Saltmarsh Restoration Priorities for the Saltmarsh Sparrow

Virginia

Last Updated August 2023

Saltmarsh Sparrow. Ray Hennessy

Saltmarsh Sparrow. Ray Hennessy

Goal Statement

The Saltmarsh Sparrow (*Ammospiza caudacuta*) is a Species of Greatest Conservation Need in Virginia. This document is intended to provide those interested in the conservation of salt marsh and Saltmarsh Sparrows with information that will help with conservation implementation. It identifies areas containing salt marshes that are suitable for restoration, enhancement, and/or conservation actions designed to provide persistent, high-quality Saltmarsh Sparrow nesting habitat over the next 10 years and to enhance long-term salt marsh resilience. In most cases, ground-truthing will be required to assess or confirm site characteristics (e.g., hydrological dynamics) prior to the development of restoration approaches and eventual implementation.

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 global population goal of 25,000 individuals. This goal is lower than published 2011/2012 population estimates (Wiest et al. 2019) to account for projected impacts of sea-level rise on the species' nesting success (Field et al. 2017). Virginia's breeding Saltmarsh Sparrow population is estimated to be 7.0% (n = 1,753 individuals) of the global population (n = 25,000 individuals). Habitat goals listed in the table below are the minimum acres of habitat (defined below) needed to support the state's population goal.

	2011/12 Population Estimate*	Percent of Global Population	Population Goal (Individuals)	2030 high marsh goals (ac)**	Total tidal marsh needed to meet 2030 high marsh goals (ac)***	2069 high marsh goals (ac)**	Total tidal marsh needed to meet 2069 high marsh goals (ac)***
Virginia	4,200 (+/-2,600)	7.0%	1,753	2,954	8,206	11,115	30,875
Regional	60,000		25,000	22,943	63,731	79,605	220,000

**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).*

This document focuses on known breeding Saltmarsh Sparrow habitat which is limited to the seaside and eastern Chesapeake Bay marshes located primarily in Accomack County. These marshes are currently considered the southern extent of the Saltmarsh Sparrow breeding range. A future complementary document will outline opportunities for marsh restoration to support nonbreeding populations of this species beyond the marshes described herein.

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 with the following characteristics:

- High marsh patches with low flooding frequency and provides a window of at least 23 days with very limited flooding.
- Extensive and dense S. patens vegetation with a deep, well-developed thatch layer at times complemented by short to intermediate S. alterniflora.
- The highest quality high marsh habitat is most often found in the least modified marshes, such as those without ditching, or are free of tidal restrictions like road crossings.

High marsh habitat in Virginia. Chesapeake Bay Program

Marsh Identification and Prioritization Process

Marsh parcels were identified using the ACJV Saltmarsh Sparrow Habitat Prioritization Tool (top 10%; ACJV 2020). These parcels were then reviewed and refined by a group of non-governmental, academic, state, and federal partners in 2021, and again in 2023. Summaries of selected marshes were drafted, informed, and finalized by this working group (see Acknowledgements for full partner list). Lastly, the working group sorted the selected marshes into the following subcategories to further refine the state's prioritization process.

Priority Marshes: Marshes prioritized for ongoing restoration planning and implementation to support the Saltmarsh Sparrow in Virginia.

Honorable Mention: Marshes identified by the partner group as important to keep in mind for future work.

Please see the overview map for all marshes identified in the state. 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 defined restoration/enhancement techniques are mentioned repeatedly throughout this document, including the Attributes section for each marsh summary, to provide users of this plan with a menu of appropriate management options at selected marshes. ***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 of berms or embankments affecting hydrology of marsh platform.

Land acquisition / protection
Purchase or easement of land to protect, including for eventual marsh migration.

Facilitated marsh migration
Active assistance of marsh migration through modification of the environment.

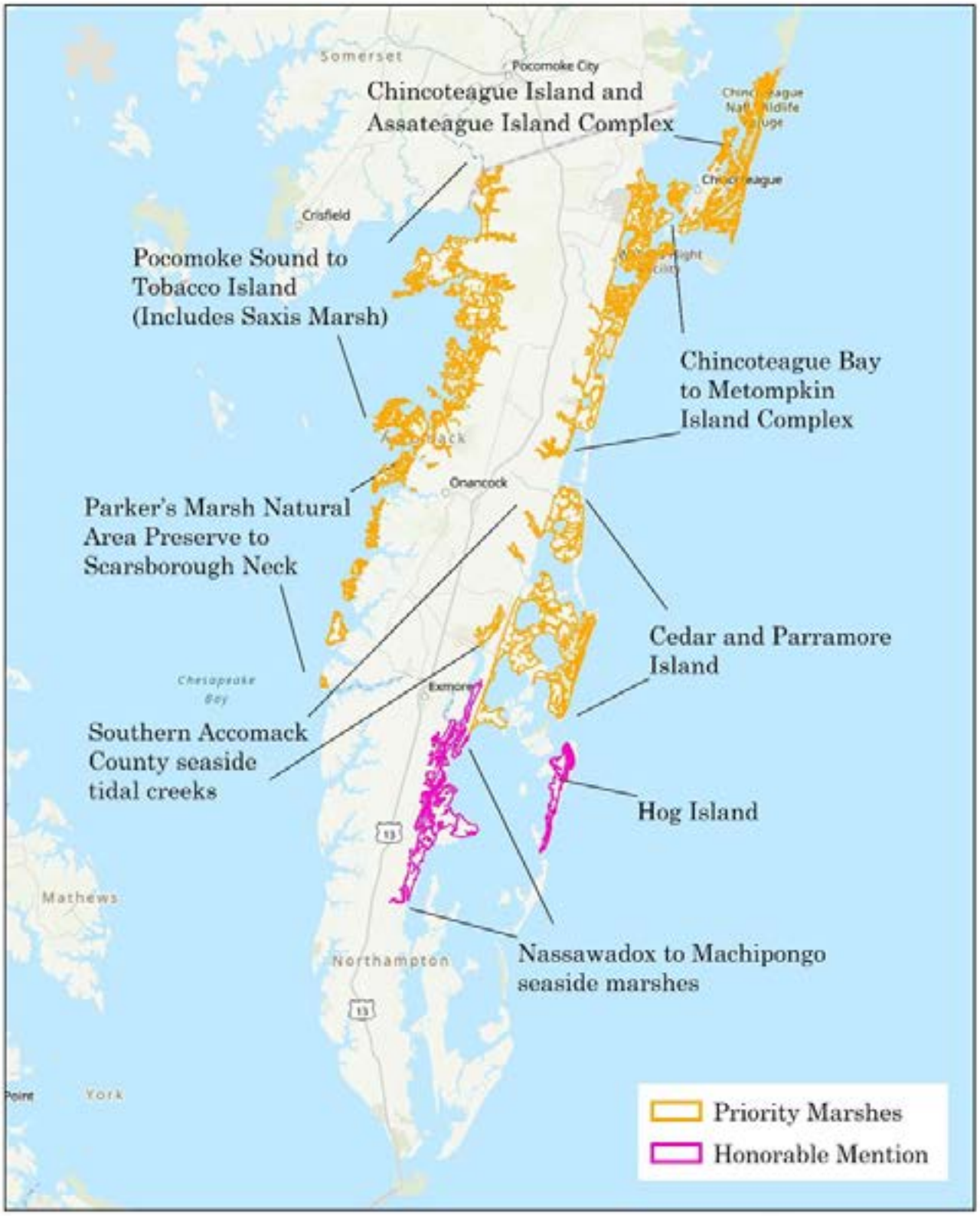
Invasive plant species mitigation (*Phragmites australis,* etc.)
Removal or mitigation of invasive plants.

