Utility of National Spatial Data for Conservation Design Projects

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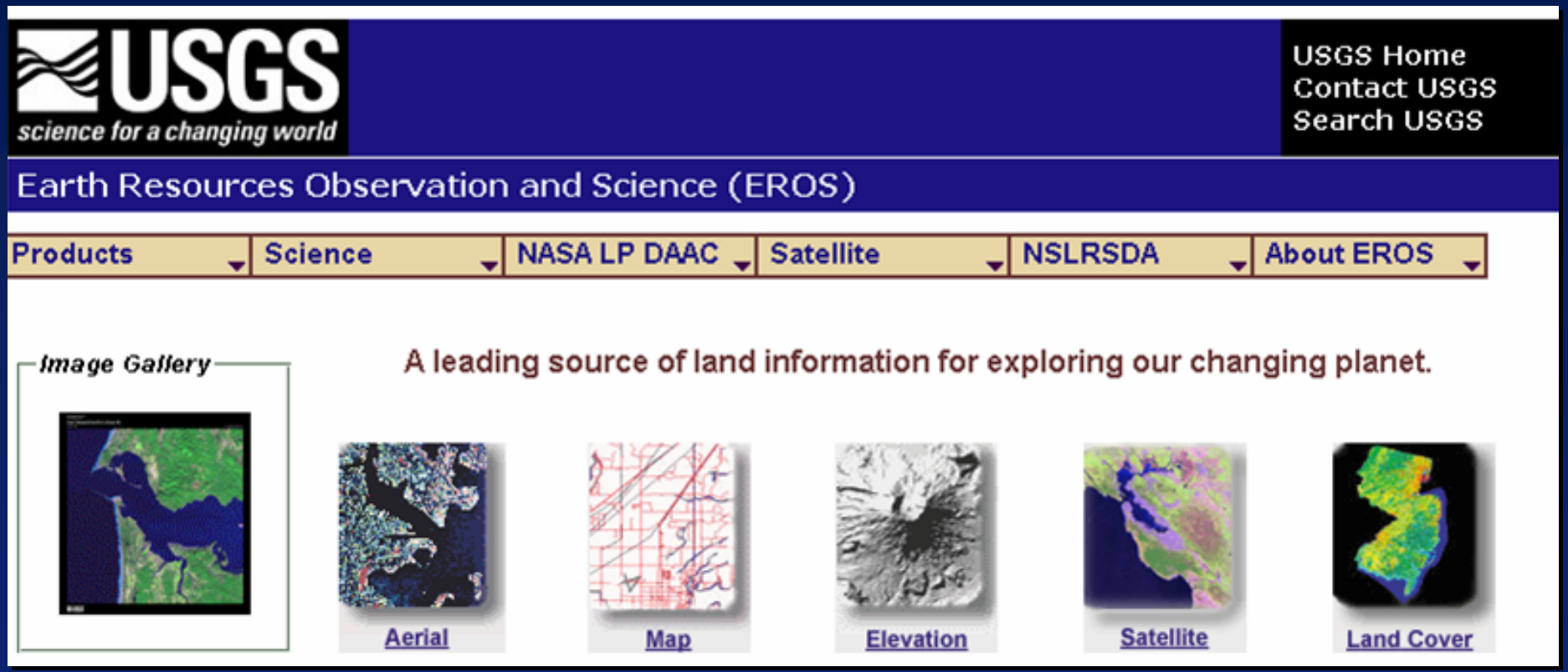
Biodiversity and Spatial Information Center
North Carolina State University

PIF CDW
St. Louis, MO
April 11, 2006

Types of Data

- Biological
  - Land cover, species occurrence (surveys)…
- Physical
  - Terrain, soils…
- Climatic
  - Precipitation, temperature…

EROS Data Center



EDC Land Cover Products

- National Land Cover Dataset 1992 (NLCD 92)
  - A U.S. land cover classification product based primarily on 1992 Landsat Thematic Mapper (TM) data.
  - $30m^2$ cell resolution
  - 21 classes
- Land Use and Land cover Data (LULC)
  - A global land cover database primarily derived from 1992 to 1993 1-km AVHRR data.
- AVHRR NDVI Composites
  - Weekly and biweekly NDVI composites based on 1-km AVHRR data (1980 to present).

USGS

LCCP | Overview | Global | National | Urban | Trends | Applications | Publications

National Land Cover Dataset 1992 (NLCD 1992)

Product Description

View Sample Data

Download NLCD Products

Accuracy Assessment

NLCD Land Cover Statistics

Program Partners

Frequently Asked Questions

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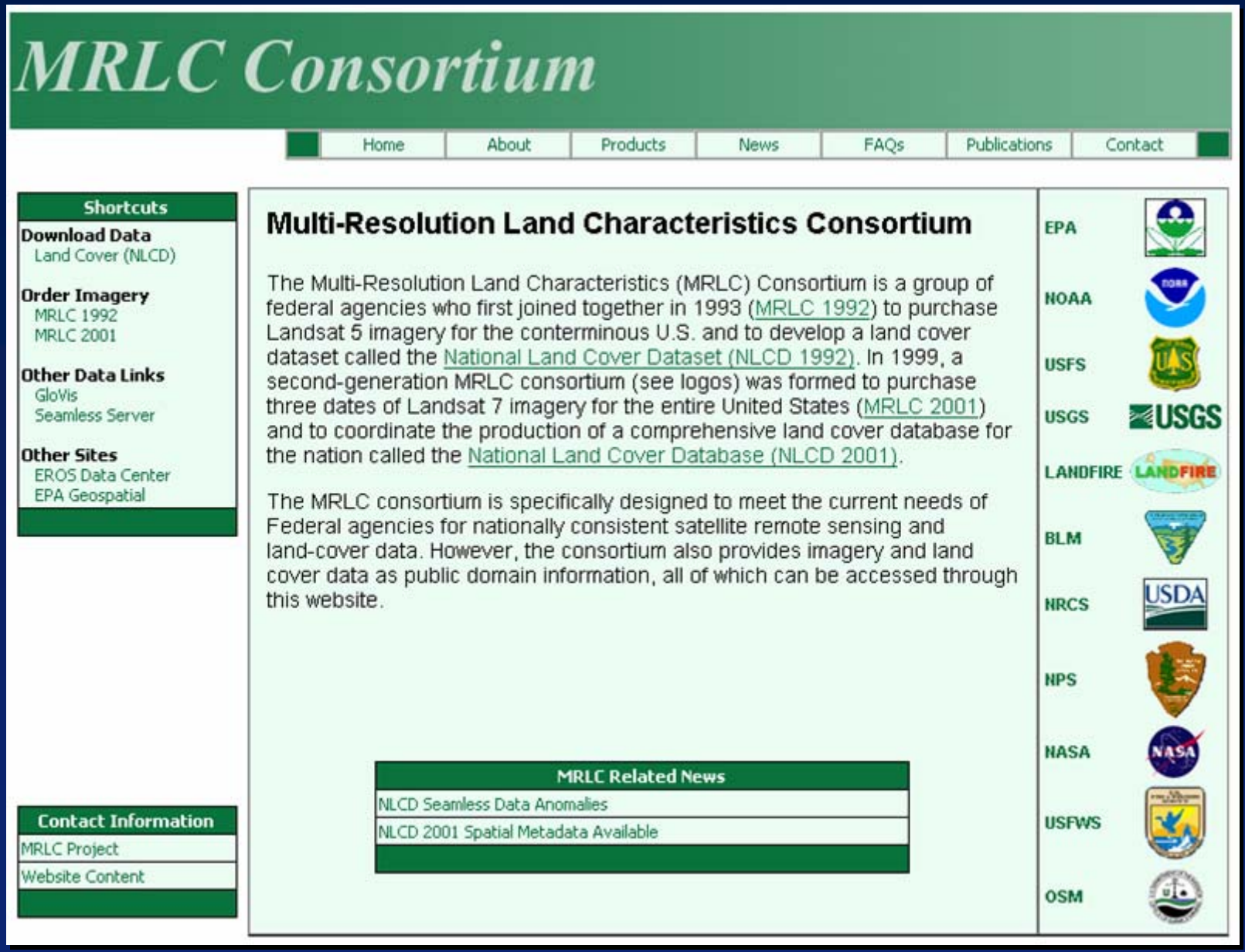
GAP

http://edc.usgs.go

EDC Elevation Products

- National Elevation Dataset (NED)
  - Seamless 10- and 30-meter digital raster elevation data covers the conterminous U.S., Alaska, Hawaii, Puerto Rico, and Virgin Islands. Features periodic updates to incorporate the best available source data (primarily USGS 10 and 30-meter DEMs).
- Shuttle Radar Topography Mission (SRTM)
  - Seamless SRTM "Finished" 1 arc second (30 meter posting) digital raster elevation covers the United States and its territories and possesions. Seamless SRTM "Finished" 3 arc second (90 meter posting) digital raster elevation covers the globe between 60 degrees N and 56 degrees S latitude. SRTM "Finished" was supplied by NGA.



http://www.mrlc.gov/index.

NLCD 2001 Land Cover Class Definitions (27 classes)

- 11. Open Water
- 12. Perennial Ice/Snow
- 21. Developed, Open Space
- 22. Developed, Low Intensity
- 23. Developed, Medium Intensity
- 24. Developed, High Intensity
- 31. Barren Land (Rock/Sand/Clay)
- 32. Unconsolidated Shore*
- 41. Deciduous Forest
- 42. Evergreen Forest
- 43. Mixed Forest
- 51. Dwarf Scrub
- 52. Shrub/Scrub
- 71. Grassland/Herbaceous
- 72. Sedge/Herbaceous
- 73. Lichens
- 74. Moss
- 81. Pasture/Hay
- 82. Cultivated Crops
- 90. Woody Wetlands
  - 91. Palustrine Forested Wetland*
  - 92. Palustrine Scrub/Shrub Wetland*
  - 93. Estuarine Forested Wetland*
  - 94. Estuarine Scrub/Shrub Wetland*
- 95. Emergent Herbaceous Wetlands
  - 96. Palustrine Emergent Wetland (Persistent)*
  - 97. Estuarine Emergent Wetland*
  - 98. Palustrine Aquatic Bed*
  - 99. Estuarine Aquatic Bed*

http://www.mrlc.gov/index.

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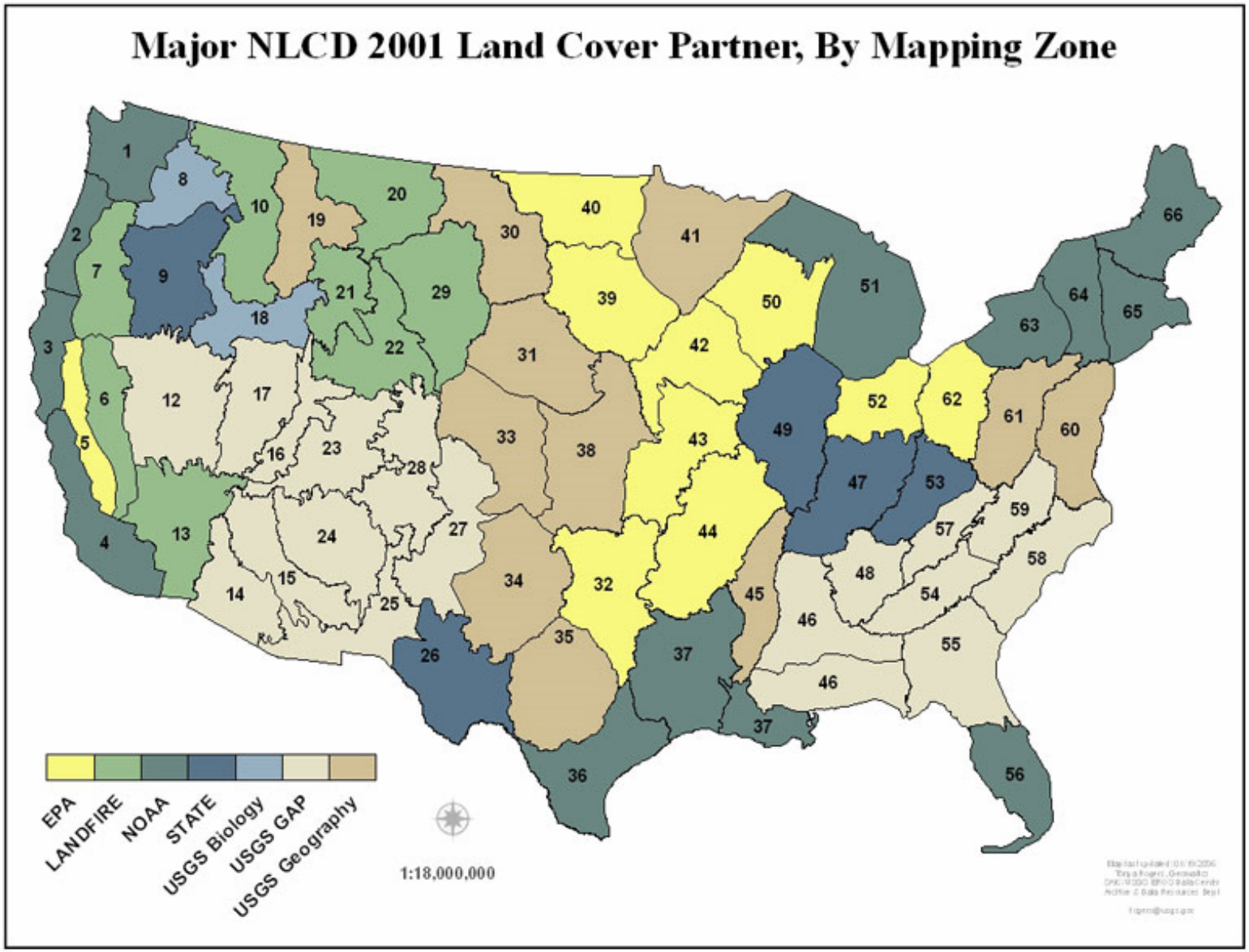

