Strategic Habitat Conservation

An Introduction to the Service's Framework for Conservation

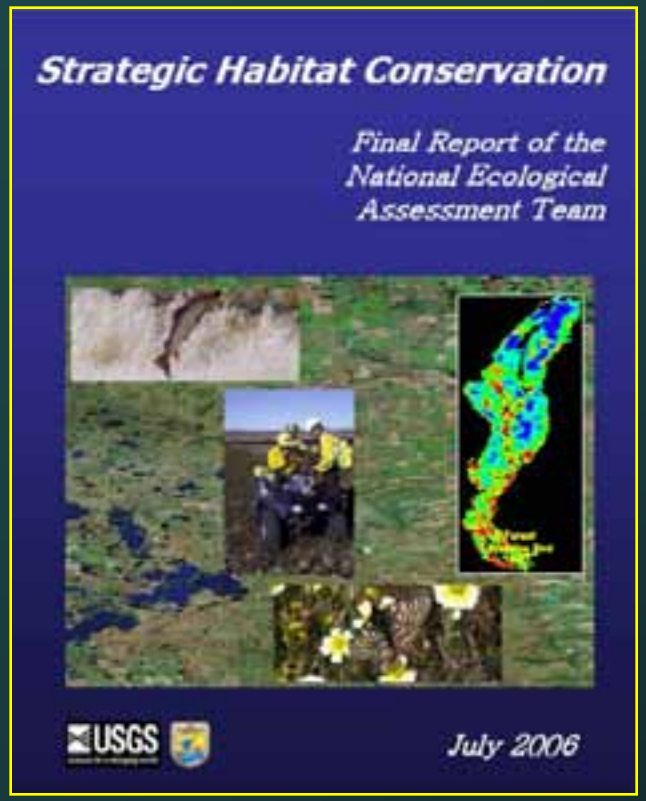
SHC Workshop – Appalachian LCC

January 2010

Goals for the Workshop

- **Discuss Strategic Habitat Conservation and ensure a common understanding.**
- **Identify which of the five elements are being addressed and gaps in SHC implementation.**
- **Develop a common vision for SHC in the Appalachian Geographic Area, including**
  - **functions of a Landscape Conservation Cooperative,**
  - **outline a clear set of next steps for broadening discussion and finalizing our vision**

Start a dialog for this week…



Define Strategic Habitat Conservation:

- What is SHC ?
- Why is this approach important?
- How is this approach different?
- What are the elements of the SHC framework and how do they fit together?

HOW are we going to implement it ?!?!

What is SHC?

- a science-based approach to conservation focused on providing landscapes capable of sustaining populations at objective levels.

- This approach is founded on an adaptive, iterative process of biological planning, conservation design, conservation delivery, monitoring and research.

- In spite of the name "Strategic *Habitat* Conservation," SHC is not just about habitat. SHC is intended to provide a strategic framework *for all Service conservation actions that address both habitat and non-habitat limiting factors*.

The scientific method

Setting clear objectives, then systematically figuring out how to achieve them <u>most</u> <u>efficiently</u> using our own resources and by working with partners and timely evaluating our progress.

Everything else is just details, but these three features are critical:

- explicit objectives
- models that describe the system (simple to complex)
- accountability

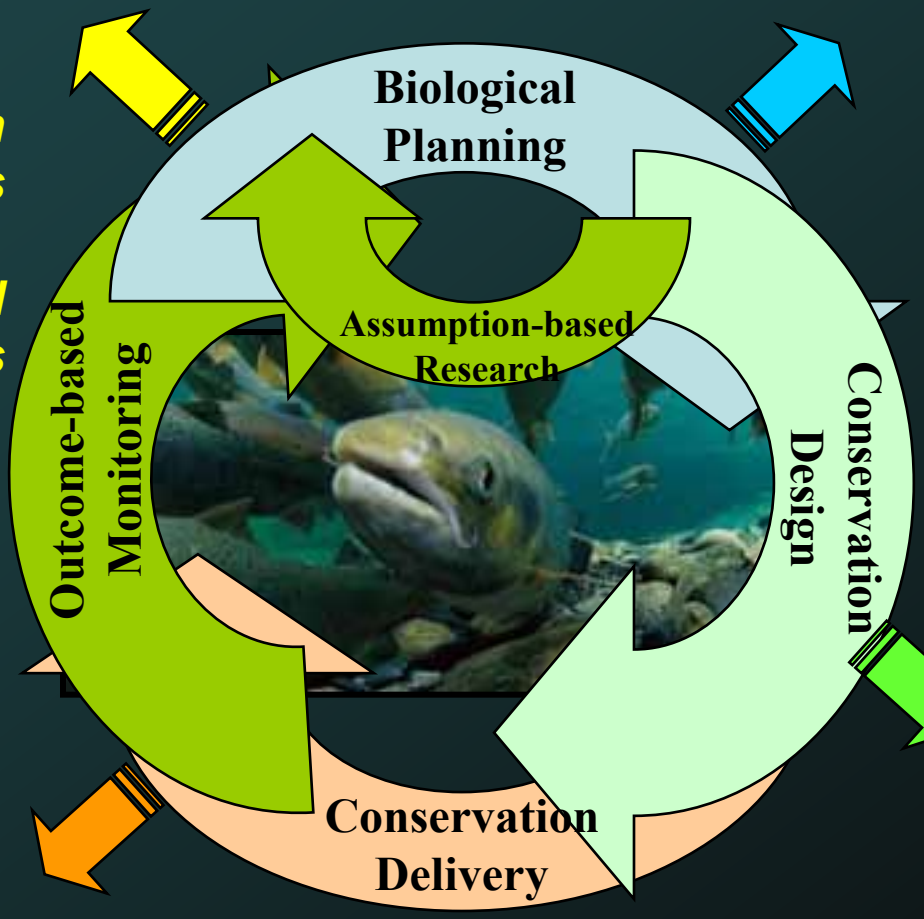
The Basic SHC Framework is an Iterative, 5-Element Adaptive Process

Build the scientific foundation for Management

Program Accomplishments

Net progress toward Population objectives

Population Impacts



Priority Species

Population Objectives

Synthesis of science

Spatially-Explicit Models; Decision Support Tools

Habitat Objectives

Program Priority Areas

How is this approach different?

