



Spatially Enabling Chesapeake Bay Indicators

12/11/2008



Overview

- Environmental Decision Support Center Concept
- Formation of Partnerships
- Chesapeake Bay Program Objectives
- ESRI Objectives
- Demonstration
- Q & A



EDSC Concept

- EPA's Information Access Strategy Recommendations
 - Enable People to Find Environmental Data and Information at EPA and Other Federal Agencies
 - Improve People's Understanding of EPA Data and Information to Promote Appropriate Use
 - Organize EPA Information and Data into Formats that Promote Better Understanding and Facilitate Desired Users
 - Use New Web Technologies to Empower People to Find, Understand and Use Environmental Information and Data



EDSC Concept

- “Implement As We Go” Activity:
Environmental Decision Support Center (EDSC)
 - Collaborative workspace through which EPA staff can discover, access, use and share environmental data and tools
 - Pilot testing to ensure that services respond to known decision making needs



Formation of Partnerships

- Chesapeake Bay Experiment is one of two EDSC pilot activities
 - “How can digital dashboards be enhanced with spatial data and tools”
- Brings together colleagues from
 - CBP (both EPA and USGS)
 - ESRI
 - EPA/OEI
 - Indus Corporation



“Chesapeake Bay 101”

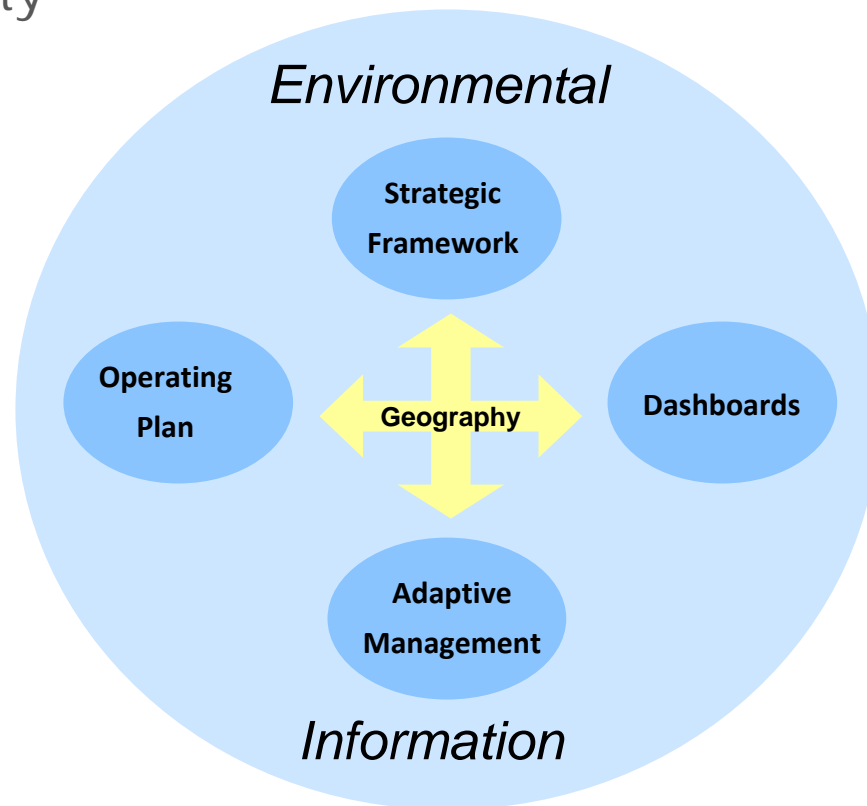
- Chesapeake Bay
 - Bay – impaired under CWA section 303d (DO, clarity)
 - Watershed – 64K square miles; six states and D.C.; nutrient and sediment pollution
- Chesapeake Bay Program Partnership
 - Multiple entities with shared mission of restoring and protecting Chesapeake Bay and its watershed
 - EPA has the federal lead; maintains the Chesapeake Bay Program Office
 - Complex management and complex *information* management



