

Moving the Needle: Manager-Identified Needs for Advancing Climate Adaptation



Maria Janowiak, Amanda Mahaffey, Christopher Riely

(aka NIACS)

Northern Institute of Applied Climate Science

Chartered by USDA Forest Service, universities, non-profit, and tribal conservation organizations

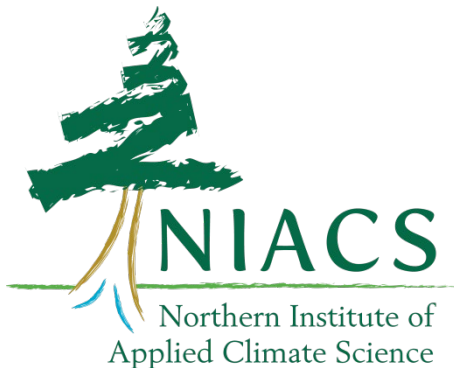
Climate and carbon services

- Climate impacts modeling
- Vulnerability assessment
- Climate adaptation
- Carbon biogeochemistry
- Carbon management

21 staff members

(Forest Service/universities)

- 10 climate outreach specialists
- 7 research scientists
- 2 web specialists
- 2 GIS/lab specialists



Michigan
Technological
University



The
UNIVERSITY
of VERMONT

UNIVERSITY OF MINNESOTA



AMERICAN FORESTS

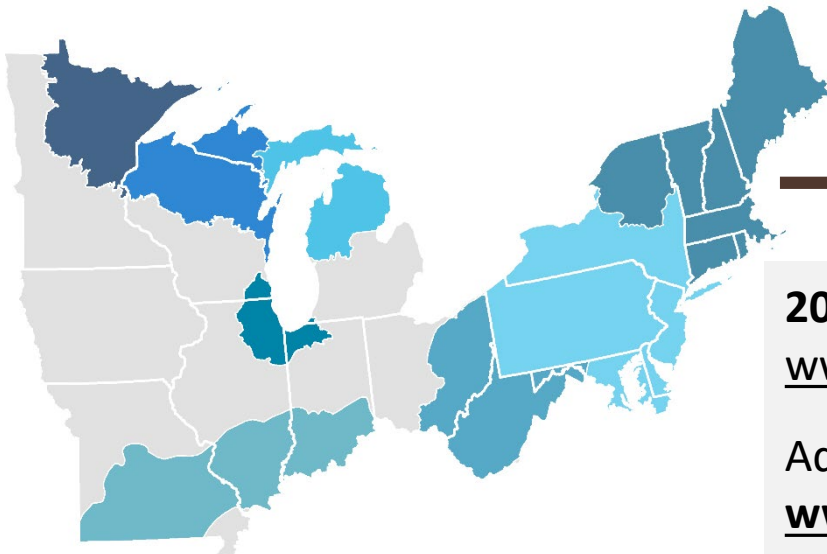


NCASI



Vulnerability Assessment & Synthesis

- Series of reports for **natural resource professionals**
- Focus on **tree species and forest ecosystems**
- Examine a **range** of future climates
- Evaluate **key ecosystem vulnerabilities** to climate change
- Does **not make recommendations** or assess vulnerability to changes in mgmt., land use, policy

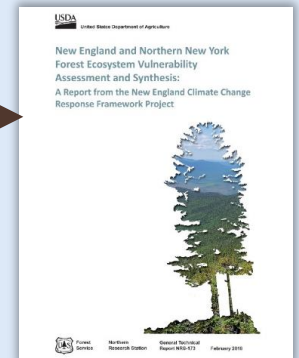


2018 REPORT:

www.nrs.fs.fed.us/pubs/55635

Additional resources & story map:

