National Climate Change & Wildlife Science Center
DOI Regional Climate Science Centers
DOI Landscape Conservation Cooperatives

A Partnership to Sustain Fish and Wildlife Communities

Robin O'Malley
Policy and Partnership Coordinator
USGS National Climate Change and Wildlife Science Center

New Conservation and Science Partnerships

- Landscape Conservation Cooperatives
- Regional Climate Science Centers
- National Climate Change and Wildlife Science Center

USGS
science for a changing world

Assumptions….

1. Climate change is occurring
2. Current policy actions are inadequate (and too late) to avoid continuing change over decades to centuries
3. Thus, human and natural systems must adapt
4. Effective adaptation will require science, observations, and tools that do not presently exist
5. Effective adaptation will be enabled by landscape and regional level partnership action on both science and management

Connecting Climate Change to Resource Management

Global Climate Models

Describe likely climate changes at a very large scale
Produced by agencies, universities, and research centers

Downscaled Information

Describe likely climate changes at a regional or local scale
Based on global models and local data
Produced by agencies, universities, and research centers

Forecasts of Ecological Response

Describe likely effects on fish, wildlife, ecosystems
Use regional and local projections of climate change
Major focus of National Climate Change and Wildlife Science Center

Adaptive Management

Conservation actions designed to react to changing circumstances
Identified by Landscape Conservation Cooperatives and other resource managers

Monitoring and Feedback

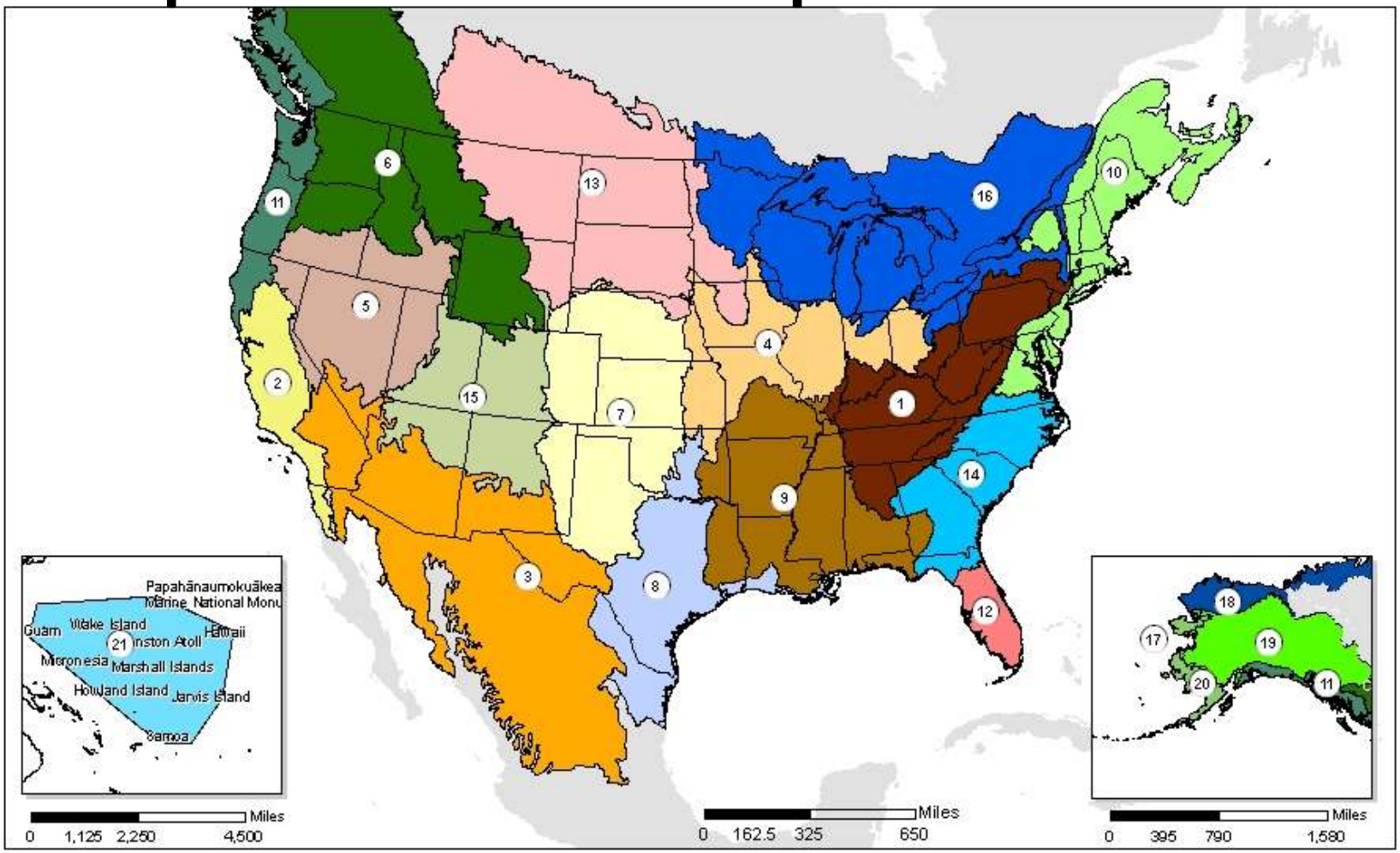
Identify effective actions, inform mid-course corrections
A fundamental component of effective planning and management

