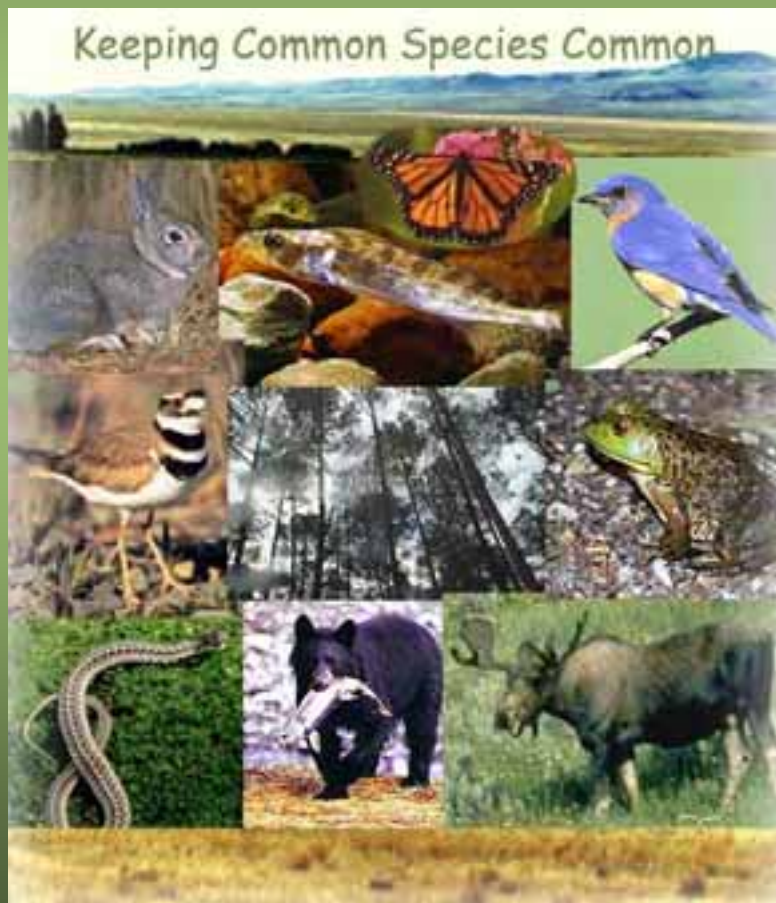


# Northwest Gap Analysis Project Stewardship Database and PAD-US Partnership

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*Mason Croft*

National Gap Analysis Program

University of Idaho

February 18, 2010



University of Idaho

# Goals of GAP

- Primary goals:
  - Keep common species common by identifying conservation gaps
  - Provide information about conservation gaps and biodiversity to make informed resource management decisions
  - Facilitate application of this information to resource management activities

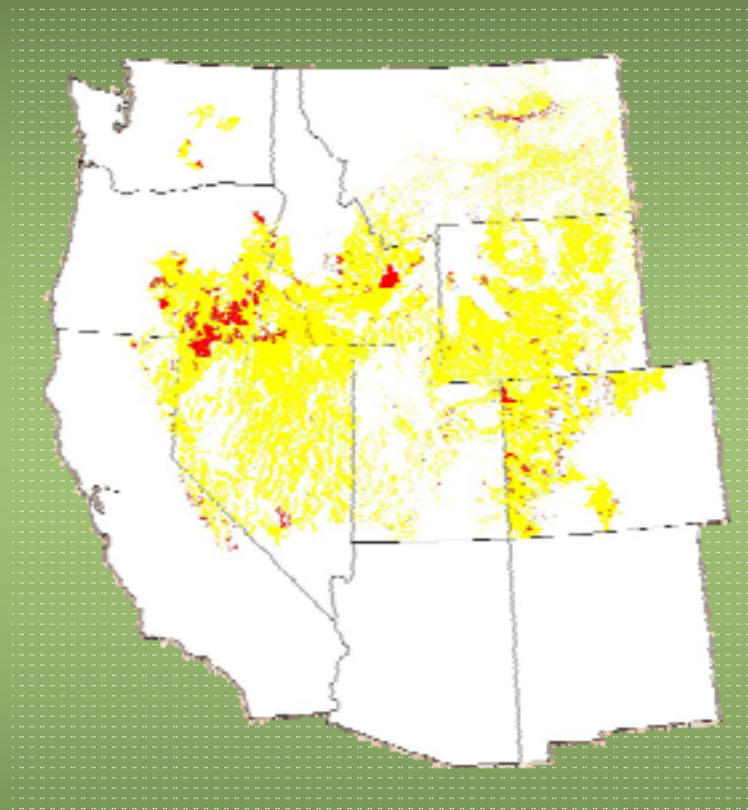
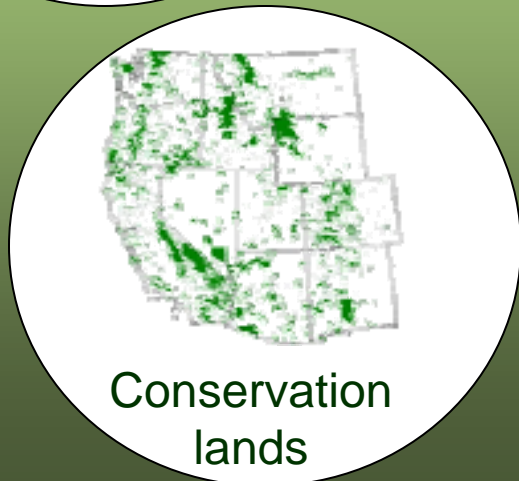
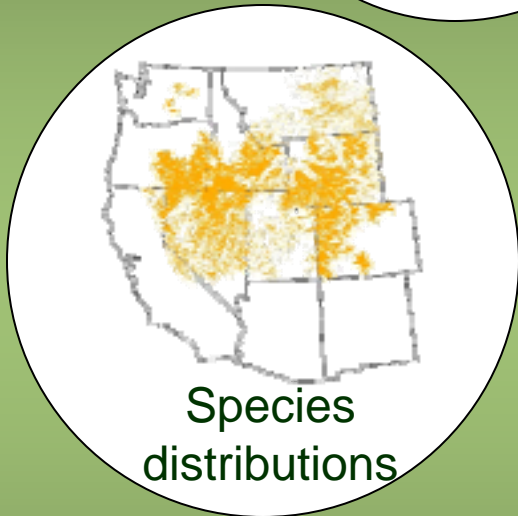


