



Northern Forests Climate Hub
U.S. DEPARTMENT OF AGRICULTURE

Informational Session: Climate Adaptation Planning & Practices Course

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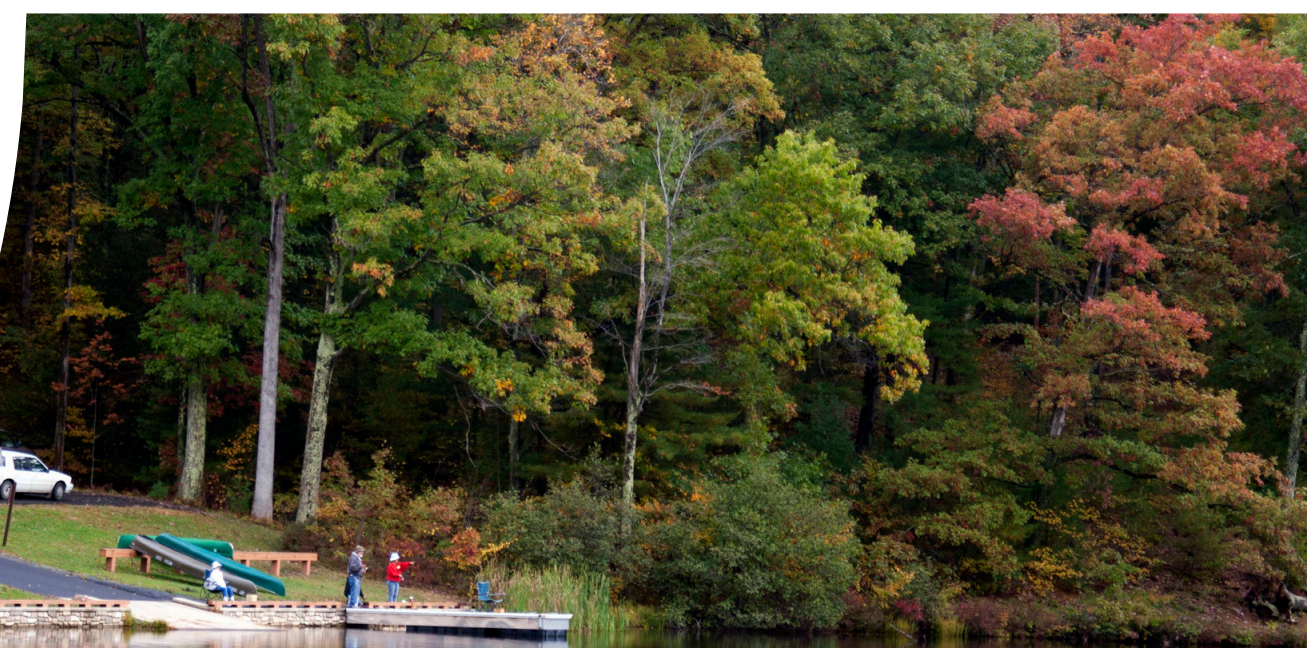


Photo Credit: PA DCNR



Michigan
Technological
University

Welcome!

This training will be led by a team of experienced instructors specializing in climate adaptation:



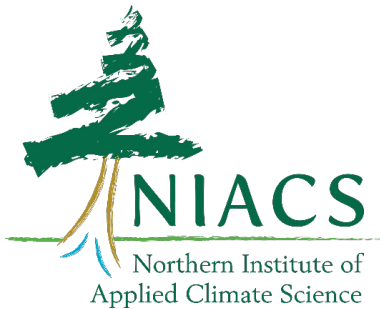
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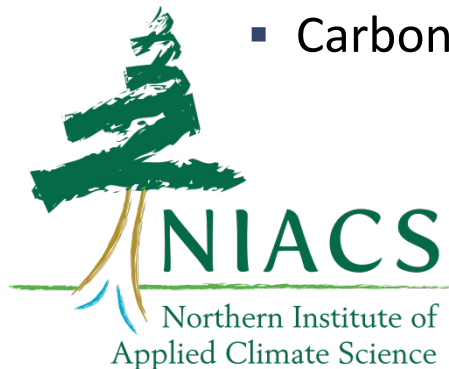
Learn more: www.forestadaptation.org/team

(aka NIACS)

Northern Institute of Applied Climate Science

We provide **practical** information, resources, and technical assistance related to forested ecosystems and climate change.

- Climate and carbon services
 - Climate impacts modeling
 - Vulnerability assessment
 - Climate adaptation
 - Carbon biogeochemistry
 - Carbon management



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



**Michigan
Technological
University**




**The
UNIVERSITY
of VERMONT**



UNIVERSITY OF MINNESOTA





A course designed to help professionals integrate climate change considerations into real-world natural resource projects.

Adaptation Planning & Practices Online Course

Through this training participants will be able to:

- Identify local climate change impacts, challenges, and opportunities.
- Develop specific actions to adapt to changing conditions.
- Create your own “climate-informed” project plan.
- Better communicate with stakeholders on the topic of climate change and climate adaptation.

Bonus: Access post-training support from NIACS staff during project planning and implementation

Adaptation is the adjustment of systems in preparation or in response to climate change.



Adaptation actions are designed to specifically address climate change impacts and vulnerabilities in order to meet goals and objectives

Adaptation is the adjustment of systems in preparation or in response to climate change.



Ecosystem-based adaptation activities that build on sustainable management, conservation, and restoration.

