Synergies between joint mitigation-adaptation practices in the land conservation sector:

Examples from forest systems



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Synergies between joint mitigation-adaptation practices in the land conservation sector:

Examples from forest systems



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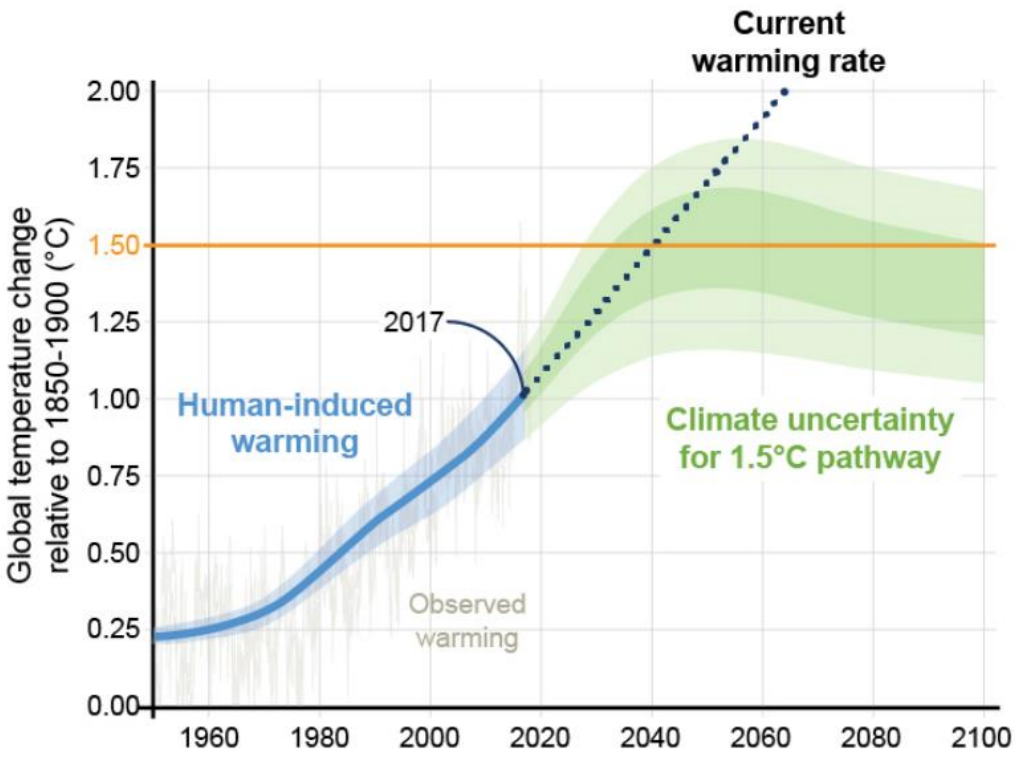
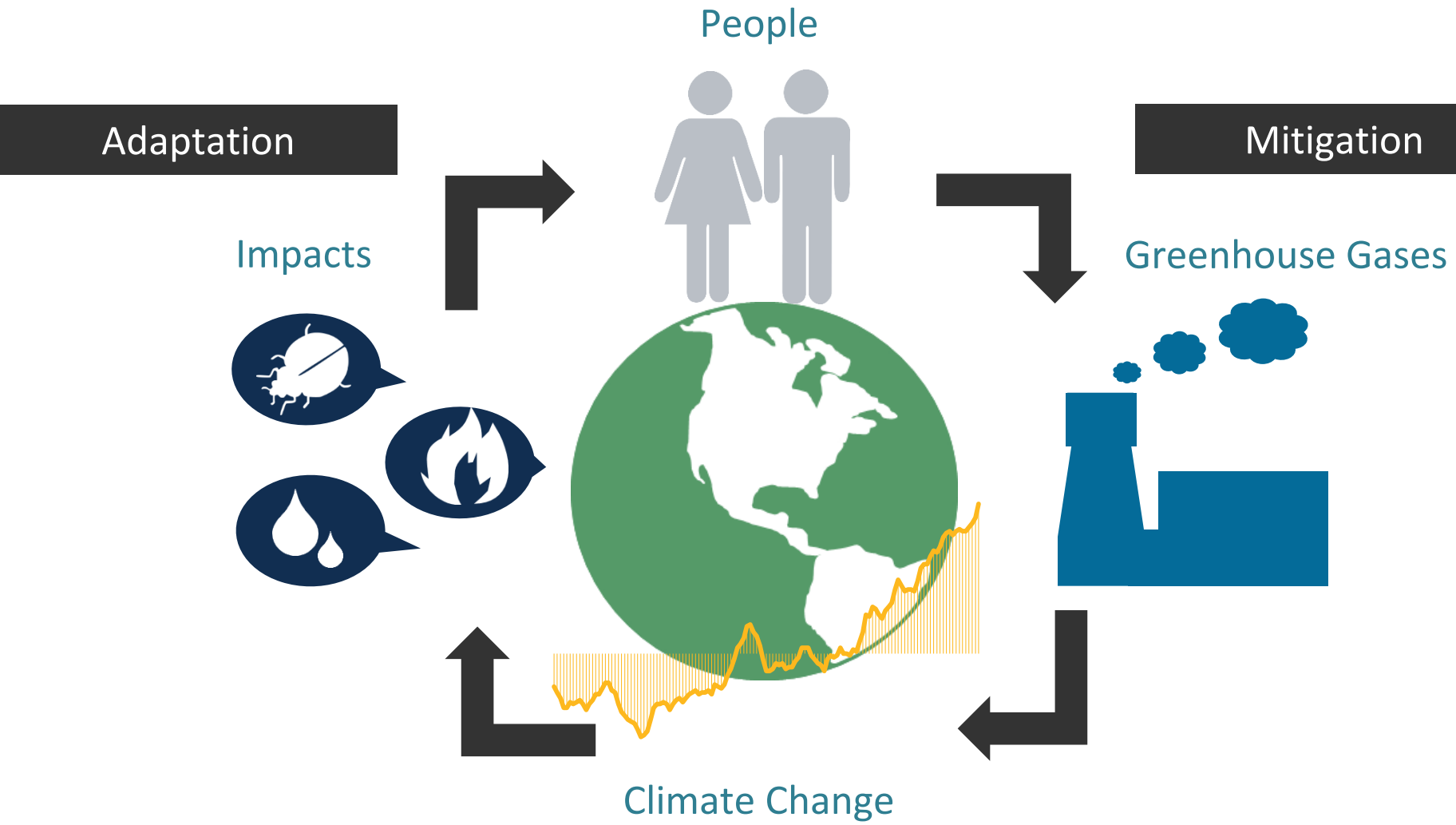
Responding to Climate Change

"Limiting global warming to 1.5ºC would require rapid, far reaching and unprecedented changes in all aspects of society" (IPCC, 6 Oct 2018)



