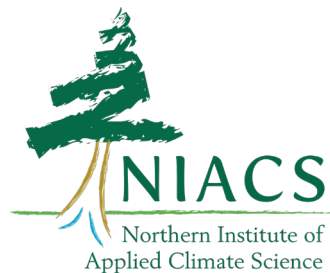


# Tribal Forest Adaptation Planning and Practices



Pre-workshop webinar  
*September 2019*



Northern Forests Climate Hub  
U.S. DEPARTMENT OF AGRICULTURE



# Welcome to the Pre-Workshop Webinar!

- Plan for ~ 45 minutes
- This will be recorded

## Notes:

- There will be some homework to complete before we meet in person!

## Workshop:

- Sept. 10-11, starting at 9am

Maria Janowiak



Patricia Leopold



Rob Croll



# What We Will Cover Today

1. Workshop goals
2. Adaptation concepts
3. Adaptation menus
4. Preparing for the workshop

# Who's on the phone?

Share your name, location, favorite fall activity



(aka NIACS)

# Northern Institute of Applied Climate Science

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

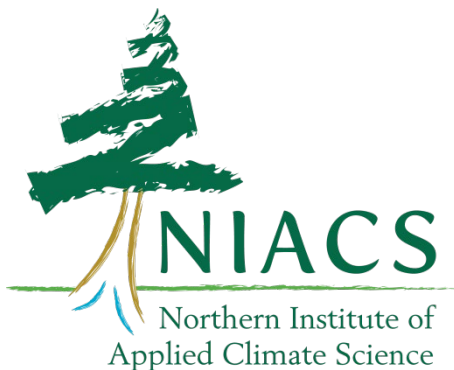
## Climate and carbon services

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

## 20 staff members

### (Forest Service/universities)

- 9 climate outreach specialists
- 6 research scientists
- 2 web specialists
- 3 GIS/lab specialists



**Michigan  
Technological  
University**



UNIVERSITY OF MINNESOTA



*The*  
**UNIVERSITY  
of VERMONT**



AMERICAN FORESTS

**ncasi**

National Council for Air  
and Stream Improvement



# Training Objectives

## You will be able to...

- Describe regional & local climate change effects on forests
- Understand adaptation concepts and principles in the context of sustainable forest management
- Use *Forest Adaptation Resources* in a real-world management project to:
  - Identify challenges and opportunities for management
  - Develop actionable steps to adapt forests to changing conditions
  - Create your own “climate-informed” forest management project

# Climate Change Adaptation

**What actions can help systems adapt to climate change and other threats while also meeting our goals and objectives?**



# There isn't a single answer

## Every community is different



Management  
goal



Timber



Wildlife



Food

Each decision is unique and will vary based upon:

**Place:** Location & Site Conditions

**Purpose:** Goals & Objectives

**People:** Values, Culture, & Mission

**Practices:** Equipment, Procedures, & Methods

# What's the commitment?

- Pick a project
- Develop a team if you'd like
- Pre-work includes (more details later):
  - Reviewing the vulnerability assessment
  - Reviewing the adaptation menu
  - Picking a project and drafting step 1 of the adaptation workbook (management goals and objectives)
- In-person meeting includes:
  - Reviewing step 1 with your team
  - Finishing steps 2 through 5

# What's the reward?

- Up to you!
- Follow-up could include
  - Online case study “adaptation demonstration”
  - Revised management plan that implements selected adaptation tactics
  - White paper to connect the narrative
  - Outreach materials
  - More!



# Adaptation Resources

# Climate Change Response Framework

A collaborative, cross-boundary approach among scientists, managers, and landowners to incorporate climate change considerations into natural resource management.

## Components:

## Progress:



Partnerships

150+ partner organizations  
(and counting)