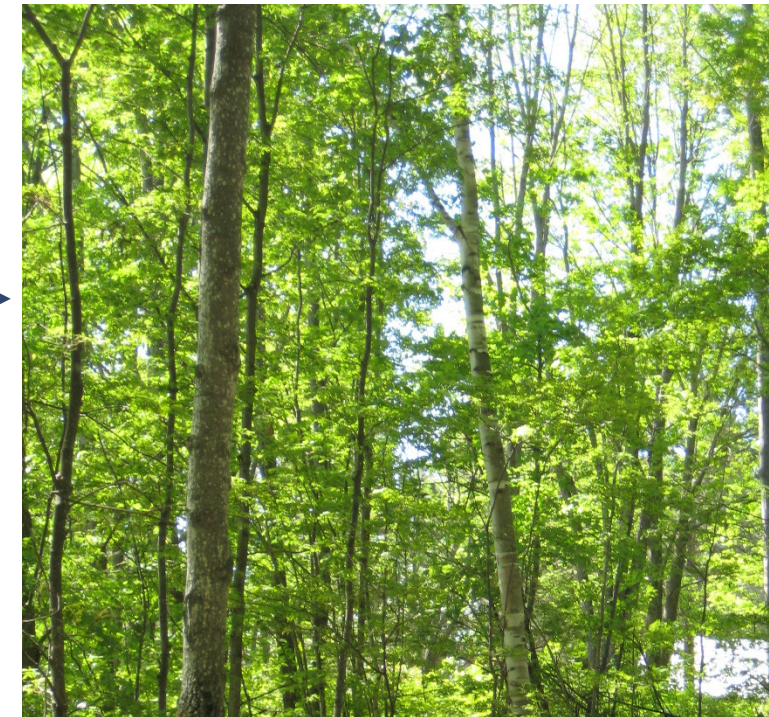
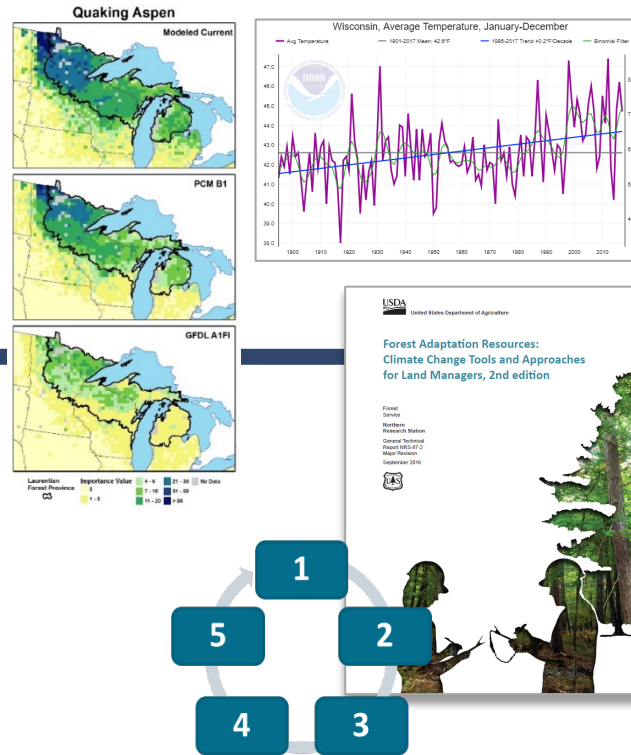
Adaptation is the adjustment of systems in preparation or in response to climate change.



- What do you **value**?
- How much **risk** are you willing to tolerate?

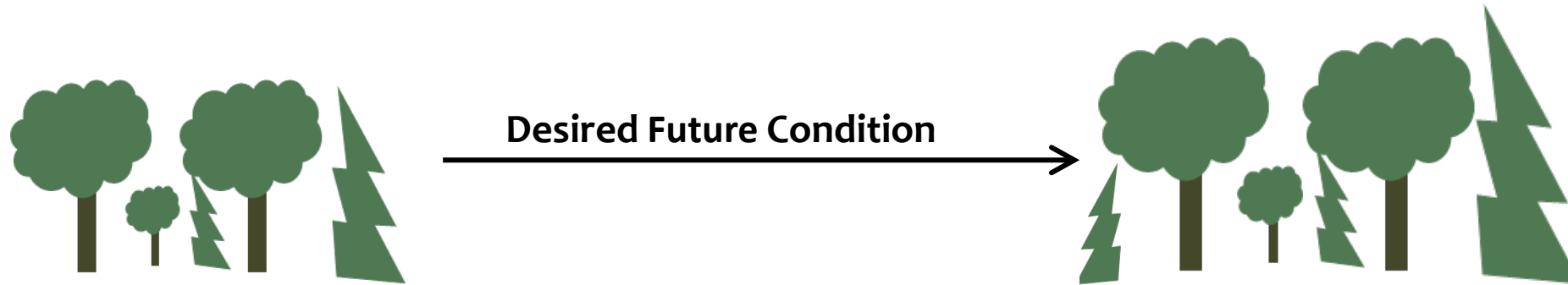
“Adaptation Planning”

When land managers intentionally consider climate change risk and adaptation in order to help meet their management goals. *(our philosophy)*

