Climate Change and the Conservation of Saltmarsh Birds

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Saltmarsh Sparrow

- Tidal marsh obligate
- IUCN globally vulnerable to extinction

Photo: K. Papanastassiou
Extreme habitat specialists: build ground nests in high marsh vegetation – *Spartina patens, Juncus gerardii*
Nesting success is low
60% of failure due to flooding

Photo: J. Walsh

Photo: C. Elphick
High spring tides pose flooding risk to sparrow nests

SLR increases spring high tide height and duration

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High flooding risk

Lower flooding risk
Predicting impacts of increasing tide heights on sparrow reproduction

Data from CT marshes

Reproduction predicted to cease by 2050-2080 with various SLR scenarios

31 cm net increase will cause this to occur

Slide from C. Elphick
Program Description

The Saltmarsh Habitat & Avian Research Program (SHARP) is a large, collaborative initiative to conserve the tidal-marsh bird community of the Atlantic seaboard. Our efforts are funded by a diversity of agencies and organizations.

PIs: Chris Elphick, Tom Hodgman, Brian Olsen, Greg Shriver, Dave Curson, Adrienne Kovach, Jonathan Cohen

5 Universities
10 Graduate students
10 States

http://www.tidalmarshbirds.org/
SHARP collaborators
Goals

- Regional monitoring
- Population estimates
- Historical trends
- Demographic modeling
- Management impacts
- Site priorities (by state)
- Regional responsibilities
- Decision support tool
- Unified data gathering
SHARP Avian Survey Points in Great Bay

2011-2013

- Yellow: Sparrows present
- Red: Sparrows absent
- Green: Sparrows nesting
Intensively Monitored Demographic Sites

- Eldridge Marsh-Wells, ME (RCNWR)
- Lubberland Creek-Newmarket, NH (GBNERR)
- Chapman’s Landing-Stratham, NH (GBNERR)
- Parker River-Plum Island, MA (PRNWR)
Higher nest success in GB marshes vs. coastal marshes; highest success range-wide.
What are our choices?

Why should we care about conserving Saltmarsh Sparrows?

Many positive benefits of ensuring the persistence of Saltmarsh Sparrows before they become federally listed under Endangered Species Act.
What can we do to keep saltmarsh birds in our future?

Long-term Strategies – allow for marsh migration & accelerate marsh transgression, *e.g.* (dead) tree removal in upland

Short-term Strategies – mitigate nest flooding and maintain reproduction
1. Decrease magnitude of tidal flooding – *e.g.* tide gates, other temporary restrictions
2. Increase elevation of habitat – *e.g.* sediment addition
3. Protect sparrow nests directly from flooding – *e.g.* water excluding devices/exclosures
Questions?