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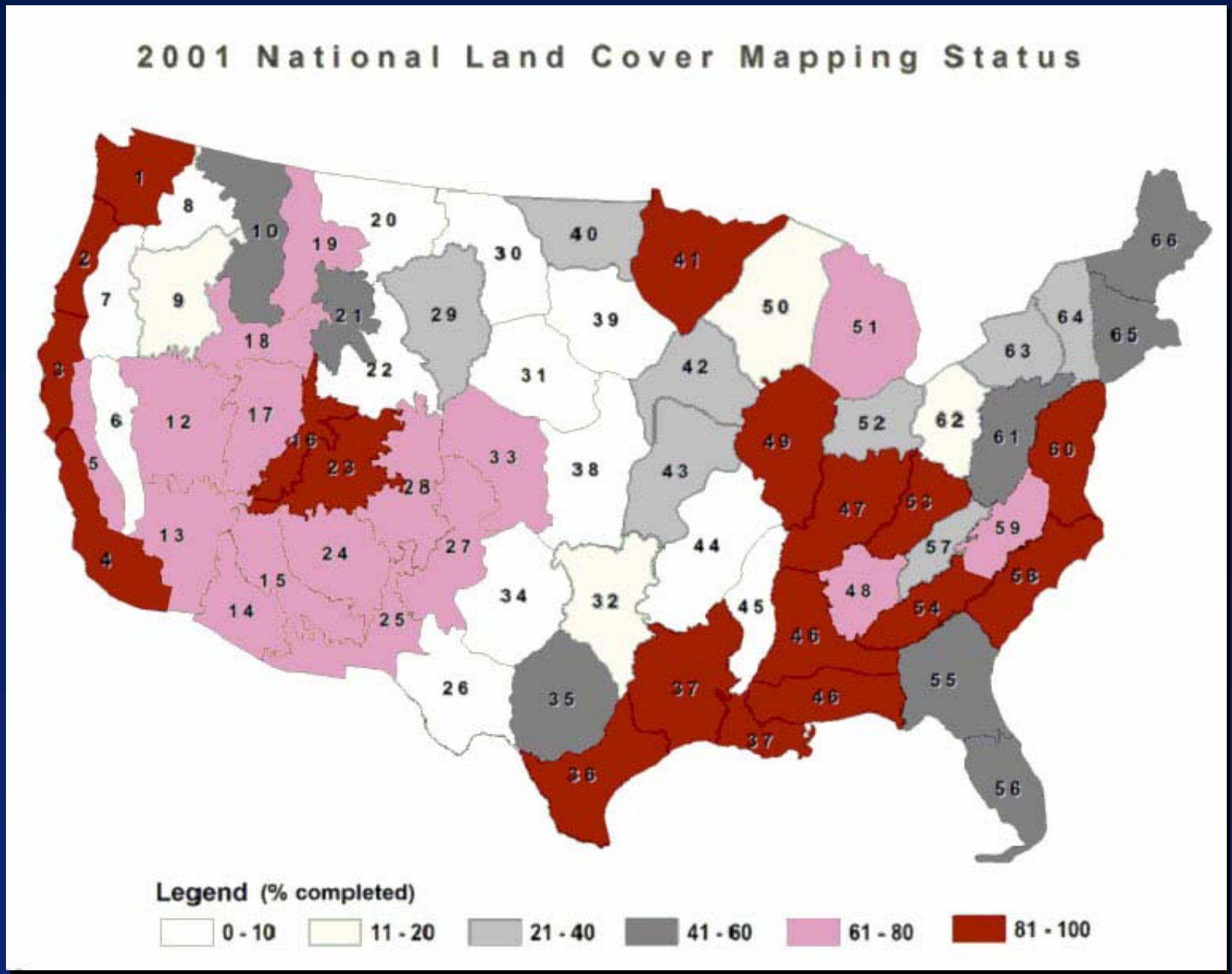

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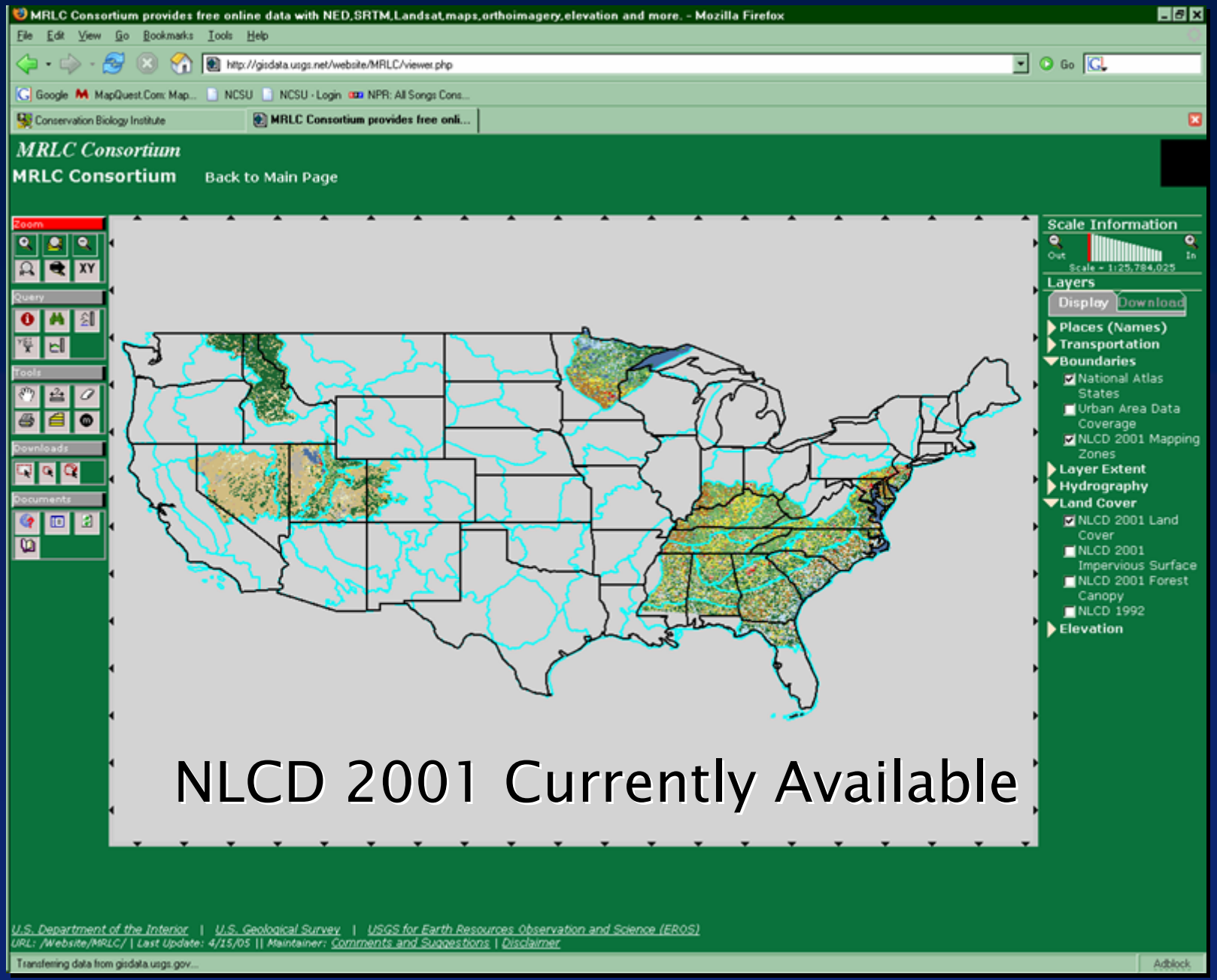

http://www.mrlc.gov/index.

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gap KEEPING COMMON SPECIES COMMON

USGS nbii National Biological Information Infrastructure

GAP Home | Maps, Data & Reports | Projects | Research & Applications | Support & Tools

GAP Home

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- FAQs
- Meetings
- How To Conduct a Gap Analysis

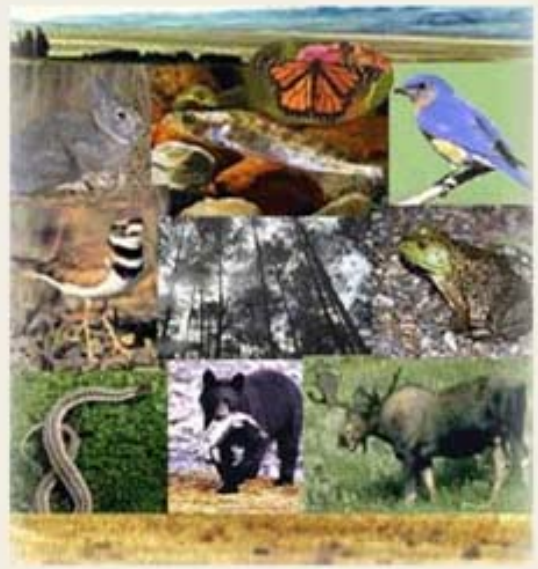
Red Fox, *Vulpes vulpes*
[NBII Image Gallery]

The GAP Analysis Program

"Keeping Common Species Common"

The goal of the GAP Analysis Program is to keep common species common by identifying those species and plant communities that are not adequately represented in existing conservation lands. Common species are those not currently threatened with extinction. By identifying their habitats, GAP Analysis gives land

Keeping Common Species Common



click on an image to view the interactive mapping application highlighting the species predicted habitat distribution

