Monitoring Winter Raptors in Delaware

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DE Division of Fish & Wildlife
DNREC
Thousands of birds migrate through Delaware every Fall
- Fall migration Sept – Nov
Thousands more call Delaware home in winter
- Nov – Mar
Wide-ranging diversity
- Waterfowl
- Raptors
- Songbirds
During Fall migration
- Part of Atlantic Flyway
- Cape May “funnel” effect
- Ample habitat and food resources
- Migration “stopover”

Overwintering
- Food
- Cover
Why monitor?

- Populations changes
  - State, region, nation
- Data gaps
- “Hot Spots”
- Species Management
- Public Engagement
- Anticipated Future Data needs
- Public Trust Doctrine – North American Model for Conservation
Why monitor?

- Large portions of some bird populations rely heavily on Delaware during migration, like the Red Knot.
- Some species have large portions of their populations overwintering in Delaware like Snow Geese.
- How many species rely on Delaware?
- What is Delaware’s responsibility for these species at the local, state, regional, national, and continental levels?
Risks & Threats

Spring and Fall migration are the most dangerous periods in a bird’s annual cycle
- Faced with many unknowns
- Predation risks?
- Food availability?
- Collision mortality?
- Disease?
- Individual movement is different between Spring and Fall
Overwintering
- Suitable habitat is critical
- Food availability?
- Cover?
- Predation?
- Weather?

Many species will remain for the entire winter period
Others move around based on conditions
Survey Diversity

- Hawk Watch (Fall)
- Songbird Radar Data (Fall)
- Sea Watch (Fall/Winter)
- Winter Marsh Raptor Surveys (Winter)
- Christmas Bird Counts (Winter)
- Bald Eagle Monitoring (Winter)
- Integrated Waterbird Management and Monitoring (Fall/Winter)
- Waterfowl Monitoring (Fall/Winter)
Hawk Watch

- Track migration trends in raptors
- Many species – Kestrels to Eagles!
- Timing of migrations for each species
- Population trends and changes
Hawk Watch
Hawk Watch

- Two sites in Delaware to survey two distinct migration corridors
  - Ashland Nature Center (Hockessin) – Piedmont Route
  - Cape Henlopen, Lewes – Coastal Route
- Partnership between DFW, DPR, DOS, DNS
- Volunteer Driven
- Sept 01 through Nov 30
- Record numbers and other data (flight heights)
American Kestrel
- Dramatic regional population decline
- Apparent from combined HW data across the Northeast
- Recently listed as endangered in DE due to declines

Ospreys
- Cape Henlopen has one of the highest Osprey counts in the Mid-Atlantic
- Important stopover site for migrant Osprey
Radar Data

- 2006-2010 data
- NEXRAD radar images from Dover AFB
- Ability to identify songbird migration “hotspots”
- Data can assist in identifying high priority sites for conservation
- High use/High fidelity vs. High use/High variability
- Not an annual survey, but one that can be repeated in the future to examine changes in the landscape for migratory songbirds.

Kevin Bronson
Sea Watch

- Fall migration and overwintering surveys of sea birds
- Gannets, loons, sea ducks, alcids, gulls, terns
- Once a month (Oct – Mar), four hours
- Thousands of birds counted
- 100% volunteer, coordinated by DOS, SBC
- Great interest in expanding the survey to mirror the framework used for Hawk Watch
- Need for a sponsoring organization to partner
# Sea Watch

19 February, 2012

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<th>Bird Type</th>
<th>Count</th>
<th>Bird Type</th>
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<td>Northern Pintail</td>
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<td>Horned Grebe</td>
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<tr>
<td>Surf Scoter</td>
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<td>Northern Gannet</td>
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<td>White-winged Scoter</td>
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<td>Bonaparte's Gull</td>
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<td>Black Scoter</td>
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<td>Ring-billed Gull</td>
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<td>Herring Gull</td>
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<td>Long-tailed Duck</td>
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<td>Great Black-backed Gull</td>
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<td>Red-breasted Merganser</td>
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<td>Ruddy Turnstone</td>
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<td>Red-throated Loon</td>
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<td>Sanderling</td>
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<td>Common Loon</td>
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<td>Razorbill</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>2615</strong></td>
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Winter Marsh Raptor Surveys

- Delaware Bayshore survey
- Conducted twice a year (Jan & Feb) at 16 strategic sites
- Target species include Northern Harrier and Short-eared Owl
- Coordinated with NJ Audubon to take an annual snapshot of the Delaware Bay
- Identification of important wintering locations and roost sites.
Largest citizen-science bird monitoring project in the U.S.
2013 – 114th Annual Christmas Bird Count
Seven counts in DE
- Wilmington
- Middletown
- Bombay Hook
- Milford Neck
- Prime Hook/Cape Henlopen
- Rehoboth
- Seaford
Christmas Bird Counts

- Long term dataset is highly valued to monitor trends in winter bird populations at all scales
- Data used for many assessments
  - State of the Birds 2009 & 2012 (USFWS)
  - State rare species rankings
  - BCR/PIF plans
  - Species or guild-specific management

State of the Birds 2009 & 2012 (USFWS)
State rare species rankings
BCR/PIF plans
Species or guild-specific management
What’s Next?

Changes in species populations, migratory timing, habitat suitability, and emerging threats can dictate the need for current and future monitoring.

Examples:

How will wintering marsh inhabitants respond to future habitat changes resulting from climate change and how can we mitigate for any negative impacts?

Are there conservation measures not yet undertaken that could benefit migratory species during the fall to better support them and increase survivability?