Vulnerability Assessment

9 published ecoregional  
assessments

Forest Adaptation Resources

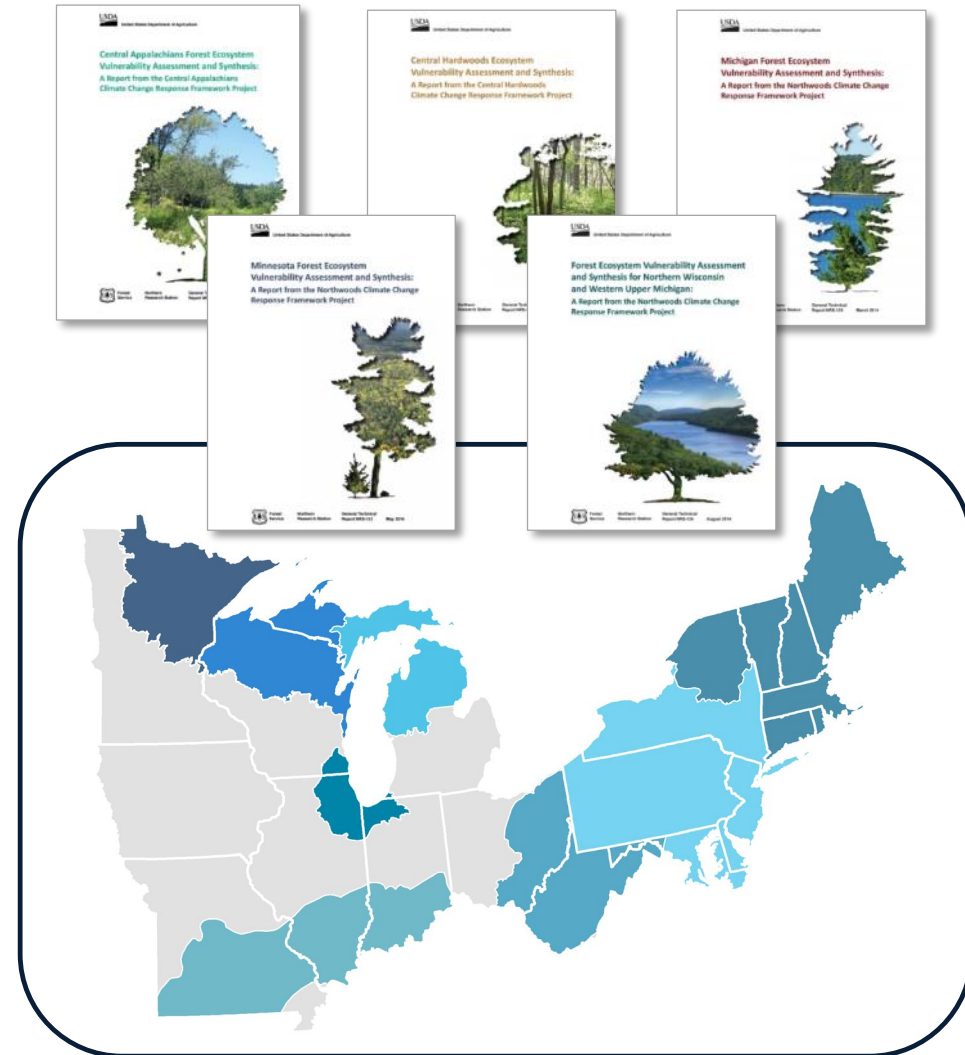
Published 2012,  
online version 2015,  
2<sup>nd</sup> edition 2016

Adaptation Demonstrations

250+ demonstrations  
underway

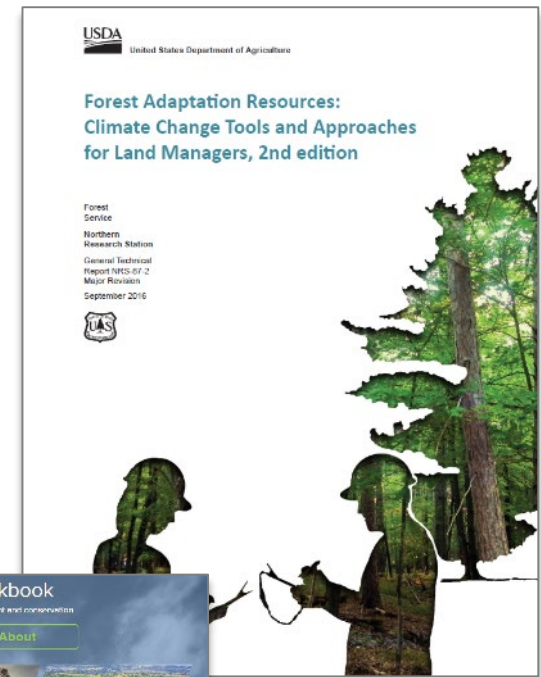
# Vulnerability Assessments

- Written for land managers
- Focus on forest ecosystems
- Assess vulnerability of
  - Tree species
  - Forest/natural communities
- Examine a range of future climates