USGS
science for a changing world

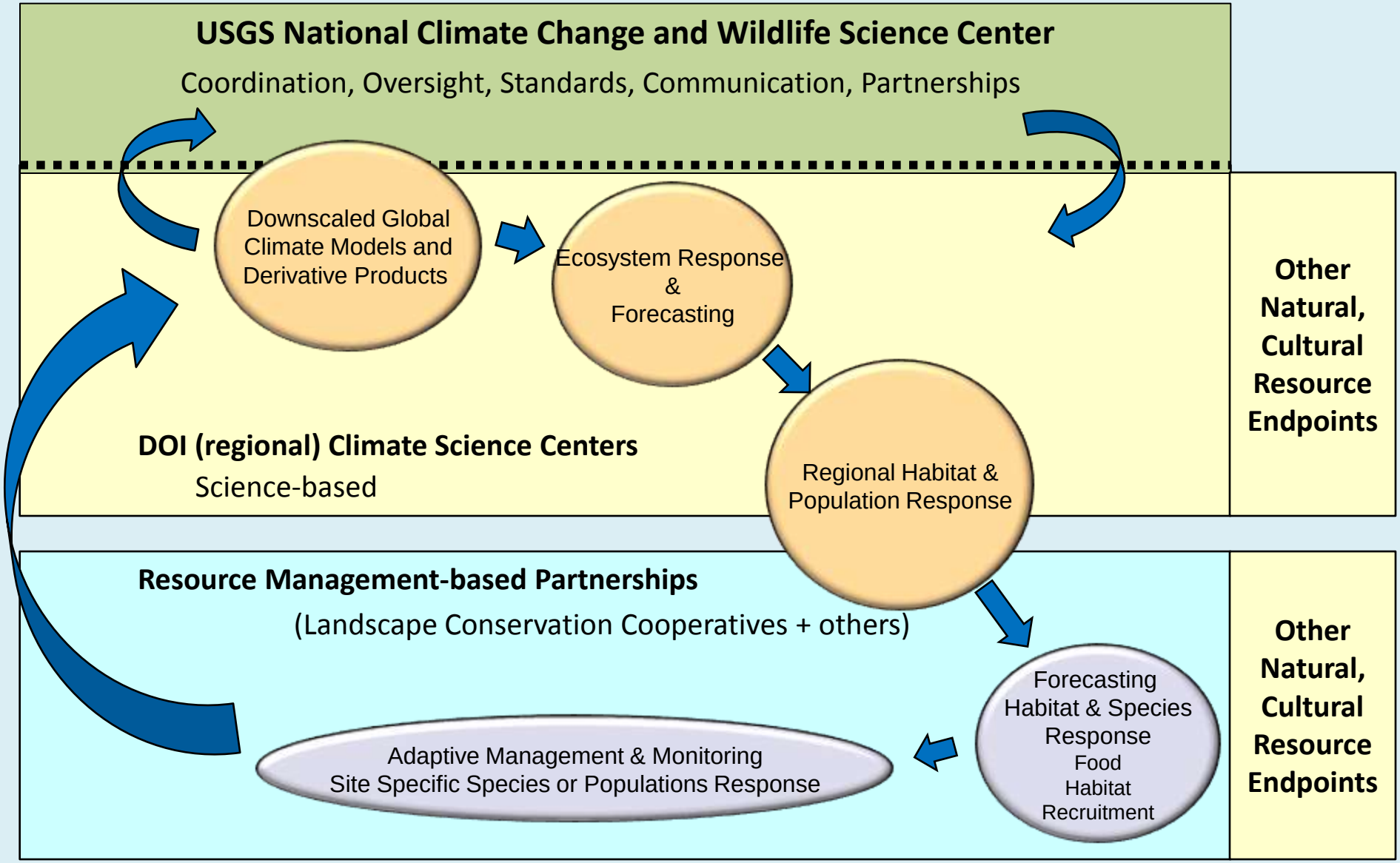
Landscape Conservation Cooperatives

- Science / resource management partnerships
- Created and led by partners
- Primary activities: Application of science to resource management
  - Develop and articulate management priorities, goals, and outcomes for landscapes
  - Use Regional Climate Science Center outputs and other information in developing these management strategies
  - Foster landscape-scale partnerships for resource outcomes
  - Develop and execute management actions with monitoring and feedback
  - Identify science needs and priorities
- Multiple (Interior Department) endpoints

Interim Geographic Framework for Landscape Conservation Cooperatives



NCCWSC Science-Management Interface



USGS
science for a changing world

National Climate Change & Wildlife Science Center

Mission

Provide **natural resource managers** with the **tools and information** they need to **develop and execute management strategies** that address the impacts of **climate change on fish, wildlife, and their habitats**

