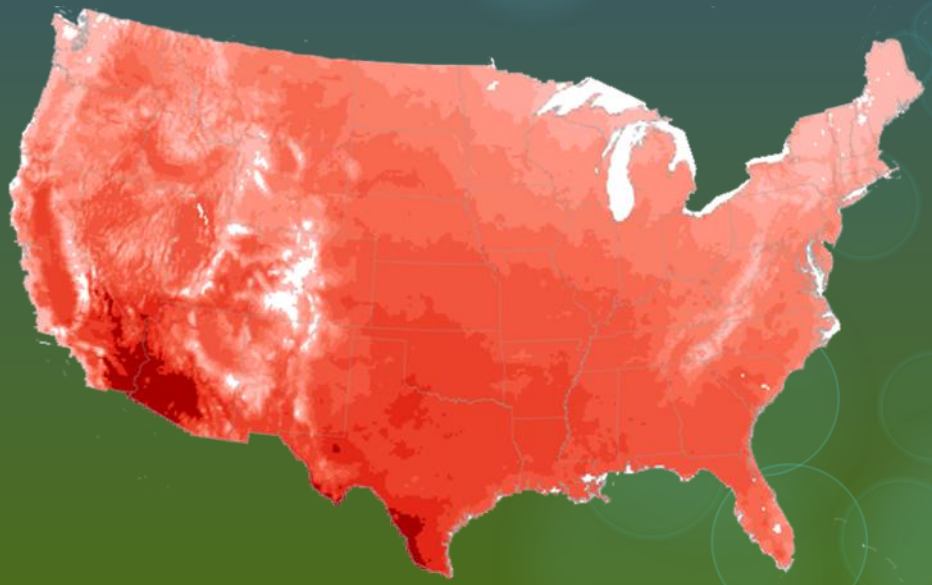
Landscape Conservation Cooperatives: Setting a Course for Sustainable Landscapes

Ben Thatcher, Assistant National Coordinator
Landscape Conservation Cooperatives



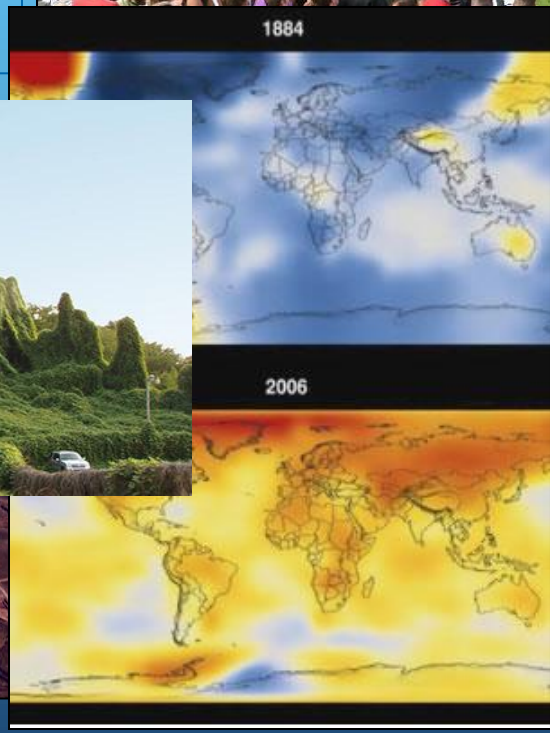
Managing By Network Academy
September 20, 2012

The conservation community faces unprecedented issues of scale, pace, and complexity in sustaining our Nation's natural resources.

Year: 2042

– Global Population ~9 Billion People –

habitat loss and fragmentation, pollution, invasive species, disease, water quality and quantity, energy development, all compounded by a rapidly changing climate…



"The conservation challenges of the 21st Century represent a force of change more far-reaching and consequential than any previously encountered."

Coordination, Communication, Collaboration

The problems and their solutions are beyond the capacity of any single agency or organization to effectively address individually

Cooperative Landscape Conservation

- Adaptation requires coordination across multiple sectors, geographical scales, and levels of government.

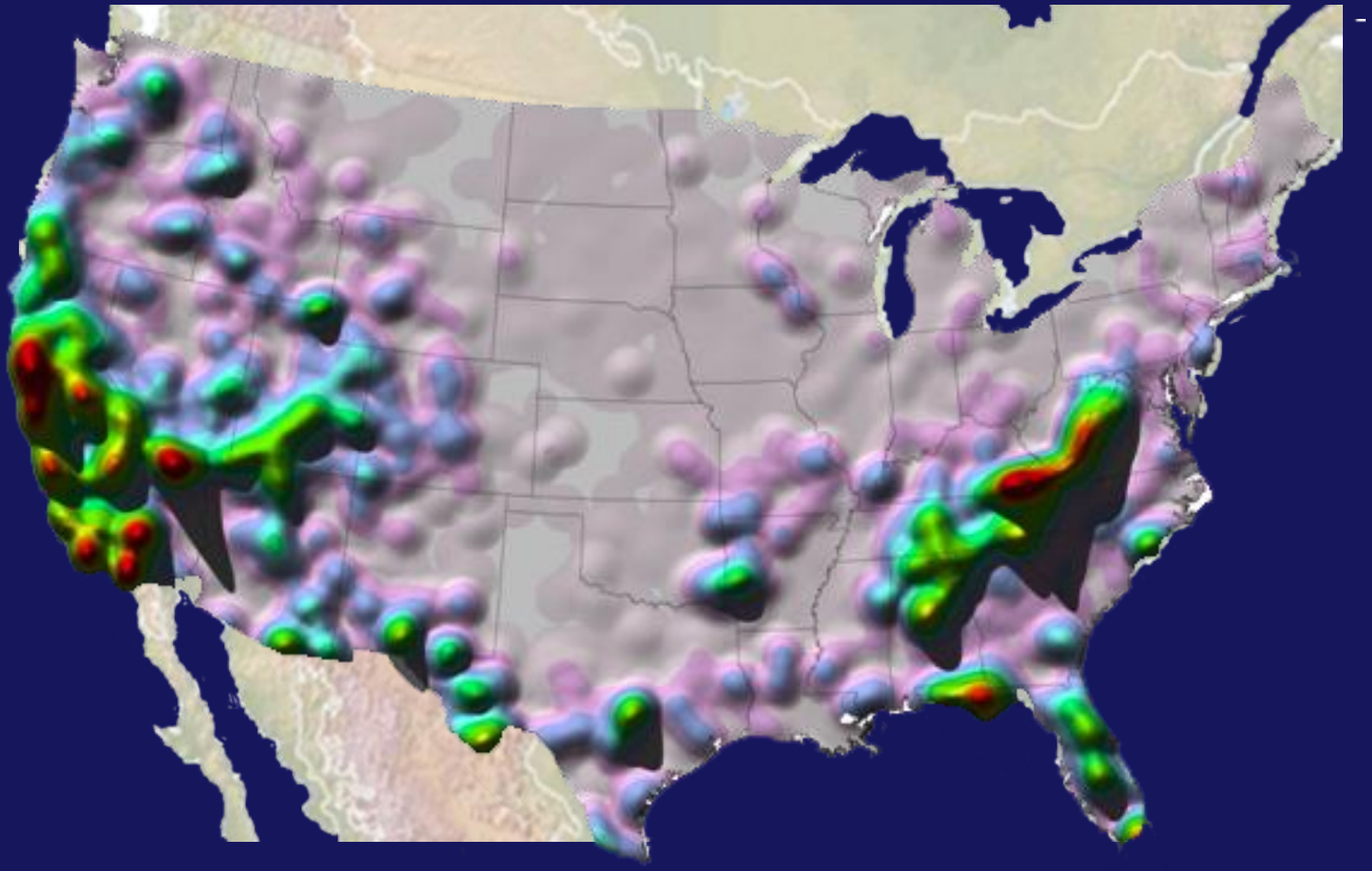
- It's Not Just a Resource Challenge…
- It's a "Way-of-Working" Challenge
  - Adopting a strategic, science-based, and system-level approach to conservation
  - Coordinating and collaborating to reduce duplication and to leverage resources and capacities