www.forestadaptation.org/ne-assessment



Adaptation Demonstrations

*Real-world examples of climate-informed
forest management*

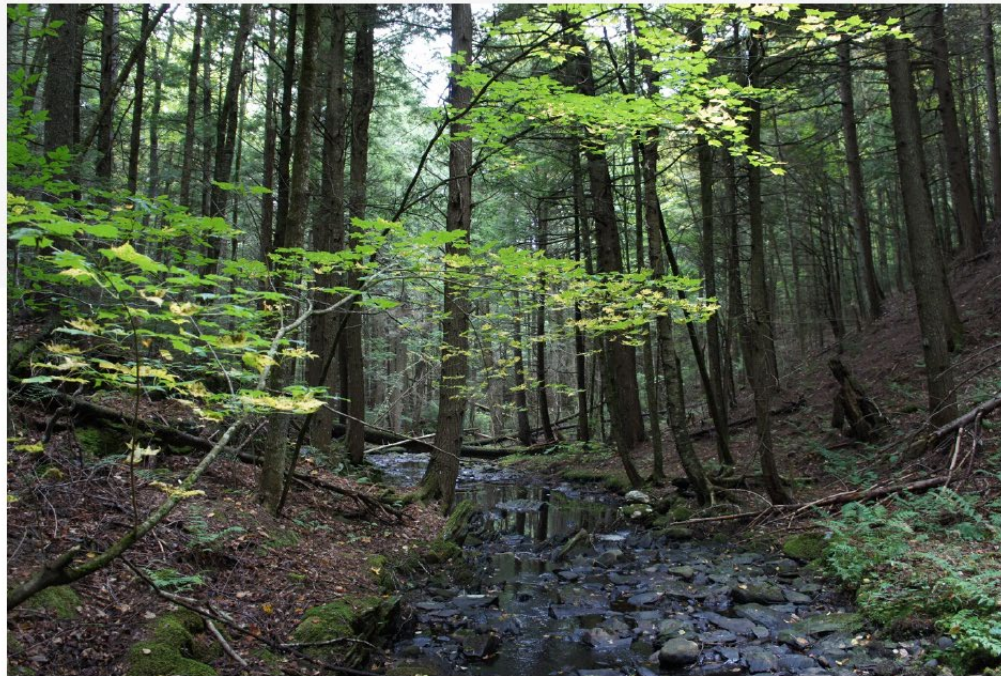


www.forestadaptation.org/demos

**Five years of forest
adaptation work in
New England...
where are we now?**

MOVING THE NEEDLE

A REVIEW OF NEEDS TO INCREASE CLIMATE ADAPTATION IN THE FORESTS OF NEW ENGLAND

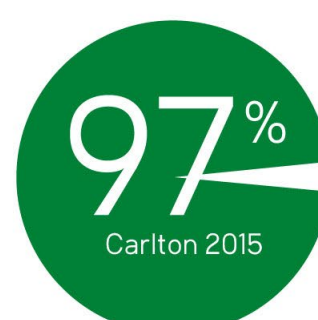
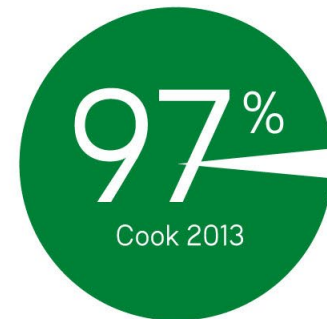


Perceptions of Climate Change

Perceptions of Climate Change

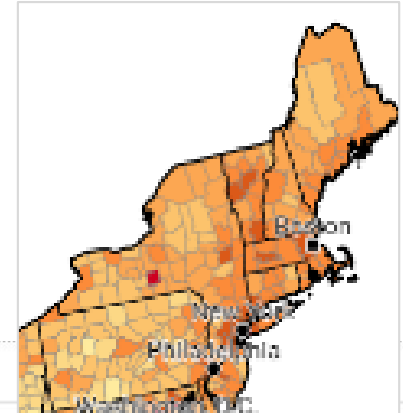
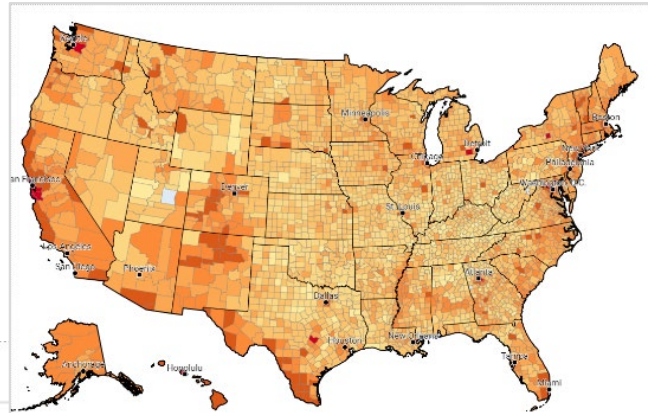
Among scientists:

