Keeping Up with Rising Waters: Adaptations to Sea Level Rise in National Wildlife Refuges

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Blackwater

Project Goals:
Raise marsh elevation and shift vegetation *S. alterniflora* to *S. patens*

Results:
Vegetation response favorable; Marsh accreting, but takes time

May 2017

October 2018
Prime Hook

Project Goal:
Restore 4,000 acres of back-barrier salt marsh

Results:
✓ 2015-2018 -- Decrease of 700 acres of open water, increase of > 500 acres of vegetated marsh.
✓ Increases in S. alterniflora and other brackish and salt marsh species.
Seal Beach NWR

Goals:

Raise elevation across 10 acres of marsh

Results:

- Covered 7.87 acres vs 10 acres originally proposed
- Achieved a less uniform coverage of sediment
Lessons Learned

- Understand subsidence
- Have well-defined monitoring objectives/timelines
- Monitor sediment thickness while applying dredge material
- Need multiple sediment samples; singular may not provide accurate sediment composition
- Understand nutrient composition
- Tidal creek development is important in reestablishing habitat
- Be aware of potential for “maladaptation”