Conservation Paradigm Shift

An Operational Comparison

	Resource Conservation	Conservation Science
Planning	• Activity oriented • Administratively focused • Programmatically explicit • Opportunity based	• Outcome oriented • Model based • Spatially explicit • Multi-scaled • Predictive
Implementation	• Protection, restoration, and management pursued as ends • Opportunities prioritized at the project scale	• Protection, restoration, and management pursued as means • Opportunities prioritized against landscape scale assessments
Monitoring & Evaluation	• An operational luxury • Appropriate as an element of research	• Essential to assessing outcomes • Integral to structured, adaptive decision making
Research	• Priorities are derived from periodic calls to programs and field stations to identify their needs	• Aimed at testing assumptions and uncertainties of biological planning and assessment

Climate Change has Profound Implications for DOI Mission



US Department of Interior
Secretarial Order No. 3289

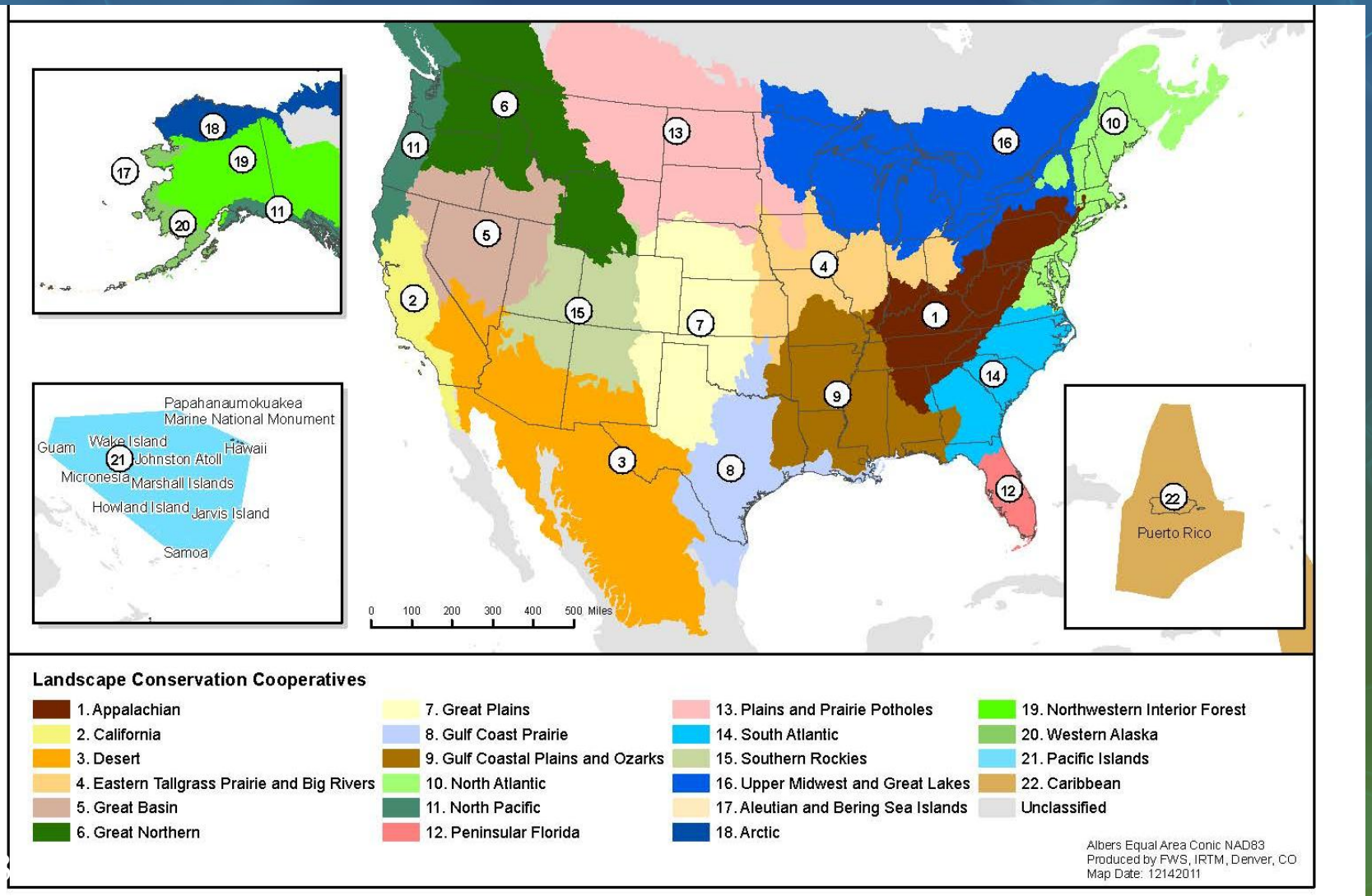
September 14, 2009:

> "*A network of Landscape Conservation Cooperatives will engage DOI and federal agencies, states, tribal and local governments and the public to craft practical, landscape-level strategies for managing climate change impacts…*"

http://www.doi.gov/whatwedo/climate/strategy

See links to downloads: Secretarial Order 3289 and Interior's Plan

LCC Geographies – A Seamless Network



LCCs: What are they?

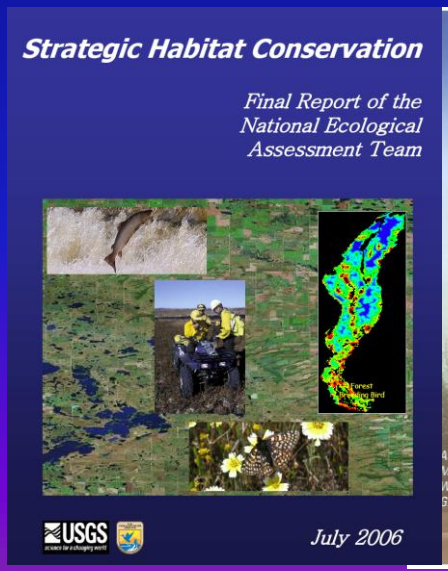
Bridging organizations: Provide forums, capacity, and resources to link scientists and managers and to facilitate communication, coordination, and collaboration among organizations

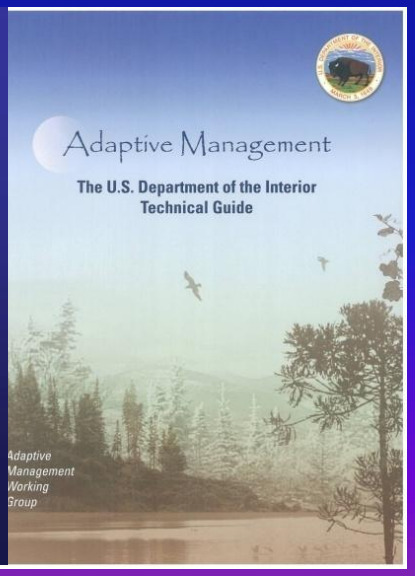
Fundamental units of planning and adaptive science: Provide science , expertise, and tools needed to design and deliver conservation at landscape scales.

