

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*

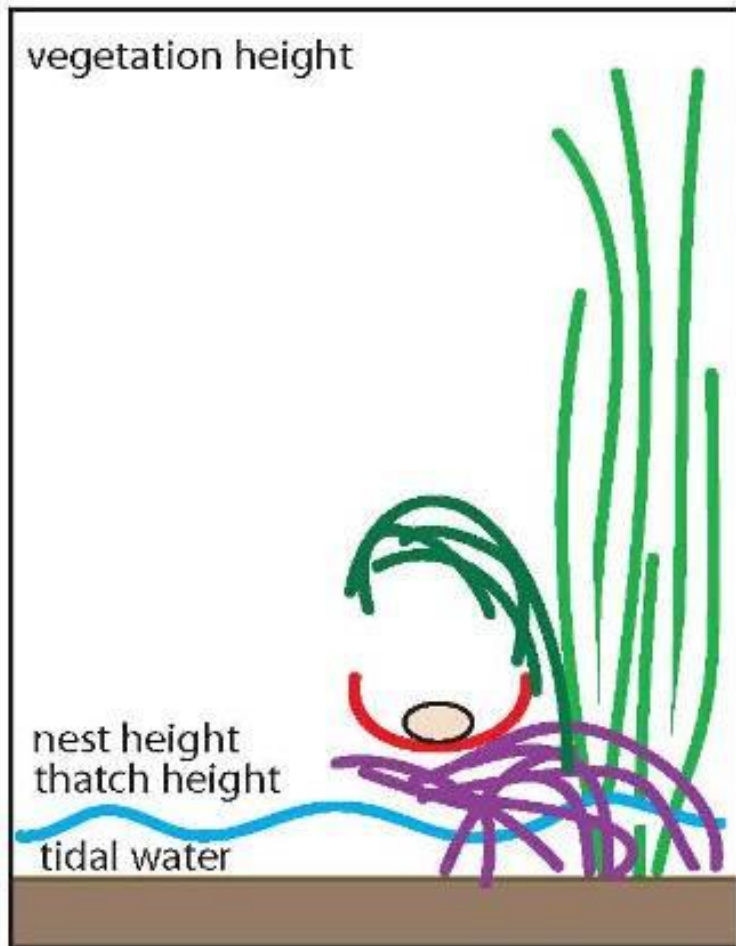


Diagram from Humphreys et al. 2007

