Squibnocket Pond Reservation
Management Plan
Aquinnah,
Massachusetts

July 23, 2024

Approved by the Sheriff's Meadow Foundation Board of Directors (December 3, 2021)
Approved by the Martha's Vineyard land bank Aquinnah Town Advisory Board (December 15, 2021)
Approved by the Martha's Vineyard land bank commission (December 20, 2021)
Approved by the Secretary of the Executive Office of Energy & Environmental Affairs (April 26, 2023)

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Executive Summary

Sweeping views of undulating parabolic dunes splitting Squibnocket Pond from the Atlantic Ocean capture the dynamic essence of the Squibnocket Pond Reservation and hark back to an island of long ago. The 323-acre Reservation experienced minimal influence from development as its ownership changed hands throughout the centuries. The land remained largely uninhabited. The underlying glacial topography of the Reservation results in high ridges of woodlands towering over dense wetland thickets and bogs. The Black Brook meanders west to east through the Reservation, babbling through large spreading maples, disappearing into dense undergrowth, and finally emerging through a deep ravine into Squibnocket Pond.

The Reservation is bounded in two noncontiguous parts, by Moshup Trail to the west, State Road to the north, Squibnocket Pond to the east and the Atlantic Ocean to the south. Many historic landmarks occur on the Reservation including Spider Hill, Nicodemus Neck, Zack's Cliff, Witch Pond, Lily Pond, Black Brook, Amos Place, Solomon Place and Gershom Place.

The Martha's Vineyard land bank commission and Sheriff's Meadow Foundation collaborated to purchase the 323 acres from the Schlossberg family in 2020-2021.

There are eight vegetation communities that span the property, each of which supports a unique assemblage of species. A total of 34 commonwealth-listed species is known to occur on the Reservation. They were observed through surveys conducted in 2020 and 2021 and were found in all the ecological communities.

This management plan proposes two vehicle-access trailheads and two separate trail systems connected by water travel via the kayak launch into Squibnocket Pond. Additionally, the plan proposes to install boardwalks, beach access stairs and viewing platforms. Management of the environs on the Reservation includes mowing and grazing successional habitats and areas of open growth woodlands, management of invasive species, and viewshed maintenance. Depictions of these items appear on Maps 10-15 (Appendix A).

All planning goals, objectives and strategies are outlined in detail in the final section of this management plan. To be implemented, this plan must be presented at a public hearing and approved by the land bank's Aquinnah town advisory board, the Martha's Vineyard land bank commission, the Sheriff's Meadow Board of Directors, and the secretary of the executive office of energy and environmental affairs (EOEEA).

About the authors

Kristen Geagan and Julie Russell are the primary authors of this management plan. Kristen Geagan has been the Director of Stewardship for Sheriff's Meadow Foundation since 2003. She holds a Master of Science in Resource Management and Conservation from Antioch University of New England and a Bachelor of Arts in Human Ecology from the College of the Atlantic.

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Sophie Mirotznik and Karina Morales are summer Ecology Interns with the land bank. Sophie Mirotznik is a senior at the University of Delaware pursuing a Bachelor of Science in Wildlife Ecology and Conservation. Karina Morales holds a Bachelor of Science in Wildlife Biology from the University of Vermont.

This plan is executed under the supervision of the Martha's Vineyard land bank land superintendent, Harrison Kisiel, and Kristen Geagan of Sheriff's Meadow Foundation.

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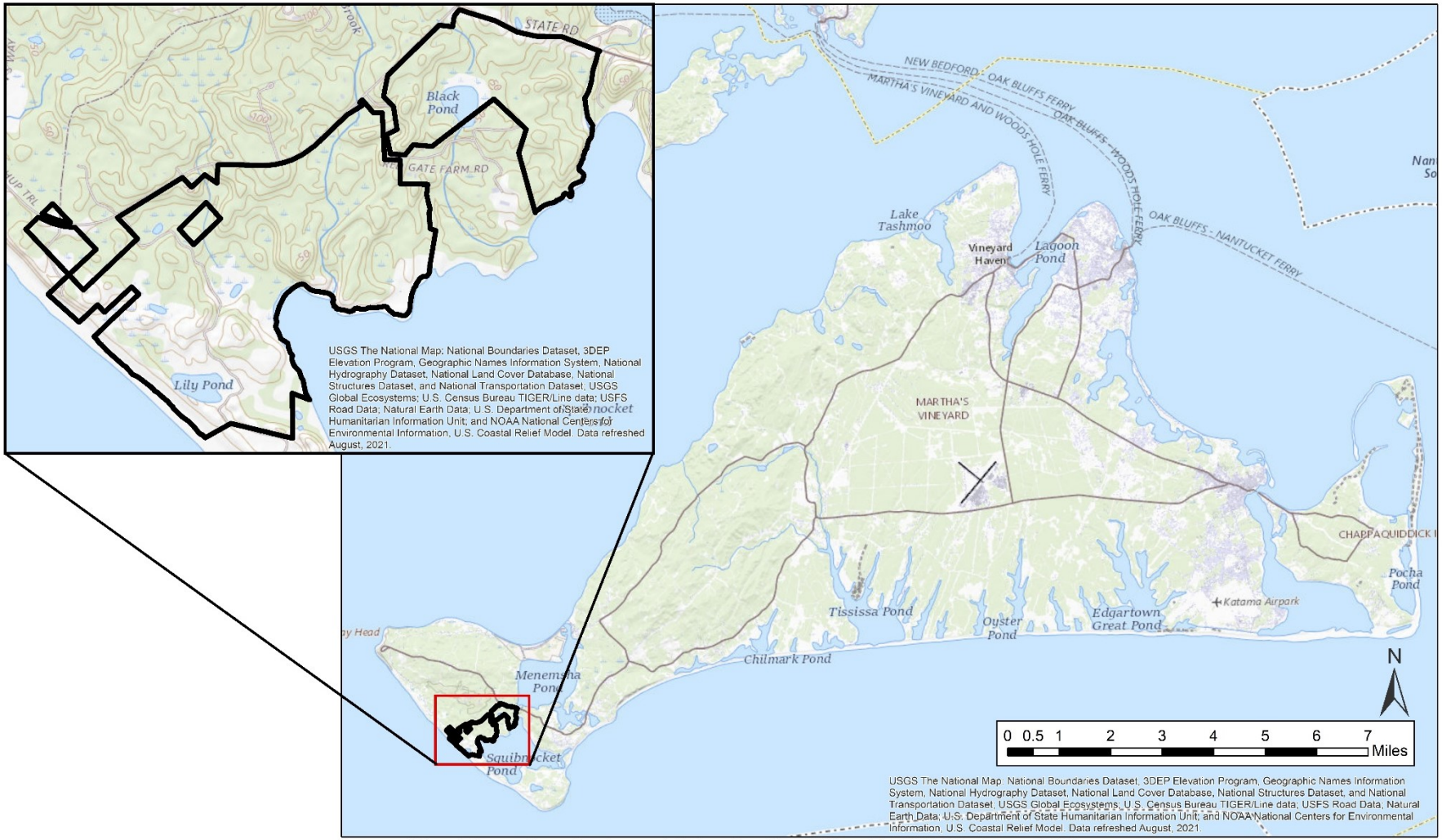
Map 1: Locus Map of Squibnocket Pond Reservation.



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only,
The Martha's Vineyard land bank and Sheriff's Meadow Foundation are not responsible for the end-users interpretation of this map

I. Natural Resource Inventory

A. Physical Characteristics

1. Locus

Squibnocket Pond Reservation is located at roughly 41°19' 27.0" N latitude and 70° 47’ 44.2" W longitude in Aquinnah, Massachusetts. The property consists of 323 acres including 32 acres owned by the Martha’s Vineyard land bank (MVLB) and the balance owned jointly with Sheriff’s Meadow Foundation (SMF) and MVLB. The Reservation is shown on Aquinnah tax maps 11-1 [portion], 11-2, 11-3, 11-4, 11-5, 11-6, 11-7, 11-8, 11-9, 11-10, 11-16, 11-35, 12-65, 12-67, 12-70, 12-79, 12-81, 12-85, 12-92, 12-96, 12-98, 12-103, 12-104, 13-1 [portion]. The Reservation is divided into two noncontiguous sections. The **northern parcel** is accessed by the north entrance and the **southern parcel** is accessed by the south entrance. See Locus Map above (Map 1).

2. Survey Maps, Deeds and Preliminary Management Plan Goals

Larger copies of all surveys are on file at the land bank and Sheriff’s Meadow offices and are available for inspection by appointment. Deeds, land bank preliminary management plan goals, and reduced copies of surveys are included in Appendix B.

3. Geology

The soils and general vegetation of the Reservation are tied to the unique glacial history of the island. Unlike much of New England, the island has a deep layer of glacial material deposited on top of bedrock. The most recent continental ice sheet, called the Laurentide, from the Wisconsinan glacial period, is responsible for the landscape of the island as it is viewed today (Oldale 1992). The convergence of the Cape Cod Bay lobe and Buzzards Bay lobe of the Laurentide formed the triangular shape of the island of Martha’s Vineyard. The Squibnocket Pond Reservation is situated in the southwest corner of the island where the Buzzards Bay lobe pushed up existing glacial sediments, forming the hummocky ridges, long valleys, and variably sized closed depressions observed on the property (Oldale 1992). These topographic features compose the southwest end moraine characterized by fine, rich, and varied soils with countless boulders of many sizes strewn about (Oldale 1992, Foster 2017, Balcoa et al. 2002, Chamberlain 1964). The numerous stone walls, interior boulder fields, steep hills such as Spider Hill, and rocky shoreline of Squibnocket Pond are fine examples of the moraine features (Figure 1).

Figure 1: Large boulders left behind by receding glaciers, common in glacial till.

Clay-filled glacial sediments in the soil allowed water to flow, as in Black Brook, across the surface, either carving a channel or following a valley into the ocean (Chamberlain 1964). Where clay-filled soils lined glacial depressions, precipitation formed ponds and other inland standing waterbodies. Witch Pond, Lily Pond, and the other ponds on the Reservation are examples of this southwest moraine feature (Figure 2).

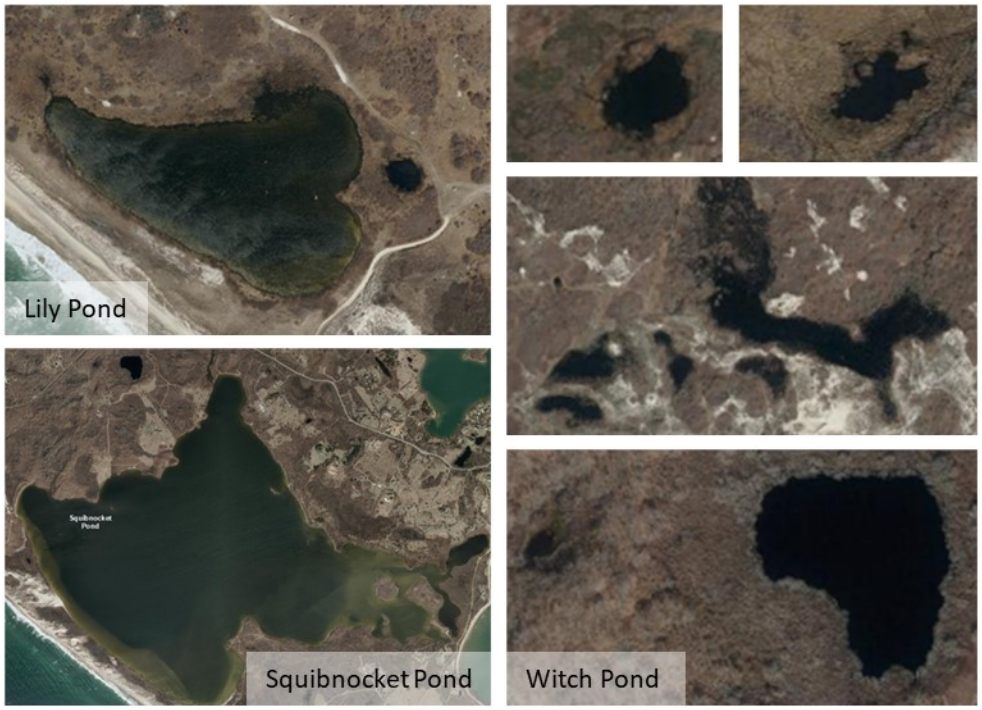


Figure 2: Various waterbodies found within Squibnocket Pond Reservation.

The hilly moraines on the Reservation terminate at coastal deposits in the form of dunes and barrier beaches along the Atlantic Ocean. The dune system comprises primary and secondary dunes. Sand blown directly from the beach face makes up the primary dunes. The secondary dunes form from primary dunes. Dunes have two sides; the windward side that faces the wind and the slip face that does not face the wind. The primary dunes of the Reservation are

parabolic dunes that form when winds from the south blow sand out of the center of the dune (Figure 3A). In a parabolic dune the slip face is on the inward side. Conversely, the secondary dunes are crescent dunes with a wide windward side and a small slip face (Figure 3B, C). The dune and barrier beach systems are dynamic.

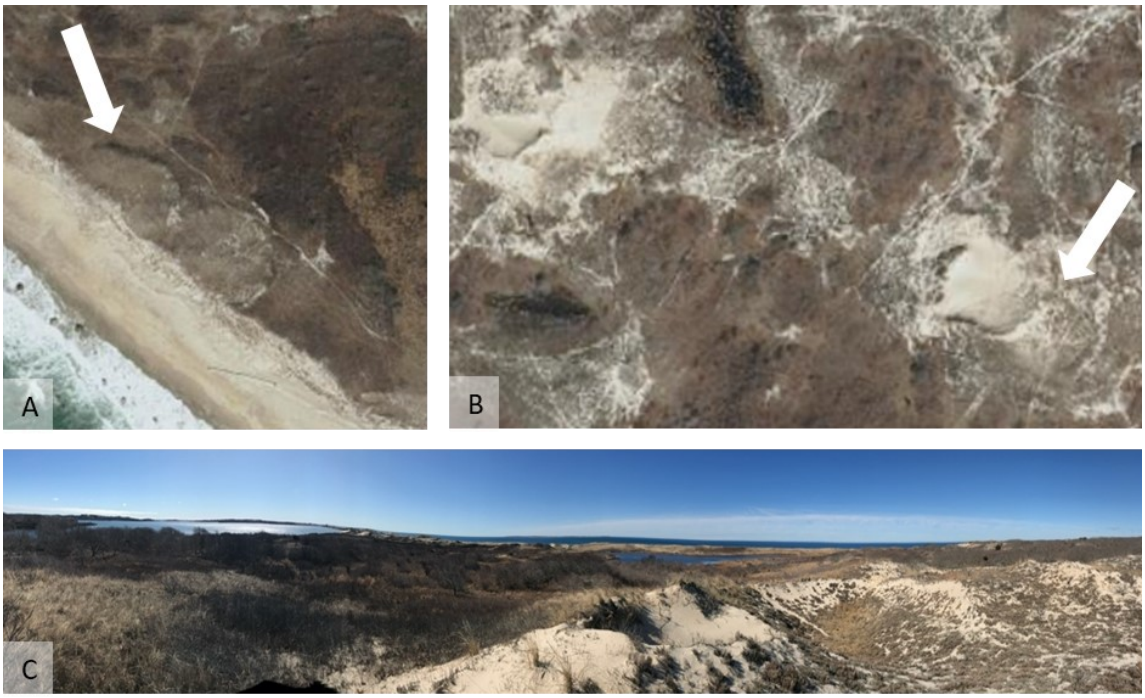


Figure 3: Dune features of Squibnocket Pond. A) Parabolic dunes. B) Crescent dunes. C) Dune and barrier beach system.

The Reservation contains 2,475 feet of barrier beach that runs parallel to shore and provides a barrier between the mainland wetland complexes and the ocean. These beaches are formed through the process of longshore transport of sand. Waves move sand parallel to the coast that has eroded from adjacent headlands and beaches (Chamberlain 1964, Providence 1982). However, significant high winds, powerful tides and strong ocean currents take sand away from the Squibnocket barrier beach faster than it can be replenished (Asimow and Wilson 2021). Additionally, coastal erosion structures such as groins, jetties and breakwaters found in various places on island, further push the littoral system out of balance.

4. Soils

The General Soils Map (Map 17, Appendix C) depicts general classes of soils across Martha's Vineyard. The Reservation comprises Eastchop-Chilmark-Nantucket soils that are formed in "reworked glacial outwash, ice-thrusted

coastal plain sediments, or glacial till; on moraines" (General Soil Map in Soil Conservation Service (Fletcher and Roffinoli 1986)). The property occurs in the "Martha's Vineyard moraine" geologic deposits (Fletcher and Roffinoli 1986). The Martha's Vineyard moraine is a terminal moraine that comprises the Cape Cod Lobe and Buzzards Bay Lobe and was formed when the Wisconsin ice sheet retreated. It consists of deep deposits of boulders and stone of variable sizes from sand to clay that formed an undulating landform.

The Nantucket-Plymouth complex dominates the Reservation. This specific soil type is deep and rolling with stones and boulders. It is suitable for agriculture. However, the slopes present a soil erosion hazard, and the stones are obstacles for farming equipment. These soil types are well suited for woodland productivity (Fletcher and Roffinoli 1986).

The Fletcher and Roffinoli (1986) mapped soil series are discussed in Appendix C following a detailed map of the soil types in the Reservation (Map 18, Appendix C).

5. Topography

One of the prominent features of the Squibnocket Pond Reservation is the hilly terrain. There are fifteen individual hills in the southern portion of the Reservation that peak at 50 feet, the highest elevations on the Reservation. The primary dunes are steep and climb rapidly to an elevation of 20 feet. A noteworthy view is had standing on the northwestern beach access point looking southeast towards Lily Pond.

The primary dunes drop to 6 feet in elevation as they give way to Lily Pond then rise abruptly to 50 feet forming a secondary dune system. From this vantage point, 180-degree views stretching from Zack's Cliff to Squibnocket Pond are possible.

Moving north the rising land is interrupted by a wetland system; once crossed, the rolling hills, including Spider Hill, begin again, reaching 40-50 feet in height.

In the northern portion of the Reservation a steep ridge runs around Witch Pond, offering views of the pond itself and Squibnocket Pond.

Two additional ridges stretch from Witch Pond towards Squibnocket Pond with the northern ridge providing views of Menemsha Pond, Herring Creek and Squibnocket Pond.

6. Hydrology

Squibnocket Pond Reservation is part of the Squibnocket Pond watershed that is part of the Menemsha-Squibnocket Pond Embayment System (Map 7, Watershed Boundaries, Appendix A) (Howes et al., 2017). Squibnocket Pond watershed is a 1,229-acre watershed in Aquinnah and Chilmark. The pond itself has an area of 603 acres, a mean depth of 4.7 feet, and limited tidal range (M.V.C, *Squibnocket Pond*) (Figure 4). Squibnocket Pond does not connect to the Atlantic Ocean. Instead, it has periodic tidal exchange with Menemsha Pond via a herring run that passes through a culvert located under State Road (*Squibnocket Pond 2019* M.V.C, 2019).

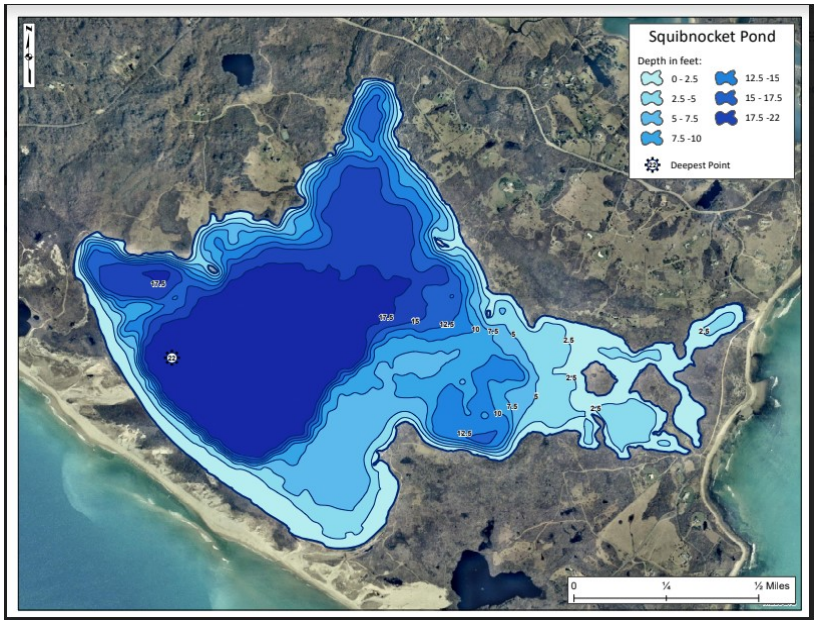
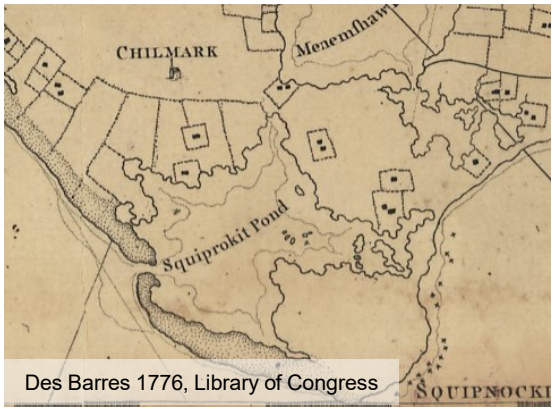


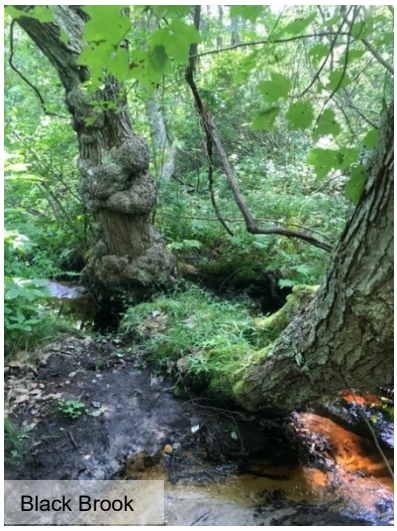
Figure 4: Bathymetry map of Squibnocket Pond (Sourced from MassWildlife)

Historic documentation indicates Squibnocket Pond had direct tidal exchange with the Atlantic Ocean periodically between 1776 and 1831 (Howes et al., 2017, De Barres 1776, Dunham, 1831). The De Barres Map (1776) does not show the herring creek between Squibnocket and Menemsha Ponds as a complete connection suggesting the herring run that exists now was a man-made channel. Natives were known to trench passages from the sea into the great ponds on Martha's Vineyard for fishing, and likely creating the herring run between Squibnocket and Menemsha Ponds for similar fishing purposes (Guernsey 1916).

The water quality of Squibnocket Pond is classified as “compromised” according to the Martha’s Vineyard Commission, due to high nitrogen load, low transparency, and low dissolved oxygen levels. Excessive nitrogen enters the pond through atmospheric deposition (Squibnocket Pond 2019 M.V.C, 2019). Low oxygen and high nitrogen loads suggest potential for eutrophication and increased algal growth in Squibnocket Pond.



Des Barres 1776, Library of Congress


Black Brook

Squibnocket Pond Reservation contains several smaller ponds and two main streams, Black Brook and Little Brook. Squibnocket Pond receives surface inflow from Black Brook, primarily a groundwater-fed stream originating from the northeast across State Rd (Howes et al., 2017). Little Brook empties into Squibnocket Pond along a small stretch of sandy shore. It originates from a wetland complex north of Moshup Trail.

The Reservation contains many marshes, bogs, and shrubswamps. Bordering vegetated wetlands in the Squibnocket Pond Reservation were delineated in August 2021. As vegetation alone was presumed to yield an accurate boundary, bordering vegetated wetland boundaries were delineated following methods described in Massachusetts Department of Environmental Protection Wetland delineation handbook (Jackson et al., 1995) (Map 2, Section I.A.6).

A Wetland Planning Map is located in Appendix A and depicts 100-year flood (Map 8) and sea level rise impacts (Map 9). Sea-level rise and 100-year flood predictions will impact the road along Squibnocket Pond and join Lily Pond with Squibnocket Pond. These impacts were taken into consideration when planning hiking trails and those existing trails adjacent to the aforementioned flooding zones may need to be re-routed in the future. The projected raised boardwalks will also serve as means for trail access in the event of flooding.

7. Ecological Processes

Geologic history, nutrient and water processes, plant composition, natural disturbance regimes, as well as human land-use all combine to determine modern-day ecological communities and the entire landscape. A landscape tends to have several habitat types with distinct plant communities and processes; understanding the ways in which these distinct habitats are

connected through various processes can improve management and conservation of ecosystems and landscapes (EPA 1999). However, not all habitats carry the same “value”. Some contribute disproportionately to the functioning of connected ecosystems and support greater amounts of biodiversity. These habitats should be prioritized in conservation.

Structural complexity

There is a significant amount of structural complexity in the Squibnocket Pond Reservation, owing to the highly varied and interwoven matrix of woodlands, upland shrublands, lowland shrubswamps and bogs, as well as pondshore and dunes. This natural variation in habitat types, topography, soil moisture, and species composition provides a diverse landscape to support a wide variety of plant, invertebrate, and bird species. Mowing or grazing areas of successional grassland and understory vegetation in woodland areas on a rotational basis would contribute to the spatial complexity of the Reservation.

Disturbance

Squibnocket Pond Reservation has several distinct habitat types that have gone through different disturbance regimes in their history. A good working definition of ecological disturbance can be: ‘‘any relatively discrete event that disrupts the structure of an ecosystem, community, or population, and changes resource availability or the physical environment’’ (Pickett & White, 1985). Flooding, fire, large storms, timber harvesting, wetland channeling, and conversion to agriculture can all be viewed as disturbances.

Figure 5: Historic map of Squibnocket Pond

Clearing around homesteads and small pasture operations on the Reservation during the mid-1800’s influences the experience of the landscape today. A combination of ancient and second growth trees occurs on the Reservation but are difficult to distinguish (Foster 2017). Timber-removal is evident in the woodland habitats through historic maps (Figure 5), aerial photos (Figure 6) and multi-trunk trees (Figures 7A, B). The Whiting Map of 1850 (Figure 5) and aerial photographs of the property from the 1930’s (Figure 6) indicate significant-to-moderate forest clearing in easily accessible and drier woodland habitats of the property.

The average age of the dominant trees in the woodlands is approximately 50 years old, which indicates that timber harvesting continued into the following decades. Rock walls are common on the property, which are now hidden within

the shrublands and woodlands of the Reservation. The ancient oaks that were left uncut during the agricultural boom have a wide sprawling form indicating they developed in more sunlight and suggest that these areas were grazed or thinned (Foster 2017) (Figure 7B). A sparse midstory suggests that the woodlands are currently recovering from grazing. Regeneration of small shrubs and herbaceous understory can now be found under the dominant sprawling canopy of black oak (*Quercus velutina*) and white oak (*Quercus alba*) trees, that was likely grass-dominated during times of grazing.

Figure 6: 1938 Aerial

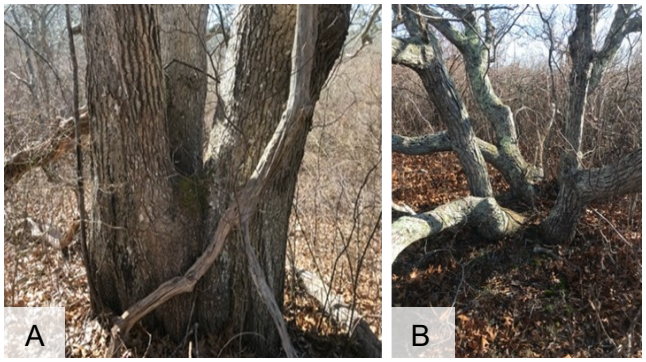


Figure 7: Tree forms indicating timber-thinning and/or grazing. A) Multi-trunked trees. B) Sprawling form.

Disturbance in the form of flooding was and will continue to be a significant process in the Reservation. Black Brook and Little Brook both flow into wetland areas throughout the property. During large flood events these wetland areas are able to sequester and slowly release water surges; long-term increases in rain events could increase the breadth of wetland habitat types in the property. Sea-level rise from anthropogenic climate change will counteract this process by constricting habitats along the coast.

Hydrological patterns

The Squibnocket Pond Reservation contains approximately 107 acres of wetland habitats (33% of the Reservation) which include marshes, bogs, ponds, creeks, shrubswamps and wooded swamps. Wetlands provide several important ecological services such as flood mitigation, carbon storage, and water purification (Viaroli et al. 2016), and disproportionately contribute to ecological functioning of nearby habitats (EPA 1999). Additionally, wetlands often support high biodiversity including rare species and waterfowl, especially the bog, pond, and marsh habitat types (Gibbs 2000). Black Brook and Little Brook feed into the wetlands which slowly drain into Squibnocket Pond. The slow-moving water promotes the settling of sediments carried by the brooks, creating pools and tussocks of vegetation. As the sediments settle, so do the nutrients and pollutants carried by the fast-moving water. The nutrients

contribute to the large number of species found in wetlands; the pollutants (e.g., heavy metals) either are changed chemically through various processes in plants/soil or are stored in the sediment layers. Therefore, the pollutants are prevented from flowing downstream which improves water quality for the downstream systems and Squibnocket Pond.

