

Screening for the Presence of Rare & Endangered Species: A New Web Service

**NatureServe Conservation Conference
April 2009**

Nick Conrad, Kat Maybury, Pete Sorrill

1. Overview of the Web Service
2. How is it Being Used Now?
3. Future Goals:
 - a) Build a User-Friendly Interface
 - b) Establish Pricing that Supports the Service Long-Term **and** our goal of making...

“biodiversity a mainstream consideration in all significant conservation and natural resource management decisions by making it simple for conservationists, government agencies, corporations, and landowners to access and use high-quality biodiversity information.”

---NatureServe's Strategic Plan 2007-2011

4. DISCUSSION: Does This Meet Your Needs?

Multijurisdictional (MJD) Web Service Launched

NatureServe has created a new web service that provides information on the at-risk plants and animals of North America. It is currently only available to the U.S. EPA.

You can use this service to query an area of interest and determine whether any at-risk species are known from that area.

Examples:

- Submit a custom polygon (any area larger than 1 square mile) and find out if any species with status under the U.S. Endangered Species Act are known to be in or near your project area.
- Discover which at-risk species are known within your county, watershed, USGS 7.5' quadrangle, or planning area.
- Find the best source for local information about these populations of plants and animals.

Data from Most of North America





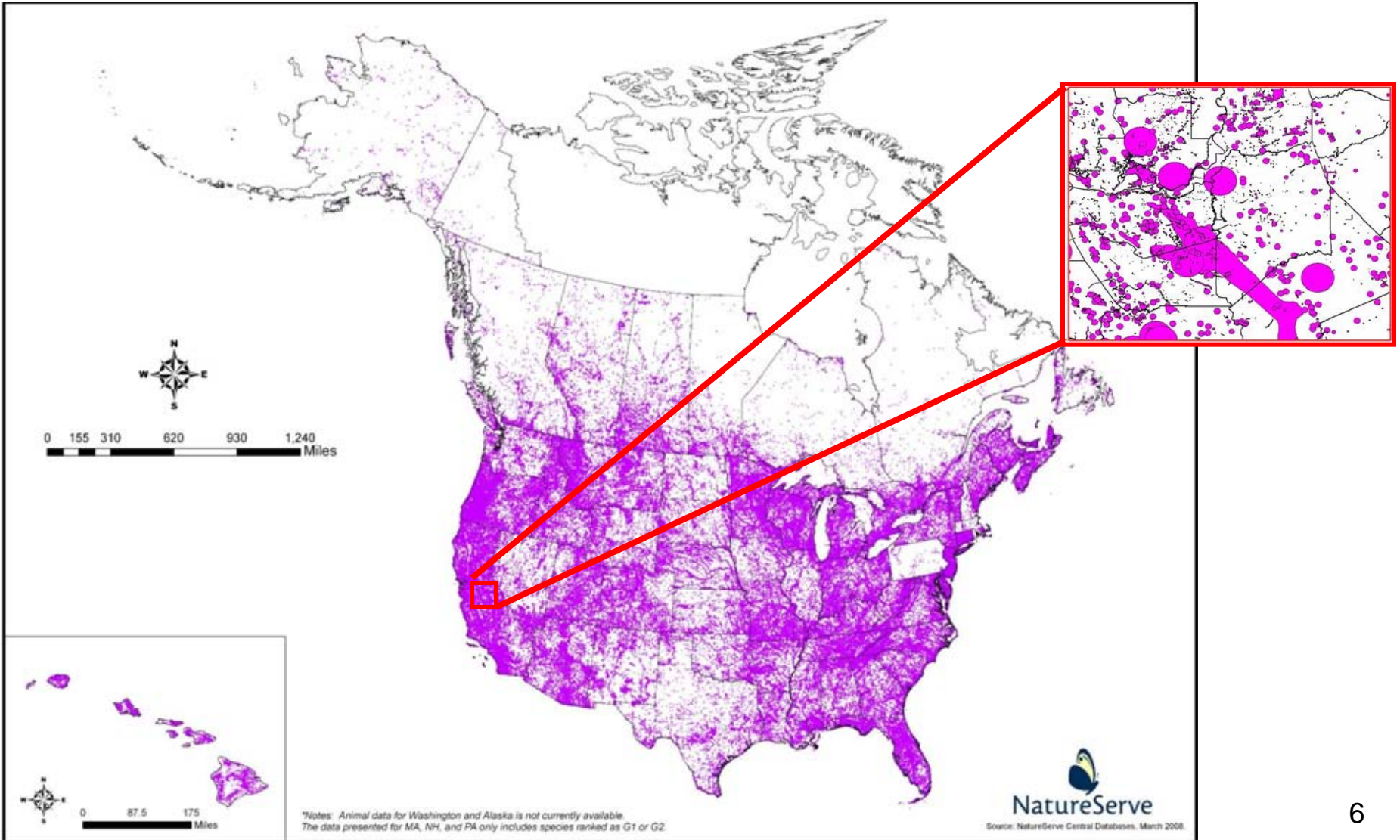
C NatureServe



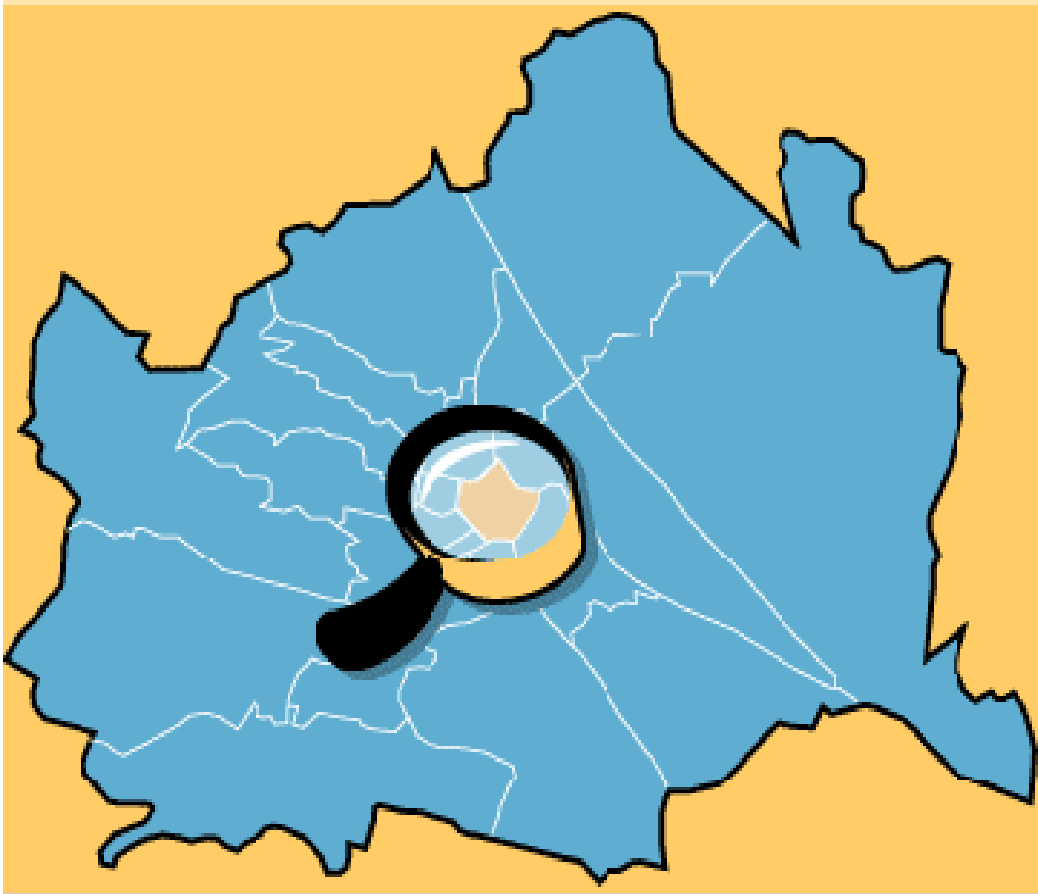
C Alabama Natural Heritage Program

Photo by Lynda Richardson

600,000+ Mapped Populations



How it Works



1. Select an area of interest:

- Custom Polygon
- FIPS County Code
- 8-digit HUC
- 7.5' Quadrangle

2. Restrict results, if desired e.g. only species with status under the USESA

How it Works

- Does not return spatial data
- Offers scalable levels of information: the smaller the area queried the less detailed the information about what's in the area.

Low spatial resolution;
High attribute detail



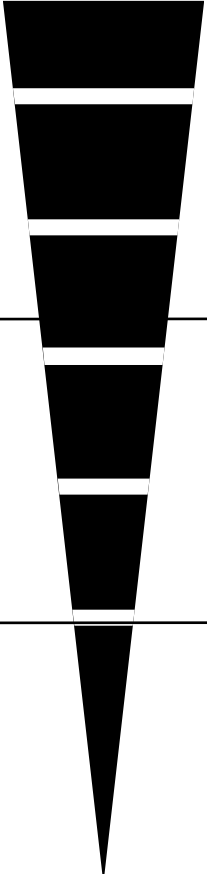
High spatial resolution;
Low attribute detail

vs.

