



Erosion and Retreat at Monomoy National Wildlife Refuge

Islands Coastal Conference 2024
Martha's Vineyard 10/01/2024



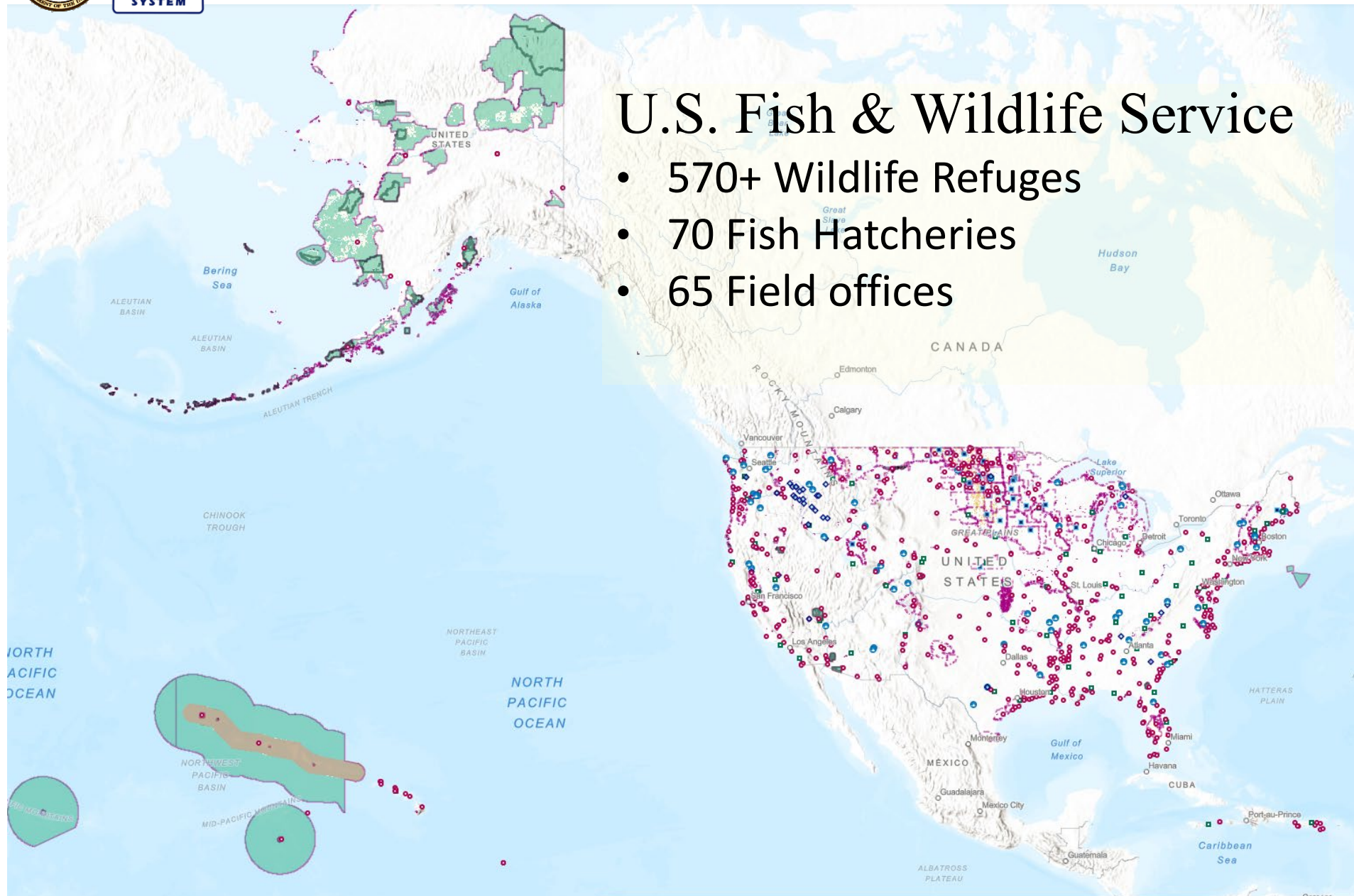
Rick Nye
Refuge Manager



Monomoy NWR

U.S. Fish & Wildlife Service

- 570+ Wildlife Refuges
- 70 Fish Hatcheries
- 65 Field offices

