New Jersey Audubon Society’s
Important Bird and Birding Areas
Program:
Mapping Priority Areas for Conservation
in the Delaware Estuary

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• 123 sites recognized for providing essential habitat for 1+ species of birds
IBA Boundaries: Applications

1. Increase protection of IBAs
   - Identify habitats to target for conservation
   - Encourage effective regulation

2. Share data
   - Provide additional tool to guide regulatory, planning, land acquisition and landowner decisions
   - Inform land trusts, planning groups and other land use advocacy groups
   - Inclusion of IBA data in municipal Natural Resource Inventories with recommended standards for planning and zoning
   - Inform regulatory programs, including CAFRA
   - T&E observations to Natural Heritage Database

3. Help implement the NJ WAP
   - Targeted stewardship areas are identified as priority areas in WAP
IBA Model: Goals and Objectives

Contracted with Rutgers University’s Center for Remote Sensing and Spatial Analysis

• Goal:
  – develop a consistent and computer automated methodology of delineating the boundaries of Important Bird Areas (IBAs)

• Objective:
  – develop a methodology that is consistent statewide and to formulate that methodology into a model that can be shared, refined and repeated
Data Layers

- Preliminary polygons
- NJ Department of Environmental Protection’s (NJDEP) Endangered and Nongame Species Program (ENSP) Landscape Project Versions 2.1 and 3.0 (www.state.nj.us/dep/fgw/ensp/landscape/index.htm)
- NJAS Habitat Analysis
- Site information and bird data provided in the initial nomination (http://njaudubon.org/Tools2.Net/Ibba/SiteListing.aspx)
- GIS data of NJDEP’s 2002 Land use/Land cover (water)
Preliminary Polygons

- Based on the original site description provided in the initial nomination
- Often based on ownership or political boundaries
NJAS Habitat Analysis

- Top 30% (by area) of highest ranking patches in each habitat type.
- Rank determined by patch index value
  - Combined indexes of bird diversity, patch characteristics, characteristics of landscape surrounding patch
Overall Process flow

- The model was developed using ESRI ArcMap version 9.2 software using the geoprocessing tool box graphical modeler interface and translated into Python scripting language.
Step 1: Initial NJAS Boundaries

- Preliminary IBA polygons with target habitat designations were provided to CRSSA by NJAS.
- Target habitats based on criteria that IBA satisfied.
- Up to four target habitats were provided for each IBA including:
  - upland forest (includes scrub-shrub)
  - forested wetland
  - grassland
  - emergent wetland
  - beach
  - water
Example: Kittatinny Camp/Van Ness Road

IBA Criteria:

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservation Concern – State-threatened (B)</td>
<td>Golden winged Warbler</td>
</tr>
<tr>
<td>Regional Responsibility Species – BCR 29 Scrub–shrub/Barrens (B)</td>
<td>Various Species</td>
</tr>
</tbody>
</table>

Target Habitats: Forest (includes scrub–shrub)
Step 2: Identify Habitats within Preliminary IBAs

• Within the Preliminary IBA polygon, all habitat areas that include the target habitat designations were identified from the following data sets:
  – NJ DEP V2.1 Landscape Project. This included all patches with rank 1–5.
  – NJAS Habitat Analysis patches.
• These identified patches were unioned, dissolved and labeled as a Preliminary IBA.
Example: Step 2
Step 3: Identify adjacent habitats

- Identify Landscape Project/NJAS Habitat Analysis patches adjacent to preliminary IBA polygons.
  - Adjacency was defined as within 100 meters of the IBA polygon boundary. All Landscape Project patches with rank 3, 4 or 5 were included.
  - Rank 1–2 landscape Project and NJAS Habitat analysis patches were included if the majority of the patch (> 75%) falls within the IBA boundary.

- All polygons selected or created in step 3 were unioned, dissolved and labeled to create a Representative IBA.

- The Representative IBAs were further “blocked out” to include internal islands, as well as eliminate small adjacent polygons not integral to the Representative
Example: Step 3
Step 4: Conservation Buffers

- To determine if revised site boundary requires a conservation buffer, the Preliminary IBA boundary was buffered out to a distance of 300 meters.
- All those areas that are not included within the encompassing or adjacent Representative IBA were identified as potential conservation buffer.
Post-model Processing

- Remove outliers and repair geometry
- Complete comprehensive attribute table
- Complete metadata
- Technical Committee review and approval
- Submit to NJDEP for inclusion in Landscape Project V 3.1, Spring 2009
Comprehensive Attribute Table

- Site name
- IBA Type: Individual or Macro
- Region: Landscape region
- NJAS Link: to site summary contained in Guide to NJ IBAs
- Comments
- Criteria and species
- NAS Link: to site report for IBA in National’s website
- X and Y Coordinates
- Acres
- Hectares
Questions?

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IBBA Program
http://njaudubon.org/Conservation/IBBA/

Stewardship Program
http://njaudubon.org/Conservation/Stewardship.html
How does mapping aid conservation efforts?

- Provides a “coarse-filter” approach to identifying important sites
- Delineates habitat important to birds
- Provides focal area to target conservation activities
- Identifies priority land for acquisition or conservation easements, and helps to guide management
- Inclusion in NJDEP Landscape Project