

nbii Bird Conservation Node

Web Tools and Information for Bird Conservation at Multiple Geographic Scales

Elizabeth Martín, NBII Program; Bruce Young, NatureServe; Montserrat Carbonell, Ducks Unlimited; John Nelson, USGS Upper Midwest Environmental Sciences Center; Grant Ballard, PRBO Conservation Science

The NBII Bird Conservation Node and partners are providing access to data and information on North American birds across multiple geographic scales, ranging from continental to regional levels. Bird data and information collected at breeding, migration, and wintering grounds, is used, when combined, to assess the status and trends of North American bird populations. The node-supported activities highlighted below will provide access to bird monitoring data and species distribution maps via Web sites and web-based tools available online by the end of 2005.

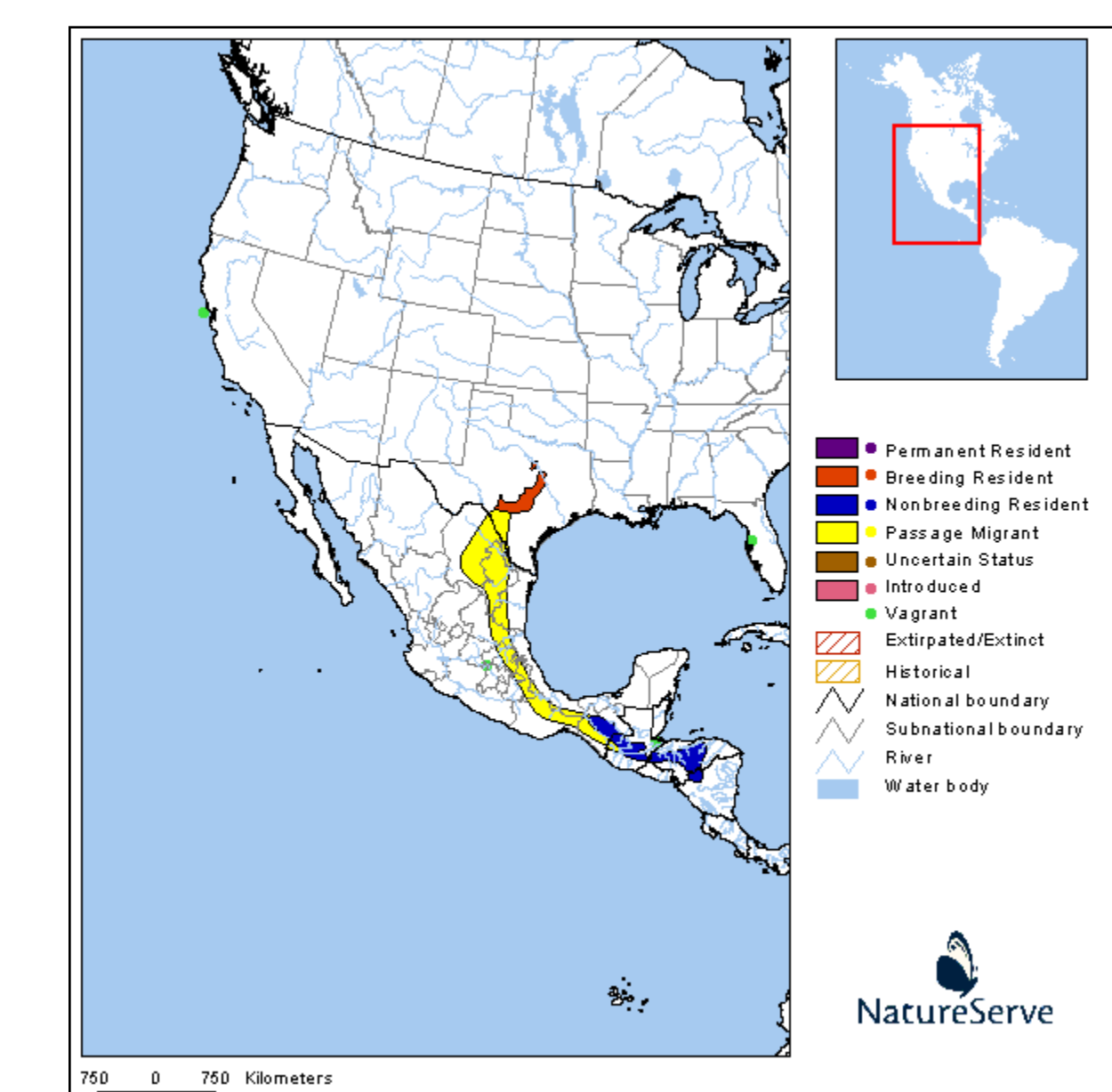
Continental Resource

Digital Distribution Maps of the Birds of the Western Hemisphere
<http://www.natureserve.org/getData/birdMaps.jsp>

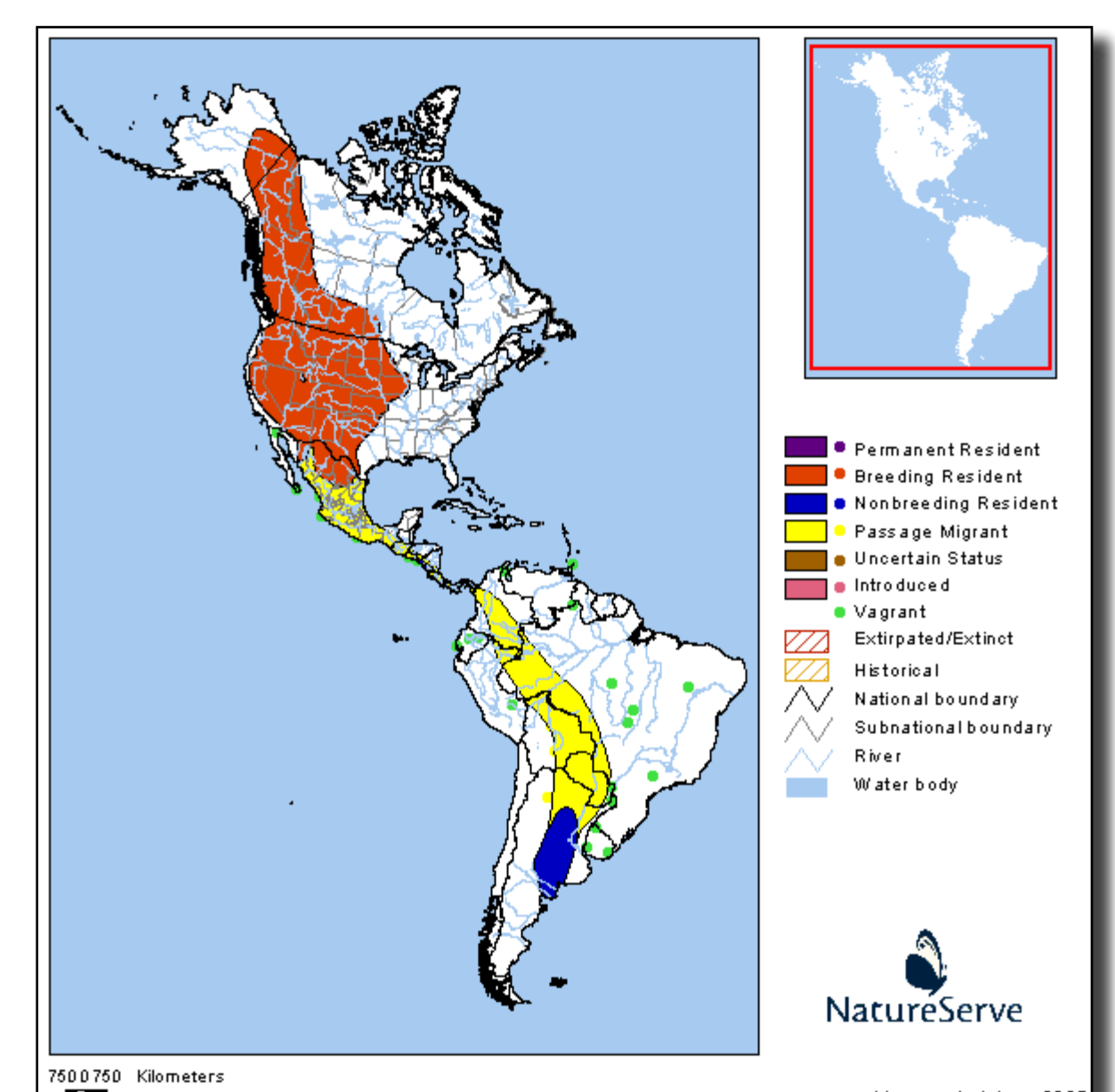
Partner: NatureServe
 Representing a group of conservation organizations that sponsored initial development of digital maps – NatureServe, Conservation International's Center for Applied Biodiversity Science, The Nature Conservancy, World Wildlife Fund, and Environment Canada's WILDSpace