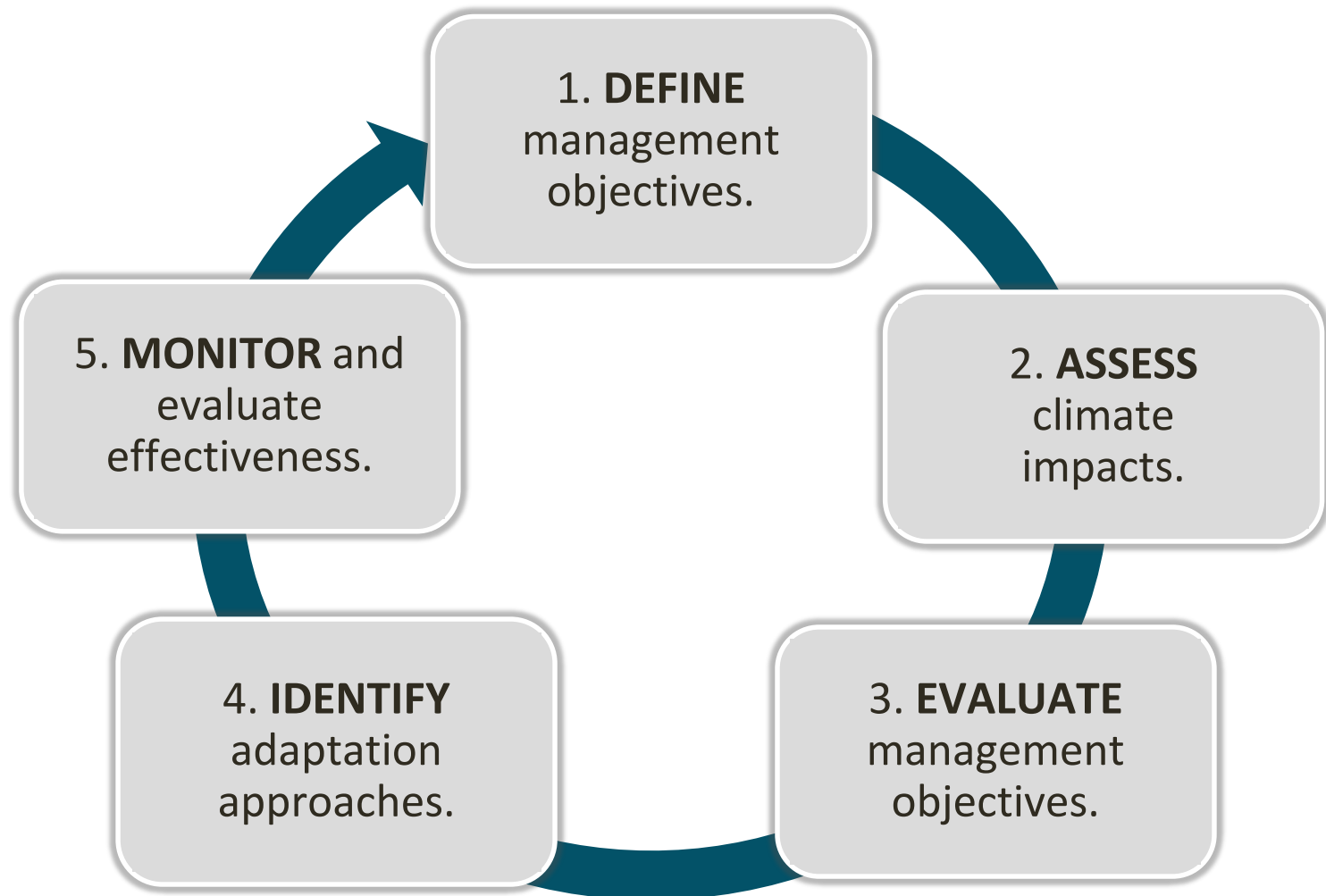
# Adaptation Resources + Workbook

- Practical process to intentionally consider climate
- Designed to be flexible – for diverse goals, and values
- Does not make recommendations – users customize actions



AdaptationWorkbook.org

# Adaptation Workbook Process



# Adaptation Menus

## Published:

- Forestry
- Urban Forestry
- Agriculture
- Forested Watersheds
- Tribal Perspectives