Studies into scientific agreement on human-caused global warming

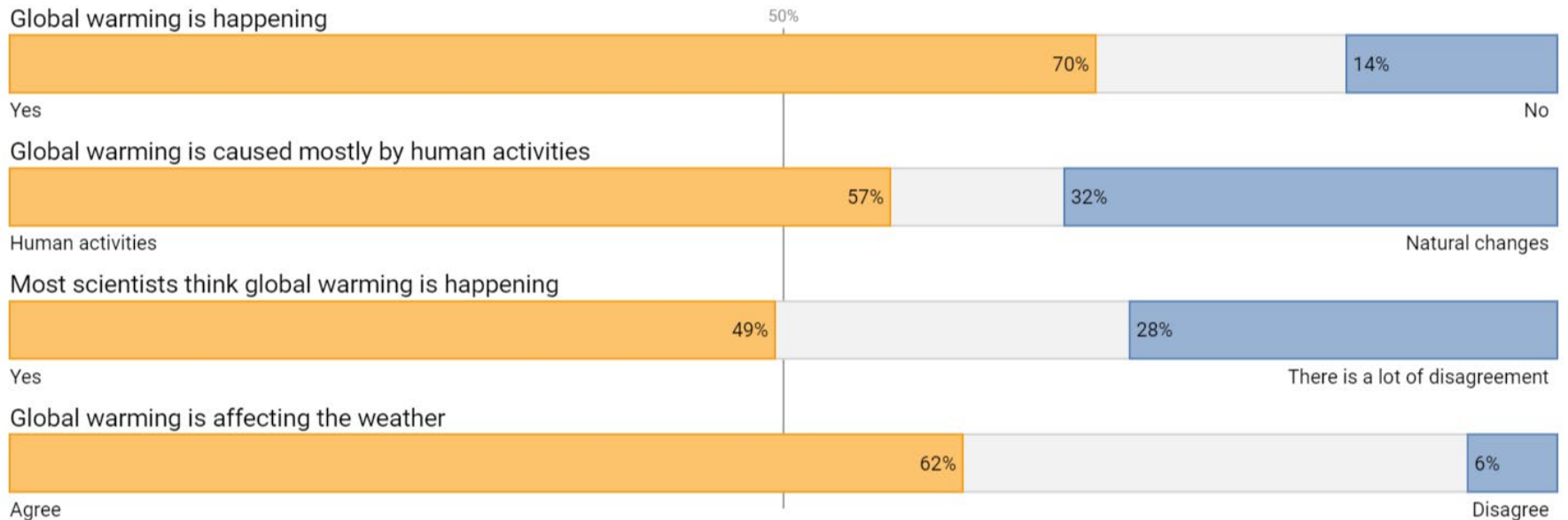


Perceptions of Climate Change

Among US Public



BELIEFS



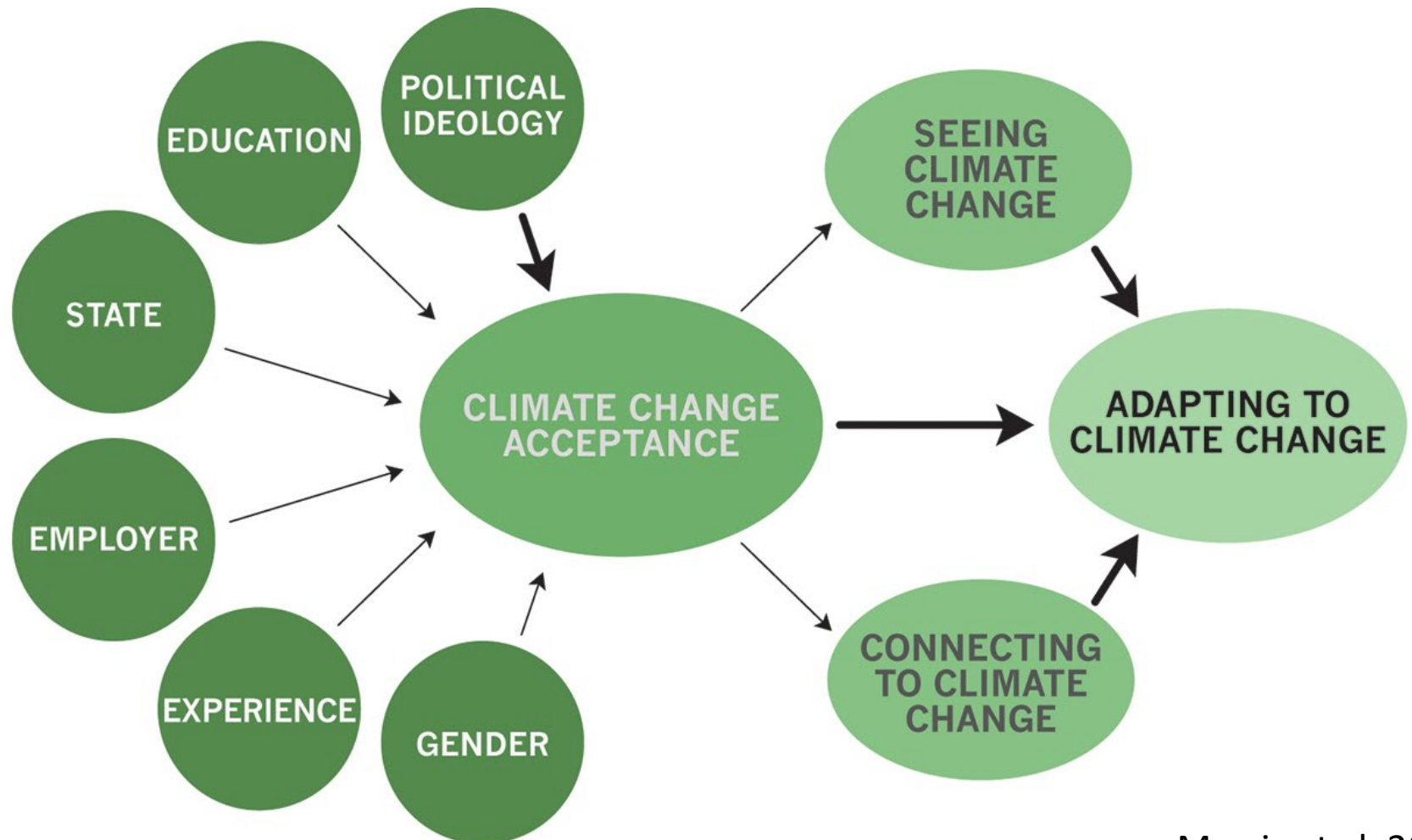
Perceptions of Climate Change

Foresters and Natural Resource Professionals

- 80% of Canadian forestry professionals believe climate change is currently having a significant impact on ecosystems (2018)
- 60% of southern foresters believe climate change is occurring – all causes (2016)
- 66% of Forest Service silviculture and rangeland managers think climate change is real and already happening (2015)

