You are signed up for the Forest Adaptation Planning and Practices for Recreation online course! We’re excited to have you.

This class will start on April 5 and finish May 26, 2021.

We look forward to helping you integrate climate change information into your real-world management project. Through this course, you’ll be able to:

- Identify local climate change impacts, challenges, and opportunities.
- Develop specific actions to adapt outdoor recreation management to changing conditions.
- Use the Adaptation Workbook to create their own “climate-informed” projects.
- Better communicate with stakeholders about key climate change impacts, challenges, and opportunities.
- Access post-training support from NIACS staff during project planning and implementation.

DATES: April 5 – May 26, 2021

Course website: www.forestadaptation.org/RecAPPo

The course runs over eight weeks, and includes:

- Weekly lectures on Monday at 2pm Eastern time to view live.
- Discussion sessions on Tuesdays at 11am Eastern or Wednesdays at 3pm Eastern (see schedule for dates). Four sessions are required, two are optional.

Virtual meeting room for all sessions (lecture, discussion):

https://michigantech.zoom.us/j/89771472093

This training is provided by these partners:

www.forestadaptation.org/RecAPPo
Course Time Commitment

To get the most out of this course, we expect you to fully participate. All participants are expected to attend the weekly lectures and four required discussion sessions (1-1.5 hours of material each week).

We realize that things come up from time to time, and most folks are experiencing a different routine with COVID-19. If you need to miss a session, please let us know ahead of time. If you anticipate needing to miss more than 2 sessions, you may want to defer participation for another time. For flexibility, all lectures will be recorded and posted to YouTube, and presentation slides will be made available after each lecture.

In addition to class time, there will be up to three hours of “homework” each week. Most of this time is what we estimate it may take you to thoughtfully develop your climate adaptation plan, and time to complete additional reading assignments. The amount of time you spend on homework depends on the complexity of your project and the level of detail you want to put into your adaptation plan.

Course Format

This course follows a five-step process to develop climate change adaptation projects using the online Adaptation Workbook (www.adaptationworkbook.org). The course format includes a lecture and a discussion session that provides a review of each step, followed by independent work time to complete each step of the adaptation workbook. The course consists of lectures (live or recorded), discussion (live), and homework (on your own). This is how the course is set up:

1. We will host a weekly lecture (30-60 minutes) on Mondays at 2pm Eastern that covers each step of the Adaptation Workbook. We encourage you to attend the live presentation, but sessions will be also recorded and posted online on our NIACS YouTube page.

2. We will host 1-hour discussion sessions for live attendance. Participants will be split up into breakout groups based on their availability. Breakout Group 1 will meet Tuesdays at 11am Eastern and Breakout Group 2 will meet Wednesdays at 3pm Eastern. We will email your session assignment and send calendar invitations.
   - Discussion session 1 (week of April 5) – Introduce project to small group.
   - Discussion session 2 (week of April 19) – Discuss project (recapping Step 2 and Step 3).
   - Discussion session 3 (week of May 17) – Discuss project (recapping Step 4 and Step 5).
• Discussion session 4 (week of May 24) – Share completed product.

3. We will also offer two optional sessions to cover topics that sometimes have greater interest. These sessions will be a mix of presentation and discussion.
   ▪ Tuesday April 13 from 11 eastern: Climate impacts on Recreation in the US.
   ▪ Wednesday April 28 from 11 eastern: In-depth on the Recreation Adaptation Menu

**Technology and Equipment Needed**

Since this is a virtual training, there are some technological requirements. At minimum, you will need high-speed internet access and a phone line. We would also like participants to use a webcam and headset that connects directly to their computer audio if possible. We have found the sound quality is best if you use your computer audio rather than a phone line. If connecting by phone, a land line will offer better quality than a cell phone. You may also need to disable pop-up blockers or firewalls for accessing the online workbook and webinar software. We are available to help troubleshoot potential issues prior to class.

**Accessibility**

If you have a disability and require certain accommodations to fully participate, please let us know before the beginning of the course. We will work with you to ensure your needs are met.

**Connection Details**

Please try to attend each weekly lecture and discussion session. The virtual meeting room is: [https://michigantech.zoom.us/j/89771472093](https://michigantech.zoom.us/j/89771472093). Please join the first session a bit early; your computer may need to install a small add-on before entering the room.

We will **record the lecture** and upload to our course website for those who cannot join the in-person lecture. Find recordings on our [NIACS YouTube page](https://michigantech.zoom.us/j/89771472093) and at [forestadaptation.org/RecAPPo](https://michigantech.zoom.us/j/89771472093).

