Are We There Yet? Trends in Protecting Wetlands and Biodiversity: a Stateside View

Jeanne Christie, Executive Director

Association of State Wetland Managers

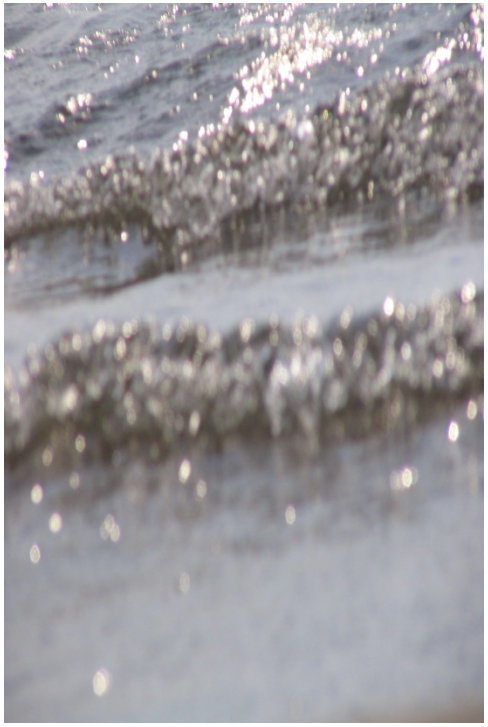
I promise to try to be interesting

What Are Wetlands?

Wetlands are areas that or inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support a prevalence of wetland vegetation….in other words--

Wetlands are identified by---

Plants + Soil + Water



Federal Government is the First Level (i.e. minimum level playing field)

Federal Government – Water/Wetlands

- Clean Water Act and other national environmental laws – direct regulatory powers
- Non regulatory grant and subsidy programs (clean water, agriculture, floods/emergency response)
- Technical Assistance/Research (particularly for problems/challenges that occur across state boundaries)
- Federal land management (Everglades)

REPORT TO CONGRESS

Wetlands

LOSSES IN THE UNITED STATES

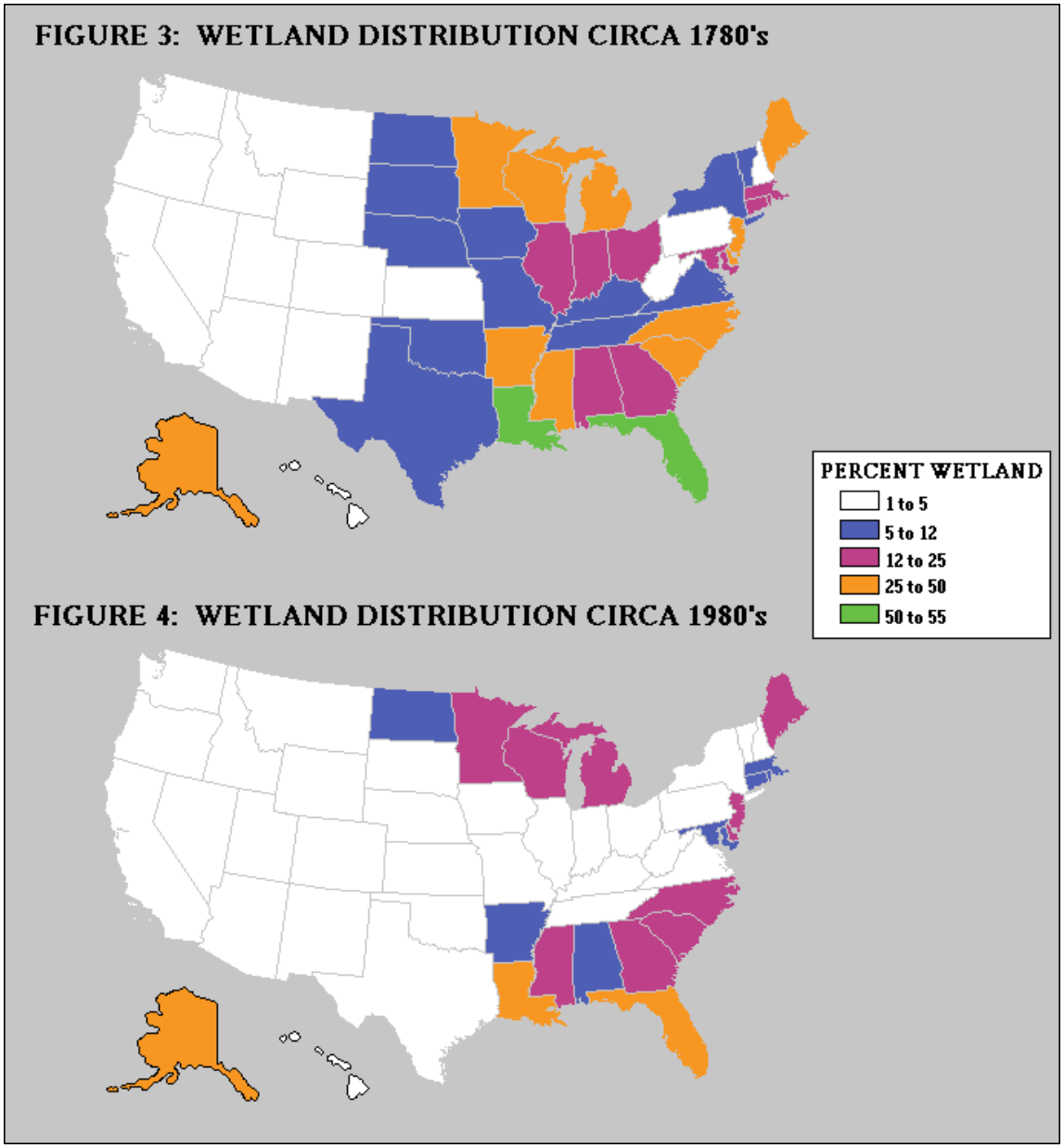
1780's TO 1980's

U.S. DEPARTMENT OF INTERIOR
U.S. FISH & WILDLIFE SERVICE

50% of Wetlands in U.S. Destroyed

Figure 2. States with notable wetland loss, 1780's to mid-1980's. *(Source. Modified from Dahl, 1990.)*

Florida has lost the most wetland acres of any state- approximately 9.3 million acres-or 46% of wetlands present in the 1780s.



The High Cost of Wetland Loss

Wildlife Habitat

Loss of wetlands and fresh water dependent biodiversity

Table 1. Status of freshwater biodiversity[4].

* *Freshwater fish, crabs, molluscs, dragon flies and some plants.*

Species	**Status (IUCN Red-List)[4]**
Freshwater mammalian species (145)	38% threatened with extinction
Freshwater amphibian species (4242)	Over 25% threatened with extinction
Freshwater fish in Africa	Nearly 25% threatened with extinction
Freshwater fish in Mediterranean Basin	Over 55% threatened with extinction
Freshwater species in Africa (5,167 assessed)*	Over 20% threatened with extinction
Extinct birds (136)	Over 10% freshwater dependent birds

[3] Vorosmarty et al.; 2010
[4] IUCN Red List of Threatened Species v. 2010.3 http://www.iucnredlist.org/

Water Supply/Water Quality

Increase on Water Use

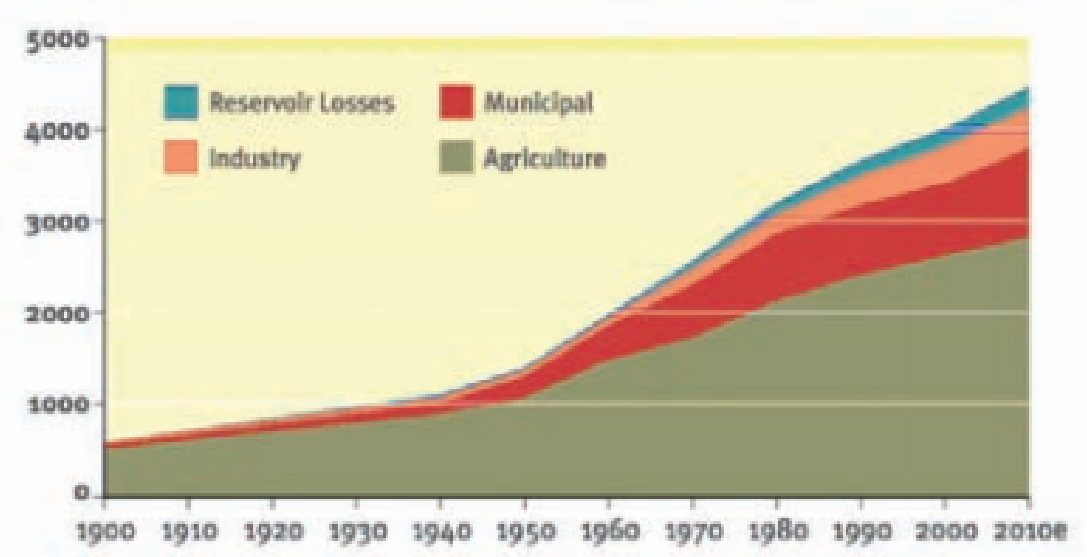
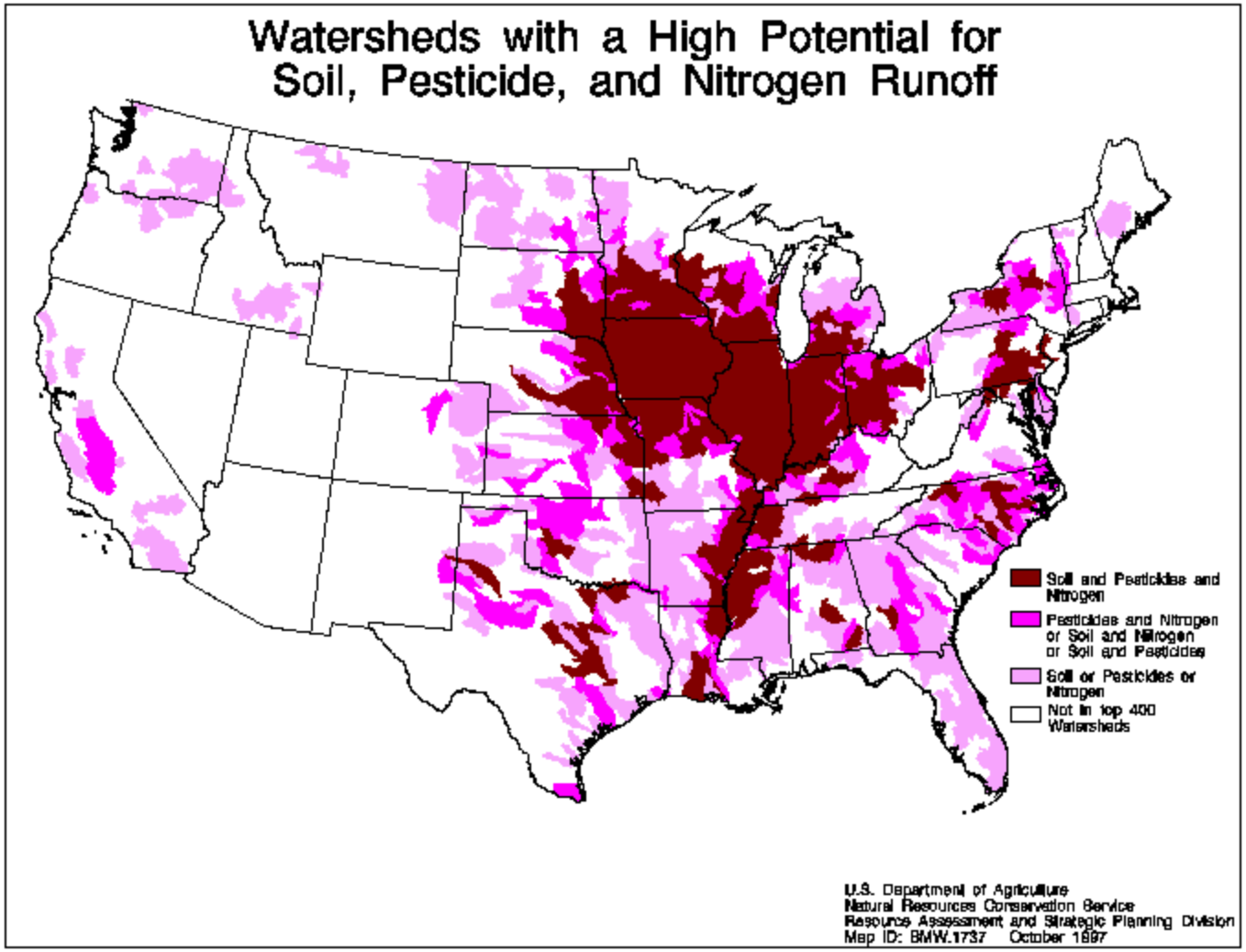


