



SALTMARSH HABITAT & AVIAN RESEARCH PROGRAM:

Conserving tidal marsh birds in our changing land & seascapes

NEW HAMPSHIRE – *Summary of key findings*

I. Saltmarsh Vital Statistics:

- New Hampshire supports 3,246 ha of saltmarsh
- Saltmarsh comprises <0.01% of the land area of New Hampshire

II. SHARP Field Effort:

- 62 survey points visited in 2011 and 2012
- 2 demographic study plots, encompassing 20.1 ha total, investigated by UNH crews
- 599 birds banded among 3 species
- 166 nests monitored total for 2 species



III. Survey Results:

- 2,778 ha of saltmarsh surveyed by SHARP
- 14 SGCN observed
- Key tidal marsh bird responsibilities:
 - **Nelson's Sparrow:** 2nd highest abundance in northeast region; 4% of northeast regional population
- Abundance estimates of focal species: (95% CI)
 - **Clapper Rail:** too few detections to estimate abundance
 - **Willet:** 1,012 individuals (0 to 2,958 individuals)
 - **Nelson's Sparrow:** 239 individuals (20 to 457)
 - **Saltmarsh Sparrow:** 1,080 individuals (0 to 2771)
 - **Seaside Sparrows:** not detected, outside of normal breeding range
- Trend estimates of focal species:
 - **Clapper Rail:** too few detections in New Hampshire to estimate trend; for USFWS Region 5, significant declines estimated at -4.6% annually since 1998
 - **Willet:** New Hampshire data too sparse to model; for USFWS Region 5, no evidence of population change, 95% CI overlapped zero
 - **Nelson's Sparrow:** New Hampshire data too sparse to model; for USFWS Region 5, significant declines estimated at -4.2% annually since 1998
 - **Saltmarsh Sparrow:** within New Hampshire, no evidence of population change, 95% CI overlapped zero; for USFWS Region 5, significant declines estimated at -9.0% annually since 1998
 - **Seaside Sparrow:** not estimated for New Hampshire, outside of species' normal breeding range; for USFWS Region 5, no evidence of population change, 95% CI overlapped zero

SHARP

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



- Extent of saltmarsh modifications among 62 survey points:
 - 50% of survey points had ditching within 100 m of survey point
 - No evidence of Open Water Marsh Management within 100 m of any survey point
 - 67.7% of survey points were upstream from a tidal restriction; second most of any state.

IV. Demographic Results:

- Nest monitoring of focal species
 - **Clapper Rail:** none monitored, outside species range
 - **Willet:** none monitored
 - **Nelson's Sparrow:** 12 nests monitored, 0.52 nests/ha, daily nest survival probability=0.98, seasonal fecundity=1.40 broods/female annually
 - **Saltmarsh Sparrow:** 154 nests monitored, 6.92 nests/ha, daily nest survival probability=0.97, seasonal fecundity=0.64 broods/female annually
 - **Seaside Sparrow:** none monitored, outside species normal breeding range
- Population viability analysis
 - **Saltmarsh Sparrow:**
 - Mean growth rates for 2 sites: -0.07 and -0.20 in 2018, declining to -0.23 to -0.33 for both sites by 2063
 - Median time to extinction for both sites is >50 years
 - **Nelson's Sparrow:** Median time to extinction = >50 years (95% CI = 42 years, >50 years)
 - **Seaside Sparrow:** not estimated; outside normal breeding range

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 re-nesting 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:

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- Or visit our website at: **www.tidalmarshbirds.org**