Program-based	→	Resource-based (through programs)
Agency-specific	→	Collaborative
Planning-averse	→	Planning-intense
Opportunity-driven	→	Science-driven/ Strategic
Site-oriented	→	Population and Landscape-oriented
Monitoring & Evaluation optional	→	Monitoring & Evaluation Evaluation needed
Management actions	→	Mgt actions are goals based on resource goals

Setting explicit objectives that reflect our mission (setting mission-oriented objectives).

Re-establish and maintain a self-sustaining population of American shad in the Susquehanna River.

Whereas traditional (activity-based) objectives.....

Protect and restore 10,000 **acres** of riparian buffer zone and 20 **miles** of shad spawning habitat in the Susquehanna River drainage.

How do they differ, and what are the advantages/disadvantages of each?

Reestablish and maintain a self-sustaining population of American shad in the Susquehanna River.

- **Requires biological info to measure progress**
- **Requires predictions of population response to habitat to decide where to protect and restore (where we deliver habitat determines how much is required).**
- **An objective foundation for deciding how much habitat we need (and therefore $$$ needed)**
- **Outcomes relative to our mission are clear, as are consequences of success versus failure.**
- **Promotes mission-oriented accountability**

Protect and restore 10,000 acres of riparian buffer zone and 20 miles of shad habitat in the Susquehanna River drainage.

- **Easily measured (tracked)**
- **Doesn't matter where the acres are protected and restored**
- **No predicted consequences of success versus failure, therefore no justification for increased program resources.**
- **No clear ending point (when have you done enough and move on to another conservation issue?)**
- **Doesn't promote mission-oriented accountability**

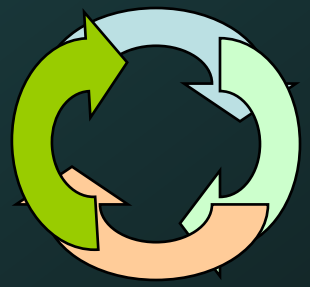
Why focus on populations?

Population status is a measurable index to ecosystem integrity and health
AND
it reflects our mission

Habitat management is an essential tool in conserving populations of many (but not all) species.

The Service is mandated to conserve populations.
We are also empowered to maintain healthy ecosystem.

Strategic Habitat Conservation



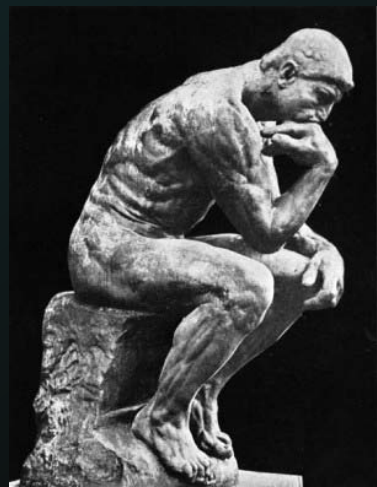
Challenges:

- Fostering a culture of strategic conservation and a renewed emphasis on science.
- Nurturing the emerging capacity for Biological Planning and Conservation Design.
- Employees uncertain

  INITIATIVE ALERT !
- Leading and managing change.

Field-level Questions:

- How much effort is directed toward opportunity vs. targets?
- How cohesive is the partnership?
- What are the population objectives?
- What are the priority areas based on?
- What are the specific habitat objectives (how much of what quality and where)?
- Who, how, and what is being monitored?
- And is that information feeding back to:
  - Revise models
  - Evaluate accomplishments
  - Assess net progress (toward pop. objectives)