# Objectives

- Map ecological systems
- Map predicted distributions of vertebrate species  
(e.g., birds, mammals, reptiles, and amphibians)
- Map land stewardship of public lands and privately protected areas
- Conduct gap analysis by overlaying:
  - ✓ Predicted species distribution maps and
  - ✓ Ecological system maps with
  - ✓ Land stewardship map
- Analyze species richness patterns relative to the level of conservation management



# Sage grouse gap analysis (*Centrocercus urophasianus*)



■ Sage Grouse Distribution  
■ Conservation Lands

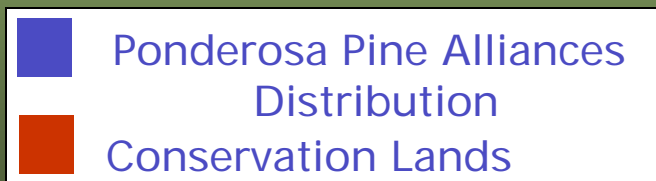


*Protection is currently <6% of its western range.*

## Ponderosa Pine Alliances (*Pinus ponderosa*)

Alliances are only 11% protected.

Protection not well-distributed.

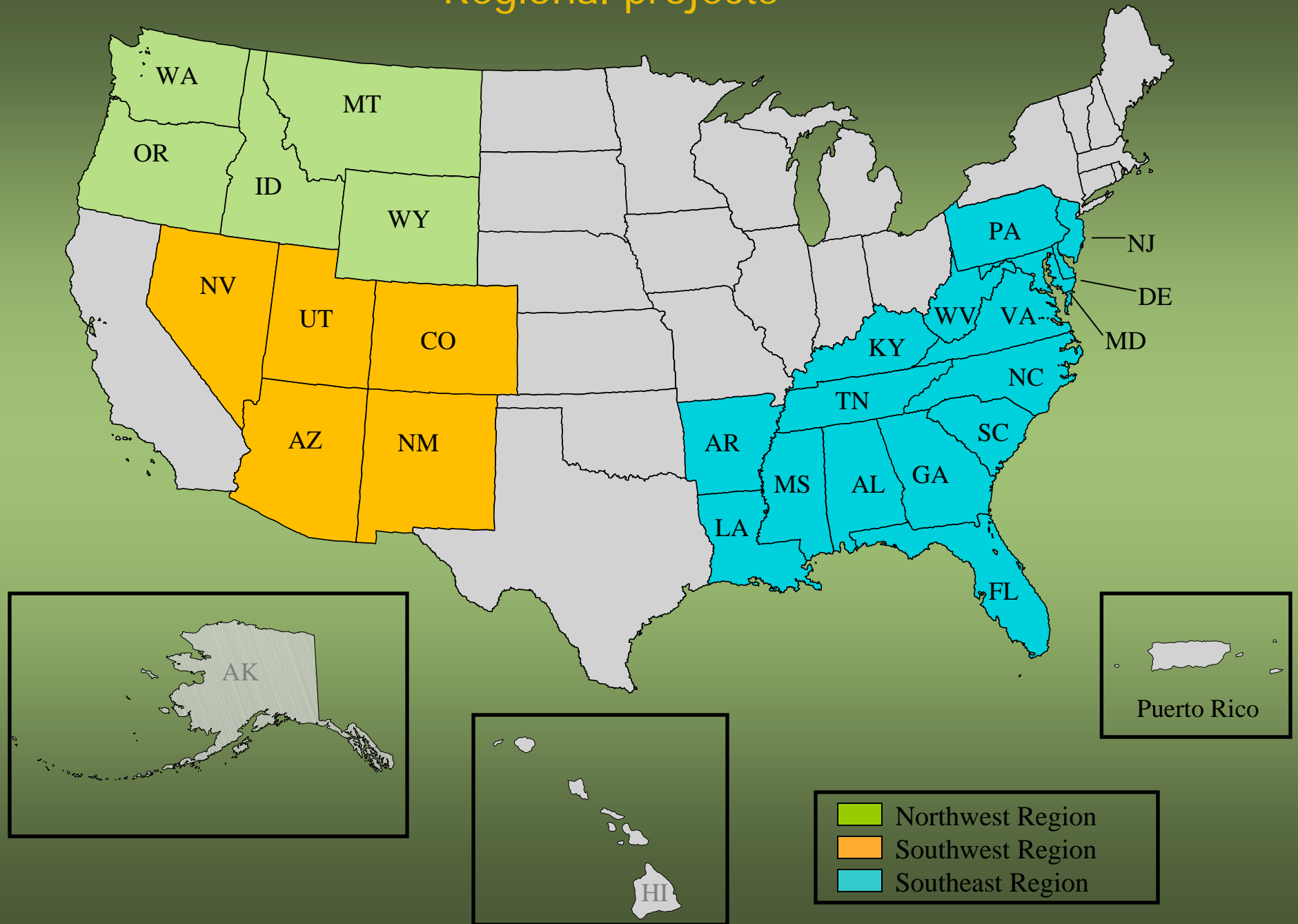


# State GAP Projects



- In many states GAP products represent the first attempt at mapping land cover, vertebrate distributions or stewardship

## Regional projects



# USGS Gap Analysis Program: National Products

Landcover



Species Ranges and Distributions



Protected Areas



# Northwest Regional Project

- 5 states and 12 mapping zones
- Coordinated out of National GAP Office

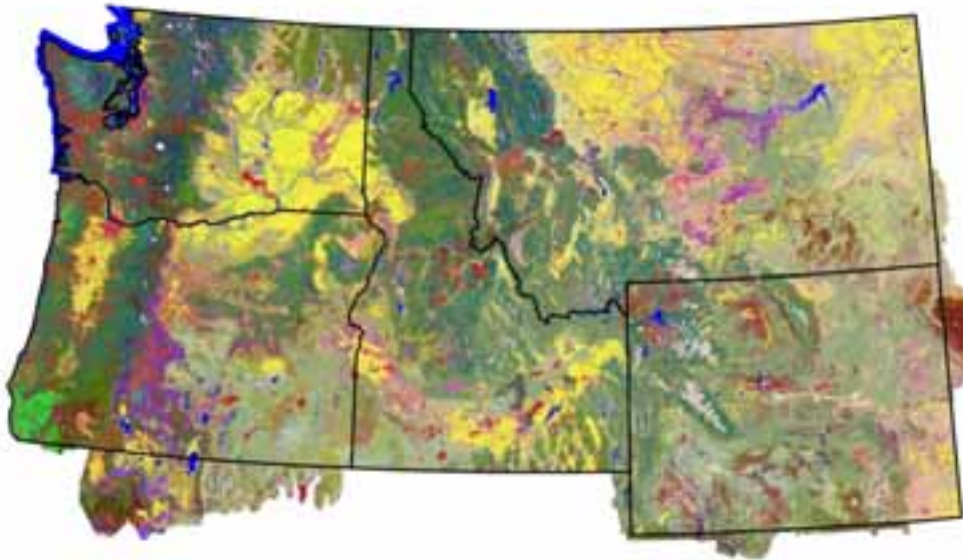


**Northwest Gap Analysis Project**



# Vegetation Mapping

Northwest Gap Analysis Project: Land Cover



- Imagery source: 2001 LANDSAT
- NatureServe Ecological Systems: 184
- Land Use Classes (e.g. Developed, Ag, Harvested): 24
- Download by state or mapzone from GAP Website

# Ecological Systems

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*Rocky Mountain Foothill Limber  
Pine-Juniper Woodlands*

*Rocky Mountain Aspen  
Forest and Woodland*

*Inter-Mountain Basins Montane  
Sagebrush Steppe*

[www.NatureServe.org](http://www.NatureServe.org)  
NatureServe Explorer

# Northwest Gap Project : Species Modeling

- Vertebrate distribution modeling
  - Species list
  - Records of occurrence
  - Environmental data
  - Deductive and inductive modeling approaches



# Online GAP Data Portal

- Available soon at [gapanalysis.nbii.gov](http://gapanalysis.nbii.gov)
- Provides avenue for searching and visualizing GAP data
- Map viewer will provide seamless view of national data