Description:
 New version (version 2.0) of Digital Distribution Maps of the Birds of the Western Hemisphere. These range maps of birds of the Western Hemisphere provide distribution information for 4,247 species of birds from 115 families that occur regularly in the Americas. Digital maps are available as ArcView shapefiles for use in GIS applications, or as gif images for direct viewing via NatureServe's Explorer and InfoNatura. ArcView shapefiles include information on taxonomic status, literature source used for distribution, and status of the bird, among others. Updates in version 2.0 include use of a standardized base map (Digital Chart of the World) for all digital maps, and addition of marine and pelagic ranges, where applicable, for all species included in the database.

Purpose:
 Accurate and readily available bird distribution maps are indispensable to inform decisions about priority areas for protection from local to continental scales. Because the maps include all regularly occurring species in the Americas, users are free to analyze whatever set of species are of interest, whether it be declining grassland birds, the parrots of Colombia, or critically endangered species in the Caribbean. The Digital Distribution Maps of the Birds of the Western Hemisphere are increasingly being used by conservationists and avian biologists to develop habitat-based conservation plans and assessments. These digital distribution maps have been used by Partners in Flight to develop the North American Landbird Conservation Plan, by researchers to develop a global analysis of avian hotspots, and by other organizations such as the Cornell Lab of Ornithology and the Smithsonian Institution's Museum of Natural History to provide educational resources via the Web and through bird exhibits.



Distribution of Swainson's hawk (*Buteo swainsoni*) in the Americas. This species is listed as a watch list species – moderately abundant or widespread with declines or high threats – in the North American Landbird Conservation Plan.



Entire distribution range of Golden-cheeked warbler (*Dendroica chrysoparia*) in the Americas. The Golden-cheeked warbler is currently listed as endangered throughout its entire range.

Multinational Resource

Latin America and Caribbean Waterfowl Surveys Database
 <Web site under construction>

