

# Seeding the Future

Creating Resilient Habitats to Benefit People and Wildlife

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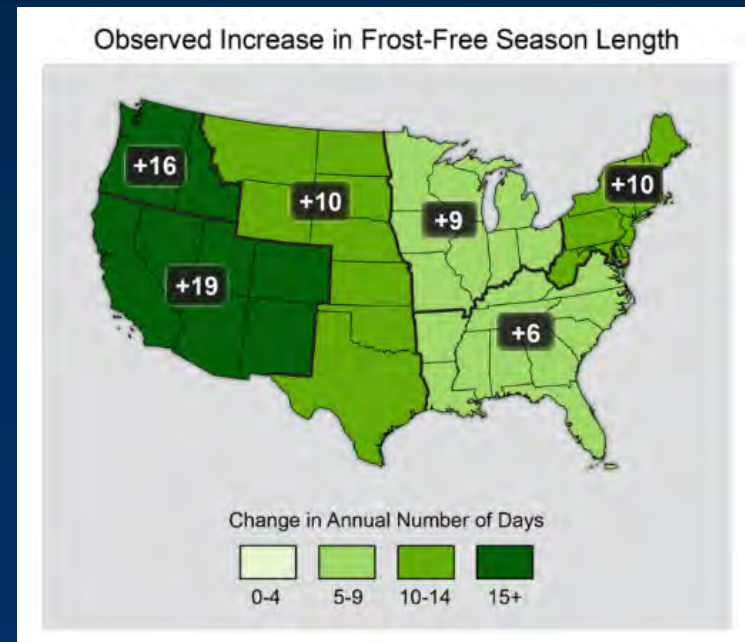
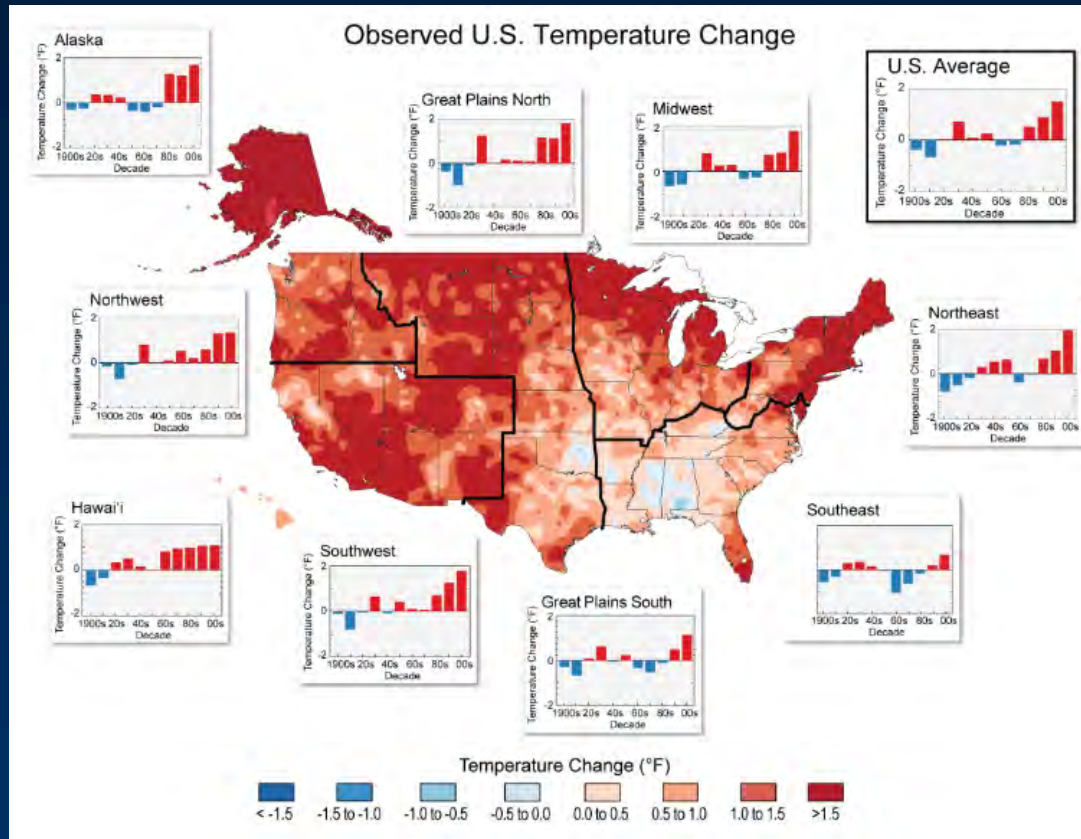
2017 National Native Seed Conference