Goals

- **Partnerships** with natural resource managers to address their highest priority science needs
- **Partnerships** with the scientific community to develop needed information and tools
- Delivery of robust tools and information at applicable scales directly to resource managers

Focus on climate change <u>adaptation</u>

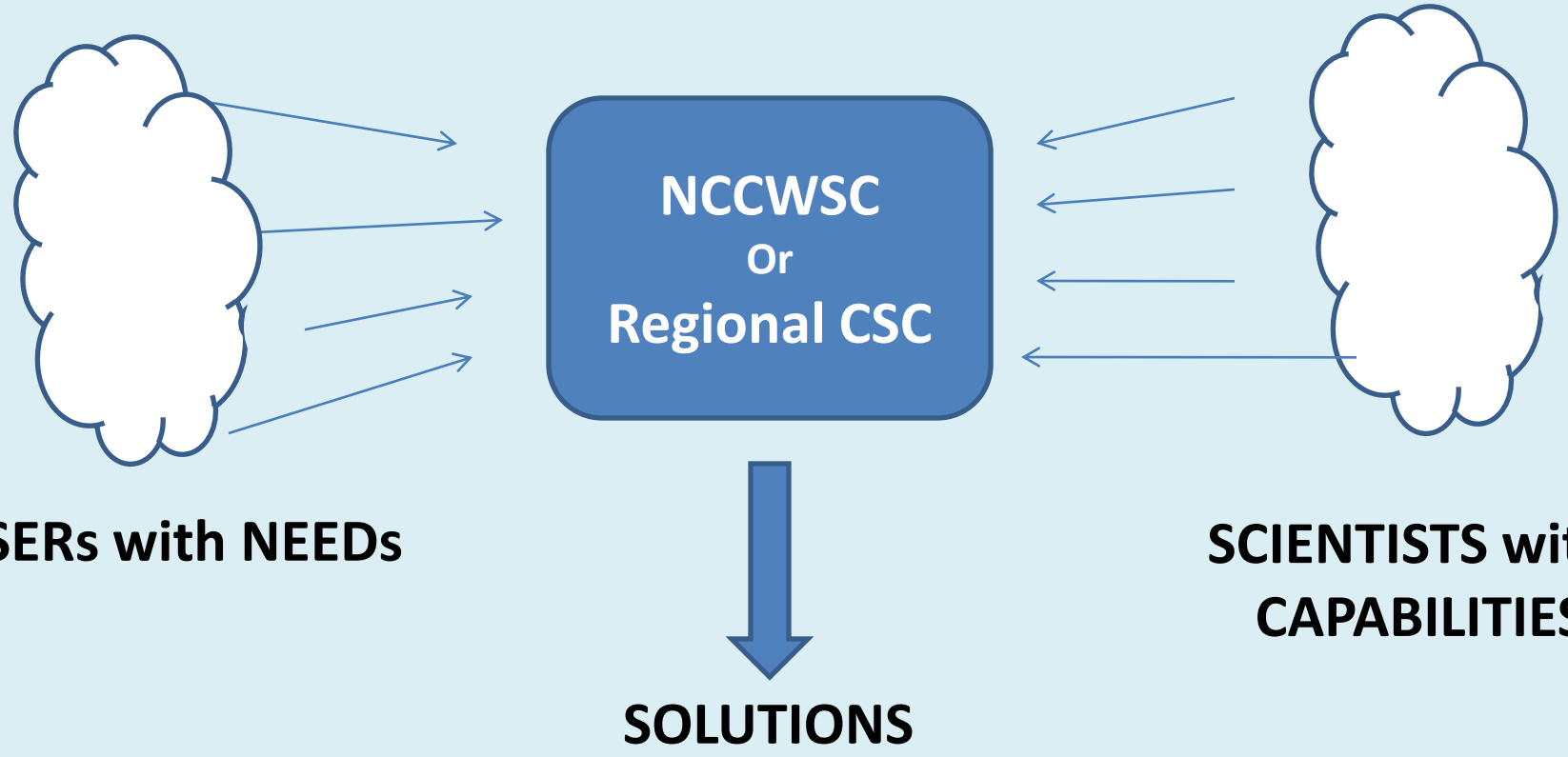
Focus on <u>climate change</u> in context of other actions/stresses, etc.