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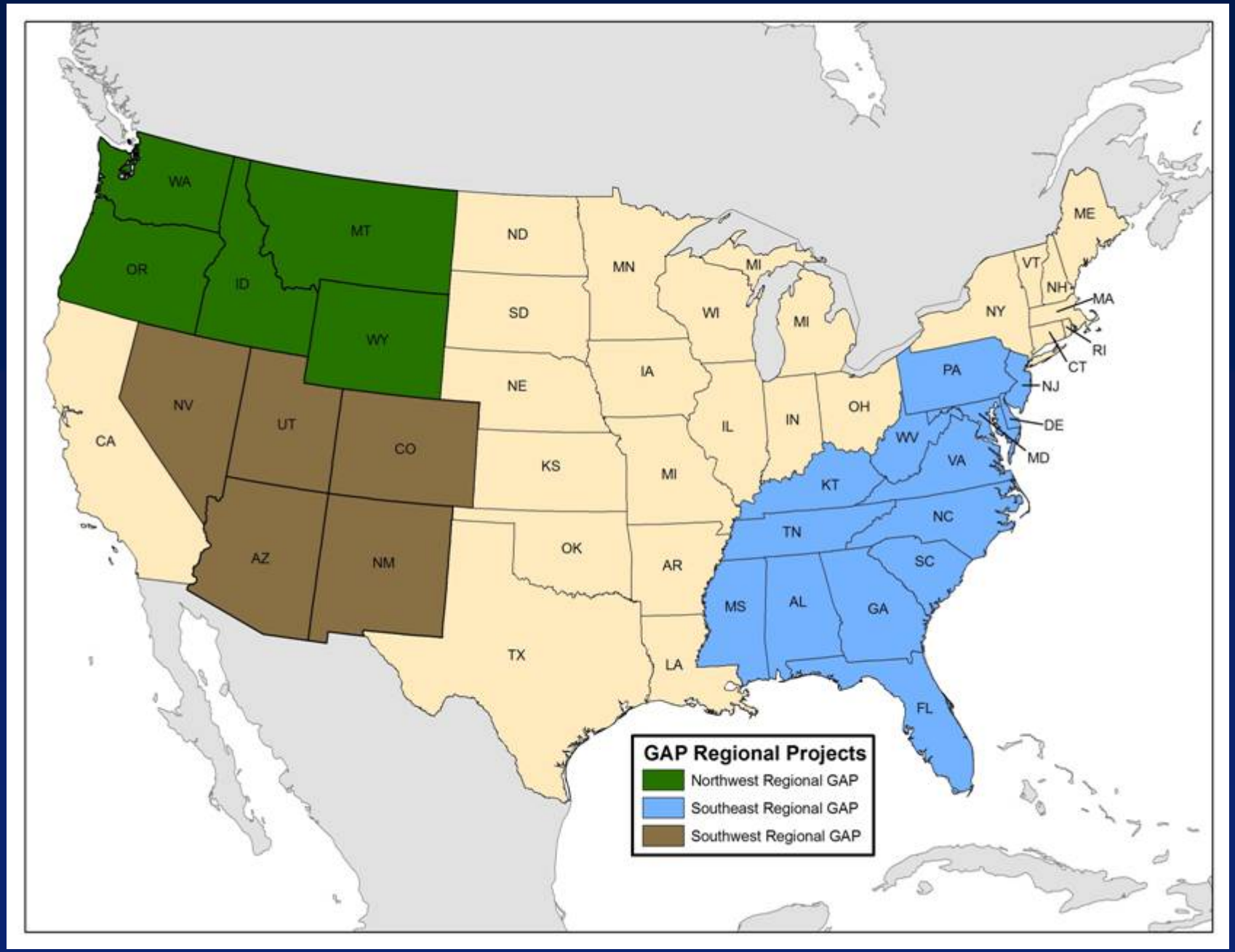
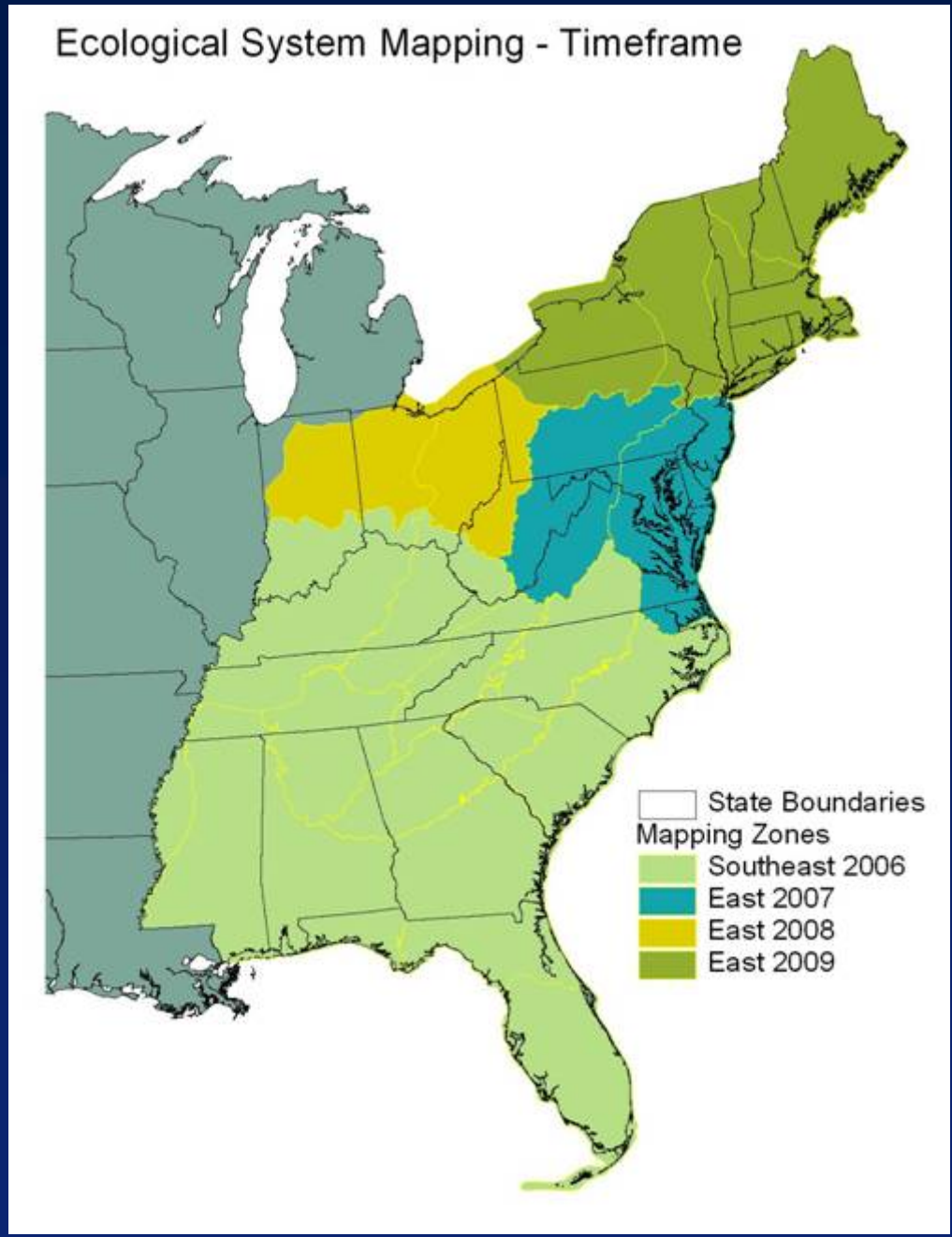
http://gapanalysis.nbii.gov/portal/serv



http://gapanalysis.nbii.gov/portal/serv

Gap Analysis Land Cover for the Eastern US

- Based on NatureServe Ecological Systems
- 135 classes expected in Southeast
- Basis for habitat modeling for vertebrate species



http://gapanalysis.nbii.gov/portal/serv

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Principal LANDFIRE Partners:

FireLab USDA Forest Service

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The Nature Conservancy

- Contact Us
- FAQs
- Sitemap

LANDFIRE is a five-year, multi-partner wildland fire, ecosystem, and wildland fuel mapping project. This project will generate consistent, comprehensive maps and data describing vegetation, fire, and fuel characteristics across the United States. These maps can assist in prioritizing and planning hazardous fuel reduction and ecosystem restoration efforts. The consistent and comprehensive nature of LANDFIRE methods ensures that data will be nationally relevant, while the 30-meter grid resolution assures that data can be locally applicable. LANDFIRE meets agency, partner, and stakeholder needs for data to support landscape fire management planning, prioritization of fuel treatments, collaboration, community and firefighter protection, and effective resource allocation.

LANDFIRE National Schedule

LANDFIRE's objective is to provide consistent, nationwide data describing wildland fuel, existing vegetation composition and structure, historical vegetation conditions, and historical fire regimes to assist:

Got Data?

Find out how to share your data to ground-truth LANDFIRE maps.

- Identification of areas at risk due to accumulation of hazardous fuel
- Prioritization of hazardous fuel reduction projects
- Improvement of coordination between agencies with regard to fire and other resource management
- Modeling real-time fire behavior to support tactical decisions to ensure sufficient wildland firefighting capacity and safety
- Modeling potential fire behavior and effects to strategically plan projects for hazardous fuel reduction and the restoration of ecosystem integrity on fire-adapted landscapes

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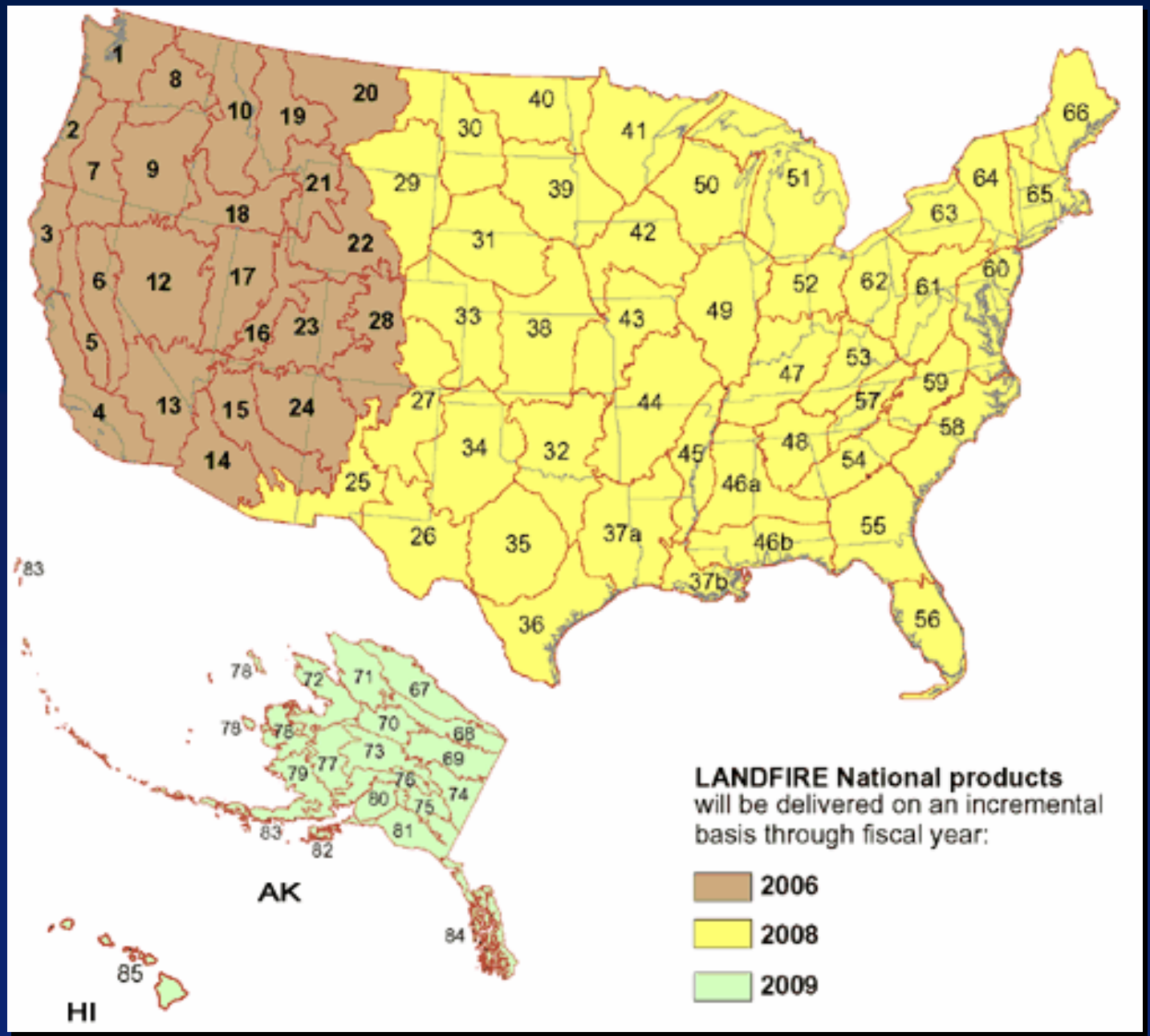
http://www.landfire.g



http://www.landfire.g

LANDFIRE Data Products

FARSITE Fuel layers:
- 13 Anderson (1982) Fire Behavior Fuel Models
- 40 Scott and Burgan (2005) Fire Behavior Fuel Models
- Forest Canopy Bulk Density
- Forest Canopy Base Height
- Forest Canopy Height
- Forest Canopy Cover
- Elevation
- Aspect
- Slope

Fire Regime layers:
- FRCC
- FRCC Departure Index Fire Regime Groups
- Mean Fire Return Interval
- Percent Low-severity Fire
- Percent Mixed-severity Fire
- Percent Replacement-severity Fire
- Succession Classes