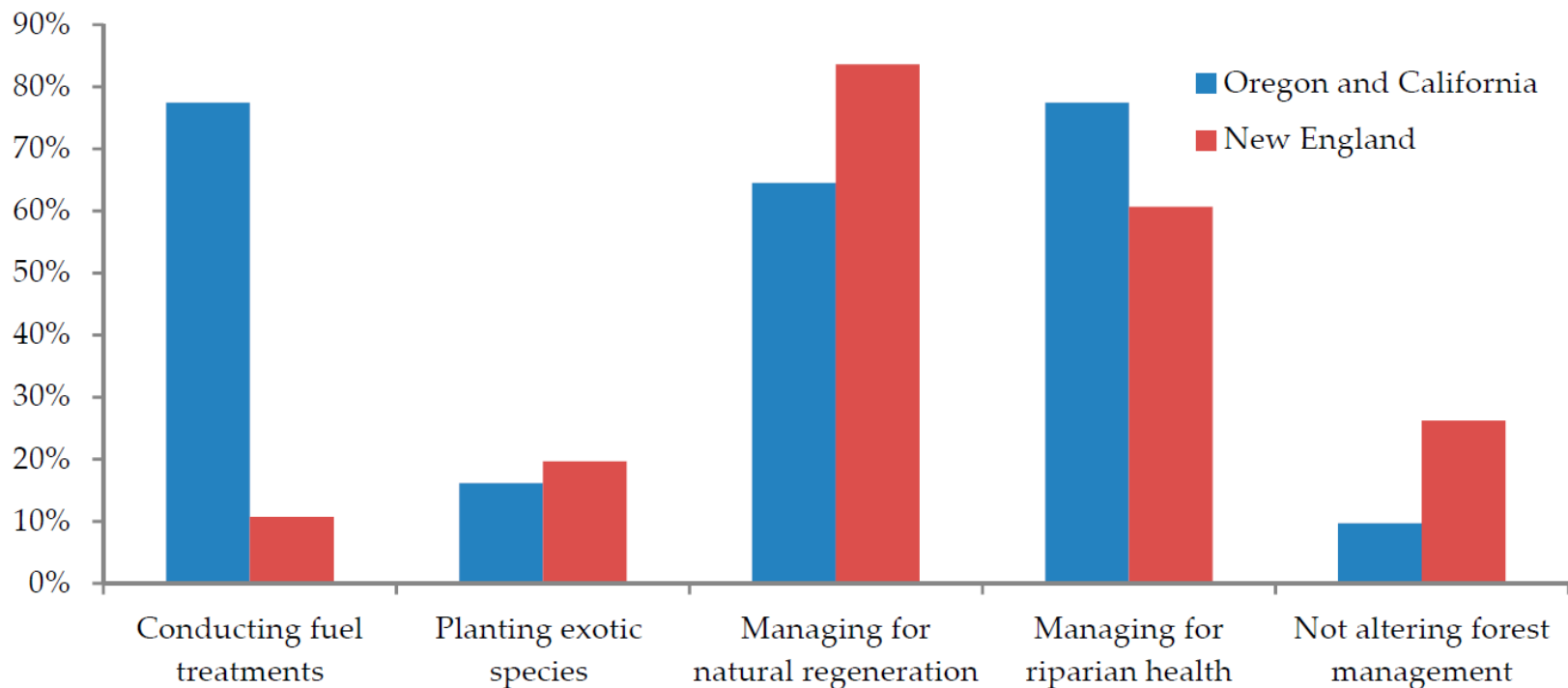
Perceptions of Climate Change

Foresters and Natural Resource Professionals



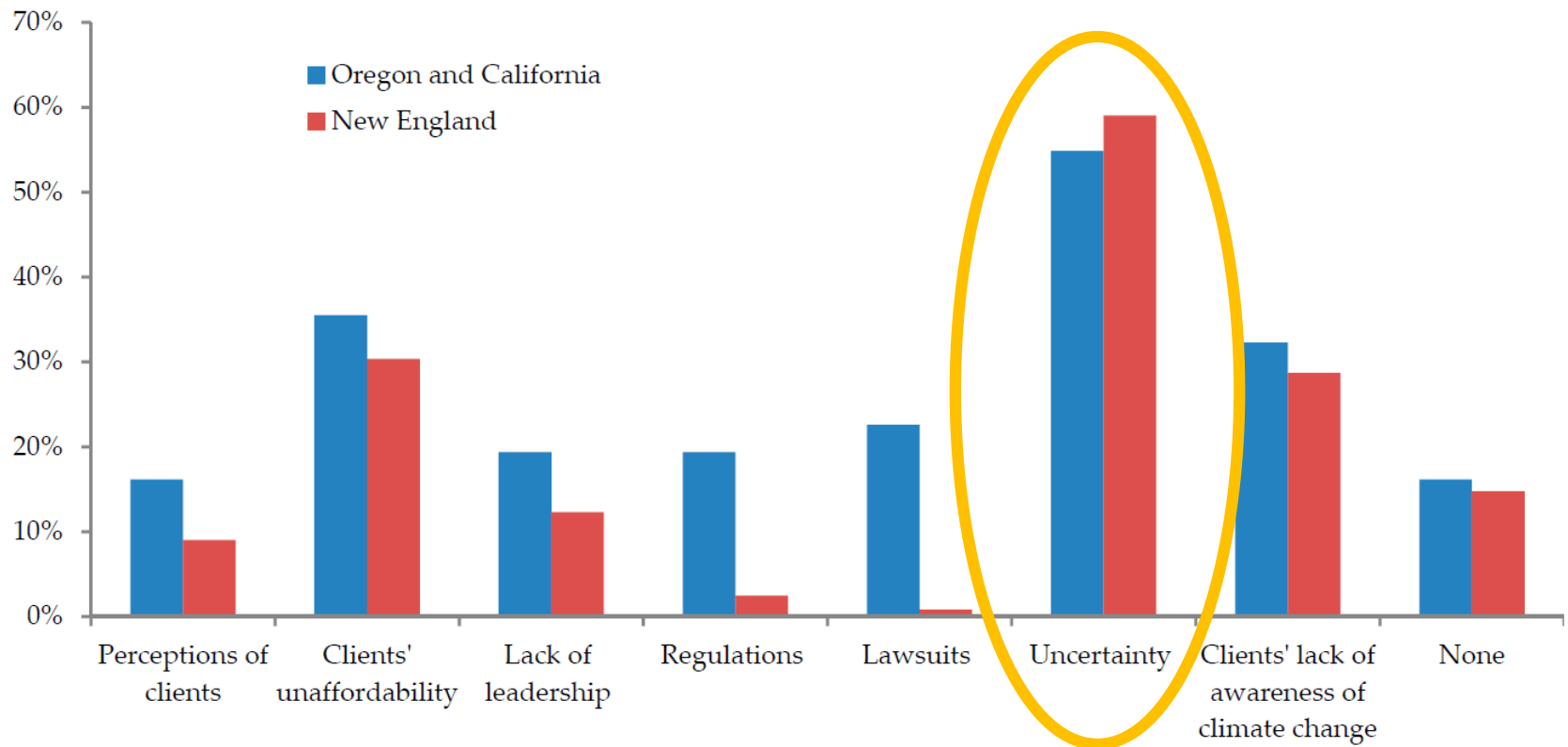
Climate Change and Adaptation

Majority of forest managers report that they are already adapting to climate in some ways