How it Works

Size of Area Queried

Information Detail Returned

<p>Larger: down to 1/4 Quad (~14 sq miles or 36 sq km)</p>		<p>Maximum: species by name and with comprehensive information about the species, as well as information on each individual element occurrence (e.g., when last observed, viability)</p>
<p>Medium: down to 1/4 of a 1/4 Quad (~3.7 sq miles or 10 sq km)</p>		<p>Intermediate: species not named, but identified by major group (e.g., bird species 1; bird species 2; plant species 1), and with information about each</p>
<p>Small: down to 1 sq mile or 2.6 sq km. Note: <i>not available for all states/provinces</i></p>		<p>Minimum: a "Yes" that at least one species is known there (or a "Not Known")</p>

Current Limitations

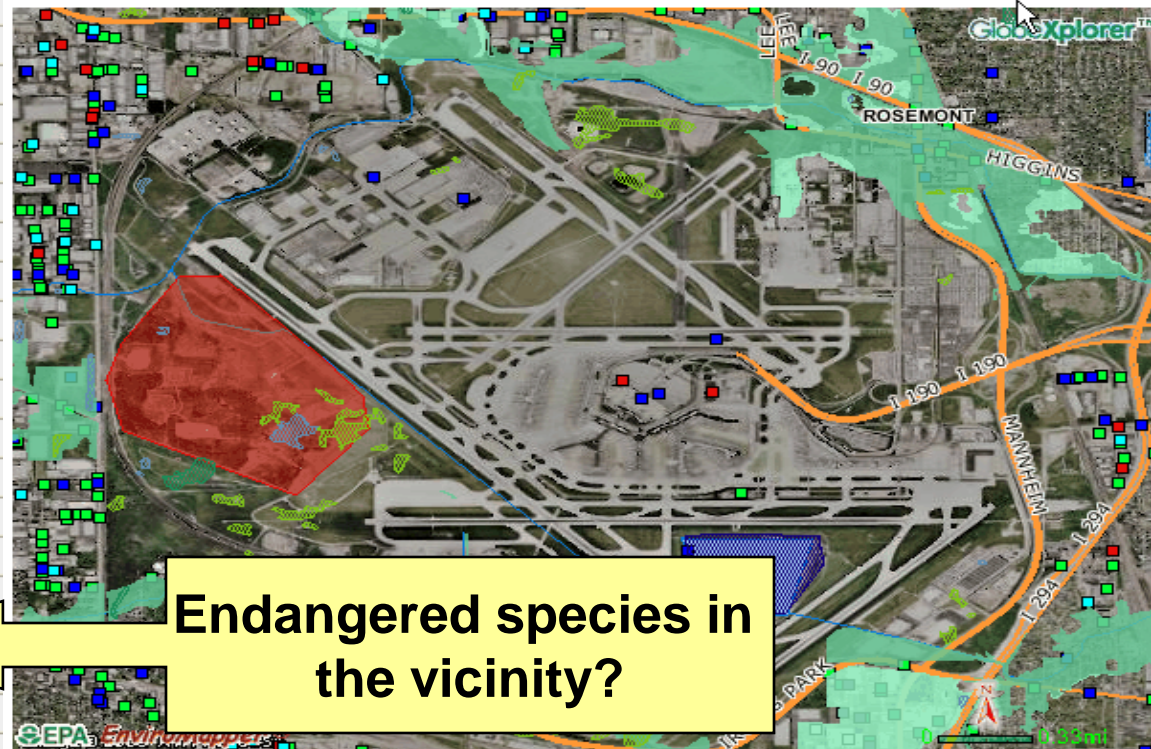
(that we hope to overcome soon)

- Currently only a web service --- no interface.
- Cannot limit results to anything other than status under the U.S. Endangered Species Act ---- no selects allowed by NatureServe conservation status ranks (Srank, Grank) for example.