Vegetation layers:
- Environmental Site Potential
- Biophysical Settings
- Existing Vegetation
- Existing Vegetation Height
- Existing Vegetation Cover
- Vegetation Dynamics Models

Fire Effects layers:
- Fuel Loading Models

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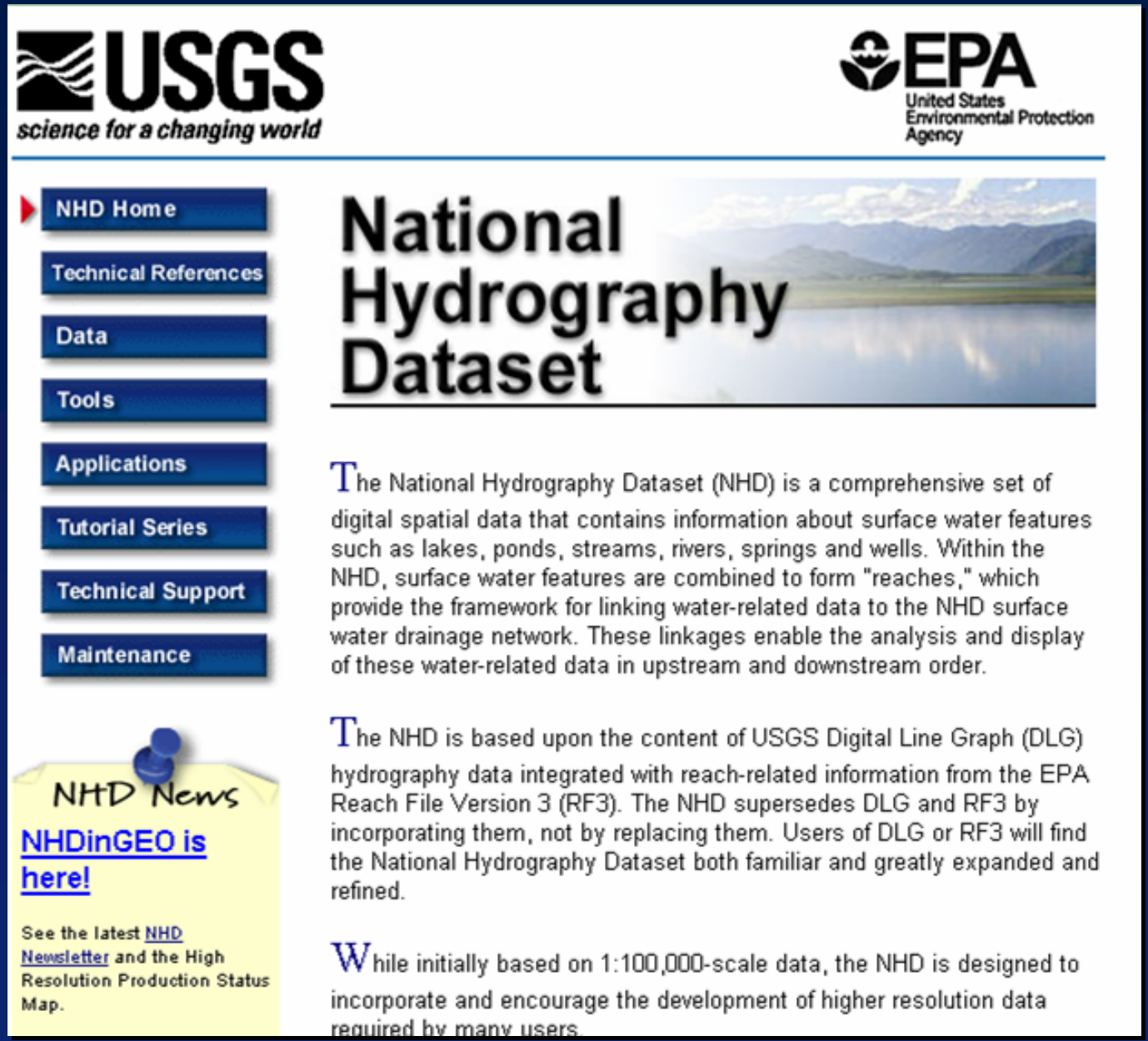
http://www.landfire.g

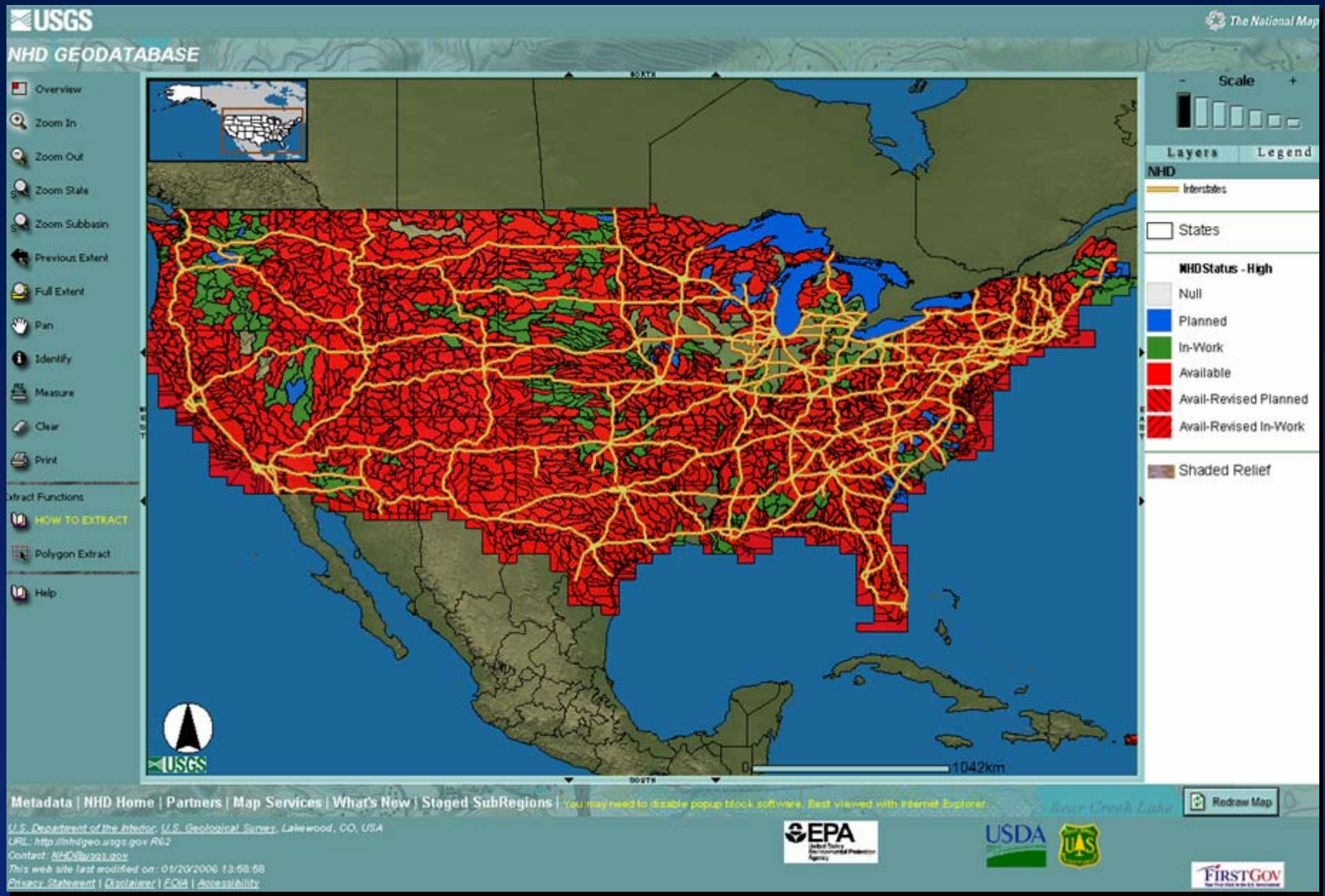
Physical

Based on Digital Line Graph (DLG) data and EPA Reach File (RF3) data

Initially 1:100k, but 1:24k updates are almost complete for US



http://nhd.usgs.go



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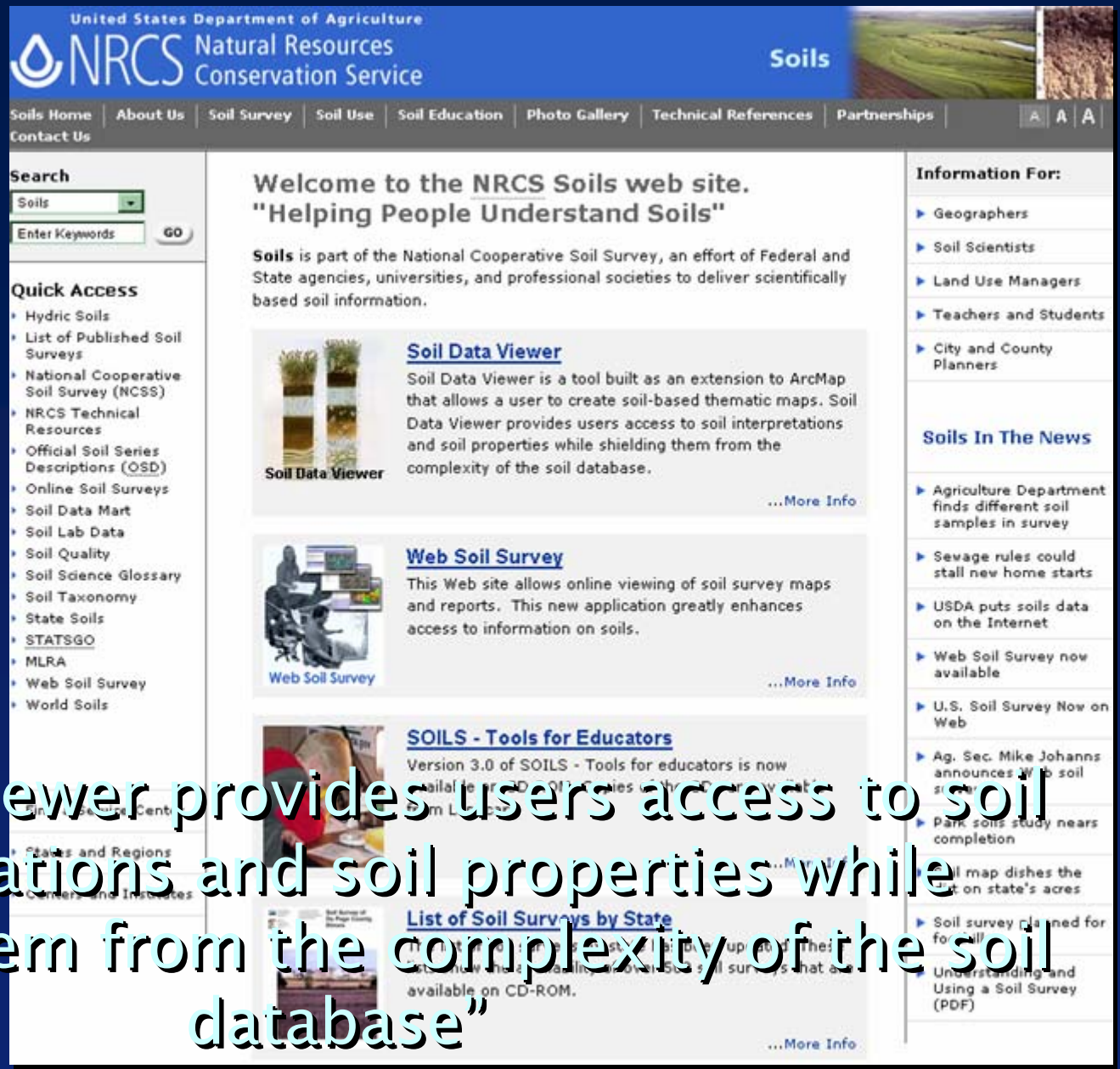
http://nhd.usgs.go

Natural Resources Conservation Service (NRCS)

