Forest Adaptation Planning and Practices

~ Online Course ~

Session 6 Discussion: Monitoring and Evaluating Effectiveness

Wednesday February 21, 2018

Discussion session: Please feel free to join the discussion on webcam or by phone – we want to hear from you!

Welcome back!

Discussion: 1:00-1:45 pm

- Step 5 review
- What monitoring items are you considering?

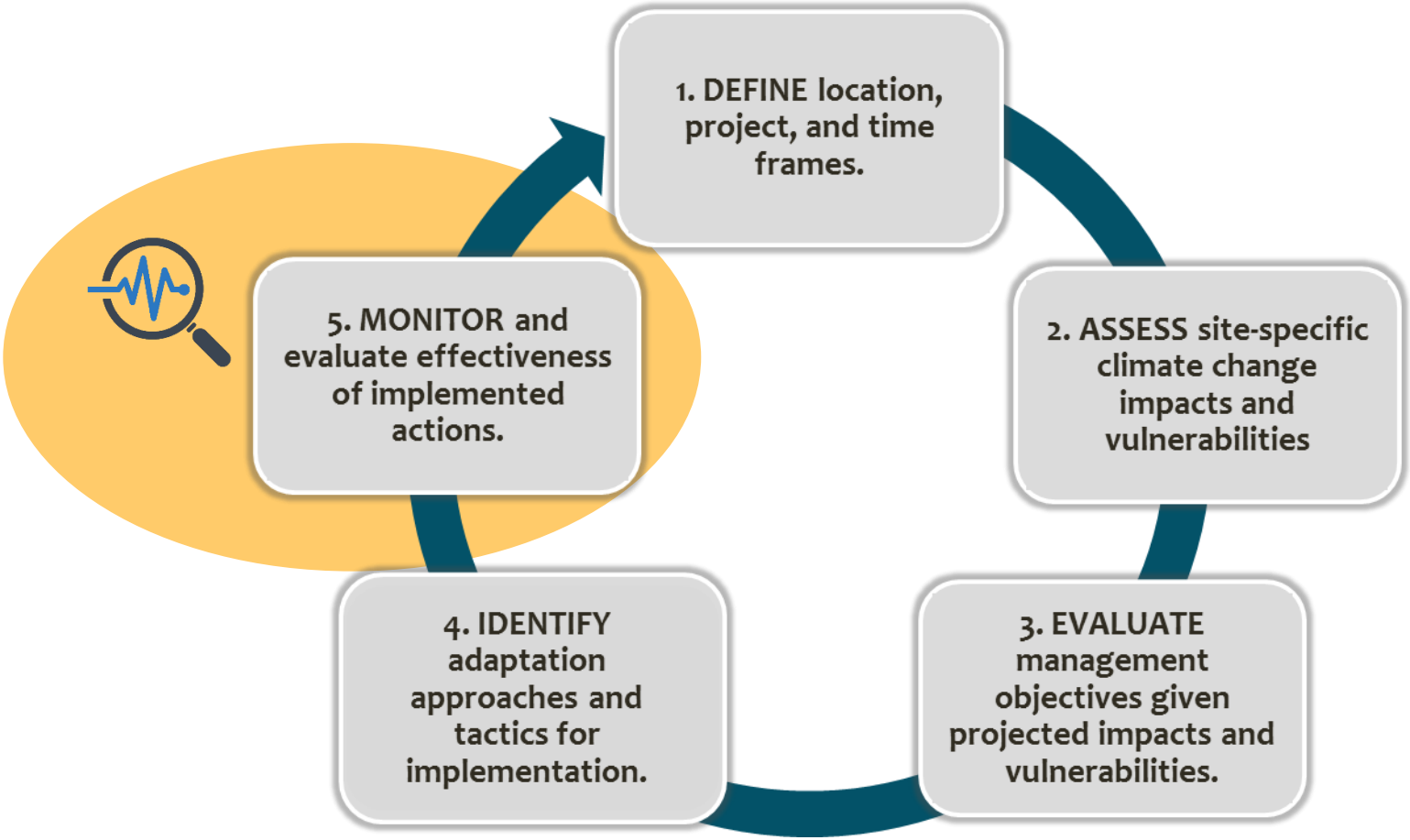
Lecture: 2:00-2:45 pm

- Step 6: Telling Your Adaptation Story
- Assignment for Feb 28
  → Project report outs!!

Guest Instructor!

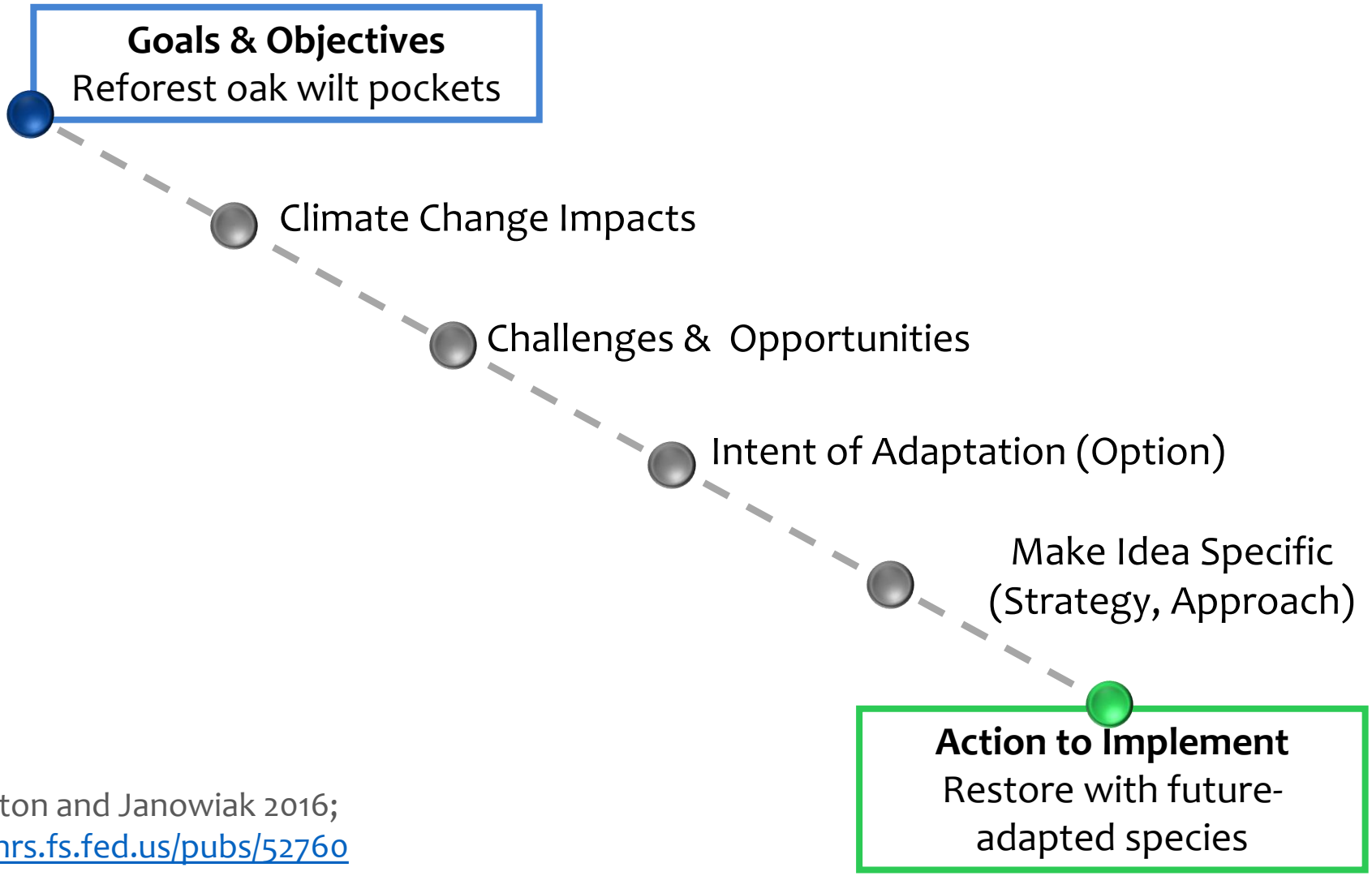
Jennifer Hushaw
Applied Forest Scientist
Climate Services Program @ Manomet
Climate Smart Land Network
www.climatesmartnetwork.org

Adaptation Workbook Process



Connecting the Dots

A clear train of thought shows ***intentionality***



Swanston and Janowiak 2016;
www.nrs.fs.fed.us/pubs/52760

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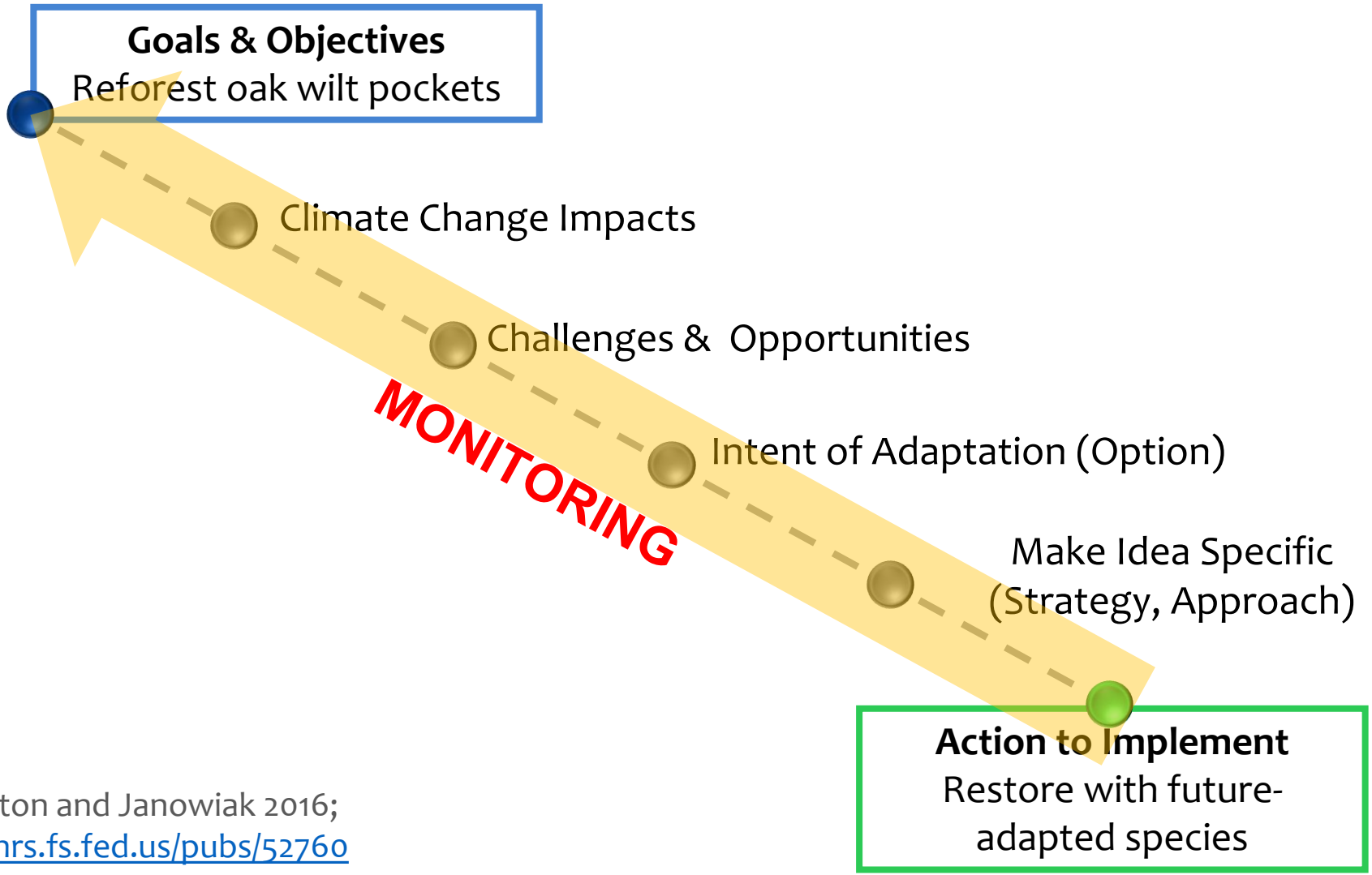


Swanston and Janowiak 2016;
www.nrs.fs.fed.us/pubs/52760

Step 5: MONITOR and evaluate effectiveness of implemented actions.

Adaptation Monitoring Variable – What you will measure

Criteria for Evaluation – What value you will use to judge whether you were successful

Monitoring Implementation– How you will gather the information

Step 5: MONITOR and evaluate effectiveness of implemented actions.

Intent (approach): Prevent the introduction and establishment of invasive plant species and remove existing invasive species

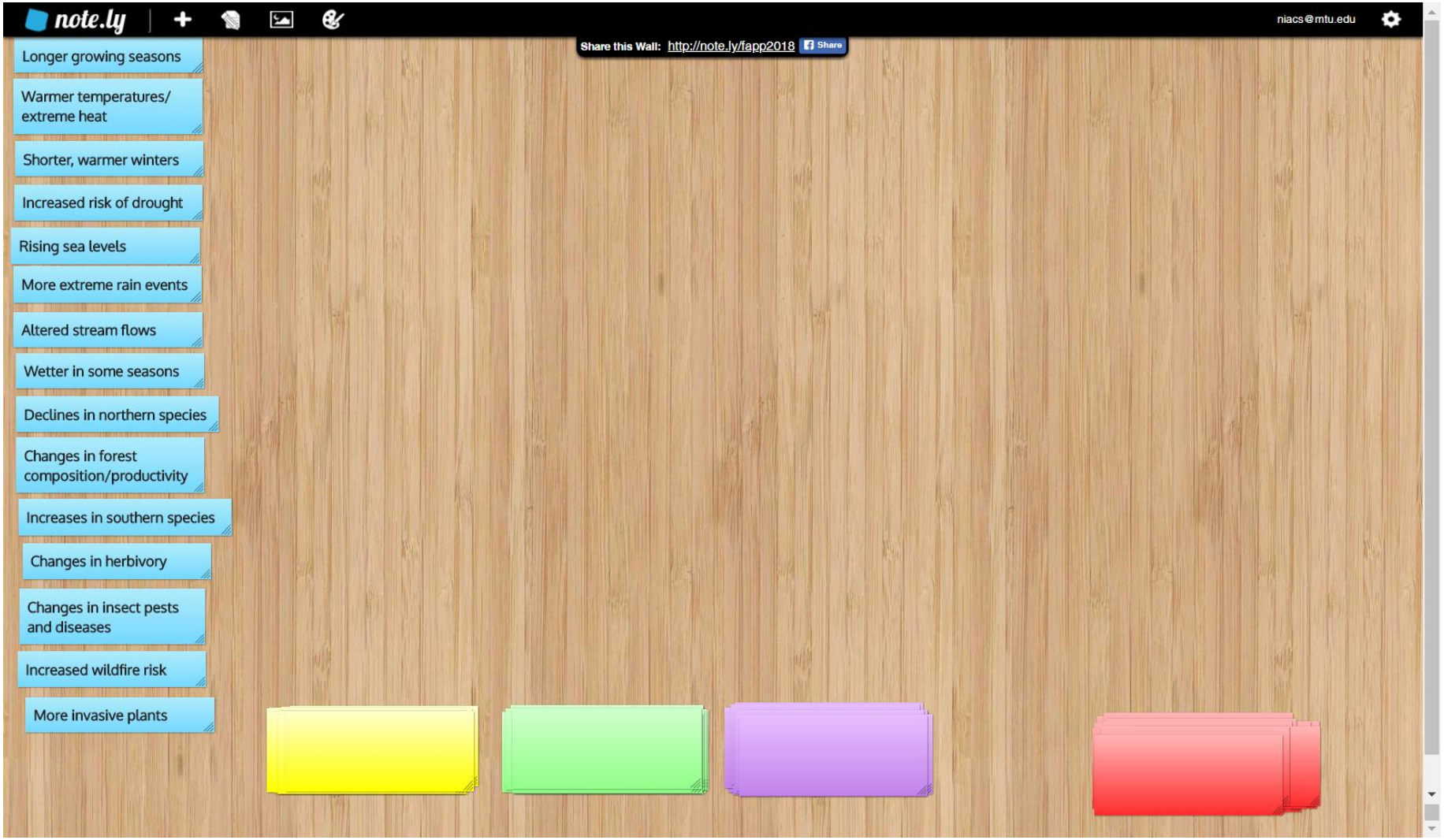
Adaptation Monitoring Variable	Criteria for Evaluation	Monitoring Implementation
Invasive species presence/abundance	No incidence of invasive species A in location X	Annual walk-through inspection of area