For audio, please choose “Join with Computer Audio” when prompted. If it is not possible to use Computer Audio, please mute your speakers and dial the number below from a land line (preferred) or a mobile phone. (646) 876-9923; Passcode: 897 7147 2093.

We encourage you to turn on your webcam during these sessions!
Course Schedule

Course Preparation — Complete before the first session

To make sure you’re ready to dive into the course during our first session, we would like you to set up an account at [www.adaptationworkbook.org](http://www.adaptationworkbook.org) by March 29. Instructions for creating an account and linking it to the course are located on page 8 in this packet.

- **For group projects:** A single account should be shared among multiple users for group projects because it is not possible for multiple users to share a single project.

Session 1 — Week of April 5

April 5 lecture:
- Icebreaker and introductions
- Course objectives, instructors, and agenda
- Introduction to the Adaptation Workbook online tool
- Developing an adaptation project: Defining project goals and objectives
- What you need to know for Step 1

April 6 or 7 required discussion session:
- Introduce your project to a small group

Assignment 1 — Due Monday at 9:00 am before the next lecture.
- Read *Forest Adaptation Resources, 2nd edition*, in particular the *Introduction* (pgs. 1-9) and the *Adaptation Workbook* (Chapter 5, pgs. 74-89).
- Complete step 1 of the Adaptation Workbook (online at [www.adaptationworkbook.org/](http://www.adaptationworkbook.org/)).
- Complete the Homework section following Step 1.

Session 2 — Week of April 12

April 12 lecture:
- Considering climate change impacts and vulnerabilities in your projects
- Resources for understanding climate change impacts and climate vulnerability
- What you need to know for Step 2

April 13 11am Eastern optional lecture:
- Climate change impacts on recreation. Lectures by Natalie Chin (WI Sea Grant) and Anna Miller (Institute of Outdoor Recreation and Tourism, Utah State University).

Assignment 2 — Due Monday at 9:00 am before the next lecture.
- Set aside 3-4 hours for completion since this is a more involved step.
- Complete Step 2 of the Adaptation Workbook: Assess climate impacts and vulnerabilities.
- Complete Homework 2 at the end of Step 2.
- **Review regional climate impacts** by reading a climate report for your specific geographic area.
  - All regional ecosystem vulnerability assessments authored by NIACS are [here](http://www.adaptationworkbook.org/).
  - Urban forest vulnerability ([video](http://www.adaptationworkbook.org/)), Chicago Wilderness Ecosystem Vulnerability ([report](http://www.adaptationworkbook.org/))
  - Central Appalachians (Maryland, Ohio, West Virginia) ([report](http://www.adaptationworkbook.org/), [summaries](http://www.adaptationworkbook.org/), [video](http://www.adaptationworkbook.org/))
  - Central Hardwoods (Illinois, Indiana, Missouri) ([report](http://www.adaptationworkbook.org/), [summaries](http://www.adaptationworkbook.org/))
  - Northwoods (Michigan, Minnesota, Wisconsin) ([reports](http://www.adaptationworkbook.org/), [video](http://www.adaptationworkbook.org/))
  - New England and Northern New York regions ([report](http://www.adaptationworkbook.org/), [storymap](http://www.adaptationworkbook.org/), [video](http://www.adaptationworkbook.org/))
  - Mid-Atlantic (Delaware, Maryland, New Jersey, New York, Pennsylvania) ([report](http://www.adaptationworkbook.org/), [video](http://www.adaptationworkbook.org/))
  - Canada (eastern provinces)
  - California
- Intermountain West, Colorado, and Northern Rockies
- Pacific Northwest and Alaska
- Southwest (Arizona and New Mexico)
- Southeast

- Explore additional information on **impacts of climate change to recreation:**
  - Climate Change Resource Center Recreation [topic page](https://recreationtopicpage.org) (check out recommended readings and related links).

*This week, please check-in with instructors* — Each project will have a meeting with course instructors (by phone, or email)

### Session 3 — Week of April 19

April 19 lecture:
- Identifying management challenges and opportunities for your project.
- Re-considering and revising management goals/objectives in light of climate challenges.
- What you need to know for Step 3.

April 20 or 21 **required discussion session**:
- Recap Step 2 - Climate Change Impacts.

