

Estuary and Coastal Restoration Law and Concepts of Ecosystem Services

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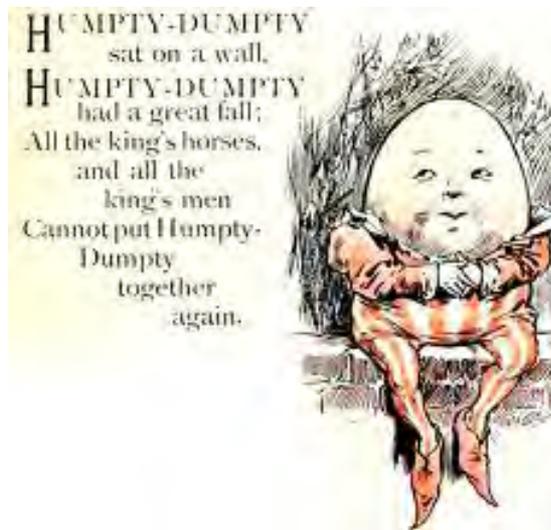
- “Conserve the golden eggs carefully. Preserve the goose or there will no more golden eggs. And if you’ve already damaged the goose, get going on restoration.”- David Brower



One day, the wife told her husband, "Honey, those eggs are a blessing. Although we will eventually be very rich, it is a quite slow way to make a fortune."

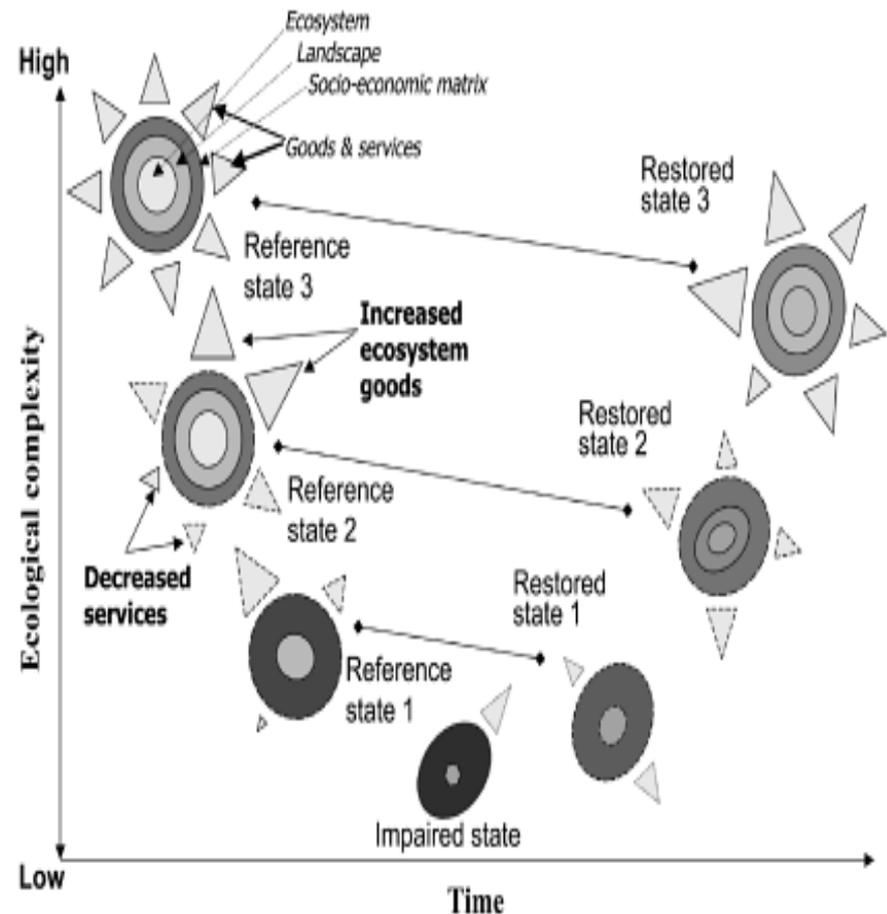
What is Ecological Restoration?

- ◆ “Crisis discipline”
- ◆ Society for ecological restoration “process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.”



Narrowing the Restoration Definition

Active or passive efforts to revive ecological structures and functions (processes) within an ecosystem that will move a given ecosystem onto a self-sustaining historical trajectory capable of reviving landscapes/seascapes (ecoscapes) and adapting to climate change/shifting baselines.