Intent (approach): Favor or restore native species that are expected to be adapted to future conditions

Adaptation Monitoring Variable	Criteria for Evaluation	Monitoring Implementation
Abundance of oak species	Trees of oak species make up 30-60% of stand basal area (or BA is at least 20 ft^2/ac)	Next forest inventory, ~5 years after harvest

Another Sticky Note Activity!

http://note.ly/fapp2018



Sticky Note Activity

Instructions:

- Submit your adaptation monitoring items in the chat box
- Put **one** monitoring item per **one** chat item
- Also include whether that monitoring item is something you already do, a new monitoring item that you will implement, or a wish list item that you may not be able to implement

Examples of what you'd might type into the chat box:

- Seedling survival of planted climate-adapted species (new)
- Cover of invasive plant species (existing)

Optional questions to answer in the Chat box:

- Where (at work, in a meeting, in a forest mgmt. plan, etc.) do you want to be able to talk about ideas related to how forests are affected by climate change?
- What's your biggest question, concern, or hang-up when it comes to talking about this topic?

Forest Adaptation Planning and Practices

~ Online Course ~

Session 6 Lecture:
Telling Your Adaptation Story

Wednesday February 21, 2018

Web session etiquette:

- Mute your phone/microphone unless you are speaking to the group.
- If using the phone, turn off your computer speakers to avoid feedback and terrible noises.

Tackling the Climate Conversation

Jennifer Hushaw

Applied Forest Scientist

APPLYING SCIENCE & ENGAGING PEOPLE

Shorebird Recovery

Landbird Conservation

Sustainable Economies

Climate Services



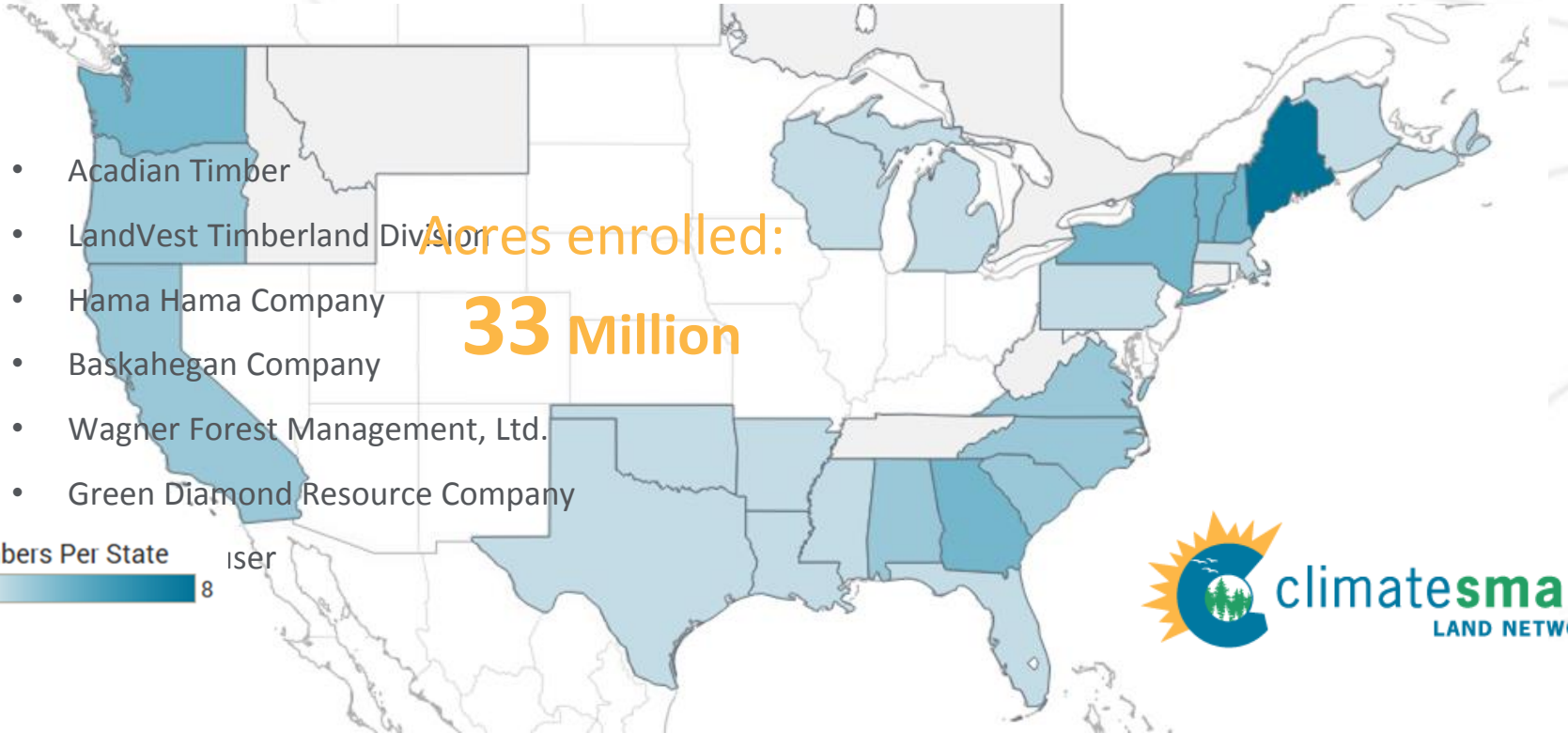



climatesmart
LAND NETWORK



Current Members

- Hancock Timber Resources Group
- J.D.Irving, Limited Woodlands
- Resource Management Service, LLC
- The Lyme Timber Company
- Maine Woodland Owners
- Greenwood & Arcadia Plantations
- New England Forestry Foundation
- Acadian Timber
- LandVest Timberland Division
- Hama Hama Company
- Baskahegan Company
- Wagner Forest Management, Ltd.
- Green Diamond Resource Company



Acres enrolled:

33 Million

climatesmart LAND NETWORK

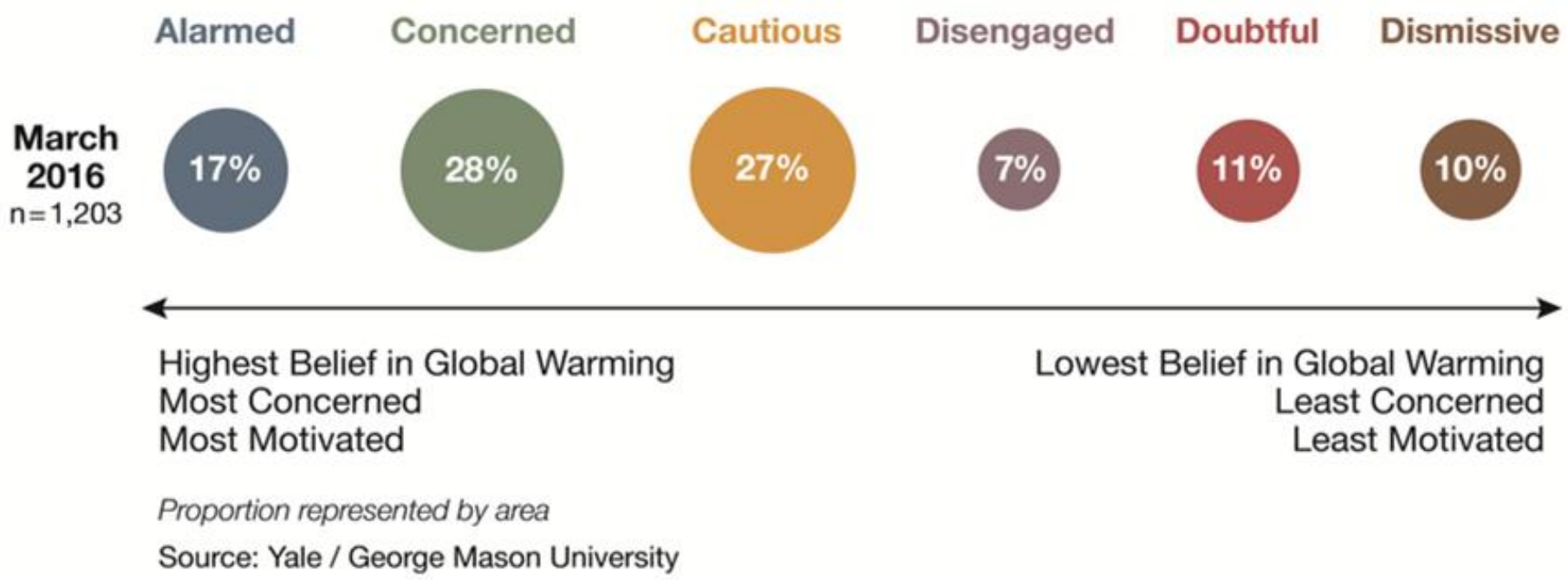
Effective

Climate Change

Communication

Know Your Audience

Global Warming's Six Americas



YALE PROGRAM ON
Climate Change
Communication

http://climatecommunication.yale.edu/visualizations-data/six-americas/

Alarmed

12%

of the U.S. population

- Certain that global warming is happening, human-caused, and harmful
- Strongly support climate policies – most likely to engage in political activism
- But, often do not know what they or society can do.

Illustration by Michael Sloan

Dismissive

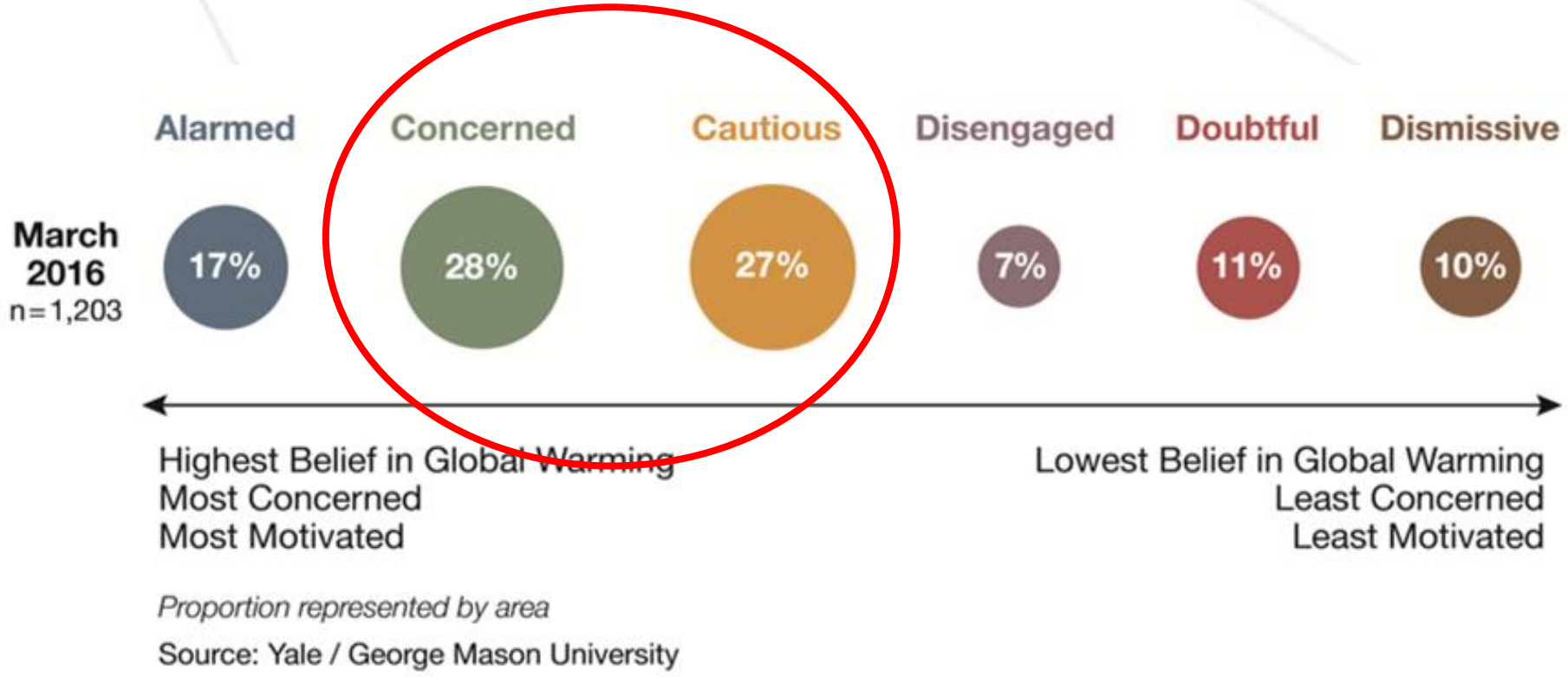
Illustration by
Michael Sloan

11%

of the U.S. population

- Believe that global warming is **not** occurring, or that if it is occurring is not human-caused
- Strongly oppose policies and action to reduce the threat
- May have contacted an elected representative to argue *against* action on global warming

Global Warming's Six Americas



http://climatecommunication.yale.edu/visualizations-data/six-americas/

29%

of the U.S. population

- Moderately certain that global warming is happening, human-caused, and harmful
- See the problem primarily as a distant threat, however – harmful mainly to other nations and future generations
- Support action on climate change, but unlikely to have engaged in political activism