# The Future Ain't What it Used to Be

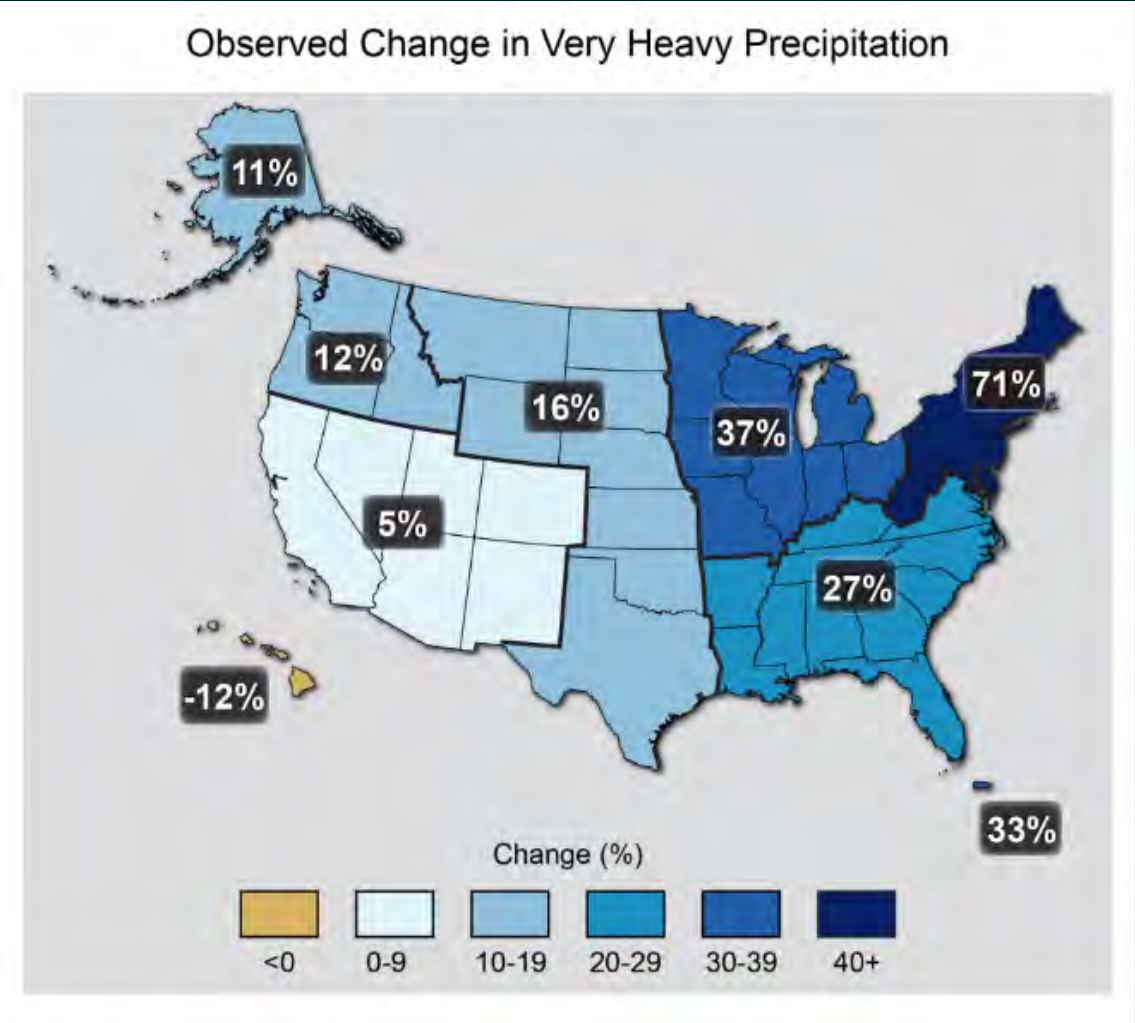


# Observed U.S. Temperature Changes



Source: 2014 National Climate Assessment

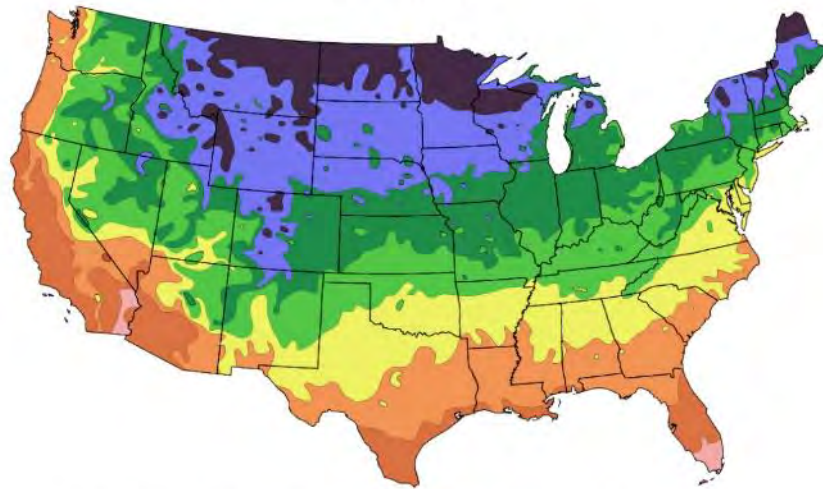
# Observed Changes in Precipitation



Source: 2014 National Climate Assessment