Nesting success is low
60% of failure due to flooding



Photo: J. Walsh

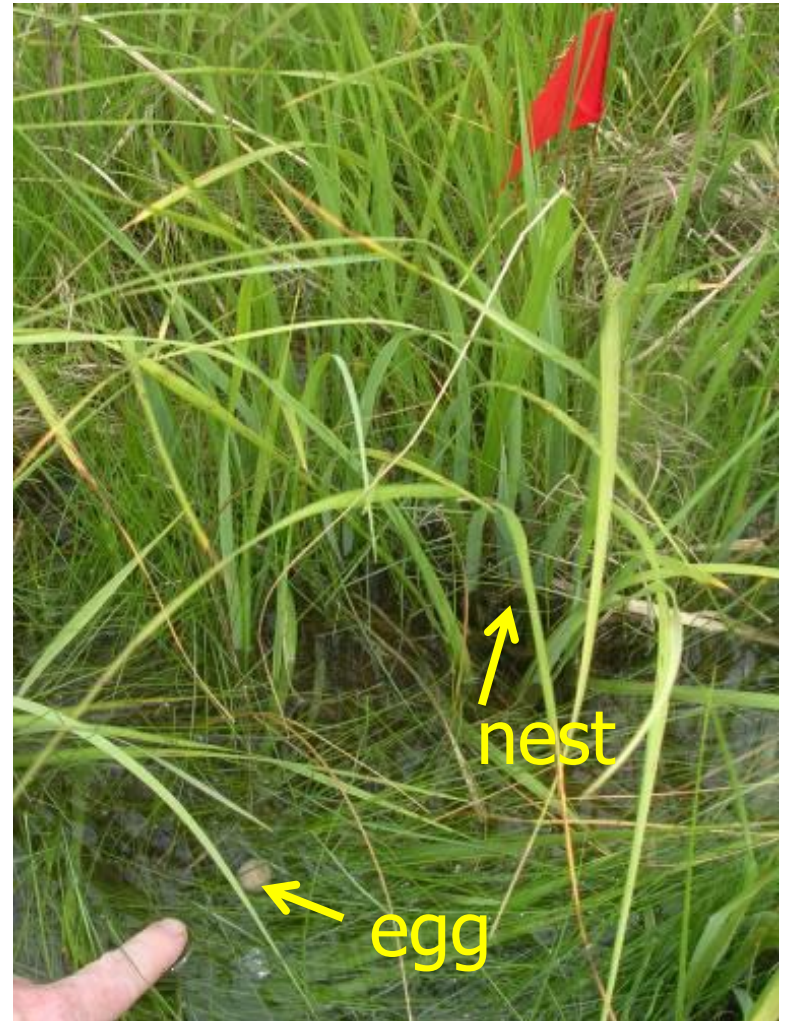
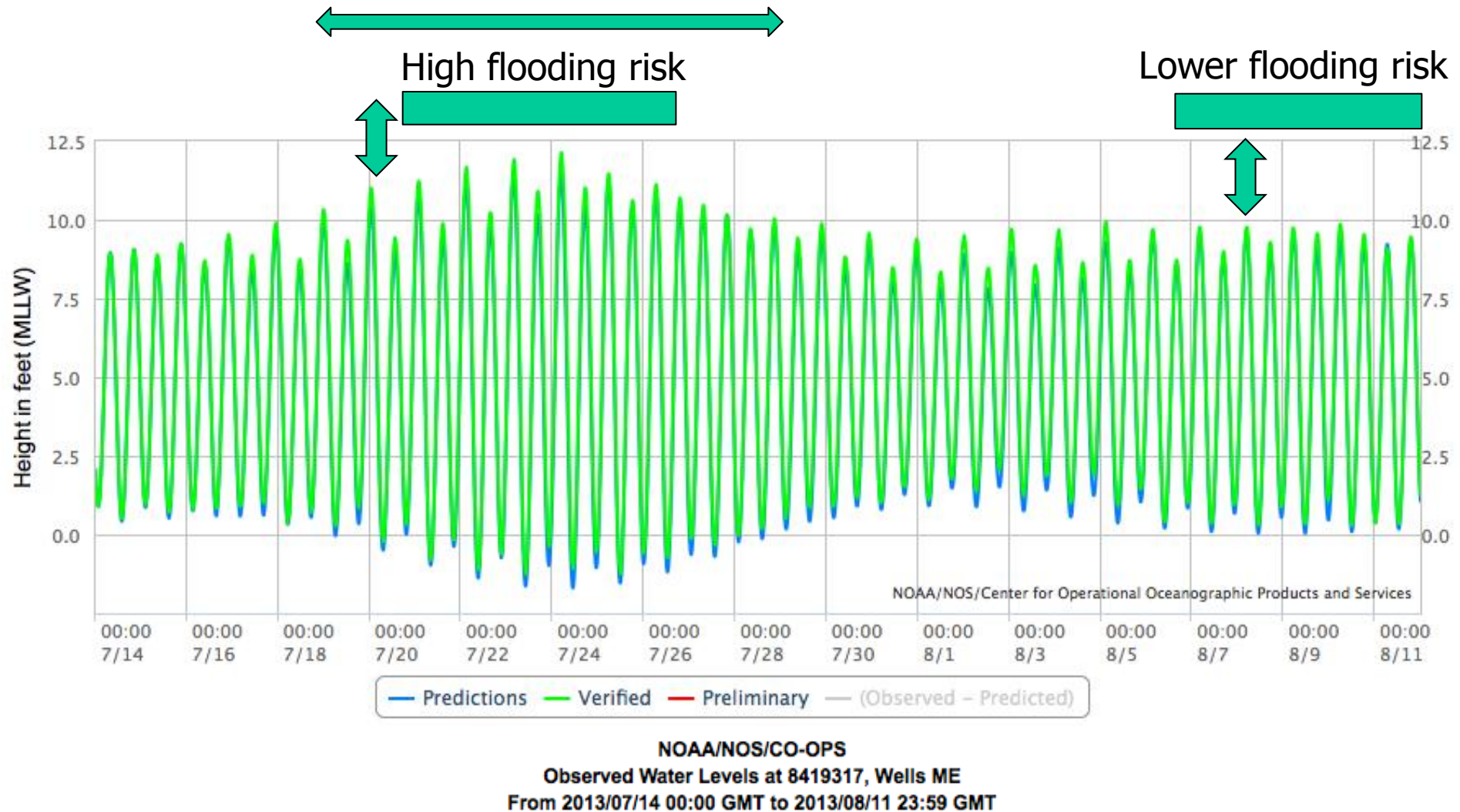