Soil Data



"Soil Data Viewer provides users access to soil interpretations and soil properties while shielding them from the complexity of the soil database"

http://soils.usda.go

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GAP

NRCS – STATSGO Database

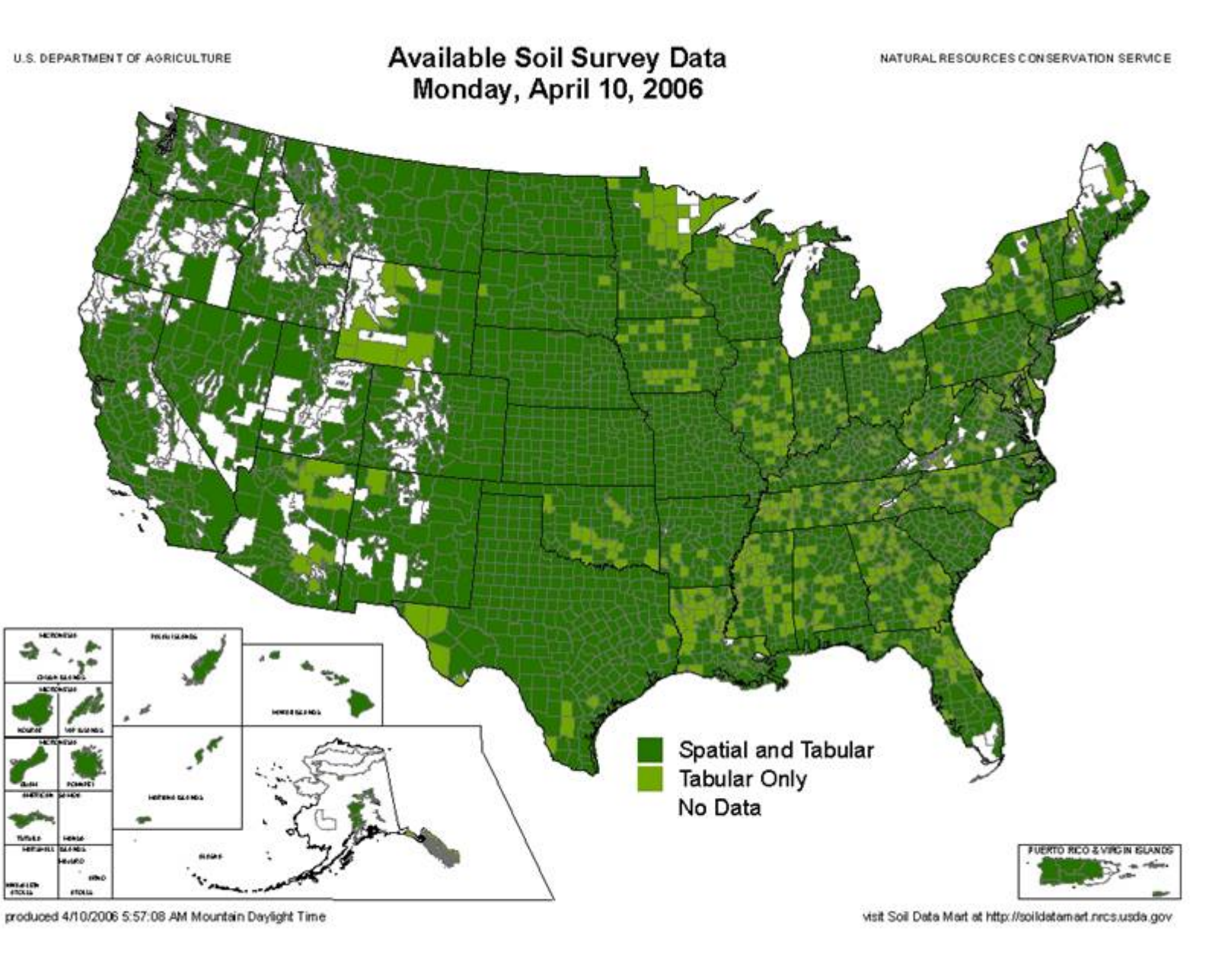
- The STATSGO database is being updated and renamed to the Digital General Soil Map of the United States. The update is scheduled for completion April 30, 2006.
- Scale 1:250,000

http://soildatamart.nrcs.usda.g

NRCS – SSURGO Database

- Soil Survey Geographic Database
- Detailed county based soil surveys
- Completion of the SSURGO data digitizing is scheduled for 2008

http://soildatamart.nrcs.usda.g



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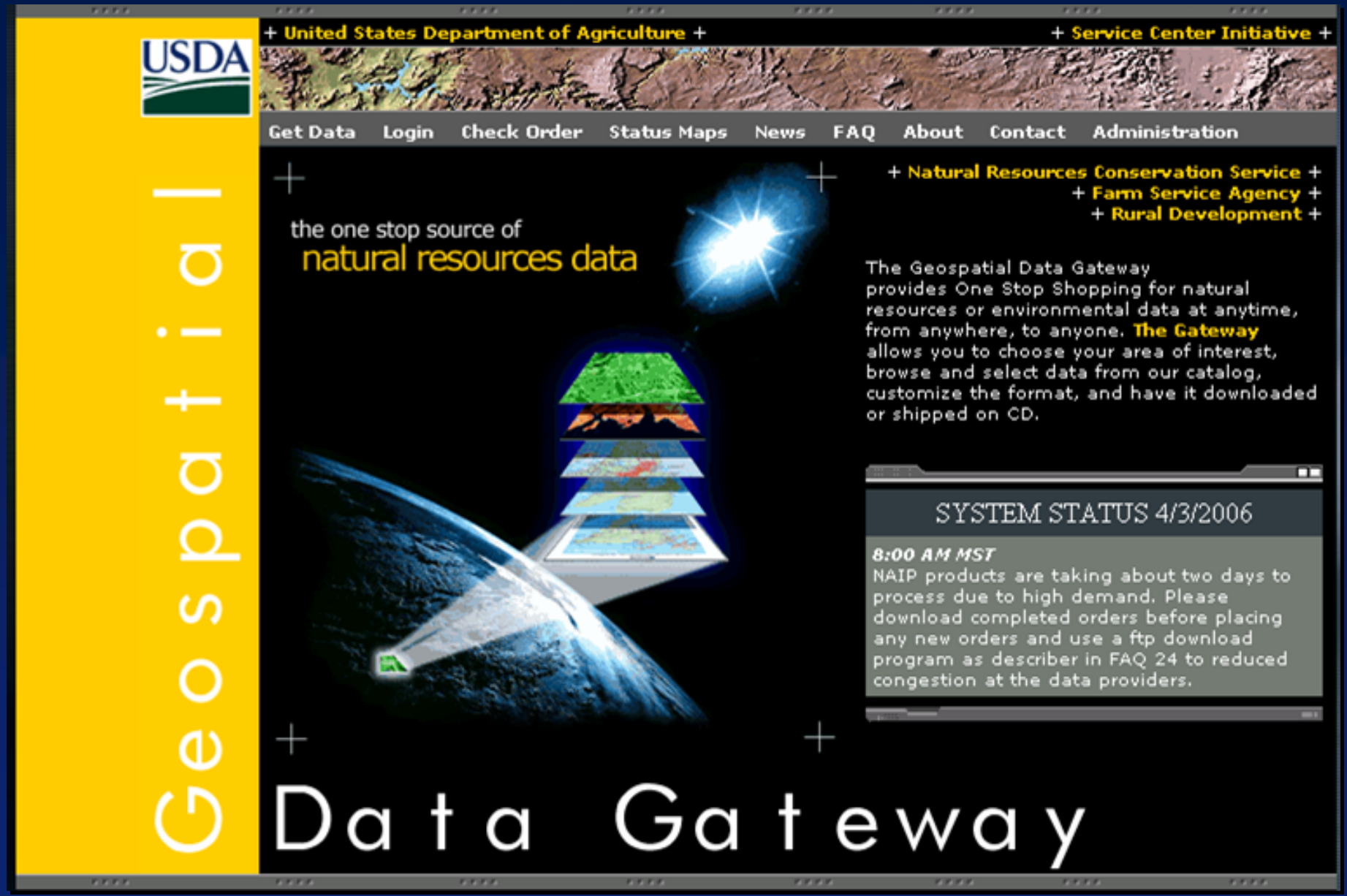

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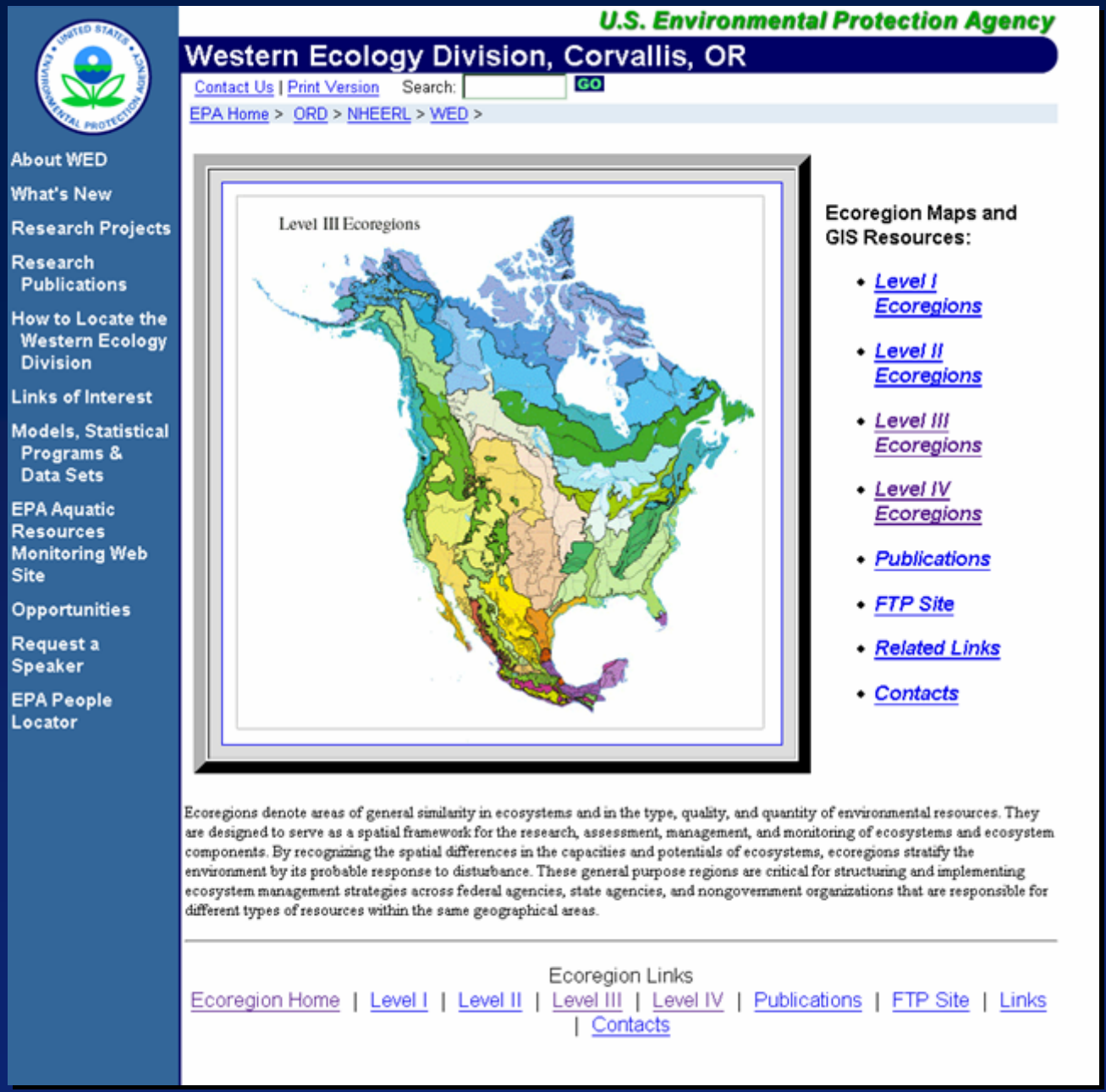
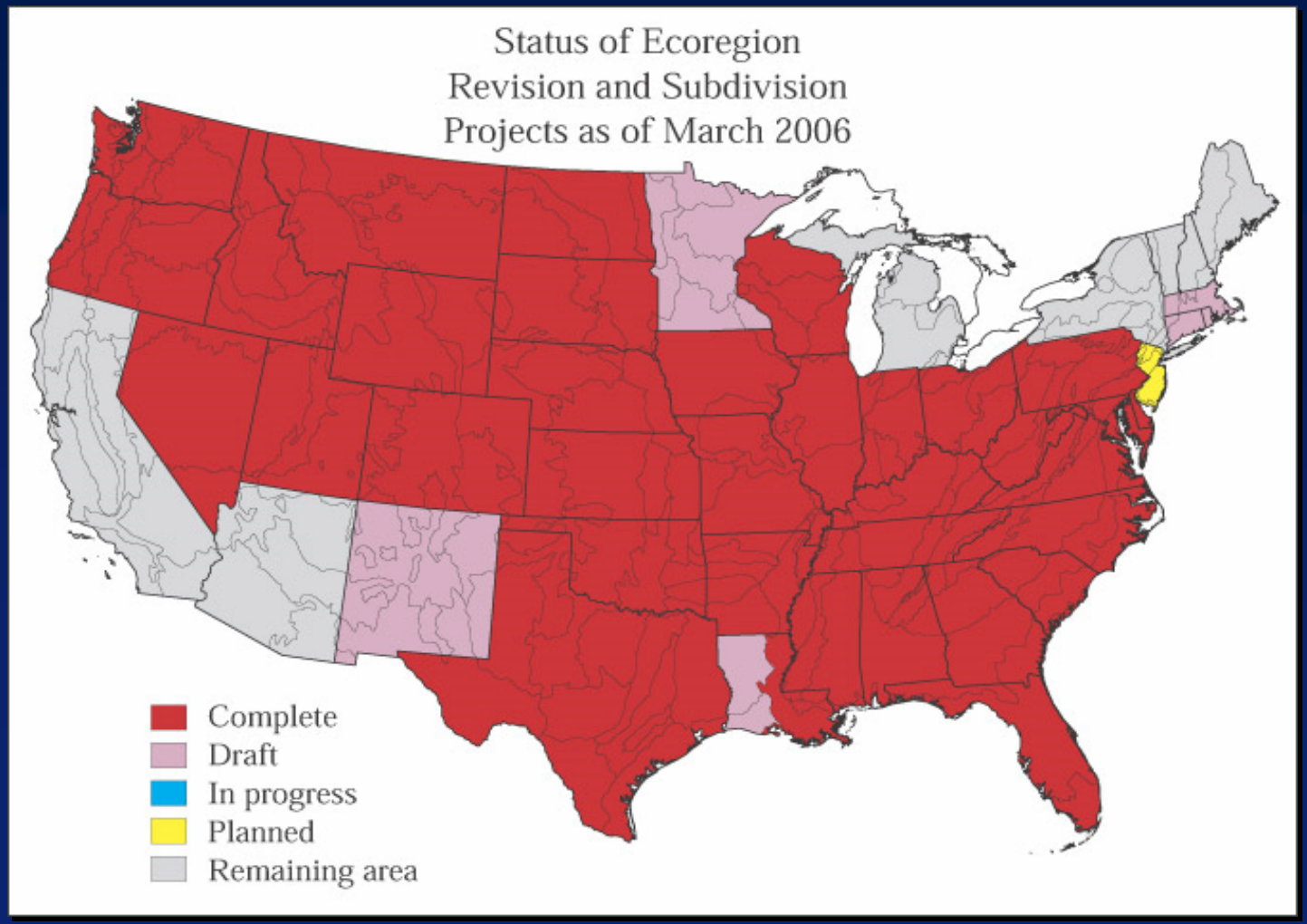
http://datagateway.nrcs.usda.g