Historic maps of the property indicate that Squibnocket Pond went further inland than it currently does today (Figure 8A, B). Likely the sand peninsula/bridge seen in the 1784 map was used to build a road that is still bordering the pond. After that event, the bog/shrubswamp vegetation along with sediment build-up led to the wetland habitats that we see there today.

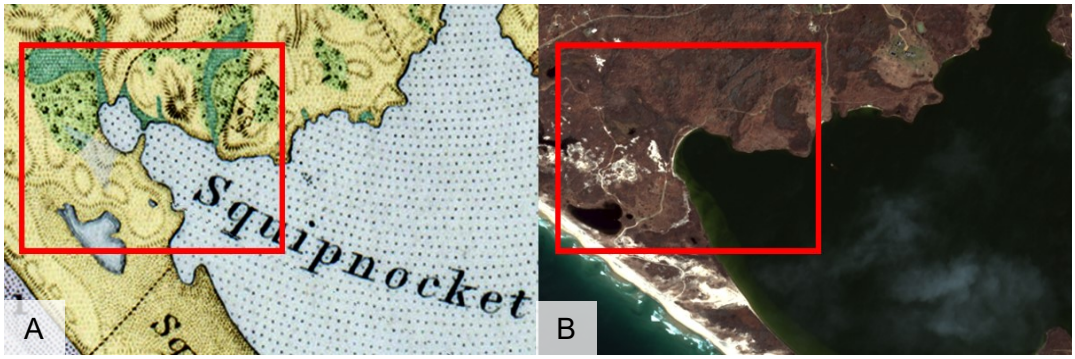
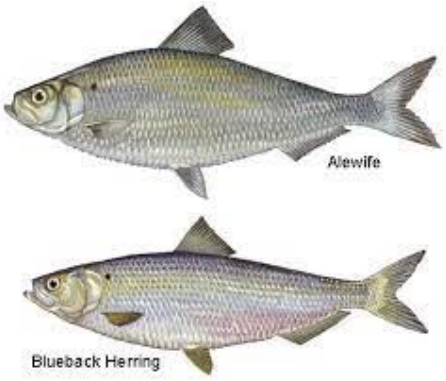


Figure 8: Maps of Squibnocket Pond highlighting change in water line. A) Topographic map circa 1784 (mv1850). B) WorldView Ortho photo 2015 (massGIS).



Squibnocket Pond is an important spawning habitat for two species of herring: Blueback Herring (*Alosa aestivalis*) and Alewife (*Alosa pseudoharengus*). These species spend the majority of their lives in the Atlantic and return to inland fresh/brackish ponds to spawn. The island population returns to Menemsha Pond in the spring, swims up Herring Creek and spawns in the Squibnocket Pond wetland complex. The fry spend up to three months in the pond before returning back to the ocean in the fall. The suitability of Herring Creek was compromised through erosion and sediment build-up during storm events. Historical population sizes of approximately 750,000 dropped to 36,626 in 2019. The Wampanoag Tribe is dredging Herring Creek to remove this excessive sediment and provide easier transportation for the adult and fry herring to and from Squibnocket Pond (Sennott 2020).

Another hydrologic process underway at Squibnocket Pond Reservation involves Lily Pond, a coastal plain pond. Coastal plain ponds are found in depressions of glacial outwash that are fed directly by the underlying aquifer and precipitation and lack a surface inlet or outlet (NHESP 2007). The water level of Lily Pond naturally fluctuates with the water table throughout the seasons; it is threatened by groundwater depletion, saltwater intrusion, and sand deposition. Coastal plain ponds support a unique combination of species and can act as important habitat to support rare and threatened plants and wildlife. Pond shore plant communities are adapted to the natural fluctuations in water levels. Some species will not germinate if water levels remain high throughout the spring or summer but can remain viable in the seed bank until conditions for germination are optimal. Often species composition changes based on the degree of inundation on the shoreline, with aquatic species such as common pipewort (*Eriocaulon aquaticum*) transitioning to upland species such as highbush blueberry (*Vaccinium corymbosum*) as one moves upslope.

Nutrient cycling

Critical nutrients in ecosystems include carbon, nitrogen and phosphorus which participate in both local- and global-scale cycling. Locally, nutrients cycle within an environment between soil, plants, and wildlife, etc. Nutrients can flow between environments through hydrological processes (e.g., runoff) as well as through wildlife movement. The availability of these nutrients, combined with water-availability and latitude, determine the productivity and species composition of an environment (EPA 1999).

Human activities have major impacts on nutrient dynamics via fertilizers and land-use changes. Fertilizers artificially add nutrients into a system to promote growth. However, these nutrients may leach out of the intended system, impacting other systems downstream. An excess of nutrients entering watersheds can cause eutrophication of downstream lakes, ponds, and estuaries. Eutrophication is a process in which nutrient additions cause an overabundance of algae; as the algae dies, decomposing bacteria break down the material, decreasing oxygen levels. Low oxygen and acidification (due to excess carbon dioxide) are harmful to fish and mollusks and can lead to “dead-zones” (NOAA 2017). The runoff of nutrients can be mitigated by wetlands (Land et. al 2016); however, each wetland has a certain nutrient tolerance before negative repercussions of nutrient-loading impact wetland health.

Disturbances that expose soils can result in soil erosion that can cause nutrient-loss in a system. Siting trails properly, utilizing water management techniques and applying appropriate surface treatments will minimize nutrient loss through

soil exposure.

Biotic interactions

Just as ecological systems are best understood through both the knowledge of distinct habitat types *and* the processes that connect them, biotic interactions require knowing the characteristics of individual species and the network within which they interact. Species in a network can be connected directly (e.g., predator-prey), or indirectly (e.g., root fungus and pollinators) with variable strength and directions of interactions. Changes in the status of one species have the potential to influence and cause shifts in the population size of other connected species. Systems with high levels of biodiversity are generally more resilient to changes, when compared to species-sparse communities due to redundant ecological functional groups (Oliver et al. 2015). For example, if there are 20 species of pollinating flies in one community vs. three in another, the loss of a species in the latter community will be more drastic. Habitat loss, fragmentation, and widespread invasive species all serve to reduce biodiversity and negatively impact biotic interactions (Fahrig 2003).

Population dynamics

The loss of a species can have many unseen effects on a community, depending on the interactions that the species had in its environment. Species dispersion, recruitment, fertility, and mortality compose a species' population dynamics and, along with genetic diversity, play an important role in the success of a species (EPA 1999). Small populations isolated by reduced habitat or habitat fragmentation are vulnerable to extinction, locally and globally. Other species are more widespread but occur in fewer numbers and are vulnerable due to low genetic diversity. Ecosystems are not static, and species require genetic diversity to adapt to their ever-changing world or risk extinction. Special care must be taken to consider the effects that management actions may have on the rare moth and plant species known to inhabit Squibnocket Pond Reservation.

B. Biological Characteristics

1. Vegetation

Beginning at the Atlantic coast, a quick rise into sparse but intact dune grass vegetation is observed. Descending from the dunes, the landscape shifts into a heath and shrub complex towards the south, and interdunal swale matrices to the north. The heath habitat comprises limited species that include woolly beach-heather (*Hudsonia tomentosa*), bayberry *(Morella caroliniensis*), poison ivy (*Toxicodendron radicans*), and grape (*Vitis labrusca*). In contrast, the interdunal swale vegetation is highly variable depending on the wetland-moisture which is a factor of topography, soil composition and precipitation. Between the primary and secondary dunes is Lily Pond, a coastal plain pond, that supports coastal plain pondshore species.

Further inshore, stunted black oaks sprout up from secondary dunes covered

in woolly beach-heather. Towards the center of the property, and abutting Squibnocket Pond, lowland features create wetland and shrubswamp matrices surrounding Little Brook. Dense shrubswamps with species such as coastal sweet pepperbush (*Clethra alnifolia*) and swamp azalea (*Rhododendron viscosum*) are interspersed between more open bogs containing dozens of grass, sedge, and rush species over a carpet of *Sphagnum* moss and sundews. There are several standing ponds that support more than one species of native water lilies. In drier upland patches, dense shrublands are vegetated with species such as black huckleberry (*Gaylussacia baccata*), winged sumac (*Rhus copallinum*), Elliott's goldenrod (*Solidago elliottii*), and trees of poison ivy (*Toxicodendron radicans*). Further upland, along moraine ridges, woodlands of a relatively simple structure are observed. A modest regeneration/shrub layer of highbush blueberry (*Vaccinium corymbosum*) and shadbush (*Amelanchier spp.*) grows under this black oak-dominated woodland canopy.

Squibnocket Pond Reservation comprises multiple habitat communities including bogs, freshwater ponds, streams, shorelines, dunes, woodland, and grasslands. They are described in detail and shown on the Ecological Communities Map (Map 19, Appendix D).

A total of 296 plant species is known to occur on Squibnocket Pond Reservation. This value includes the nine commonwealth-listed plants, which will not be included in the species table (Table 2, Appendix D).

Several exotic invasive plants including, but not limited to, oriental bittersweet, Japanese honeysuckle, morrow's honeysuckle, autumn olive, grey willow, multiflora rose, Japanese barberry, phragmites, and purple loosestrife occur in localized areas on the property mostly along roads and other areas of disturbance.

2. Wildlife

Wildlife Surveys

Formal avian point-count surveys were performed in eight habitats across four seasons within the Squibnocket Pond Reservation: Fall 2020, Winter 2021, Spring 2021, and Summer 2021. Night flying moth community composition and abundance was assessed using black-light traps during the summer of 2021. These traps were placed in five habitats: bog, dune, mixed-oak woodland, grassland, and pond shore. Additional diurnal surveys for pupae of endangered moth species were performed in wetlands during September 2021. Coastal beetles were surveyed over two beach transect walks during the summer of 2021. Acoustic monitors for bats were deployed for 10 days (September 17-27) in 2020. Bat acoustic data were processed using the Kaleidoscope software by Wildlife Acoustics.

Species occupancy was also determined through assembling surveys from

other sources. Jesse Ausubel from Rockefeller University in New York sampled water from Black Brook, Witch Pond, Lily Pond, Squibnocket Pond, and the Atlantic Ocean in May of 2020 and 2021 and conducted eDNA analysis on these samples. Paul Goldstein and John trapped and identified bees (Hymenoptera) on the property, and Aquinnah at large, between 2011-2012, and species were included in this plan (personal communication; Goldstein and Ascher 2016).

Visual surveys for spotted turtles and other reptiles and amphibians were conducted in the bog complexes of the Reservation over four different visits between May-August 2021.

In addition to these methods, opportunistic observations of other wildlife (mammals, reptiles, amphibians, and invertebrates) took place while on the property. Direct and indirect (tracks and scat) sightings aided in creating a running inventory of species. The lists of these groups are not exhaustive but provide an assessment of common occupants of Squibnocket Pond Reservation. The listed number of species reflects all observations within the Reservation; however, in species inventory lists, commonwealth-listed species have been omitted.

A. **Birds**
   A total of 126 avian species (10 listed) was detected on Squibnocket Pond Reservation. Species and their frequencies within eight habitats surveyed is included in Table 9, Appendix F.
B. **Invertebrates**
   A total of 458 invertebrates (8 listed) was detected on Squibnocket Pond Reservation. This includes: 355 moth species (7 listed), eleven of which are new detections for the island of Martha's Vineyard as of 2021 (Table 8, Appendix E); 97 bee species (Table 7, Appendix E); and 6 other invertebrates (1 listed) (Table 7, Appendix E).
C. **Mammals**
   Fifteen mammal (2 listed) species were detected on the Reservation through direct (sightings) or indirect (tracks, scat) observations. Interestingly, eDNA results from the Atlantic Ocean off the Squibnocket beach discovered the presence of a Minke whale in 2021. A full list of mammal species observed on the Reservation is included in Table 7, Appendix E.
D. Reptiles and amphibians
   Three species of amphibians and 3 species of reptiles were observed (1 listed). A full list of these species is included in Table 7, Appendix E.
E. Fish
   No fish were surveyed to compile this management plan. However, eDNA studies of Black Brook, Lily Pond, Witch Pond, Squibnocket Pond, and the Atlantic Ocean off the barrier beach were conducted in 2020 and 2021 and revealed four species of fish within the Reservation environs and 32

additional species of fish in Squibnocket Pond and the Ocean. A full list of the species that occur on the Reservation is included in Table 7, Appendix E.

3. Rare and Endangered Species

Three quarters of Squibnocket Pond Reservation is designated as either priority and/or estimated habitat (Map 21, Appendix G). There are thirty-four commonwealth-listed species known to occur on Squibnocket Pond Reservation. Twenty species were on record with the commonwealth natural heritage endangered species program (NHESP) for the Reservation. Of these MVLBC and SMF observed eleven species and documented an additional 14 listed species for the property. Nine species are plants; seven species are birds; fifteen are invertebrates (Lepidoptera and Coleoptera); two are mammals; and there is one reptile species. To protect these commonwealth-listed species, they are omitted from species inventory tables.

These rare and endangered species are supported by a mosaic of various unfragmented habitats (Table 1, see below). For example, within Squibnocket Pond Reservation there are approximately 93 acres of open woodland, which are characterized by wide sprawling trees and a sparse midstory canopy and understory. This canopy structure provides ample but filtered light to reach groundcover plants and supports certain rare plants. These types of mixed-deciduous woodlands generally develop from areas of grazing or agricultural operations and are susceptible to the impacts of succession that may result in denser understory vegetation and decreasing light penetration. Populations of rare and/or endangered species that have adapted to the open woodland, and now cannot survive in the more competitive and shrubbier landscape, are diminishing. Much of the upland woodland of the Reservation has naturally remained open or has been managed that way through periodic mowing, especially when visible from paths and roads, which has provided opportunities for these listed species to survive.

Open grasslands and early successional shrublands are important to shade intolerant species that rely on an adequate frequency of natural or anthropogenic disturbance to halt dense vegetation growth. These early successional and open habitats were common on the Reservation in the mid 1800’s well into the mid 1900’s. During the past 50 years periodic mowing of shrublands and annual mowing of grasslands resulted in suitable habitat for listed birds and plants species as well as promoted host plants for listed moth species.

The prolific bogs and interdunal swales on the Reservation are a refuge to a suite of unique plant and invertebrate species that occur among the cranberry-sedge-sphagnum mosaic. This habitat is not uncommon to the area. However, the listed-species plant species that are associated with the bog/swale habitat are sensitive to minute changes that impact their microhabitats. The listed

invertebrate species depend on specific host plants that are prevalent in the bogs on the Reservation.

Several listed species rely on the coastal dunes and beaches of the Reservation. Coastal erosion structures and climate change have significantly impacted the barrier beach habitat on the island as a whole. Populations of species that depend on barrier beaches are endangered due to lack of and competition for nesting habitat with humans. A total of 2,475 linear feet of coastal beach is protected on the Reservation which provides habitat for rare birds, plant and invertebrate species and allows the natural flow of sand to occur. The coastal dunes and coastal pond margins provide various host plants such as beach plum and spartina sp. that listed invertebrate species require for their larva. The coastal pond margins and coastal plain pond shores on the Reservation provide suitable habitat for listed plants that are dependent on the unique disturbance regime that results from water level fluctuations.

Table 1: Frequency of rare species detected in Squibnocket Pond Reservation in three overarching habitat types.

	Coastal Habitat	Wetland Habitat	Upland Shrubland/ woodland
Rare Birds	4	1	3
Rare Invertebrates	6	2	7
Rare Plants	3	2	4
Rare Mammals	0	0	1
Rare Reptiles	0	1	0
Total	13	5	15

C. Cultural Characteristics

1. Land History

Archaeological evidence discovered over the last century from 39 documented sites in the area of Squibnocket Pond Reservation (Locus) and Menemsha Pond in Aquinnah/Chilmark indicate pre-contact indigenous people used the Reservation and surrounding land and water in a hunter-gatherer lifestyle in recurring small settlements where ample nutrient-rich supplies existed (Guernsey 1916, Huntington 1969, Ritchie, 1969, MHC 1984, Doucette 2013, Doucette & Herbster 2008, Herbster & Cherau 2000). For thousands of years the indigenous peoples' lifestyle had low impacts on the landscape of the property. It was not until post-contact with European settlers that the indigenous

peoples of Martha's Vineyard began to bend the landscape to their needs. The ecological timetable is slow to the human eye. The enormous multi-trunked open growth "wolf" trees with windswept crowns surrounded by even-aged straight trunks towering over boulders plucked from the ground surface to delineate stonewall boundaries and foundations are the living legacies of human interactions with the landscape of the post-contact period. The transition from indigenous peoples' use of seasonal settlements to permanent settlements along the Old South Road spanned many years.

The locus itself was used predominantly as commonlands for grazing, hunting, woodland harvest, and small-scale crop production. Only a few homesteads occurred on the locus. The full effect of European settlement was not observed on the property until the 1800's when many of the trees were cut and the land near Squibnocket Pond was opened for pasturing and tilling. The commonland was divided into small lots in 1870. During the 1900's the fields and stonewalls gave way to tall trees and dense shrubs, the hills became more difficult to discern and Black Brook was hidden. The small lots were amassed into larger landholdings by various European settlers. All the owners had other primary dwellings elsewhere on the island. The conservation significance of this unique stretch of land was not lost on the 20th Century owners. The property has remained free from development apart from the small hunting cabin along the shore of Squibnocket Pond and the land retained by the grantors. A detailed description of the land use history of Squibnocket Pond Reservation is included in Appendix H.

D. Property and Development Characteristics

1. Planning Concerns

Massachusetts Endangered Species Act
Prior to implementation of the management plan a Massachusetts Endangered Species Act application must be filed with NHESP for the entirety of the project proposed in Priority Habitat along with a Notice of Intent for work proposed in Estimated Habitat. Concerns regarding endangered species and their habitats include recreational access to the beach during invertebrate and shorebird breeding seasons, recreational access through wetlands, removal of invertebrate host plant vegetation. These concerns are addressed in the Land Management Planning section of this management plan on Page 34. Supporting calculations regarding carrying capacity justification and assessment of beach access locations is included in Appendix I.

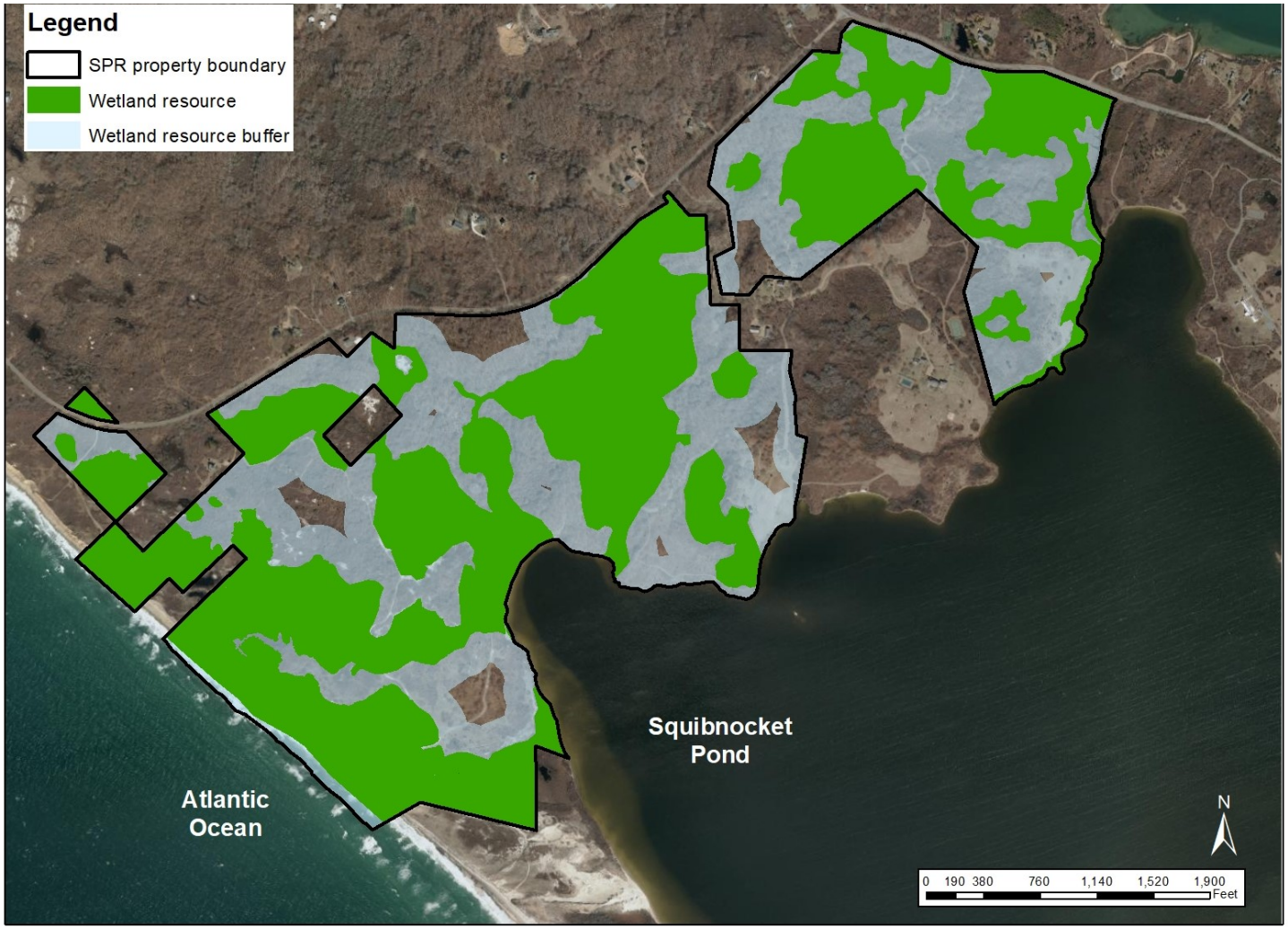
Wetland Protection Act
The coastal and pond shorelines, dunes, bordering vegetated wetlands (bogs, shrubswamps and mesic woodland) and 200-foot riverfront area are considered "wetland resource areas" under the Massachusetts Wetlands Protection Act. The wetland resource areas and 200-foot buffer zone around the wetland resource areas are subject to the jurisdiction of the Aquinnah

conservation commission (Map 2) for a total of 311 acres (96%) of the Reservation. The shoreline and adjacent inland are located within the land subject to coastal storm flowage and are in the high velocity zone. Installing a trail, boardwalks, bridges, and stairs over these resource areas requires a filing for a Notice of Intent with the Aquinnah conservation commission and Massachusetts Department of Environmental Protection (MA DEP).

Chapter 91

Black Brook and Little Brook could potentially be designated by the commonwealth as navigable ways under M.G.L. c. 91 and the Waterways Regulations in 310 CMR 9.00. However, these brooks are not navigable by boat due to their size and intermittent streambed as they flow through shrubswamps and bogs. The proposed boardwalks and bridges for the Reservation do not preclude pedestrian passage in the brooks and there are no boardwalks proposed at the kayak launch and landing sites to preclude Squibnocket Pond shoreline navigation.

Map 2: Wetland resource areas of Squibnocket Pond Reservation and 200ft buffer zone.



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019; habitat: MVLandBank
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map.

District of Critical Planning Concern and Overlay Districts
The Martha's Vineyard Commission has the power to define and designate areas requiring special planning. The Reservation is within the Town of Aquinnah District of Critical Planning Concern and the Moshup Trail District of Critical Planning Concern. The Reservation is also within the following overlay districts: Flood Plain Zone, Coastal District, and the Island Road District. The DCPCs and Overlay Districts are governed by Aquinnah Zoning Bylaws Articles X, XI, XIII and XIV (Special Zoning District Map, page 26).

***Coastal District*:** Within the Coastal District (Article X) a special permit is required from the Aquinnah planning board review committee for any structure within 200 ft of a resource area, for vehicular access greater than 12 ft in width and for any alteration of existing stonewalls. A review by the Martha's Vineyard Commission of parking areas that service more than 5 vehicles is required.

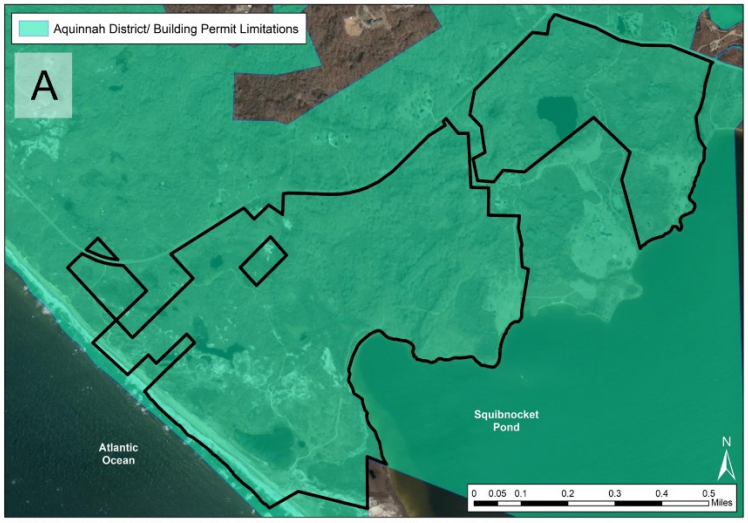
***Flood Plain Zone*:** Within the Flood Plain Zone (Article X) a special permit is required from the Aquinnah planning board review committee for any new construction. Man-made alteration of sand dunes is prohibited within the velocity zone.

***Moshup Trail District of Critical Planning Concern*:** Within the Moshup Trail District of Critical Planning Concern (Article XI) a special permit is needed from the Aquinnah planning board review committee for any signage, the siting of any structure, curb cuts, alteration of existing stonewalls, parking areas and the removal of any vegetation. Any structures must meet specific aesthetic guidelines as well as be sited 150 ft from the road and have a foundation no more than 18" above grade.

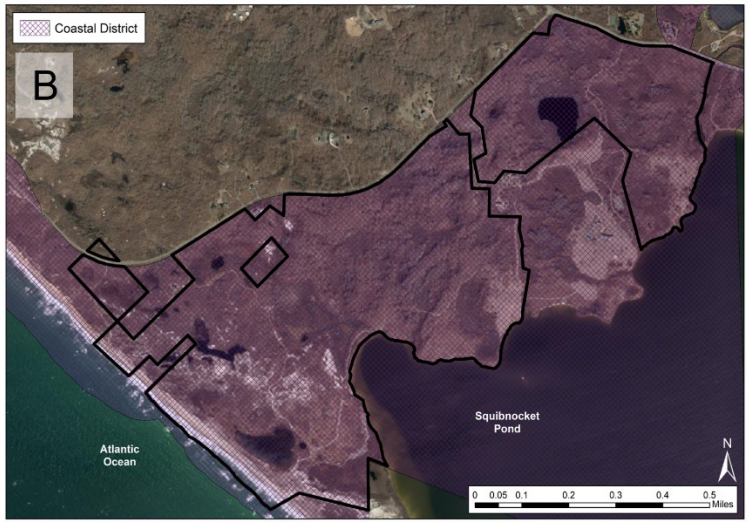
***Aquinnah Town District of Critical Planning Concern*:** With the Aquinnah Town District of Critical Planning Concern (Article XIII) a special permit is required from the Aquinnah planning board review committee for any structures, curb cuts, driveways, pedestrian paths over 3ft in width, roads wider than 12 ft, use of any impervious materials, signs, the removal of all living trees over 3 ft diameter at base from an area greater than 200 ft^2, the removal of any living tree over 9 in diameter at base, and any aggressive pruning (removal and pruning of trees requires site visit and approval from the tree warden). Within coastal areas (500 ft from high watermark), except on municipal lots, no new boardwalks or parking lots are permitted. Prior to any development a project notification form must be submitted to the Massachusetts Historical Commission and the Aquinnah planning board review committee to determine if a survey is required to protect historical and archeological resources of the property.

***Island Roads District*:** Within the Island Roads District, a special permit is required to alter any stonewalls. All curb cuts must be 1,000 ft from any other vehicular access on the same side of the road.

Map 3: Districts of Critical Planning Concerns A) Town of Aquinnah and Special Building Permit Limitation Zone. B) Coastal District Zone. C) Moshup Trail District and Major Roads Zone (DCPC). D) Flood Plain Zone.



