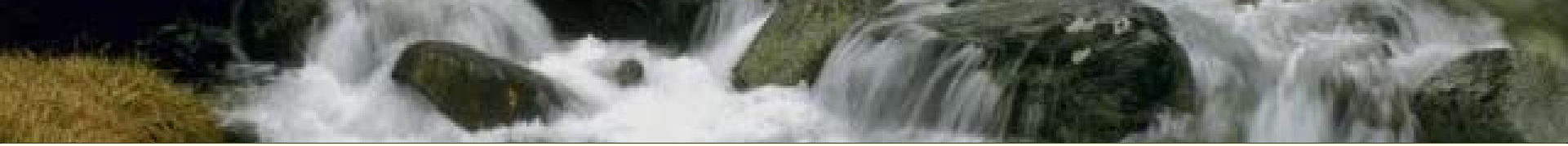

Biodiversity Conservation Planning

"…*it's all about methods, data, and tools*"

Pat Comer, Chief Terrestrial Ecologist

Land Trust Alliance Rally
October 5, 2007

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Biodiversity Conservation Planning

Seems like everyone is doing it!

- The Nature Conservancy - Ecoregional Conservation Plans & Conservation Action Plans
- State Comprehensive Wildlife Conservation Strategies
- Bird Conservation Region and Joint Venture plans
- GAP Analysis Projects
- Multi-county planning initiatives
- Forest Products Industry
- And many, many others

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The process and products need to be…

- Transparent
- Measurable
- Actionable
- ‘Bulletproof’
  - Expert Knowledge
  - Partner Consensus

Government

Industry

Conservation NGOs

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Adaptive Conservation Framework

Assessment

Effects

Priority-setting

Implementation

Monitor

Develop Strategies

Capacity-building

Policy-based

Practice-based

Place-based

Implement

Analysis at Multiple Spatial Scales

- **Regional-scale** (e.g., habitat conservation throughout the Southern Rocky Mountains and Central Shortgrass Prairie ecoregions)
- Public/Private Land Planning Unit (e.g., management emphasis on contiguous National Forest, county open space, and local trust lands)
- Local Landscape (e.g., multiple habitat patches within a project area)

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10 Common Steps in Planning

- WHAT IS THE PLANNING AREA?
- WHAT ECOSYSTEMS AND SPECIES REQUIRE CONSIDERATION?
- WHERE ARE THEY?

- WHAT ARE EXPECTED HEALTHY CONDITIONS?
- WHAT ARE CURRENT CONDITIONS?
- WHAT ARE THE TRENDS AMONG THOSE CONDITIONS?
- WHAT ARE DESIRED CONDITIONS?

- WHAT STRATEGIES WILL MOVE US TOWARD DESIRED CONDITIONS?
- WHAT ARE EXPECTED OUTCOMES FROM THESE STRATEGIES?
- HOW WILL WE MEASURE OUR PROGRESS?

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What Should We Aiming For?

- Shared Methods
- Common Data Libraries
- Standard Tools

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A Network Connecting Science With Conservation

Tools for Strategic Biodiversity Planning

a case study from Puerto Rico

Pat Comer, Chief Terrestrial Ecologist

Land Trust Alliance Rally
October 5, 2007

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Puerto Rico Biodiversity Conservation Initiative

The Conservation Trust of Puerto Rico

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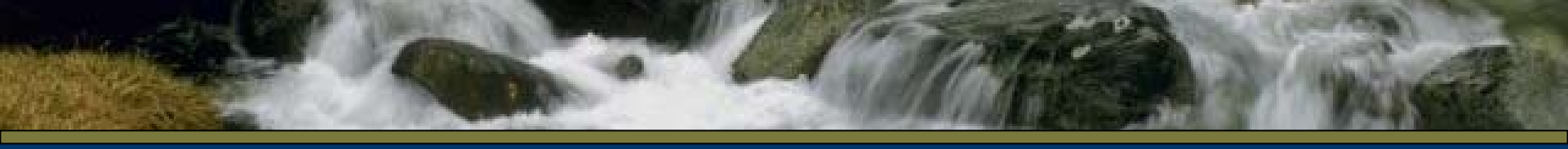

Puerto Rico Biodiversity Conservation Initiative

- Develop integrated conservation strategies across terrestrial, freshwater, and marine ecosystems
- Integrate existing data into common format and system
- Prioritize and fill key data gaps
- Build capacity with technical methods, data, and tools

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Planning at Multiple Scales

- **Caribbean-wide habitat priorities**

(e.g., marine mammals & reptiles, fish assemblages, migratory birds)

- **Island-wide land/water use prioritization**
  (incentives, regulation, and land acquisition)
- **Watershed land use planning**

  (integrating freshwater and coastal marine issues with needs of local land-use planning)
- **Local 'Site' management planning, and implementation, and monitoring**

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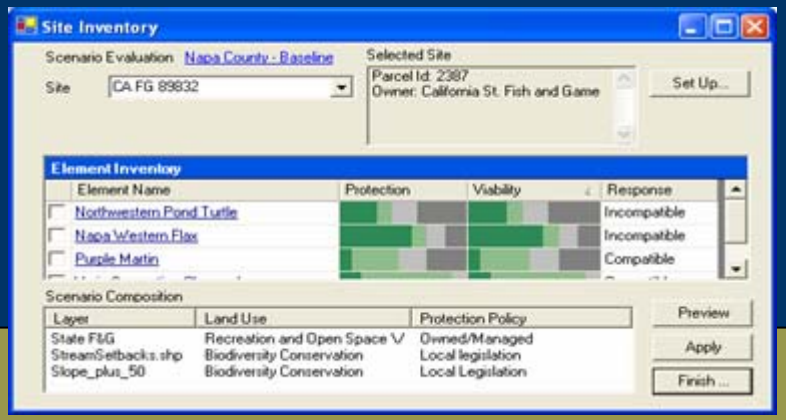
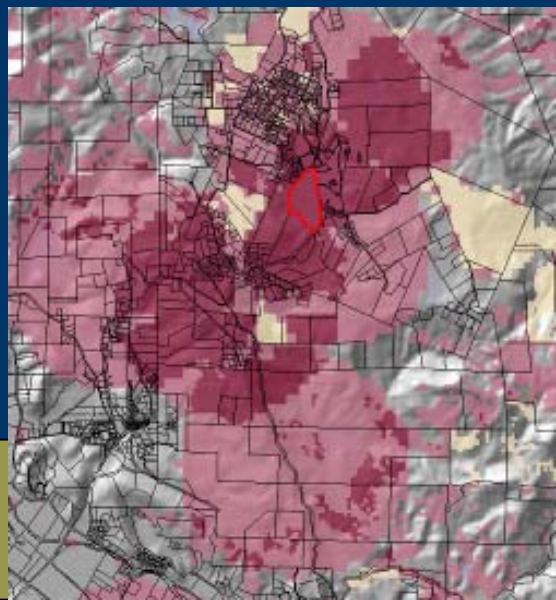
A Network Connecting Science With Conservation

NatureServe VISTA

A Conservation Planning Methodology and Decision Support System





What is NatureServe Vista?

- An extension to ESRI's ArcMap 9 (with spatial analyst)

1. Integrates conservation information, management practices, and land use plans
2. Will help you to create plans specific to your area, resources, and values
3. Allows you to dynamically monitor progress toward goals, identify emerging conflicts and opportunities, and create mitigation plans

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Coarse Filter/Fine Filter Approach

- **Ecological Systems**

  Natural community mosaics defined at scales useful for management and monitoring

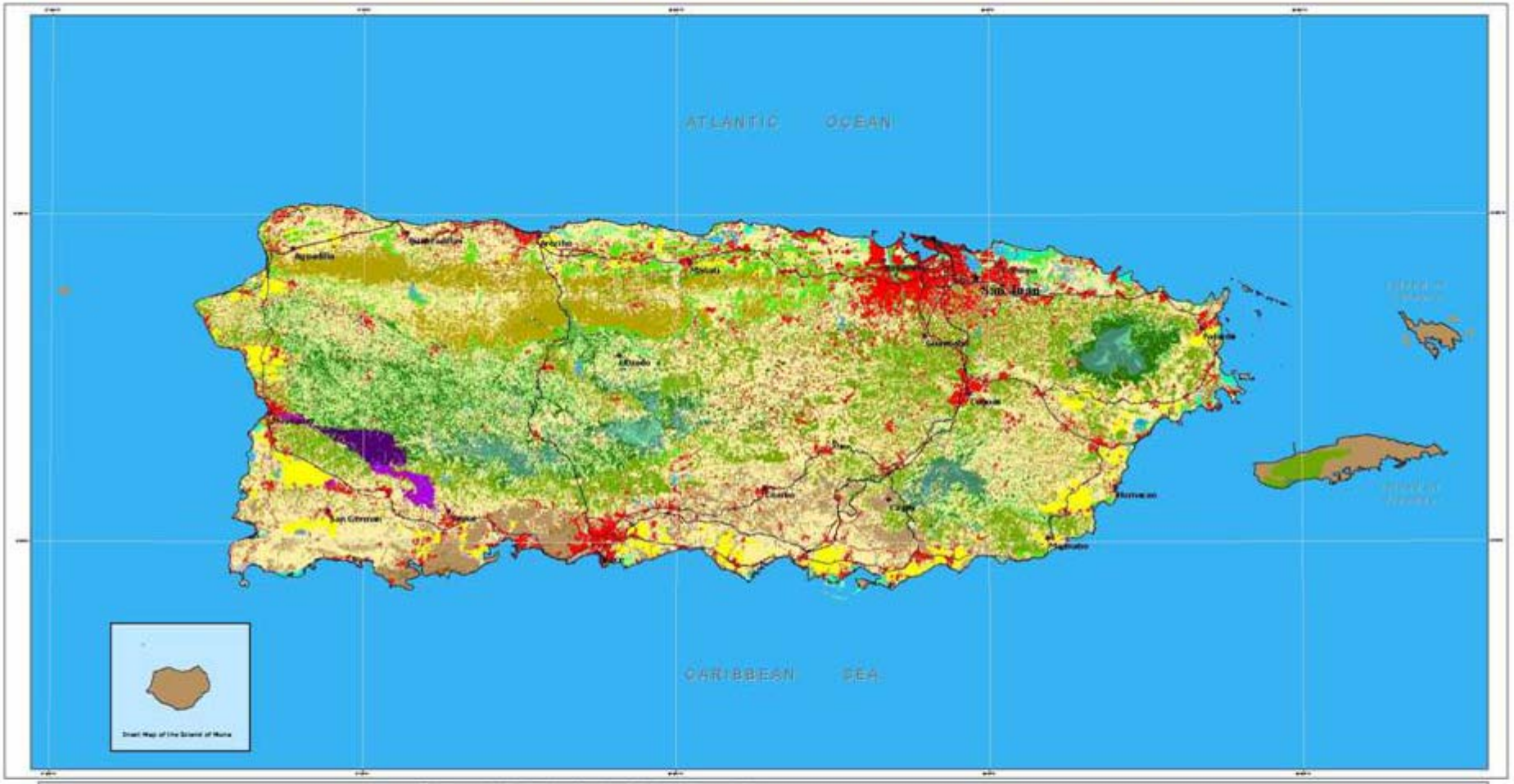
- **Focal Communities**

  vulnerable species groupings, spawning areas, migratory stopover points, movement corridors, etc.

- **Focal Species/Subspecies**

  imperiled, declining, endemic, vulnerable, “umbrella”

Terrestrial Ecological Systems and Land Use Classes for Puerto Rico



Terrestrial Ecological System Classes

- Caribbean coastal rocky shore
- Caribbean coastal sandy beach
- Caribbean coastal thorn scrub
- Caribbean edapho-xerophilous "mogote" complex
- Caribbean emergent herbaceous estuary
- Caribbean estuarine mangrove forest
- Caribbean floodplain forest
- Caribbean freshwater marsh
- Caribbean lowland dry semi-deciduous forest
- Caribbean lowland moist serpentine woodland
- Caribbean maritime shore/estuary mouth mangrove
- Caribbean montane wet elfin forest
- Caribbean montane wet serpentine woodland
- Caribbean montane wet short shrubland
- Caribbean montane/submontane karst forest
- Caribbean riparian forest and woodland
- Caribbean salt flats and ponds
- Caribbean seasonal evergreen lowland forest
- Caribbean seasonal evergreen submontane/lowland forest
- Caribbean serpentine dry scrub
- Caribbean wet montane forest
- Caribbean wet submontane/lowland forest

Land Use Classes

- Intensive Agriculture
- Extensive Agriculture
- Urban/Industrial
- Montane forest/shrub and active/abandoned shade coffee
- Water

Ecological Systems of Latin America and the Caribbean
A Working Classification of Terrestrial Systems

0 5 10 20 30 40
Kilometers

1 : 250,000 Scale

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Freshwater Habitats

0 12.5 25 50 75 100 Kilometers

Freshwater Habitats

- Coastal Aquatics
- Karst Streams
- Stream Classes 1 - 3 Under 600 Meters in Elevation
- Stream Classes 1 - 3 Over 600 Meters in Elevation
- Stream Classes 4 - 6
- Stream Classes 7 - 8
- Freshwater Lakes
- Karst Freshwater Pools

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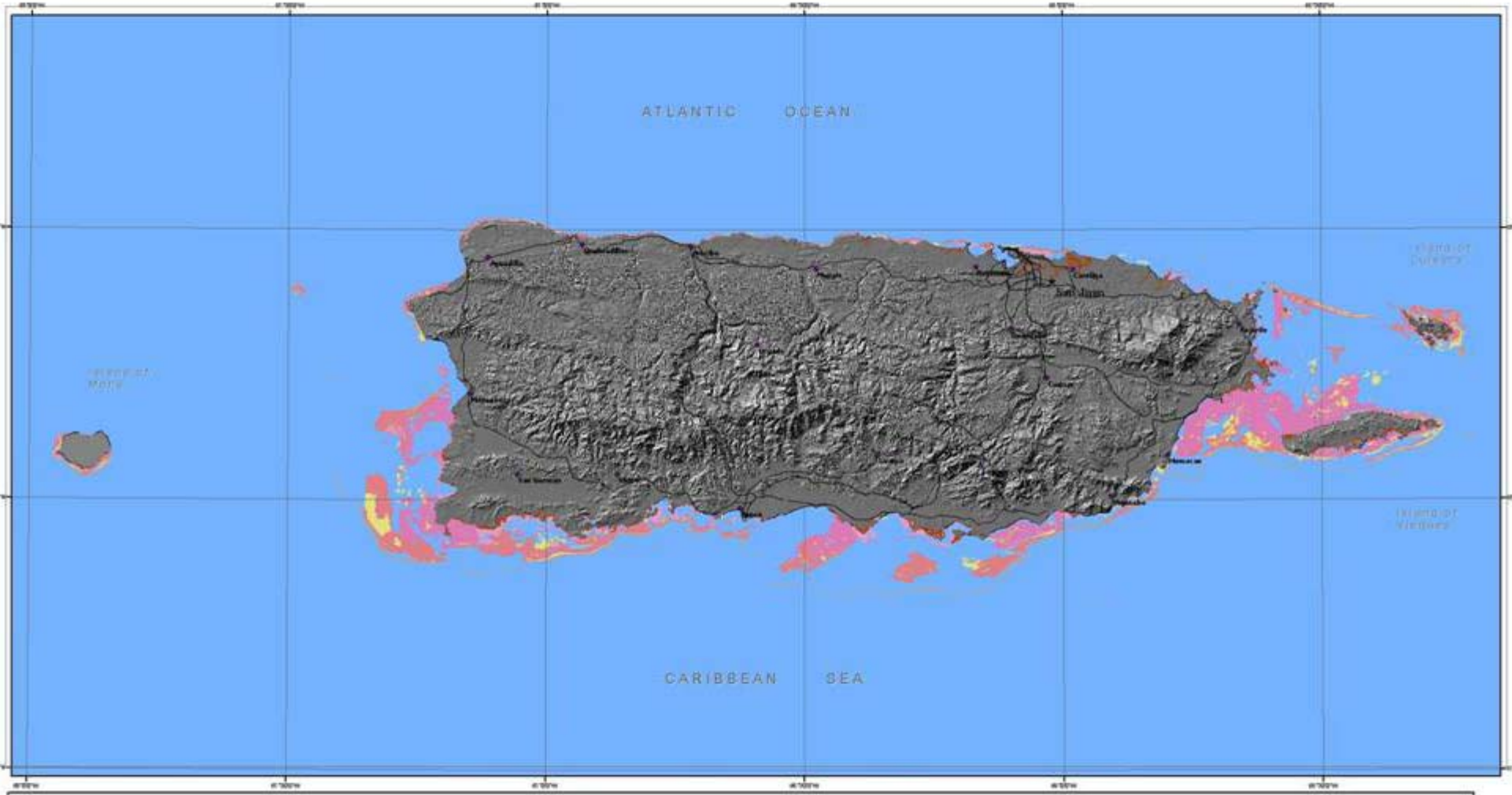
Coastal Marine Habitat



Coastal Marine Habitats

- Backreef_Colonized Bedrock/Colonized Pavement with Sand and Channels
- Backreef_Linear reef
- Backreef_Patch Reef (Individual and Aggregated)/Scattered Coral/Rock in Unconsolidated Sediment
- Bank/Shelf Escarpment/Forereef_Colonized Bedrock/Colonized Pavement with Sand and Channels
- Bank/Shelf Escarpment/Forereef_Linear reef/Spur and Groove Reef
- Bank/Shelf_Colonized Bedrock/Colonized Pavement with Sand and Channels
- Bank/Shelf_Linear Reef/Spur and Groove Reef
- Forereef/Bank/Shelf Escarpment_Patch Reef (Individual) Scattered Coral/Rock in Unconsolidated Sediment
- Lagoon/Reef Crest/Shoreline Intertidal_Colonized Bedrock and Pavement/Colonised Pavements with Sand and Channels
- Lagoon/Reef Crest/Shoreline Intertidal_Linear Reef
- Seagrass/Backreef
- Seagrass/Bank Shelf
- Seagrass/Lagoon
- Mangroves Interface