Figure 6. Increase in water use. 20th century world water use, by sector, in cubic kilometres. *Source: World Water Resources and Their Use, UNESCO, 1999. http://webworld.unesco.org/water/ihp/db/shiklomanov/part'3/_Read'me.html.*

Water Quality



Gulf Hypoxia (Dead) Zone

50% of Wetlands in U.S. Destroyed

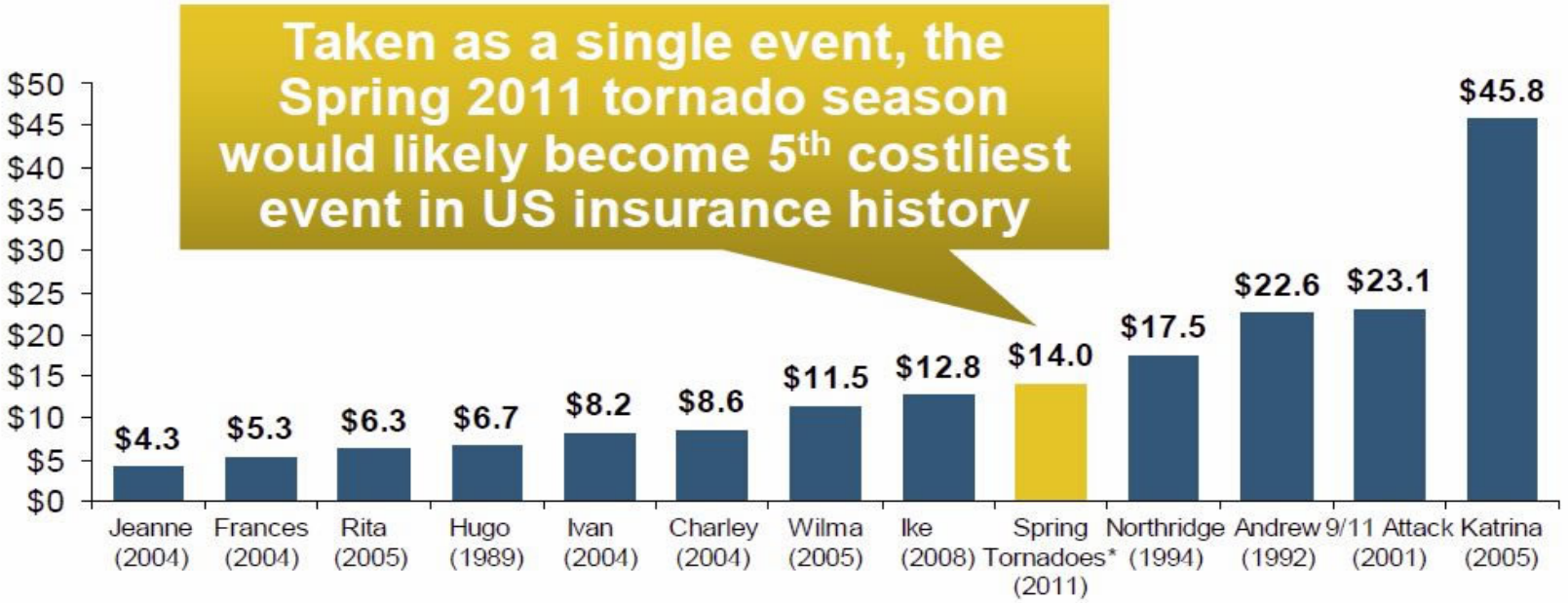
Figure 2. States with notable wetland loss, 1780's to mid-1980's. *(Source. Modified from Dahl, 1990.)*

Flooding in all the Wrong Places

Top 12 (13?) Most Costly Disasters in U.S. History

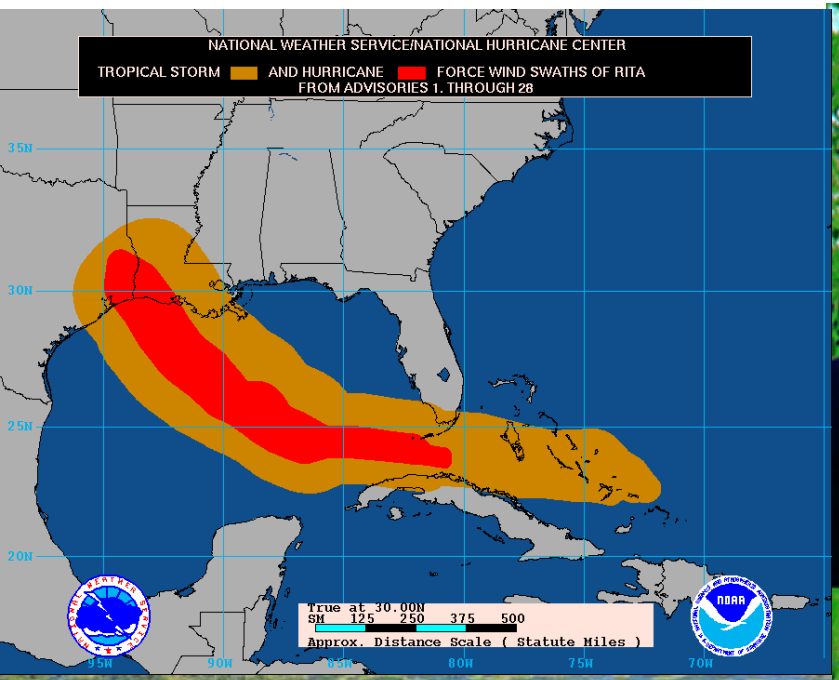
INSURANCE INFORMATION INSTITUTE

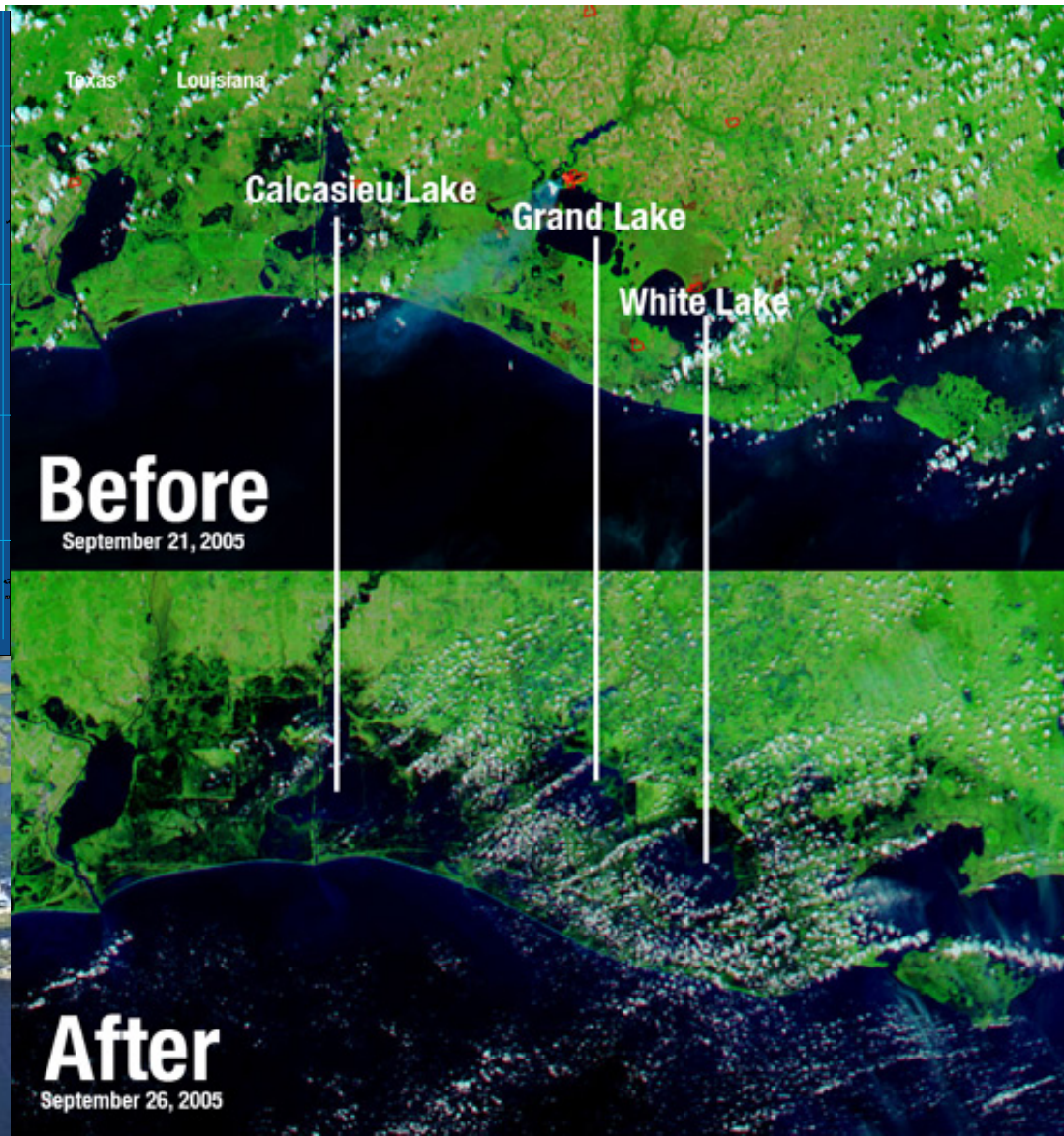
(Insured Losses, 2010 Dollars, $ Billions)



*Losses will actually be broken down into several "events" as determined by PCS.
Sources: PCS; Insurance Information Institute inflation adjustments.