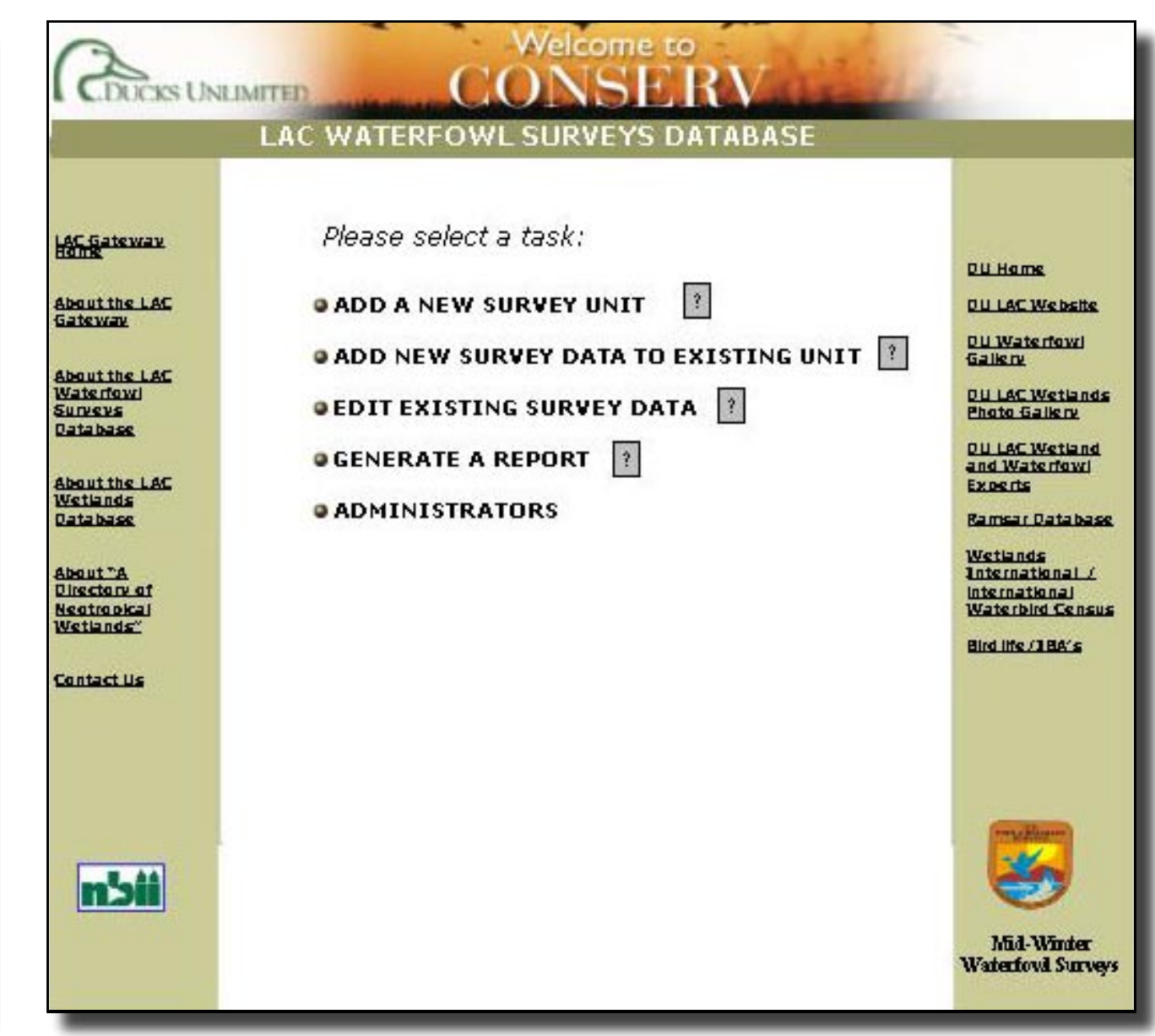
Partner: Ducks Unlimited, Inc.

Description:
 Ducks Unlimited, Inc. (DU), in collaboration with almost 100 colleagues from ten different countries in the Caribbean and Central and northern South America, is gathering valuable data on the distribution and numbers of North American and Neotropical waterfowl. For the first few years, field data was entered on "field sheets" and then entered on an Excel spreadsheet. For the next two years, colleagues were able to use an Access database that helped with the entering and analysis of the data. Now, DU programmers have been working with the U.S. Fish and Wildlife Service and NBII to develop a Web-based Oracle database that manages all the information once contained in the Access format. This database will eventually be linked to a Wetlands Inventory database from information contained in the Directory of Neotropical Wetlands (Scott & Carbonell, 1986). Partners and coordinators from the countries participating in the surveys will be able to enter their survey information online and guest users will be able to query survey summaries and view survey sites on a mapping application.

Purpose:
 The cornerstone of Ducks Unlimited's (DU) conservation program is objective scientific information on the ecology and status of North American waterfowl populations. Recent research has indicated that the Caribbean and Central and northern South America provide the necessary habitats for the wintering phases in the life cycle of North American migratory waterfowl. The Waterfowl Surveys Initiative has been motivated by DU's interest in learning more about North American migratory waterfowl distributions during the northern winter and where wetland landscape conservation programs should be directed, together with the interest that exists in the Latin America and Caribbean countries to designate new wetlands of international importance (Ramsar sites), establish protected areas, and identify habitat management needs. The Latin America and Caribbean Waterfowl Surveys Database will increase the accessibility of this information for partners and provides a mechanism for collecting, managing and analyzing waterfowl surveys and wetland information.