Chesapeake Action Plan

- Chesapeake Action Plan (2008)
 - Accelerate implementation
 - Developed to “strengthen management, coordination, and accountability”

- Elements:





CBP Objectives

- Web accessible, spatially enabled decision support “dashboards”
 - Capturing ...
 - Topic-based resource management goals and strategies
 - Implementation priorities
 - Partner activities
 - Environmental results
 - Progress toward goals
 - Built on reusable tools, gadgets, components
 - Leveraging authoritative environmental and programmatic information



CAP Goals and Topics

Managing Fisheries	Restoring Habitats	Reducing Pollution	Protecting Watersheds	Fostering Stewardship
Oysters	Fish Passage Restored	Wastewater (N&P)	Lands Preserved	Public Access
Blue Crab	Bay Grasses Planted	Agriculture (N, P, and S)	Watershed Mngmt. Plans	Education & Interpretation
Striped Bass	Wetlands Restored	Urban/Suburban (N, P, and S)	Forest Buffers Planted	Communication & Outreach
Alosids	Oyster Restoration	Air Pollution (N)		Citizen Action
Menhaden	Dashboard Navigation Principle #1 – CAP Goals & Topics			



Home

Goals/Strategy

Select Areas

Identify Partners

Implement Actions

Monitor Results

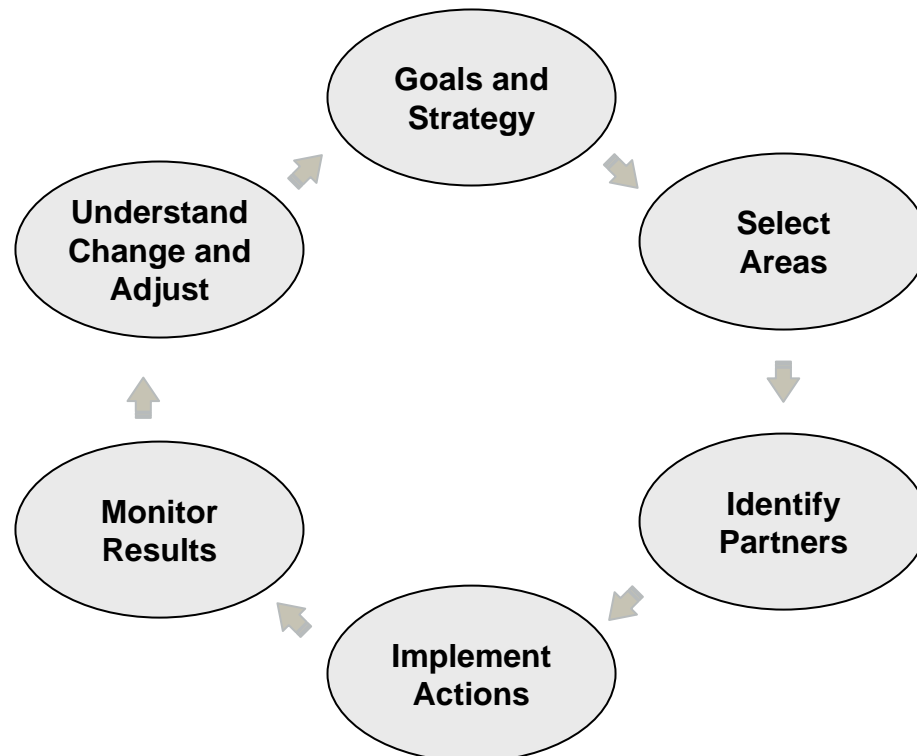
Understand Change



Adaptive Management

**Dashboard
Navigation
Principle #2**

**Adaptive
Management**





Goals/Strategy

CAP Goal and Topic Area

Managing Fisheries	Restoring Habitats	Reducing Pollution	Protecting Watersheds	Fostering Stewardship
Oysters	Fish Passage Restored	Watershed (R&P)	Watershed Stream Flow	Public Access
Blue Crab	Bay Grasses Restored	Agriculture (N, P, and S)	Watershed Stream Flow	Education & Stewardship
Striped Bass	Watershed Restored	Urban/Suburban (N, P, and S)	Riparian Forest	Communication & Outreach
Algae	Oyster Restoration	Air Pollution (S)		Citizen Action
Mechanics				