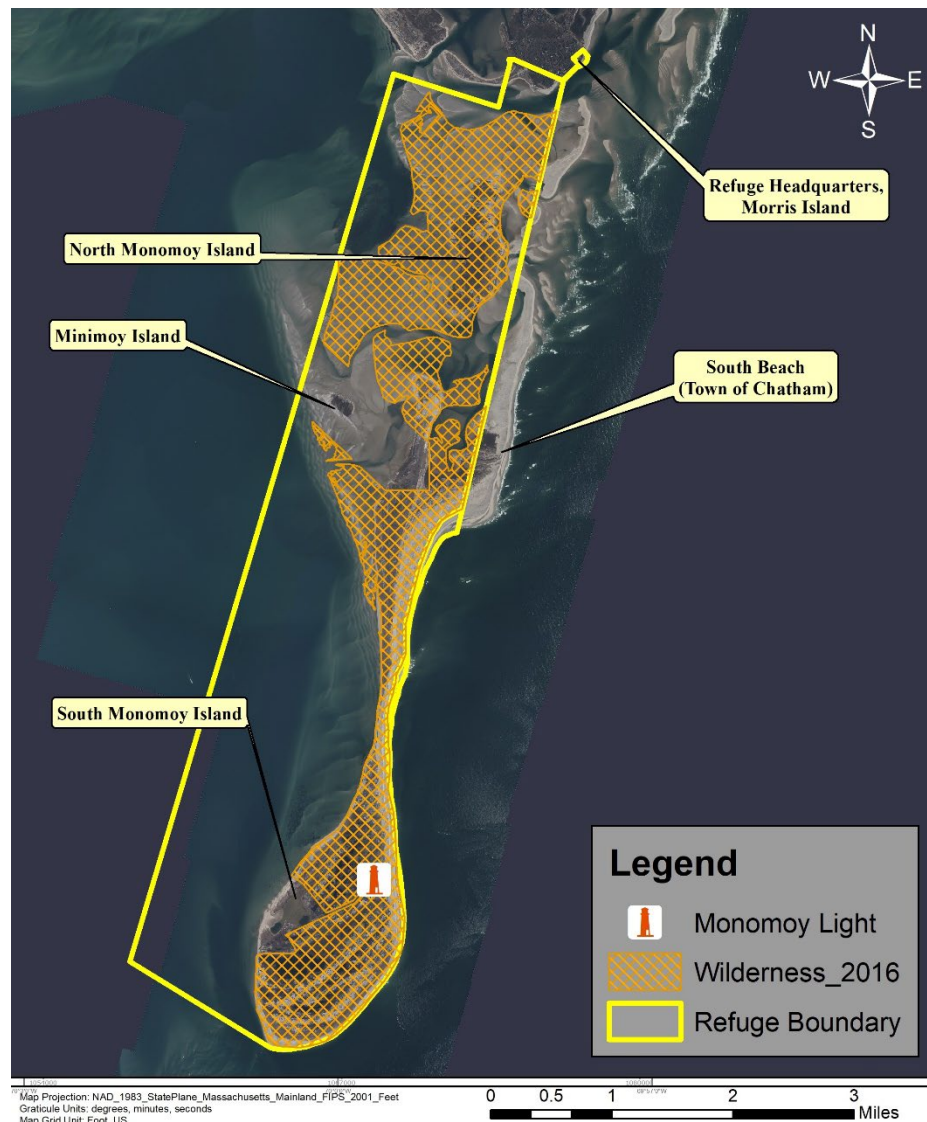




Monomoy NWR

National Wildlife Refuge

- Network of lands & waters
- Conservation & recovery
- Monomoy NWR:
 - ‘A sanctuary for migratory birds’
- Monomoy Wilderness
- Marine Protected Area
- National Register of Historic Places (Monomoy Light)