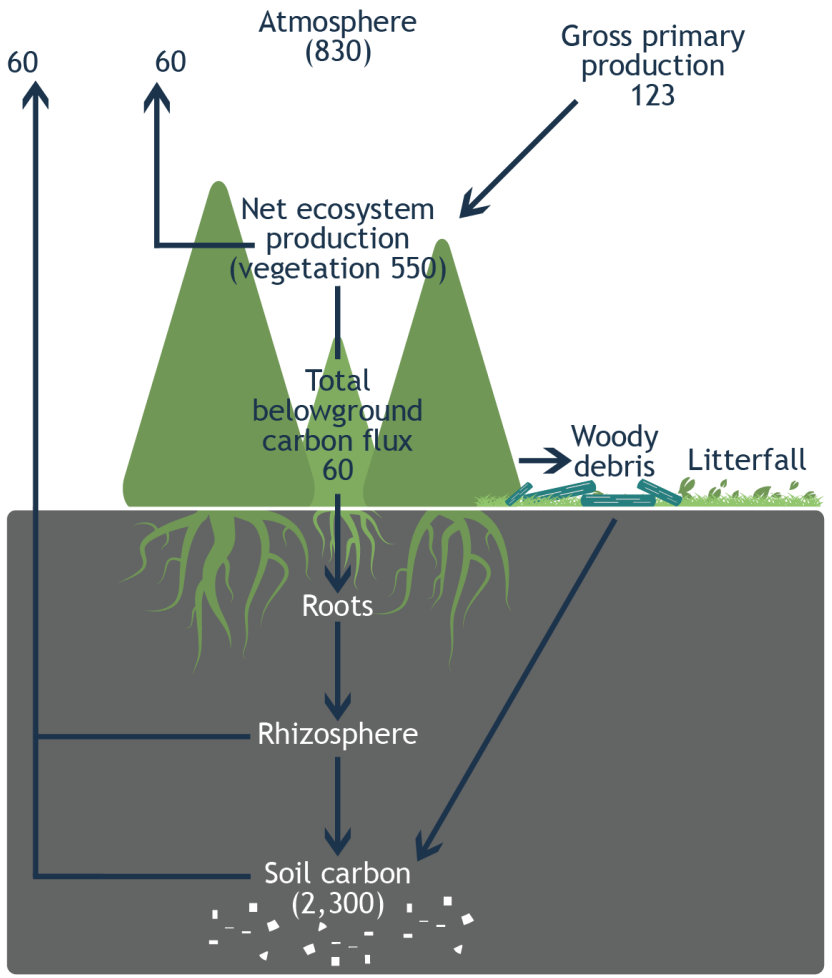
IPCC 2018

Responding to Climate Change



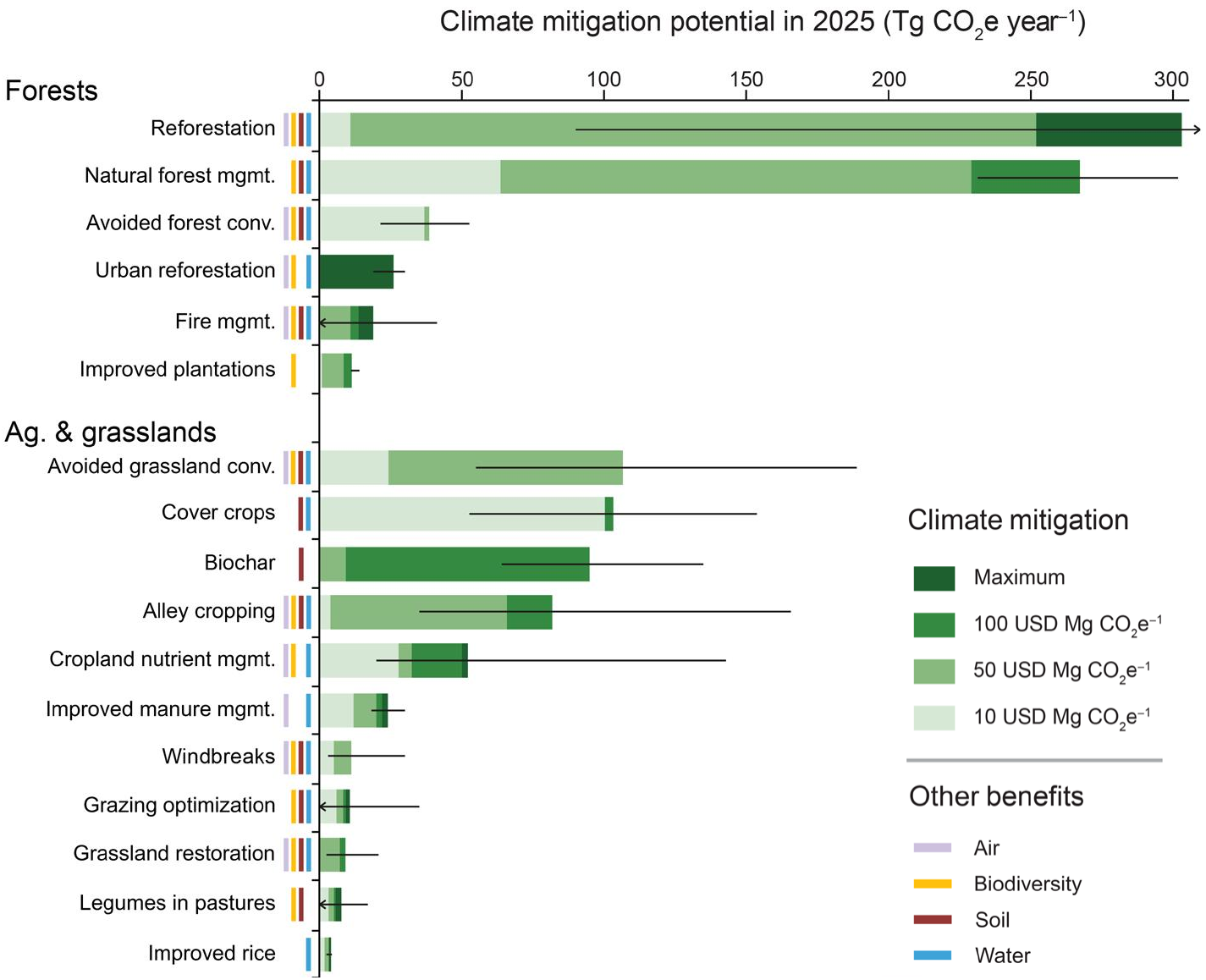
Natural Climate Solutions (aka Mitigation)

"Natural and working lands have the potential to deliver 37% of cost-effective carbon dioxide mitigation needed by 2030"



Griscom et al. 2017 (PNAS), TNC 2017, FIA 2015; Image: Janowiak et al 2017

Natural Climate Solutions (aka Mitigation)



Fargione et al. 2018

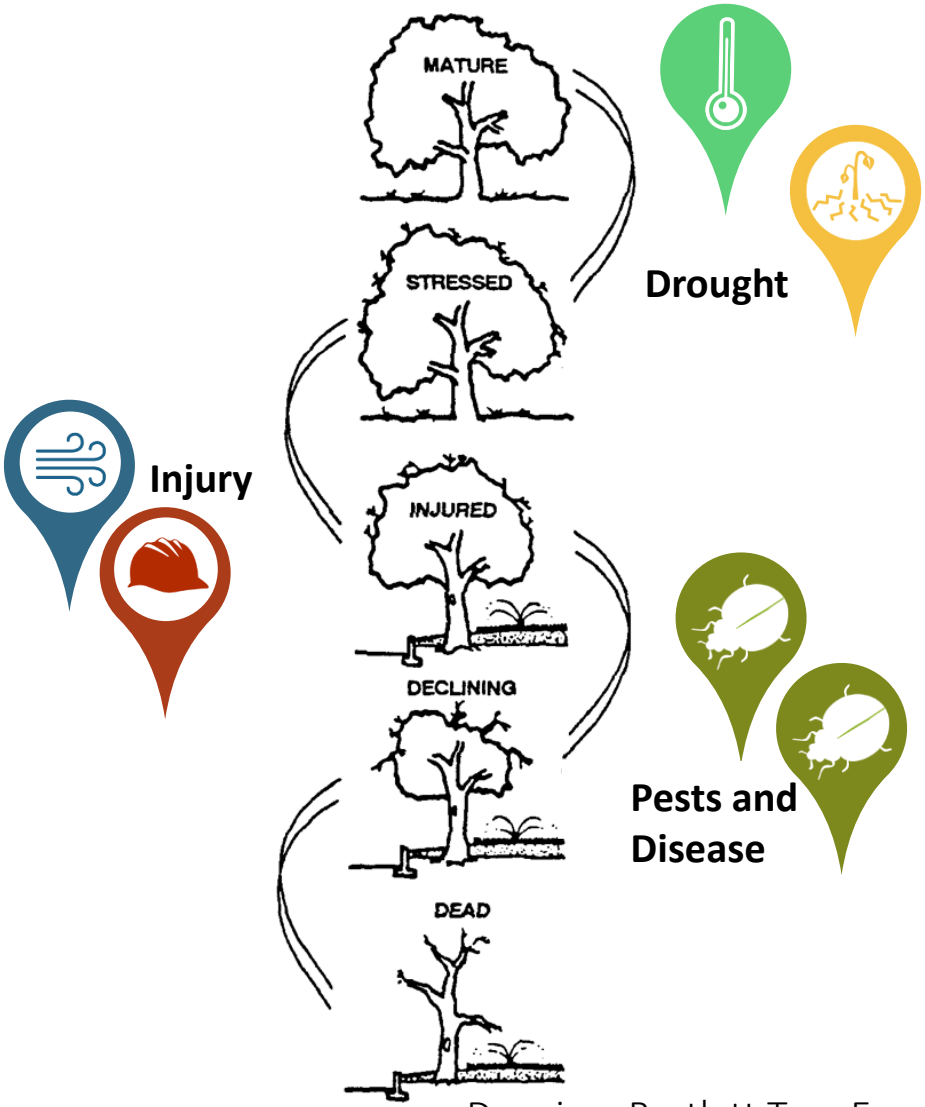
Adaptation vs. Mitigation

Not opposites! Not mutually exclusive!

Reducing Climate Risks

Climate change puts additional stress on ecosystems.

Ensuring that forests are healthy and able to adapt to future conditions helps maintain their capacity to absorb and sequester carbon.



Drawing: Bartlett Tree Experts

We need to ensure that forests are healthy and can sustain themselves into the future.

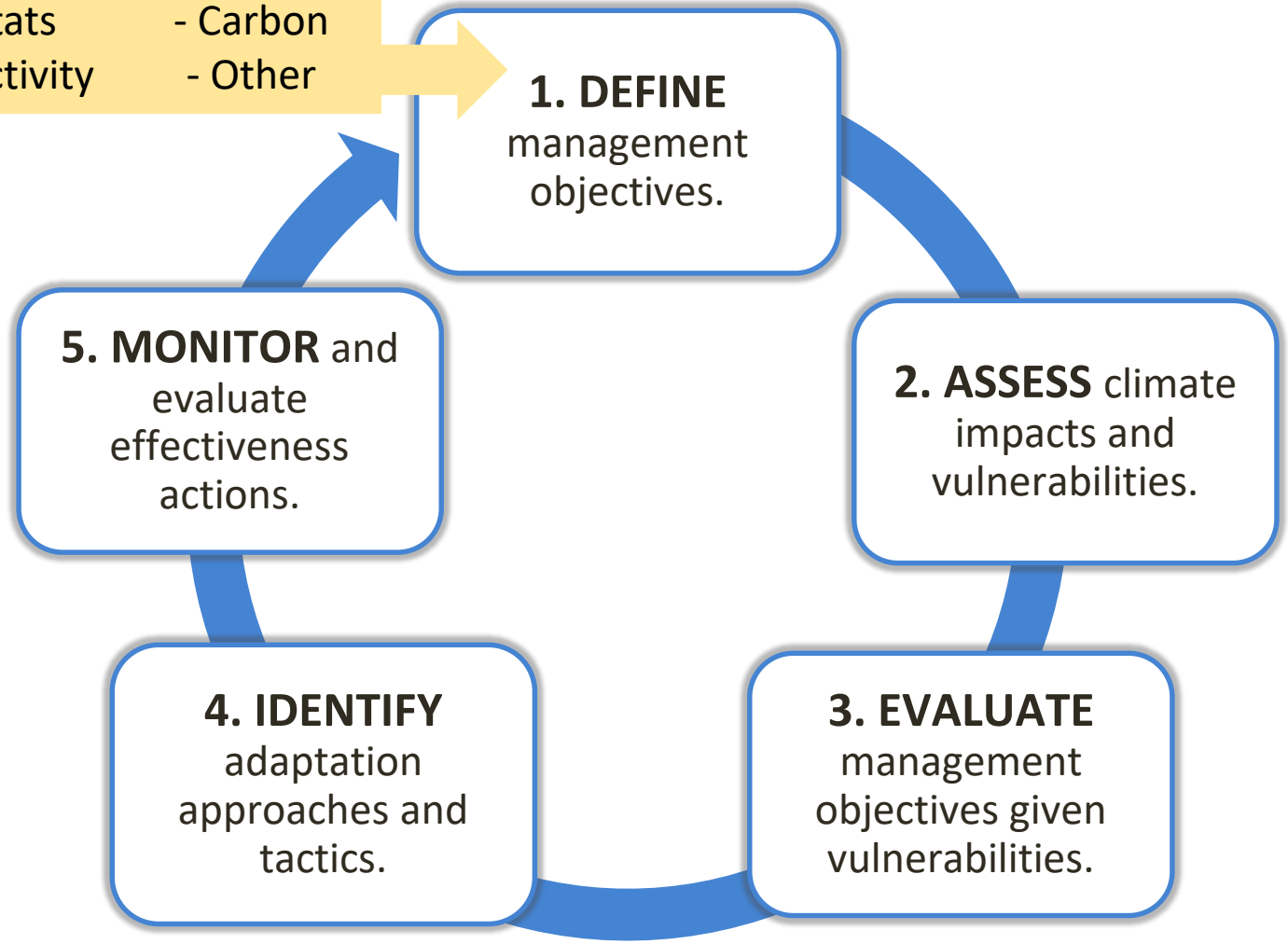
-Purify the air
- Support local economies
- Maintain clean water supplies
- Support biodiversity
- Regulate streamflow
- **Sequester carbon**

… and more!