0 5 10 20 30 40 Kilometers

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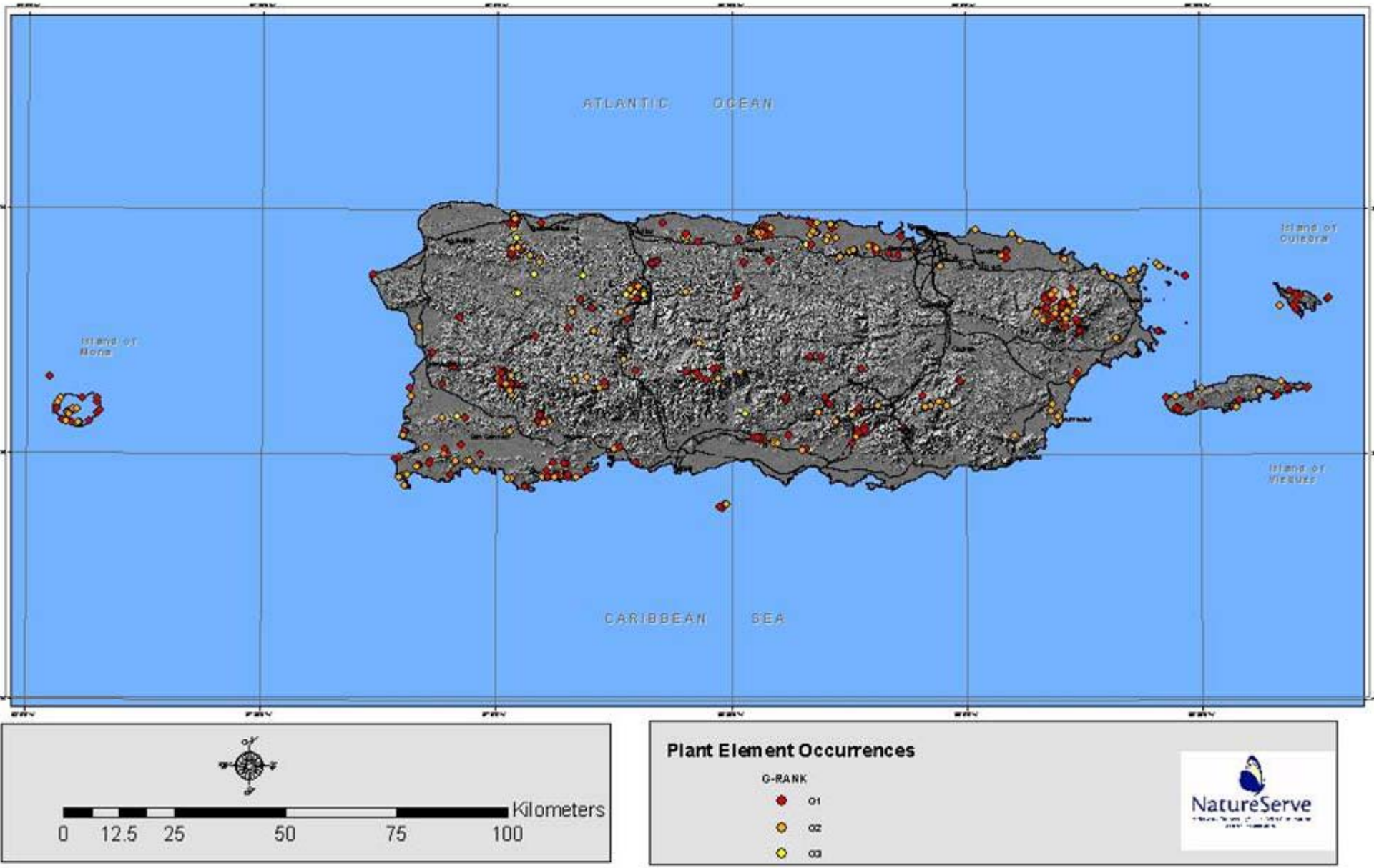
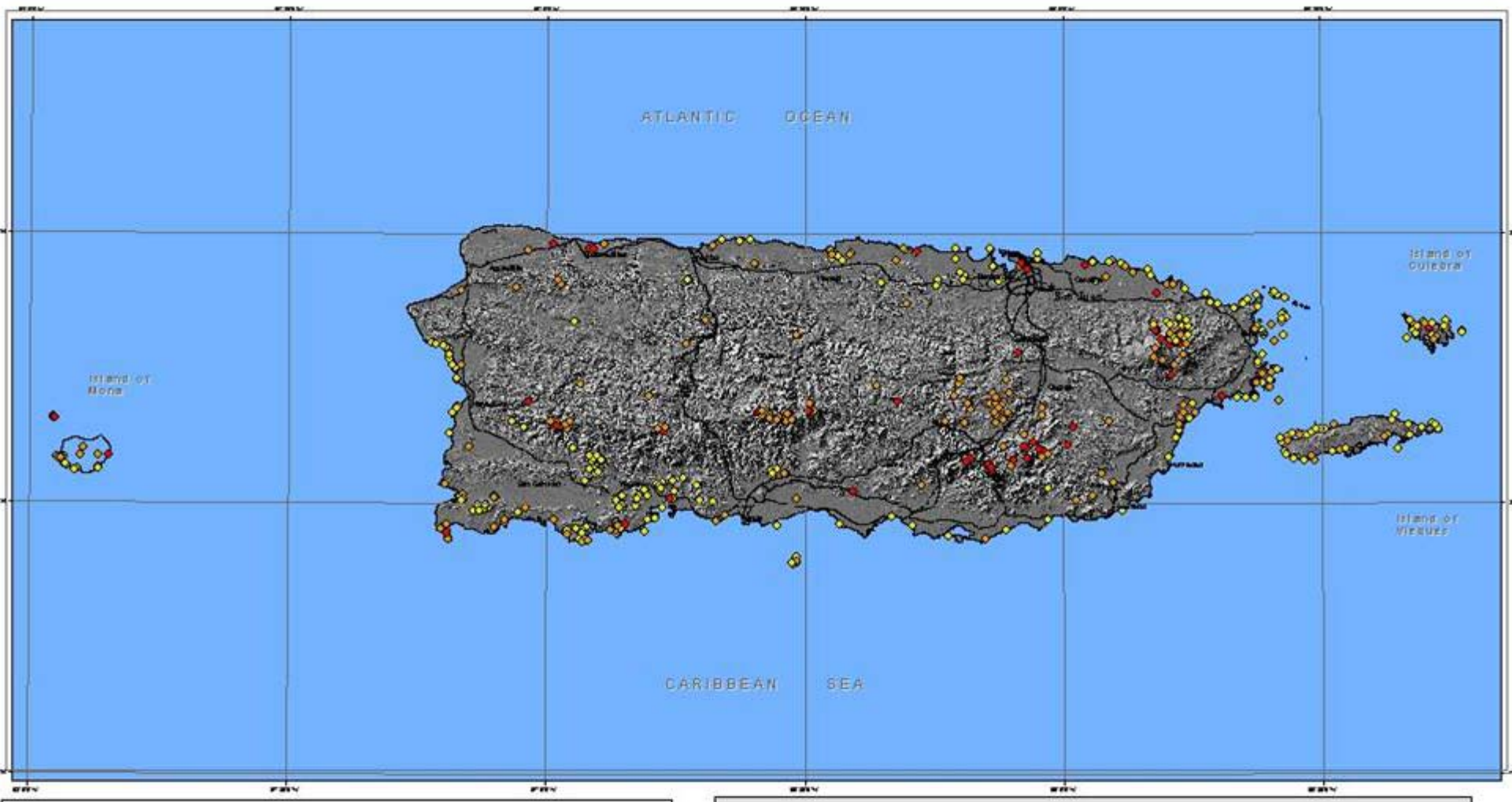
Plant Element Occurrences by G-Rank



Animal Element Occurrences by G-Rank



0 12.5 25 50 75 100 Kilometers

Animal Element Occurrences

G-RANK

- G1
- G2
- G3

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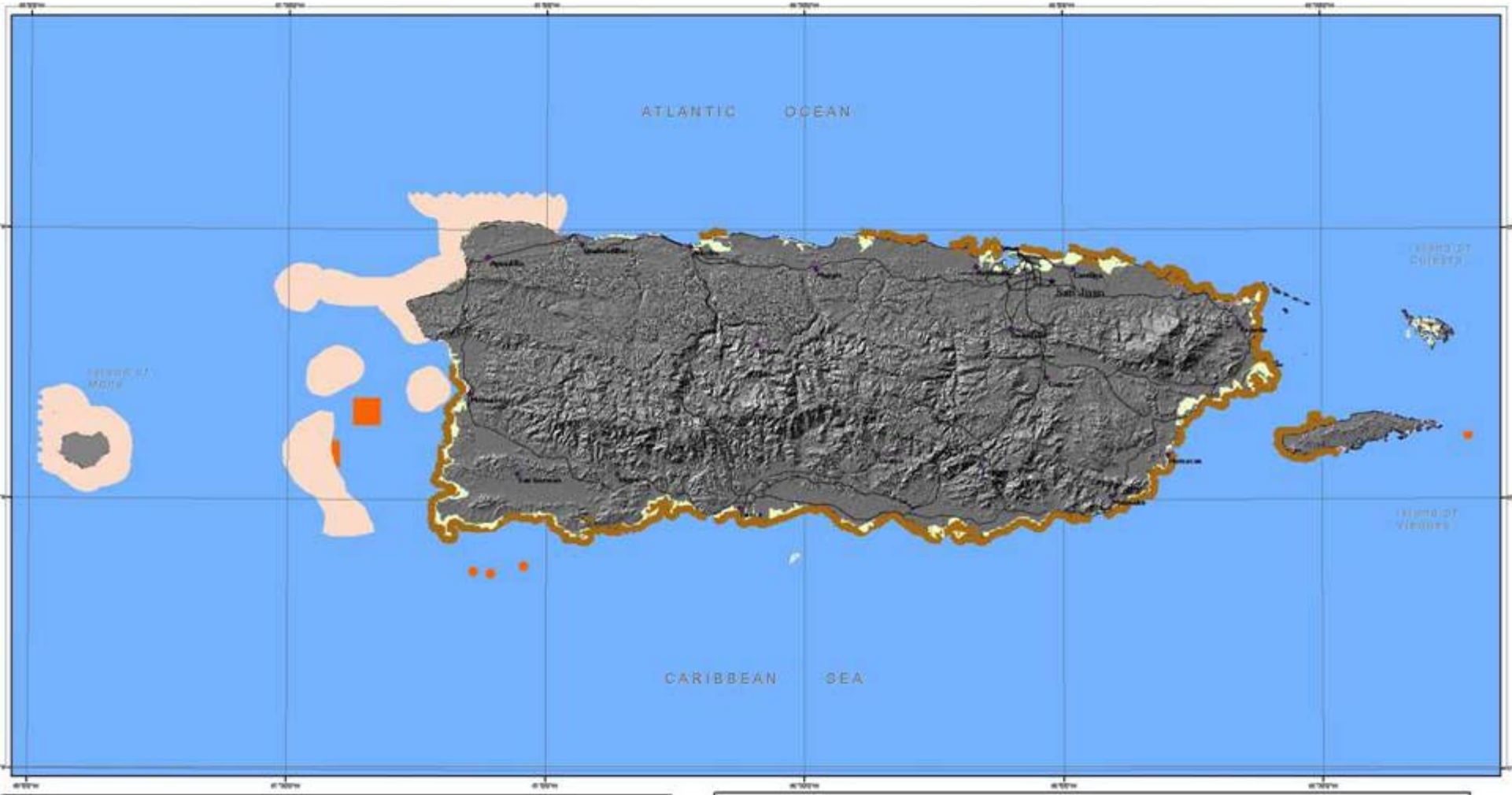
Densities of Marine Species



0 12.5 25 50 75 100 Kilometers

Marine Species

- Pelicans
- Whales
- Eretmochelys Nest
- Spawning Aggregation Areas
- Dermochelys Nest
- Chelonia Nest
- Manatee

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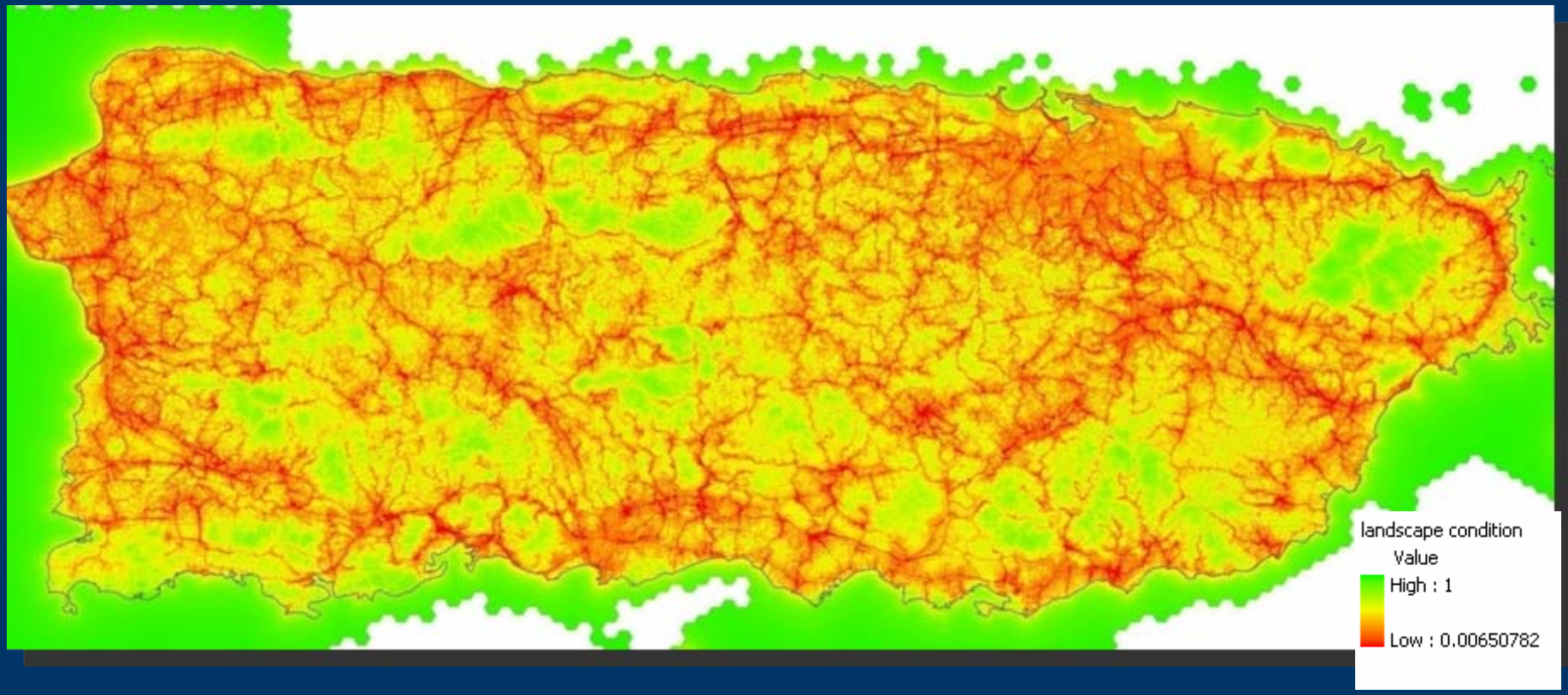
Vista Landscape Condition Model



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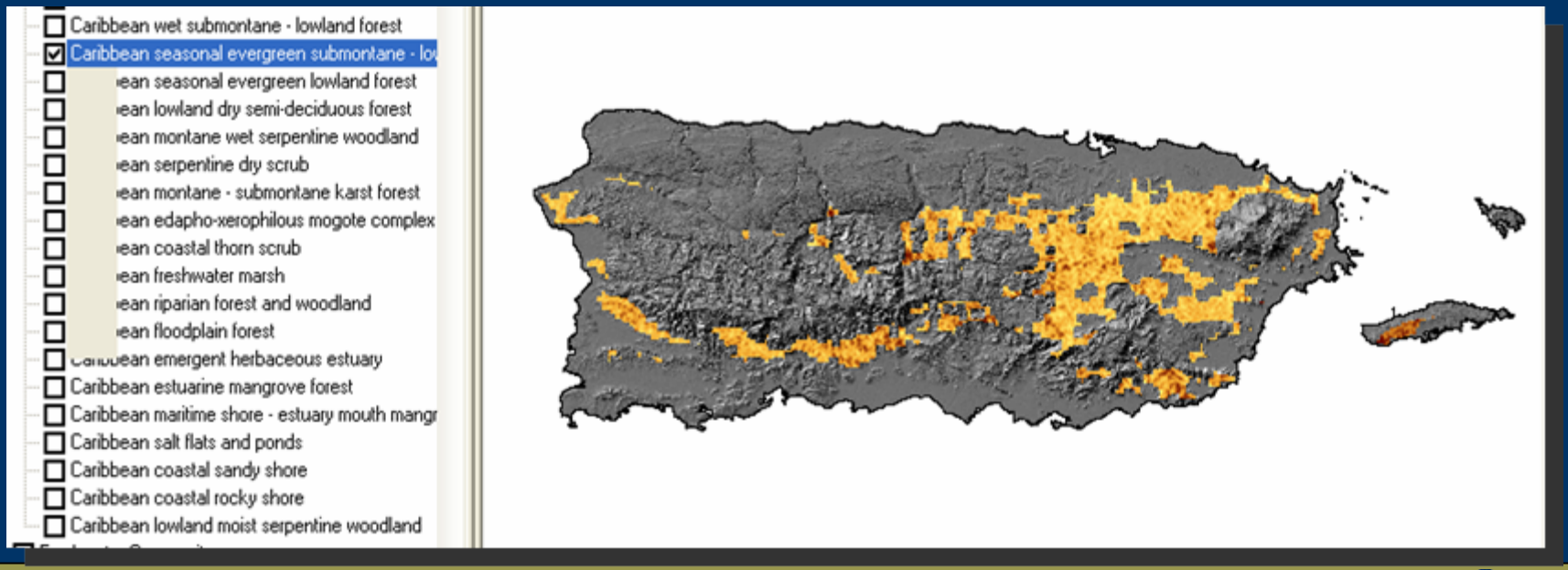
Vista Element Conservation Value Layer

Map and specify conservation requirements for elements including a model of current condition



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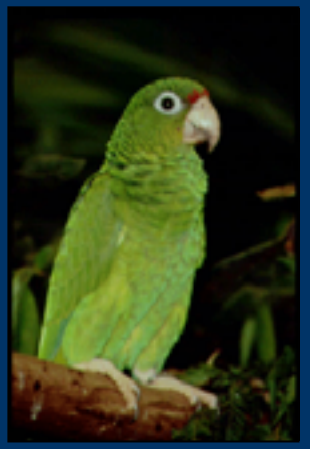
Stating Goals or Desired Conditions

"Avoid High Value Places"



"No Net Loss"

"Abate Threat X Y & Z"

Representation Goals

as measurable expressions of societal values.

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Defining Baseline Scenario

- Use Vista to combine:
  - Land use & conservation use
  - Management practices
  - Infrastructure
  - Policy mechanisms

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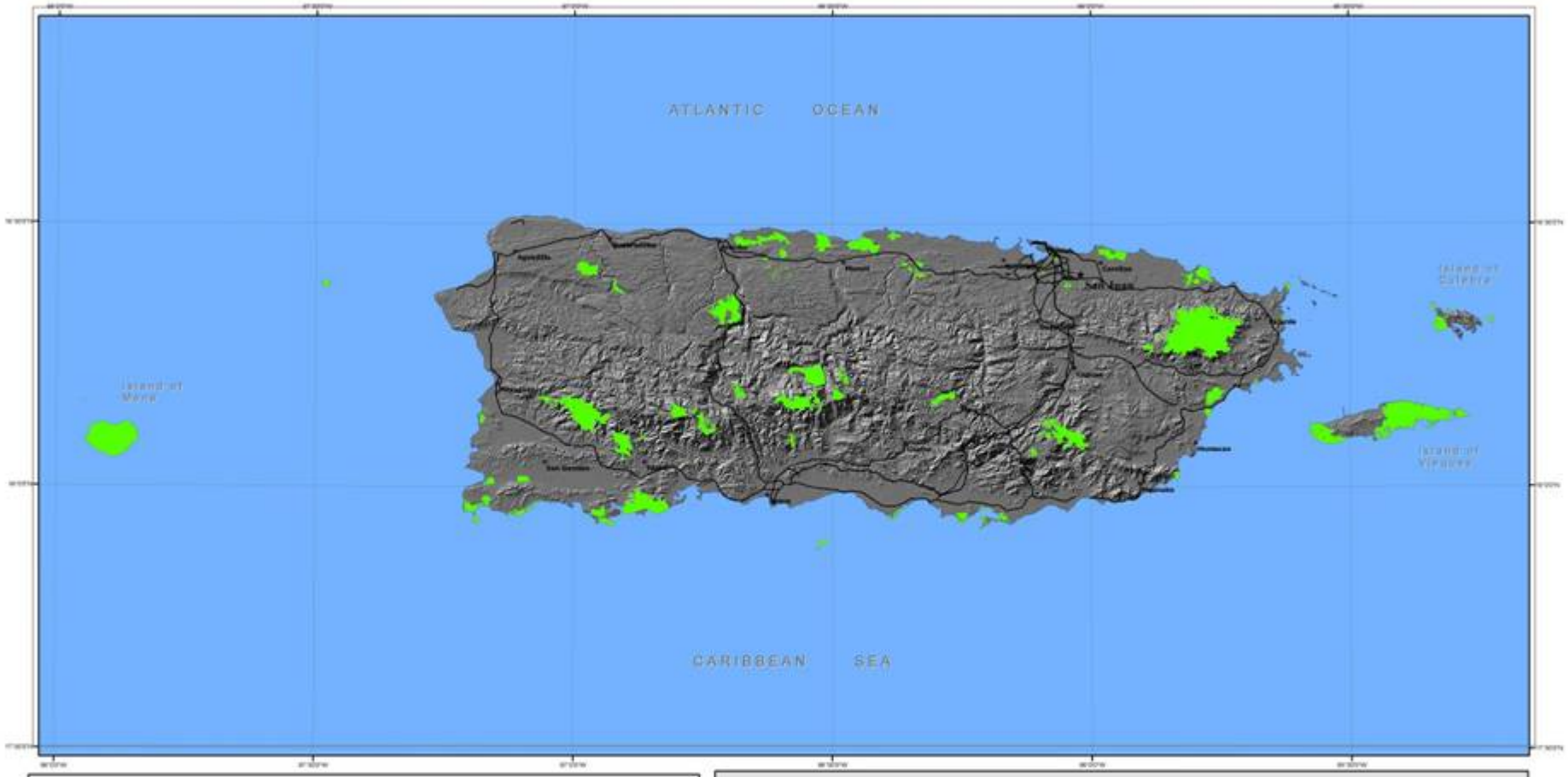
Terrestrial Protected Areas