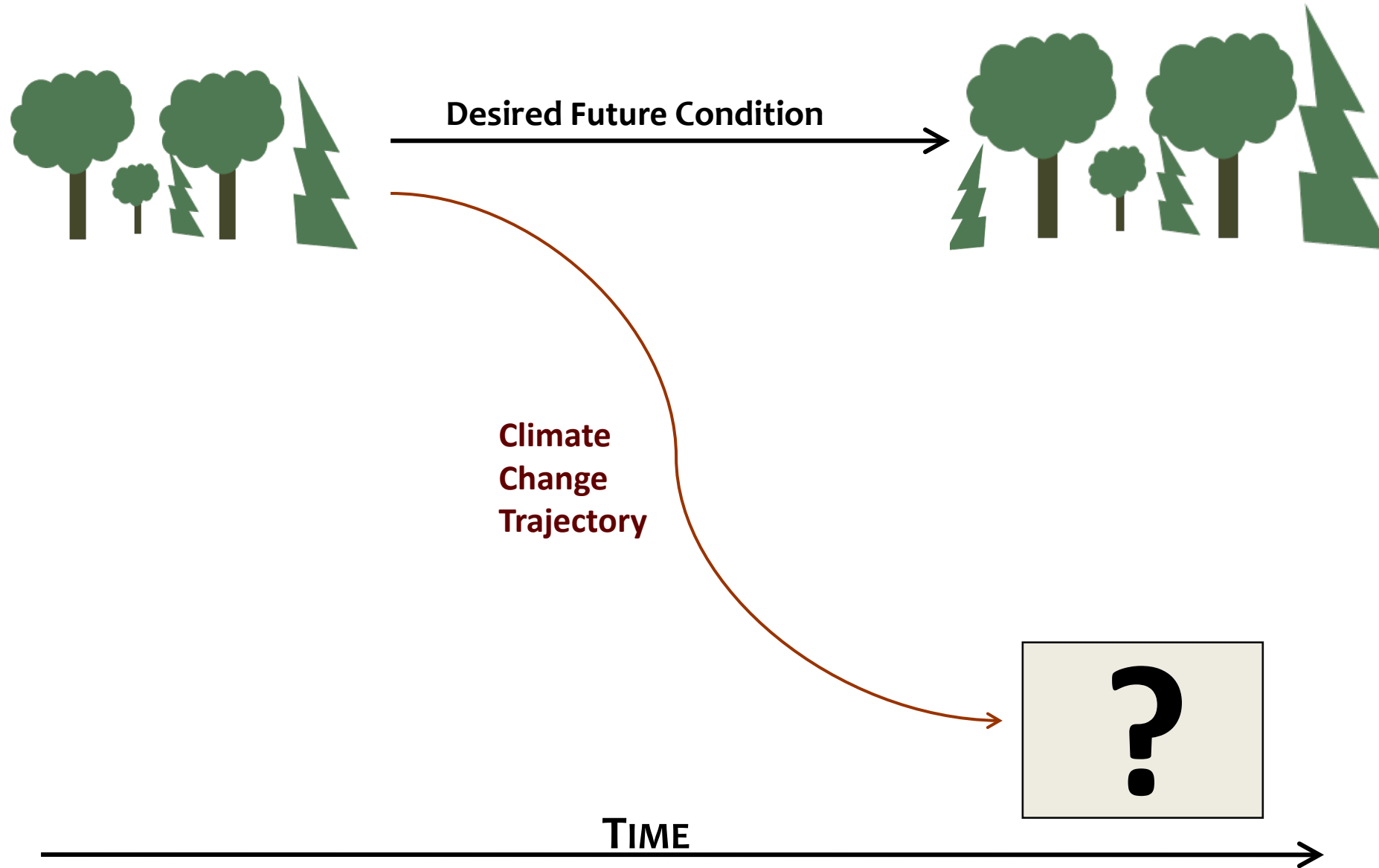


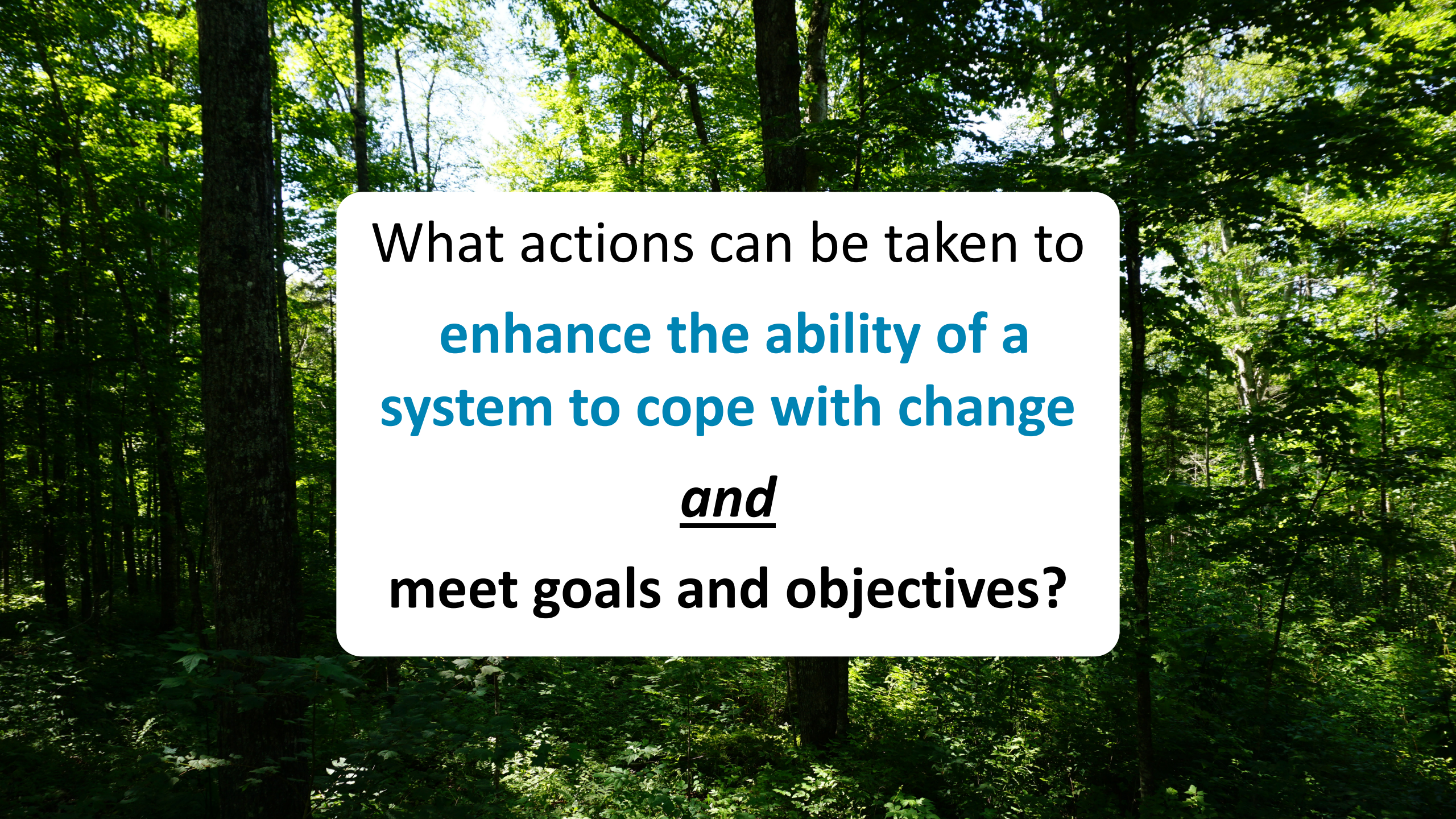
Forest Adaptation Resources and Adaptation Workbook
www.nrs.fs.fed.us/pubs/52760

Climate-Driven Changes



Climate-Driven Changes





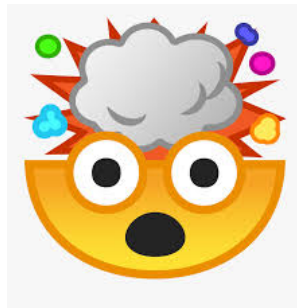
What actions can be taken to
**enhance the ability of a
system to cope with change**
and
meet goals and objectives?

Adaptation Planning

If you want a single “answer” for how to respond to climate change, it’s

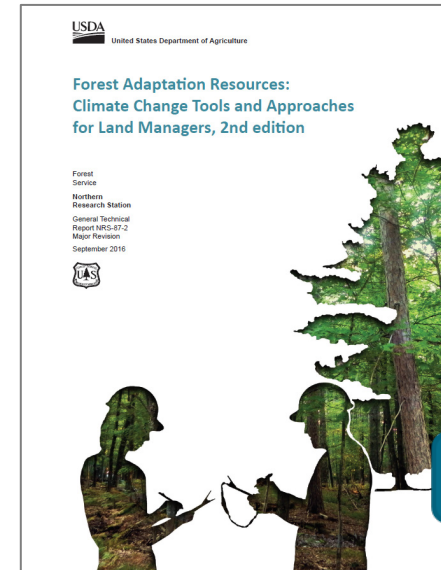
“It depends”

