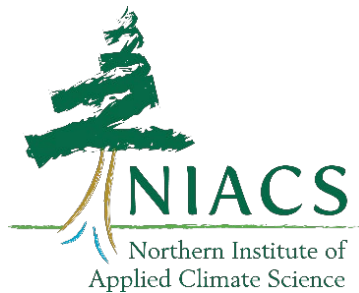


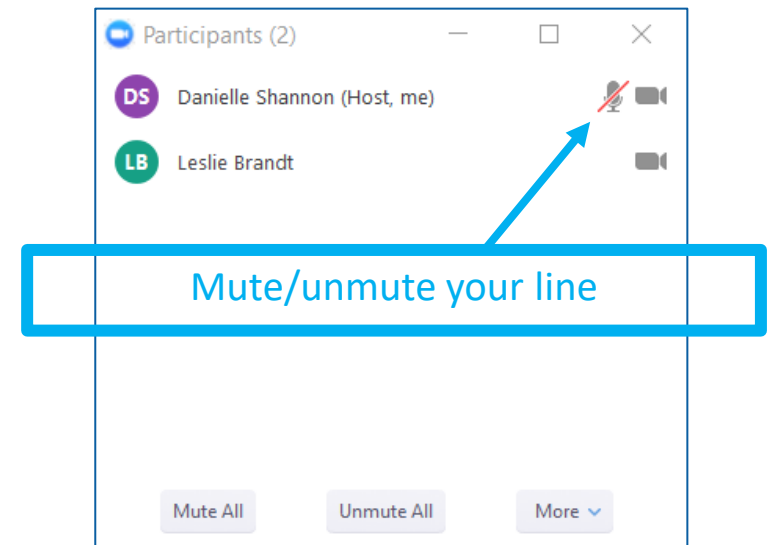
Climate Change Adaptation Planning TNC Florida



WELCOME!

Please:

- Turn on your webcams for discussion if you can.
- ‘Rename’ yourself if needed (right click and type your full name).
- Questions: chat box and/or unmute.



Northern Institute of Applied Climate Science

Climate

Carbon

The Northern Institute of Applied Climate Science (NIACS) develops synthesis products, fosters communication, pursues science, and provides technical assistance in climate change adaptation and carbon management.

Multi-institutional collaborative chartered by USDA Forest Service, universities, and non-profit and tribal conservation organizations



USDA Climate Hubs



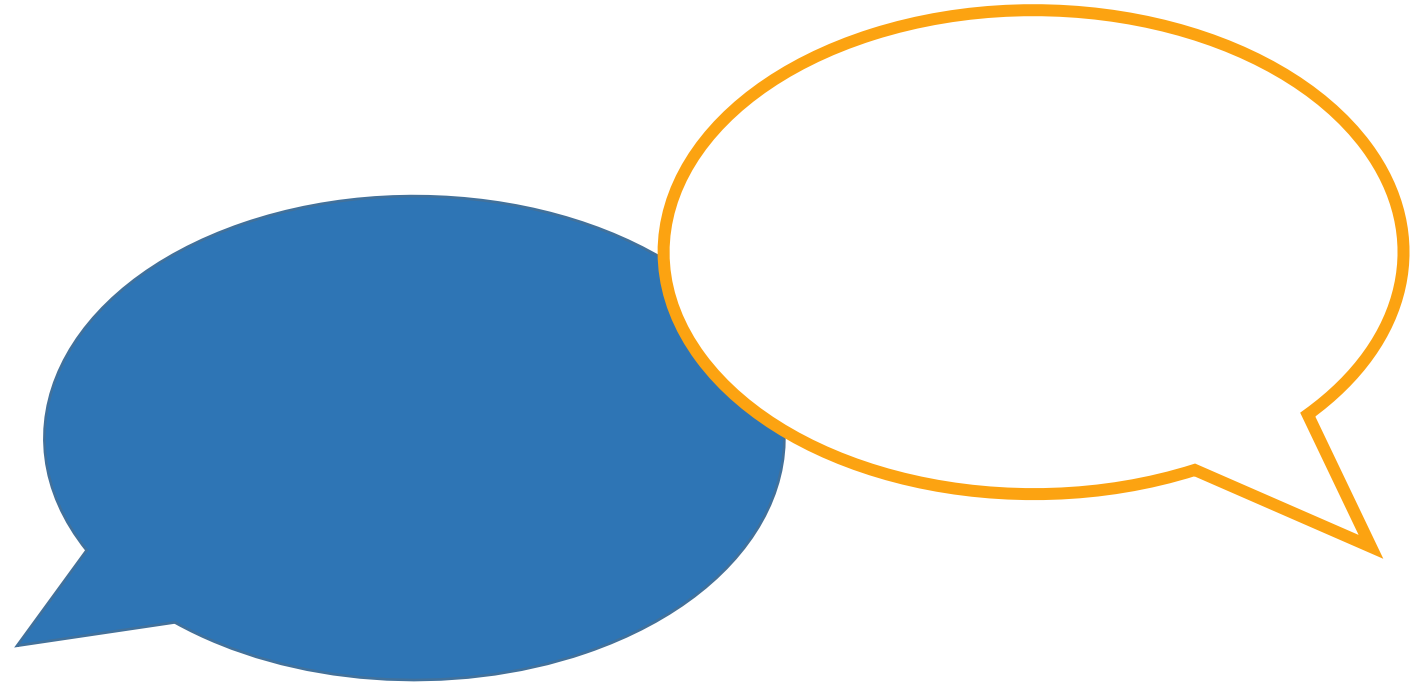
Northern Forests Climate Hub
Southeast Climate Hub

Climate Services

- Science-based
- Region-specific
- Practical assistance

www.climatehubs.usda.gov/

Introductions



Who's in the room?

Introduce yourself

- Name
- Role/area of expertise

Overall Goals for Workshop

1. How might climate change affect the areas and resources that I manage?
2. What management actions could help prepare for those effects?



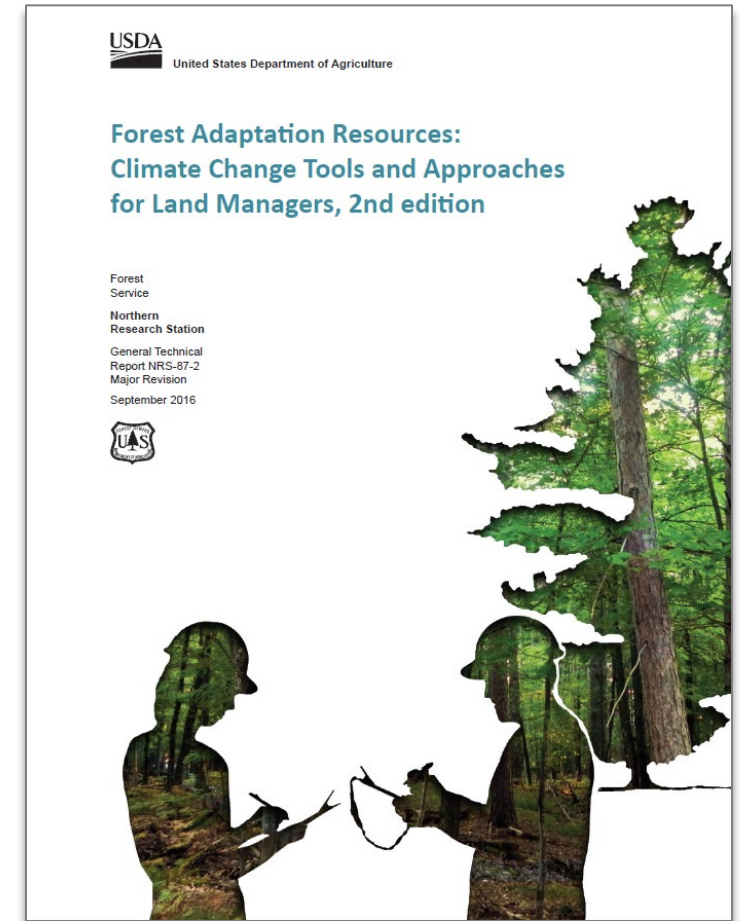
Agenda

- 1:00** Welcome/ Introductions
- 1:25** Define management goals and objectives for each preserve
- 1:50** Presentation: climate change impacts and vulnerabilities
- 2:40** *Break (10 min)*
- 2:50** Assess climate change impacts and vulnerabilities for each preserve
- 3:50** Next steps & prep for tomorrow
- 4:00** Adjourn

Process: Forest Adaptation Resources

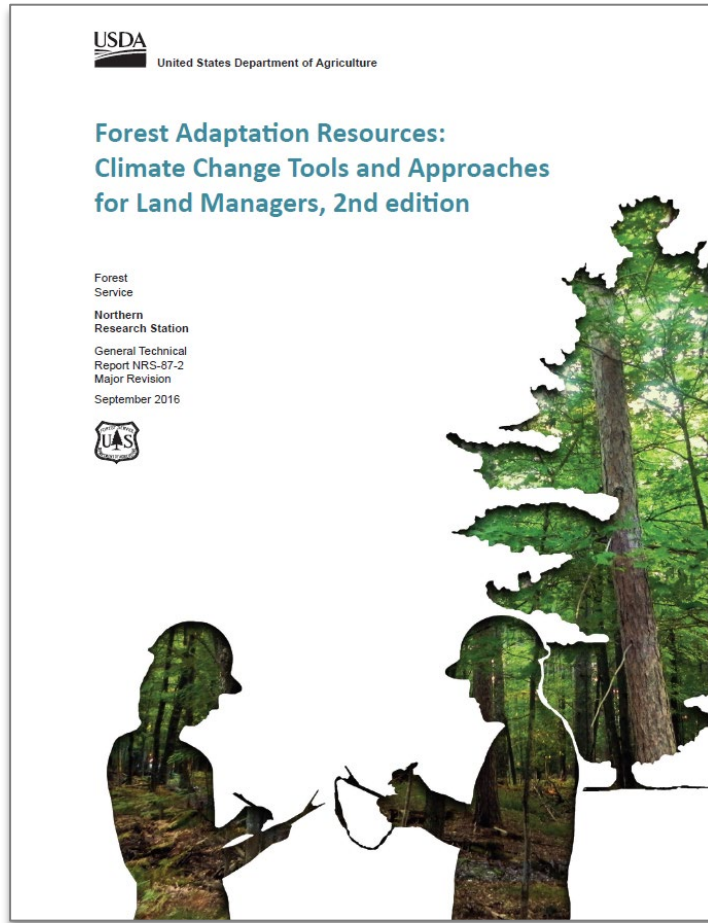
A flexible workbook and menu:

- Process to intentionally consider climate & customize adaptation actions
- Designed for a variety of landowners with diverse goals
- Does not make recommendations
- Online version!

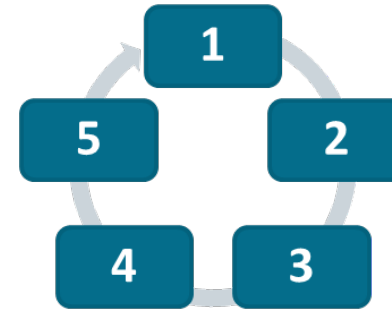


www.nrs.fs.fed.us/pubs/40543 and www.AdaptationWorkbook.org

Forest Adaptation Resources



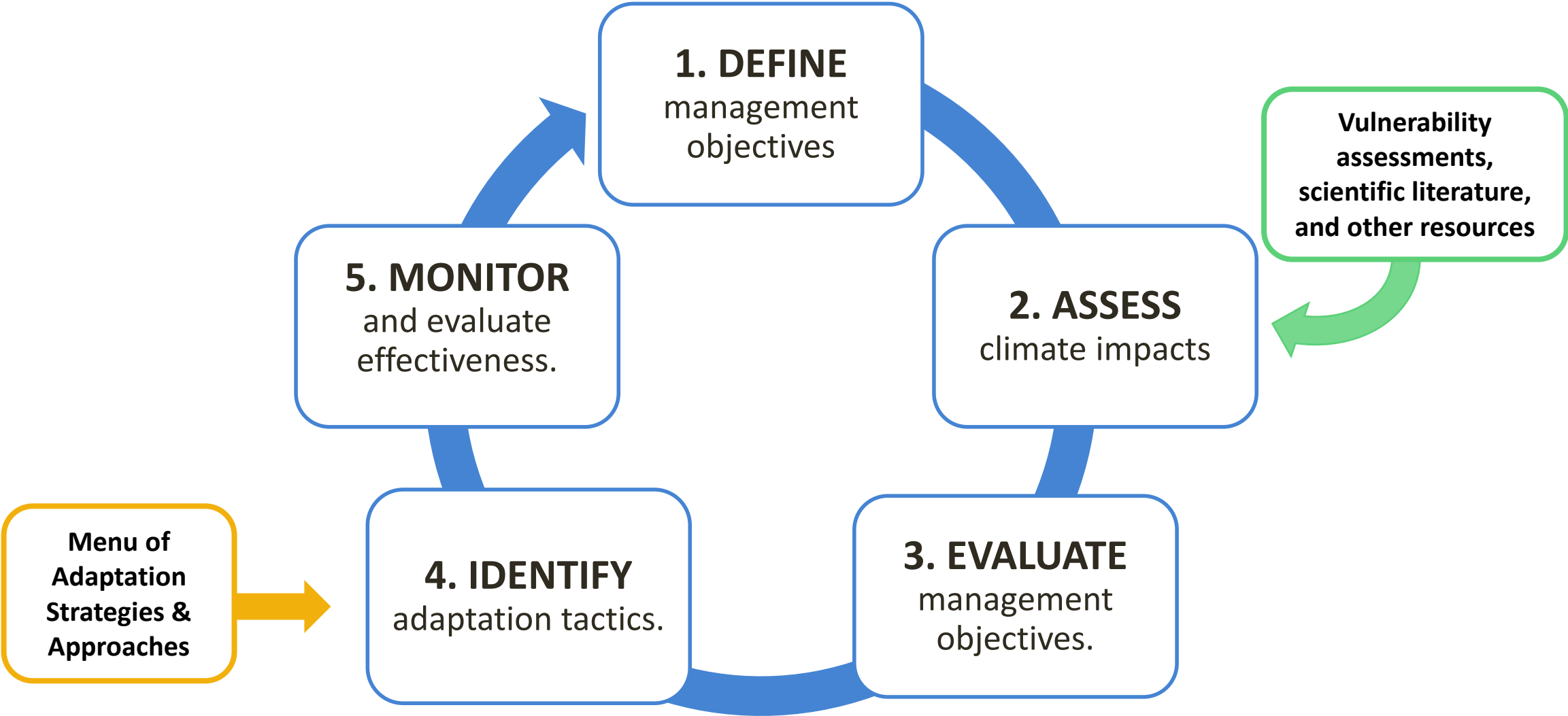
Adaptation Workbook



Strategies & Approaches

Menu of adaptation actions

Adaptation Workbook



This Process = Climate Change Filter



Put goals and objectives through a climate change filter to make sure these are all climate-informed.