Ducks Unlimited's web-based gateway to Latin America and Caribbean waterfowl and wetlands databases will allow users to explore and retrieve data from these important information resources.



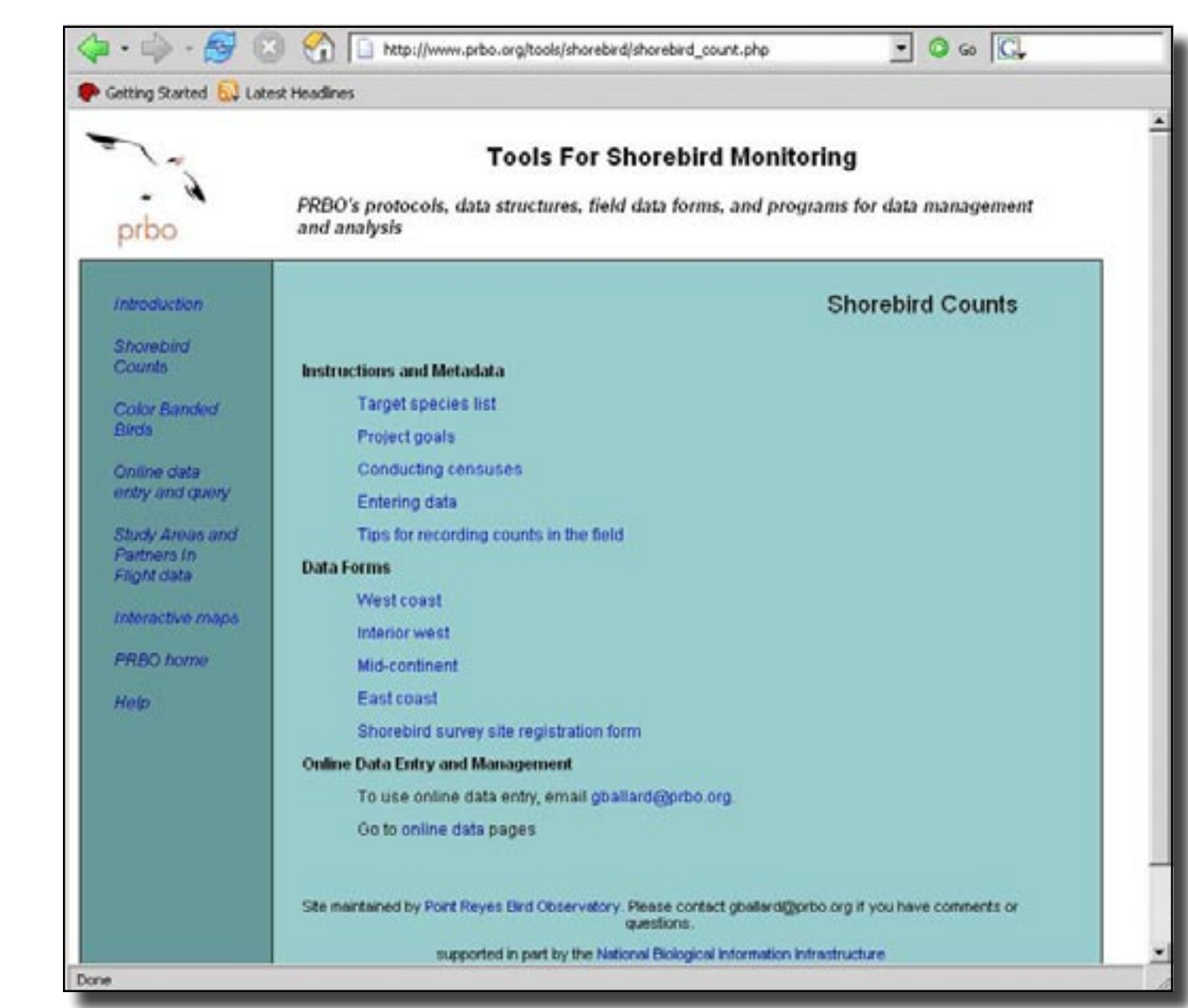
Contributors of waterfowl survey data from Latin America and the Caribbean will be able to submit and view their survey results online.

