



Biological Informatics Program: Raptor Search - Data Visualization

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Presented by:

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Presentation Overview

- Search as a Platform
- Raptor Data Sources
- Standard Search
- Geospatial Search
- Data Explorer – Search Visualized

Search As a Platform

- Raptor is based on the Vivisimo Velocity search engine (Ver 7.0.5)
- It is used as a traditional search engine
- Ability to create many search instances for different projects
- Search results can be passed onto custom built applications, i.e. Data Explorer

Raptor Data Sources

- Over 50 content sources to include websites and databases from the following:
- All USGS Science Center Websites
- NBII FGDC Metadata Clearinghouse, NBII Website & Catalog database
- Fire Research And Management Exchange System
- U.S. Fish & Wildlife Service
- NOAA: National Marine Fisheries Service
- EPA: Ecosystem Services Research Program; Global Change Research
- National Park Service
- U.S. Forest Service: Tree Search
- Cornell Ornithology Lab Birds of North America Online: Species List
- Invasive Plant Atlas of New England
- Biodiversity Heritage Library
- ConserveOnline
- Pew Center on Global Climate Change

Searching with Raptor

- **Standard Search**
Traditional looking list of search results
- **Geospatial Search**
Location based search results on a map

Standard Search Results

- Dynamic “clusters” based on search results
- “Refinement” subsets
- Bio-complexity Thesaurus (BCT) integration
- Images from USGS Gallery & NBII *LIFE* , when appropriate
- Simple map display
- Document previews
- *More...*

Standard Search Features

Dynamic biological clusters

nbi National Biological Information Infrastructure

Help | [Advanced](#)

bullfrog

NBII Home

Clusters Sources

All Results remix

- + Rana catesbeiana (67)
 - + Fish (46)
 - + Amphibian (31)
 - + Park (16)
 - + Endangered, Species Bulletin (14)
 - + Invasive (13)
 - + Quarterly Wildlife Mortality (12)
 - + Tadpoles, Maturity (7)
 - + Herptile (7)
 - + Terrestrial vertebrates (6)
- [more](#) | [all](#)

Font size:

Refine Results

- Publisher
- File Format

Search portal by Vivismo

Top 208 [unique results](#) | [Details](#)

Select/deselect all on this page

Images

Images from the [NBII LIFE](#) and other biological image repositories



NBII Life Images

[More images](#)

Refinements

1. Rana catesbeiana - American Bullfrog, Bullfrog



Map Display

Provides information on the American **Bullfrog**, including Red List status, distribution, life history, threats, conservation measures, and utilization....

Publisher: IUCN, Conservation International, and NatureServe

Source: NBII Web Resources Database

www.globalamphibians.org/.../GAA?searchName=Rana+catesbeiana - 1K - cache

2. Bullfrog tadpole (*Rana catesbeiana*) and red swamp crayfish (*Procambarus*)

Standard Features Cont...

Sources

Databases
Websites
Federation

Publisher
Refinement



The screenshot shows the NBII search results page for the query 'invasive species'. The page features a search bar at the top right with the text 'invasive species' and a 'search' button. Below the search bar, the text 'Top 497 unique results | Details' is visible. On the left side, there is a 'Sources' panel with a tree view of search sources. The 'Sources' panel includes a 'Clusters' tab and a 'Sources' tab. Under 'Sources', there are several checked items: 'NBII', 'NBII Web', 'NBII FGDC Metadata', 'USGS Gap Analysis Program', and 'NBII LIFE'. There is also an 'Additional Sources' section with unchecked items like 'GBIF', 'Amphibiaweb', 'TROPICOS', 'GPO Pubs', and 'NEPIS'. A 'Search' button is at the bottom of this panel. Below the sources panel, there is a 'Refine Results' section with a 'Publisher' dropdown menu showing a list of publishers, including 'Alabama Cooperative Extension System', 'Aquatic Nuisance Species (ANS) Task Force', 'Arizona Game and Fish Department', and 'Arizona Game and Fish Department Heritage Program'. The main content area shows a section for 'Images' with a title 'Images from the NBII LIFE and other biological image repositories' and a row of five image thumbnails. Below the images, there is a list of search results. The first result is titled 'Developing a National Framework for Invasive Species Early Detection, Rapid Assessment, and Rapid Response Fact Sheet' and includes a 'Publisher' field with the value 'National Biological Information Infrastructure' and a 'Source' field with the value 'NBII Web Resources Database'. The second result is titled 'Pacific Basin Information Node Invasive Species Management and Control Fact Sheet' and includes a 'Publisher' field with the value 'National Biological Information Infrastructure' and a 'Source' field with the value 'NBII Web Resources Database'. A 'Related Topics' sidebar is located on the right side of the page, listing topics such as 'Invasive animals', 'Invasive plants', 'Species', 'Introduced species', 'Invasions', 'Invasiveness', and 'Pioneer species'. A callout box labeled 'Thesaurus integration' points to the 'Related Topics' sidebar. Another callout box labeled 'Preview within search results' points to the first search result. A third callout box labeled 'Sources' points to the 'Sources' panel. A fourth callout box labeled 'Databases Websites Federation' points to the 'Sources' panel. A fifth callout box labeled 'Publisher Refinement' points to the 'Refine Results' section.

