

A close-up photograph of a Saltmarsh Sparrow perched on a plant with white, fluffy flowers. The bird has a dark cap, a yellowish-brown forehead, and a greyish-brown breast with dark streaks. The background is a soft-focus mix of green and yellow grasses.

Saltmarsh Restoration
Priorities for the
Saltmarsh Sparrow

Rhode Island



Saltmarsh Sparrow. Bri Benvenuti

Goal Statement

This document is intended to provide those interested in salt marsh and Saltmarsh Sparrow conservation with information that will help with conservation implementation while considering funding, organizational capacity, uncertainty, stakeholder support, and regulatory constraints. It identifies areas containing salt marsh that are good candidates for restoration, enhancement, and/or conservation to provide persistent high-quality Saltmarsh Sparrow nesting habitat in the next 6 years in addition to long-term salt marsh resilience

Saltmarsh Sparrow Objectives from the Atlantic Coast Joint Venture (ACJV)

The ACJV's Saltmarsh Sparrow Conservation Plan (Hartley and Weldon, 2020) identifies state-by-state population and habitat goals for the Saltmarsh Sparrow based on a goal population of 25,000 birds. Rhode Island's breeding Saltmarsh Sparrow population is estimated to be 1.5% of the regional population as of 2011/2012 (Wiest et al. 2019). Its population goal was therefore calculated as 1.5% of the regional population goal of 25,000 birds. Habitat goals listed in the table below are the minimum acres of high-quality habitat (defined below) needed to support the state's population goal. The short-term habitat goal sets a realistic target for the next 6-10 years (by 2030); the long-term habitat goal is set to achieve and sustain the state's Saltmarsh Sparrow population goal.

	2011/2012 Population Estimate*	State's %	Population Goal (Indiv)	2030 high marsh goal (ac)**	Total marsh needed to meet 2030 goal (ac)***	Long-term (2069) High Marsh Goal** (ac)	Total marsh needed to meet 2069 goal (ac)**
Rhode Island	900 (+/- 300)	1.5%	376	194	539	582	1,617
Regional	60,000		25,000	22,943	63,731	79,603	221,119

*Updated population estimates exist for each marsh patch within the range of the Saltmarsh Sparrow, however they are currently under peer review. When they are published, these figures will be updated to reflect the detections in the maps contained within this document.

**High marsh goals represent acres of "high quality habitat," defined as having conditions that support a stable or growing population of breeding Saltmarsh Sparrows.

*** Acreage based on the assumption that ~36% of tidal marsh acreage is high marsh (Correll et al. 2019).

High-quality Habitat for Saltmarsh Sparrows

High-quality habitat is defined as conditions that allow sufficient reproductive success to support a stable or growing Saltmarsh Sparrow population. Conservation should focus on preserving, restoring, or enhancing high-quality breeding habitat, which will have the following characteristics:

- High marsh patches with the lowest flooding frequency which provide a relatively safe window of at least 24 days with limited flooding.
- Extensive and dense *Spartina patens* vegetation with a deep, well-developed thatch layer; short-form *S. alterniflora*, *Distichlis spicata*, and *Juncus gerardii* also comprise high marsh areas and can support Saltmarsh Sparrow nesting.
- The highest quality high marsh habitat is most often found in the least modified marshes, such as those without ditching, or that are downstream, or free of tidal restrictions like road crossings.



Juncus gerardii in a Rhode Island salt marsh. Doug McGrady

Marsh Identification and Prioritization Process

Marsh parcels were identified and characterized by first identifying the highest-ranked marsh patches identified by the ACJV Saltmarsh Sparrow Habitat Prioritization Tool (top 10%; ACJV 2020). They were then reviewed by various non-profit, academic, state, and federal partners and edited as needed for accuracy. The assessment data for each marsh was compiled from the MarshRAM assessment completed at 55 marshes across the state in 2017, 2018, and 2021 (Kutcher, 2019, 2022). Although the entirety of each marsh was not assessed, in most cases we have data for a parcel that is likely representative of the status of the larger marsh complex. Marsh loss data were derived from aerial photointerpretation of 1972 and 2020 aerial imagery (Kutcher 2024). Conservation recommendations were compiled for each site from data available within the state (Kutcher and Chaffee, 2021) and using practices that are being evaluated to assess their ability to both restore marsh functions and resiliency but also to provide for improved high marsh nesting habitat over time (Watson et.al. 2016; Raposa et.al. 2019). This group has sorted the following marshes into the following subcategories to further refine this prioritization within the state.

Priority Marshes: Marshes prioritized for ongoing restoration planning and action to support the Saltmarsh Sparrow in Rhode Island.

Reference Marshes: The state tidal marsh working group established these reference sites as part of the state-wide monitoring network. Annually data is collected on elevation, vegetation, and other metrics to track progress and provide comparison for local restoration sites.

Honorable Mention: The following marshes were identified by the partner group as important to keep in mind for future work.

The information in this document including spatial delineations of priority marshes are available as part of a regional set of marsh restoration priorities for the Saltmarsh Sparrow. This information is available to view on the [ACJV Saltmarsh Sparrow mapper](#).

Restoration Technique Definitions

The following terms are used repeatedly throughout this document to identify opportunity for different techniques at identified marshes, including in the “attributes” section. ***This information is meant to identify opportunity and potential for these restoration techniques at each site but is not meant to be prescriptive.*** A formal site assessment and design is always necessary to identify specific next steps and restoration strategies within each marsh parcel.

Sediment placement

Placement of material (including sediments from dredging efforts) on the marsh platform. Includes thin-layer placement, thick-layer placement, beneficial use of dredged sediments, formation of hummocks/microtopography, etc.

Repair hydrology - runnelling / channel creation

Modification of marsh platform using shallow channel creation to remove or prevent ground water saturation at the marsh surface that results in marsh vegetation death and marsh subsidence. Excavated peat is reused to create structured microtopography.

Repair hydrology - tidal restriction mitigation

Removal or modification of large-scale tidal restrictions such as road crossings, culverts, bridges, etc. to restore tidal flow.

Repair hydrology - address ditch plugs

Adjustment of ditch plugging on marsh platform to improve hydrology.

Repair hydrology - ditch remediation

Adjustment of human-made ditches on the marsh platform to improve hydrology.

Repair hydrology - berm, embankment, or levee modification

Removal or alteration of berms, stonewalls or embankments to restore hydrology of marsh platform and marsh migration corridor.

Land acquisition / protection for marsh migration

Purchase or easement of land to protect for eventual marsh migration.

Facilitated marsh migration

Active assistance of marsh migration through modification of the environment.

Invasive plant species mitigation (*Phragmites australis*, etc.)

Removal or mitigation of invasive plants.

Living shoreline development

Development of nature-based features to promote shoreline stabilization.

Wildlife herbivory mitigation

Removal or management of wildlife due to overgrazing. Wildlife includes deer, horses, crabs, geese, etc.

Stormwater mitigation

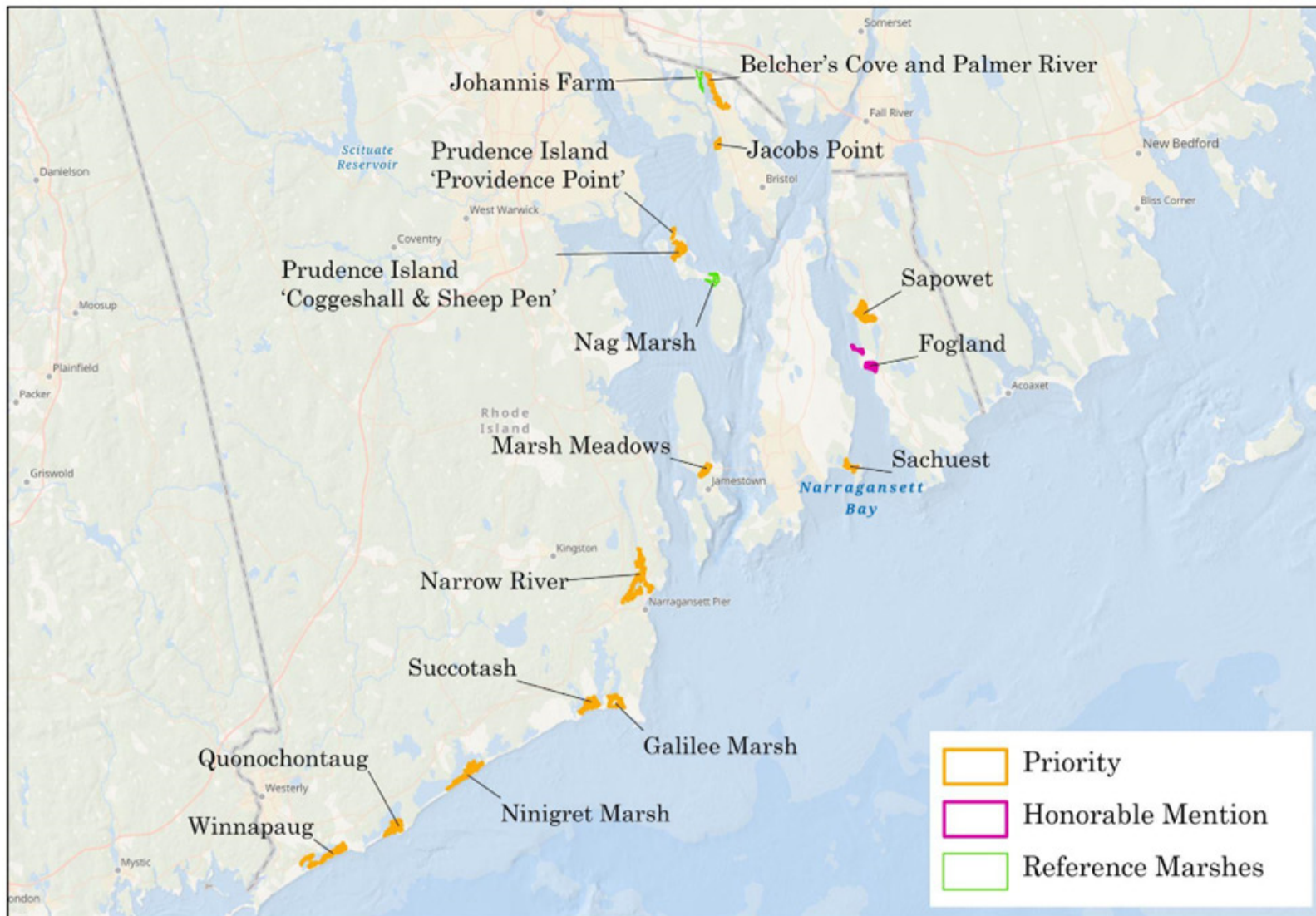
Management of stormwater inputs to reduce water, nutrients, and sediment.

Additional ecological assessment needed

Additional monitoring and site assessment is necessary to determine specific next steps or assess existing restoration efforts at this site.

Priority Marshes

The following marshes have been prioritized for ongoing restoration planning and action to support the Saltmarsh Sparrow in Rhode Island.



Rhode Island Priority
Saltmarsh Sparrow Marshes

	Priority
	Honorable Mention
	Reference Marshes

10 Miles

 10 Kilometers

Galilee Marsh - 138 acres (56 ha)

Existing Conditions

Galilee salt marsh (Narragansett) is a 138-acre tidal wetland complex composed of a tidal creek, high marsh, and low marsh habitats managed for wildlife conservation and hunting by Rhode Island Department of Environmental Management (RIDEM). This system currently includes four self-regulating tide gates that were designed to restore salt marsh habitat by re-establishing tidal connectivity to Point Judith Pond while preventing flooding of adjacent residential development. Under current conditions, the marsh is receiving too much tidal flow and large agricultural embankments, former farm roads, and ditch spoils are further contributing to prolonged flooding of the marsh platform, which has led to vegetative die-off and marsh subsidence. Invasive *Phragmites australis* (hereafter *Phragmites*) is present, site has signs of extensive alterations, including ditches and agricultural berms.