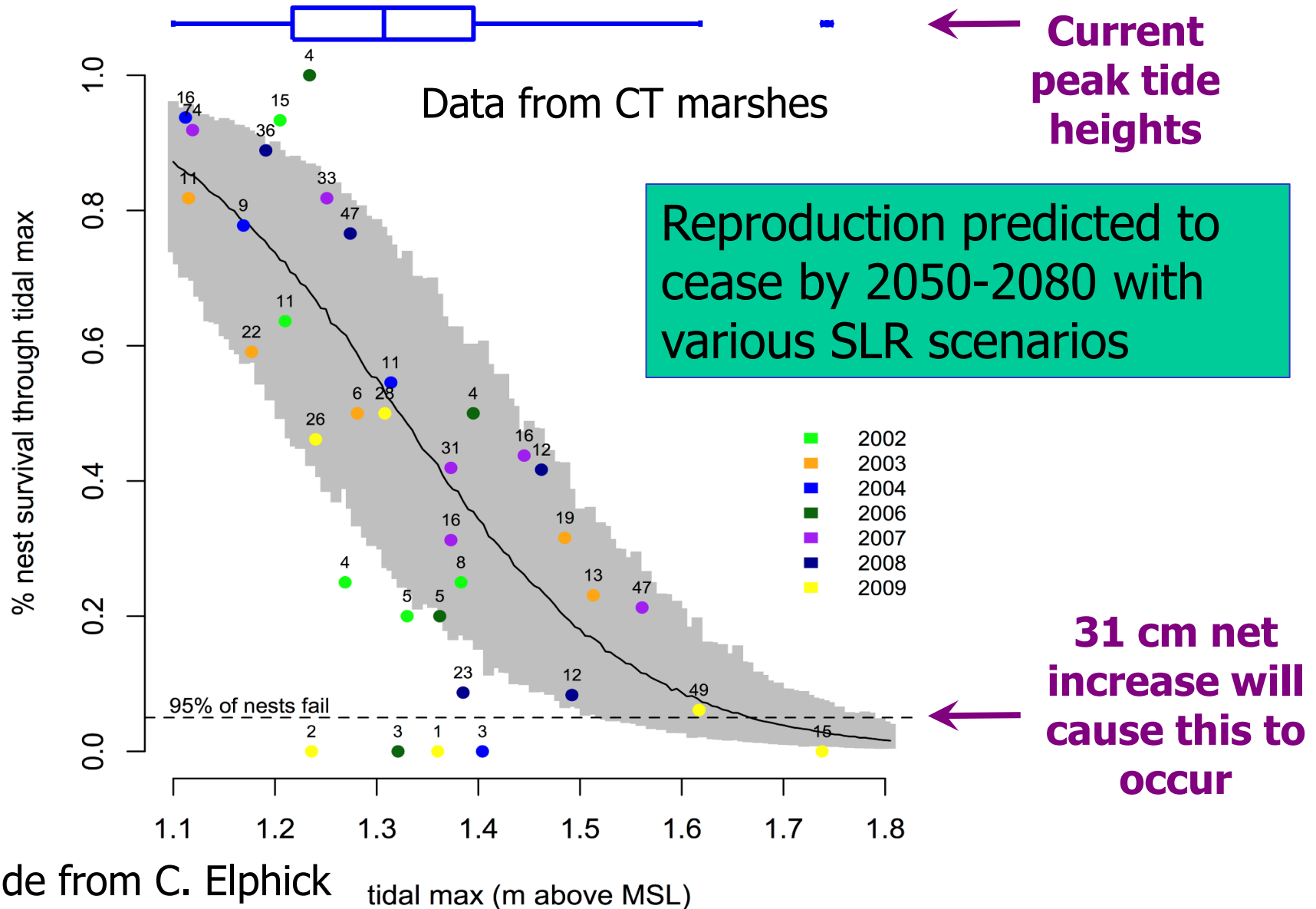
Photo: C. Elphick

High spring tides pose flooding risk to sparrow nests

SLR increases spring high tide height and duration



Predicting impacts of increasing tide heights on sparrow reproduction





Saltmarsh Habitat & Avian Research Program



[Program Description](#) [Collaborators & Contacts](#) [Field Methods](#) [Public Downloads](#) [Links](#) [Data-Sharing Portal](#)