Land Stewardship



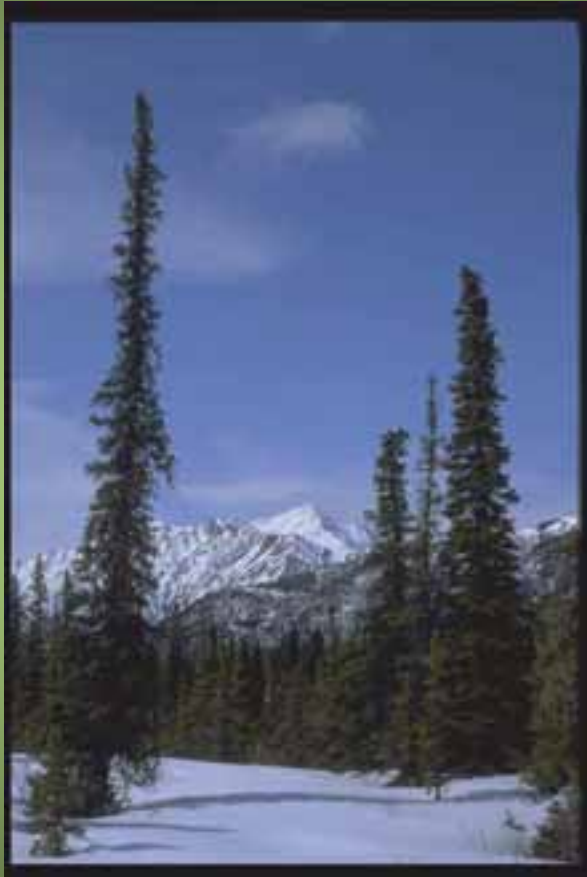
Species Ranges



Land Cover

# GAP Stewardship Objectives

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- Obtain public land ownership boundaries
- Aggregate internal management boundaries and obtain management plans for each mapped land unit
- Assign measures of biodiversity management status to each mapped land unit
  - GAP status codes
- Ensure data updates are coordinated with PAD-US Partners

# Master Stewardship List (MSL)

Master GAP Stewardship Class, Owner and Management Geodatabase Codes and Descriptions and approved IUCN Crosswalk Status				
Class	Owner/Managing Agency	Management Type/Designation	IUCN Category	
1000	Federal Land			
1100	Bureau of Land Management (BLM)			
		1101 Area of Critical Environmental Concern (BLM)	V	
		1104 National Monument (BLM)	< 5,000 acres V > 5,000 acres III	
		1118 Special Recreation Management Area (BLM)	if GAP 1 or 2, then V otherwise PU	
1300	Fish and Wildlife Service (FWS)			
		1301 National Wildlife Refuge (FWS)	IV	
		1302 Waterfowl Production Area (FWS)	VI if GAP 1 or 2, otherwise PU	
1400	Forest Service (USFS)			
		1410 Research Natural Area (USFS)	Ia	
		1411 Wild, Scenic & Recreation River (USFS)	V	
		1412 Wilderness Area (USFS)	Ib	
1600	National Park Service (NPS)			
		1602 National Battlefield (NPS)	III	
		1611 National Park (NPS)	II	
1700	Natural Resources Conservation Service (NRCS)			
		1701 Conservation Easement (NRCS)	V if GAP 1 or 2, otherwise PU	
3000	State Land			
3100	State Park & Recreation			
		3101 State Park	> 5,000 acres II < 5,000 acres V, if GAP 1 or 2 otherwise PU	
		3102 State Recreation Area	V if GAP 1 or 2, otherwise PU	
3300	State Fish and Game			
		3301 State Wildlife Management Area	IV if GAP 1 or 2, otherwise PU	
5000	Local Government Land			
5100	City Land			
		5103 City Preserve or Natural Area	V if GAP 1 or 2, otherwise PU	
5200	County Land			
		5209 County Forest	V if GAP 1 or 2, otherwise PU	
6000	Non-Governmental Organization Land			
6100	Audubon Society			
		6101 Audubon Society Preserve or Sanctuary	III	
6200	Local Land Trust Preserve/Easement			
		6201 Local Land Trust Preserve	V if GAP 1 or 2, otherwise PU	
		6202 Local Land Trust Easement	V if GAP 1 or 2, otherwise PU	
6300	The Nature Conservancy (TNC)			
		6301 Nature Conservancy Easement (TNC)	V if GAP 1 or 2, otherwise PU	
		6302 Nature Conservancy Preserve (TNC)	if GAP 1 then Ia if GAP 2 then V	
7100	Private Conservation Easement/Conservation Deed			
		7101 Private Conservation Easement/Conservation Deed Restriction	Temporarily Unassigned	