Galilee Marsh. From the archives of Dr. Mary Gillham, Creative Commons

Existing Projects

RIDEM and Ducks Unlimited – an assessment of the condition and the function of the tide gates was conducted by Woods Hole Group through a contract with Ducks Unlimited in coordination with RIDEM. The assessment was funded by a competitive State Wildlife Grant (cSWG) in 2020 to implement and evaluate restoration alternatives (i.e. dampening spring tides through tide gates). Design, permitting and implementation funds are needed to modify the tide gates. Best contact: Bri Benvenuti (bbenvenuti@ducks.org)

Save The Bay and RIDEM – through funding from the RI Coastal and Estuarine Restoration Trust Fund (2023) and an America the Beautiful grant (2024), funds have been secured to restore the tidal hydrology of the marsh platform. Save The Bay and RIDEM Division of Fish and Wildlife will collaborate to restore hydrology impacted by legacy agricultural features and mosquito control activities to improve marsh resilience to sea-level rise and conduct management of *Phragmites* along the upper edge of the marsh. Support is still needed for long-term monitoring. Best contact Ben Gaspar (bgaspar@savebay.org), John Veale (john.veale@dem.ri.gov)

Marsh RAM Assessment Data

- Elevation: Moderate (0.6 NAVD88)
- Disturbance: Moderate
- Index of Marsh Integrity: Intermediately degraded (6.6)
- Migration Potential: High relative to marsh size, but low priority statewide
- High quality high marsh: estimated 16% (inner) and 10% (outer) for a total of 20.5 acres.
- Estimated marsh loss (outer marsh only) = 17.6% (High) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrow present, some recent productivity data; site was extensively studied in the 1990s. RIDEM conducted tidal marsh bird work in 2022 (EPA walking surveys, banding, & nest

searching). USFWS piloted the Saltmarsh Habitat and Avian Research Program (SHARP) rapid assessment protocol at this marsh in 2023.

Recommended Management / Next Steps To Management Action

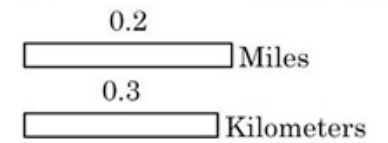
- Further evaluation of tidal gates to benefit Saltmarsh Sparrow nesting.
- Finalize plan, permit, implement, and monitor hydrological improvements to include runnels, ditch remediation, and maintenance of a select number of ditches to address impounded water on the marsh platform exacerbated by historic ditching and embankments.
- More strategic use of peat spoils for more targeted micro-topography to benefit Saltmarsh Sparrows.
- Manage *Phragmites* along the upper edges of the marsh.
- Conduct mulching and repetitive cutting using runnels to remove impounded water on the marsh platform.
- Explore potential for sediment placement. Outer marsh is a good candidate, inner marsh would also improve nesting habitat.

Attributes

Sediment placement	Y
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	Y
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	N
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	N
Wildlife herbivory mitigation	Y
Stormwater mitigation	Y
Additional ecological assessment needed	Y



Galilee Marsh



Succotash Marsh Management Area – 99 acres (40 ha)

Existing Conditions

This is an unditched back barrier marsh that has been hydrologically impaired by the construction of an installed raised roadway bisecting the marsh. Additionally, a constructed breachway was installed in a different location than where the barrier pond had historically breached on its own. The marsh is therefore separated into west (Potter's Pond) and east (Succotash) ponds which each have unique tidal inputs and resulting tidal regimes. Marsh on both sides is highly degraded and full of creeks formed after construction of the breachway. All marsh is owned by RIDEM.



Least Tern share the coastal marsh with sparrows and benefit from restoration efforts. Ray Hennessy

The west side (Potter Pond) marsh platform is either currently bare or close to bare and transitioning into mudflat. The area experiences a muted tidal amplitude / range compared to other marshes in Rhode Island, is bordered by a road and parking area on the southside of the marsh, and experiences tidal restriction resulting from an installed tidal channel which changed where tidal flow originates. *Phragmites* is also present along the terrestrial border which is exacerbated by stormwater runoff from the state beach parking area. Agricultural embankments exist in the marsh and have created subsidence basins.

The east side (Succotash marsh) is dominated by *S. alterniflora* and has developed a high density of tidal creeks due to altered hydrology from the breachway. There is evidence of several historical roadway features and agricultural embankments that now support high marsh vegetation. The easternmost portion of the marsh running north to south along Succotash Road, including the adjacent 'Hazard Island', has been established by the Narragansett Bay National Estuarine Research Reserve (NERR) as a long-term monitoring site and as a reference marsh for restorations occurring in the salt ponds (coastal lagoons) along the RI south shore; restoration activities in this specific part of the marsh would confound that effort and should be avoided.

Existing Projects

Massachusetts Audubon (Mass Audubon): Working with Save the Bay, SMARTeams, Cape Save the Bay: Implemented initial tidal hydrology restoration work on the Potters Pond section of the marsh including installation of runnels beginning in 2018 to address the impounded water on the marsh platform and the expansion of *Phragmites*. Best contact: Wenley Ferguson (wferguson@savebay.org)

NERR: Working with RIDEM Divisions of Fish and Wildlife and Marine Fisheries, Save The Bay, USFWS, University of Rhode Island, and NRCS, is funded by the Narragansett Bay Estuary Program for site assessment, design, permitting work for sediment placement project on both sides of the marsh. Funding is still needed for implementation and post-restoration monitoring (pre-restoration monitoring is covered through current grant). Best contact: Caitlin Chaffee (caitlin.chaffee@dem.ri.gov), John Veale (john.veale@dem.ri.gov)

Marsh RAM Assessment Data

- Elevation: Low (0.30 NAVD88)
- Disturbance: High
- Index of Marsh Integrity: Most Degraded (5.3)
- Migration Potential: Highest Priority
- High quality high marsh – estimated at 6.2% currently (6 acres)
- Estimated marsh loss = 23.6% (High) between 1972 and 2020

Existing Sparrow Data

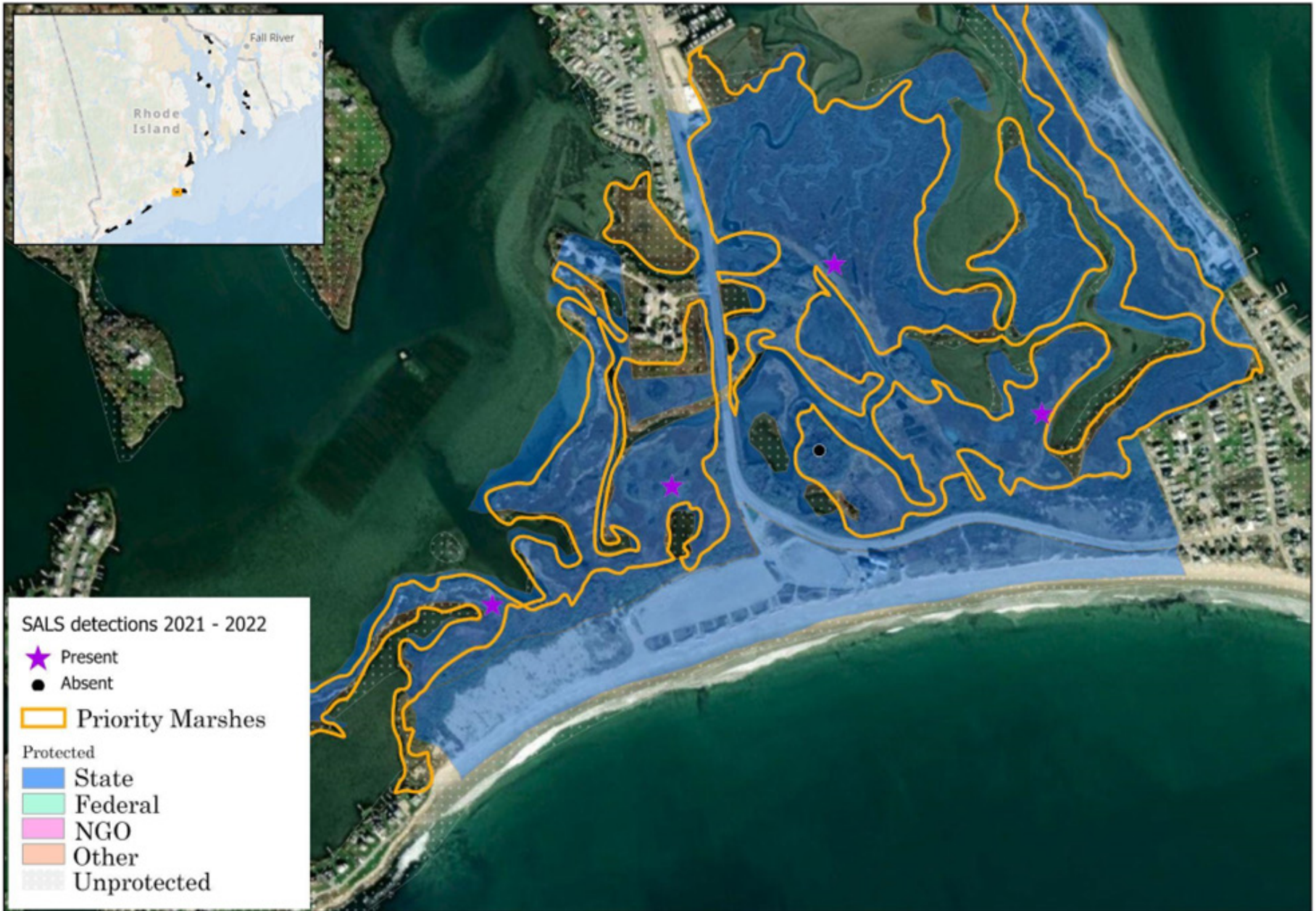
Saltmarsh Sparrow detected at this site, breeding has not been confirmed. The vast majority of sparrows occur on the west side (Potter Pond). RIDEM conducted marsh wide EPA walking transects here in 2022. Contact Sam Miller from RIDEM for more information.

Recommended Management / Next Steps To Management Action

- Continue assessment and design for sediment placement / elevation enhancement project.
- Maintain hydrological improvements (tidal flow / drainage enhancement) informed by a site assessment.
- Evaluate the need for stormwater management at this site.
- USFWS, Save the Bay, & RIDEM will conduct the SHARP rapid demographic protocol in 2024 to get updated tidal marsh bird use data prior to sediment placement.

Attributes

Sediment placement	Y
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	N
Land acquisition / protection for marsh migration	N
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	N
Wildlife herbivory mitigation	Y
Stormwater mitigation	Y
Additional ecological assessment needed	Y



Succotash Marsh Management Area



0.15
Miles

0.2
Kilometers

Ninigret - 146 acres (46 ha)

Existing Conditions

This is an unditched back barrier marsh that has been hydrologically impaired by the This group of salt marshes is located behind a 234-acre barrier beach owned by RIDEM Division of Parks, RIDEM Division of Fish and Wildlife, and USFWS. The barrier beach protects Ninigret Pond, a salt pond with a constructed breachway. The back barrier salt marshes exhibit signs of degradation, such as impounded water, vegetation, and expansion of *Phragmites*. These marshes are important nesting sites for saltmarsh sparrows and currently support the largest population of seaside sparrows in the state (RIDEM unpublished data).



Saltmarsh Sparrow chicks at Ninigret. Alison Koczek/USFWS

Existing Projects

RIDEM: worked with Coastal Resources Management Council, USFWS, and Save The Bay with funds from NFWF's Hurricane Sandy Coastal Resiliency Grant to place sediment on the marsh surface, vegetation planting, and establishment of creeks and runnels to restore tidal hydrology. This occurred in 2017. Best contact: Wenley Ferguson (wferguson@savebay.org)

RIDEM: Restoration east of the breachway on RIDEM included tidal hydrology restoration and *Phragmites* management using runnels (2018 - 2020). Best contact: Wenley Ferguson (wferguson@savebay.org)

Marsh RAM Assessment Data *(additional assessment planned for 2021 on 18-acre parcel)*

- Elevation: Low (0.09 NAVD88)
- Disturbance: Low
- Index of Marsh Integrity: Intermediate Degraded (5.6)
- Migration Potential: Moderate to low – will build through overwash potentially
- High quality high marsh: estimated at 23.4% currently (32 acres)
- Estimated marsh loss = 14.9 % (High) from 1972 to 2020

Existing Sparrow Data

Saltmarsh Sparrow detected, breeding has not been confirmed, however there is evidence of nesting 4 years post sediment placement along the perimeter of the project site (Paton, pers. obs.). Evaluation of bird response to restoration began by SHARP in 2023 using the rapid assessment protocol. Additional point count monitoring is planned for 2024 and full demographic monitoring in 2025.