## In Preparation:

- Forest Carbon Management
- Wetlands
- Wildlife Management
- Coastal Ecosystems
- Recreation

## Brunch Classics

|   |    |   |    |
|---|----|---|----|
| <b>Lemon Ricotta Pancakes</b><br>Whipped Mascarpone Maple, Berries                          | 15 | <b>AJ's Omelet</b><br>Fontal Cheese, Spinach, Mushrooms                             | 14 |
| <b>Cornflake Crusted French Toast</b><br>Berries, Maple Syrup                               | 15 | <b>Eggs Florentine</b><br>Spicy Capicola, House-Made Cheddar Biscuit, Spinach       | 15 |
| <b>Bacon, Egg &amp; Cheese</b><br>Bacon, Two Eggs, Taleggio Cheese, Ciabatta                | 14 | <b>Porchetta Hash</b><br>Poached Egg, Calabrian Chili Hollandaise                   | 16 |
| <b>Avocado Toast</b><br>Poached Eggs, Tomatoes, Chili Flakes, Sea Salt                      | 15 | <b>Chia Pudding</b><br>Chia Seeds, Toasted Coconut, Banana, Strawberry              | 14 |
| <b>Chicken Parmigiana</b><br>Spicy Marinara, Fresh Mozzarella                               | 22 | <b>Farmhouse Breakfast</b><br>Two Eggs, House-Made Cheddar Biscuit, Chicken Sausage | 14 |
| <b>Squid Ink fettuccine Vongole</b><br>Little Neck Clams, Garlic, White Wine, Butter, Chili | 22 | <b>Chicken Kale Caesar</b><br>Chicken, Kale, Croutons                               | 16 |

## Create Your Own Pasta

| <i>Shapes</i>   |    | <i>Sauces</i>  |    |
|---|----|--|----|
| <b>Rigatoni</b><br>Semolina, All-Purpose Flour, Olive Oil                     | 14 | <b>Marinara</b><br>San Marzano tomatoes, Garlic, White Wine, Basil, Chili          |    |
| <b>Cavatelli</b><br>All-Purpose Flour, Durum Flour, Eggs, Ricotta             | 15 | <b>Arrabiata</b><br>All-Purpose Flour, Durum Flour, Eggs, Ricotta                  | +1 |
| <b>Tagliatelle</b><br>All-Purpose Flour, Durum Flour, Eggs                    | 15 | <b>Broken Meatball</b><br>House Tomato Sauce with the Addition of Broken Meatballs | +4 |
| <b>Gluten-Free Rigatoni</b><br>Gluten-Free All-Purpose Flour, Olive Oil, Eggs | 16 | <b>Sunday Sauce</b><br>House Tomato Sauce with Short Rib, Sausage, Veal            | +4 |
| <b>Spaghetti</b><br>Semolina, Durum Flour, Olive Oil                          | 15 | <b>Roasted Garlic Pecorino</b><br>Semolina, Durum Flour, Olive Oil                 | +2 |
| <b>Four Cheese Herb Ravioli</b><br>Fontal, Ricotta, Parmesan, Pecorino        | 18 | <b>Carbonara</b><br>Pancetta, Eggs, Peas, Pecorino                                 | +3 |

## Sides

|                        |    |
|------------------------|----|
| Pecorino Truffle Fries | 8  |
| Potato Hash            | 6  |
| Bacon                  | 6  |
| Turkey Sausage         | 6  |
| Field Greens           | 7  |
| Two Eggs Any Style     | 6  |
| Beignets               | 8  |
| Baked Goods            | 10 |




## Brunch Cocktails

|   |       |
|---|-------|
| <b>Bloody Mary</b><br>Vodka, Spiced Fresh DOP Tomato Juice, Horseradish             | 10/45 |
| <b>Cointreau Spritz</b><br>Cointreau Spritz, Aperol, Crème de Peche, Sparkling Wine | 12/55 |
| <b>Green Side</b><br>Reyka Vodka, Green Juice, Lemon                                | 12/55 |
| <b>Morning Derby</b><br>Bourbon, Grapefruit, Ginger, Carrot Juice                   | 12/55 |
| <b>Sangria</b><br>Red Wine, Fresh Fruit, Pisco, Crème de Peche                      | 10/45 |
| <b>Firing Squad</b><br>Milagros Tequila, Cointreau, Fresh Lime, Grenadine           | 12/55 |
| <b>Tall Mimosa</b><br>Reyka Vodka, Cointreau, Jake's Mimosa Juice, Sparkling Wine   | 12/55 |

