

ENGAGING PRIVATE LANDOWNERS in Climate-Informed Management

Mass Land Conservation Conference

March 24, 2018 - Worcester, MA

Today's Presenters:

Kelly Watkinson

Land and Climate Program Manager

Land Trust Alliance

➤ Land Trusts and
Climate

Maria Janowiak

Deputy Director

Northern Institute of Applied Climate Science

➤ Climate-Informed
Stewardship

Lisa Hayden

Landowner Outreach Coordinator

New England Forestry Foundation

➤ The MassConn
Experience

Land and Climate Program

MARCH 24, 2018

KELLY WATKINSON



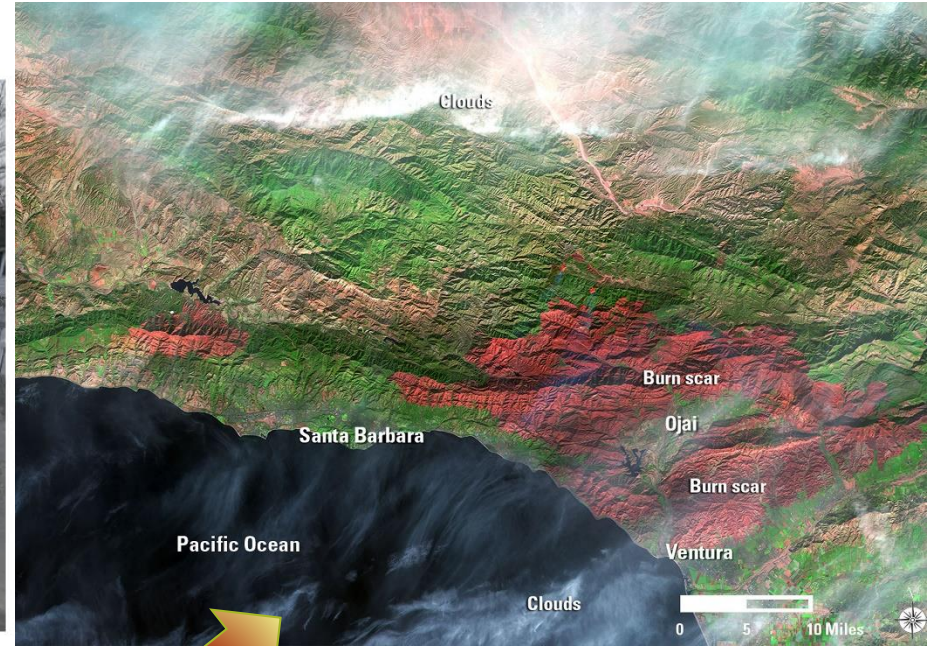


FROM **The Boston Globe**

This South Shore neighborhood's been flooded for a week



A neighborhood off of Kentucky Street in an area bordering Marshfield and Duxbury remained flooded after a nor'easter hit Boston and coastal areas for the second time in a week. —Barry Chin/Globe Staff



Thomas Fire: California's largest wildfire since modern record-keeping began in 1932, burned 282,000 acres.

Image taken by Landsat 8. Source: U.S. Geological Survey's Land Remote Sensing Image Collections