**Assignment 3 — Due Monday at 9:00 am before the next lecture.**
- Set aside 2-4 hours for completion, as time will vary based upon your project.
- Complete Step 3 of the Adaptation Workbook: Evaluate objectives considering climate impacts.
- Complete Homework 3 at the end of Step 3.

### Session 4 — Week of April 26

April 26 lecture:
- Adaptation concepts: resisting change, enhancing resilience, and facilitating transitions.
- Developing specific actions for climate-change adaptation.
- What you need to know for Step 4.

April 28 3pm Eastern **optional lecture**:
- In-depth on the Recreation Adaptation Menu.

**Assignment 4 — Due Monday at 9:00 am before the next lecture.**
- Set aside 3-4 hours for completion since this is a more involved step.
- Review the list of Adaptation Strategies and Approaches for recreation.
- Complete Step 4 of the Adaptation Workbook: Identify adaptation approaches and tactics.
- Complete Homework 4 at the end of Step 4.

### Break (Week of May 3) — No session

*Use extra time to catch up on projects and have office hours with instructors.*
Session 5 — Week of May 10

May 10 lecture:
- Tools for measuring effectiveness of implemented adaptation actions
- Capitalizing on existing data, inventory, or monitoring processes/partnerships.
- What you need to know for Step 5.

NO DISCUSSION SESSION

Assignment 5 – Due Monday at 9:00 am before the next lecture.
- Set aside 2-3 hours for completion. Time will vary based upon your project.
- Complete Step 5 of the Adaptation Workbook: Monitor effectiveness of implemented actions.
- Complete Homework 5 at the end of Step 5.
- Optional reading: Federal Outdoor Recreation Trends from the BEA

This week, please check-in with instructors – Each project will have a meeting with course instructors (by phone, or email) to discuss Step 4 adaptation actions.

Session 6 — Week of May 17

May 17 lecture:
- Completing the Adaptation Workbook
- Tips for talking about climate change with colleagues, partners, and clients

May 18 or 19 required discussion session:
- Recapping steps 4 and 5

Assignment 6 — Due Monday at 9:00 am before the next lecture.
- Set aside 3-4 hours for completion of this assignment, or potentially more if you have to return to some previous steps.
- Finish up any loose ends in the Adaptation Workbook.
- Complete Homework 6 within the Adaptation Workbook.
- Summarize your project to share with the course participants as well as your colleagues and partners in a PowerPoint presentation (templates will be provided).
- Optional reading on climate change communication:
  - Communicating climate change adaptation: A practical guide to values-based communication

Session 7 — Week of May 24

May 24, 25, and 26 lecture/discussion sessions:
- Select a time to present and share your project!
- Participant adaptation project presentations (5 minute presentations).
- Next steps for moving toward implementation.
- How we can help you in the future.
- Course evaluations.

What if the scheduled times don’t work for me?
Reach out to one of the instructors to learn more about other options. This may include attending a future in-person training or receiving individualized technical assistance on your project.
Instructors

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

**Leslie Brandt**, Climate Change Specialist, USDA Forest Service and Northern Institute of Applied Climate Science

Leslie has been leading efforts on climate change vulnerability assessments and adaptation for over 11 years. She is a lead author of the Adaptation Strategies and Approaches Menu for Outdoor Recreation. Other projects include an adaptive silviculture for climate change project in the Mississippi National River and Recreation Area and a vulnerability assessment for recreation on the Mark Twain National Forest.

**Kristen Schmitt**, Climate Change Outreach Specialist, Michigan Technological University and Northern Institute of Applied Climate Science

Kristen leads work on adaptation across the United States, with a special focus on Western States and coastal areas. She has led virtual and in-person trainings for natural resource managers and developed content on the Climate Change Resource Center website over her 11-year tenure with NIACS. Her work with the San Bernardino National Forest was one of the first projects to test the Outdoor Recreation Menu.

**Danielle Shannon**, Climate Change Outreach Specialist, Michigan Technological University and Northern Institute of Applied Climate Science

In her 9 years at NIACS, Danielle has helped integrate considerations of watershed management and hydrology into climate change adaptation. She led the creation of Adaptation Strategies and Approaches for Forested Watersheds that was funded through the Great Lakes Restoration Initiative. Danielle is also co-leading the recreation vulnerability assessment for the Mark Twain National Forest and is the coordinator for the USDA Northern Forests Climate Hub.

**Courtney Peterson**, Northern Institute of Applied Climate Science & Colorado State University

Courtney is a Research Associate in the Forest and Rangeland Stewardship Department at Colorado State University. One of her major roles is serving as the Adaptive Silviculture for Climate Change (ASCC) Coordinator, focusing on disseminating ASCC project findings and translating them into outreach and training opportunities with land managers and scientists working to manage forests for climate change adaptation.