USGS
science for a changing world

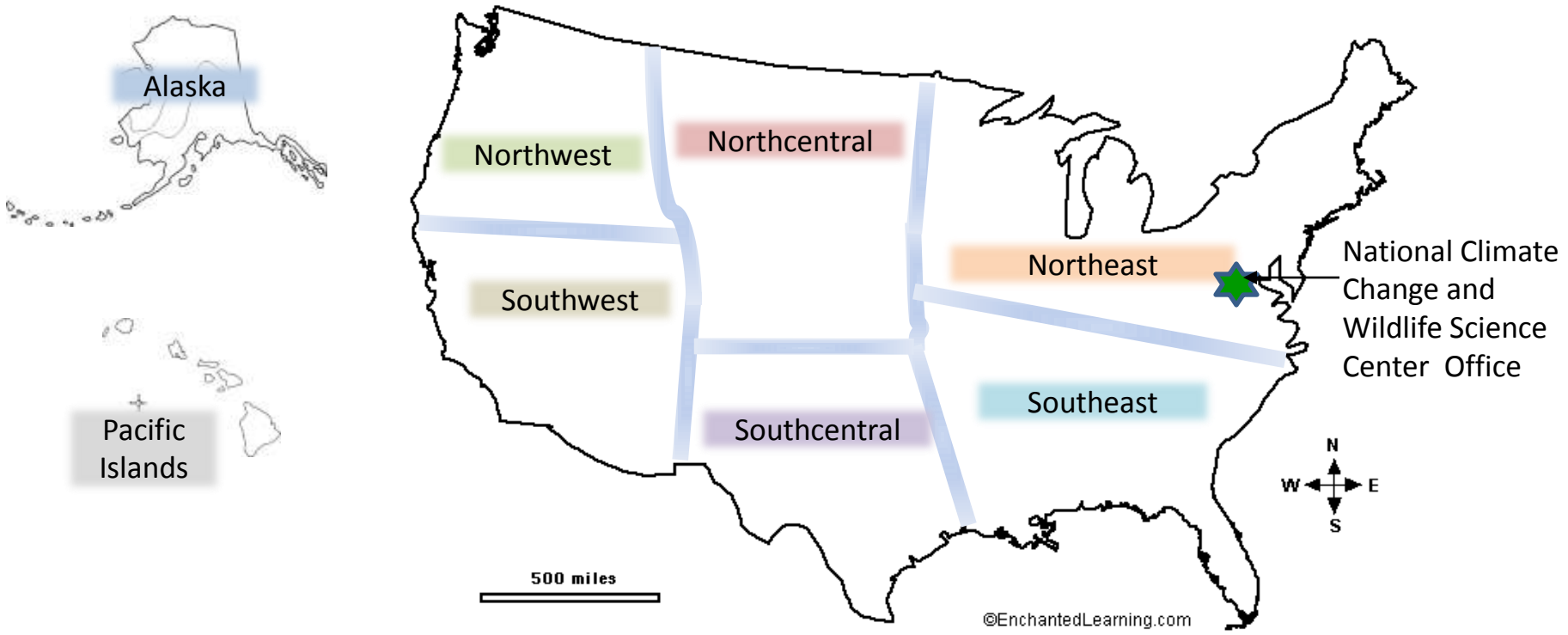
National Climate Change & Wildlife Science Center

Potentially most valuable role?

Convenor of the parties



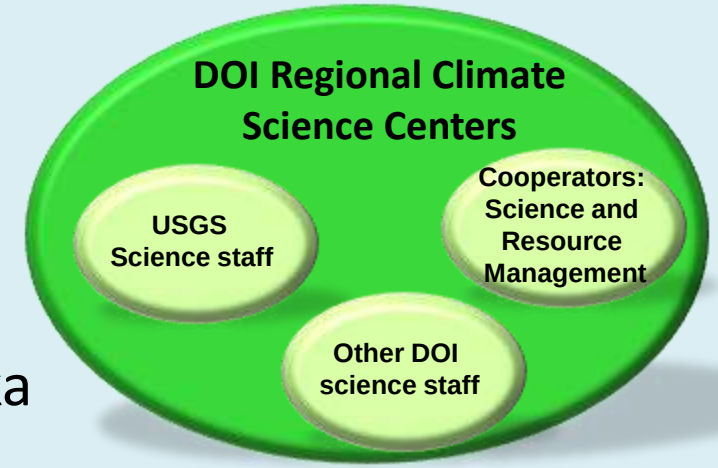
Climate Science Centers--Regions



"Fuzzy Boundaries"

USGS
science for a changing world

Establishing DOI Regional CSCs



- University / Nonfederal Based
- Competitive Process
- FY 2010 – Northwest, Southeast, Alaska
- FY 2011 – Southwest, North Central
- FY 2012 – Northeast, South Central, Pacific
- Program Announcement ("call for proposals") in Early 2010
- Director, Science Planner/Partnership Coordinator, Ecologists, Modelers, Climate Scientists, Population Biologists (?), Hydrologists (?), Sociologists (?)