Living shoreline development
Development of nature-based features to promote shoreline stabilization.

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

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

Overview Map Of Priority And Honorable Mention Marshes In Virginia



Priority Marshes

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

Chincoteague Island and Assateague Island Complex - 4,755 acres (1,924 ha)

Existing Conditions

Much of the salt marsh restoration efforts in the state of Virginia are centered at this site. It can be broken down into several geographic units, most of which are federally owned but also includes town and private land. All of the refuge impoundments, with one exception, were constructed in the 1950s and 1960s with the primary purpose of providing waterfowl migration and wintering habitat. Chincoteague NWR has resident horses known as Chincoteague ponies on Assateague Island that are owned and managed by the Chincoteague Volunteer Fire Company and that graze in two large, designated areas on the refuge under a special use permit. An exclusion fence was recently added on Assateague Island to protect sections of the salt marsh from grazing ponies.

- Impounded area: These impoundments currently provide many benefits to wildlife including wintering/migratory habitat for waterfowl, food sources for water birds of conservation concern, and shorebird migratory stopover habitat for many species. Ditching occurs within impoundment units and at the outflow of water control structures. There is some trampling of marsh by Chincoteague ponies which is restricted to Black Duck Drain and areas north of the E-pool management unit. These areas also have high nutrient input, but more monitoring is necessary to determine the extent of nutrient input here.
- Bay areas: most marshes are frequently flooded, consisting of short-form S. alterniflora and Distichlis spicata.
- This entire site is important to migratory birds; it supports a diverse suite of breeding and nonbreeding waterbirds in addition to the Saltmarsh Sparrow
- A Saltmarsh Integrity Study Report is available for Chincoteague NWRC
- Sika deer are present at this site; the impacts of sika deer herbivory on marshes has not been formally assessed.

Existing Projects

USFWS: This project aims to enhance elevation through sediment placement in Swan Cove. Implementation will involve a 125 ft bridge and build up the back barrier marsh platform. The project is designed but support is still needed for implementation and monitoring. Best contact: Bart Wilson (bartholomew_wilson@fws.gov)

Saltmarsh Sparrow Data

Saltmarsh Sparrows detected (2021/2022; SHARP 2023); breeding has been confirmed at this site.

Recommended Management / Next Steps To Management Action

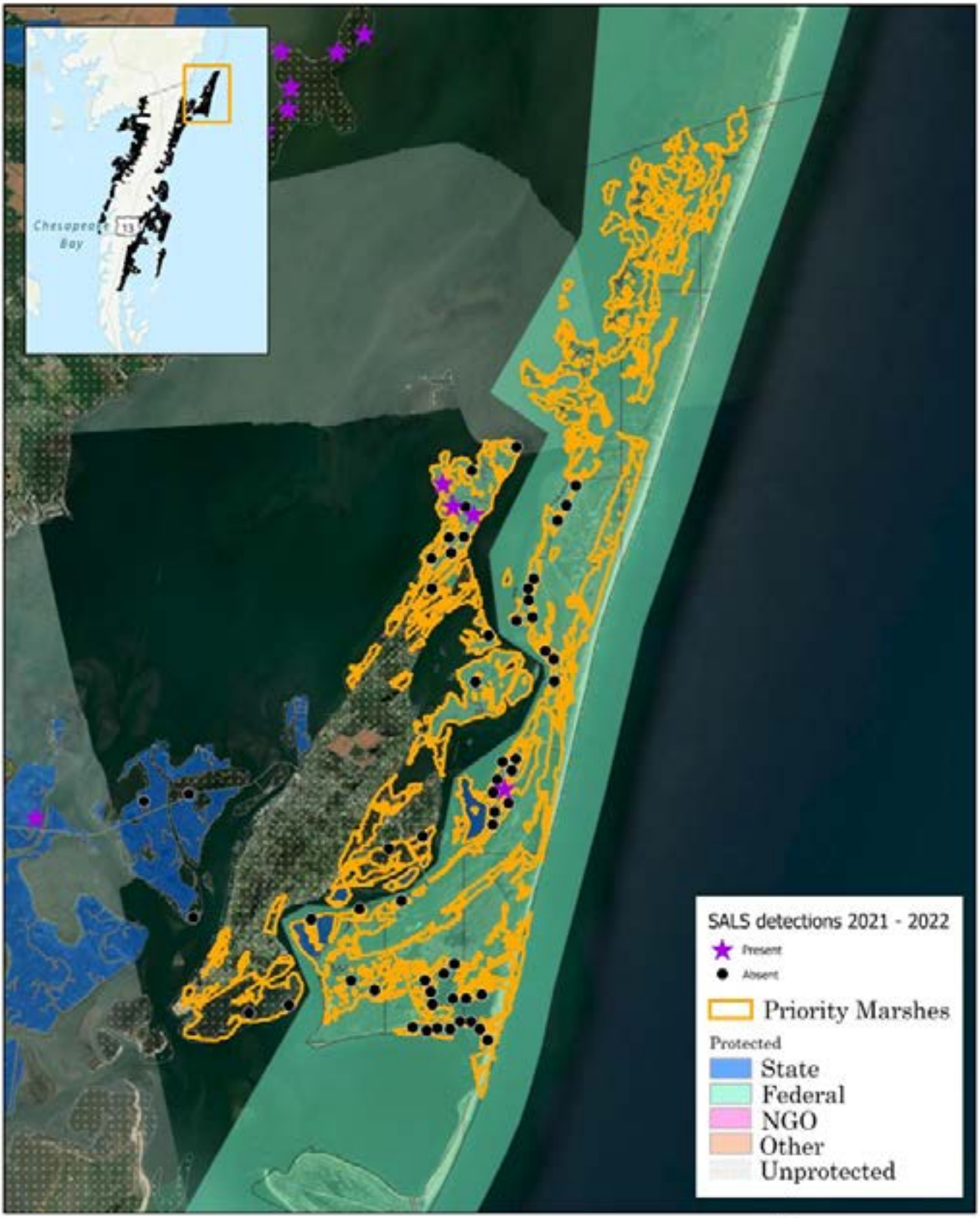
- Lighthouse Meadow, Sow Pond, and Assateague Bay refuge management units are incorporated in a new Salt Marsh Restoration Plan. See this plan for specific next steps in these areas.
- Support implementation of Swan Cove project (see above).
- Review Chincoteague and Wallops Island NWRs Comprehensive Conservation Plan (CCP) for overall ecological goals for the area.