EPA Ecoregion Products



http://www.epa.gov/wed/pages/ecoregions

Omernik Ecoregions Level 4



http://www.epa.gov/wed/pages/ecoregions

Avian Data

NatureServe EXPLORER

An Online Encyclopedia of Life

NatureServe

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Welcome to NatureServe Explorer, an authoritative source for information on more than 65,000 plants, animals, and ecosystems of the United States and Canada. Explorer includes particularly in-depth coverage for rare and endangered species.

Search the database for species or ecological communities & systems.

NatureServe Explorer is a product of NatureServe and its natural heritage member programs.

You can easily find information on:

- scientific and common names
- conservation status
- distribution maps
- life histories, conservation needs, and more

Highlights

Search Rare Species Data by County or Watershed

More Images Than Ever

Ecological Systems Data

Additional Data Resources

Use our **InfoNatura** website to find data on the animals of Latin America.

Find more NatureServe data.

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Site Search | Thanks To

Website requires Internet Explorer 5.0 or Netscape 4.06 or higher .

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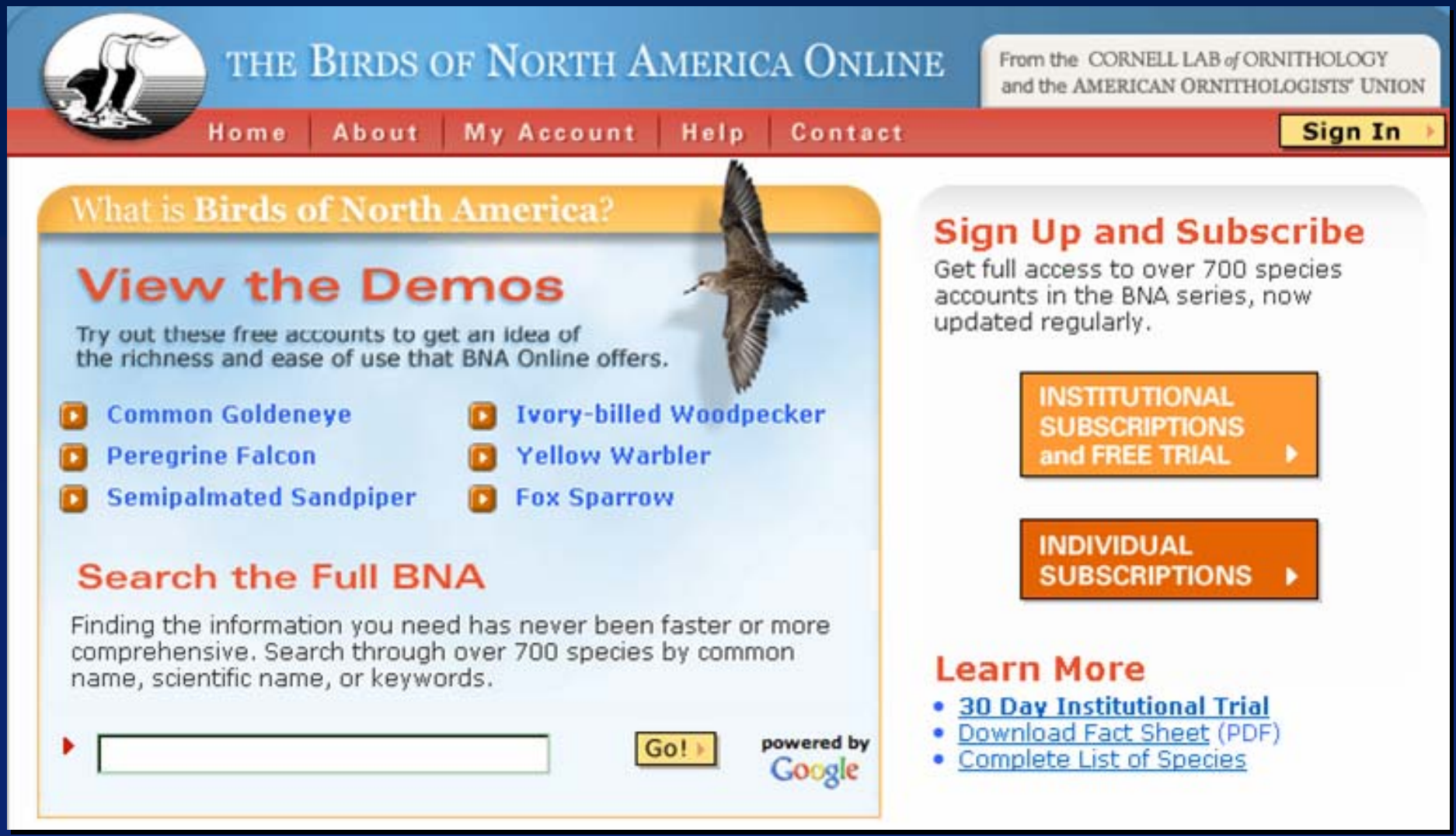
http://www.natureserve.org/expl

Birds of NA



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http://bna.birds.cornell.edu/BI

THE BIRDS OF NORTH AMERICA ONLINE

From the CORNELL LAB of ORNITHOLOGY and the AMERICAN ORNITHOLOGISTS' UNION

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Peregrine Falcon

Falco peregrinus

Order *FALCONIFORMES* - Family *FALCONIDAE*

BNA No. 660

Authors: CLAYTON M. WHITE, NANCY J. CLUM, TOM J. CADE, W. GRAINGER HUNT

Recommended Citation

Species Account | References | Sound & Video | Image Gallery

Section Menu:

INTRODUCTION

One of the most widely distributed of warm-blooded terrestrial vertebrates, the Peregrine Falcon occurs from the tundra to the Tropics, from wetlands to deserts, from maritime islands to continental forests, and from featureless plains to mountain crags—it is absent as a breeder only from the Amazon Basin, the Sahara Desert, most of the steppes of central and eastern Asia, and Antarctica. This depth and breadth of habitat reflects a prodigiously catholic diet that includes many hundreds of species of birds, some bats, and a few rodents, and yet a commonality of ways in which Peregrines pursue them. The presence of this species in the pristine landscape has no doubt influenced the morphological and behavioral evolution of countless avian species. Even so, some populations of Peregrines are food specialists; in the Pacific Northwest, for example, enormous numbers of a few marine bird species support one of the densest-known Peregrine populations.

The often-held image of the Peregrine as a symbol of wilderness diminishes when one sees this falcon breeding on metropolitan bridges and urban skyscrapers or watches tundra migrants

+ zoom

Peregrine Falcon standing on its prey, a pigeon; Jones Beach St. Pk., LI, NY; Feb.

About the photographs

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http://bna.birds.cornell.edu/BI

USGS

Environment Canada

New Search BBS Page Help Citations Disclaimer

Raw BBS Data Search Menu

Species List for a route	State Summary by year	Stop/Location by State/Route	Advanced Search
Species Totals for a route, by year		Stop/Location by FWS Region	FTP Site

Includes data through 2005.

These data are provisional.

Although these data have undergone editing and review, not every error has been detected and eliminated prior to posting. The BBS database is constantly being revised as additional errors are identified. Thus the same data sets retrieved on separate occasions using the interactive programs (i.e., all data retrieval options except FTP files) may have inconsistencies due to corrections made to the database in the intervening time period. Corrections are identified in the DataFix.txt file located on the FTP site. Also see the databasecorrections.txt file on the FTP site for updates regarding the FTP data files.

Descriptions of Data Request Functions:

Species List -- Returns cumulative list of bird species detected on route. Format: English common names.

Species Totals -- Returns table listing total number of individuals detected of each bird species found on route for each year the route was run. Format: English common names on left, years across top; numbers are total individuals per year; dashes indicate route was not sampled that year.

Advanced Search -- Permits small to medium sized queries of the BBS database ranging in complexity from data for a single bird species or for an entire state. Species are identified in the result sets by species identification numbers (AOU numbers), no common names are used. Weather and route history data also available via Advanced Search.

FTP Site -- Contains the entire BBS data set divided into manageable files (i.e. species groups or states). Use this site for large data requests such as an entire region or the entire BBS data set. Once at the FTP site see the "Readme.txt" file for complete descriptions of each file type.