Tools for Shorebird Monitoring
www.prbo.org/tools/shorebird

Partner: PRBO Conservation Science

Description:
 This Web site provides access to reference materials, field protocols, data forms, help, and online data management facilities (still under construction) for shorebird monitoring. New relational database developed as part of suite of tools for shorebird monitoring can accommodate varying protocols and project contexts, and will interface with newly emerging Bird Monitoring Data Exchange Schema, maximizing the database utility to analysts and project managers.

Purpose:
 The Tools for Shorebird Monitoring website will serve as a gateway for researchers, citizen scientists, and the general public interested in collecting, submitting, managing, and querying shorebird data following internationally standardized scientific protocols. The Web site will eventually provide access to the entire PRBO Pacific Flyway dataset, containing over a million shorebird observations from Mexico to Alaska, and will facilitate a next generation of citizen science focused on documenting shorebird numbers, phenology, and habitat use throughout North America, and possibly beyond.



PRBO's Tools for Shorebird Monitoring website includes links to reference materials, field protocols, metadata, and data management resources. For example, the Web site's Shorebird Count page provides everything you ever wanted to know about counting shorebirds, with links for region-specific species lists, protocols, and how to get help.

Enter Shorebird Count

You are entering data for SHOREBIRD SPECIES. Please select a project. If you have already observed, click here to open a new window with the form.

Shorebird Count Area, Site, or Subsite: [text input]

Date (mm/dd/yyyy): [dropdown] [dropdown] [dropdown] [dropdown]

Species (enter code)	Total Counted	Observer	Species (enter code)	Total Counted
[dropdown]	[text input]	[text input]	[dropdown]	[text input]
[dropdown]	[text input]	[text input]	[dropdown]	[text input]
[dropdown]	[text input]	[text input]	[dropdown]	[text input]
[dropdown]	[text input]	[text input]	[dropdown]	[text input]
[dropdown]	[text input]	[text input]	[dropdown]	[text input]
[dropdown]	[text input]	[text input]	[dropdown]	[text input]

Sample data entry page. User will have a project-protocol specific bird list to choose from, the ability to choose a team of observers, a study area (pre-set or user defined), and notes related to each specific count.

National/Regional Resource

Regional Bird Conservation Planning: Birds and Land Uses
http://umesc-ims01.er.usgs.gov/website/new_bird/

