

# Design Planning for Enhanced Tidal Flow and Native Marsh Habitat in the Grassle Marsh (NJ)

\*Toni Rose Tablante, Andrea Habeck, Amanda Archer, Thomas Grothues, Gregg Sakowicz, Patricia McHugh

\* [toni.tablante@marine.rutgers.edu](mailto:toni.tablante@marine.rutgers.edu)

## INTRODUCTION

- Jacques Cousteau National Estuarine Research Reserve, Tuckerton, New Jersey
- ½ mile nature trail
- 15.43-acre pocket marsh

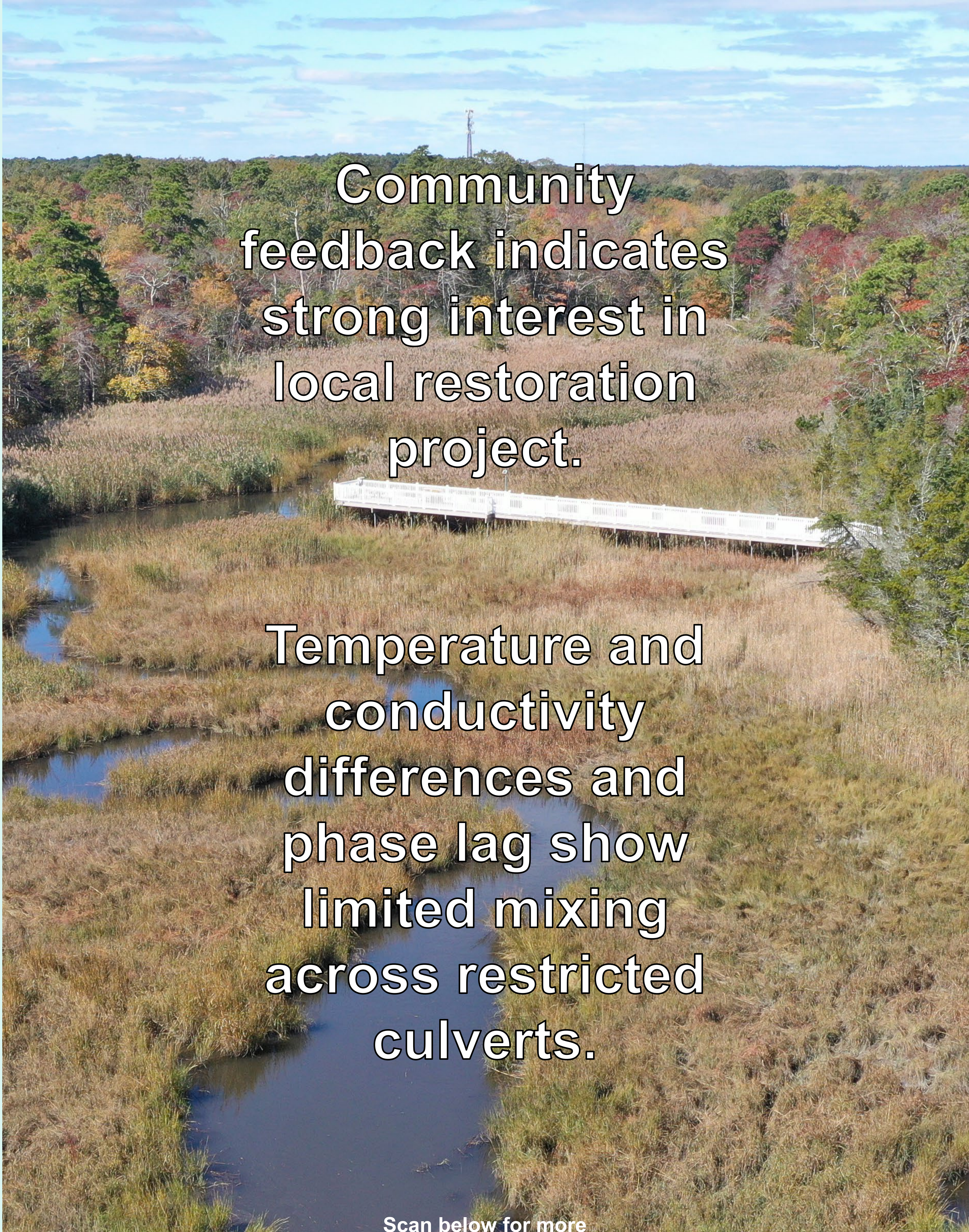
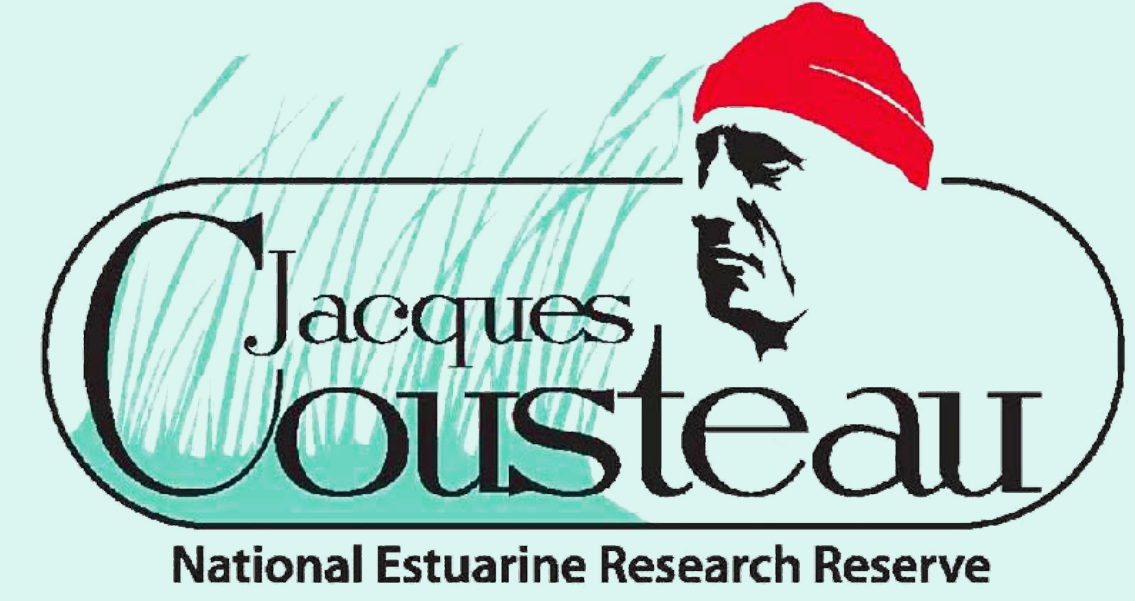
## RESTORATION PURPOSE AND ISSUE

