



# Birds in Parks and Refuges: an Application of NPScape Products and Tools

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# Birds in Parks

- Certified Species Lists for Natural Resource Units
- Unique nearly continental dataset
  - Especially good for mammals & birds
- Species-Area
  - Epic fail!
  - % of local species pool v. area driven more by region than area



# Birds 1: Coverage Problem

Rupp et al.:

- Almost all US bird species found in at least 1 refuge or NPS unit (most in many)
- Agencies complementary by region (NPS better in arid SW, FWS better in wetlands & Midwest)
- Low coverage species: marine & grassland



## Birds 2: Why?

Why are some species not found in NPS units (&FWS refuges)?

- Narrow endemics
  - Few opportunities to be in parks
- Ranges in areas with few NPS units
  - San Joaquin Valley / Carizzo Plains
- NPS units in geographic ranges, but wrong habitats
  - Unique landscapes & historic areas, not “typical” habitats



# Birds 2: Why?

- Predictors of species presence/absence
- Hierarchy:
  - Size of geographic range in US
  - # of NPS units in range
  - % suitable habitat in NPS units
  - % suitable habitat in local area of NPS units



# NPSpecies

- Query of Access version or REST calls to current version
  - ```
SPlist <-  
  read.csv("http://services.nrinform.nps.gov/npspecies/  
  species/list/Certified/UNIT/bird/ParkStat?format=  
  csv", skip=7,header=TRUE)
```
- Synonomize to species level
- ITIS scientific names
- FWS uses (nearly) AOU common names
- NatureServe names an imperfect match to either



# Bird Geographic Ranges

The screenshot shows the NatureServe website interface. At the top left is the NatureServe logo. To its right is a search bar with 'Google Custom Search' and a 'Search' button, and a 'Donate Now' button. Below the search bar is a navigation menu with links: Home, About Us, Projects, Visit Local Programs, Get Data, Products & Services, Publications, and Support Us. The main content area is titled 'Get Data' and 'Digital Distribution Maps of the Birds of the Western Hemisphere Version 3.0'. It includes an 'Introduction' section with text about habitat loss and a digital library of bird distributions. There is an illustration of three birds (orange, green, and red) by Mark Wainwright. To the right, there are 'Additional Resources' including links to search InfoNatura and read about bird conservation issues. At the bottom, there are logos for Adobe Acrobat Reader and ArcExplorer, and a note that the consortium consists of the following organizations: NatureServe and the National Park Service.

**Get Data**

**Digital Distribution Maps of the Birds of the Western Hemisphere Version 3.0**

**Introduction**

Habitat for birds and other animals is disappearing quickly from the Earth's surface. Conservationists are in a race against time to protect remaining habitat to stem the loss of biodiversity. Critical to these conservation efforts is focusing on-the-ground actions on the places where threatened species are found. To aid conservationists in determining where these species occur, NatureServe formed part of a consortium of conservation organizations that joined forces to develop a digital library of the distributions of the birds and mammals of the Western Hemisphere. The goal of the project was to make these maps easily accessible to conservation planners and other interested users.

The data presented here represents an updated version of major product of this collaboration—a digital map library of the distributions of the birds of the Western Hemisphere, now covering 4,273 species. The maps are annotated to indicate sources, migratory status, historic versus current ranges, origin (native or introduced) and taxonomic decisions. The migratory status indications are particularly detailed, distinguishing where birds are permanent residents, breeding residents, non-breeding residents, and passage migrants.

These maps are presented as a free resource for conservationists, researchers, and the general public. To view the map for each species, visit our [InfoNatura](#) website, search for the species you are interested in, and click on "Range Map." To download the map files in ArcView format, see below. The map files can be viewed using ESRI ArcExplorer software, which can be downloaded for free from ESRI's [website](#). Please contact ESRI, not NatureServe, for any support needs related to the software.

- Read the original [Project Description](#) (252K PDF).
- Read the [Metadata for Version 3.0](#) (171K PDF).

**Additional Resources**

- Search [InfoNatura](#) for birds of Latin America and the Caribbean .
- Search for birds of North America on [NatureServe Explorer](#).
- Read about [bird conservation issues](#) at Landscape America.

