

# Landscape Conservation Cooperatives



*The Right Science in the Right Places  
To Sustain America's Natural and Cultural Resources*



# Why?

- **Many of the conservation challenges we face today are different than the conservation challenges we faced yesterday**
  - **Global Climate Change**
  - **Land Conversion - Urban sprawl, energy development, pine plantations, ...**
  - **Alteration and Degradation of Freshwater and Marine Systems**
  - **Global, Federal, and State Policies - Farm Bill, Carbon Sequestration, Hydroenergy, National Water Resources...**

# Landscape Conservation Cooperatives

## Climate Change Cornerstones

LCCs and the Climate Science Centers (CSC) are key elements of the Department of the Interior's Strategic Response to Climate Change



# Landscape Conservation Cooperatives

What are they?

Applied conservation science partnerships. Partners include federal and state agencies, Tribes, conservation organizations, and universities within a geographically defined area

Fundamental units of planning and adaptive science that inform conservation actions on the ground

A national and international network of land, water, wildlife and cultural resource managers and interested public and private organizations

# Landscape Conservation Cooperatives (LCCs)

- Link science and conservation delivery through management-science partnerships
- Inform integrated resource management
- Address climate change and other stressors within and across landscapes
- Function within a specific landscape and as part of a national network
- Include Federal, state, tribal and local governments and non-governmental organizations
- Work interactively with DOI Climate Science Centers

# National Climate Change and Wildlife Science Center and Regional Climate Sciences (CSCs)

- Acquire, create, and use high resolution climate modeling information and derivative products to support adaptation planning for natural and cultural resources.
- Integrate physical climate models with models that predict impacts to or responses by natural and cultural resources
- Forecast changes in natural and cultural resources in response to climate change.
- Assess the vulnerability and risk of natural and cultural resources to climate change.
- Develop standardized approaches to modeling and monitoring techniques, to facilitate the linkage of existing monitoring efforts to climate models and natural and cultural resources response models.

# LCC-CSC Relationship

- **Science priority setting:**
  - LCCs identify and communicate priority science conservation needs to CSC
  - CSC's develop a regional science agenda.
- **Scientific collaboration:**
  - LCCs and CSCs have complementary science roles.
  - LCCs will develop and apply scientific information to specific locations, species, and conservation priorities.
  - CSCs will produce models, datasets, decision support tools, and research outcomes that support applied conservation planning at LCCs.

# LCC-CSC Relationship

- **Information sharing:**
  - **Develop integrated data management networks to facilitate sharing of information**
  - **Maintain consistency with DOI-wide information standards (e.g., shared data standards, databases, and GIS protocols) to enable coordination and information sharing**
  - **Work with states and other partners to support rigorous and compatible natural resources information systems**