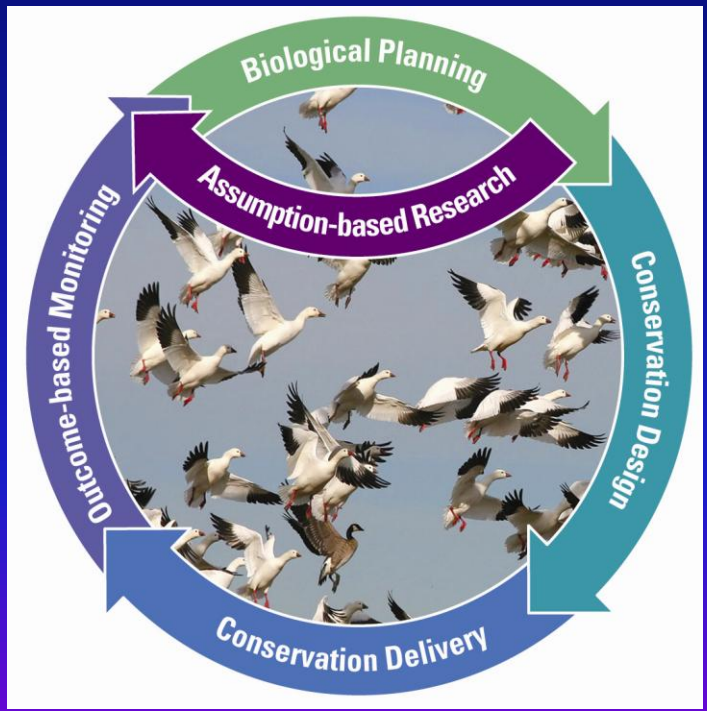
Applied conservation science partnerships: An international network of conservation organizations working collaboratively towards common landscape vision and goals.

Science-based & Adaptive

LCCs provide capacity for making strategic science-based decisions within an adaptive resource management framework







LCC Network: Vision and Mission

Vision: Landscapes capable of sustaining natural and cultural resources for current and future generations.

Mission: To function as a network of cooperatives that provide the forums for developing a shared vision of landscapes that sustain natural and cultural resources, that cooperates in its implementation, and that collaborates in its refinement.

Gulf Coastal Plains and Ozarks LCC Functional Roles

- Offer partners a landscape perspective for their conservation activities
- Develop explicit linkages across existing conservation partnerships that span multiple taxa
- Help incorporate future change into conservation planning (e.g., urbanization, sea-level rise)
- Pull these pieces together to help conservation partners define and design sustainable landscapes

Involvement in the LCCs

- All 50 state natural resource agencies
  - Many state parks, forest programs
  - Department of water in some western states
  - Western Gov's Assoc., NE
- All major federal agencies –
  - FWS, NPS, BLM, BOR, USGS, BIA, BOEM
  - USFS, NRCS
  - NOAA/NMFS, EPA, USACE, DOE, DOD
- Tribes – at least 20 individual and consolidated groups
- Non-governmental organizations

Great Northern
LANDSCAPE CONSERVATION COOPERATIVE

USA

- Montana
- Wyoming
- Idaho
- Washington
- Oregon

CANADA

- British Columbia
- Alberta

GNLCC Steering Committee

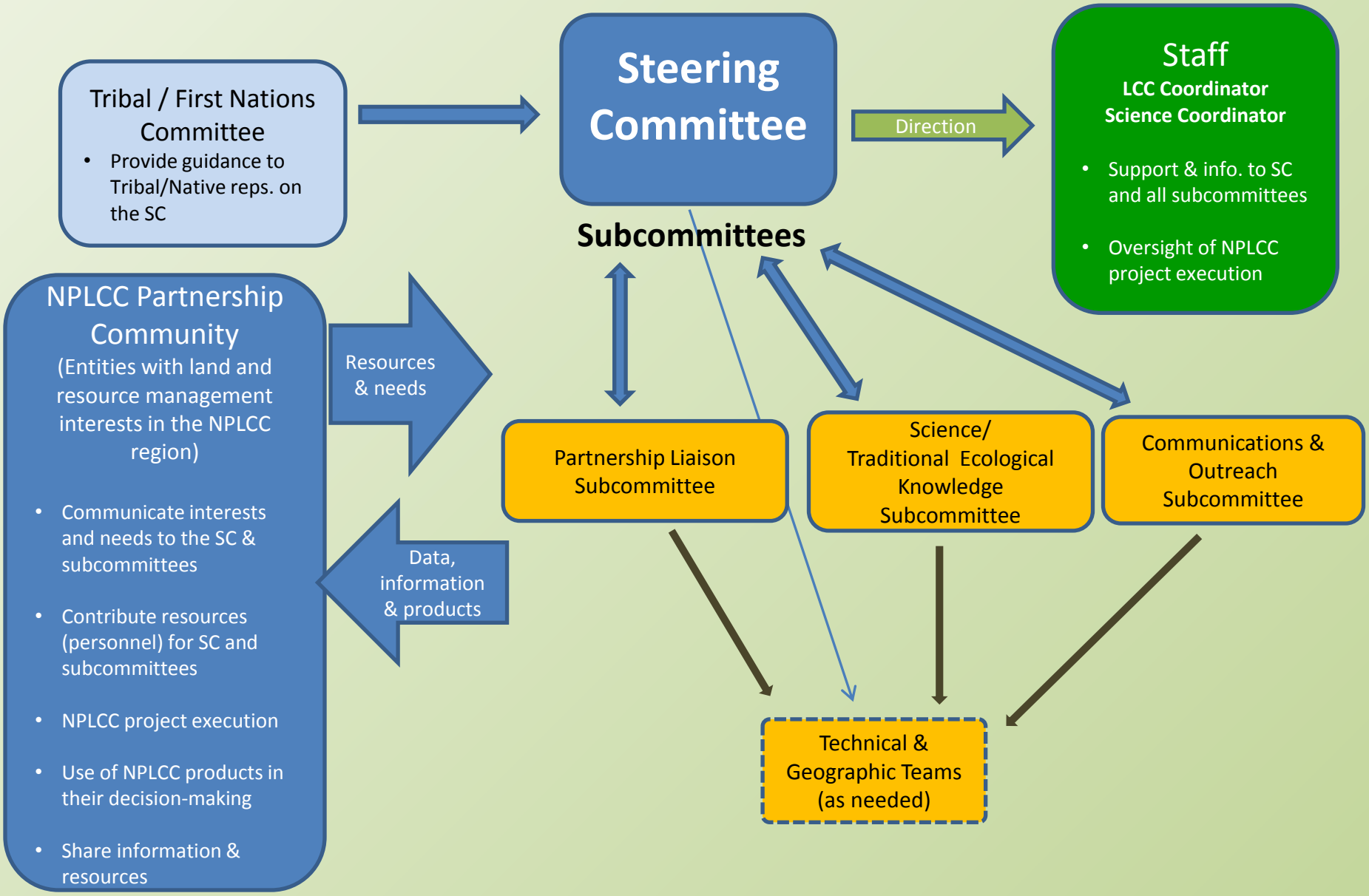
Great Northern Landscape Conservation Cooperative

- Alberta Parks Division and Sustainable Resource Development Division
- British Columbia Ministry of Environment and Ministry of Forests, Lands and Natural Resource Operations
- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Columbia Basin Federal Caucus
- Confederated Salish and Kootenai Tribes
- Confederated Tribes of the Umatilla Indian Reservation
- Canadian Wildlife Service
- Heart of the Rockies Initiative
- Idaho Department of Fish and Game
- Montana Fish, Wildlife and Parks
- National Park Service
- National Oceanic and Atmospheric Administration
- Natural Resources Conservation Service
- Nez Perce Tribe
- Oregon Department of Fish and Wildlife
- Parks Canada – Waterton Lakes National Park
- US Fish and Wildlife Service
- US Forest Service
- US Geological Survey
- Washington Department of Fish and Wildlife
- Wildlife Conservation Society
- Wyoming Game and Fish Department
- Yakama Indian Nation