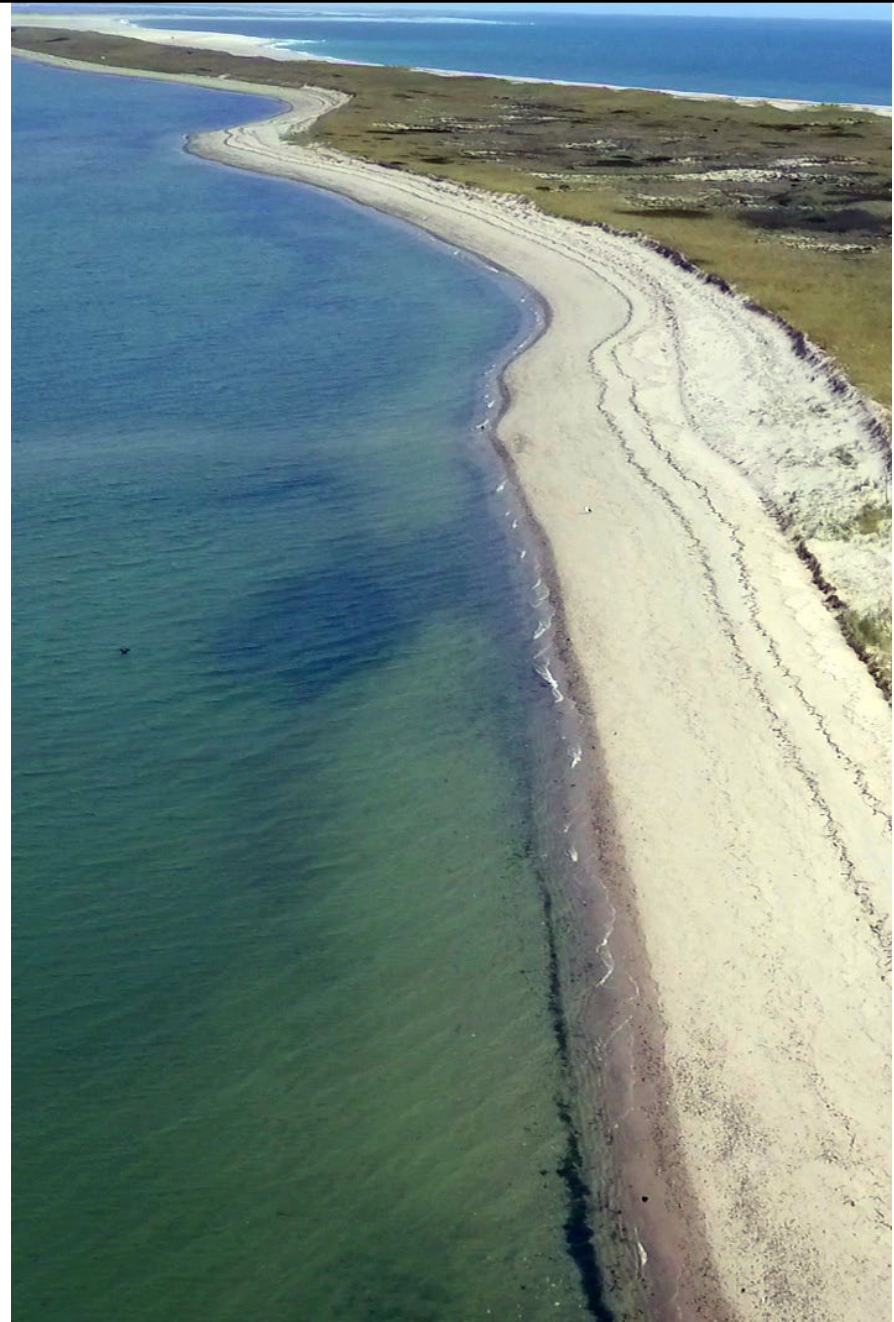




Monomoy NWR

RAD Framework

- Resist-Accept-Direct strategies
- Ecosystem focus
- Resist
 - restore, maintain ecosystem function
- Accept
 - allow change w/o intervening
- Direct
 - actively shape ecosystem processes





Monomoy NWR

Morris Island Bluff – Feb 2021



February 2021

Loss at top of bluff

- 20 to 55-ft lost since 2017
- 1/2 Acre off the top in 4 years
- 12 Transects since Nov 2020
- 5-ft of loss from Nov - Feb
- 7-ft/year mean loss by 2021



Monomoy NWR

Morris Island Bluff Erosion – Facilities Removal



- Bottom half stair removed Nov 2020
- Remainder removed in Mar 2021
- Northern access closed at platform