NEPAssist

A GIS tool that assists the review of Environmental Impact Statements and Environmental Assessments

Within 400 meters of a Wild and Scenic River?	No
Within an Area of Concern (Great Lakes)?	No
Within 400 meters of a Great Lakes shoreline?	No
Within Great Lakes basin?	No
Within 400 meters of an Environmentally Sensitive Shoreline?	No
Within an NWI Wetland?	Yes
Within 400 meters of a Pipeline?	No
Within 400 meters of an Oil Storage Facility?	
Within 400 meters of a Navigation Lock/Dam?	
Within 400 meters of a Non-navigational Dam?	
Within 400 meters of a Marina?	
Within a Wildlife Refuge?	
Within a National Forest?	
Within 400 meters of a National Forest?	
Within a State Forest?	
Within a Federally Managed Area?	
Within a State Managed Area?	
Within a Locally Managed Area?	
Within a Privately Managed Area?	
Within a Federal Special Designated Area?	
Within a State Special Designated Area?	
Within a Local Special Designated Area?	
Within a Private Special Designated Area?	
Within Other Environmentally Sensitive Areas?	
Within 400 meters of a Archaeological Site?	
Within 1609 meters (1 mile) of a Nuclear Power Plant?	
Within 1609 meters (1 mile) of an Electric Power Plant?	
Within 400 meters of an Animal Feedlot?	No
Within 400 meters of a Poultry or Hog Farm?	No
Within the boundaries of a Metropolitan Planning Organization?	Yes <i>Chicago Area Transportation Study</i>



Emergency Response

EnviroMapper for EOC - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://134.67.221.114/era/em4er.asp

Emergency Response Analyzer

Jan 17, 2008 12:07

ER Events

From: To: High-light Zoom To Show Time Scale Print

New Geography

Find ER Site List Site

Zoom In Zoom Out 2X Recenter Identify

Select a feature

- Air emissions
- City Boundaries
- Congress'l Districts
- Countries
- ER Sites
- FEMA Region HQ
- Federal lands
- Fire stations
- Hazardous waste
- Highways
- Hospitals
- Landfill
- Multi-activities
- NOAA ESI
- RCRA TSD
- RMP
- Railroads
- Schools
- Sections boundary
- Streams
- Streets
- Superfund
- Townships boundary
- Toxic releases
- Water bodies
- Water dischargers
- ZIP Codes

Endangered Species

Map Features Legend

- ER Sites
- Cities
- Streets
- Major roads
- Local streets
- Townships boundary
- BLM
- Alternate
- N/A
- Sections boundary
- BLM
- Alternate
- Countries
- Countries

Refresh Map

0 0.09mi

There is no OSC site in the time period you specified.

Next Steps: Interface

NatureServe EXPLORER

An Online Encyclopedia of Life

Search About Us About the Data Local Programs Help

Click on a State to select. Click and drag over an area to zoom in. Find a Place

Click and drag selects locations (does not zoom in map)

Change View: States Counties Watersheds Fed

San Francisco Los Angeles 1000 km 500 mi

Microsoft Virtual Earth

Selected

Find a Place

palm springs

Palm Springs

Add/Rem

PALM SPRINGS, CA

PALM SPRINGS, FL

PLUM SPRINGS, KY

PALM SPRINGS NORTH, FL

If found directly in database, user can add it immediately. Otherwise, select the place and zoom to it.

Additional Data Resources

February 2009 Data Refresh!
NatureServe Explorer species and ecological community data updated February 6, 2009.

Next Steps: Interface



- ↑ Animals, Vertebrates
 - ➔ **Birds** [Entire group selected]
 - ↓ Wading Birds
 - ↓ Waterfowl
 - ↓ Raptors
 - ↓ Shorebirds
 - ↓ Perching Birds
 - ↓ Other Birds

Search Now

Choose Criteria

Federal statuses under the U.S. Endangered Species Act

- Listed Endangered
- Listed Threatened
- Proposed for Delisting
- Proposed Endangered
- Proposed Threatened
- Candidate
- Special Concern
- Essential or Non-Essential Experimental Population
- No U.S. Federal Status

Select All

Select None

submit

Next Steps:Interface

UID	EO ID	Sci. Name / Common Name	State	State Rank	Global Rank	State Protected Status (Y/N)	Federal Status	Last Observed Date For EO	Viability Of EO
2.104938	2680	<i>Dendroica chrysoparia</i> / Golden-Cheeked Warbler	TX	S2	G2	Y	LE	2007	A - Excellent
2.101846	7241	<i>Tympanuchus pallidicinctus</i> / Lesser Prairie-Chicken	TX	S2	G3	N	C	1972	X - Extirpated
2.139880	1154	<i>Heilanthus paradoxus</i> / Pecos Sunflower	TX	S1	G2	N	LT	2002	C - Fair
2.139880	1709	<i>Heilanthus paradoxus</i> / Pecos Sunflower	NM	S2	G2	Y	LT	2006	AB - Excellent-to-Good

Next Steps: Interface



Dendroica chrysoparia (Sclater and Salvin, 1860)

- Golden-cheeked Warbler -

A member of the Perching Birds group in the Parulidae family.