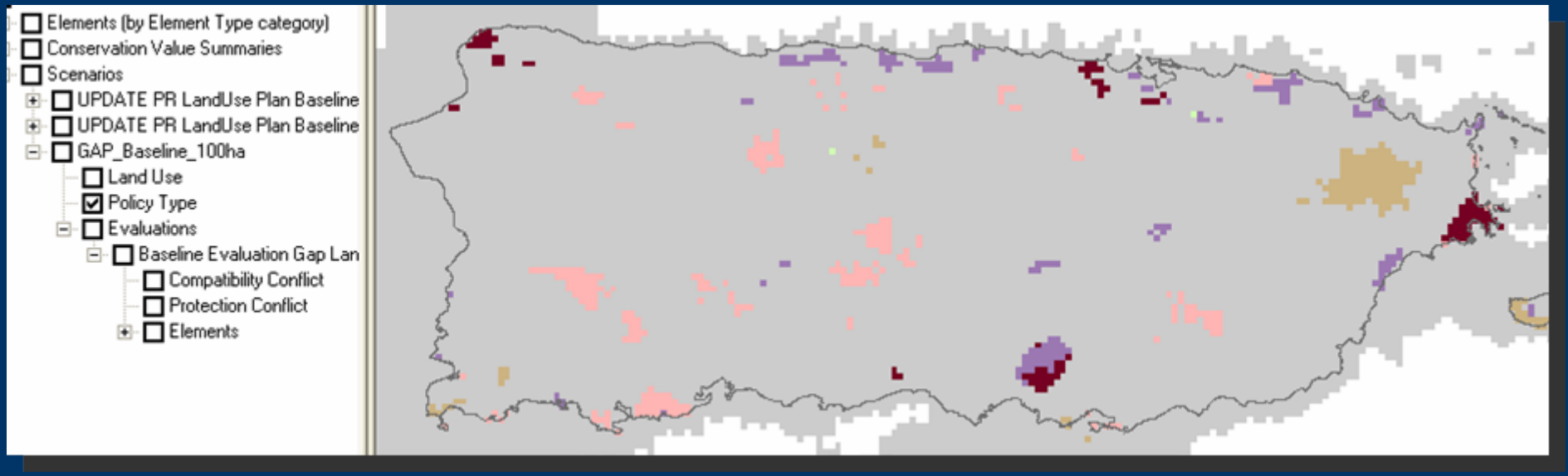
0 12.5 25 50 75 100 Kilometers

Roads

NatureServe

Vista Policy Type Scenario

Policy mechanisms characterized using GAP stewardship, most is currently unknown & assumed at risk



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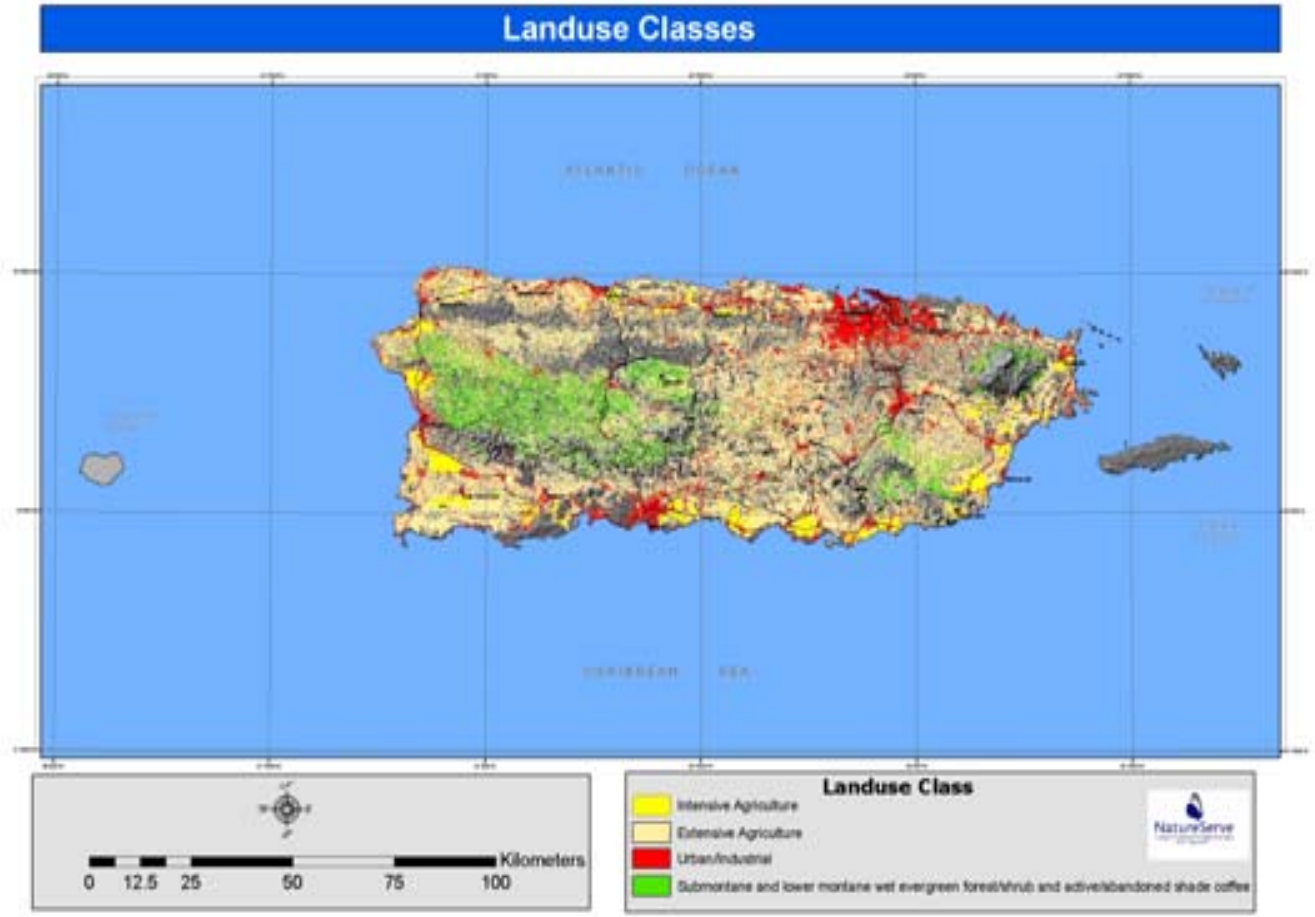
Vista Land Use Type Scenario



Land uses of varying intensity extend over ~ 60% of the land area of Puerto Rico

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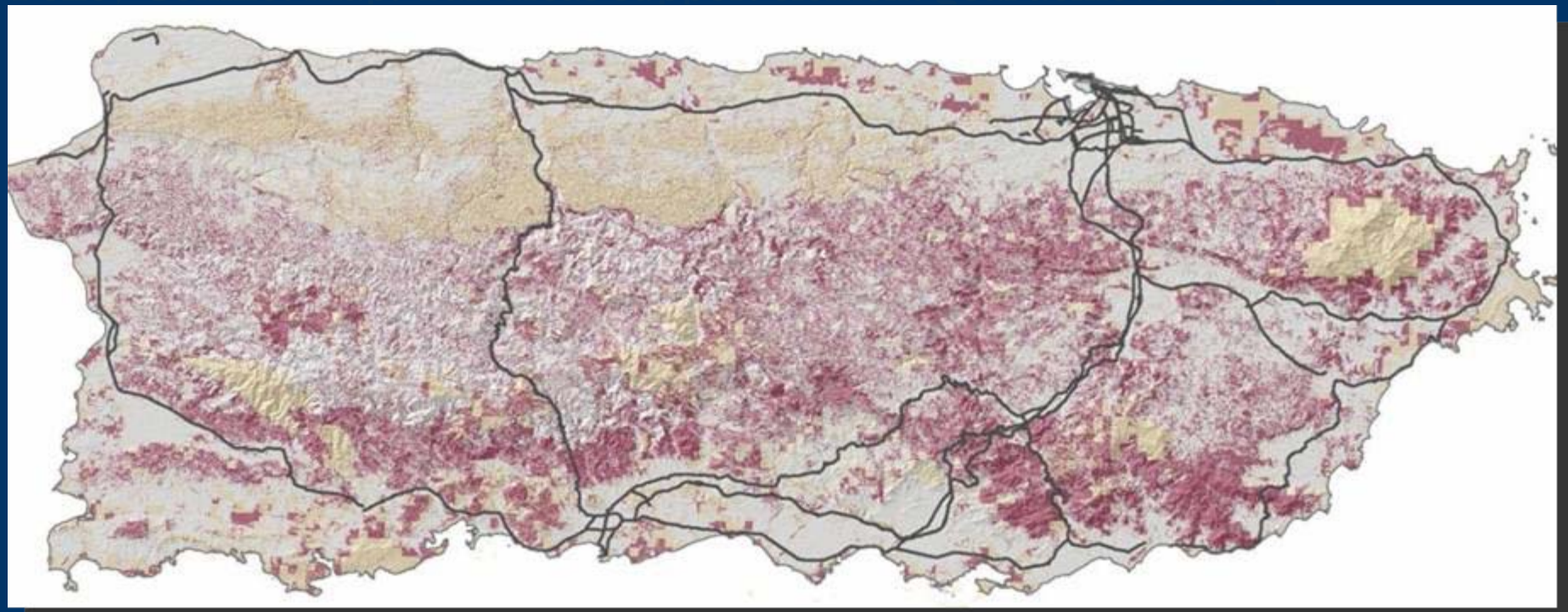
Baseline Scenario Evaluation



Red = conflict in use and/or underlying policy

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Evaluation Reports

Overall Scenario Performance

All Elements (302 Total)

	Goals Met For	% of Goals Met	Goals Unmet For	% of Goals Unmet
Protected and Compatible	96 elements	31.79%	206	68.21%
Compatible	183 elements	60.6%	119	39.4%

Back to top

Goal Performance by Element Type

Summary

Name	Protected and Compatible Goal Met For	Goal Unmet For	Compatible Goal Met For	Goal Unmet For
Terrestrial Ecological System (33 elements)	12 elements (36.36%)	21 elements (63.64%)	25 elements (75.76%)	8 elements (24.24%)
Freshwater Community (23 elements)	2 elements (8.7%)	21 elements (91.3%)	22 elements (95.65%)	1 elements (4.35%)
Mammal (4 elements)	2 elements (50%)	2 elements (50%)	2 elements (50%)	2 elements (50%)
Bird (22 elements)	8 elements (36.36%)	14 elements (63.64%)	11 elements (50%)	11 elements (50%)
Reptile (13 elements)	3 elements (23.08%)	10 elements (76.92%)	4 elements (30.77%)	9 elements (69.23%)
Amphibian (12 elements)	7 elements (58.33%)	5 elements (41.67%)	8 elements (66.67%)	4 elements (33.33%)
Vascular Plant (195 elements)	62 elements (31.79%)	133 elements (68.21%)	111 elements (56.92%)	84 elements (43.08%)

Back to top

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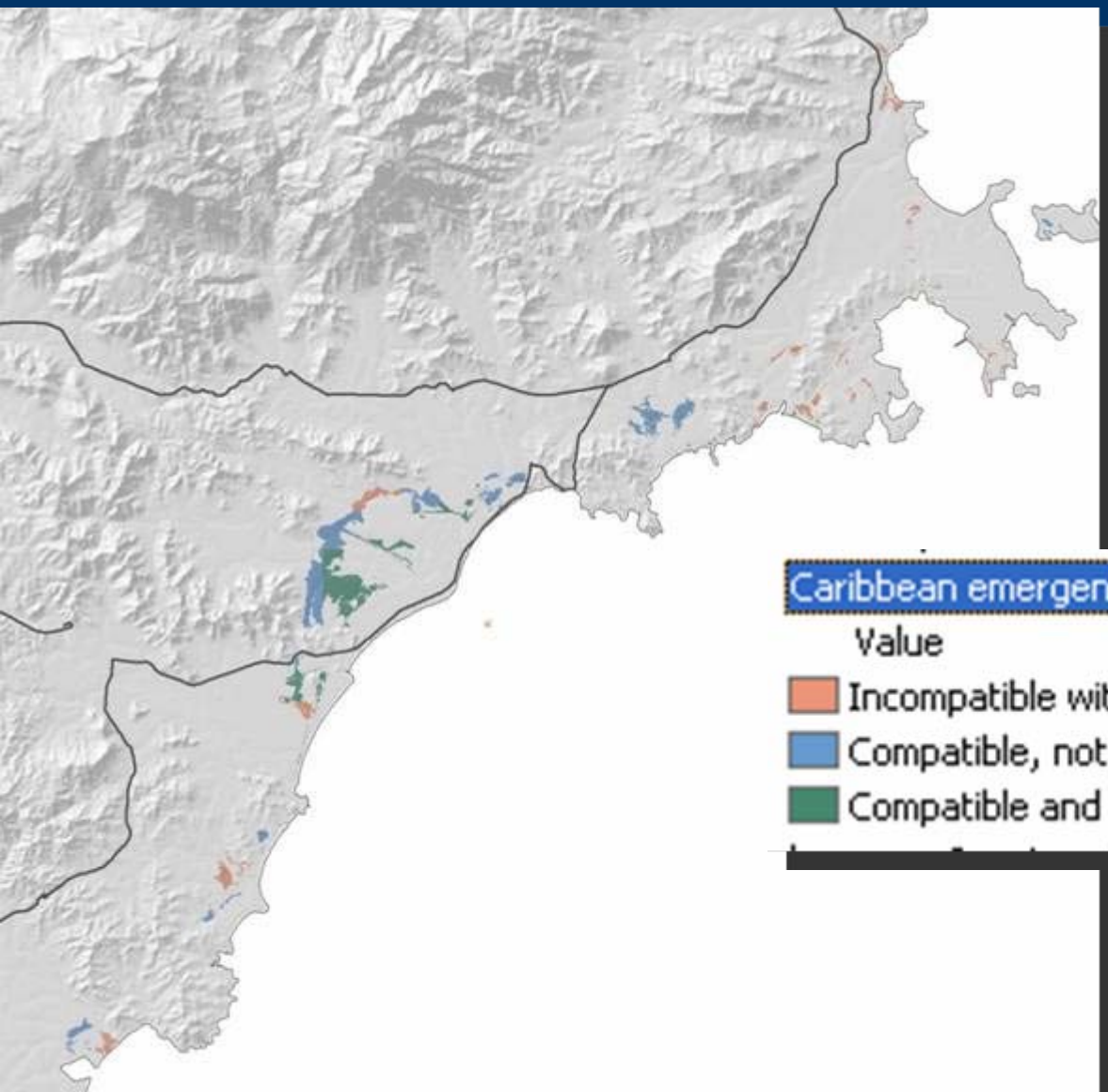
Terrestrial Ecological System (33 elements)

Name	Distribution Area (hectares)	Occs	Protected and Compatible Goal	Goal Met	Area (hectares)	Occs	Percent of goal	Compatible Goal	Goal Met	Area (hectares)	Occs	Percent of goal
Caribbean wet montane forest- Sierra Palm alliance	11,965.95	1	2,481 hectares	Y	4,151.52	1	167.33%	Y	Y	9,589.14	1	386.5%
Caribbean wet montane forest - Palo Colorado alliance	3,713.49	1	762 hectares	Y	3,577.32	1	469.46%	Y	Y	3,713.13	1	487.29%
Caribbean seasonal evergreen submontane-lowland forest (young secondary)	97,270.47	1	10,862 hectares	N	1,092.87	1	10.06%	Y	Y	88,590.6	1	815.6%
Caribbean wet submontane lowland forest (young secondary)	1,877.22	1	9,482 hectares	N	73.44	1	0.77%	N	N	1,795.86	1	18.94%
Caribbean montane submontane karst forest (young secondary)	15,690.96	1	0 hectares	Y	235.26	1	100%	Y	Y	7,782.57	1	100%
Caribbean montane wet serpentine woodland (young secondary)	1,001.25	1	0 hectares	Y	573.3	1	100%	Y	Y	937.08	1	100%
Caribbean lowland moist serpentine woodland (young secondary)	1,951.38	1	0 hectares	Y	943.56	1	100%	Y	Y	1,757.7	1	100%
Caribbean lowland dry semideciduous forest (young secondary)	19,810.44	1	7,283 hectares	N	2,025.63	1	27.81%	Y	Y	11,030.67	1	151.46%
Caribbean lowland dry riparian woodland and forest	1,231.2	1	1,229 hectares	N	93.6	1	7.62%	N	N	545.4	1	44.38%
Caribbean lowland dry limestone semideciduous forest (young secondary)	3,919.32	1	0 hectares	Y	142.38	1	100%	Y	Y	2,272.59	1	100%
Caribbean lowland dry limestone semideciduous forest	10,679.4	1	8,500 hectares	N	3,058.74	1	35.99%	Y	Y	8,894.97	1	104.65%
Caribbean floodplain forest (young secondary)	11,768.58	1	0 hectares	Y	436.5	1	100%	Y	Y	4,831.02	1	100%
Caribbean coastal dry evergreen forest	1,002.78	1	196 hectares	N	160.92	1	82.1%	Y	Y	841.95	1	429.57%
Caribbean lowland moist serpentine woodland	1,850.76	1	1,044 hectares	N	523.26	1	50.12%	Y	Y	1,498.05	1	143.49%
Caribbean coastal rocky shore	389.52	1	89 hectares	N	73.71	1	82.82%	Y	Y	120.42	1	135.3%
Caribbean coastal sandy shore	1,229.49	1	1,237 hectares	N	165.15	1	13.35%	N	N	463.5	1	37.47%
Caribbean salt flats and ponds	1,495.98	1	432 hectares	N	323.1	1	74.79%	Y	Y	741.78	1	171.71%
Caribbean maritime shore - estuary mouth mangrove	8,721.27	1	6,512 hectares	N	2,150.37	1	33.02%	N	N	4,755.78	1	73.03%
Caribbean emergent herbaceous estuary	5,741.55	1	3,083 hectares	N	1,206.63	1	39.14%	Y	Y	3,430.35	1	111.27%
Caribbean floodplain forest	3,925.17	1	3,151 hectares	N	290.34	1	9.21%	N	N	2,122.29	1	67.35%
Caribbean riparian forest and woodland	453.24	1	0 hectares	Y	8.01	1	100%	Y	Y	193.14	1	100%
Caribbean freshwater marsh	19,317.69	1	2,843 hectares	N	910.35	1	32.02%	Y	Y	10,338.03	1	363.63%
Caribbean coastal thorn scrub	17,670.87	1	3,600 hectares	Y	5,043.69	1	140.1%	Y	Y	11,365.74	1	315.72%
Caribbean edapho-xerophilous mogote complex	10,360.35	1	15,268 hectares	N	352.98	1	2.31%	N	N	5,538.33	1	36.27%

Single Element Evaluation



Vista Output for Caribbean Emergent Herbaceous Estuary Type in SE Puerto Rico

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Vista Site Explorer

Example: Good compatibility of current land use but lack of goal contribution from unreliable conservation policy indicating threat/risk for future

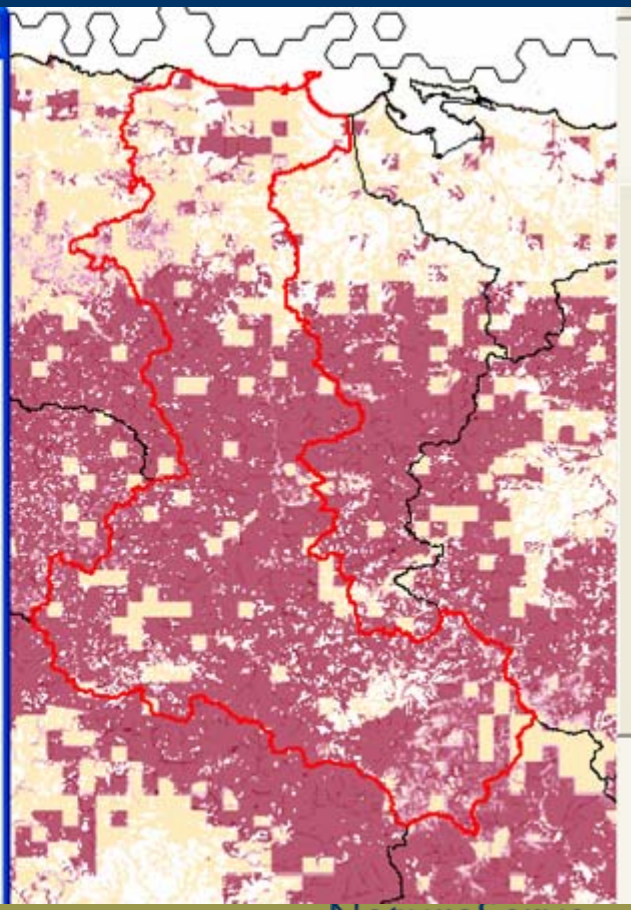
Site Explorer

Baseline Evaluation Gap Landcover
Scenario Evaluation
Site Layer Huc_basins_Dissolve