Concerned

Illustration by
Michael Sloan

26%

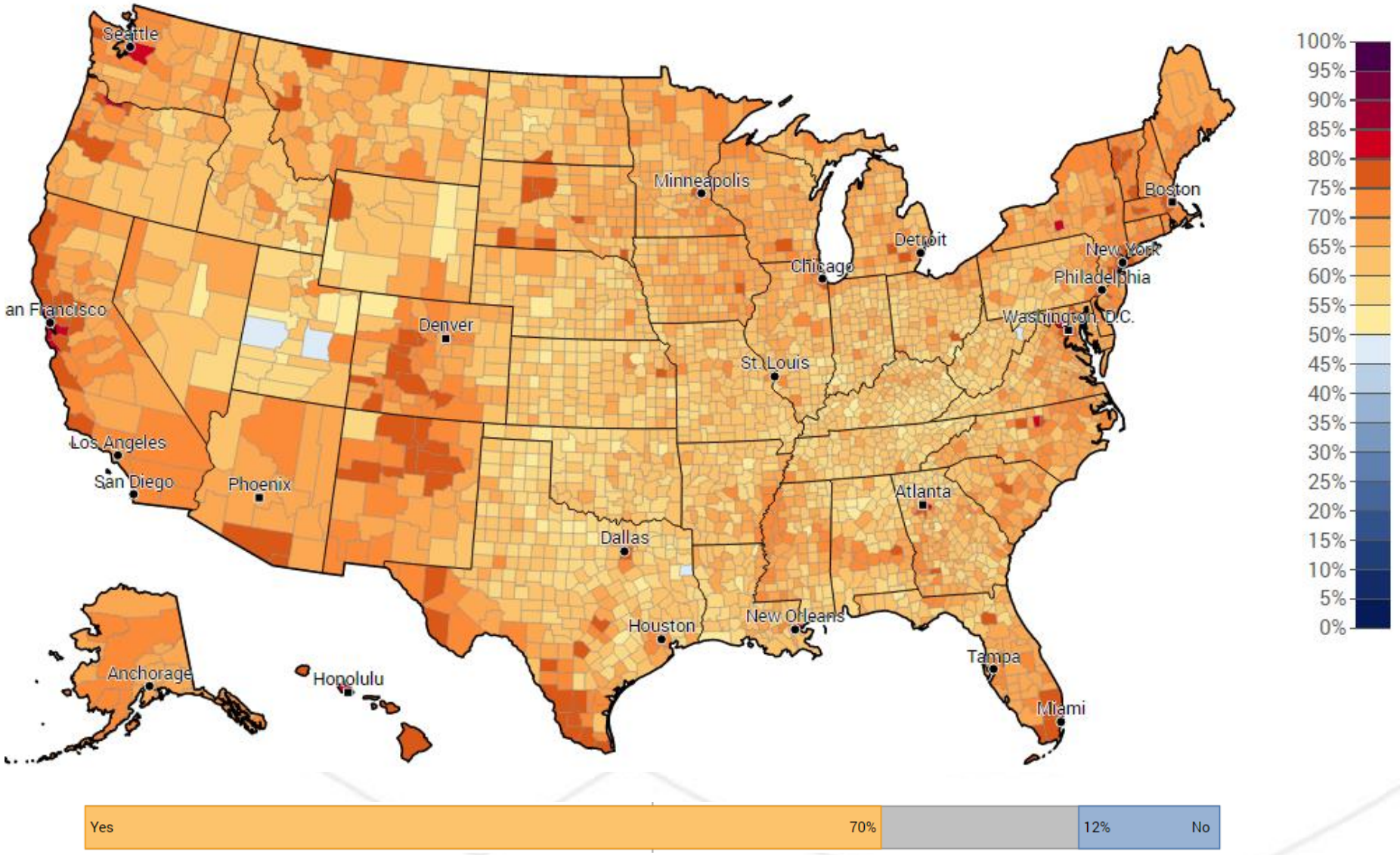
of the U.S. population

- "Fence-sitters" – Uncertain that global warming is happening and human-caused
- Global warming seems like a distant threat
- No strong opinions on what, if anything, should be done

Cautious

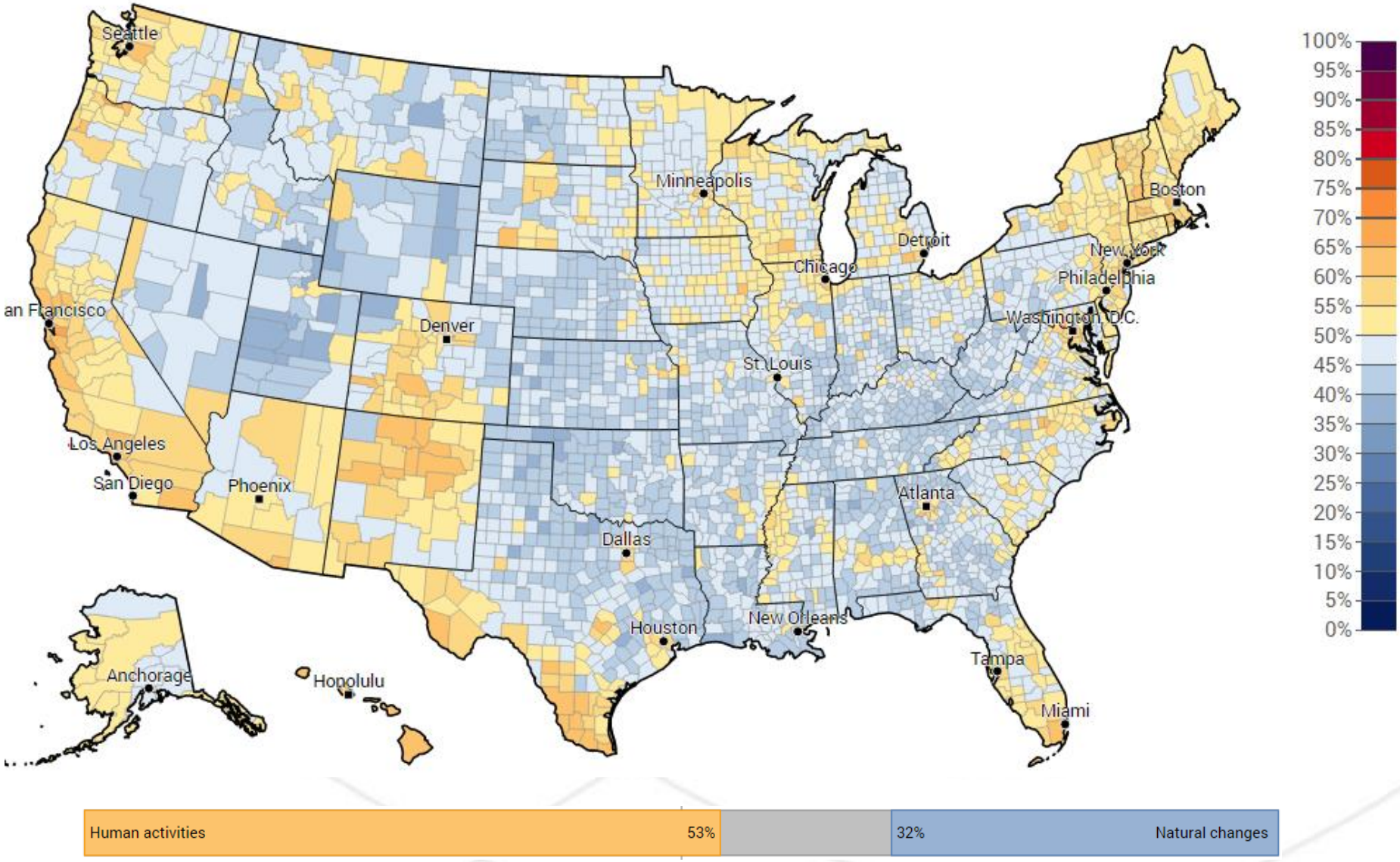
Illustration by Michael Sloan

Estimated % of adults who think global warming is happening, 2016



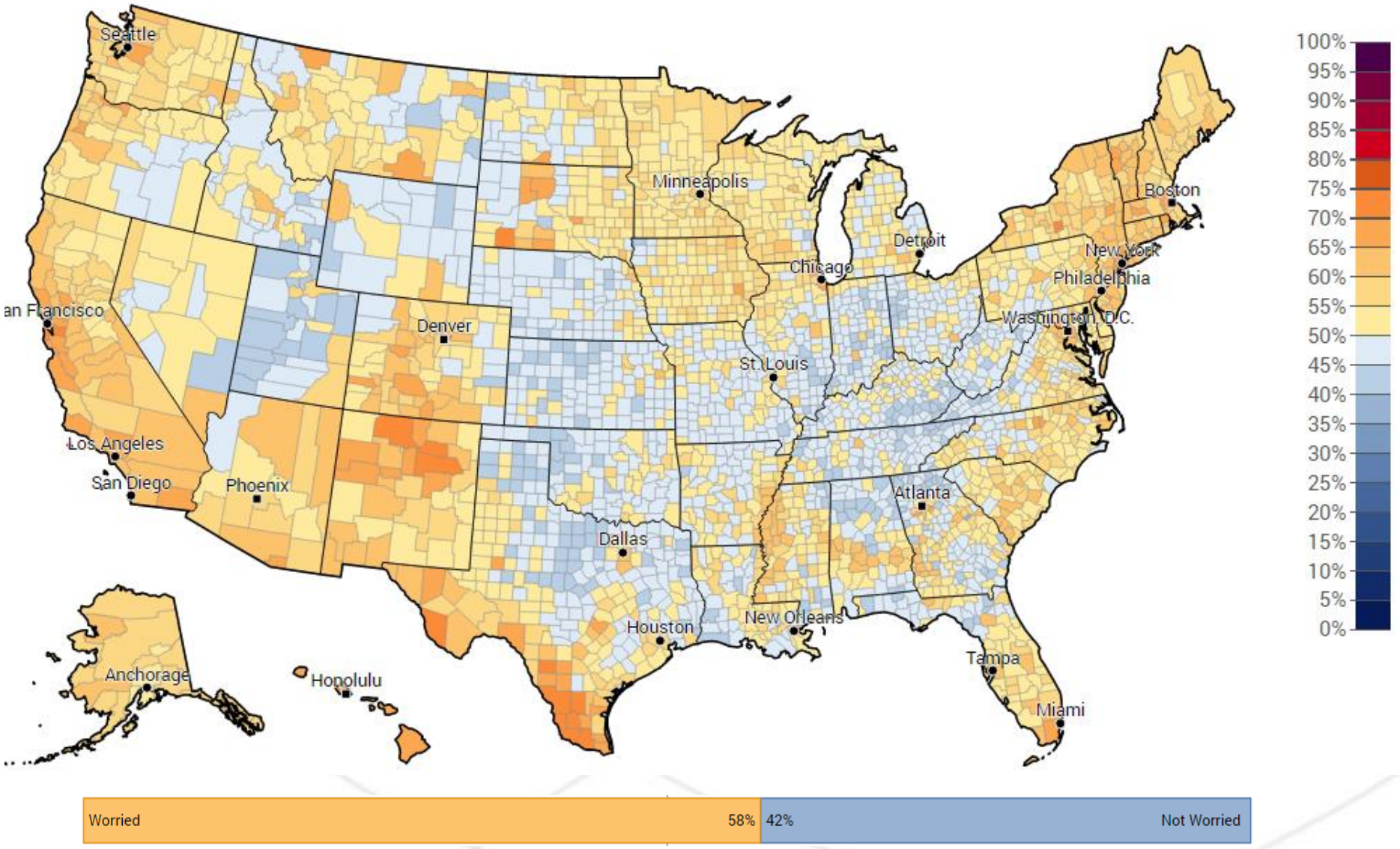
http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/

Estimated % of adults who think global warming is mostly caused by human activities, 2016



http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/

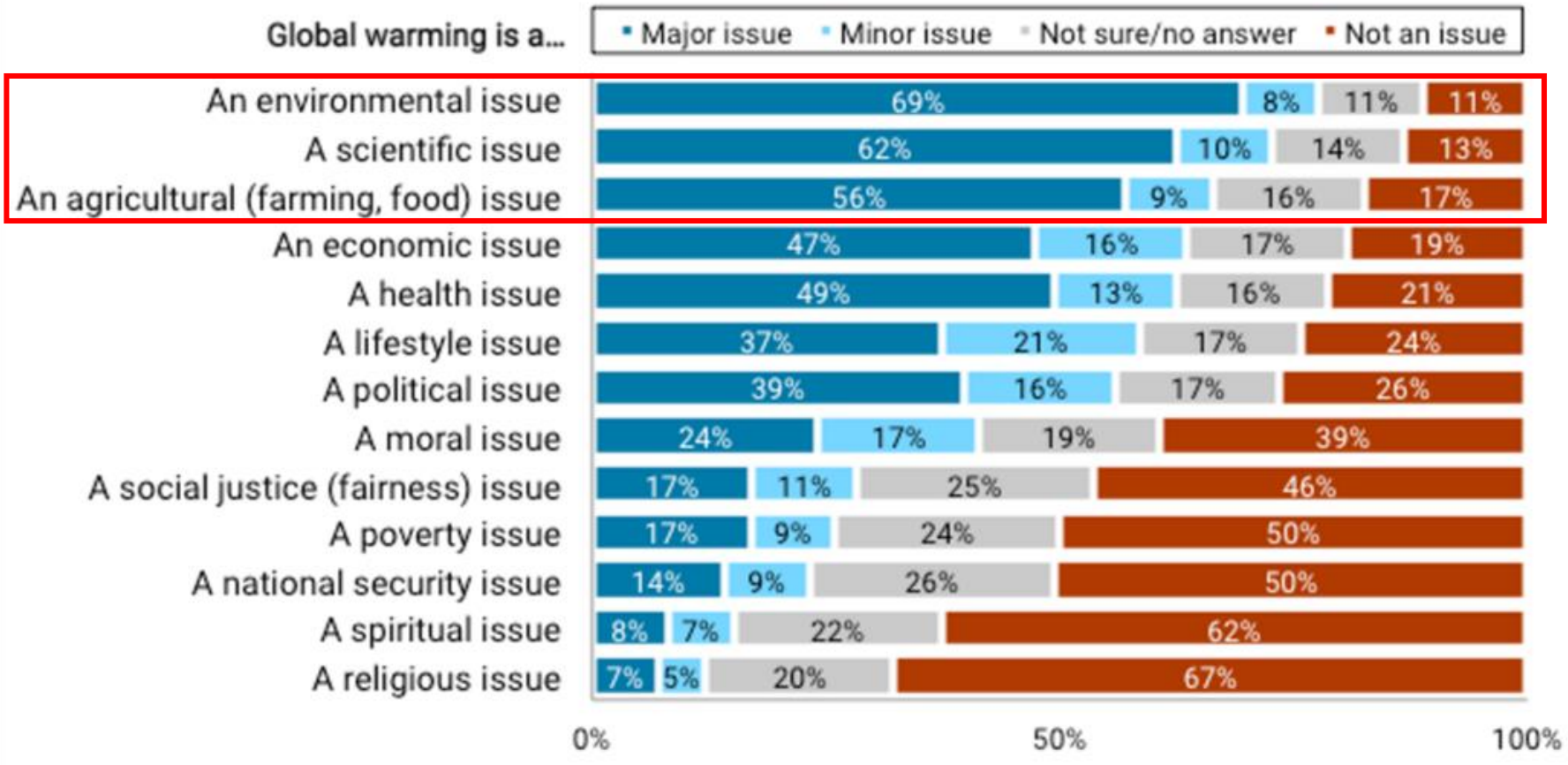
Estimated % of adults who are worried about global warming, 2016



http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/

Framing

Risk Management



In your opinion, do you think global warming is...; Do you think global warming is a *major* or *minor*...

