

NOAA Coastal Service Center Initiatives

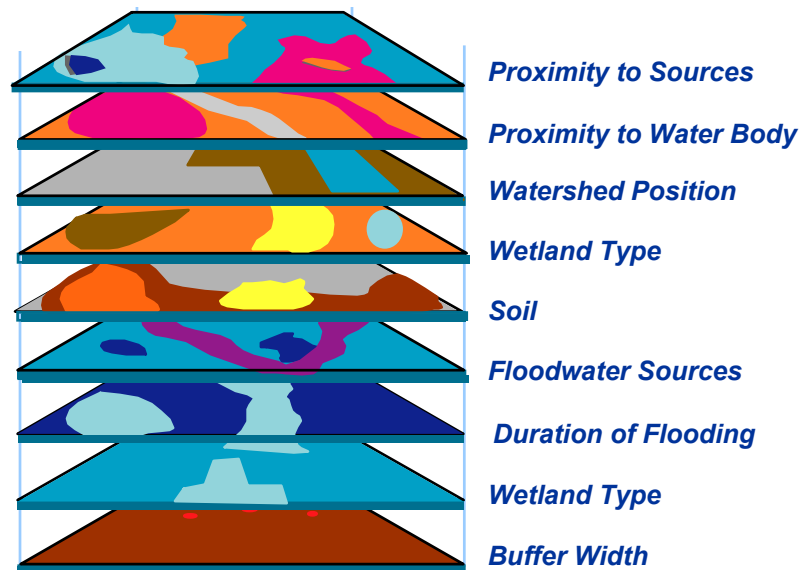
Topics

- **LCR Tools Examples**
 - SWAMP
 - Rhode Island Tools
 - SCREAM
 - Lake St. Clair Integrated Coastal Management Tool
- **ICM development of criteria**
 - Stakeholders
 - Concept
 - Criteria
 - Functionality
- **ICM Example Problem**

NOAA Coastal Service Center Initiatives

LCR Tools - SWAMP

- **Interdisciplinary Assessments**
 - Landscape ecology within a watershed context
 - Habitat ecology for salt marsh, freshwater riparian
 - Emphasis on Water Quality, Hydrology, and Habitat
- **Developed as a pilot project**
 - Not field tested in South Carolina
- **Criteria based on predecessor tool NC-CREWS**
 - Extensively tested in NC



NOAA Coastal Service Center Initiatives

LCR Tools – Rhode Island Suite

Criteria based on Stakeholder needs and available data

- **Sea Grass Site Selection**

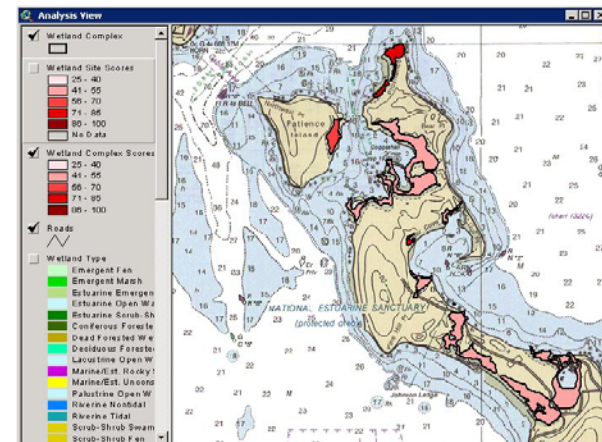
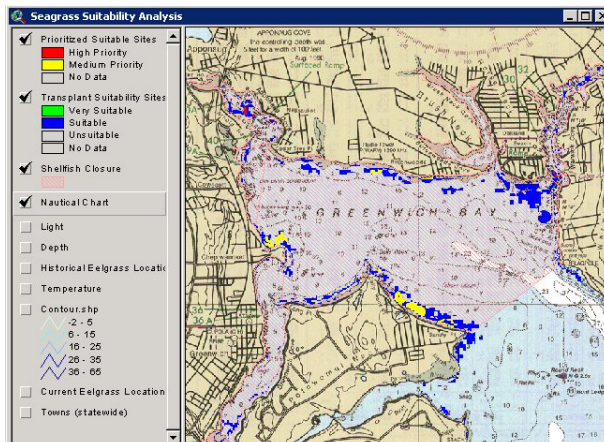
- Prioritize eelgrass restoration opportunities