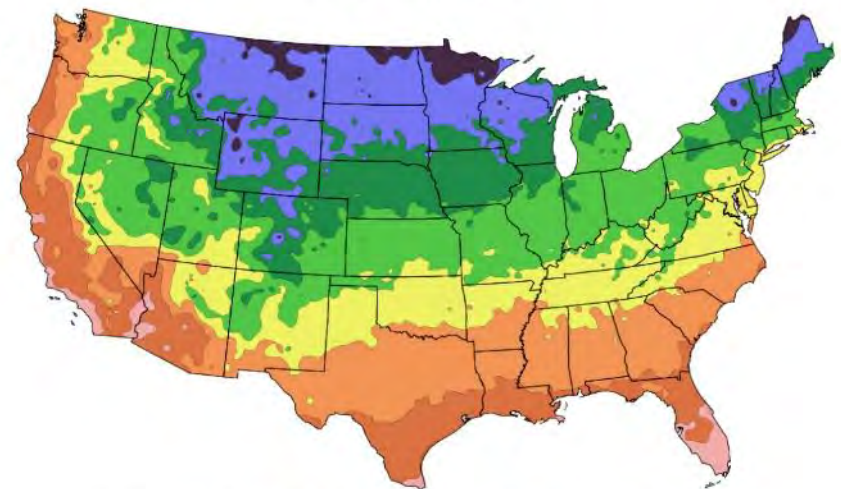
# Shifting Plant Hardiness Zones

1990 Map



After USDA Plant Hardiness Zone Map, USDA Miscellaneous  
Publication No. 1475, Issued January 1990

2006 Map



National Arbor Day Foundation Plant Hardiness Zone Map  
published in 2006.