Climate Change and Adaptation

But... barriers remain



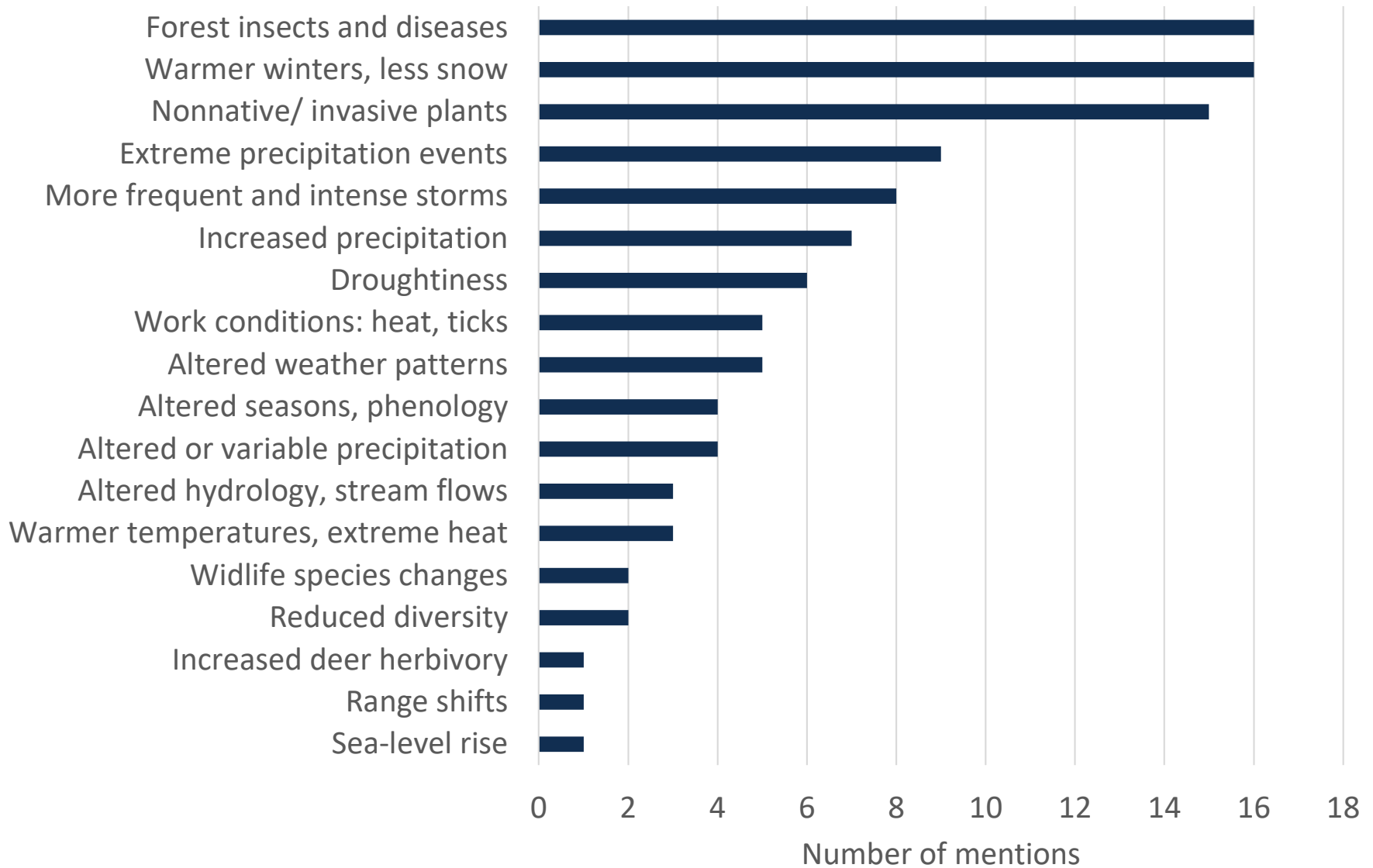
Needs Assessment

Purpose: identify the major needs among natural resource practitioners who are working in forests, in order to better understand the current barriers to climate change

- 4 listening sessions & online feedback

- What we do know
- What we don't know
- What we would most like to know
- What resources are available

Observed Changes



What we know

- Climate change impacts are being observed regionally.
- Many forest stressors are increasing, often independent of changes in climate.
- Basic information about tree species distribution, silvics, and current management strategies.
- Forests have responded to past change.
- How forests might change – generally.
- Ecosystems are complex!

Barriers to Adaptation

- Uncertainty about what to do
- Feeling overwhelmed
- Scientific information is inaccessible
- Lack of funding or resources to implement work
- Disbelief in climate change – among the public, decision-makers, landowners, etc.
- Decisions made with short-term thinking
- Traditional barriers to forest management
- Lag times to implementing adaptation

Moving Forward on Adaptation



Moving Forward on Adaptation

1. Manage in the face of uncertainty.

- When will changes occur?
- Where will changes be most severe?
- What are interactions among stressors, disturbances, and management?
- Which species (especially non-tree species) are most vulnerable?
- What other stressors are coming our way?
- What are significant thresholds for change?

Uncertainty is unavoidable. We need tools for facing uncertainty and acting without complete knowledge.

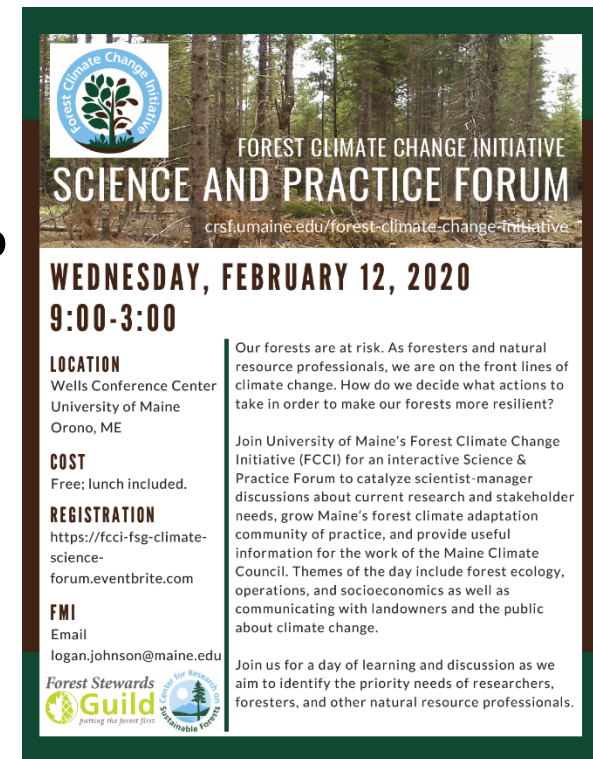


Uncertainty is unavoidable. We need tools for facing uncertainty and acting without complete knowledge.