Selection Attributes
FID: 11

Options ... | Help | Report | More >>

Element Name	Total	Protected Area	% Prot	Compatible Area
Ottoschulzia rhodoxylon	16 occ's.; 49.68 ha.		25% occ's; 25.5%	
Karstic freshwater Streams	648 occ's.; 878.22		4.5% occ's; 2.7% area	
Caribbean wet montane forest-	1 occ's.; 11,965.95		100% occ's; 34.7%	
Large Rivers Stream order eq 7 No	1 occ's.; 187.83 ha.		100% occ's; 3.4%	
Caribbean seasonal evergreen	1 occ's.; 97,270.47		100% occ's; 1.1%	
Tillandsia tenuifolia var tenuifoli	8 occ's.; 25.02 ha.		0% occ's; 0% area	
Medium Rivers Stream order 4 5 and	1 occ's.; 2,575.26		100% occ's; 4.7%	
Medium Rivers Stream order 4 5 and	1 occ's.; 1,378.35		100% occ's; 6.8%	
Caribbean montane submontane	1 occ's.; 15,690.96		100% occ's; 1.5%	
Headwaters Stream order 1 2 and 3	1 occ's.; 239.49 ha.		100% occ's; 9.8%	
Headwaters Stream order 1 2 and 3	1 occ's.; 282.69 ha.		100% occ's; 46.7%	
Headwaters Stream order 1 2 and 3	1 occ's.; 527.85 ha.		100% occ's; 10.9%	
Eugenia haematocarpa	5 occ's.; 15.75 ha.		20% occ's; 20.6%	
Headwaters Stream order 1 2 and 3 lt	1 occ's.; 2,970.99		100% occ's; 4.6%	
Headwaters Stream order 1 2 and 3 lt	1 occ's.; 3,581.64		100% occ's; 4% area	
Headwaters Stream order 1 2 and 3 lt	1 occ's.; 1,391.22		100% occ's; 1.4%	
Caribbean coastal sandy shore	1 occ's.; 1,229.49		100% occ's; 13.4%	



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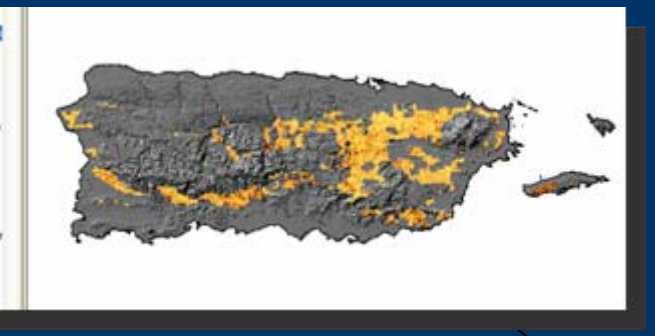
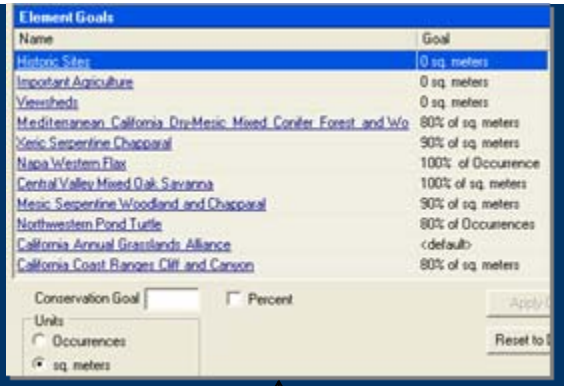
Vista Scenario Evaluation Process

Element min size & Conservation Goals

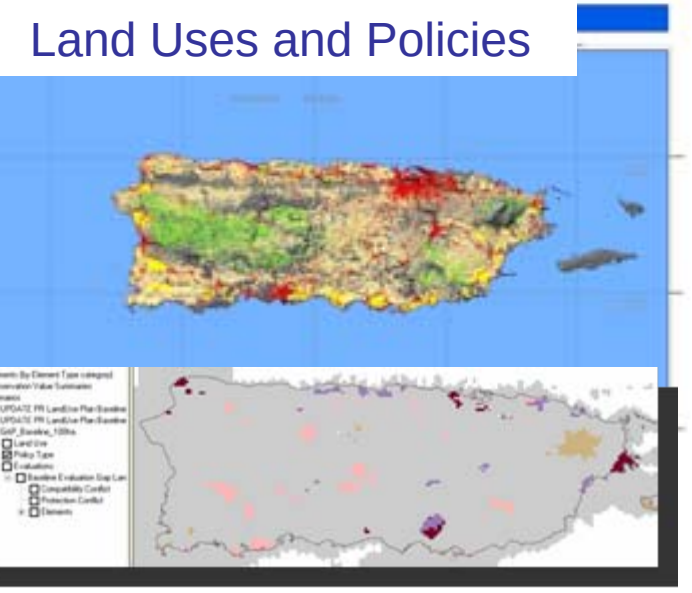


Element Distribution

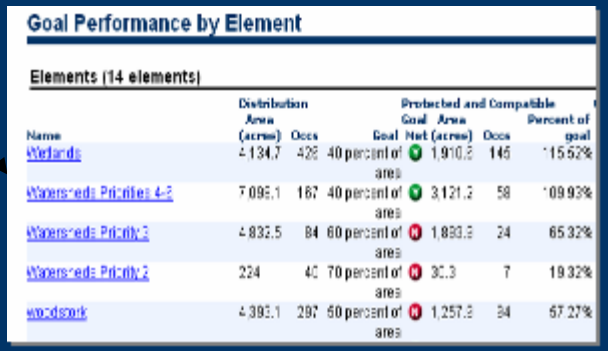


Evaluation Maps

Land Uses and Policies



GIS Intersect & Table Lookup



Evaluation Report

Element Response to Land Use

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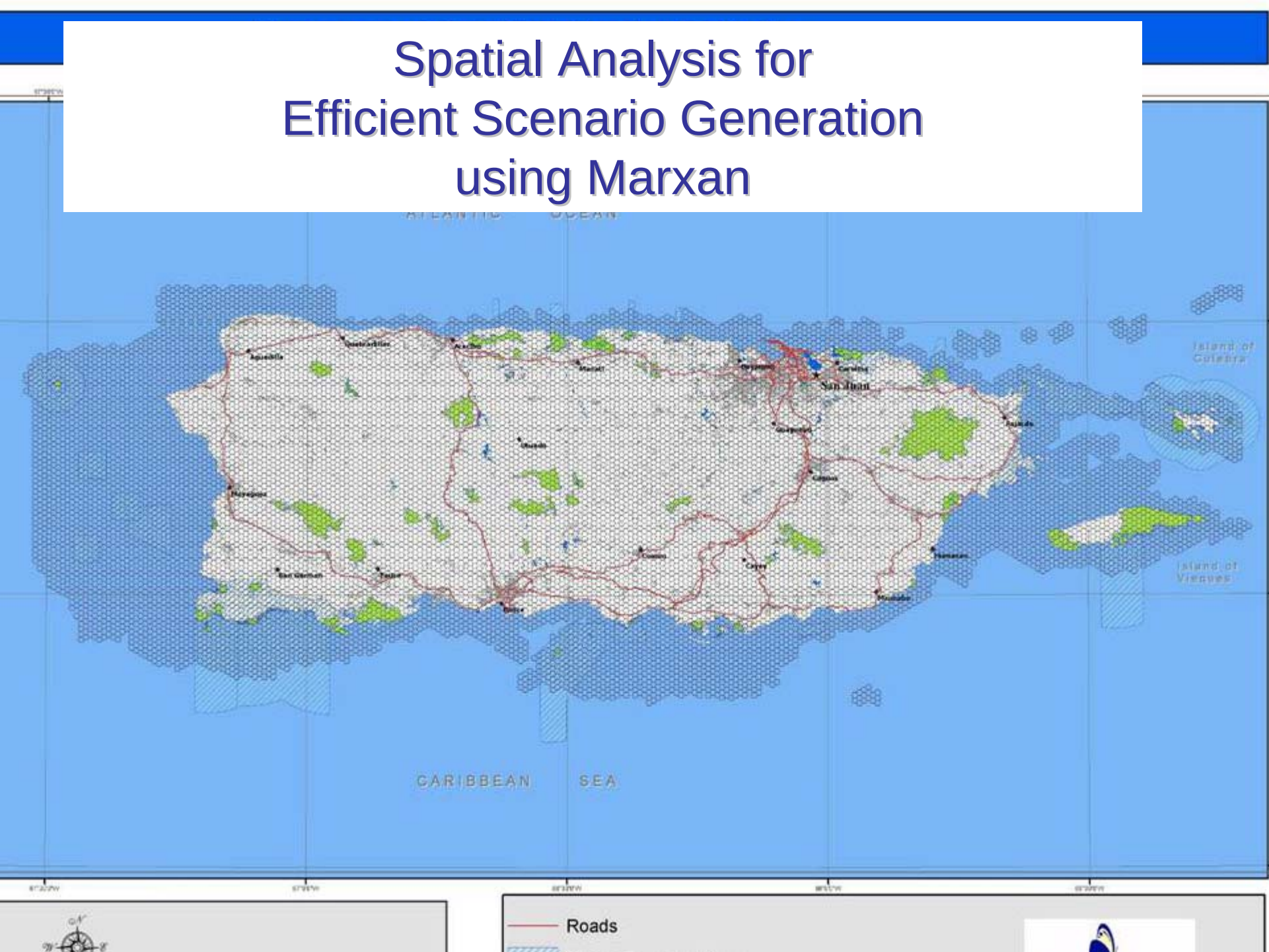
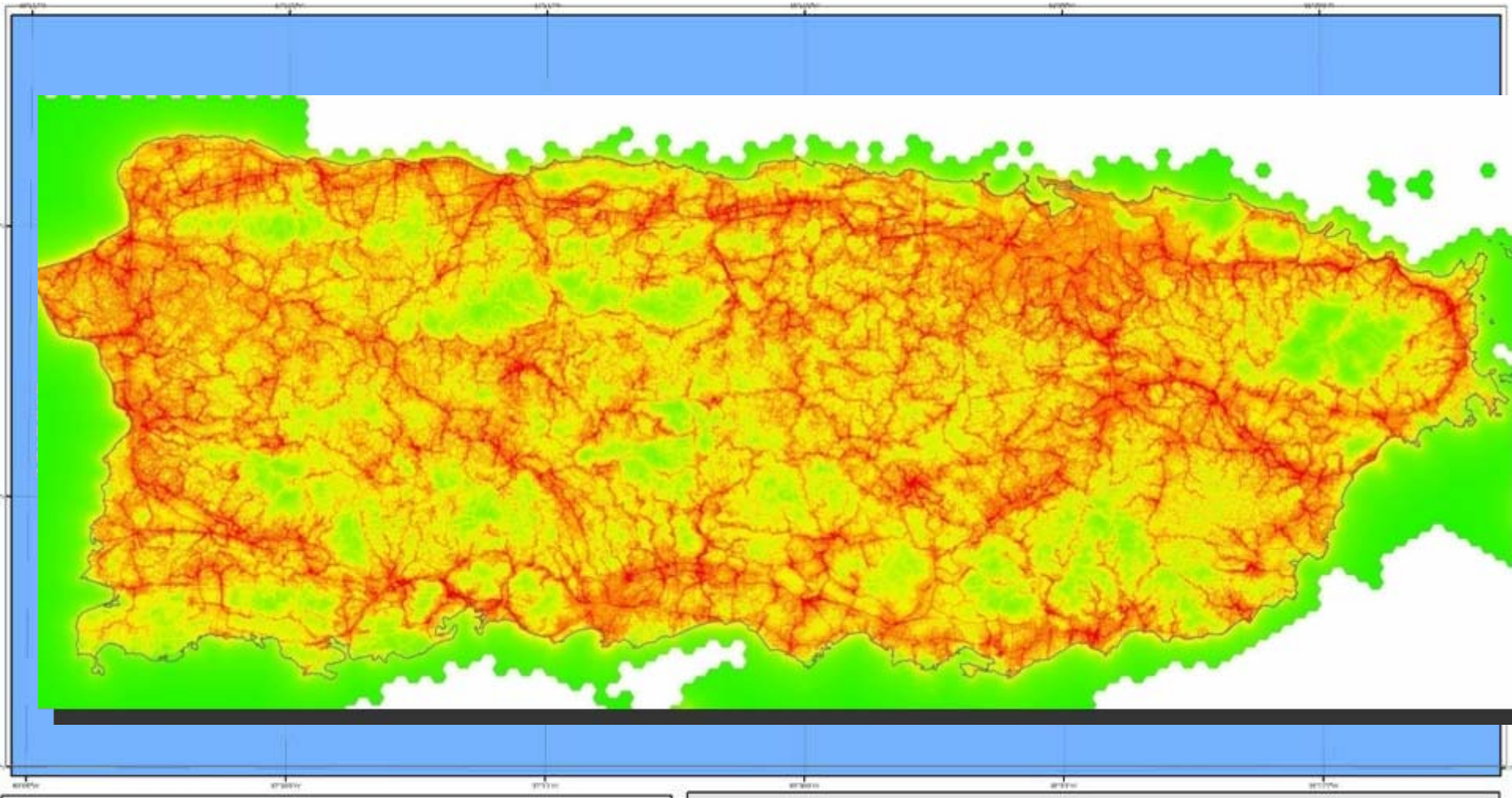
Spatial Analysis for Efficient Scenario Generation using Marxan



Marine and Terrestrial Cost



Kilometers

0 12.5 25 50 75 100

Roads

Cost Values

High : 494

Low : 0

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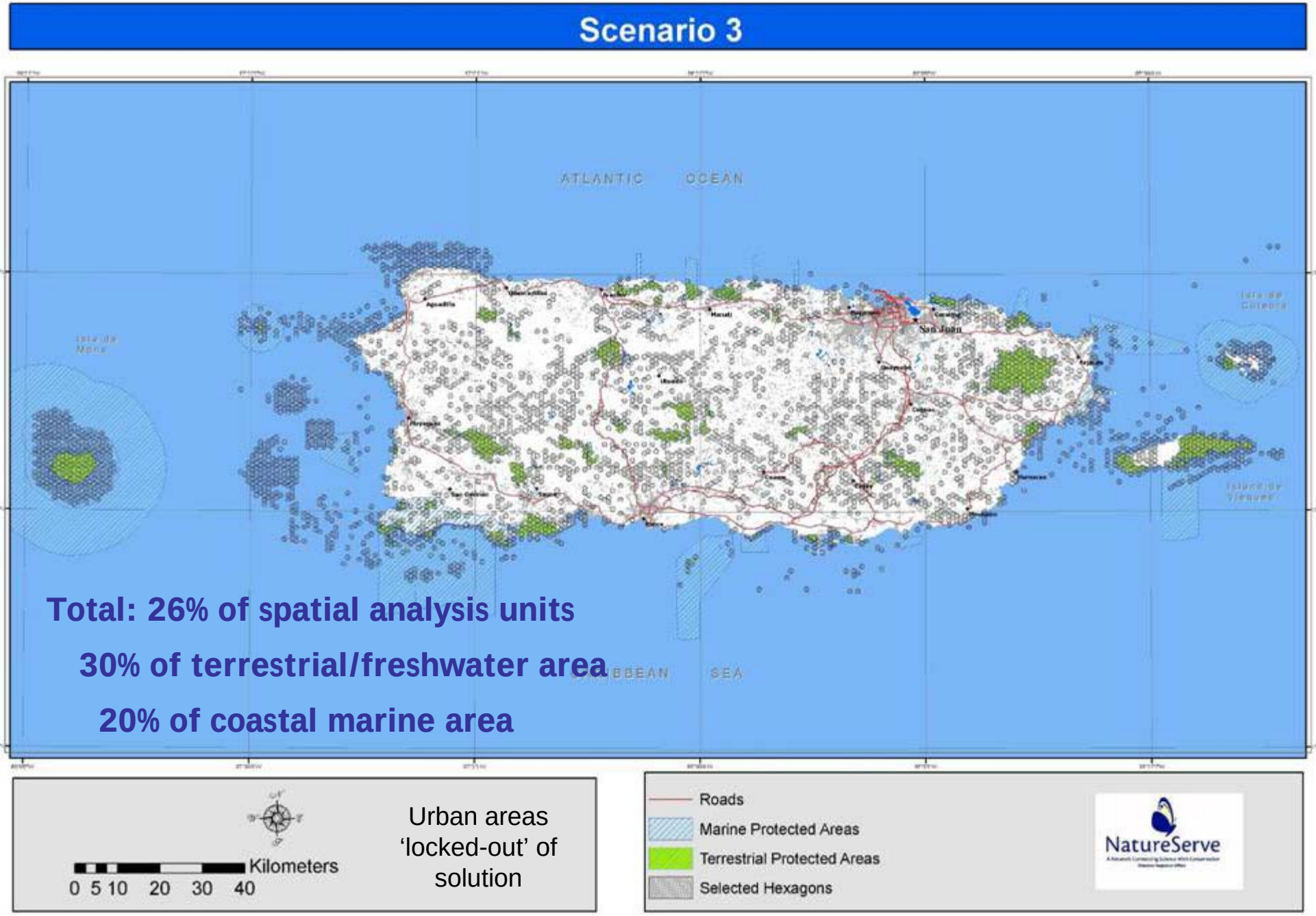
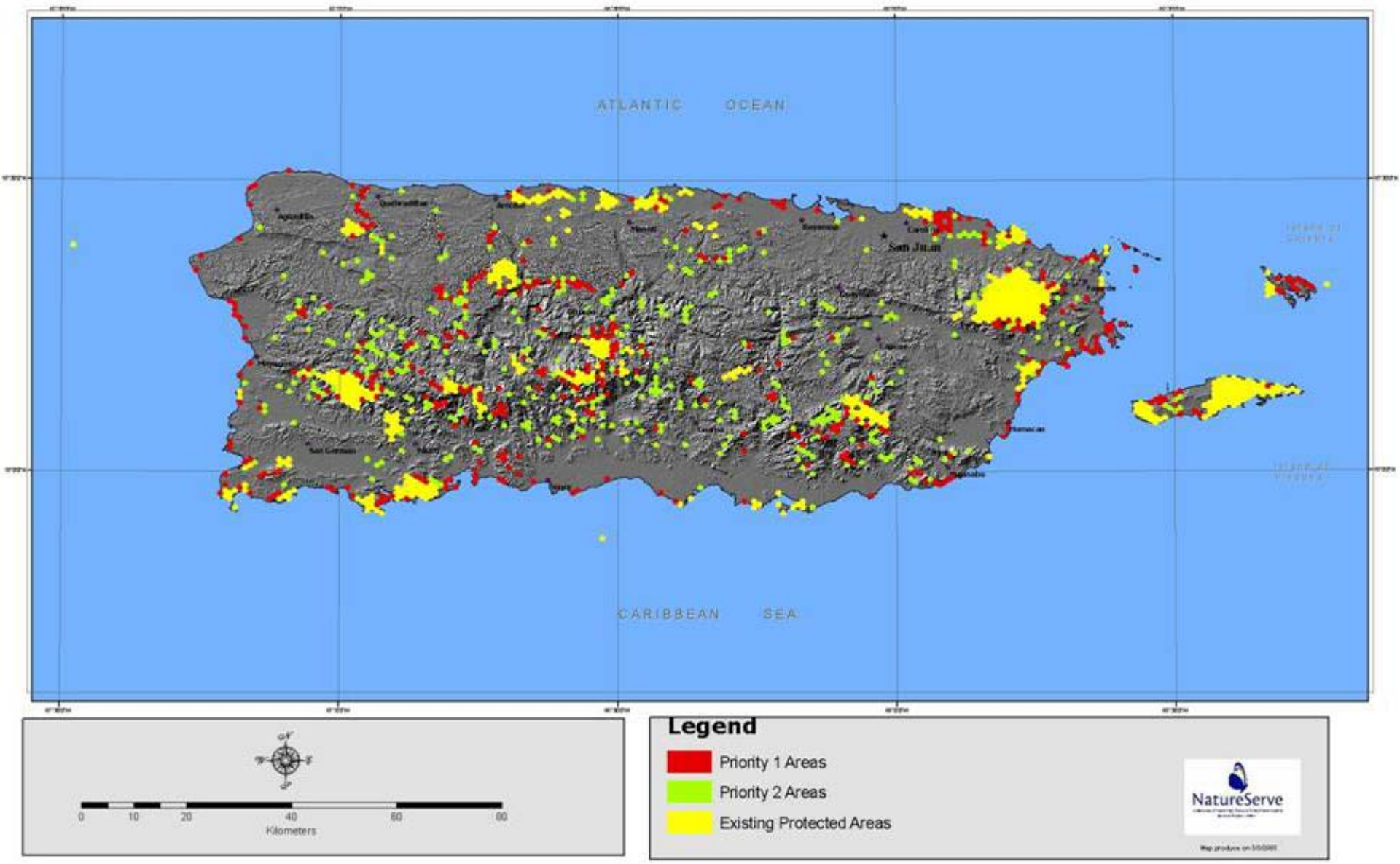
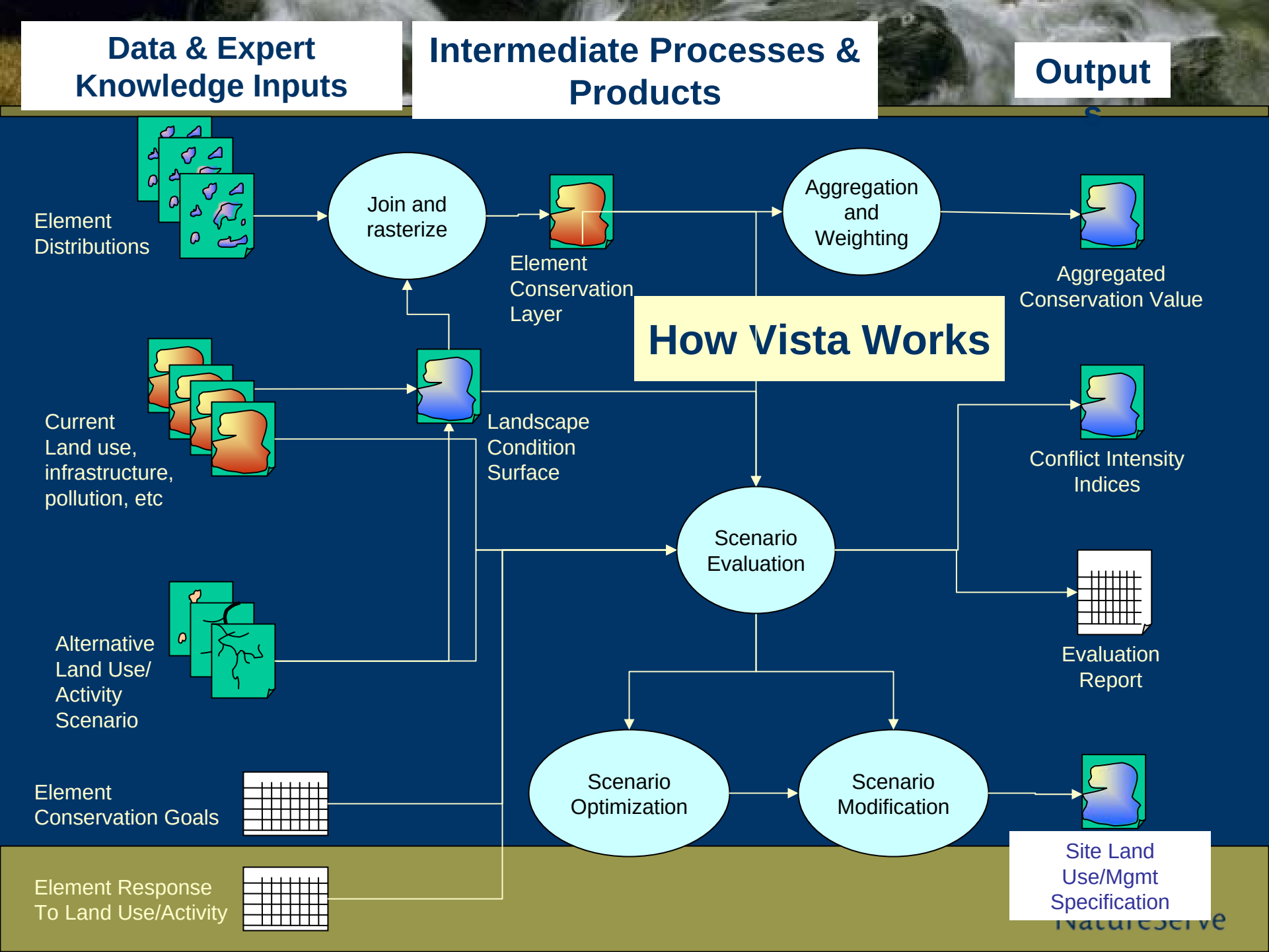
Goal for terrestrial ecosystems: 10% of historical extent, managed areas “locked in”