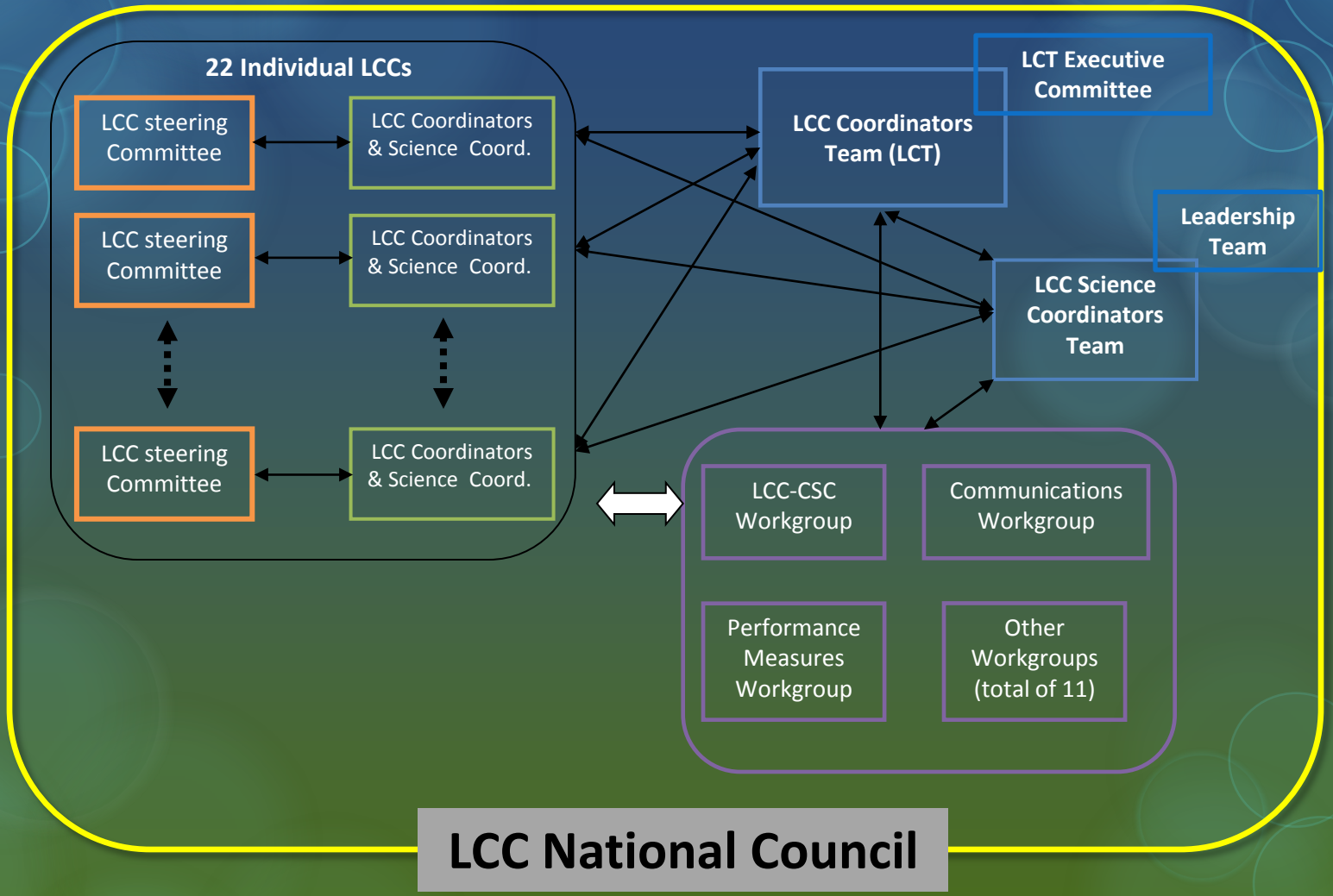
April 2010


Steering Committee
Sets and approves:
• Vision, goals & priorities
• Staff direction
• Strategic framework
• Capacity
• Project funding
• Communications
Advisory Team
Coordinates:
• Science needs
• Project funding process
• Strategic framework
• Capacity
• Outreach to Science & Partnership Communities
GNLCC Staff
Science Community
University, government & NGO scientists & specialized technical expertise:
• Develops or provides specific science needs
• Participates in committees or working groups
Partnership Community
Sets priorities for or supports on-the-ground landscape conservation. Organized into three partner forums:
• Columbia Basin
• Rocky Mountain
• Sage-Steppe

North Pacific Landscape Conservation Cooperative



LCC Network Organizational Structure

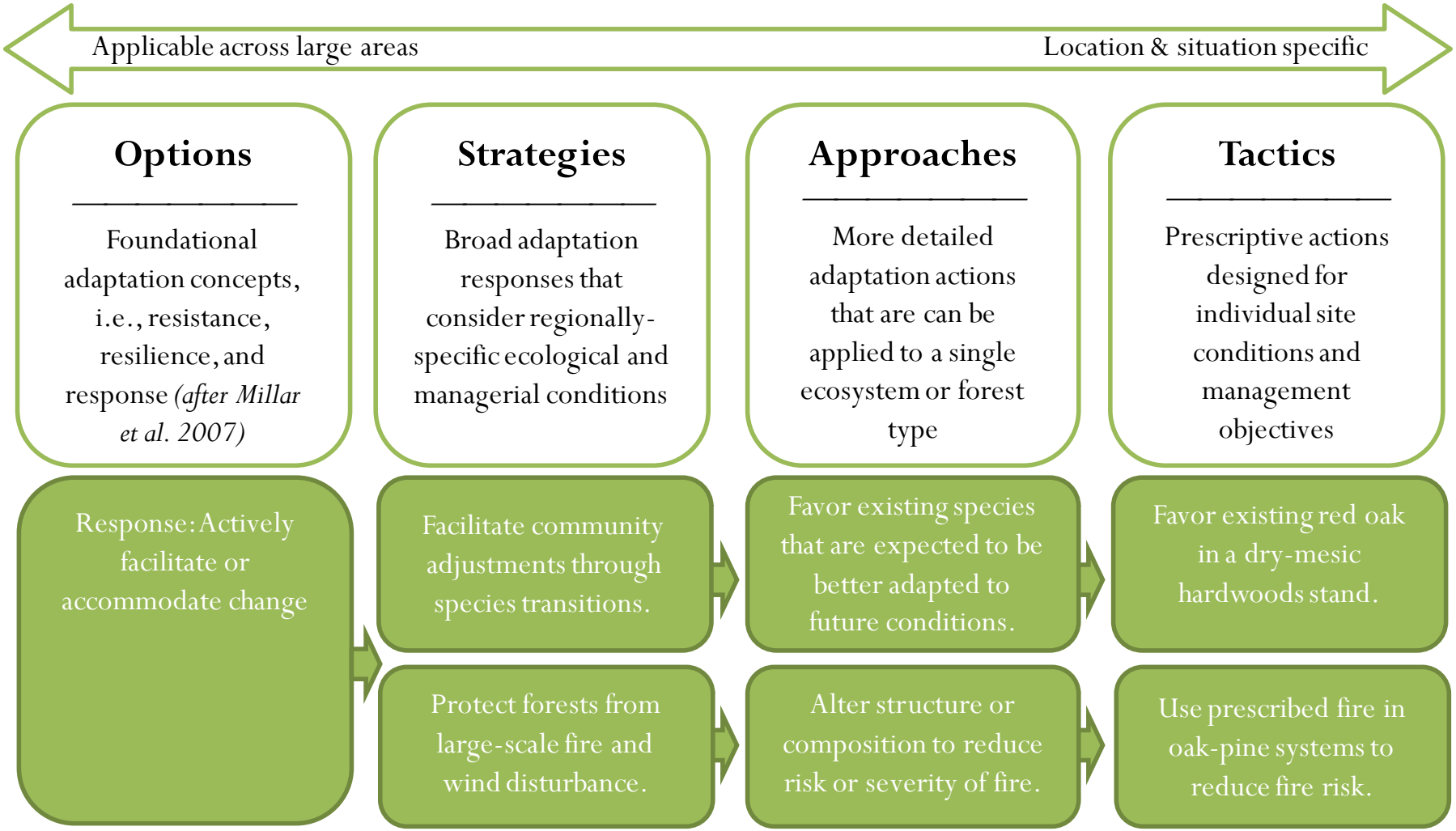


Seven Key Steps (Goals)