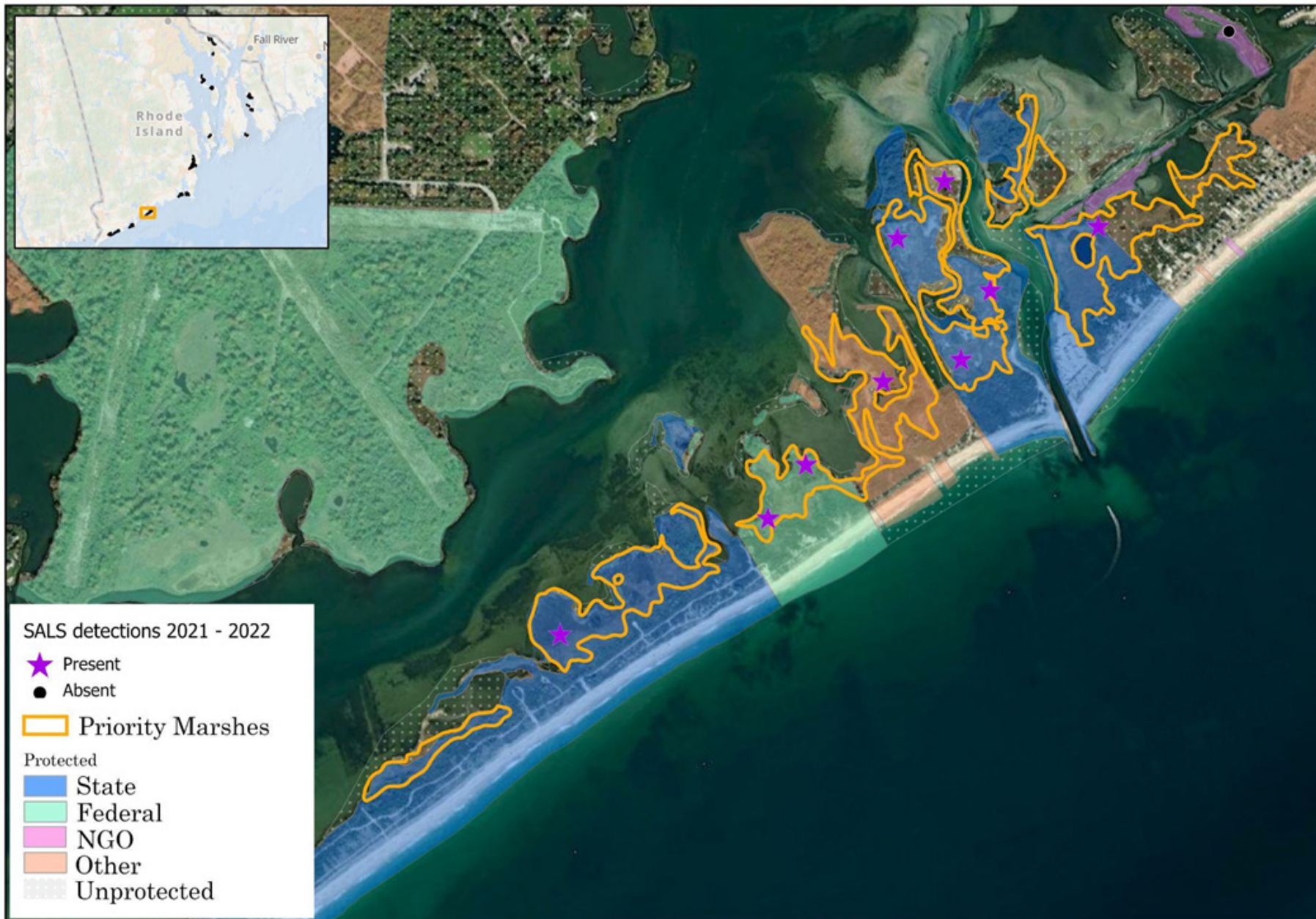
Recommended Management / Next Steps To Management Action

- Tidal hydrology will be restored by digging shallow runnels and removing impediments to marsh migration such as a former roads and fill.
- Herbicide treatment to reduce cover of non-native *Phragmites* on the back barrier salt marshes.

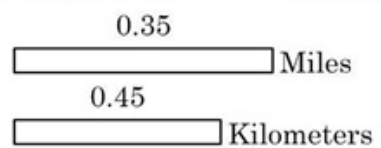
- Activities within the 2017 elevation enhancement project site will include re-grading creeks and other high elevation areas to enhance stabilization and reduce *Phragmites* growth. Funding for these activities has been secured through an America the Beautiful grant (2024). Match is being provided by a grant secured by Save The Bay from the [RI Coastal and Estuarine Habitat Restoration Trust Fund](#).
- Assess feasibility of future elevation enhancement projects in the vicinity of the breachway to beneficially reuse sediment from maintenance of the breachway.

Attributes

Sediment placement	Y
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	Y
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	N
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	Y
Wildlife herbivory mitigation	N
Stormwater mitigation	Y
Additional ecological assessment needed	Y



Ninigret Marsh



Prudence Island 'Providence Point' – Narragansett Bay National Estuarine Research Reserve (NERR)– 15 acres (6 ha)

Existing Conditions

This small site has a high proportion of high marsh and salt shrub habitat with no history of alterations. The northern portion of the site is in good condition; it consists largely of high marsh salt meadow and extensive *Iva frutescens*, with one remnant ditch. The southern arm of the marsh, however, is largely degraded; it consists of impounded pools and ponds and generally clogged hydrology. It is this southern section that could be the main focus of future hydrologic repairs.



Narragansett Bay Estuarine Reserve. NOAA

Existing Projects

Narragansett Bay NERR: The Research Reserve abandoned a dirt road directly adjacent to the marsh to allow for near-term migration of Providence Point marsh into the uplands (2022). The road was cut off just south of where it takes a sharp right turn as it gets close to the marsh. Monitoring is underway specific to this project to track change over time. No additional support is needed Best contact: Kenny Raposa (kenneth.raposa@dem.ri.gov)

Marsh RAM Assessment Data *(additional assessment planned for 2021 on 18-acre parcel)*

- Elevation: Medium (0.64 NAVD88)
- Disturbance: Low
- Index of Marsh Integrity: Least Degraded (7.8)
- Migration Potential: High (salt shrub 36%)
- High quality high marsh – estimated at 25% currently (3.75 acres)
- Estimated marsh loss = 2.2 % (Low) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrows have not been detected at this site (SHARP 2023; eBird 2024)

Recommended Management / Next Steps To Management Action

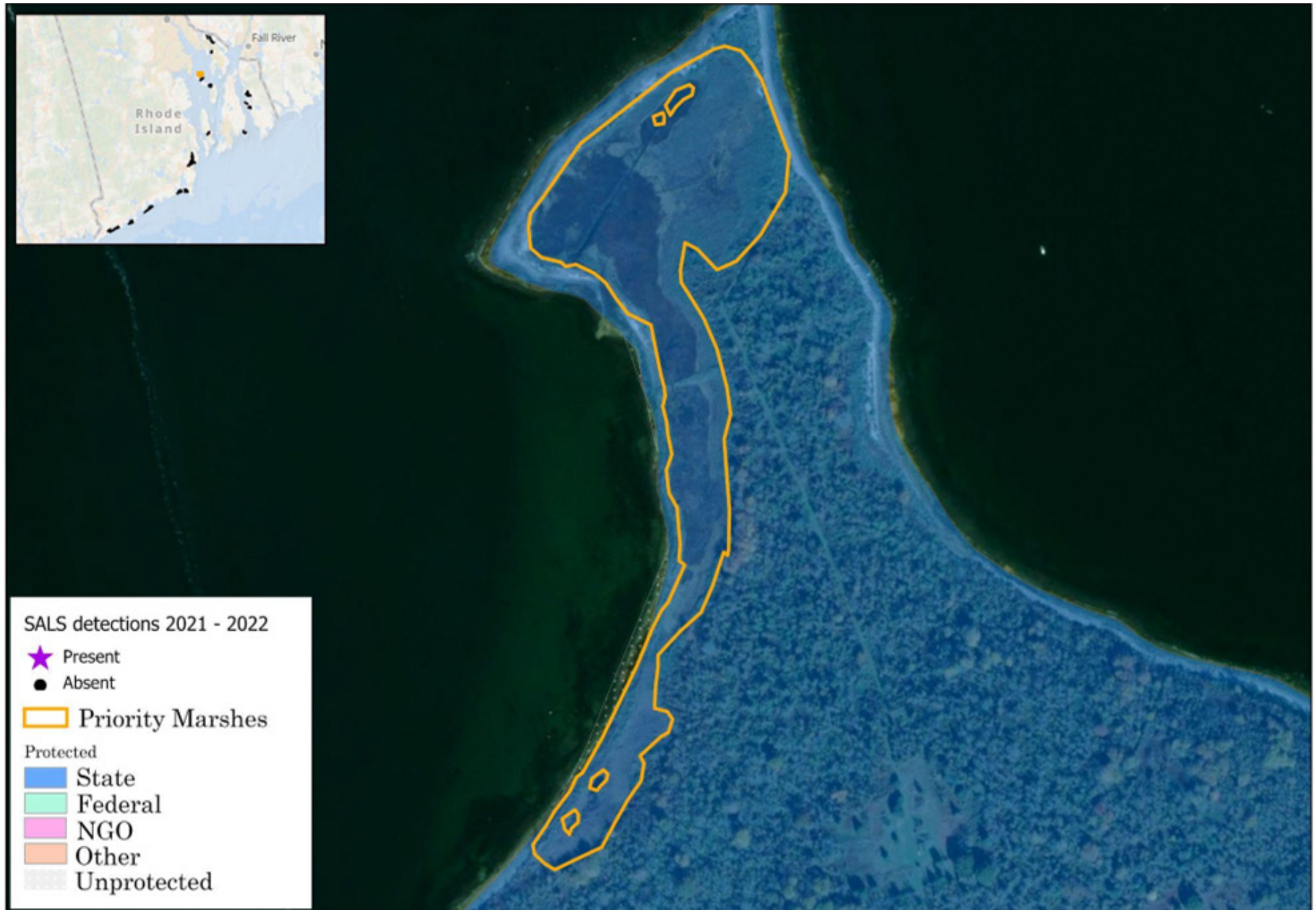
- Stabilize marsh edges.
- Improve hydrology of the marsh platform.
- Manage *Phragmites*.
- Evaluate the potential to facilitate marsh migration through grading of the surrounding upland.
- Facilitate marsh migration through vegetation management and land protection (e.g. NWR property on mainland).

Attributes

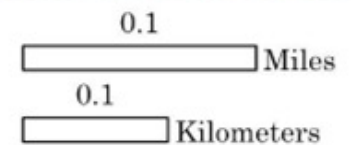
Sediment placement	N
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	Y
Repair hydrology - berm, embankment, or levee modification	N
Tidal marsh land acquisition / protection	N
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	N
Wildlife herbivory mitigation	N
Stormwater mitigation	Y
Additional ecological assessment needed	Y



A saltmarsh sparrow peeks out from the marsh edge. Bri Benvenuti



Prudence Island 'Providence Point'



Prudence Island 'Coggeshall & Sheep Pen'– Narragansett Bay NERR – 78 acres (32 ha) see previous map

Existing Conditions

These marshes are part of Narragansett Bay NERR. Coggeshall is a large meadow/fringe marsh complex on north Prudence Island. It is a NERR Sentinel Site, set aside from extensive manipulations for long-term monitoring. Much of the original salt meadow has been converted to short-form *S. alterniflora* high marsh in recent years, though some areas of healthy salt meadow remain. Sheep Pen is a smaller marsh just south of Coggeshall. It also contains a diverse habitat mixture, including some relatively extensive salt meadow high marsh.

Phragmites abuts portions of this marsh, which was the site of a recent migration facilitation experiment. Existing challenges include ditching at both marshes, while a road and stone wall abuts some of Coggeshall which severely limits marsh migration.

Existing Projects

NERR: Previous restoration actions include extensive monitoring, research and management of Coggeshall as one of two NERR Sentinel Sites where long-term monitoring of vegetation, elevation, elevation change, water levels and migration rates is conducted. A short-term migration facilitation experiment was also recently completed at Sheep Pen. Support is still needed for design, permitting, implementation, and monitoring in this area. Best contact: Kenny Raposa (kenneth.raposa@dem.ri.gov)



Tall-form *Spartina alterniflora* dominates low marsh areas. Keith Bradley, Creative Commons

Marsh RAM Assessment Data (additional assessment planned for 2021 on 18-acre parcel)

- Elevation: Medium (0.62 NAVD88)
- Disturbance: Moderate
- Index of Marsh Integrity: Intermediate Degraded (6.1)
- Migration Potential: Moderate
- High quality high marsh: estimated at 11.7% currently (9.1 acres)
- Estimated marsh loss = 3.6% (Low) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrows detected at this site (SHARP 2023). Four SHARP point count locations were established in 2023 with more sampling planned in 2024.

Recommended Management / Next Steps To Management Action

- Facilitated marsh migration through removal of the roadway or stone walls.
- Stabilize marsh edge (lower priority).
- Explore utility of small-scale sediment placement if sediment is available - possibilities exist from grading of surrounding uplands during road removal.