**Natalie Chin**, Climate and Tourism Outreach Specialist, Wisconsin Sea Grant

Natalie joined Wisconsin Sea Grant’s Lake Superior Field Office in August 2019. Her work is focused on creating actionable science for stakeholders across the Great Lakes, especially related to climate change and tourism. She is also interested in data science projects that can create useful tools for decision-makers.
Getting started with the Adaptation Workbook

Please set up your Adaptation Workbook account (If you haven’t already done so) the week before the course begins so that we can make the course features available to you before you start.

- If you have a small team, use one person’s email address to create an account that you can share among the group. You can then take turns working on the course project and decide how to tackle course assignments among your team.
- **If you used a different email address** to create your Adaptation Workbook account, send that address to Leslie Brandt (leslie.brandt@usda.gov) so that your email/account can be associated with the course.

Creating an Account

a. Navigate to www.adaptationworkbook.org. Click on “Get Started” to create an account

b. Create a new account by entering a username, email address, and other information. Be sure to check the terms and conditions/privacy policy check box, as well as the check box allowing us to help you as you go through the workbook. When you have entered all the information, click “Create new account.”
c. The following screen will direct you to confirm your new account. You will need to check the email of the account that you’ve linked to the Adaptation Workbook, find a confirmation email (from info@adaptationworkbook.org), and click the confirmation link. Your confirmation email should arrive within a few hours. Check your spam folder if you don’t see it in your inbox! The link will take you to a one-time login screen that will require you to create a site password. Click “Log in” and create a password on the following screen.

![Password Reset Screen](image)

Once logged in, you will see your Workbook dashboard. This is where you will add a project. Please note, we will create projects during the first week of the online course, please do not add a project until after the first lecture and discussion.

**IMPORTANT! ************

Although you can use the Adaptation Workbook at any time, you will need to create a course project to use during the Planning and Practices course to access course content and additional materials. Please wait until after Lecture 1 to create a course project.

If you have questions, please contact:
Leslie Brandt (Leslie.brandt@usda.gov) or Danielle Shannon (dshannon@mtu.edu)
Step 1: DEFINE location, project, and time frames.

“What are your management goals and objectives for the project area?”

The first step is to describe the project area and your management objectives before considering the potential effects of climate change. This may include identifying:

- Any ecosystem types, stands, or other distinct areas that you want to consider individually
- Any short- or long-term milestones that can be used to evaluate progress

Step 2: ASSESS site-specific climate change impacts and vulnerabilities.

“What climate change impacts and vulnerabilities are most important to this particular site?”

Climate change will have a wide variety of effects on the landscape, and not all places will respond similarly. List site-specific factors that may increase or reduce the effects of climate change in your project area, such as:

- Site conditions, such as topographic position, soils, or hydrology
- Past and current management
- Forest composition and structure
- Susceptibility to pests, diseases, or other stressors that may increase
Step 3: EVALUATE management objectives given projected impacts and vulnerabilities.

“What management challenges and opportunities may occur as a result of climate change?”

This step explores management challenges and opportunities that may arise under changing conditions. For each of your management objectives, consider:

- Management challenges and opportunities given the climate impacts you identified previously
- The feasibility of meeting each management objective under current management
- Other considerations (e.g., administrative, legal, or social considerations) beyond climate change that may affect your ability to meet your management objectives

Step 4: IDENTIFY adaptation approaches and tactics for implementation.

“What actions can enhance the ability of the ecosystem to adapt to anticipated changes and meet management goals?”

Generate a list of adaptation tactics — prescriptive actions specifically designed for your project area or property and your unique management objectives. Use the menus of Adaptation Strategies and Approaches as a starting point for identifying specific management tactics (e.g., what, how, when) that you can implement. As you develop tactics, consider the:

- Benefits, drawbacks, and barriers associated with each tactic
- Effectiveness and feasibility of each tactic

Step 5: MONITOR and evaluate effectiveness of implemented actions.

“What information can be used to evaluate whether the selected actions were effective and inform future management?”

Monitoring metrics can help you determine whether you are making progress on your management goals and evaluate the effectiveness of those actions. When identifying monitoring items, work to identify monitoring items that:

- Can tell you whether achieved your management goals and objectives
- Can tell you whether the adaptation tactics had the intended effect
- Are realistic to implement