Adaptation Workbook Process

What do you care about?

- Habitats
- Carbon
- Connectivity
- Other



www.adaptationworkbook.org

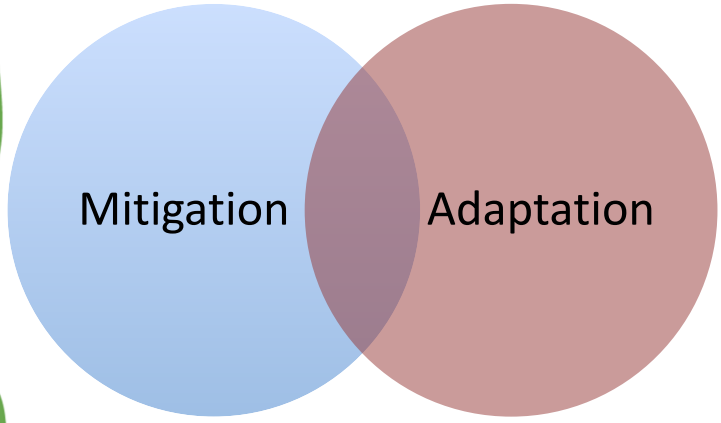
Role of the land conservation sector and RCPs in Joint Mitigation Adaptation

RCP Network Gathering

November 13, 2019

Joint mitigation adaptation

Potential synergies and win-wins



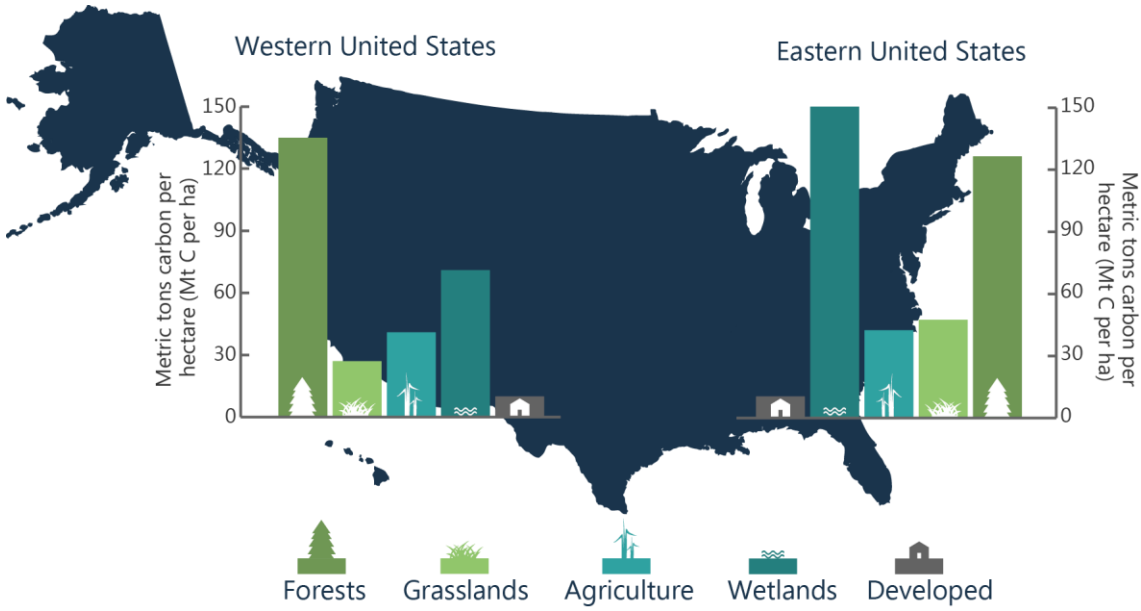


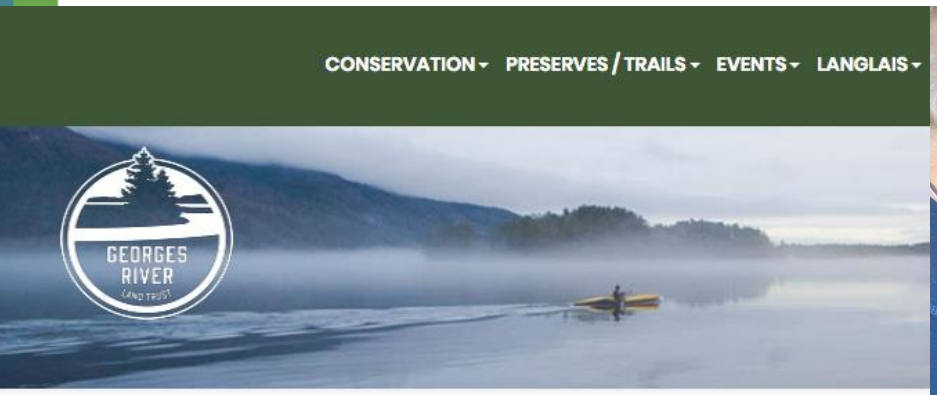
Figure: Janowiak et al. 2017

The work of RCPs

- Prioritization, Planning & Acquisition
- Advocacy
- Education & Outreach
- Stewardship & Management

Kestrel Land Trust walk

Planning & Prioritization



12 Rivers Conservation Initiative

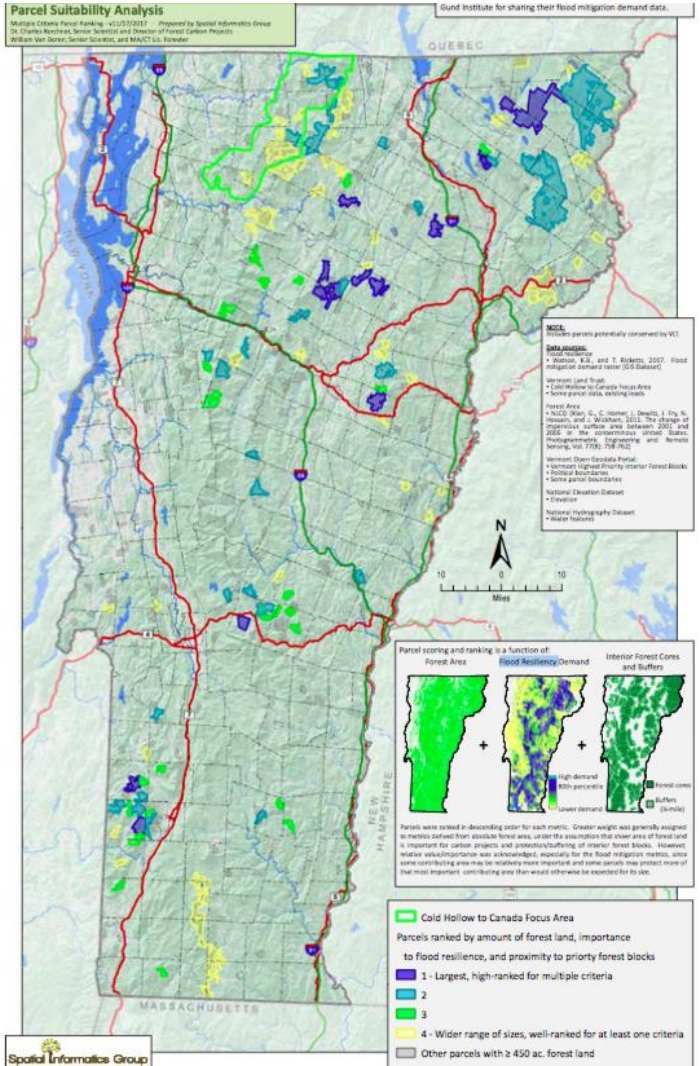
Georges River Land Trust is proud to be working closely with seven of our neighboring land trusts in midcoast Maine to implement the 12 Rivers Conservation Initiative. Collectively, we hope to conserve special landscapes at a scale greater than the sum of our individual efforts.

In 2016, we began to reexamine our long-term conservation planning through the lens of regional climate data. Here's an **article about our recent progress.**

Planning & Prioritization

"Cold Hollow to Canada has a unique role with our boots on the ground knowledge of the forest landscape and who owns it."

- Nancy Patch



Advocacy

MA Climate Adaptation Coalition's
Climate Change Funding Principles (Draft 10/31/19)

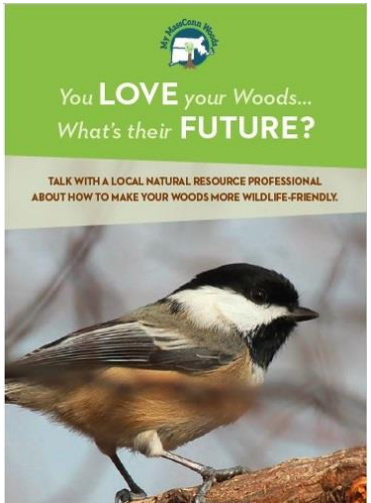
"Align mitigation and adaptation efforts to best complement each other.

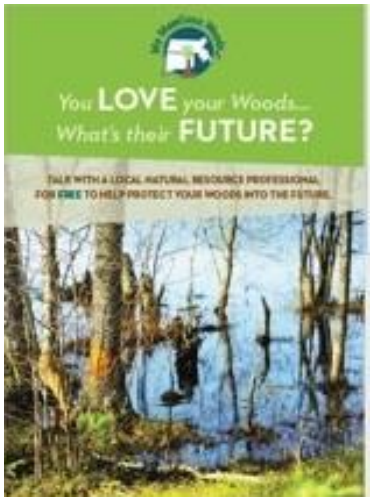
Provide co-benefits, such as restoring and conserving natural resources (key habitats and ecosystem services), that both reduce climate risks and naturally remove carbon from the air"

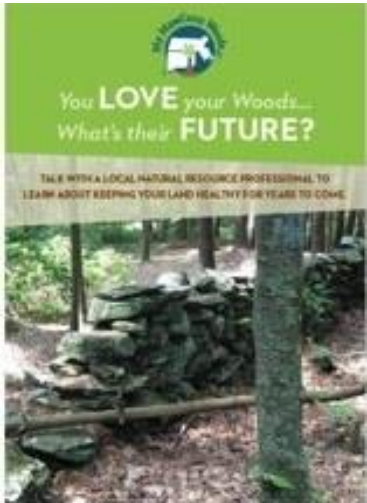
Education & Outreach

MassConn Sustainable Forest Partnership

- Comprehensive program for engaging foresters and woodland owners in conversations about adaptation
- Learn more in next session!