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
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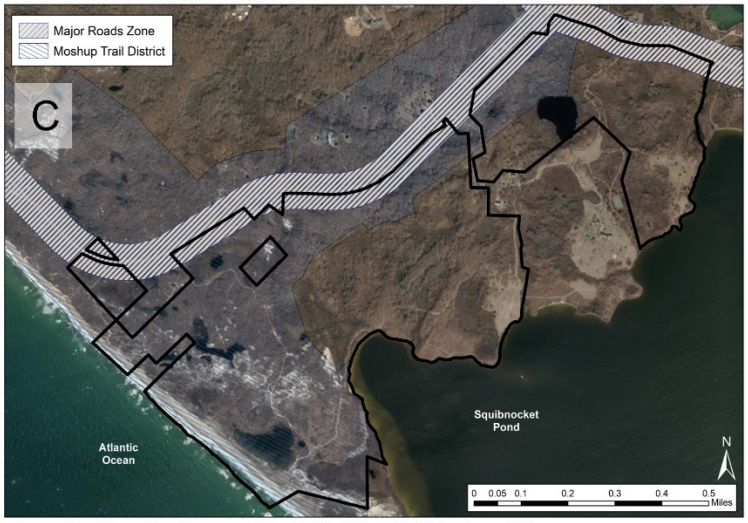

Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
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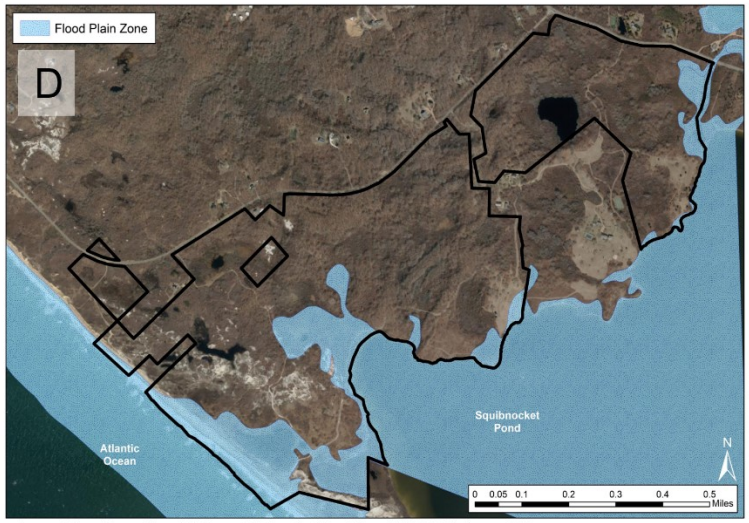


Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

Easements and Restrictions

The grantors reserved 8 non-exclusive use easements appurtenant to the land over certain existing roads and land abutting their driveway. Additionally, the grantor reserved an 11-acre exclusive use beach area appurtenant to the land as well as a 4-vehicle parking area (See Map 22, Map 23, Appendix J). Hunting and trailhead location and size restrictions are detailed in the deeds (Duke County Registry of Deeds (DCRD) 81:347, 1595:116, 83:23).

2. Abutters

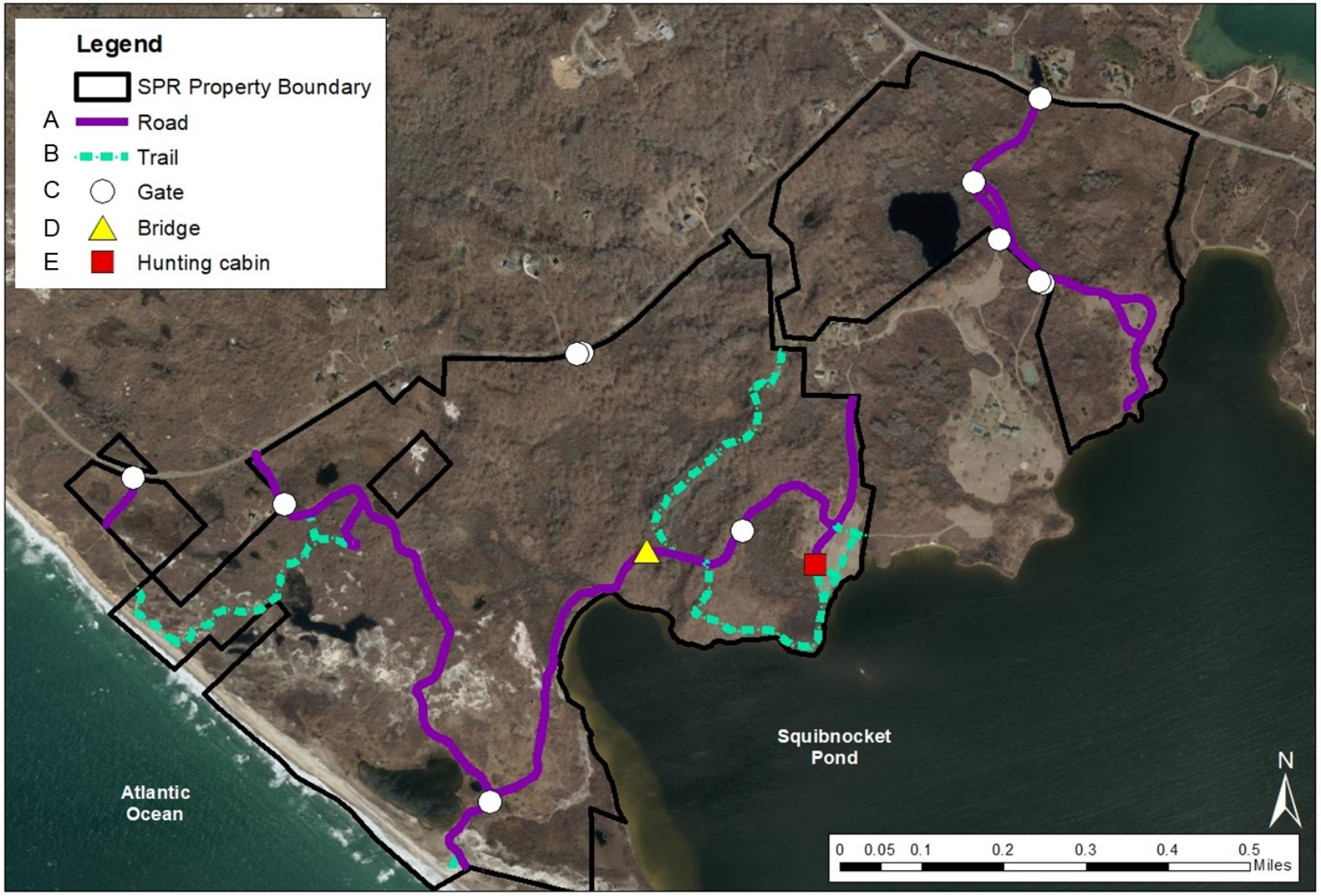
A list of those owning land abutting or within 200 ft of the Squibnocket Pond Reservation is generated based on the Aquinnah 2021 Assessors Map as it appears in the AxisGIS program (Map 24, Appendix K). Chilmark abutters are included on the Abutters List in Table 10, Appendix K. Beach lot owners of Map 12 lots 94.8-94.13 & 94.1-94.7 and Map 14 Lots 3.1-3.13 are not listed on AxisGIS (https://www.axisgis.com/AQUINNAHMA/)

3. Existing Use and Infrastructure

Squibnocket Pond Reservation is bounded by the Atlantic Ocean, State Road, Squibnocket Pond and Moshup Trail as well as a few private properties. Various pre-existing infrastructure exists within the Reservation; some will be incorporated or altered for public use, while others will be decommissioned or reserved for staff/emergency use (Map 4, below).

A. **Roads**: The property currently has several existing roads that are accessed from Moshup Trail and State Road. Some roads, especially in the southern section will be incorporated into proposed trail systems; others, such as those near Lily and Squibnocket Pond will not be incorporated into public use at this time but will be maintained for staff.
B. **Trails**: Several trails exist on the property that are maintained through mowing; some of these will be incorporated into proposed trail systems, others will be for staff-use-only, and others will be left to revegetate.
C. **Gates**: There are a total of ten gates existing within the Reservation boundaries. In the north section, there is one entrance gate off State Road and one internal gate as well as three internal “walls”. In the southern section, there are two entrance gates off Moshup Trail, three gates abutting neighboring property and three internal gates at various places (e.g., near Lily Pond and access to beach). There are three additional gates proposed along the road in the northeasterly area of the south section.
D. **Bridges**: A bridge crosses Black Brook. This bridge will be maintained for maintenance vehicle access as deemed necessary.
E. **Structures**: A small, off-grid hunting cabin dating to the 19th century exists near the shore of Squibnocket Pond. It was restored by the prior owner and was maintained without modern plumbing or electricity.

Map 4: Existing infrastructure of Squibnocket Pond Reservation See Section 1.D.3 for descriptions of these features.



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

II. Inventory Analysis

In this section, problems and opportunities that may arise in the management of Squibnocket Pond Reservation are analyzed.

A. Constraints & Issues

1. Ecological Context

The Reservation is near other conservation land. Toad Rock Preserve is located across Moshup Trail, and land owned by Vineyard Conservation Society and SMF is proximate to the Reservation. The Reservation is an important link to the cross-Aquinnah trail system planned ultimately to connect Vineyard Sound to the Atlantic Ocean.

2. Natural and Cultural Resource Concerns

There are five main areas of concern at Squibnocket Pond Reservation, each briefly addressed below and then addressed in more detail in the land management section of the plan:

Commonwealth-listed rare species
34 commonwealth-listed plant and wildlife species have been determined to occur on the Reservation. The three major habitat types – upland, wetland, coastal – all provide habitat for these species. These species are included in inventory totals but are not identified in species tables.

Erosion
There is highly variable topography on the Reservation including the dynamic dune system. The hazard of soil erosion along trails may present stabilization issues if not properly managed. Soil loss, root exposure and rutting will be minimized, and archeological artifacts will be protected by using light-penetrating raised boardwalks and adjustable stairs in the dune system; implementing switchbacks and water management systems on slopes; routing around sensitive wetland habitats when possible; and installing stairs and raised boardwalk to span the Black Brook ravine.

Invasive Species
Invasive species are a concern on any property. Exotic and/or invasive species outcompete and displace native species, altering the composition of natural vegetation communities (Somers 1996). Often without natural enemies, these seedlings compete for nutrients, water, and light with neighboring plants. Annual monitoring and quick control and removal of invasive species are important to maintain an ecological balance and the integrity of habitats on the Reservation.

Wetland Resource Areas
Multiple wetland resource areas occur on Squibnocket Pond Reservation. The wetlands provide important habitat for various wildlife and plant species and

are groundwater recharge areas. Care must be taken to ensure that erosion of soil from trails and other open surfaces does not result in siltation of a wetland and that management activities do not unduly alter habitat characteristics.

Succession
Squibnocket Pond Reservation is undergoing natural succession. Absent major disturbances, grassland and shrubland habitats will succeed to a denser woodier community that will displace the diverse herbaceous assemblage including some listed species. These habitats need to be managed with a variety of techniques that mimic past disturbances responsible for creating and maintaining them.

3. Sociological Context

Squibnocket Pond Reservation is positioned in the town of Aquinnah along the western shore of Squibnocket Pond. The property is surrounded by private residences and is included in the commonwealth's Aquinnah Minority Environmental Justice Block. The area is popular for its natural beauty, fishing, and beach-going.

4. Neighborhood Concerns

The land bank and SMF consider the concerns of neighbors as part of the planning process. All abutting property owners and the local conservation commission are sent written notice of a public hearing on the draft plan. All neighbors -- and all members of the public -- are invited to review the draft plan, attend the public hearing and make written or oral comments. The Sheriff's Meadow Foundation Board of Directors, land bank's Aquinnah town advisory board, the Martha's Vineyard land bank commission review all comments and can change the draft plan if desired. Anyone may also express concerns at any public meeting of the Martha's Vineyard land bank commission and Aquinnah town advisory board or may simply contact land bank and SMF staff. Some general concerns already incorporated into this management plan include:

- Trespassing on private property.
- Access for subsistence harvesting/hunting by the Wampanoag tribe
- Hunting and fishing access.
- Beach access.
- Ticks and their tick-borne illnesses.

B. Addressing Problems and Opportunities

1. Land bank Mandate and Sheriff's Meadow Mission

In 1986, the voters of Martha's Vineyard created the land bank to acquire, hold, and manage land in a predominantly natural, scenic, or open condition. The land bank keeps open space open and allows modest public use. Its "shared-use" policy strives to provide a range of public benefits, from low-impact

recreation and aesthetics to wildlife conservation and watershed protection. Protection of natural resources is the land bank's highest priority, yet "shared-use" demands balancing the public use of natural resources with protection of the same.

In 1959, Henry Beetle Hough and Elizabeth Bowie Hough established the Sheriff's Meadow Foundation to purchase and conserve properties that were otherwise overlooked by other conservation organizations. The mission of Sheriff's Meadow Foundation is to conserve the natural, beautiful, rural landscape and character of Martha's Vineyard for present and future generations.

These two organizations have collaborated on other conservation projects on the island that are in line with their goals and policies. The joint purchase of Squibnocket Pond Reservation is a continuation of this work.

2. Goals at Purchase

The purchase of Squibnocket Pond Reservation meets eight of the land bank's nine criteria for property acquisition: land that protect well fields, aquifers, and recharge areas; forest land conservation; fresh and saltwater marshes or wetland conservation; ocean and pond frontage, beach, dune, and adjoining backland resource protection; wildlife habitat conservation; easements for trails and for publicly owned lands; protection of scenic vistas; and sites for passive recreation. Similarly, the purchase of the Reservation meets 11 of SMF's criteria for acquisition: visible and benefits the general public; protects rare species; protects scenic views; protects wetlands, streams, and watersheds; the land is likely to be developed in a manner that doesn't preserve the rural character of the area; the property contains significant wildlife habitat and important ecological habitats or natural features; the property provides public access or recreational use; the property can host a trail network; the property is contiguous to other conserved lands; there is wide-spread community support for the project; and the project can pay for itself or lend itself to special fundraising.

A preliminary management plans was adopted by the land bank commission and Aquinnah advisory board, and Sheriff's Meadow Foundation board of directors (see Appendix B).

3. Opportunities

The 323 acres of Squibnocket Pond Reservation provides several opportunities for the public to interact with this scenic landscape. They are as follows:

A. **Access:** There are two access options for vehicles entering the Reservation. The north entrance is proposed off State Road and utilizes an existing road and is proposed to provide 13 spaces for vehicles (three

reserved for paddlers). The south entrance is proposed off Moshup Trail and provides 12 spaces for vehicles with one reserved for universal access. An in-season reservation system is proposed for both trailheads. A sign station and lavatory facilities are proposed at both entrances.

B. **Trails**: A 5.6-mile trail system utilizing existing and proposed trails meandering over hills and valleys of the Reservation with access to Squibnocket Pond and the Atlantic Ocean is possible. Additionally, a short universal access loop trail is possible at the south entrance trailhead.
C. **Views**: The Reservation offers unlimited opportunities for breathtaking views of the dune system, freshwater ponds, Squibnocket and Menemsha Ponds, Noman's, and the Atlantic Ocean. Two viewing platforms are proposed along the trail system with one on a hill overlooking Squibnocket Pond and the other on the secondary dunes overlooking Lily Pond. Additionally, benches are proposed throughout the trail system when respite and viewing opportunities present themselves.
D. **Passive recreation**: The Reservation is well suited for passive recreational use such as kayaking, hiking, birdwatching, and beach-going.
E. **Hunting and Fishing:** The Reservation supports white-tailed deer and waterfowl populations as well as access to salt-water fishing. There are 245 acres of huntable land on the Reservation, based on deed restrictions and commonwealth hunting regulations (321 CMR 3.00).

4. Universal Access (UA)

Squibnocket Pond Reservation is not well-suited for universal accessibility. The topography, sensitive habitats and archaeological significance of the area preclude the provision of universal accessibility to most of the Reservation.

The Reservation's ROS (Recreation Opportunities Spectrum) classification is "Semi-Primitive Non-motorized". Further details are included in Appendix L.

III. Land Management Planning

This final section of the management plan states goals for Squibnocket Pond Reservation and outlines strategies for achieving them. These goals and strategies are designed to fit within the social and ecological constraints defined previously. The plan addresses five areas of planning concern: nature conservation; recreation and aesthetics; natural products; community interaction; and land administration.

A. Nature Conservation

Provide long-term protection for plants, wildlife, and natural processes occurring at Squibnocket Pond Reservation.

Objective 1: Protect and encourage rare and endangered species on the Reservation.

Strategies:

A. Monitor the property for rare plants and wildlife during regular property

checks.

B. Develop and implement a strategy to protect any additional rare species observed on the property.
C. Monitor existing and report new observations of rare and endangered species to the proper commonwealth authority.
D. Reroute or close trails in the event that the recreational use interferes with a rare species.
E. Annually mow trails one-foot wider than trail tread to create edge habitat for rare species that benefit from disturbance.
F. Prohibit non-motorized bicycles, horses, and dogs from the southern portion of the Reservation accessed by the south entrance off Moshup Trail.
G. Protect and enhance existing rare species habitats:
    a. Woodland Habitat
        i. Site trails and trailheads in such a manner as to minimize tree cutting.
        ii. Manage understory in targeted areas of open-grown oaks through mowing and grazing (See Project Planning Maps).
    b. Shrubland
        i. Mow successional shrublands annually.
    c. Bog
        i. Site trails in such a manner as to minimize bog crossing.
        ii. Boardwalk any unavoidable bog crossings with light-penetrating decking (16% light penetration) and pin foundation systems.
        iii. Mow 0.29 acres of bog buffer area as needed to control woody vegetation, (Appendix A, Map 10).
    d. Grasslands
        i. Mow and/or graze at least once annually.
        ii. Promote butterfly weed through targeted mowing and grazing before emergence and/or after seed dispersal.
        iii. Fence off rare species or host plants of rare species during grazing.
    e. Dune
        i. Site trails in such a manner as to minimize disturbance in the dune system.
        ii. Where trail crossings in dunes are necessary use: raised boardwalks with light-penetrating decking and pin foundations; mats; adjustable aluminum stair system; and snow fencing.
        iii. Use mats on existing maintenance roads.
    f. Coastal Pond Shore
        i. Designate specific pond shore access points to avoid impacting existing and future rare plant species and wildlife habitat.
        ii. Site brook crossings to minimize negative stream habitat impact; utilize existing ways if this is not feasible.
        iii. Use signage, detailed maps and symbolic fencing where

necessary to discourage unauthorized pondshore access.

g. Beach
    i. Manage shorebird nesting habitat according to the “guidelines for managing Recreational Uses of beaches to protect Piping Plovers, terns and Their Habitats in Massachusetts “ (DFW, April 1993) including but not limited to the use symbolic fencing to designate and protect breeding and foraging habitat of listed shorebird and invertebrate species and the closure of beach access paths if a listed-birds nest is within 50 yards of the path or a breeding pair further than 50 yards is disturbed by the use of the path.
    ii. Monitor for rare shorebirds and invertebrates by qualified monitors.
    iii. Consult with NHESP to design, implement and adaptively modify (as necessary) appropriate monitoring protocols to identify population trends for rare invertebrate species.
    iv. Limit beach recreation to the northern beach access point area between June 1 and August 31.
    v. Permit pedestrian access in the intertidal zone between the northern beach access point and the southern boundary limit of the Reservation between June 1 and August 31.
    vi. Maintain shorebird symbolic fencing through the end of October.
    vii. Coordinate monitoring efforts with abutting exclusive-use easement.
    viii. Use signage and seasonal staff to educate and discourage unauthorized uses.
    ix. Prohibit use of kites during shorebird nesting season (April – August).
    x. Prohibit dogs on the southern portion of the Reservation.
    xi. Prohibit motorized vehicles, including all-terrain vehicles, on the beach unless for emergency purposes.
    xii. Consider designating limited areas for more intensive beach use activities.

Objective 2: Reduce and control erosion of trails.

Strategies:

A. Reroute or temporarily close any trail where necessary.
B. Implement switchbacks on grades greater than 8% and alternate switch lengths in order to improve drainage.
C. Use water-bars and checks in conjunction with surface materials if necessary.
D. Explore alternative erosion control measures as such methods are discovered.
E. Cover trails with woodchips if needed to manage unforeseen erosion issues and prevent further surface soil erosion.

F. Minimize use of heavy maintenance equipment on trails with a slope of greater than 8%.
G. Prohibit use of motorized vehicles such as dirt bikes, electric bikes, and all-terrain vehicles throughout.
H. Prohibit use of non-motorized bicycles and horses on the northern portion of the Reservation accessed by the north entrance for at least two years in order to observe the actual impact to the trails by hikers and then determine whether to allow this use and how best to phase it in provided that bicycles and horses cannot access the southern portion of the Reservation by the northern portion and are prohibited from sensitive trails in wetlands and coastal habitats.
I. Use mats, adjustable aluminum stairs and raised boardwalks.
J. Use stone and ramps at boardwalk ends as necessary.
K. Use steps to traverse steep slopes (>15%) and install trail edge retainers where trails cross a slope perpendicular.

Objective 3: Protect the value of the Reservation as migratory and breeding habitat for wildlife species.

Strategies:

A. Retain snags in woodland where these trees do not pose unacceptable safety or fire hazard.
B. Site trails and shore access away from otter latrines and dens.
C. Minimize trail siting through all shrubswamp, bog and pondshore habitats.
D. Use existing trails in grassland habitat.
E. Site trails away from known nesting osprey poles and heron rookeries.
F. Monitor changes in vegetation cover during regular property checks and by updating ecological inventory in 2032.

Objective 4: Monitor for and control the spread of invasive species such as barberry, multiflora rose, honeysuckle, phragmites, purple loosestrife, autumn olive and bittersweet.

Strategies:

A. Pull purple loosestrife annually around Lilly Pond and the shore of Squibnocket Pond.
B. Use appropriate methods such as hand pulling, repeated mowing, pre-dispersal cutting, weed wrench removal, and girdling as time and funding allow.
C. Monitor for re-growth and continue to manage invasive plants.
D. Explore other control methods and implement with permission of the MVLBC, SMF and Aquinnah Conservation Commission if physical control methods fail.
E. Dispose of invasive species following approved methods.
F. Clean maintenance equipment between properties to avoid the spread of invasive species.

Objective 5: Reduce forest-fire danger on the Reservation.

Strategies:

A. Prohibit open campfires on the Reservation.
B. Follow the recommendation of the Martha's Vineyard Commission Community Wildfire Protection Plan, providing recommendations do not preclude attainment of natural conservation objectives.

Objective 6: Protect natural process on the Reservation

Strategies:

A. Improve connectivity in Black Brook.
    a. Evaluate functionality of culverts and other crossings for wildlife habitat improvement.
B. Encourage native plants to support native pollinators.
    a. Use native island grown plants for any restoration or screening.
    b. Implement mowing regime around flowering times of dominant vegetation.
C. Wetland functions
    a. Allow the natural process of wetland succession, dune migration and stream meandering to occur.
    b. Protect buffer zone vegetation of wetland resource areas.

Objective 7: Create and manage open habitats (see Project Map)

Strategies:

A. Maintain 10.3 acres of grassland through annual mowing and/or grazing
    a. Utilize spot grazing or in-season grazing to manage woody vegetation.
    b. Fence off any rare plants and rare species host plants as necessary for in-season grazing.
B. Restore 5.8 acres shrubland into early-successional shrubland and grassland.
    a. Use mowing to convert existing shrubland.
    b. Maintain converted early-successional shrubland through annual mowing, during the non-growing season, and/or grazing, provided rare species are not impacted.
C. Maintain low herbaceous understory in 12.3 acres of historic pastureland with large spreading oaks.
    a. Mow annually during the non-growing season using a spring/fall rotational mowing schedule.
    b. Graze and mow during the summer season if woody vegetation management is necessary, and rare species are not impacted.
D. Highlight stonewalls and foundations by hand or through grazing when visible from a public trail and if feasible.

Objective 8: Plan for climate change adaptation

Strategies:

A. Use adjustable boardwalks and adjustable beach access stairs.
B. Minimize soil disturbance property-wide.
C. Promote carbon sequestration in management practices.
D. Site trails outside of 10 ft sea-level rise prediction zone where possible.
E. Use boardwalks where necessary.
F. Reroute 750 ft of existing southeastern shore trail as needed.
G. Anticipate needing to move kayak launch and landing sites approximately 130-200 ft from shore.

B. Recreation and Aesthetics

Allow limited, low-impact recreational use of the area; prohibit camping (generally) and overnight boat storage on the Reservation; and create and/or maintain attractive views and landscapes, provided that these uses do not preclude attainment of nature conservation objectives.

Objective 1: Maintain the property open for low-impact recreation.

Strategies:

A. Open the property for hiking and other passive uses.
    a. Open Reservation between 7am and 7pm in-season and from dawn to dusk in the non-core season (November – April).
    b. Utilize trailhead gates to manage use during core and non-core visitation season.
    c. Staff the trailheads, beach and kayak launch during the core visitations season and staff the trailhead during the non-core visitation season, re-assess staffing after 5 years.
    d. Utilize trail counters and cameras to monitor use and manage accordingly.
    e. Utilize a reservation system for vehicle access during the core visitation season (April 1 – October 31).
    f. Provide fisherman and star gazers with access to the closed gate by request, re-assess after 5 years.
B. Limit total number of people on the Reservation at any given time between May 1 and October 31. Start at 125 and increase, as experience justifies, up to 175 no sooner than five years post-opening following an evaluation of the Reservation and after review and written approval from NHESP. This calculation is based on vehicle capacity plus walk-on, drop-off, bicycle, and kayak access.
    a. Re-evaluate carrying capacity increase after five years based on endangered species population numbers and use data.
    b. Consult with NHESP to develop a set of habitat/ rare species metrics to guide rare species monitoring, identify potential impacts and set appropriate goals/thresholds for making future adaptive management decisions.
    c. Adjust carrying-capacity based on monitoring results and possibly

further restrict public access to coastal areas on the southern portion of the preserve promptly if negative impacts to rare species and their habitats are observed.

C. Install new trail(s) where appropriate (see Project Map).
D. Allow picnicking on benches, viewing platforms and designated beach areas and maintain a “carry in-carry out” policy for litter.
E. Prohibit use of bicycles and horses on the Reservation
    a. Re-evaluate the potential use of bicycle and horses on the northern portion of the Reservation after two years to observe the actual impact to the trails by hikers and then determine whether to allow this use and how best to phase it in provided that bicycles and horses cannot access the southern portion of the reservation from the northern portion at any time.
F. Monitor impact of passive recreational use on the Reservation annually and manage accordingly.
    a. Utilize property attendant data during the core visitation season (May 31 – October 1).
    b. Utilize weekly property inspections in combination with trail counter and camera data during the non-core visitation season (months of May and October).
    c. Utilize monthly property assessments in combination with trail counter and camera data during the winter season (November 1 through April 30).
G. Protect the significant archaeological nature of the Reservation.
    a. Consider archaeological research proposals that are permitted by the proper authorities and reviewed by MVLBC and SMF.
    b. Otherwise prohibit unless allowed under above permitting:
        i. digging or disturbance of the surface,
        ii. removal of any artifacts from the Reservation,
        iii. and metal detecting.
    c. Use surveillance at trailheads as needed to ensure the archaeological value of the Reservation remains intact.
    d. Minimize stonewall crossing and use stiles when crossings are unavoidable.
H. In recognition of the water quality in Squibnocket Pond, designate pond as a no-swimming area.

Objective 2: Direct visitors to access the north and south entrances to the Reservation by way of two trailheads located. (see Project Map).

Strategies:

A. Create a 13-vehicle trailhead at the north entrance and a 12-vehicle trailhead at the south entrance (See Project Map).
    a. Avoid soil disturbance by siting the trailhead on level ground and bringing in surface material to the trailhead.
    b. Minimize tree cutting to fewer than 20 oak trees in the creation of

the trailheads.
c. Utilize an in-season reservation system to manage use.
d. Install gates at trailhead entrances.
e. Re-evaluate the level and duration of staffing during the non-core visitation months (November – April) after five years.
f. Reserve one space in the south entrance trailhead for a Universal Access vehicle.
g. Widen entrance as necessary.

B. Provide reservable day-long kayaks through the reservation system, starting with 4 and increasing up to 8 as experience justifies and accessible from the north entrance to the Reservation, between June 15 – September 1 (see Map 11 and Map 14, Appendix A).
    a. Install kayak storage racks with minimal-to-no ground disturbance at the launch and landing sites.
    b. Install life-jacket storage box at the north entrance trailhead.
    c. Reserve at least 3 spaces in the north entrance trailhead for paddlers.
    d. Supply dollies at the trailhead for off-season paddlers. Remove dollies during the season, as kayak access at that time is limited to reservable kayaks only.
    e. In order to inhibit trespass and/or misuse of the dunes, design reservation system so that it, and the on-site rangers who implement it, will clearly advise paddlers of the location of the designated landing for ocean access.
        i. Erect signage as necessary to protect coastal habitats and fragile wetland vegetation.
        ii. Site kayak landing on southern portion of Reservation away from barrier beach and other sensitive coastal areas.

C. Improve and/or create 734 ft of access roads to the trailheads
    a. Minimize soil disturbance through the use of additional surface material.
    b. Improve sightlines at access road entrances.

D. Install map station at the trailheads with maps of the areas and nearby conservation areas and signs designating the appropriate uses and rules of the Reservation.
E. Build at the south entrance a 150 ft^2 maintenance shed and install a portable lavatory.
F. Install a portable lavatory close to the north entrance, if needed.
G. Monitor for vandalism and address as needed with surveillance equipment and working with local authorities.
H. Install a welcome sign and logo post on the Reservation’s north and south entrances.
I. Install a bicycle rack near the trailhead entrances within the Reservation.

Objective 3: Create new trails as shown on the Project Map.