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

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**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



MARYLAND
DEPARTMENT OF
NATURAL RESOURCES



ESF



The Nature
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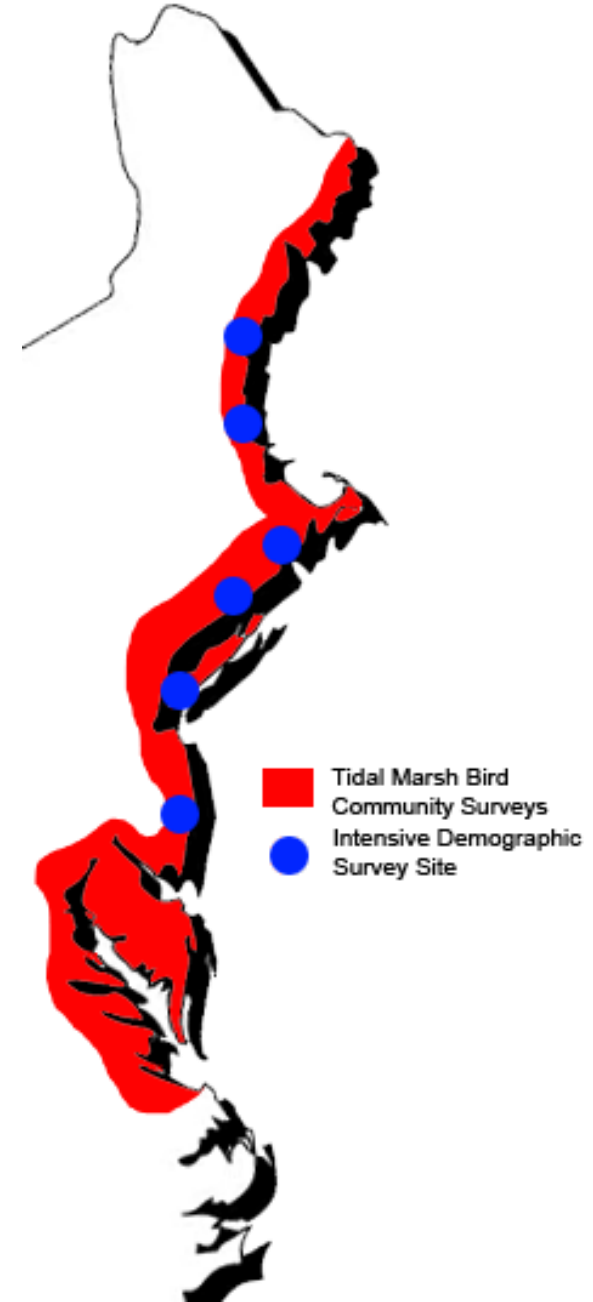