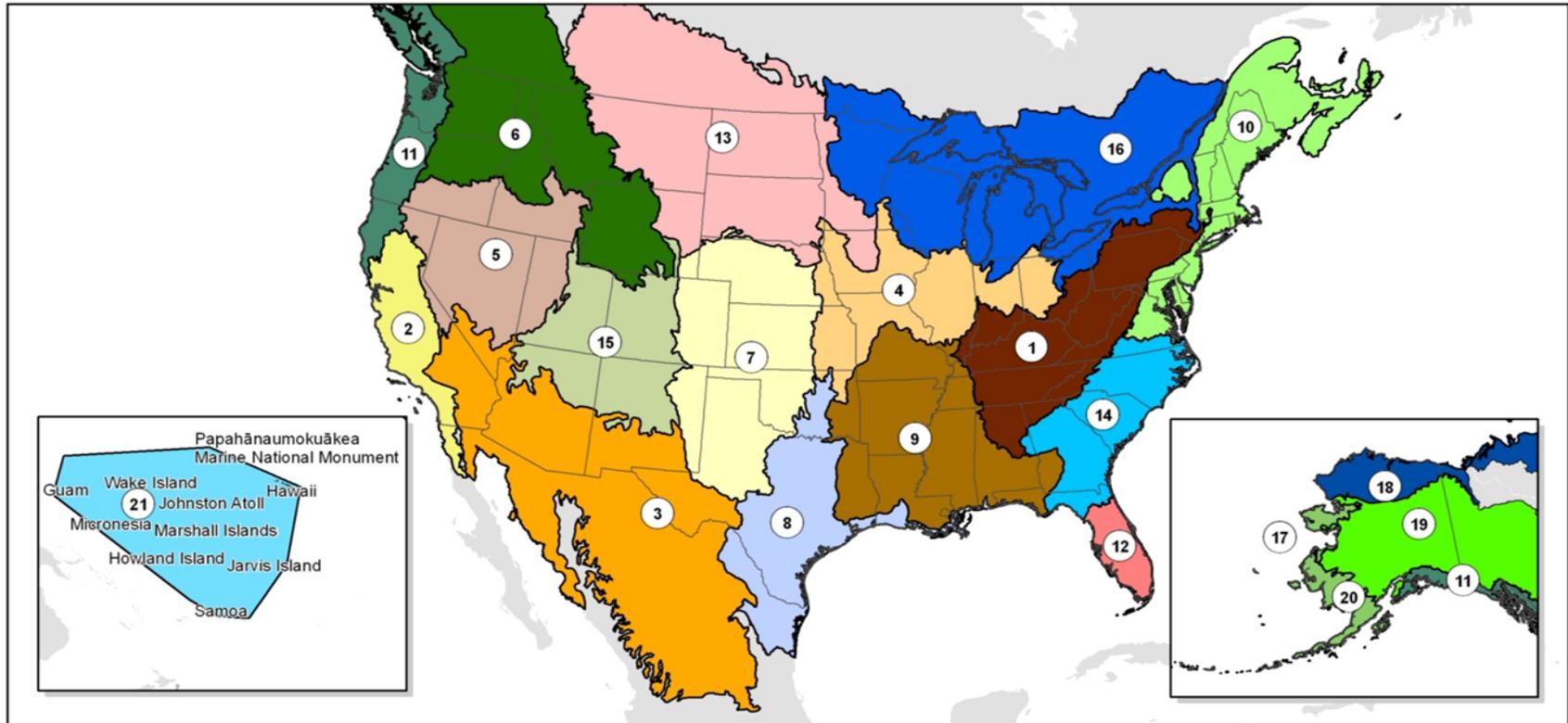
# Positioning of LCC's

- Integral to climate change adaptation efforts but not climate centric.
- Augment and draw upon existing science capacities of partners.
- Link science with conservation planning and design – products relevant, timely and effective in support of conservation decisions
- No expectation that LCC's will provide all science needs of FWS or partners
- Provide a diversity of decision support tools

# Products and Services

- **Biological plans, conservation design, research priorities, monitoring and inventory design and evaluate conservation delivery strategies and activities**
- **Focus on priority species and habitats identified by LCC partners**

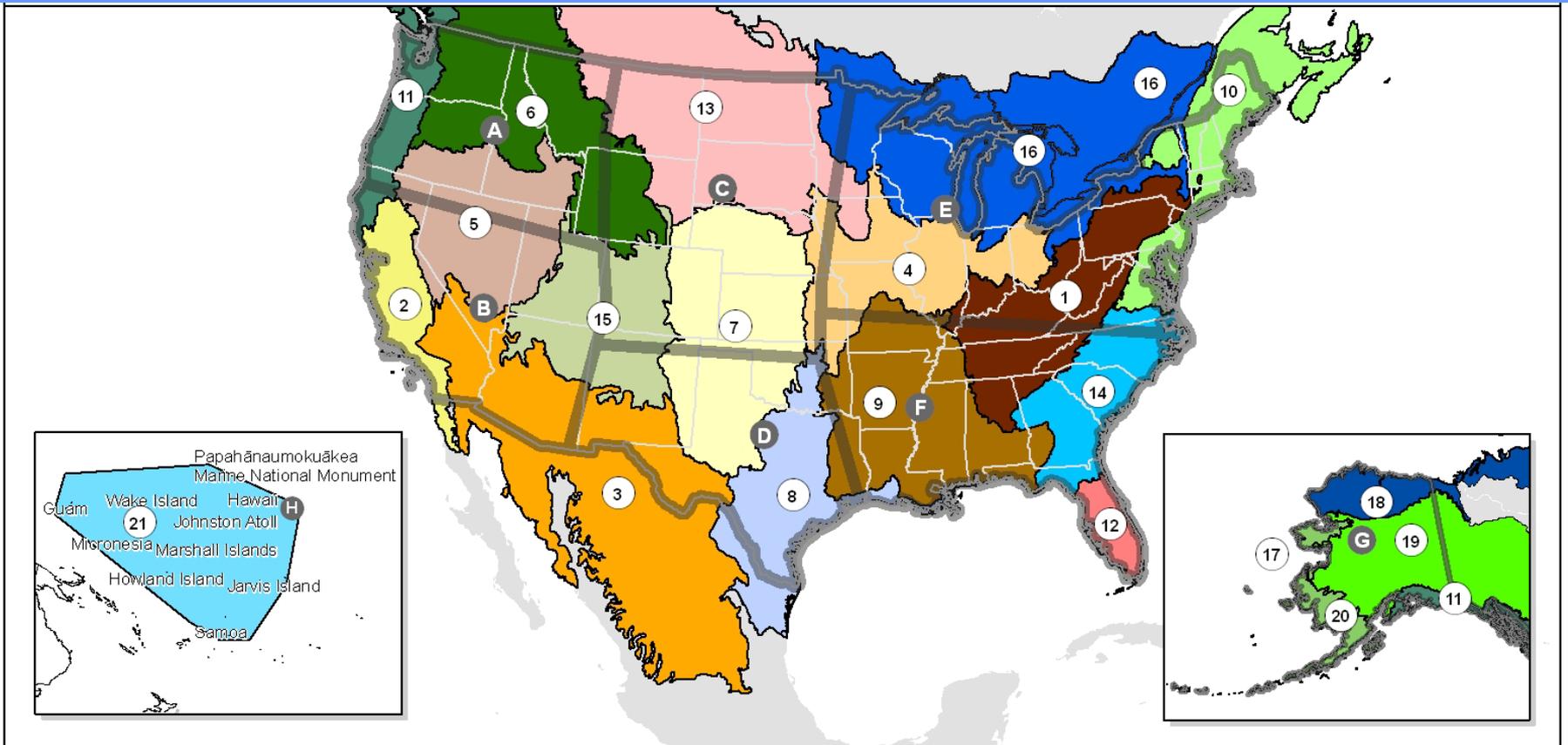
# Landscape Conservation Cooperatives: Geographic Areas