Base: Americans 18+ (n=1,330). October, 2015.

Note: Results in this chart differ slightly from results for the same question presented in Maibach, E., Leiserowitz, A., Roser-Renouf, C., Myers, T., Rosenthal, S. & Feinberg, G. (2015) *The Francis Effect: How Pope Francis Changed the Conversation about Global Warming*, which reported on a separate national survey conducted using a different methodology.

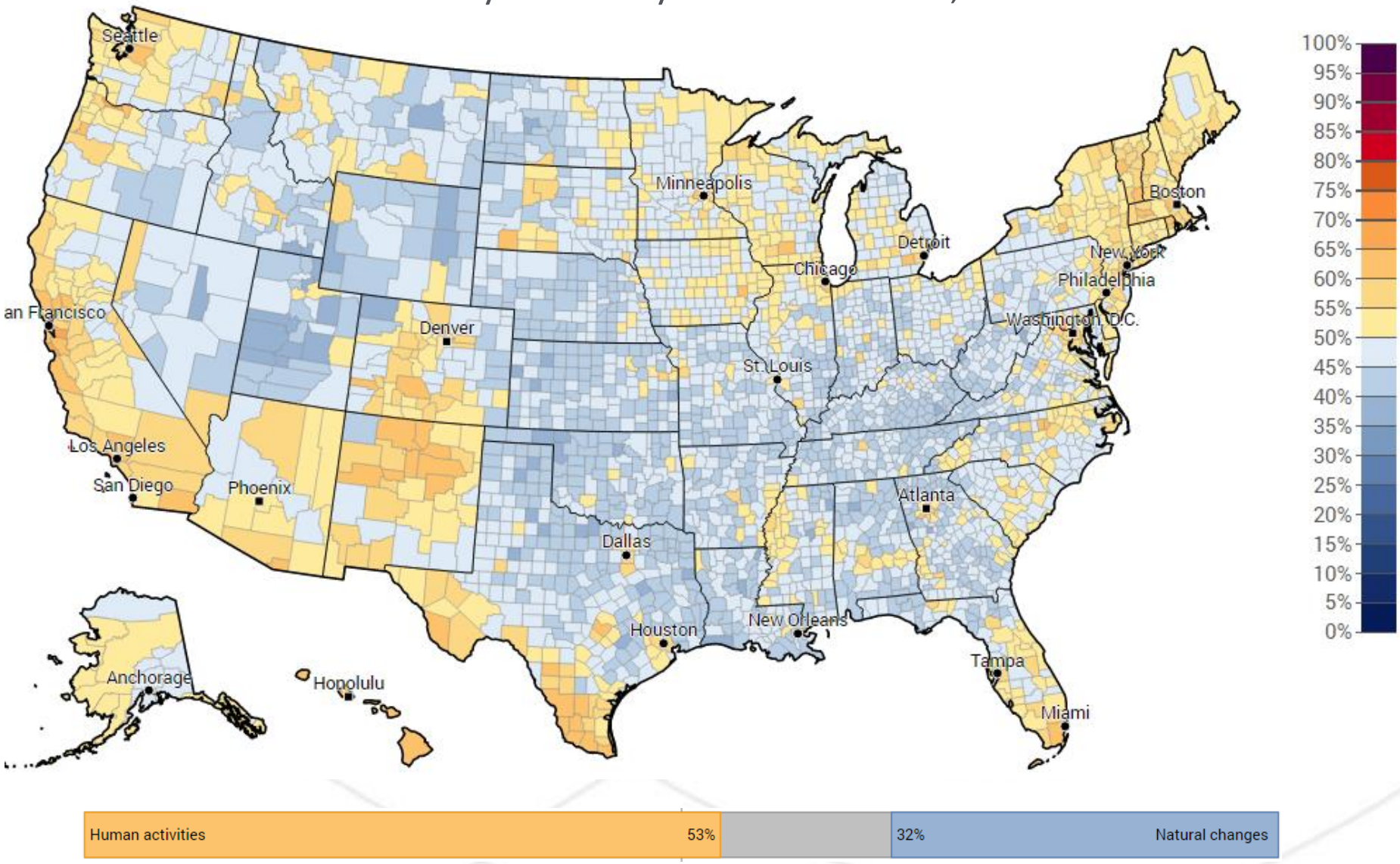
YALE PROGRAM ON Climate Change Communication

GEORGE MASON UNIVERSITY CENTER for CLIMATE CHANGE COMMUNICATION

http://climatecommunication.yale.edu/visualizations-data/majorities-americans-think-global-warming-major-environmental-scientific-andor-agricultural-issue/

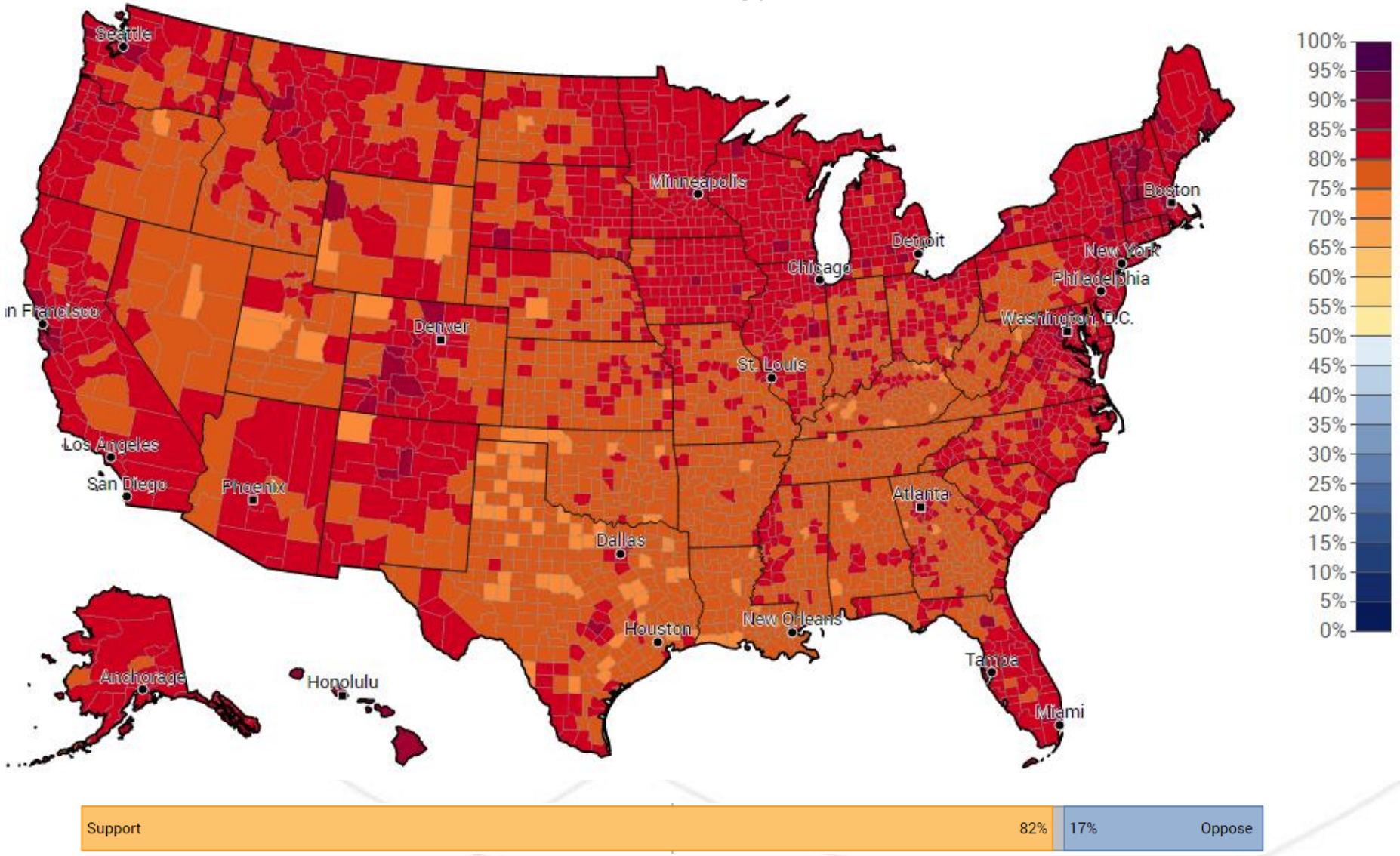
Find Common Ground

Estimated % of adults who think global warming is mostly caused by human activities, 2016



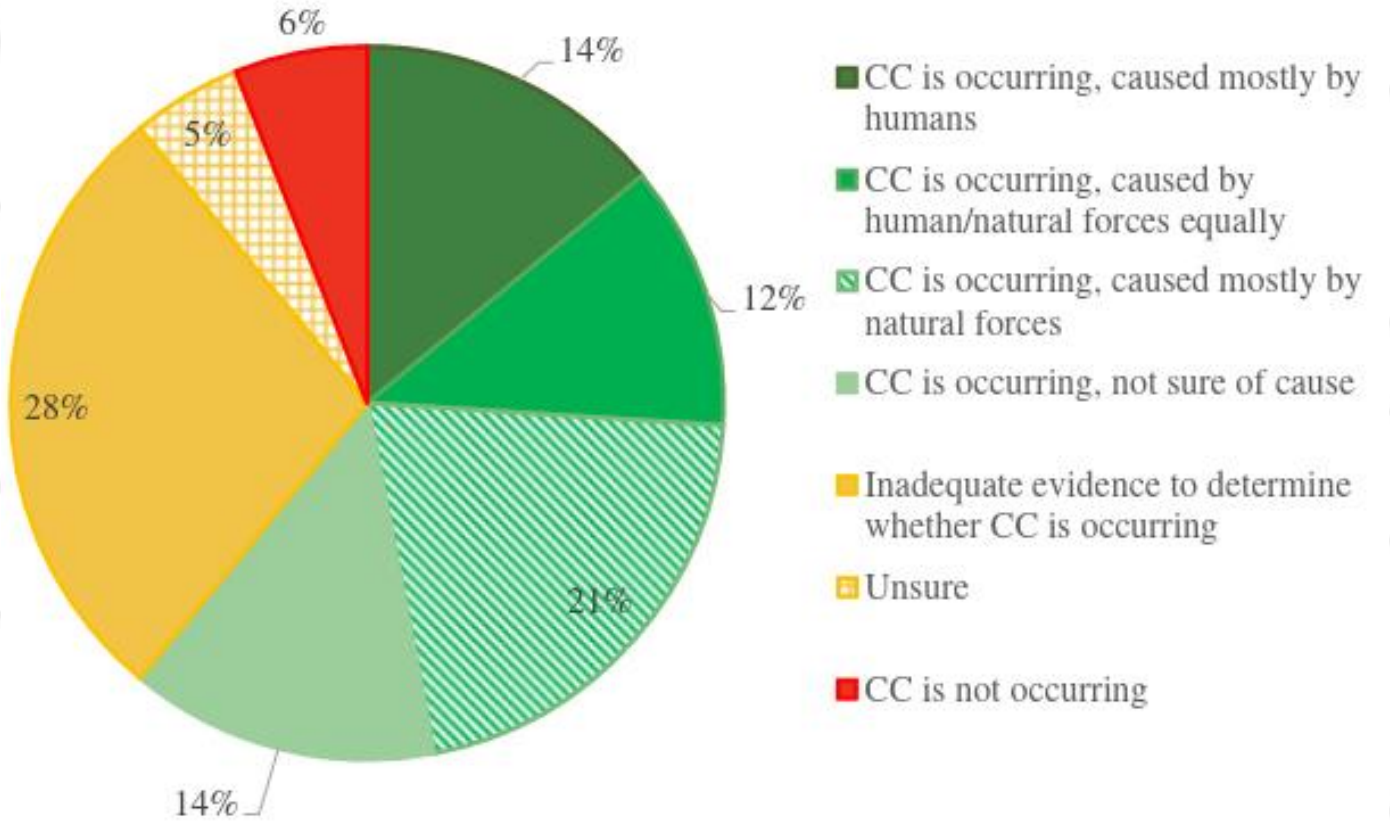
http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/

Estimated % of adults who support funding research into renewable energy sources, 2016



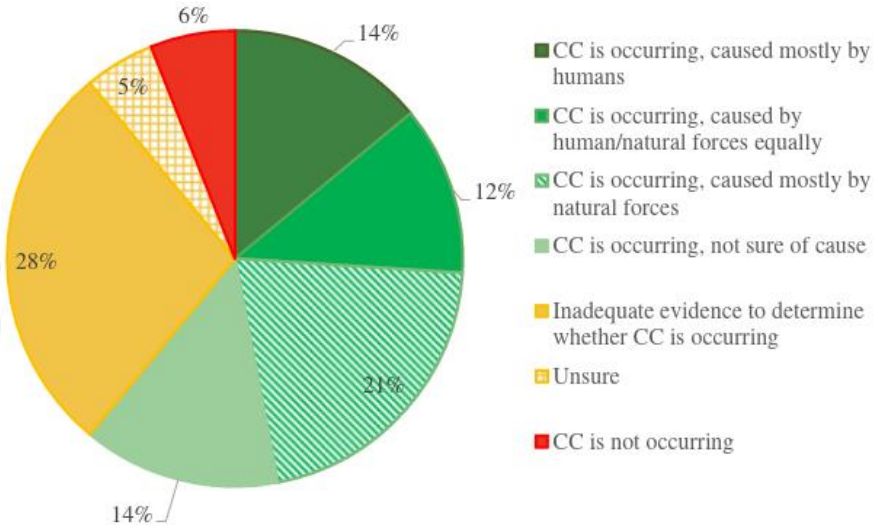
http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/

Perceptions of foresters …



Boby, L., Hubbard, W., Megalos, M., and H.L.C. Morris. 2016. Southern Foresters' Perceptions of Climate Change: Implications for Educational Program Development. Journal of Extension. 54(6):6RIB3. Available online at https://joe.org/joe/2016december/rb3.php; last accessed Feb. 21, 2018.

Perceptions of foresters



"**Seventy-five percent** of the respondents expressed interest in learning more about forest management strategies that promote forest health and resilience."