1. Conserve and connect habitat
2. Manage species and habitats
3. Enhance management capacity
4. Support adaptive management
5. Increase knowledge and information
6. Increase awareness and motivate action
7. Reduce non-climate stressors

7 Goals
22 strategies
100+ actions
Progress Lists
Case studies

adaptation strategies & approaches



Slide credit: Patricia Butler- Climate Change Response Framework Project

North Atlantic LCC

Projects related to understanding landscape change (land use change and climate change) impacts on habitat capability to support fish and wildlife populations and providing decision support tools

- Coastal Decision Support Tools
  - Sea level rise, beaches and piping plovers
- Aquatic Decision Support Tools
  - Stream flow, temperature, and brook trout
- Terrestrial/Wetland Decision Support Tools
  - Species/habitat
  - Ecological integrity
  - Geophysical
  - Regional connectivity

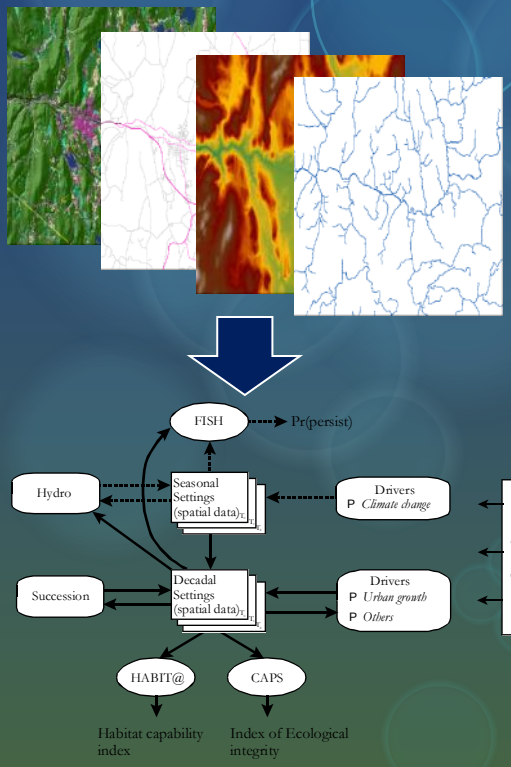
PROJECT TITLE: Designing Sustainable Landscapes for Wildlife: Decision-Support Tools for Conservation

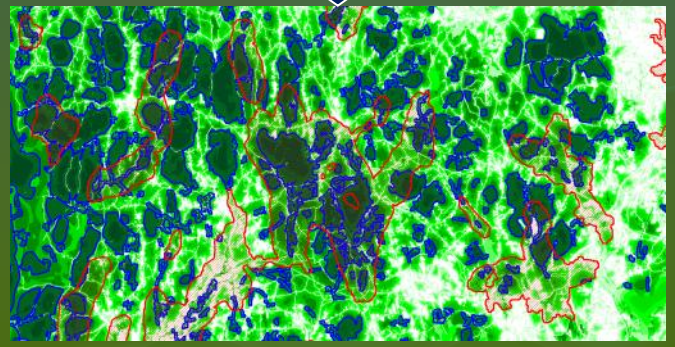
1. Develop and compile spatial data

2. Build landscape change model – climate change, urban growth, succession (other drivers)

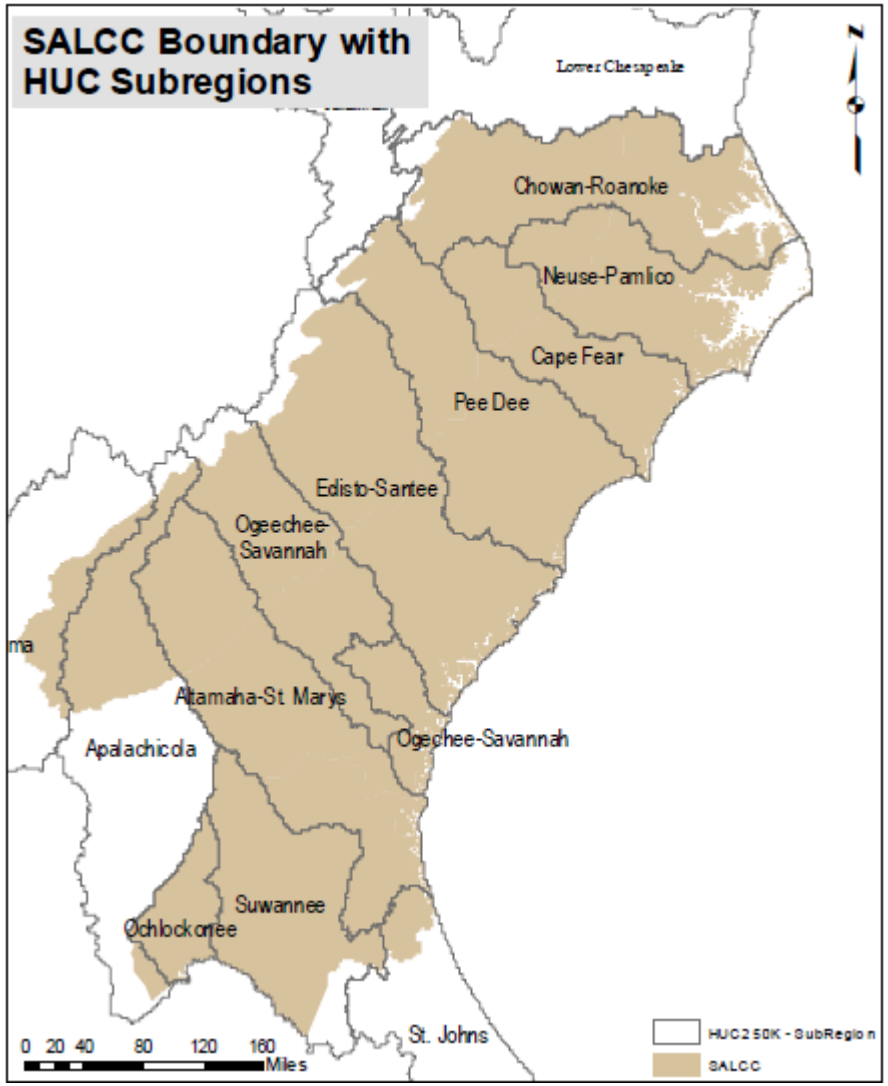
3. Assess landscape ecological integrity (*coarse filter*: intactness, resiliency, buffering, diversity, and connectivity) and habitat capability for representative species (*fine filter*) under alternative future scenarios