...ecosystem, objectives, climate pressure, risk tolerance, capacity...

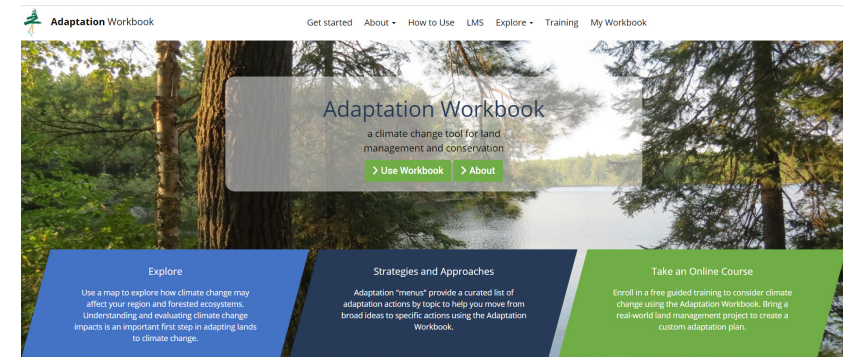
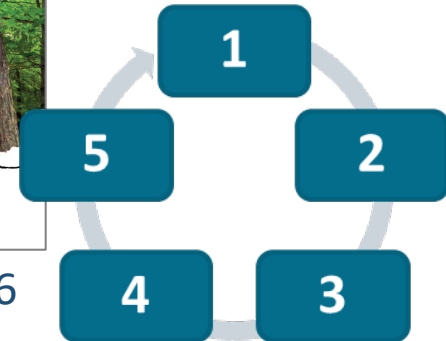


Climate Adaptation Workbook and Adaptation Resources

- Flexible workbook designed for a variety of land owners with diverse goals
- Works at project-level
- Centers around manager's expertise, and judgement
- Adaptation resources to help you create clear rationale for your actions by connecting them to broader adaptation ideas.
- Does not make recommendations