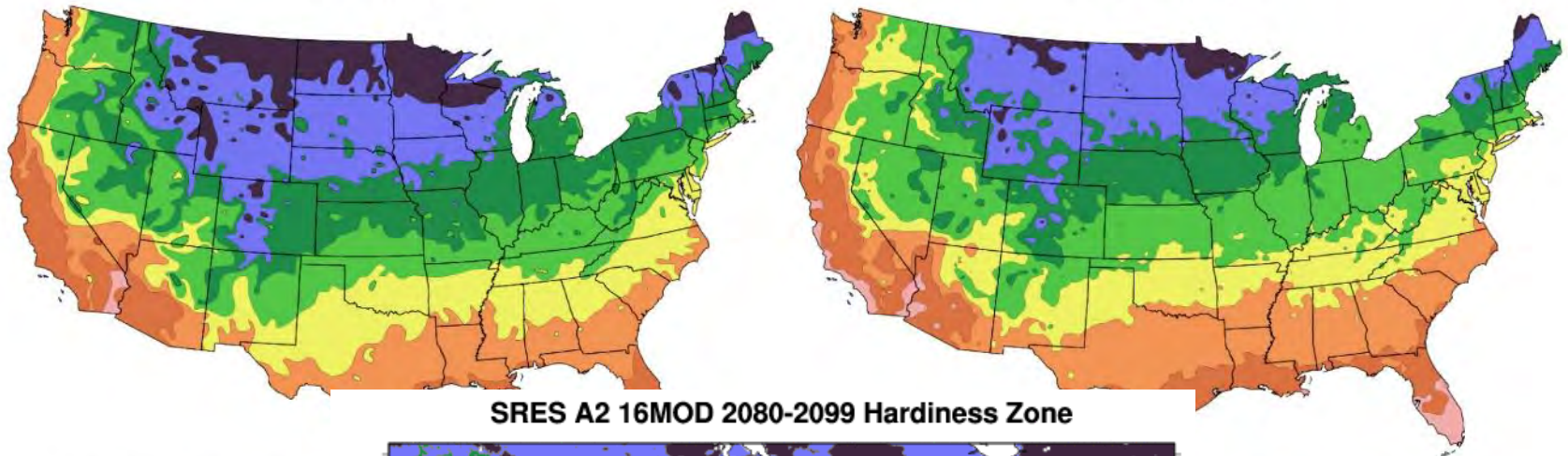
Zone



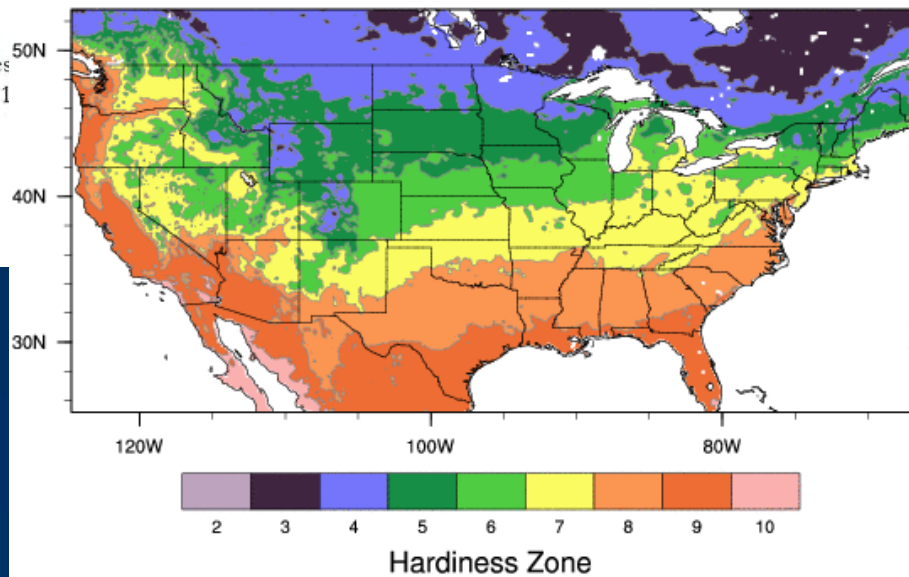
# Shifting Plant Hardiness Zones

1990 Map

2006 Map



SRES A2 16MOD 2080-2099 Hardiness Zone



After USDA Plant Hardiness  
Publication No. 1

Plant Hardiness Zone Map  
in 2006.