- Avoid fishing areas
- Target shellfish closure areas

- **Salt Marsh Site Selection**

- Prioritize marsh restoration

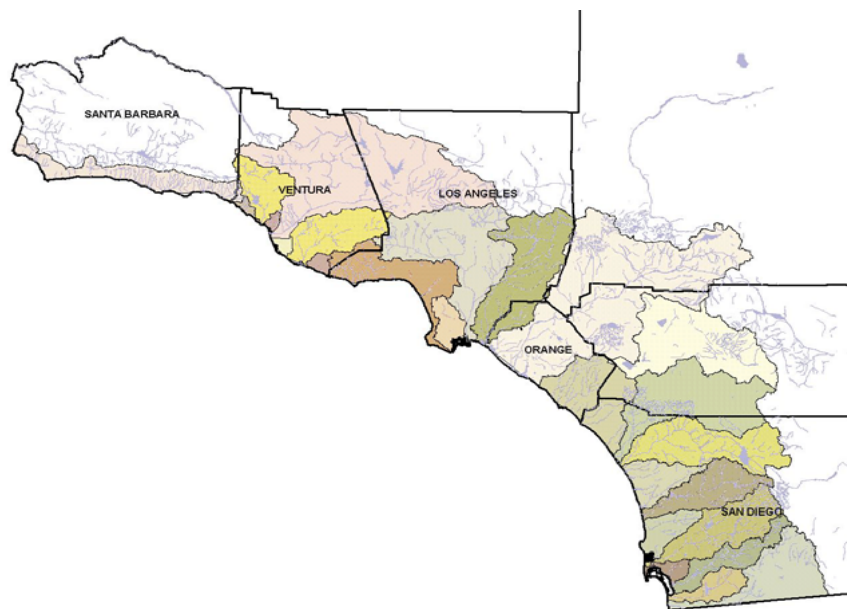
- Socioeconomic considerations
- Feasibility
- Ecological function



NOAA Coastal Service Center Initiatives

LCR Tools - SCREAM

- **Decision Support Tools that Support the Planning and Site Prioritization Goals of the WRP**
 - SCREAM, Southern California Riparian Ecological Assessment Method
 - Examines the functional contributions of habitat, hydrology, and biogeochemistry to the watershed
 - Methodology developed with the WRP Science Advisory Panel and incorporated into a GIS – based decision support tool



NOAA Coastal Service Center Initiatives

LCR Tools – Lake St. Clair ICM Tool

- **A decision support tool to help coastal resource managers and planners**
 - Examine decisions
 - Identify restoration and conservation priorities
- **Criteria were developed through NOAA CSC and stakeholder interaction**



NOAA Coastal Service Center Initiatives

Project Stakeholders

- Cooperative Agreement Grant
 - NOAA Coastal Services Center and Great Lakes Commission
- Subcontractors
 - Michigan Natural Features Inventory
 - Walpole Island First Nation
- Project Management Team (Volunteers)
 - United States Government
 - Canadian Government
 - State and Provincial Governments (Michigan and Ottawa)
 - Local Agencies (Counties, Conservation Districts, Council of Governments)
 - Non-Profit Organizations
- Advisory Committee (Volunteers)
- All working together to develop the Lake St. Clair Coastal Habitat Restoration and Conservation Plan

NOAA Coastal Service Center Initiatives

Development of Criteria - Stakeholders

- **Spent time**
 - Listening to concerns and responsibilities of stakeholders
 - Gathered information about issues
- **Formed a working group**
 - Spent more time listening
- **Developed initial concept for comment**
 - Core criteria based in landscape ecology
 - Easy to review and comment
 - Hard to start from blank page
 - Hard to visualize a DST



NOAA Coastal Service Center Initiatives

Criteria and Components of the Tool - Initial

- Metrics
 - Nearest Neighbor
 - Proximity
 - Size
 - Core Area
 - Impervious Surface
 - Inventory
- Queries
 - Metric Query
 - Category Query
 - Landscape Query
 - Aggregate Query
- Scenario Testing
 - Current state
 - Change
 - New state
- Output
 - Report Format
 - Map Format

NOAA Coastal Service Center Initiatives

Criteria and Components of the Tool – Stakeholder Review

- Metrics
 - Nearest Neighbor
 - Proximity
 - Total Habitat Size
 - Size
 - Core Area
 - Impervious Surface
 - Inventory
 - Element Occurrences
 - Stream Corridor
 - Shoreline Hardening
 - Invasive Species
- Aquatics
- Queries and Overlays
 - Metric Query
 - Category Query
 - Landscape Query
 - Aggregate Query
 - Percentage Natural Area
 - Socioeconomic Growth
 - 1800s Land Cover
 - Historic Water levels
 - Soils
 - Land Ownership
- Scenario Testing
- Output
 - Report Format
 - Map Format

NOAA Coastal Service Center Initiatives

Meeting Objectives

- **A decision support tool to help coastal resource managers and planners**
 - Examine decisions
 - Scenario Testing
 - Identify restoration and conservation priorities
 - Connectivity
 - Nearest neighbor
 - Proximity
 - Quality
 - Size
 - Core Area
 - Distance to Streams
 - Shoreline hardening
 - Element occurrences
 - Invasive Species



NOAA Coastal Service Center Initiatives

Watershed Planning Goals – Development Needs

Goals

- No net loss of habitat
- Decrease the number of habitat patches, by creating linkages and increasing total size
- Conduct restoration activities in areas that would benefit rare, and high quality habitats (or threatened and endangered species).
- Create habitat buffers to rivers and streams.