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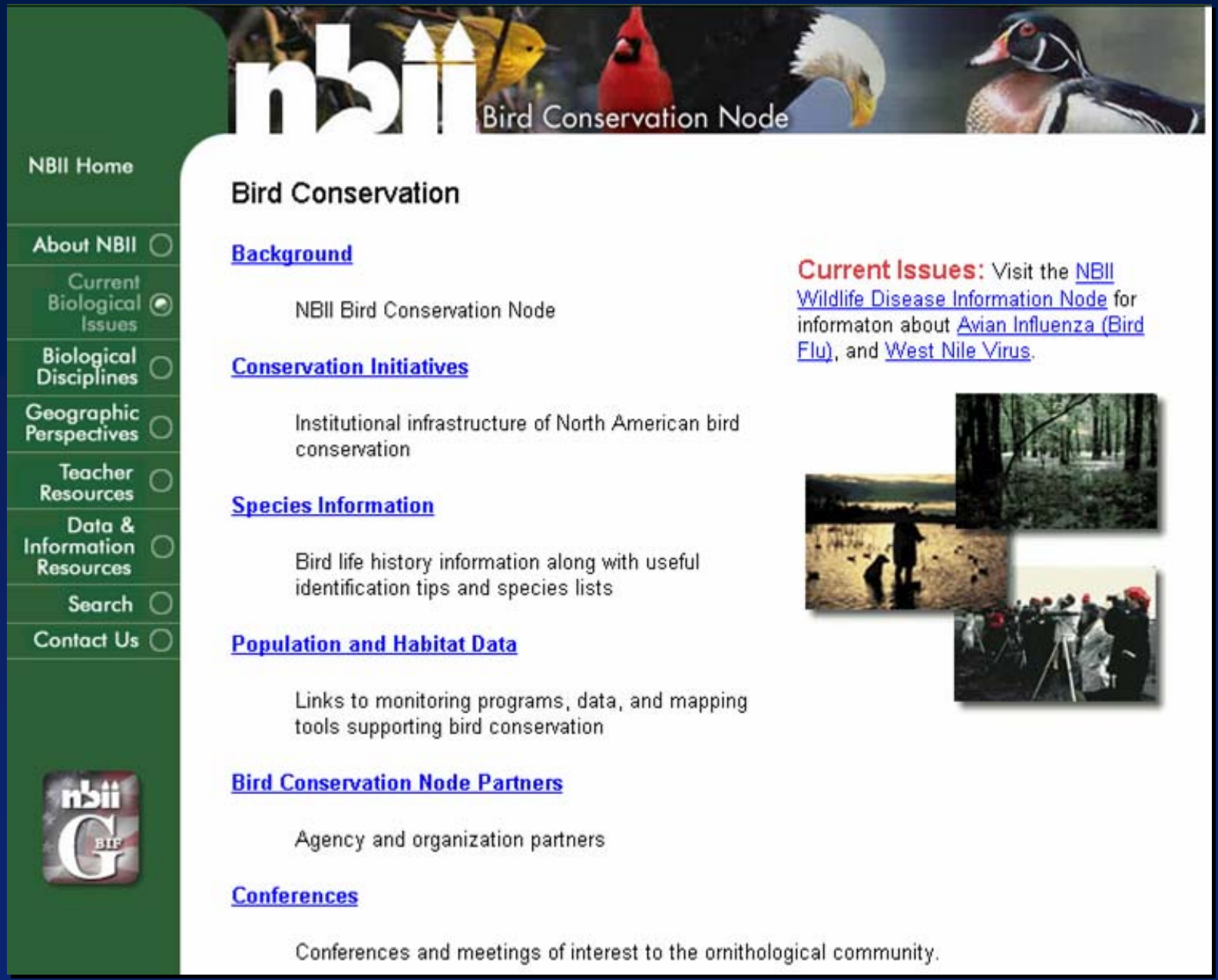
http://www.pwrc.usgs.gov/b


nbii
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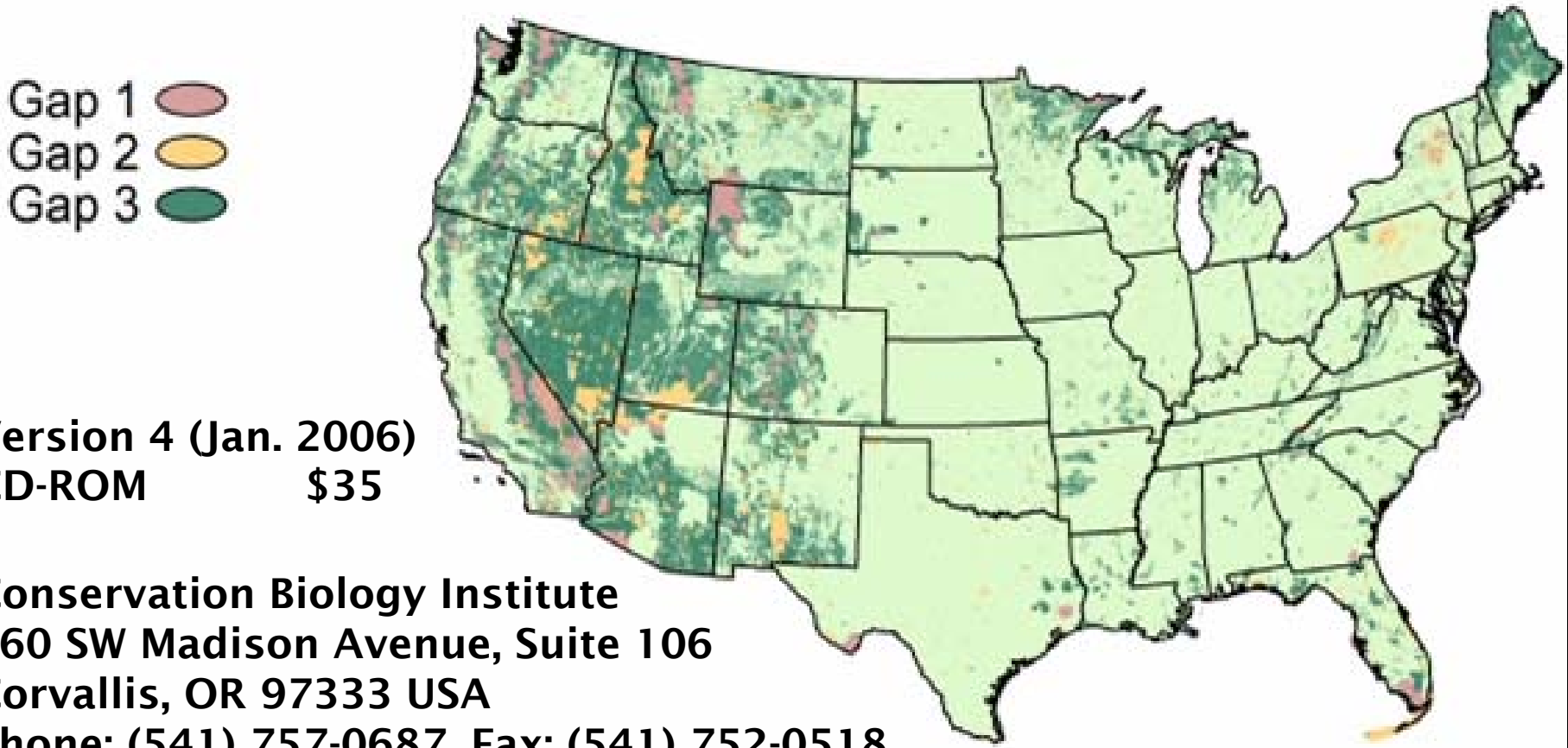
Conservation Initiatives
Institutional infrastructure of North American bird conservation
Species Information
Bird life history information along with useful identification tips and species lists
Population and Habitat Data
Links to monitoring programs, data, and mapping tools supporting bird conservation
Bird Conservation Node Partners
Agency and organization partners
Conferences
Conferences and meetings of interest to the ornithological community.
Current Issues: Visit the NBII Wildlife Disease Information Node for informaton about Avian Influenza (Bird Flu), and West Nile Virus.

Stewardship Data

Protected Areas Database

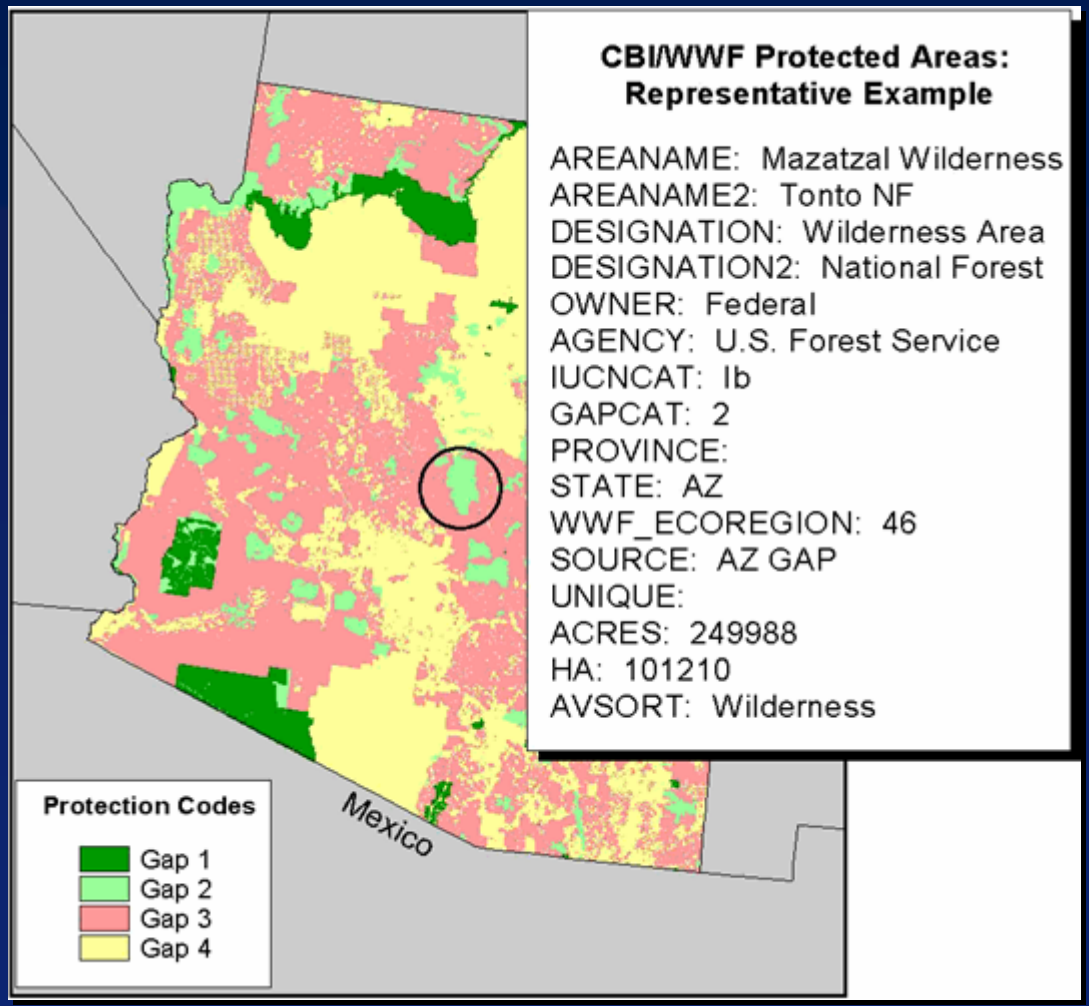


Version 4 (Jan. 2006)
CD-ROM $35

Conservation Biology Institute
260 SW Madison Avenue, Suite 106
Corvallis, OR 97333 USA
Phone: (541) 757-0687, Fax: (541) 752-0518

http://www.consbio.org/index.