- Review USGS document on optimization of salt marsh management at Chincoteague.
- Assess implications of increasing tidal flow in impounded areas.

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
- Land acquisition / protection - N
- Facilitated marsh migration – N
- Invasive plant species mitigation (*Phragmites australis*, etc.) – Y
- Living shoreline development - Y
- Wildlife herbivory mitigation – Y
- Additional ecological assessment needed - Y

Sika deer at Chincoteague National Wildlife Refuge. Judy Gallagher Creative Commons



Chincoteague Island and Assateague Island Complex

Chincoteague Bay to Metompkin Island Complex – 13,375 acres (5,413 ha)

This marsh complex includes Wallops Island NWR, Assawoman Island Unit and Metompkin Island Unit within the Chincoteague National Wildlife Refuge Complex (CNWRC) and portions of Metompkin Island within The Nature Conservancy's Virginia Coast Reserve. This marsh complex is a matrix of federal, state, NGOP, and privately owned land.

Existing Conditions

The National Aeronautics and Space Administration Wallops Flight Facility located on Wallops Island is the biggest source of disturbance for this parcel. Future channel dredging may occur regularly following the construction of a new dock on the north end of the island to accommodate the delivery of rocket parts via the waterway. Additional (but temporary) disturbance may result from the replacement of the existing causeway bridge.

- Areas of unditched marsh shortgrass and *Phragmites australis* (hereafter *Phragmites*) hummocks exist near the Wallops Flight Facility.
- The complex is important to migratory birds; it supports a diverse suite of breeding and nonbreeding waterbirds in addition to the Saltmarsh Sparrows including waterfowl, shorebirds, seabirds, and includes the largest Laughing Gull colony in Virginia.
- Saltmarsh Integrity Study Report is available for Chincoteague NWRC.

Existing Projects

There are no existing restoration projects at this site.

Saltmarsh Sparrow Data

Saltmarsh Sparrows detected (2021/2022; SHARP 2023), breeding has been confirmed at this site.

Recommended Management / Next Steps To Management Action

- Establish working relationship with the Wallops Flight facility for restoring marshes and preserving marsh migration areas (*Phragmites* is currently encroaching inner marsh area along causeway and on the backside of the island).
- Explore the potential for beneficial use of dredged sediments.
- Limit hardening of shorelines.
- Protect adjacent buffers to facilitate marsh migration.
- Causeway could be causing some tidal restrictions to marsh.
- Living shoreline – northern part of the parcel is relatively undeveloped but there is potential for living shoreline work.
- The western side of this marsh complex presents migration opportunities where low-lying agricultural fields may convert quickly. Some of these areas already are experiencing salt water intrusion and S. patens is already growing on former ag fields. Facilitation could also occur on forested lands if trees were girdled.

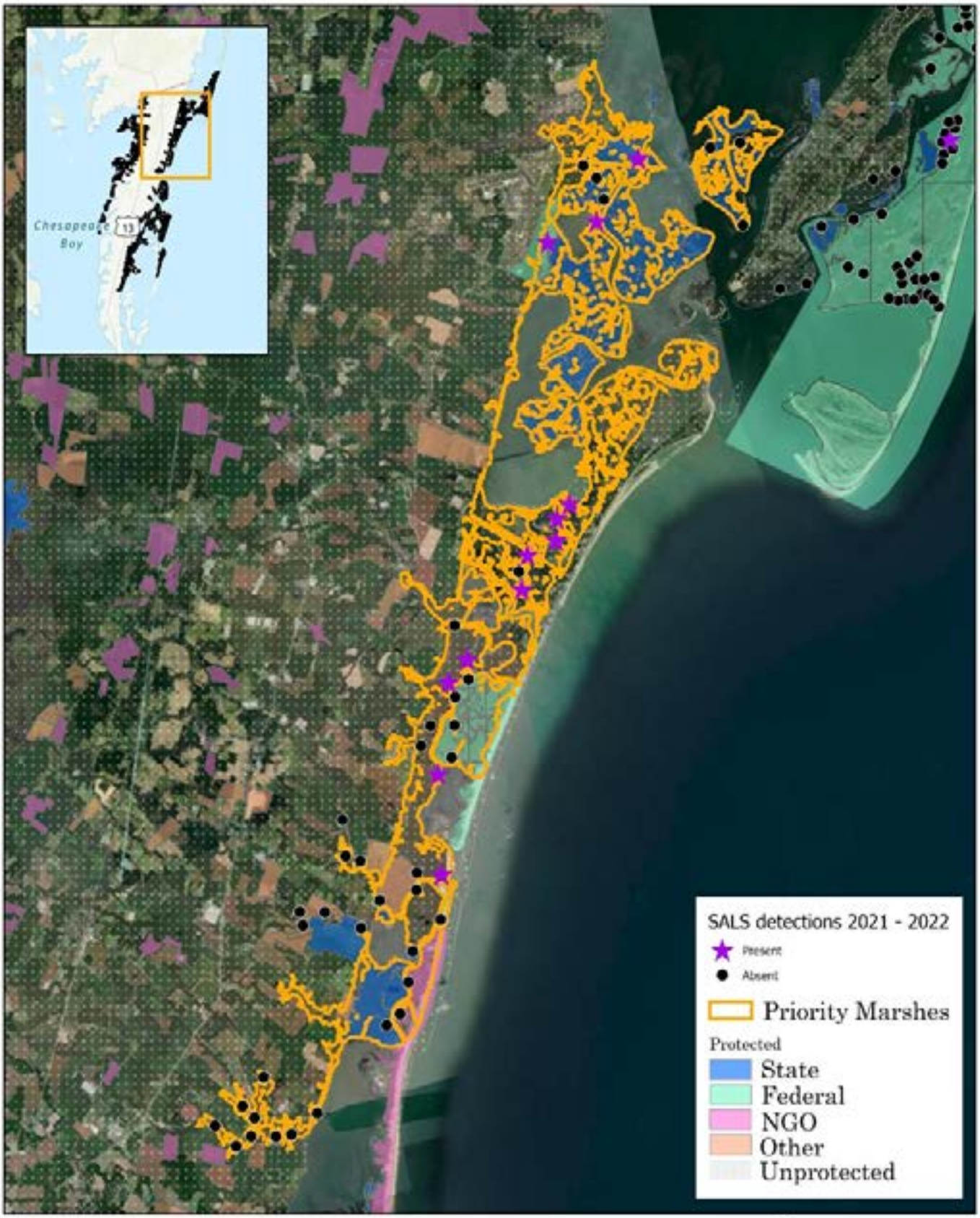
Attributes

- Sediment placement - Y
- Restore hydrology - runnelling / channel creation - N
- Restore hydrology - tidal restriction mitigation - Y
- Restore hydrology - ditch plug remediation - N
- Restore hydrology - ditch remediation - N
- Restore hydrology - berm, embankment, or levee modification – N

- Land acquisition / protection - Y
- Facilitated marsh migration – Y
- Invasive plant species mitigation (*Phragmites australis*, etc.) - Y
- Living shoreline development - Y
- Wildlife herbivory mitigation - N
- Additional ecological assessment needed - Y

Note: extensive patch-level information is available for this site. Please contact maureen_correll@fws.gov ***for additional information.***

Example of a living shoreline project on private property in Virginia. Virginia Sea Grant, Creative Commons



Chincoteague Bay to Metompkin Island Complex

Cedar Island and Parramore Island – 17,488 acres (7,077 ha)

Existing Conditions

Marsh subsidence is occurring across many patches in this marsh parcel. There is dredging of inshore channels by local towns, and *Phragmites* exists on dredge material deposition sites, along narrow bands in the upland ecotone, and on both barrier islands (including Revels Island) primarily along the backside flats/saltmarsh interface. However, there are no significant ditching or tidal restrictions present at this site.