U.S. Laws on coastal/estuary restoration- 1) Clean Water Act

- ◆ Clean Water Act- 33 USC 1251 The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

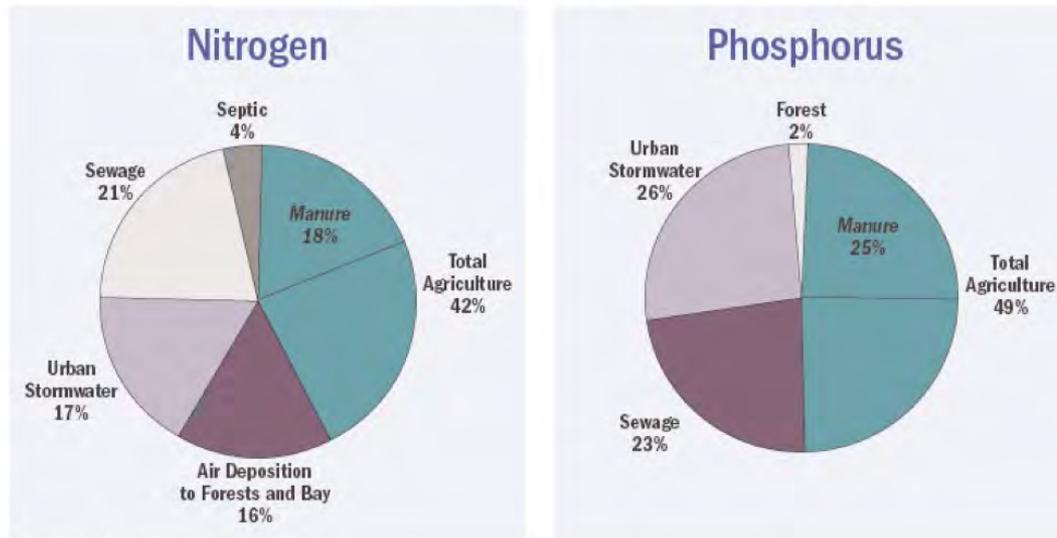
McHUMOR.com by T. McCracken



1) Clean Water Act- Chesapeake Bay Agreement

Clean Water Act- Sec. 117 (33 USC 1267) - Chesapeake Bay Agreement

Sources of Nitrogen and Phosphorus Pollution Reaching the Chesapeake Bay



Source: EPA Chesapeake Bay Program

2) Estuary Restoration Act

- 33 USC 2901- Estuary Restoration

- §2901. Purposes**

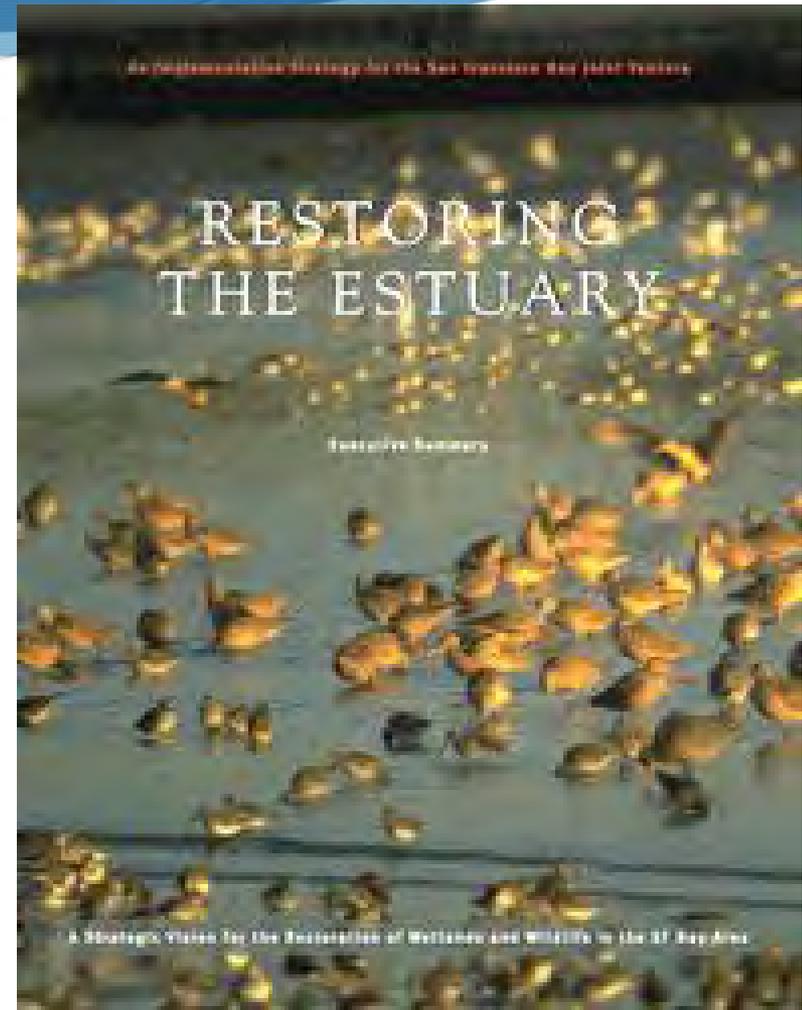
- The purposes of this chapter are-

- (1) **to promote the restoration of estuary habitat by implementing a coordinated Federal approach to estuary habitat restoration activities, including the use of common monitoring standards and a common system for tracking restoration acreage;**

- (2) **to develop and implement a national estuary habitat restoration strategy for creating and maintaining effective estuary habitat restoration partnerships among public agencies at all levels of government and to establish new partnerships between the public and private sectors;**

2) Estuary Restoration Act

- 33 USC 2902(4) (A)-The term "estuary habitat restoration activity" means an activity that results in improving degraded estuaries or estuary habitat or creating estuary habitat (including both physical and functional restoration), with the goal of attaining a self-sustaining system integrated into the surrounding landscape.



2) Estuary Restoration Act

- 33 USC 2902(4)(B)

- The term "estuary habitat restoration activity" includes—

- (i) the reestablishment of chemical, physical, hydrologic, and biological features and components associated with an estuary

- (ii) cleanup of pollution for the benefit of estuary habitat (unless characterized as mitigation or restoration for purpose of natural resource damage)