## Landscape Conservation Cooperatives

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

Albers Equal Area Conic NAD83  
 Produced by FWS, IRTM, Denver, CO  
 Map Date: 03182010



**Climate Science Centers**

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

**Landscape Conservation Cooperatives**

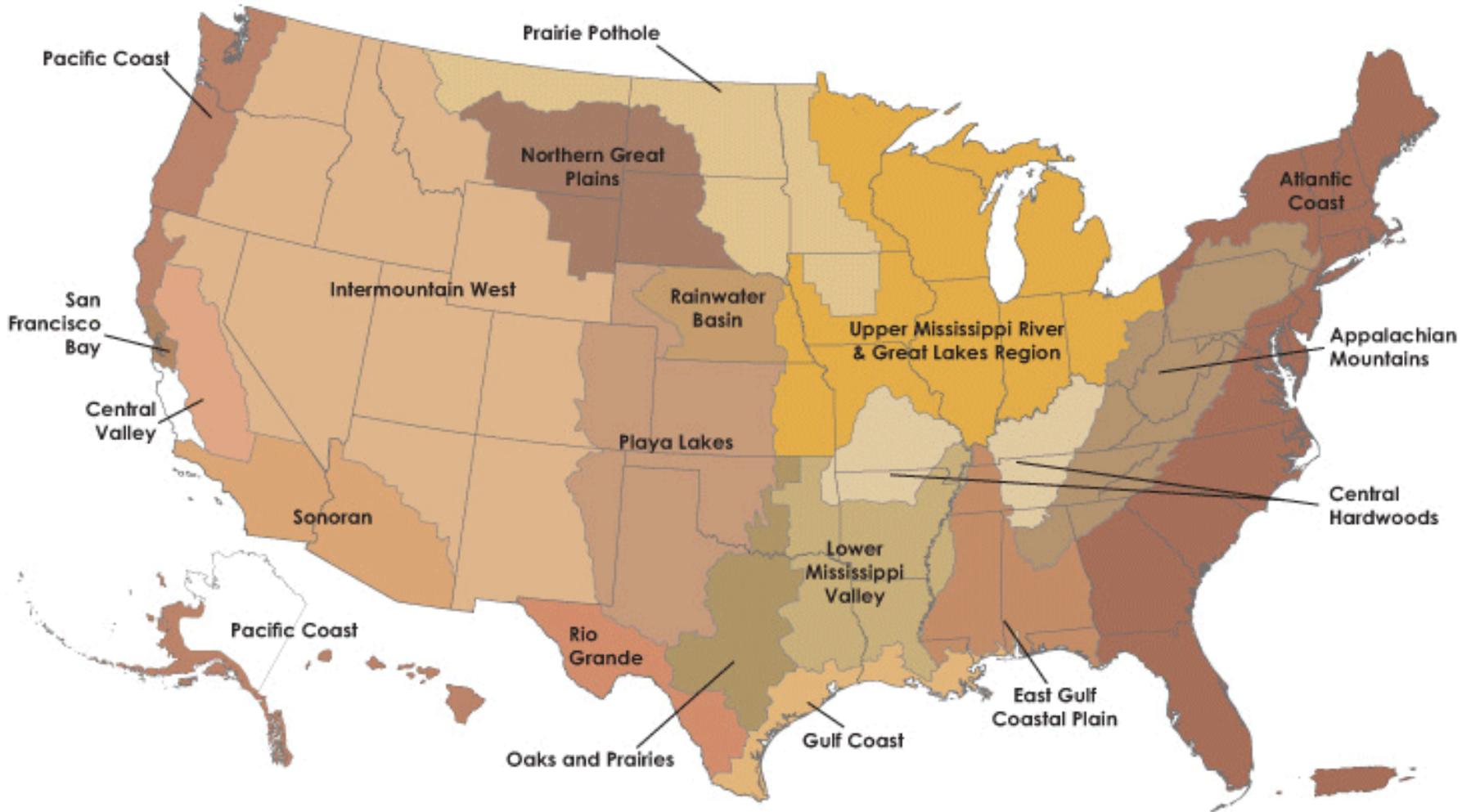
- 1.** Appalachian
- 2.** California
- 3.** Desert
- 4.** Eastern Tallgrass Prairie and Big Rivers
- 5.** Great Basin
- 6.** Great Northern
- 7.** Great Plains