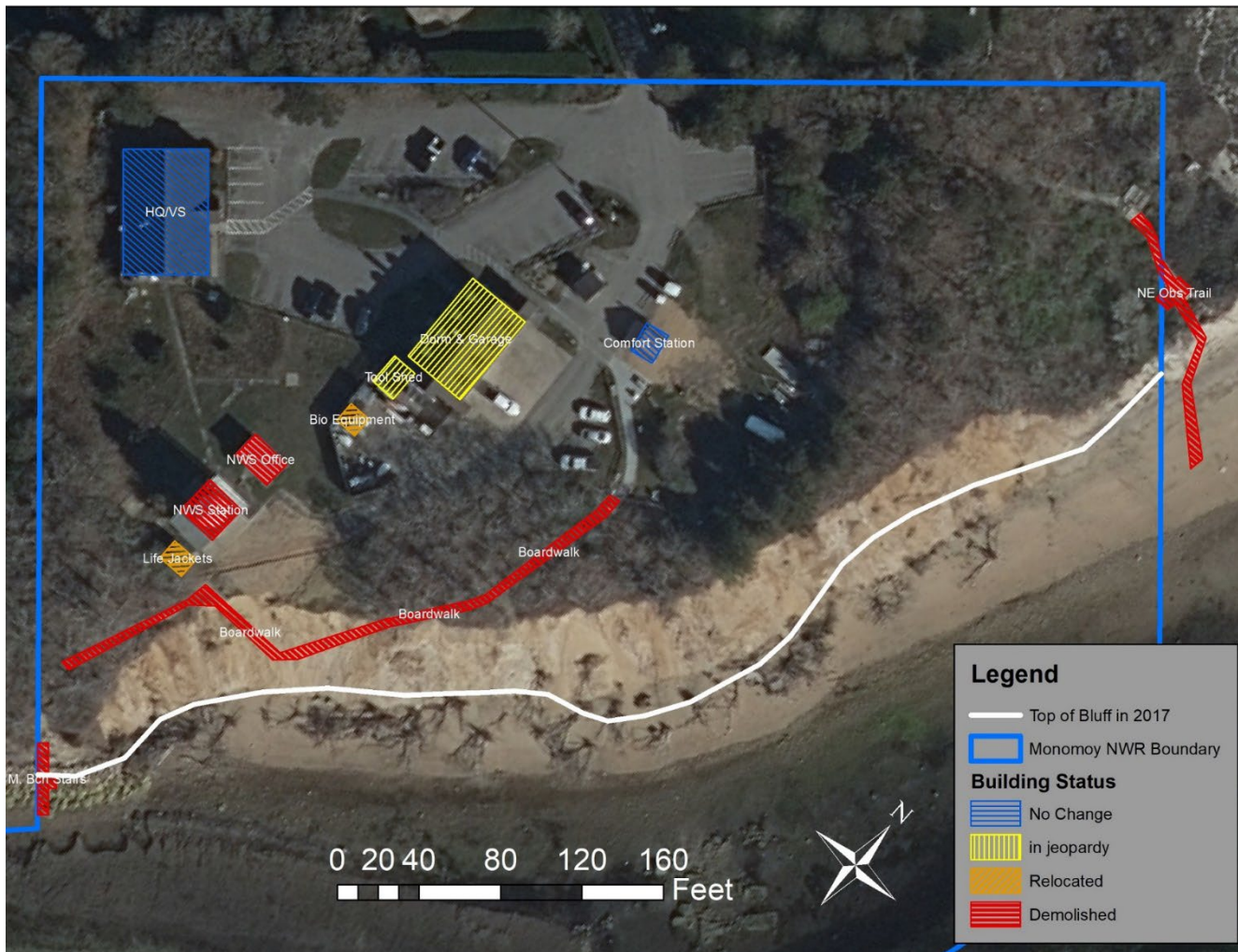


- Weather station demolished June
- Storage sheds relocated



Monomoy NWR

Morris Island Bluff Erosion – Site Plan 2021



Dorm / Maint.
shop in jeopardy

- Space for 10 interns
- Plus 4 temporary stays
- 1.5 bay garage



Monomoy NWR

Morris Island Bluff Erosion – Actions

Water drainage controls

Deep rooted grasses

Tree Removal

- Remove large trees from top
- Remove trees that fell into surf

Relocate/Build new dorm??