Land Trusts and Climate Change

Adaptation

- Strategic conservation planning
- New land management practices

Mitigation

- Drawing carbon out of the atmosphere
- Renewable energy siting



Land and Climate Program

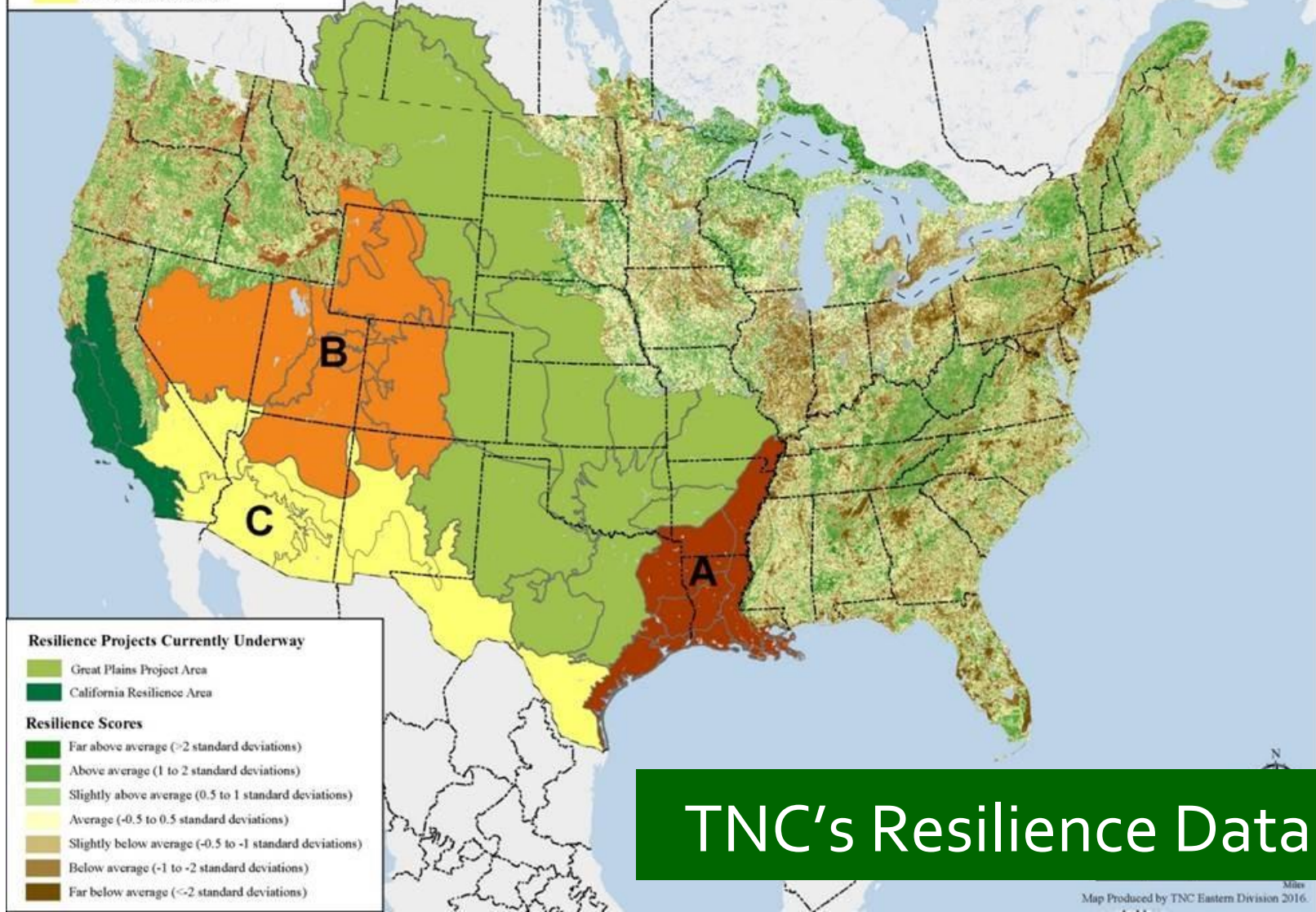
Goals

1. Increase the number of land trusts whose strategic conservation plans address climate impacts and promote climate resilience
2. Advance the use of land to mitigate climate change
3. Empower land trusts to encourage the buildout of renewable energy facilities while steering the facilities away from sensitive lands

Study Areas for Completing the Resilient Network

- A. Mississippi Valley
- B. Rocky Mountain
- C. Southwest Desert

Building resilience through land protection

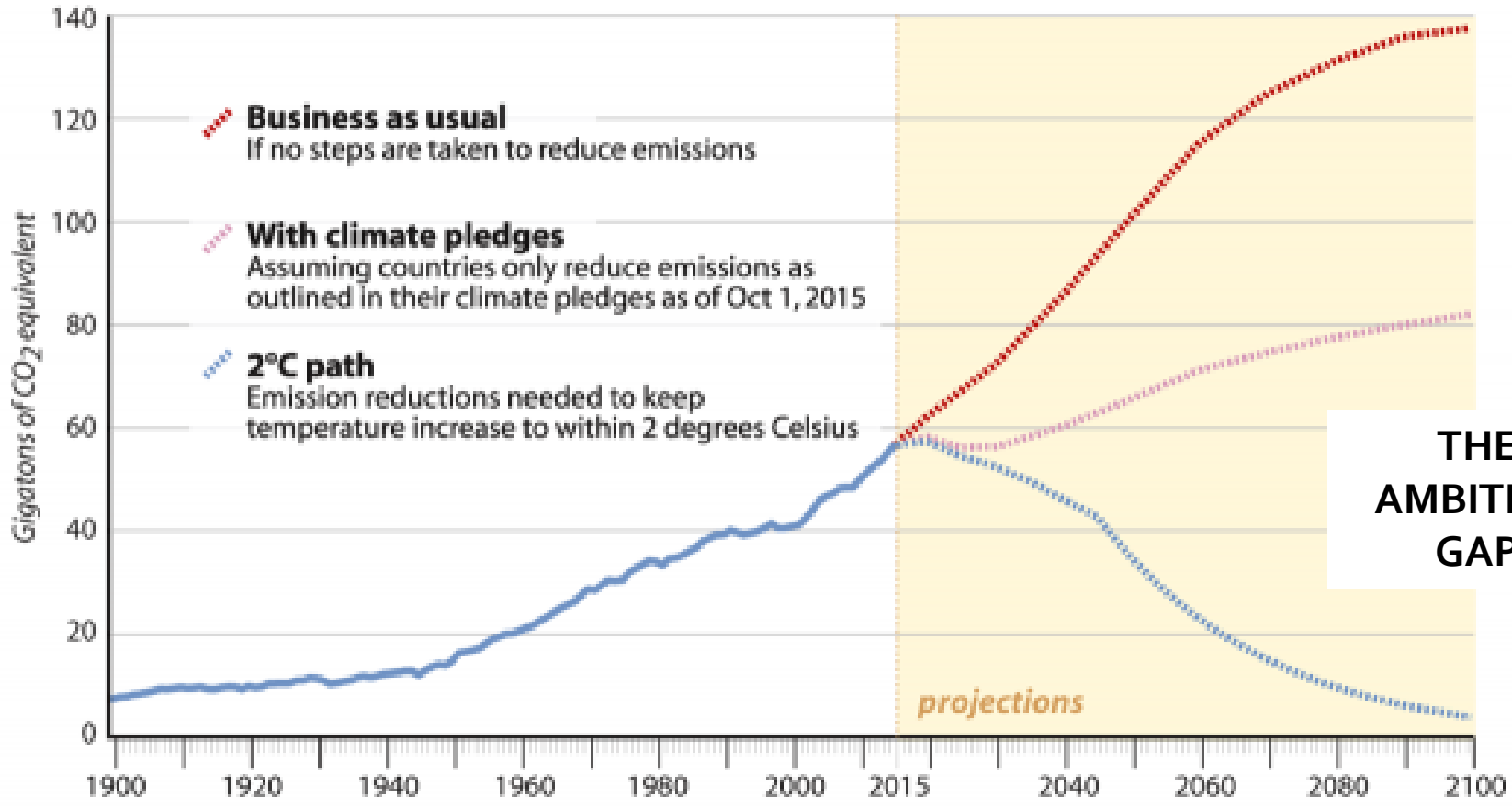


TNC's Resilience Data

Charting the Paris Climate Pledges

To stave off potentially cataclysmic effects of climate change, the world must keep global warming under 2 degrees Celsius. The climate pledges that countries have submitted so far would reduce emissions enough to hold warming to 3.5 degrees C.