Adaptation Actions Can Be...

Same actions— climate change just makes them that much more important



Small “tweaks” that improve effectiveness

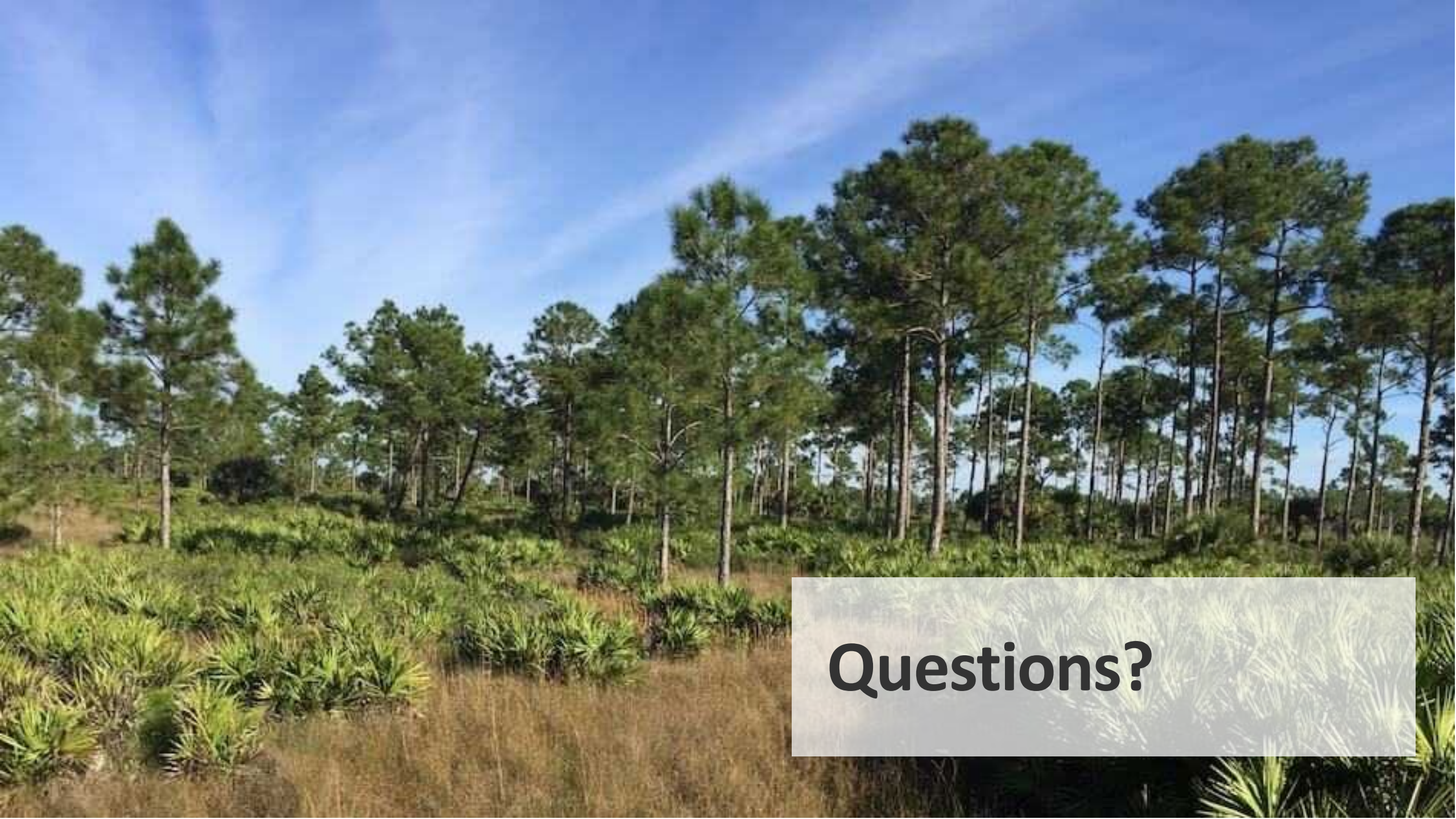
New & different actions to consider, even some that may seem **wild & crazy**

**individual results will vary*

Intentional

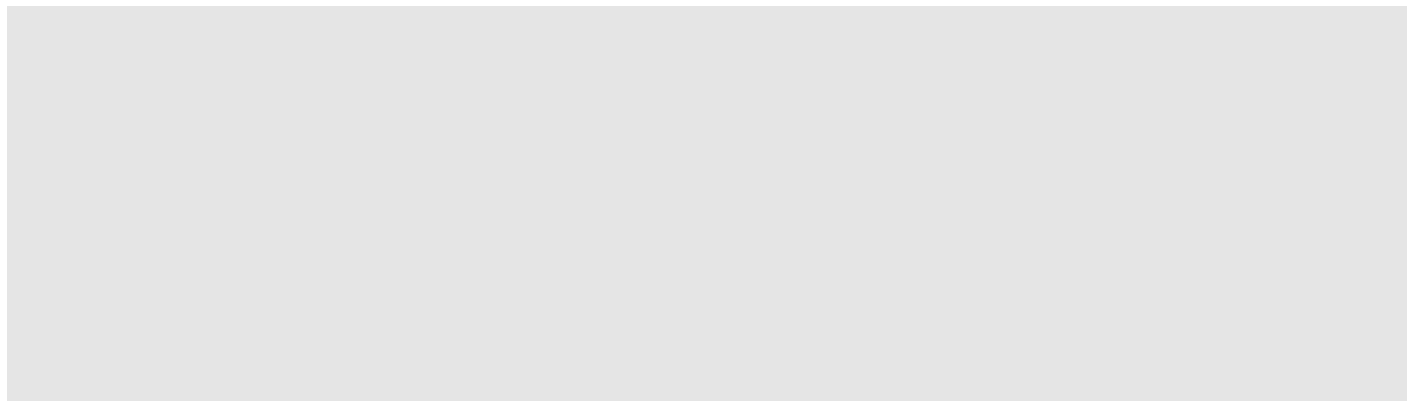
- Explicitly consider and address climate change
- Outcomes: a plan that is more robust



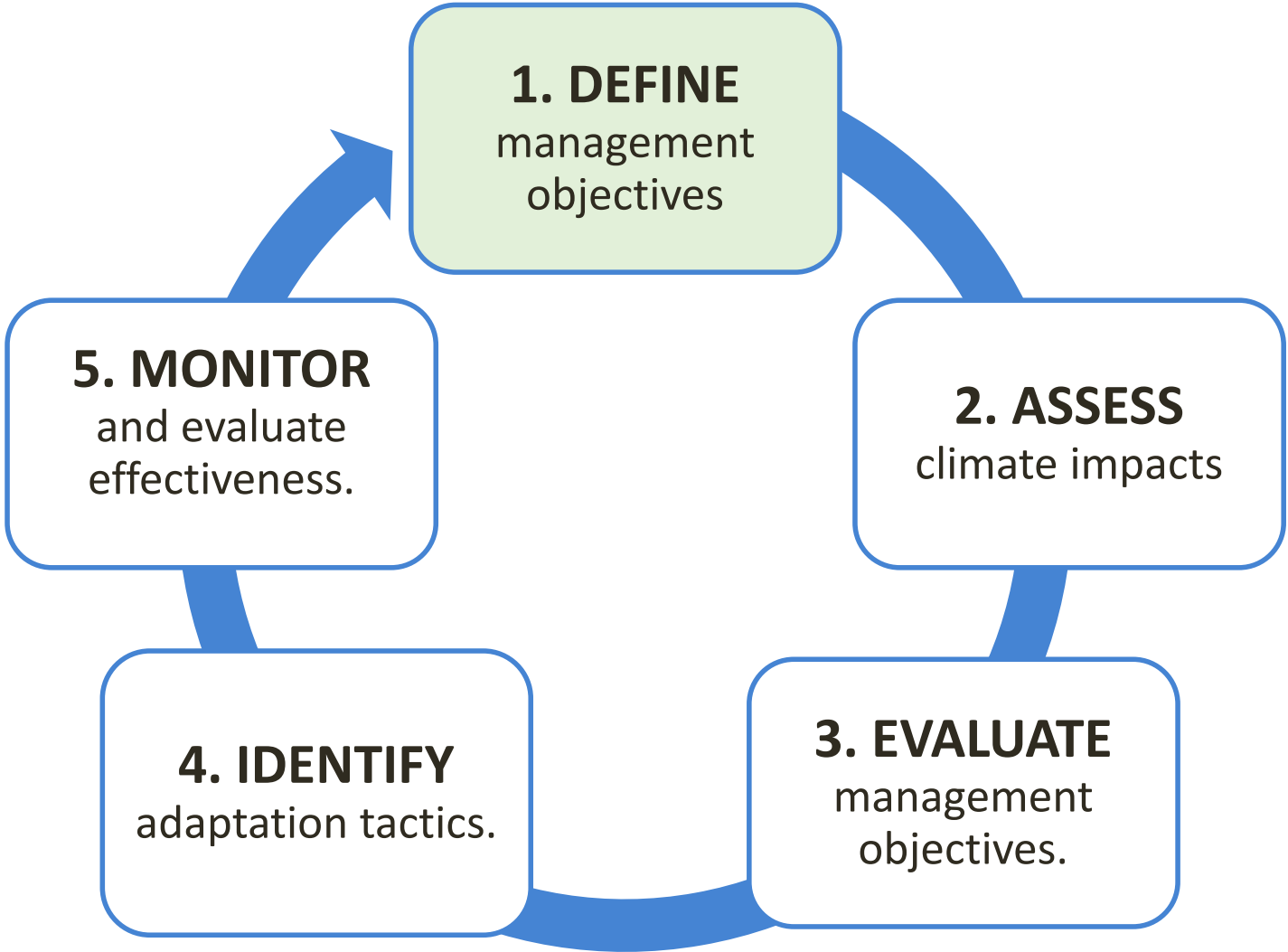


Questions?

Project Goals and Objectives



Adaptation Workbook



STEP 1: DEFINE location, project and time frames

Key Questions:

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



STEP 1: Pre-Work

Management Goal

Broad statements: desired state or process.

- Why are you doing this project?
- Be explicit about what you want to see on the landscape

Management Objective

Concise, measurable statements.

- What are you planning to do to achieve your goal?



Goals: Disney Wilderness

Mgmt topics	Goals	Objectives
Fire management/ Natural communities	<ul style="list-style-type: none"> • Maintain/improve herbaceous groundcover diversity – including rare spp and longleaf and slash pine overstory: 8000 acres pine flatwoods • Maintain/improve herbaceous diversity of marsh systems • Maintain structure and compositions suitable for Florida Scrub Jays 	<ul style="list-style-type: none"> • What action/ where/ how much?
Invasive spp.	<ul style="list-style-type: none"> • Reduce or maintain invasive spp cover in priority habitats • Eradicate non-native Crotalaria spp. in priority areas • Limit feral hog damage across 12,000 acres of habitat • Identify emerging invasive spp threats in upland and wetland habitats 	<ul style="list-style-type: none"> • What action/ where/ how much?
Restoration	<ul style="list-style-type: none"> • Continue overstory pine restoration (Tower, Spur, Graves units) 	
Rare spp.	<ul style="list-style-type: none"> • Maintain a minimum of 10 red-cockaded woodpecker breeding pairs annually • Maintain a minimum of 5 Florida scrub-jay families annually • Prevent human disturbance to American Bald Eagle nesting 	