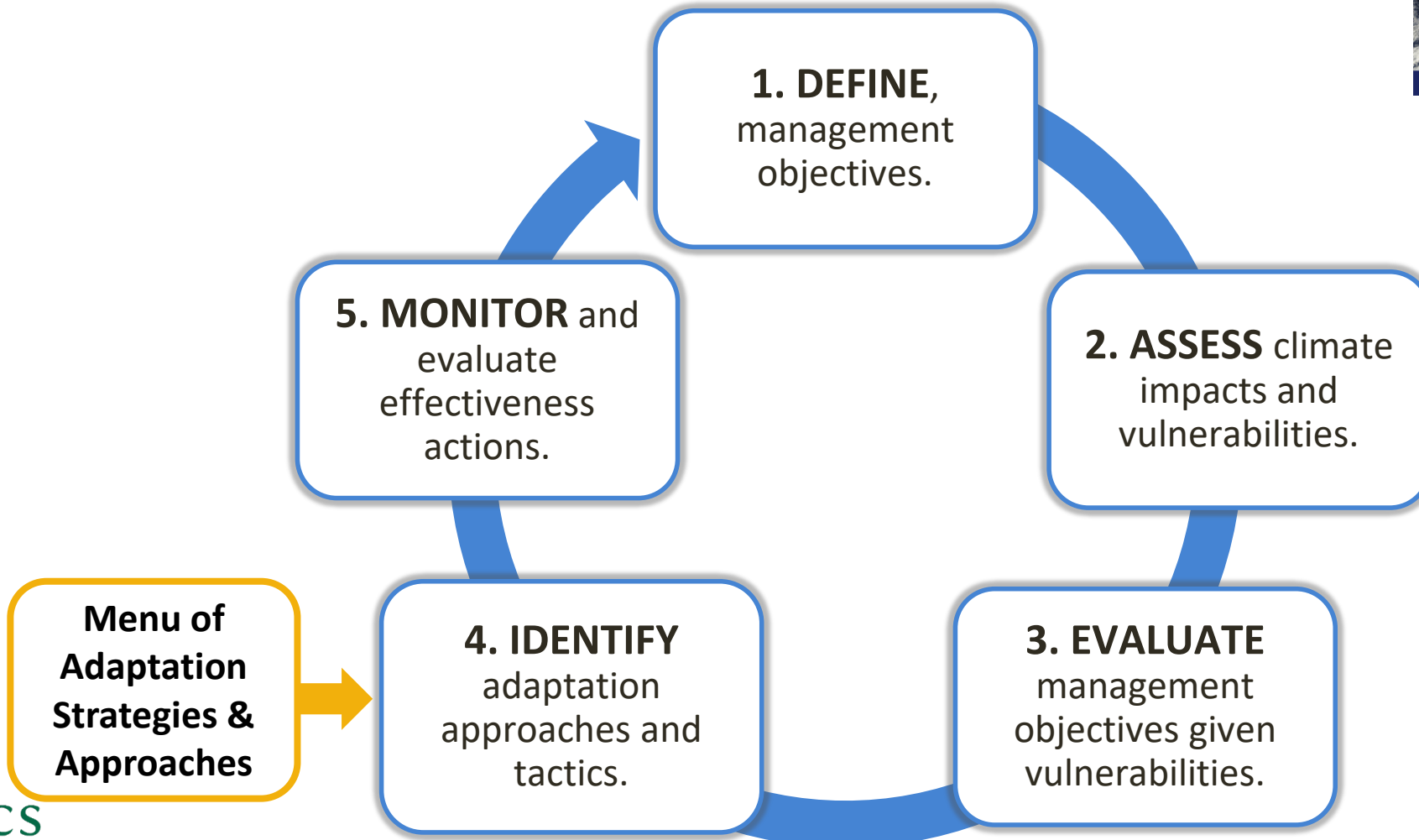


Swanston et al. 2016
(2nd edition)

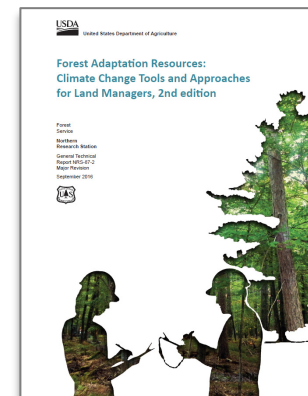


Adaptation Workbook: Decision-support tool

Provides “structured flexibility”



Vulnerability assessments, scientific literature, and other resources



Adaptation Planning and Practices Course

A course designed to help natural resource professionals learn how to integrate climate change into project level planning.

- **Outputs:**
 - A custom Adaptation Plan that is unique to a real-world project.
 - Primer on communicating climate change
 - Course participants receive synthesized lists of geographically relevant climate-related resources and tools.
- **Bonus:**
 - Access to adaptation professionals at NIACS
 - Receive continuing education credits!