Smithsonian
National Zoological Park

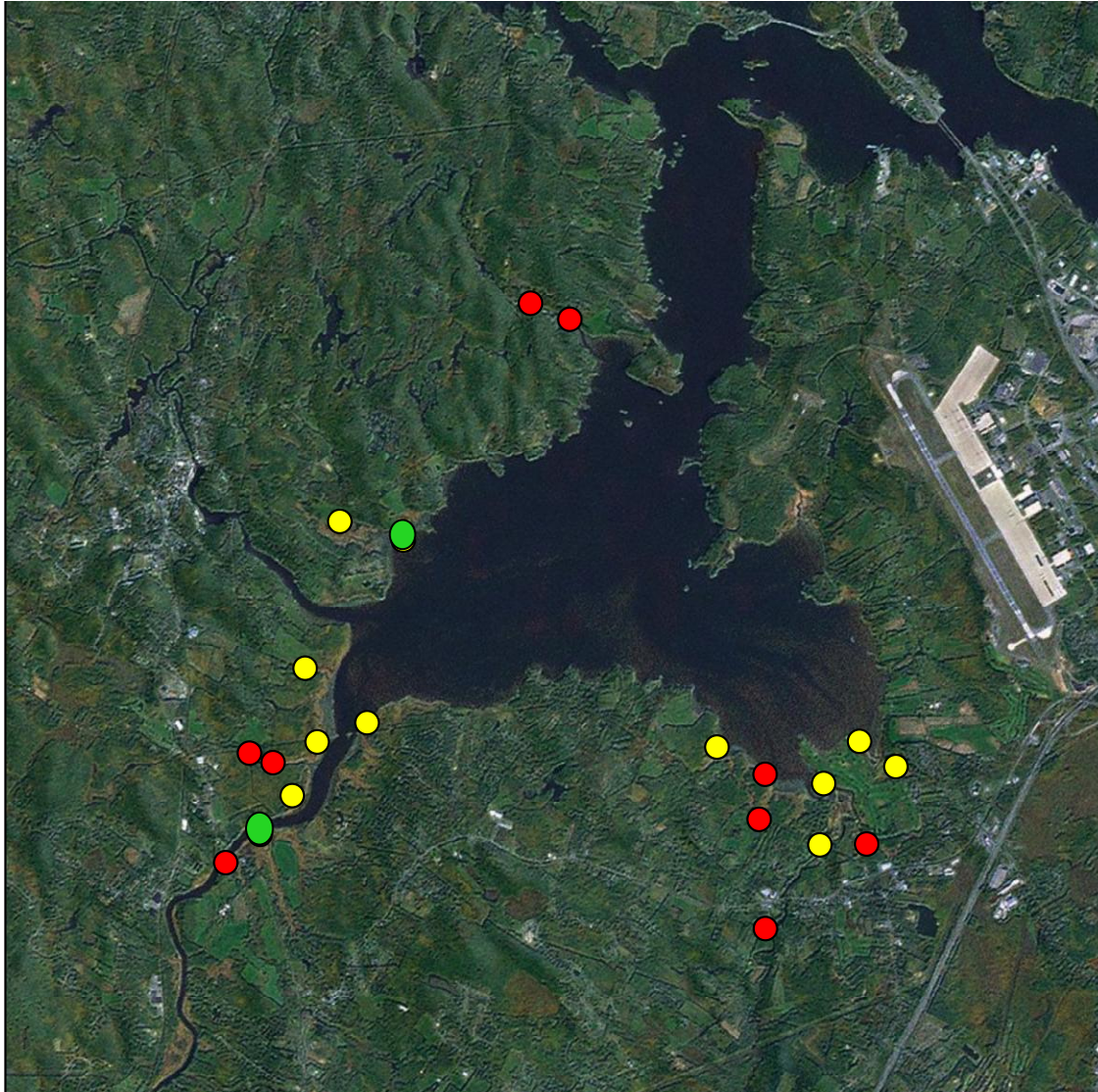


Goals

- Regional monitoring
- Population estimates
- Historical trends
- Demographic modeling
- Management impacts
- Site priorities (by state)
- Regional responsibilities
- Decision support tool
- Unified data gathering