Goals: Tiger Creek Preserve

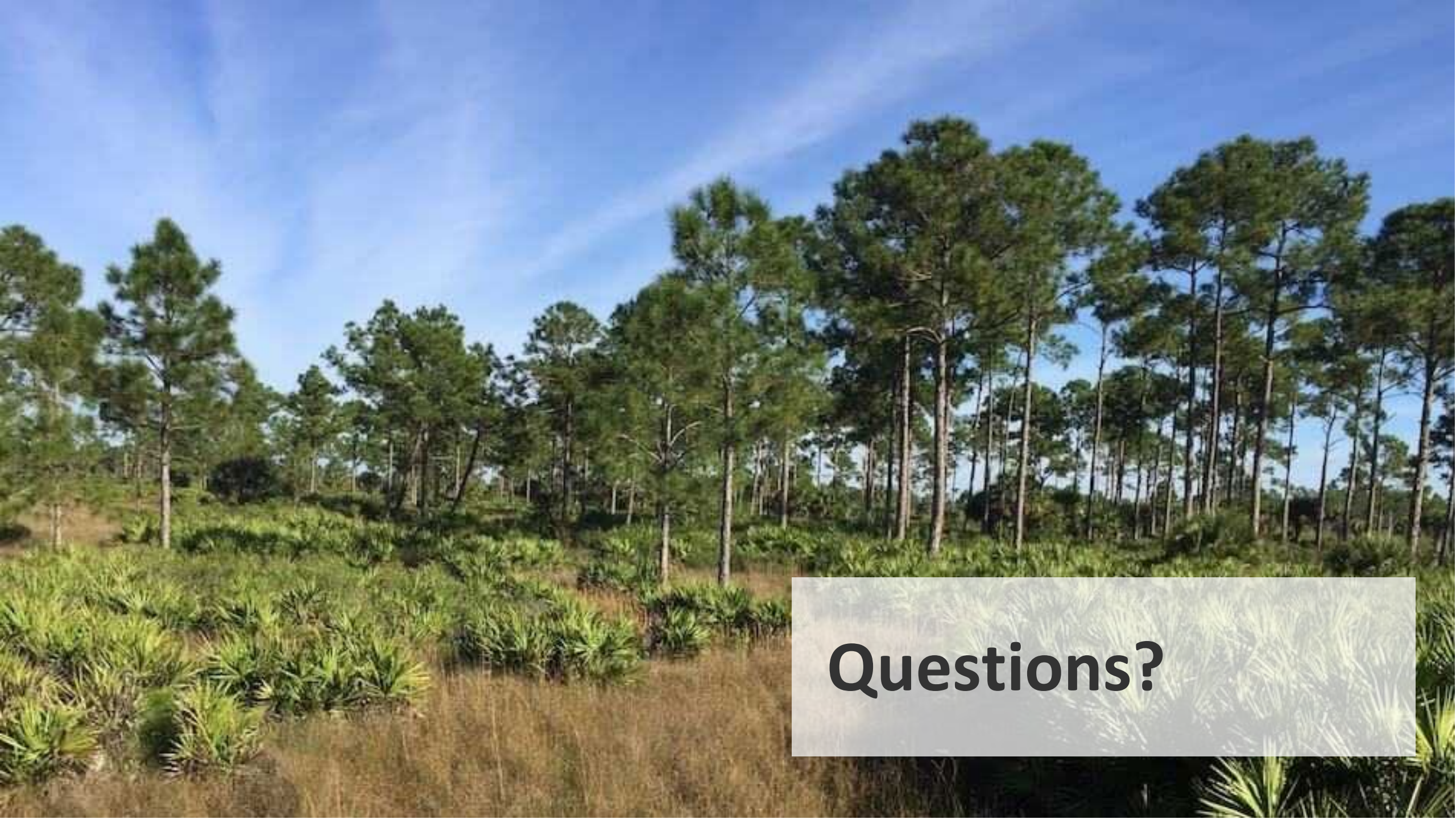
Mgmt topics	Goals	Objectives
Fire management/ Natural communities	<ul style="list-style-type: none"> • Maintain/improve herbaceous groundcover diversity – including rare spp and longleaf and slash pine overstory: 1000 acres pine flatwoods • Maintain/improve herbaceous groundcover diversity – including rare spp and longleaf overstory: 700 acres sandhill habitat • Maintain/improve appropriate vegetative structure and composition: 67 acres of yellow sand scrub habitat 	<ul style="list-style-type: none"> • What action/ where/ how much?
Invasive spp.	<ul style="list-style-type: none"> • Reduce or maintain invasive spp cover in priority habitats • Identify emerging invasive spp threats in upland and wetland habitats 	<ul style="list-style-type: none"> • What action/ where/ how much?
Restoration	<ul style="list-style-type: none"> • Restore areas of low longleaf pine density 	
Rare spp.	<ul style="list-style-type: none"> • Prevent human disturbance to American Bald Eagle nesting • Maintain a stable to increasing population of Warea cateri 	

Goals: Blowing Rocks Preserve

Mgmt topics	Goals	Objectives
Infrastructure/ Access	<ul style="list-style-type: none">• Provide continued road access to BRP• Provide continued access to recreational facilities like the Hawley Nature Center	<ul style="list-style-type: none">• What action/ where/ how much?
Wetlands	<ul style="list-style-type: none">• Maintain connectivity between intertidal wetlands and the Indian River Lagoon• Analyze hydrology and the culvert system on the preserve's NW shoreline to assess impacts to carbon sequestration and biodiversity• Facilitate transition of coastal uplands to coastal wetlands to ensure biodiversity and ecosystem services	<ul style="list-style-type: none">• What action/ where/ how much?
Coastal strand/ Wildlife habitat	<ul style="list-style-type: none">• Increase habitat viability and biodiversity in coastal strand that is transitioning to seagrass hammock• Maintain nesting habitat for sea turtles and shorebirds• Maintain or enhance habitat for migratory bird species	

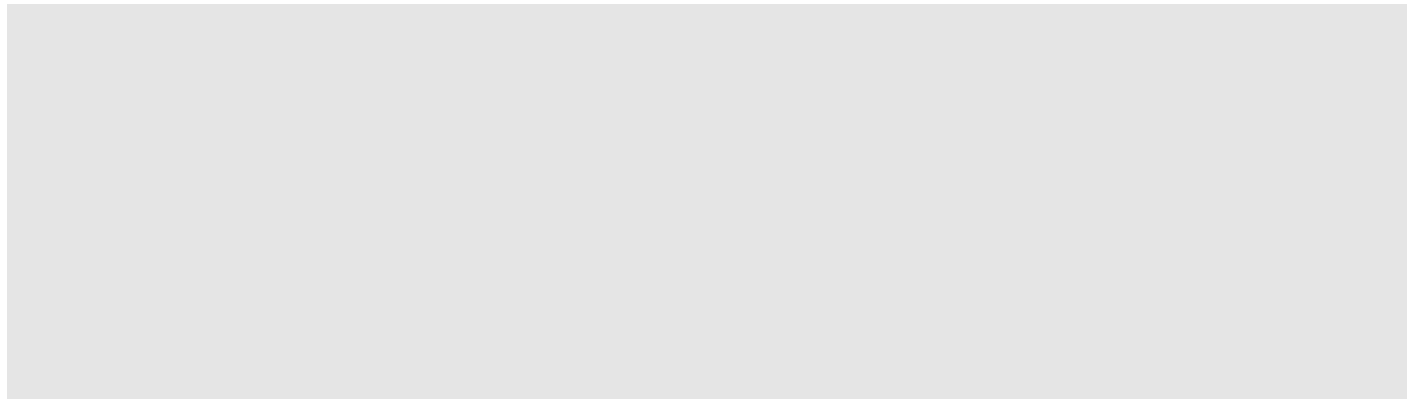
Goals: Apalachicola Bluffs and Ravines Preserve

Mgmt topics	Goals	Objectives
Restoration	<ul style="list-style-type: none">• Restore 225 acres of Sandhill Community on Bluff's tract• Restore 300 acres of upland pine community on Sweetwater tract	<ul style="list-style-type: none">• What action/ where/ how much?
Invasive spp.	<ul style="list-style-type: none">• Treat invasive species across 6500 acres	
Restoration/ Maintenance	<ul style="list-style-type: none">• Maintain herbaceous groundcover diversity and longleaf pine populations throughout 3500 acres of longleaf pine sandhills.• Maintain herbaceous groundcover diversity and longleaf pine populations throughout 200 acres of longleaf pine uplands.	
Rare spp.	<ul style="list-style-type: none">• Promote Eastern Indigo populations• Promote Gopher Tortoise populations across ABRP.	

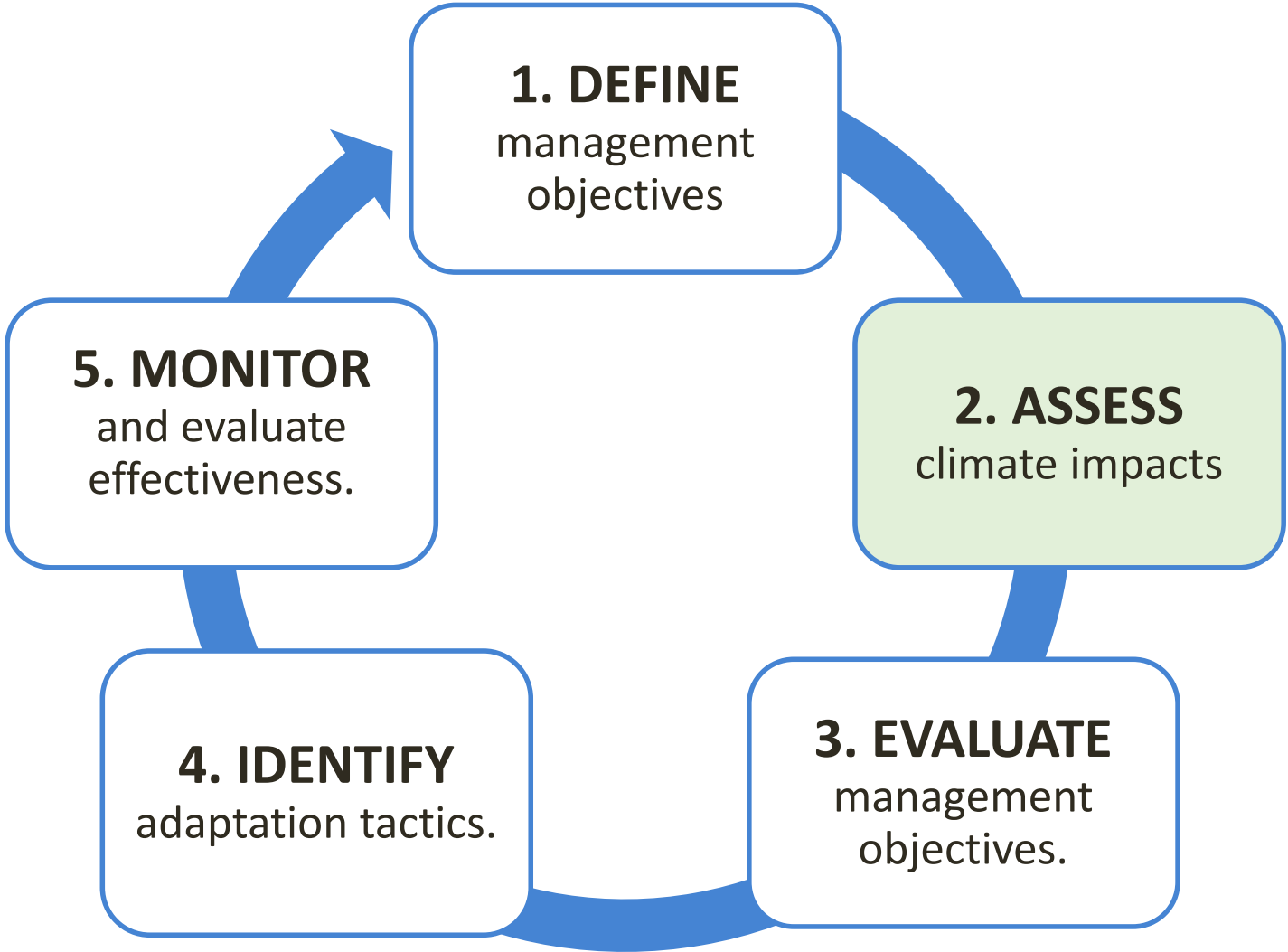


Questions?

Climate Change Impacts



Adaptation Workbook



STEP 2: ASSESS climate change impacts and vulnerabilities

To understand the Regional picture:

1. Recap: Climate Trends and Projections
2. Regional Climate Vulnerabilities
3. Focus on fire and invasives

Break!



STEP 2: ASSESS climate change impacts and vulnerabilities

Key Questions:

- How might your preserve be uniquely affected by climate change?
- What characteristics of your preserve might amplify or reduce climate impacts?



Discussion: Breakout Rooms

1. Join the breakout room for your preserve
2. Download the STEP 2 worksheet from the website & assign one person to take notes
 - <https://forestadaptation.org/climate-tnc-florida>
3. Review a map of your preserve. Discuss:
 - Focus on those regional impacts that are most important for your preserve -
 - What are the specific features on your preserve that might increase/decrease risk?
 - Are there areas on your preserve that are more/less susceptible to change?



Breakout Rooms

*Science experts can go where they feel most knowledgeable/helpful

Breakout rooms	Facilitator
Blowing Rocks	Kristen Schmitt
Disney Wilderness/ Tiger Creek	Stephen Handler
Apalachicola Bluffs and Ravines	Brooke Hagarty

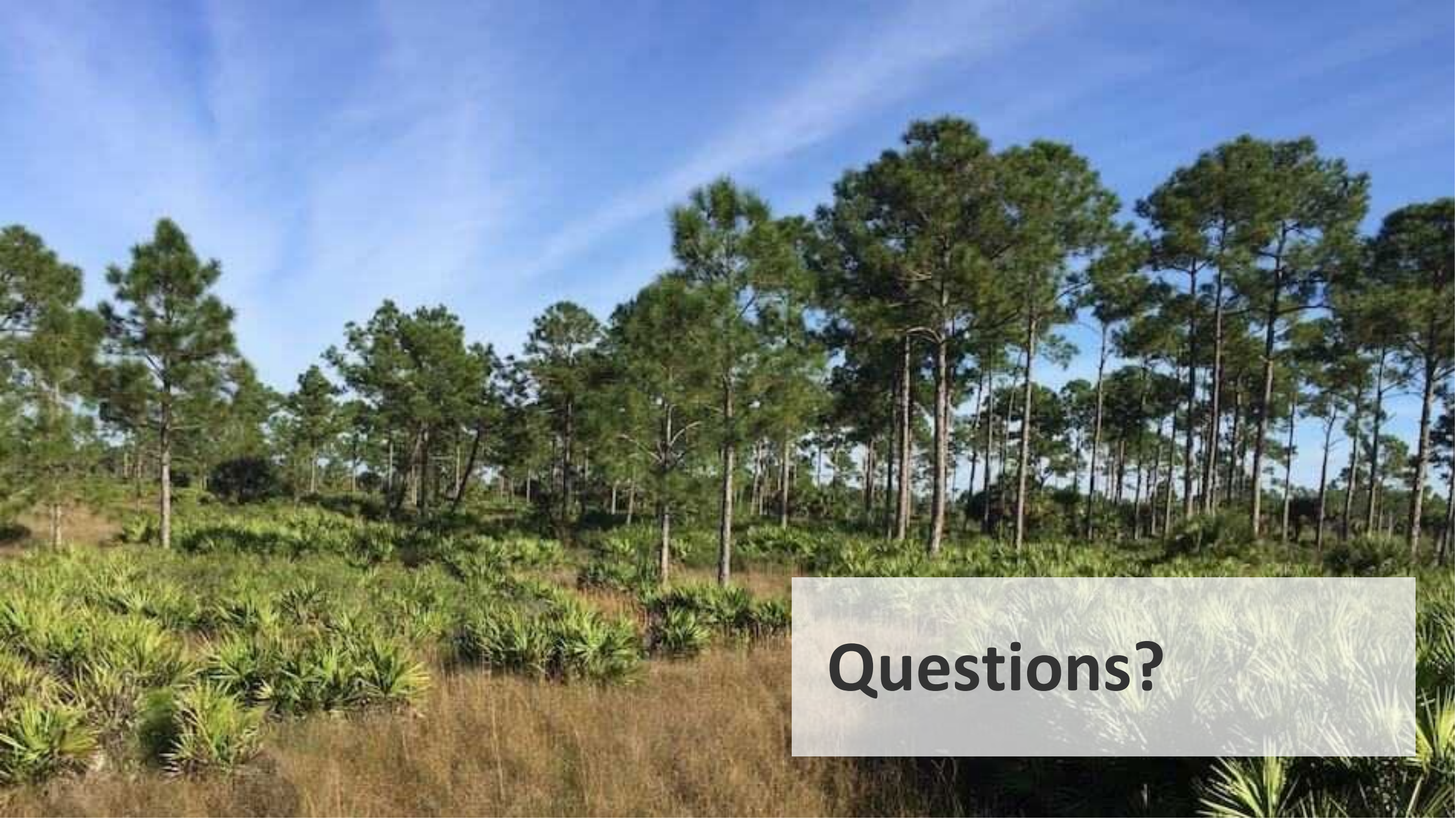
Discussion

- What are the specific features on your preserve that might increase/decrease climate risk?
- Are there areas on your preserve that are more/less susceptible to change?
- Rate the overall climate vulnerability of your preserve:
 - www.menti.com 22 24 38 58
 - <https://www.menti.com/alues3rvwpsq>

Next Steps

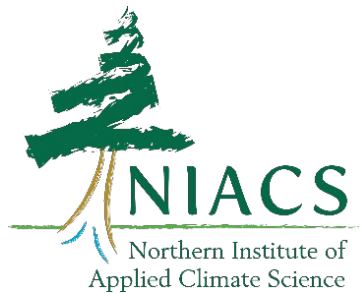
- **Next Session:** Tuesday, Nov. 29th (tomorrow): 9am – 12pm ET
- **Homework:** Briefly review the NIACS Adaptation Menu(s) relevant to your preserve/ecosystem type;
<https://forestadaptation.org/adaptation-strategies> (or through workshop website)
 - E.g. forests, fire-adapted ecosystems, coastal

kristen.schmitt@usda.gov | stephen.handler@usda.gov



Questions?