- This site is important to migratory birds; it supports a diverse suite of breeding and nonbreeding waterbirds in addition to the Saltmarsh Sparrow.
- Both islands are under extensive conservation ownership. Most of Cedar Island is owned and managed by Chincoteague NWR, The Nature Conservancy Virginia Coast Reserve (TNC) and the Virginia Marine Resources Commission. A small portion of Cedar Island is in private ownership. Parramore Island is owned and managed by TNC and is also designated as a VA Department of Conservation and Recreation Natural Area Preserve.

Existing Projects

- Virginia Institute of Marine Science (VIMS): Partnering with VA Department of Wildlife Resources (VA DWR) to place sediment on the backside of south Cedar Island to restore areas of high marsh and to keep the south end of the island from breaching again. The project has encountered an unexpected hurdle; the planned material deposit site is partially on Public Baylor Grounds, which are reserved for public shellfish harvesting and cannot be leased or used for other purposes. Currently, partners are in the permitting phase of this project and are working with the Virginia Marine Resources Commission, which manages the Baylor Grounds, and other regulatory agencies to gain approval for this project. Project is funded by NFWF and a competitive SWG grant. Design is 70% complete, and funding is still needed for implementation and monitoring. Best contact: Christopher Hein (hein@vims.edu) and Ruth Boettcher (ruth.boettcher@dwr.virginia.gov).
- The Nature Conservancy (TNC): Project aims to build and monitor oyster reefs with two types of oyster substrate adjacent to an eroding, state-owned marsh to enhance and protect the seaside town of Wachapreague, VA. Newly established reefs will dampen wave energy and protect the marsh edge from further erosion and may facilitate sediment trapping in order to build marsh acreage. Project is funded by NFWF and scheduled for completion by the end of 2023. No additional support is necessary. Contacts: Bo Lusk (blusk@tnc.org), Alex Wilke (awilke@tnc.org).
- Virginia Institute of Marine Science (VIMS): This project is an eelgrass restoration in Burton's Bay and will plant 60 acres of eelgrass west of the southern end of Cedar Island. Newly established eelgrass habitat may reduce the impact of wave energy on marsh erosion in the vicinity of the project. The project grant was awarded by NOAA with funding from the Bipartisan Infrastructure Law and Inflation Reduction Act. No additional support is necessary. Best contact: Chris Patrick (cpatrick@vims.edu), Bo Lusk (blusk@tnc.org).
- Dredge opportunity: Accomack county has dredging planned for Folly Creek after 2024. County has interest in using the dredge beneficially, but they have not yet found a site to deposit. Best contact: Alex Wilke (awilke@tnc.org)

Saltmarsh Sparrow Data

Saltmarsh Sparrows detected (2021/2022; SHARP 2023); breeding has not been confirmed at this site.

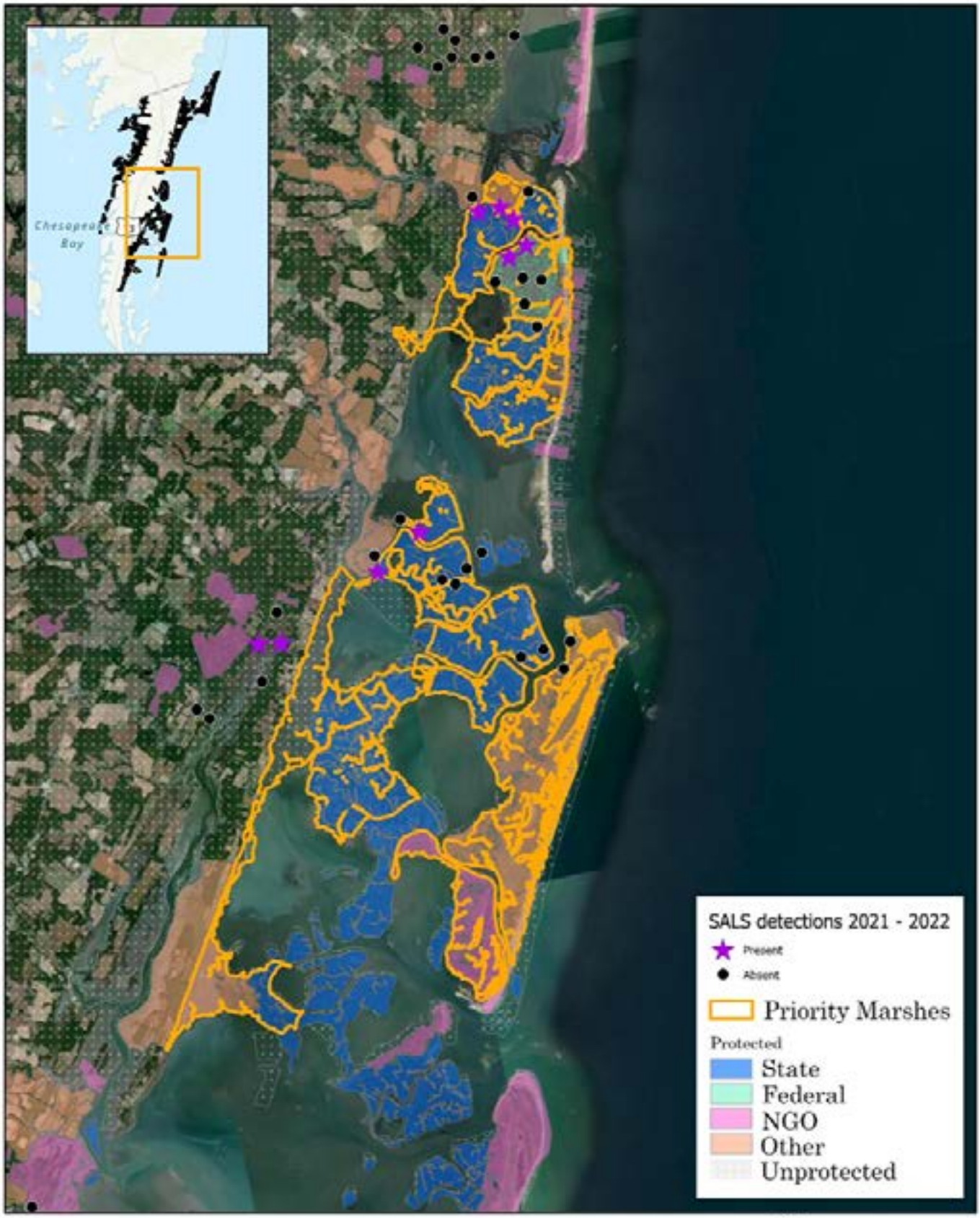
Recommended Management / Next Steps To Management Action

- Develop relationships with local partners and communities for future opportunities related to beneficial use of dredge material. Key partners include the Eastern Shore Navigable Waterways Committee and the Accomack-Northampton Planning District Commission.
- Protect adjacent buffers to facilitate marsh migration. Partnership called the Virginia Eastern Shore Conservation Alliance has prioritized the protection of marsh migration space across the state.