Priority Areas for Conservation




Data & Expert Knowledge Inputs
Intermediate Processes & Products
Output
Element Distributions
Join and rasterize
Element Conservation Layer
Aggregation and Weighting
Aggregated Conservation Value
How Vista Works
Current Land use, infrastructure, pollution, etc
Landscape Condition Surface
Conflict Intensity Indices
Scenario Evaluation
Alternative Land Use/ Activity Scenario
Evaluation Report
Element Conservation Goals
Scenario Optimization
Scenario Modification
Site Land Use/Mgmt Specification
Element Response To Land Use/Activity

Wrap up

- Acknowledgements: IITF Puerto Rico GAP Project & *Patrimonio* (DRNA) for data; Conservation Trust for funding

- More information:
  - Natureserve.org/vista: read about, download Vista
  - Ebmtools.org: search for dozens of tools for ecosystem-based management
  - patrick_crist@natureserve.org for application information
  - Pat_comer@natureserve.org

NatureServe


¡Gracias!
Thank You!
www.natureserve.org

The Conservation Registry

Integrating on-the-ground conservation

Gina LaRocco
Defenders of Wildlife

Registry Overview:

- What is the registry?
- Who is involved?
- Why is it necessary?
- How will it work?
- How can you help?

What is the Registry?

- Online, centralized database
- Records, tracks and maps conservation actions across the landscape
- User-friendly format for data entry and retrieval

Conservation Action:

- Enhance Conservation Status
- Habitat Restoration and Management
- Monitoring, Education and Research

Who is involved?

- Users
  - Landowners
  - Land trusts
  - Forest industry
  - Federal, state and local agencies
  - Policy makers
  - Conservation organizations
  - Hunting, fishing and recreation groups
  - Interested public

- Partners
  - Benjamin Hammett, Phd
  - Bonneville Power Administration
  - Bureau of Land Management (Oregon)
  - Clean Water Services
  - Defenders of Wildlife
  - Doris Duke Charitable Foundation
  - Idaho Department of Fish & Game
  - Metro Regional Government
  - John Miller, Wildwood / Mahonia, Inc.
  - Nature Serve
  - Northwest Habitat Institute
  - Oregon Department of Fish & Wildlife
  - Oregon Department of Forestry
  - Oregon Department of Geology and Mineral Industries
  - Oregon Department of Parks and

- Partners (cont.)
  - Oregon Forest Resources Institute
  - Oregon Institute for Natural Resources
  - Oregon Watershed Enhancement Board
  - Samuel S. Johnson Foundation
  - The Nature Conservancy (Oregon)
  - U.S.D.A. Forest Service
  - U.S.D.A. Forest Service Pacific NW Research Station
  - U.S. Fish and Wildlife Service
  - U.S. Geological Survey
  - University of Idaho
  - Washington Biodiversity Council
  - Washington Department of Fish & Wildlife
  - Washington Interagency Committee for Outdoor Recreation/ Salmon Recovery Funding Board
  - Washington Interagency Committee—Natural Resource Information Portal
  - Wessinger Foundation

Why is it necessary?

- State Wildlife Action Plans
  - Need for a tool to track and monitor conservation actions
  - Stakeholder group working with Oregon Department of Fish and Wildlife

Why is it necessary? (cont.)

- Lack of centralized location for tracking conservation actions

- Impossible to determine
  - Where actions are taking place
  - If actions match priorities

- Missed opportunities for collaboration among

How will it work?

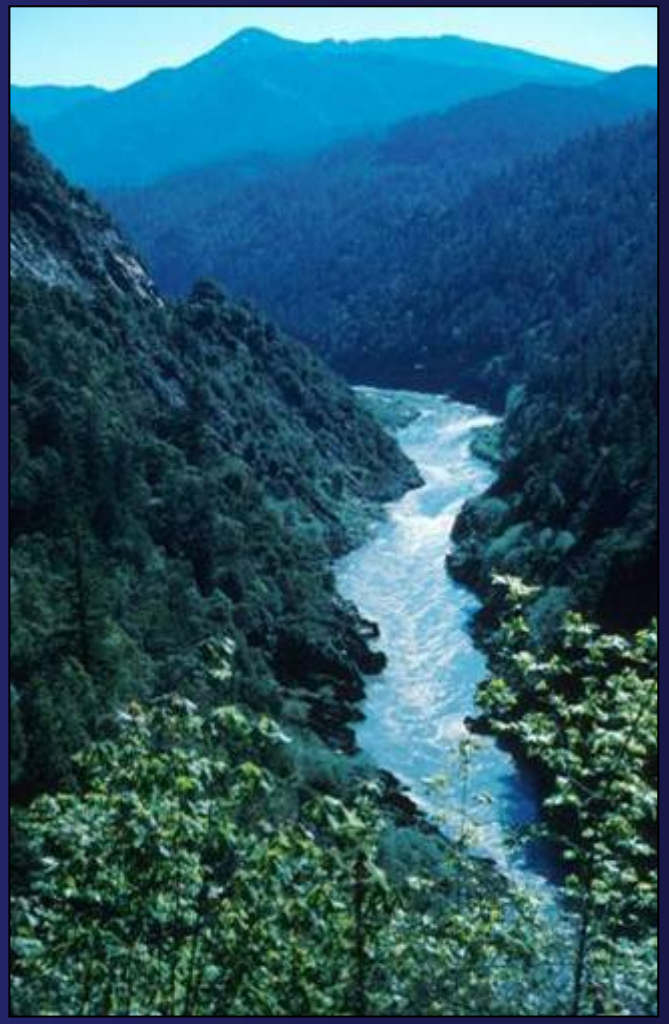
- Initial pilot in Idaho, Washington and Oregon
- National expansion following initial launch
- State and organization-specific portals for content, data and user administration

Design:

- Balance between simplicity and precision
- User-friendly interface for less technical users, but also a powerful analytic tool for professionals

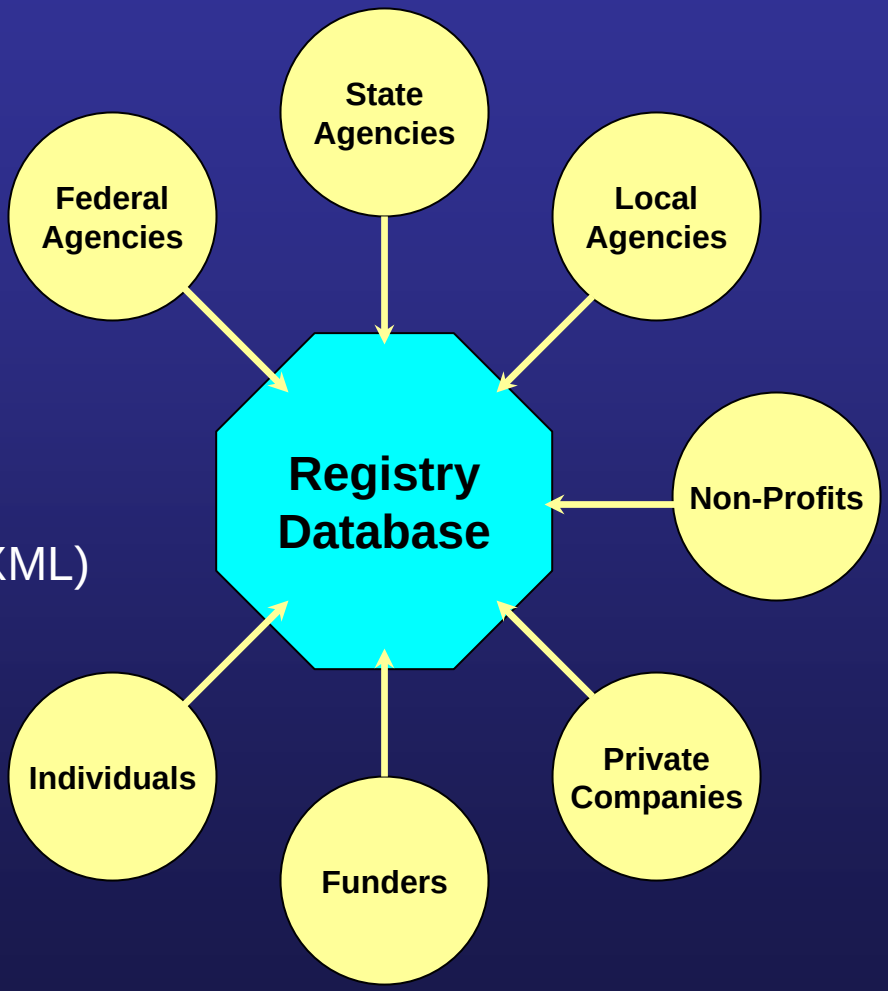
Design: (cont.)

- Emphasis on ease of use
  - Turbo-tax style data entry
  - Google Maps platform
- Integration/linkage with other databases
- Uses NatureServe habitat and species information



Project Entry

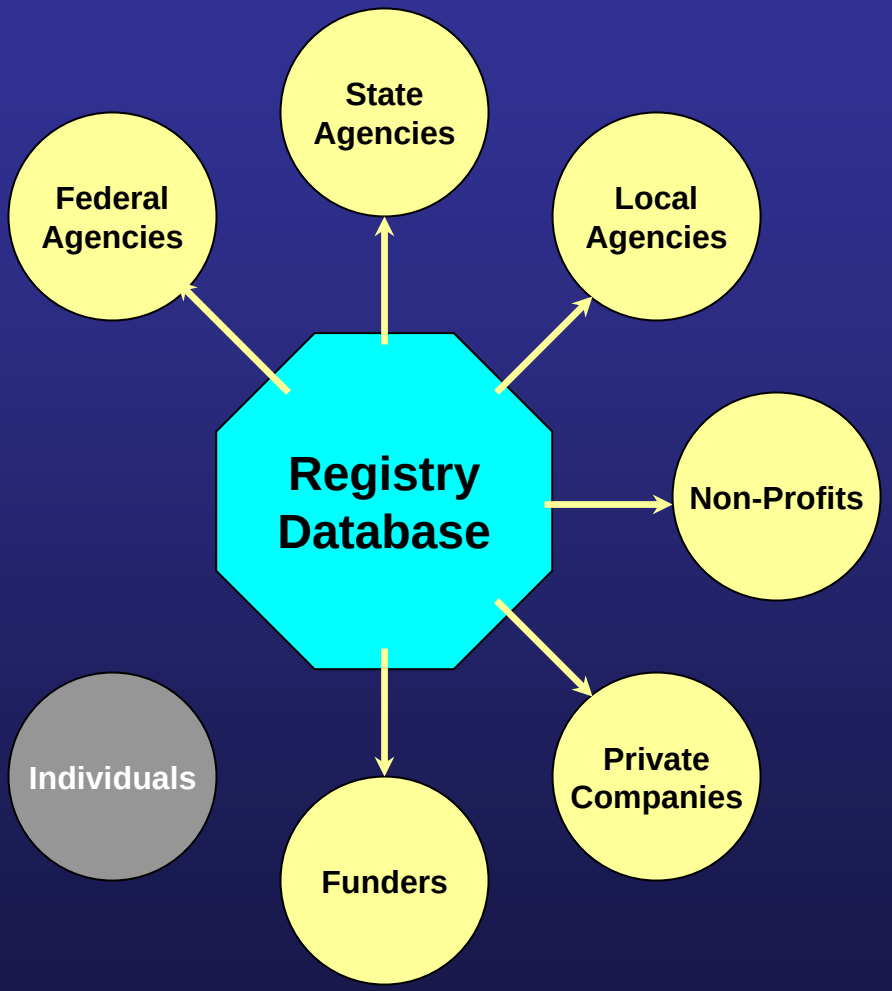
Project Entry Methods
- Manual (typed input)
- Automated (data sharing via XML)



Registry Portals

Portal Features

- Unique web address
- Filtered database content
- Branded look and feel
- Additional customization

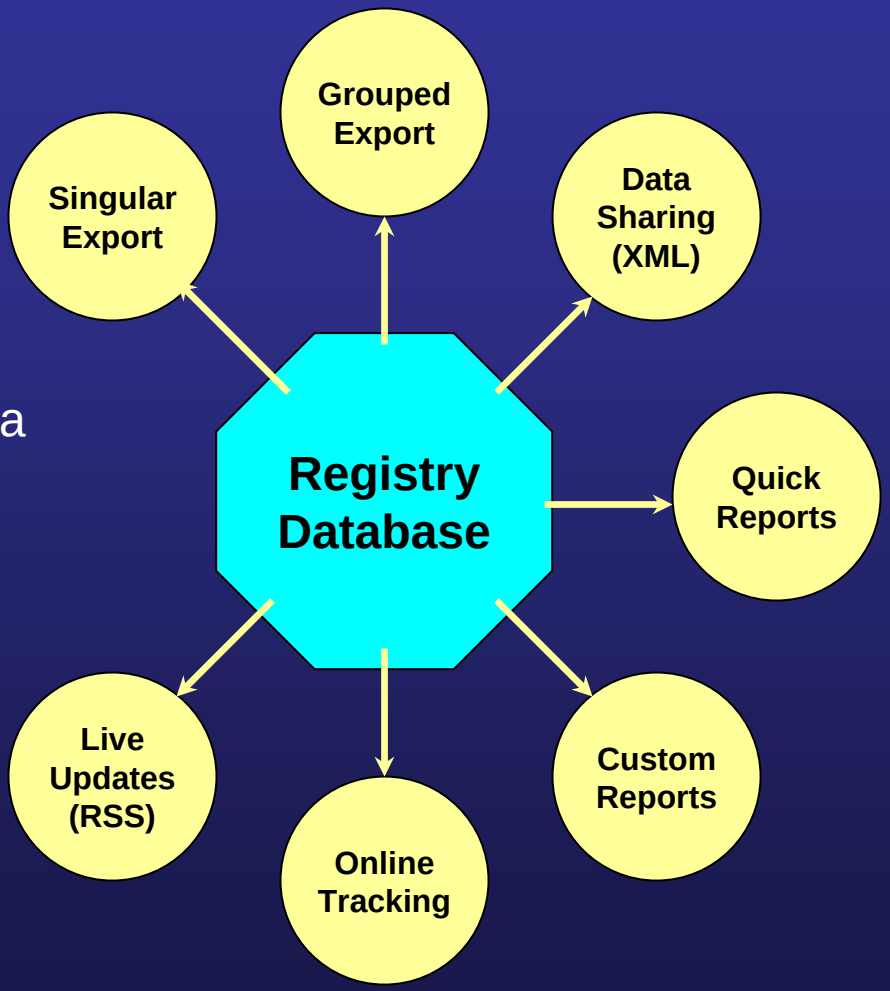


Example Web Address:
http://landtrust.conservationregistry.org

Sharing and Tracking

Open System

- Registry tools or extracted data
- Single or grouped projects
- Simple and complex reports
- Data, images, shape files
- Access to custom map layers



How can you help?

- Funding
- Volunteer as beta testers
- Share your data on conservation actions
- Outreach

Registry Development Team:

- **Defenders of Wildlife**
  Sara Vickerman
  Gina LaRocco
  Kassandra Kelly

- **Oregon Dept. of Fish and Wildlife**
  Matt Lawhead

- **The Nature Conservancy**
  Michael Schindel

- **Institute for Natural Resources**
  Jimmy Kagan
  Avi Hihinashvilli
  Moran Rosenthal-Henn

- **The Other Firm**
  Ty Montgomery
  Ryan Shaw
  Sam Miller

Contact Information:

Sara Vickerman
Gina LaRocco

Defenders of Wildlife
1880 Willamette Falls Drive, #200
West Linn, Oregon 97068
503-697-3222
E-mail:
SVickerman@defenders.org
GLarocco@defenders.org

Overview web site:

www.conservationregistry.org

Demo Site

- Representative data and functionality
- Available throughout development
- http://demo.conservationregistry.org
- Username: demo@conservationregistry.org
- Password: demo

The Conservation Registry

SEARCH

PROJECTS | MY REGISTRY | NEWS | FORUM | HELP | ABOUT | CONTACT

- Browse by Maps
- Browse by Keywords
- Add a Project
- Advanced Search
- Registry Tutorials
- Create an Account
- View My Registry

State Portals

Select a State — Go

Partner Portals

- Bureau of Land Management
- Land Trust Alliance
- U.S. Fish & Wildlife Service
- Oregon State University

Projects in Need

- Volunteers (8)
- Partners (11)
- Financial Support (40)

Quick Search

View projects of specific types or common criteria.

- Sample Region
- Habitat Restoration and Management
- Land Conservation Status
- Monitoring, Education and Research

RSS Feeds (What is this?)

Welcome to the Conservation Registry

The Registry is a free, online database that records, tracks and maps conservation actions across the landscape. The Registry provides a way to share information about conservation activities, show the volume of conservation investments underway and help users better determine how those investments match conservation priorities.

VIEW TUTORIAL

About The Conservation Registry

The concept of the Registry emerged from the need to understand the scope of conservation activities across the landscape and to identify areas where landowners and organizations can generate the greatest strategic benefits for fish and wildlife.

LEARN MORE

Mapping

About Project Mapping

Mapping allows anyone to browse geographic areas to view current projects in a variety of map views (political, topographical, satellite, etc.). When entering project data, registered users can use drawing tools within the map view to depict project locations with points, lines or polygons.