USGS
science for a changing world

Thank you

ROBIN O'MALLEY

romalley@usgs.gov

703-648-4086

www.nccw.usgs.gov

EXTRA SLIDES

EXTRA SLIDES

NCCWSC Governance

- National Advisory Board
  - Input on priorities, opportunities, accomplishments
  - National agenda setting for adaptation of fish / wildlife / ecosystems / habitats
- Advisory Councils for Climate Science Centers
  - Review activities and accomplishments
  - Develop regional science agenda / priorities
- Science Input and Review Mechanisms

USGS
science for a changing world

National Climate Change & Wildlife Science Center

Priority Science Activities:

- Use and create high resolution **climate modeling information and derivative products** for forecasting ecological and population response at national, regional, and local levels
- **Integrate physical climate models with ecological, habitat, and population response models**
- **Forecast fish and wildlife population** and habitat changes in response to climate change
- **Assess the vulnerability** and risk of species and habitats to climate change.
- **Develop standardized approaches to modeling and monitoring** techniques, to facilitate the linkage of monitoring efforts to climate and ecological/biological response models

End Game

Managing toward the Future

- Altered biological communities (a given)
- Effective monitoring
- Partnerships leading to synergy
- Common transparent information base

Culture change

USGS
science for a changing world

Connecting Climate Change to Resource Management

Global Climate Models

Describe likely climate changes at a very large scale
Produced by agencies, universities, and research centers

Downscaled Information

Describe likely climate changes at a regional or local scale
Based on global models and local data
Produced by agencies, universities, and research centers

Forecasts of Ecological Response

Describe likely effects on fish, wildlife, ecosystems
Use regional and local projections of climate change
Major focus of National Climate Change and Wildlife Science Center

Adaptive Management

Conservation actions designed to react to changing circumstances
Identified by Landscape Conservation Cooperatives and other resource managers

Monitoring and Feedback

Identify effective actions, inform mid-course corrections
A fundamental component of effective planning and management

USGS
science for a changing world

National Climate Change & Wildlife Science Center

- **Not within the Center's focal area:**
  - General Circulation Models (GCMs)
  - Long-term monitoring
  - Resource management policy and decisions
  - Clearinghouse on climate change and wildlife

USGS
science for a changing world

Landscape Conservation Cooperatives

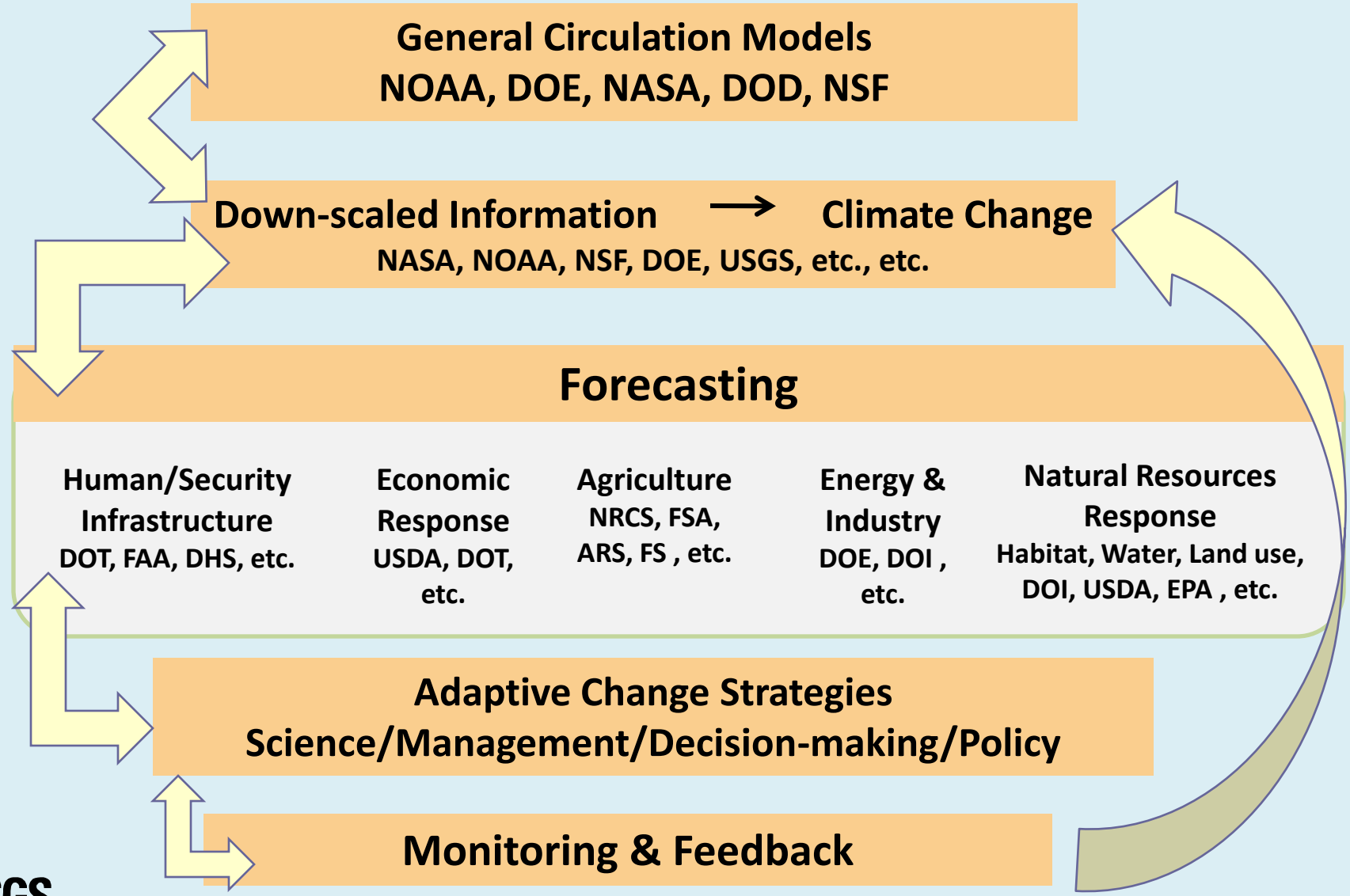
Originated with USFWS Strategic Habitat Conservation initiative