- Dorm is 102 feet from edge
- At 85-ft: no equipment between dorm and bluff
- At 50-ft: no dorm use

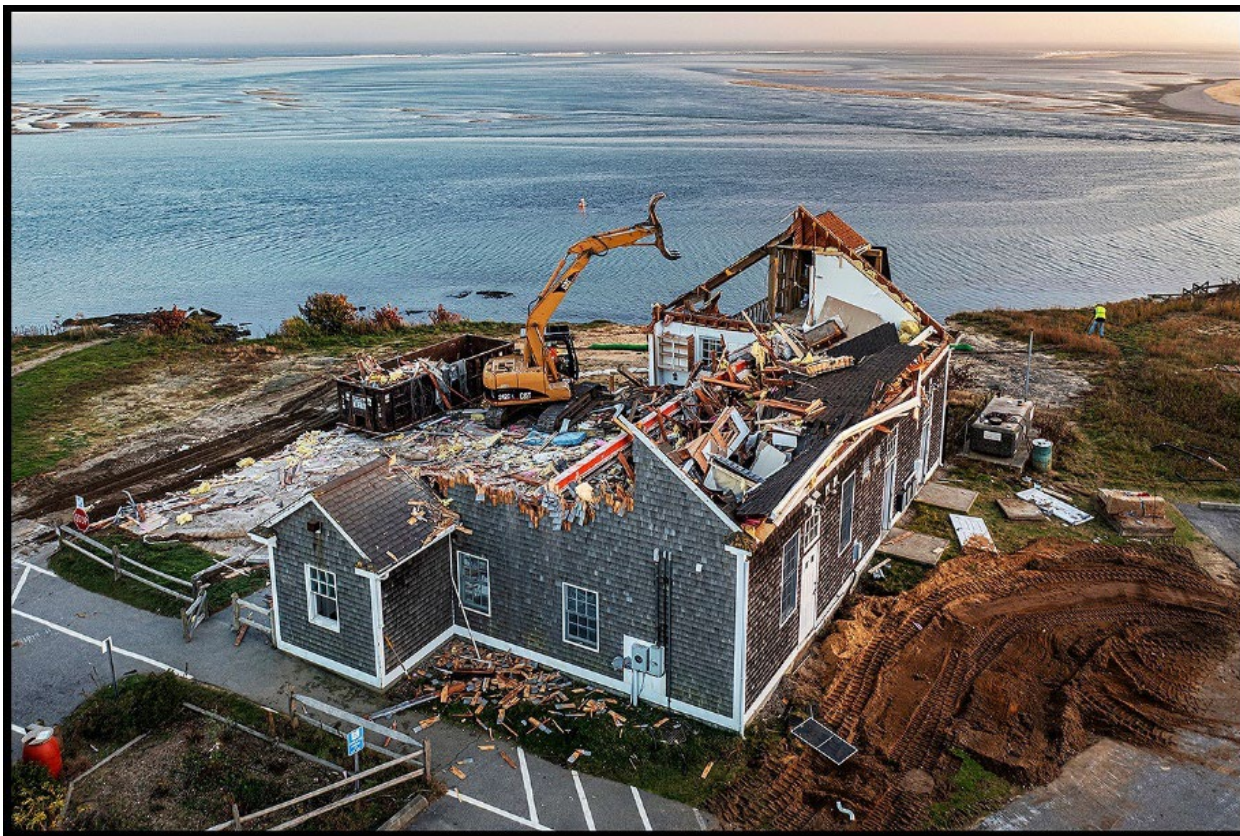
Protect bluff from tidal energy

- Living shoreline
- Grade and plant grasses
- Town of Chatham 'guide vanes'





Monomoy NWR



Drone POV Facing Remote Islands

Photo Credit: Milton Levin

Dormitory demolition – Nov 2022

[3D Dorm Walkthrough](#)

Bathroom relocation – Dec 2023





Monomoy NWR

Morris Island Bluff Erosion – January 2023

Facilities

- Dormitory demolished ①
- Maintenance demolished ②
- HQ/VC 100' from edge ③
- Acquisition/Relocation? ④

Access ⑤

Neighbors & Community ⑥

Revetment / bulkhead ⑦

Trees ⑧



January 2023 / Spencer Kennard



Monomoy NWR

HQ, Visitor Center, and Parking Lot – April 2024





Monomoy NWR

Remaining Facilities

Sheds – easily removed / relocated

Parking area with natural materials





Monomoy NWR

Critical Habitat on Morris Island



- Dune habitat
- 4-acres saltwater marsh
- Trees getting into waterways



Questions?