# The need for indigenous perspectives

- Adaptation menus have been reflective of western science and a resource-centric perspective
- Needed to create a menu reflective of Indigenous knowledge and kin-centric perspectives



A photograph of a forest. In the foreground, there are several evergreen trees, possibly spruce or fir, with green needles. The background is filled with deciduous trees whose leaves have turned various shades of yellow and orange, indicating autumn. The sky is visible through the canopy, appearing overcast.

# **Tribal Adaptation Menu & Guiding Principles**

# Tribal Adaptation



Indigenous peoples have adapted to environmental change for millenia

We have a responsibility to understand and support our relatives

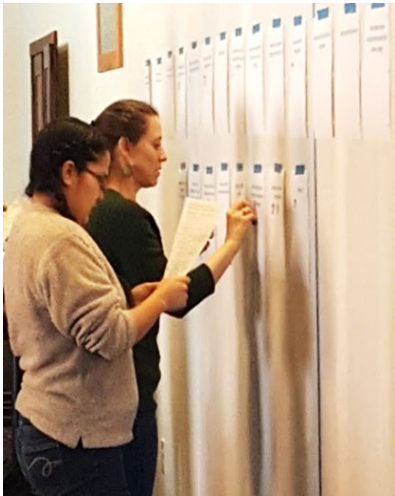
- Change in access-relations
- Fixed boundaries - reservations, treaty-ceded territories

# Origins: Tribal Adaptation Menu



In the Spring of 2017, NIACS held an *Adapting Forested Watersheds to Climate Change Workshop* in Minocqua, WI

– Case Study Wild Rice Restoration project that was to be used with the NIACS Adaptation Workbook and Adaptation Menu



# Purpose: Tribal Adaptation Menu



- Create a new climate adaptation approach menu
  - Decision-making and conduct rooted in Indigenous ways
  - Engage Indigenous sciences and knowledges
- Trend of Euro-centric science looking to Indigenous knowledge, which has been the foundations of our existence for millennia

# Multiple Perspectives



- Indigenous perspectives call for observation, recognizing and learning from our first teachers, and adaptation that addresses responsibility and reciprocity to all our relations
- Western perspectives emphasize control and management of non-sentient resources

# Adaptation & Natural World



Abundance of adaptation options from Western perspectives

- Instead of waiting for systems to naturally establish themselves, managers are tasked with selecting and managing for specific future forest/aquatic/natural communities

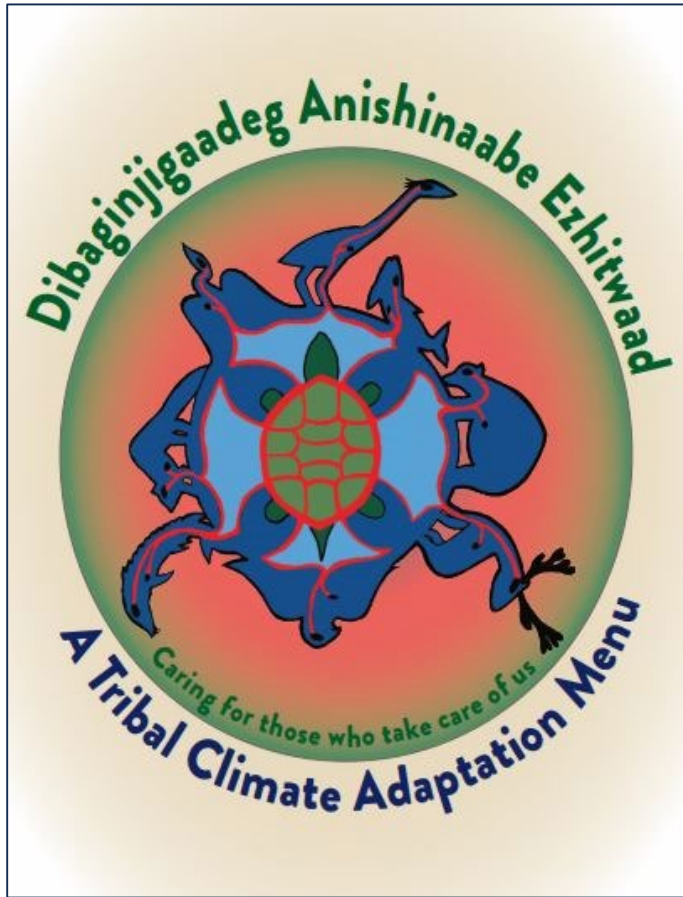
The Tribal Adaptation Menu offers a different perspective on adaptation