Hurricane Rita did comparatively little damage.

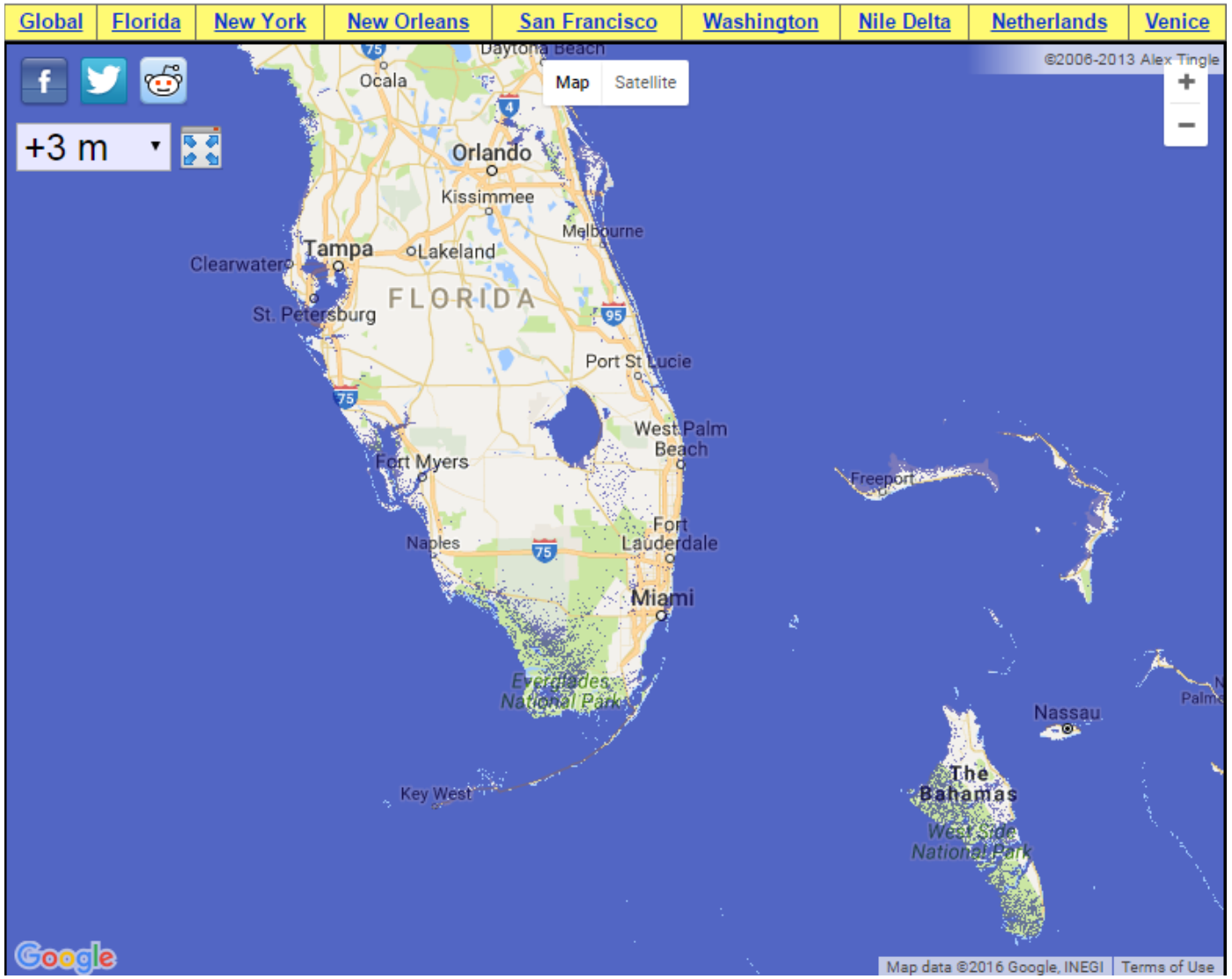




Climate Change

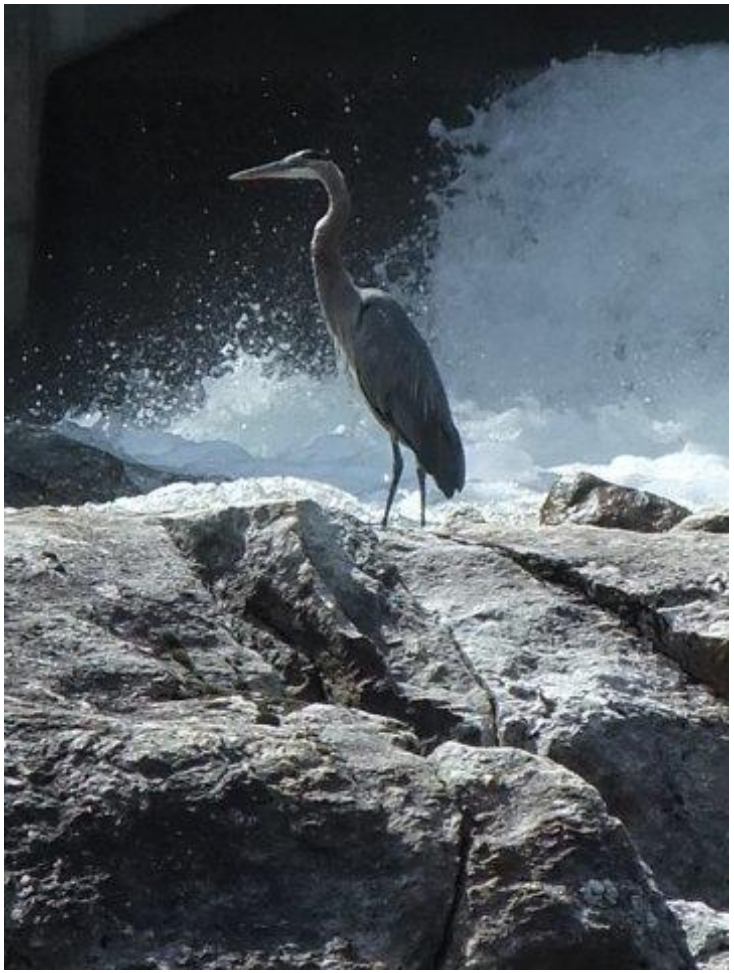
Coastal Florida and Everglades - Sea Level Rise Map

Use the window in the top left of the map frame to change the amount of sea level rise.



The Three Key Questions

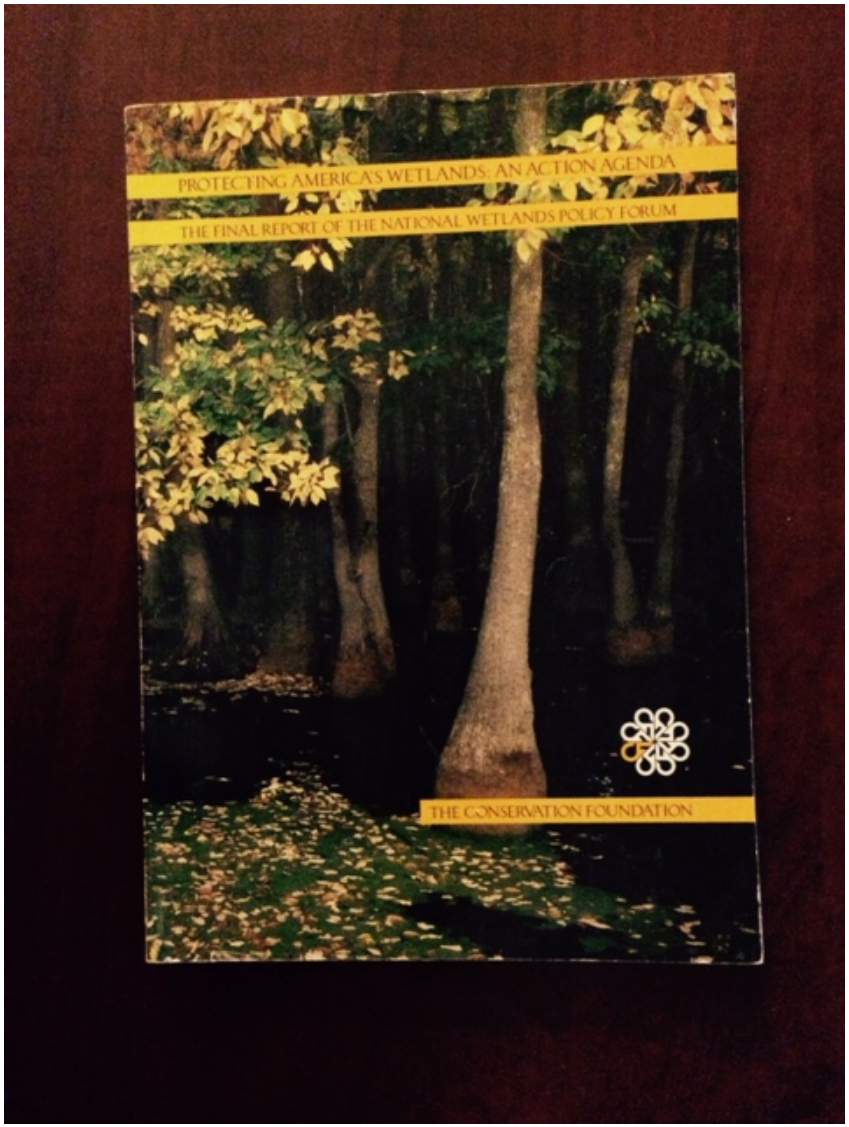
- What's at risk?
- Why is it important?
- What will it take to fix it?