GLOBAL GREENHOUSE GAS EMISSIONS*



*Chart includes emissions of all greenhouse gases, expressed in carbon dioxide equivalent

Goal 2: Advance the use of land to mitigate climate change

- Promote the concept of natural climate solutions (carbon absorption in plants and soils)
- Help land trusts participate in carbon markets and carbon-reduction programs
- Shape federal policies to promote natural climate solutions

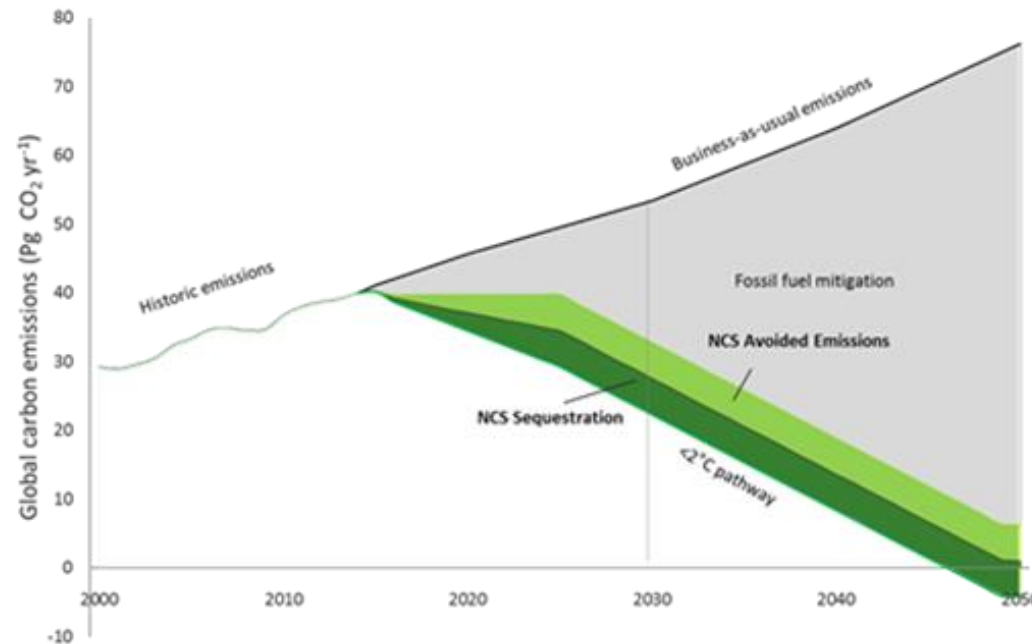


Fig. 2. Adapted from Natural Climate Solutions , by Griscom et al. , 2017, retrieved from www.pnas.org/content/early/2017/10/11/1710465114

Goal 3: Empower land trusts to encourage the buildout of renewable energy facilities while steering the facilities away from sensitive lands

- Pilot project: shape New York State policies related to renewable energy siting
- Disseminate lessons learned to state associations and land trusts in other states





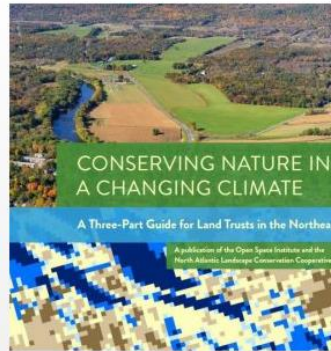
This site is intended to offer basic to intermediate-level guidance about climate change and conservation responses to the U.S. conservation community. Not sure where to get started? Read the introduction to getting started, take a self-assessment, or search key terms.



1 2 3 4 5

About Conservation in a Changing Climate

This website is designed to support on-the-ground conservation efforts of land trusts in the United States. The resources and learning categories are intended to provide basic to intermediate information and to lead to additional resources and tools that can support more advanced levels of understanding about climate change and its implications for the conservation community.



Conserving Nature in a Changing Climate offers land conservation practitioners

Latest News

Researchers discover two tiny new primate species in a far-flung forest



CI's Russ Mittermeier was part of the team that discovered two new species of Tarsier in Indonesia — a "Yoda-like" primate threatened by deforestation.

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Learning Center



- Climate Forum
- Sample Documents
- Climate Resources

Trainings



- Full Day Workshops
- Webinars
- State/Regional/National Conferences

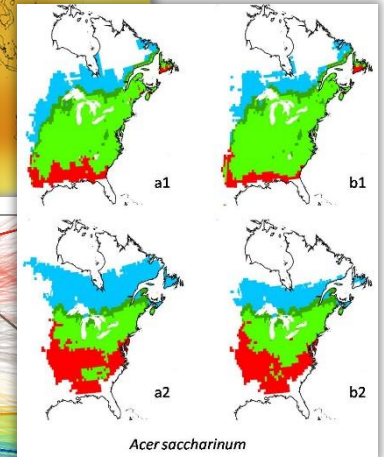
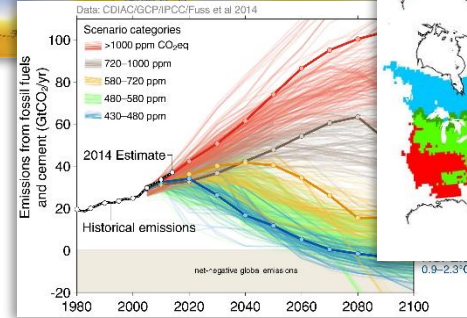
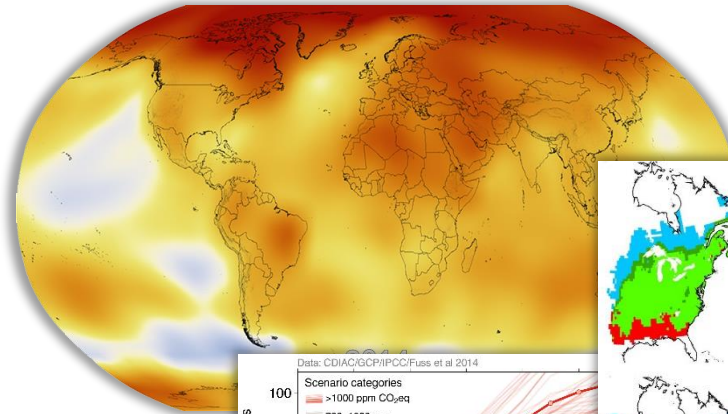
Climatechange.lta.org