4. Identify and map priorities for conservation (land protection, management and restoration)



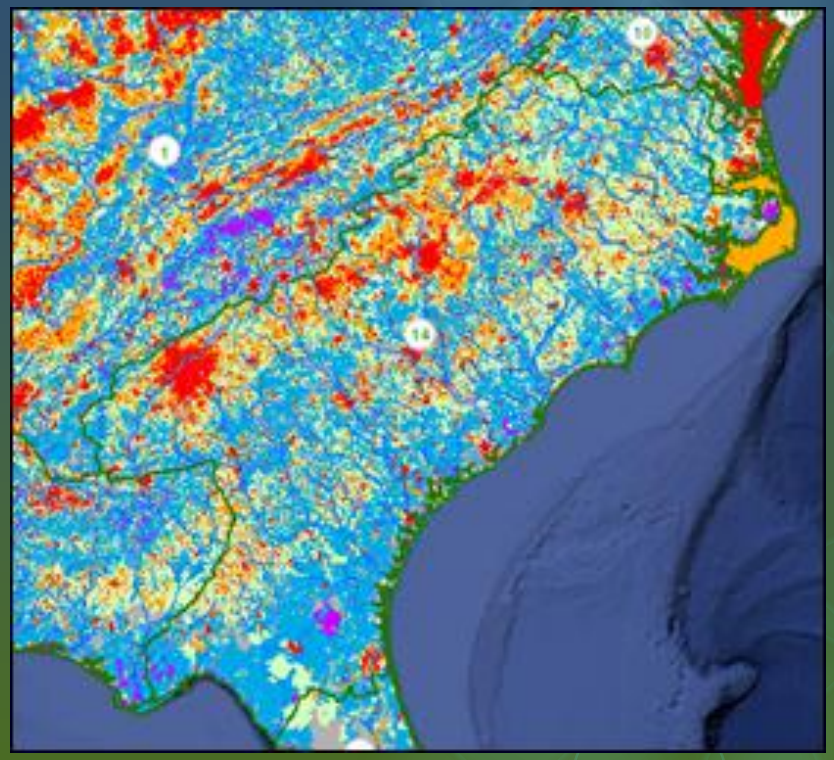


The South Atlantic Landscape



South Atlantic Conservation Strategies

- Effects of sea level rise on sea turtle, shorebird, seabird, beach mouse nesting distributions
- Seamless LiDAR
- Identify genetic “hotspots” and conservation areas for sustaining populations and maintaining within-species adaptive capacity.
- Address information gaps to develop and implement science-based instream flow standards and practices.

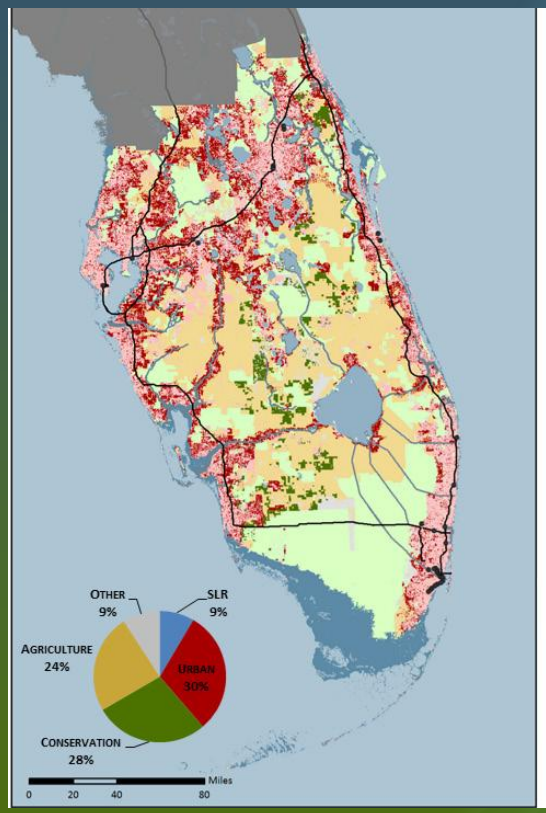


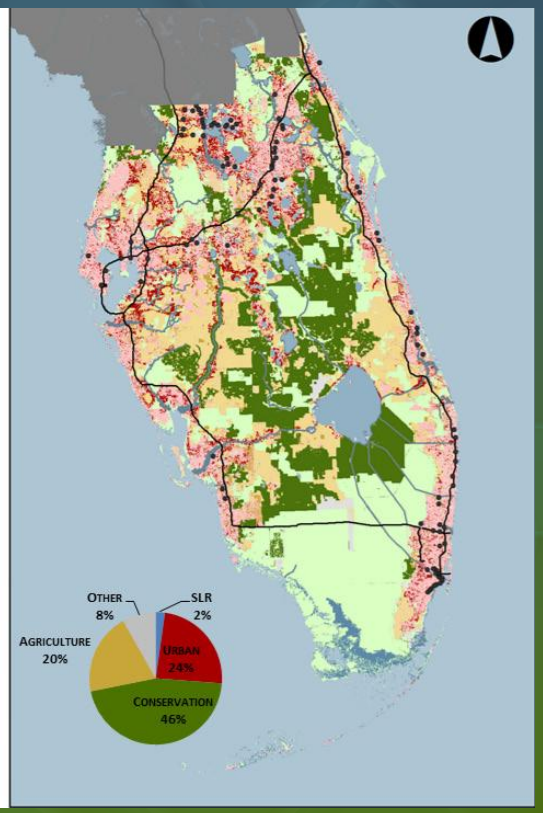
“Addressing the Challenge of Climate Change in the Greater Everglades Landscape”

- Changes in the Greater Everglades Landscape relative to 4 drivers:
  - climate change
  - management decisions,
  - population change,
  - financial resources.
- The outputs of these scenarios will help to prioritize conservation and management.

SCENARIO C (2060)
- **High Sea Level Rise**
- **Low Financial Resources**
- **Business as Usual Planning**
- **Double Population Growth**

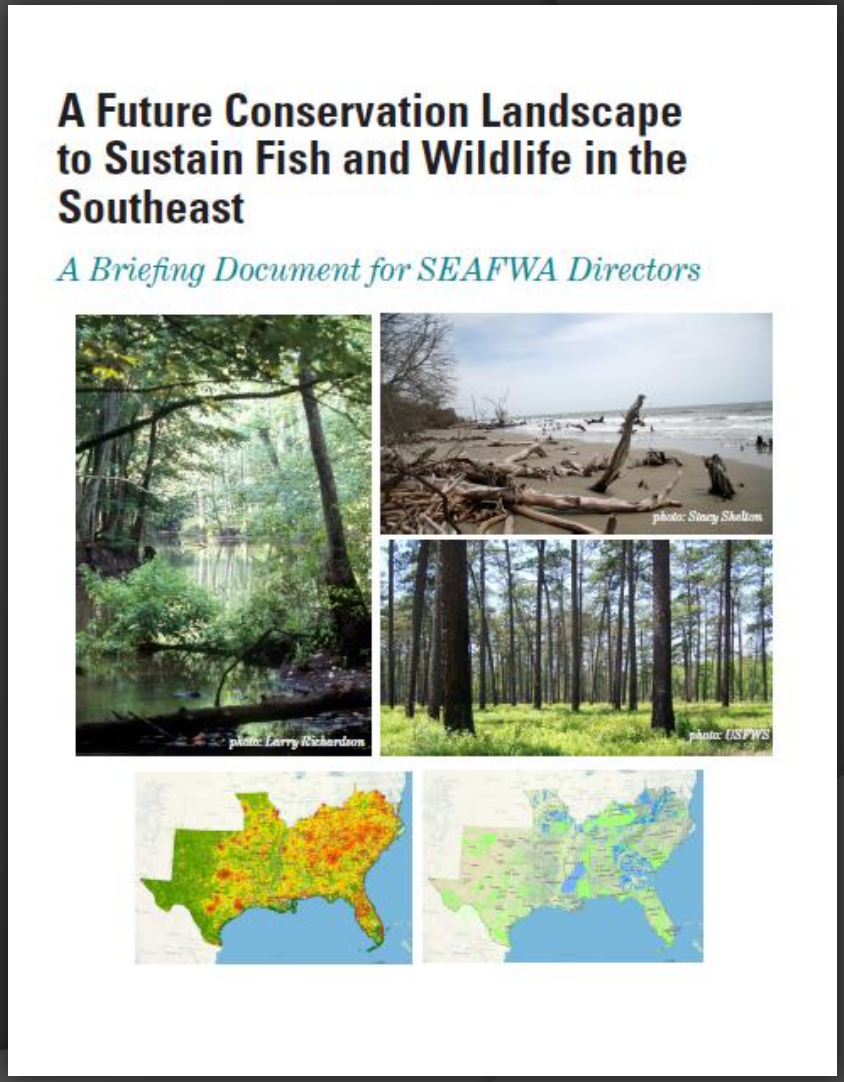
SCENARIO B (2060)
- **Low Sea Level Rise**
- **High Financial Resources**
- **Proactive Planning**
- **Trend Population Growth**