Browse Maps

Registry Announcements

Welcome to the Registry Demo:

This demonstration version of the Conservation Registry is provided to simulate how the Registry will perform while programming for the beta launch continues. Please note that not all features are live and project data is for example purposes only. Additional features and live data will be made available soon.

Explore these features of the Registry Demo:

Search: We've pre-populated the search box for you. Click the arrow to submit and you'll be shown representative search results.

Browse: Click "Browse by Maps" or "Browse by Keywords" to see how these features will function.

Projects: Click "Add a Project" to see how a user will view their project data prior to submission or during editing.

My Registry: Click "My Registry" to view how users will be able to manage Registry data from their personal dashboard.

Explore on Your Own: Click around! If you come across an inactive feature of the Demo, you'll see a description of how that feature will perform or planned content.

We hope you are pleased with the direction the Registry is taking and will welcome your comments during our beta testing phase. If you'd like to be considered as a beta tester, please click here.

Past Posts

Registry Fact Sheet
March 23, 2007

Site Map (v2.1)
March 16, 2007

Visual Design
January 11, 2007

Data Entry Fields
November 8, 2006

Registry Partners
November 3, 2006

PowerPoint Presentation
November 2, 2006

Previous Posts

Registry Sponsors

The Nature Conservancy

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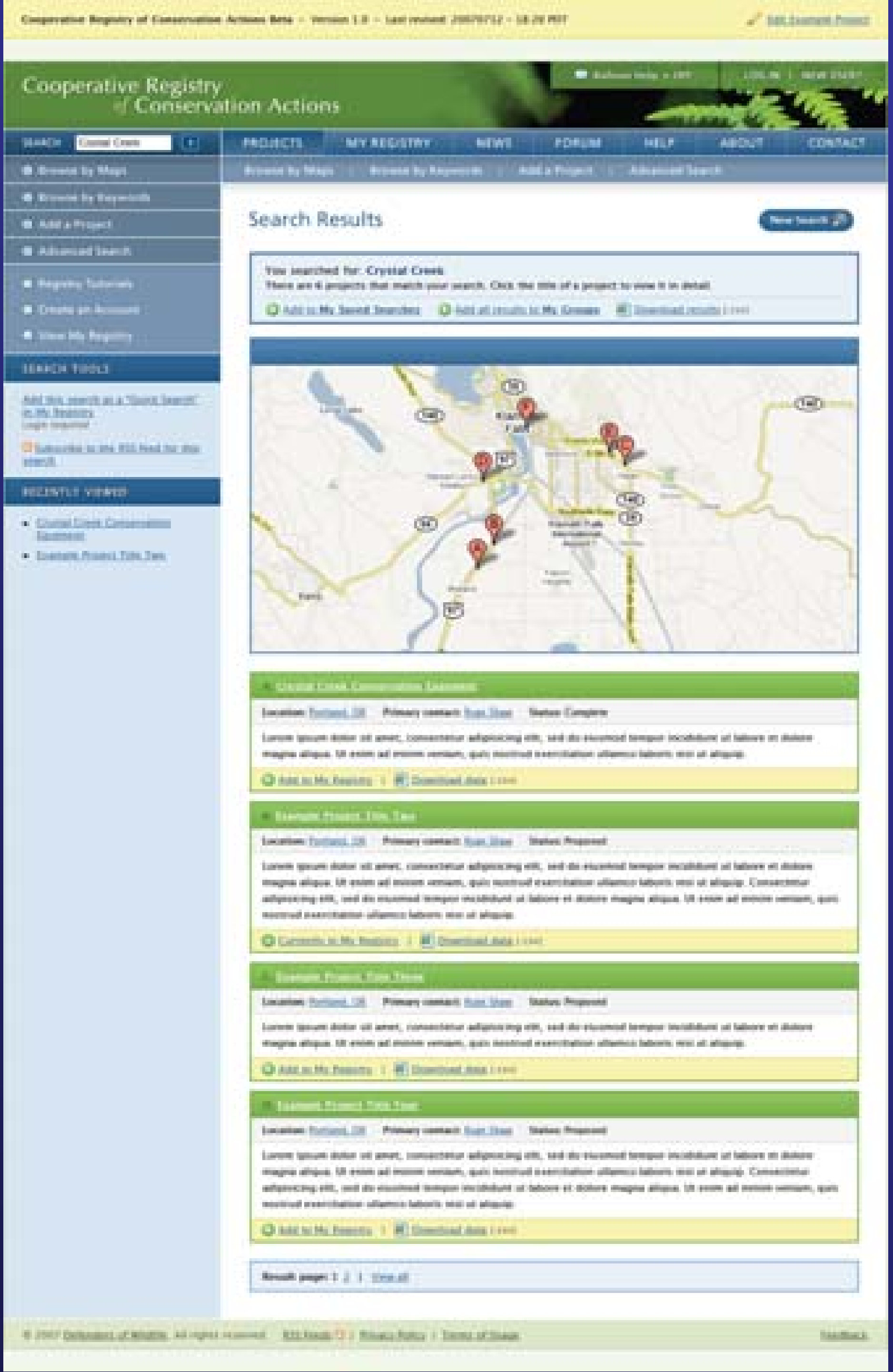
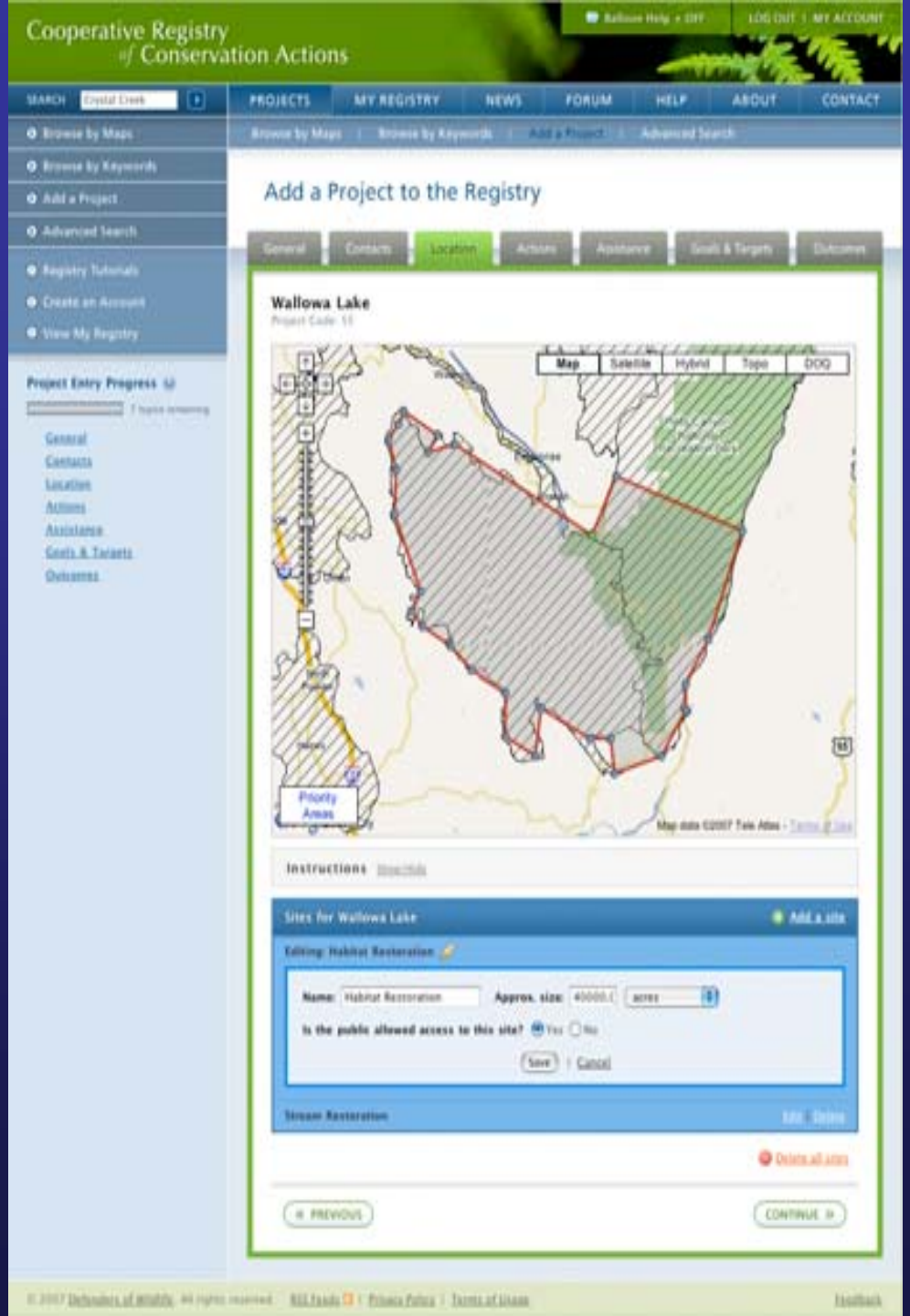
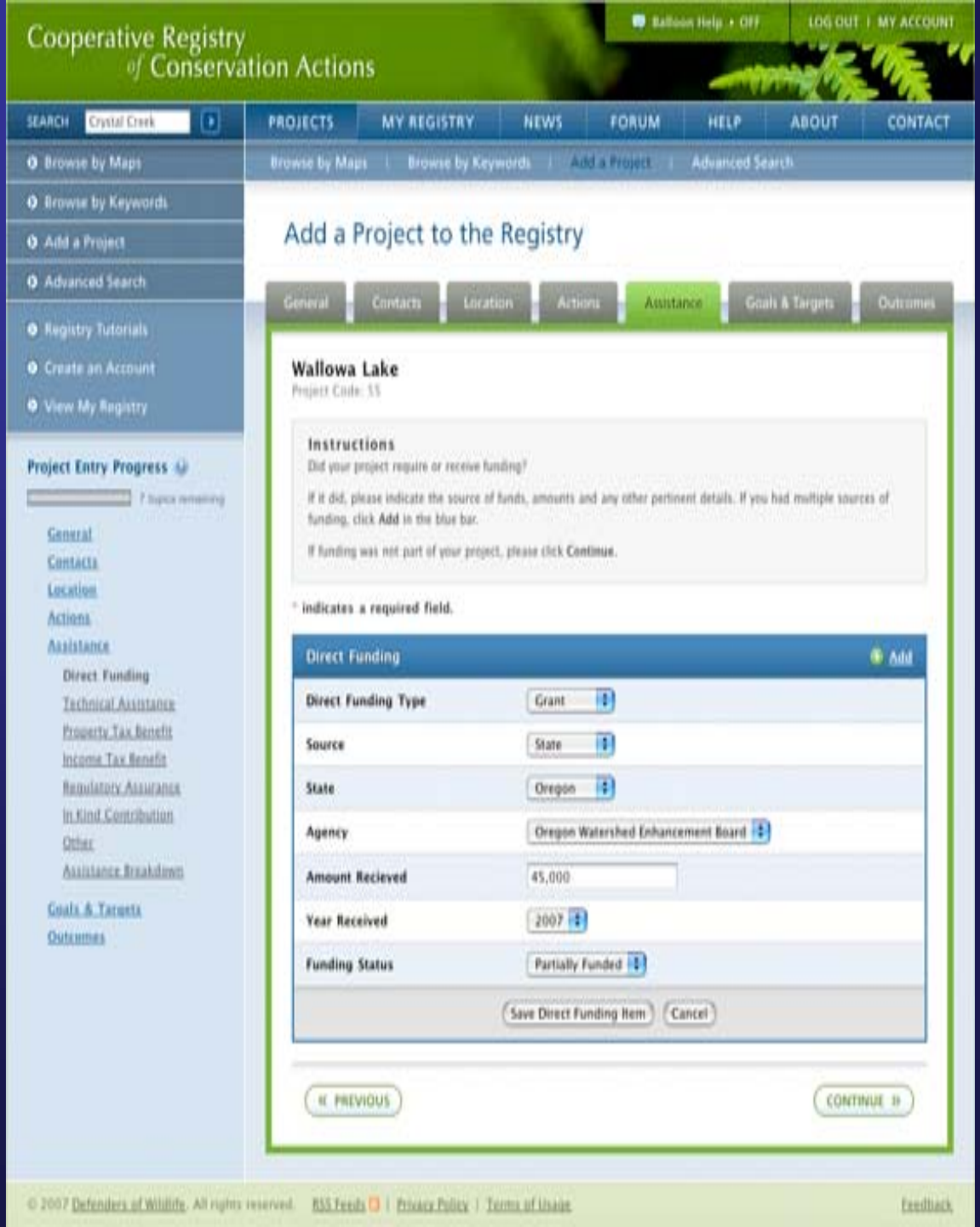
Feedback


Cooperative Registry of Conservation Actions
PROJECTS
MY REGISTRY
NEWS
FORUM
HELP
ABOUT
CONTACT
Browse by Maps
Browse by Keywords
Add a Project
Advanced Search
Registry Tutorials
Create an Account
View My Registry
SEARCH TOOLS
RECENTLY VIEWED
Search Results
New Search
You searched for: Crystal Creek
Location:
Primary contact:
Status: Complete
Status: Proposed


Cooperative Registry of Conservation Actions Beta - Version 1.0 - Last revised: 2007/07/12 - 18.20 PDT
Edit Example Project
Cooperative Registry of Conservation Actions
Balloon Help: OFF
LOG IN | NEW USER
SEARCH Crystal Creek
PROJECTS
MY REGISTRY
NEWS
FORUM
HELP
ABOUT
CONTACT
Browse by Maps
Browse by Keywords
Add a Project
Advanced Search
Registry Tutorials
Create an Account
View My Registry
KEYWORD TOOLS
Keyword Selections
All Projects (1,598) remove
Biodiversity (93) remove
Salmon (29) remove
Chinook (14) remove
Clear this keyword path
Add this keyword path as a "Quick Search" in My Registry
Login required
Subscribe to the RSS feed for this keyword path
RECENTLY VIEWED
Crystal Creek Conservation Easement
Example Project Title Two
Browse by Maps | Browse by Keywords | Add a Project | Advanced Search
Browse by Keywords
Instructions
The following keywords are represented within the Registry and/or your specific search criteria. The number of projects tagged with each keyword appears in parentheses. Clicking on a keyword will present a new list of keywords that are present within the selected keyword, narrowing results each time you select additional keywords. The resulting path is presented in Keyword Tools to the left.
Search for keyword: bird
Suggestions: biodiversity, biodiversity_partners, biodiesel
10 Most Popular: Alphabetical order | Sort by occurance (high to low) | Show all (1,587)
biodiversity (93), botanical garden (10), botany (40), buffer zones (8), coastal plain (98), conservation (114), conservation ecology (12), consulting (93), coral reef (8), corridors (8), database (6), dunes (40), ecological inventory (1), ecological restoration (13), ecological risk assessment (3), ecosystem management (6), ecosystems (17), endangered species (42), environmental (24), exotic plants (17), exotic species (8), fire ecology (2), flatwoods (4), floodplains (11), forest (11), grasslands (10), greenspace (10), greenway (10), groundcover (10), groundtruthing (10)
Results: 10 projects
Crystal Creek Conservation Easement
Location: Portland, OR Primary contact: Ryan Shaw Status: Complete
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip.
Add to My Registry | Download data (.csv)
Example Project Title Two
Location: Portland, OR Primary contact: Ryan Shaw Status: Complete
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip.
Add to My Registry | Download data (.csv)
Result page: 1 2 | View all
© 2007 Defenders of Wildlife. All rights reserved. RSS Feeds | Privacy Policy | Terms of Usage
Feedback


Cooperative Registry
of Conservation Actions
LOG OUT | MY ACCOUNT
SEARCH
PROJECTS
MY REGISTRY
NEWS
FORUM
HELP
ABOUT
CONTACT
Browse by Maps
Browse by Keywords
Add a Project
Advanced Search
Registry Tutorials
Create an Account
View My Registry
Project Entry Progress
General
Contacts
Location
Actions
Assistance
Goals & Targets
Outcomes
Add a Project to the Registry
General
Contacts
Location
Actions
Assistance
Goals & Targets
Outcomes
Wallowa Lake
Map
Satellite
Hybrid
Topo
DOQ
Priority Areas
Instructions
Sites for Wallowa Lake
Add a site
Name:
Approx. size:
acres
Is the public allowed access to this site?
Yes
No
Save
Cancel
Stream Restoration
Edit
Delete
Delete all sites
« PREVIOUS
CONTINUE »
Privacy Policy
Terms of Usage
Feedback


Cooperative Registry of Conservation Actions
PROJECTS
MY REGISTRY
NEWS
FORUM
HELP
ABOUT
CONTACT
Add a Project to the Registry
Wallowa Lake
Actions for Wallowa Lake
Enhance conservation status
Private property transactions
Conservation easement
Land acquisition for conservation (fee simple, etc.)
Stewardship certification
Conservation plans and agreements
Natural area designation and zoning
Conservation mitigation banks
Habitat restoration and management
Aquatic and riparian restoration and management
Enrich stream nutrients
Improve in-stream fish habitat
Maintain or create natural stream buffers
Increase the function of an existing wetland
Stabilize streambank
Terrestrial habitat restoration and management
Species conservation and management
Invasive species control and management
Clean ups and contamination management
Monitoring, research, and education
Please provide additional details regarding your selected actions.
Action
Area size
Action lead
Status
Conservation easement
Enrich Stream Nutrients
Improve In-stream Fish Habitat
Maintain or create natural stream buffers
Increase the function of an existing wetland
Restore or re-establish wetland hydrology
Stabilize streambank