- Restricted tidal salt marsh
- Historically dominated by *Spartina sp.*
- Increase tidal flow and improve connection between Grassle Marsh and Sheepshead Meadows
- Two undersized culverts under main roadway, Great Bay Boulevard
- *Phragmites australis* overgrowth



## SOLUTION

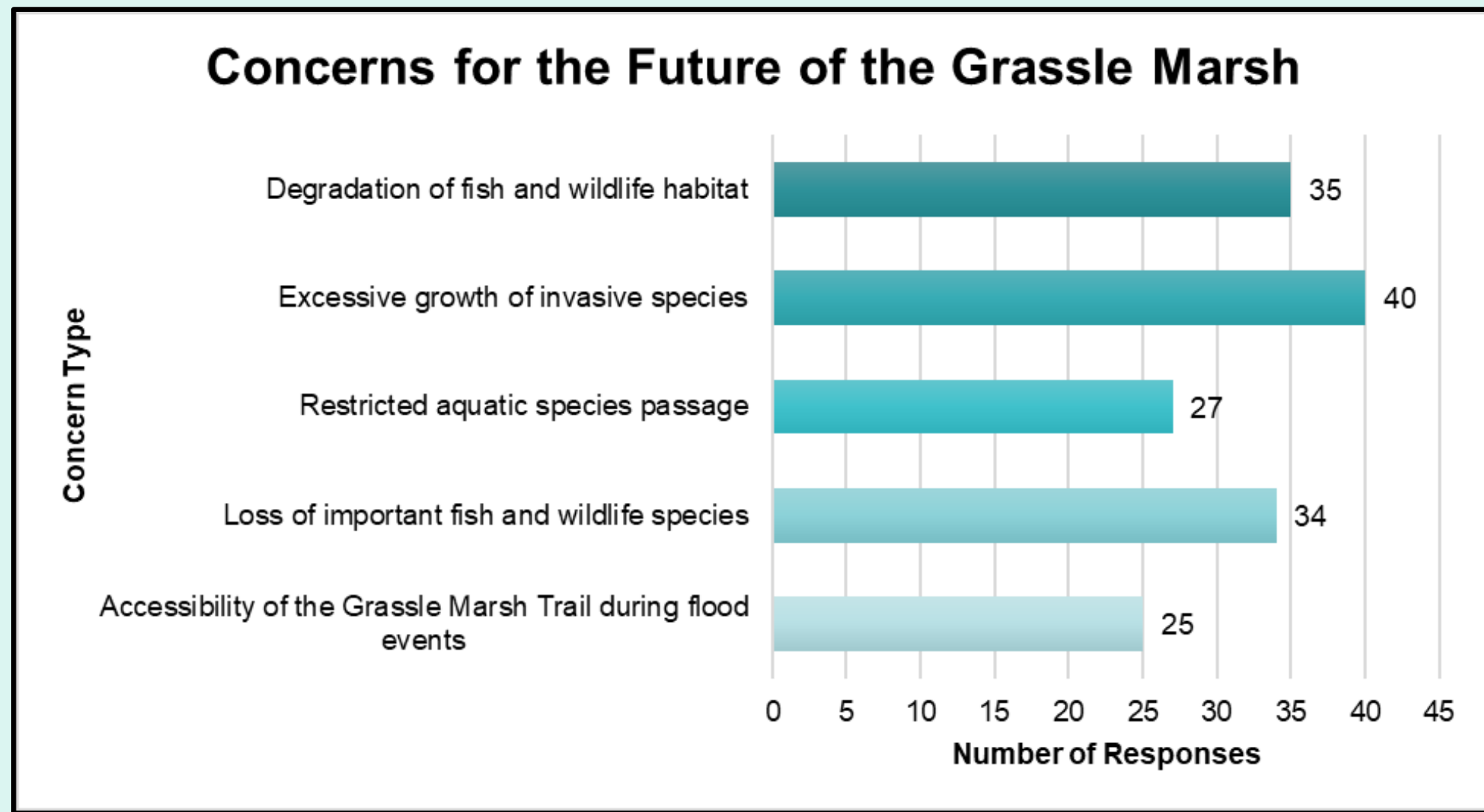
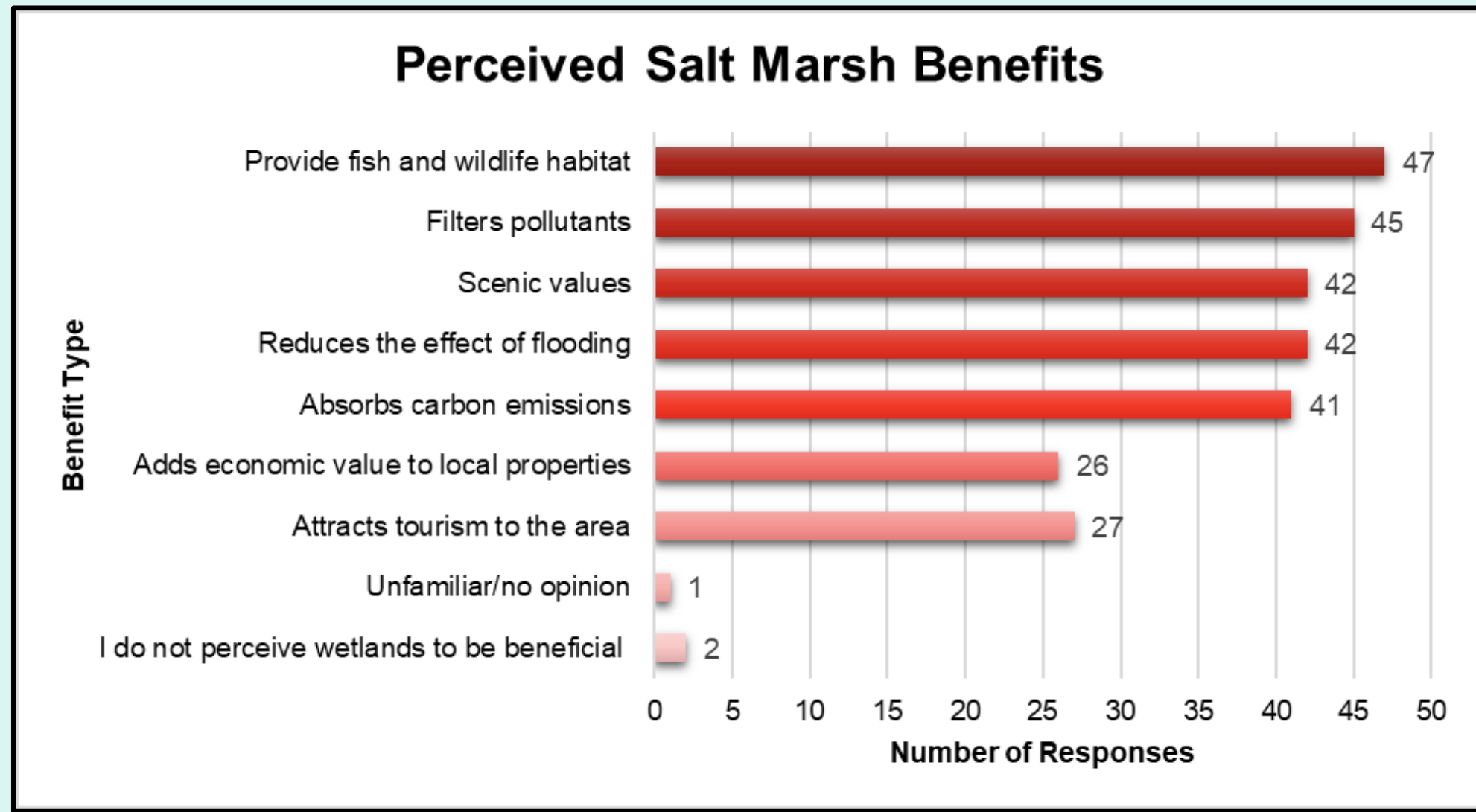
- Culvert replacement – box culvert
- Habitat connectivity
- *Phragmites* removal methods and native plantings



Community feedback indicates strong interest in local restoration project.

Temperature and conductivity differences and phase lag show limited mixing across restricted culverts.

Scan below for more information about the Grassle Marsh restoration project.



Survey results show community recognition of Grassle Marsh's benefits and concern for future degradation, indicating support for restoration. Responses were collected from 48 surveyors via virtual and in-person trail surveys.

## HOBO Loggers from Either Side of the Marsh Show a Lag of 35 minutes and Amplitude Difference Across 30 meters of Culvert

