A CLIMATE RESILIENT APPROACH TO MARSH RESTORATION
Great Meadows Marsh, Stratford CT

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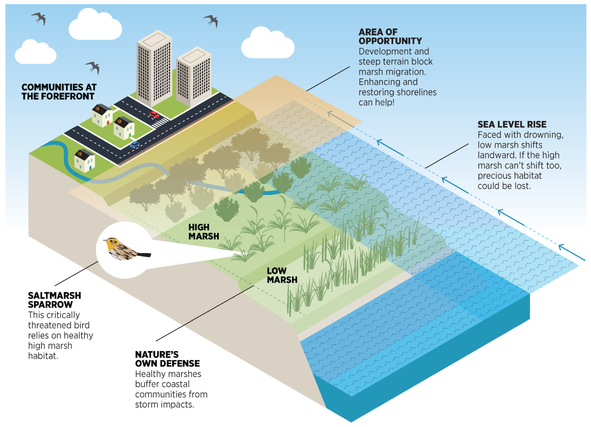


BIRDS **80%** decline

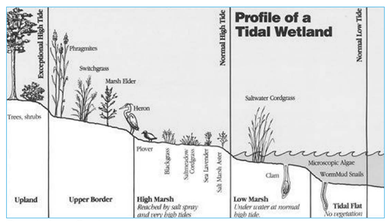
Over the last 15 years, Saltmarsh Sparrow populations have declined by an estimated 80%. If we don't act, they face extinction.

HABITAT **up to 48%** lost

Across the Long Island Sound area, nearly half of tidal wetlands have been lost to human activity. Sea level rise poses a new threat.

MONEY **$23.2B** in storm protection

The National Oceanic and Atmospheric Administration estimates that marshes provide $23.2B in storm protection annually. Healthy ecosystems are the first and best line of defense.

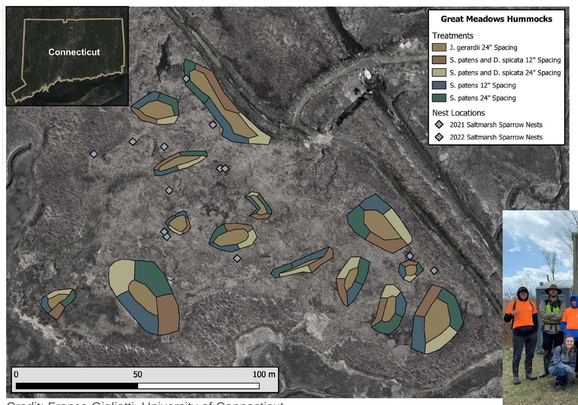


Credit: April Smith

Traditional Restoration Challenges

Novel Resilience Approach

Target conditions are based on historical or contemporary references, not forward-looking conditions	Selected new soil elevations using forward-looking sea-level rise predictions & climate change models
Funding is seen as a competitive event, rather than the opportunity for collaboration	Forged strong relationships & multi-benefit partnerships across all stages of restoration
Thin-layer deposition requires clean off-site sediment and is expensive to transport.	Created "hummocks" (habitat islands) using onsite sediment all within a single year from breaking ground
Impounded marsh cause a mosquito nuisance to the local community	Created meandering tidal channel to improve marsh drainage and reduce mosquitos
Residents of surrounding communities residents are not engaged with the project's success	Recruited diverse community members to actively contribute to on-the-ground restoration, via volunteer events & paid internships
Wealthier jurisdictions are prioritized for restoration because they have the tax base, political connections, environmental education, or leisure time to petition for improvements to ecosystem service	Targeted Great Meadows Marsh in part due to its proximity to underserved communities, and had Environmental Justice principles inform project decision-making



Credit: Franco Gigliotti, University of Connecticut

Results

In 1 year…

- 34 acres of marsh restored
- 14 hummocks created
- 6,000 tons of *Phragmites*-ridden soil removed
- 150,000 native plants installed
- 400+ volunteer hours
- 12 paid stewardship interns
- 6 saltmarsh sparrows observed
- 5 long-term monitoring photo points installed
- 4 press conferences + more news articles

Recommendations for Replicating Restoration

- **Engage** local communities for support & stewardship
- **Secure** funding in advance for post-restoration adaptive management
- **Leverage** local government interest to facilitate planning & permitting
- **Prepare** to adaptively manage installation or monitoring. **Time** project implementation with dredging of commercial waterways
- **Buffer** contract costs to cover surprise trash that lurks beneath the muck
- **Actively** oversee construction crews, develop soil compaction mitigation & access plans
- **Calculate** time and season needed to install individual plants in variety of substrates, tailor order size & volunteer effort accordingly. **Assess** onsite capacity to water delivered/staged plants.
- **Develop** post-implementation monitoring plan with measurable goals

Photo Credits: Corrie Folsom-O'Keefe, Jack Matthias, Erin Alvey