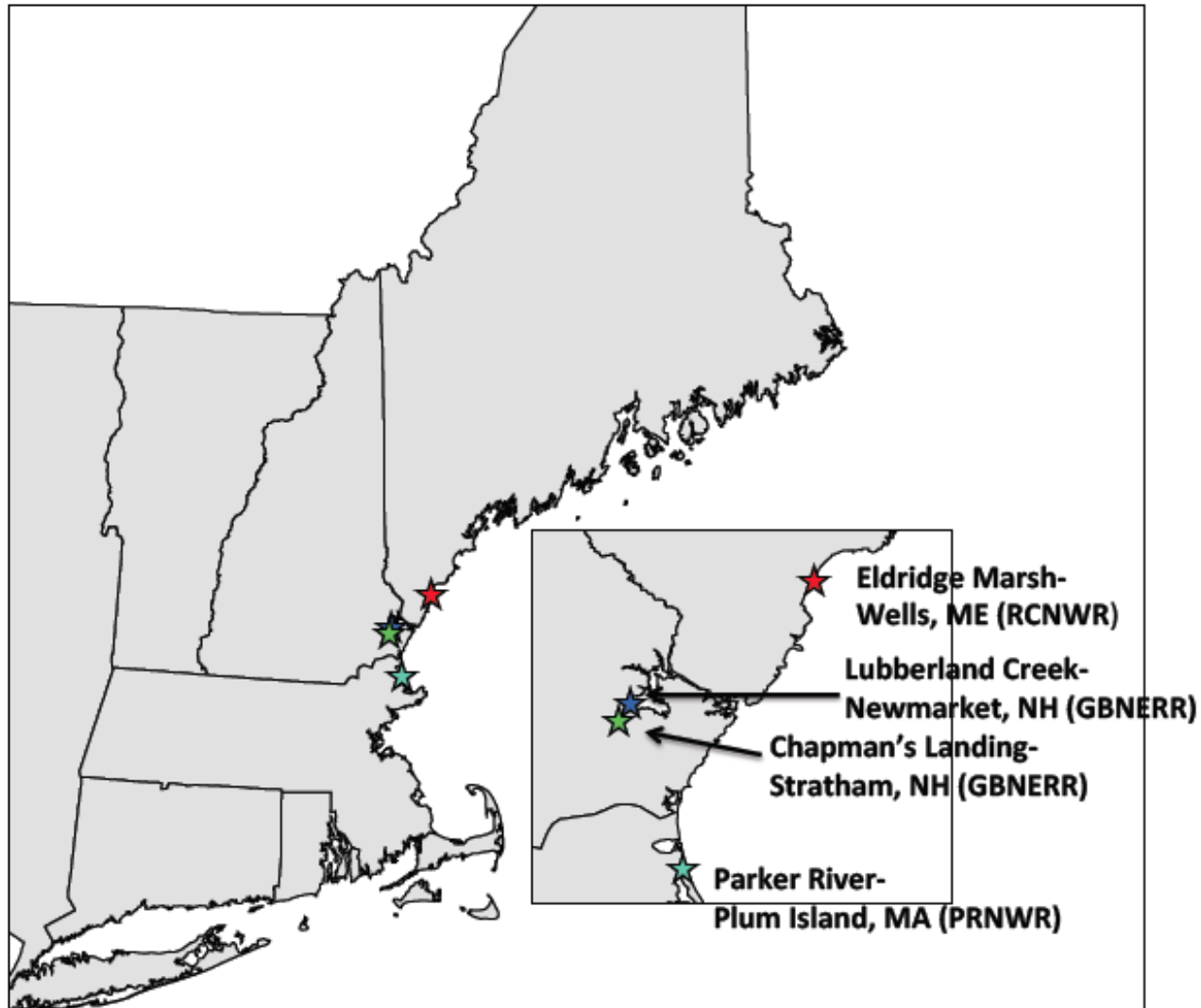
SHARP Avian Survey Points in Great Bay



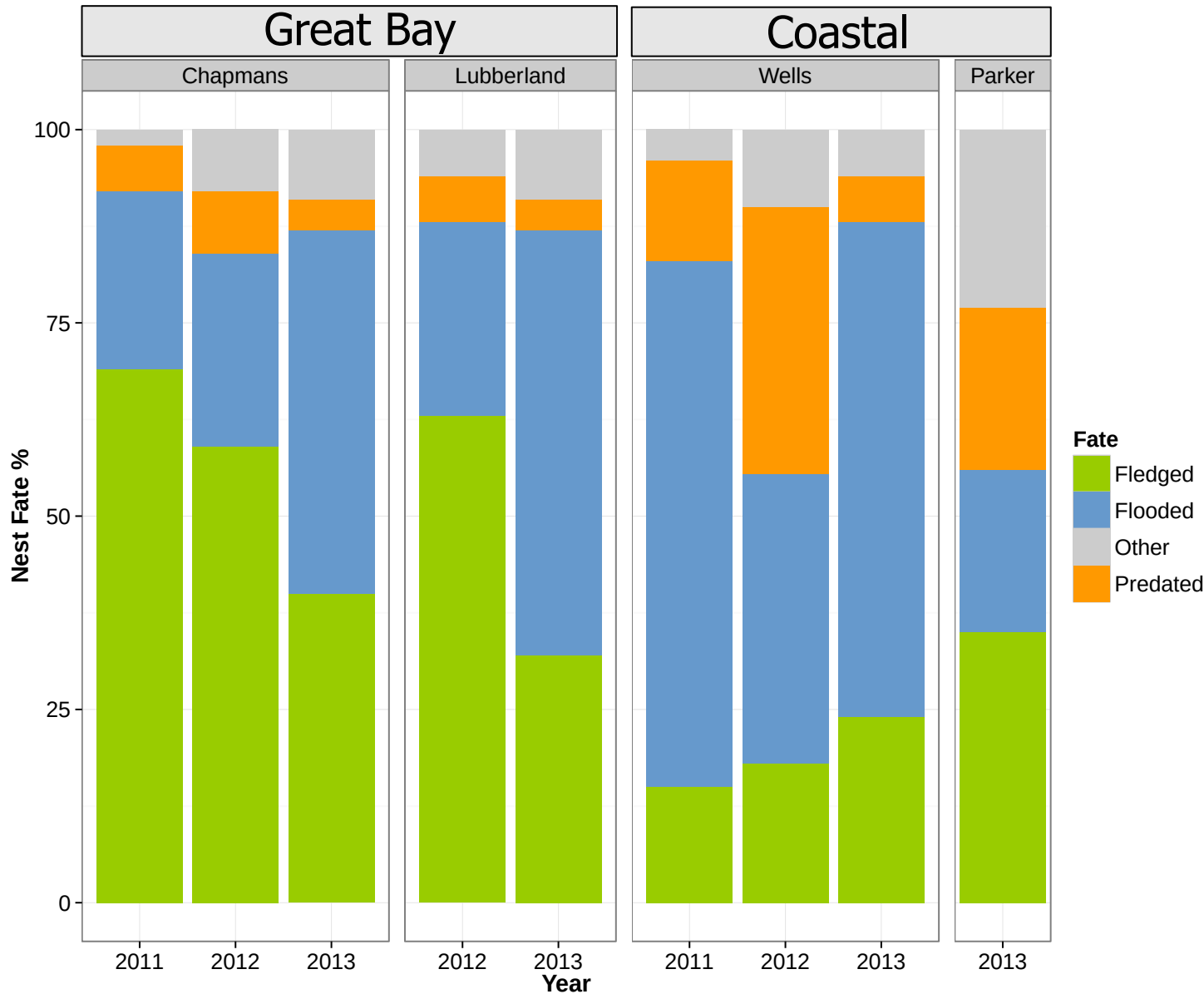
2011-2013

- Sparrows present
- Sparrows absent
- Sparrows nesting

Intensively Monitored Demographic Sites



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?