Course Format and Expectations

Participate all 8 weeks

- Try to have at least one person from your project at each session
- Participate in Discussion sessions
- We require projects to check-in with instructors, be ready!
- **You will only receive CEUs for classes you attend**
- Certificate of completion

Lecture Sessions

- ~30 min to 1 hour, recorded
- Weekly every **Monday afternoon (2-3p ET)**
- January 25 – March 15
- **No session - Vacation week: Feb. 15**

Break-out Group Discussions

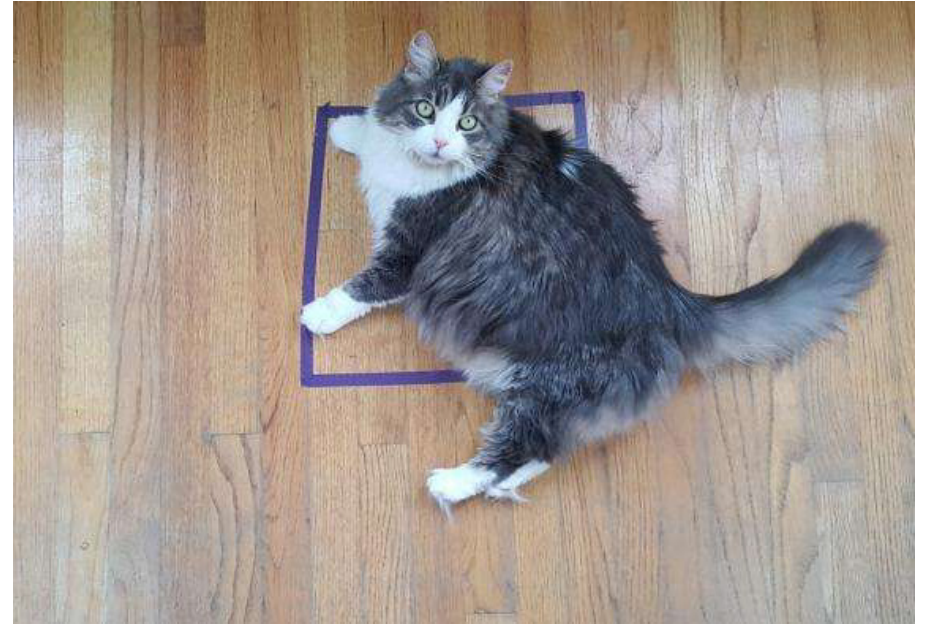
- 1 hour
- Every other week (*Tuesday or Wednesday*)

Meeting dates and times are listed in the Getting Stated Guide

Course Format and Expectations

Warning: This course is a time commitment!

- Participants are assigned Adaptation Workbook steps and reading assignments to complete between weekly lectures.
- Assignments are generally expected to take 2-4 hours to complete.
- We will guide you through the material during lecture - but it's up to you to complete your "homework".



Create space in your schedule for this course and assignments.

What will you work on in this course?

- Each participant must bring a project to the course
 - Small group work (4-5 max) works too!

Ask yourself:

- Where are you working?
- What are your management goals and objectives for this area?



Pick a path!

Choosing a project



- Choose a project that will help you learn the process.
- Keep it simple!
- Once you understand the process, you can always repeat the Adaptation Workbook process on other lands.

PROJECT IDEAS



Choose a project that you are currently working on.



Up and coming projects! Like your next stewardship plan.