Strategies:

A. Utilize ±8,879 existing feet of trail.
B. Create ±16,714 linear feet of new trail.
    a. Make trail corridors eight feet wide with a maintained tread of 6 feet.
    b. Minimize the cutting of trees in the creation of trails.
C. Create a ± 304 linear feet universal access loop trail with interior views at the south entrance trailhead.
D. Build up trail and harden using permeable surface materials.
E. Retain sides of trail in natural state as possible.
F. Build ±2,211 linear feet of boardwalk, utilizing mats (e.g., dune mats) and elevated pin-and-plate foundation with light-penetrating decking.
G. Install a viewing platform with three-sided benches at the overlook near Spider Hill.
H. Install adjustable, modular aluminum stairs (60-100 steps) over the dune(s) for beach access.
I. Install erosion control measures where needed.
J. Mark trails with paint blazes, colored markers, mini-maps, or directional signs if needed.
K. Site trails so that they are as unobtrusive as possible to nearby homes and sensitive wildlife habitat.
L. Minimize the need for signs by siting trails appropriately.
M. Allow staff discretion to close or relocate trails or add new trails, such as spur trails for off-property trail connections.
N. Allow multiple uses of trails where appropriate, by initially limited to hiking and Nordic skiing in the southern portion of the property and in the northern portion of the property with the possibility of permitting bicycling and horses in future but only after at least two years of monitoring impacts from passive use on trail conditions to determine whether it is appropriate to allow these additional uses on the northern portion of the property.
O. Dogs prohibited on the southern portion of the Reservation and permit leashed dogs on the northern portion of the property contingent on a positive one-year evaluation.
P. Use brush or temporary fences to close unauthorized or relocated trails if necessary.
Q. Prohibit visitors' use of motorized vehicles, such as but not limited to dirt bikes, electric bikes, and all-terrain vehicles with the exception of electric bike use by staff as an alternative to vehicle use.
R. Check and maintain trails monthly.
S. Maintain existing trail system in good condition.

Objective 4: Manage existing access roads.

Strategies:

A. Maintain 7,149 linear feet of existing access road, and bridge for maintenance purposes.
    a. Utilize mats (e.g., dune mats) and surface material as necessary to

provide adequate maintenance access.
b. Mow grass medians and roadsides, as necessary.

B. Maintain existing gates as shown on the easement map (Map 12, Project Planning Map C, Appendix A; Deeds, Appendix B); relocate, as necessary.

Objective 5: Highlight and maintain existing views; expand as fitting.

Strategies:

A. Trim, as needed, to maintain and enhance existing views; expand as fitting.
B. Continue to mow 0.2 acres of existing understory clearing during the growing season at a rate of no more than twice per month, providing the mowing does not interfere with nature conservation goals (See Map 10, Project Planning Map A, Appendix A).
C. When trimming vegetation on slopes greater than 8%, limit soil disturbance by maintaining ground cover where possible and installing erosion control measures if necessary.
D. Install rustic benches and viewing platforms where appropriate.
E. Remove debris.
F. Flush-cut stumps.

Objective 6: Entertain possibilities for other trail links.

Strategies:

A. Create new trails as necessary to connect the Reservation to future conservation land and trail easements.

Objective 7: Permit leashed dogs on the northern portion of the Reservation, on an observational basis.

Strategies:

A. Permit leashed dogs in upland parts of the northern portion of the Reservation year-round providing dogs cannot access the southern portion of the Reservation from the trail system and Squibnocket Pond; evaluate usage after one year and adjust management accordingly to prohibit dogs on the entirety of the Reservation, if necessary.
B. Prohibit all dogs from the southern portion of the Reservation.
C. Post use rules in appropriate locations; rangers will reinforce rules.
D. Encourage visitors to clean up after their pets.
E. Should misuse occur in the future, the land bank and Sherrif's Meadow Foundation will react swiftly to adjust rules tailored to the circumstances but to include, if necessary, a ban of dogs.

Objective 8: Prohibit camping and overnight boat storage.

Strategies:

A. Prohibit camping on the Reservation unless special permission is granted for scouting and like groups and if in compliance with appropriate town bylaws.

B. Monitor the Reservation for squatters and remove unauthorized campers promptly.
C. Prohibit all overnight storage of boats and outhaul anchors.
D. Establish designated areas for kayak launching and landing.
    a. Allow boat landings in designated areas only (see Project Map).
    b. Prohibit boat landing outside of designated areas on the Reservation including pleasure craft landing on the barrier beach.
        i. Utilize staff posted at the barrier beach and kayak landing/launch sites during the core visitation season to monitor and enforce boat landing rules for the Reservation.
        ii. Provide maps to visitors with kayak reservations that clearly outline designated launch and landing areas.
        iii. Demark launch and landing areas with signage visible from the water.

Objective 9: Utilize existing hunting cabin for staff purposes.

Strategies:

A. Maintain cabin in good condition for staff purposes such as storage of equipment and supplies.

C. Natural Products

Objective 1: Allow hunting of white-tailed deer and waterfowl on the Reservation.

Strategies:

A. Notify the public of the hunting policy on the Reservation through the land bank hunting policy and on the Sheriff's Meadow Foundation and land bank website.
    a. Provide access to Squibnocket Pond for waterfowl hunting via the kayak launching and landing areas; limit hunting in the pond environs to the non-vegetated stretches of the shoreline.
    b. Provide access for archery and shotgun deer hunting via the two trailheads.
        i. Limit archers to 10 per week for the season.
        ii. Limit deer shotgun hunters to 10 per day for the season.
        iii. All deer must be removed by foot using the proposed trail system.
        iv. Dressing of deer must occur off-premises with no burying of the viscera on the Reservation.
B. Properly sign the Reservation boundaries and deed-restricted hunting buffer zones (See Hunting Map).
C. Attend the trailheads to check-in hunters during deer shotgun season.
D. Recognize Aboriginal rights for hunting, fishing, and trapping on the Squibnocket Pond Reservation.

Objective 2: Allow access to Squibnocket Pond and Atlantic Ocean for

fishing via the trailheads.

Strategies:

A. Supply trailhead access during the summer season via the daytime reservation system from early May to October 31.
B. Allow nighttime use of the Reservation for fishing during the off-season (November 1 to April 30) by walk-on, bicycle and vehicle through closed gate.
C. Provide nighttime access information for passage through the closed south entrance gate on the southern portion of the Reservation to fisherman upon request.
D. Investigate access to Squibnocket Pond for shellfishing at such time as a viable shellfishing season is available.

Objective 3: Allow gathering of natural products.

Strategies:

A. Prohibit collecting of rare plants and wildlife on the Reservation.
B. Suggest that gathering occur within the immediate environs of the trail system, to avoid social trails and trampling of vegetation.

D. Community Interaction

Provide helpful and interesting information about the property for visitors; promote cultural resource conservation; and allow educational use of the property.

Objective 1: Help people find the property and avoid trespassing.

Strategies**:**

A. Mark the property on land bank and Sheriff's Meadow websites and TrailsMV app and provide directions.
B. Staff Reservation with sufficient number of rangers.
C. Install "end of public property" signs where appropriate, including the southeasterly end of the beach.
D. Install logo markers on property.
E. Limit trespassing by closing existing and unauthorized trails not intended for use.
F. Install gates or fencing as needed.
G. Inform visitors how to access the Reservation trailheads and their intended uses.
H. Post map of property and trails as well as an aerial overview of the connecting conservation land and trails on sign station and websites as they are updated.
I. Erect signs, as needed, to prevent confusion as to location and retained use, by grantors, of exclusive-use easement area.
J. Erect signs, as needed, to inform paddlers of the two locations along the pondshore—the kayak launch and kayak landing—where alighting is permitted.
K. Inform visitors that swimming in the pond is not permitted.

L. Utilize staff during the core visitation season posted at the barrier beach to monitor use on trail system by members of the Zack's Cliff Beach Association and easement holders and enforce rules on the Reservation regarding carrying capacity. Assess the impact of easement holders' use on carrying capacity numbers after five years and adjust load accordingly.

Objective 2: Present useful and interesting information about Squibnocket Pond Reservation to the public.

Strategies:

A. Provide the public library and conservation commission with copies of this management plan if so desired.
B. Make a copy of this plan available at the land bank and Sheriff's Meadow offices and, when file size is not restrictive, on the respective websites.
C. Post information about the cultural and natural history of the Reservation at the trailheads.

E. Land Administration

Oversee Squibnocket Pond Reservation on a regular basis and develop good neighborhood relations.

Objective 1: Maintain good relations with abutters and neighbors.

Strategies:

A. Establish contact and working relations with neighbors.
B. Maintain contact and working relations with the Aquinnah conservation commission.
C. Post the activities allowed and prohibited on the Reservation.

Objective 2: Recognize existing recorded easements and agreements (Book 1556 Page 30 and Book 1595 Page 116) (See Easement Map).

Strategies:

A. Provide cooperation and assistance in rare species monitoring and management in exclusive-use area (easement 7) if requested.
B. Coordinate maintenance efforts with easement holder on shared access roads (easement 5).
C. Give notice as required prior to any use of the driveway easement.
D. Easement holder is responsible for any necessary permitting associated with their use and maintenance.
E. Maintain Zack's Cliff access gate and trailhead.

Objective 3: Keep property well-maintained.

Strategies:

A. Clean up any litter and junk which may occur.
    a. Conduct regular beach cleanups and remove debris, as necessary.
    b. Install beach cleanup bins along maintenance road to minimize

vehicle travel on sandy access roads.

B. Promptly respond to problems.
C. Employ adequate staff—in-season and, as needed, otherwise—to effectively implement land management goals.

Objective 4: Maintain set hours for use.

Strategies:

A. Open property during in-season (early May - October 31) between 7am and 7pm every day; in the remainder of the year post hours as between dawn and dusk except for stargazing, fishing, and SMF and MVLBC board-approved special permission.
B. Provide fisherman and star gazers with access to the closed gate by request, re-assess after 5 years.
C. Post “closed at dark” signs on the sign station during off-season months.

Objective 5: Keep well-maintained boundaries.

Strategies:

A. Locate and GPS corners.
B. Walk boundaries annually.
C. Post boundary flags where appropriate.
D. Correct encroachments as they occur.

Objective 6: Keep good records of all land management activities and natural events.

Strategies:

A. Record all significant events, natural or otherwise.
B. Continue to update plant and wildlife inventories.
C. Maintain photographic record of landscape appearance.

Objective 7: Comply with all applicable regulations and agreements.

Strategies:

A. Comply with Massachusetts endangered species act.
B. Comply with wetlands protection act and Aquinnah town wetland by-laws.
C. Request recommendations from the Massachusetts historical commission regarding the proposed activities in the plan.

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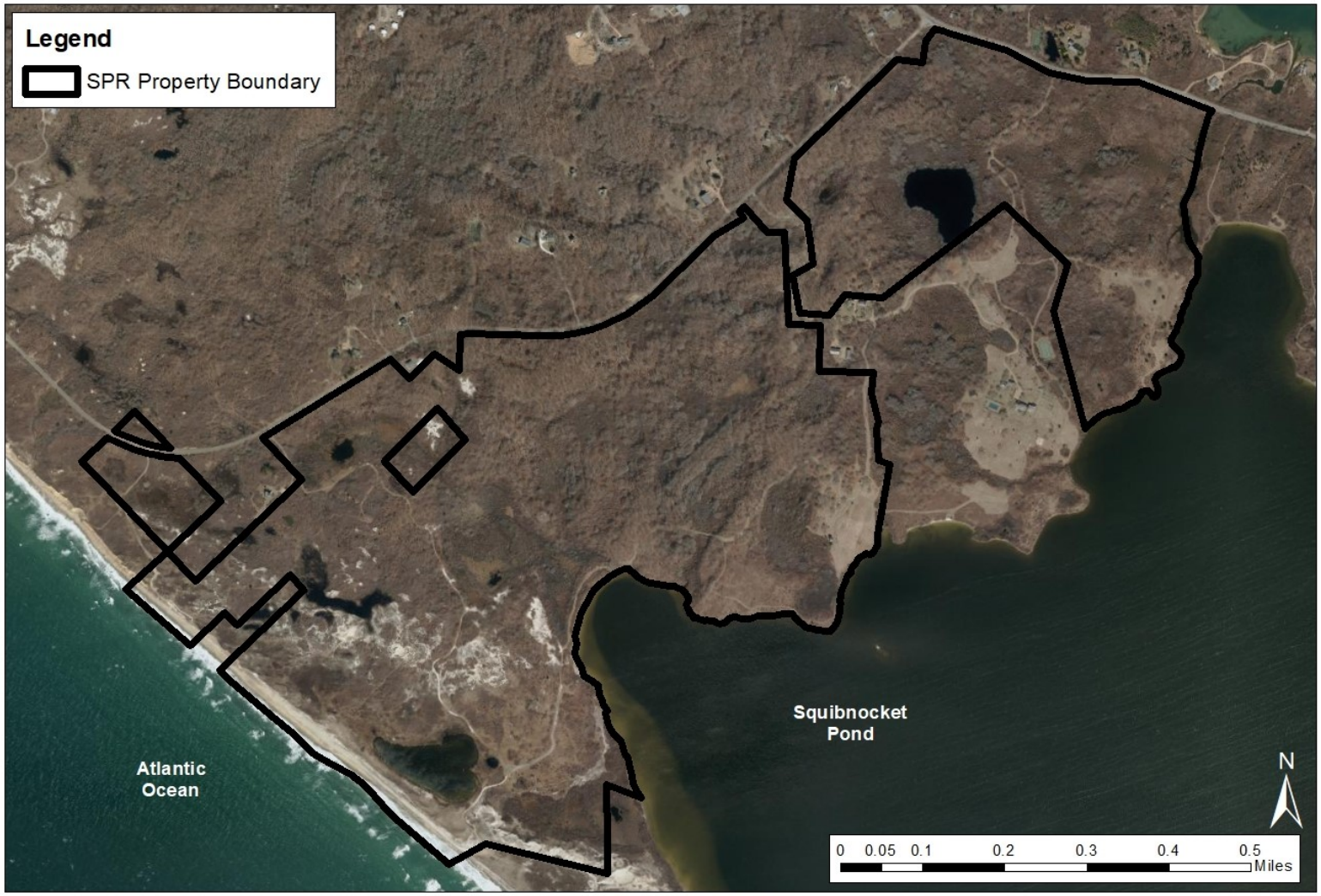
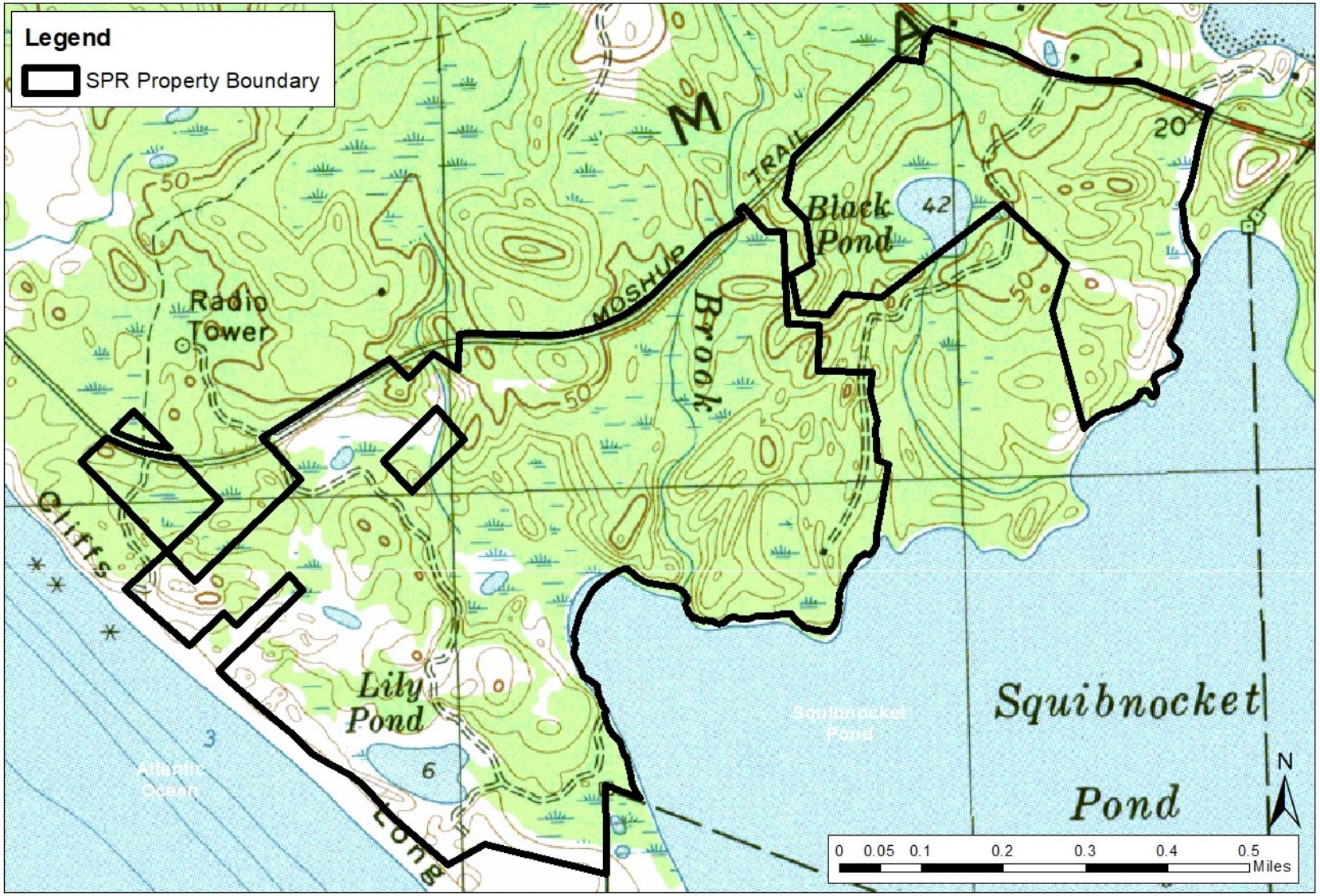
Appendix A: Locus, Topography and Site Management Maps

Map 5: Aerial image of Squibnocket Pond Reservation.



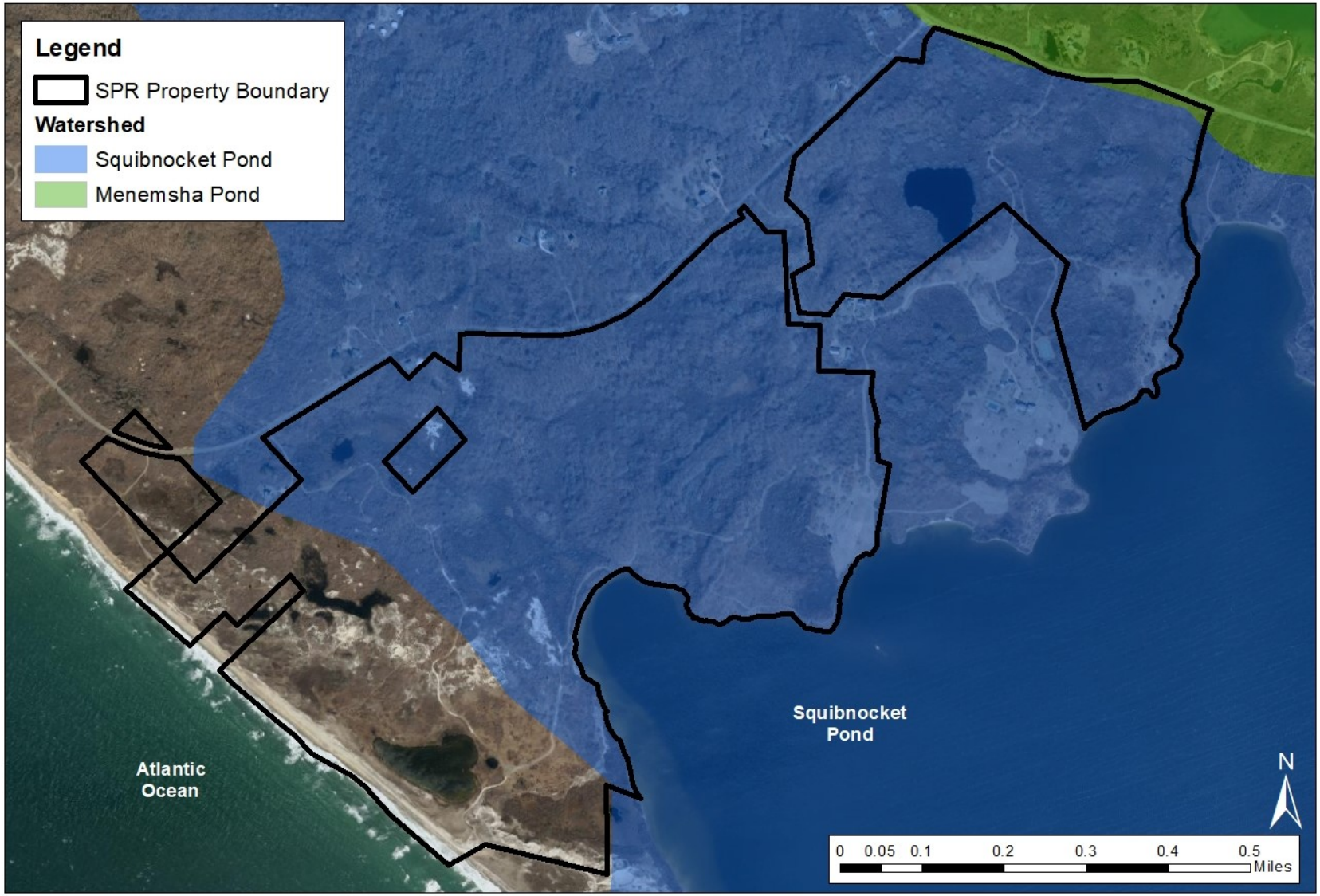
Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

Map 6: Topographic map of Squibnocket Pond Reservation, isolines are in 10 ft intervals.



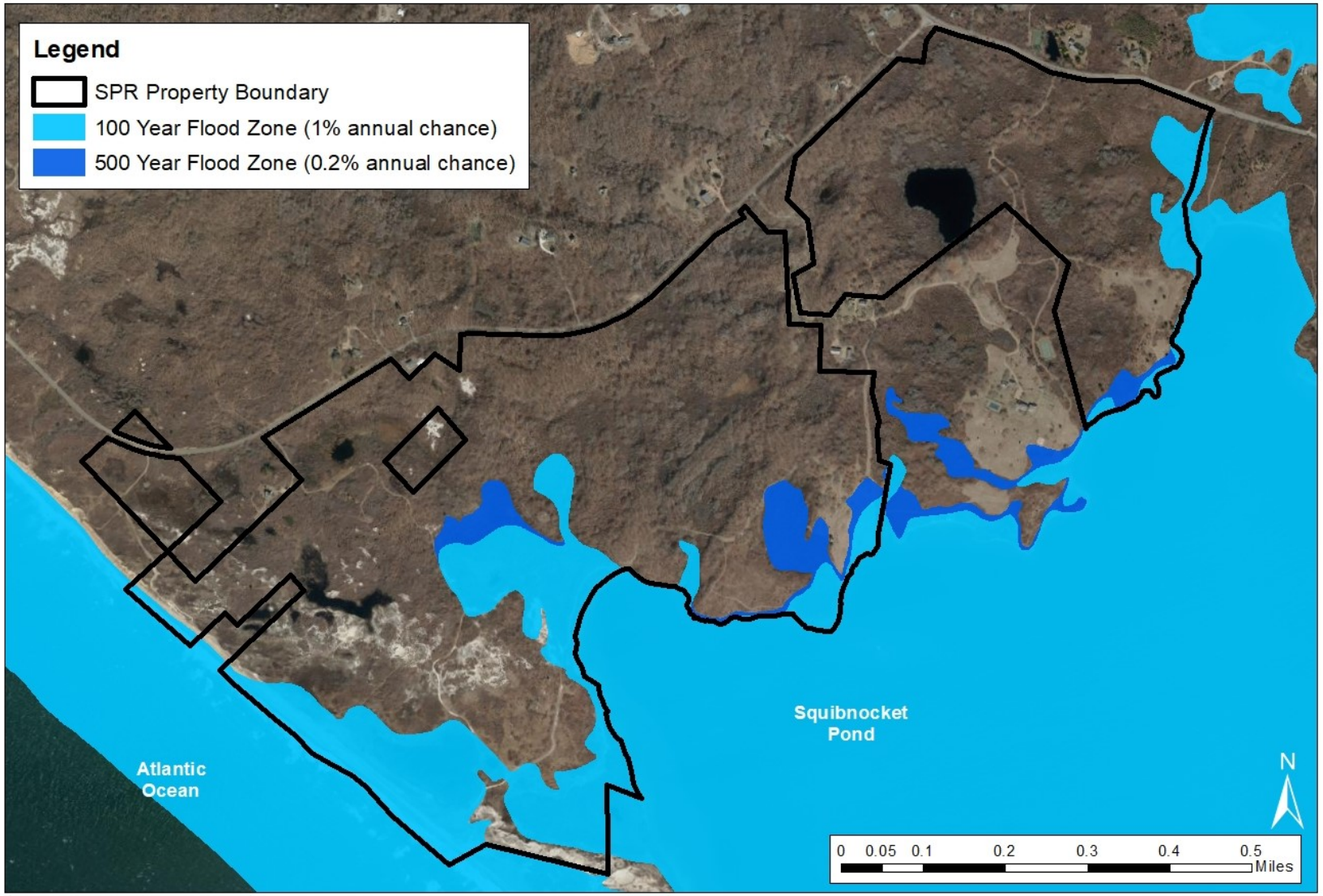
Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

Map 7: Watershed boundaries near Squibnocket Pond Reservation.



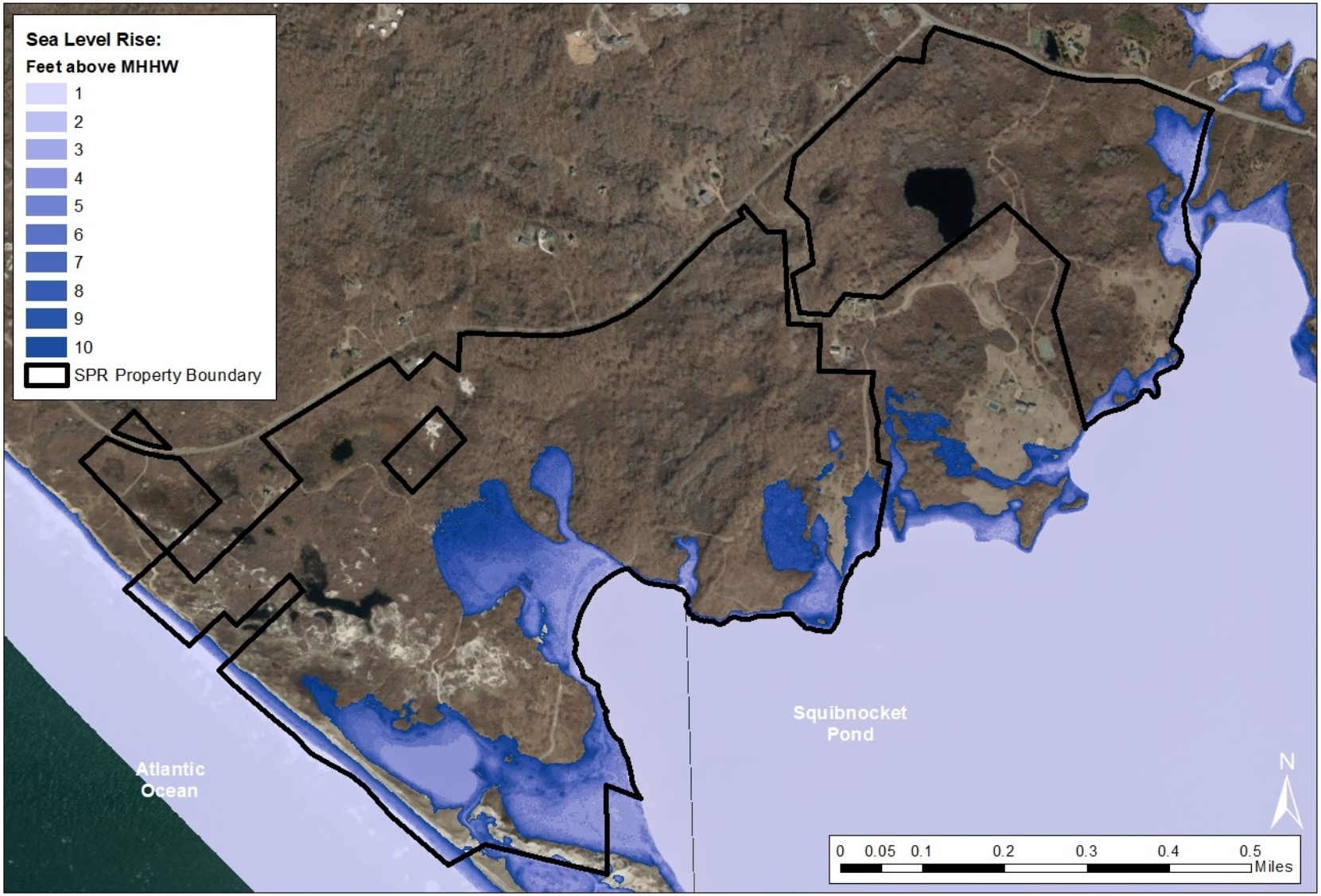
Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

Map 8: Flood zones (FEMA 2016) of Squibnocket Pond Reservation.