# Criteria for assigning GAP Status Codes

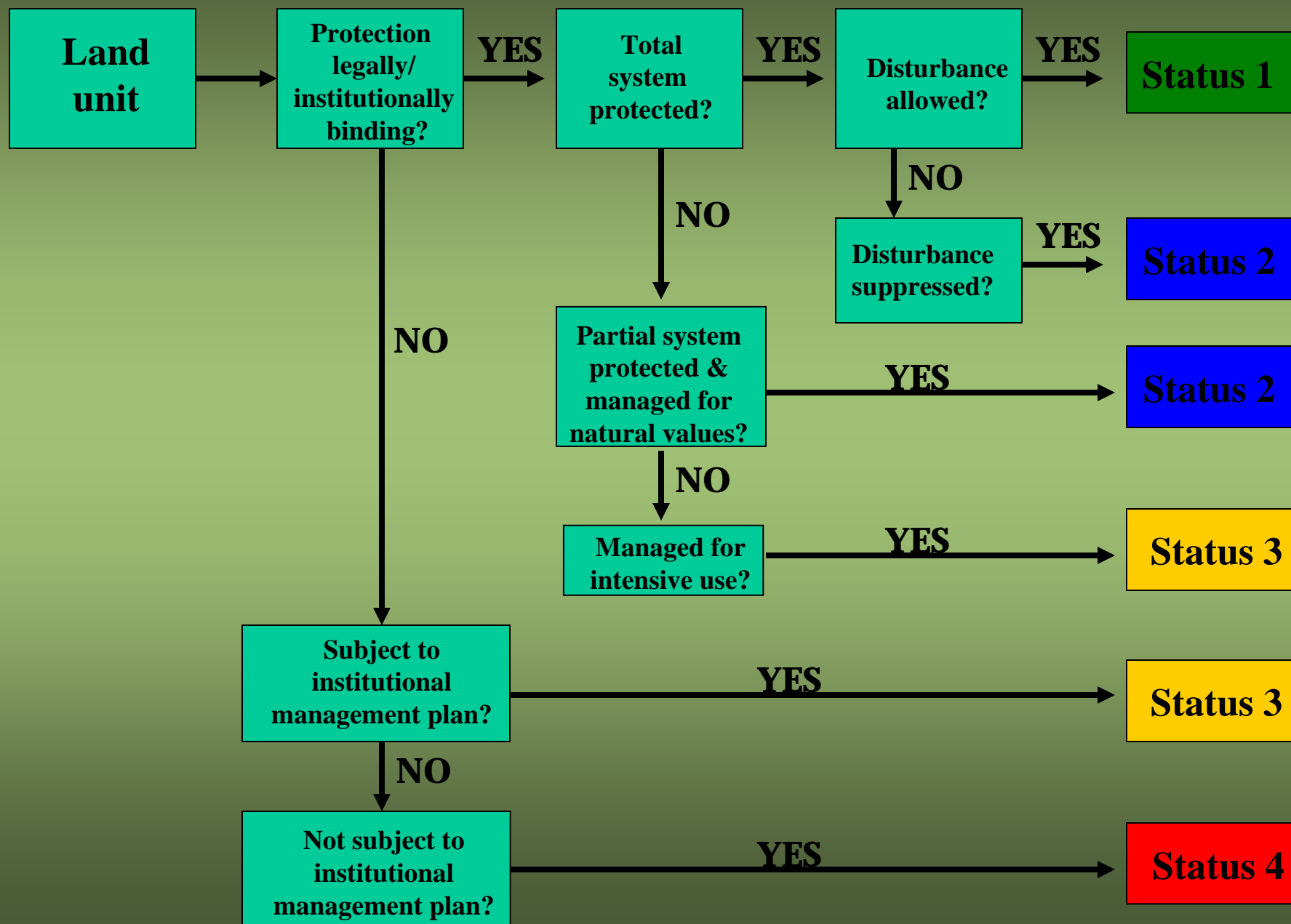
- Permanence of protection from conversion of natural land cover to unnatural
- Relative amount of land unit managed for natural cover
- Inclusiveness of management



- Type of management
  - Suppresses or allows natural disturbance
  - Degree it is mandated through legal and institutional arrangements



# Dichotomous key for GAP status codes



# GAP Status Code Definitions



## Status 1

Land unit having **permanent protection** ... and a mandated management plan within which disturbance events are allowed to proceed or are mimicked through management

## Status 2

Land unit having **permanent protection** ... but which may receive use or management practices that degrade quality of existing natural communities

## Status 3

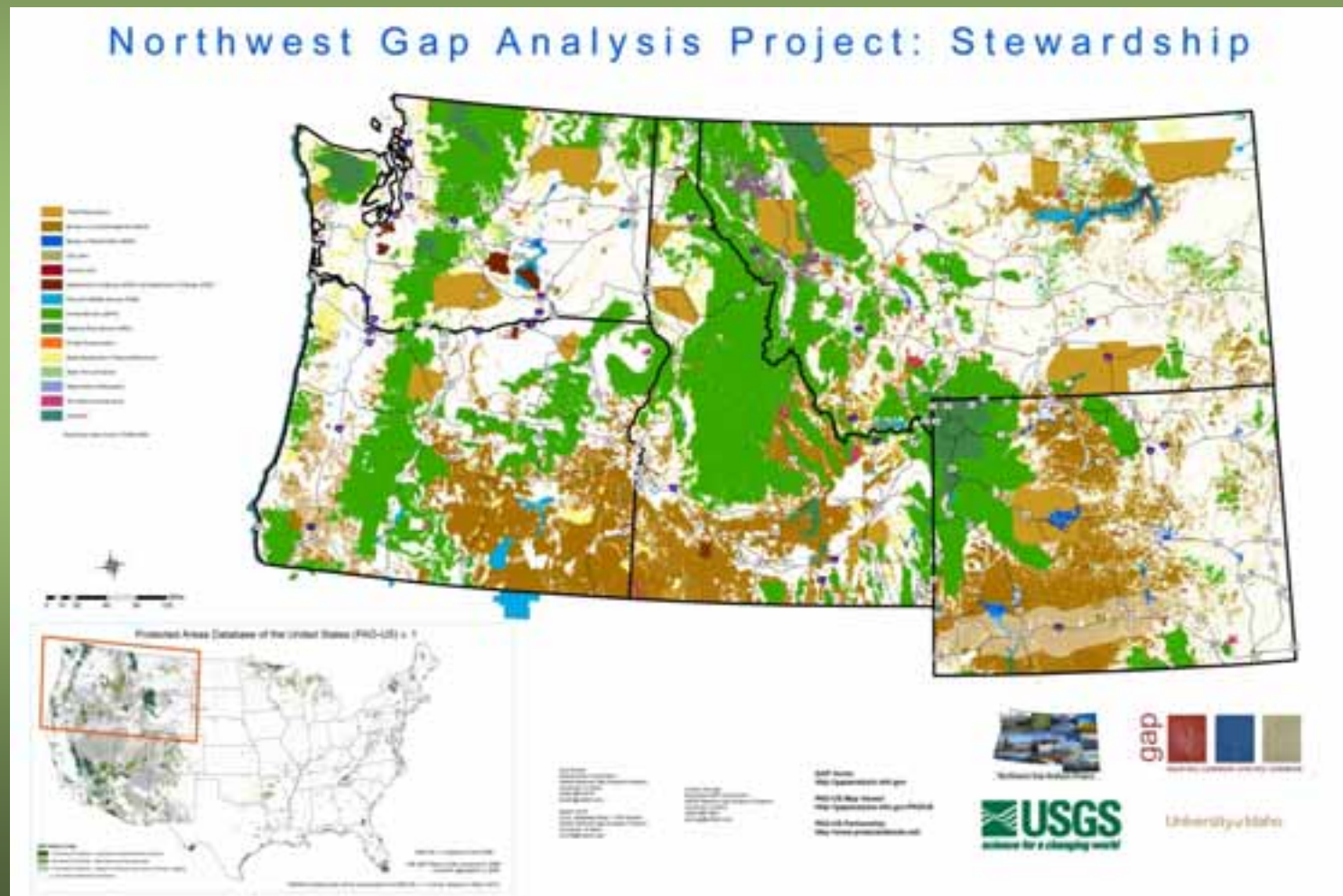
Land unit having **permanent protection** ... for the majority of area but subject to extractive uses (i.e. logging, mining) ...