- (iii) control of nonnative and invasive species in the estuary;

- (iv) reintroduction of species native to the estuary, including through such means as planting or promoting natural succession

- (v) construction of reefs to promote fish and shellfish production and to provide estuary habitat for living resources

- (vi) other activities that improve estuary habitat.

3) Coastal Zone Management Act

- ◆ Coastal Zone Management Act 16 USC 1452- The Congress finds and declares that it is the national policy—
 - ◆ (1) to preserve, protect, develop, and **where possible, to restore** or enhance, the resources of the Nation's coastal zone for this and succeeding generations;...
 - ◆ (2) to encourage and assist states [with] (C) the management of coastal development to improve, safeguard, **and restore the quality of coastal waters**
- ◆ State Management Plan must include ways “to restore [shoreline] areas adversely affected by [shoreline] erosion”

4) Coastal Wetland Planning, Protection, and Restoration Act

- 16 USC 3951 (6) "coastal wetlands restoration project" means any technically feasible activity to create, restore, protect, or enhance coastal wetlands through sediment and freshwater diversion, water management, or other measures that the Task Force finds will significantly contribute to the long-term restoration or protection of the physical, chemical and biological integrity of coastal wetlands in the State of Louisiana,the primary purpose of a "coastal wetlands restoration project" shall not be to provide navigation, irrigation or flood control benefits;



Restoration and Law- Coastal Wetland Planning, Protection, and Restoration Act

- ◆ 16 USC 3951 (7) "coastal wetlands conservation project" means- (B) the restoration...of coastal wetlands ecosystems if such restoration ...is conducted on coastal lands and waters that are administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon



Restoration and Law- Coastal Wetland Planning, Protection, and Restoration Act

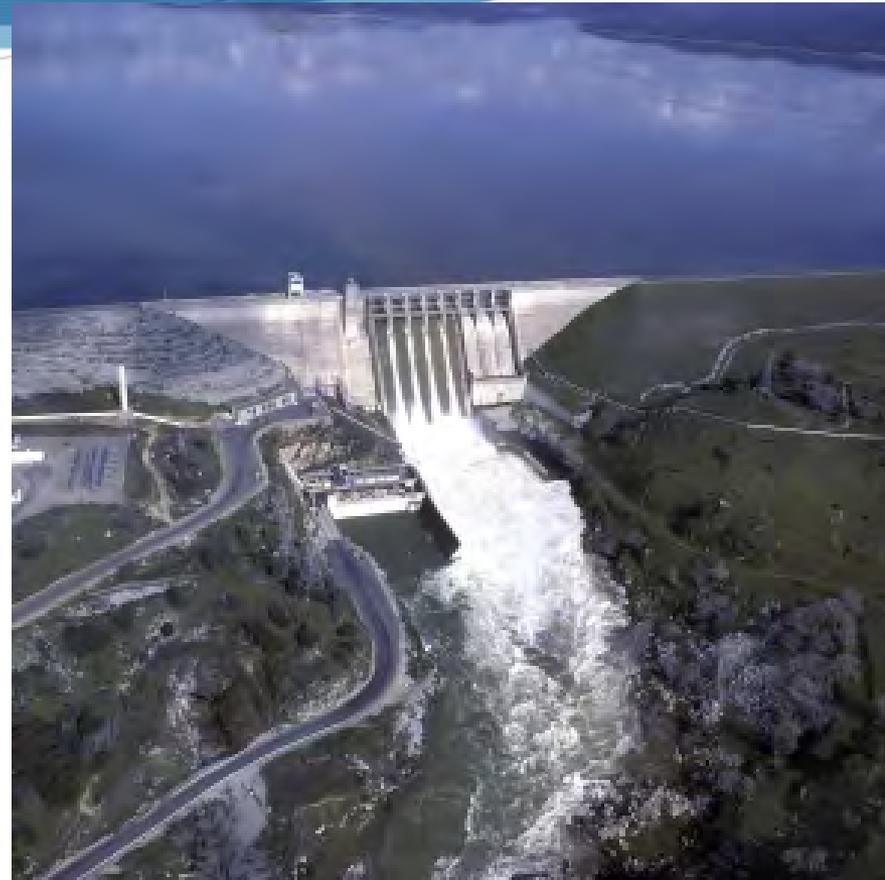
- ◆ §3952. Priority Louisiana coastal wetlands restoration projects- designed to be a “comprehensive approach to restore and prevent the loss of, coastal wetlands in Louisiana.”
 - ◆ Does not appear to cover “coastal wetlands conservation projects”
- ◆ What difference do the definitions (coastal wetland restoration vs. coastal wetland conservation) make?
 - ◆ 70% of the money is to carry out coastal wetlands restoration projects Louisiana in accordance with the priorities set forth
 - ◆ 15% are for wetland conservation projects in Louisiana
 - ◆ 15% are for wetland conservation projects in other coastal States

5) Water Resources Development Act

- ◆ 33 USC 2309a

- ◆ 1) In general

- ◆ If the Secretary determines that construction of a water resources project by the Secretary or operation of a water resources project constructed by the Secretary has contributed to the degradation of the quality of the environment, the Secretary **may undertake measures for restoration of environmental quality...**



5) Water Resources Development Act

- ◆ 33 U.S.C. 2317 Wetland Restoration and Enhancement Demonstration Program
 - ◆ “no overall net loss of the Nation's remaining wetlands base, as defined by acreage and function, and a long-term goal to increase the quality and quantity of the Nation's wetlands, as defined by acreage and function”
- ◆ 33 U.S.C. **§2330. Aquatic ecosystem restoration**
- ◆ (1) In general The Secretary may carry out a project to restore and protect an aquatic ecosystem or estuary if the Secretary determines that the project- (A)(i) will improve the quality of the environment and is in the public interest; or (ii) will improve the elements and features of an estuary (as defined in section 2902 of this title); and (B) is cost-effective.

6) Restoration and Law- Florida Everglades

- ◆ Everglades National Park Protection and Expansion Act
 - ◆ (16 USC 410r-5) Purpose- “to enhance and restore the ecological values, natural hydrologic conditions, and public enjoyment” of the area
 - ◆ (16 USC 410r-8) All funds made available pursuant to this subsection [modification of water projects] shall be transferred to the State of Florida or a political subdivision of the State, subject to an agreement that any lands acquired with such funds will be managed in perpetuity for the restoration of natural flows to the park or Florida Bay

7) Restoration and Military Installations

- ◆ 16 USC 670a Integrated natural resources management plan- Should address “wetland protection, enhancement, and restoration, where necessary for support of fish, wildlife, or plants”

