Coastal Impact Assistance Program (CIAP)

Coastal Forest Conservation Initiative (CFCI)

Geospatial Decision Support Tool
Coastal Forest Conservation Initiative
Geospatial Decision Support Tool

- CFCCI SDSS Presentation
  - Tool Background/Theory
  - Development/Technical Requirements
  - Structure/Components
  - User Interface
  - Sample Run
Coastal Forest Conservation Initiative
Geospatial Decision Support Tool

- Tool Background
  - Proximity Based
  - Euclidean Distance/Distance Decay
  - LUCIS Model Framework
  - Raster vs. Vector Based (30 meter grid)
  - Natural Breaks (Jenks) determine priority
  - Priority Scale of 1-5 or Low to High
  - Scalable/Flexible
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Geospatial Decision Support Tool

- Tool Development
  - ArcGIS 9.3 Platform
  - ESRI Extension
  - 3D & Spatial Analyst Extensions
  - Microsoft .NET Framework Version 3.5
  - Windows 2000 & up
  - Simple Install and Register Process
  - Programming & User Interface in C #
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- Tool Structure
  - 1st Tier Assessment
  - Transparent and Consistent Metric
  - 2 Components: Coastwide Analysis & Tract Specific Analysis
    - Coastwide Component: develops priority surface for entire coast based on selected parameters
    - Tract Specific Component: develops priority rating for each tract based on subjective rating of input variables
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Geospatial Decision Support Tool

- Tool Structure
  - Not identical to written Selection Criteria Document
  - Problems:
    - Subjectivity
    - Lack of Spatial Data
    - Coastwide vs. Tract Specific Criteria
  - Implemented a simple Principal Components Analysis
    - Reduced Components into Two Tiers
    - Subjectivity Coincident with Tract Specific Parameters Lacking Spatial Data
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- **Input Parameters**

  - Based on Synthesis Report, Stakeholder Input, DNR/CPRA Input
  - Parameters/Datasets Selected for Each Component/Tier
  - Component/Tier Priority Determined and Assigned to Input Data Layer
  - One Layer May Consist of One or More Datasets
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- Data Layers
  - Airfields/airports
  - DEQ Data
  - Evacuation Routes
  - Highways
  - Hospitals
  - Bridges
  - Pipelines/Powerlines/Pipeline Crossings
  - Ports
  - Railroads
  - Tunnels
  - Control Structures
  - Levees
  - Banks/Barriers/Ridges
  - Elevation/Flood Zone Data
  - Waterbottoms
  - Scenic Rivers
  - Historical Trees
  - Breeding Bird Routes
  - Oyster Beds
  - Seabirds
  - Shorebirds
  - Natural Heritage Program
  - Cities/Urban Areas
  - Marsh
  - Rivers/Streams
  - Scrub Wetland
  - Sea Grass
  - Swamp
  - Water bodies
  - DOTD Wells
  - Drinking Water Surface Intakes
  - Surveyed Areas
  - Historic Preservation Sites
  - Archaeological Sites
  - Public Lands
  - Recreation Points
  - Schools
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- Data Prep
  - Vector to Raster Conversion
  - Euclidean Distance
  - Natural Break Symbology
  - Raster Reclassification
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Coastwide Analysis Tool
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Print, Help, & Description
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Other considerations related to proximity might include relative proximity to restoration projects, environmentally protected areas, wastewater assimilation facilities or riparian buffer, which may provide secondary benefits.
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This tool combines the MUA results from each category into a single CMUA providing a comprehensive prioritization of the suitability of lands for participation in the CFCI. The Project Selection Criteria Section of the Synthesis Report has the overall CFCI selection criteria divided into four categories which include Cost Effectiveness, Landowner Cooperation, Community Support, and Components. This tool allows program managers to look at all influential aspects of a potential tract.
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Tract Analysis Tool
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Cost Effectiveness

- Likelihood of conversion:
  - Medium-High

- Partnership opportunities:
  - Low

- Absence of hazardous waste contamination:
  - Medium-High

- Restoration needs:
  - Medium

- Target for reforestation or conversion to forested use:
  - High

Description:
Parcels that have been targeted for reforestation or conversion to forested land use by other conservation agencies or programs have increased opportunities for partnership and cost-sharing and are consequently more feasible for program acquisition than parcels that have not been so targeted. Targeted reforestation or forest conversion parcels should be assigned a higher numerical score than parcels that have not been targeted.
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Sample Output
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**Summary**

- CFCI SDSS is Functional, Scalable, and Flexible Tool
- Produces Objective Results in Transparent Manner
- Potential to Assist in a Number of Land Planning Capacities
- Tool is Visualizing Data That Already Exists, Not Creating it
- Complex Geoprocessing Procedures Occur Behind the Scenes
- Tool Based on Sound Theory Accepted in Academic & Industry
- Best Data Available was Utilized and Redundancy Reduced
- Data Availability = Primary Limitation
- Tool is Not the Final Answer
Questions/Comments

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