Resources

WCS Climate Adaptation Fund Joint Mitigation and Adaptation FAQ

Communications products

- Collaboration of Mass ECAN affiliated climate communications expert work group, LTA, OSI
- Real examples from land trusts
- Climatechange.lta.org

Hilltown Land Trust
AN AFFILIATE OF THE TRUSTEES

Recommendations for Communicating about Climate Change

Before considering any guidance on communication, remember that the first step to developing effective messaging on any topic is to identify who specifically you are trying to reach — the target audience — and what specifically you want them to do in response — the desired outcome.

Need help? Visit "Developing a Communications Product" for a bare-bones outline of the steps to developing a communication product to see where this guidance fits into the process.

Here are five research-based recommendations to help you communicate more effectively about climate change. To help show you what these recommendations look like in practice, we have linked to examples of products that do it well and provide additional communications product analysis for further insights. An collection of additional communications product examples is available here.

1. Lead with politically neutral messages about conserving resources people already care about.

Here's why: Most people don't need to be talked into caring about majestic scenery, clean water, and healthy trees, no matter where they lie on the political spectrum. But even though climate change threatens universally valued natural assets, the term itself is inescapably polarizing because it is portrayed as an ideological issue. And since it is difficult for people without a scientific background to understand the science behind climate change, they rely on political leaders to validate or refute the findings. Rather than rallying us to work together at a time when unity matters most, the term climate change tends to pull us apart.

Politics aside, many of the strategies promoted for climate mitigation, like carbon sequestration, or climate adaptation, like green infrastructure, require considerable explanation. Effective communication should focus on common ground issues, and mutually beneficial outcomes. If you root your messages in universal values and needs, you can make a more compelling case for adaptation actions intended to sustain the things we all care about in the face of changing environmental conditions, without specifying what's driving those changes.

For example: Protecting clean water for drinking, timber for building homes, and open space for recreation

Supporting evidence: The research behind recommendation # 1

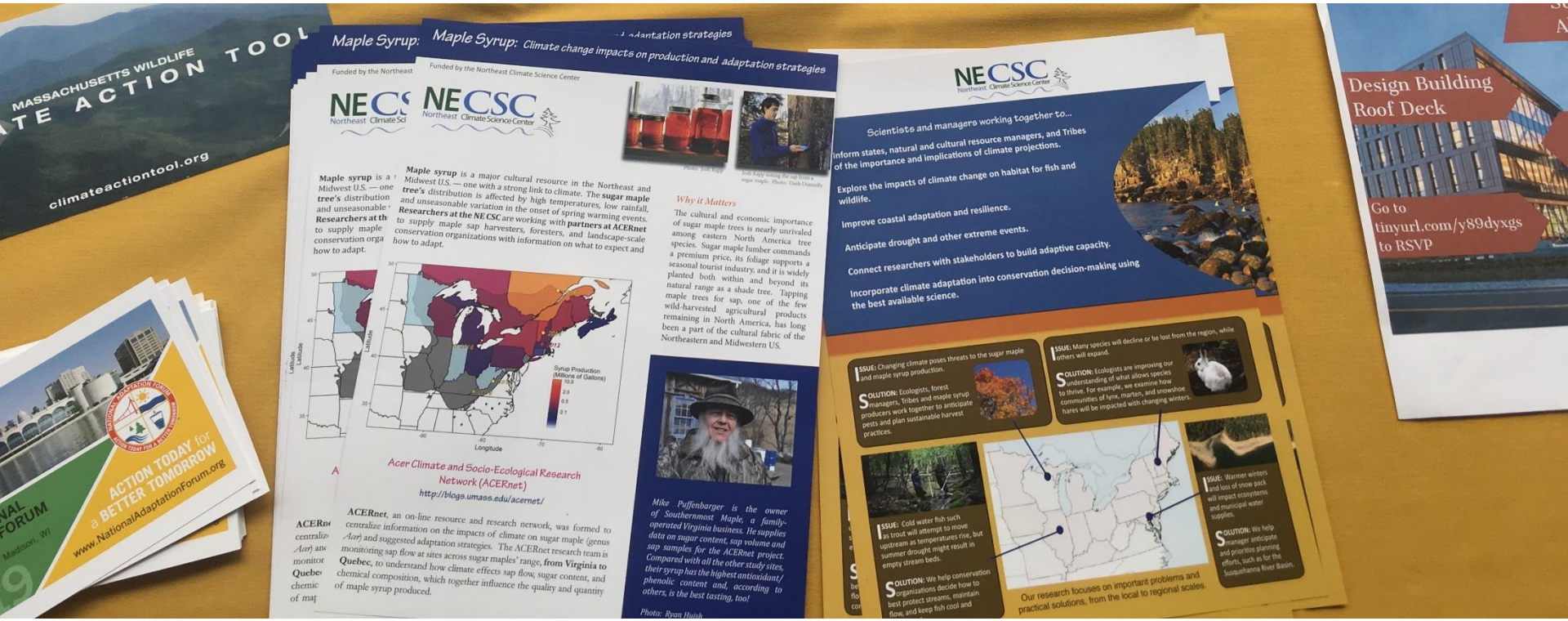
In practice: Maine Coast Heritage Trust's fundraising mailer Marshes for Tomorrow. Read the communications product analysis here.

2. Find trusted spokespeople to deliver your messages.

Here's why: It's tempting to assume that opposition to or apathy about climate change is rooted in ignorance. That assumption leads science communicators to try to educate audiences by citing all the facts. In fact, research indicates that ideology, social identity, and trust have much greater influence on how people make sense of complex or controversial topics. That means an individual's willingness to accept facts is incumbent upon his or her trust of, and respect for, the source of information. Ideally, you want to build this level of trust with your audiences, but that comes from repeated positive interactions over time. So if you are trying to initiate productive conversations about climate change with new audiences, find trusted scientific or natural resource experts in your community to offer evidence and testimonials.

Inventory of Climate Communication Products

Product type	Title	Land Trust	Primary target audience	Primary strategy	Flesch-Kincaid Grade Level
Brochure	Connecting Habitat and Neighbors	Vermont Land Trust	Members	Green infrastructure and nature-based solutions	9th
Annual report	2017 Annual Report	Scenic Hudson	Members	Conservation Restriction (CR) or Conservation Easement (CE)	College

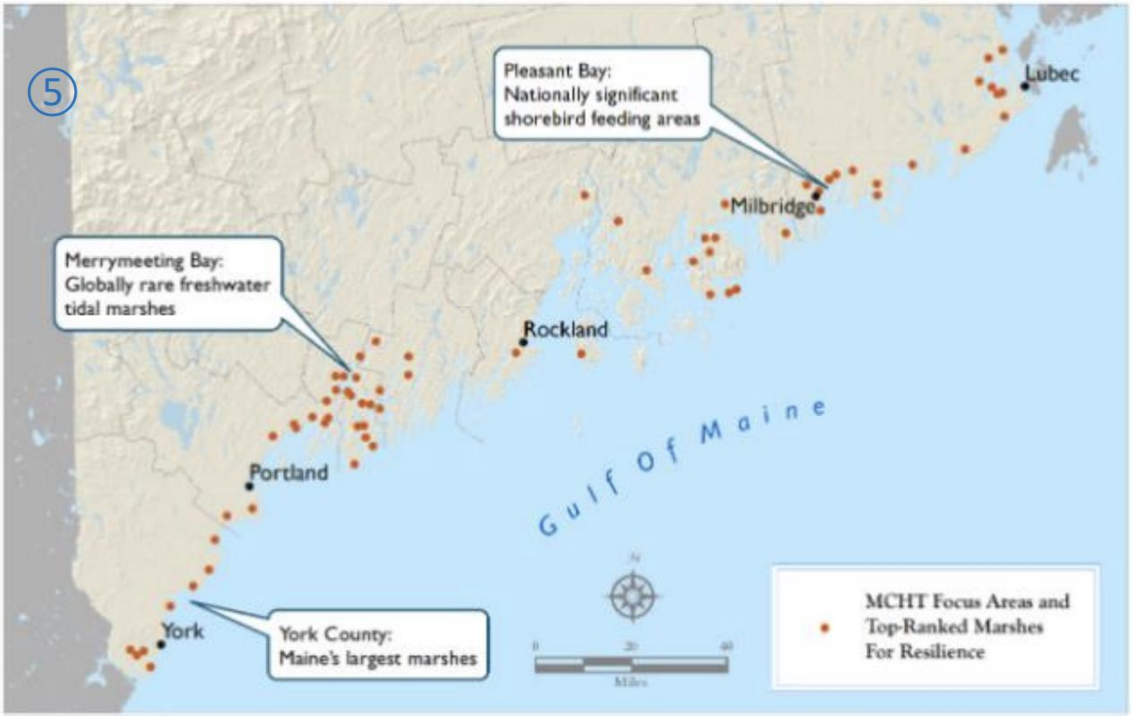


Product Analysis

How this product showcases the recommendations:

> **1. Leading with politically neutral messages about conserving resources people already care about.**

In the first two sentences, this piece offers three compelling reasons why anyone should care about the fate of salt marshes: clean water, commercial fisheries, and coastal infrastructure. By opening with a message about things that are key to the economy and quality of life in Maine, the author primes the reader to care that sea-level rise is an increasing threat to these and other resources.