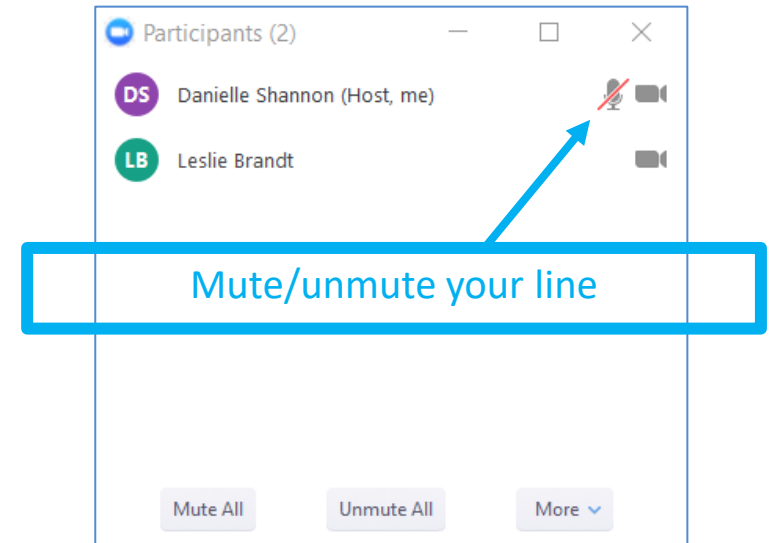
Climate Change Adaptation Planning TNC Florida



Welcome!

Please:

- Turn on your webcams for discussion if you can.
- ‘Rename’ yourself if needed (right click and type your full name).
- Questions: chat box and/or unmute.





Goals: Today

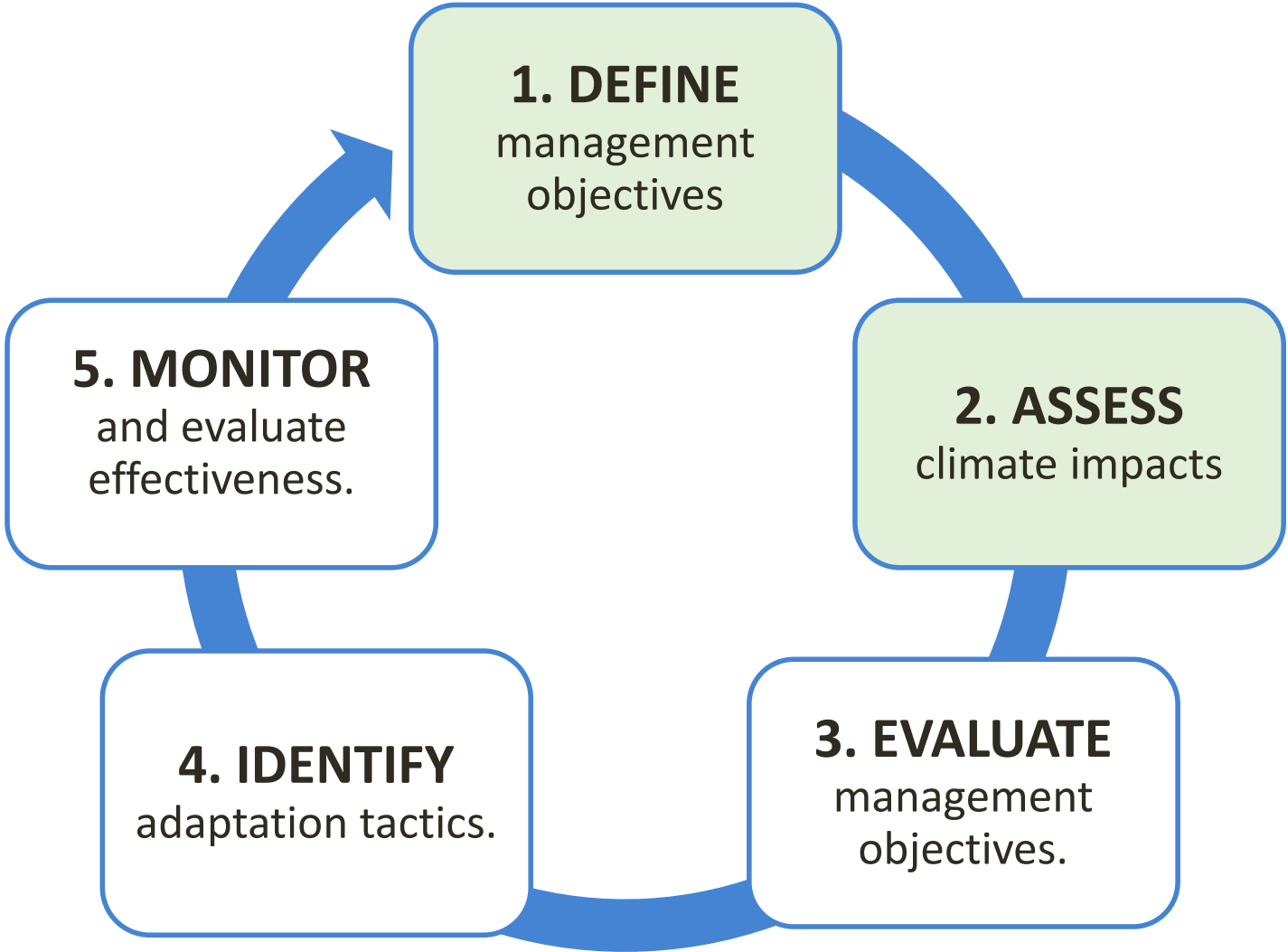
- Understand how climate will affect our ability to meet preserve goals and objectives
- Start to develop adaptation actions to respond to climate challenges while meeting management goals



Agenda

- 9:00** Welcome/ Plan for the Day
- 9:15** Climate challenges and opportunities for meeting preserve goals
- 10:00** Group discussion: climate challenges and opportunities
- 10:30** *Break (15 min)*
- 10:45** Presentation: climate adaptation concepts and climate menus
- 11:00** Identify and evaluate adaptation actions (pt. 1)
- 11:50** Next steps
- 12:00** Adjourn

Adaptation Workbook



STEP 2: ASSESS climate change impacts and vulnerabilities

- What are the specific features on your preserve that might increase/decrease climate risk?
- Are there areas on your preserve that are more/less susceptible to change?

Blowing Rocks:

Rocks on the southern portion of the beach help mitigate shoreline erosion.

Tiger Creek:

Already limitations in finding suitable Rx burn windows on this property – could become harder with climate change.

Apalachicola Bluffs:

Ravines on property may provide opportunities for refuges from some climate change.

STEP 2: ASSESS climate change impacts and vulnerabilities

Direct and indirect effects of climate change:

- Temperature
- Precipitation
- Flooding
- Wildfire
- Slope failure/erosion
- Tree mortality

Potential Impacts

Adaptive Capacity

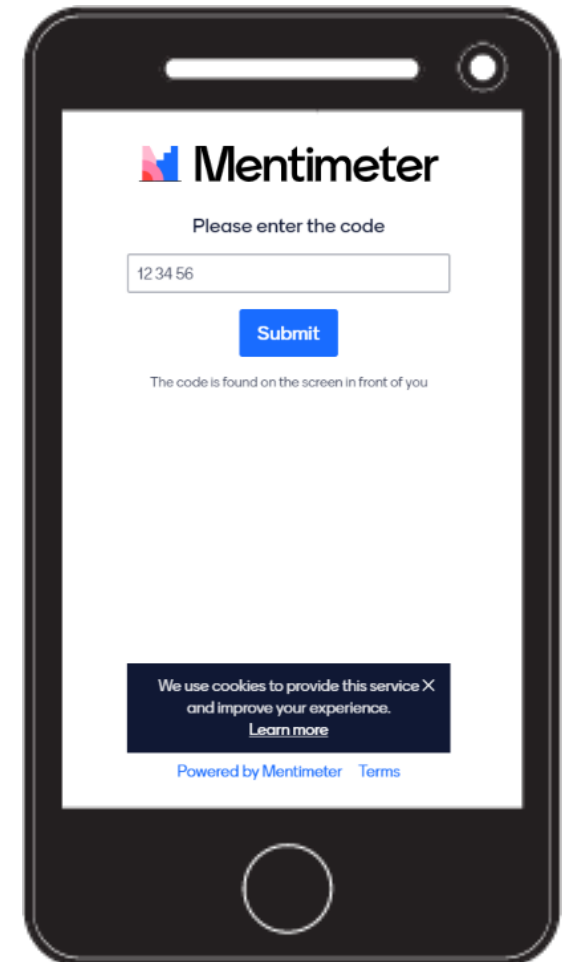
Vulnerability

Ability of the system to cope with change:

- High local diversity
- Species tolerance or plasticity
- Room to respond to disturbance (e.g. upslope movement)
- Ability of floodwaters to disperse

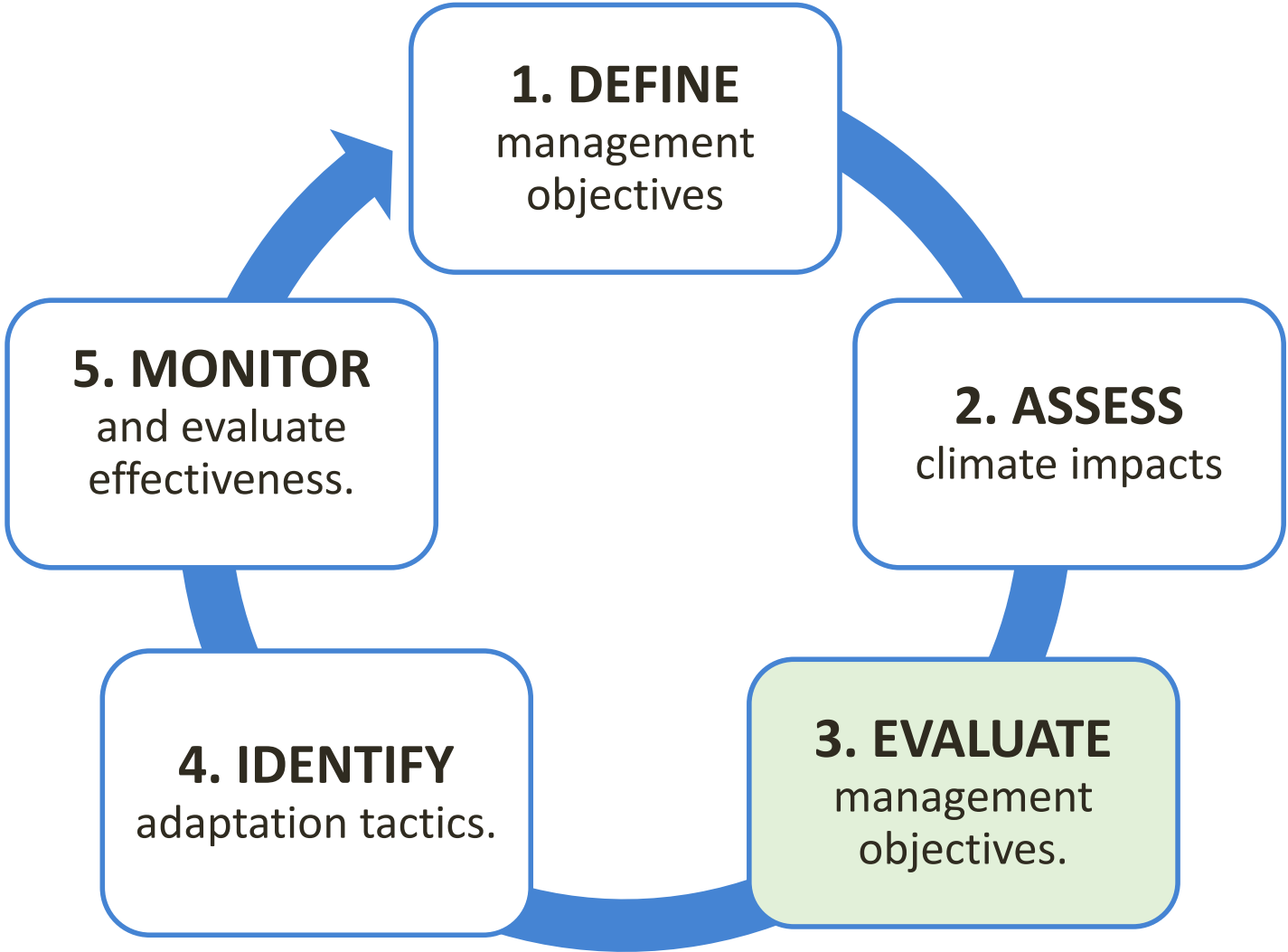
How vulnerable is your preserve to climate change?

