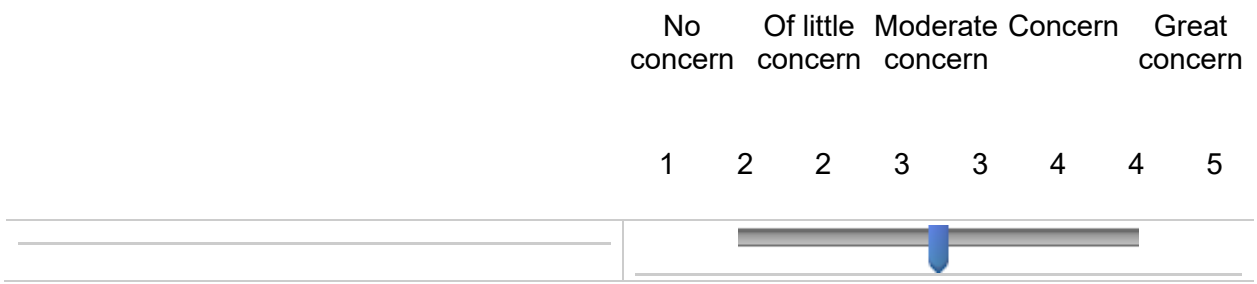


Display this question:

If Q4. Which of the following audiences do you engage with? Select all that apply. != Foresters/natural resource professionals

And Q4. Which of the following audiences do you engage with? Select all that apply. != Private woodland owners

Q13c. Thinking about **your audience members in your state**, please provide your best guess of their **average level of concern** about climate change (1=no concern, 5=great concern).



Page Break

Display this question:

If Q4. Which of the following audiences do you engage with? Select all that apply. = Private woodland owners

Q14a. When you are engaging with **woodland owners**, which of the following phrases are you **most likely** to use to refer to the concept of climate change? Select all that apply.

- ☐ Climate change
- ☐ Changing climate
- ☐ Global warming
- ☐ Extreme weather
- ☐ Changing weather patterns
- ☐ Other (please describe)

_____

Display this question:

If Q4. Which of the following audiences do you engage with? Select all that apply. = Foresters/natural resource professionals

Q14b. When you are engaging with **foresters/natural resource professionals**, which of the following phrases are you **most likely** to use to refer to the concept of climate change? Select all that apply.

- ☐ Climate change
- ☐ Changing climate
- ☐ Global warming
- ☐ Extreme weather
- ☐ Changing weather patterns
- ☐ Other (please describe) _____

Page Break

Display this question:

If Q4. Which of the following audiences do you engage with? Select all that apply. != Private woodland owners

And Q4. Which of the following audiences do you engage with? Select all that apply. != Foresters/natural resource professionals

Q14c. When you are engaging with **your audiences**, which of the following phrases are you **most likely** to use to refer to the concept of climate change? Select all that apply.

- ☐ Climate change
- ☐ Changing climate
- ☐ Global warming
- ☐ Extreme weather
- ☐ Changing weather patterns
- ☐ Other (please describe) _____

End of Block: Block 4

Start of Block: Block 5

Q15. What have been your biggest **successes** in integrating climate change into your work?

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Q16. What have been your biggest **challenges and barriers** in integrating climate change into your work?

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Page Break

Q17. Which ways of engaging with the new community of practice would make it worthwhile for you to participate? Select all that apply.

- [ ] Synchronous Zoom meetings every 1-2 months
- [ ] Flash talks by participants about climate-related programming and resources
- [ ] Breakout rooms to discuss challenges and share advice
- [ ] Presentations/trainings by experts in climate change and forestry
- [ ] Other **synchronous** ways of engaging (please describe)

_____

- [ ] Email listserv for participants to contact each other
- [ ] Slack channel for asynchronous discussions
- [ ] Creating a central online hub of climate-related Extension forestry materials
- [ ] Other **asynchronous** way of engaging (please describe)

_____

Page Break

Q18. What else could the community of practice do to help you overcome barriers to integrating climate change into your work?

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Q19. Is there anything else you would like to share with us?

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End of Block: Block 5