## Status 4

Land unit with lack of irrevocable easement or mandate to prevent conversion of natural habitat ... (or unknown)

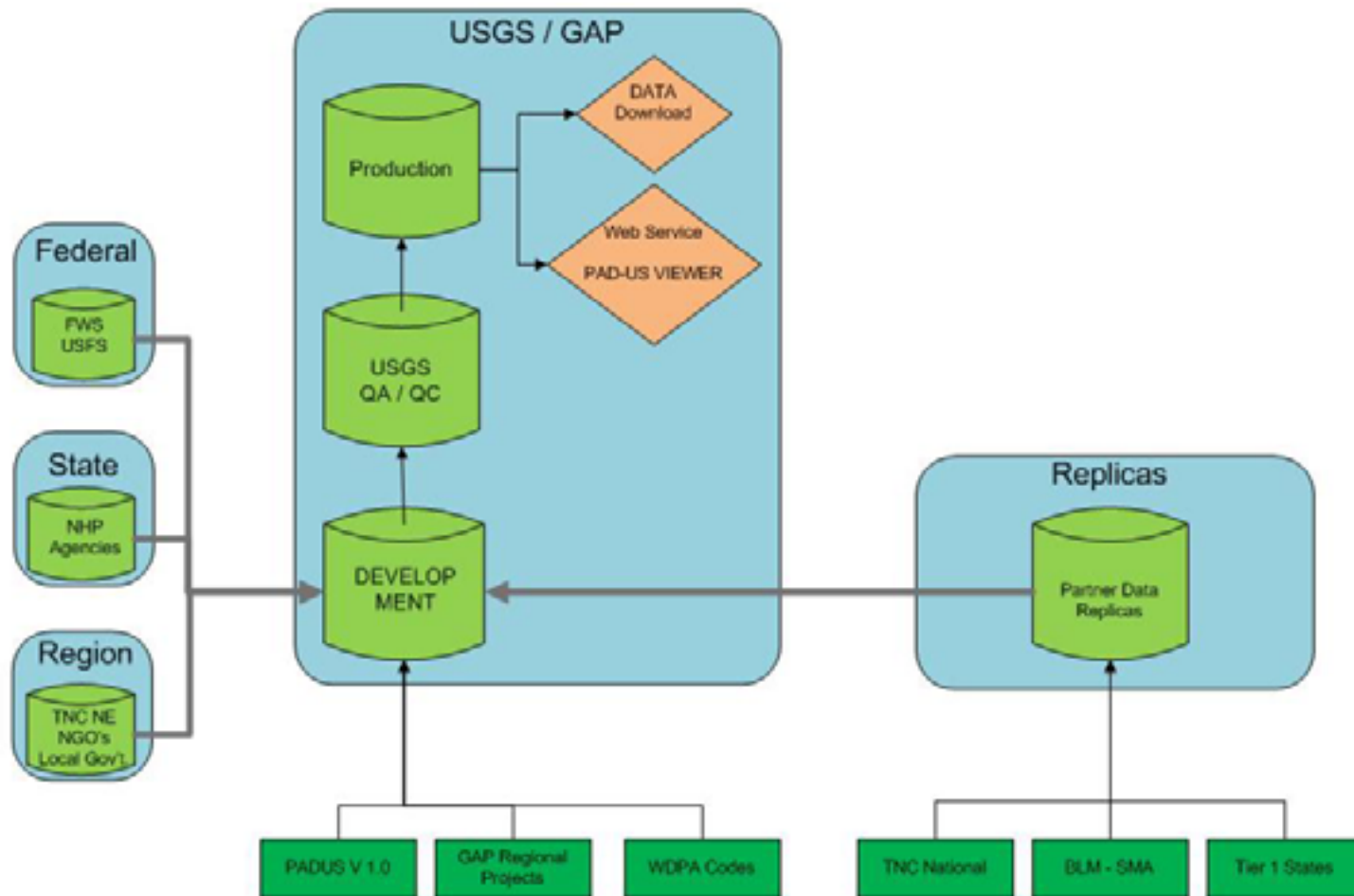
# Draft NW Stewardship Map

Stewardship data classified by land stewards