Thesaurus
integration

Preview
within
search
results

Geospatial Search Results

- Overview map and bounding-box options
- Sources limited to those with adequate geospatial data
- Results displayed on map as well as listed
- Data Explorer visualization tool
- *More...*

Raptor Geospatial Search

The screenshot shows the Raptor Geospatial Search interface. At the top, there are navigation tabs: Search, Advanced, Geospatial (selected), and Help. The Raptor logo is in the top right corner. Below the tabs are two main steps:

- Step 1: Enter a keyword(s)** - A text input field.
- Step 2 (Optional): Select a region by drawing a bounding box or by zooming in** - A blue button labeled "Draw a Bounding Box" with a tooltip that says: "Click, drag, and release to create a bounding box. Click it to move and change the shape and size."

A map of North America is displayed in the center. A blue callout bubble points to the map with the text: "Select a region on the map". Another blue callout bubble points to the "Draw a Bounding Box" button with the text: "Limited to sources with sufficient geospatial information".

Step 3 (Optional): Search all available sources or make your selection

- GAP (Gap Analysis Program)
- GBIF (Global Biodiversity Information Facility)
- IPANE (Invasive Plant Atlas of New England)
- NBII LIFE (Library Of Images from the Environment)
- NBII Web Resources Catalog
- NBII Metadata Clearinghouse

Step 4: Submit or reset your search parameters

Buttons for "Search" and "Reset" are located at the bottom right of the search options.

* Note: The Raptor Geospatial Search is limited to sources with sufficient geospatial information.

References to non-U.S. Department of the Interior (DOI) products do not constitute an endorsement by the DOI. By viewing the Google Maps API on this web site the user agrees to these [TERMS](#) of Service set forth by Google.

Geospatial Search Results

nbii National Biological Information Infrastructure

Geospatial | Help | Advanced

elk search

NBII Home

Clusters Sources

All Results remix

- Document is the published result, conclusion, or progress (68)
- National Elk (18)
- Cervus, Elaphus (25)
- Water, Elkhorn Slough (17)
- Chronic Wasting Disease (40)
- River, Watershed (21)
- Jackson, Hole (14)
- Teton, Hunting Areas (15)
- Distribution, Gap (21)
- Utm Nad83 (14)

Font size: A A A A

Refine Results

- Map View [disable]
- Publisher
- File Format

Search portal by visimo

Search results for elk

New Geospatial Search Map Legend Related Topics

Map Satellite Terrain

Elk calving areas in the Jackson Hole area, Wyoming

Publisher: Spatial Data and Visualization Center

Source: NBII FGDC Metadata Clearinghouse mercury.ornl.gov/...lving.html

Zoom Here Result List Save Result

The map displays 10 results per page.

first · previous · 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · next · last

Select/deselect all on this page Save selected: 0

Elk calving areas in the Jackson Hole area, Wyoming [find similar] map

... is not distributed without permission from the National Elk Refuge....

Publisher: Spatial Data and Visualization Center

Source: NBII FGDC Metadata Clearinghouse

Resource Type: Data & Maps

mercury.ornl.gov/metadatas/nbii/html/wnrnc/calving.html - 8K - cache

Results list includes map view

Click a pin to activate the location on the map



Visualization of Search

*Geospatial
Search
Result*

*Map
Viewer*

*GAP/PADUS
Map Layers*

=

Data Explorer

Data Explorer

Data Explorer

Info Panel

Search Results

GAP Landcover

PADUS Status

GAP Conservation Status Code

- Permanent Protection - natural disturbances
- Permanent Protection - natural disturbance s
- Permanent Protection - extractive use allowe
- No known mandate for protection

PADUS Management

NBII Data Panel

- GAP Landcover Opacity: 50 %
- PADUS Management Opacity: 50 %
- PADUS Status Opacity: 99 %

POWERED BY 200 km Google Maps data ©2011 - Terms of Use

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Occurrence data search result

Data layer products



Data Explorer – Search Visualized

- Allows the user to overlay search results on top of USGS data products
- No limit in the number of results that can be viewed
- Expandable with other map layer services
- 1st example of an application build from the search platform concept at BIP
- Data can be exported as XML for further study in desktop GIS programs



**2010 Honorable Mention Winner at
23rd Annual GCN Awards for
“Outstanding Information Technology
Achievement in Government”**

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