Saving Marshes to Save the Coast

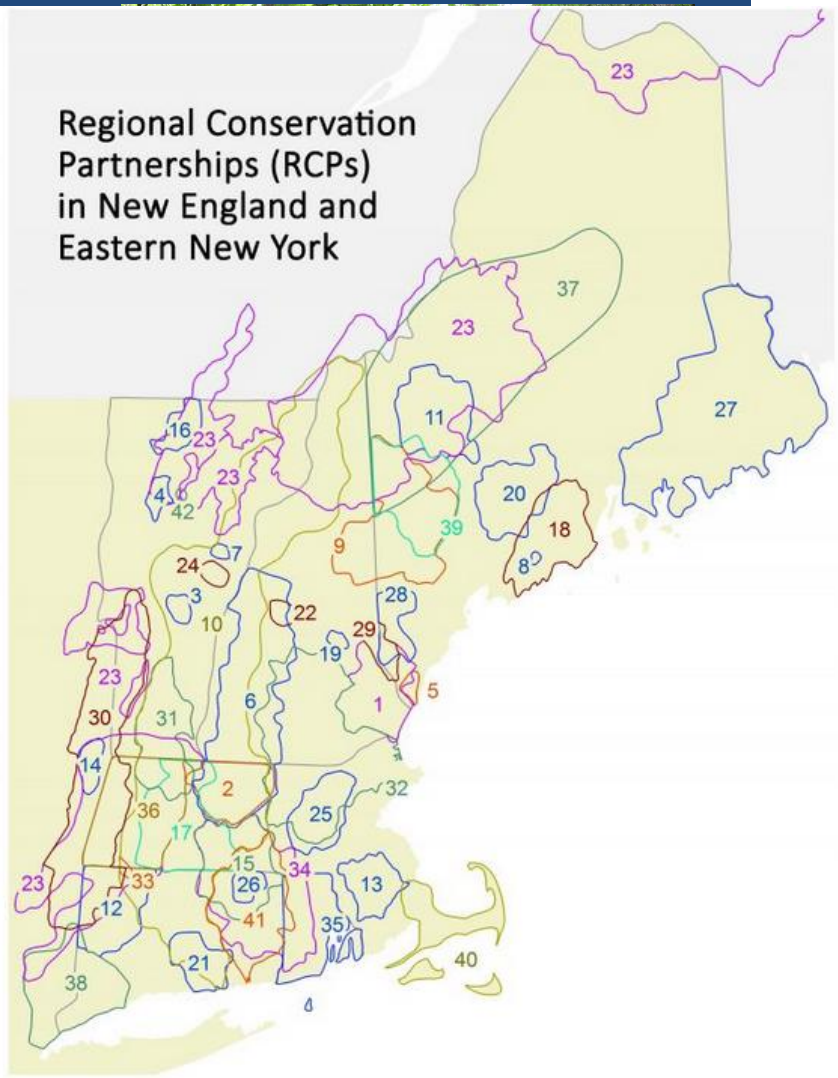
Marshes keep coastal waters clean and provide critical habitat for rare plants, migratory birds, and a wide range of fish and shellfish—including the commercially important species our coastal communities depend upon. Over the next 100 years, global sea level is projected to rise between three and six feet, potentially destroying some of our most productive ecosystems and coastal infrastructure. In the worst case scenario, we may lose all of Maine's existing marshland and wipe out highly vulnerable species.

By protecting critical uplands now we can help marshes migrate and lessen these negative impacts. You can help maintain healthy natural and human communities on our coast by supporting Maine Coast Heritage Trust (MCHT) in its four-part plan to protect and care for priority marshes.

Stewardship & Management

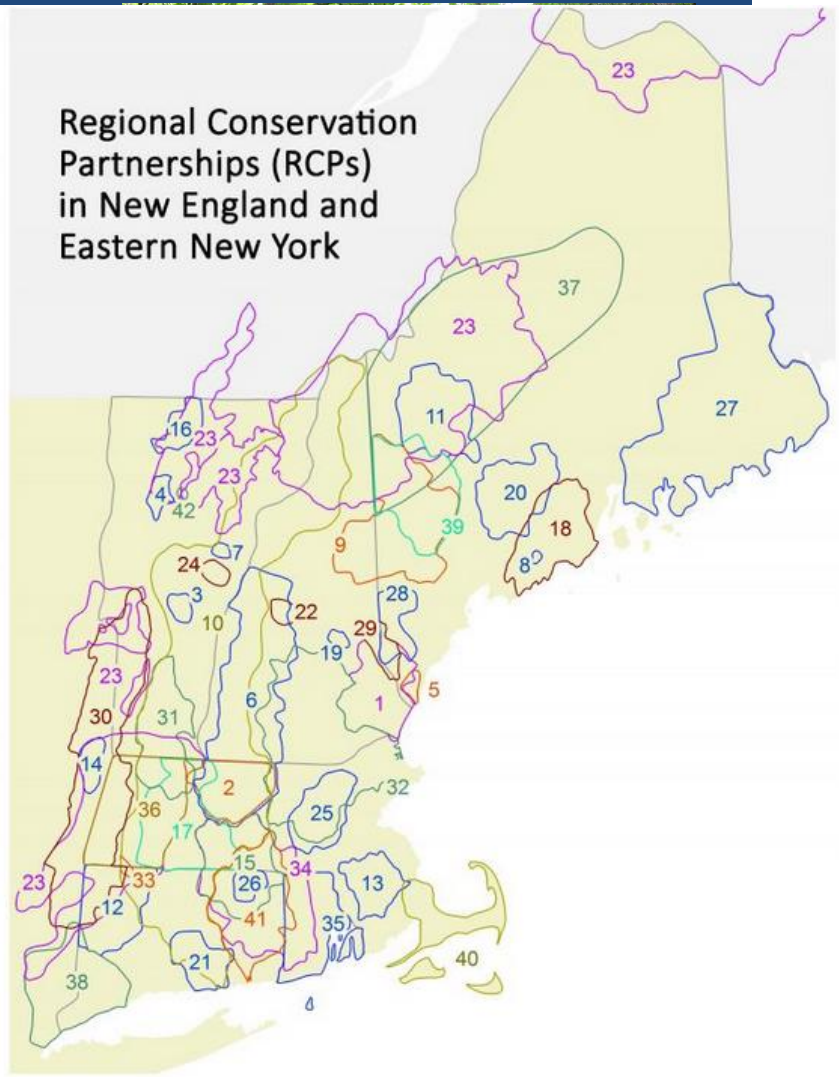
Power of Networks for Climate Change

- Peer knowledge exchange
- Cohesion
- Cross-organizational



Power of Networks for Climate Change

- Regional scale
- Supportive community
- Climate adaptation networks



MASS ECAN
Massachusetts Ecosystem Climate Adaptation Network

CAW
New Hampshire Coastal Adaptation Workgroup

Questions?

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Power of Networks for Climate Change

- Peer knowledge exchange
- Cross-organizational
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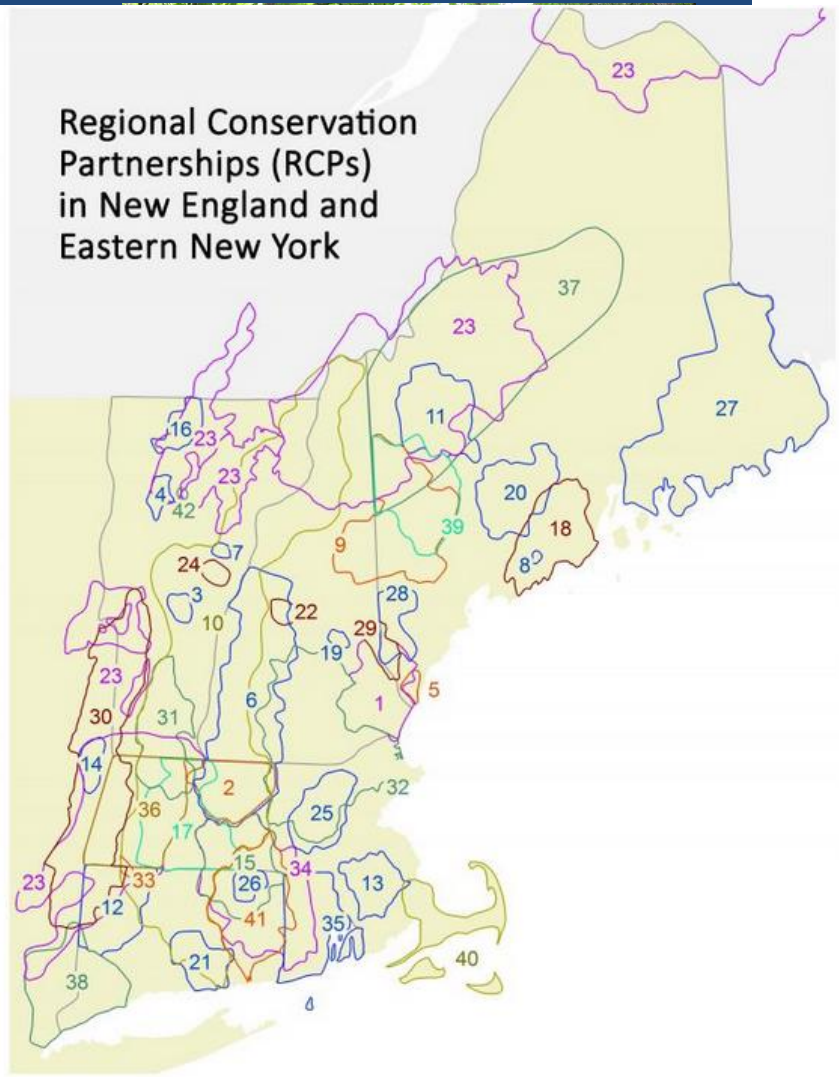
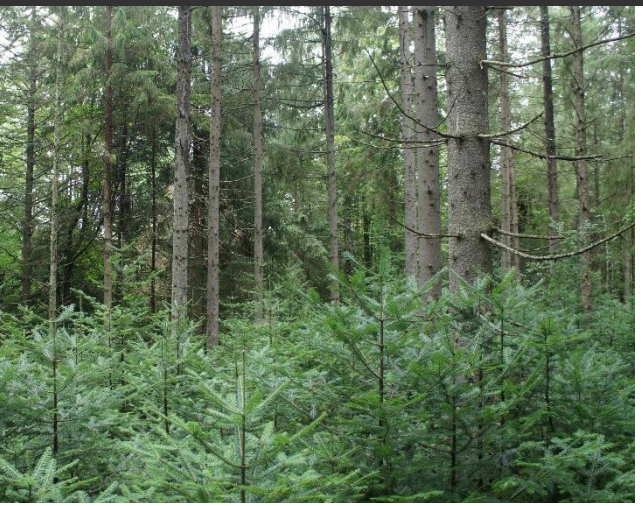