• **Situation**

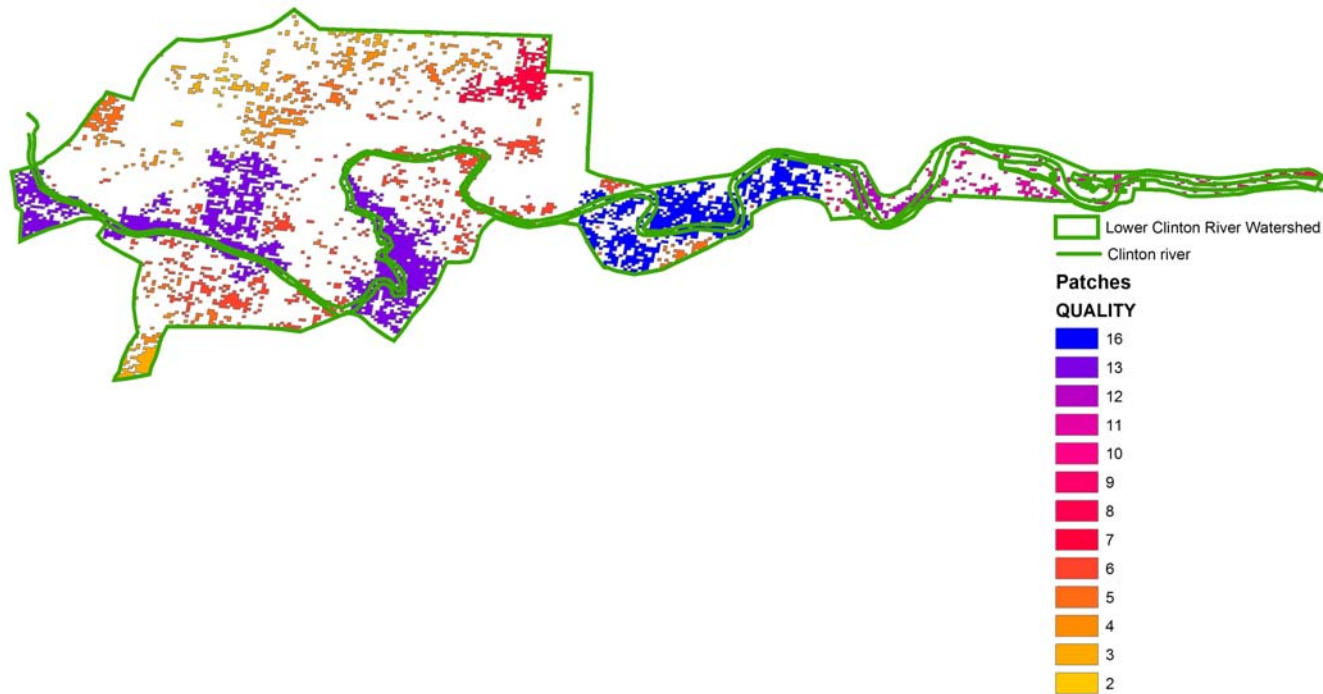
- Developer wants to change a 1.0 acre deciduous forest to low density development
- Developer is agreeing to conduct restoration campaign to plant trees and restore deciduous forest elsewhere
- Will also consider other sites

• **Using the Tool**

- Determine the current habitat situation within watershed
- Use scenario testing to change proposed development and add forest in other areas.