# Three R's: Respect, Reciprocity, and Relationships



- Decisions for use of our relatives were originally communal decisions made with recognition and acknowledgement throughout
- Today management and decision-making for land and the natural environment is made less as a communal decision and more as an individual or institutionalized

# Tribal Adaptation Menu



No singular native, tribal or indigenous approach for caring of the land

- Suggestions to assist in addressing needs of a particular indigenous community
- Used by non-tribal people or organizations interested in indigenous approaches to adaptation

# Guiding Principles for Interacting with Tribes

## How to Develop Culturally Appropriate Climate Adaptation Actions



*Offering asemaalnāēqnemaw (tobacco). (Photo by Charlie Rasmussen, GLIFWC.)*

This document is intended to empower tribal governments, federal and state agencies, non-governmental organizations (NGOs), individual landowners and others to incorporate Anishinaabeg perspectives, specifically from the Great Lakes region, into a climate adaptation framework. We recognize the shortcomings of this document in our attempt to incorporate indigenous concepts, language, and cultural practices; a single document written in English can't fully capture what we intend to express. We hope that the perspectives given here offer users an additional lens with which to view the environment and facilitate a more culturally appropriate approach to working with tribal nations.

While the intent of this document is to give specific examples from one group of people, we encourage other tribes to edit these according to the needs of their individual community by adding language, words, and editing process be undertaken first, before initiating climate change adaptation planning in knowledge that is unique to the perspective of each indigenous community.

- Designed for use by tribal communities and their non-tribal partner agencies
- Strategy/approach/tactic framework
- The first three strategies address cultural practices, community engagement and recognizing human and non-human reciprocal relationships
- Emphasizes that sometimes not doing something may be appropriate

## Menu of Adaptation Strategies and Approaches

### Strategy 1: Consider cultural practices and seek spiritual guidance.

*Indigenous knowledges and ways can provide the backbone for successful climate adaptation. Seeking guidance from the community on adaptation needs and actions, respecting and building on dynamic relationships, and honoring cultural responsibilities and histories may benefit both short- and long-term adaptation efforts.*

#### 1.1. Consult cultural leaders, key community members, and elders.

*Cultural leaders, community members, harvesters, elders, and other key individuals have important knowledges and perspectives that can inform climate adaptation activities. Taking time to build relationships and properly consult with the broader community will result in more informed decisions and more support for adaptation actions.*

Example tactics:

- ✿ Conduct community engagement workshops to learn about past changes using specific examples or important resources as discussion points.
- ✿ Interview wild rice gatherers to discuss observed impacts on wild rice from storm events or changing lake levels.
- ✿ Work with tribal leaders and members to identify knowledgeable individuals in the community, such as elders, and how to consult with them in a good way.
- ✿ Build organizational capacity by funding outreach staff who are trained to discuss climate change with the community.



*Pat and Chibinesiban Jim Northrup from Fond du Lac Band of Lake Superior Chippewa. Chibinesiban Jim Northrup has since walked on. (Photo by Melonee Montano, GLIFWC.)*

#### 1.2. Consider mindful practices of reciprocity.

*Healthy relationships depend on reciprocal exchanges of gifts, knowledge, and respect, among others. For example, it is appropriate to offer asemaa/nāēqemaw (tobacco) when requesting permission to use a gift (resource). This principle applies to land management as well as interpersonal relationships within the community.*

Example tactics:

- ✿ Offer asemaa/nāēqemaw (tobacco) when requesting permission to use a gift (resource).
- ✿ Provide gifts when seeking guidance or knowledge from elders or community members.
- ✿ Share data and results of climate change assessments and adaptation projects with the local community.
- ✿ Ensure that teachers and contributors are credited in presentations, public documents, and materials.
- ✿ Teach harvesting in a good way, such as taking only what you need and leaving enough to sustain a population. For example, harvesters should refrain from harvesting wild rice when it is raining, because it can weaken the root system.