MASS ECAN
Massachusetts Ecosystem Climate Adaptation Network

CAW
New Hampshire Coastal Adaptation Workgroup

USDA United States Department of Agriculture
Northern Forests Climate Hub

The Forest Carbon Management Menu: a resource for identifying mitigation and adaptation practices



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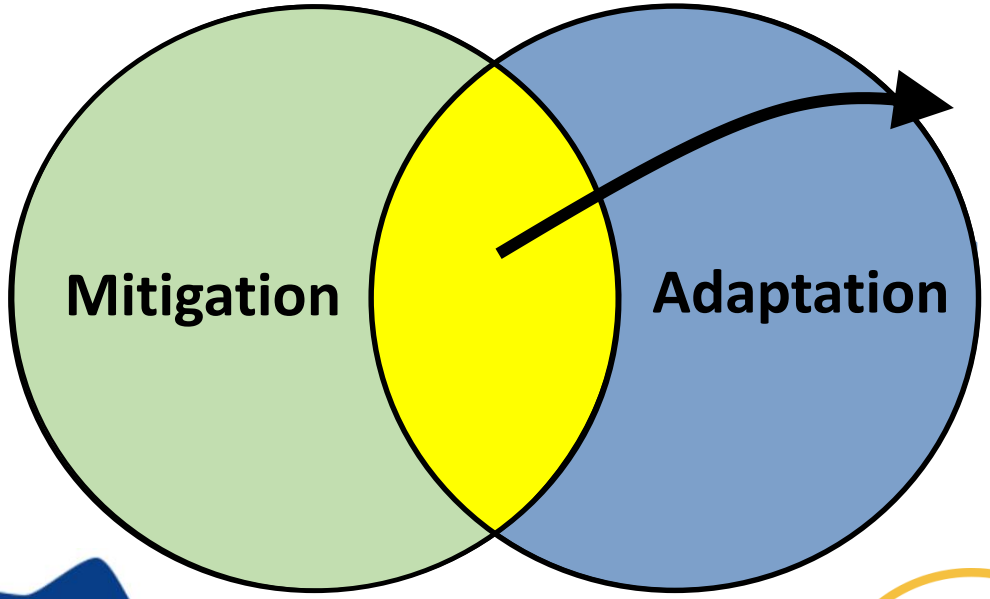
QUESTION

Is your RCP responding to climate change in its current work?

1. Integrating climate mitigation & adaptation is needed for ***resilient carbon sequestration***



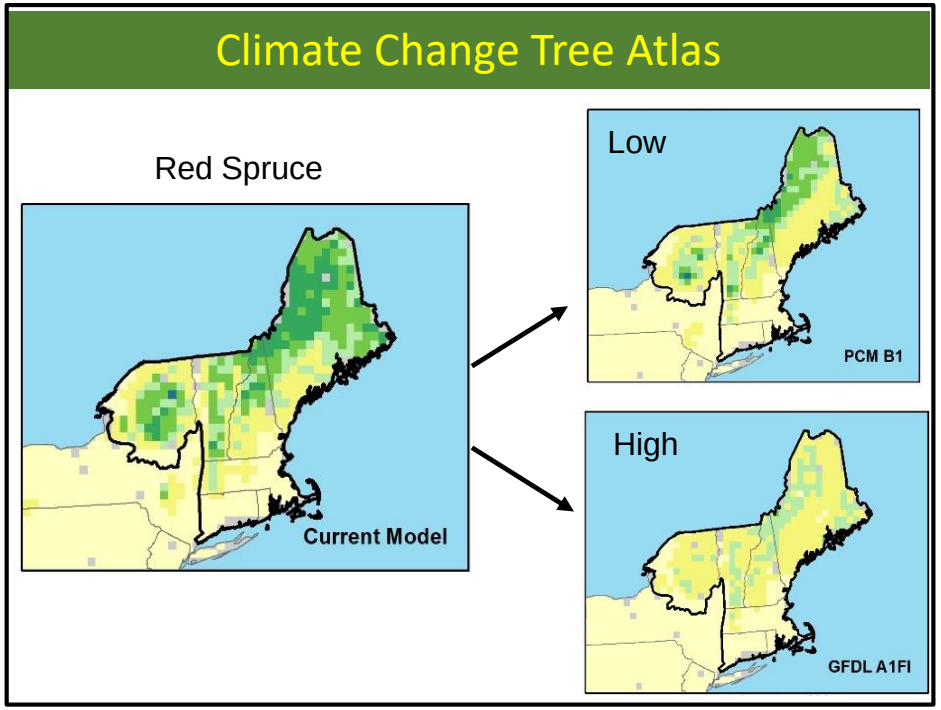
Synergies in mitigation & adaptation

1. Integrating climate mitigation & adaptation is needed for ***resilient carbon sequestration***

Thinning reduces risk of catastrophic carbon loss from wildfire in fire-prone systems

Adler Fire, Yellowstone NP (NPS)

Managing for future-adapted species where tree species are projected to decline

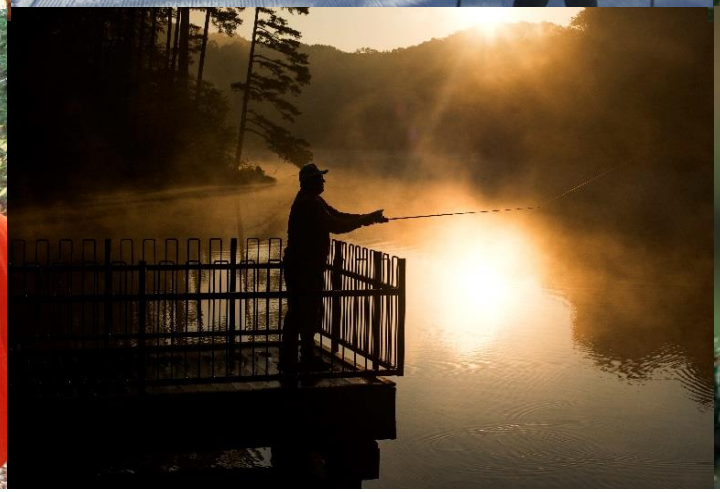


www.nrs.fs.fed.us/atlas/tree/

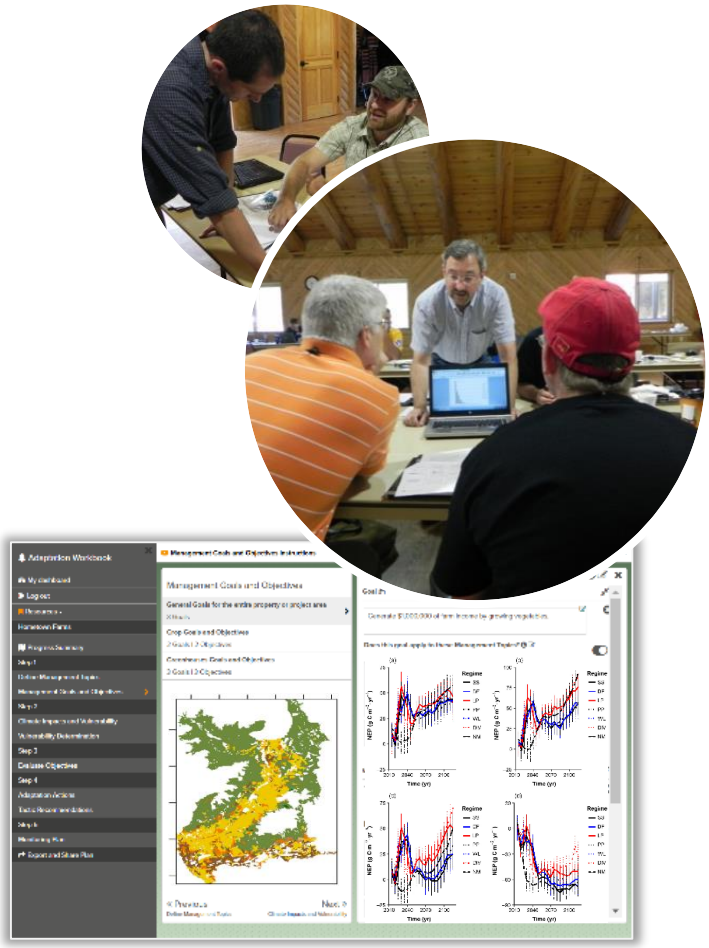
*2. Identifying **"no-regrets" actions** can build support for JMA while highlighting important co-benefits*








*3. Quantification of carbon benefits is often lacking, so **look to directionality of responses***