Attributes

- Sediment placement - Y
- Restore hydrology - runnelling / channel creation – N
- Restore hydrology - Tidal restriction mitigation - N
- Restore hydrology – Address ditch plugs - N
- Restore hydrology - ditch remediation - N
- Restore hydrology - Berm, embankment, or levee modification - N
- Land acquisition / protection - Y
- Facilitated marsh migration – N
- Invasive plant species mitigation (*Phragmites australis*, etc.) - Y
- Wildlife herbivory mitigation – N
- Living shoreline development - Y
- Additional ecological assessment needed - Y

Cedar Island is 1 of 12 barrier islands that protect the Virginia Coast. Its annual rate of retreat—already rapid at 6.6 meters per year—is predicted to speed up by as much as 50% by 2100 as the Virginia barrier island system re-equilibrates to the rapid acceleration in sea-level rise observed during the last 50-100 years. VA Institute of Marine Science, Creative Commons



Cedar and Parramore Island

Southern Accomack County Seaside Tidal Creeks - 1,043 acres (422 ha)

Existing Conditions

This marsh parcel is a relatively unditched marsh. A large amount of the surrounding area is already within conservation easement or otherwise protected.

- This site supports a diverse suite of waterbirds year-round, including Laughing Gull colonies that are declining due to frequent flooding events.

Existing Projects

No existing restoration projects are underway at this site.

Saltmarsh Sparrow Data

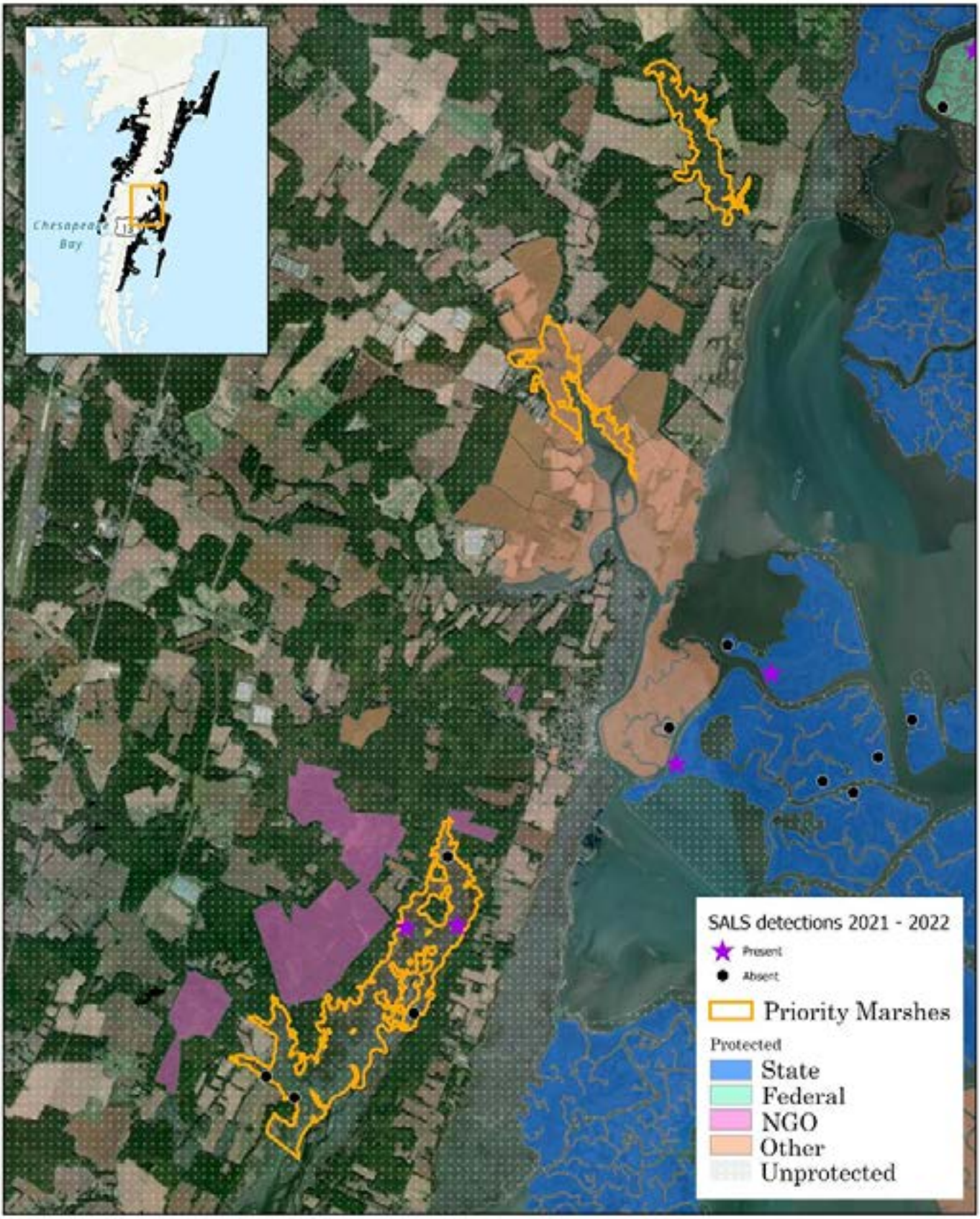
Saltmarsh Sparrows detected (2021/2022; SHARP 2023); breeding has not been confirmed at this site.

Recommended Management / Next Steps To Management Action

- Additional site visits and assessment are needed to assess marsh conditions and suitability.
- There is significant potential for land protection to facilitate marsh migration into areas adjacent to this parcel as several agricultural properties directly border the marsh.

Attributes

- Sediment placement - Y
- Restore hydrology - runnelling / channel creation – N
- Restore hydrology - Tidal restriction mitigation - N
- Restore hydrology – address ditch plug remediation - N
- Restore hydrology - ditch remediation - Y
- Restore hydrology - berm, embankment, or levee modification - N
- Land acquisition / protection - N
- Facilitated marsh migration – N
- Invasive plant species mitigation (*Phragmites australis*, etc.) - Y
- Living shoreline development - N
- Wildlife herbivory mitigation - N
- Additional ecological assessment needed - Y



Southern Accomack County Seaside Tidal Creeks

Pocomoke Sound to Tobacco Island (Including Saxis Marsh) - 17,991 acres (7,281 ha)

Existing Conditions

Saxis Causeway extends into marsh which prevents tidal flow; significant *Phragmites* stands are present along the upland edge.