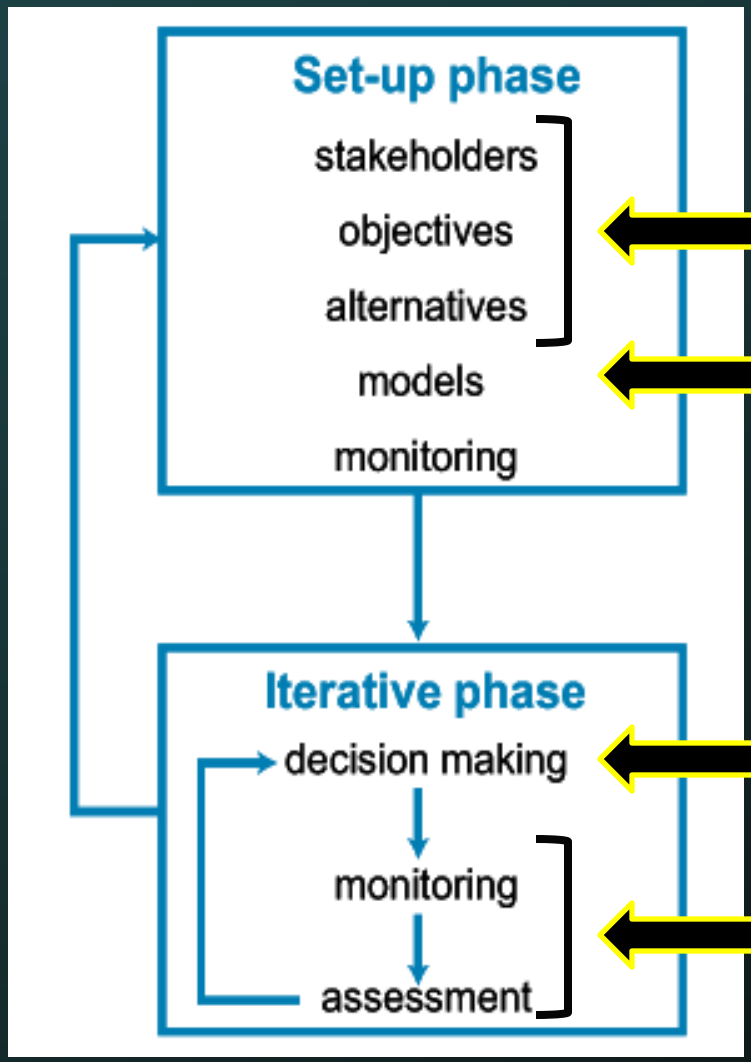


SHC Example:

Multispecies management: Horseshoe Crab & Red Knot

Red knot, Calidris canutus
Breeding, migration, and wintering grounds
Breeding Area
Nunavut
Delaware Bay
Stopover
Brazil
Tierra del Fuego
N
1000 0 1000 2000 Miles
Wintering Area