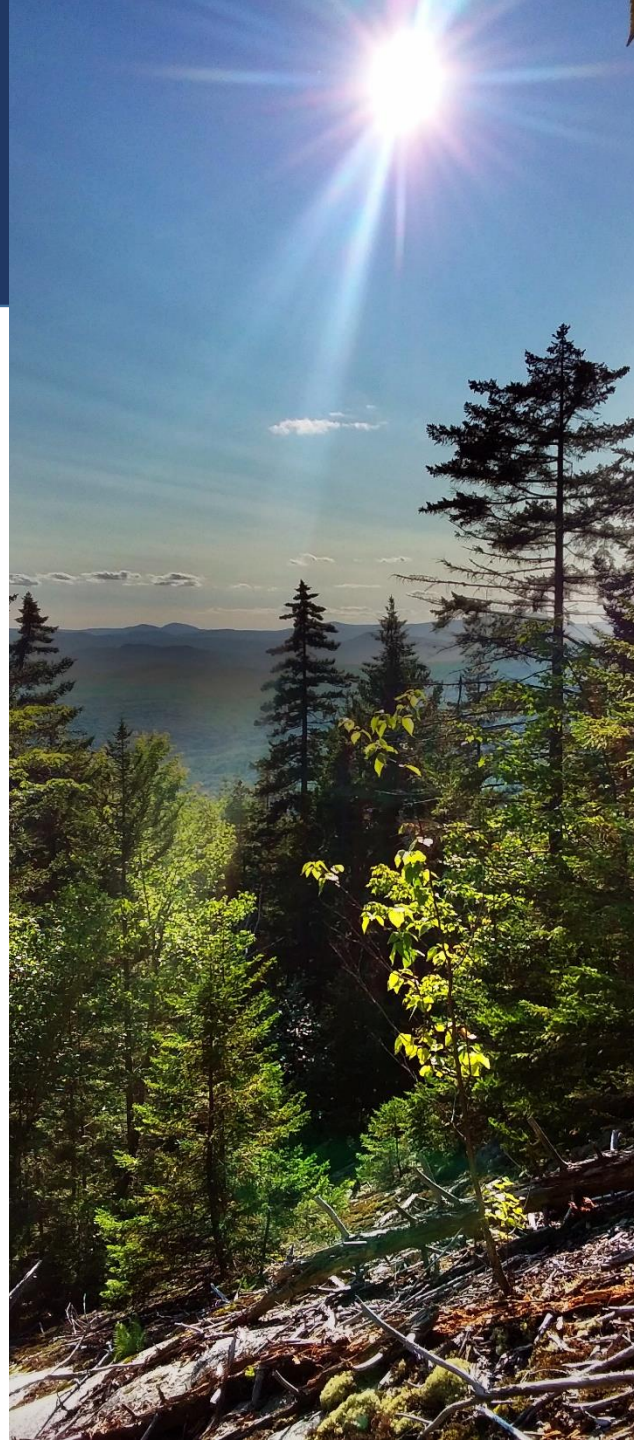
Mitigation Practice	C response	Timeframe
Extend rotations	↑	Short
Conservation easements (avoid forest loss)	↑	Short
Shelterwood (structural complexity)	↑	Mid
Underplanting future-adapted species	↑	Mid
Reforestation	↑	Long
Thinning	— / ↑	Mid / Long
Clearcut	↓ / —	Mid / Long

Practitioner's Menu of Strategies and Approaches for Forest Carbon Management

NIACS
Northern Institute of Applied Climate Science

AMERICAN FORESTS
- SINCE 1875 -

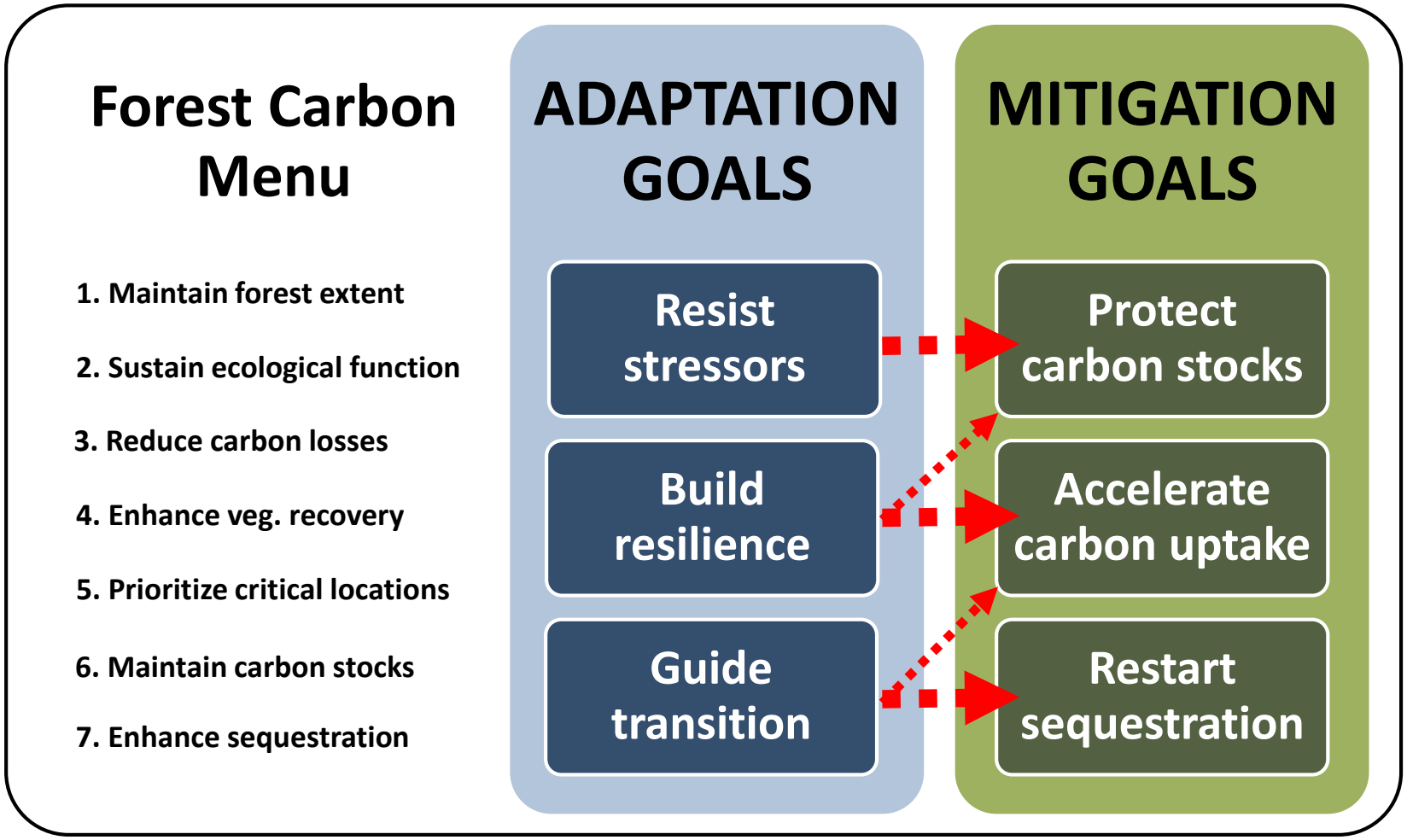
www.forestadaptation.org/carbon



Journal of FORESTRY

Forest management for carbon sequestration and climate adaptation. *Journal of Forestry.* doi: 10.1093/jofore/fvz062

Practitioner's Menu of Strategies and Approaches for Forest Carbon Management



Reduce stressors & maintain carbon stocks

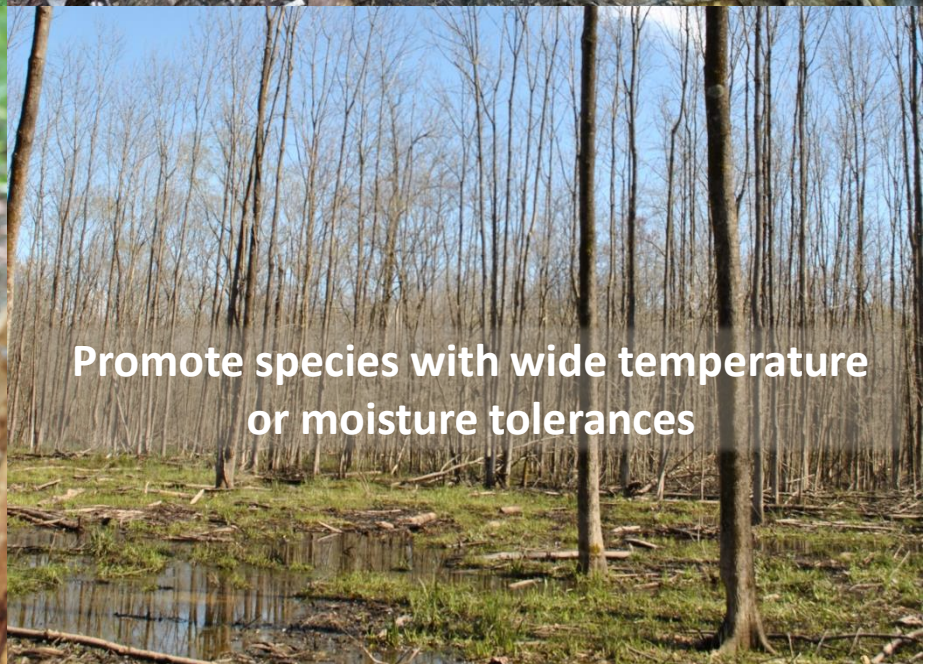
Strategy 2: Sustain fundamental ecological functions

Reduce stressors & Maintain carbon stocks

S3: Reduce carbon losses from natural disturbance

Build resilience

S6: Enhance existing carbon stocks while retaining forest character



S7: Enhance sequestration capacity through forest alterations

Introduce or favor existing genotypes or species better adapted to future conditions

Alter forest structure or composition

Promote species with enhanced carbon density

Forestry with Birds – and Climate and Carbon – in Mind

Audubon | VERMONT

Steve Hagenbuch,
Conservation Biologist

How Climate Change Will Affect Vermont's Birds

Survival by Degrees: 389 Bird Species on the Brink
https://www.audubon.org/climate/survivalbydegrees

Climate:
Temperature
Precipitation
Vegetation

Related Threats:
Extreme and Frequent Weather Events
Non-native Species
Deer over-population