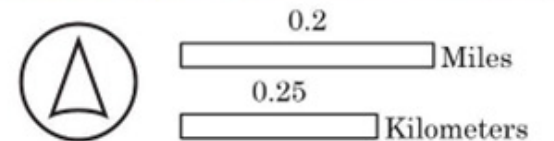
Attributes

Sediment placement	Y
Repair hydrology - runnelling / channel creation	N
Repair hydrology - tidal restriction mitigation	N
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	N
Tidal marsh land acquisition / protection	N
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	N
Wildlife herbivory mitigation	N
Stormwater mitigation	Y
Additional ecological assessment needed	Y





Prudence Island 'Coggeshall & Sheep Pen'



Sapowet Marsh Management Area – 187 acres (75 ha)

Existing Conditions

Sapowet Marsh (Tiverton) is located within the Sapowet Marsh Management Area and owned and managed by RIDEM. The salt marsh and adjacent low lying agricultural fields were acquired by RIDEM in 1958 and are open to the public for active and passive recreation. Save The Bay has also begun initial phases of tidal hydrology restoration of the marsh platform and *Phragmites* management in the northern, western, southeastern and northeastern sections of the marsh between 2018 and 2023. There are significant agricultural features in the agricultural fields (e.g., stone walls, stone lined cart paths, stone berms, earthen embankments) that have created large shallow pools of standing water on the marsh platform. These embankment features extend into the brackish marsh that is now dominated by *Phragmites*. The marsh also suffers from extensive crab herbivory along the edges of the creeks and ditches and on the marsh platform.



Distichlis spicata is commonly found in a healthy coastal marsh.
Sandra Richard, Creative Commons

Existing Projects

RIDEM: Worked with Save The Bay to enhance the marsh migration corridor around the marsh by restoring the agricultural fields and converting them to warm season grass habitat, as well as removing a stone cobble berm along the northern edge of the marsh in 2017 and 2019. Best contact: Wenley Ferguson (wferguson@savebay.org)

RIDEM: Working with Save The Bay to continue to restore tidal hydrology on the marsh platform in a phased approach to allow for reduction in size and depth of the large, shallow pools, consolidation of the sediment, and revegetation. Once hydrology has been restored, invasive species management in the upper marsh will include repetitive cutting to stress the *Phragmites*, followed by selective herbicide treatment. Sections of the stone berms that line the upland edge of the marsh will be removed and woody invasive vegetation will be cut and stump treated. Seeding of native plants will be completed in areas after woody invasive removal to encourage native plant establishment. This work is being funded by an America the Beautiful grant (2024). Support is still needed for long-term monitoring. Best contact: Wenley Ferguson (wferguson@savebay.org)

Marsh RAM Assessment Data

- Elevation: Medium (0.65 NAVD88)
- Disturbance: High
- Index of Marsh Integrity: Most Degraded (4.9)
- Migration Potential: Moderate (farmland)
- High quality high marsh – estimated at 14.4% currently (26.9 acres)
- Estimated marsh loss = 12.4% (Moderate) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrow present in high densities, breeding likely but has not been confirmed. Site will be monitored as part of the American the Beautiful grant using the SHARP rapid assessment protocol. Monitoring will be completed by USFWS, Save the Bay, & RIDEM.

Recommended Management / Next Steps To Management Action

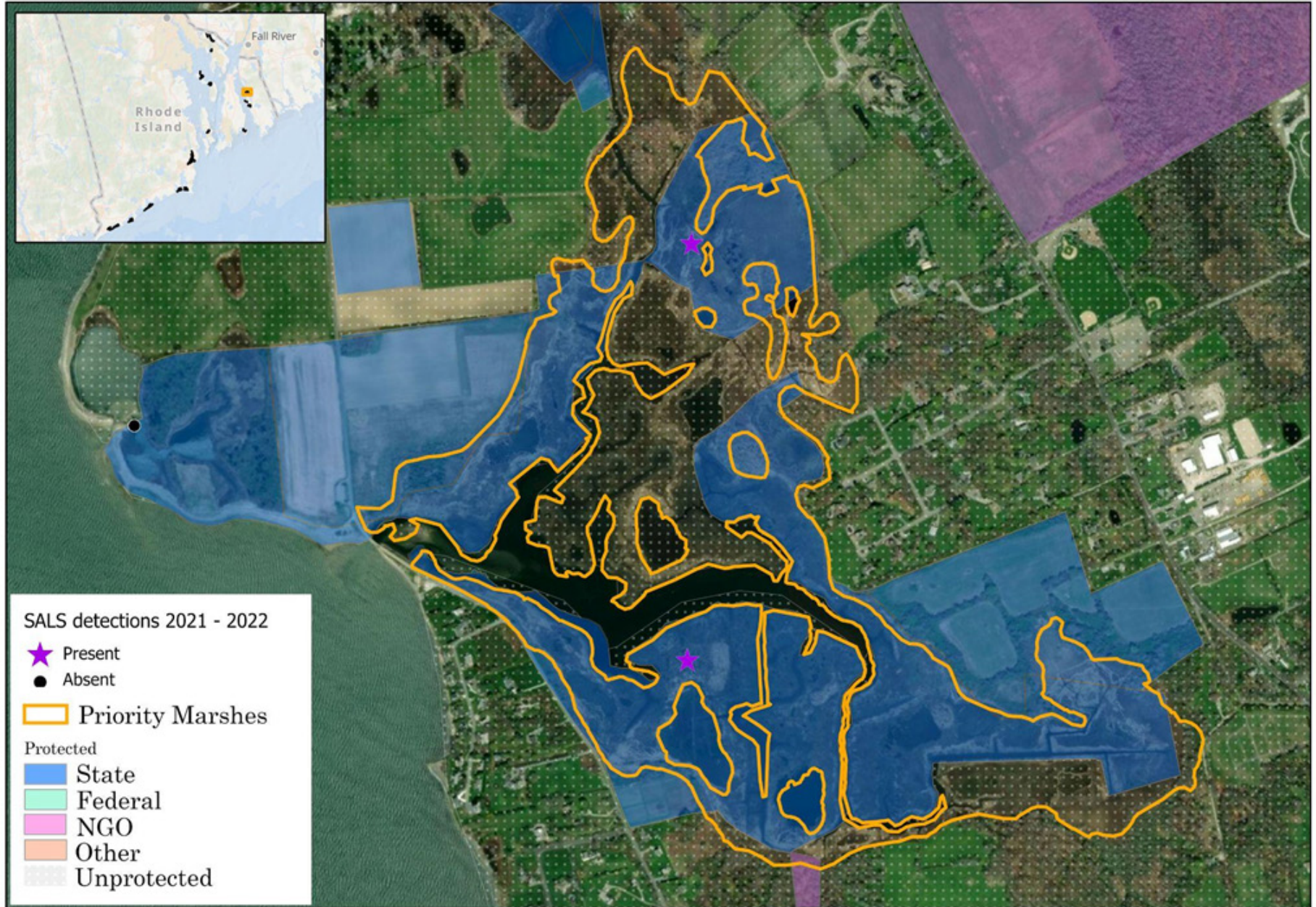
- Continue to collaborate with Town and non-profit land protection organizations (Town Open Space Commission, Tiverton Land Trust and The Nature Conservancy) to protect unprotected lands that are suitable for marsh migration.

Attributes

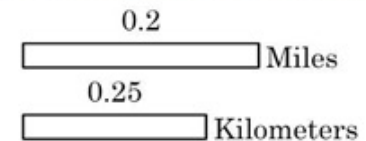
Sediment placement	N
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	Y
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	Y
Wildlife herbivory mitigation	Y
Stormwater mitigation	N
Additional ecological assessment needed	Y



Little Blue Heron can be found in Rhode Islands coastal marshes. Ray Hennessy



Seapowet Marsh Management Area



Winnapaug Pond salt marshes - 171 acres (69 ha)

Existing Conditions

Previous restoration activities include hydrological improvements through use of runnels on seven parcels beginning in 2013 of various ownership. Existing challenges include the lack of sediment supply (interruption of natural overwash events), heavily ditched marsh on south side, impounded water on marsh platform, and *Phragmites* present in dense patches on the northern side of the salt pond. Sea level fen in northwest corner of northern marsh has brackish species present (RI Natural History Survey conducted a survey of the marsh in 2017 and didn't find the rare fen species documented in prior surveys).

Existing Projects

The following actions have taken place by Save The Bay in coordination with RIDEM Mosquito Abatement Program and the property owners. Best contact for all: Wenley Ferguson (wferguson@savebay.org)

Town of Westerly: 2013 funding through USFWS and RI Coastal and Estuarine Habitat Restoration Trust Fund. Runnel installation and selective ditch maintenance in a highly impaired grid ditched marsh.

Weekapaug Foundation for Conservation: 2017-18 3 separate parcels, funding through RI Coastal and Estuarine Habitat Restoration Trust Fund. Runnel installation and selective ditch maintenance in a highly impaired grid ditched marsh. Marsh migration facilitation through drainage improvements in areas where marsh migrating into the overwash areas.

RIDEM: 2019-2021, funding through the Narragansett Bay Estuary Program. Collaborated with RIDEM DFW and Mosquito Abatement Program on restoring marsh platform tidal hydrology through installation of runnels. This marsh had limited ditching on the western side. Marsh migration facilitation through drainage improvements in areas where marsh migrating into the overwash areas.

Westerly Land Trust and Audubon Society of Rhode Island: 2019-2022, funding through the Narragansett Bay Estuary Program. Collaborated with RIDEM Mosquito Abatement Program and Westerly Land Trust and Audubon Society of Rhode Island (ARSI) on restoring marsh platform tidal hydrology through installation of runnels and maintenance of selective ditches. Marsh has a significant amount of agricultural features that have impounded water on the marsh platform and in the marsh migration corridor.



Wenley Ferguson of Save the Bay examines a small mound of peat from runnel excavation. Save the Bay

Marsh RAM Assessment Data

- Elevation: Low (0.13 NAVD88)
- Disturbance: Low
- Index of Marsh Integrity: Most Degraded (4.9)
- Migration Potential: Low
- High quality high marsh – estimated at 5.2 % currently (8 acres)
- Estimated marsh loss = 14.6% (High) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrows not recently detected (SHARP 2021/2022; SHARP 2023, eBird 2024).

Recommended Management / Next Steps To Management Action

- Explore the possibility for sediment placement in sections of grid-ditched marsh that have converted to open water during future maintenance of breachway; coordinate with US Army Corps of Engineers (ACOE), CRMC and the Town of Westerly. Facilitate marsh migration through additional land protection and additional restoration actions (project proposed with Westerly Land Trust to address agricultural embankments in a low lying area dominated by *Phragmites*).
- Improve tidal hydrology through ongoing tidal hydrology restoration of the marsh platform as they are designed and permitted (Save the Bay is working with private landowners)
- Secure permit(s) to conduct maintenance of past projects.

Attributes

Sediment placement	Y
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	Y
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	N
Wildlife herbivory mitigation	Y
Stormwater mitigation	Y
Additional ecological assessment needed	Y



Winnapaug



0.35 Miles

0.5 Kilometers

Narrow River – 205 acres (83 ha)

Existing Conditions

Most of the Narrow River marsh is owned by USFWS as part of John H. Chafee NWR. The Narrow River Land Trust and Audubon Society of Rhode Island own another 62 acres of marsh. Agricultural features and accelerated sea level rise have caused significant impacts to these marshes, including impounded water areas. Challenges at this site include limited migration potential due to steep elevation gradients in many areas.



Salt marsh at Narrow River. Wenley Ferguson/Save the Bay

Existing Projects

USFWS: 15-acre marsh creation / elevation enhancement project conducted by USFWS (2017-2019). Best contact Nick Ernst (nick_ernst@fws.gov)

USFWS: Hydrology restoration and *Phragmites* and non-native woody vegetation management is planned in marsh migration areas through NFWF America the Beautiful funded proposal (2024). Additionally, project partners will carry out activities such as soil decompaction, tidal hydrology restoration, and vegetative planting at the 2017 elevation enhancement project site (see above). Best contact Nick Earnst (nick_earnst@fws.gov)

Marsh RAM Assessment Data (conducted in 2021 at ASRI Narrows, Starr Drive, and Stedman marshes).