8) Executive Orders

- ◆ Fishery Management- **Ex. Ord. No. 12962. Recreational Fisheries**
- ◆ **Federal Agency duties-** (b) identifying recreational fishing opportunities that are limited by water quality and habitat degradation and promoting restoration to support viable, healthy, and, where feasible, self-sustaining recreational fisheries;
- ◆ (c) fostering sound aquatic conservation and restoration endeavors to benefit recreational fisheries;

Law and Practice

- ◆ No single piece of legislation providing a holistic overview of restoration activities for coastal restoration
 - ◆ Ad Hoc approach
- ◆ No specific definition of restoration in the acts on coastal/estuary restoration
 - ◆ Left to the discretion of various agencies suggesting a potential range in quality on restoration projects
 - ◆ Law may provide examples of programs that will constitute restoration projects (Estuary Restoration Law and Chesapeake)
- ◆ Challenging to implement restoration laws with a lack of coordination

Executive Best Practice?



- ◆ In implementing these acts, Agency direction has been to focus on “ecosystem services” through the lens of valuation –
- ◆ Report to the President: Sustaining Environmental Capital: Protecting Society and the Economy (July 2011)

Restoration and Ecosystem Services

- ◆ Ecosystem services- “Direct and indirect contributions of ecosystems to human well-being”
 - ◆ Nothing indicating that this must be done quantitatively though agencies have begun to incorporate valuations and proposing “ecosystem service” markets
 - ◆ Push for environmental markets in Chesapeake Bay
- ◆ From a legal perspective and an ecological perspective, it may be essential to challenge the idea of relying on quantitative valuation as an appropriate means of incorporating the concept of ecosystem services

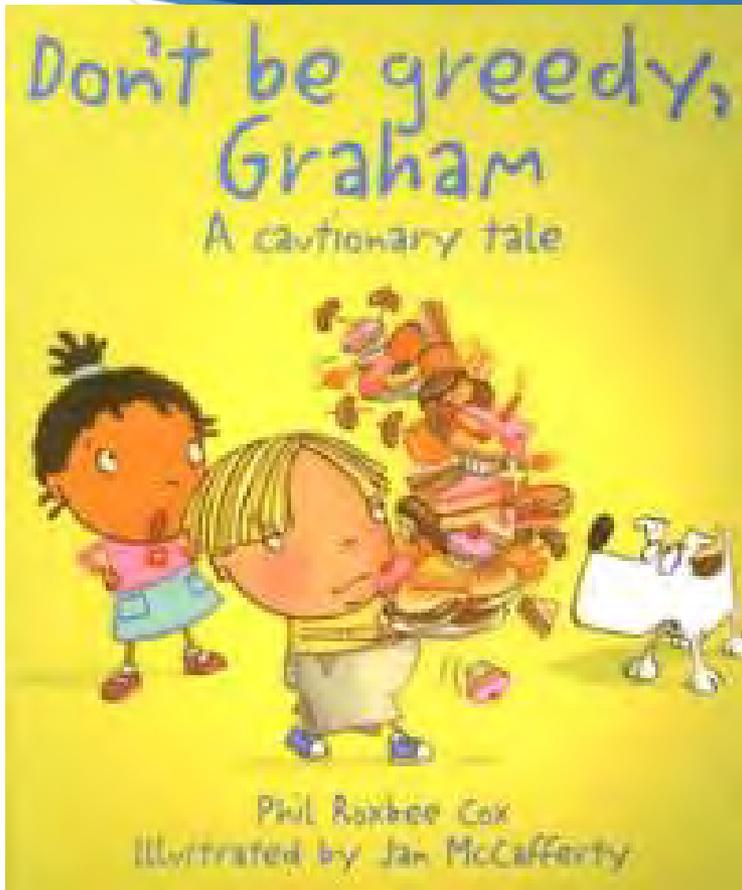


Ecosystem Valuation

- William Bruce Cameron “not everything that can be counted counts, and not everything that counts can be counted.”