# Looking Ahead, Not Behind

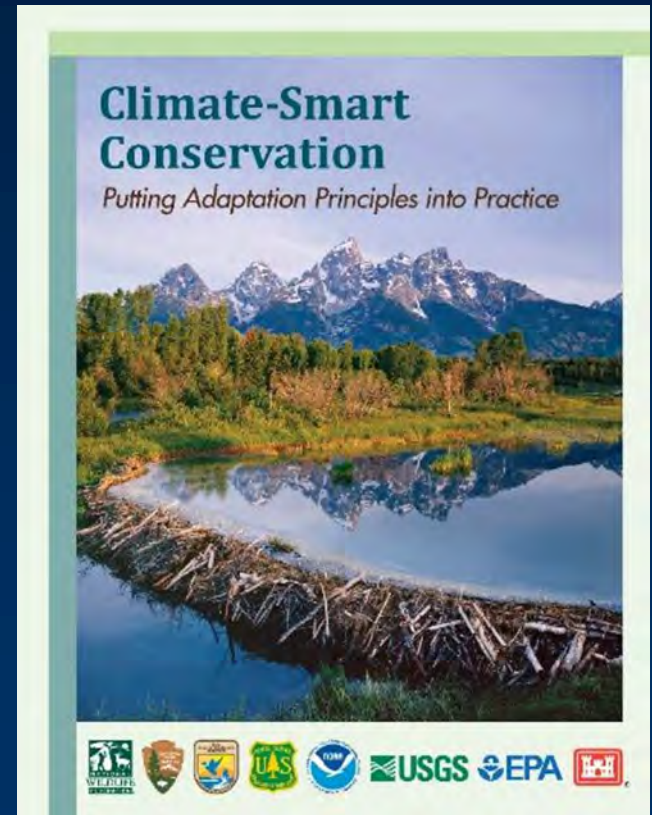


“I skate to where the puck is going to be, not where it has been.”

--- Wayne Gretzky

# Climate-Smart Conservation in a Nutshell

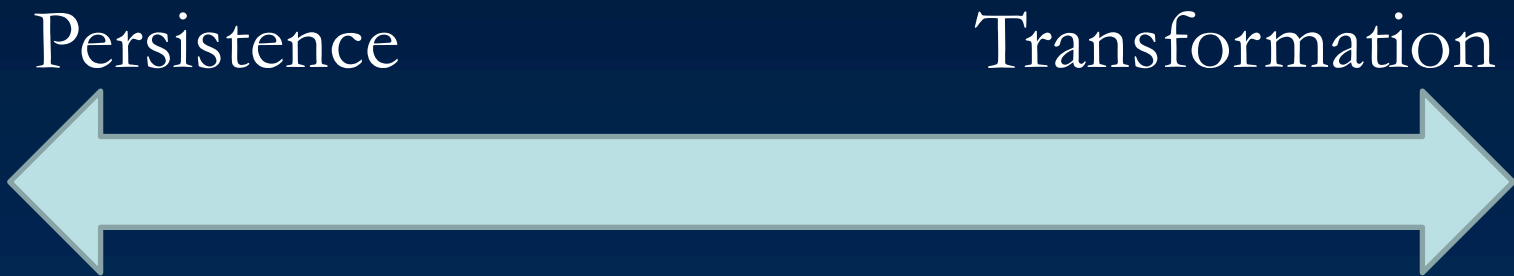
- Act with intentionality
  - link actions to climate impacts
- Manage for change, not just persistence
- Reconsider goals, not just strategies
- Integrate adaptation into existing work