The Origin of ‘No Net Loss’

“Protecting American’s Wetlands: An Action Agenda

The Report of the National Wetlands Policy Forum”

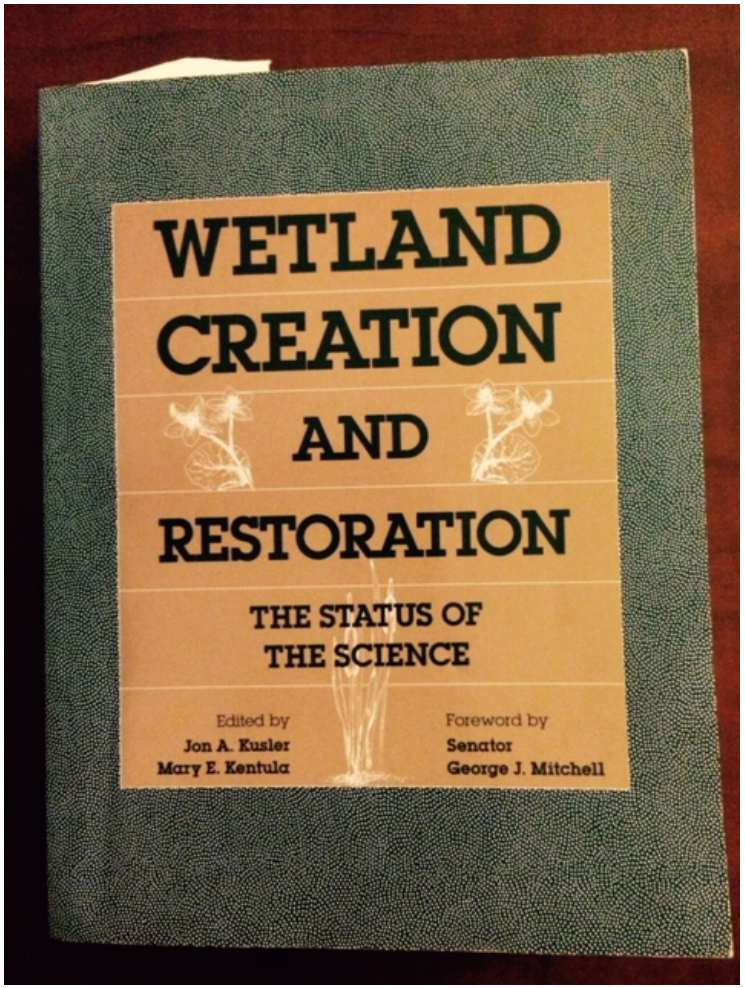


National Mitigation Policy (Wetland Replacement)

Avoidance. Section 230.10(a) allows permit issuance for only the least environmentally damaging practicable alternative.[5] The thrust of this section on alternatives is avoidance of impacts. Section 230.10(a) requires that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. In addition, Section 230.10(a)(3) sets forth rebuttable presumptions that 1) alternatives for non-water dependent activities that do not involve special aquatic sites [6] are available and 2) alternatives that do not involve special aquatic sites have less adverse impact on the aquatic environment. Compensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a).

Minimization. Section 230.10(d) states that appropriate and practicable steps to minimize the adverse impacts will be required through project modifications and permit conditions. Subpart H of the Guidelines describes several (but not all) means of minimizing impacts of an activity.

Compensatory Mitigation. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required. Compensatory actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands) should be undertaken when practicable, in areas adjacent or continuous to the discharge site (on-site compensatory mitigation). If on-site compensatory mitigation is not practicable, off-site compensatory mitigation should be undertaken in the same geographic area if practicable (i.e., in close proximity and, to the extent possible, the same watershed). In determining compensatory mitigation, the functional values lost by the resource to be impacted must be considered. Generally, in-kind compensatory mitigation is preferable to out-of-kind. There is continued uncertainty regarding the success of wetland creation or other habitat development. Therefore, in determining the nature and extent of habitat development of this type, careful consideration should be given to its likelihood of success. Because the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, restoration should be the first option considered.

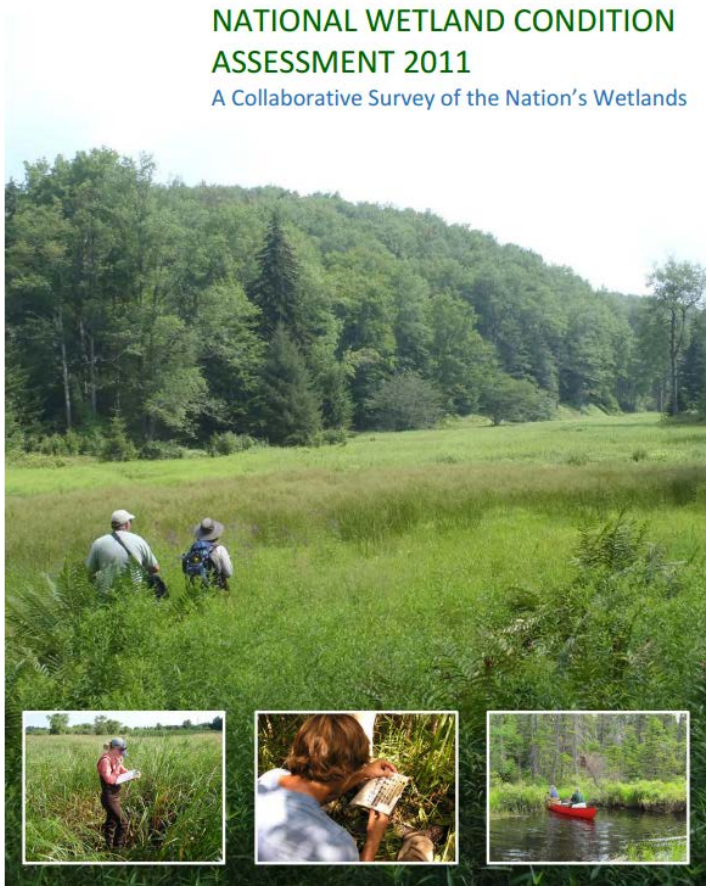


The first national assessment of the ecological condition of the nation's wetlands.

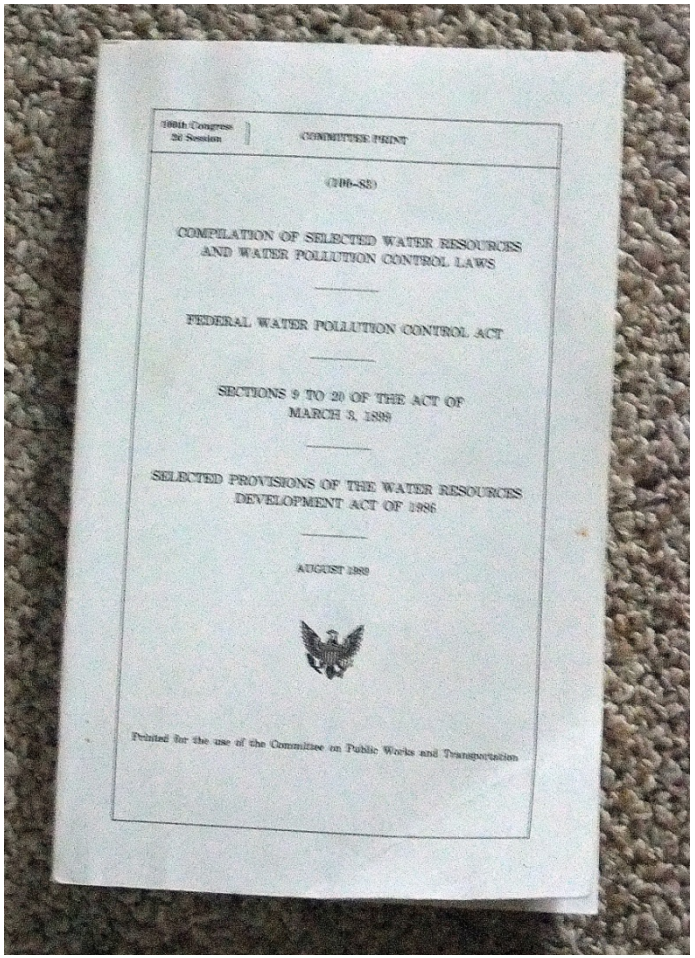
Nearly half of wetland area (48%) is in good condition; 32% is in poor condition and the remaining 20% is in fair condition.

Physical disturbances to wetlands and their surrounding habitat such as compacted soil, ditching, and removal or loss of vegetation, are the most widespread problems across the country. Wetlands with compacted soil likely to have poor plant communities.

Nonnative (invasive) plants are a problem across the country.



Clean Water Act



100th Congress
2d Session

COMMITTEE PRINT

(100-83)

COMPILATION OF SELECTED WATER RESOURCES AND WATER POLLUTION CONTROL LAWS

FEDERAL WATER POLLUTION CONTROL ACT

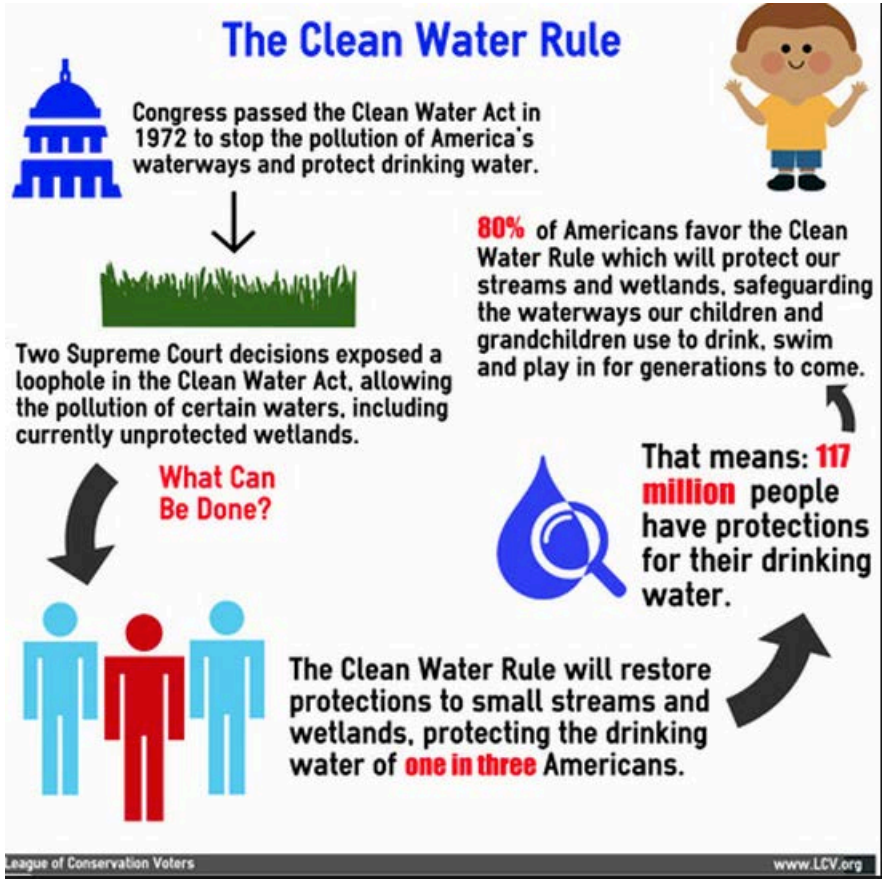
SECTIONS 9 TO 20 OF THE ACT OF MARCH 3, 1899

