



SALTMARSH HABITAT & AVIAN RESEARCH PROGRAM:

Conserving tidal marsh birds in our changing land & seascapes

MARYLAND – Summary of key findings

I. Saltmarsh Vital Statistics:

- Maryland supports 86,329 ha of saltmarsh
- Saltmarsh comprises 0.03% of the land area of Maryland; 3rd highest in northeast region

II. SHARP Field Effort:

- 224 survey points visited in 2011 and 2012

III. Survey Results:

- 55,566 ha of saltmarsh surveyed by SHARP
- 24 SGCN observed; tied with Delaware for 2nd highest in northeast region
- Key tidal marsh bird responsibilities:
 - **Clapper Rail:** 3rd highest abundance in northeast region; 10% of northeast regional population
 - **Willet:** 3rd highest abundance in northeast region; 13% of northeast regional population
 - **Saltmarsh Sparrow:** 2nd highest abundance in northeast region; 25% of northeast regional population
 - **Seaside Sparrow:** 2nd highest abundance in northeast region; 35% of northeast regional population
 - **Coastal Plain Swamp Sparrow:** 9,100 individuals, highest abundance in northeast region; 54% of northeast regional population
 - highest abundance in northeast region for 8 additional SGCN (American Black Duck, Common Yellowthroat, Great Blue Heron, Glossy Ibis, Little Blue Heron, Least Bittern, Marsh Wren, Virginia Rail)
 - 2nd highest abundance in northeast region for 3 additional SGCN (Forster's Tern, Great Egret, Snowy Egret)
 - 3rd highest abundance in northeast region for 3 additional SGCN (Laughing Gull, Tricolored Heron, Black-crowned Night-Heron)
 - Supports \geq 20% of northeast regional population for 12 additional SGCN
- Abundance estimates of focal species: (95% CI)
 - **Clapper Rail:** 10,735 individuals (4,782 to 16,688 individuals)
 - **Willet:** 13,916 individuals (6,687 to 21,145)
 - **Nelson's Sparrow:** outside species' normal breeding range
 - **Saltmarsh Sparrow:** 15,071 individuals (1,672 to 28,471)
 - **Seaside Sparrows:** 82,543 individuals (0 to 167,991)





- 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 224 survey points:
 - 47.3% of survey points had been ditched within 100 m of survey point
 - 12.1% of survey points had evidence of Open Water Marsh Management within 100 m of any survey point
 - 27.7% of survey points were upstream from a tidal restriction

IV. Demographic Results:

- Nest monitoring of focal species across USFWS Region 5
 - **Clapper Rail**: 45 nests monitored in 3 states, nests/ha ranged from 0.27 to 0.80, daily nest survival probability ranged from 0.98 to 0.99
 - **Willet**: 142 nest monitored across 5 states, nests/ha ranged from 0.08 to 1.08, daily nest probability ranged from 0.92 to 0.96
 - **Nelson's Sparrow**: 80 nests monitored in 3 states, nests/ha ranged from 0.04 to 1.21, daily nest survival probability ranged from 0.92 to 0.98, seasonal fecundity ranged from 0.71 to 1.4 broods/female annually
 - **Saltmarsh Sparrow**: 1,022 nests monitored across 7 states, nests/ha ranged from 0.93 to 13.09, daily nest survival probability ranged from 0.92 to 0.97, seasonal fecundity ranged from 0.30 to 0.64 broods/female annually
 - **Seaside Sparrow**: 349 nests monitored across 3 states, nests/ha ranged from 1.02 to 12.3, daily nest survival probability ranged from 0.90 to 0.95, seasonal fecundity ranged from 0.47 to 0.88 broods/female annually
- Population viability analysis for USFWS Region 5:
 - **Saltmarsh Sparrow**: among 21 sites across 7 states, mean growth rate in 2018 ranged from 0.006 to -0.52, declining to -0.13 to -0.89 by 2063; median time to extinction ranged from 6 to >50 years
 - **Nelson's Sparrow**: across 2 states, median time to extinction ranged from 30 to >50 years
 - **Seaside Sparrow**: across 3 states, median time to extinction ranged from 38 to >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:

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