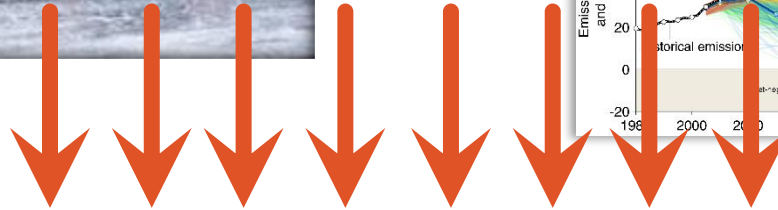
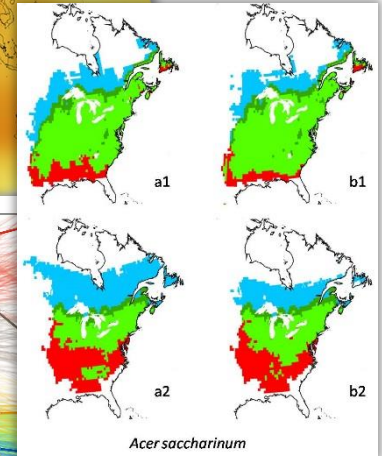
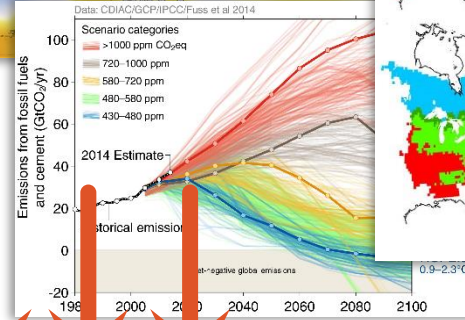
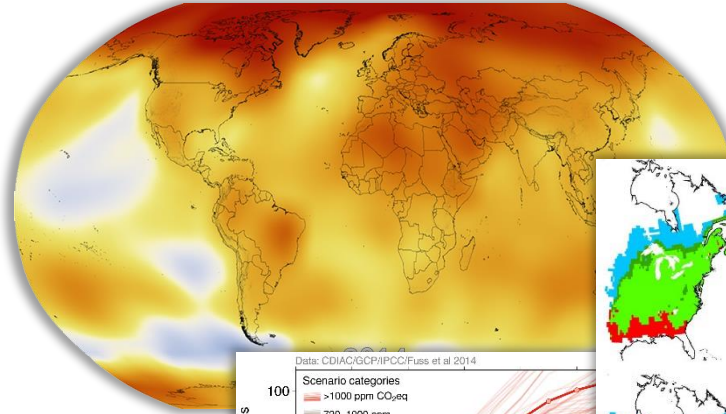
Maria Janowiak
Northern Institute of
Applied Climate Science



Considering Climate Change



Considering Climate Change

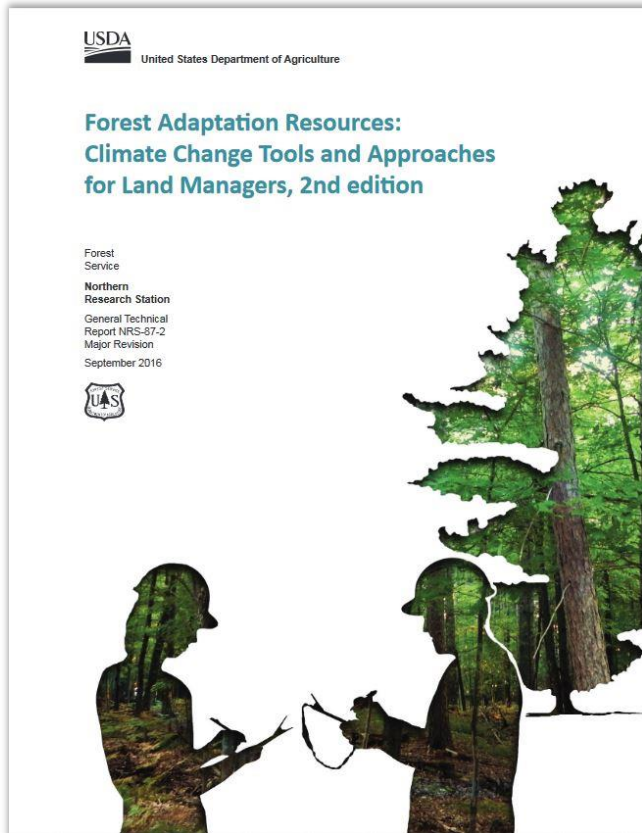


If you want a single “answer” for how to respond to climate change, it’s:

“It depends”

It depends on where you are working and what you’re trying to achieve.