- This site is important to other migratory birds and supports a diverse suite of breeding marsh birds, seabirds, shorebirds, and waterfowl.
- Saxis marsh is the only marsh in Virginia where breeding Black Rail are reliably detected (2007, 2014, 2022; C. Hines pers. comm)

This site has been partially restored to provide habitat for species like the Eastern Black Rail. Ed Corey

Existing Projects

VA DWR: Black Rail habitat restoration project at Saxis WMA (i.e., Pig Point) funded through a cSWG grant entails reducing the density and extent of *Phragmites* stands through experimental prescribed burning and the application of herbicide. Both treatments will be applied in early 2024. Additional support is needed for long-term monitoring. Best contact: Ruth Boettcher (ruth.boettcher@dwr.virginia.gov)

Saltmarsh Sparrow Data

Saltmarsh Sparrows detected (2021/2022; SHARP 2023); breeding has been confirmed at this site (2023)

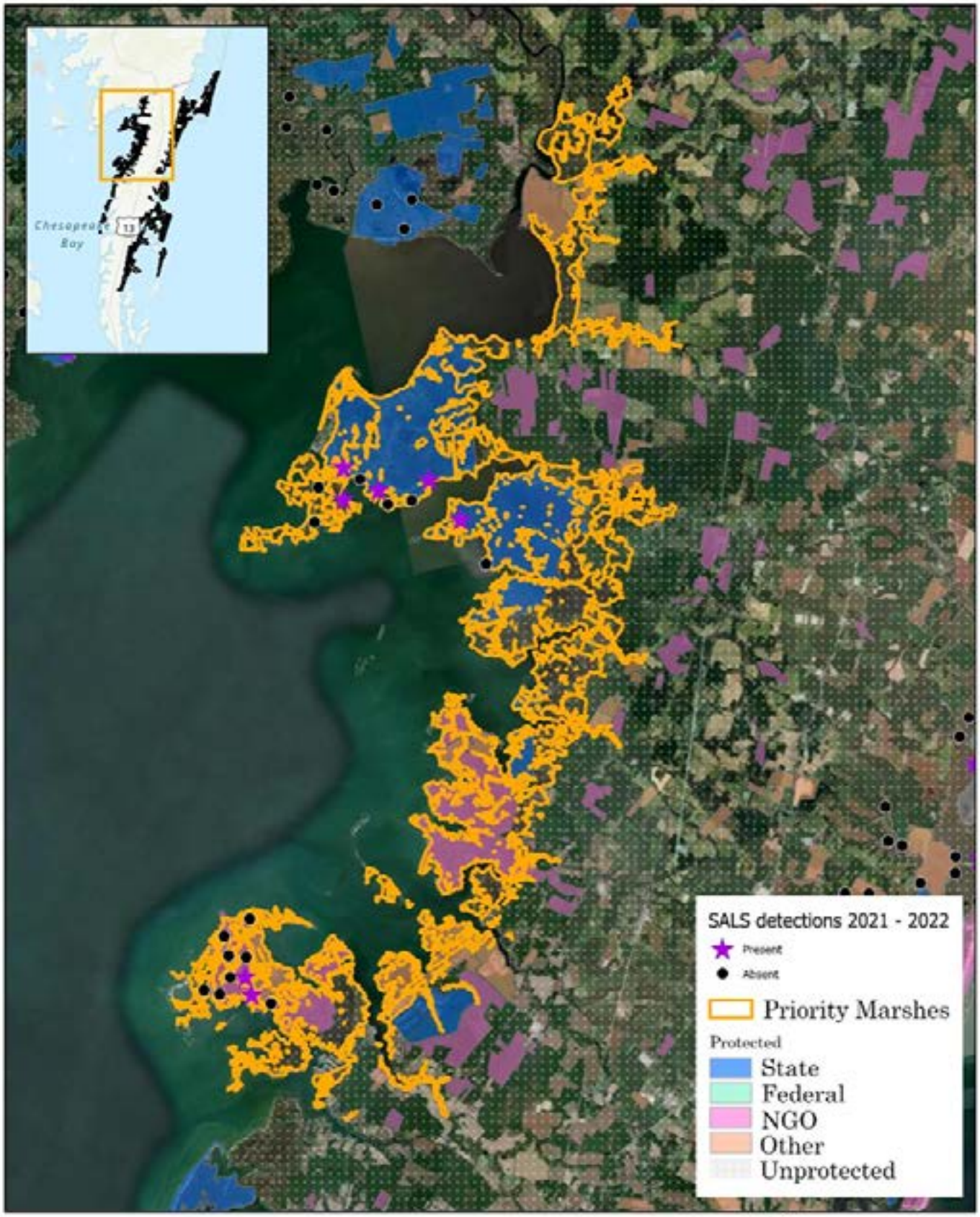
Recommended Management / Next Steps To Management Action

Perhaps one of best opportunities to manage marsh migration in Virginia.

- Protect surrounding land for marsh migration.
- Explore utility of facilitated marsh migration through tree girdling
- Assess potential for sediment placement.
- *Phragmites* control along the upland edge.

Attributes

- Sediment placement - Y
- Restore hydrology - runnelling / channel creation – Y\
- Restore hydrology - tidal restriction mitigation - N
- Restore hydrology – address ditch plugs - N
- Restore hydrology - ditch remediation - Y
- Restore hydrology - Berm, embankment, or levee modification - Y
- Land acquisition / protection – Y
- Facilitated marsh migration – Y
- Invasive plant species mitigation (*Phragmites australis*, etc.) - Y
- Living shoreline development - Y
- Wildlife herbivory mitigation - N
- Additional ecological assessment needed - Y



Pocomoke Sound to Tobacco Island (Includes Saxis Marsh)

Parker's Marsh Natural Area Preserve to Scarsborough Neck – 3,592 acres (1,454 ha)

Existing Conditions

This marsh is unditched and characterized by large areas of S. patens with a well-developed thatch layer. The surrounding land is largely protected through conservation easements or public ownership. This site is important to other migratory birds and supports a diverse suite of waterbirds; historical breeding Black Rail detections occurred here.

This site has been historically important for breeding Eastern Black Rail. Michael Gray

Existing Projects

No marsh restoration projects are currently underway at this site.