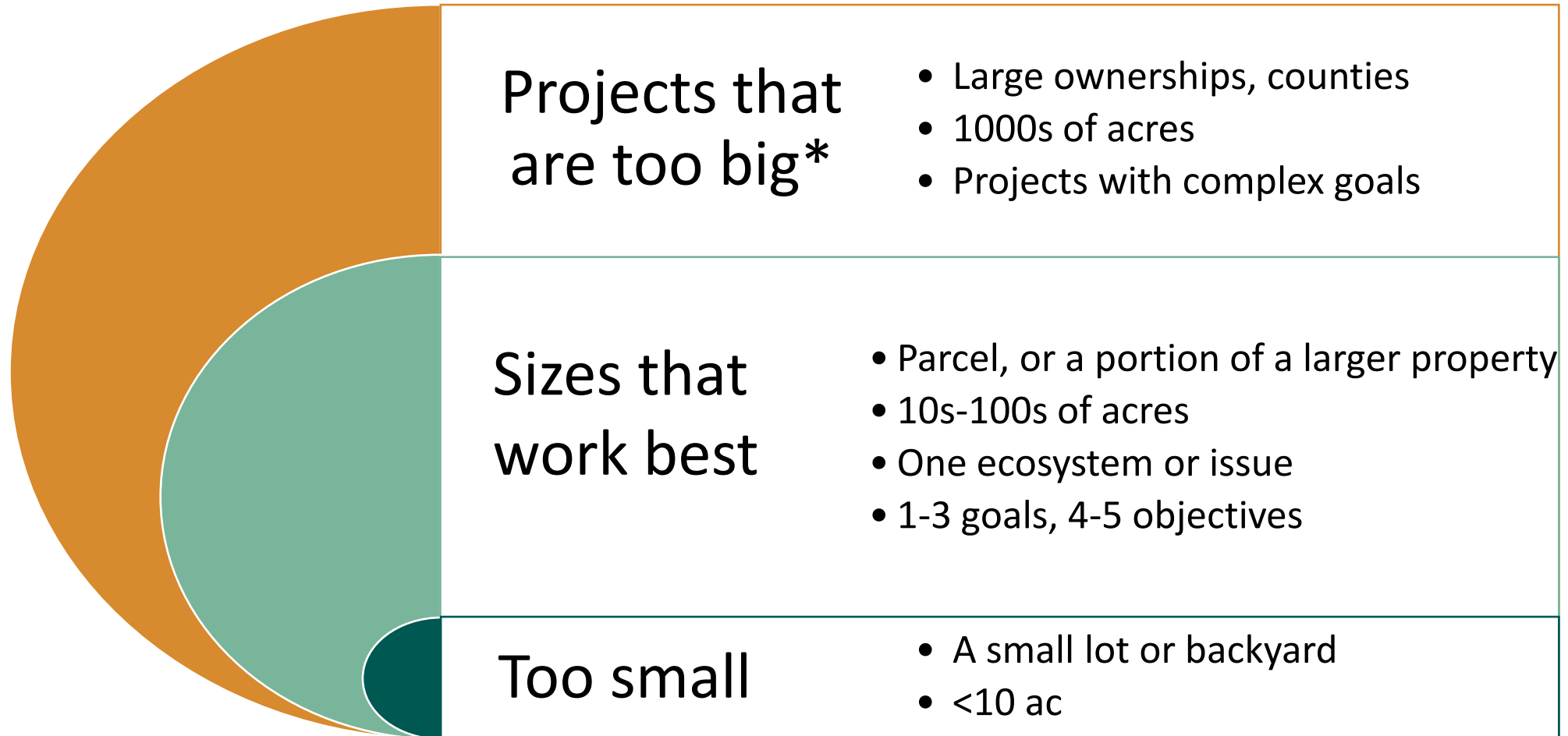


Tricky project that you want to spend focused time on



Still unsure? How about your nearest location?

Choosing a project: Scale suitable for course



*These projects are **too big to complete within this time available within this course**, but the Adaptation Workbook process can be applied at larger scales with more time and some additional assistance. Ask us!

Defining goals



Goals: Big picture - What you want/ What you're trying to do

Management goals are broad, general statements, usually not quantifiable, that express a desired state or process to be achieved.

Objectives: More detailed description of how you're going to achieve your goals

Objectives are concise statements that form the basis for further planning to achieve the identified goals.

******If possible, draw from existing management plans, or planning documents******

IDEAS

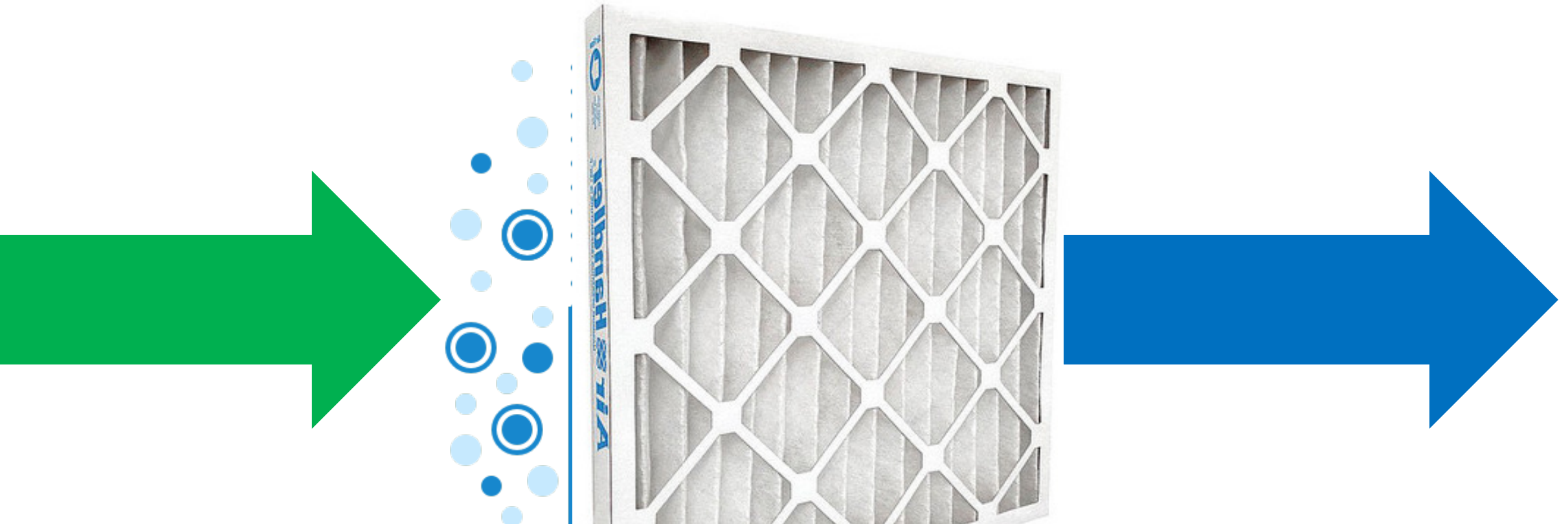
Goal: Increase stream connectivity along the Lazy River

Objective: Remove 3 structures that impede natural flows or create barriers to aquatic organisms in the next 15yrs

Goal: Reduce invasive species cover

Objective: Reduce area covered by invasive buckthorn from 10% to no more than 5% in the next 10yrs.

Adaptation Workbook = Climate Change Filter



Your goals/objectives do not need to include the terms 'climate change' or 'resilience'.

**Considering climate change in our planning should ensure ALL of our goals and objectives
are robust to climate change impacts.**

Things to Keep in mind

- Make the most of the course and use a project that you're already working on.
- Choose a project that ALREADY has defined goals and objectives.
- Goals/Objectives **DO NOT** need to be related to climate change (that comes later)
- Goals/objectives can be area-wide or specific to a particular topic or land use.
- Look into the future 10-20 years, or beyond...

Purpose of the course is to be intentional: Connect our actions to climate change impacts

Regardless of scale:

- Watershed
- Municipality
- Streamside buffer
- Tree planting



Considering **climate vulnerability** in **planning** may increase the effectiveness of mgmt. actions and sustain function for years to come.