Cooperative Registry of Conservation Actions
Balloon Help : OFF
LOG OUT | MY ACCOUNT
SEARCH Crystal Creek
PROJECTS
MY REGISTRY
NEWS
FORUM
HELP
ABOUT
CONTACT
Browse by Maps
Browse by Keywords
Add a Project
Advanced Search
Registry Tutorials
Create an Account
View My Registry
Project Entry Progress
7 topics remaining
General
Contacts
Location
Actions
Assistance
Direct Funding
Technical Assistance
Property Tax Benefit
Income Tax Benefit
Regulatory Assurance
In Kind Contribution
Other
Assistance Breakdown
Goals & Targets
Outcomes
Add a Project to the Registry
General
Contacts
Location
Actions
Assistance
Goals & Targets
Outcomes
Wallowa Lake
Project Code: 55
Instructions
Did your project require or receive funding?
If it did, please indicate the source of funds, amounts and any other pertinent details. If you had multiple sources of funding, click Add in the blue bar.
If funding was not part of your project, please click Continue.
* indicates a required field.
Direct Funding
Add
Direct Funding Type
Grant
Source
State
State
Oregon
Agency
Oregon Watershed Enhancement Board
Amount Recieved
45,000
Year Received
2007
Funding Status
Partially Funded
Save Direct Funding Item
Cancel
« PREVIOUS
CONTINUE »
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Balloon Help • OFF
LOG OUT | MY ACCOUNT
SEARCH Crystal Creek
PROJECTS
MY REGISTRY
NEWS
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HELP
ABOUT
CONTACT
Browse by Maps
Browse by Keywords
Add a Project
Advanced Search
Registry Tutorials
Create an Account
View My Registry
Browse by Maps | Browse by Keywords | Add a Project | Advanced Search
Add a Project to the Registry
General
Contacts
Location
Actions
Assistance
Goals & Targets
Outcomes
Project Entry Progress
7 topics remaining
General
Contacts
Location
Actions
Assistance
Goals & Targets
Goals
Targeted Habitats
Targeted Species
Outcomes
Wallowa Lake
Project Code: 15
Instructions
Please indicate all of the targeted habitats related to your project. In some instances, the selection box will reveal additional choices to further specify the habitat type. Please select all that apply.
Targeted Habitats for Wallowa Lake
Forests and Woodlands
Expand All
Oak Woodlands
Aspen Stands
Mixed Hardwood-Conifer Forest or Woodland (Big Leaf Maple)
Coastal Spruce, Port Orford Cedar or Redwood Forest
Western Oregon Douglas-fir Hemlock Forest
Silver Fir - Mountain Hemlock Montane Forest
Subalpine Forests and Woodlands (Spruce-fir)
Mixed Conifer (Grand fir/White fir/Douglas fir/Pine) Forests
Siskiyou Mixed Conifer (Jeffrey pine, White fir, Shasta fir)
Lodgepole Pine Forest and Woodland
Ponderosa Pine Forest and Woodland
Juniper Woodland and Savanna
Aquatic
Shrubs and Grasslands
Wetlands and Riparian Habitats
Montane Riparian Forests and Shrublands
Coastal and Valley (Western Oregon) Lowland Riparian Forests and Shrublands
Interior (Eastern Oregon) Lowland and Foothill Riparian Woodlands and Shrublands
Marshes, Bogs and Emergent Wetlands
Forested or Shrub Wetlands and Swamps
Special Types
Human Habitats
« PREVIOUS
CONTINUE »
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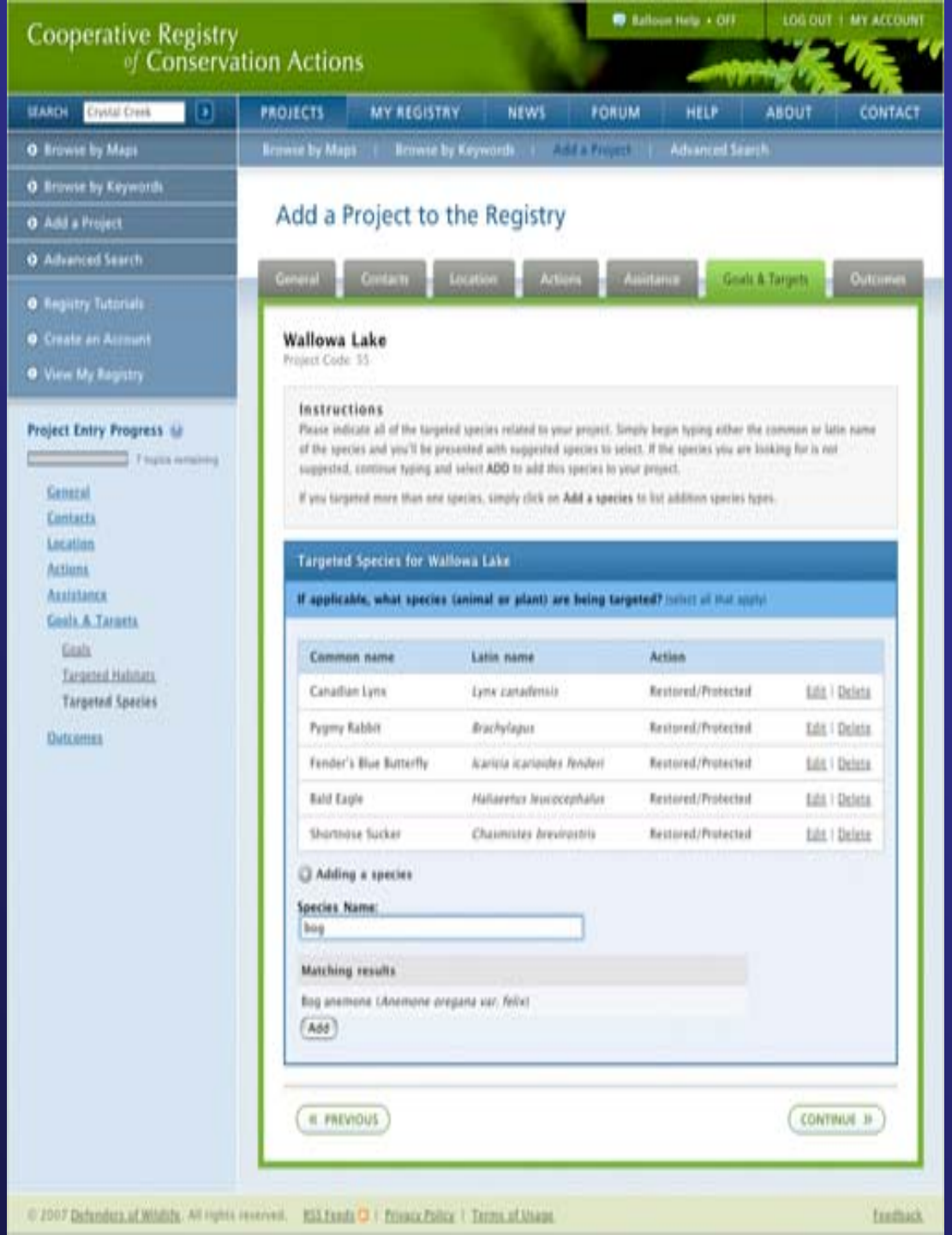
Cooperative Registry of Conservation Actions
Balloon Help • OFF
LOG OUT | MY ACCOUNT
SEARCH
Crystal Creek
PROJECTS
MY REGISTRY
NEWS
FORUM
HELP
ABOUT
CONTACT
Browse by Maps
Browse by Keywords
Add a Project
Advanced Search
Registry Tutorials
Create an Account
View My Registry
Project Entry Progress
7 topics remaining
General
Contacts
Location
Actions
Assistance
Goals & Targets
Goals
Targeted Habitats
Targeted Species
Outcomes
Browse by Maps | Browse by Keywords | Add a Project | Advanced Search
Add a Project to the Registry
General
Contacts
Location
Actions
Assistance
Goals & Targets
Outcomes
Wallowa Lake
Project Code: 55
Instructions
Please indicate all of the targeted species related to your project. Simply begin typing either the common or latin name of the species and you'll be presented with suggested species to select. If the species you are looking for is not suggested, continue typing and select ADD to add this species to your project.
If you targeted more than one species, simply click on Add a species to list addition species types.
Targeted Species for Wallowa Lake
If applicable, what species (animal or plant) are being targeted? (select all that apply)
Common name
Latin name
Action
Canadian Lynx
Lynx canadensis
Restored/Protected
Edit | Delete
Pygmy Rabbit
Brachylagus
Restored/Protected
Edit | Delete
Fender's Blue Butterfly
Icaricia icarioides fenderi
Restored/Protected
Edit | Delete
Bald Eagle
Haliaeetus leucocephalus
Restored/Protected
Edit | Delete
Shortnose Sucker
Chasmistes brevirostris
Restored/Protected
Edit | Delete
Adding a species
Species Name:
bog
Matching results
Bog anemone (Anemone oregana var. felix)
Add
« PREVIOUS
CONTINUE »
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(Be Smart About) Technology for Smart Conservation Planning

LTA Rally 2007
Larry Orman, Executive Director

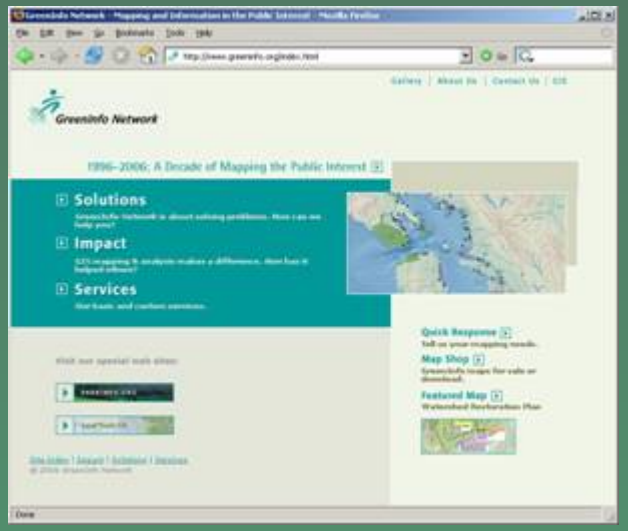
Denver, Colorado
October 5, 2007

Overview

- Conservation planning tools are part of overall information technology for land trusts
- Success with tools is *f*(capacity + good strategy) -- choose tools that match your capacity
- Follow the 5 golden rules!
- Last, some cool tools

GreenInfo Network

- Non-profit information and GIS technology support organization
- 10 staff, work with 100 groups per year on a client-consultant basis
- Extensive land trust experience, + created www.landtrustgis.org



www.greeninfo.org

Framing Your Overall Strategy

- Inventory your capacity
  - Human capital
  - Organizational culture
  - Technology in relation to goals, budget and people
- Define your technology level:
  - Basic
  - Advanced
  - Expert
- Adopt best practices from that level, learn from the next up

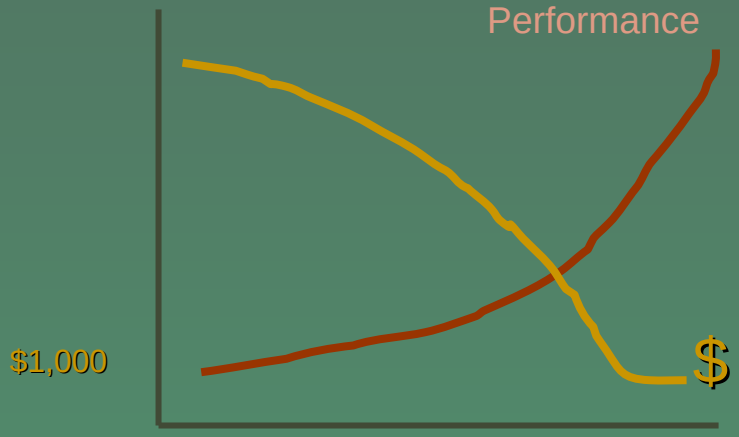
www.landtrustgis.org

The 5 Golden Rules

1. People matter, stuff doesn't
2. Learn to walk before you drive
3. Start with simple conservation planning
4. Stay away from the bleeding edge
5. Design really, really matters

#1: People Matters, Stuff Doesn't

- Cost of computing stuff is small
- GIS software is free
- But people…
  - Skill/education
  - Time using GIS
  - $20-50,000/yr.
- Always figure out people before stuff

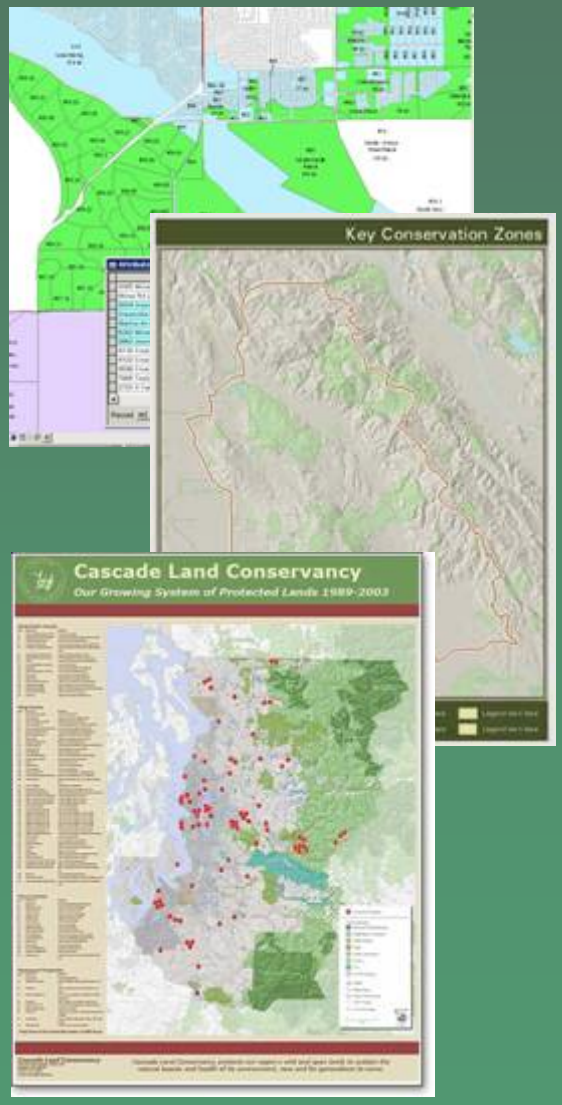


ecpgrant@esri.com

#3: Learn to Walk Before You Drive

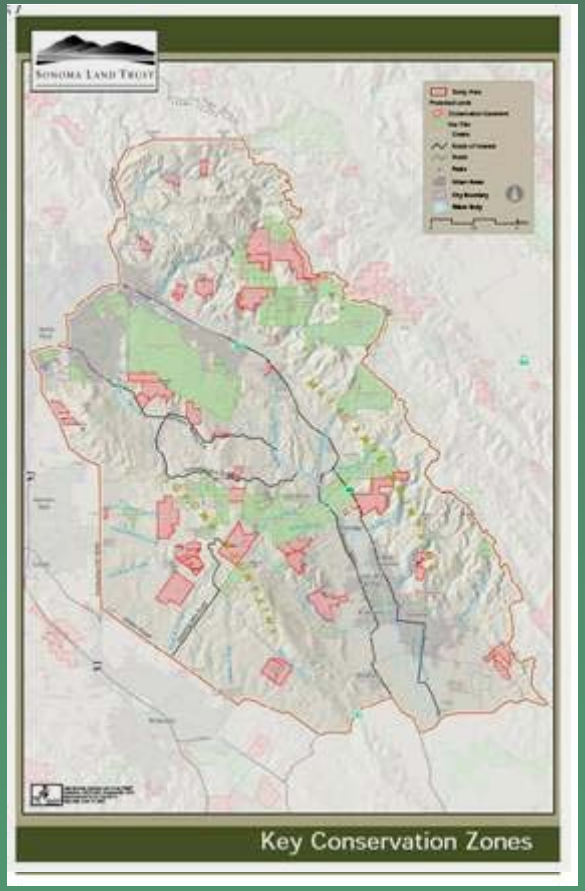
- Have these in place before doing a major conservation planning project:
  - GIS data and system for projects
  - Look and feel for mapping
  - "Turf" map of holdings, area of interest
  - Educated board/staff/stakeholders, relative to approach being used and likely results

- Test the waters before diving in



#3: Start With Simple Planning

- Base maps and core data:
  - Topography, infrastructure, watersheds
  - Tax parcels
  - Vegetation
  - Protected lands
  - Special data: habitat, plans/zoning farmland, etc.
- Use overlays, canvass experts, stakeholders for priorities
- Refine and evaluate, finalize



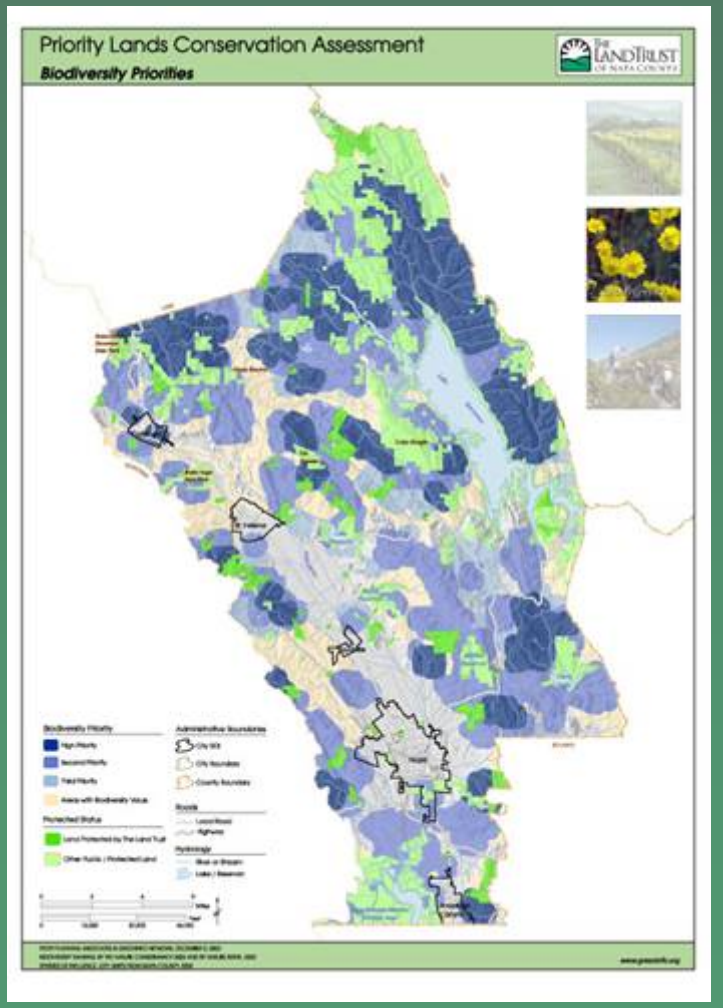

Windows
A fatal exception 0E has occurred at 0137:BFFA21C9. The current application will be terminated.
* Press any key to terminate the current application.
* Press CTRL+ALT+DEL again to restart your computer. You will lose any unsaved information in all applications.
Press any key to continue _

Remember:

Never get newly released software. . .

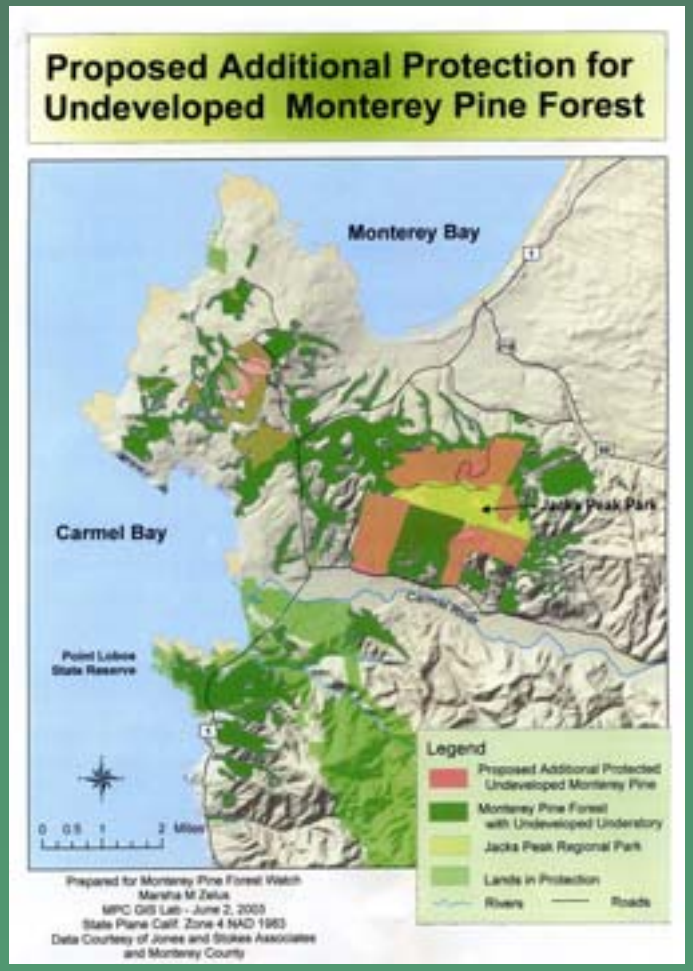
#5: Design Really, Really Matters

Conservation planning needs to be <u>visually understandable</u>



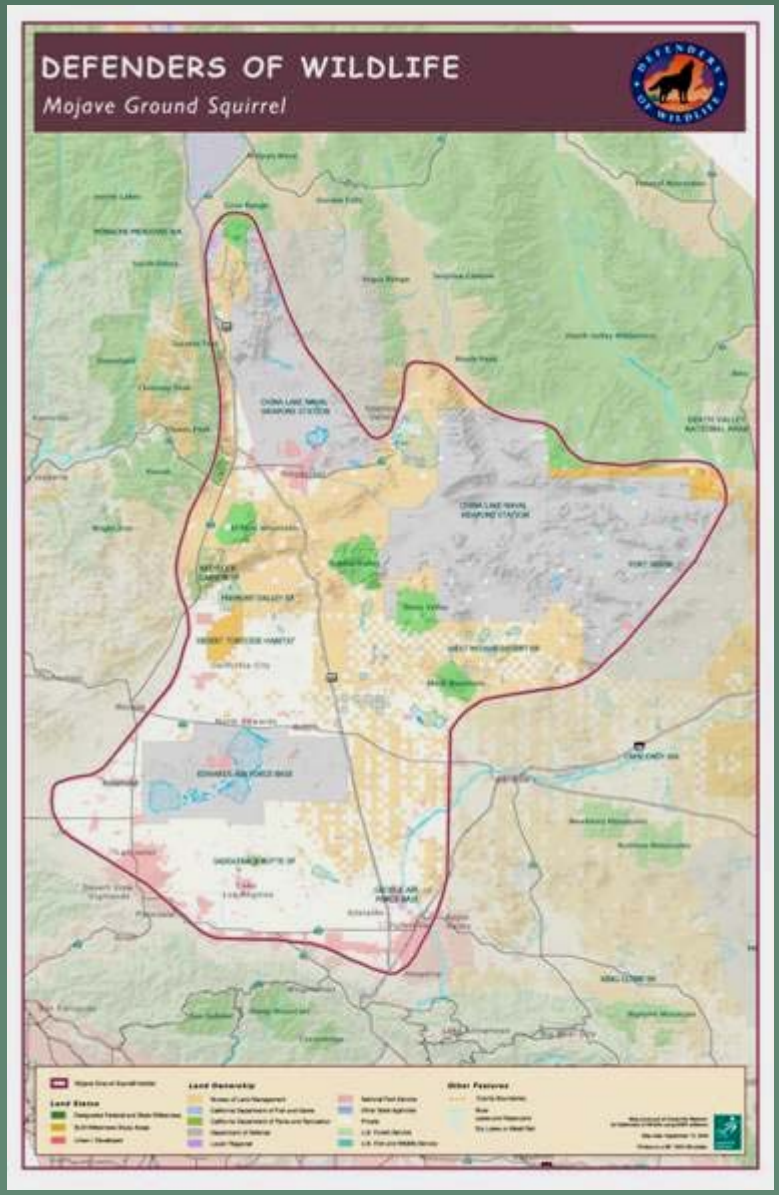
#5: Design Really, Really Matters

Design is mostly about unfolding a story with a clear message.