- 8.** Gulf Coast Prairie
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# U.S. Joint Ventures

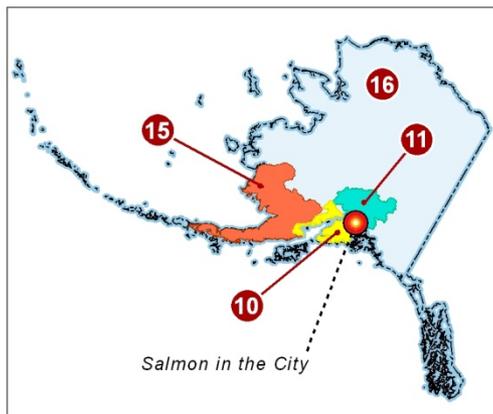


# Fish Habitat Partnerships

## March 2010



NATIONAL  
FISH HABITAT  
ACTION PLAN



Salmon in the City

North American Salmon Stronghold Partnership

### Geographic/Species Based Partnerships

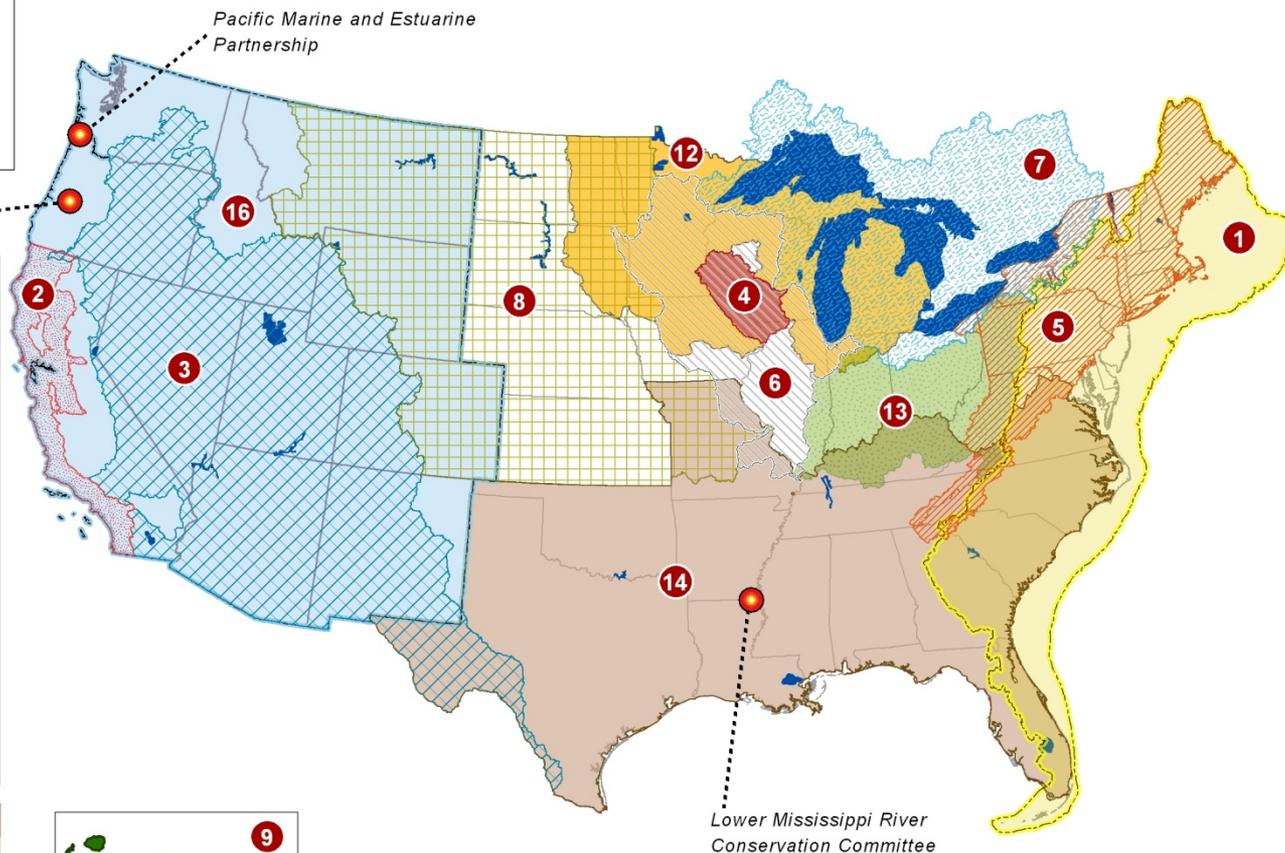
1. Atlantic Coastal FHP
2. California Fish Passage Forum
3. Desert FHP
4. Driftless Area Restoration Effort
5. Eastern Brook Trout Joint Venture
6. Fishers and Farmers Partnership
7. Great Lakes Basin FHP
8. Great Plains FHP
9. Hawaii FHP
10. Kenai Peninsula FHP
11. Mat-Su Basin Salmon Habitat Partnership
12. Midwest Glacial Lakes Partnership
13. Ohio River Basin FHP
14. Southeast Aquatic Resources Partnership
15. Southwest Alaska Salmon Habitat Partnership
16. Western Native Trout Initiative

