Characterization of the nest site preferences of Saltmarsh and Nelson's Sparrows, and hybrids.

KATHARINE J. RUSKIN, Ecol. & Environ. Sci., Univ. Maine, Orono, ME, MATTHEW A. ETTERSON, USEPA/ORD/NHEERL/Mid-Continent Ecol. Div., Duluth, MN, and BRIAN J. OLSEN, Ecol. & Environ. Sci., Univ. Maine.

Saltmarsh Sparrows (hereafter SALS) are named on the National Audubon Society's current WatchList as a species of global conservation concern (National Audubon Society 2007). Anthropogenic climate change is perhaps the largest threat to SALS populations because sea level rise is predicted to result in a loss of high marsh habitat, where SALS breed exclusively (Greenberg et al. 2006, BioScience 56: 675-685). Marsh conservation and restoration offer hope for mitigating threats to the persistence of SALS by increasing available breeding habitat. However, previous attempts to characterize SALS nesting preference have provided mixed results and there is little evidence for habitat associations that distinguish successful from unsuccessful nests (Gjerdrum et al. 2005, Condor 107: 849-862; Shriver et al. 2007, Auk 124: 552-560). In this study, we characterized nest preference of SALS, the closely related Nelson's Sparrow (hereafter NESP), and their apparent hybrids in a breeding population in Scarborough Marsh, Maine. We compared nest preference traits to nest success rates to test whether habitat choices are driving differential nest success observed among species. In both years of study, nest success rates were significantly different among species; NESP nests experienced higher rates of failure than SALS and hybrid nests. We found a tendency toward spatial clustering of nest sites at the scale of study plot (approximately 10 ha), but this pattern was not distinguishable from complete spatial randomness. We found significant differences between nest sites and randomly-selected points for various attributes, for example that nest sites were associated with more Spartina patens, a thicker thatch layer, and taller vegetation than randomly-selected points. These results indicate that female sparrows are exhibiting a nest site preference based on habitat characteristics at a small spatial scale.