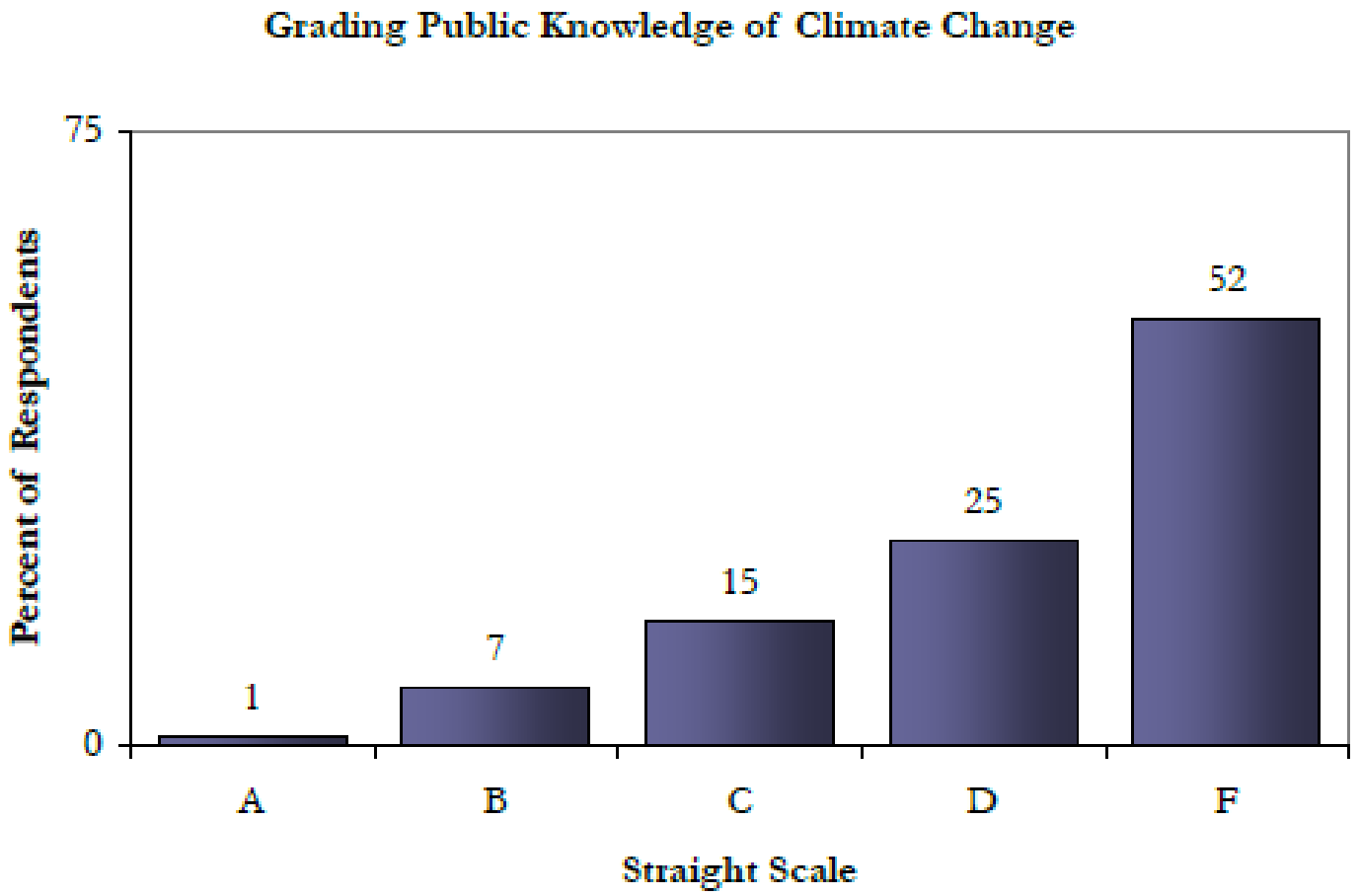
Boby, L., Hubbard, W., Megalos, M., and H.L.C. Morris. 2016. Southern Foresters' Perceptions of Climate Change: Implications for Educational Program Development. Journal of Extension. 54(6):6RIB3. Available online at https://joe.org/joe/2016december/rb3.php; last accessed Feb. 21, 2018.

Trust

Inform

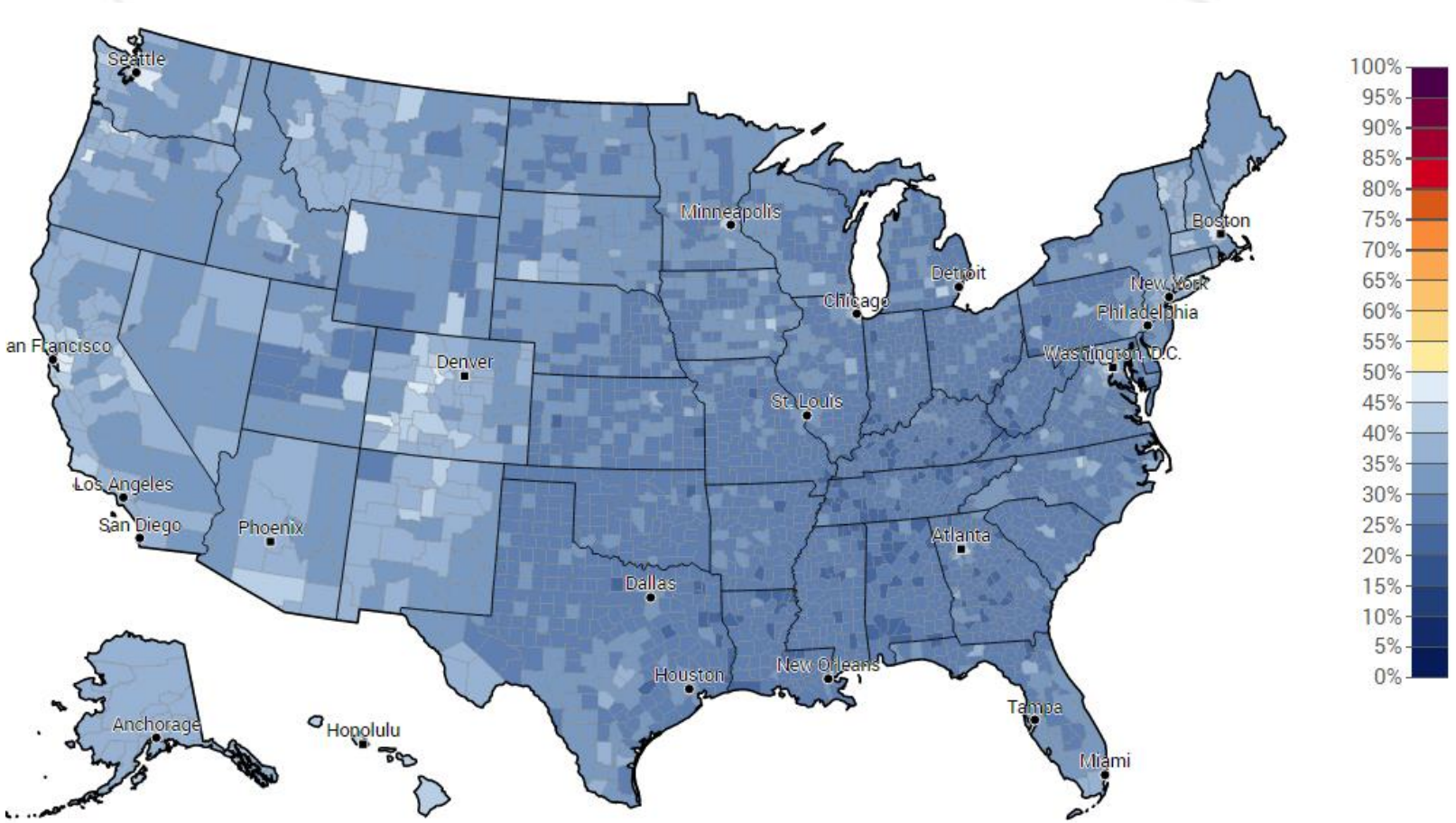
YALE PROJECT ON CLIMATE CHANGE COMMUNICATION
BRIDGING SCIENCE + SOCIETY

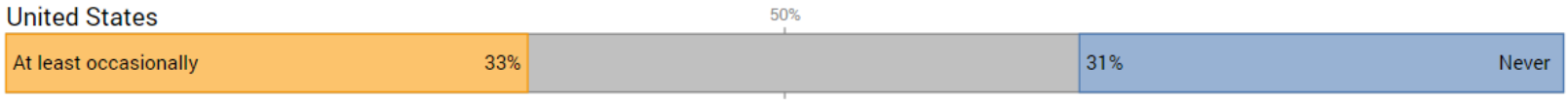
Americans' Knowledge of Climate Change



Connect the Dots

Estimated % of adults who discuss global warming at least occasionally, 2016





Learning to Speak Climate

"Just a few years ago…"

"I've never seen that before…"

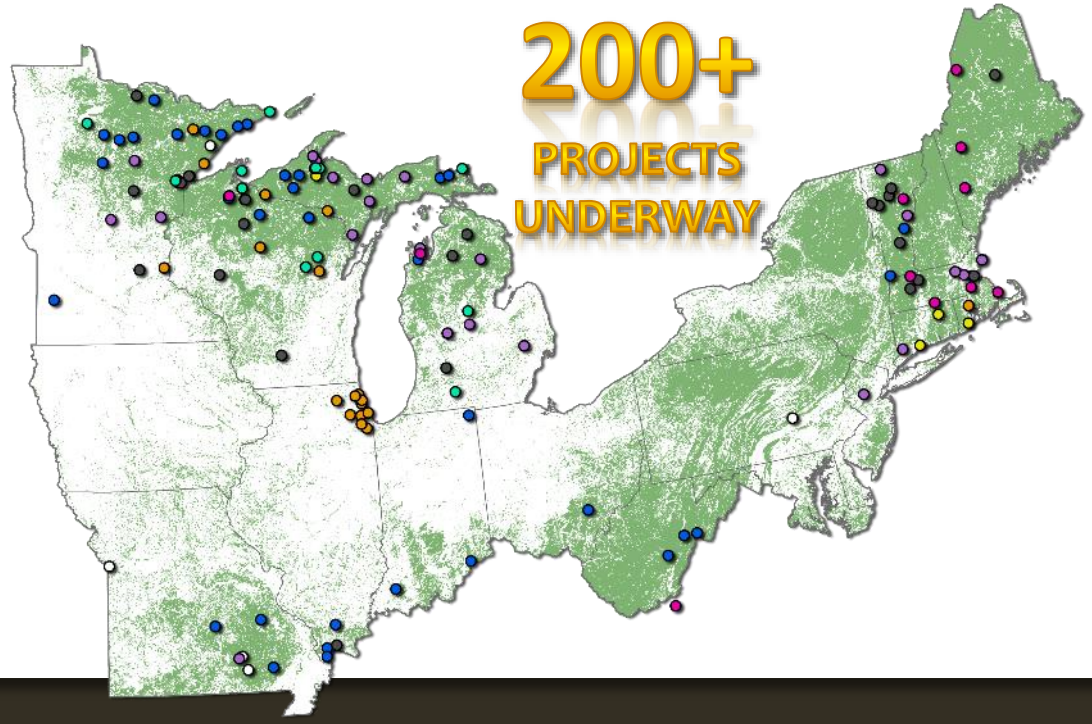
"Well usually …but now I don't know anymore."

Friedman, Thomas, L. (2008, August 5). Learning to Speak Climate. *The New York Times*. Available online at http://www.nytimes.com/2008/08/06/opinion/06friedman.html; last accessed Feb. 21, 2018.

My Advice

1. Know your audience
2. Framing
3. Find common ground
4. Build Trust
5. Inform
6. Connect the dots

Communication Resources



www.forestadaptation.org/demos

Communication Resources

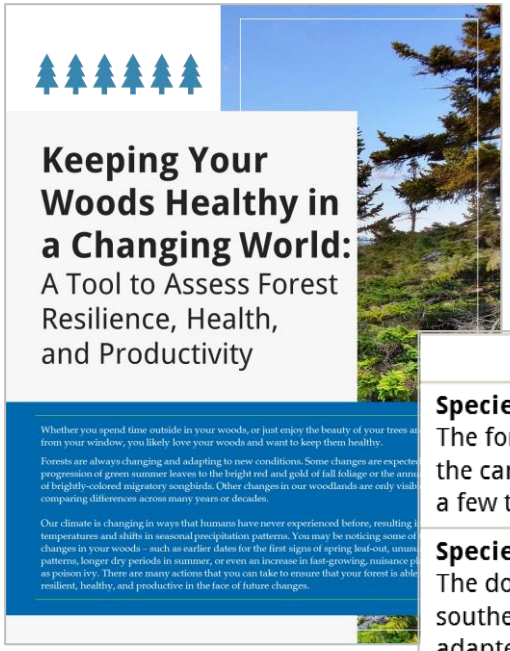
that could be adapted for your local area….

- Helping foresters talk to landowners: trainings, fact sheets, site visit sheets, etc.
- Expanding to all of MA and CT – stewardship plans

Access at: www.forestadaptation.org/massconn

Communication Resources

that could be adapted for your local area….



- Designed for woodland owners and foresters to identify potential risks (NY)
- Draft out for feedback…

	Higher Risk	←→	Lower Risk	
Species diversity: The forest has low species diversity, either in the canopy or throughout the forest. One or a few tree species are dominant.				Many tree species are present, without a single species being overly dominant.
Species suitability: The dominant tree species are near the southern extent of their species range or are adapted to cold conditions.				The dominant tree species can tolerate warmer, drier, or more variable conditions, and they are generally found farther south.
General tree health: Trees have poor growth form or have been damaged by insect pests or forest diseases.				Trees are healthy and free of disease. The trees generally have good growth and form.
Insects and Diseases: The forest is currently affected by insects or diseases. There are looming threats, such as nearby outbreaks.				There are no current or looming forest insect or disease issues and there is a diversity of non-host species.

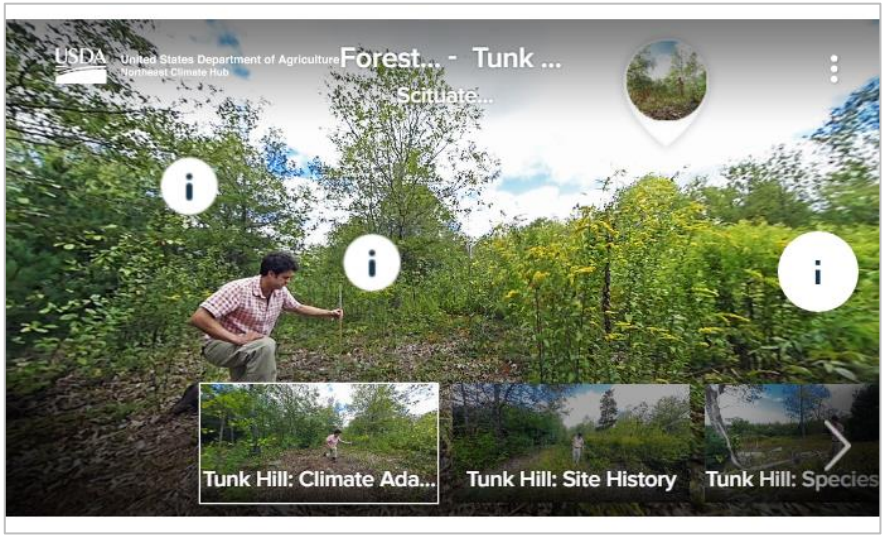
Access at: www.forestadaptation.org/NY-checklist

Communication Resources

that could be created for your local area….