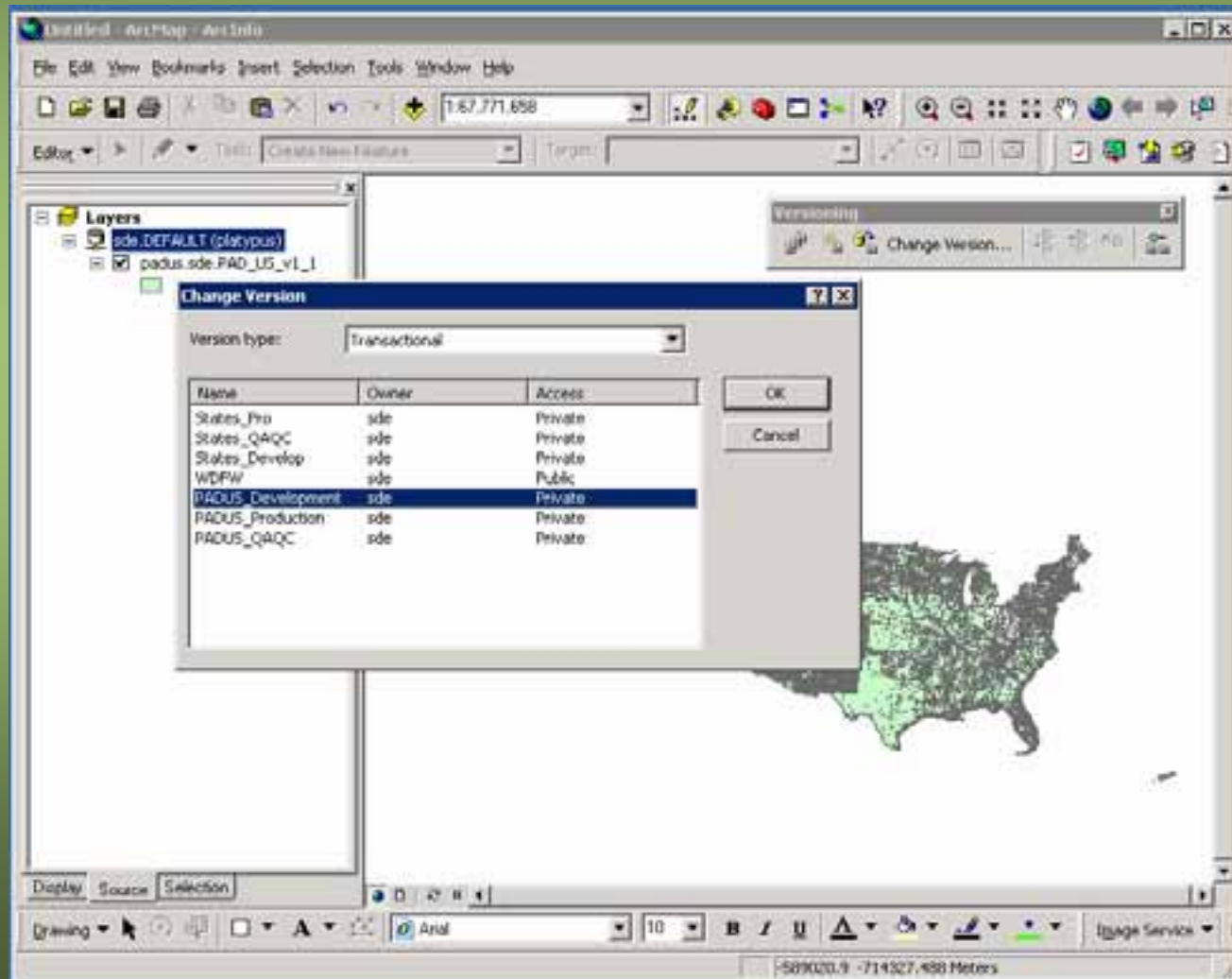
# Multiuser Geodatabase

## Data Flow chart



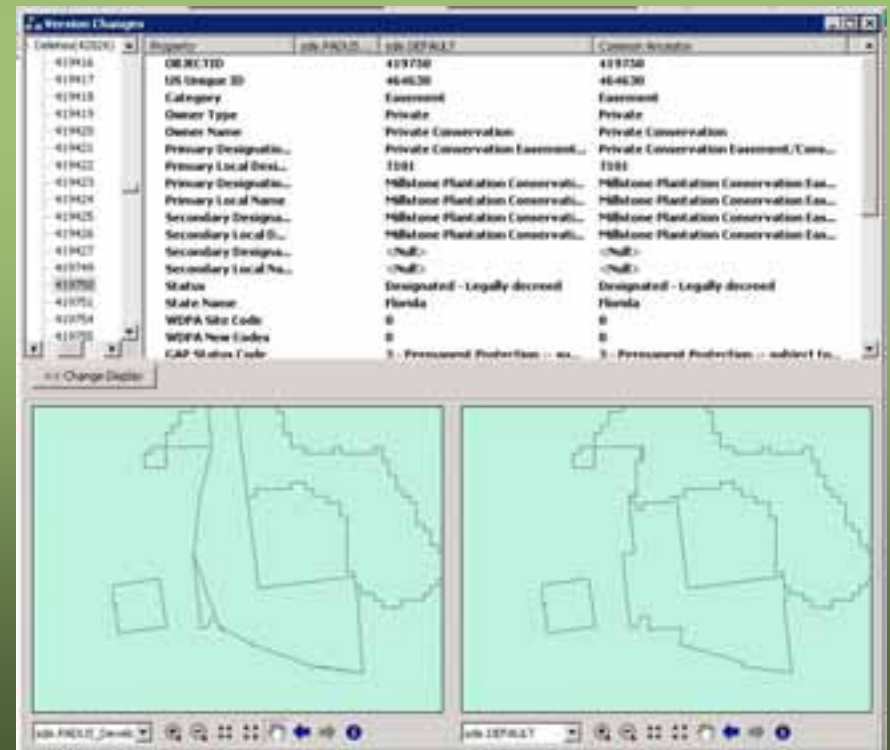
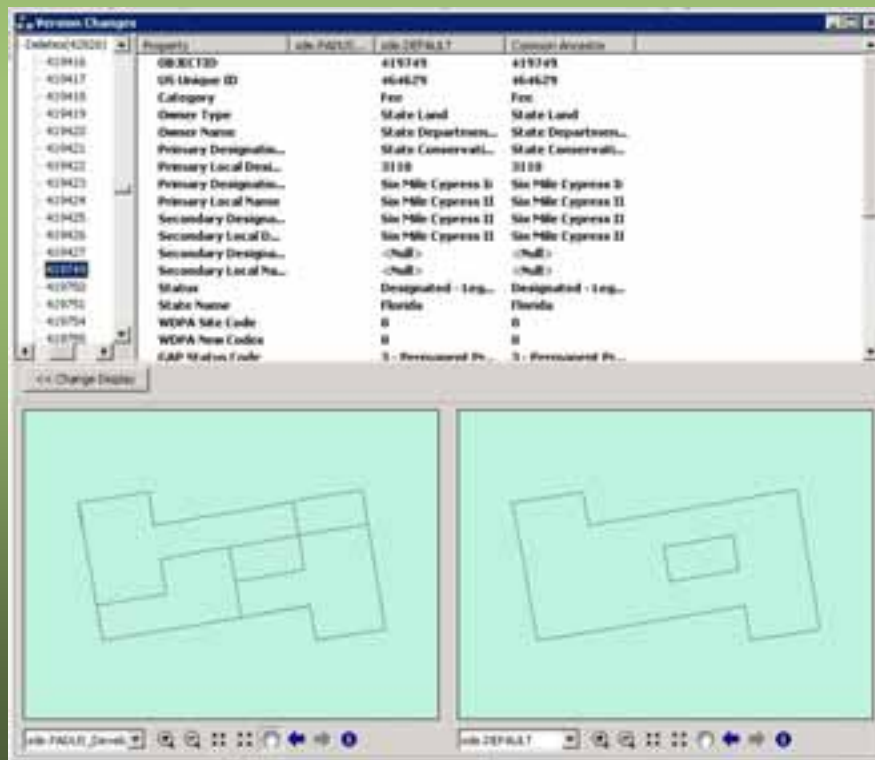
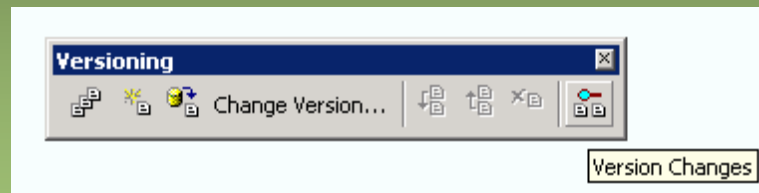
# Replicated Database

- Includes version for each processing step