Forest Adaptation Resources



Swanston et al. 2016;

www.forestadaptation.org/far

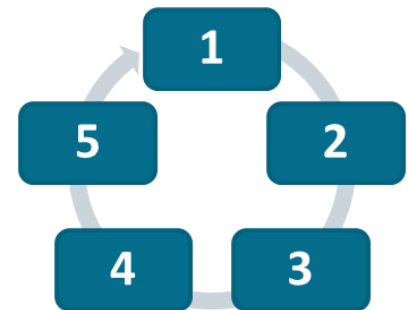
Strategies & Approaches

Menu of adaptation actions



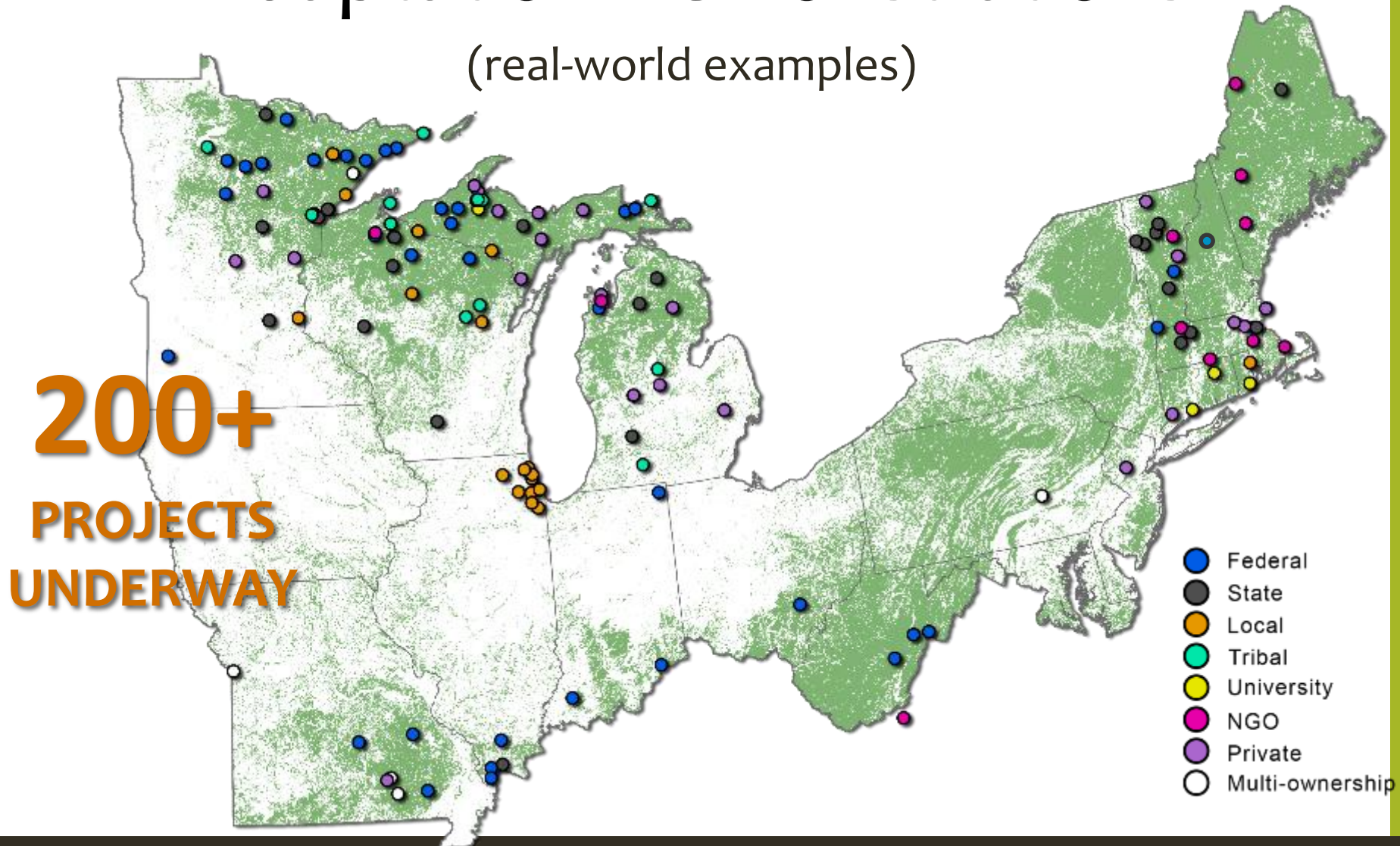
Adaptation Workbook

- Structured process to integrate climate change considerations into management
- Workbook approach



Adaptation Demonstrations

(real-world examples)