Other ideas for telling your story…

Adaptive silviculture videos
www.forestadaptation.org/ascc-nh



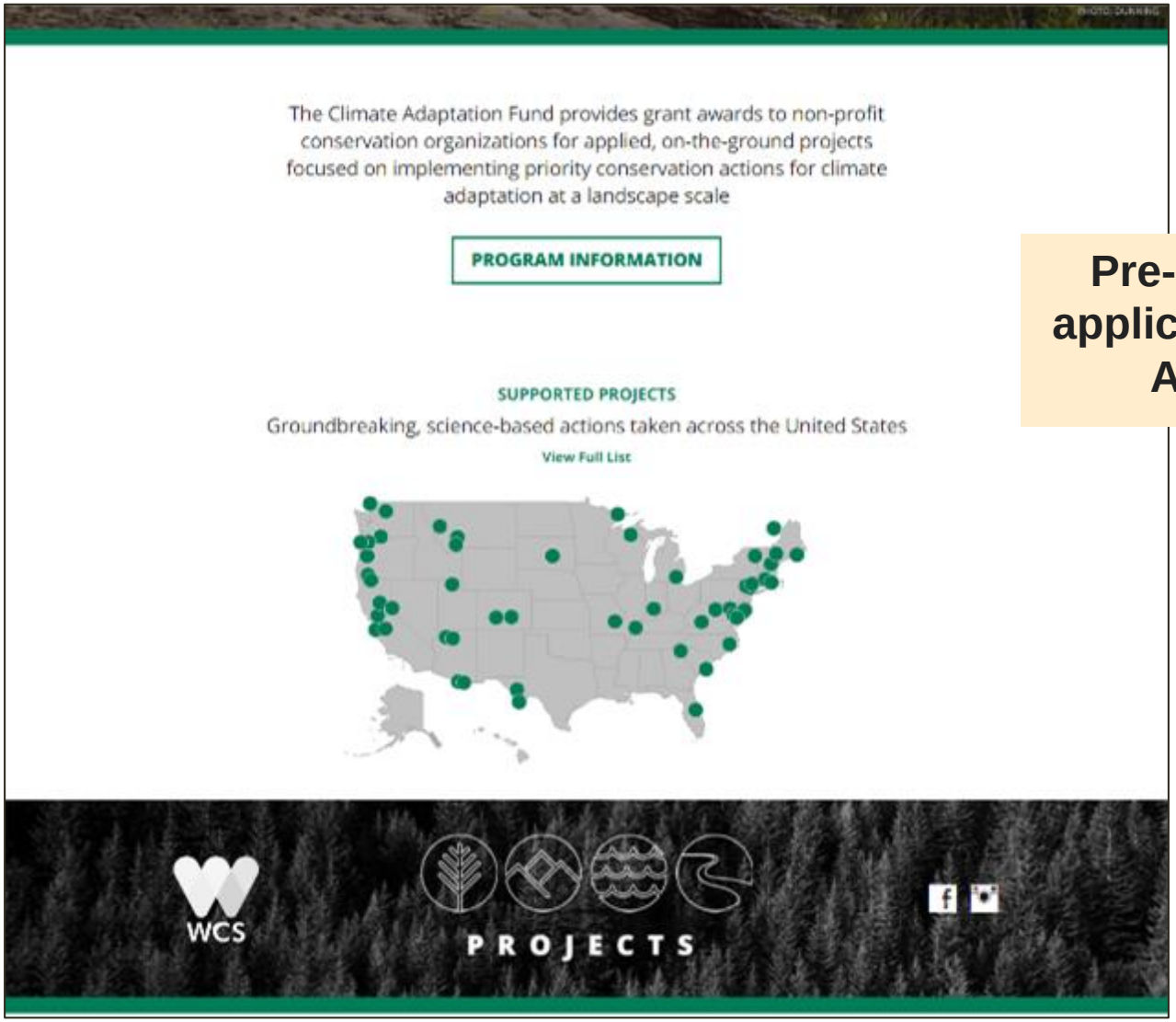
Virtual reality tour and videos:
www.forestadaptation.org/providence

Telling Your Adaptation Story

Telling your adaptation story effectively can help you…

- Gather support
  - Institutional
  - Financial
- Reach a larger audience
- Communicate key lessons

A Practical Example



Pre-proposal applications due April 6!

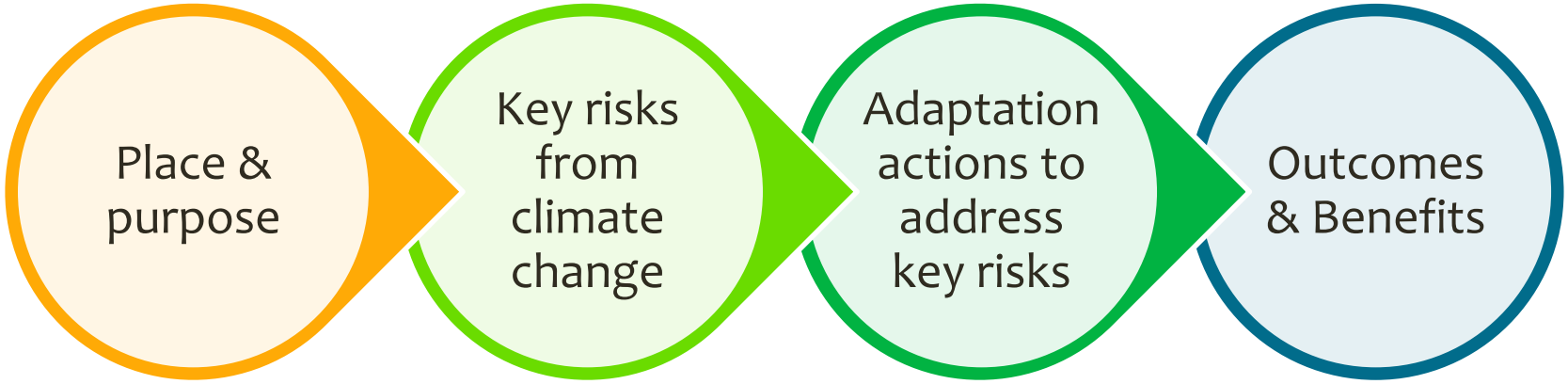
www.wcsclimateadaptationfund.org

What makes a good story?

Get used to doing a few key things when you're telling your adaptation story:

- Tailor the message to the audience
- Follow a logical sequence of ideas (connect the dots)
- Be clear about intentionality
- Include specific details
- Connect your actions to the bigger picture

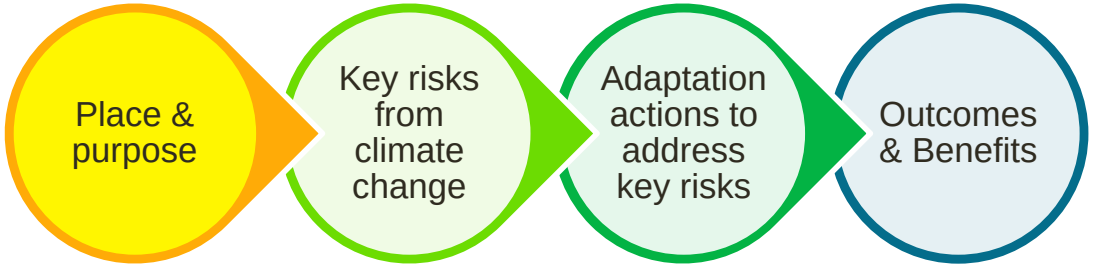
Example storyline



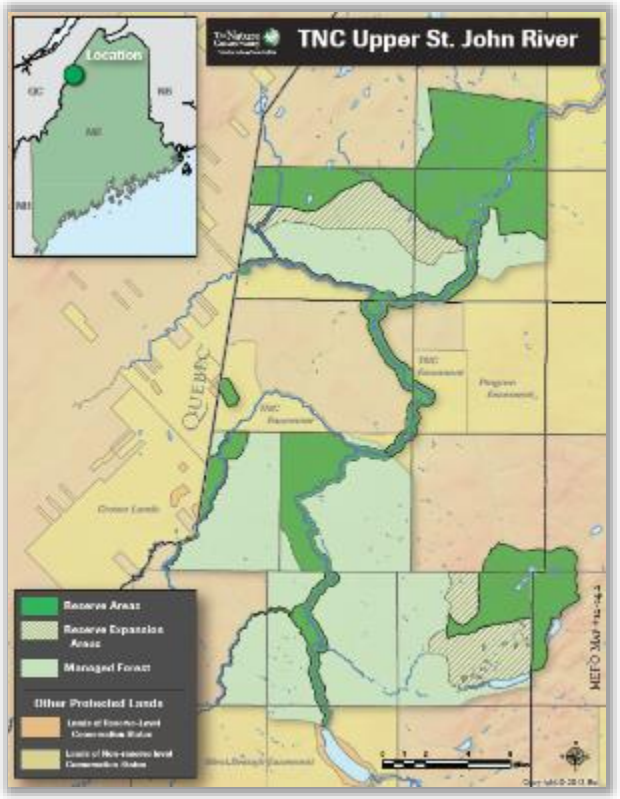
Feel familiar?

You've already done all of this thinking!

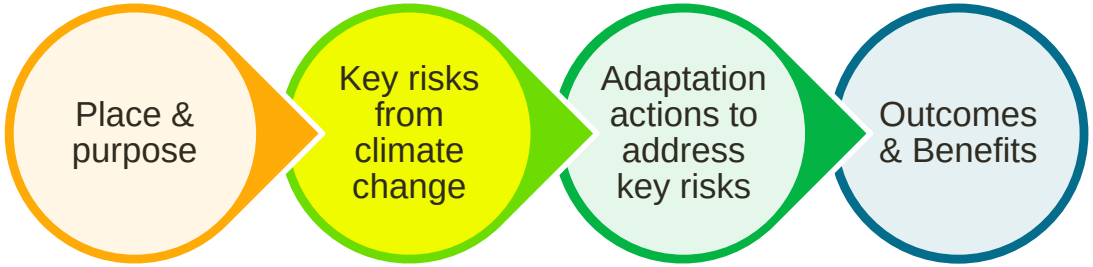
Example story: St. John Forest



- Former industrial lands in northern Maine (159,000 ac)
- Part of a larger landscape strategy to connect forestlands
- Protect a diversity of species and habitats
- Sustainable forestry
- Restore softwood component

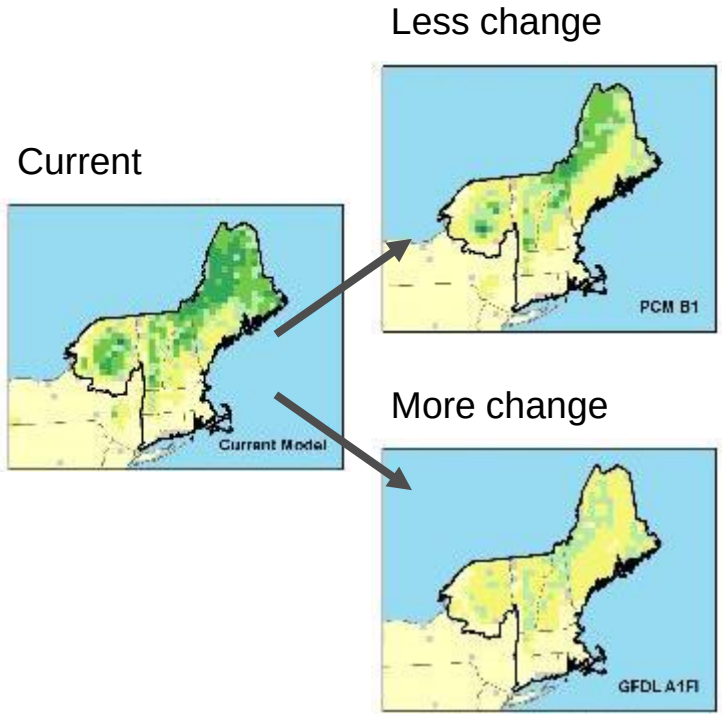


Example story: St. John Forest

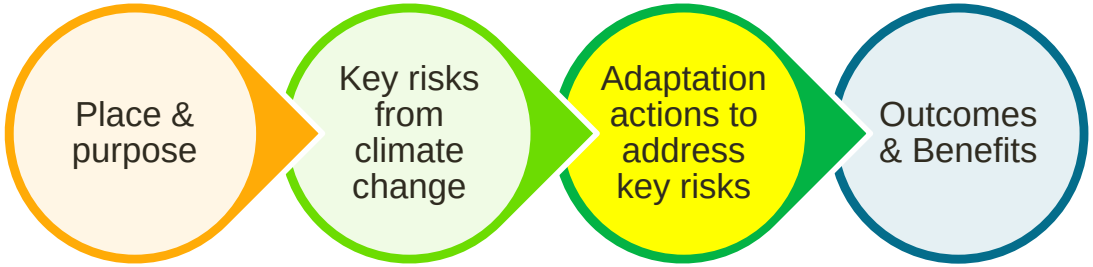


- Longer growing season (+)
- Increased precip, more winter rain, more storms (-)
- Potential for drier summers (-)
- **Softwoods species (spruce, balsam) already reduced and expected to decline further (-)**

Red Spruce Suitable Habitat

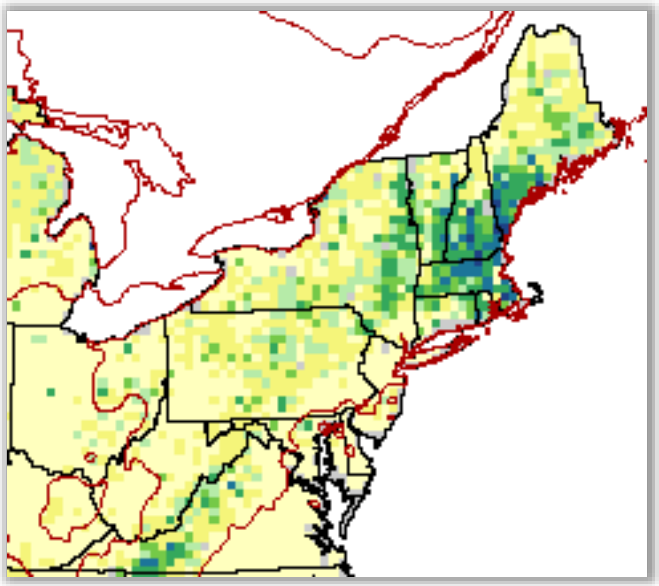


Example story: St. John Forest

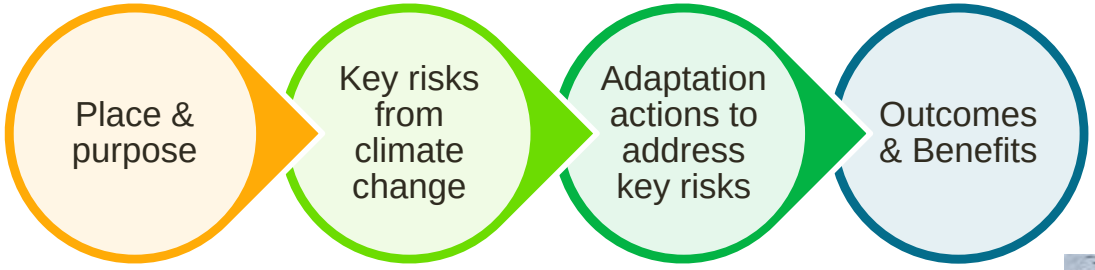


- Favor or restore native species that are expected to be adapted to future conditions
  - Plant red spruce, black spruce
- Establish or encourage new mixes of native species
  - Plant white pine

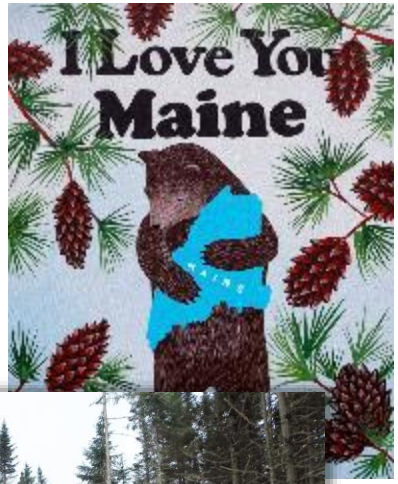
Current White Pine Abundance



Example story: St. John Forest



- Forest stands restored to having a native softwood component
- Improved mixedwood habitat for pine marten, bats, etc.
- Continued softwood timber
- Forests better able to adapt to climate change



Project or Place Name

Project Place & Purpose

- 1-2 bullets describing key context (forest type, condition)
- 1-2 bullets touching on most important management goals
- Keep font sizing at least 16 in all boxes!