### System Based Partnership

- Reservoir FHP



Denotes "Candidate"  
Fish Habitat Partnership

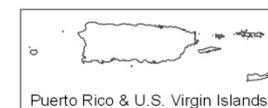


Pacific Marine and Estuarine Partnership

Lower Mississippi River Conservation Committee



Hawaii



Puerto Rico & U.S. Virgin Islands



# Strategic Habitat Conservation

The Right Stuff in the Right Places  
for America's Fish and Wildlife



# Strategic Habitat Conservation (SHC) is:

- A unified conservation approach for defining and pursuing landscape and population sustainability.
- At the core of SHC is a structured science-based framework founded on an adaptive, iterative process of biological planning, conservation design, conservation delivery, monitoring, and research.



# Strategic Habitat Conservation Framework

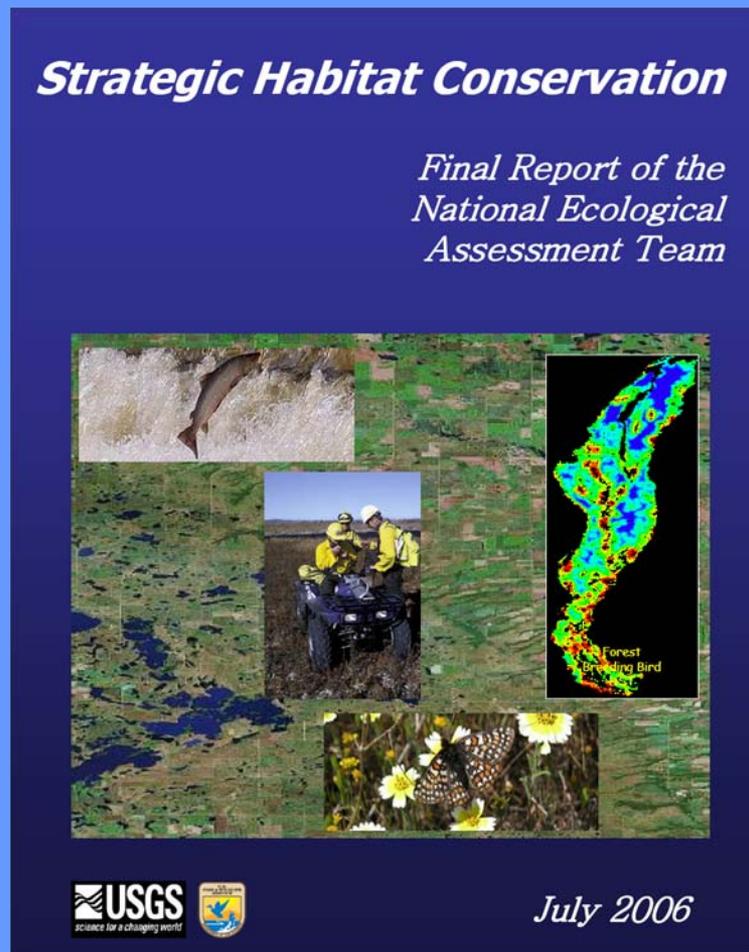
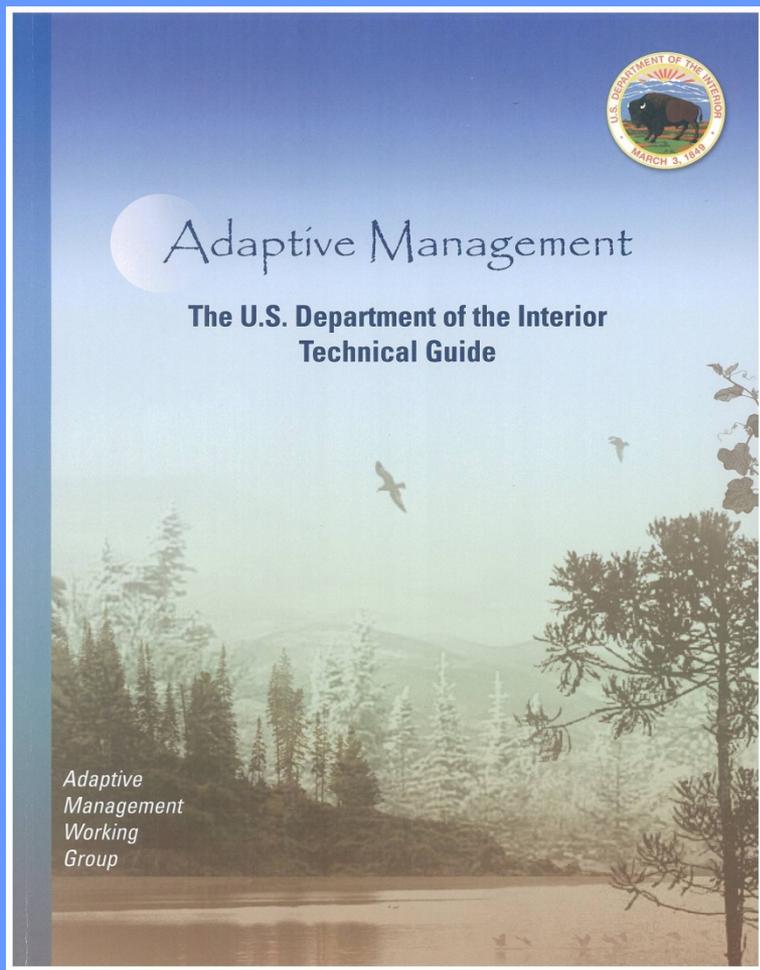
## Functional Elements