Double-loop Learning



Planning

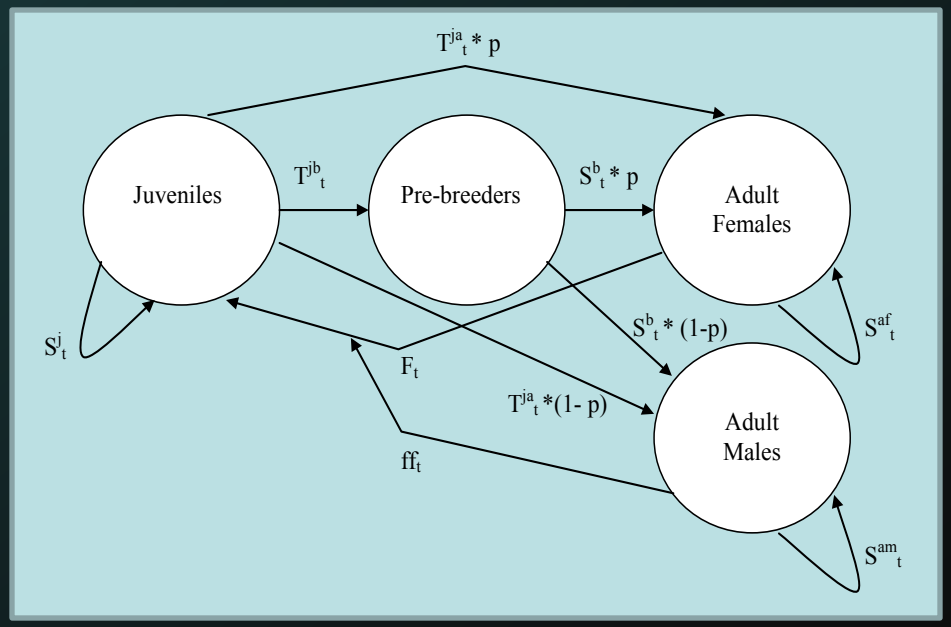
Design

Delivery

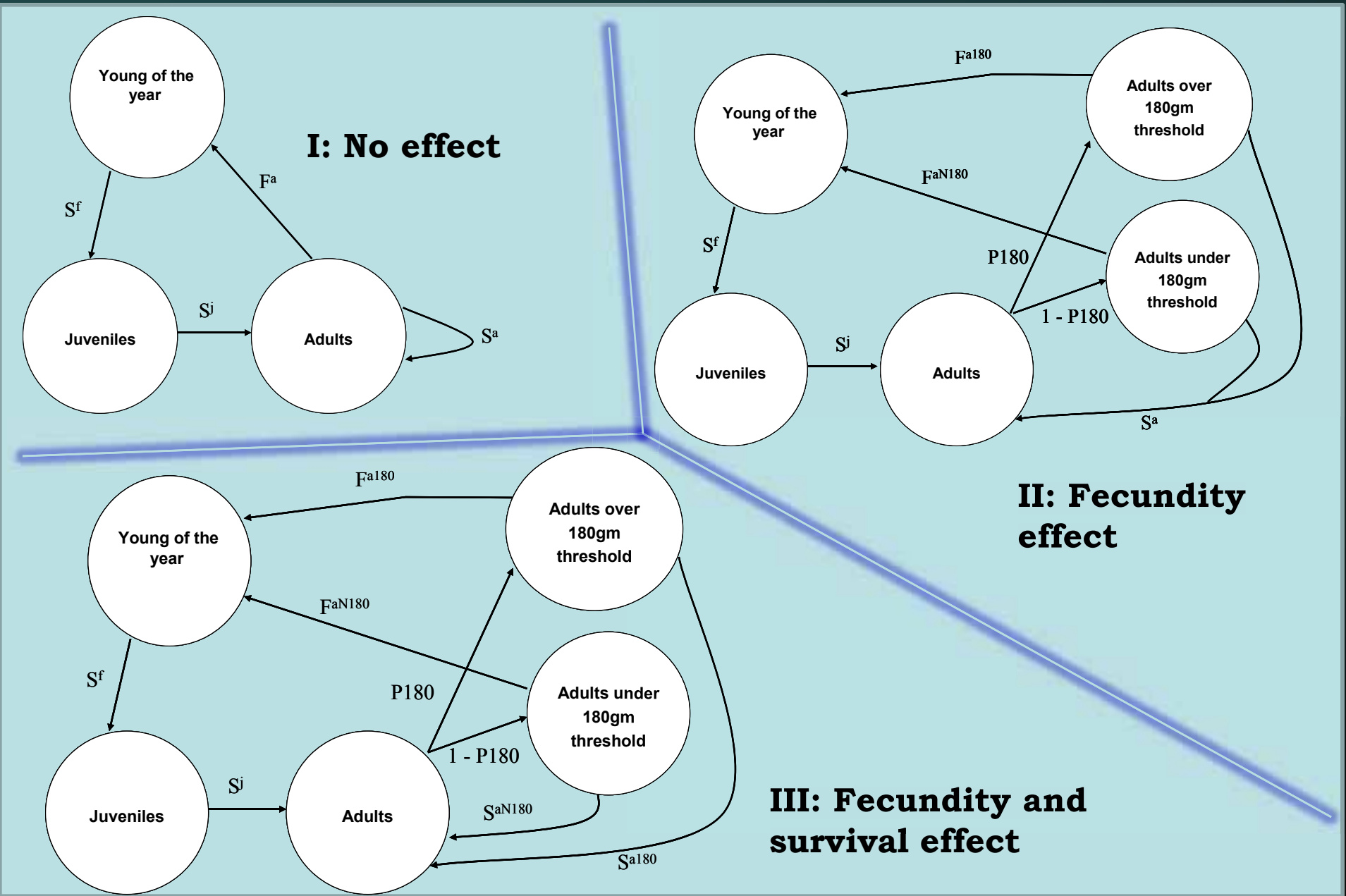
M&E/Research

Predictive Modeling: HSC Models

- Age/Stage-structured
  - Juv survival = 0.88
  - Transition to pre-breeder = 0.093
  - Transition to adult = 0.0007
  - Pre-breeder survival = 0.97
  - Adult survival = 0.64 (males) and 0.63 (females)
  - Probability of entering adult stage as a male (1-p) is 0.52 based on equilibrium sex ratios; un-harvested and sex-specific maturity



Alternative Predictive Models – Red Knot



SHC Example:

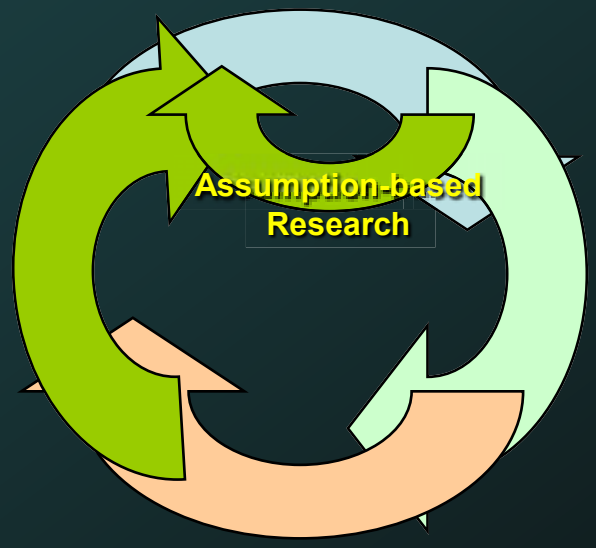
Multispecies mgt: Horseshoe Crab & Red knot pop'ns

Biological Planning

ASMFC + ESA Recovery Plan : Pop'n Objectives

ASMFC: Fishery Compliance, Int'l shorebird teams

Monitoring and Research



Conservation Design

ARM WG: Pop'n response to alternatives

Conservation Delivery

ASMFC Board: Sets Harvest Regs

so where are we now ?....

SHC

LCCs have NOT replaced SHC !