Climate Change Impacts, Challenges, and Opportunities

- Top 2-3 climate change-related issues affecting your project area

Audience: State your audience here

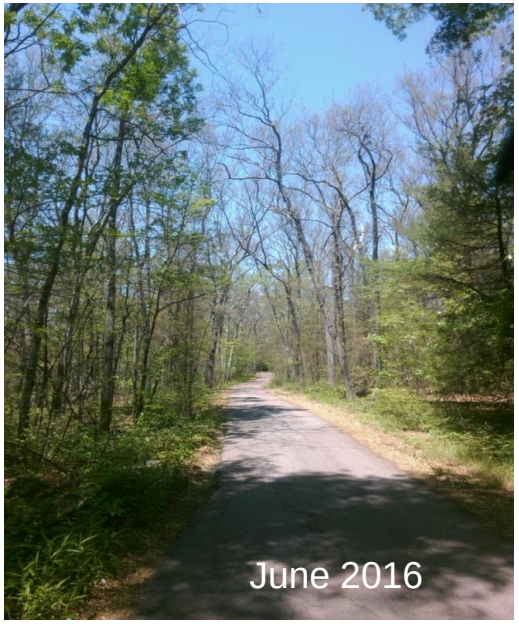
Project or Place Name

Actions	Outcomes
Describe an adaptation tactic or set of related tactics that you are considering for implementation.	Describe the intended outcome from these actions
Describe another adaptation tactic or set of related tactics…	Describe the intended outcome from these actions
Describe another adaptation tactic or set of related tactics… or delete this box for space if the others are long.	Describe the intended outcome from these actions

Example: Bristol Lot (Eastern Mass)

Project Place & Purpose

- Former agricultural land
- Increase the structural diversity of a mixed oak stand
- Sustain the regeneration of oak species through the use of prescribed fire.



Climate Change Impacts, Challenges, and Opportunities

- impacts by insect pests could become more problematic in central hardwood-pine forests under a warmer climate(-).
- Increased evapotranspiration and decreased soil moisture are likely to exacerbate summertime drying and contribute to drought-induced plant stress and decreases in productivity and survival(-).
- central hardwood-pine forests are projected to have similar or increased habitat, including black, chestnut, scarlet, and white oak and pignut and shagbark hickory(+).

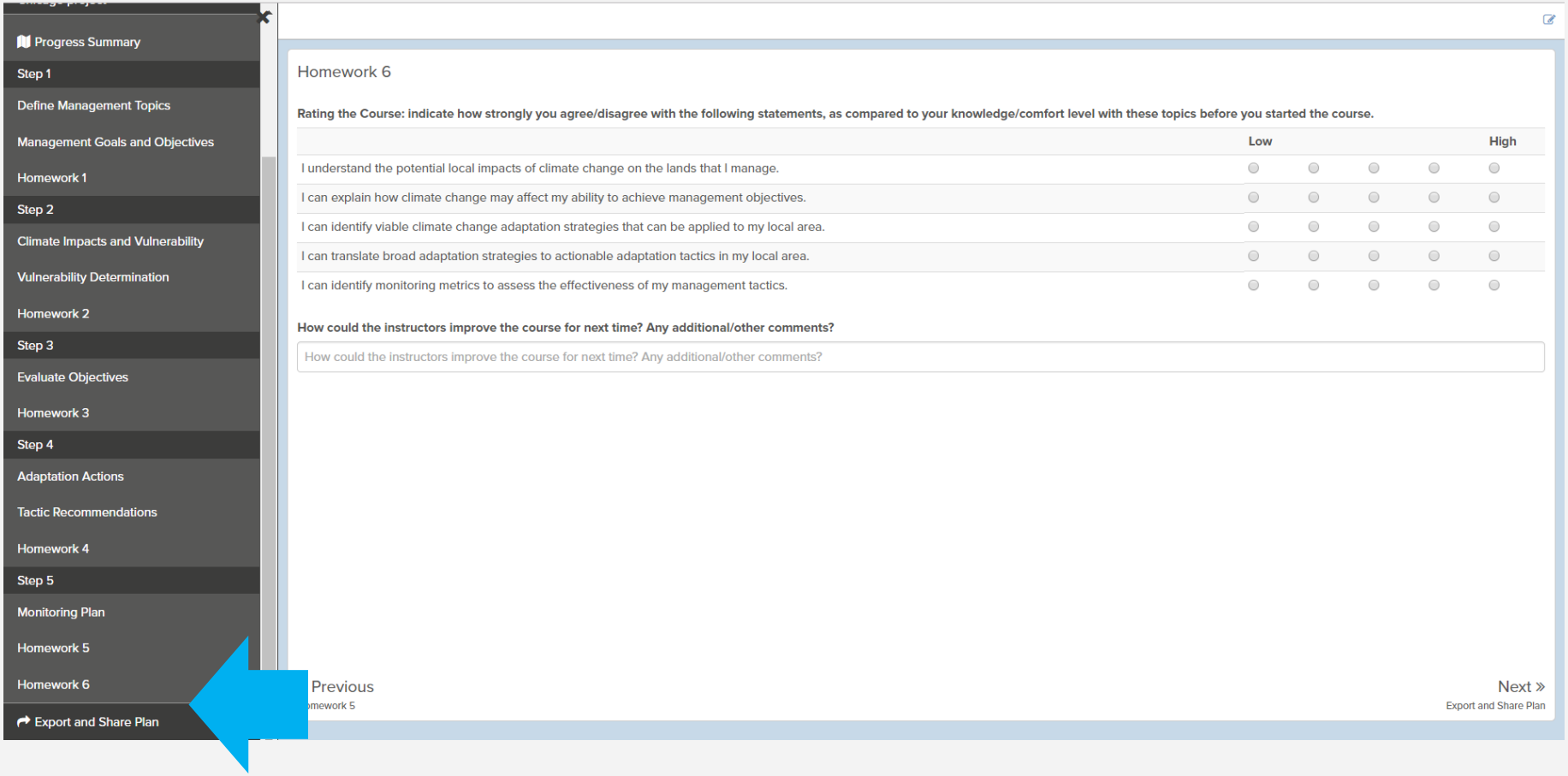
Audience: General public

(Demo page at: www.forestadaptation.org/Bristol)

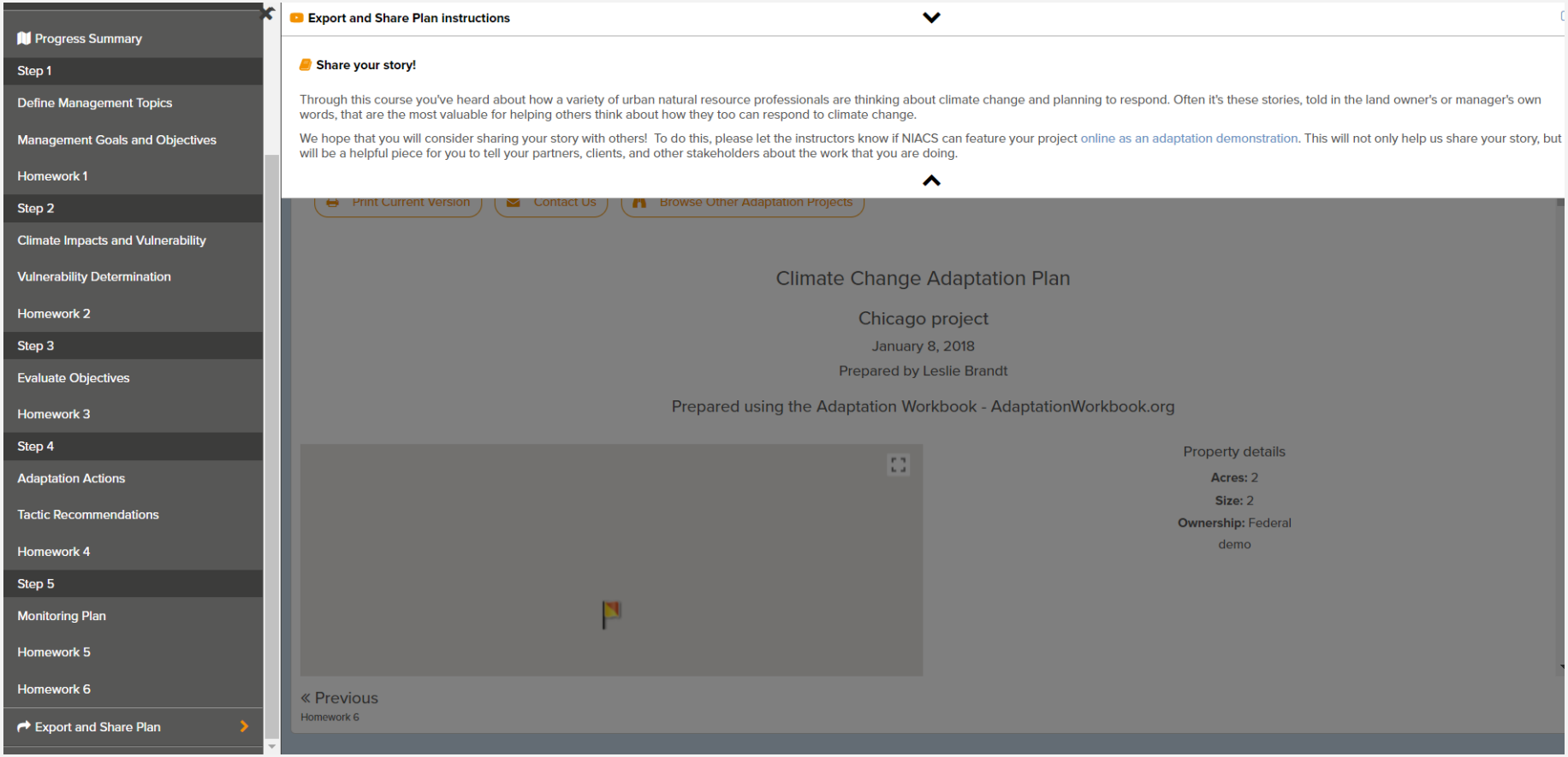
Example: Bristol Lot

Actions	Outcomes
Perform a silvicultural operation to remove crowded, damaged, or stressed trees in order to reduce competition for light, nutrients, and water. Create a mix of species, age classes, and stand structures to reduce the availability of host species for pests and pathogens.	High levels of diversity helps increase the ability of the stand to adapt to climate change. Gives residual trees more nutrients and light to increase its viability to withstand drought stress and damage for pests and disease.
Use prescribed fire to maintain oak regeneration and sustain a mixed oak ecosystem.	Expand our Rx burn program and demonstrate how prescribed fire can be a useful tool in ecosystem management.
Plant blight resistant American chestnut if impact from insect pests is severe.	Reestablish American chestnut back into the Central Hardwood forest.

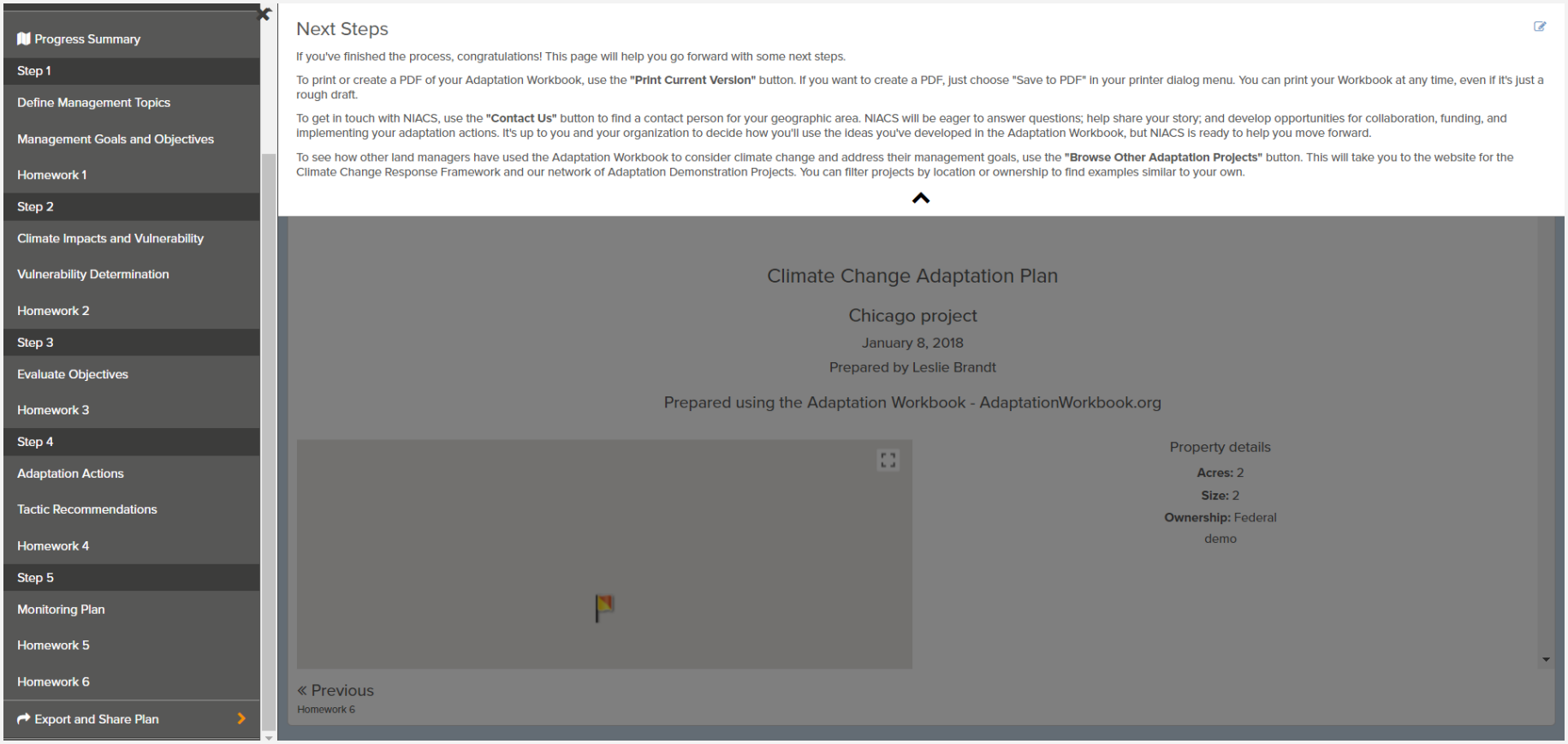
Homework


Progress Summary
Step 1
Define Management Topics
Management Goals and Objectives
Homework 1
Step 2
Climate Impacts and Vulnerability
Vulnerability Determination
Homework 2
Step 3
Evaluate Objectives
Homework 3
Step 4
Adaptation Actions
Tactic Recommendations
Homework 4
Step 5
Monitoring Plan
Homework 5
Homework 6
Export and Share Plan
Homework 6
Rating the Course: indicate how strongly you agree/disagree with the following statements, as compared to your knowledge/comfort level with these topics before you started the course.
Low
High
I understand the potential local impacts of climate change on the lands that I manage.
I can explain how climate change may affect my ability to achieve management objectives.
I can identify viable climate change adaptation strategies that can be applied to my local area.
I can translate broad adaptation strategies to actionable adaptation tactics in my local area.
I can identify monitoring metrics to assess the effectiveness of my management tactics.
How could the instructors improve the course for next time? Any additional/other comments?
How could the instructors improve the course for next time? Any additional/other comments?
Previous
Next »
Export and Share Plan