Moving Forward on Adaptation

2. Expand the type of information that is available for decision-making.

- Better spatial and temporal resolution
 - Where can we reduce uncertainty?
- Make information for accessible
 - Social and economic components
 - Science I can use
 - Tools for communicating with the public



The poster features a background image of a forest. In the top left corner is the Forest Climate Change Initiative logo, which includes a tree icon and the text 'Forest Climate Change Initiative'. The main title 'FOREST CLIMATE CHANGE INITIATIVE SCIENCE AND PRACTICE FORUM' is centered at the top in white text. Below the title is the URL 'crsf.umaine.edu/forest-climate-change-initiative'. The date and time 'WEDNESDAY, FEBRUARY 12, 2020 9:00-3:00' are prominently displayed. The location 'WELLS CONFERENCE CENTER University of Maine Orono, ME' is listed. The cost is 'Free; lunch included.' The registration information includes the URL 'https://fcci-fsg-climate-science-forum.eventbrite.com'. The FMI contact information is 'Email logan.johnson@umaine.edu'. At the bottom left are logos for 'Forest Stewards Guild' and 'Maine Forest Stewards Guild'. A vertical text on the right side reads 'Our forests are at risk. As foresters and natural resource professionals, we are on the front lines of climate change. How do we decide what actions to take in order to make our forests more resilient?'. At the bottom right, it says 'Join University of Maine's Forest Climate Change Initiative (FCCI) for an interactive Science & Practice Forum to catalyze scientist-manager discussions about current research and stakeholder needs, grow Maine's forest climate adaptation community of practice, and provide useful information for the work of the Maine Climate Council. Themes of the day include forest ecology, operations, and socioeconomics as well as communicating with landowners and the public about climate change.' and 'Join us for a day of learning and discussion as we aim to identify the priority needs of researchers, foresters, and other natural resource professionals.'

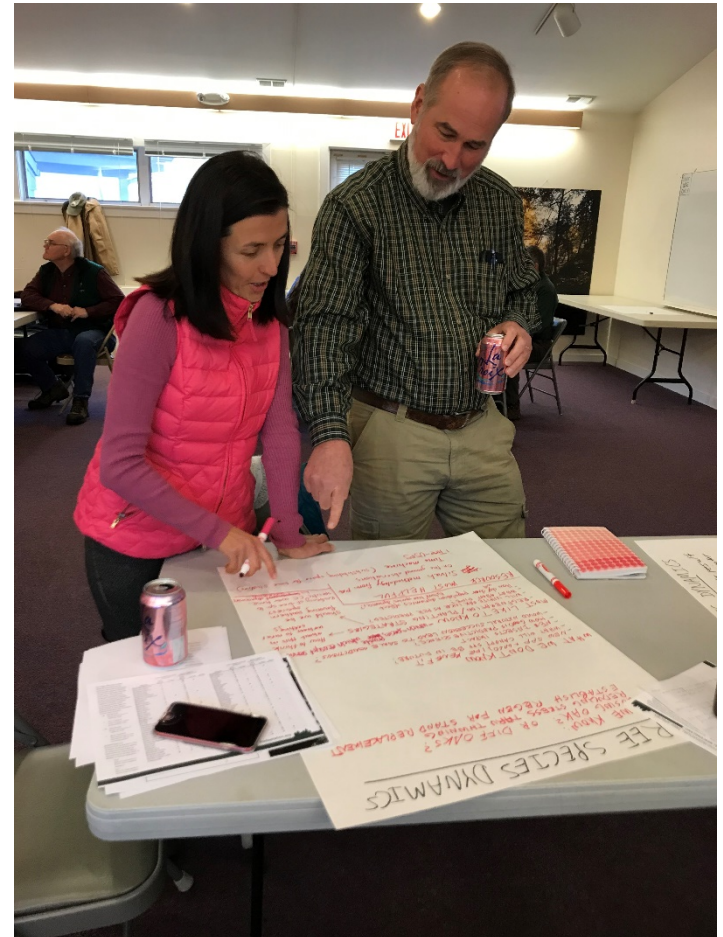
Expand the type of information that is available for decision-making.



Moving Forward on Adaptation

3. Prioritize risks and management actions.

- Identify areas of potential refugia
- Best places/opportunities for specific actions
- Recommendations for best practices and examples



Moving Forward on Adaptation

4. Address barriers to sustainable forest management.

- Current constraints, e.g., small woodlots, challenging wood markets
- Social perception of forest management and forest adaptation – more acceptance needed
 - Communication strategies/messages
- Cost to act vs. Cost of no action.
- “No-regrets” actions to focus on/rally around



Moving Forward on Adaptation

5. Learn from each other through communities of practice.

- Go back and look at the outcomes of past activities and see what happened.
- Share outcomes.
- Create a network or community of practice.
- More monitoring!



Next Steps

- Share major themes in report
- Support continued science “translation”
- Foster communities of practice