- Find your way to [menti.com](https://www.menti.com)
- Access on your computer, or use your phone!
- Use number: **22 24 38 58**



<https://www.menti.com/alues3rvwpsq>

Adaptation Workbook



Evaluate Goals & Objectives

Given climate change

STEP 3: Evaluate management objectives given climate change

- How might climate change challenge our ability to meet goals and objectives for each preserve?
- Are there climate-related opportunities?
- Do our objectives need to change?



Climate vulnerability vs. Challenges to objectives

Step 2 is about the place:

- Detailing site characteristics that may present climate-related vulnerabilities



Step 3 is about your goals

- Describe how climate change may affect your ability to achieve the project goals and objectives



Similar but different!

In Breakout Groups: Consider climate challenges

Brainstorm:

What are the climate-related challenges to achieving your objectives?



** Focus on climate-related challenges
(not global markets, policies, etc.)*

In Breakout Groups: Consider climate challenges

Brainstorm:

What are the climate-related challenges to achieving your objectives?

** Focus on climate-related challenges
(not global markets, policies, etc.)*

Example:

Maintain a 2-4 year FRI for all longleaf pine sandhills.

Challenge:

Increasingly hot/dry summer conditions may reduce the # of days that meet Rx burn criteria.

In Breakout Groups: Consider management opportunities

Brainstorm:

What are the climate-related opportunities to achieving your objectives?



** Focus on climate-related opportunities (not opportunities for new/different actions)*

In Breakout Groups: Consider management opportunities

Brainstorm:

What are the climate-related opportunities to achieving your objectives?

** Focus on climate-related opportunities (not opportunities for new/different actions)*

Example:

Plant native warm season grasses and longleaf pine over 300 acres of upland pine.

Opportunity: Native warm season grasses may be favored under future climate conditions

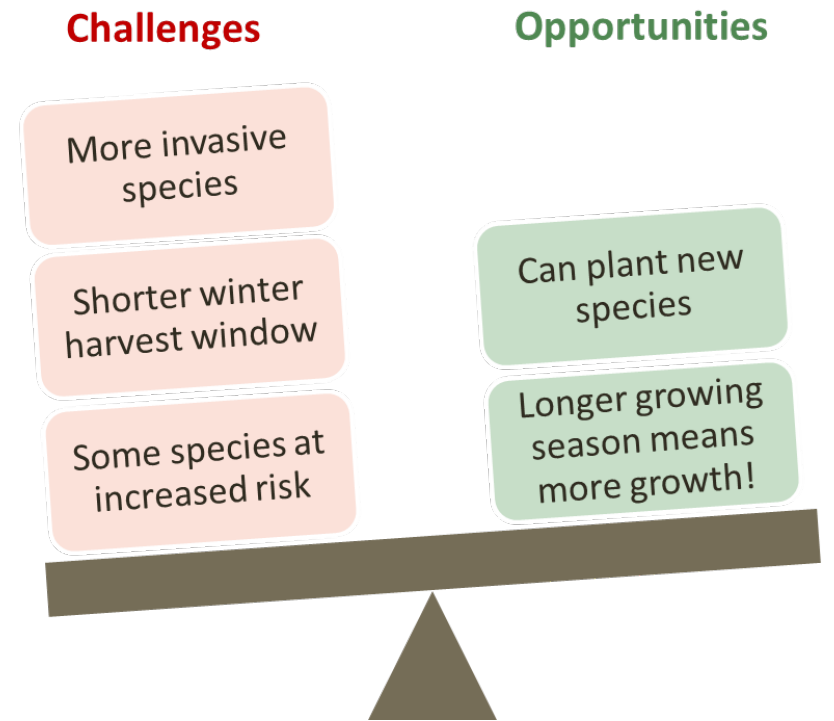
STEP 3: Evaluate desired management objectives given climate change

Feasibility – Can you meet your management objectives using current (business-as-usual) management actions?

High: We can do it! *Opportunities > Challenges*

Moderate: Somewhere in the middle

Low: We'll need more resources or effort.
Challenges > Opportunities



Discussion: Breakout Rooms

1. Join the breakout room for your preserve
2. Download the STEP 3 worksheet from the website & assign one person to take notes
 - <https://forestadaptation.org/climate-tnc-florida>
3. Discuss climate challenges and opportunities
4. [As time allows] Discuss feasibility of meeting objectives under 'business as usual' management.
5. Select a spokesperson to talk about 1-2 key challenges and opportunities you discussed.
6. 10:00 am – Reconvene for discussion

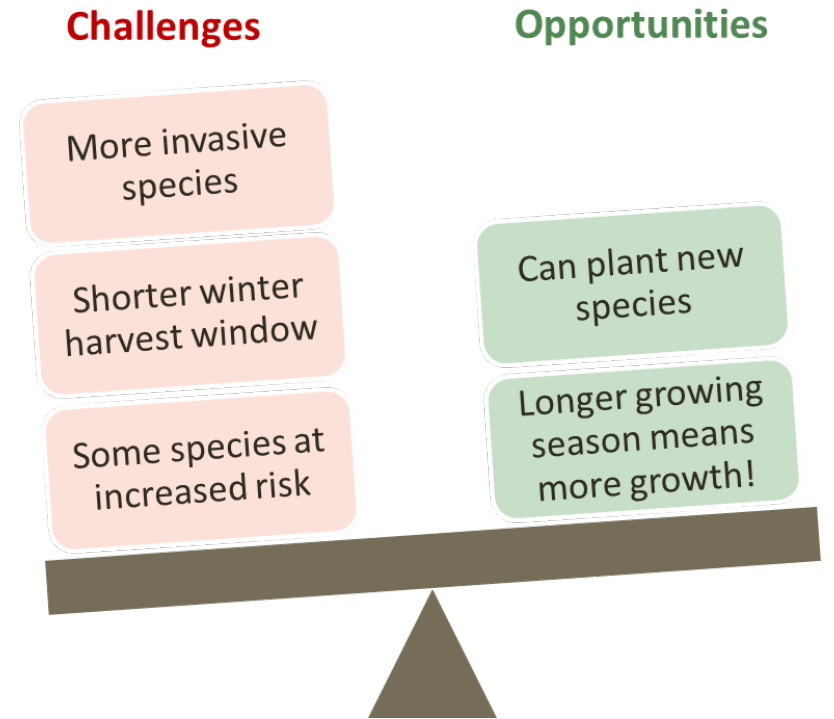
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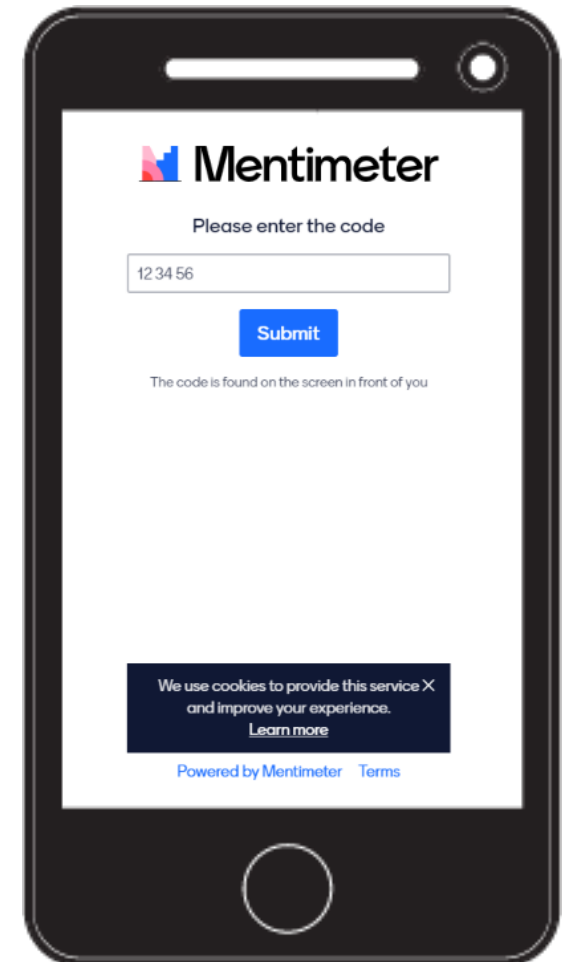
Moderate: Somewhere in the middle

Low: We'll need more resources or effort.
Challenges > Opportunities



Activity: Feasibility of Management Objectives

- Find your way to [menti.com](https://www.menti.com)
- Access on your computer, or use your phone!
- Use number: **22 24 38 58**

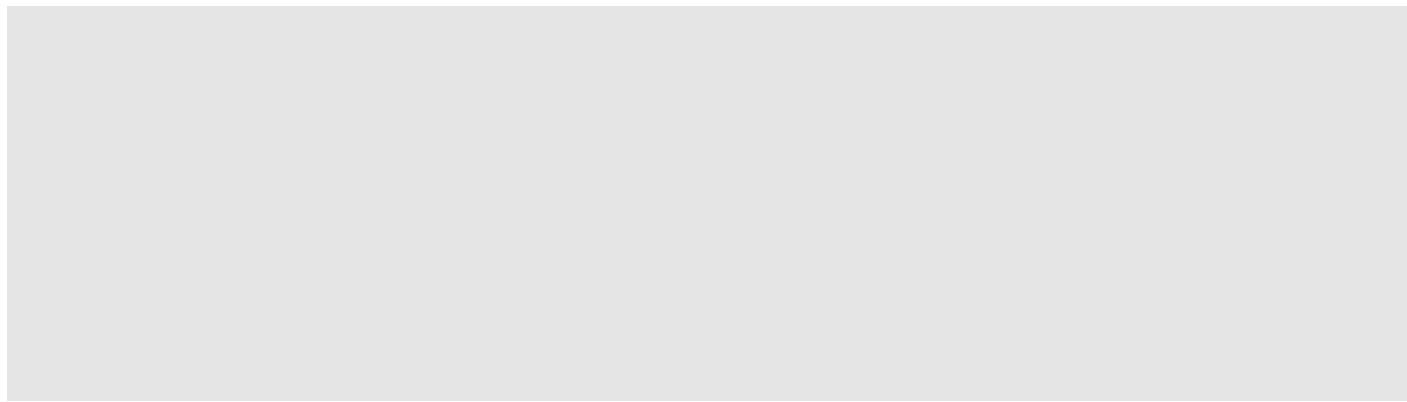


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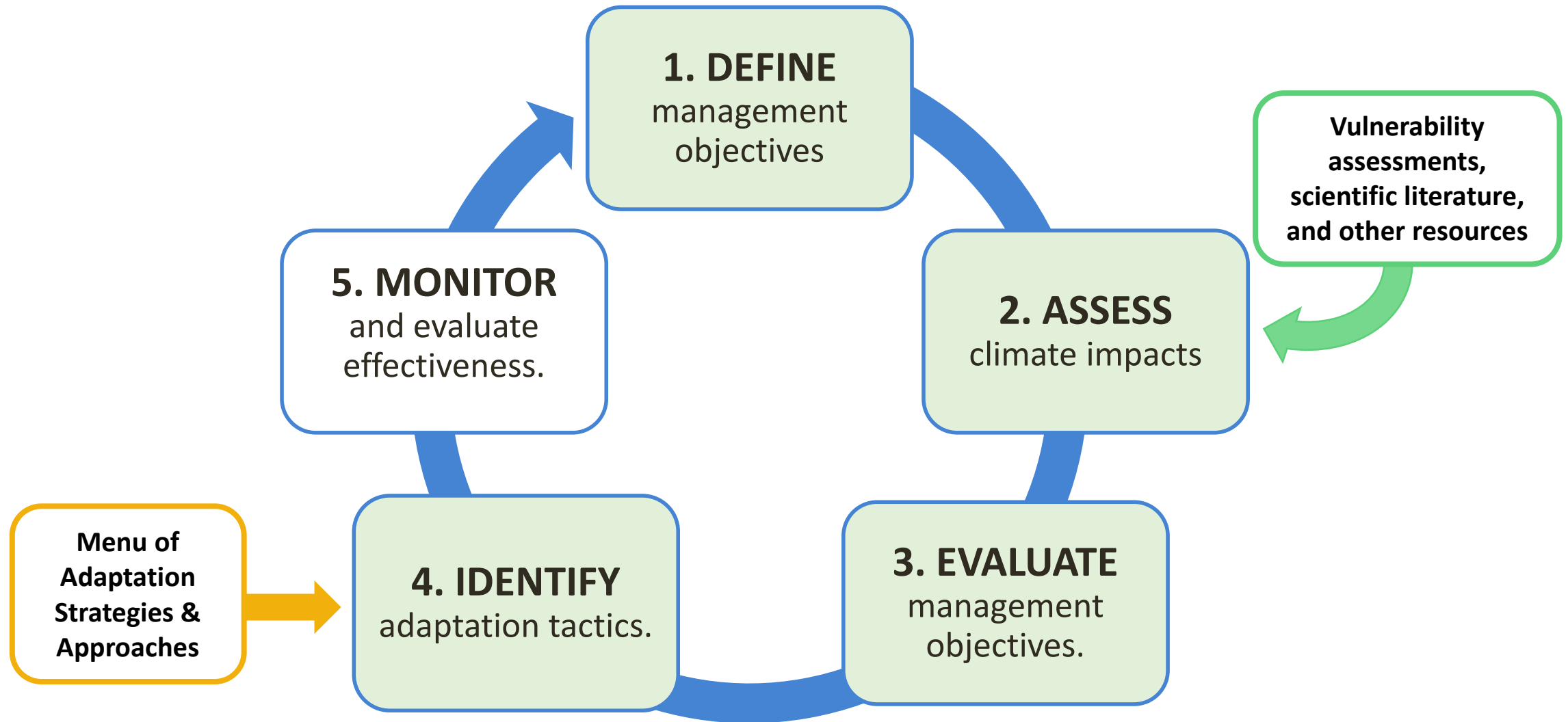
Break!



Climate Adaptation and Adaptation Menu



Adaptation Workbook



STEP 4: Identify and select adaptation approaches and tactics for implementation

- What actions can help cope with change and help meet the project goals and objectives?