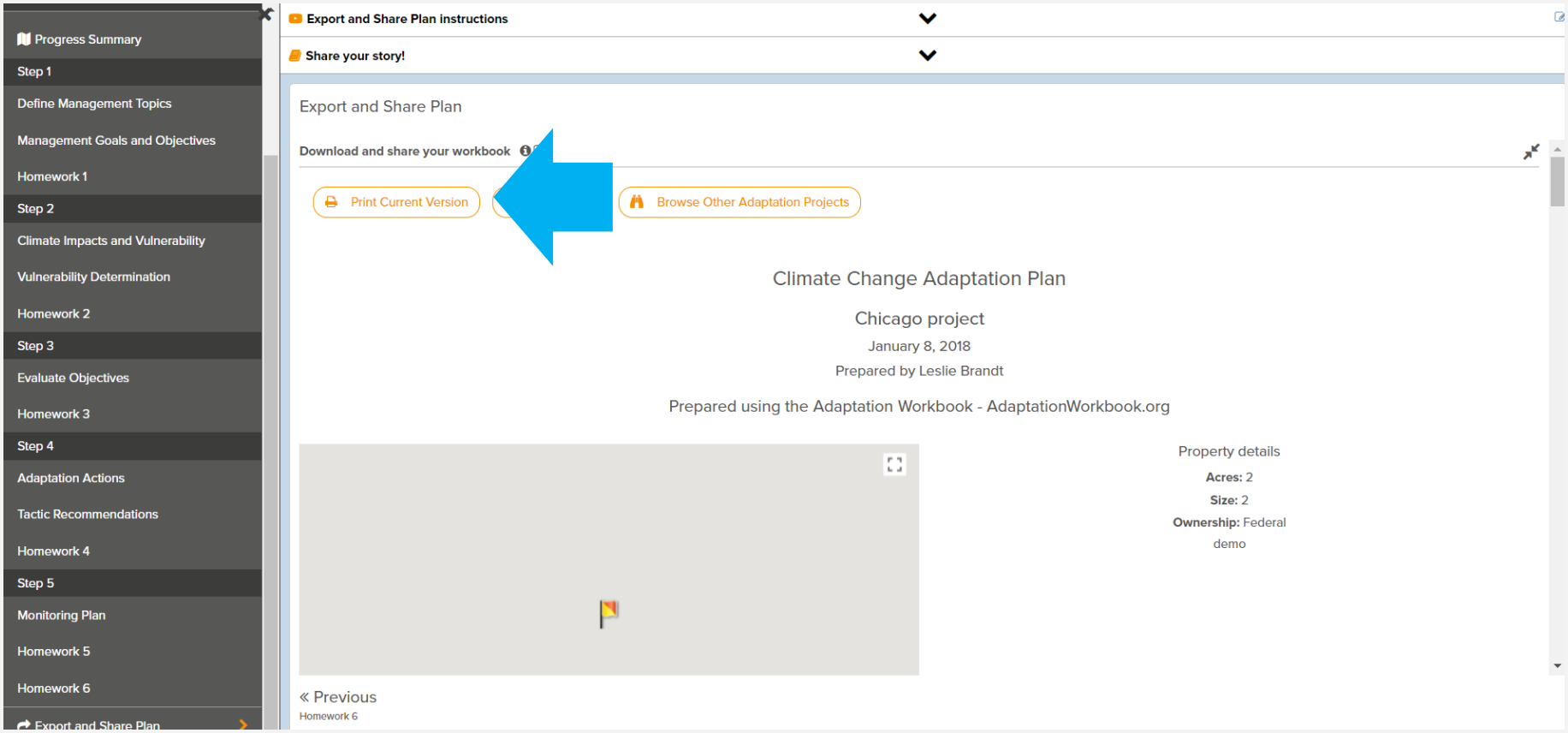
Landing Page



Export and Share Plan Instructions



Export and Share Plan



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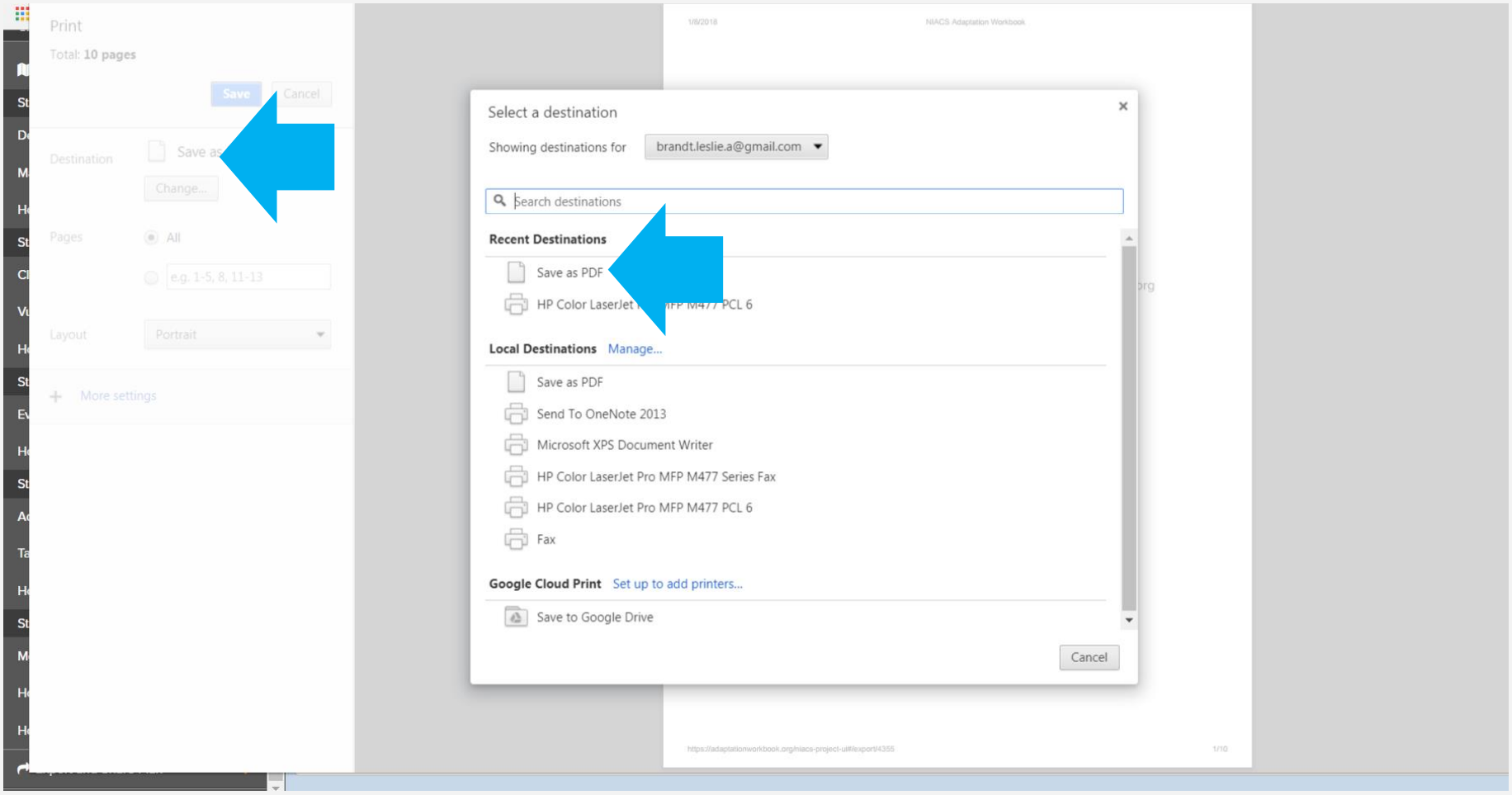
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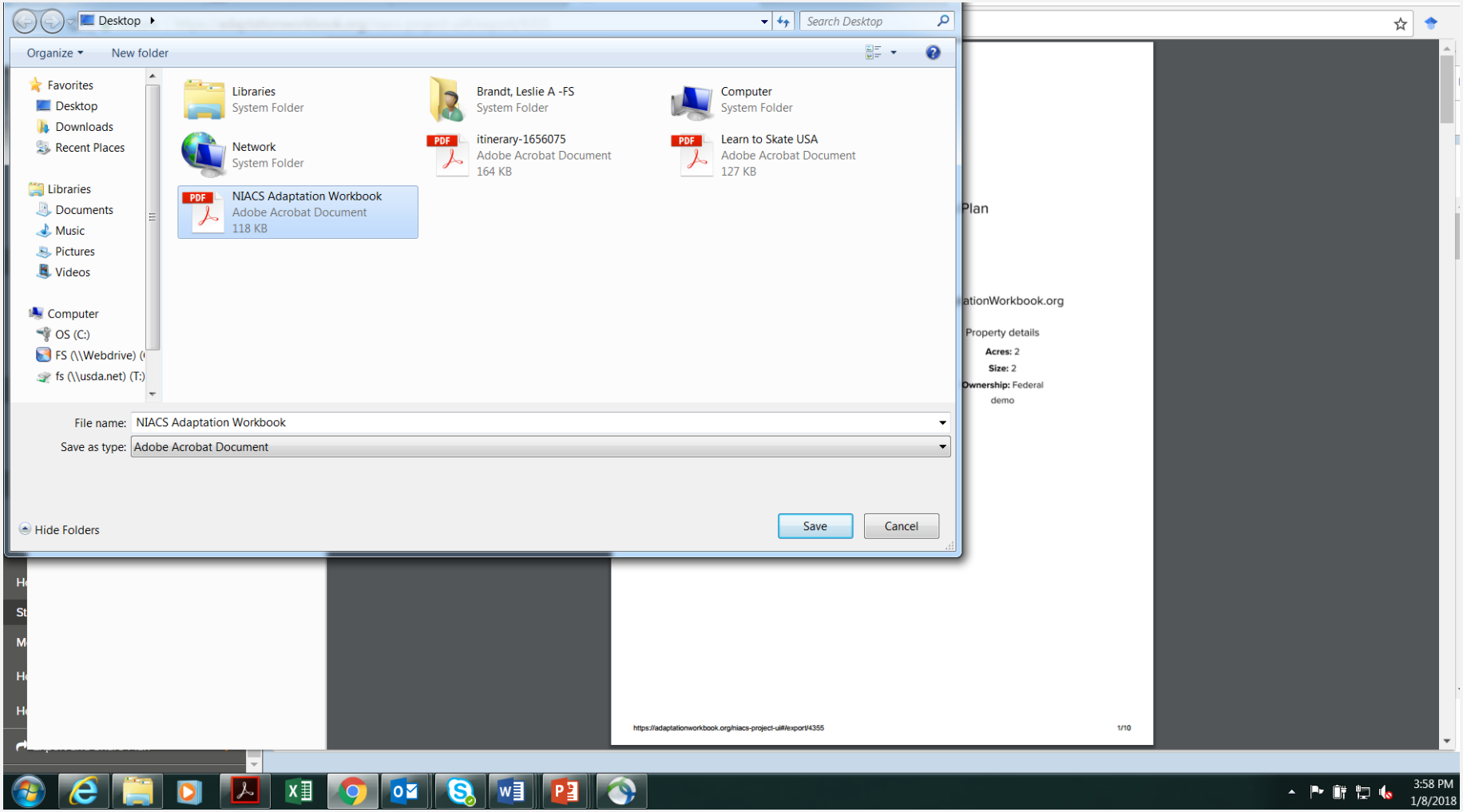
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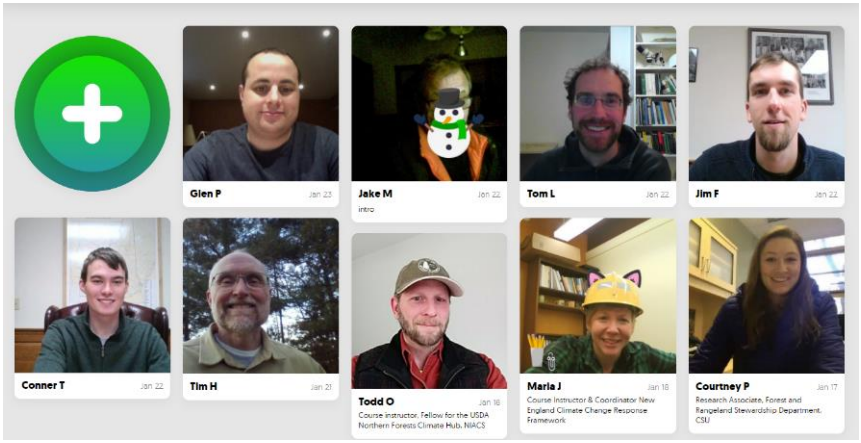
One More Flipgrid

Take a quick video and tell the class either of these things:

- One thing you learned from the course that you think is important for professionals to know.
- How you plan to use this information in your job.



https://flipgrid.com/80fdf9

Assignment

- Refine or complete steps of the workbook as needed
  - Try Output / Export PDF of your plan – examine and clean up prior Steps as desired
- Complete **Homework 6** at the end of the workbook
- **Flipgrid** response at: https://flipgrid.com/80fdf9
- Fill in your project's details in the **Adaptation Story Template Slides**
  - **Email slides to Maria by Tuesday, February 27!**
  - **Practice presenting in under 4 minutes!!**
- Come to the last session & share your adaptation story!

Thanks everyone!

Troubleshooting? Stay on the line.