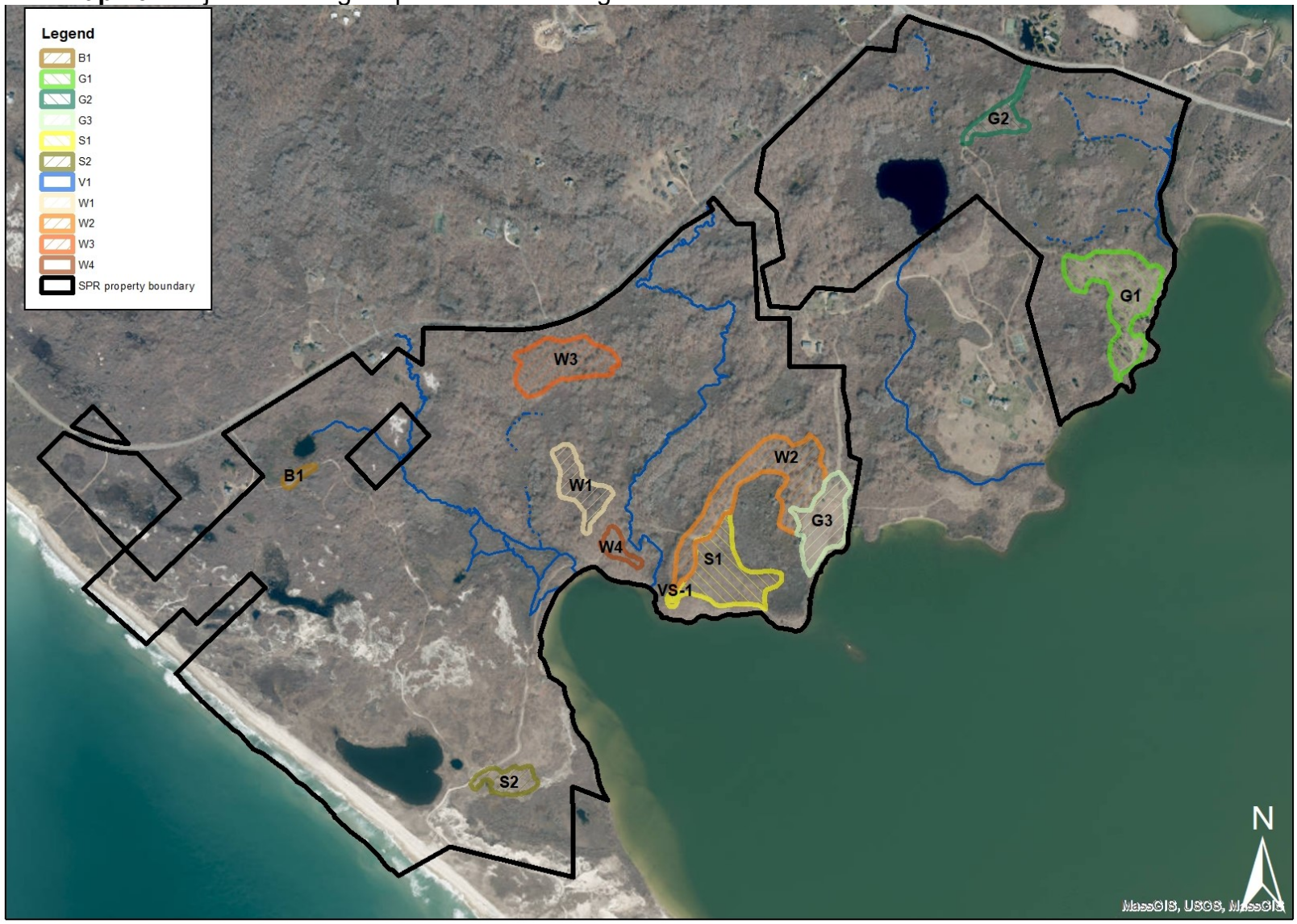
Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

Map 9: Sea level rise scenarios and the resulting impact zones of Squibnocket Pond Reservation



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

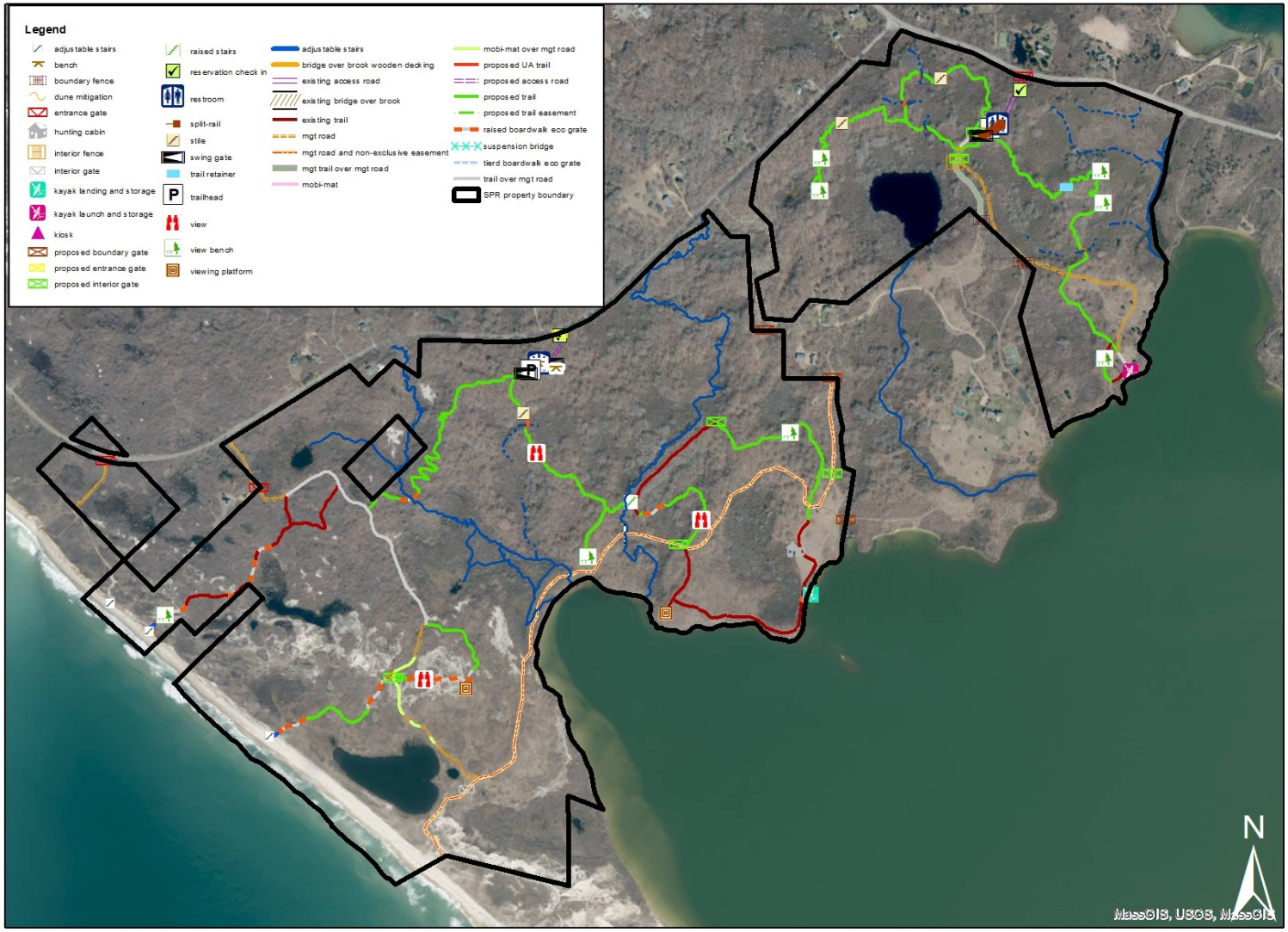
Map 10: Project Planning Map A: habitat management areas



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2023; habitat: MVLandBank
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map. Coordinate Reference: State Plane, Mass Mainland, Meters, NAD 83

0 550 1,100 2,200 Feet

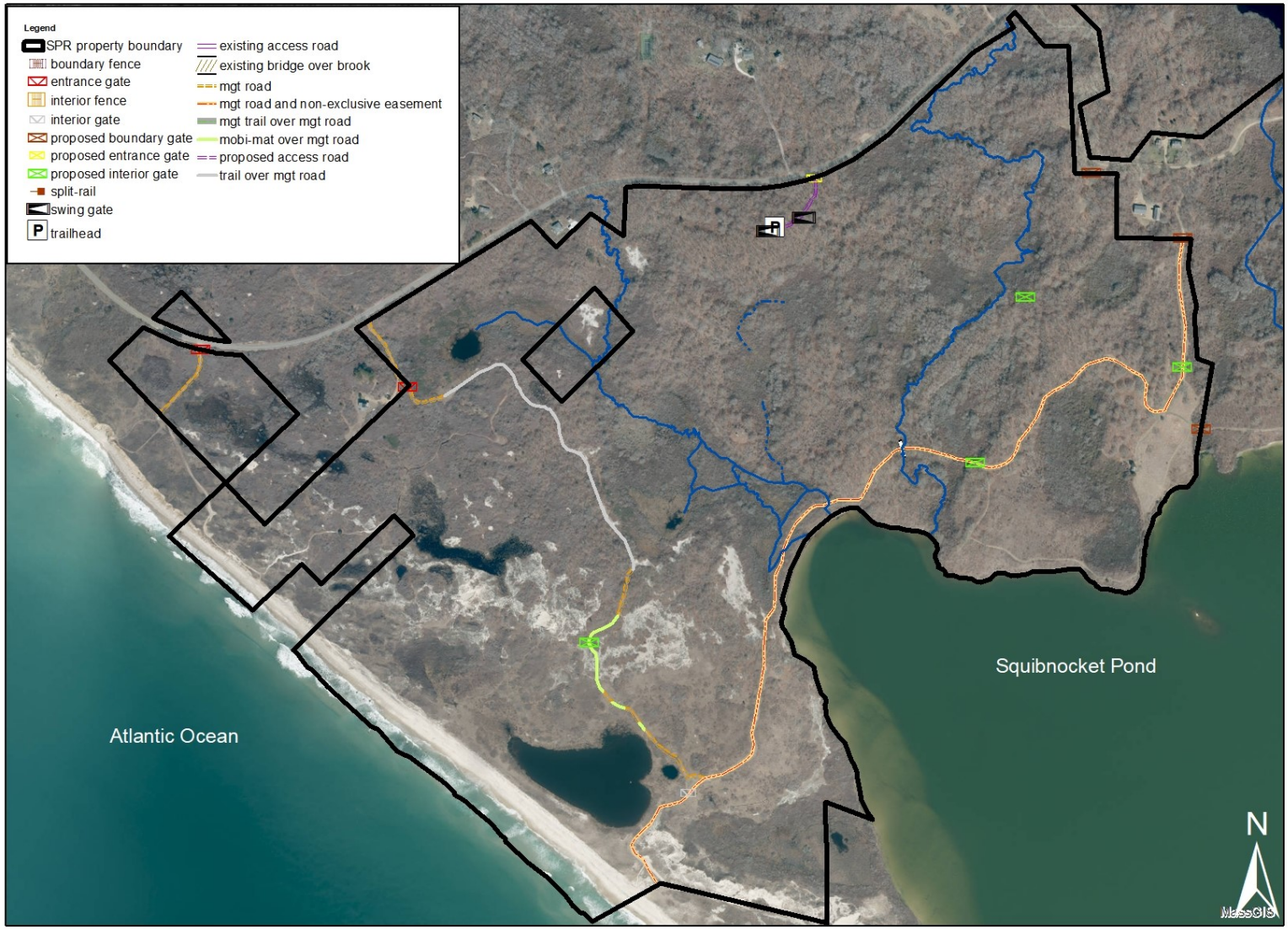
Map 11: Project Planning Map B: trail system and features.



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2023; habitat: MVLandBank
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map. Coordinate Reference: State Plane, Mass Mainland, Meters, NAD 83

0 550 1,100 2,200 Feet

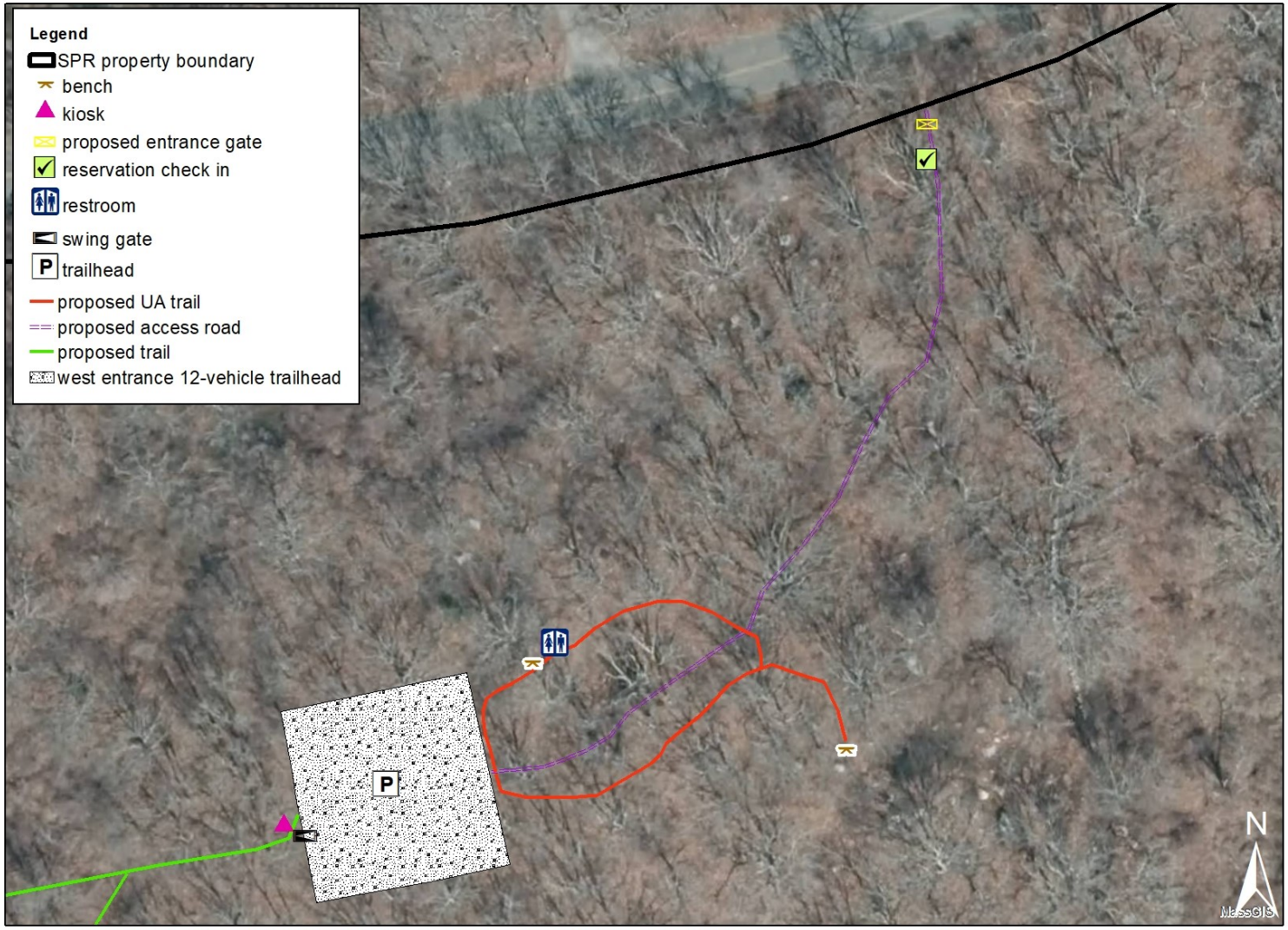
Map 12: Project Planning Map C: roads and gates



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2023; habitat: MVLandBank
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map. Coordinate Reference: State Plane, Mass Mainland, Meters, NAD 83

0 412.5 825 1,650 Feet

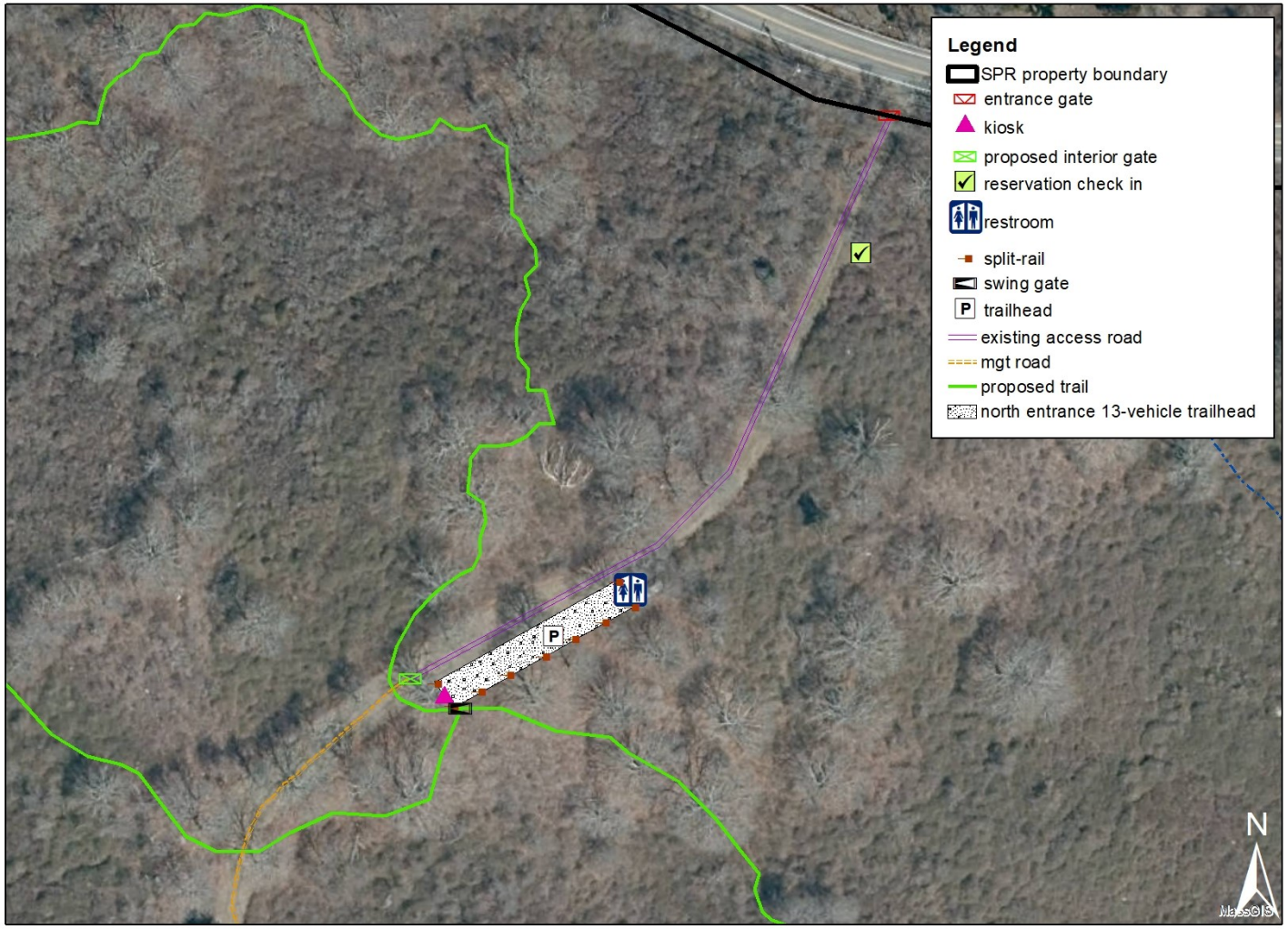
Map 13: Project Planning Map D: South Entrance trailhead



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2023; habitat: MVLandBank
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map. Coordinate Reference: State Plane, Mass Mainland, Meters, NAD 83

0 30 60 120 Feet

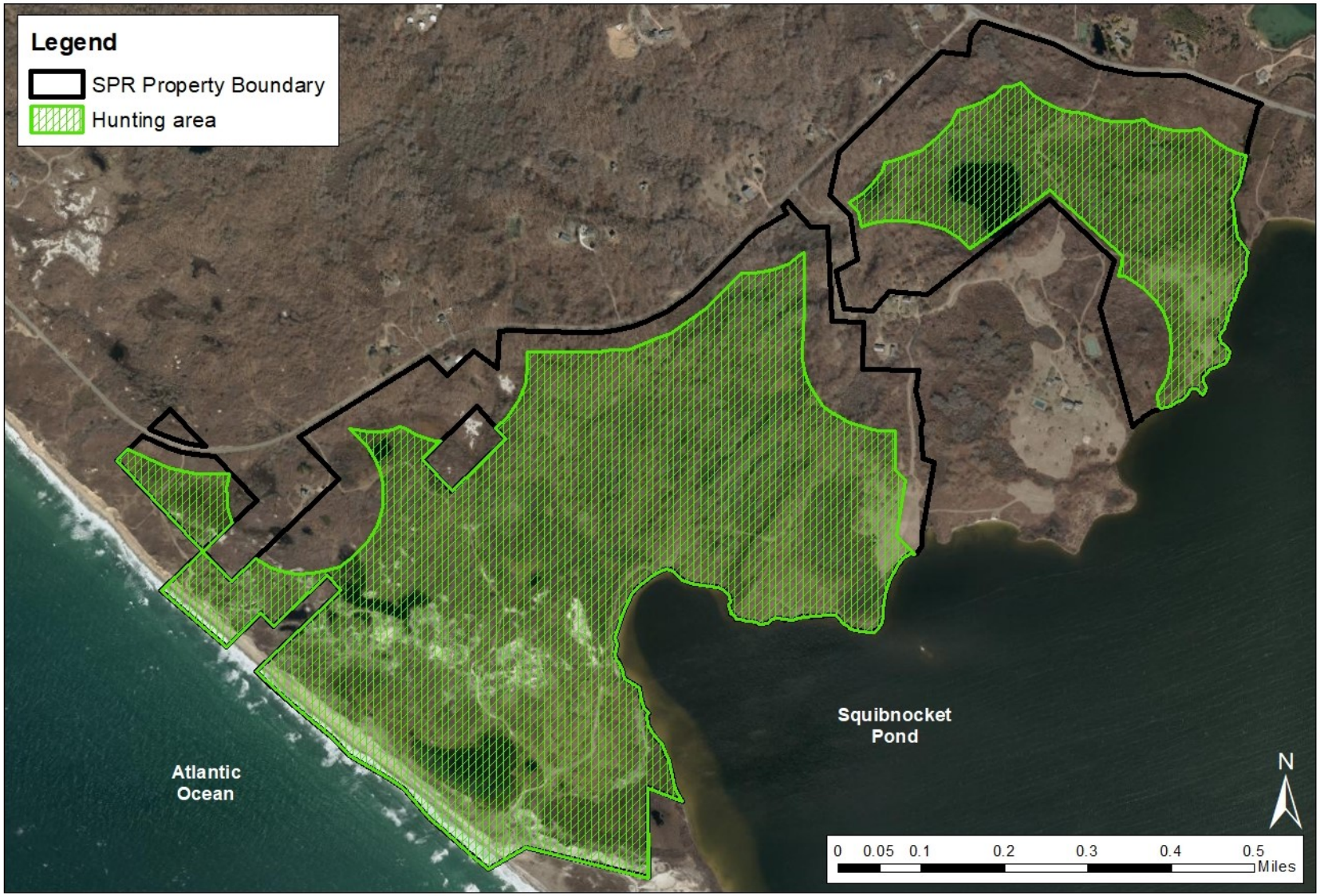
Map 14: Project Planning Map E: North Entrance trailhead.



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2023; habitat: MVLandBank
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map. Coordinate Reference: State Plane, Mass Mainland, Meters, NAD 83

0 55 110 220 Feet

Map 15: Hunting areas of Squibnocket Pond Reservation.

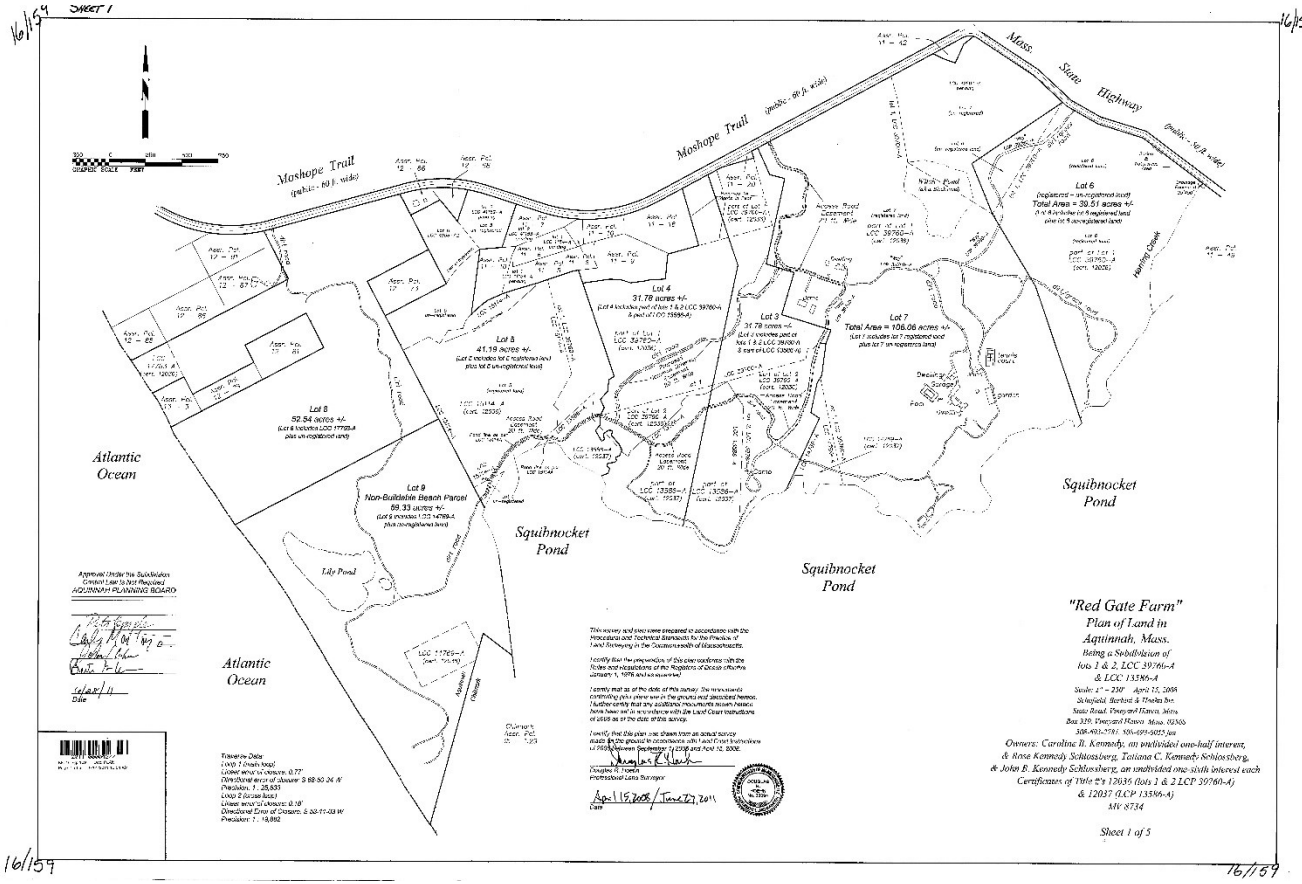


Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

Appendix B. Surveys, Deeds and Preliminary Management Plan Goals

Surveys:

For the purposes of this management plan document, a survey map of the entire property (excluding small parcel off Moshup Trail) can be found below. Larger versions, as well as detailed insets of parcels can be requested at the Martha's Vineyard land bank office in Edgartown, MA.



Deeds

The complete deeds to the Squibnocket Pond Reservation are found below. The first was filed on December 15th, 2020; the second on September 15th, 2021. These deeds can also be located in the Dukes County office of Recorded and Registered Lands (https://www.masslandrecords.com/Dukes/).

[redacted]

2020 00008423
Bk: 1556 Pg: 30 Doc: DEED
Page: 1 of 16 12/15/2020 02:29 PM

2020 00089422
Bk: 81 Pg: 347 Cert: 14976
Doc: DEED 12/15/2020 02:22 PM

LAND COURT, BOSTON. The Land herein described will be shown on our approved plan to follow as

DEC 9 2020
Plan 39760-C Lots 8,9+10
Plan 39760-D Lots 15,16+17
(EXAMINED AS DESCRIPTION ONLY)
CHIEF SURVEYOR SJK

Note: the easements/roads referred to herein will not be shown on the final court plan SJK

MARTHA'S VINEYARD LAND BANK FEE
☐ PAID $____
☒ EXEMPT$ A
62524 12/15/20 mt
NO. DATE CERTIFICATION

QUITCLAIM DEED

Red Gate Farm LLC, a duly established Delaware limited liability company qualified to do business in the Commonwealth of Massachusetts, with a principal place of business in New York, New York ("Grantor")

for consideration of TWENTY-SEVEN MILLION AND 00/100 DOLLARS ($27,000,000.00)

grants to **Martha's Vineyard Land Bank Commission**, a corporate body politic, with a principal place of business at 167 Main Street, P.O. Box 2057, Edgartown, MA 02539, a fifty-five and 56/100 percent (55.56%) interest, and **Sheriff's Meadow Foundation**, a Massachusetts nonprofit corporation, with a principal place of business at P.O. Box 1088, Vineyard Haven, MA 02568, a forty-four and 44/100 percent (44.44%) interest, such undivided interests to be held as tenants in common, and said co-tenants using, for notice purposes, the mailing address care of **Martha's Vineyard Land Bank Commission**, 167 Main Street, P.O. Box 2057, Edgartown, MA 02539 (together, "Grantee")

with ***quitclaim covenants***

The land with all improvements thereon located in the Town of Aquinnah, formerly Gay Head, County of Dukes County, Commonwealth of Massachusetts, more particularly described as follows:

PARCEL ONE: (*Registered Land*)

Lot 10 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 3, 4, 5, 6 & 7 LCP 39760-B Scale: 1" = 100' May 21, 2018 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339, Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" filed with the Land Court as Plan No. 39760-C.