- Biological Planning
- Conservation Design
- Conservation Delivery
- Decision-Based Monitoring
- Assumption-Driven Research

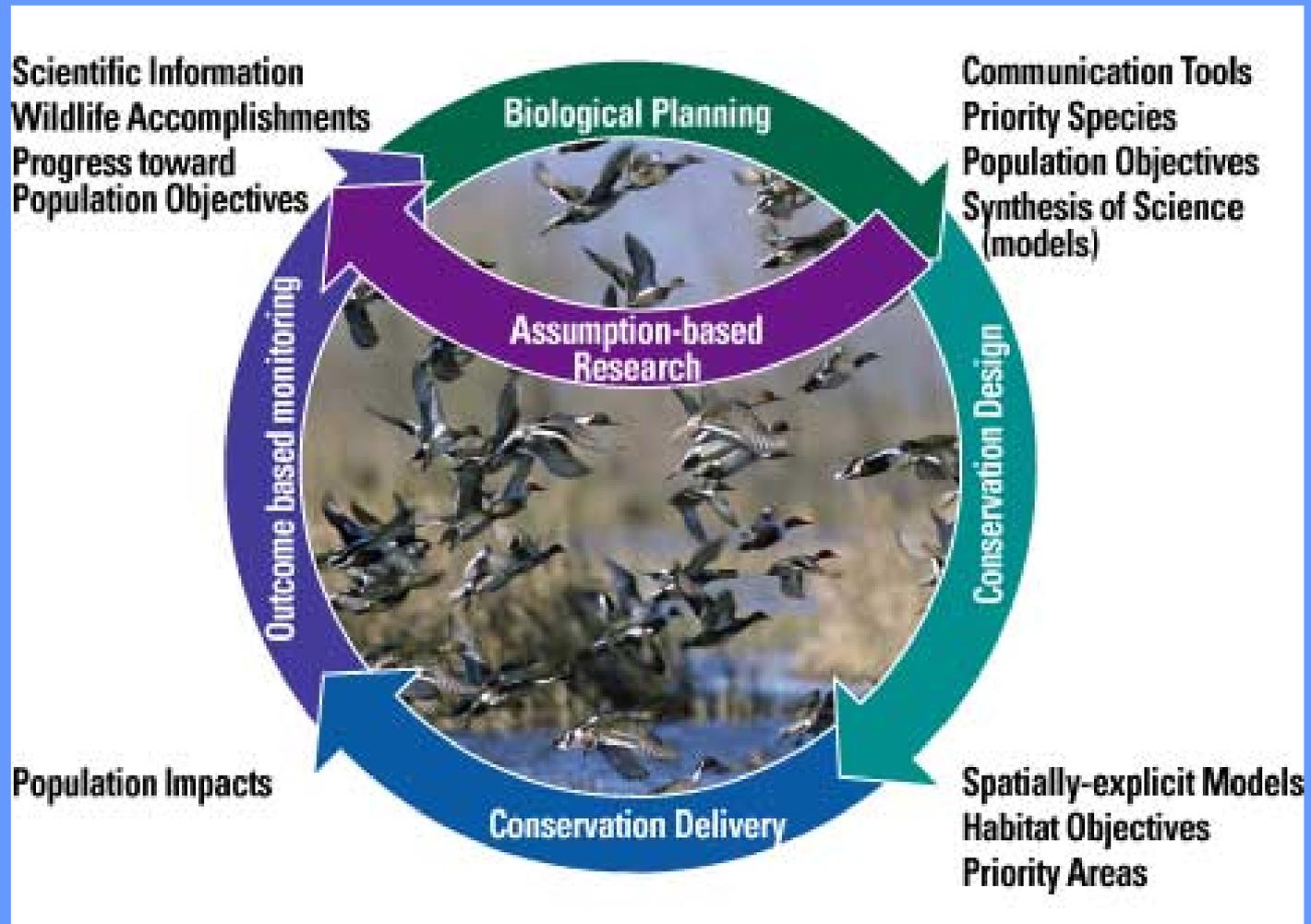
# SHC:

- Bridges the research-management gulf
- Is a form of Adaptive Resource Management at broad spatial scales

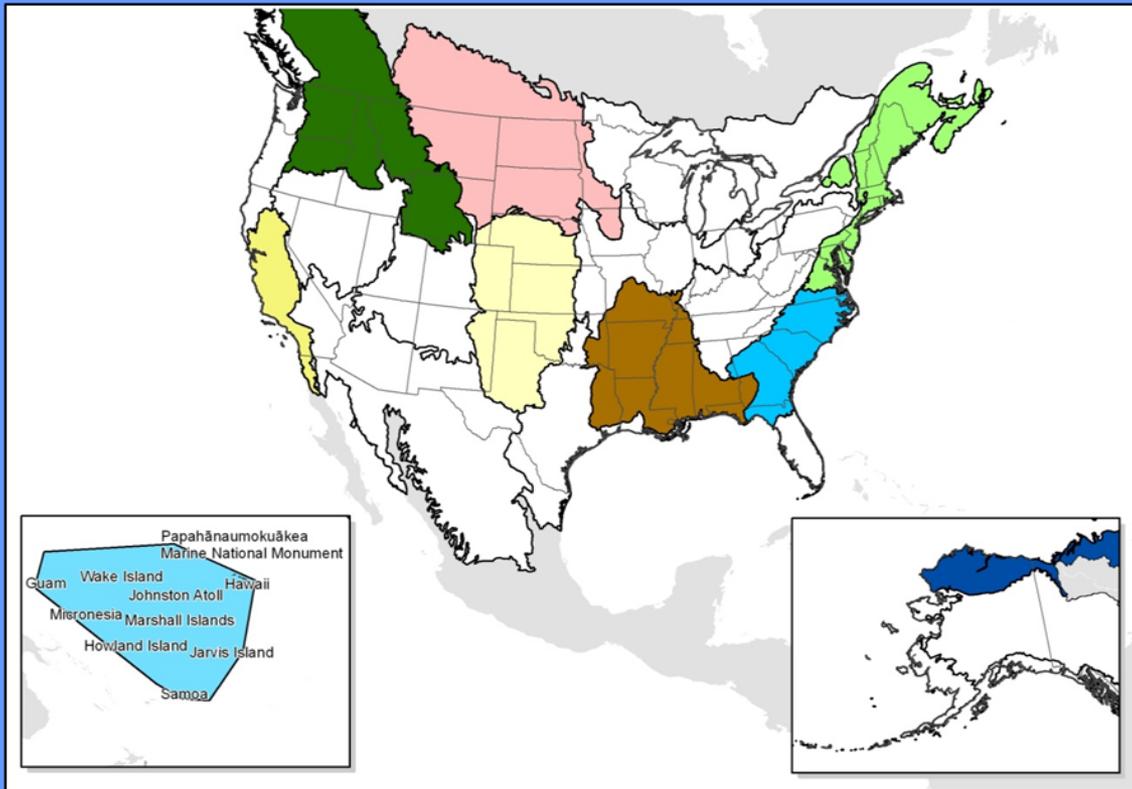




# The Basic SHC Framework is an Iterative, Adaptive Process

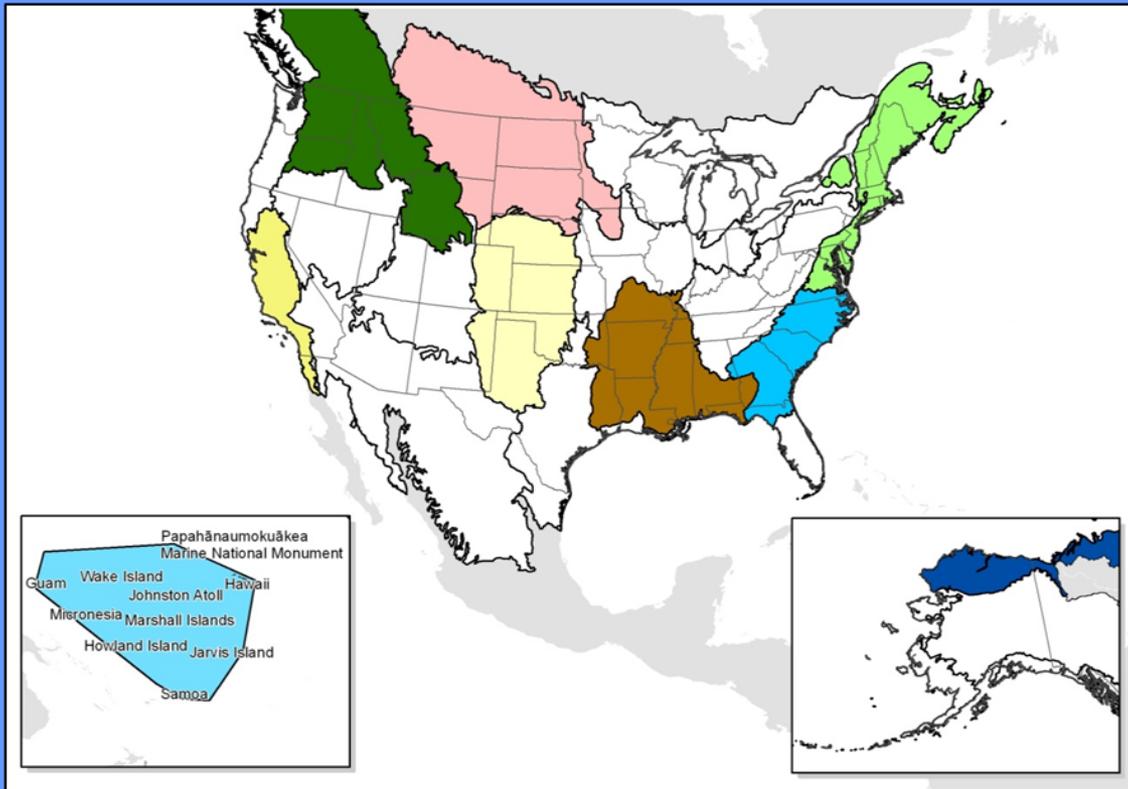


# Status of Landscape Conservation Cooperatives



# Landscape Conservation Cooperatives

Established in FY2010



- Arctic
- California
- Great Northern
- Great Plains
- Gulf Coastal Plains & Ozarks
- North Atlantic
- Pacific Islands
- Plains and Prairie Potholes
- South Atlantic



# 2010 LCC Project Update

- 84 projects/\$9.2 Million
- 16 Risk and Vulnerability Assessments
- 17 Inventory and Monitoring
- 25 Resource Assessments
- 21 Resource Planning/Conservation Design
- 5 Management Effectiveness/Research
- Partners include USGS, BLM, NPS, BOR, USFS, NFWF, States (>20), TNC, DU, WMI

# Water focused projects

## (National)

- **Flow 2011 Workshop** – *Instream Flow Council*
- **National Stream Gauge Network Analysis** – *National Center for Climate Change and Wildlife Science*
- **Dynamic Linear Modeling to Characterize Hydrologic Regimes and Detect Flow Modifications at Multiple Temporal Scales** – *USGS, U. of Washington, U. of Mass, USFWS*

# Water focused projects

(Regional or LCC-based)

- **Data Rescue and Inventory of Hydrology-Related Data in Arctic Alaska** - *BLM; UAF International Arctic Research Center; USFWS*