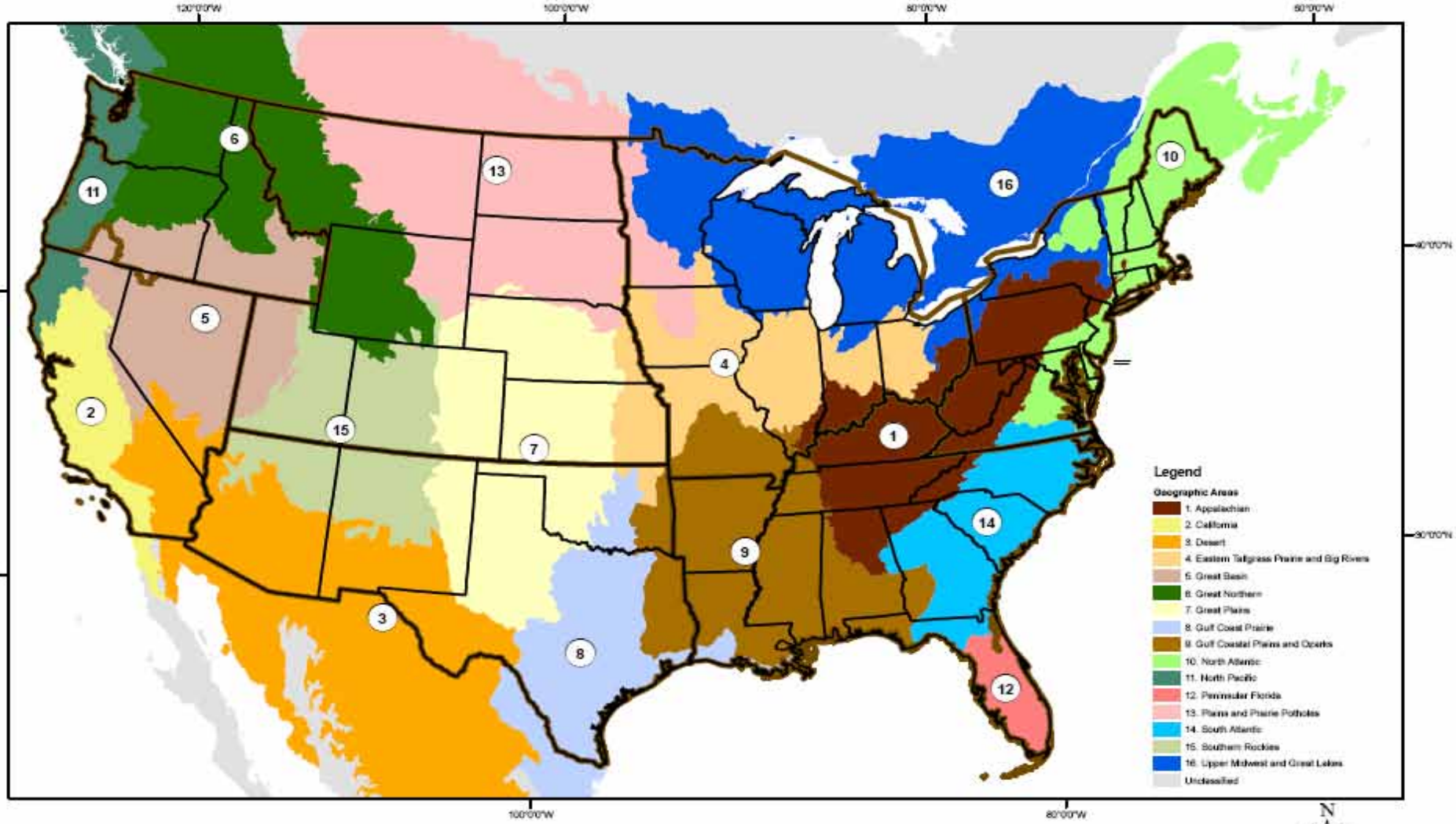
LCCs are a functional mechanism.

SHC is a operational framework

or a “business model”

U.S. Department of the Interior

Geographic Areas



0 175 350 700 1,050 1,400 Miles

0 400 800 1,600 2,400 3,200 Kilometers

N W E S

Albers Equal Area Conic
NAD83

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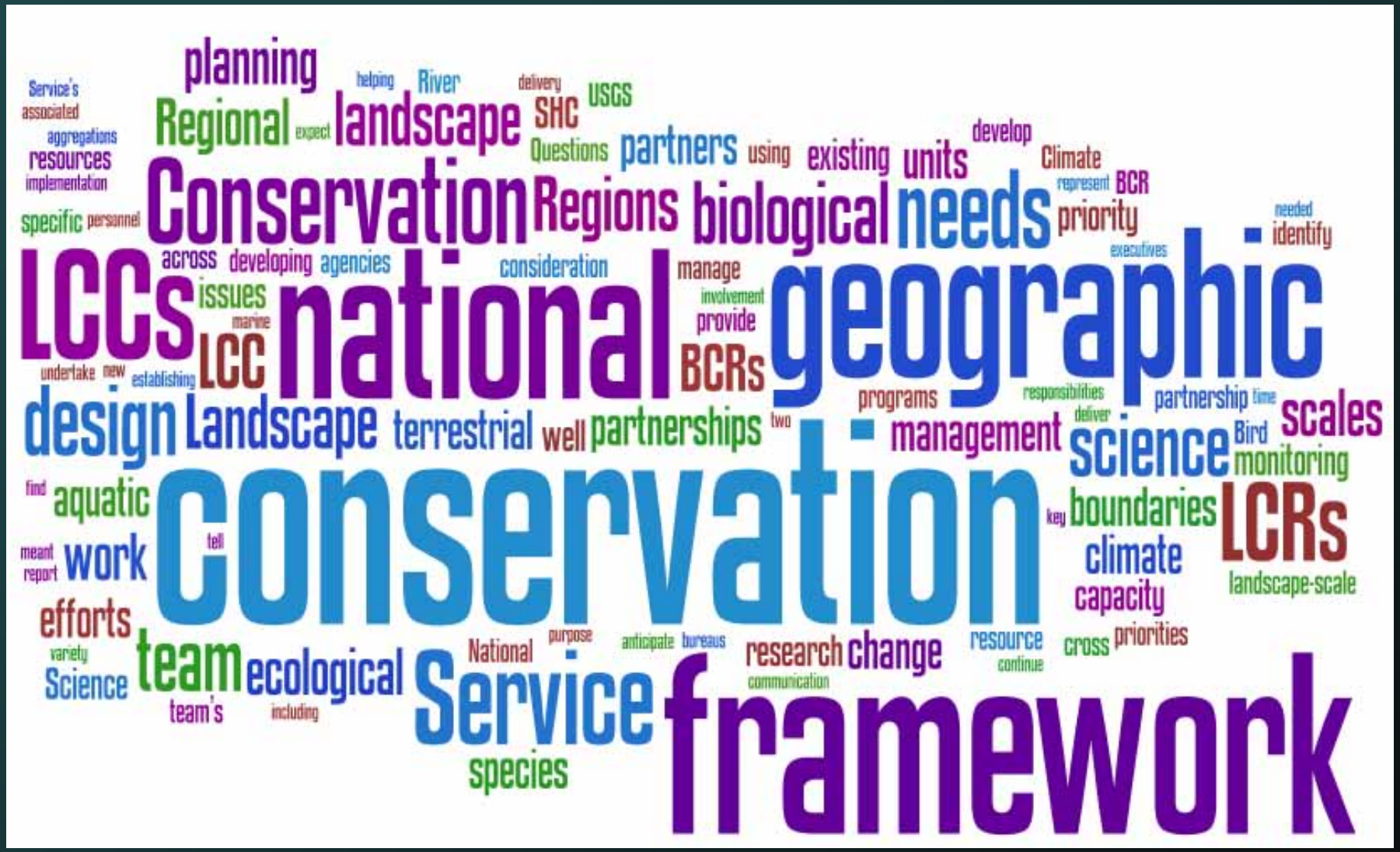
Map Date: 12232009