SELECTED PROVISIONS OF THE WATER RESOURCES DEVELOPMENT ACT OF 1986

AUGUST 1988

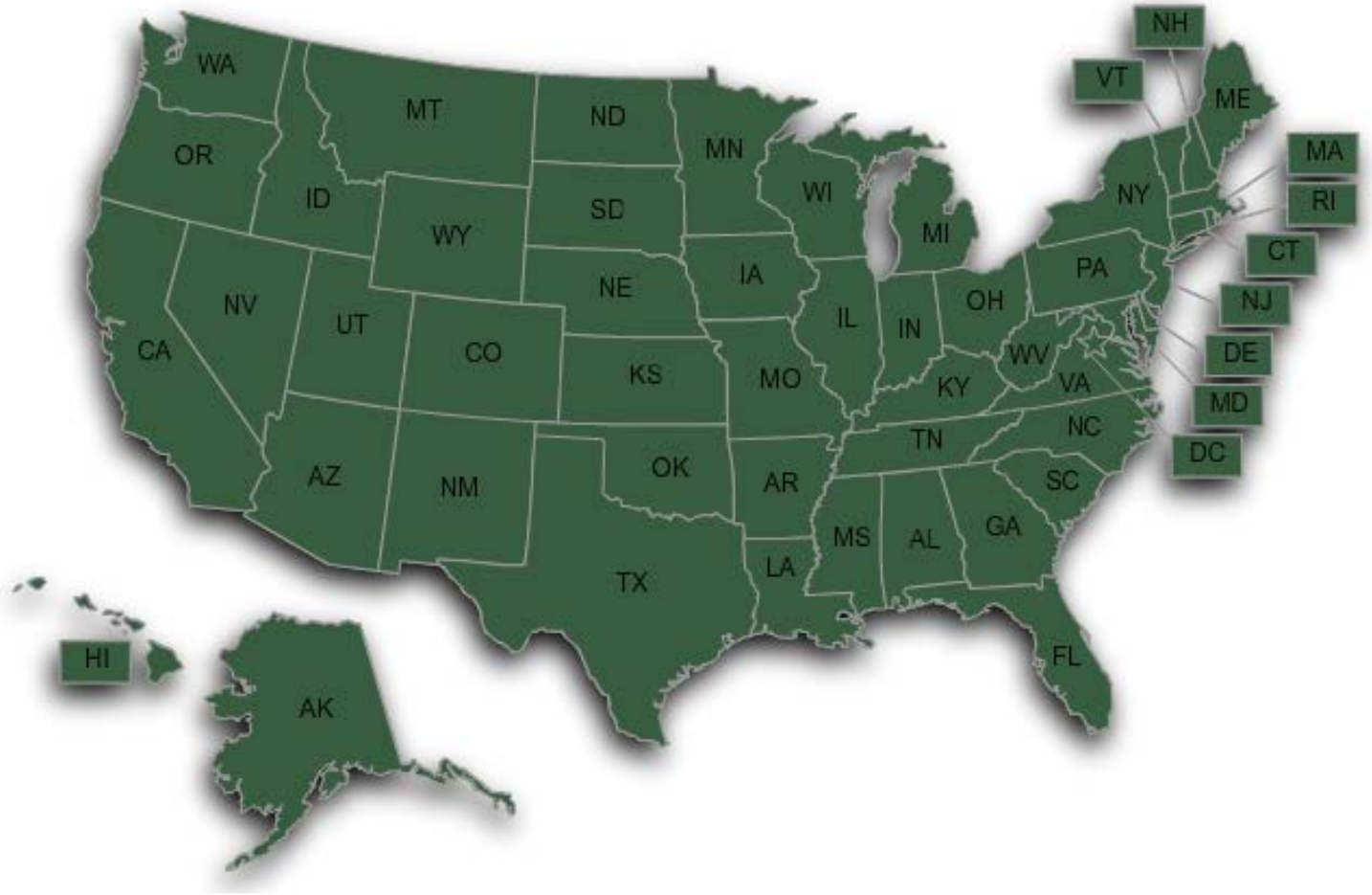
Printed for the use of the Committee on Public Works and Transportation

Clean Water Act Jurisdiction Controversy



National WaterWetland Policy

State Government is the Second Level



State Government – Water/Wetlands

- Clean Water Act delegation and state environmental laws – direct regulatory powers (stormwater, waste disposal, water appropriations, floodplains/floodways)
- State growth and land use management activities
- Technical assistance/research (particularly for problems/challenges within state boundaries)
- State land management (Blue Spring State Park)
- Acquisition

States Are Highly Variable

The type of statutory authority utilized varies from state to state. Some states have comprehensive authorities in one statute. Some states utilize authorities scattered among several statutes. The point is there is more than one path to the same goal…

Key Issues for States

Wetland Ecology Varies Greatly from State to State

- Types of Wetlands, Size, Frequency, Location
- Geographic distribution, rate and reason for historic losses
- Principle Types of Economic Activity—Land and Water Related
- Water, Wetland and other Environmental Degradation Issues
- Population Densities

e.

Key Issues for States

State laws addressing wetlands are *highly* variable across the country.

- Types of Wetlands Regulated
- Definition of Wetlands
- Regulated and Exempted Activities
- Whether Mapping is Required Prior to Regulation
- Distribution of Authority Between State and Local Government
- Distribution of Program Provisions Between Statute and Regulation

Analysis and Reports: Coastal Wetland Loss Intra-Regional Analysis

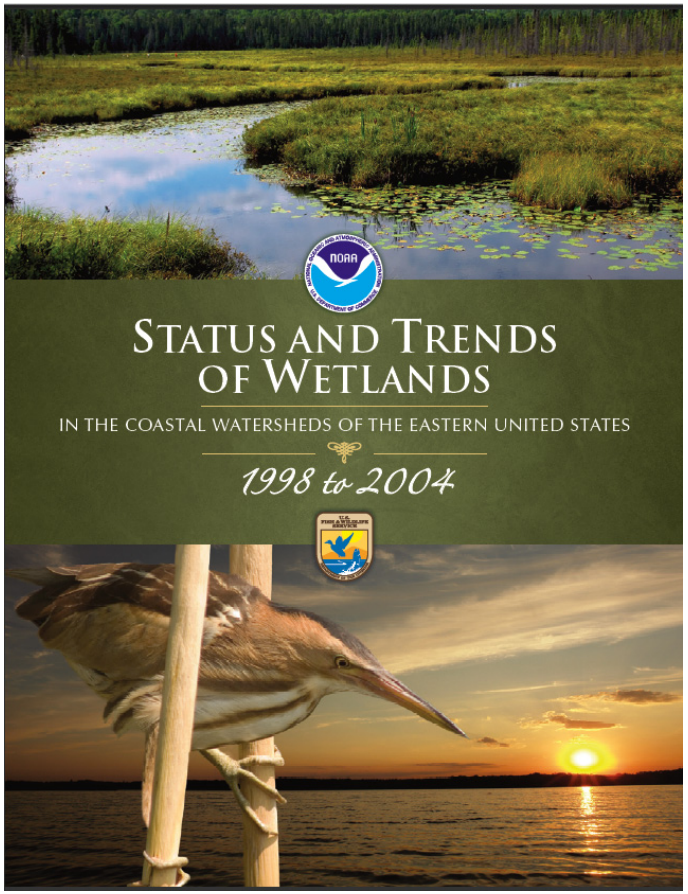
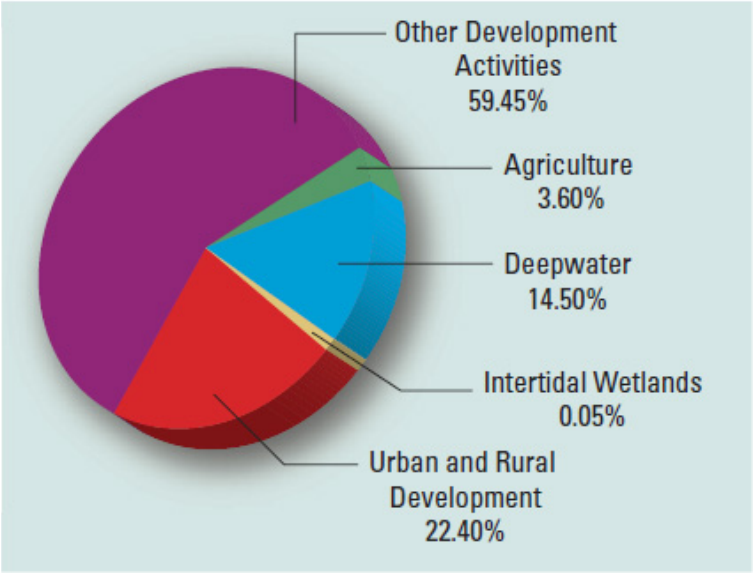
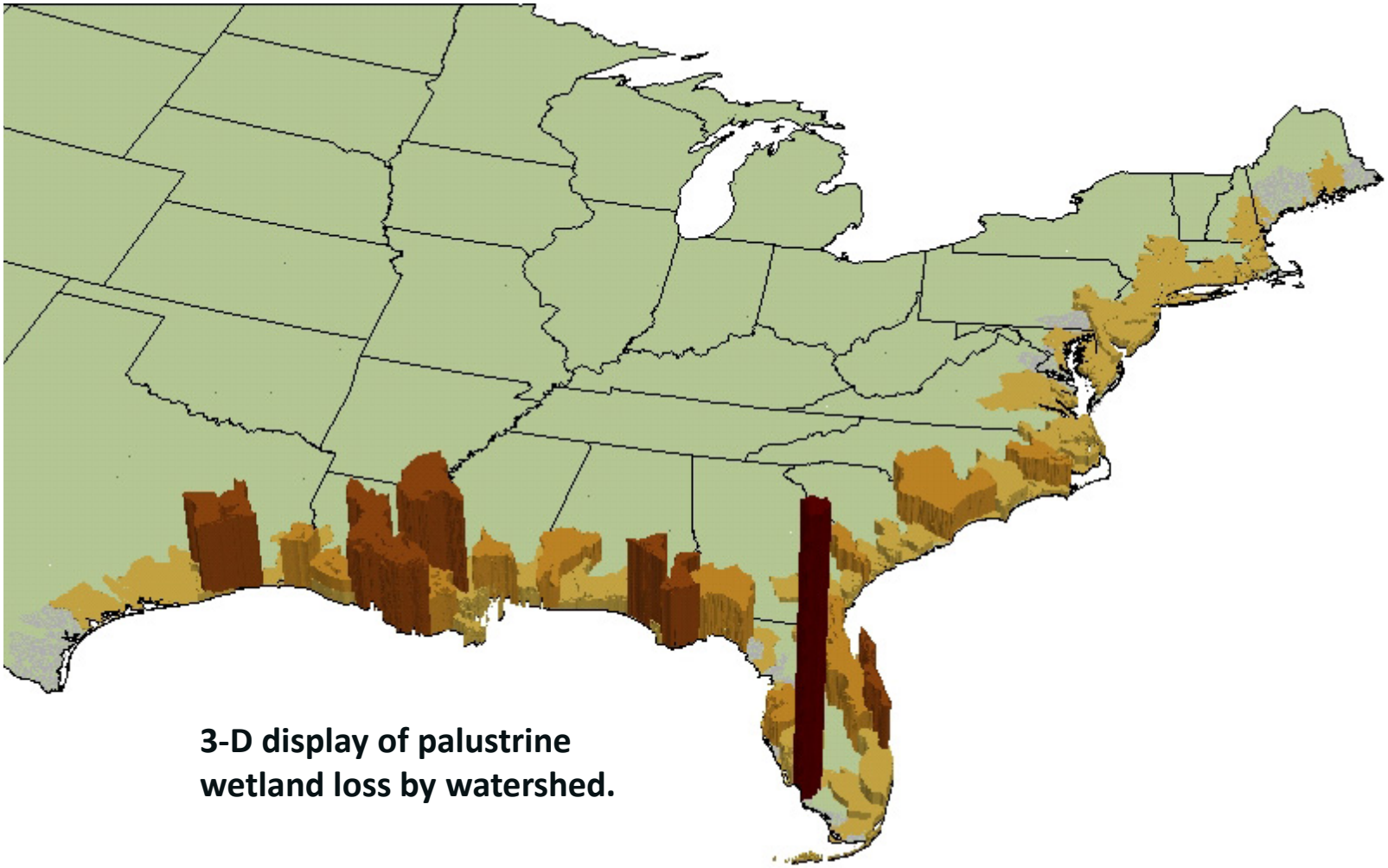


FIGURE 8. Attribution of Loss or Conversion of Freshwater Wetlands in the Coastal Watersheds of the Atlantic, Gulf of Mexico and Great Lakes, 1998 to 2004



Analysis and Reports: Coastal Wetland Loss Intra-Regional Analysis



3-D display of palustrine wetland loss by watershed.