- **Set biological goals for priority species populations,**
- **Make strategic decisions**
- **Constantly reassess and improve**
- **On a landscape scale**

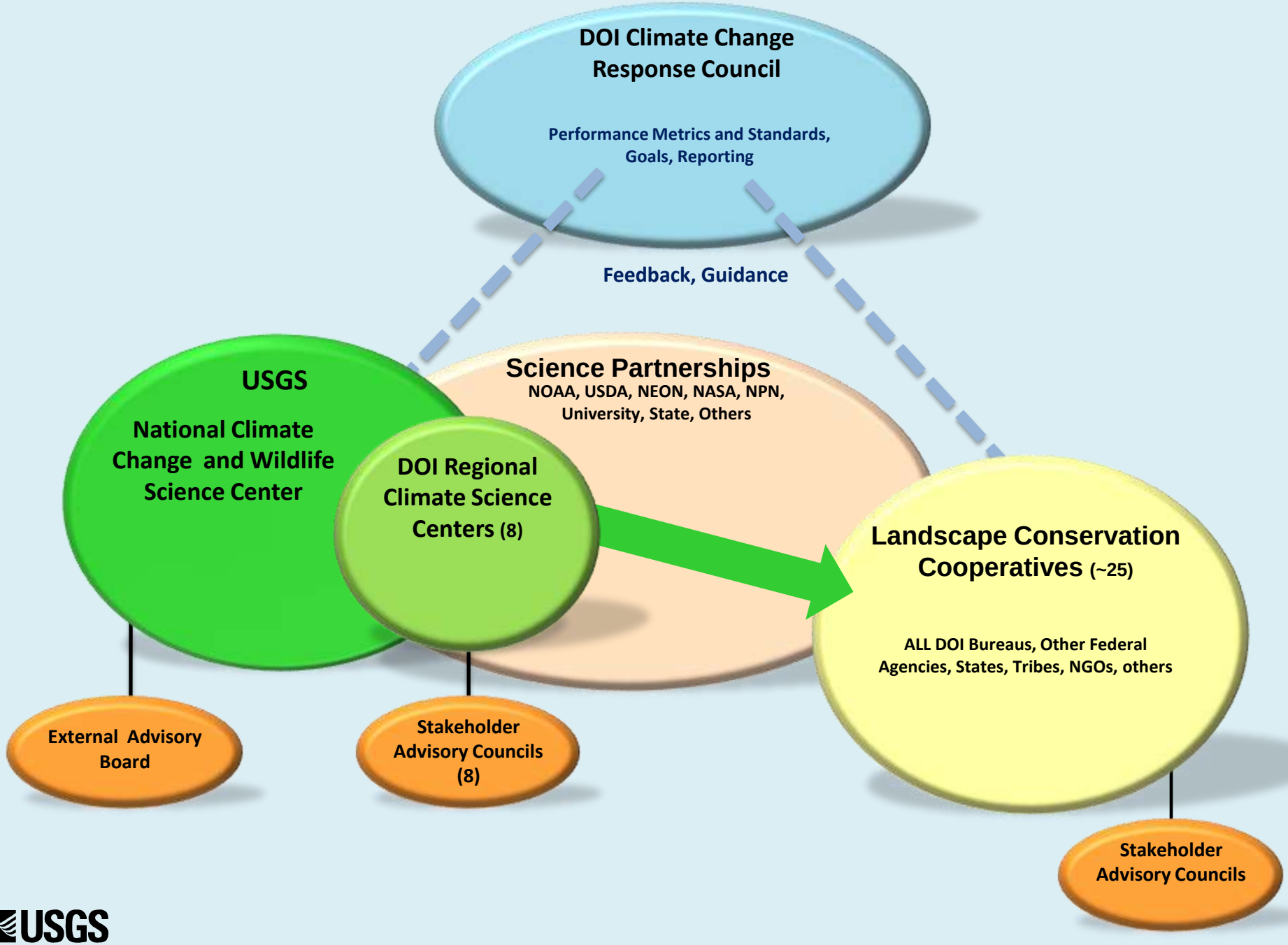
- **For climate and other change vectors**