#### 1.3. Understand the human and landscape history of the community.

*Every place has a unique context and unique stories to tell. The history of the community and the land can inform land management decisions, and it is worth investing time and attention to cultivate a deeper understanding of a place before deciding on appropriate management actions.*

Example tactics:

- ✿ Identify and meet with Tribal Historic Preservation Officers and discuss the history of the local community.

# Culturally Relevant Adaptation

Forest Adaptation Menu:

**Strategy 9: Facilitate community adjustments through species transitions.**

**Approach 9.7:** Introduce species that are expected to be adapted to future conditions.

Tribal Adaptation Menu:

**Strategy 11: Encourage community adjustments and transition while maintaining reciprocity and balance.**

**Approach 11.4:** Seek out and share traditional and cultural knowledge of potential new beings from tribal communities where these beings are native.



# Preparing for the Workshop

# Before the Workshop

- Read through the Guiding Principles and Tribal Adaptation Menu
- Complete “Step 1” of the adaptation workbook, for a project of your choice, using the template worksheet.

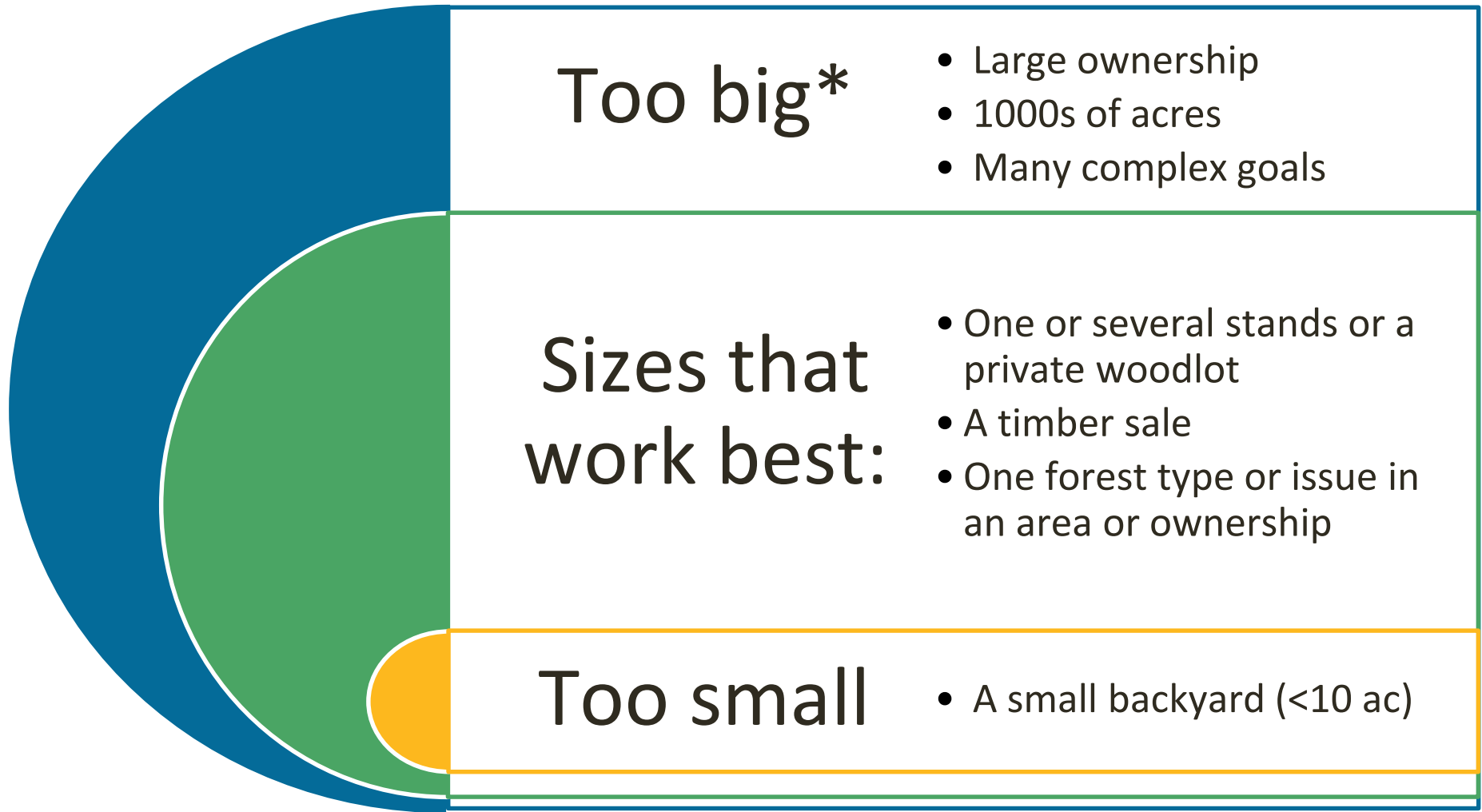


**Step 1:** DEFINE area of interest, program goals and objectives, and time frames.

## **What project should I choose?**

- Something you're working on now!
- Something from your resource management plan
- Something you want to spend time discussing
- You're encouraged to submit a project as a group – just let us know.

# Step 1: DEFINE area of interest, program goals and objectives, and time frames.



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

**Step 1:** DEFINE area of interest, program goals and objectives, and time frames.

## **Examples from other workshops:**

- Forest management of northern white cedar
- Ash management pre- or post- emerald ash borer mortality
- Restoring or expanding wild rice on suitable lakes.
- Expanding medicinal plants into areas where they will be more accessible to community members.
- Managing the population of turtles (culturally important wildlife species) on a chain of lakes within a reservation.
- Working with partner agencies to improve marten habitat on off-reservation lands

**Step 1:** DEFINE area of interest, project or program goals and objectives, and time frames.

*Send to Maria Janowiak ([maria.janowiak@usda.gov](mailto:maria.janowiak@usda.gov)) this week if possible.*