- Elevation: Unknown
- Disturbance: Varies from Low (ASRI, Stedman) to High (Starr Drive)
- Index of Marsh Integrity: Varies from Least Degraded (ASRI) to Most Degraded (Starr Dr); Intermediately Degraded on average (6.2)
- Migration Potential: Moderate (Stedman) to High (ASRI, Starr Dr)
- High quality high marsh – estimated at 12.6% on average (26 acres)
- Estimated marsh loss = 3.0 % (Low) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrows detected and confirmed breeding at this site. Evaluation of bird response to restoration is being monitored by SHARP using rapid assessment protocol at runnel and sediment placement areas in 2023. Saltmarsh Sparrows are starting to use the revegetated edges. USFWS conducted EPA marsh wide EPA walking transects in 2023 and detected seaside sparrows on the ASRI salt marsh (Ernst, pers, obs).

Recommended Management / Next Steps To Management Action

- Explore the possibility for sediment placement in sections of grid-ditched marsh that have subsided.
- Remove historical embankment / dam on west side of river to facilitate marsh migration on ASRI and Narrow River Land Trust parcels.

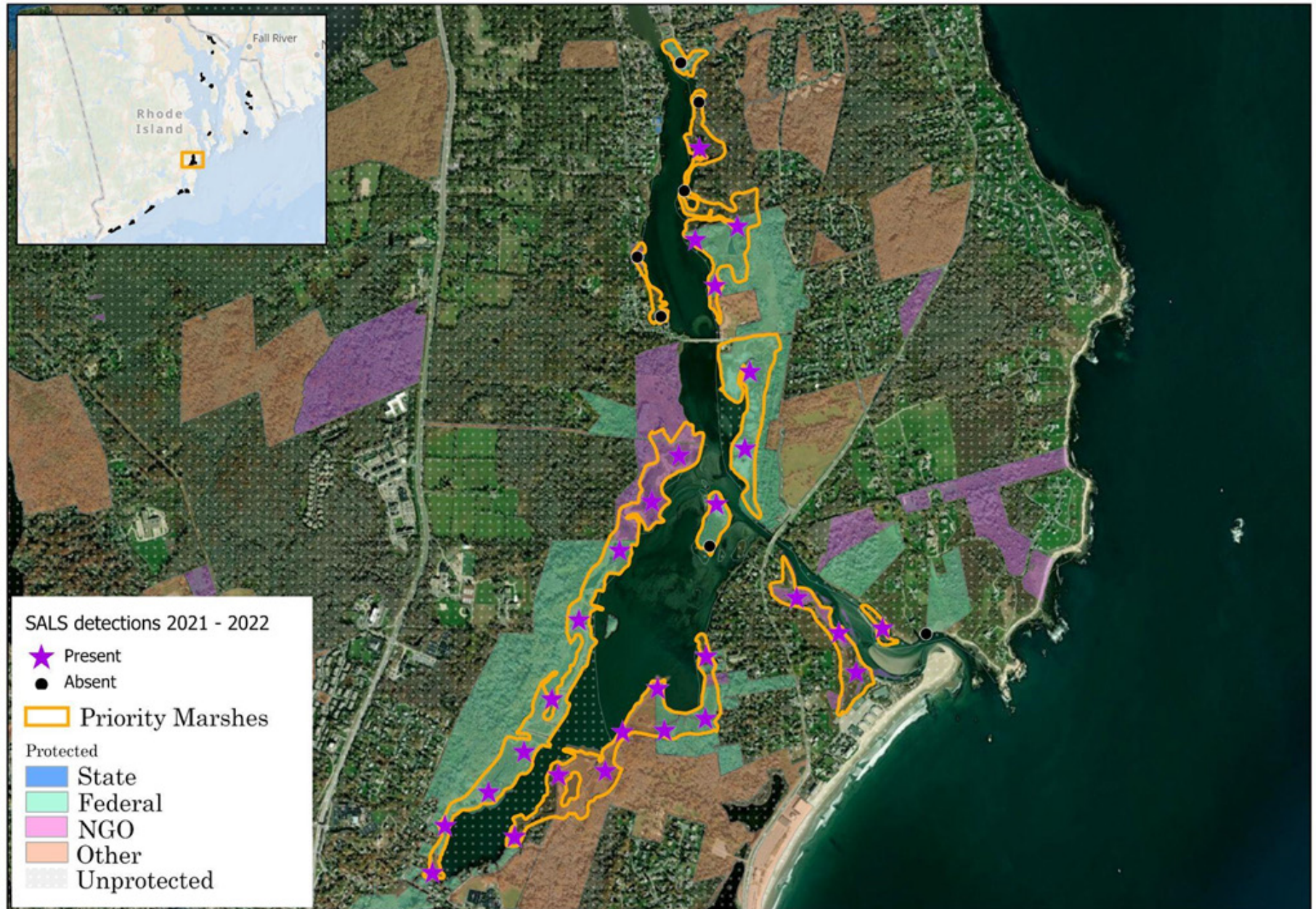
- Facilitate marsh migration at Town-owned property east of Middlebridge by moving the mow line back, managing *Phragmites* at freshwater input site, and potential movement of access road.
- Evaluate potential for sediment placement at sites downstream of Sprague Bridge.
- Initiate steps to correct hypersaline soils in previous sediment placement sites and revegetate areas by planting and through natural colonization.
- Improve hydrology through use of runnels, including maintenance of existing runnels / drainage features; additional sites being assessed including the Town owned parcel along Pettaquamscutt Cove managed by the Friends of Canonchet Farm.
- Further address impounded water through stormwater management on ASRI parcels downstream of Sprague Bridge; high potential for restoration due to land ownership and existing stewardship habits of landowners (Narrow River Land Trust, ASRI, the Town of Narragansett and USFWS).
- Continue adaptive management at sediment placement site initiated in 2019, 2022, & 2023.
- Rerun SHARP rapid assessment protocol in 2025.

Attributes

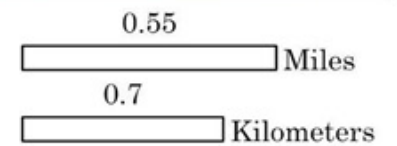
Sediment placement	Y
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	N
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	Y
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	Y
Living shoreline development	N
Wildlife herbivory mitigation	Y
Stormwater mitigation	Y
Additional ecological assessment needed	Y



Salt marshes in Rhode Island provide nursery habitat for many recreational fisheries species. Eric Heupel, Creative Commons



Narrow River



Quonochontaug (Quonny) – 98 acres (40 ha)

Existing Conditions

This is a back barrier salt marsh on a salt pond with a constructed breachway which was built in the 1960s. This breachway has altered the hydrology of the marsh in many ways including fill, redirection of hydrology, etc. This resulted in an altered tidal regime and disconnected sections of the marsh from one another. There are also wide, parallel ditches which have caused large subsidence basins to form over time due to standing water.

Existing Projects

Coastal Resources Management Council: Worked with RIDEM DFW, Coastal Resources Management Council, Save The Bay, USFWS, National Oceanic Atmospheric Administration, Environmental Protection Agency (EPA), Narragansett Bay Estuarine Research Reserve, the University of Rhode Island (URI) and the Town of Charlestown to complete a sediment placement east and west of the breachway (2019-20), funded by NOAA and a Hurricane Sandy grant. Save The Bay then conducted restoration of tidal hydrology through creation of creeks, salt marsh plantings, and *Phragmites* management via hand pulling and pre- and post-restoration monitoring. Adaptive management of hydrology and select plantings is ongoing. Best contact: Wenley Ferguson (wferguson@savebay.org)

Save The Bay: Restoration of the marsh platform tidal hydrology on a highly ditched marsh owned by Charlestown Land Trust and the Dunns Corner Fire District east of the sediment placement project (2021-2023). Best contact: Wenley Ferguson (wferguson@savebay.org)

Marsh RAM Assessment Data

- Elevation: Low (0.23 NAVD88)
- Disturbance: High
- Index of Marsh Integrity: Most degraded (4.6)
- Migration Potential: High
- High quality high marsh – 3.5% (3 acres – before recent sediment placement)
- Estimated marsh loss = 20.4% (High) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrows detected at this site (2021/2022; SHARP 2023). Bird response to restoration activities being monitored by SHARP.

Recommended Management / Next Steps To Management Action

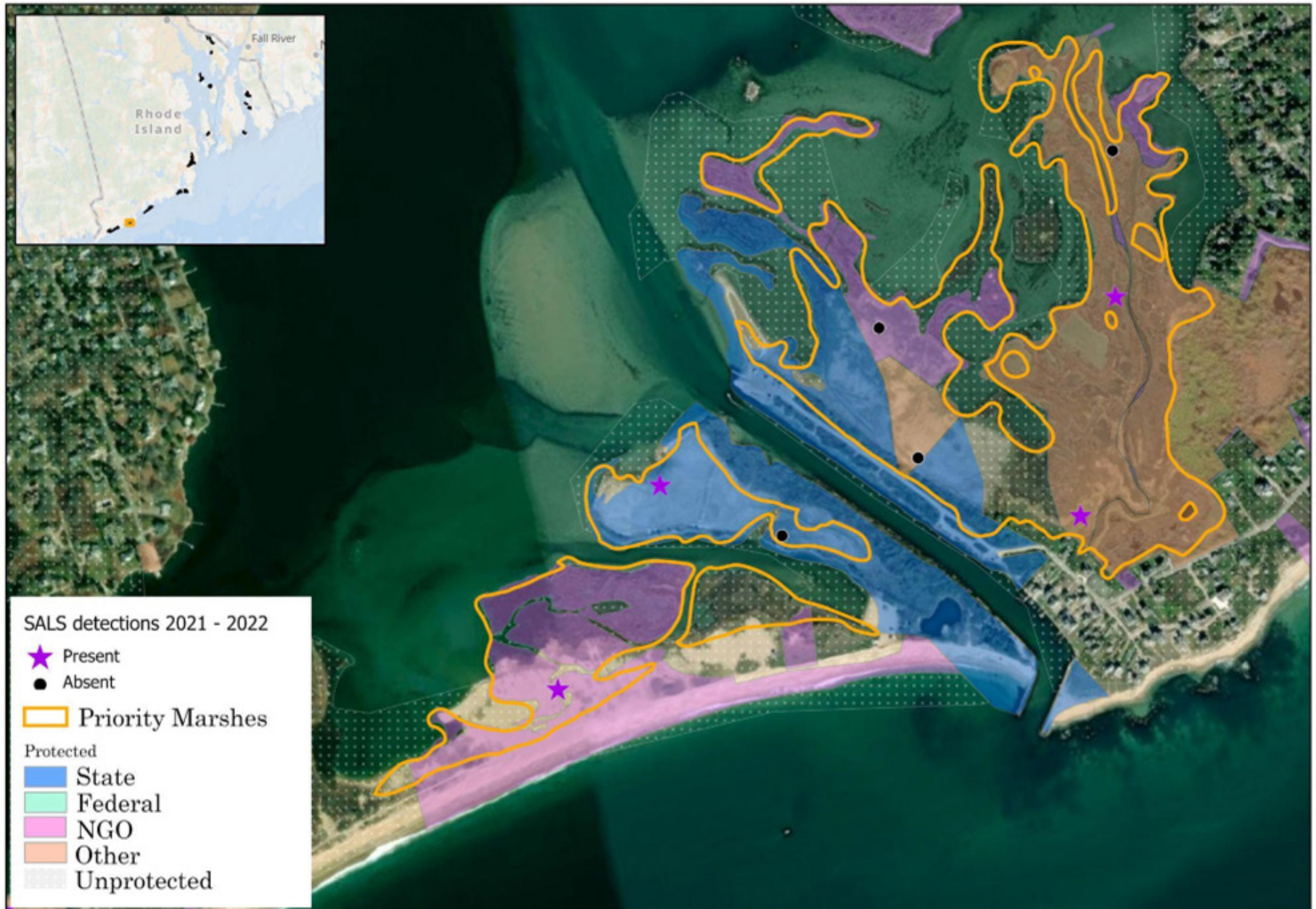
- Continue to adaptively manage and monitor elevation enhancement project to encourage revegetation.
- Assess other parcels on the backbarrier beach for tidal hydrology restoration.
- Develop a maintenance permit for work on the Charlestown Land Trust parcel. Assess future land protection for marsh migration; marsh parcels around pond perimeter that also have enhancement potential through addressing perched culverts, ditch spoils and impacts from past agricultural activities (ASRI and private parcels).
- Evaluate future sediment placement opportunity during planned maintenance of the breachway channel by the Town of Charlestown or the State of RI.