PARCEL TWO: (*Recorded and Registered Land*)

Lot 8 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 3, 4, 5, 6 & 7 LCP 39760-B Scale: 1" = 100' May 21, 2018 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339, Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" recorded with the Dukes County Registry of Deeds in Plan Book 19, Page 35.

NOTE: Included within the boundaries of Lot 8 are the following *registered* parcels:

1

Lot 8 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 3, 4, 5, 6 & 7 LCP 39760-B Scale: 1" = 100' May 21, 2018 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339, Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" filed with the Land Court as Plan No. 39760-C;

Lot H on a plan of land entitled "Plan of Land in Gay Head. Scale 200 feet to an inch. MAR. 21, 1914. J.H. Crowell, Surveyor" filed with the Land Court as Plan No. 4958-A2; and

Lot 585 on a plan of land entitled "Plan of Land in Gay Head: Swift & Learned Inc., Surveyors SEPT. 28, 1940" filed with the Land Court as Plan No. 17763A.

PARCEL THREE: (*Recorded and Registered Land*)

Lot 9 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 3, 4, 5, 6 & 7 LCP 39760-B Scale: 1" = 100' May 21, 2018 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339, Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" recorded with the Dukes County Registry of Deeds in Plan Book 19, Page 35.

NOTE: Included within the boundaries of Lot 9 is the following *registered* parcel:

Lot 9 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 3, 4, 5, 6 & 7 LCP 39760-B Scale: 1" = 100' May 21, 2018 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339, Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" filed with the Land Court as Plan No. 39760-C.

PARCEL FOUR: (*Recorded and Registered Land*)

Lot 9 on a plan of land entitled " 'Red Gate Farm' Plan of Land in Aquinnah, Mass. Being a Subdivision of lots 1 & 2, LCC 39760-A & LCC 13586-A Scale: 1" = 250' April 15, 2008 Schofield, Barbini & Hoehn Inc. State Road, Vineyard Haven, Mass. Box 339, Vineyard Haven, Mass. 02568 508-693-2781, 508-693-6055 fax Owners: Caroline B. Kennedy, an undivided one-half interest, & Rose Kennedy Schlossberg, Tatiana C. Kennedy Schlossberg, & John B. Kennedy Schlossberg, an undivided one-sixth interest each Certificates of Title #'s 12036 (lots 1 & 2 LCP 39760-A) & 12037 (LCP 13586-A) MV 8734" recorded with the Dukes County Registry of Deeds in Plan Book 16, Page 159.

NOTE: Included within the boundaries of Lot 9 is the following *registered* parcel:

> Lot No. 259 on a plan of land entitled "Plan of Land in Gay Head William S. Swift Inc., Surveyors APRIL 3, 1929" filed with the Land Court as Plan No. 14769A.

PARCEL FIVE: (*Registered Land*)

Lot 15 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 12 & 13, LCP 39760-C Scale: 1" = 100' September 15, 2020 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339 Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" filed with the Land Court as Plan No. 39760-D.

PARCEL SIX: (*Registered Land*)

Lot 16 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 12 & 13, LCP 39760-C Scale: 1" = 100' September 15, 2020 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339 Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" filed with the Land Court as Plan No. 39760-D.

PARCEL SEVEN: (*Registered Land*)

Lot 17 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 12 & 13, LCP 39760-C Scale: 1" = 100' September 15, 2020 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339 Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" filed with the Land Court as Plan No. 39760-D.

PARCEL EIGHT: (*Recorded Land*)

Lot 15/16 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 12 & 13, LCP 39760-C Scale: 1" = 100' September 15, 2020 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339 Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" recorded with the Dukes County Registry of Deeds in Plan Book 19, Page 36.

PARCEL NINE: (*Recorded Land*)

Lots 93, 94, 540, 567, 572, 575 and 584, and those portions of Lots 90, 250 and 290 located southerly of Moshope Trail, all as shown on a plan entitled "Plan of Gay Head Showing the Partition of the Common Lands as made by Joseph T. Pease and Richard L. Pease Commissioners Appointed by the Judge of Probate Under Section 6 Chapter 213 of the Acts of 1870 Scale, 200 Feet to an inch By John H. Mullin, Civil Engineer" and filed with the Dukes County Registry of Probate.

PARCEL TEN: (*Recorded Land*)

Set Off Lots 251 and 252 assigned to Elizabeth Howwasswee in the division of Indian lands recorded with the Dukes County Registry of Deeds in Book 65, Page 188, more particularly described as follows:

> Lot No. 251 - two hundred fifty one - was assigned to Elizabeth Howwasswee - Census No. 196. And is thus bounded and described: Beginning at the northerly corner bound of Lot No. 93; thence by Lot No. 250 N 53° E one hundred eight 65/100 feet to a bound; thence by Lot No. 91, N 85° 35' E thirty three 30/100 feet to a bound; thence by Lot No. 90, S 7° 45' E one hundred seventy two 85/100 feet to a bound; thence by Lot No. 252, S 62° 14' W forty four 15/100 feet to a bound; thence by Lot No. 93 N 39° 30' W one hundred sixty four feet to the first mentioned bound, or the place of commencement.
>
> Lot No. 252 - two hundred fifty two - was assigned to Elizabeth Howwassee - Census No. 196. And is thus bounded and described: Beginning at the southerly corner of Lot No. 90; thence by the same, N 71° 50' E seventy nine 55/100 feet to a bound at a corner of the Gershom Place or Lot No. 95; thence by the same, S 2° 20' W eighty seven 12/100 feet to another corner of the same; thence S 22° 10' E ninety nine feet to a corner of the Gershom Place, and still by the same, S 78° 45' W one hundred thirty three 90/100 feet to Lot No. 271; thence by the same, S 67° 30' W two hundred twenty 60/100 feet, and by Lot No. 270, S 68° 40' W three hundred thirty 80/100 feet to a bound by the wall of Soloman's Place; thence by Lot No. 94, N 11° 20' E two hundred seventy seven 50/100 feet to a bound; thence by Lot No. 93, S 5° 13' E eighty two 50/100 feet to a corner of said lot; thence still by Lot No. 93 N 68° E one hundred one 85/100 feet to a bound and on the same course still by the same lot, three hundred sixty four feet to a bound; thence by Lot No. 251, N 62° 14' E forty four 15/100 feet to the first mentioned bound or the place of commencement.

PARCEL ELEVEN: (*Recorded Land*)

Set Off Lot 95 of the Gay Head Indian Lands, sometimes called the "Gershon Place", bounded and described as follows:

> Beginning at the east corner thereof, thence by the commons N 70° W 17 rods to the Tallman Land; and then by the same S 77-1/2° W 10 rods to the bars; and still by the same S 63-1/4° W 7 rods 11 links to a corner; and S 3-1/4° W 5 rods 17 links to a bound; S 21-

1/2° E 6 rods to a corner; thence by South Pasture wall S 79-1/2° W 8 rods to Solomon's Place; and then by Solomon's Place S 23-1/2° E 5 rods 15 links or to the corner of the fence or wall; and then by said fence or wall easterly about 35 rods to a corner; thence north to the first mentioned bound.

Said Parcels One through Eleven contain 304 acres, more or less (the "Premises").

The premises herein conveyed are conveyed subject to and with the benefit of the easements and covenants contained in (1) that certain "Access Easement and Agreement" granted by Grantor to No Gate LLC dated October 15, 2020, recorded with the Dukes County Registry of Deeds in Book 1547, Page 373, and registered in the Dukes County Registry District Office of the Land Court as Document No. 89028; and (2) that certain "Access Easement and Agreement" granted by No Gate LLC to Grantor dated October 15, 2020, recorded with the Dukes County Registry of Deeds in Book 1547, Page 380, and registered in the Dukes County Registry District Office of the Land Court as Document No. 89029. (These easements are shown on the Easement Plans referred to below as Easement Nos. 1-4.)

The Grantor holds title to the following two (2) parcels of real estate (hereafter, collectively, the "*Grantor's Property*"):

PARCEL ONE: (*Registered Land*)

Lot 11 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 3, 4, 5, 6 & 7 LCP 39760-B Scale: 1" = 100' May 21, 2018 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339, Vineyard Haven, Mass. 508-693-2781 www.sbhinc.net MV 8734" filed with the Land Court as Plan No. 39760-C; and

PARCEL TWO: (*Registered and Recorded Land*)

Lot 14 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 12 & 13, LCP 39760-C Scale: 1" = 100' September 15, 2020 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339 Vineyard Haven, Mass 508-693-2781 www.sbhinc.net MV 8734" recorded with the Dukes County Registry of Deeds in Plan Book 19, Page 36.

NOTE: Included within the boundaries of Lot 14 is the following registered parcel:

> Lot 14 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 12 & 13, LCP 39760-C Scale: 1" = 100' September 15, 2020 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini &

Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339 Vineyard Haven, Mass 508-693-2781 www.sbhinc.net MV 8734" filed with the Land Court as Plan No. 39760-D.

The right and easement to use any of the roads and ways contained within the boundaries of the Grantor's Property, most of which roads and ways are shown on the above-referenced plans as "*existing dirt road*", "*Access Road Easement 20 ft. wide*", "*Common Driveway Easement 20 ft. wide*", "*Way LCP 39760-A*", and "*way*", and any unmarked roads or trails, is expressly ***excluded*** from this grant.

The Grantor reserves the following perpetual rights and easements appurtenant to the Grantor's Property, the locations of which easement areas (the "Easement Areas") are identified on the sketch plans titled as Easement Plans 1, 2, 3, 4 and 5 which are attached hereto as **Exhibit A** (5 sheets) and incorporated herein by reference (the "Easement Plans"):

(a) The non-exclusive right and easement to use that portion of Red Gate Farm Road marked as "Easement No. 5" on Easement Plans 1, 3 and 4 for purposes of accessing and egressing "Easement No. 6" and "Easement No. 7" described below, on foot, bicycle, horseback or in motorized vehicles. Grantor reserves the right, if, as and when deemed desirable by Grantor, to maintain and/or improve that portion of "Easement No. 5" as is located between Grantor's Property and "Easement No. 7" in a condition satisfactory to Grantor, in Grantor's sole discretion.

(b) The non-exclusive right and easement to mow, manage the vegetation on, and landscape the 75-foot wide area east of Red Gate Farm Road shown as "Easement No. 8" on Easement Plan 5.

(c) The exclusive right and easement to use the area shown as "Easement No. 7" on Easement Plan 4 for all purposes for which beaches are customarily used on the Island of Martha's Vineyard, including, but not limited to, fishing, walking dogs, bathing, sunbathing, picnicking, enjoying or studying nature, walking, horseback, bicycle riding and playing games, kayaking, canoeing, and boating. In connection with such right and easement, Grantor reserves the following rights:

i. If desired, Grantor shall be entitled to install stairs, paths, steps, boardwalks or wooden racks on the beach for the storage of watercraft, shall apply to the Aquinnah Conservation Commission for permission where required, and shall pay for the cost of construction, installation and ongoing maintenance of such improvements.

ii. Grantor shall be entitled to store, during the boating season, watercraft on the beach, including sailboats, dinghies or motorboats with or without outboard motors, kayak, canoes, or paddle boards. Grantor

may also keep a non-motorized dolly on the Beach to facilitate the use and storage of Grantor's boats, and may store paddles, sails, centerboards or other accessories that are reasonably necessary for the use of Grantor's boats.

iii. The non-exclusive right and easement to utilize the parking area located on "Red Gate Farm Road" near "Easement No. 7" and identified as "Easement No. 6" on Easement Plans 1, 3, and 4 for four (4) vehicles for use by occupants of the Grantor's Property. Grantor shall have exclusive use of "Easement No. 6, subject only to (i) intermittent use by grantee's employees and representatives, solely when attending to habitat maintenance and management purposes; or (ii) use by emergency vehicles. Said right and easement shall include the right to maintain and improve "Easement No. 6" so that it is in a safe and useable condition.

iv. The right (but not obligation, and in Grantor's sole discretion), and solely in the event that Grantees do not do so to Grantor's satisfaction, to install and maintain gates, at Grantor's expense, to discourage trespassers from traveling onto Grantor's Property, at the following locations:

(a) At Easement No. 1;
(b) Within Easement No. 5, at the common boundary between the Premises and Parcel One of Grantor's Property;
(c) At the entrance of Easement No. 7; and
(d) At any additional location where driveways, trails, roads or ways enter onto the Grantor's Property.

Grantor shall have the right to enter the Easement Areas for all purposes consistent with the reservation of the rights and easements described above, including, but not limited to, all necessary acts of construction, repair, maintenance and replacement of the Easement Areas. In the event that in the course of such entry, the surface of the ground in any Easement Area is disturbed, it shall thereafter be promptly restored as near to its original and natural condition as possible after the exercise of any of the easement rights granted herein.

Grantor hereby relinquishes grantor's right and easement to use any of the roads, ways and trails located outside of the boundaries of the Grantor's Property.

The Grantor hereby agrees to indemnify and save Grantee harmless from and against all loss, demands, causes of action, costs and expenses, claims, liability or damages, including reasonable attorneys' fees and disbursements, caused by, related to or in any way arising out of the exercise of the rights reserved hereby by Grantor, or Grantor's invitees, agents, employees, licensees, contractors and

representatives.

Grantor shall secure any and all necessary permits, orders, certificates, authorizations and other approvals from the Town of Aquinnah, the Commonwealth of Massachusetts or any other sovereign body with jurisdiction prior to conducting any of the road repair, landscaping, or other work authorized by this reservation of rights and easements.

Grantee shall have the right to relocate the access and parking easement areas shown as "Easement No. 5" and "Easement No. 6" if such relocation is reasonably necessary or convenient to accommodate any other improvements to the Premises, provided that (a) the relocated easement area provides a reasonably equivalent and continuous means of access; (b) the full cost of such relocation shall be borne by the Grantee; (c) there shall be no material interruption of the means of access being relocated; and (d) the Grantee shall cause a new plan to be prepared showing the location of the easement as relocated. Upon such relocation, the easement existing for the prior location shall terminate and a new easement (on the same terms and conditions set forth herein) shall automatically be created for the new location of such easement.

Grantor and Grantee shall use best efforts to notify the other at least seven (7) days in advance of the exercise of any of the construction, installation, maintenance, landscaping, repair or replacement rights reserved herein.

Any notices given hereunder shall be in writing and shall be delivered in hand, mailed postage prepaid, by registered or certified mail, return receipt requested, or shall be sent by Federal Express or another nationally recognized overnight delivery service, addressed to the party for whom the notice is intended at the address of such party maintained by the Board of Assessors for the Town of Aquinnah. Any such notices shall be deemed given when so delivered by hand, or if so mailed, when deposited with the U.S. Postal Service, or, if so delivered by such overnight delivery service, when deposited with said overnight delivery service.

This conveyance is made subject to the following restrictions:

(i) Use of the Premises shall be confined to those specific uses enumerated in Chapter 736 of the Acts of 1985, Section 5, in effect on the date of this deed.

(ii) Grantee shall not permit hunting on the Premises within fifty (50) feet of Grantor's Property (the "Hunting Buffer Zone"), and should Grantee permit hunting on any other portion of the Premises, Grantee shall install conspicuous signage indicating the limit of the Hunting Buffer Zone.

(iii) The trailhead for the Lily Pond Preserve, if any, shall be located within the

area shown as "approximate Lily Pond Preserve parking/trailhead" on Easement Plan No. 1 (the "Lily Pond Trailhead"). Should Grantee elect to install the same, such trailhead shall accommodate no more than twelve (12) vehicles for users of the Lily Pond Preserve and, during the bathing season, Grantee shall maintain a reservation system that allocates such spaces; provided that pedestrian and bicycle access to the trailhead shall be managed. The location of the Lily Pond Trailhead shall not be altered by Grantee without the prior written consent of Grantor, such consent not to be unreasonably withheld, conditioned or delayed.

(iv) The trailhead for the Witch Pond Preserve, if any, shall be located within the area shown as "approximate Witch Pond Preserve parking/trailhead" on Easement Plan No. 1 (the "Witch Pond Trailhead"). Should Grantee elect to install the same, such trailhead shall accommodate no more than ten (10) vehicles for general hiking and for paddlers and a lower trailhead located within the area shown as "P-2" accommodating up to three (3) vehicles for universal access hiking and for paddlers. Grantee may elect to maintain a reservation system that allocates such spaces; provided that such election is made after consultation with Grantor and further provided that access to the trailheads shall be managed. The location of the Witch Pond Trailhead shall not be altered by Grantee without the prior written consent of Grantor, such consent not to be unreasonably withheld, conditioned or delayed.

(v) The Grantee shall be prohibited from partitioning the Premises, or conveying any portion thereof to any party other than one or more similar conservation organizations, for the greatest time period allowed by law.

The restrictions set forth in this deed are of actual and substantial benefit to the Grantor and Grantor's Property. All of the rights, restrictions and easements set forth in this deed shall run with the land, and be binding upon and inure to the benefit of the parties hereto and their successors and assigns as owners, respectively, of the Grantor's Property and the premises. The terms "Grantor" and "Grantee" as used herein shall include each such party's successors and assigns.

To the extent that any provision of this deed is deemed to constitute a restriction subject to the limiting provisions of M.G.L. Chapter 184, Sections 26 through 30, then all such restrictions shall be binding upon the Grantor and Grantee for a term of one hundred fifty (150) years from the date of recording hereof and shall remain in full force and effect in accordance with the provisions of M.G.L. Chapter 184, Section 27, as it may be amended from time to time, or as provided in similar successor provisions, which provision of M.G.L. Chapter 184, Section 27 permit the extension of the period of enforceability of said restrictions by the recording of an extension in accordance with the provisions of said law before the expiration of the first thirty (30) years from the date of recording hereof, and before the expiration of each succeeding twenty (20) year period thereafter, or for such other maximum further periods of time as may be allowed by any

amendments of said law or by any successor provisions.

The Grantor hereby certifies that the premises are vacant land and therefor no homestead right or interest exists in the premises; and that Red Gate Farm LLC is not classified during its current taxable year as a corporation for federal income tax purposes.

For Grantor's title, see the following deeds: deed from Caroline B. Kennedy, Rose Kennedy Schlossberg, Tatiana C. Kennedy Schlossberg and John B. Kennedy Schlossberg dated December 21, 2012 and filed with the Dukes County Registry District Office of the Land Court as Document No. 76639 and recorded with the Dukes County Registry of Deeds in Book 1303, Page 315; deed from Caroline B. Kennedy dated December 21, 2012 and recorded with the Dukes County Registry of Deeds in Book 1303, Page 312; deed from James F. Reynolds, Trustee of The Upper Moshup Trail Nominee Trust, dated September 7, 2017 and recorded in the Dukes County Registry of Deeds in Book 1447, Page 825; deed from James F. Reynolds, Trustee of The Set Off Lot 95 Nominee Trust, dated September 7, 2017 and recorded in the Dukes County Registry of Deeds in Book 1447, Page 819. See also Certificate of Title No. 13441.

Reminder of Page Intentionally Left Blank

Executed as a sealed instrument on this 4th day of December, 2020.

RED GATE FARM LLC

By: _____
Edwin A. Schlossberg, its Manager

COMMONWEALTH OF MASSACHUSETTS

County of Dukes County, ss.

Before me, the undersigned notary public, on this 4th day of December, 2020, personally appeared Edwin A. Schlossberg, Manager as aforesaid, who is personally known to me or was proved to me through a current document issued by a federal or state government agency bearing a photographic image of the signatory's face and signature, to be the person whose name is signed to the foregoing instrument and acknowledged to me that he signed it voluntarily as his free act and deed and the free act and deed of Red Gate Farm LLC, for its stated purpose.