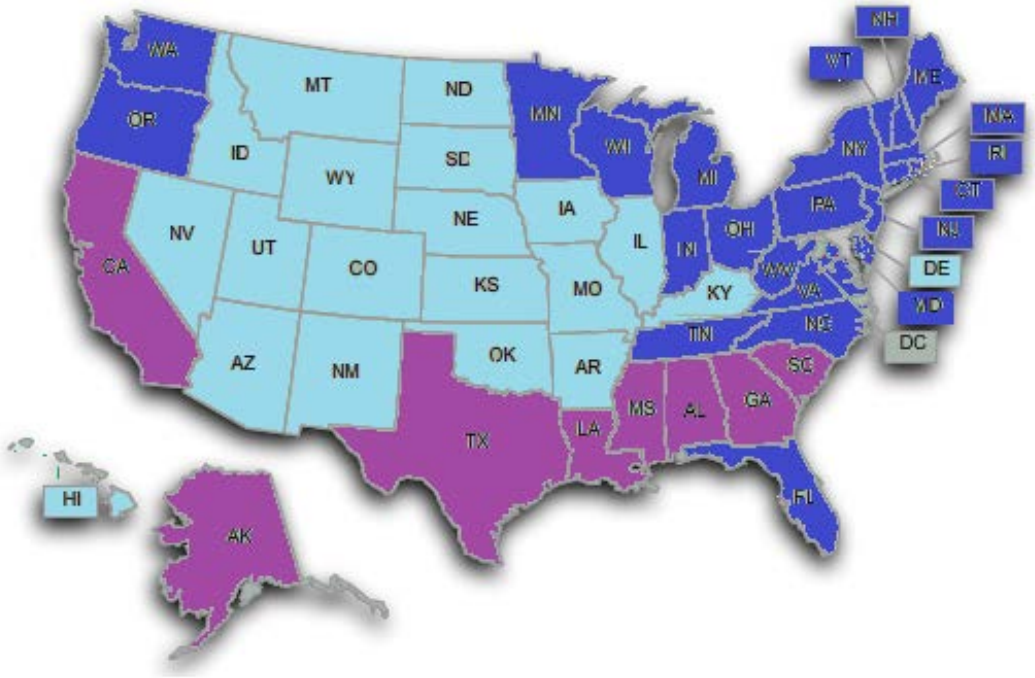
Association of State Wetland Managers' **National Status and Trends Project**

- Fifty Online State Summaries (~700+ pages)
- National Status & Trends Report
- Comparative national maps
- Include links and references to hundreds of examples, models and templates

Jeanne Christie Photo

Project Results:
State Regulatory Role

Core Element 1: Wetland Regulation



State Regulatory Authority

1) Assumption of 404
2) State Dredge and Fill Program
3) 401 Certification Program with additional regulations
4) 401 Certification Only

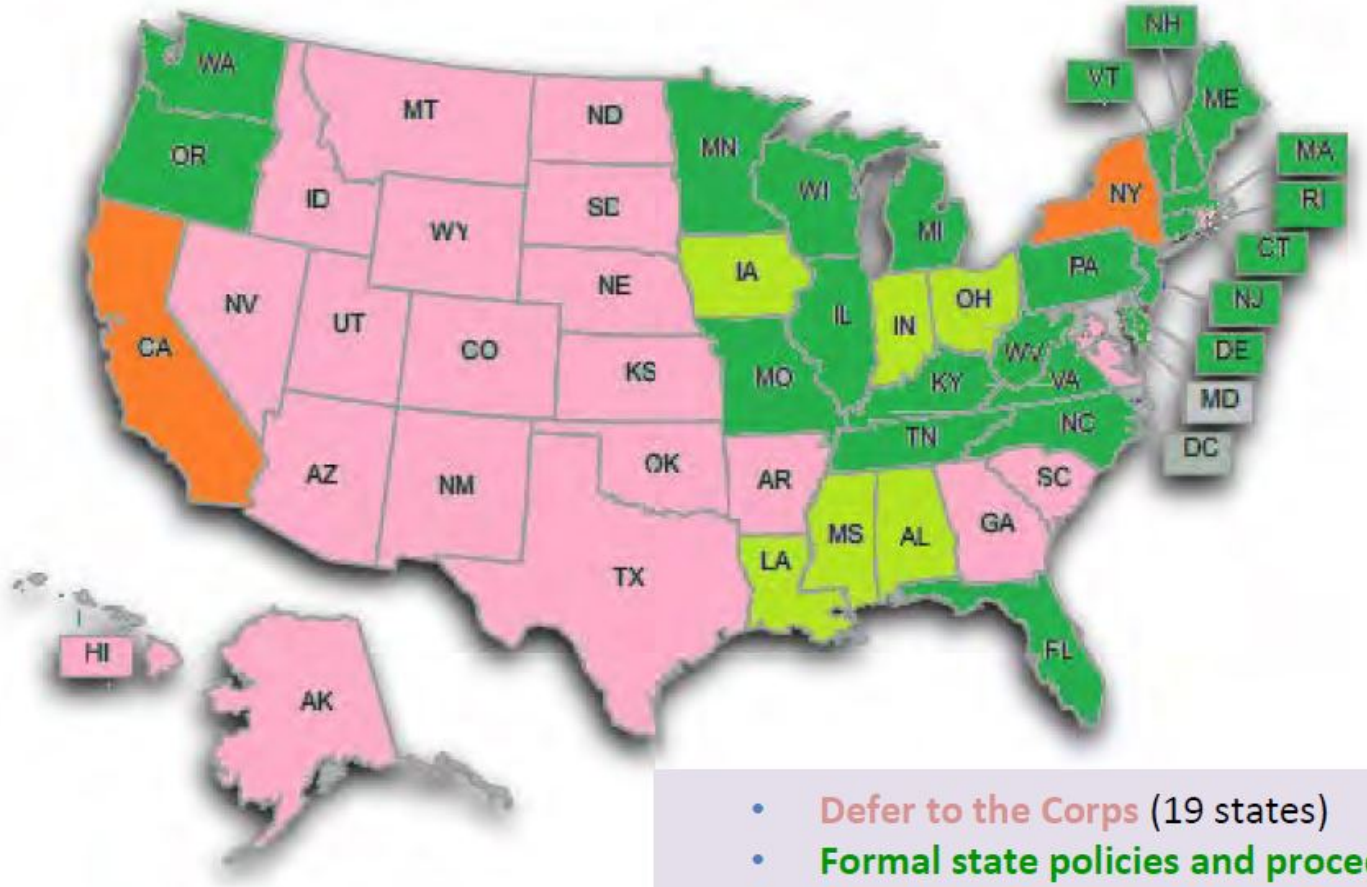
401 Cert + Programs examples:

- Non CWA waters
- Isolated
- Tidal/Coastal
- Admin orders

State Dredge and Fill Permitting Program (22 states)
Rely on 401 Certification Program + Other (8 states)
Rely Solely on 401 Certification (20 states)

Important Note: Did not ask which components states are actively doing (e.g. own enforcement) or evaluate the quality of these efforts

Administration of Wetland Mitigation by States

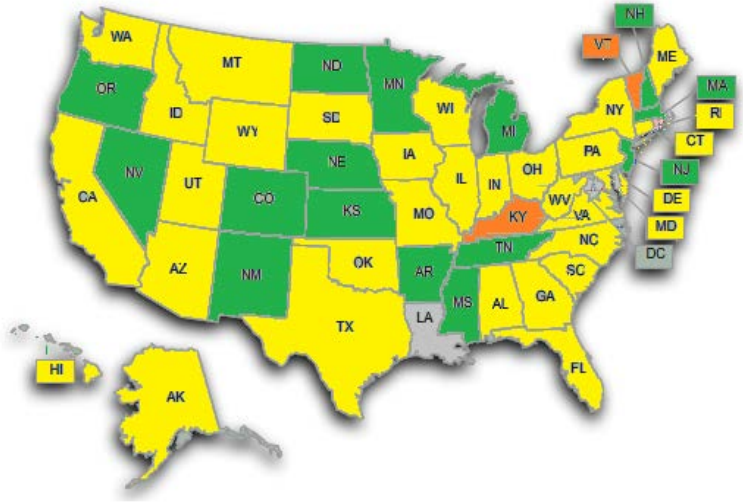


- Defer to the Corps (19 states)
- Formal state policies and procedures (23 states)
- Developing formal state policies/procedures (2 state)
- Corps primary, with policies for additional (6 states)

Project Results:
Voluntary Wetland Restoratio

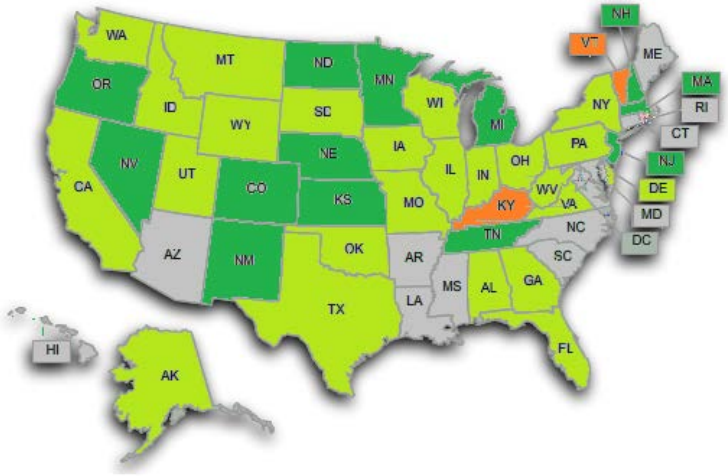
Core Element 4:
Voluntary Wetland Restoration

Formal State Voluntary Wetland Program



- **Have a state-led VWR program** (15 states)
- **Developing a state-led VWR program** (2 states)
- No state **state-led VWRprogram** (32 states)
- **Unknown/no data available** (1 state)

No Single Formal State-Run Program ≠ No Voluntary Restoration Work



- **Formal state-run program** (13 states)
- **Decentralized state activities** (24 states)
- **Developing a program** (2 states)
- No state involvement in restoration work (2 states)

Whether or not a state has a state-run voluntary restoration program is not a good indicator of whether or not voluntary wetland restoration is happening (or its quality) in the state

State Monitoring & Assessment Programs

- **Ongoing formal M&A Program** (14 states)
- **Program under development** (9 states)
- **Project-specific M&A only** (10 States)
- **May or May not be Part of non-wetland monitoring program only** (10 states)
- **No wetland monitoring** (6 states)
- **Unknown/No data available** (1 state)

Anecdotal Data about Challenges:

Staffing and Resources

Wetland Regulation FTE

M&A FTE

Wetland WQS FTE

Voluntary Wetland Restoration FTE

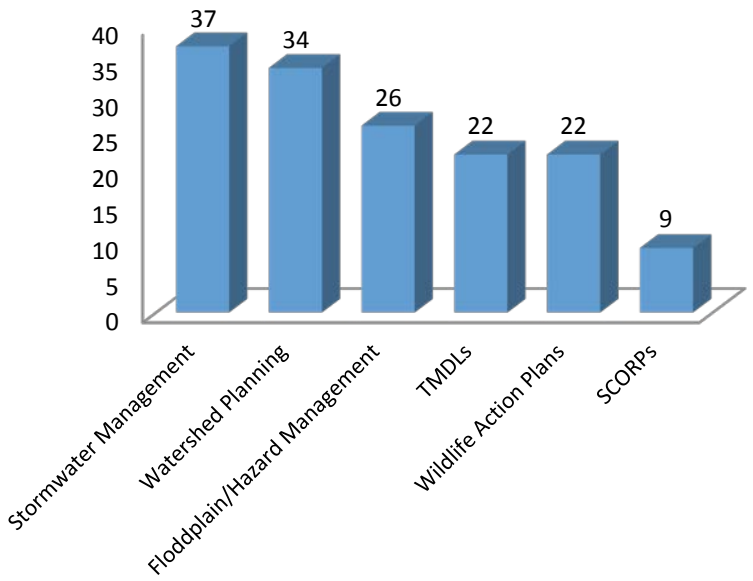
Key challenges:

- Economic downturn/budget cuts
- Political barriers/recent elections
- Retirements and job changes
- Restructuring
- Junior staffing
- Need for training

No Staff, <1 FTE, 1-4 FTE, 5-9 FTE, 10-19 FTE, 20+ FTE (up to 300)

Integration between Wetland Programs and Other State Programs

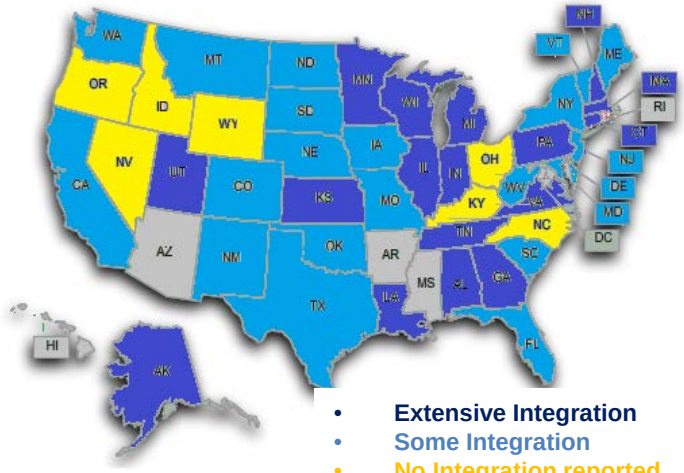
Specific Integration Areas



Area for future research

Example: Integration with State Stormwater Management

37 states



- **Extensive Integration**
- **Some Integration**
- **No Integration reported**

Examples:

- Shared permitting
- Joint project review
- Project-based comment letters
- Shared staffing/ management chains
- Integration of wetlands into SW BMP manuals
- Physical site Inspections
- Determining buffer, etc.
- Consideration when permitting projects
- Included in SW post-construction requirements
- Connections through restoration activities
- Quarterly joint staff meetings→ Informal water cooler chats

For more information and to download the Status & Trends Report on State Wetland Programs go here: http://www.aswm.org/wetland-programs/state-wetland-programs

Status and Trends Report on State Wetland Programs in the United States

Association of State Wetland Managers

2015

Association of State Wetland Managers - Protecting the Nation's Wetlands.

ASWM Upcoming Webinars

- ASWM Hydric Soil Training Webinar #2: Hydric Soil Processes - 8/10/16
- NFFA Webinar: Funding for Floodplain Restoration 9/1/16

For a complete list of our upcoming webinars, click here.

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FTS Contract GS10F0065V

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- EPA Core Elements Framework
- -Wetland Program Plans
- -Monitoring and Assessment
- -Regulation
- --401 Certification
- --State Programmatic General Permits
- --404 Assumption
- --Dredge & Fill
- --Mitigation
- -Water Quality Standards
- -Voluntary Restoration & Protection
- State Wetland Programs
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State Wetland Programs

State Program Summaries

The Association of State Wetland Managers (ASWM) conducted a study of state-level wetland work in all fifty states. ASWM's national study was designed to: 1) assess status and trends; 2) identify models and lessons learned; and 3) document information and program development needs. Information gathered for each state included a focus on status of work towards each of EPA's four Core Elements. Data collection was completed for a snapshot of the year 2014 and the report will be available in July 2015.

Jeanne Christie Photo

For each of the 50 states, ASWM documented the status of the state's:

- Wetland Regulations and Programs;
- Wetland Monitoring and assessment;
- Voluntary Wetland Restoration Programs and Activities;
- Wetland Water Quality Standards;
- Adaptation and/or Climate Change Activities Involving Wetlands;
- Areas of Integration with Other State Programs; and
- Unique Education and Outreach Models.

The final ASWM report, *Status and Trends Report on State Wetland Programs in the United States*, provides a comprehensive look at how states are approaching each of the four core elements for state wetland programs, including state summary documents, comparative data analysis and maps, descriptive text on status and trends and documentation of potential models.

Additionally, the report includes a set of recommendations for supporting states and links to additional information for states and tribes to use as a resource for developing their own state programs.

Additional resources about sustainable financing can be found here.

Please click on any state below for a direct link to any of *ASWM"s 50 State Wetland Program Summaries*.

If you have questions or comments about the State Summaries project or the Status and Trends Report, please contact ASWM Policy Analyst Brenda Zollitsch via email brenda@aswm.org or telephone (207) 892-3399.

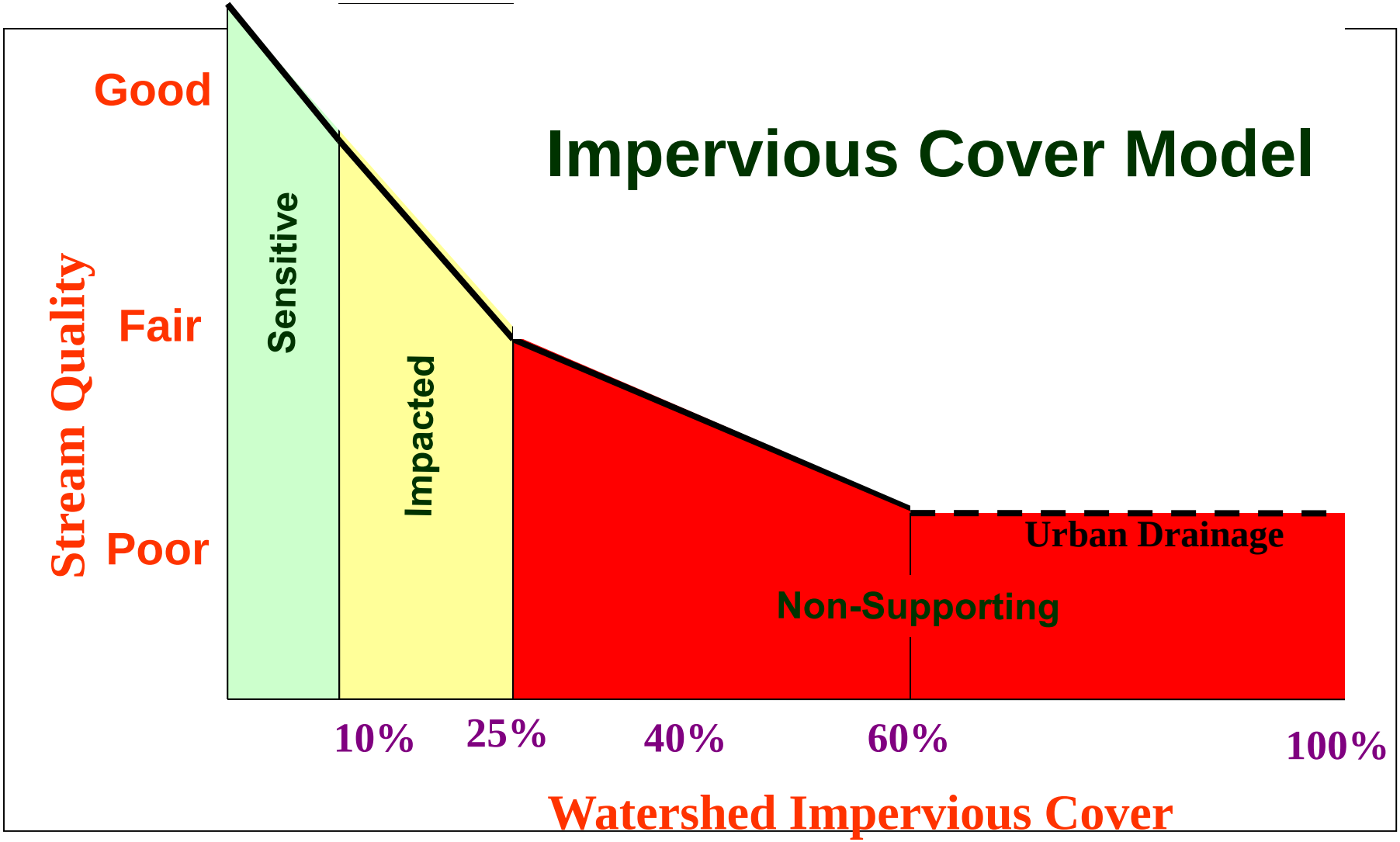
State Water/Wetland Policy

Local Government is the Third Level

Local Government- Water/Wetlands

- Local environmental regulatory programs (wetlands, shoreland zoning)
- Broader zoning—i.e., subdivision control, building code, special codes, erosion controls
- Water use, stormwater management, greenway development, sanitary codes
- Acquisition
- Public works projects
- Public land management

Where is the Water in your Community? Where is it Going?