#5: Design Really, Really Matters

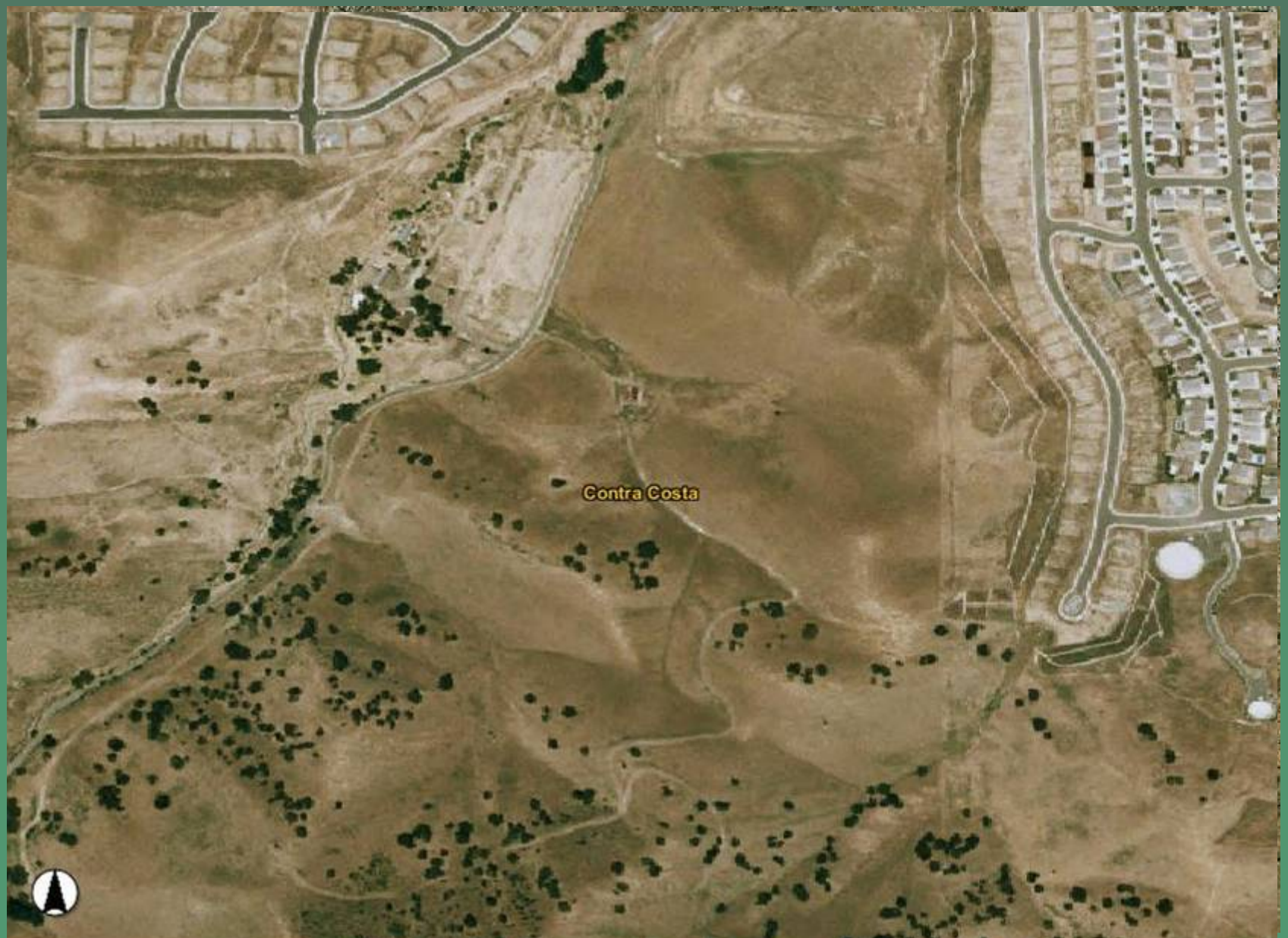
1. Have a story for an audience
2. Use graphic frames to allocate space
3. Direct the eye in the sequence you intend
4. Layer image elements so that important information stays prominent



Cool Stuff

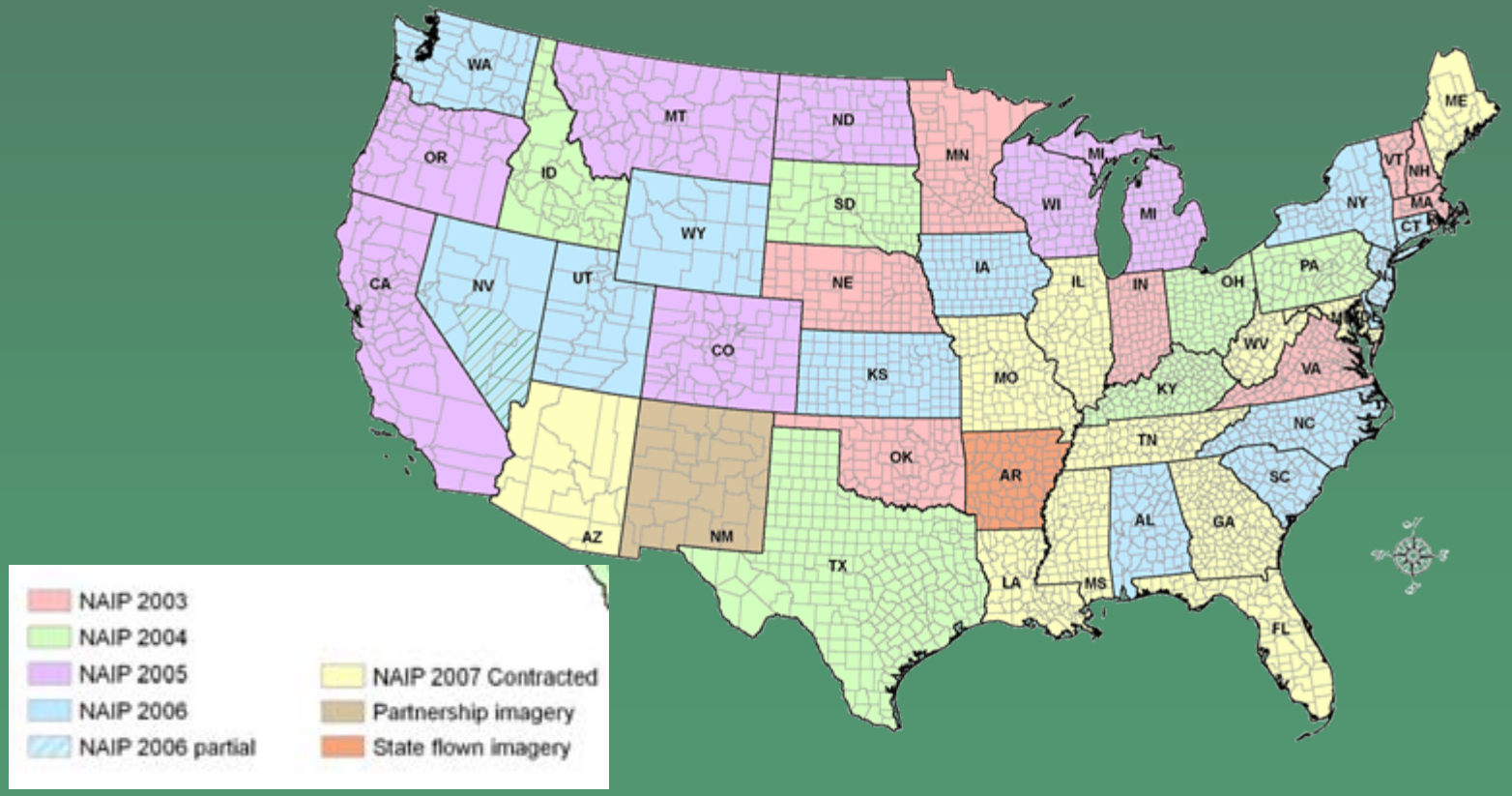
1. NAIP – high resolution air photography (cheap!)
2. Google Earth and applications
3. GeoPDFs
4. Field Atlases

NAIP

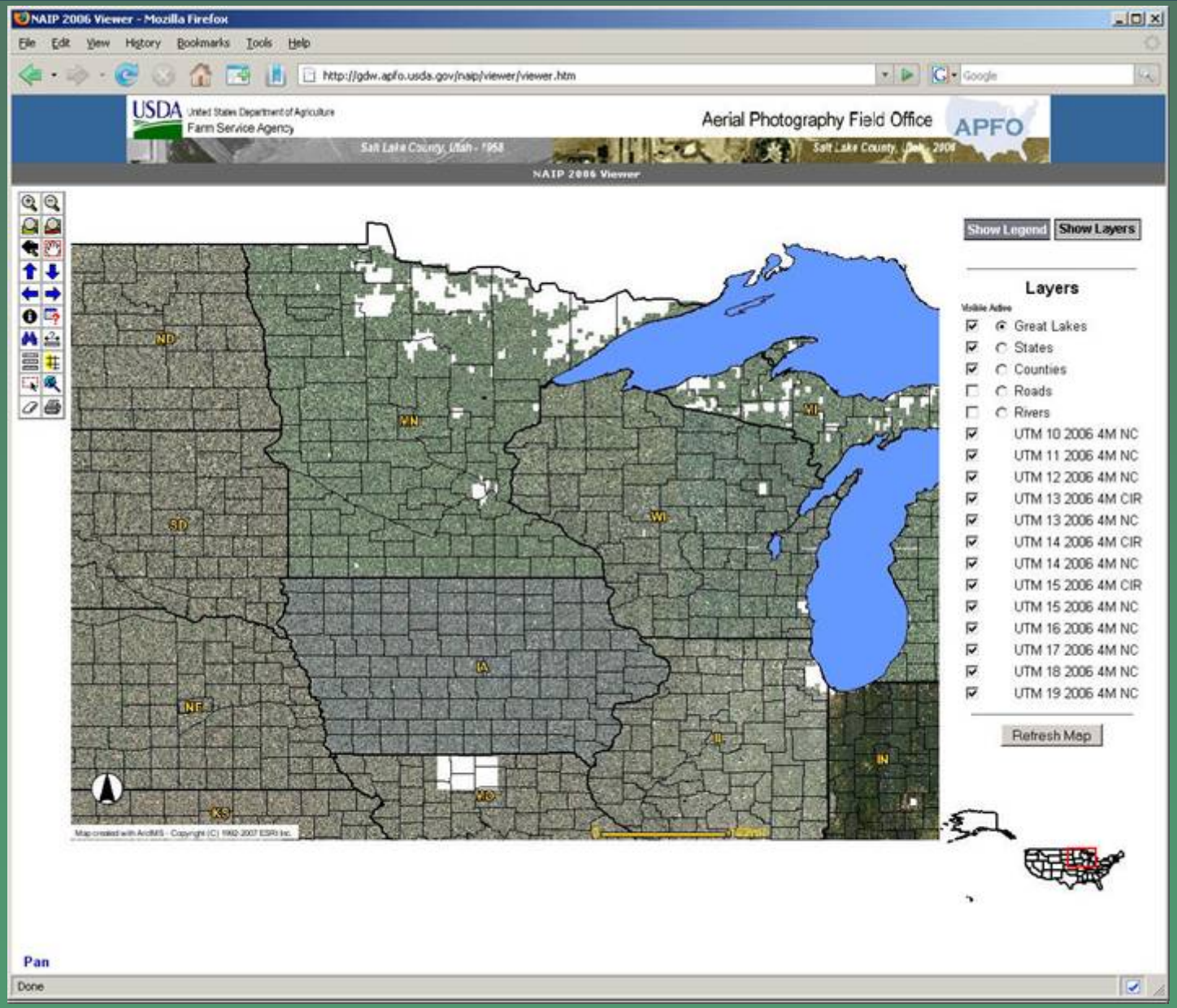


NAIP

- National Agricultural Imagery Program (USDA Farm Service Agency) http://www.fsa.usda.gov
- 1 meter, current, by county – free to very low cost



NAIP


NAIP 2006 Viewer - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://gdw.apfo.usda.gov/naip/viewer/viewer.htm
USDA United States Department of Agriculture
Farm Service Agency
Aerial Photography Field Office
APFO
Salt Lake County, Utah - 1958
NAIP 2006 Viewer
Show Legend
Show Layers
Layers
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Great Lakes
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Refresh Map
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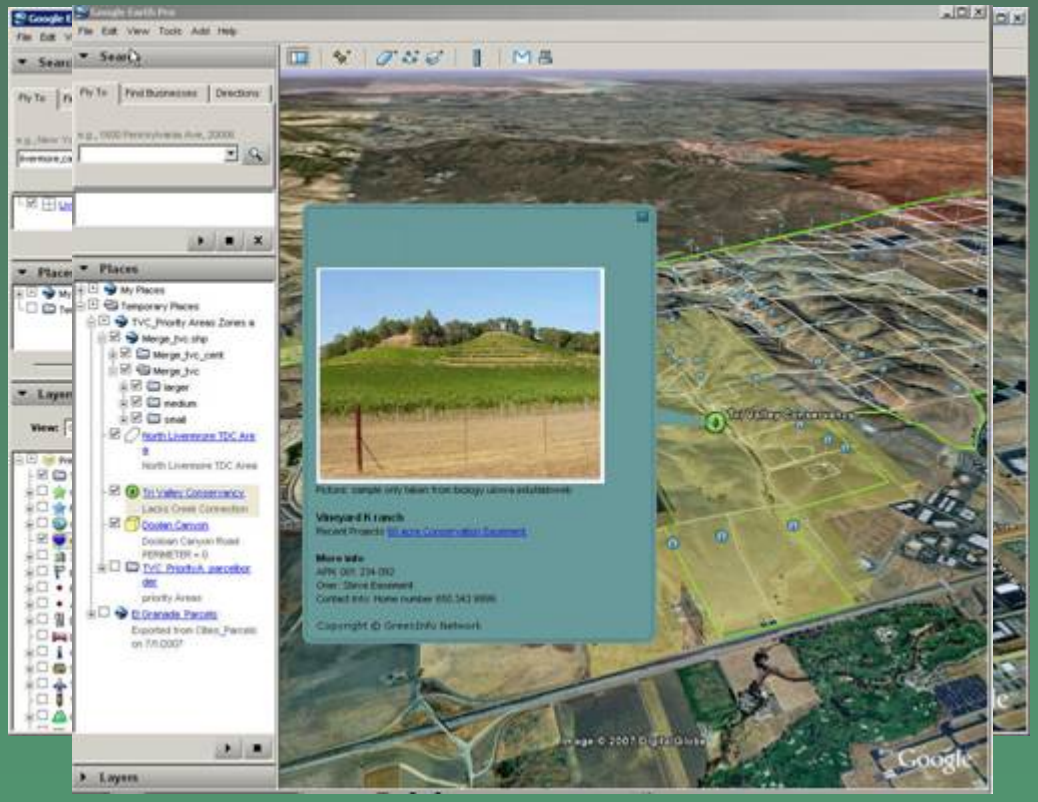
Google Earth

Get at: earth.google.com

1. View the landscape
   - Virtual visit
   - Share remotely
   - Report images

2. Build applications

3. Build really complex applications



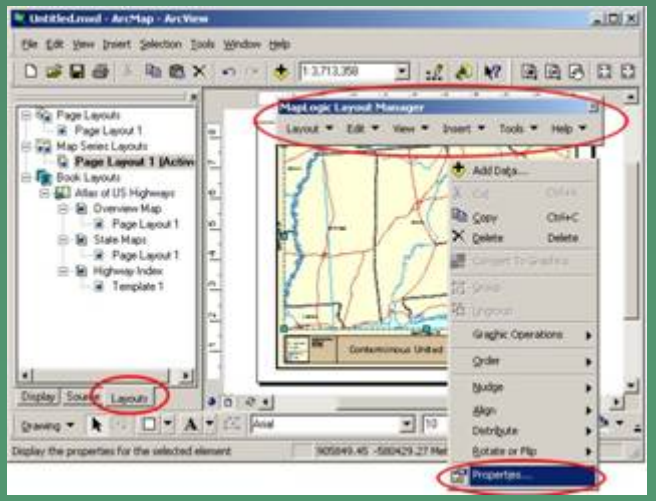
Google Earth

GeoPDFs

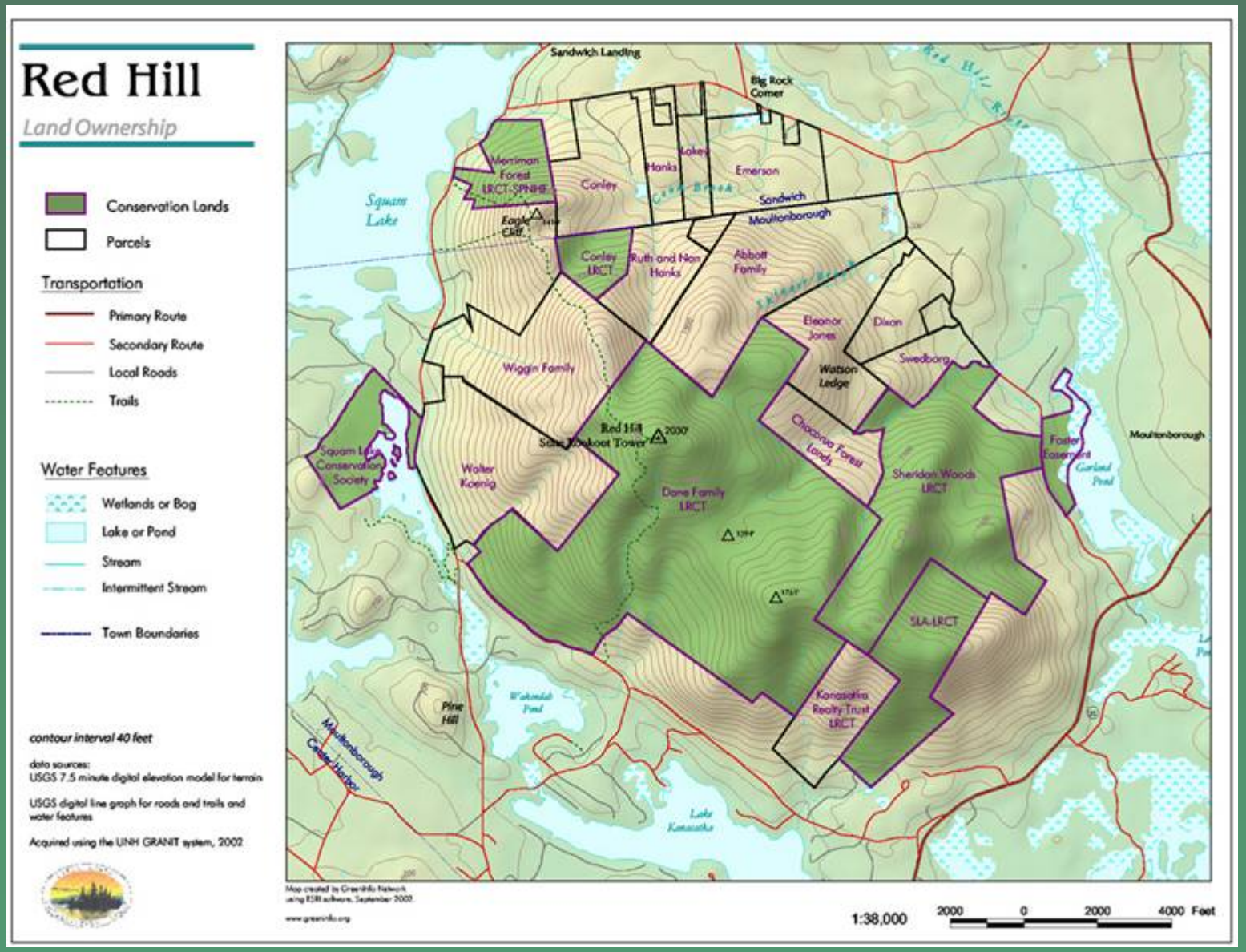
- Acrobat Reader Plug-in
- Layered GIS maps
- Measure, comment
- Interactive links
- Author needs $300 software, “reader” is free
- **www.terrago.com**

Field Atlases

- Atlases – field work, reference
- ESRI Map Book
- MapLogic's Map Book software – www.maplogic.com



Design Really, Really Matters



Smart Technology. . .

- If you're not sure, do it simply and quickly – then see if you need to do it better
- Develop a "best practices" checklist for how you use technology generally- check against your peers (or where you want to go)
- Always invest in building up people – and keeping them for a long time

For more information

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