_____
[notary seal]

Exhibit A Sheet1

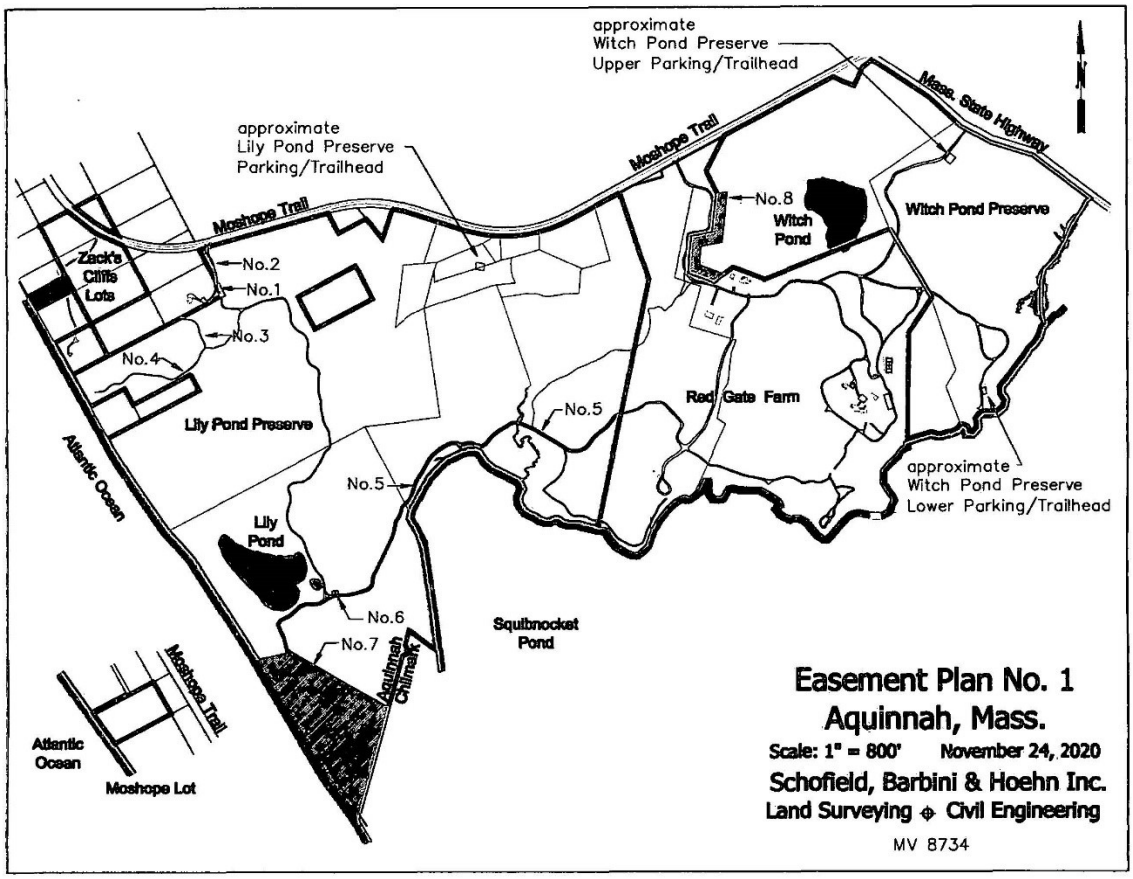


Exhibit A Sheet 2

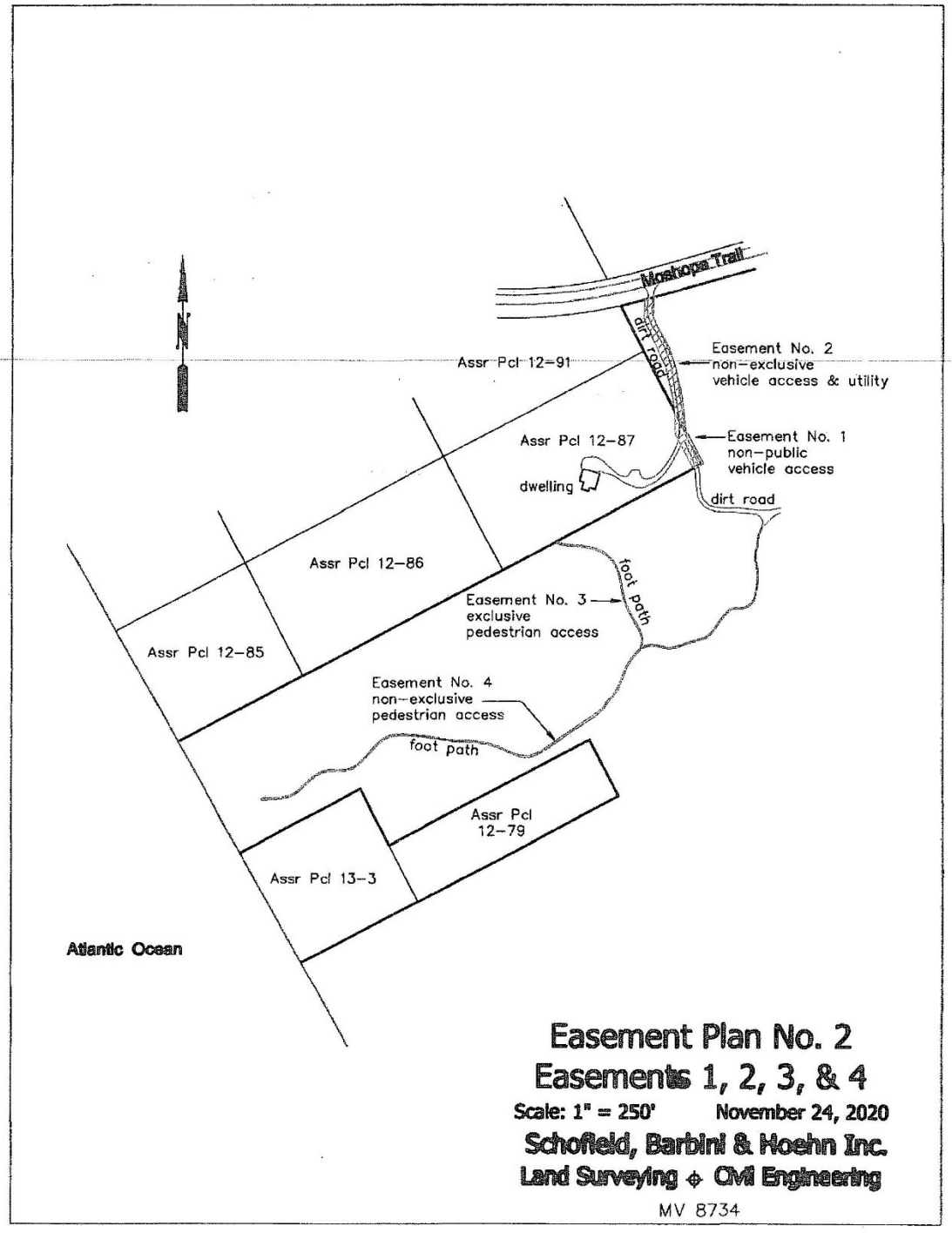


Exhibit A Sheet 3

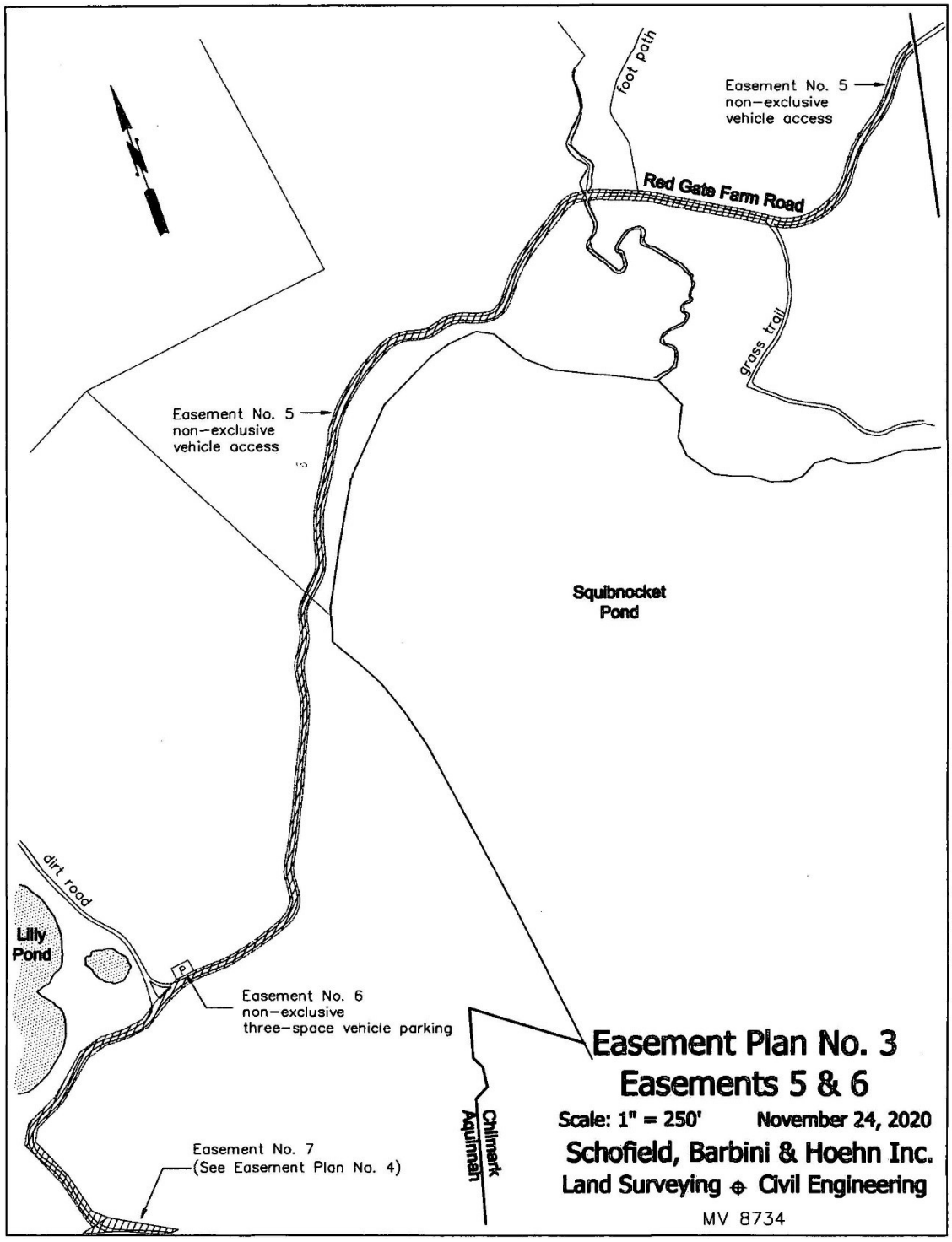


Exhibit A Sheet 4

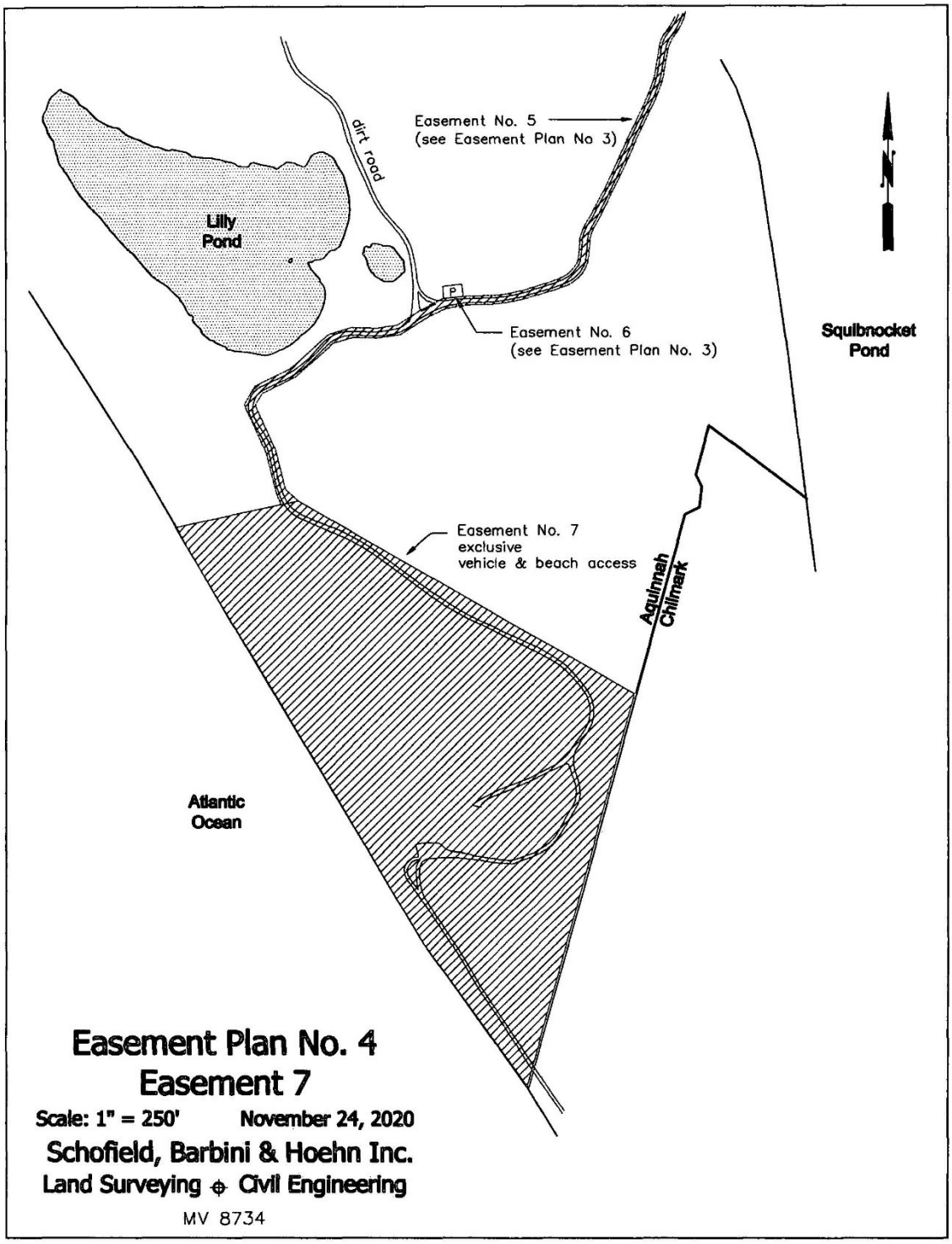
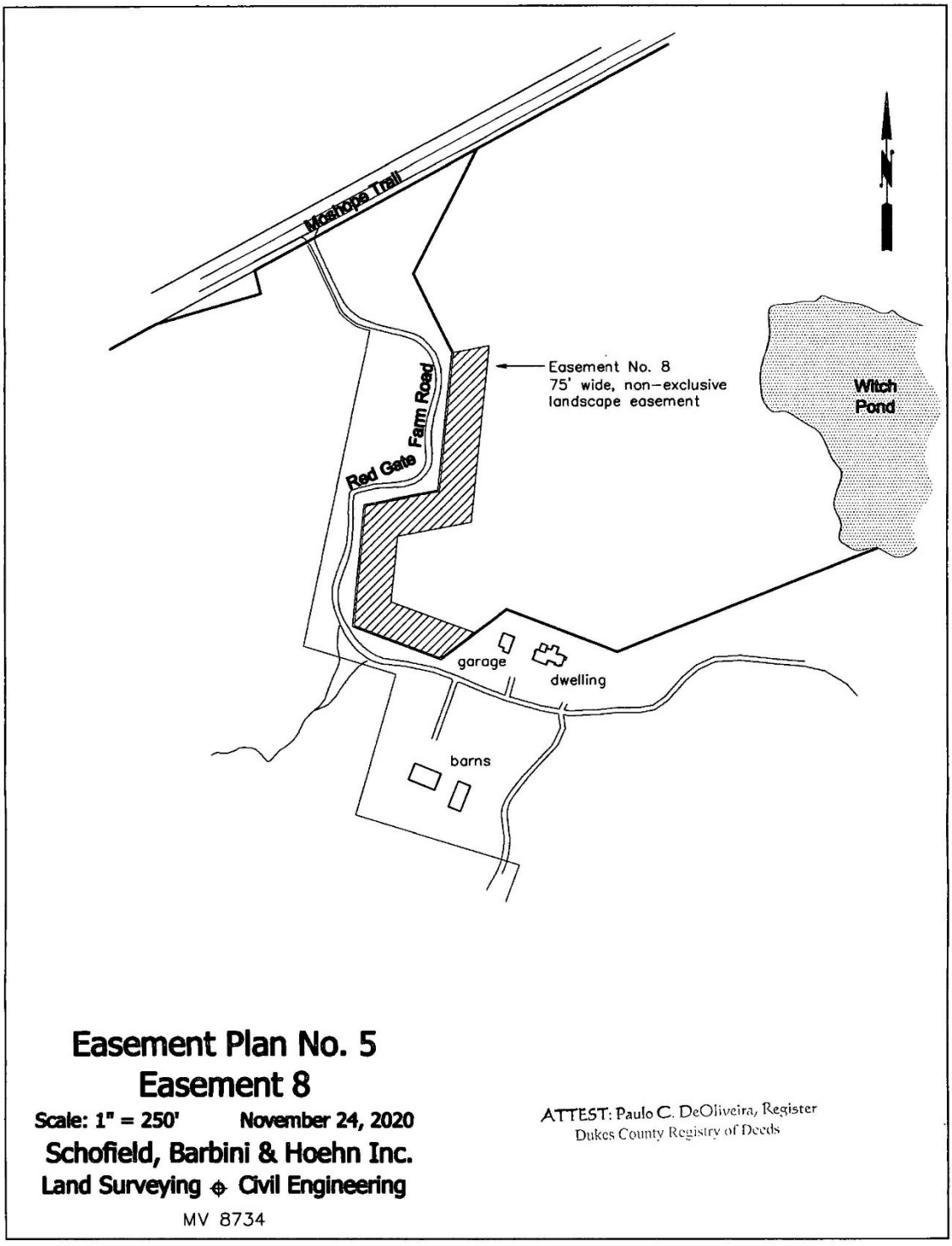


Exhibit A Sheet 5



Easement Plan No. 5
Easement 8

Scale: 1" = 250' **November 24, 2020**

Schofield, Barbini & Hoehn Inc.

Land Surveying ⊕ Civil Engineering

MV 8734

ATTEST: Paulo C. DeOliveira, Register
Dukes County Registry of Deeds

Subdivision Plan
No. 39760-C
Showing Changes To Be Filed

Subdivision Plan
No. 39760-B
Showing Changes To Be Filed

Subdivision Plan
No. 39760-D
Showing Changes To Be Filed

Transfer Certificate of Title

Cert No: 13441
Doc No: 76639

Book: 73
Page: 59

From Transfer Certificate Nos. 12036 and 12037,Originally Registered February 22, 2006, in Registration Book 64 , Pages 345 and 347 for the Registry District of Dukes County.

This is to Certify that **RED GATE FARM LLC** of ESI Design, 111 Fifth Ave., 12th Floor, New York, NY 10003 is the owner in fee simple, of that certain parcel of land situated in AQUINNAH, in the County of Dukes County and Commonwealth of Massachusetts, described as follows:

PARCEL ONE:

Being Lots 3, 4, 5, 6 and 7 shown on the hereinafter mentioned plan and more specifically described as:

Lot 3

NORTHWESTERLY	by	Moshope Trail (60.00 wide), one hundred eight and 70/100 (108.70) feet;
NORTHERLY	by	land now or formerly of Roger McKie, et al on said plan, two hundred twenty-five and 99/100 (225.99) feet;
SOUTHWESTERLY	by	said McKie land, forty-nine and 56/100 (49.56) feet;
NORTHWESTERLY	by	Moshope Trail (60.00 wide), forty-five and 78/100 (45.78) feet;
NORTHEASTERLY and SOUTHEASTERLY	by	Lot 7 on said plan, several courses together measuring one thousand seven hundred fifty-seven and 28/100 (1757.28) feet;
SOUTHEASTERLY	by	said Lot 7, five hundred eighty-six and 25/100 (586.25) feet;
NORTHEASTERLY	by	said Lot 7, seventy-one and 06/100 (71.06) feet;
SOUTHEASTERLY	by	said Lot 7, five hundred thirty-seven (537±) feet, more or less;
SOUTHEASTERLY SOUTHERLY and SOUTHWESTERLY	by	Squibnocket Pond
WESTERLY	by	Lot 4 on said plan, one thousand eight hundred twenty feet, (1820 ±) more or less; and
SOUTHWESTERLY	by	said Lot 4, six hundred fifty-one and 89/100 (651.89) feet.

Being Lot 3 on the hereinafter mentioned plan. All of said boundaries, except the water lines, are determined by the Court to be located as shown on plan No 39760-B, drawn by Schofield, Barbini & Hoehn, Inc., Surveyors, dated April 15, 2008, which is filed at Dukes County Registry District of the Land Court with Certificate of Title No. 12036, Book 64, Page 345.

Subject to the terms set forth in the Order of Conditions issued by the Gay Head Conservation Commission, duly recorded with the Dukes County Registry of Deeds on July 13, 1983 in Book 403, Page 394.

Subject to the terms of a stipulation between Alexander D. Forger, Trs. and the Town of Gay Head, filed with the papers in this case on January 7, 1980, a copy of which is filed as Document #29518.

Subject to the rights of the public in said Squibnocket Pond, a great pond, and subject to the provisions of Chapter 272 of the Acts of 1855.

So much of the land hereby registered as is included within the area marked "Reserved for Rights in Peat", approximately shown on Plan No 39760-A, is subject to the rights of Issac D. Rose, his heirs and assigns, as reserved in a Set-off approved by Probate Court in and for the County of Dukes County and duly recorded in Book 65, Page 207.

Subject to and with the benefit of provisions set forth in a deed given by Alexander D. Forger, Trustee to Alexander D. Forger, trustee, dated April 3, 1978 and duly recorded in Book 355, Page 393, including without limitation a right of first refusal.

Subject to a utility easement set forth in a grant made by Alexander D. Forger, Trustee to New Bedford Gas & Edison Light Company (now Commonwealth Electric Company) and New England Telephone and Telegraph Company, dated July 28, 1980 and duly recorded in Book 375, Page 425.

The land hereby registered is affected by three special permits granted by the Planning Board of the Town of Gay Head, notices of which are recorded in Book 373, Pages 432, 433 and 434.

Subject to a utility easement set forth in a grant made by Alexander D. Forger, Trustee, to New Bedford Gas and Edison Light Company (now Commonwealth Electric Company) and New England Telephone and Telegraph Company dated January 28, 1985 and duly recorded in Book 419, Page 671.

Subject to rights of drainage and sloping as set forth in a taking by the County Commissioners of Dukes County dated January 19, 1955 and duly recorded in Book 227, Page 564.

Lot 4

NORTHWESTERLY	by	Moshope Trail (60.00 wide), two hundred and 00/100 (200.00) feet;
NORTHEASTERLY	by	Lot 3 on the hereinafter mentioned plan, six hundred fifty-one and 89/100 (651.89) feet;
EASTERLY	by	said Lot 3, one thousand eight hundred twenty (1820 ±) feet, more or less;
SOUTHWESTERLY SOUTHERLY and WESTERLY	by	Squibnocket Pond;
NORTHWESTERLY WESTERLY SOUTHWESTERLY and SOUTHEASTERLY	by	Black Brook;
NORTHWESTERLY	by	Lot 5 on the hereinafter mentioned plan, forty-three (43 ±) feet, more or less;
SOUTHWESTERLY	by	said Lot 5, six hundred seventy-two and 67/100 (672.67) feet;
NORTHWESTERLY and NORTHERLY	by	land now or formerly of Mildred Brock, et al, several courses together measuring five hundred seventy-four and 33/100 (574.33) feet;
NORTHWESTERLY again	by	land of said Brock, et al, one hundred fifty-six and 61/100 (156.61) feet; and
NORTHWESTERLY	by	land now or formerly of The Cape Cod Company, two hundred thirty-three and 48/100 (233.48 feet);
SOUTHWESTERLY	by	land of said The Cape Cod Company, four hundred five and 25/100 (405.25) feet.

Being Lot 4 on the hereinafter mentioned plan. All of said boundaries, except the water lines, are determined by the Court to be located as shown on plan No 39760B, drawn by Schofield, Barbini & Hoehn, Inc., Surveyors, dated April 15, 2008, which is filed at Dukes County Registry District of the Land Court with Certificate of Title No. 12036, Book 64, Page 345.

Subject to the terms set forth in the Order of Conditions issued by the Gay Head Conservation Commission, duly recorded with the Dukes County Registry of Deeds on July 13, 1983 in Book 403, Page 394.

Subject to the terms of a stipulation between Alexander D. Forger, Trs. and the Town of Gay Head, filed with the papers in this case on January 7, 1980, a copy of which is filed as Document #29518.

Subject to the rights of the public in said Squibnocket Pond, a great pond, and subject to the provisions of Chapter 272 of the Acts of 1855.

So much of the land hereby registered as is included within the area marked "Reserved for Rights in Peat", approximately shown on Plan No 39760-A, is subject to the rights of Issac D. Rose, his heirs and assigns, as reserved in a Set-off approved by Probate Court in and for the County of Dukes County and duly recorded in Book 65, Page 207.

Subject to and with the benefit of provisions set forth in a deed given by Alexander D. Forger, Trustee to Alexander D. Forger, trustee, dated April 3, 1978 and duly recorded in Book 355, Page 393, including without limitation a right of first refusal.

Subject to a utility easement set forth in a grant made by Alexander D. Forger, Trustee to New Bedford Gas & Edison Light Company (now Commonwealth Electric Company) and New England Telephone and Telegraph Company, dated July 28, 1980 and duly recorded in Book 375, Page 425.

The land hereby registered is affected by three special permits granted by the Planning Board of the Town of Gay Head, notices of which are recorded in Book 373, Pages 432, 433 and 434.

Subject to a utility easement set forth in a grant made by Alexander D. Forger, Trustee, to New Bedford Gas and Edison Light Company (now Commonwealth Electric Company) and New England Telephone and Telegraph Company dated January 28, 1985 and duly recorded in Book 419, Page 671.

Subject to the flow of a natural watercourse running through the same and shown as Black Brook.

Subject to rights of drainage and sloping as set forth in a taking by the County Commissioners of Dukes County dated January 19, 1955 and duly recorded in Book 227, Page 564.

Lot 5

NORTHWESTERLY	by	land now or formerly of Alexander D Forger, Tr., one hundred ninety-eight and 15/100 (198.15) feet;
NORTHEASTERLY NORTHWESTERLY and NORTHEASTERLY	by	land now or formerly of Ralph Hornblower, three courses together measuring two hundred ninety-seven and 12/100 (297.12) feet.
NORTHWESTERLY and NORTHERLY	by	land now or formerly of Leonard C. Vanderhoop and Alexander D. Forger, Tr., nine hundred seventeen and 45/100 (917.45) feet;
NORTHEASTERLY	by	land now or formerly of Mildred W Brock, et al and Lot 4 on the hereinafter mentioned plan, seven hundred sixty-six and 21/100 (766.21) feet;
SOUTHEASTERLY	by	Lot 4 on said plan, forty-three (43±) feet, more or less;
SOUTHEASTERLY and NORTHEASTERLY	by	Black Brook;
SOUTHERLY SOUTHWESTERLY and SOUTHEASTERLY	by	Squibnocket Pond;
SOUTHEASTERLY	by	land of said Alexander D. Forger, Tr., one hundred thirty (130+/-) feet, more or less; and
SOUTHWESTERLY	by	land of said Alexander D. Forger, Tr., one thousand fifty-five and 29/100 (1055.29) feet.

Being Lot 5 on the hereinafter mentioned plan. All of said boundaries, except the water lines, are determined by the Court to be located as shown on plan No 39760B, drawn by Schofield, Barbini & Hoehn, Inc., Surveyors, dated April 15, 2008, which is filed at Dukes County Registry District of the Land Court with Certificate of Title No. 12036, Book 64, Page 345.

Subject to the terms set forth in the Order of Conditions issued by the Gay Head Conservation Commission, duly recorded with the Dukes County Registry of Deeds on July 13, 1983 in Book 403, Page 394.
Subject to the terms of a stipulation between Alexander D. Forger, Trs. and the Town of Gay Head, filed with the papers in this case on January 7, 1980, a copy of which is filed as Document

#29518.

Subject to the rights of the public in said Squibnocket Pond, a great pond, and subject to the provisions of Chapter 272 of the Acts of 1855.

Subject to and with the benefit of provisions set forth in a deed given by Alexander D. Forger, Trustee to Alexander D. Forger, trustee, dated April 3, 1978 and duly recorded in Book 355, Page 393, including without limitation a right of first refusal.

Subject to a utility easement set forth in a grant made by Alexander D. Forger, Trustee to New Bedford Gas & Edison Light Company (now Commonwealth Electric Company) and New England Telephone and Telegraph Company, dated July 28, 1980 and duly recorded in Book 375, Page 425.

The land hereby registered is affected by three special permits granted by the Planning Board of the Town of Gay Head, notices of which are recorded in Book 373, Pages 432, 433 and 434.

Subject to the flow of a natural watercourse running through the same and shown as Black Brook.

The above described land is subject to any rights of way by necessity legally existing thereover.

Lot 6

NORTHEASTERLY	by	State Highway (50.00 wide), one thousand one hundred twenty-three and 64/100 (1123.64) feet;
SOUTHEASTERLY	by	land now or formerly of Weston Howland Jr., et al, thirty-eight (38+/-) feet, more or less;
SOUTHEASTERLY	by	Herring Creek and Squibnocket Pond;
SOUTHWESTERLY	by	Lot 7 on the hereinafter mentioned plan, one thousand five hundred sixty-one (1561±) feet, more or less; and
NORTHWESTERLY	by	land now or formerly of Alexander D. Forger, Tr., nine hundred one and 90/100 (901.90) feet.

Being Lot 6 on the hereinafter mentioned plan. All of said boundaries, except the water lines, are determined by the Court to be located as shown on plan No 39760B, drawn by Schofield, Barbini & Hoehn, Inc., Surveyors, dated April 15, 2008, which is filed at Dukes County Registry District of the Land Court with Certificate of Title No. 12036, Book 64, Page 345.

Subject to the terms set forth in the Order of Conditions issued by the Gay Head Conservation Commission, duly recorded with the Dukes County Registry of Deeds on July 13, 1983 in Book 403, Page 394.

Subject to the terms of a stipulation between Alexander D. Forger, Trs. and the Town of Gay Head, filed with the papers in this case on January 7, 1980, a copy of which is filed as Document #29518.

Subject to the rights of the public in said Squibnocket Pond, a great pond, and subject to the provisions of Chapter 272 of the Acts of 1855.

Subject to and with the benefit of provisions set forth in a deed given by Alexander D. Forger, Trustee to Alexander D. Forger, trustee, dated April 3, 1978 and duly recorded in Book 355, Page 393, including without limitation a right of first refusal.

Subject to a utility easement set forth in a grant made by Alexander D. Forger, Trustee to New Bedford Gas & Edison Light Company (now Commonwealth Electric Company) and New England Telephone and Telegraph Company, dated July 28, 1980 and duly recorded in Book 375, Page 425.

The land hereby registered is affected by three special permits granted by the Planning Board of the Town of Gay Head, notices of which are recorded in Book 373, Pages 432, 433 and 434.

So much of the land hereby registered as is included within the area marked "Drainage Easement", approximately shown on said plan, is subject to the easement set forth in a taking by the Department of Public Works, dated December 11, 1956 and duly recorded in Book 232, Page 149.

Subject to the flow of natural watercourses running through the same and shown on said plan as Herring Creek.

Subject to the rights of the proprietors in the Herring Fishery as reserved in a set-off approved by

the Probate Court on December 21, 1878 and duly recorded in Book 65, Page 245.

Lot 7

NORTHEASTERLY	by	land now or formerly of Alexander D. Forger, Tr., five hundred sixty (560±) feet, more or less;
NORTHERLY NORTHEASTERLY and NORTHWESTERLY	by	Black Pond;
NORTHEASTERLY	by	land now or formerly of Alexander D. Forger, Tr. and Lot 6 on the hereinafter mentioned plan, one thousand seven hundred fifteen (1715±) feet, more or less;
SOUTHEASTERLY SOUTHERLY and SOUTHWESTERLY	by	Squibnocket Pond;
NORTHWESTERLY	by	Lot 3 on said plan, five hundred thirty-seven (537±) feet, more or less;
SOUTHWESTERLY	by	said Lot 3, seventy-one and 06/100 (71.06) feet;
SOUTHWESTERLY	by	said Lot 3, five hundred eighty-six and 25/100 (586.25) feet;
SOUTHWESTERLY and WESTERLY	by	said Lot 3 several courses together measuring one thousand seven hundred fifty-seven and 28/100 (1757.28) feet; and
NORTHWESTERLY	by	Moshope Trail (60.00 wide), one thousand thirty-seven and 67/100 (1037.67) feet.

Being Lot 7 on the hereinafter mentioned plan. All of said boundaries, except the water lines, are determined by the Court to be located as shown on plan No 39760B, drawn by Schofield, Barbini & Hoehn, Inc., Surveyors, dated April 15, 2008, which is filed at Dukes County Registry District of the Land Court with Certificate of Title No. 12036, Book 64, Page 345.

There is appurtenant to the land hereby registered any rights of way by necessity legally existing.

Subject to and with the benefit of restrictions, easements and a right of first refusal set forth in a deed from Alexander D. Forger, Trustee u/d/t dated January 16, 1978 and registered with the Dukes County Registry District of the Land Court as document #10640.

Subject to the terms set forth in the Order of Conditions issued by the Gay Head Conservation Commission, duly recorded with the Dukes County Registry of Deeds on July 13, 1983 in Book 403, Page 394.

Subject to the terms of a stipulation between Alexander D. Forger, Trs. and the Town of Gay Head, filed with the papers in this case on January 7, 1980, a copy of which is filed as Document #29518.

Subject to the rights of the public in said Squibnocket Pond, a great pond, and subject to the provisions of Chapter 272 of the Acts of 1855.

Subject to the flow of a natural watercourse running through the same and shown as an unnamed brook.

Subject to the rights of all those lawfully entitled in and to Black Pond, as shown on said plan.

Subject to and with the benefit of provisions set forth in a deed given by Alexander D. Forger, Trustee to Alexander D. Forger, trustee, dated April 3, 1978 and duly recorded in Book 355, Page 393, including without limitation a right of first refusal.

Subject to a utility easement set forth in a grant made by Alexander D. Forger, Trustee to New Bedford Gas & Edison Light Company (now Commonwealth Electric Company) and New England Telephone and Telegraph Company, dated July 28, 1980 and duly recorded in Book 375, Page 425.

The land hereby registered is affected by three special permits granted by the Planning Board of the Town of Gay Head, notices of which are recorded in Book 373, Pages 432, 433 and 434.

Subject to the rights of drainage and sloping as set forth in a taking by the County Commissioners of Dukes County dated January 19, 1955 and duly recorded in Book 227, Page 564.

PARCEL TWO:

SOUTHEASTERLY	by	land now or formerly of Cora F. Morton, four hundred forty-nine and 62/100 (449.62) feet;
SOUTHWESTERLY	by	land now or formerly of Ralph Hornblower, et al, two hundred sixty-four (264) feet;
NORTHWESTERLY	by	said Hornblower land, four hundred seventy-three (473) feet;
NORTHEASTERLY	by	said Hornblower land, two hundred twenty-eight and 85/100 (228.85) feet; and
EASTERLY	by	said Hornblower land, forty-two and 21/100 (42.21) feet.

Said land is shown as Lot 259 on the hereinafter mentioned plan.

All of said boundaries, except the water lines, are determined by the Court to be located as shown on plans drawn by William S. Swift, Inc., Surveyors, one dated April 1929 and the other dated April 3, 1929, as modified and approved by the Court (Plan 14769-A) filed in the Land Registration Office, a copy of a portion of which is filed with the Original Certificate of Title No. 604 in Registration Book 4, Page 19.

PARCEL THREE:

NORTHEASTERLY	by	land now or formerly of Nellie Mingo, et al, two hundred sixty-four (264) feet;
SOUTHEASTERLY	by	land now or formerly of Russell Wright, measuring on the upland about three hundred sixty-five (365) feet;
SOUTHWESTERLY	by	the Atlantic Ocean; and
NORTHWESTERLY	by	land now or formerly of Ralph Hornblower, measuring on the upland about four hundred twenty-five (425) feet.

All of said boundaries, except the water lines, are determined by the Court to be located as shown on a plan drawn by Swift & Learned, Inc., Surveyors, dated September 28, 1940 (Plan No. 17763-A) as modified and approved by the Court, filed in the Land Registration Office, a copy of a portion of which is filed with Certificate of Title No. 984 in Registration Book 6, Page 57, and is shown as Lot 585 on said plan.

There is appurtenant to the land hereby registered any rights of way by necessity legally existing.

PARCEL FOUR:

NORTHWESTERLY	by	land now or formerly of Margaret B. Gough, two hundred twenty-four and 20/100 (224.20) feet;
NORTHEASTERLY	by	said Gough land and by land now or formerly of Lucinda DeGras, et al, four hundred thirty-three and 90/100 (433.90) feet;
SOUTHEASTERLY	by	land now or formerly of Elizabeth Howwaswee, by the edge of the upland; and
SOUTHWESTERLY	by	land now or formerly of the Town of Gay Head and land now or formerly of Georgiana E. Tobey, five hundred and twenty-eight (528) feet.

Being Lot H as shown on Plan #4958-A2 filed with Original Certificate of Title No. 21, Book 1, Page 81.

The above described land is subject to such rights of way by necessity as may legally exist.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws and any amendments thereto, and that the title of said

RED GATE FARM LLC

to said land is registered under said Chapter subject, however, to any of the encumbrances mentioned in Section forty-six of said Chapter, and any amendments thereto, which may be subsisting, and subject also to any and all rights of the public in the use of said Squibnocket Pond as a great pond. Also to any and all public rights legally existing in and over the same below mean high water mark, and subject also as aforesaid; and to the memoranda of encumbrances for this certificate..