Attributes

Sediment placement	Y
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	Y
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	N
Wildlife herbivory mitigation	Y
Stormwater mitigation	Y
Additional ecological assessment needed	Y



Biologists measure vegetation at a former saltmarsh sparrow nest site. Ben Gaspar



Quonochontaug



0.15 Miles

0.2 Kilometers

Sachuest - 50 acres (20 ha)

Existing Conditions

Sachuest Marsh (Middletown) is a highly manipulated salt marsh owned by USFWS (Sachuest NWR) and the Norman Bird Sanctuary. The outlet of this marsh was moved in the late 1800s when a water supply was created in the former brackish and freshwater wetlands adjacent to the marsh. The marsh has suffered from flooding due to the manmade outlet that regularly became clogged with beach sand. A section of the marsh was historically used as a landfill by the Navy and the town. USFWS has conducted multiple restoration projects over the past 18 years to improve marsh health, including resizing a culvert, removing fill from the former landfill area and installing a new outlet to Narragansett Bay, and conducting an elevation enhancement project at part of the site in 2016. The marsh has been so highly modified that restoring the marsh to previous hydrology is very challenging. Existing conditions now include excessive freshwater input from diverted streams, impounded water on the marsh platform due to the combination of a bisecting road, altered flow paths (a result of previous attempts at restoration), and channels potentially restricting tidal flow and impeding drainage of freshwater during rain events (Maidford River). Engaged partners include USFWS, Norman Bird Sanctuary, and Save the Bay.



Sediment deposition on the marsh platform can help coastal marshes keep up with sea level rise. USFWS

Existing Projects

USFWS: Worked with NOAA to restore tidal flow under the connector road to restore marsh on the other side of the road through addition of 2 culverts and a ditch system in 1998 (a.k.a. the Turkey Foot; Roman et al. 2002). Best contact: Kenny Raposa (kenneth.raposa@dem.ri.gov)

USFWS: Worked to remove contents of landfill on refuge property and constructed an outlet with Ducks Unlimited (2001). Best contact: Nick Ernst (nick_ernst@fws.gov)

USFWS: Worked with Save The Bay on a tidal hydrology restoration of the marsh platform including runnels and selective ditch maintenance (2015 and 2016) on USFWS and Norman Bird Sanctuary lands. Best contact: Nick Ernst (nick_ernst@fws.gov), Ben Gaspar (bgaspar@savebay.org)

USFWS: Worked with Save the Bay and The Nature Conservancy on a sediment deposition project from an upland source of sediment to restore elevation of marsh saltmarsh sparrow nesting habitat on the eastern side of site (2016). Best contact: Nick Ernst (nick_ernst@fws.gov), Ben Gaspar (bgaspar@savebay.org)

USFWS: Connector Road culvert upgraded to accommodate the increased amount of water from diverted Maidford River and north marsh to the outlet installed as part of the landfill removal (2018). Best contact: Nick Ernst (nick_ernst@fws.gov), Ben Gaspar (bgaspar@savebay.org)

Save the Bay: Working with RIDEM (fiscal agent), USFWS, and Norman Bird Sanctuary Project partners will restore hydrology on the marsh platform that has been impacted by the realigned creek and ditching activities. Partners will also restore dune and coastal shrub habitat in the former manmade outlet to prevent sand overwash into the creek during coastal storm events. On the Norman Bird Sanctuary owned section of the marsh, runnels will be installed to drain impounded freshwater that enters the marsh from an adjacent roadway and creates conditions favorable for *Phragmites*. At the previous 11-acre elevation enhancement project area, activities will include regrading of creeks and planting of native vegetation. This project is supported by a NFWF America the Beautiful grant to RIDEM. Implementation and monitoring of vegetation, water level and saltmarsh sparrow are funded, however support is still needed for long-term monitoring. Best Contact: Wenley Ferguson (wferguson@savebay.org)

Marsh RAM Assessment Data

- Elevation: Moderate (0.5 NAVD88)
- Index of Marsh Integrity: Least degraded (7.8)
- Migration Potential: High (salt shrub = 58%)
- High quality high marsh: estimated at 8% (4 acres)
- Estimated marsh loss = unknown

Existing Sparrow Data

Saltmarsh Sparrow detected and confirmed breeding at this site (2021/2022; SHARP 2023). SHARP rapid assessment protocol conducted in 2023 at two points post restoration. USFWS also conducted marsh wide EPA walking transects in 2023.

Recommended Management / Next Steps To Management Action

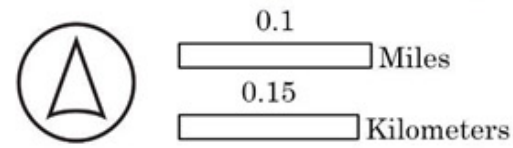
- Resurvey bird population to assess Saltmarsh Sparrow reproduction at this site post-restoration.
- Assess removal of the landfill to facilitate marsh migration.
- Maintain within-marsh adaptive management through maintenance of runnels and *Phragmites* control.
- Work with Norman Bird Sanctuary to evaluate potential for facilitated marsh migration into *Phragmites*-dominated marsh.

Attributes

Sediment placement	Y
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	Y
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	N
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	N
Wildlife herbivory mitigation	Y
Stormwater mitigation	Y
Additional ecological assessment needed	Y



Sachuest



Jacob's Point (upper and lower) – 41 acres (17 ha)

Existing Conditions

Jacob's Point is owned by the Warren Land Trust. The brackish section of the marsh is owned by Audubon Society of Rhode Island and is dominated by *Phragmites*. Existing challenges include adjacent railroad bed (East Bay Bikepath) preventing marsh migration. Development in the watershed has increased the percentage of impervious surface and stormwater runoff allowing for expansion of *Phragmites* over the past 30 years in the unrestricted section of the marsh. Northern marsh has a stand of native *Phragmites* bordered by non-native *Phragmites*.

Existing Projects

Save The Bay: Worked with NRCS with funding from NOAA and the RI Coastal and Estuarine Habitat Restoration Trust Fund in 2009 to replace collapsed stone culverts under a former dirt road. In 2015, Save The Bay in coordination with the Warren Land Trust installed shallow runnels on both sides of the road feature to restore tidal hydrology on the marsh platform impacted by agricultural features including agricultural embankments and ditch spoils that impounded water on the marsh platform. Best contact: Wenley Ferguson (wferguson@savebay.org)

Warren Land Trust: Working with ASRI to restore the tidal hydrology of the marsh in the brackish section of the marsh owned by Audubon. Save The Bay has developed a restoration plan and will be submitting permits in 2024 to conduct the work and will be collaborating with the researchers from the Saltmarsh Sparrow Research Initiative on the location of the microtopography from the excavated peat. The project will include addressing the impounded water in the *Phragmites* dominated section of the marsh and trying to improve the conditions for marsh migration. This work is funded through an NRCS EQIP agreement. No more support is needed at this time. Best contact: Wenley Ferguson (wferguson@savebay.org)

Marsh RAM Assessment Data

- Elevation: High (0.70 NAVD88)
- Disturbance: High
- Index of Marsh Integrity: Least degraded (7.9)
- Migration Potential: Low
- High quality high marsh: 39% (16 acres)
- Estimated marsh loss (outer marsh) = 2.5% (Low) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrow detected in high densities and confirmed breeding at this site (SHARP 2023; Reinert et al. 2021)/The Saltmarsh Sparrow Research Initiative (<https://www.salsri.org/>) is active at this location and monitors the breeding population of saltmarsh sparrows at this site annually.

Recommended Management / Next Steps To Management Action

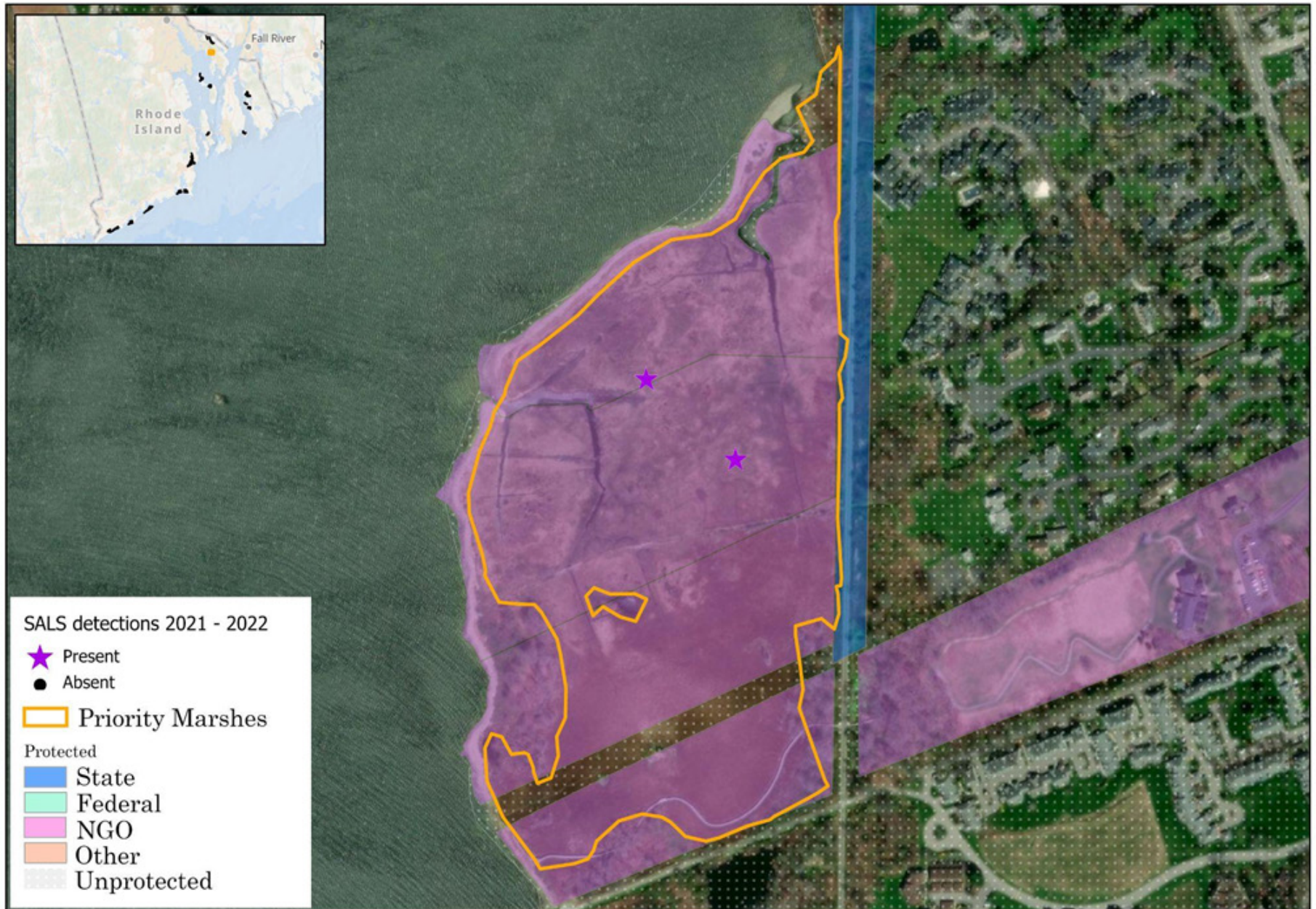
- Evaluate conservation actions through the ongoing work of the SSRI and other collaborators.
- Additional outreach will occur to the condominium associations on the management strategies for to reduce stormwater inputs to the marsh by encouraging infiltration and pavement removal.

Attributes

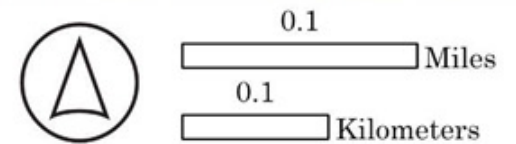
Sediment placement	N
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	N
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	Y
Wildlife herbivory mitigation	Y
Stormwater mitigation	N
Additional ecological assessment needed	Y

A Saltmarsh Sparrow explores mudflat during low tide.
Ray Hennessy





Jacob's point



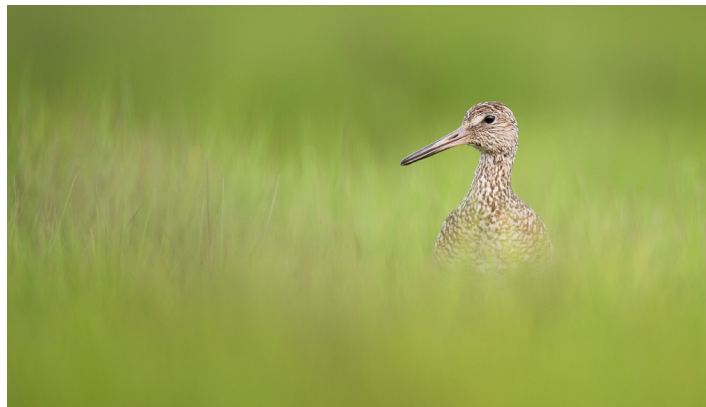
Palmer River East- 126 acres (51 ha)

Existing Conditions

The east side of the Palmer River is bordered by this salt marsh and low lying agricultural fields. It has been impaired by agricultural features in the marsh and migration corridor and three utility corridors, a power line, an underground gas line and an underground abandoned water line.