Saltmarsh Sparrow Data

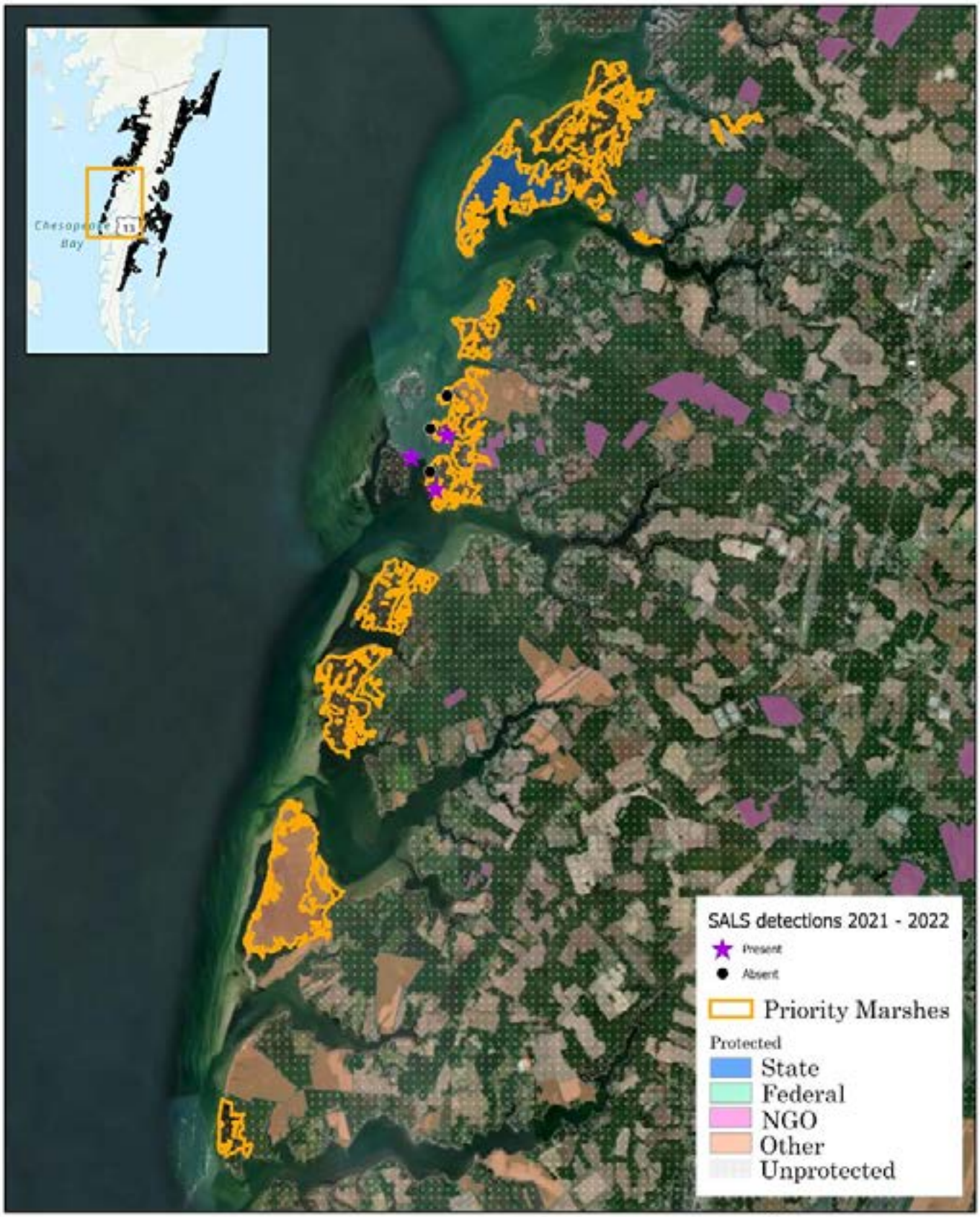
Saltmarsh Sparrows detected (2021/2022; SHARP 2023); breeding has not been confirmed at this site.

Recommended Management / Next Steps To Management Action

- Protect surrounding land for eventual marsh migration.
- Assess potential for sediment placement.
- Assess hydrology for marsh platform restoration.
- Given the shallow elevational gradient on the bayside, marsh migration will be easier than on the seaside. Land acquisition abutting marshes will allow for migration.

Attributes

- Sediment placement - Y
- Restore hydrology - runnelling / channel creation – Y
- Restore hydrology - tidal restriction mitigation - N
- Restore hydrology - Ditch plug remediation - N
- Restore hydrology - Ditch remediation - Y
- Restore hydrology - berm, embankment, or levee modification - Y
- Land acquisition / protection - Y
- Facilitated marsh migration – Y
- Living shoreline development – Y
- Invasive plant species mitigation (*Phragmites australis*, etc.) - Y
- Wildlife herbivory mitigation – N
- Additional ecological assessment needed - Y