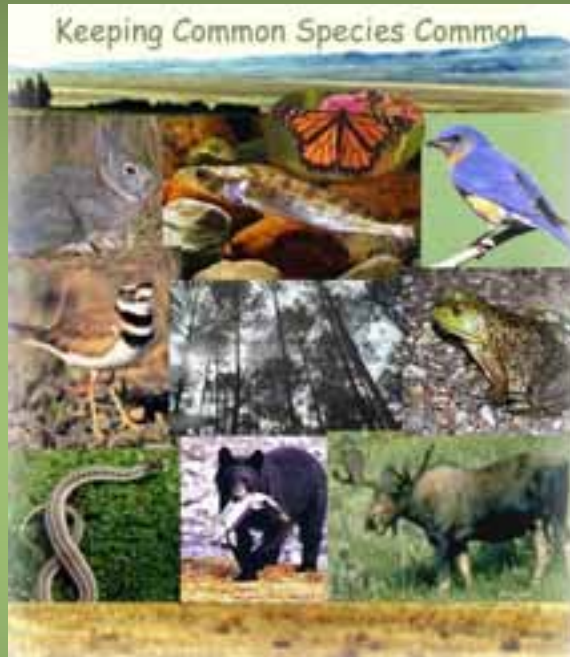


# Version Changes Tool

- Quick initial QA/QC to identify what changes were made
  - Additions
  - Deletions



# Questions?



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