Our biggest hurdle :

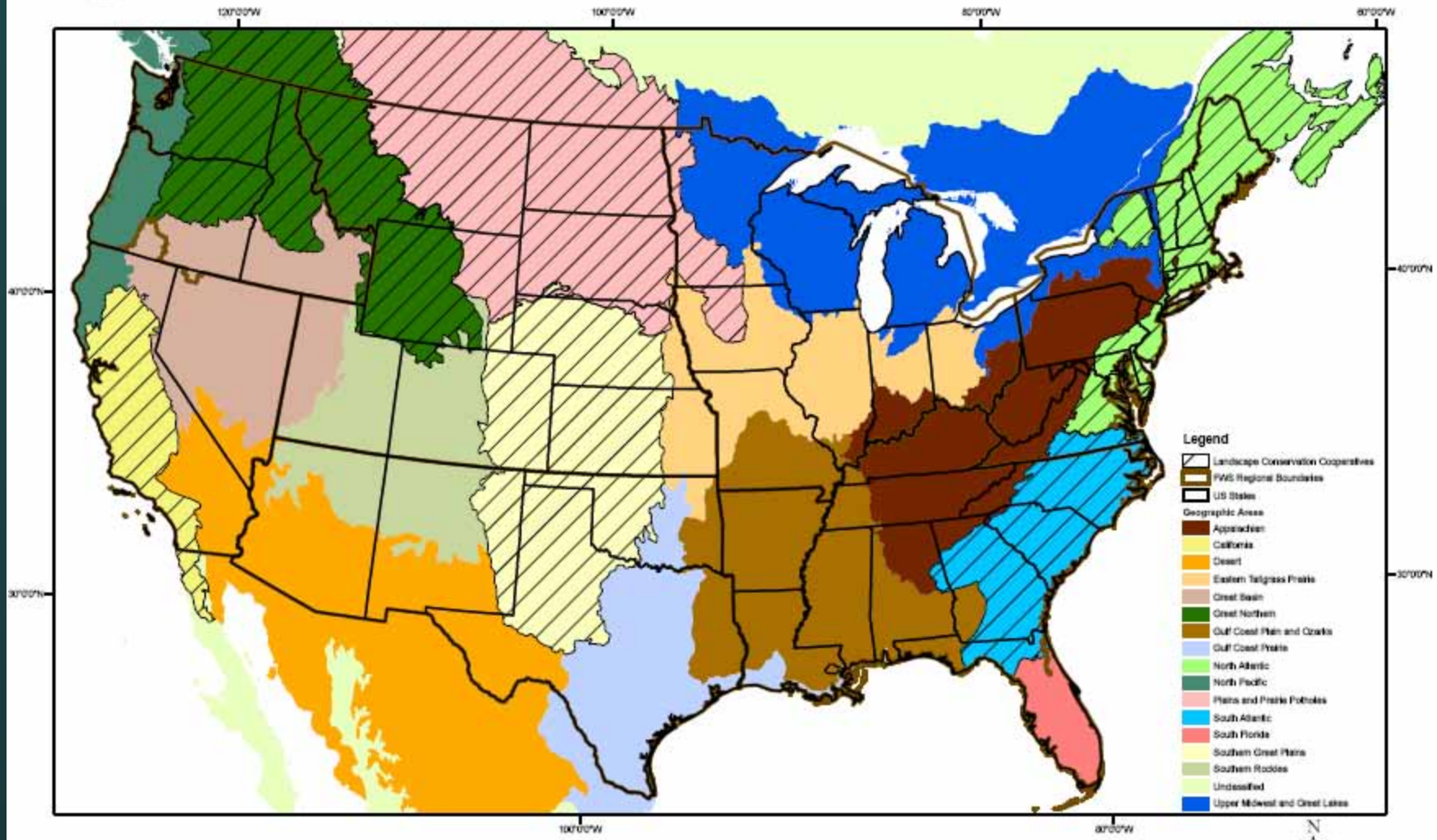


SHC -
Landscape
Conservation
CORBIS-BETTMANN

U.S. Fish and Wildlife Service

Proposed Landscape Conservation Cooperatives FY2010

Conterminous United States



0 150 300 600 900 1,200 Miles

0 395 790 1,580 2,370 3,160 Kilometers

N W E S

Albers Equal Area Conic
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Produced by IRTM, Denver, CO
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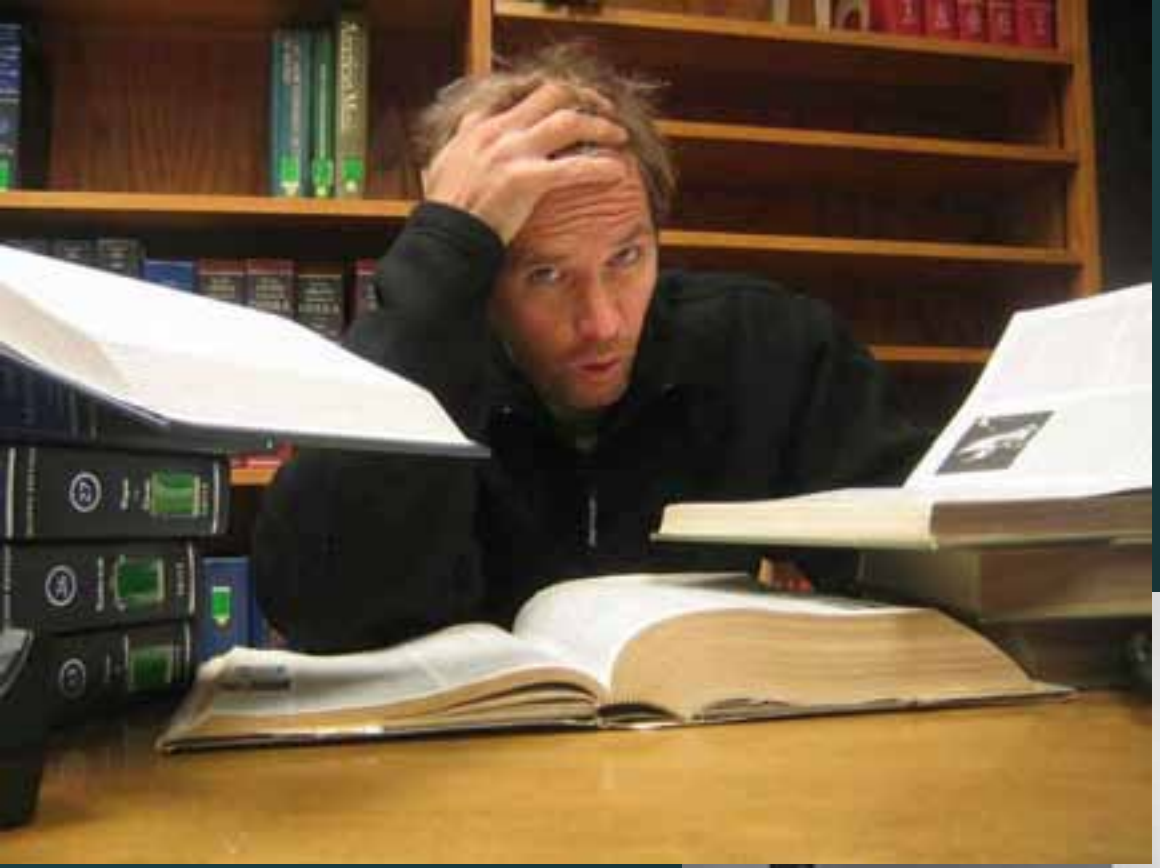
PRESS TIME
SPI
AGENTS OFFICE
SAFETYPHOTO
INTERNATIONAL