- **Long-term monitoring of the impacts of climate change on the glaciers and rivers in the Arctic National Wildlife Refuge** - *UAF Water and Environment Research Center; USFWS Arctic NWR*

# Water focused projects

(Regional or LCC-based)

- **Linking North Slope Climate, Hydrology, and Fish Migration and Streamflow monitoring on Upper Kuparuk and Putuligayuk Rivers -**  
*Alaska Cooperative Fish and Wildlife Research Unit; Marine Biological Laboratory Woods Hole; UAR Water and Environment Research Center; USFWS FES, UAF Water and Environment Research Center*

# Water focused projects

(Regional or LCC-based)

- **Forecasting changes in stream flow, temperature and brook trout populations in the eastern US as a result of climate change: what's going to happen, how certain are we, and how can we help managers help fish -**  
*National Fish and Wildlife Foundation; The Nature Conservancy; University of Massachusetts; U.S. Fish and Wildlife Service; U.S. Forest Service; U.S. Geological Survey; USGS Climate Change and Wildlife Center*

# Water focused projects

(Regional or LCC-based)

- **Temporal and Spatial Pattern of Sea-level Rise Impacts to Coastal Wetlands and Other Ecosystems** - *University of Hawaii*
- **Projection of global climate change scenarios onto the Hawaiian Islands: Estimating the characteristics of rainfall for the 21st century** - *FWS; University of Hawaii; USGS*

# Thank you and questions



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