



# Ecosystem Restoration Business Line Budgeting – A Systems Approach



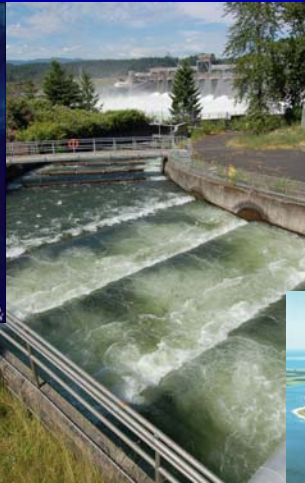
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## Introduction



Mouth of Mississippi  
River



Bonneville Dam Fish  
Ladder



Chesapeake Bay Bridge



## Purpose



- To propose a **Nationwide** methodology for **distribution** of Ecosystem Restoration funding which better addresses **competing needs**



## Corps Policy Objective for Ecosystem Restoration



- ER 1105-2-100 states:
  - “The objective of ecosystem restoration is to restore degraded ecosystem **structure, function,** and **dynamic processes** to a less degraded, more natural condition.”



## Current Approach for Ecosystem Restoration Project Budgeting



- Scoring is part of the “Budgetary Performance criteria”:
  - Habitat Scarcity
  - Connectivity
  - Special Status Species
  - Hydrologic Character
  - Geomorphic Condition
  - Plan Recognition
  - Self-Sustaining