STEP 4: Identify and select adaptation approaches and tactics for implementation

- What actions can help cope with change and help meet the project goals and objectives?
- How will future managers know what you were trying to do?

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



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

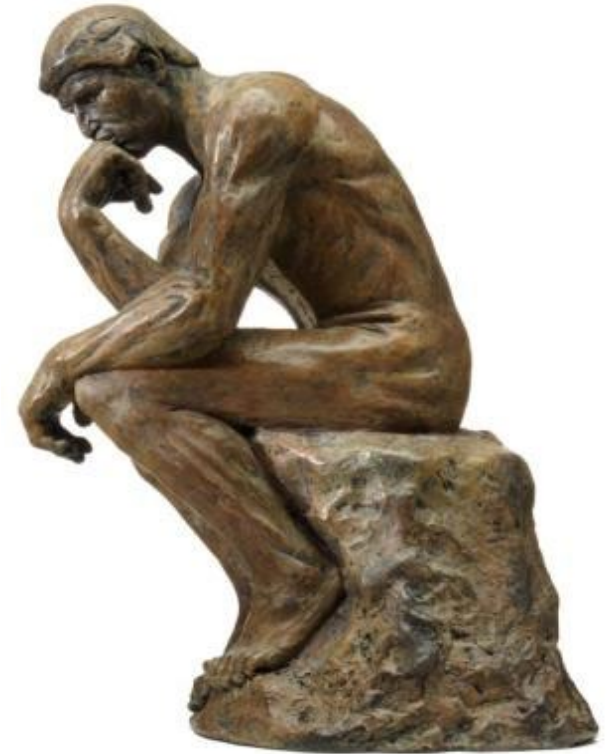
Adaptation Actions

Climate-informed decisions are *intentional*...

...but not always different

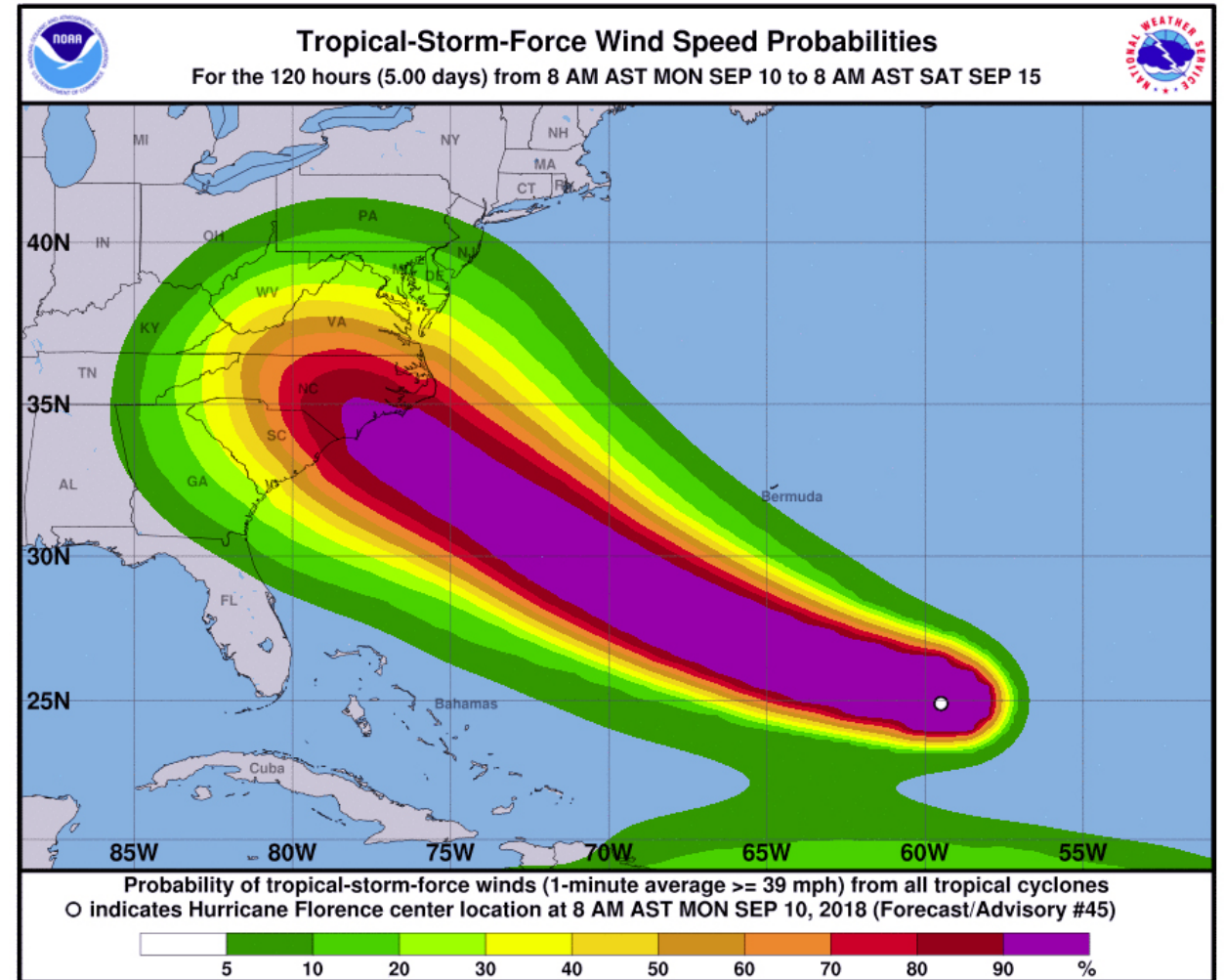
They will reflect

- Restrictive mandates, plans, and laws
- Public perception
- Costs
- Values
- Other barriers to change



We Don't Need Certainty

Instead: think about risk management!



Adaptation Concepts

RESISTANCE



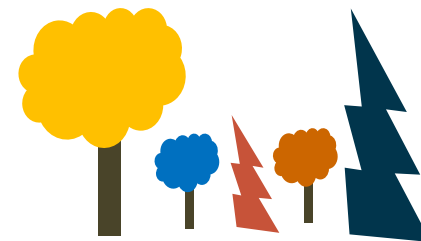
- Improve defenses of ecosystem against change and disturbance

RESILIENCE



- Return to prior reference condition following disturbance

TRANSITION



- Intentionally facilitate change

← Reduce impacts/maintain current conditions

→ Forward-looking/promote change

Resistance (persistence)

Improve the defenses of the system against anticipated changes or directly defending against disturbance in order to maintain relatively unchanged conditions.

Short-term, High-value



Controlling water levels in a forested wetland (USFS, Shawnee National Forest)



Threatened Dwarf lake iris (FWS)



Invasive species management (USFS)

Resilience (persistence)

Accommodate some degree of change or disruption, but be able to return to a similar condition after disturbance.

- Improve overall health & vigor
- Restore disturbance-adapted ecosystems
- Increase species and genetic diversity



Prescribed burning to regenerate fire-adapted species



Increasing species and genetic diversity



Increasing setbacks to allow for fluctuating water levels.

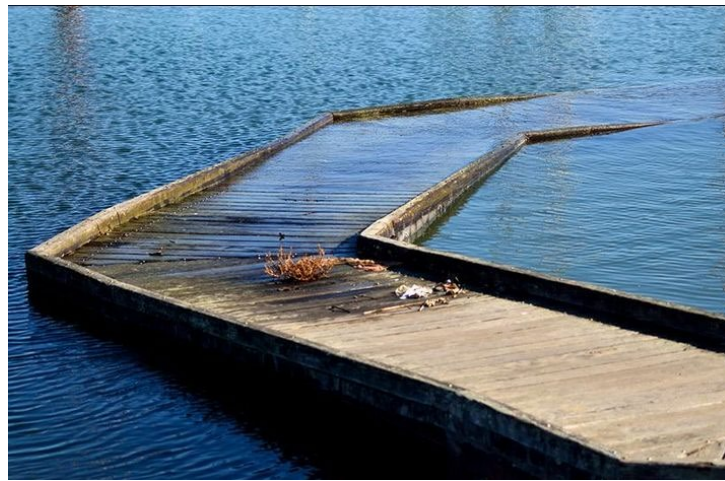
Transition (change)

Intentionally encourage change, help ecosystems respond in a targeted fashion.

- Grow and plant future-adapted seedlings
- Relocate visitor infrastructure
- Accommodate new & altered hydrologic processes



Growing species that are expected to be adapted to future conditions.



Relocate existing infrastructure to areas with less risk (P: Tom Hilton)



Encourage new species composition following fire (P: Luis Vidal)

Adaptation: there is no single answer

Every situation is different



Goal



Coastal protection



Wildlife



Carbon

Each decision is unique and will vary based upon:

People: Values, Culture, & Resources

Place: Location & Site Conditions

Purpose: Goals & Objectives

Practices: Equipment, Procedures, & Methods

Manage Risk

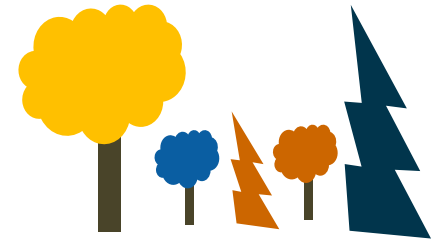
RESISTANCE



RESILIENCE



TRANSITION



Identify and implement actions that are
robust across a range of potential future conditions

Adaptation Menus of Strategies and Approaches

A “menu” of **possible actions** that allows you to decide what is *most relevant for a particular location and set of conditions.*

Examples:

- Forest Menu
- Fire-Adapted Ecosystems Menu
- Wildlife



<i>Brunch Classics</i>		
Lemon Ricotta Pancakes Whipped Mascarpone Maple, Berries	15	AJ's Omelet Fontal Cheese, Spinach, Mushrooms 14
Cornflake Crusted French Toast Berries, Maple Syrup	15	Eggs Florentine Spicy Capicola, House-Made Cheddar Biscuit, Spinach 15
Bacon, Egg & Cheese	14	Porchetta Hash Poached Egg, Calabrian Chili Hollandaise 16
	15	Chia Pudding Chia Seeds, Toasted Coconut, Banana, Strawberry 14
	22	Farmhouse Breakfast Two Eggs, House-Made Cheddar Biscuit, Chicken Sausage 14
	22	Chicken Kale Caesar Chicken, Kale, Croutons 16
<i>Eat Your Own Pasta Sauces</i>		
	14	Marinara San Marzano tomatoes, Garlic, White Wine, Basil, Chili
	15	Arrabiata All-Purpose Flour, Durum Flour, Eggs, Ricotta +1
	15	Broken Meatball House Tomato Sauce with the Addition of Broken Meatballs +4
	16	Sunday Sauce House Tomato Sauce with Short Rib, Sausage, Veal +4
	15	Roasted Garlic Pecorino Semolina, Durum Flour, Olive Oil +2
	18	Carbonara Pancetta, Eggs, Peas, Pecorino +3
<i>Brunch Cocktails</i>		
		Tomato Juice, Horseradish 10/45
		Crème de Peche, Sparkling Wine 12/55
		Lemon 12/55
		per, Carrot Juice 12/55
		ico, Crème de Peche 10/45
		au, Fresh Lime, Grenadine 12/55
		lake's Mimosa Juice, Sparkling Wine 12/55

Adaptation Menu



Translating broad **concepts** to specific **actions**

Options (concepts):

- Resistance, Resilience, Transition

Strategies:

- Regionally specific conditions

Approaches:

- Actions for a specific ecosystem

Tactics:

- Prescriptions for local conditions and management objectives

Example: Fire Adaptation Menu

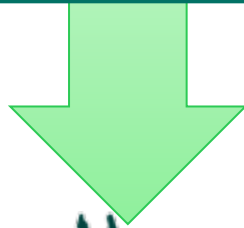
OPTION

 Option: **Resistance** (forestall change)

STRATEGIES

APPROACHES

TACTICS



ACTION

Example: Fire Adaptation Menu

OPTION

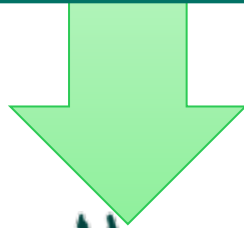
STRATEGIES



Sustain fire as a fundamental ecological process

APPROACHES

TACTICS



ACTION

Example: Fire Adaptation Menu

OPTION

STRATEGIES

APPROACHES

TACTICS

→ Approach 1.1. Restore or maintain fire in fire-adapted ecosystems

ACTION



Example: Fire Adaptation Menu

OPTION

STRATEGIES

APPROACHES

TACTICS



Tactic example: Use prescribed fire and mechanical treatments to manipulate structure and fuels ([describe when, where and how](#))



Example: Fire Adaptation Menu

OPTION

STRATEGIES

APPROACHES

TACTICS

→ Tactic example: Consider using managed and/or prescribed fire to facilitate transition to new fire regimes ([describe when, where and how](#))

ACTION



Example: Fire Adaptation Menu

OPTION

STRATEGIES

APPROACHES

TACTICS

→ Approach 7.3. Consider using fire as a tool to align existing vegetation communities with changing climate regimes

ACTION



Example: Fire Adaptation Menu

OPTION

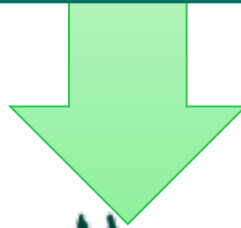
STRATEGIES



Strategy 7: Facilitate ecosystem adaptation to expected future fire and climate regimes

APPROACHES

TACTICS



ACTION

Example: Fire Adaptation Menu

OPTION

 Option: **Transition** (facilitate change)