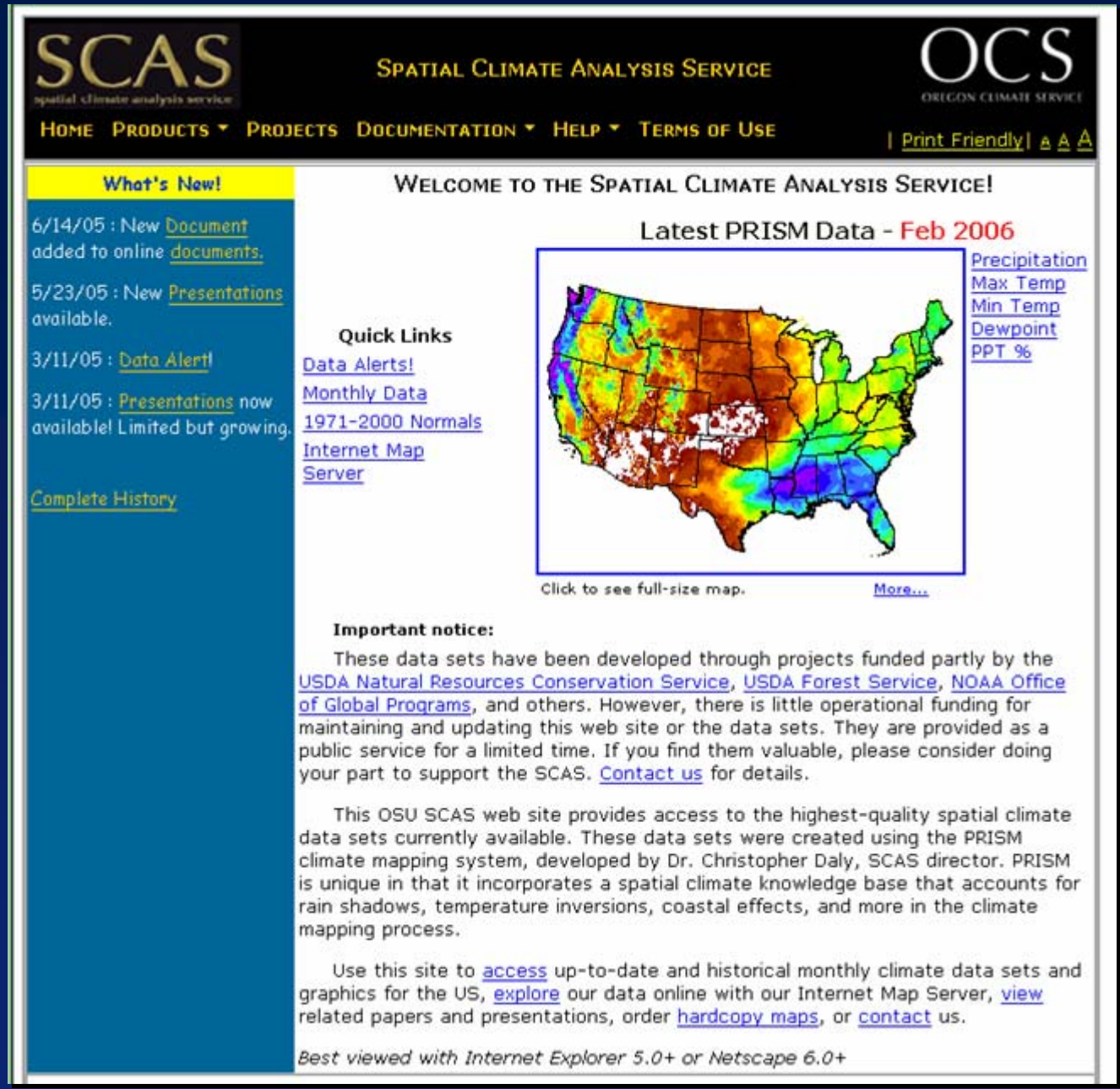
Protected Areas Database



http://www.consbio.org/index.

Climatic Data

Spatial Climate Analysis Service



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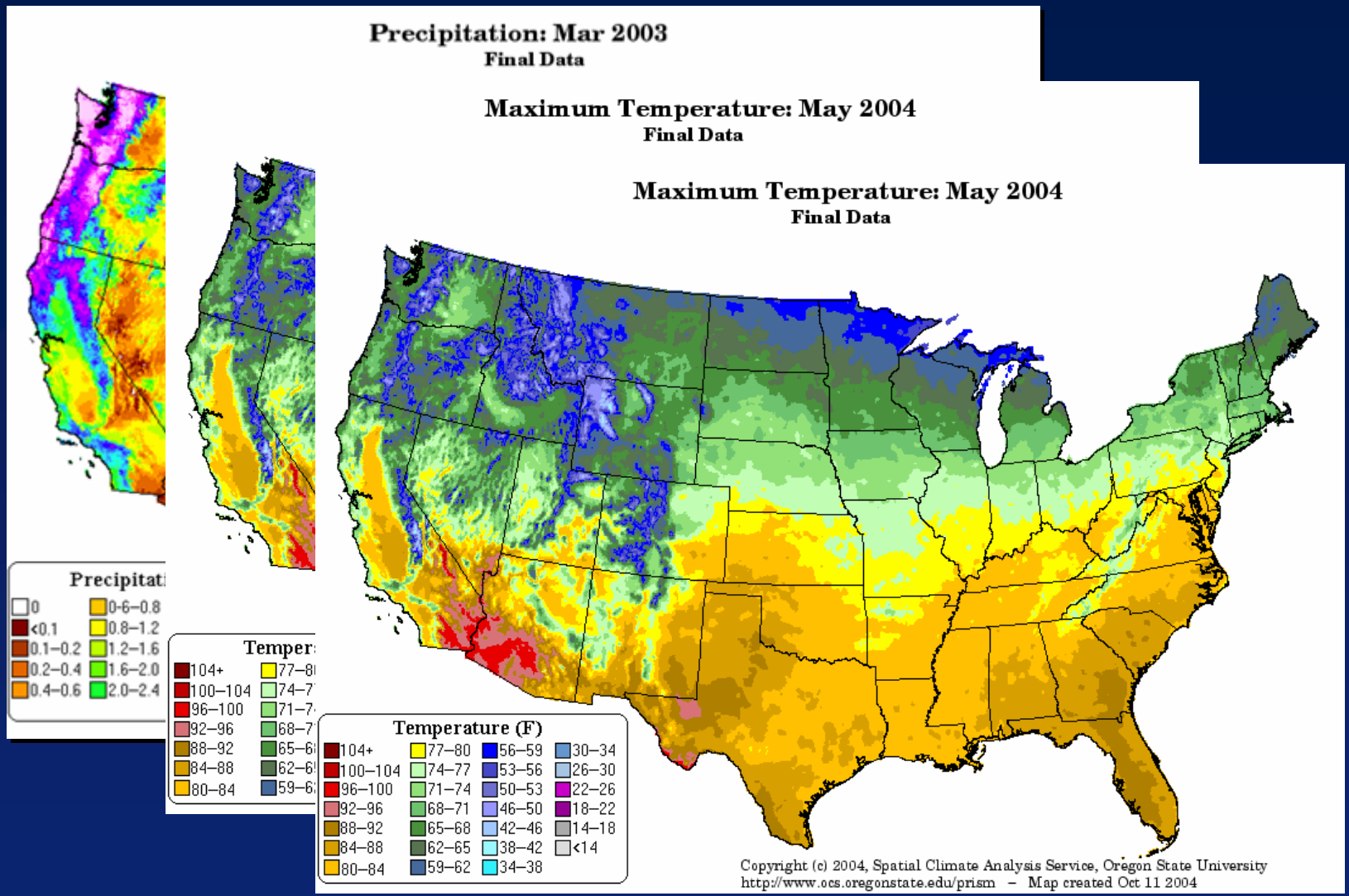
http://www.ocs.oregonstate.edu/prism/index

Spatial Climate Analysis Service (SCAS)

- PRISM modeling
  - **P**arameter-elevation **R**egressions on **I**ndependent **S**lopes **M**odel
- MapServer Explorer
- ASCII grid format
- 4km resolution
- 2km data (high resolution) available through Climate Source at http://www.climatesource.com



http://www.ocs.oregonstate.edu/prism/index

HOME | Literature | Links | Examples | Methods | Comments & Questions | Data Access

Welcome to the DAYMET U.S. Data Center - A source for Daily Surface Weather Data and Climatological Summaries

Daymet is a model that generates daily surfaces of temperature, precipitation, humidity, and radiation over large regions of complex terrain. Daymet was developed at the University of Montana, Numerical Terradynamic Simulation Group (NTSG), to fulfill the need for fine resolution, daily meteorological and climatological data necessary for plant growth model inputs

Using a digital elevation model and daily observations of minimum and maximum temperatures and precipitation from ground-based meteorological stations, an 18 year daily data set (1980 - 1997) of temperature, precipication, humidity and radiation has been produced as a continuous surface at a 1 km resolution. A wide range of summary and point daily data over the conterminous United States are now available.

No other data at this temporal and spatial resolution exists. This data is currently being distributed, free of charge, from the NTSG lab through its outreach component, the EOS Training Center Natural Resource Project.

The Daymet U.S. database is indexed by the Oak Ridge National Laboratory, Distributed Active Archive Center (ORNL DAAC), in their list of Regional and Global Data for Global Change Research

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http://www.daymet.or

DAYMET

Daily Surface and Weather Climatalogical Summaries

- Utilizes a digital elevation model and daily observations of minimum and maximum temperatures and precipitation to create data sets

- Temperature
- Precipitation
- Humidity
- Radiation
- 1 km resolution
- 18 year daily data set

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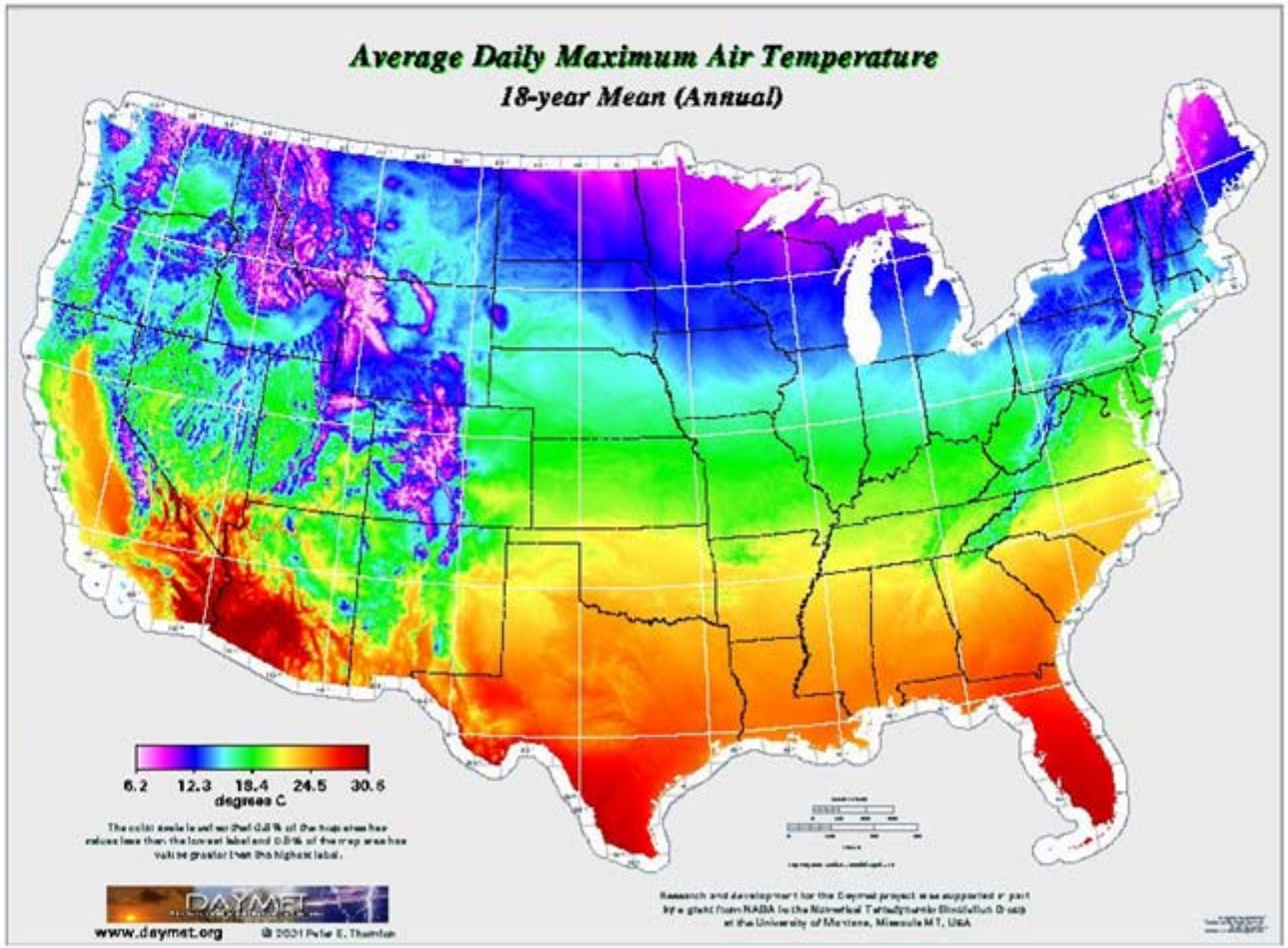
http://www.daymet.or

DAYMET

Daily Surface Weather and Climatalogical Summaries

HOME | Literature | Links | Examples | Methods | Comments & Questions | Data Access



http://www.daymet.or

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Summary

- Lots of data out there
- Access is getting easier
- Get to know the data sets you're working with. Most have flaws – some that may be critical to your output.

"Although conceptually simple….applying the methodology can be onerous"

Shifley and Thompson

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