Land protection actions for marsh migration began in 2017 with NRCS, Save The Bay and the Warren Land Trust along this section of the Warren River. Two parcels have been

protected by NRCS Wetlands Reserve Easements, the Sowams Preserve and the Highlander School parcels. Each parcel includes salt marsh and adjacent low lying agricultural land and forested wetland. Additional agriculture easements with NRCS in progress that may provide for migration facilitation. Further, the Sowams parcel was donated to the Warren Land Trust after the easement was secured.



Eastern Willets are shorebirds but breed regularly in tidal marshes. Ray Hennessy

Existing Projects

Save The Bay: working with Warren Land Trust to conduct restoration work since 2022 including tidal hydrology restoration of the marsh platform and woody invasive removal and replanting of native grasses and pollinator species in the low lying agricultural fields. Drainage features have been installed into areas of dense *Phragmites* and sections of stone berms/walls have been removed. Repetitive cutting of *Phragmites* during the growing season is being conducted to reduce its height and vigor. Support is still needed for long-term monitoring. Best contact: Wenley Ferguson (wferguson@savebay.org)

Save The Bay: At the Highlander Wetlands Reserve Easement parcel, permits have been prepared to restore marsh platform tidal hydrology and to facilitate marsh migration. Support is still needed for long-term monitoring. Best contact: Wenley Ferguson (wferguson@savebay.org)

Save The Bay: At the Haile Preserve, donated to the Warren Land Trust, the Land Trust is working with Save The Bay on a plan to restore marsh platform hydrology impacted by legacy agricultural impacts and the utility lines. Partners are also addressing excessive stormwater inputs to the brackish marsh from a dysfunctional retention pond. Save The Bay secured funds from the RI Coastal and Estuarine Habitat Restoration Trust Fund to conduct the restoration work. Support is still needed for long-term monitoring. Best contact: Wenley Ferguson (wferguson@savebay.org)

Marsh RAM Assessment Data

- Elevation: Medium (0.56 NAVD88)
- Disturbance: Moderate
- Index of Marsh Integrity: Intermediately degraded (6.0)
- Migration Potential: High
- High quality high marsh: 36% (45 acres)
- Estimated marsh loss = 11.1% (Moderate) between 1972 and 2020

Existing Sparrow Data

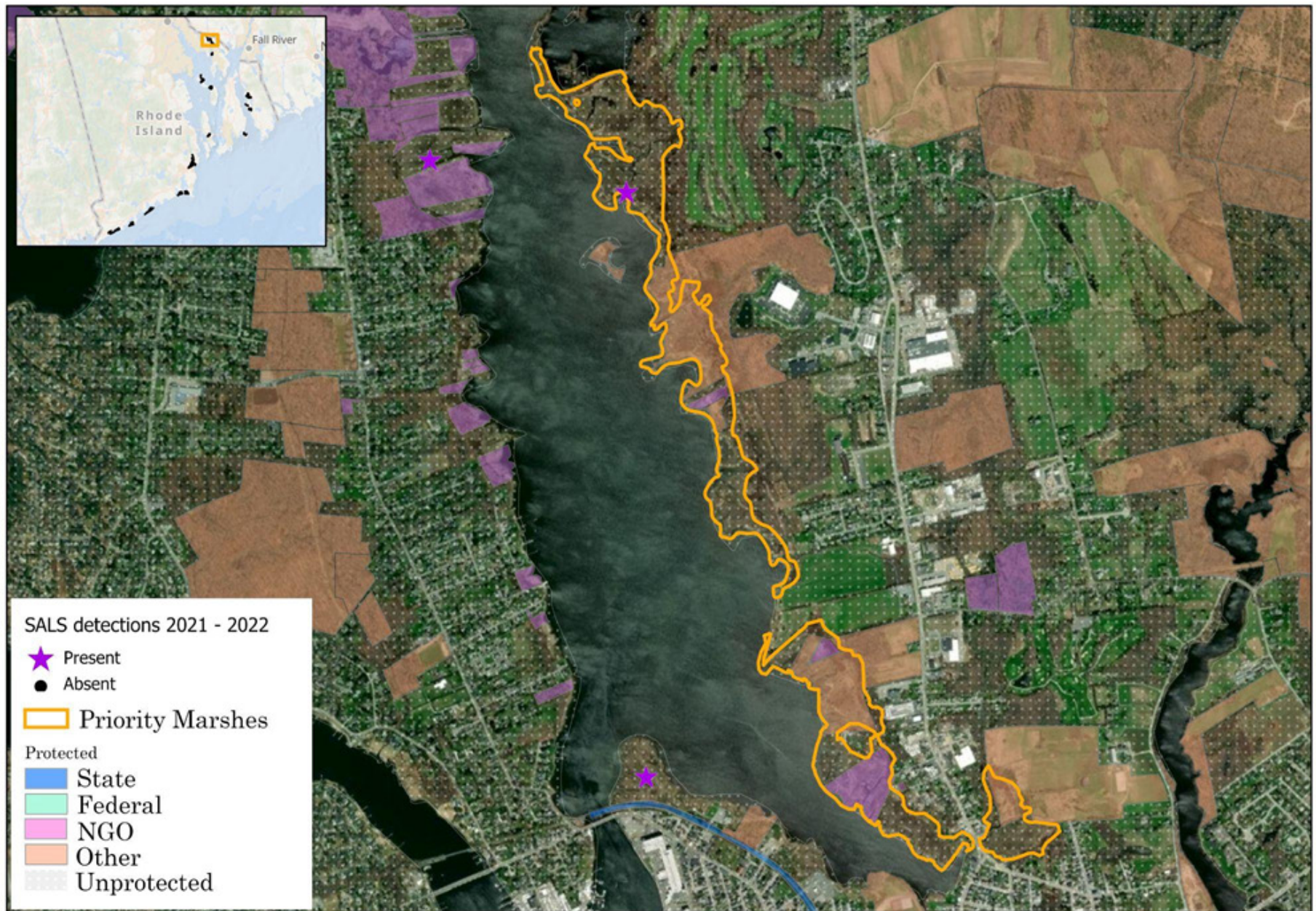
Saltmarsh sparrows detected at this site, but breeding has not been confirmed (2021/2022; SHARP 2023)

Recommended Management / Next Steps To Management Action

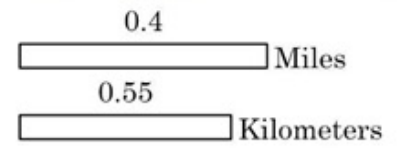
- Survey parcel for bird communities
- Continue to conduct tidal hydrology restoration actions and monitor results (STB) Assess hydrology and vegetation communities (assessment planned for fall 2021).
- Assess the water line's impact on the marsh hydrology at the Sowams Preserve. Discuss removal of sections of it with Bristol County Water Authority.
- Continue to conduct outreach and advocate for future land protection.
- Manage stormwater runoff in coordination with the Town of Warren from surrounding development into failed retention basin to reduce discharge onto marsh, minimize *Phragmites* expansion, and eliminate excess water in marsh migration corridor. (Haile Preserve).

Attributes

Sediment placement	N
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	Y
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	Y
Wildlife herbivory mitigation	Y
Stormwater mitigation	N
Additional ecological assessment needed	Y



Belcher's Cove and Palmer River



Marsh Meadows / Round Marsh, Jamestown – 68 acres (28 ha)

Existing Conditions

The east side of the Palmer River is bordered by this salt marsh and low lying agricultural fields. This majority of this site has high marsh vegetation but it is getting outcompeted by *Phragmites*. There is a focus area on the eastern side of the marsh. A major road extends across the marsh owned by the RI Department of Transportation. The road is proposed for elevation due to frequent tidal flooding. It is bordered by ag land (has easement) and a golf course on the east side.



Salt marsh adjacent to Palmer River. Creative Commons

There is also a red maple swamp complex adjoining the marsh. Existing challenges at this site include high nutrient input from the nearby golf course and agricultural activities in the watershed, ditching, and high rates of erosion partially due to fiddler crabs.

Existing Projects

Save The Bay: Worked with the Town of Jamestown and ASRI to complete a tidal hydrology restoration of the marsh platform through installation of runnels and maintenance of selective ditches in 2015 and 2016 to address impounded water on the marsh platform and expansion of *Phragmites*. This project is complete and was supported through funding from RI Coastal and Estuarine Habitat Restoration Trust Fund and NRCS. Best contact: Wenley Ferguson (wferguson@savebay.org)

Save The Bay: Conceptual design complete for work on the west side of the causeway to repair hydrology. Support is needed for design, mermitting, implementation, and monitoring. Best contact: Wenley Ferguson (wferguson@savebay.org)

Marsh RAM Assessment Data

- Elevation: Medium (0.54 NAVD88)
- Disturbance: Moderate
- Index of Marsh Integrity: Intermediately degraded (6.1)
- Migration Potential: High
- High quality high marsh: estimated at 16% (11 acres)
- Estimated marsh loss = 7.1% (Moderate) between 1972 and 2020

Existing Sparrow Data

Saltmarsh Sparrow detected (eBird 2023) but breeding has not been confirmed.

Recommended Management / Next Steps To Management Action

- Fully survey parcels for bird communities.
- Facilitate marsh migration through the removal of stone walls and berms on the low-lying agricultural field and red maple swamp.

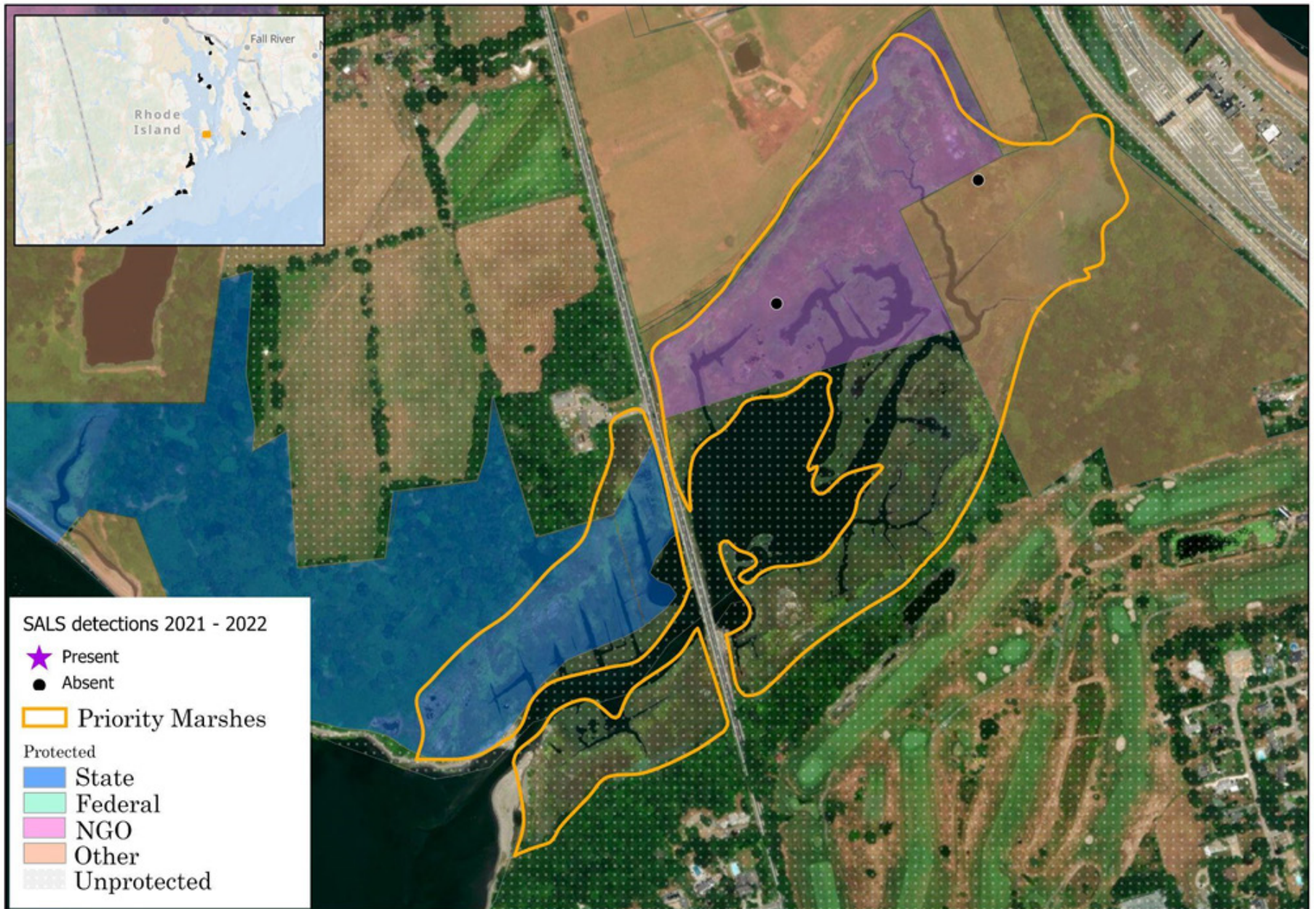
- Develop restoration plan for western side of marsh owned by Town and interested private landowners.
- Address nutrient input from the golf course.
- Develop and implement a 10-year maintenance permit for hydrology restoration and *Phragmites* management on Town and ASRI-owned parcel.