# Continuum of Change

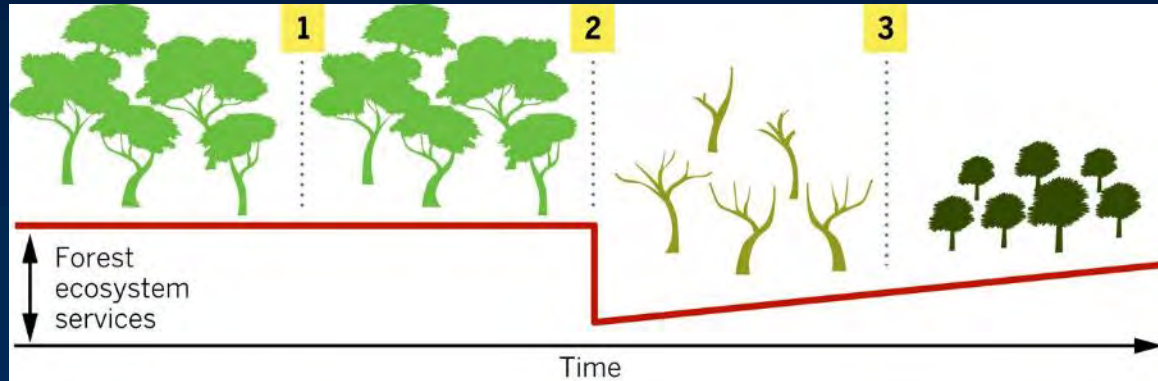
Emphasis on Outcomes or Endpoints



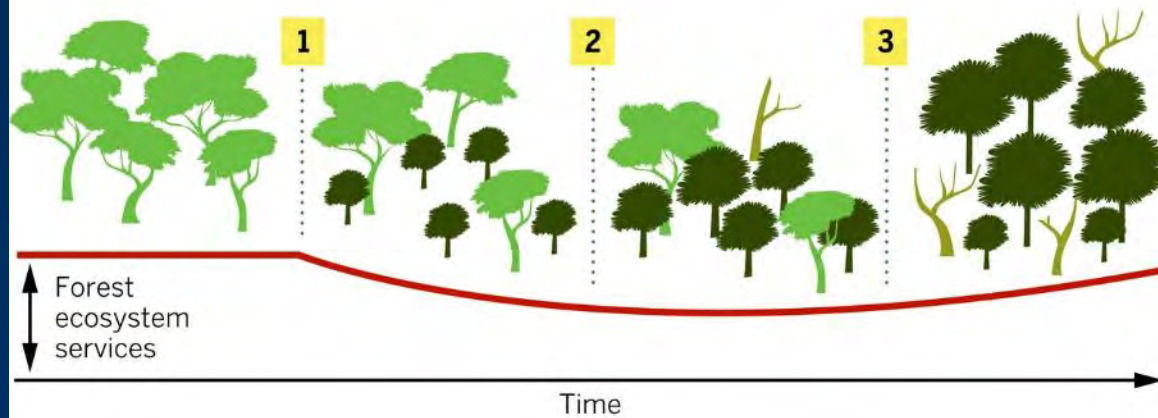
- Conservation and restoration now mostly focused on persistence of current conditions, or return to historical conditions
- Adaptation will often be concerned with determining:
  - when to manage for persistence
  - when to manage for change
  - When (and how) to cycle between the two

# Anticipating and Facilitating Transitions

Managing for Persistence

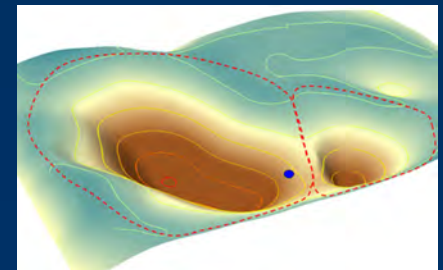


Managing for Change



# What's Resilience?

- “...the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.”
  - Executive Order 13653
- Used variously to emphasize persistence (“withstand”, “bounce back”) and transformation (“maintain functionality”)
- Being used in so many ways that value of term rapidly becoming compromised
  - If using, Important to define “of what, to what”



# Natural Defenses

Using Nature to Protect People and Property



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Using Nature to Protect People and Property



## NATURAL DEFENSES IN ACTION

HARNESSING NATURE TO PROTECT OUR COMMUNITIES



ALLIED  
WORLD



# Appropriate Materials for “Living Shorelines”



# Ensuring Green Infrastructure is Truly Green



# Taking Habitat Restoration to Scale





# Looking to the Future





The preceding presentation was delivered at the

## **2017 National Native Seed Conference**

Washington, D.C. February 13-16, 2017

This and additional presentations available at <http://nativeseed.info>