USGS
science for a changing world

Conceptual Climate Adaptation Strategy



USGS
science for a changing world



USGS
science for a changing world

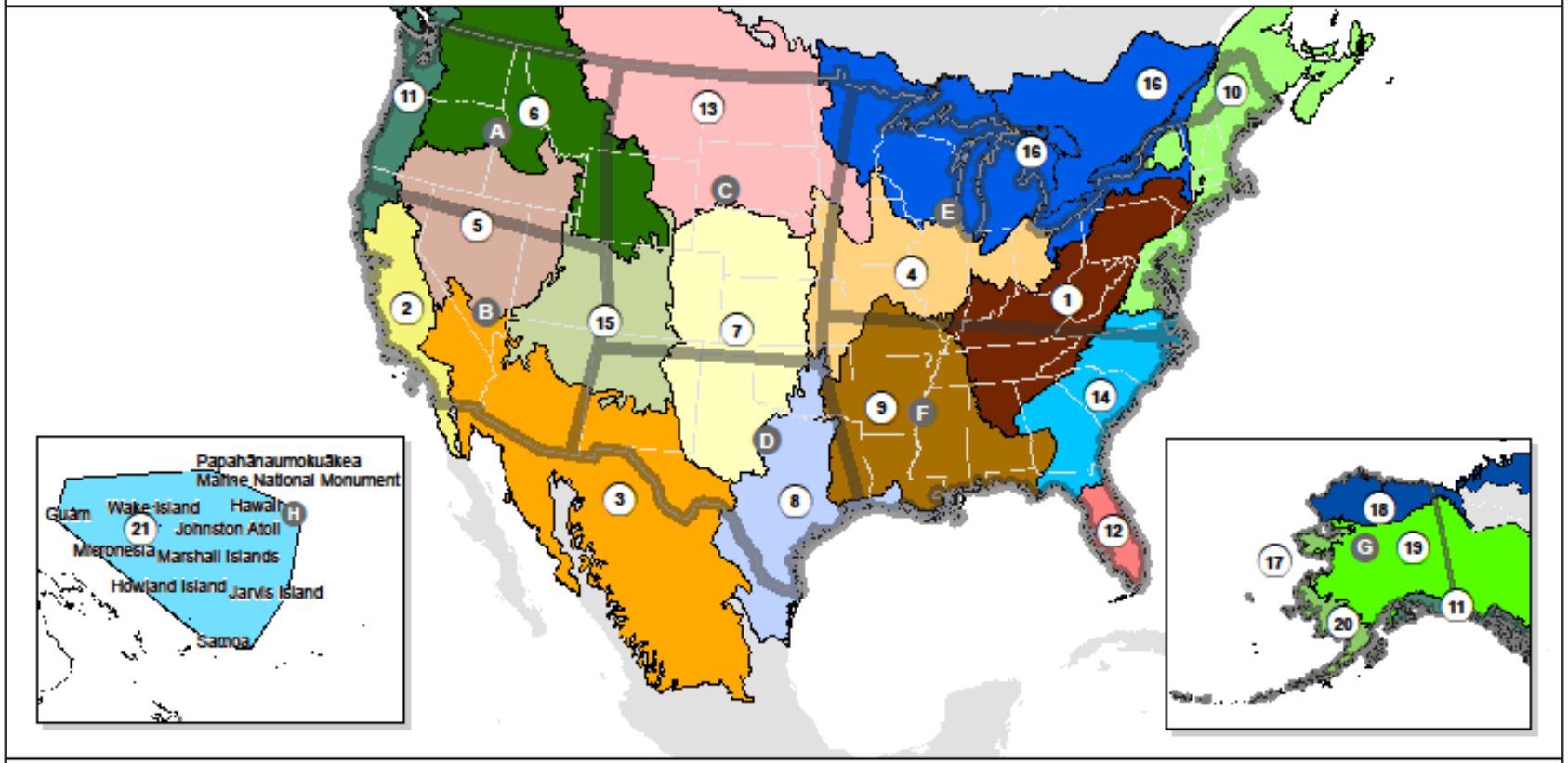
Strategic Considerations

- **LCCs, Regional Climate Science Centers, and NCCWSC are institutional innovations designed to provide platform for cross-jurisdictional and science-management collaboration (everywhere, not just in a few high profile places)**

- **Ongoing tension between**
  - **Very place- or resource-specific solutions ("better fit") and**
  - **Consistent approaches to allow place-to-place comparison and derivation of larger / general patterns ("bigger picture")**