Parkers Marsh Natural Area

Preserve to Scarsborough Neck

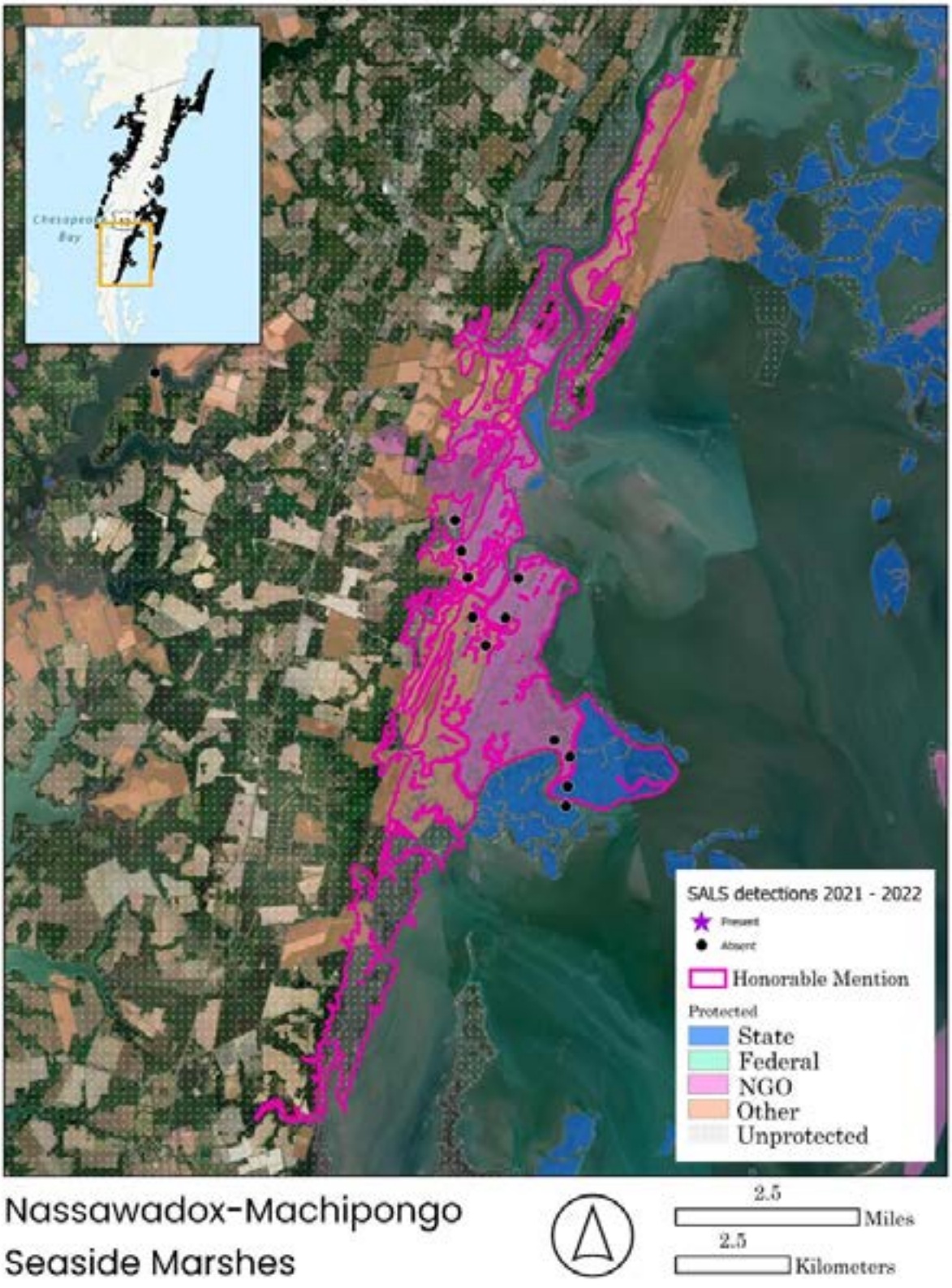
Honorable Mentions

Hog Island/Rogue Island – 1,938 acres (784 ha)

This area has potential for sediment deposition but is a lower priority for breeding Saltmarsh Sparrows.

Nassawadox to Machipongo Seaside Marshes - 8,409 acres (3,403 ha)

This marsh parcel is a relatively unditched marsh and much of the surrounding area is already within conservation easement or otherwise protected. Saltmarsh Sparrows have not been detected here recently and the area is a lower priority for breeding Saltmarsh Sparrows. Recent surveys in 2021 and 2022 did not detect Saltmarsh Sparrows in this location, however they were detected in 2014 (SHARP), albeit during the early portion of season when birds could have been migrating.



Best Practices in Marsh Management

Engaging and consulting with landowners, local land managers, and restoration experts should be the first step in the development of a salt marsh conservation project. Before any monitoring or management action is planned, consideration should be given to how management for Saltmarsh Sparrow will be integrated with other priority species or habitats. Any management actions should follow best practices to avoid impacting existing suitable Saltmarsh Sparrow habitat. Necessary precautions include:

- If a management approach is not well understood or hasn't been widely implemented in similar ecological settings, management should be phased and initially limited to a small portion (e.g. <10%) of marshes known to provide valuable Saltmarsh Sparrow habitat.
- Conduct intensive marsh modification work outside the window of the active Saltmarsh Sparrow breeding season and the breeding seasons of other marsh dependent species (April – August).
- The importance of Virginia marshes during migration and winter for Saltmarsh Sparrows is well known, so avoiding impacts during that time of year should be considered as well.

Policy

Challenges

- There is a limited amount of dredge material available for sediment placement projects, especially since the intra-coastal waterway is no longer being dredged.
- Lack of funds for marsh restoration projects and for acquiring lands in suitable marsh migration zones limits the amount of work possible to complete on the ground.
- Lack of capacity to conduct long-term post-restoration monitoring.

Permitting Considerations

For any wetland modification work, regulatory permitting agencies include the VA Marine Resources Commission, VA Dept. of Environmental Quality, and the US Army Corps of Engineers. Any proposed work on protected lands would require a special use permit from the land-owning agency.

Potential Solutions

Establishment of a collaborative working group is underway that will develop a plan identifying and prioritizing habitat restoration opportunities in Virginia's seaside coastal lagoon system for marsh-nesting American Oystercatchers. It is possible for the working group to use the Saltmarsh Sparrow plan as a starting point for its work on the seaside of Virginia. If successful, the working group may decide to expand its scope to include the bayside marshes of the Eastern Shore and incorporate other species such as Saltmarsh Sparrow, eastern Black Rails and other high-priority, marsh-dependent species in its prioritization exercise. The working group will also identify potential funding sources for each project. Many partners have already engaged in cooperative conservation planning for avian communities in coastal Virginia (i.e., Virginia Coast Avian Partnership, Virginia Barrier Island Landowner Working Group) and will likely join this working group. A well-established group of partners committed to working collaboratively on restoring marshes in Virginia will go a long way towards justifying these efforts and finding sufficient funding to implement and evaluate the work.

Monitoring

Any habitat restoration efforts should be monitored both pre-implementation and post-implementation to measure change and determine whether vegetation and elevation goals have been met. This monitoring will ideally include an array of ecological metrics specific to tidal marshes and will build upon the existing knowledge base for salt marsh restoration in this area.

The VA DWR along with partners received SWG funds in 2023 to reassess the breeding distribution of Saltmarsh Sparrows on the lower Delmarva Peninsula and examine reproductive success in occupied seaside and bayside marshes. Results from this work will help guide future breeding Saltmarsh Sparrow monitoring efforts in Virginia.

Acknowledgements

Thank you to working group members Ruth Boettcher (VA DWR), Kevin Holcomb (USFWS), Chance Hines (WIlliam & Mary's Center for Conservation Biology; CCB), Elizabeth Hunter (USGS / Virginia Tech), Becky Gwynn (VA DWR / ACJV), Bryan Watts (CCB), and Alex Wilke (TNC) who all contributed to the contents of this document. Thank you to the Saltmarsh Habitat and Avian Research Program (SHARP) for providing detection data for Saltmarsh Sparrows which helped inform our saltmarsh sparrow data sections for each marsh.

Monarch butterfly in high marsh habitat at Chincoteague National Wildlife Refuge. Judy Gallagher Creative Commons

Contact & Citation Information

For more information or to update information contained in this document please contact:

Mo Correll, Atlantic Coast Joint Venture: maureen_correll@fws.gov

Suggested citation: Atlantic Coast Joint Venture. 2023. Report. Saltmarsh Restoration Priorities for the Saltmarsh Sparrow: Virginia. Version 2.0. Available at: https://acjv.org/documents/VA_SALS_comp_guidance_doc.pdf

References

Atlantic Coast Joint Venture. 2020. The Saltmarsh Sparrow Habitat Prioritization Atlantic Coast Joint Venture. 2020. The Saltmarsh Sparrow Habitat Prioritization Tool. Available at: https://fws.maps.arcgis.com/apps/MapSeries/index.html?appid=1bc5b29be4ac43d8949b2941d2ce5174

The Saltmarsh Habitat and Avian Research Program. 2023. Point count database. Information to access database is available at: www.tidalmarshbirds.org.

Hartley, MJ and AJ Weldon, eds. 2020. Saltmarsh Sparrow Conservation Plan. Atlantic Coast Joint Venture. Available at: acjv.org/documents/SALS_plan_final.pdf

Wiest, WA, Correll, MD, Marcot, BJ Olsen, BJ, Elphick, CS, Hodgman, TP, Gunterspergen, GR, and WG Shriver. 2019. Estimates of tidal marsh bird densities using Bayesian networks. Journal of Wildlife Management 3:109-120.