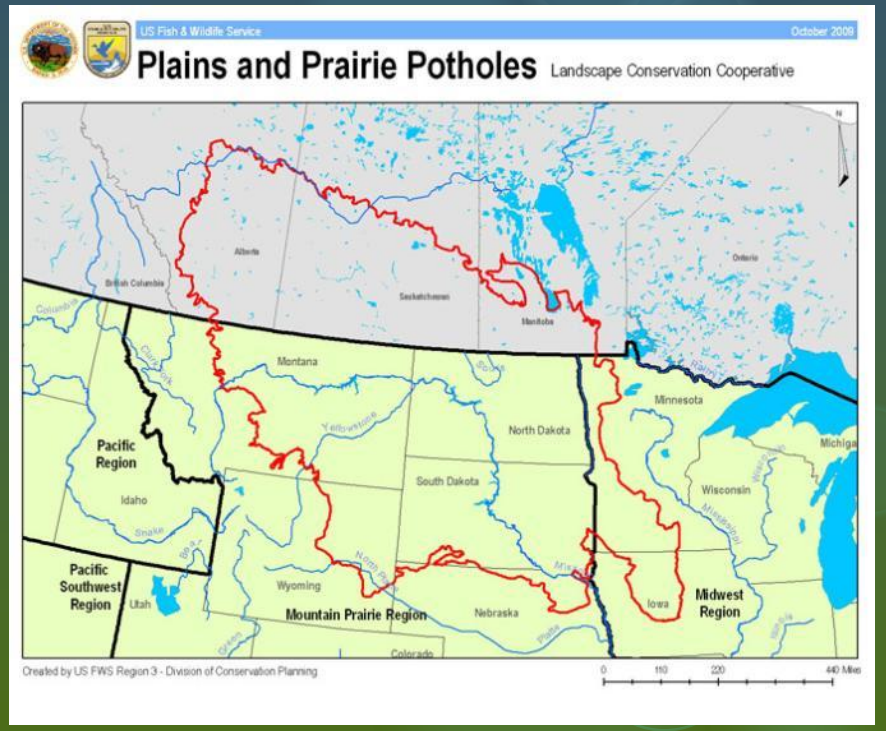
The Southeast Conservation Adaptation Strategy (SECAS)

Fourteen states working together with the LCCs to develop a conservation vision and plan for the Southeastern U.S.



Plains and Prairie Potholes LCC

PROJECT TITLE: ***Capture and Interpretation of Downscaled Climate Change Models to Benefit Avian Conservation***



Prairie Pothole Wetlands and Prairies - vulnerable to climate change and land use practices

Plains and Prairie Potholes LCC

PROBLEM: Climate change models with greater precision are needed to project climate change impacts on wetlands and ultimately wetland-dependent birds.

PROJECT OUTCOMES:

- Creation of down-scaled climate models for the Northern Great Plains that will be used to develop habitat niche models of wetland-dependent bird species.

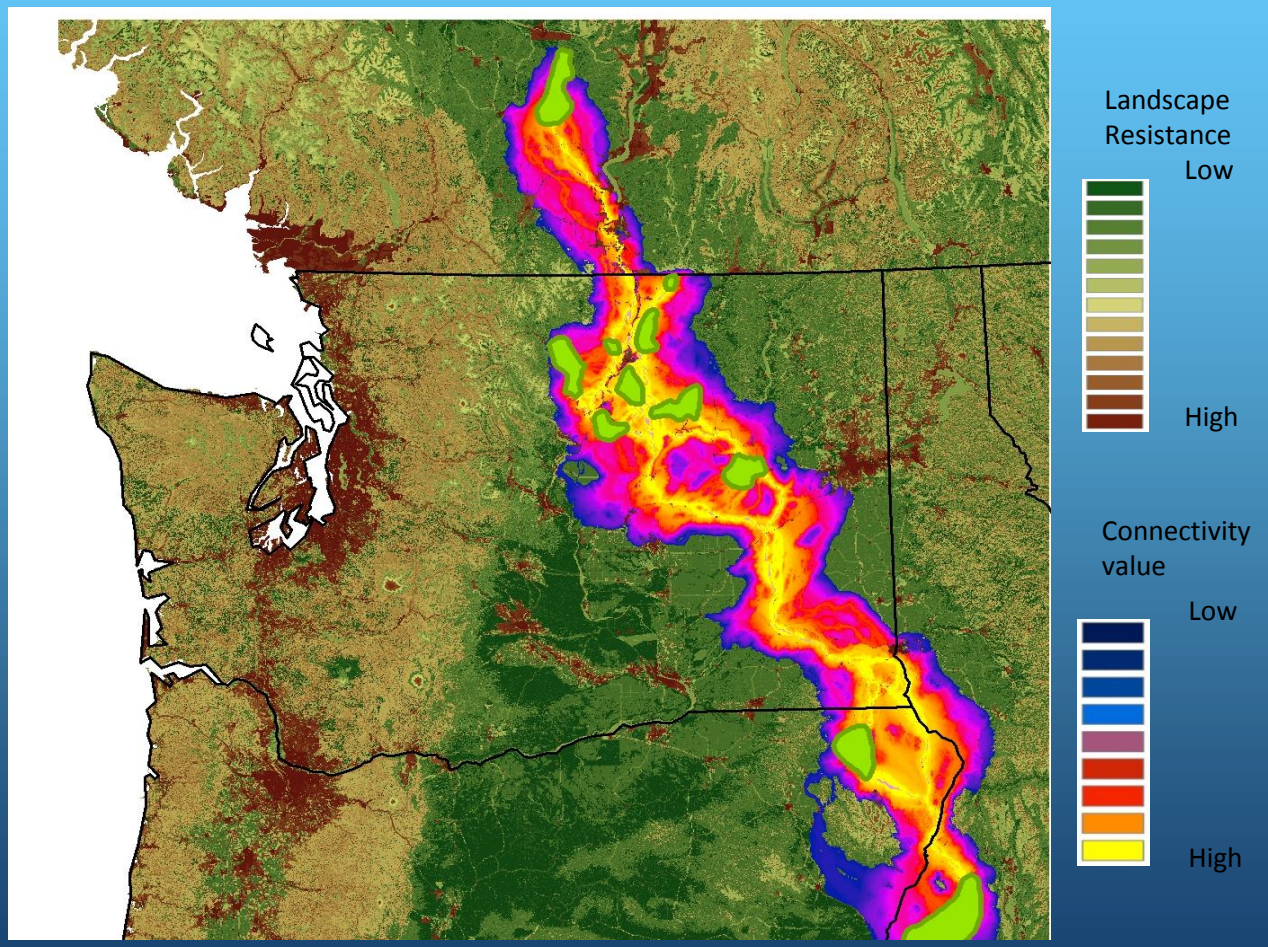
- Niche models can be used by managers to determine where to target habitat acquisition and restoration.