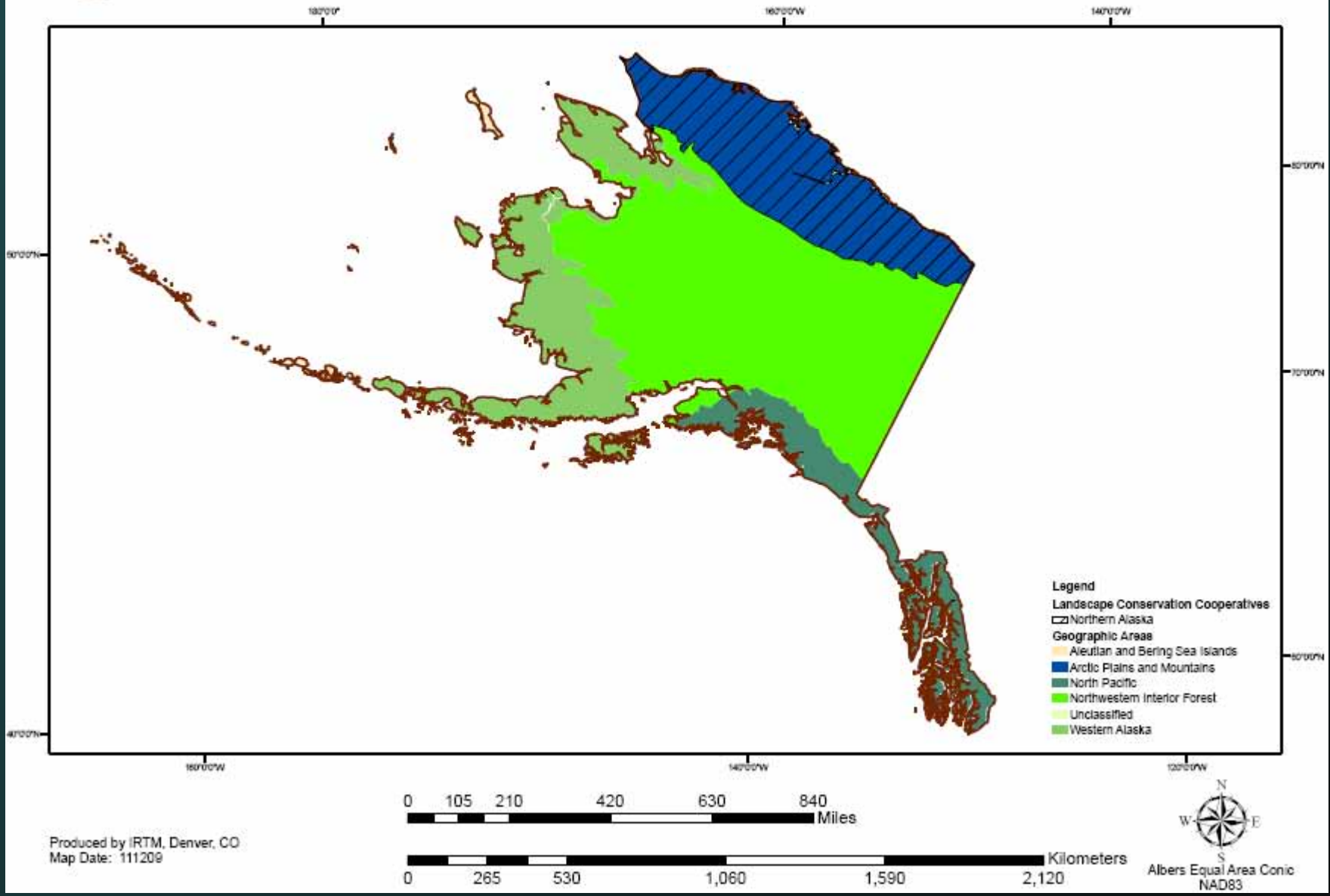


The End

U.S. Fish and Wildlife Service

Proposed Landscape Conservation Coopertives FY2010

Alaska



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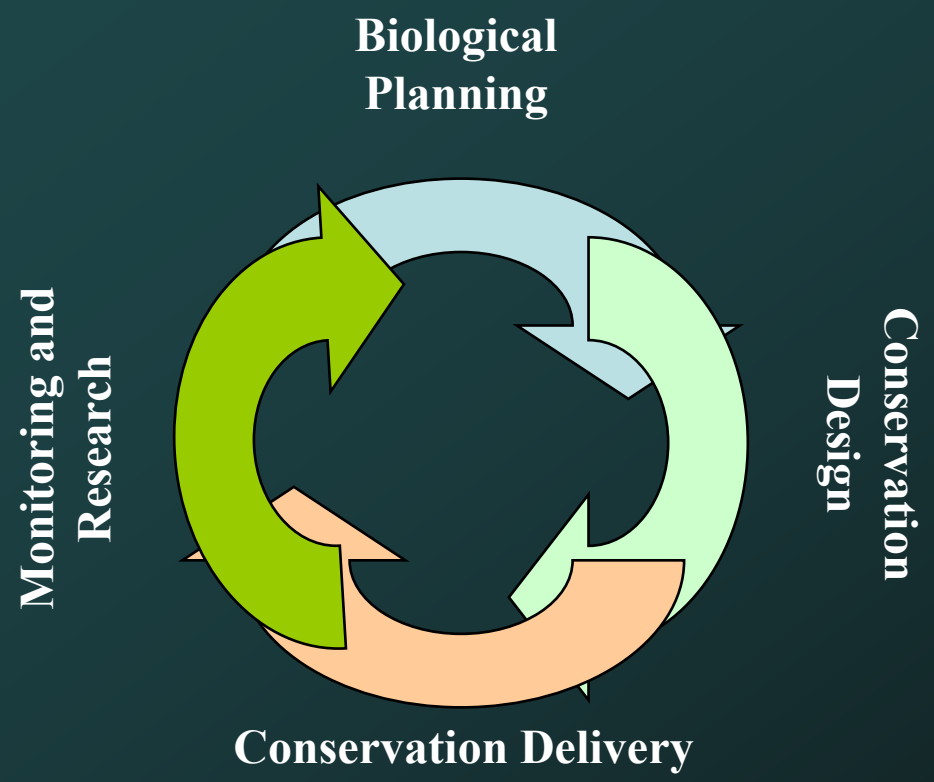
The Changing Nature of Conservation



Objectives stated as biological outcomes

↓

Models tie populations to sites and landscapes

↓

Deliver conservation

↓

Assess progress and refine

Strategic Habitat Conservation

Back to the “Why?”

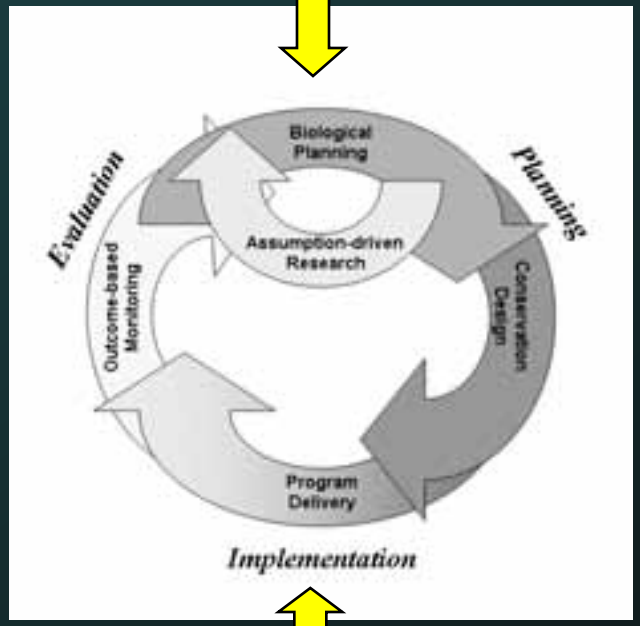
Three Messages:

- The drivers of change are structural, not procedural – affecting who we are and how we work.
- Brings to question our core operating assumptions and organizational competencies.
- Expect gradual change in performance measures and budget structure – resource-centric, outcome-driven, horizontally integrated.

Our Business Model

Sustainable Ecosystems (Populations) = *f* (Administration, Outreach, LE, Conservation Delivery)

The outcomes we need to achieve



The big attention getter

We challenge you to figure out how you can make the greatest contribution to the Service achieving this mission, whatever your present role in the agency.