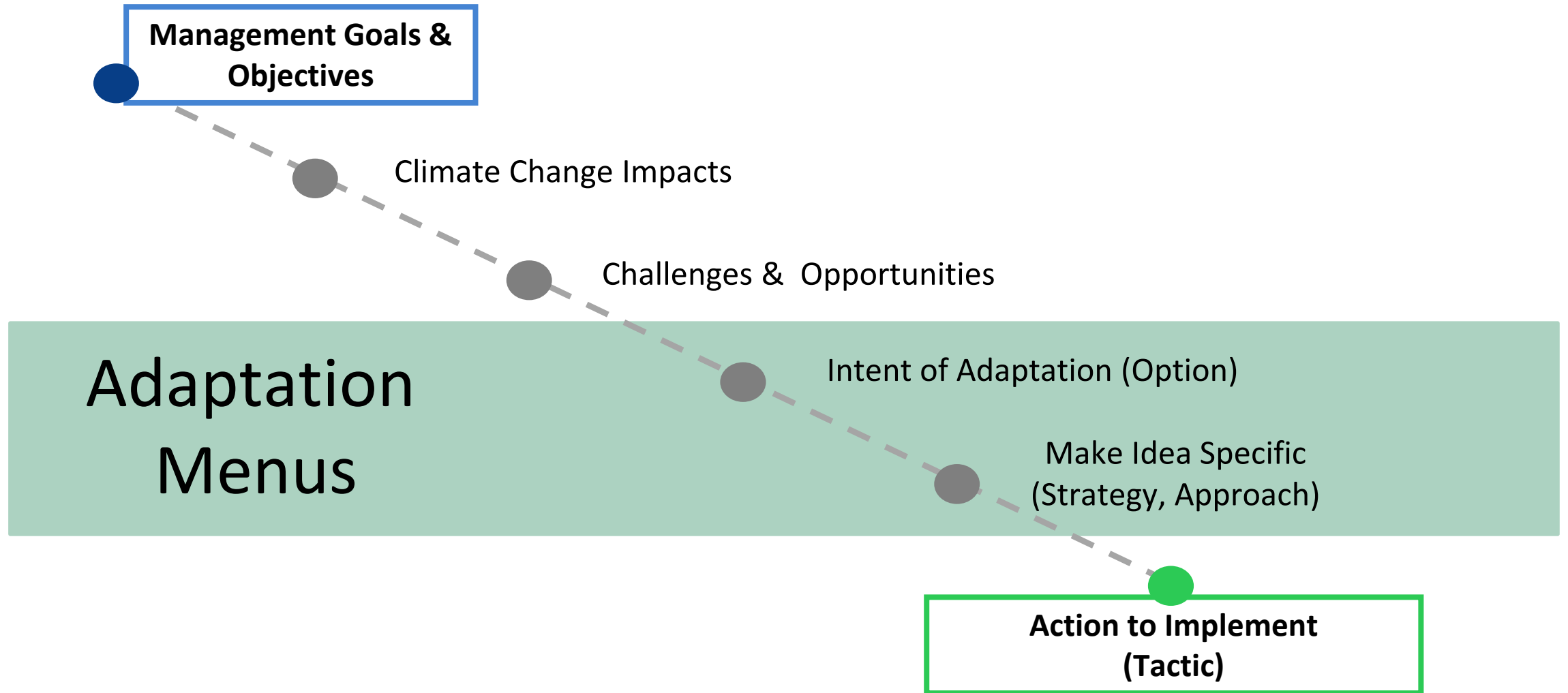
STRATEGIES

APPROACHES

TACTICS


ACTION

Menu + Workbook



Adaptation Menu

























- Forests, Urban Forests
- Agriculture
- Forested Watersheds
- Tribal Perspectives
- Carbon Management
- Recreation
- Wetlands (non-forested)
- California forests
- Wildlife
- Fire-adapted ecosystems
- Great Lakes Coastal Ecosystems
- Grasslands*

** Resources in development*

forestadaptation.org/adaptation-strategies

Open Access Editor's Choice Review

Adaptation Strategies and Approaches for Managing Fire in a Changing Climate

by  Martha Sample ^{1,*} ,  Andrea E. Thode ² ,  Courtney Peterson ^{3,4} ,
 Michael R. Gallagher ⁵ ,  William Flatley ⁶ ,  Megan Friggens ⁷ ,  Alexander Evans ⁸ ,
 Rachel Loehman ⁹ ,  Shaula Hedwall ¹⁰ ,  Leslie Brandt ^{3,11} ,  Maria Janowiak ^{3,11}  and
 Christopher Swanston ^{3,11} 

- 1 Center for Adaptable Western Landscapes, Northern Arizona University, Flagstaff, AZ 86011, USA
- 2 School of Forestry, Northern Arizona University, Flagstaff, AZ 86011, USA
- 3 Northern Institute of Applied Climate Science, USDA Northern Forests Climate Hub, Houghton, MI 49931, USA
- 4 Forest and Rangeland Stewardship Department, Colorado State University, Fort Collins, CO 80523, USA
- 5 USDA Forest Service, Northern Research Station, New Lisbon, NJ 08064, USA

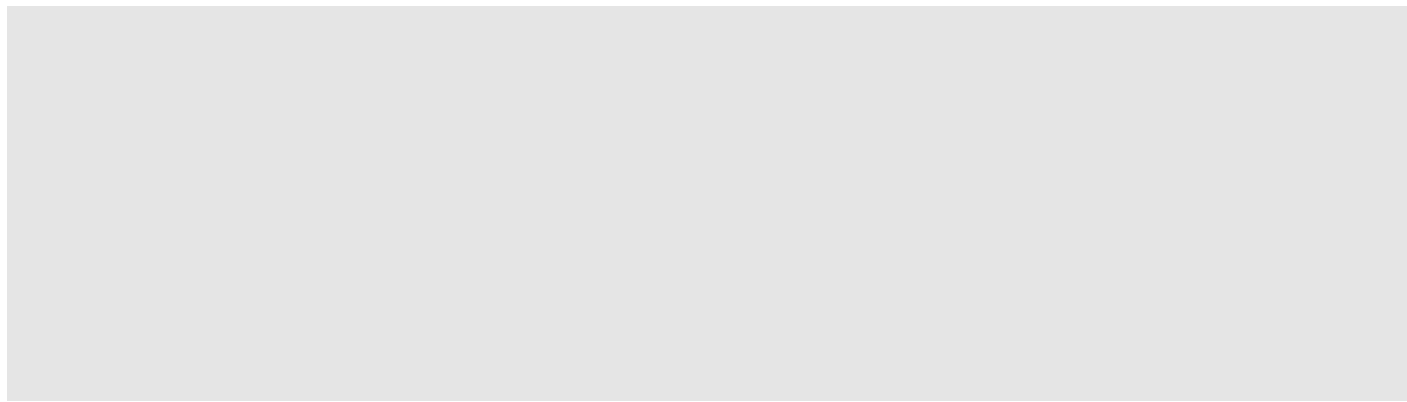
⁶ Kansas, Conway, AR 72035, USA
⁷ Station, Albuquerque, NM 87102, USA
⁸ Storage, AK 99508, USA
⁹ USA



A landscape photograph showing a field of green, spiky plants in the foreground, leading to a dense forest of tall, thin pine trees under a clear blue sky. The scene is captured from a low angle, emphasizing the height of the trees.

Questions?

Identify and Evaluate Adaptation Actions



Work Time!

- Download a Step 4 worksheet (on workshop website)
- Work in breakout rooms by Preserve (45 mins)
- **Regroup in main room at 11:50am**

Adaptation Menu (e.g. forest, wildlife, fire)

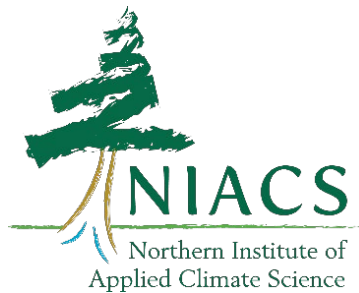
	Adaptation Approach	Adaptation Tactic	Benefits/Drawbacks, etc.
Forestry	4.1. Prioritize and maintain unique sites	WHAT? HOW? WHERE?	
Recreation	5.1. Recondition Recreation-Related Infrastructure Located in Vulnerable Areas	WHAT? HOW? WHERE?	

Next Steps

- **Next Session:** Wednesday, Nov. 30th (tomorrow): 12pm – 3pm ET
 - Feel free to bring your lunch!
- No homework

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Climate Change Adaptation Planning TNC Florida





Goals: Today

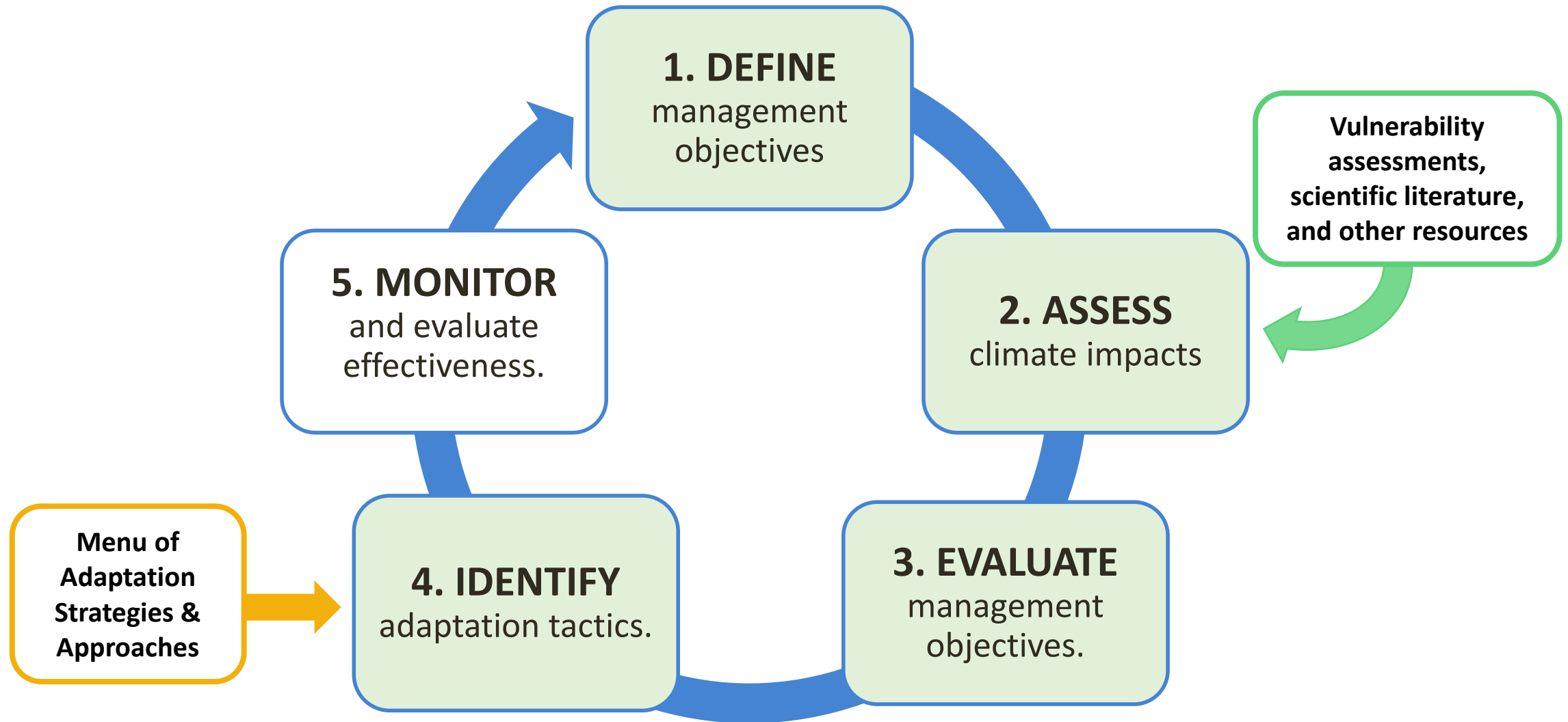
- Further develop climate change adaptation tactics & share with the broader group
- Discuss how to measure and monitor success



Agenda

- 12:00** Welcome/ plan for the day
- 12:15** Identify and evaluate adaptation actions (pt. 2)
- 1:00** Group discussion – adaptation tactics
- 1:45** *Break (15 min)*
- 2:00** Monitor the effectiveness of implemented actions
- 2:45** Next steps & wrap-up
- 4:00** Adjourn

Adaptation Workbook



Check Your Work...

Do your adaptation ideas address:

- Your Management Objectives?
- Important climate change impacts?
- Special features of the project area?
- A range of adaptation options? (RRT)
- Stuff you're already doing as well as new ideas?

Work Time (continued)!

- Use your STEP 4 worksheet from yesterday
- Work in breakout rooms by Preserve (~45 mins)
- Select a spokesperson: 2-3 adaptation tactics that you're excited or concerned about
- Meet back in full room at 1:00 pm

Adaptation Menu (e.g. forest, wildlife, fire)

Adaptation Menu (e.g. forest, wildlife, fire)	Adaptation Approach	Adaptation Tactic	Benefits/Drawbacks, etc.
Forestry	4.1. Prioritize and maintain unique sites	WHAT? HOW? WHERE?	
Recreation	5.1. Recondition Recreation-Related Infrastructure Located in Vulnerable Areas	WHAT? HOW? WHERE?	