GREEN MOUNTAIN Audubon CENTER

Audubon VERMONT

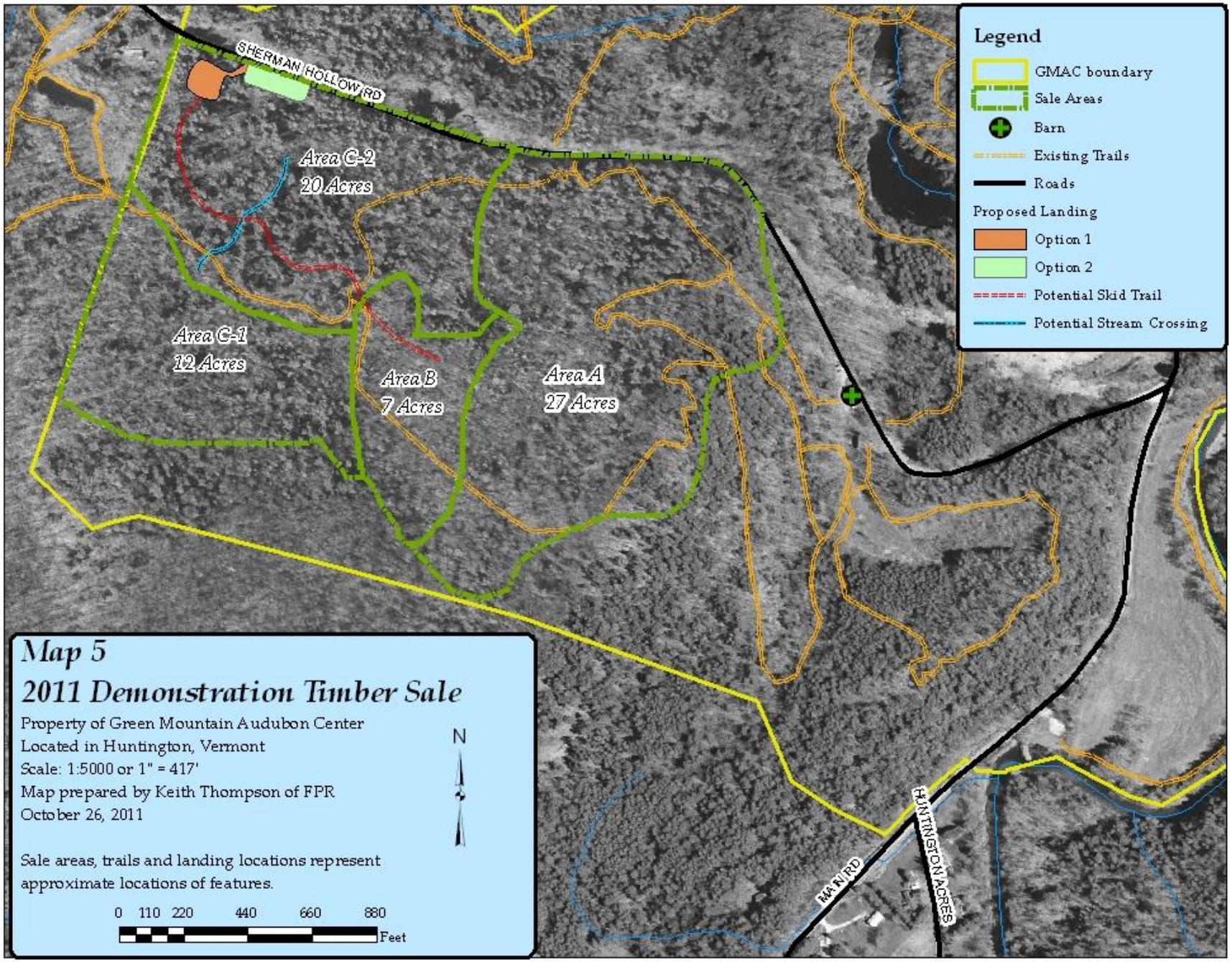
The Green Mountain Audubon Center is operated by Audubon Vermont, the state program of the National Audubon Society.

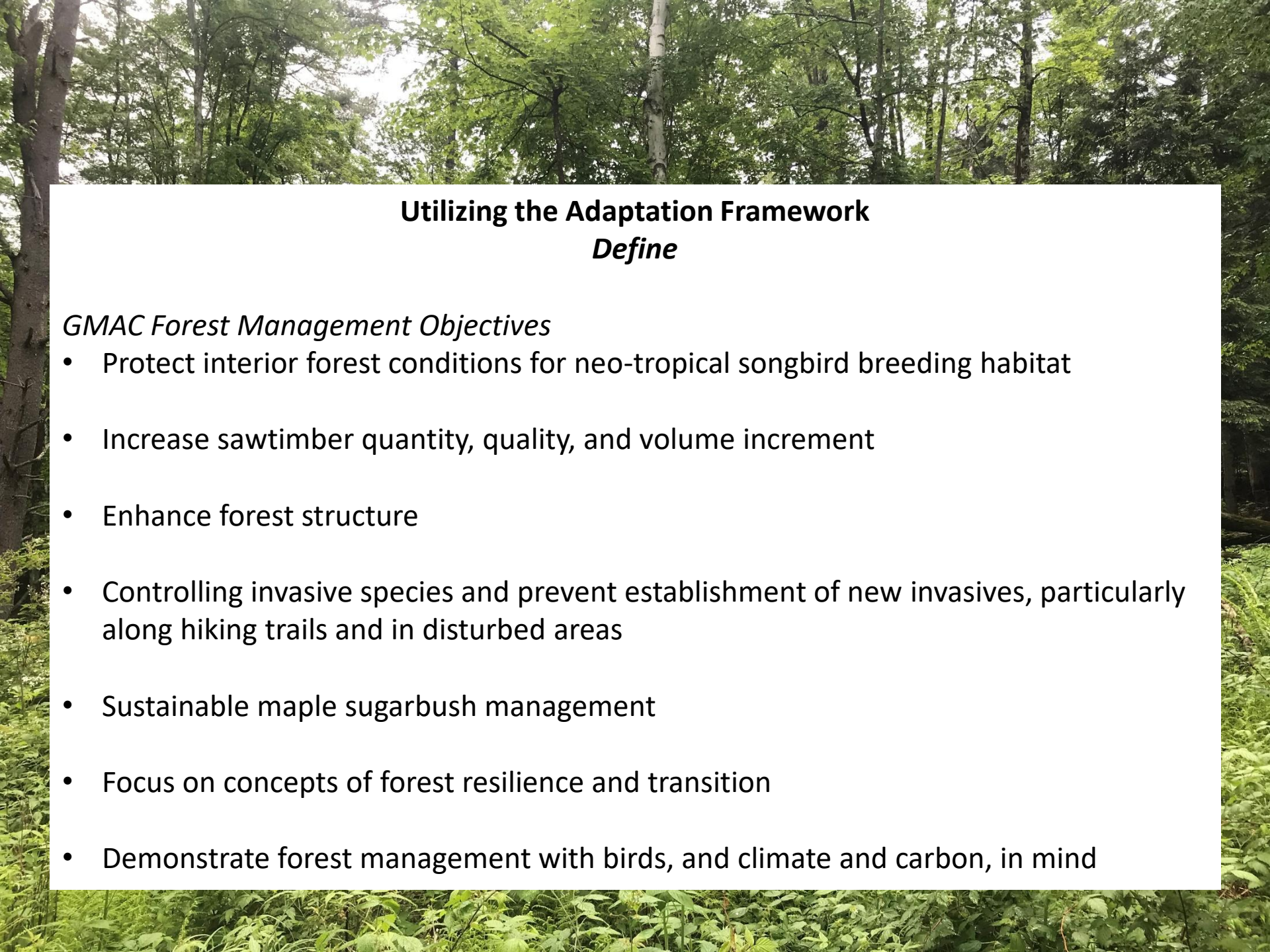
Restrooms are located in the Visitor Center

P1 Visitor Center Parking
P2 Sugarhouse Parking
P3 Horseshoe Bend Parking

Grounds Open from Dawn Until Dusk

Map Design: SilverCloud Designs, www.silvercloud.design


SHERMAN HOLLOW RD
Area C-2
20 Acres
Area C-1
12 Acres
Area B
7 Acres
Area A
27 Acres
MAIN RD
HUNTINGTON ACRES
Legend
GMAC boundary
Sale Areas
Barn
Existing Trails
Roads
Proposed Landing
Option 1
Option 2
Potential Skid Trail
Potential Stream Crossing
Map 5
2011 Demonstration Timber Sale
Property of Green Mountain Audubon Center
Located in Huntington, Vermont
Scale: 1:5000 or 1" = 417'
Map prepared by Keith Thompson of FPR
October 26, 2011
Sale areas, trails and landing locations represent approximate locations of features.
N
0 110 220 440 660 880
Feet



Utilizing the Adaptation Framework
Define

GMAC Forest Management Objectives

- Protect interior forest conditions for neo-tropical songbird breeding habitat
- Increase sawtimber quantity, quality, and volume increment
- Enhance forest structure
- Controlling invasive species and prevent establishment of new invasives, particularly along hiking trails and in disturbed areas
- Sustainable maple sugarbush management
- Focus on concepts of forest resilience and transition
- Demonstrate forest management with birds, and climate and carbon, in mind

Utilizing the Adaptation Framework

Assess and Evaluate

Impacts and Vulnerabilities

- Range expansion of non-native insect pests (HWA)

Utilizing the Adaptation Framework

Assess and Evaluate

Impacts and Vulnerabilities

- Increases in non-native plant species

Utilizing the Adaptation Framework

Assess and Evaluate

Impacts and Vulnerabilities

- Increase in northern red oak component

Utilizing the Adaptation Framework

Assess and Evaluate

Impacts and Vulnerabilities

- Increase in deer browse

Utilizing the Adaptation Framework
Identify

Tactics and Approaches

- Maintain current extent of mature forest
  - Approach 1.1 – Avoid forest conversion to non-forest uses

Co-Benefits

- Bird habitat – maintains extent and quality
- Climate – maintains existing tree species diversity
- Carbon – maintains existing carbon sequestration capacity

Utilizing the Adaptation Framework
Identify

Tactics and Approaches

- Control of non-native invasive plant populations
  - Approach 2.3 – Prevent introduction and establishment, remove existing occurrences using mechanical, (preferred), herbicide, or targeted goat grazing

Co-Benefits

- Bird habitat – native plants support greater insect food sources
- Climate – maintains native plant diversity, enhances forest resilience
- Carbon – maintains carbon sequestration capacity

Utilizing the Adaptation Framework
Identify

Tactics and Approaches

- Implement regeneration silvicultural treatments
  - Approach 3.5 – Alter forest structure to reduce severity or extent of wind and ice damage
  - Approach 6.6 – Promote species and structural diversity to enhance carbon capture and storage efficiency

Co-Benefits

- Bird habitat – increase habitat quality and complexity through enhanced species and structural diversity
- Climate – improves tree health and vigor to enhance resilience
- Carbon – improves tree health to maintain long-term carbon stocks and maintain/enhance sequestration rates

Utilizing the Adaptation Framework
Identify

Tactics and Approaches

- Promote northern red oak component in areas where present
  - Approach 6.6 – Promote species and structural diversity to enhance carbon capture and storage efficiency

Co-Benefits

- Bird habitat – increase tree specie diversity and potential food resources
- Climate – promotes native species expected to be better-adapted to future conditions
- Carbon – reduces risk of long-term carbon losses by favoring lower risk species

Small group discussion:

- **Is your RCP's integrating adaptation and mitigation practices into management, acquisition, or other efforts?**

- **Does this impact how you communicate your efforts to landowners or the public?**