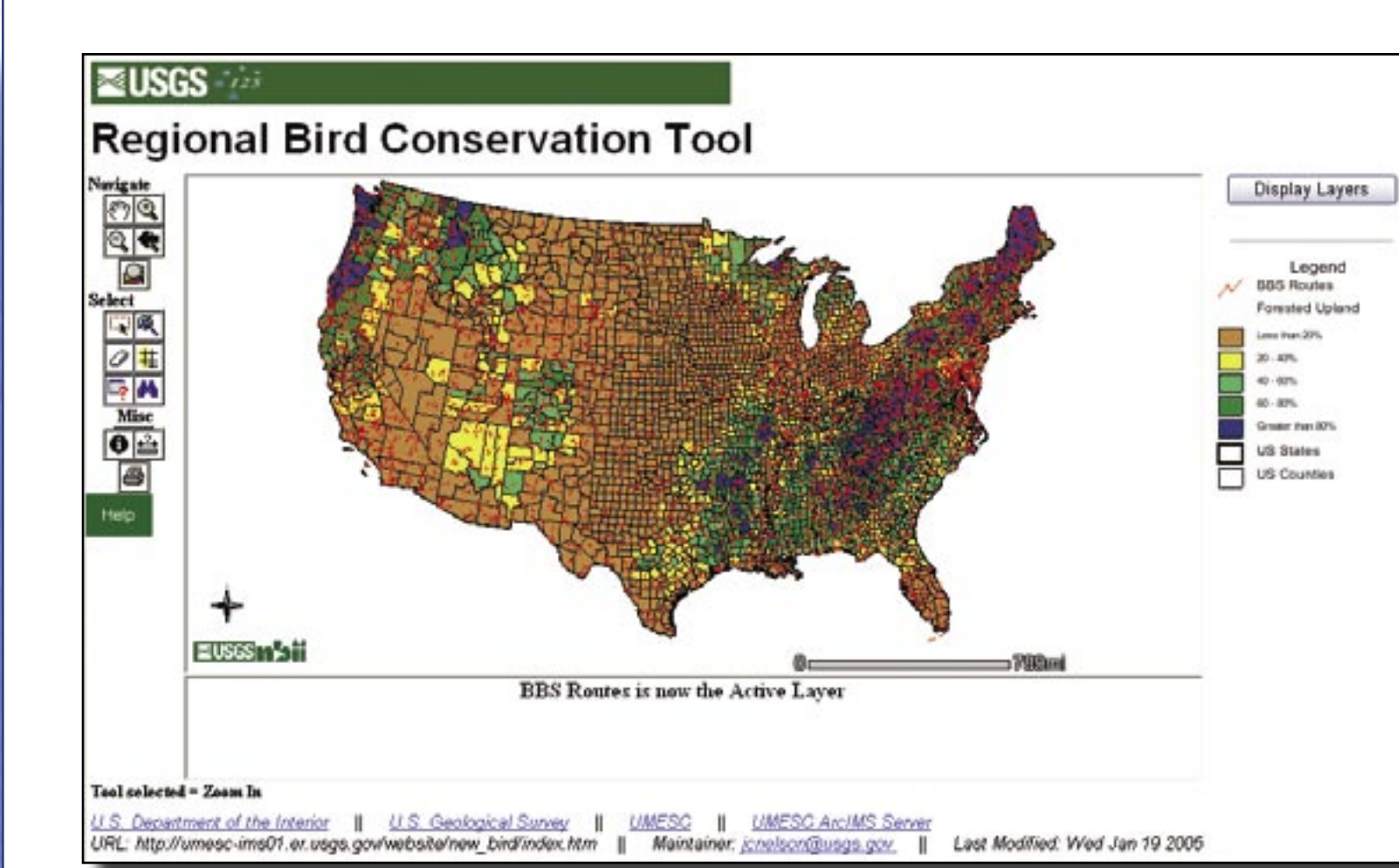
Partner: U.S. Geological Survey's Upper Midwest Environmental Sciences Center

Description:
 This Web site is designed to assist managers concerned with bird conservation planning. The Web site uses mapping software that allows users to visualize and download Breeding Bird Survey (BBS) data associated with user-specified locations, such as federal lands, counties, states, and other geographic divisions. It also allows users to select BBS routes within a specified distance from a refuge or county. The Web site creates lists of bird species, in order of their abundance, for user-specified locations and calculates species richness by BBS routes. Maps summarizing land uses by county are also available for viewing or downloading. This information will be most useful for land managers and program coordinators concerned with regional and national bird conservation planning. The maps and summaries of bird data also provide a regional context for local conservation planning.