Attributes

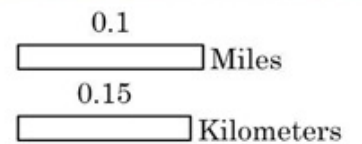
Sediment placement	N
Repair hydrology - runnelling / channel creation	Y
Repair hydrology - tidal restriction mitigation	Y
Repair hydrology - address ditch plugs	N
Repair hydrology - ditch remediation	N
Repair hydrology - berm, embankment, or levee modification	Y
Tidal marsh land acquisition / protection	Y
Land acquisition / protection for marsh migration	Y
Facilitated marsh migration	Y
Invasive plant species mitigation (<i>Phragmites australis</i> , etc.)	N
Living shoreline development	Y
Wildlife herbivory mitigation	Y
Stormwater mitigation	Y
Additional ecological assessment needed	Y



A fiddler crab emerges from a burrow in the bank of a marsh. Beth Fishkind, Creative Commons



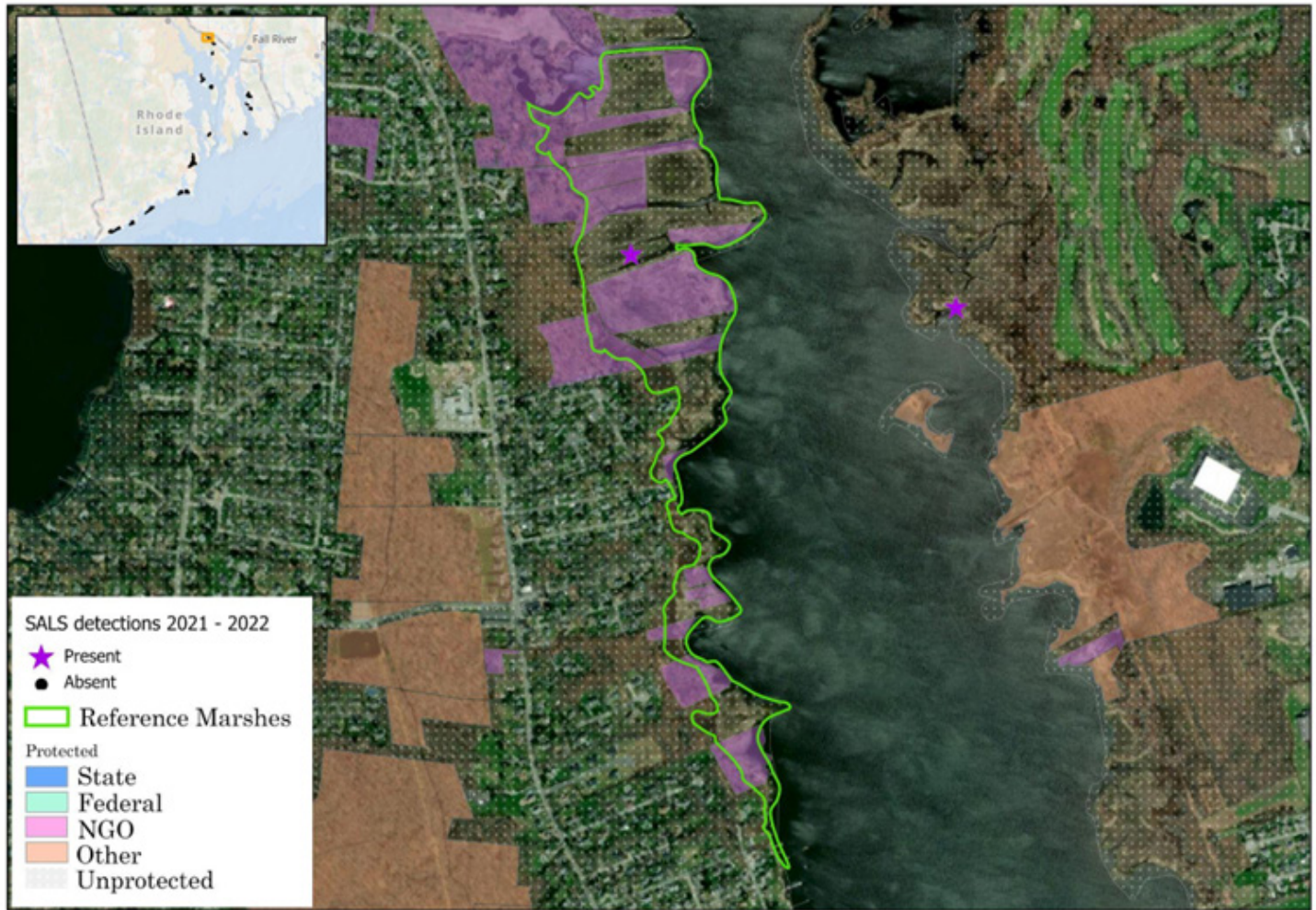
Marsh Meadows / Round Marsh,
Jamestown



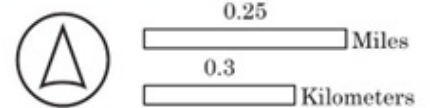
Reference Marshes

The state tidal marsh working group established these reference sites as part of the state-wide monitoring network. Annually data is collected on elevation, vegetation, and other metrics to track progress and provide comparison for local restoration sites.

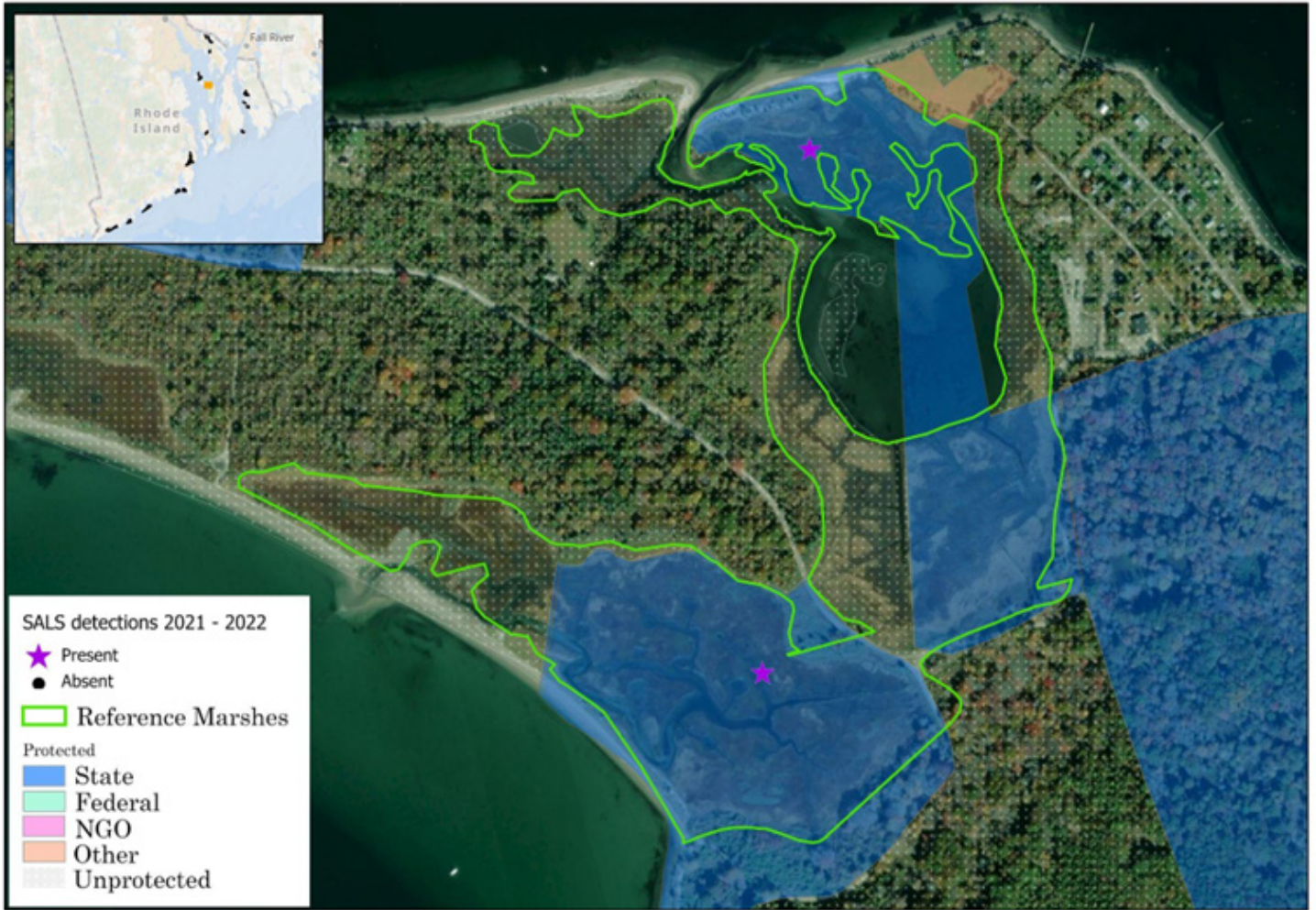
Johannis Farm – 71 acres (29 ha)



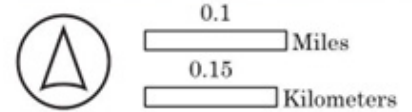
Johannis Farm



Nag Marsh– 79 acres (32 ha)



Nag Marsh



Honorable Mention

The following marshes were identified by the partner group as important to keep in mind for future work but either needing additional assessment before any work can be planned, or not a top priority for the Saltmarsh Sparrow specifically.

Fogland - 94 acres (38 ha)

Best Practices For Marsh Management For Saltmarsh Sparrow

Any management actions should follow best practices to not irreparably harm existing Saltmarsh Sparrow habitat. Necessary precautions include:

- Consulting local land managers and owners before any monitoring or management action is planned
- Initially limit management impact to a small portion of the high marsh (e.g. <25%)
- Conduct all management action outside the window of active saltmarsh sparrow breeding season (avoid May – September annually)

Monitoring

Any habitat restoration efforts should be monitored both pre-construction (2+ years before implementation) and post-construction (up to 10 years after implementation is complete) to measure change and determine whether vegetation goals and elevations have been met. This monitoring will ideally include an array of ecological metrics specific to tidal marshes in Maine and will be integral to build upon the existing knowledge base for salt marsh restoration in this area. The ACJV, SHARP, and Ducks Unlimited recently released [recommendations for monitoring saltmarsh sparrows at restoration sites](#) which includes a decision tree for deciding timelines, level and type of monitoring, and spatial distribution of data collection locations.

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Release the Sparrow! Ray Hennessy

Contact & Citation Information

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Marsh RAM assessment data definitions:

- Elevation: median elevation in relation to NADV88
- Disturbance: Characterization of past human disturbance at the site (e.g. ditching, tidal restrictions, etc.)
- Index of Marsh Integrity: IMI scores are relative to a 0-10 scale, where scores approaching 10 indicate no observed indications of disturbance or marsh degradation, and scores approaching zero indicate observation of multiple, strong indications of disturbance and degradation - score is highly correlated with presence of meadow high marsh.
- Migration Potential: characterizes the relative potential of land abutting the wetland to support landward migration, a combination of migration area and replacement ratio (migration area relative to marsh patch area)
- High quality high marsh: proportion of marsh characterized as meadow high marsh (consisting of high marsh species adapted to infrequent flooding)
- Marsh loss: (Kutcher 2024) loss of vegetated marsh area from 1972 to 2020 estimated using aerial

photo interpretation. Higher loss values are indicative of greater vulnerability.

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