



# SALTMARSH HABITAT & AVIAN RESEARCH PROGRAM:

*Conserving tidal marsh birds in our changing land & seascapes*

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## NEW JERSEY – Summary of key findings

### I. Saltmarsh Vital Statistics:

- New Jersey supports 81,923 ha of saltmarsh
- Saltmarsh comprises 0.04% of the land area of New Jersey; 2<sup>nd</sup> highest in northeast region

### II. SHARP Field Effort:

- 350 survey points visited in 2011 and 2012
- 3 demographic study plots, encompassing 50.2 ha total, investigated by University of Delaware crews
- 1,392 birds banded among 2 species
- 532 nests monitored among 5 species



### III. Survey Results:

- 69,966 ha of saltmarsh surveyed by SHARP
- 25 SGCN observed; highest in northeast region
- Key tidal marsh bird responsibilities:
  - **Clapper Rail:** 2<sup>nd</sup> highest abundance in northeast region; 31% of northeast regional population
  - **Willet:** highest abundance in northeast region; 38% of northeast regional population
  - **Saltmarsh Sparrow:** highest abundance in northeast region; 33% of northeast regional population
  - **Seaside Sparrow:** highest abundance in northeast region; 38% of northeast regional population
  - **Coastal Plain Swamp Sparrow:** 2,700 individuals, 3<sup>rd</sup> highest abundance in northeast region; 16% of northeast regional population
  - Highest abundance in northeast region for 4 additional SGCN (Black-crowned Night-Heron, Great Egret, Snowy Egret, Yellow-crowned Night-Heron)
  - Supports  $\geq$ 20% of northeast regional population for 13 additional SGCN, more than any other state
- Abundance estimates of focal species: (95% CI)
  - **Clapper Rail:** 34,064 breeding individuals (9,091 to 59,038)
  - **Willet:** 42,291 individuals (16,202 to 68,381)
  - **Nelson's Sparrow:** outside species' normal breeding range
  - **Saltmarsh Sparrow:** 19,940 individuals (6,308 to 33,573)
  - **Seaside Sparrows:** 88,378 individuals (24,966 to 151,790)

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SHARP

*Information to conserve tidal marsh birds in our changing land & seascapes*

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- Trend estimates of focal species in USFWS Region 5:
  - **Clapper Rail**: significant declines estimated at -4.6% annually since 1998
  - **Willet**: no evidence of population change, 95% CI overlapped zero
  - **Nelson's Sparrow**: significant declines estimated at -4.2% annually since 1998
  - **Saltmarsh Sparrow**: significant declines estimated at -9.0% annually since 1998
  - **Seaside Sparrow**: no evidence of population change, 95% CI overlapped zero
- Extent of saltmarsh modifications among 350 survey points:
  - 49.1% of survey points had been ditched within 100 m of survey point
  - 12.9% of survey points had evidence of Open Water Marsh Management within 100 m of any survey point
  - 49.1% of survey points (n=350) were upstream from a tidal restriction

#### IV. Demographic Results:

- Nest monitoring of focal species
  - **Clapper Rail**: 10 nests monitored, 0.27 nests/ha, daily nest survival probability=0.98
  - **Willet**: 56 nests monitored, 1.08 nests/ha, daily nest survival probability=0.96
  - **Nelson's Sparrow**: none monitored; outside breeding range
  - **Saltmarsh Sparrow**: 246 nests monitored, 5.13 nests/ha, daily nest survival probability=0.93, seasonal fecundity=0.50 broods/female annually
  - **Seaside Sparrow**: 217 nests monitored, 4.23 nests/ha, daily nest survival probability=0.95, seasonal fecundity=0.88 broods/female annually
- Population viability analysis
  - **Saltmarsh Sparrow**:
    - Mean growth rates for 3 sites: -0.01 to -0.15 in 2018, declining to -0.20 to -0.33 by 2063
    - Median time to extinction for all 3 sites is >50 years
  - **Nelson's Sparrow**: not estimated; outside breeding range
  - **Seaside Sparrow**: Median time to extinction is >50 years (95% CI = 45 years, >50 years)

#### V. Regional Conservation Implications

- On average, tidal-marsh specialists have declined across New England and USFWS Region 5 as a whole over the last two decades.
- For Saltmarsh Sparrows, these declines are most severe on marshes with tidal restrictions, although the trend remains across all specialists even when excluding Saltmarsh Sparrow.
- Within Connecticut (the only state where historical nesting data were available), nest density is also declining for Saltmarsh Sparrows, Seaside Sparrows, and Clapper Rail, with Saltmarsh Sparrows showing the strongest decline. The declines can be explained by increases in rates of nest flooding since 2002.



- Seasonal reproductive success (incorporating nest success and renesting rates) for Seaside Sparrows declined from south to north within USFWS Region 5, and Nelson's Sparrow reproductive success was highest at the farthest upriver marshes.
- Saltmarsh Sparrow seasonal reproductive success was highly variable across the range and is driven more strongly by local rather than regional patterns. Nests across the range were equally likely to be flooded, but predation rates increased to the south.

**VI. For Additional Information, Contact:**

- Greg Shriver, Dept. of Entomology & Wildlife Ecology, University of Delaware, 302-831-1300, gshriver@udel.edu
- Chris Elphick, Ecology & Evolutionary Biology, University of Connecticut, 860-486-4547, chris.elphick@uconn.edu
- Brian Olsen, School of Biology & Ecology, University of Maine, 207-581-2542, brian.olsen@maine.edu
- Tom Hodgman, Bird Group, Maine Dept. of Inland Fisheries & Wildlife, 207-941-4482, tom.hodgman@maine.gov
- Adrienne Kovach, Dept. of Natural Resources & the Environment, University of New Hampshire, 603-862-1603, akovach@unh.edu
- Jonathan Cohen, Dept. of Environmental and Forest Biology, SUNY College of Environmental Science and Forestry, 315-470-6737, jcohen14@esf.edu

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- Or visit our website at: **[www.tidalmarshbirds.org](http://www.tidalmarshbirds.org)**