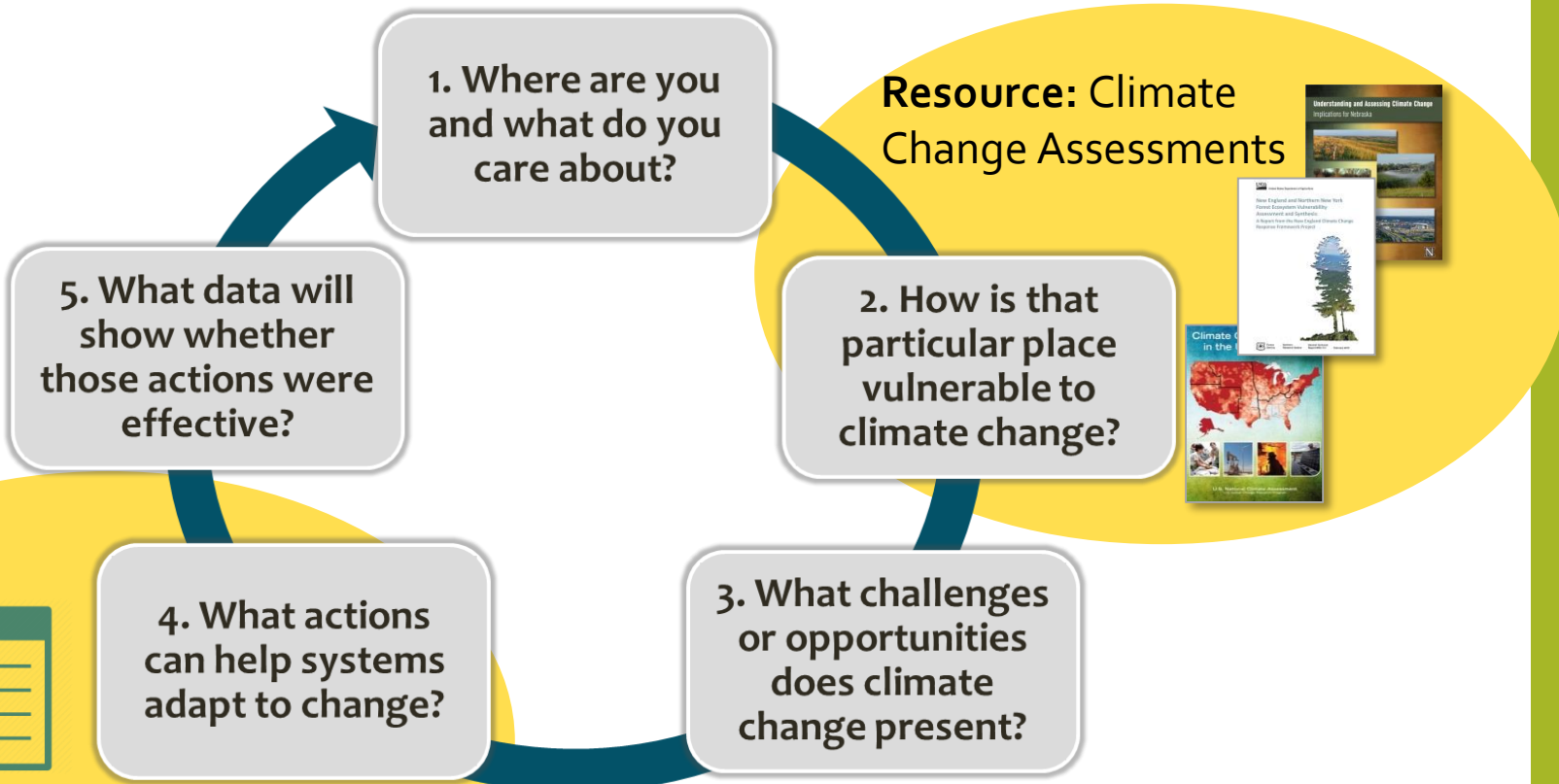
www.forestadaptation.org/demos

What actions can be taken to
enhance the ability of a system
to cope with change

and

meet land management goals
and objectives?

What does climate change mean for stewardship?



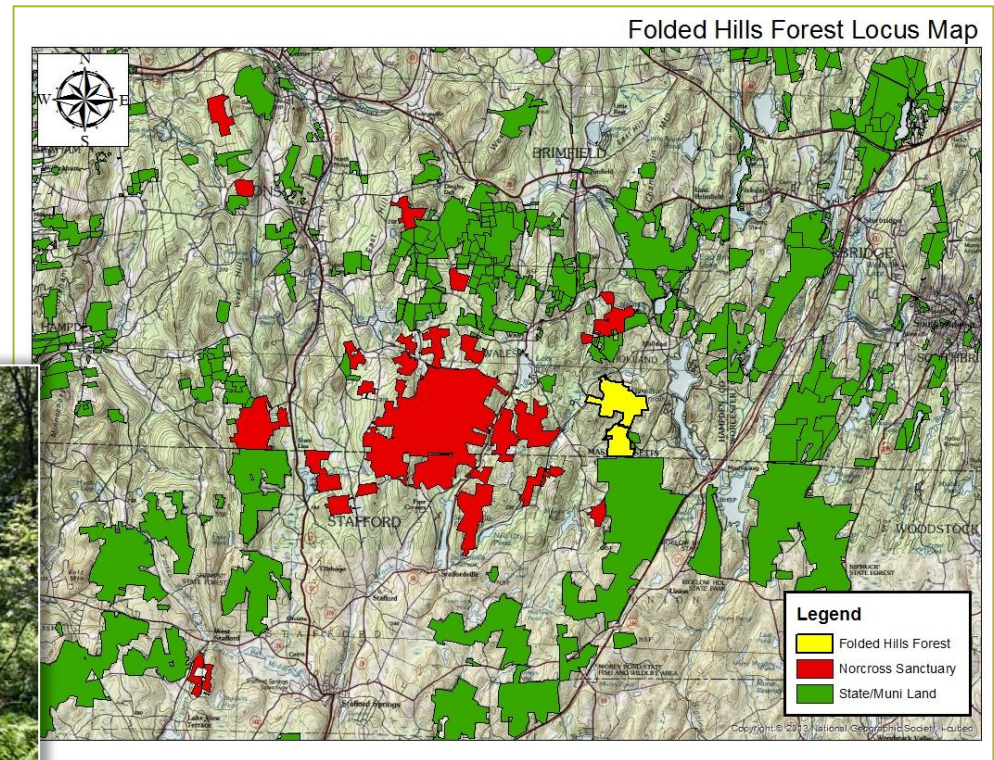
Who are you
and what do
you care about?



Who are you
and what do
you care about?

Norcross Wildlife Sanctuary

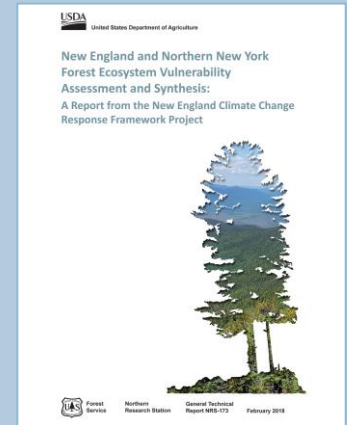
- Privately-managed refuge with >8,000 acres in MA and CT
- Heart of Emerald Forest within MassConn region
- Forest management on portions of Sanctuary
- Upland & aquatic habitats



How is this place vulnerable to climate change?

- Review resources to understand regional impacts from climate change
- Consider your local site conditions to understand unique vulnerabilities and risks.