## Prioritization Conflict: *Connectivity*



**Scale**

**VS.**

**Scale**



**Elizabeth River, VA**



**White River, AR**



## Prioritization Conflict: *Special Status Species*



**Species**

**VS.**

**Species**



**Salmon**

**Pallid Sturgeon**



## Prioritization Conflict: *Geomorphic Condition*



**Stream**

**VS.**

**Stream**



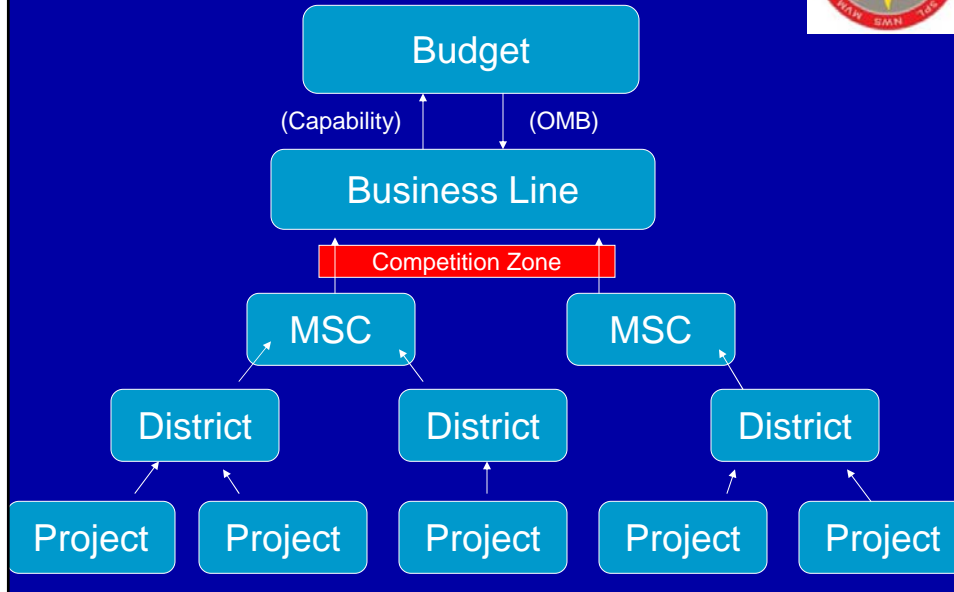
**Willow Creek,  
Nebraska**



**Kenai River, Alaska**



## Current Budget Decision Flow



## A Different Focus



**Habitat**



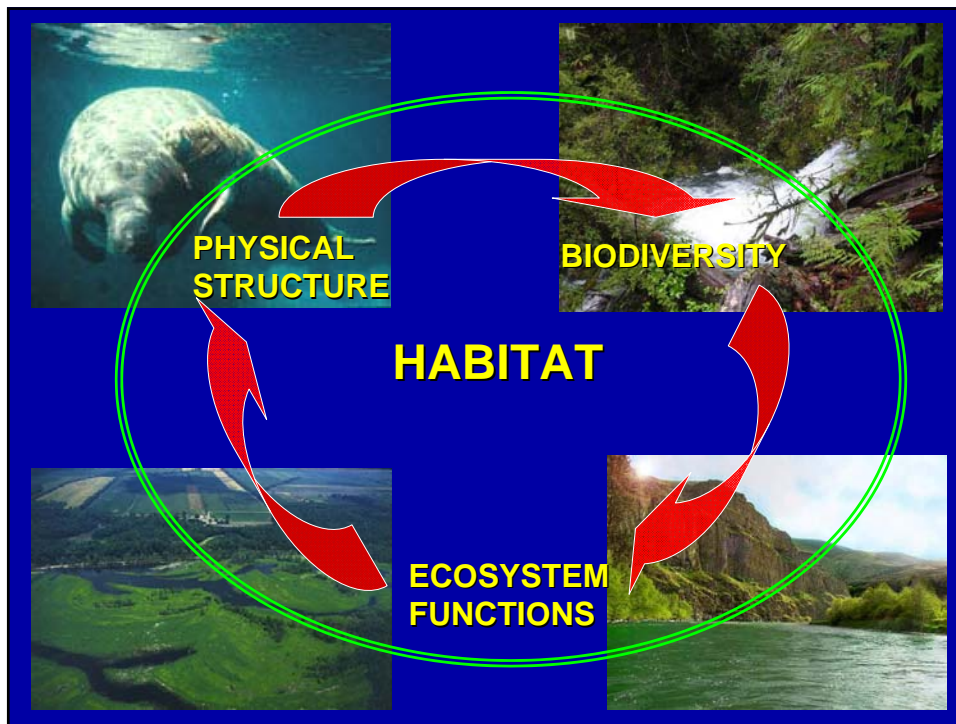
**Tidal Marsh**


**VS.**

**Habitat**




**Freshwater Lake**











## What is Biodiversity?



**Biodiversity** is the number and variety of organisms found within a specified geographic region.

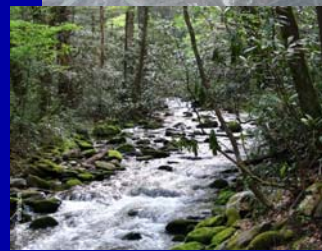
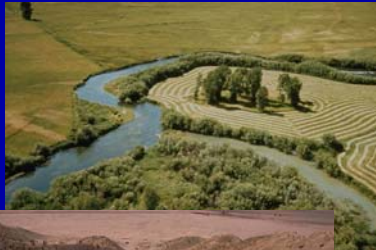









## What is Physical Structure?



**Physical Structure** is the hydrology and geology of a given habitat.



## What are Ecosystem Functions?



**Ecosystem Functions** are the physical, chemical and biological processes or attributes that contribute to the self-maintenance of the ecosystem





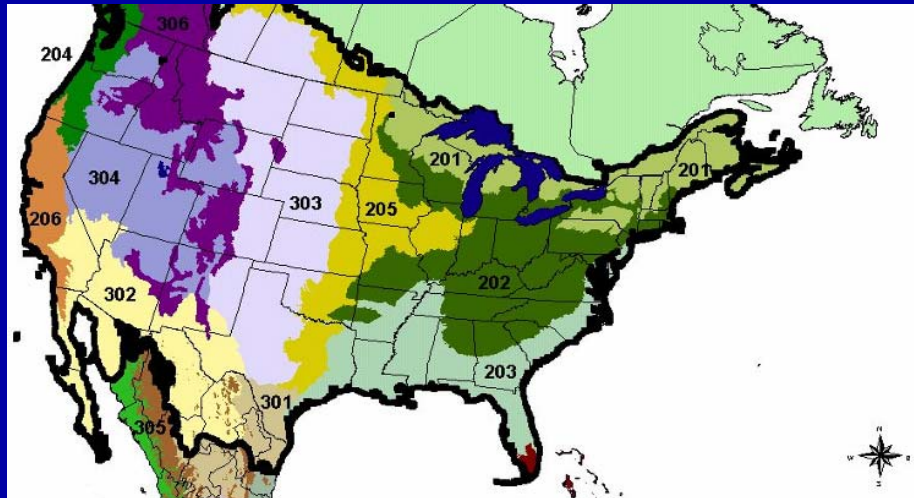
## The 4.8 Billion Dollar Question



How can you use a **habitat perspective** to do nationwide **budgeting** using a **systems approach**?