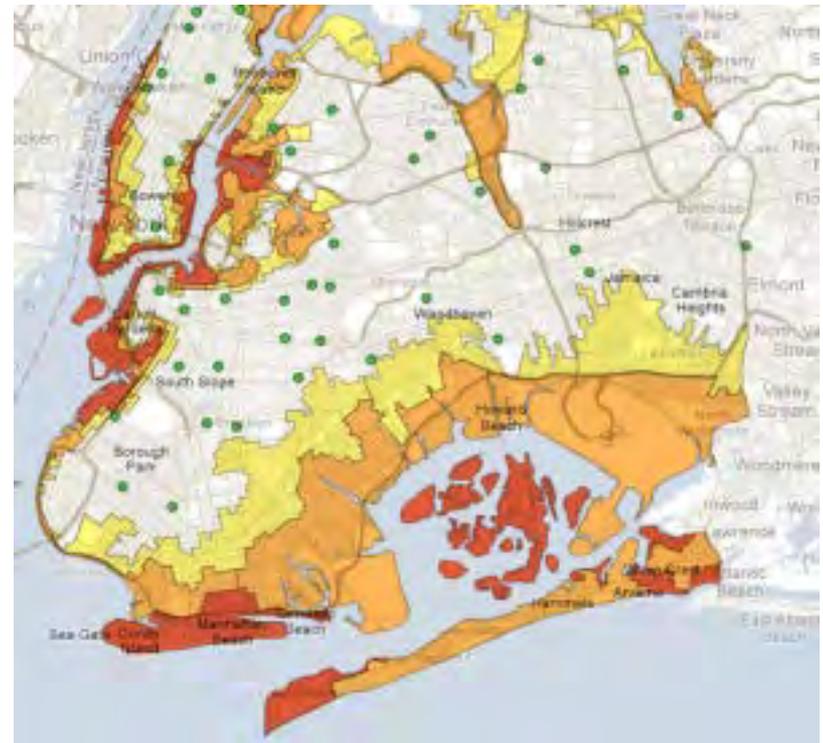
Cautionary tale



- ◆ Problem with seeking valuation as part of restoration effort is that we end up commoditizing certain aspects of ecosystems that may or may not be the key aspects of the ecosystems
 - ◆ A functional “trade off analysis” may be simple in concept but not reflect complexities of science
 - ◆ Danger of Market Reductionism is that market fads take over

Ecosystem Service Districts

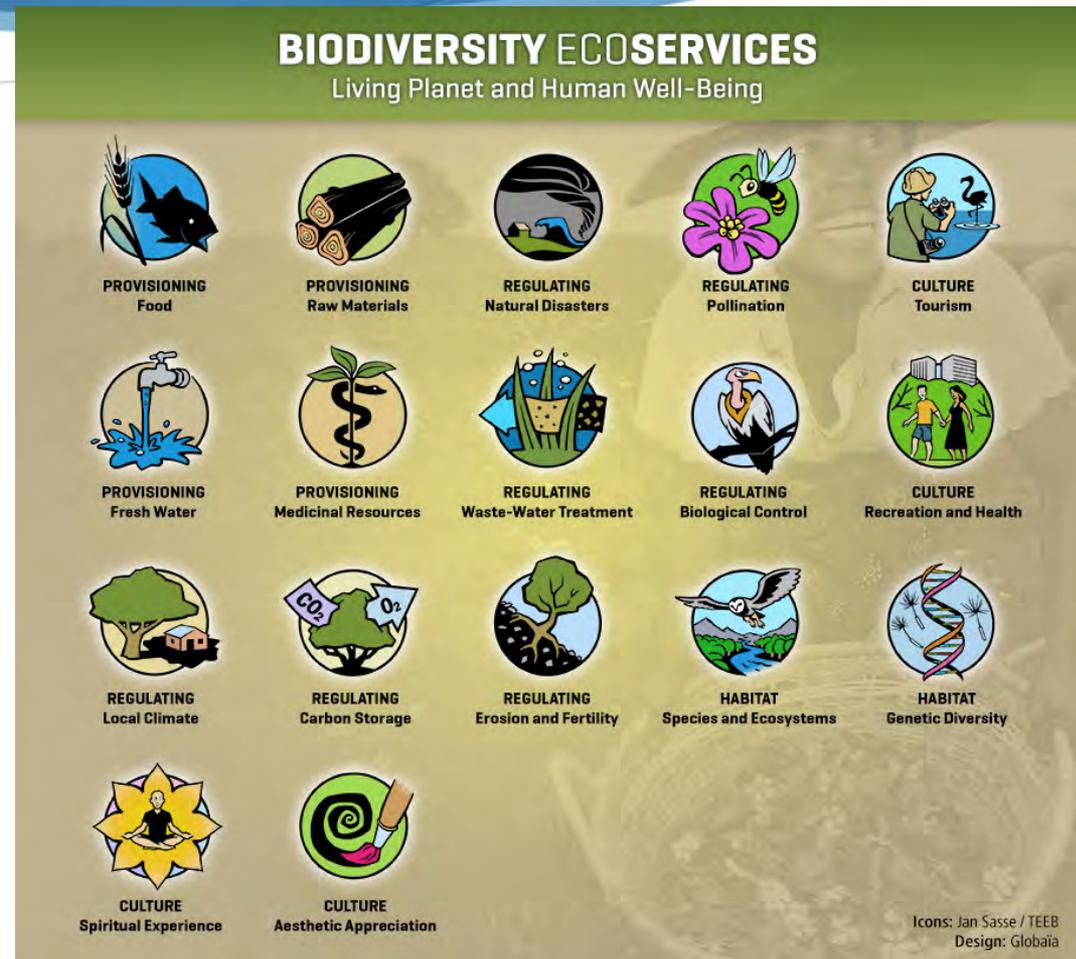
- Existing Idea for Ecosystem Service Districts- (Heal et al. Protecting Natural Capital through Ecosystem Service Districts” (2001) Designate local areas to protect and maintain “natural capital”
 - Focus efforts on water purification and flood control