- Assess and describe uncertainty in models

Washington Habitat Connectivity Analyses

Columbian Sharp-tailed Grouse Example

- Corridor analysis
- Species core areas
- Species DNA



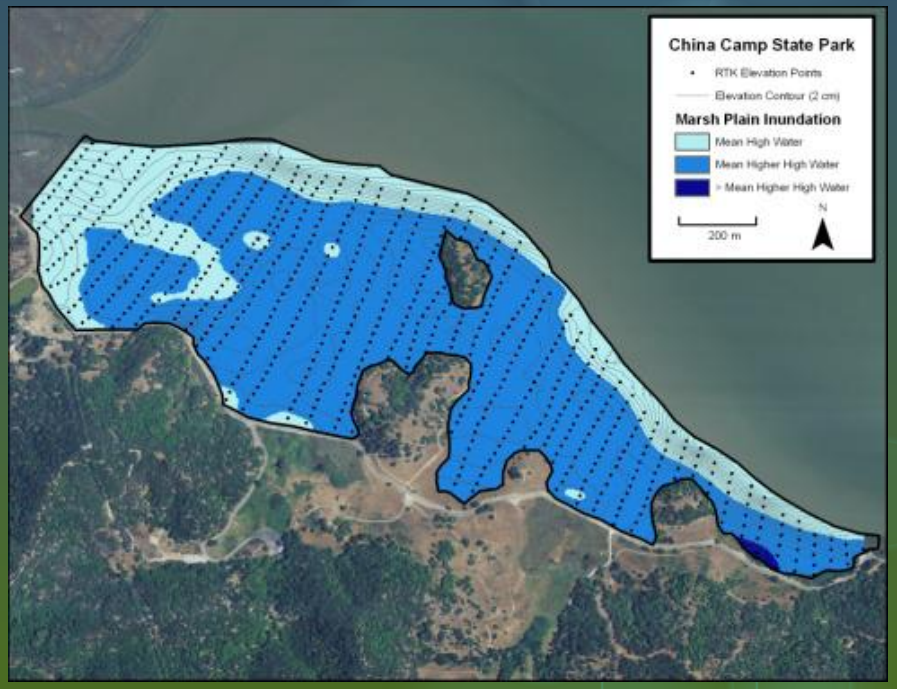
McAllister et al. 2010

California LCC

PROBLEM: Sea level rise associated with climate change will negatively impact refuges along the California coast. Refuge managers need tools to assist them in making decisions.

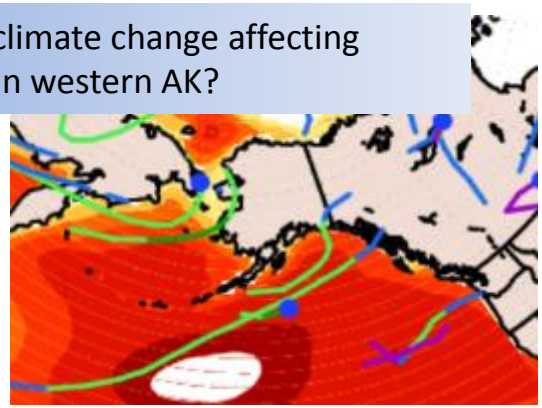
PROJECT OUTCOMES:

- **Highly accurate elevation models;**
- **Monitoring of annual inundation patterns;**
- **Maps of vegetation community structure and habitat suitability;**
- **Informed decisions on where to conduct restoration, where to protect lands and where to walk away.**



LCC Goal: Linking Science to Management

How is climate change affecting storms in western AK?



- Western Alaska LCC Coastal Storms Pilot Program looks at the science of climate change and storms to understand the impacts to natural resource, land, emergency, and community managers
- NOAA is involved through weather, climate, and ocean services

How are the storms affecting the landscape?

How are impacts to the landscape affecting communities and resources?

How does this information change our planning and decisions?

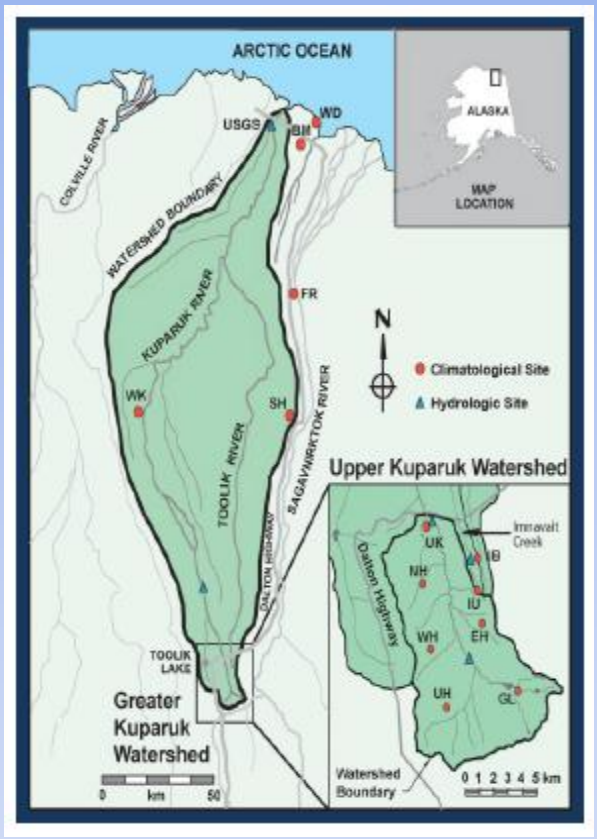
Arctic Landscape Conservation Cooperative
Advancing Science, Understanding Change.

Arctic LCC linking Climate, Stream Flow, and Fish Migration

Collaborators: Arctic LCC and the UAF, Water and Environmental Research Center

Mission: Help Managers **identify fish populations with Seasonal migrations that may be impacted by a warmer, drier Arctic**.

Expected Outcome: A model that examines the relationship between measured steam flow and surface water connectivity between summer feeding and over-wintering habitats for fish on the North Slope. Work initiated in 2010 will focus on the Upper Kuparuk River.



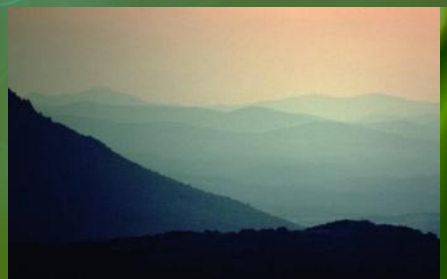
Common themes of many LCC Projects

- Address increasing land use pressures and widespread resource threats and uncertainties amplified by a rapidly changing climate
- Result in tools needed to prioritize and guide more effective conservation actions in the face of these threats and uncertainties
  - Assess how much of what conservation action is needed where to sustain species , habitats and systems (Doing the Right Things in the Right Places)




Key points about LCCs

- LCCs are self-directed partnerships that are developing shared science capacity for landscape conservation to achieve common goals
- DOI/FWS role is to facilitate these self-directed partnerships (LCCs are not Fish and Wildlife Service **programs**)
- LCC projects (science and tools) developed as part of this shared science capacity are intended to help the partnership and partner agencies and organizations to define , design and deliver landscapes that can sustain natural and cultural resources




Landscape Conservation Cooperatives

Landscape Conservation Cooperatives embody a shared vision for dealing with change on the landscape and will be a key component in addressing the challenge of natural resource stressors

Thank You!