Illustration by Mark Wainwright

Adobe Acrobat Reader

ArcExplorer

The consortium consists of the following organizations:

GIS challenge:  
~7000 species in Western Hemisphere, each 1-10000 polygons in geographic range shapefile  
For each of 280 NPS units (~800 FWS refuges), which species ranges overlap?



# Bird Habitat Requirements

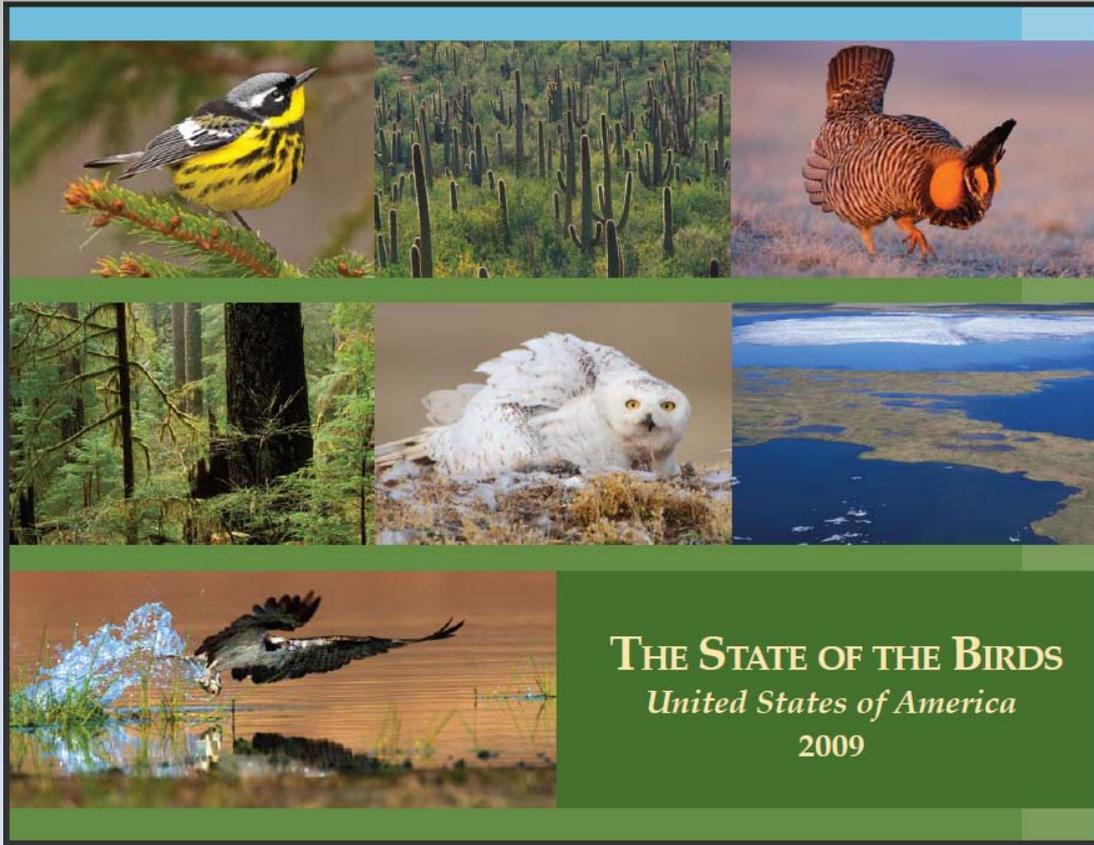


Table (pdf only) of  
habitat requirements  
for habitat specialists  
1 or more of:

- Forest
- Shrubland
- Grassland
- Water/Wetland
- Developed



# NPScape 2002 NLCD Landcover

- Habitat area in 5 lumped classes from 2002 NLCD
- 30km local area around NPS units
  - Needed to clip at unit boundary from Phase 1 products for within-unit
- Script to generate 30km area for FWS refuge boundaries
  - NPScape Phase 1 tools hard to use against FWS boundaries; NPScape Phase 2 tools more flexible



# NPScape-Based Extensions

For each habitat-restricted species:

- How much of that habitat in the 30km area (inclusive of park) is inside the park?
- How much of the outside is in protected areas (PAD dataset from NPScape)?