Suggestion One: Re-map based on Ecosystem Service but do not prioritize ecosystem services

Change the rhetoric-

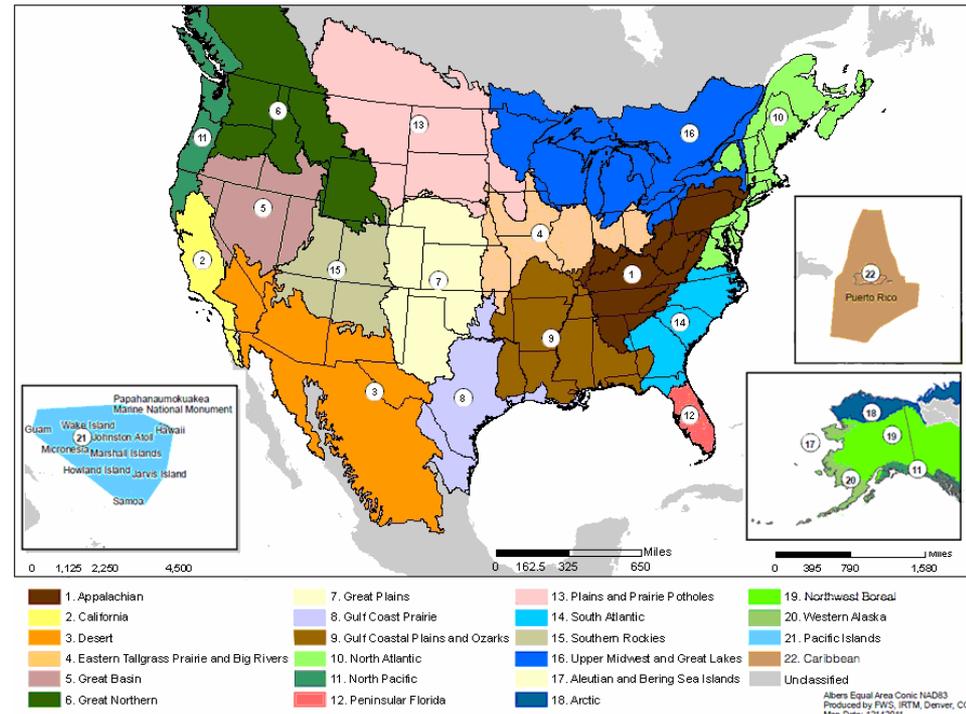
- Acknowledge all areas deliver ecosystem services
- Re-map the land/coast based on patterns of ecosystem services- existing fisheries/ existing water purification/ existing storm surge protection
- Avoid arbitrary public/private property divides
- Apply jurisdictional authority based on boundaries of ecosystem services rather than political boundaries



Suggestion Two: Landscape Restoration Partnerships

Extend Landscape Cooperative Conservation Partnerships specifically to active restoration work

Under Secretarial Order No. 3289, the Department of the Interior launched the Landscape Conservation Cooperatives which are public-private partnerships designed to address climate change and other landscape scale issues



Albers Equal Area Conic NAD83
Produced by FWS, IRM, Denver, CO
Map Date: 12/4/2011

Take Away