New report!



www.forestadaptation.org/ne-assessment

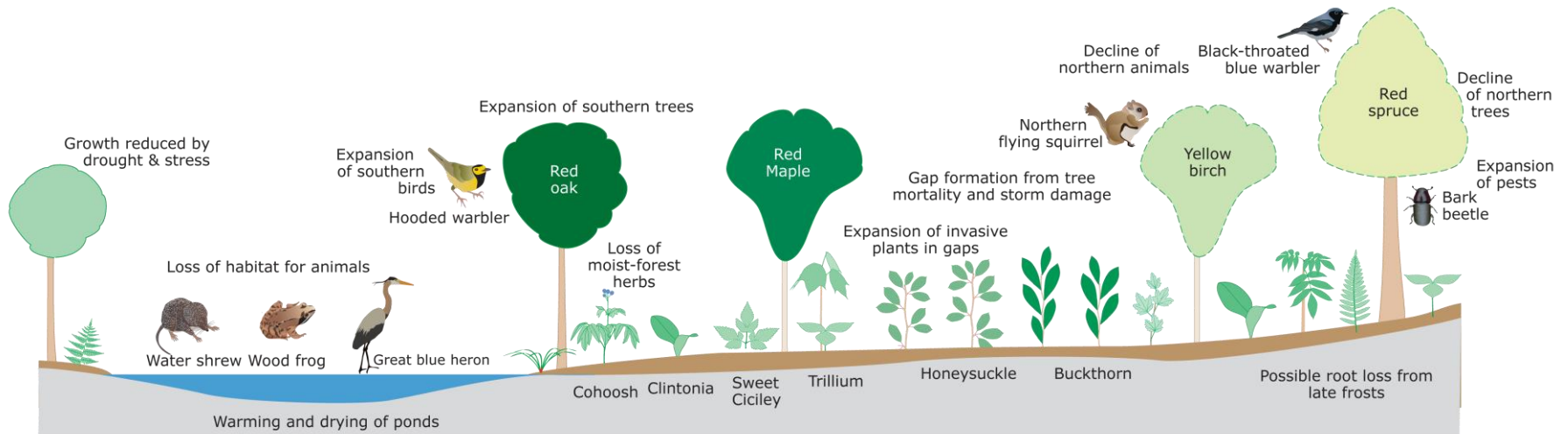


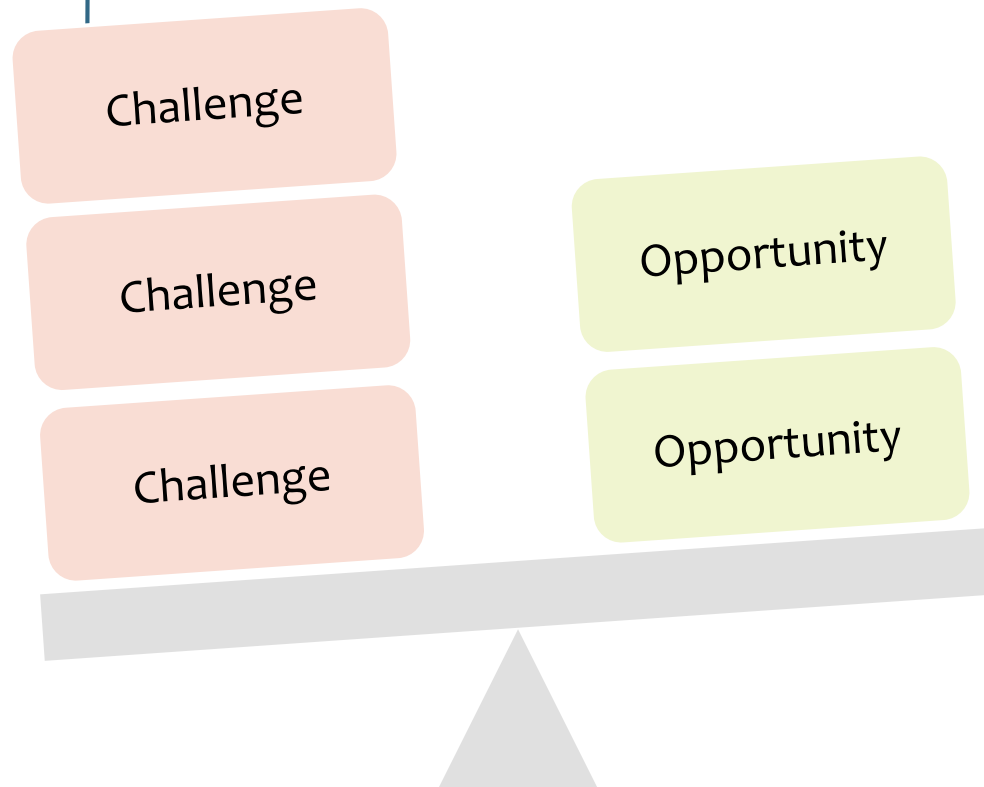
Illustration by Jerry Jenkins, from Rustad et al. 2012

How is this place vulnerable to climate change?

- Extreme precipitation events leading to altered stream flow and hydrologic change
- Common northern species are likely to experience greater stress, such as maple, birch, and beech
- Oak-hickory forest species may have increased habitat



What opportunities or challenges does climate change present?



What opportunities or challenges does climate change present?

- Extreme weather events could create challenges to forest management operations (-), but could also enhance structural diversity (+)
- Many insect pests and invasive plants may become more problematic in the future, especially if forests are stressed from changes in the climate (-)
- Loss of hemlock and other important species reduce cover and food available for many important wildlife species (-)
- Extreme rain events could damage culverts and forest roads, negatively impacting water quality (-)



What actions can help systems adapt to change?