Adaptive Management Phase



Riparian Forest Buffers Assess Goals and Strategy

CAP Strategic Analysis

- strategies
- challenges
- action needed

Tributary Strategy Goals

- N, P, and S goals by basin

Performance

- current progress toward goal
- realistic annual target

Publications

- Policies, directives, plans

Existing Geographic Element



Select Areas

CAP Goal and Topic Area

Managing Fisheries	Restoring Habitats	Reducing Pollution	Protecting Watersheds	Fostering Stewardship
Oysters	Fish Passage Restored	Watershed (NP)	Land Preserved	Public Access
Blue Crab	Bay Grasses Restored	Agriculture (N, P, and S)	Watershed Riparian Zone	Education & Stewardship
Striped Bass	Watershed Restored	Urban/Suburban (N, P, and S)	Riparian Forest	Communication & Outreach
Algae	Oyster Restoration	Air Pollution (S)		Citizen Action
Methods				

Riparian Forest Buffers Select Areas to Enhance Actions

Adaptive Management Phase



Geographic Priorities

- High nutrient and sediment loads
- Agricultural and urban/suburban sectors

BMP Efficiencies

- N, P and S reduction efficiencies

Existing Geographic Element



Identify Partners

CAP Goal and Topic Area

Managing Fisheries	Restoring Habitats	Reducing Pollution	Protecting Watersheds	Fostering Stewardship
Oysters	Fish Passage Restored	Watershed (P&F)	Land Use Preserved	Public Access
Blue Crab	Bay Grasses Restored	Agriculture (P, F, and S)	Watershed Riparian Zone	Education & Stewardship
Striped Bass	Watershed Restored	Urban/Suburban (P, F, and S)	Riparian Forests	Communication & Outreach
Algae	Oyster Restoration	Air Pollution (P)		Citizen Action
Mechanics				

Riparian Forest Buffers

Identify Partner Activities and Resources

Adaptive Management Phase



Partner Directory

- Topic based partner Inventory (activity integration plan)

Funding Inventory

- Topic based funding inventory (activity integration plan)



Implement Actions

CAP Goal and Topic Area

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Striped Bass	Watershed Restored	Urban/Suburban (R, P, and S)	Riparian Forest	Communication & Outreach
Alseids	Oyster Restoration	Air Pollution (R)		Citizen Action
Mechanisms				

Riparian Forest Buffers Implement Management Actions

Project Tracking

- **Place-based accounting of implementation efforts**

Adaptive Management Phase



Existing Geographic Element



Monitor Results

CAP Goal and Topic Area

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Merchandise				

Riparian Forest Buffers Monitor Change and Assess Progress

Adaptive Management Phase



Monitoring

- Tidal and non-tidal water quality monitoring data

Trends

- USGS Trends Mapper

Restoration Efforts Indicator

- Annual and cumulative progress toward topic-based goal

Existing Geographic Element



Understand Change

CAP Goal and Topic Area

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Oysters	Fish Passage Restored	Watershed (R&P)	Land Use Preserved	Public Access
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Striped Bass	Watershed Restored	Urban/Suburban (R, P, and S)	Riparian Forests	Communication & Outreach
Albino	Oyster Restoration	Air Pollution (R)		Citizen Action
Mechanics				

Riparian Forest Buffers

Understand Change to Adjust Actions

Landscape Change

- Projected change in forest, agriculture, and developed landscape

Adaptive Management Phase



Existing Geographic Element



Demonstration

Demonstration of Early Concepts



Questions?

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