Basic description : A small songbird (warbler).



© Public Domain

Habitat comments : BREEDING: Old-growth and mature regrowth Ashe juniper-oak woodlands in limestone hills and canyons, 180 to 520 meters elevation (summarized in Ladd and Gass 1999). Edges and open mosaics of Ashe juniper-scrub oak association in broken terrain in canyons and slopes; closed canopy stands with plenty of old junipers and a sufficient proportion of deciduous oaks in the canopy (Sexton 1992); occupied sites contain junipers at least 40 years old. May occupy habitat patches as small as perhaps 50 ha (larger if close to urban areas) (Sexton 1992). NESTING: Nests usually in upright fork of mature juniper, about 1.5-9 m above ground. Depends on sloughed juniper bark for nesting material. Both males and females tend to return to the same territory to breed.

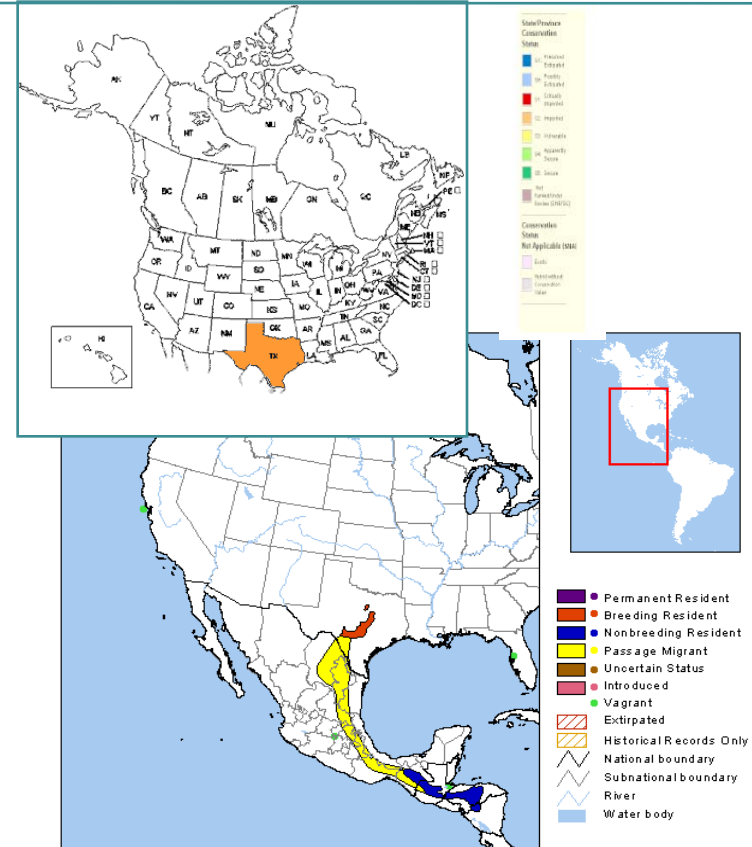
NON-BREEDING: In migration and winter, occurs mainly in montane pine or pine-oak association (Vidal et al. 1994); recently recorded also in broadleaf associations in lower montane wet and tropical forest (Vannini, in Collar et al. 1992). In Honduras and Guatemala, found primarily above 1300 m in pine-oak forest (Rappole et al. 1999). Dominant pine species was coote (PINUS OCCARPA) and dominant oaks were "encino" oaks (QUERCUS SAPOTIFOLIA, Q. ELIPTICA, Q. ELONGATA, and Q. CORTESII) (Rappole et al. 1999).

Global status : G2 Global status last reviewed : 12/03/1996

Global status reasons : Small breeding range in central Texas; vulnerable to habitat alteration; threats include urbanization, juniper eradication, and cowbird parasitism.

IUCN Red List category : EN - Endangered

US ESA status : LE: Listed endangered



References : References for information cited in this report are available at <http://www.natureserve.org/explorer>

Copyright 2007
All rights reserved

Discussion:

This is currently only available to EPA. If we made it more widely available, which of your needs would it meet?

What would make it more useful?

Are the spatial scales you can query useful?

How important is the future development of an interface and advanced search criteria (map viewer, Grank, Srank, etc.) to you?

Would you be interested in other TYPES of data being served, e.g., where at-risk species MIGHT be based on predictive models that locate appropriate habitat. Or where very rare natural communities are located?

What can we do to improve the tool for you?