|                      |                         |                              |                    |
|----------------------|-------------------------|------------------------------|--------------------|
| <b>Project Area:</b> |                         |                              |                    |
| <b>Location:</b>     |                         |                              |                    |
| <b>Ecosystem</b>     | <b>Management Goals</b> | <b>Management Objectives</b> | <b>Time Frames</b> |
|                      |                         |                              |                    |

**Step 1:** DEFINE area of interest, program goals and objectives, and time frames.

**Goals:** What are your desired outcomes?

**Objectives:** How do you plan to achieve these outcomes?

**Step 1:** DEFINE area of interest, program goals and objectives, and time frames.

## Example Goal:

- *Improve wildlife habitat for game species in a hunting area.*

## Example Objective:

- *Implement prescribed burns across 100 acres of property to encourage growth of mast species like northern red oak.*

## Step 1: DEFINE area of interest, program goals and objectives, and time frames.

| Management Goal                         | Management Objective   | Time Frame |
|---|--|------------|
| ▪ Increase urban tree species diversity | ▪ Have no more than 20 percent of a family, 10 percent of a genus and 5 percent of a species | 15 years   |
| ▪ Increase canopy cover                 | ▪ Increase % canopy from 20% to 30%  | 20 years   |
| ▪ Reduce invasive species cover         | ▪ Reduce area covered by invasive buckthorn from 10% to no more than 5%                      | 10 years   |

*Note: Goals and objectives **do not** need to be related to climate change (that comes later)*

# For more background ...

**Look over some information on ecosystem vulnerabilities:**

Forest Assessments:

[www.forestadaptation.org/vulnerability-assessment](http://www.forestadaptation.org/vulnerability-assessment)

Print reports and online StoryMaps

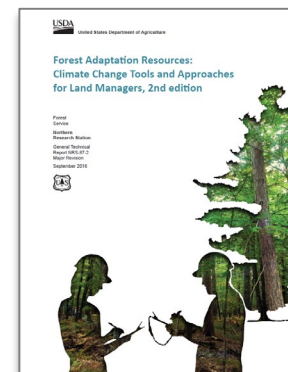
**Preview one of the menus**

Tribal Adaptation Menu:

[www.glifwc.org/ClimateChange](http://www.glifwc.org/ClimateChange)

Forests, Agriculture, Forested Watersheds:

[www.adaptationworkbook.org/strategies](http://www.adaptationworkbook.org/strategies)



All links on workshop page: [www.forestadaptation.org/SRM](http://www.forestadaptation.org/SRM)



**Questions?**