U.S. Department of the Interior

Landscape Conservation Cooperatives - Climate Science Centers



Climate Science Centers

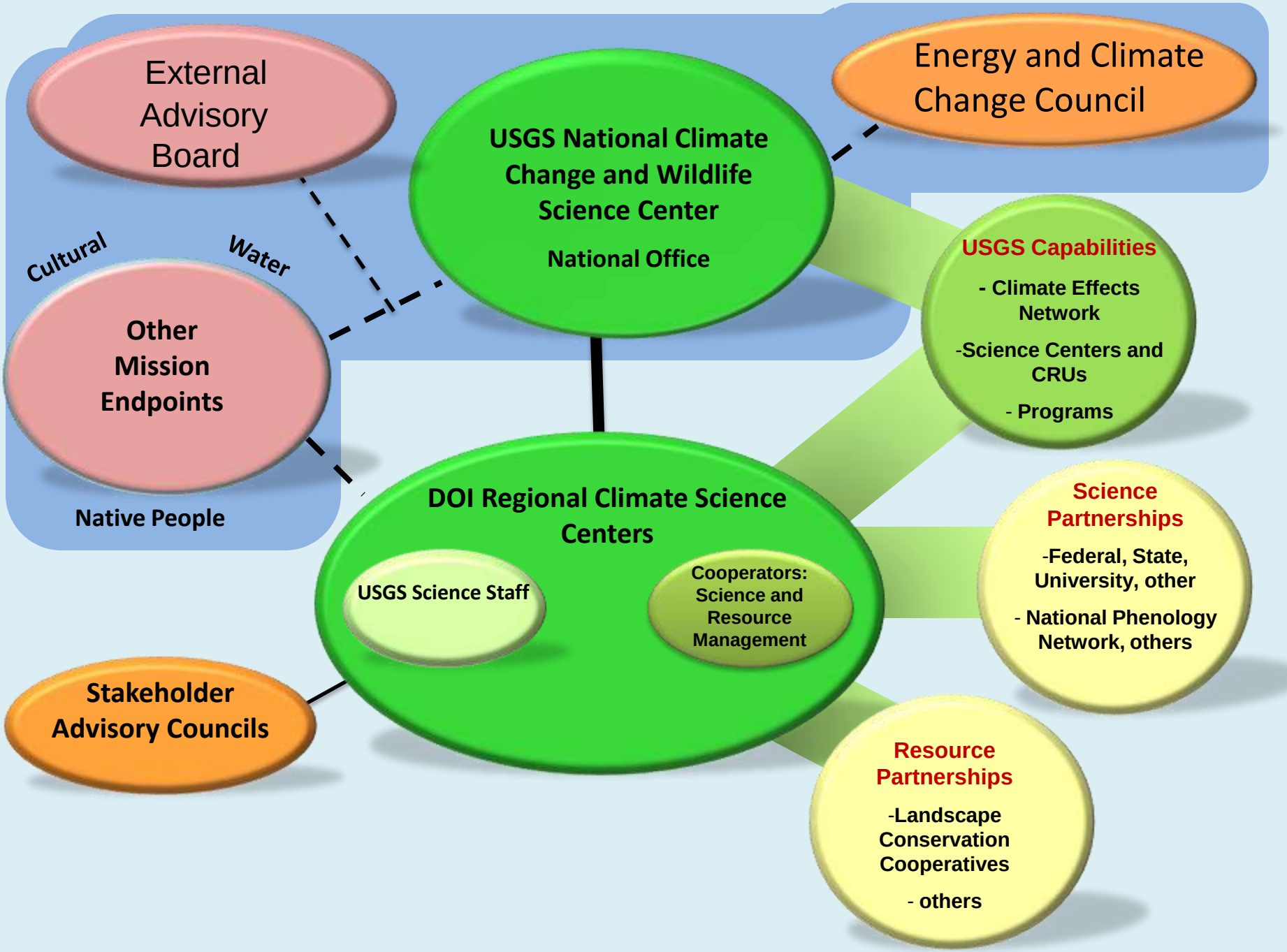
- A Northwest
- B Southwest
- C Northcentral
- D Southcentral
- E Northeast
- F Southeast
- G Alaska
- H Pacific Islands

Landscape Conservation Cooperatives

1. Appalachian
2. California
3. Desert
4. Eastern Tallgrass Prairie and Big Rivers
5. Great Basin
6. Great Northern
7. Great Plains
8. Gulf Coast Prairie
9. Gulf Coastal Plains and Ozarks
10. North Atlantic
11. North Pacific
12. Peninsular Florida
13. Plains and Prairie Potholes
14. South Atlantic
15. Southern Rockies
16. Upper Midwest and Great Lakes
17. Aleutian and Bering Sea Islands
18. Arctic
19. Northwestern Interior Forest
20. Western Alaska
21. Pacific Islands

Unclassified

Albers Equal Area Conic NAD83
Produced by FWS, IRTM, Denver, CO
Map Date: 03242010


External Advisory Board
Energy and Climate Change Council
USGS National Climate Change and Wildlife Science Center
National Office
USGS Capabilities
- Climate Effects Network
-Science Centers and CRUs
- Programs
Cultural
Water
Other Mission Endpoints
Native People
DOI Regional Climate Science Centers
USGS Science Staff
Cooperators: Science and Resource Management
Science Partnerships
-Federal, State, University, other
- National Phenology Network, others
Stakeholder Advisory Councils
Resource Partnerships
-Landscape Conservation Cooperatives
- others