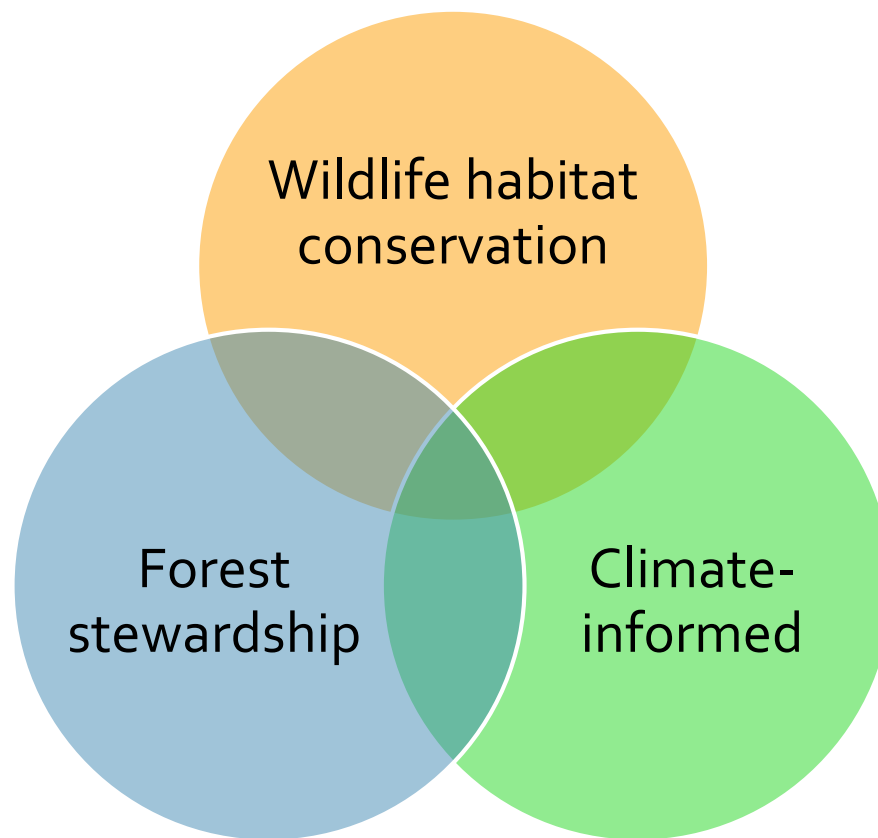
Manage for Change:

Ecosystems will fundamentally become something different

Manage for Persistence:

Ecosystems will still be recognizable as being the same system (character)

What actions can help systems adapt to change?



What actions can help systems adapt to change?

Increase diversity of tree species and sizes (tree thinning)

- Favor species valuable for wildlife and promote diversity
- Improve growth and health of remaining trees



Retain: Den trees, dead trees, and downed wood for habitat

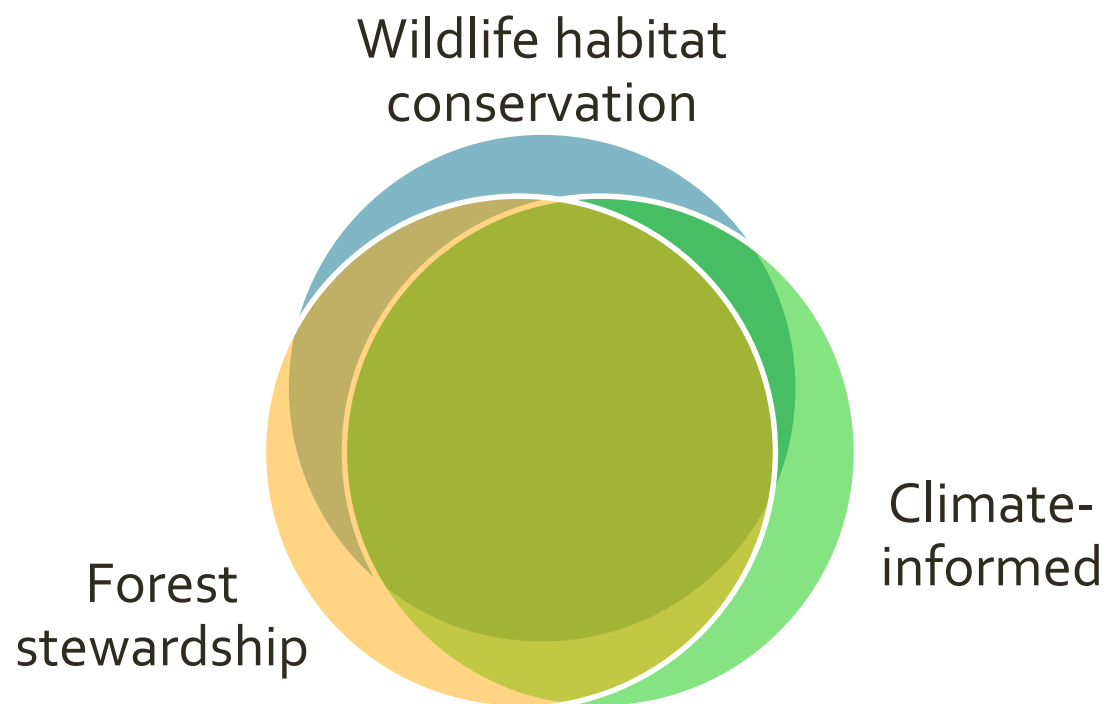
Protect: Establish riparian wetland reserves



What actions can help systems adapt to change?



What actions can help systems adapt to change?



What actions can help systems adapt to change?

Consider which actions make sense for your lands!

- Protect water and soils on your land.
- Improve ability of your trees to resist bugs and disease.
- Prevent and control non-native plants and weeds that already threaten native plants and animals.
- Manage damage to young trees from excessive deer browsing.
- Prepare for big weather events by promoting strong, healthy trees in your woodlot.
- Respond quickly after big disturbance events to help your woods bounce back.
- Promote a diversity of tree species and tree sizes.
- Protect rare or sensitive plant and animal communities.
- Consider how your current trees and new trees that you may want to plant will react to future conditions.
- Monitor your woods and the effect of different management tactics.