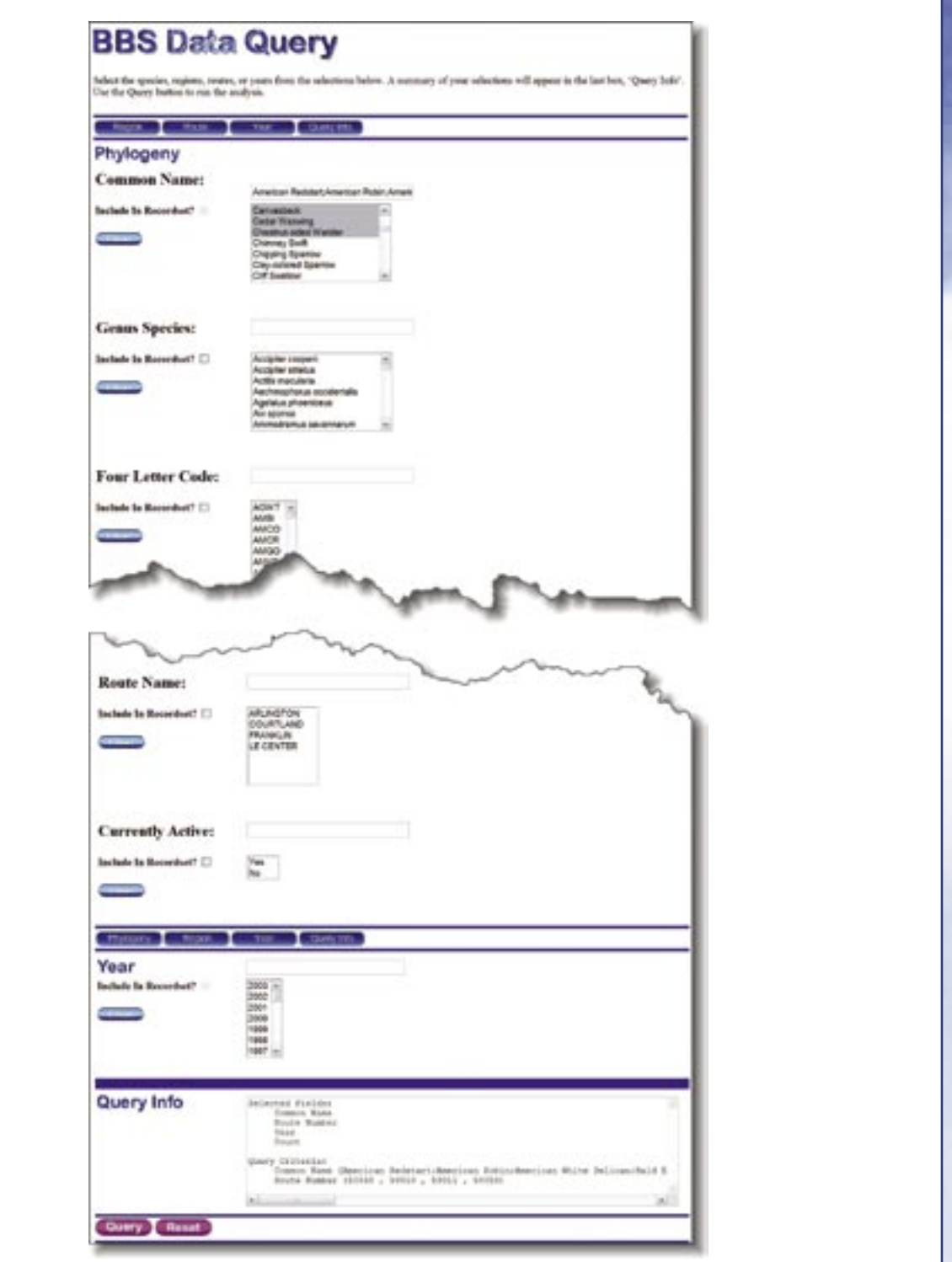
Purpose:
 Conservation planning is currently a major emphasis of state, federal, and non-governmental land management agencies. The North American Bird Conservation Initiative (NABCI; <http://www.nabci-us.org/>) seeks to unite people across the Americas in an international effort to address all-bird conservation. Some questions that arise in the process of bird conservation planning include:

- What bird species are likely to be found in my region or in another specific location?
- How abundant are the different bird species associated with a particular location?
- How can I create a bird species checklist for a site where no field work has been conducted?
- What types of habitat are available in the counties, states, and regions surrounding my management unit?
- How much forest (wetland, grassland, etc.) land cover is present in my region compared with other regions?

Answers to these questions can be found in the maps and summaries of land cover and bird data provided via this Web site.



Land cover composition is an important aspect of bird conservation. The Regional Bird Conservation Tool has summarized the National Land Cover Data set to provide this aspect to the user. North American Breeding Bird Survey routes, depicted in red in the map, can be queried or used as the basis for retrieval of land cover and species summaries by route.



This Cold Fusion Query page is part of the Regional Bird Conservation Tool and ties the graphical selection of North American Breeding Bird Survey (BBS) routes to the extensive BBS database provided by Patuxent Wildlife Research Center. This query page allows the user to select from 13 categories to refine the query.