ForestAdaptation.org/Adaptation-Workbook

Crosby Farm Regional Park



MISSISSIPPI PARK
CONNECTION
Discover your river

ASCC
Adaptive Silviculture for Climate Change

Saint Paul Parks and Recreation

Goals:

- Diverse, stratified forest canopy with natural regeneration
- Diverse habitat for wildlife (migratory flyway & pollinators)
- Bluff trail restoration, bluff slope erosion control
- Continued monitoring and removal of invasive vegetation

Climate Challenges

- Warmer temperatures, especially at night, in both summer and winter
- Drought stress in the summer
- More heavy rain events, flooding
- Shift of hardiness zones to 5 or 6 (similar climate to Omaha, NE)
- Extreme events, including polar vortex impacts – extreme low temps in winter
- Invasive species considerations



Crosby Farm Regional Park



MISSISSIPPI PARK
CONNECTION
Discover your river



Adaptive Silviculture for Climate Change



Some adaptation actions designed for this Ash-Elm Floodplain Forest:

- Prevent the introduction and establishment of invasive plant species and remove existing invasive species.
- **Incorporate genotypes of existing native species** that are adapted to warmer temperatures.
- **Incorporate a broader range of flood-adapted species** native to Minnesota and northern Iowa.
- **Promote a broad suite of species adapted to future conditions** (flood-tolerant and drought-tolerant) from seed zones farther south along the Mississippi River. Shift the tree species composition to be similar to areas in southern Iowa and Missouri.

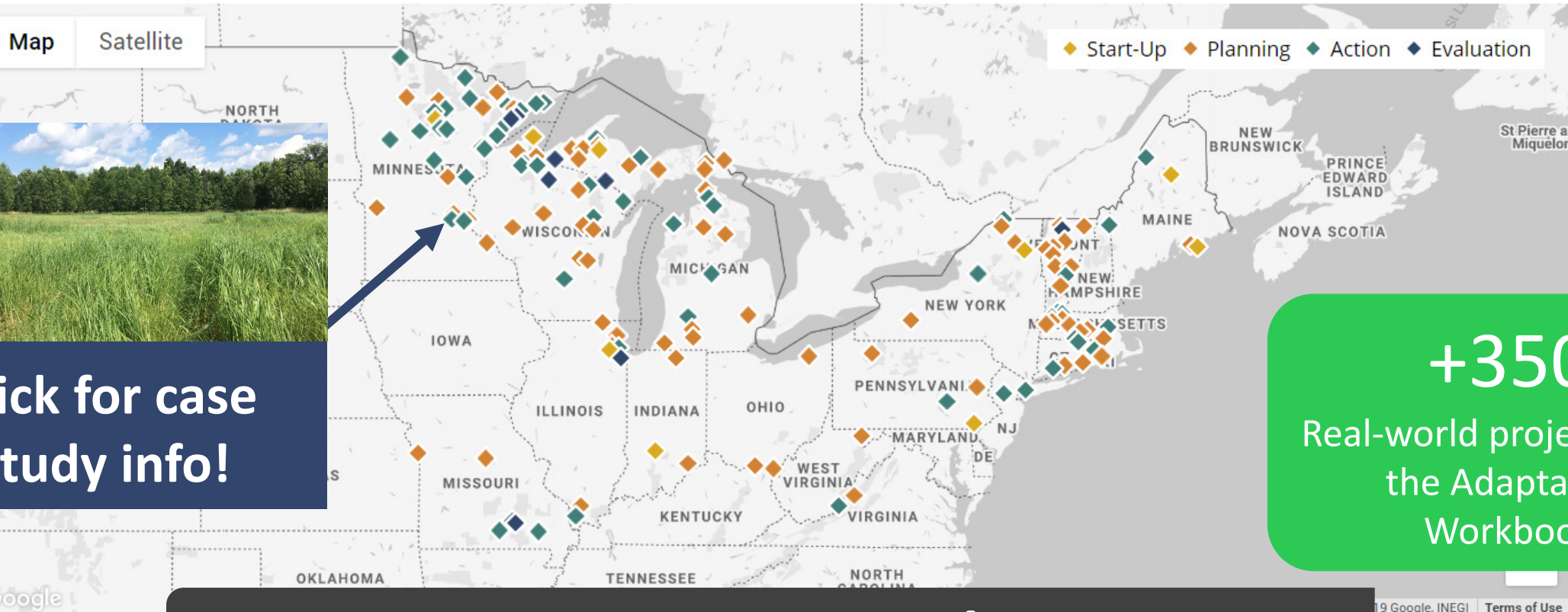


Photo Credits: Mary Hammes, MPC



Adaptation Demonstrations

Home » Adapt » Demonstrations



Click for case study info!

+350
Real-world projects using the Adaptation Workbook

[Forestadaptation.org/demos](https://forestadaptation.org/demos)

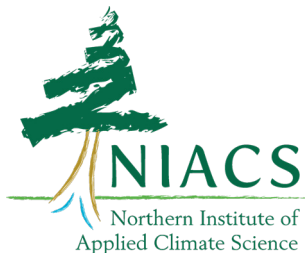
Search on the map by location or filter by keyword

Interested? Next Steps:

Register for the course:

forestadaptation.org/winter2021course

- Indicate which day of the week works best for you!
- **Complete Step 1**, email it back to us.
- Start exploring the Adaptation Workbook:
www.AdaptationWorkbook.org



Thank you!



Photo: PA DCNR



QUESTIONS?

Thank you!

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