

# Climate change threatens endangered sparrows

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A new study in *The Condor: Ornithological Applications* finds that some sparrow species will go extinct within the century due to climate change.

Seaside (*Ammospiza maritima*) and saltmarsh (*A. caudacuta*) sparrows are closely [related species](#) and among only five [bird species](#) that are almost completely restricted to coastal salt marshes for their entire life. These sparrows' nests are predominantly destroyed by predators or flooding.

Salt marshes are globally limited to about 30,000 square miles (45,000 square km), with one-third of the total on North American coasts. Of the 25 species or subspecies limited to tidal wetlands worldwide, 15 are restricted to the US Atlantic and Gulf coasts. Given rapid climate changes and other threats to salt marsh ecosystems, many of these species are in serious danger.

The global breeding range of the saltmarsh sparrow extends from Virginia to Maine, with a [population estimate](#) of 60,000 birds. Sea-level rise can negatively impact breeding seaside and [saltmarsh sparrows](#) by reducing the amount of available habitat, and by increasing nest flooding rates. Furthermore, the high human population densities of Mid-Atlantic states also make it difficult for sparrows to thrive in the region.

This study aimed to estimate population trajectories for seaside and saltmarsh sparrows within Edwin B. Forsythe National Wildlife Refuge in New Jersey, identify the primary drivers of those trajectories, and

explore potential management strategies to prevent declines.

The researchers found that seaside sparrows persisted under a 1 ft (0.35 m) rise in sea level scenario and also under a sea level rise of almost 2.5 ft (0.75 m). Saltmarsh sparrows survived in neither scenario. With a 1 ft rise in sea level, the seaside sparrow population experienced a compound decline of .35% a year. Under the 2.5 ft [sea level rise](#) scenario, this decline increased to .56% a year. The saltmarsh sparrow median time to quasi-extinction was 20 years under both scenarios.

The results indicated that seaside sparrows are likely to persist, while saltmarsh sparrows are likely to become locally extinct in the next 30 years.

"Given the projected increases in sea level over the next few decades and threats from predators, we will need to implement timely and creative actions to avoid extinction of saltmarsh sparrows," said the paper's lead author, Samuel Griffith Roberts.

**More information:** The paper, "Preventing local extinctions to tidal marsh endemic sparrows in Eastern North America," is available at: [academic.oup.com/condor/article/121/1/duy024/5393601](https://academic.oup.com/condor/article/121/1/duy024/5393601) , DOI: [10.1093/condor/duy024](https://doi.org/10.1093/condor/duy024)

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