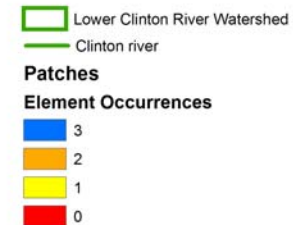
NOAA Coastal Service Center Initiatives

Output Examples - Quality



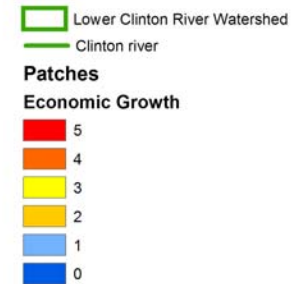
NOAA Coastal Service Center Initiatives

Output Examples - Element Occurrences



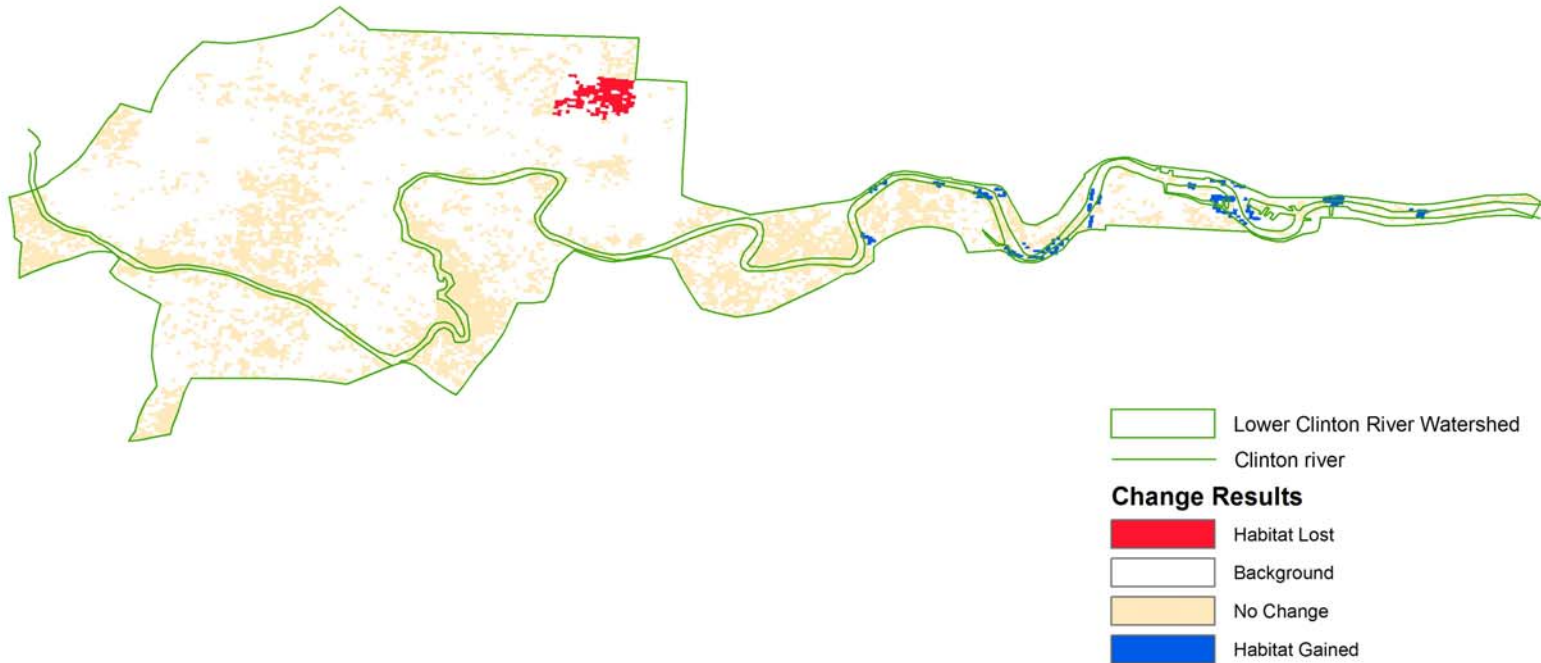
NOAA Coastal Service Center Initiatives

Output Examples – Economic Growth



NOAA Coastal Service Center Initiatives

Changing Areas



NOAA Coastal Service Center Initiatives

Evaluating Change

- Outcomes
 - No net loss of habitat
 - Number of patches reduced
 - Average patch size increased
 - Increase Stream buffers *
 - Connections made to patches supporting rare and high quality areas*

*shown on previous slide

Current Habitat	
Total Area (acres)	1055.7
Average Size (acres)	2.5
Number of Patches	419

Habitat after Changes	
Total Area (acres)	1057.7
Average Size (acres)	2.6
Number of Patches	406

NOAA Coastal Service Center Initiatives

Functionality

- **Flexible data inputs**

- Raster land cover (required)
- All others optional and can be point, line or polygon

- **Flexible location**

- Any polygon
- User drawn polygon
- Any geographical boundary
 - Watershed
 - County, township

- **Flexible classification**

- User chooses what is habitat
 - Simple
 - Unique
 - Grouped

- **Flexible scoring**

- User determines values
- User determines scores

- **Optional features**

- Queries
- Overlays
- Scenario Testing

- **Multiple outputs**

- GIS Shapefiles
- Map images
- Reports
- Tables