## Ecological Divisions



\* NatureServe prepared the International Terrestrial Ecological Systems Classification under grant from The Nature Conservancy, 2003





## Ecological Divisions



- An Example:

Ecological Division: **Gulf and Atlantic Coastal Plain**

Percent Habitat Lost: ??

Percent Recoverable: ??



## Ecological Divisions



- An Example:

Ecological Division: **North American Pacific Maritime**

Percent Habitat Lost: ??

Percent Recoverable: ??



## What Data is Out There?



- FWS: Bird & Wildlife Habitat Loss
- USGS: Ecosystem Vulnerability to Adverse Changes
- NOAA/NMFS: Coastal & Marine Habitat Loss & Degradation
- NGO'S: Wetland Sustainability Research, Productive Ecosystem Assessments, Habitat Loss



## Bringing It Together



- Scientific information exists on these Ecological Divisions that can help decision makers prioritize by these Divisions
- Corps cannot make prioritizations alone, but should participate on an Inter-Agency Prioritization Committee (IPC)
- IPC would establish Federal funding priorities by Ecological Divisions



## Bringing It Together



- Capabilities/tools such as:
  - Multi-Scale Assessment of Watershed Integrity (MAWI) model (Corps)
  - Ecosystem Management Decision Support (EMDS) System (US Forest Service)

can be used to combine data for IPC decisions



## Inter-Agency Prioritization Committee



- Comprised of Scientists, Subject Matter and Policy Experts from across the board, such as:
  - OMB
  - USACE
  - NOAA/NMFS
  - USEPA
  - NGO's
  - State Resource Agencies
  - Academia
  - ASA(CW)
  - USFS
  - USGS
  - NRCS
  - USFWS





## A Nationwide Systems Approach



- Shift budgeting focus to Ecological Divisions
- Establish IPC to prioritize funding between Ecological Divisions

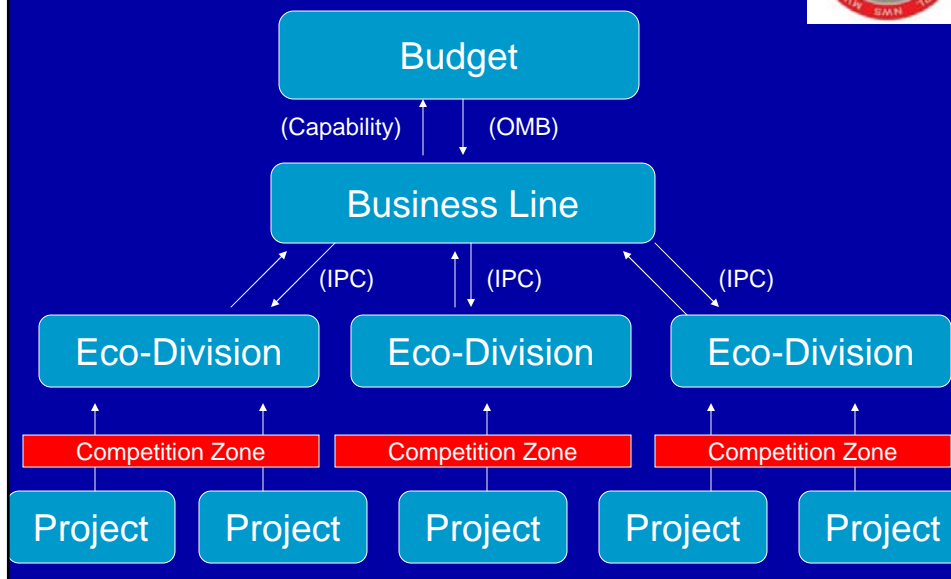
Example criteria include:

- % Habitat Lost
- % Habitat Recoverable

- Ecosystem Restoration projects compete at the Ecological Division level



## Proposed Budget Decision Flow





## Recommendations

- Take a **leadership** role in establishing IPC to **prioritize** funding between **Ecological Divisions**
- **Distribute** Nationwide ER funding by **Ecological Division** priorities
- Ecosystem Restoration projects **compete** at the **Ecological Division** level



## Conclusions

- Ecological Division focus **IS** the systems approach
- **Budgeting** by Ecological Divisions provides:
  - **unified** Federal priorities for focus of ER dollars across organizations
  - **effective** distribution of funding nationwide
  - easier **acceptance** of comparative methods used between projects in the same Ecological Division



## Questions ???

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The Tenacious Goats