Discussion

Report on:

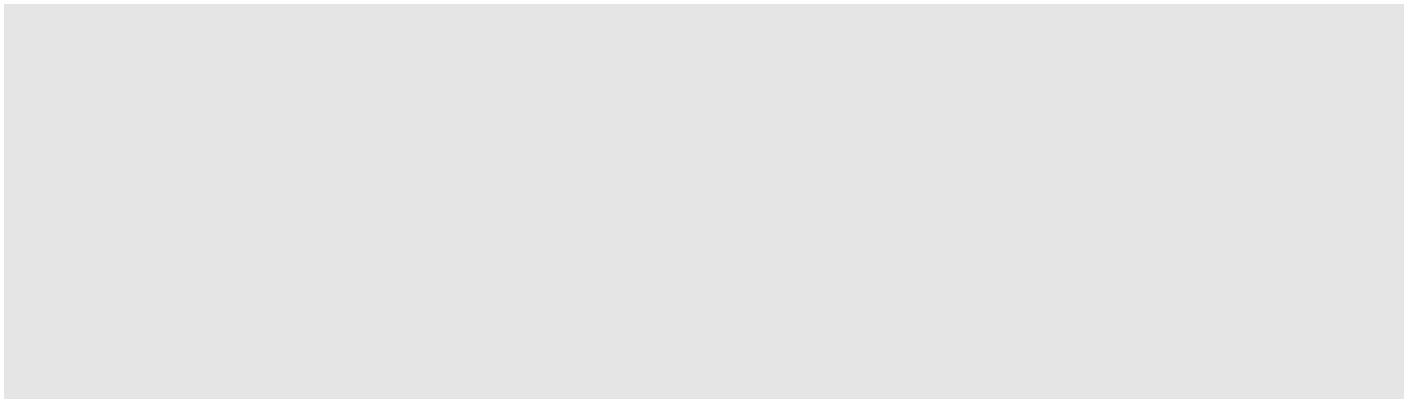
- 2-3 adaptation tactics your group discussed



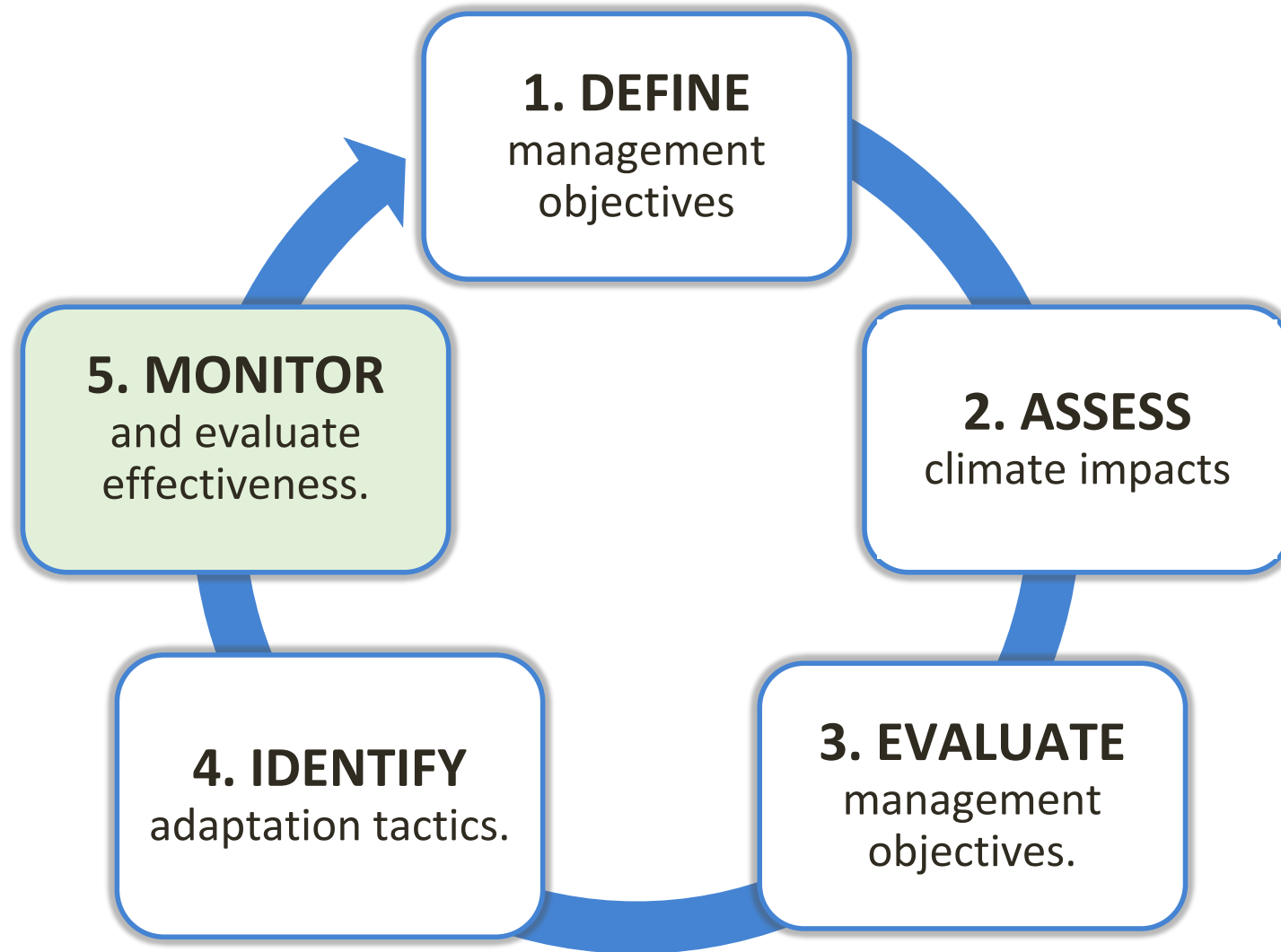
Break!



Monitoring



Adaptation Workbook



STEP 5: Monitor and evaluate effectiveness of implemented actions.

- How do we know if our selected actions were effective?
- What can we learn from these actions to inform future management?



STEP 5: Monitor and evaluate effectiveness of implemented actions.

What question are you are asking? This will guide your monitoring approach:

- **Impact/ response monitoring** = What changes are occurring?
- **Implementation monitoring** = Did we do the action?
- **Effectiveness monitoring** = **Did our actions actually have the desired effect?**
- **Scientific research** = Is this outcome statistically significant compared to a control?

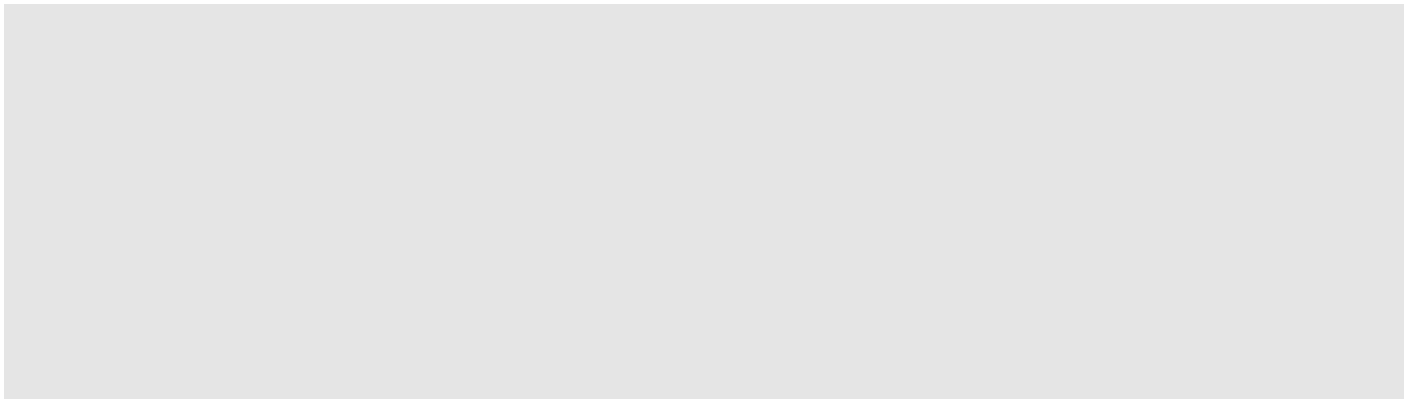
STEP 5: Monitor and evaluate effectiveness of implemented actions.

Management Topic – General category of your mgmt. action	e.g. Restoration
Adaptation Monitoring Variable – What you will measure	e.g. herbaceous groundcover diversity
Criteria for Evaluation – A value or threshold that is meaningful for assessing effectiveness or informing future decisions	e.g. a floristic quality index (FQI) > 45
Monitoring Implementation – How you will gather the information	e.g. Pre- Rx burn survey and post Rx burn surveys at 1,2 and 5 years.

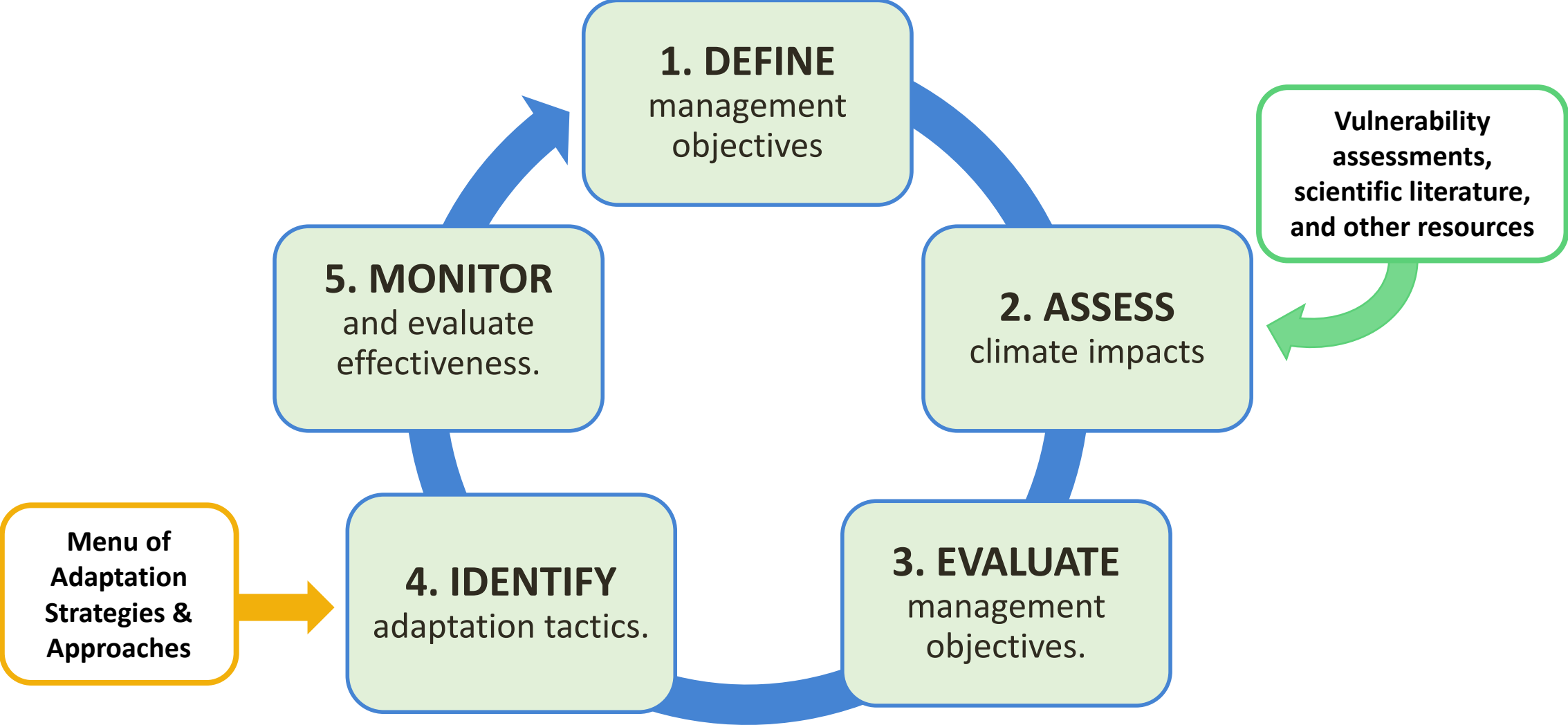
STEP 5: Monitor and evaluate effectiveness of implemented actions.

- Keep it simple! Something you actually can and will do.
- Prioritize!

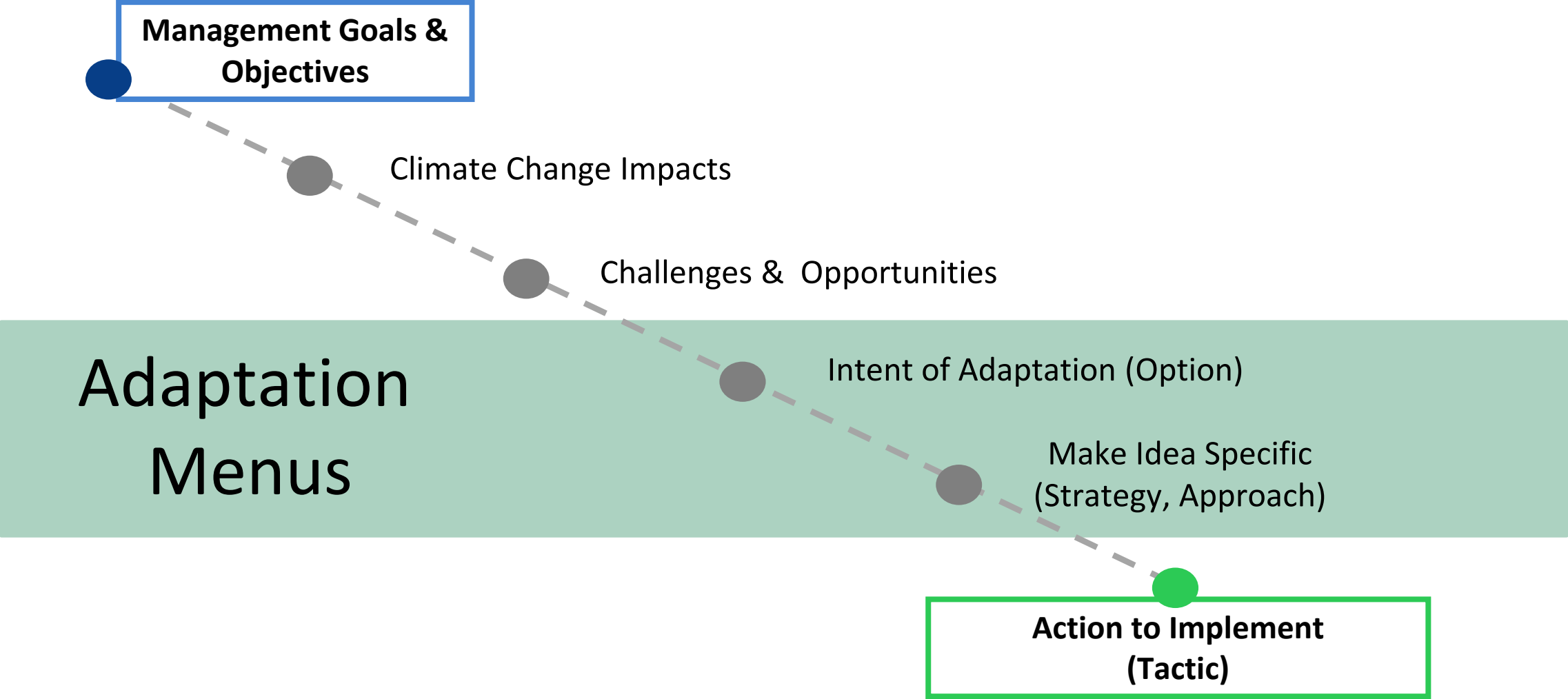
Wrap-Up



What we've achieved



What we've achieved





What's Next?

- B Pace-Aldana (TNC Florida)
- Other ideas or needs (e.g. information)?



Thank you!