Agriculture = 1.9%

2 Acre Residential = 10.6 %

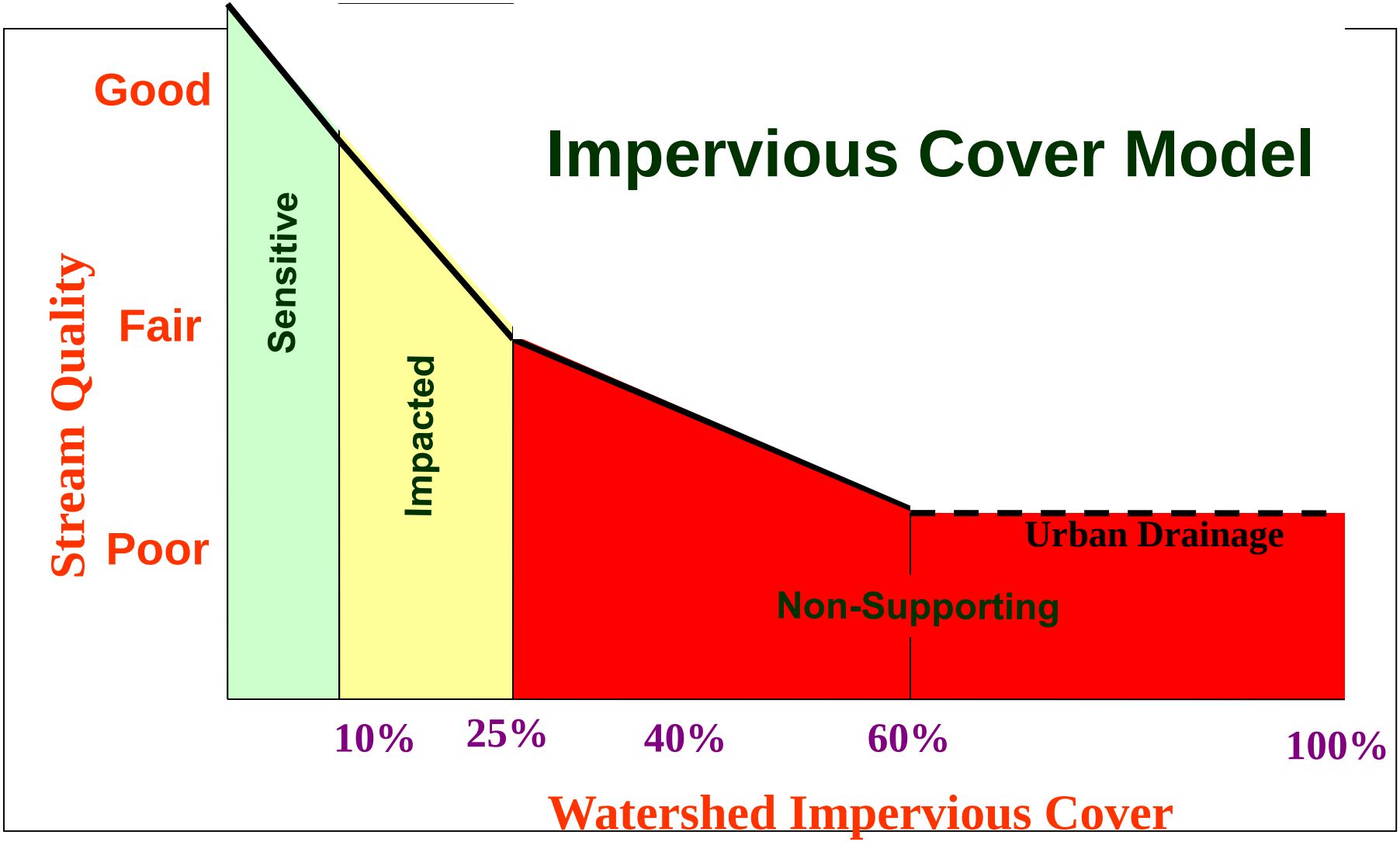
1 Acre Residential **= 14.3 %**

½ Acre Residential **= 21.2 %**

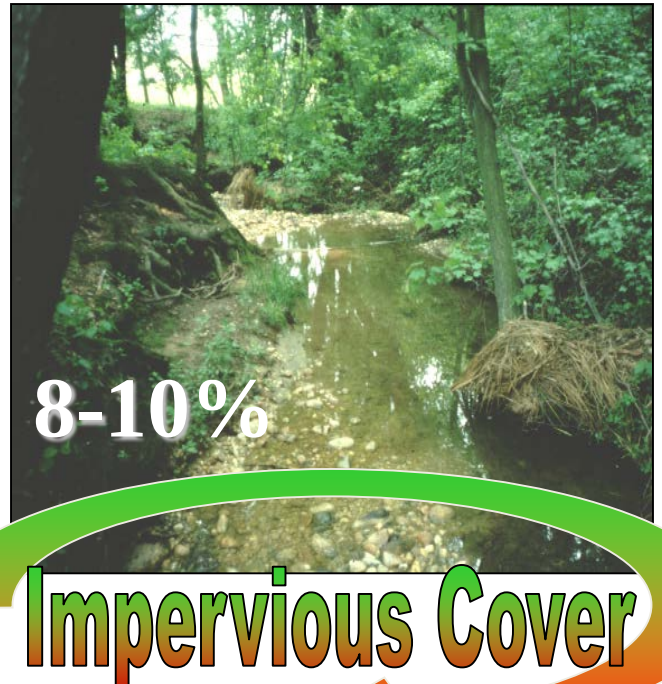
Light Industrial = 53.4 %

Commercial = 72.2 %

Where is the Water in your Community? Where is it Going?



IC and Stream Habitat



Impervious Cover

The 8 Tools of Watershed Protection

8. Watershed Stewardship

1. Watershed Planning

2. Land Conservation

7. Non-Stormwater Discharges

3. Aquatic Buffers

6. Stormwater Management

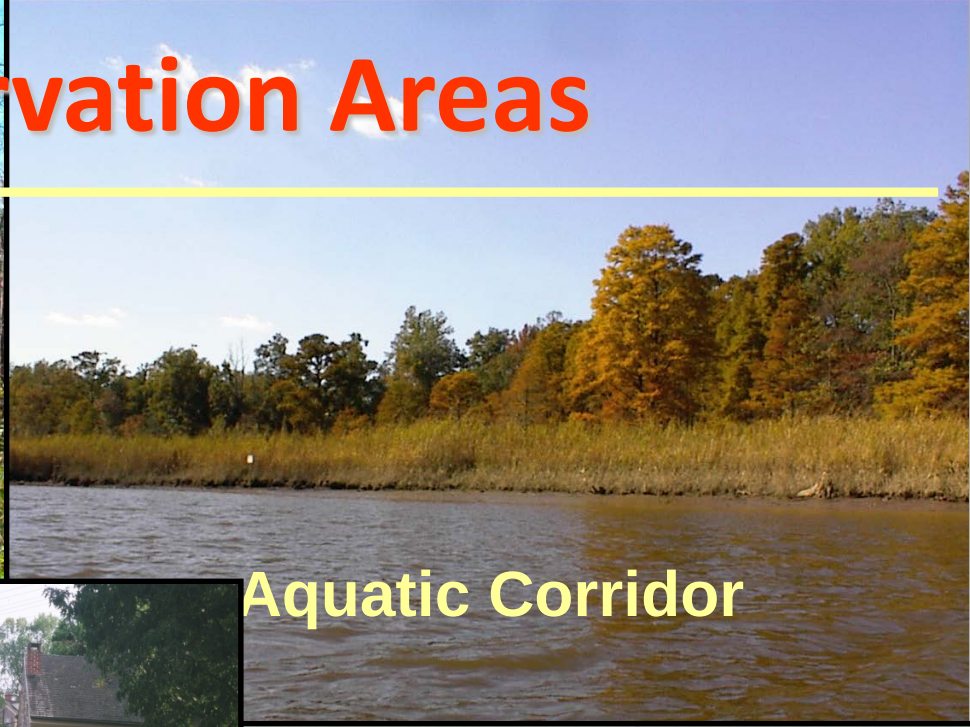
5. Erosion & Sediment Control

4. Better Site Design

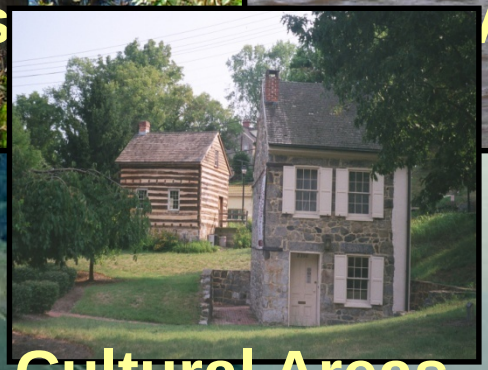
Center for Watershed Protection

5 Types of Conservation Areas

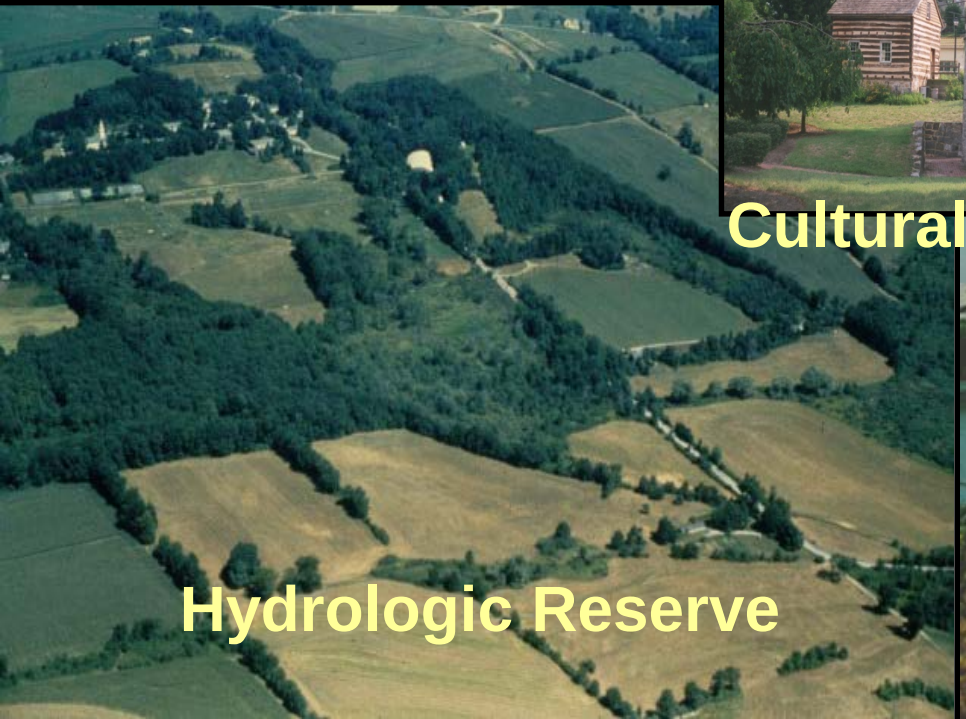
Critical Habitats



Aquatic Corridor



Cultural Areas



Hydrologic Reserve

Water Pollution Hazard

Think about how governments are organized

- *Federal*
- *State*
- *Local*

- *Executive Branch*
- *Legislative Branch*
- *JudicialBrantch*

- *Counties/Management Districts*
- *Towns/Municipalities*

Think about natural resources are organized

A Shared Comprehensive Approach

- Reassessment Needed of Federal/State/Local Roll
- Allocation of Responsibilities Based on Inherent Strengths of each Level of Government
- Integration of Sound Science into Wetland Programs (beginning with legislation)
- Continued Commitment to a Partnership Approach

Questions?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“The Role of Family and Community in Mentoring Alienated Youth in the American Midwest.”

One day, an at-risk youth from a blended family in the economically depressed farm belt is rendered unconscious during an extreme weather event.

When she awakens, she undertakes a long, hazardous journey to a distant, mineral-based metropolitan center. Along the way, she is accompanied by three variously challenged and apparently homeless adults while also being pursued by a malevolent person of color – in this case, green.

Just before she reaches her destination, she briefly struggles with opium addiction, but fortunately that problem is cured by snow.