Witness Karyn F. Scheier, Chief Justice of the Land Court, Department of the Trial Court, at Edgartown, in said County of Dukes County the twenty-seventh day of December the year two thousand and twelve at 3 o'clock and 18 minutes in the afternoon.

Attest , with the Seal of said Court,---Dianne E. Powers

Dianne E. Powers , Assistant Recorder

Land Court Case Nos. 39760/14769/17763/4958

Property Address:
Moshope Trail
Aquinnah, MA 02535

MARTHA'S VINEYARD LAND BANK FEE
☐ PAID $_____
☒ EXEMPT$ A
63796 9/15/21 MH
NO. DATE CERTIFICATION

2021 00007436
Bk: 1595 Pg: 116 Doc: DEED
Page: 1 of 12 09/15/2021 01:52 PM

2021 00091002
Bk: 00083 Pg: 23 Cert: 15162
Doc: DEED 09/15/2021 01:48 PM

QUITCLAIM DEED

Red Gate Farm LLC, a duly established Delaware limited liability company qualified to do business in the Commonwealth of Massachusetts, with a principal place of business in New York, New York ("Grantor")

for consideration of **TEN MILLION AND 00/100 DOLLARS ($10,000,000.00)** paid

grants to **Martha's Vineyard Land Bank Commission**, a corporate body politic, with a principal place of business at 167 Main Street, P.O. Box 2057, Edgartown, Massachusetts 02539 ("Grantee")

with ***quitclaim covenants***

The land with all improvements thereon located in the Town of Aquinnah, formerly Gay Head, County of Dukes County, Commonwealth of Massachusetts, more particularly described as follows (hereafter, the "Premises"):

CONVEYED PARCEL: *(Registered Land)*

Lot 11 on a plan of land entitled "Subdivision Plan of Land in Aquinnah Schofield, Barbini & Hoehn Inc. Surveyors May 21, 2018" filed with the Dukes County Registry District Office of the Land Court as Plan No. 39760-C.

The following parcel is expressly retained by Red Gate Farm LLC (hereafter, the "Retained Parcel"):

RETAINED PARCEL: (*Registered and Recorded Land*)

Lot 14 on a plan of land entitled "Plan of Land in Aquinnah, Mass. being a subdivision of Lots 12 & 13, LCP 39760-C Scale: 1" = 100' September 15, 2020 Owner: Red Gate Farm LLC Certificate of Title #: 13441 Schofield, Barbini & Hoehn Inc. Land Surveying * Civil Engineering 12 Surveyor's Lane, Box 339 Vineyard Haven, Mass 508-693-2781 www.sbhinc.net MV 8734" recorded with the Dukes County Registry of Deeds in Plan Book 19, Page 36 (the "Retained Parcel Plan").

NOTE: Included within the boundaries of Lot 14 is the following registered parcel:

Property Address: Moshup Trail, Aquinnah, Dukes County, MA 02535

Lot 14 on a plan of land entitled "Subdivision Plan of Land in Aquinnah Schofield, Barbini & Hoehn Inc., Surveyors September 15, 2020" filed with the Dukes County Registry District Office of the Land Court as Plan No. 39760-D.

The right and easement to use any of the roads and ways contained within the boundaries of the Retained Parcel, most of which roads and ways are shown on the above-referenced plans as "*existing dirt road*", "*Access Road Easement 20 ft. wide*", "*Common Driveway Easement 20 ft. wide*", "*Way LCP 39760-A*", and "*way*", and any unmarked roads or trails, are expressly ***excluded*** from this grant, except as provided herein.

The Premises are conveyed together with the non-exclusive, perpetual right and easement to use the portion of the driveway off of Moshope Trail located on the Retained Parcel identified as "Driveway Easement" on the sketch plan attached hereto as **Exhibit A** and incorporated herein by reference (the "Driveway Easement Plan") upon the following terms and conditions:

(a) Grantee shall provide reasonable prior notice to Grantor before any use of the Driveway Easement (which notice, notwithstanding the notice provisions below, may be oral if given at least forty-eight (48) hours prior to such use);

(b) Grantee shall use the Driveway Easement for not more than twelve (12) days per calendar year (which days may be consecutive or non-consecutive, provided that the total number of days per calendar year shall not exceed twelve (12) calendar days in the aggregate);

(c) Grantee shall not use the Driveway Easement during the months of July or August;

(d) Grantee shall use the Driveway Easement exclusively by Grantee personnel solely for access and egress by vehicles and maintenance equipment for purposes of the maintenance of the Premises and other land of Grantee located southerly of the Premises, and for no other property or purpose. The general public shall have no right to use the Driveway Easement.

Grantor reserves the following perpetual rights and easements over the conveyed premises, as appurtenant to Grantor's Retained Parcel, the locations of which easement areas (the "Easement Areas") are identified on the sketch plan titled as Easement Plan No. 6 which is attached hereto as **Exhibit B** and incorporated herein by reference (the "Easement Plan"):

(a) The non-exclusive right and easement to use (i) that portion of Red Gate Farm Road marked as "Easement No. 9" on the Easement Plan, and (ii) that portion of the grass trail marked as "Easement No. 10" on the Easement Plan, for purposes of accessing and egressing, on foot, bicycle, horseback or in motorized vehicles, those Easement Areas as were reserved by the Grantor in that certain Quitclaim Deed from Grantor to Grantee and Sheriff's Meadow Foundation dated December 15, 2020, recorded with said Deeds, Book 1558, Page 30, and filed with the Land Court as Document No 89422. Grantor reserves the right, if, as and when deemed desirable by Grantor, to maintain and/or improve "Easement No. 9" in a condition satisfactory to Grantor, in Grantor's sole discretion.

(b) The right (but not obligation, and in Grantor's sole discretion), and solely in the event that Grantee does not do so to Grantor's satisfaction, to install and maintain gates, at Grantor's expense, to discourage trespassers from traveling onto the Grantor's Retained Parcels, at the locations shown as "Gate A", "Gate B", "Gate C", "Gate D", "Gate E" and "Gate F" on the sketch plan attached hereto as **Exhibit C** and incorporated herein by reference.

Grantor shall have the right to enter the conveyed premises for all purposes consistent with the reservation of the rights and easements described above, including, but not limited to, all necessary acts of construction, repair, maintenance and replacement of the gates and Easement Areas.. In the event that in the course of such entry, the surface of the ground in any Easement Area is disturbed, it shall thereafter be promptly restored as near to its original and natural condition as possible after the exercise of any of the easement rights granted herein.

Grantor hereby agrees to indemnify and save Grantee harmless from and against all loss, demands, causes of action, costs and expenses, claims, liability or damages, including reasonable attorneys' fees and disbursements, caused by, related to or in any way arising out of the exercise of the rights reserved hereby by Grantor, or Grantor's invitees, agents, employees, licensees, contractors and representatives.

Grantor shall secure any and all necessary permits, orders, certificates, authorizations and other approvals from the Town of Aquinnah, the Commonwealth of Massachusetts or any other sovereign body with jurisdiction prior to conducting any of the road repair, landscaping, or other work authorized by this reservation of rights and easements.

Grantee shall have the right to relocate the access easement areas shown as "Easement No. 9" and "Easement No. 10" if such relocation is reasonably necessary or convenient to accommodate any other improvements to the Premises, provided that (a) the relocated easement area provides a reasonably equivalent and continuous means of access; (b) the full cost of such relocation shall be borne by the Grantee; (c) there shall be no material interruption of the means of access being relocated; and (d) the Grantee shall cause a new plan to be prepared showing the location of the easement as relocated. Upon such relocation, the easement existing for the prior location shall terminate and a new easement (on the same terms and conditions set forth herein) shall automatically be created for the new location of such easement.

Grantor and Grantee shall use best efforts to notify the other at least seven (7) days in advance of the exercise of any of the construction, installation, maintenance, landscaping, repair or replacement rights reserved herein.

Any notices given hereunder shall be in writing and shall be delivered in hand, mailed postage prepaid, by registered or certified mail, return receipt requested, or shall be sent by Federal Express or another nationally recognized overnight delivery service, addressed to the party for whom the notice is intended at the address of such party maintained by the Board of Assessors for the Town of Aquinnah. Any such notices shall be deemed given when so delivered by hand, or if so mailed, when deposited with the U.S. Postal Service, or, if so delivered by such overnight delivery service, when deposited with said overnight delivery service.

This conveyance is made subject to the following restrictions:

(i) Use of the Premises shall be confined to those specific uses enumerated in Chapter 736 of the Acts of 1985, Section 5, in effect on the date of this deed.

(ii) Grantee shall not permit hunting on the Premises within one hundred fifty (150) feet of the Retained Parcel (the "Hunting Buffer Zone"), which zone is delineated by a dotted line and identified as "150' Hunting Buffer " on the sketch plan attached hereto as **Exhibit C** and incorporated herein by reference. Should Grantee permit hunting on any other portion of the Premises, Grantee shall install conspicuous signage indicating the limit of the Hunting Buffer Zone.

(iii) No public parking area shall be sited or constructed on the Premises.

The restrictions set forth in this deed are of actual and substantial benefit to the Retained Parcel. All of the rights, restrictions and easements set forth in this deed shall run with the land, and be binding upon and inure to the benefit of the parties hereto and their successors and assigns as owners, respectively, of the Grantor's Retained Parcel and the Premises. The terms "Grantor" and "Grantee" as used herein shall include each such party's successors and assigns.

To the extent that any provision of this deed is deemed to constitute a restriction subject to the limiting provisions of M.G.L. Chapter 184, Sections 26 through 30, then all such restrictions shall be binding upon the Grantor and Grantee for a term of one hundred fifty (150) years from the date of recording hereof and shall remain in full force and effect in accordance with the provisions of M.G.L. Chapter 184, Section 27, as it may be amended from time to time, or as provided in similar successor provisions, which provision of M.G.L. Chapter 184, Section 27 permit the extension of the period of enforceability of said restrictions by the recording of an extension in accordance with the provisions of said law before the expiration of the first thirty (30) years from the date of recording hereof, and before the expiration of each succeeding twenty (20) year period thereafter, or for such other maximum further periods of time as may be allowed by any amendments of said law or by any successor provisions.

The Grantor hereby certifies Red Gate Farm LLC is not classified during its current taxable year as a corporation for federal income tax purposes.

By signing below the Grantor hereby certifies, under the pains and penalties of perjury, that the Premises conveyed by this deed is not a principal residence and is therefore not homestead property pursuant to M.G.L. c. 188.

For Grantor's title, see the following deeds: deed from Caroline B. Kennedy, Rose Kennedy Schlossberg, Tatiana C. Kennedy Schlossberg and John B. Kennedy Schlossberg dated December 21, 2012 and filed with the Dukes County Registry District Office of the Land Court as Document No. 76639 and recorded with the Dukes County Registry of Deeds in Book 1303, Page 315. See also Certificate of Title No. 13441.

Executed as a sealed instrument on this 15 day of September, 2021.

RED GATE FARM LLC

By: _____
Edwin A. Schlossberg, its Manager

COMMONWEALTH OF MASSACHUSETTS

County of Dukes County, ss.

Before me, the undersigned notary public, on this 15 day of September, 2021, personally appeared Edwin A. Schlossberg, Manager as aforesaid, who is personally known to me or was proved to me through a current document issued by a federal or state government agency bearing a photographic image of the signatory's face and signature, to be the person whose name is signed to the foregoing instrument and acknowledged to me that he signed it voluntarily as his free act and deed and the free act and deed of Red Gate Farm LLC, for its stated purpose.

_____
[notary seal]

PAUL D. MOREAU
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
July 01, 2022

EXHIBIT A

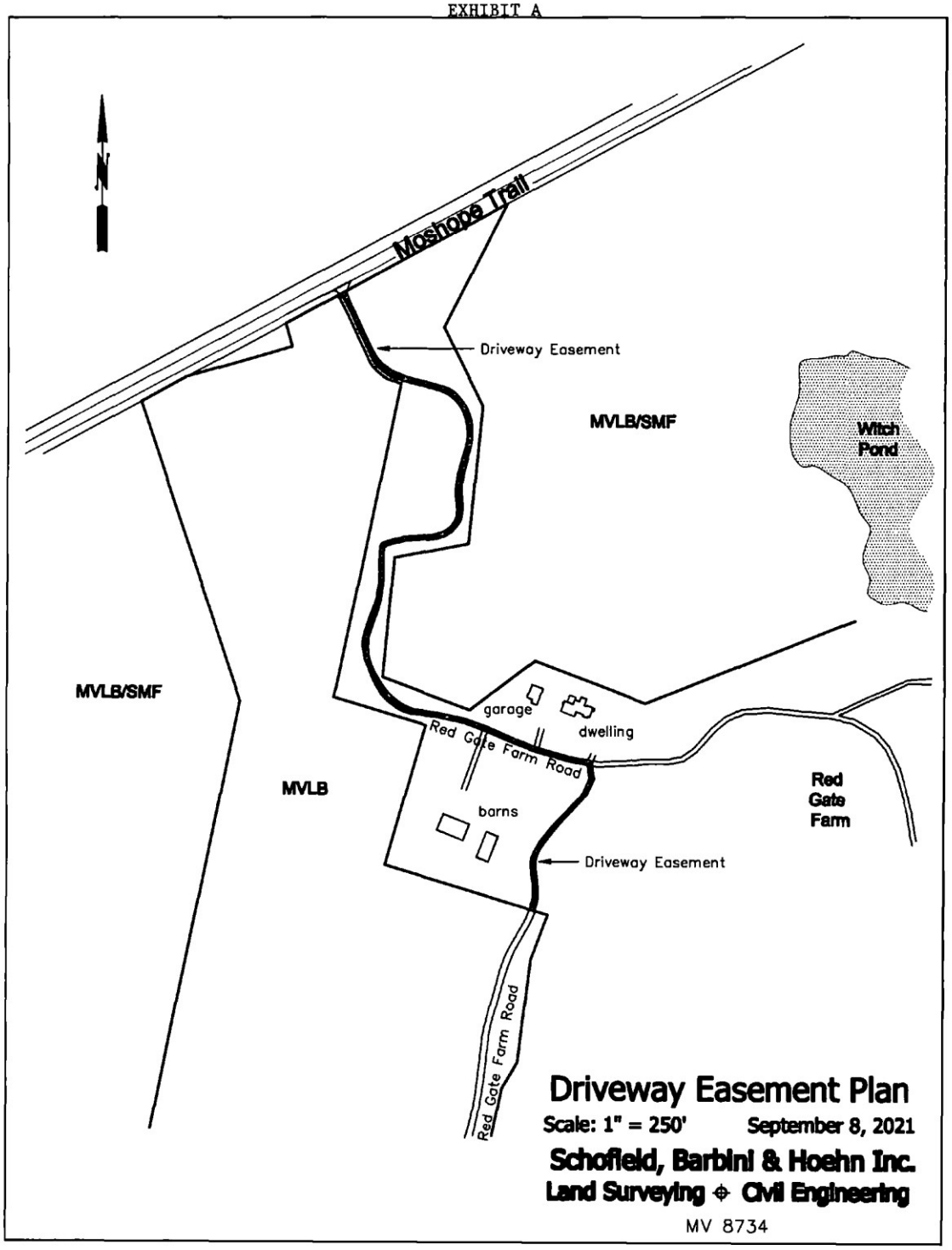

N
Moshope Trail
Driveway Easement
MVLB/SMF
Witch Pond
MVLB/SMF
garage
dwelling
Red Gate Farm Road
MVLB
barns
Red Gate Farm
Driveway Easement
Red Gate Farm Road
Driveway Easement Plan
Scale: 1" = 250'
September 8, 2021
Schofield, Barbini & Hoehn Inc.
Land Surveying ⌖ Civil Engineering
MV 8734

EXHIBIT B

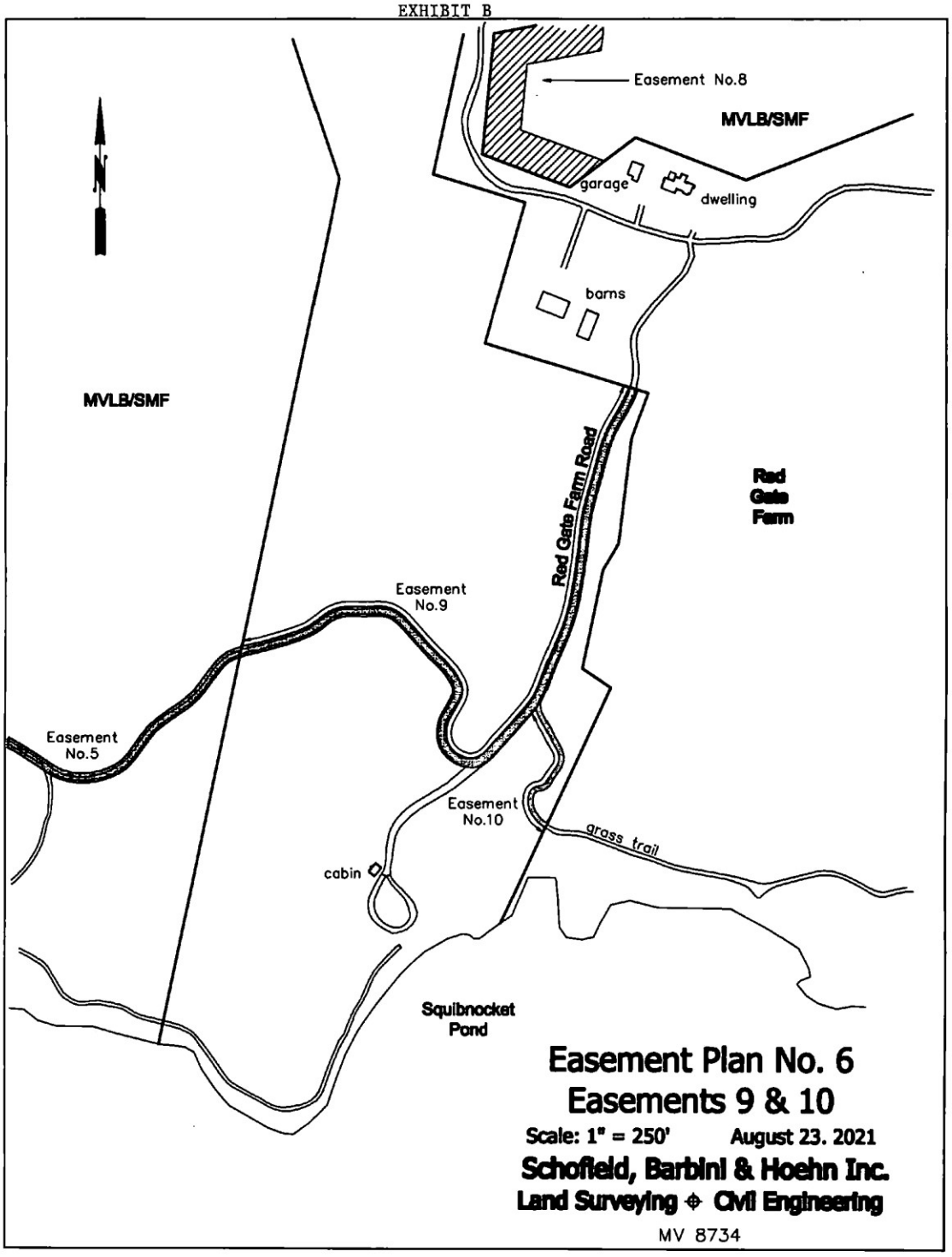
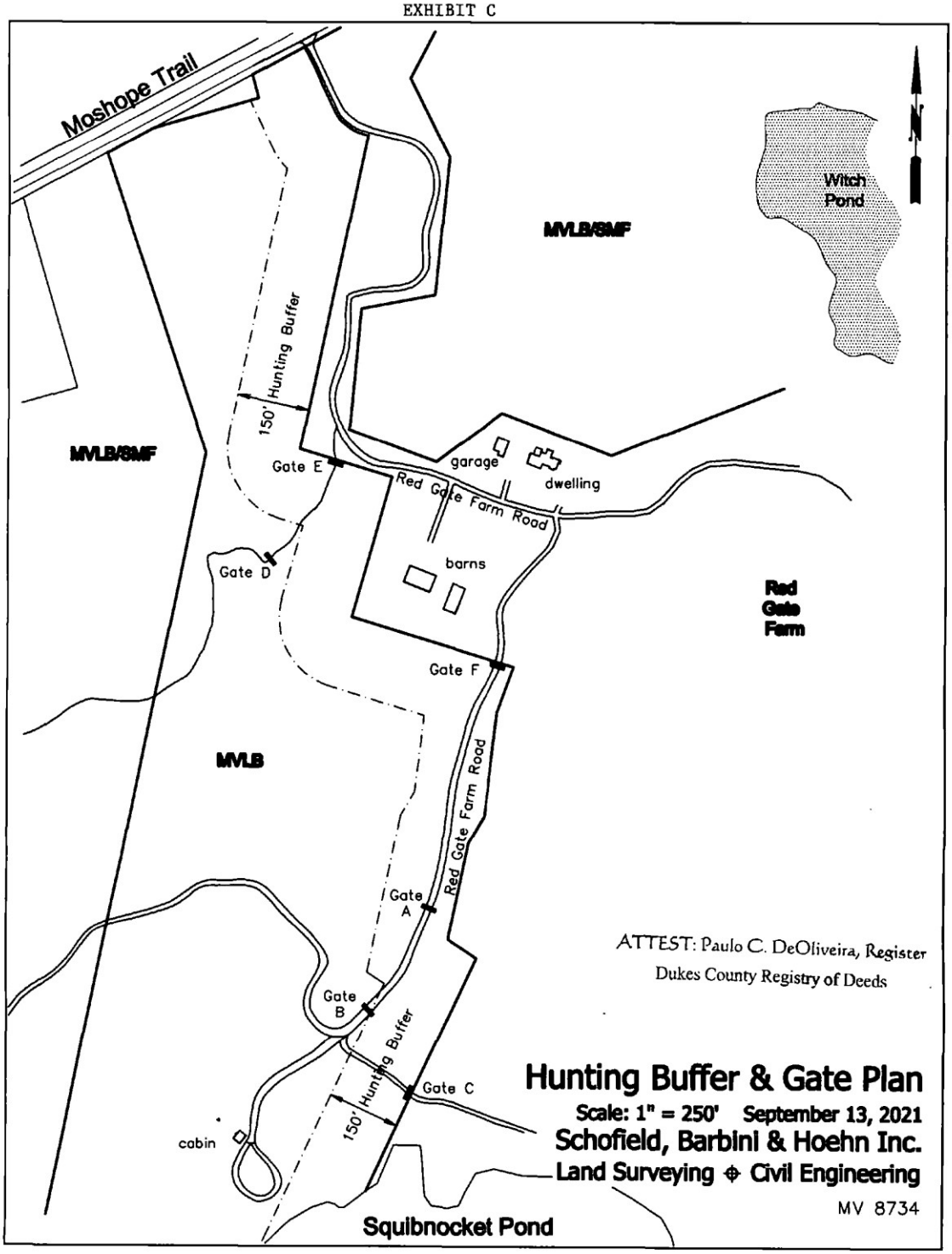

Easement No.8
MVLB/SMF
garage
dwelling
barns
MVLB/SMF
Red Gate Farm Road
Red Gate Farm
Easement No.9
Easement No.5
Easement No.10
grass trail
cabin
Squibnocket Pond
Easement Plan No. 6
Easements 9 & 10
Scale: 1" = 250'
August 23. 2021
Schofield, Barbini & Hoehn Inc.
Land Surveying ⌖ Civil Engineering
MV 8734

EXHIBIT C


Moshope Trail
Witch Pond
MVLB/SMF
150' Hunting Buffer
MVLB/SMF
Gate E
garage
dwelling
Red Gate Farm Road
Gate D
barns
Red Gate Farm
Gate F
MVLB
Red Gate Farm Road
Gate A
Gate B
Hunting Buffer
150'
Gate C
cabin
Squibnocket Pond
ATTEST: Paulo C. DeOliveira, Register
Dukes County Registry of Deeds
Hunting Buffer & Gate Plan
Scale: 1" = 250' September 13, 2021
Schofield, Barbini & Hoehn Inc.
Land Surveying ⊕ Civil Engineering
MV 8734

stamp added to capture image during scanning

Doc 00091002

DUKES LAND COURT
REGISTRY DISTRICT
RECEIVED FOR REGISTRATION

On: Sep 15,2021 at 01:48P
Document Fee 155.00 Rec Total $890.00

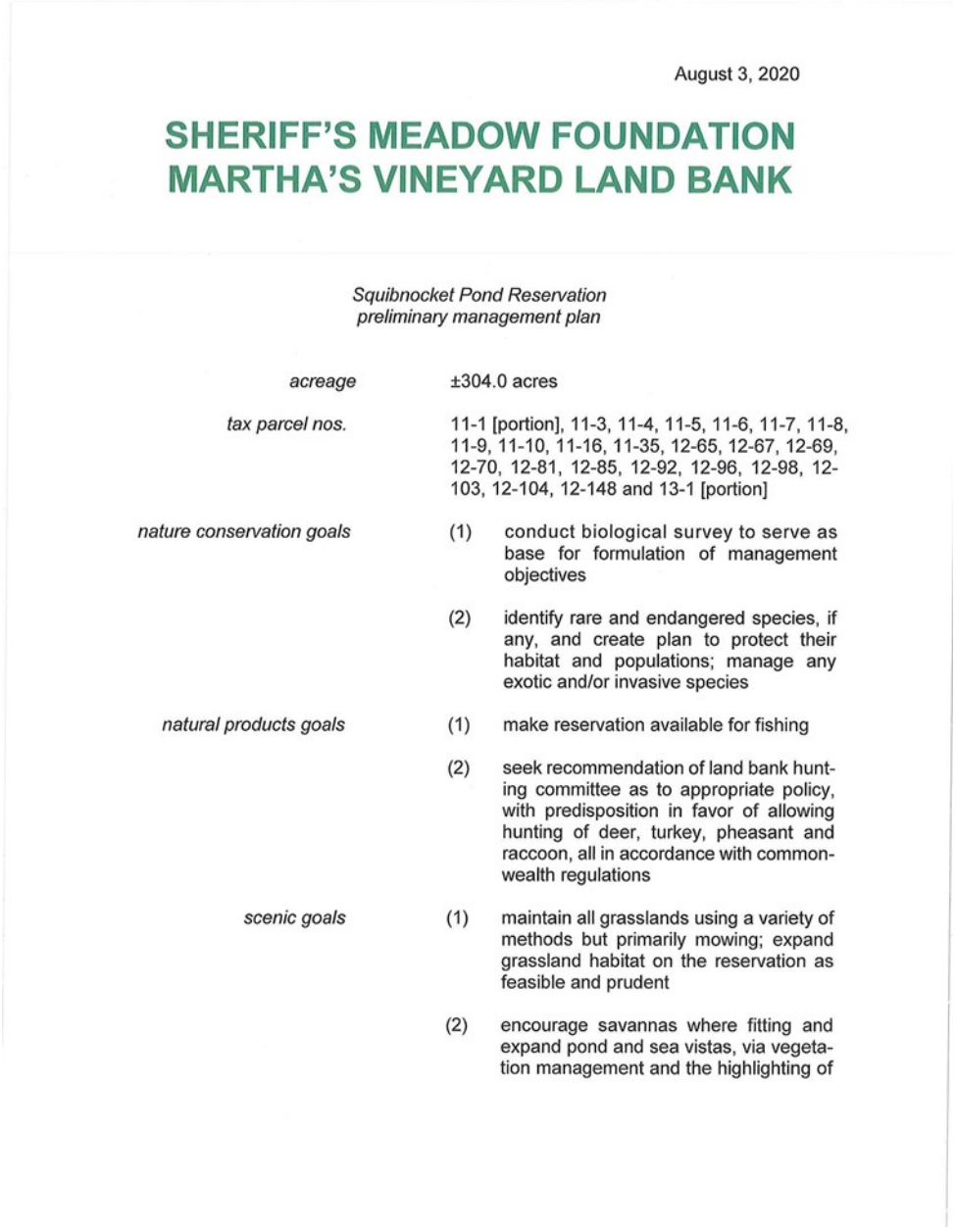
NOTED ON: CERT 15162 BK 00083 PG 23

stamp added to capture image during scanning

Preliminary Management Plan goals:

This document was developed by Sheriff's Meadow Foundation and Martha's

Vineyard land bank staff in the summer of 2020 as an initial plan of management goals and strategies. It has served as a foundation for this final management plan, but has been subject to change.



August 3, 2020

SHERIFF'S MEADOW FOUNDATION
MARTHA'S VINEYARD LAND BANK

Squibnocket Pond Reservation
preliminary management plan

acreage	±304.0 acres	
tax parcel nos.	11-1 [portion], 11-3, 11-4, 11-5, 11-6, 11-7, 11-8, 11-9, 11-10, 11-16, 11-35, 12-65, 12-67, 12-69, 12-70, 12-81, 12-85, 12-92, 12-96, 12-98, 12-103, 12-104, 12-148 and 13-1 [portion]	
nature conservation goals	(1)	conduct biological survey to serve as base for formulation of management objectives
	(2)	identify rare and endangered species, if any, and create plan to protect their habitat and populations; manage any exotic and/or invasive species
natural products goals	(1)	make reservation available for fishing
	(2)	seek recommendation of land bank hunting committee as to appropriate policy, with predisposition in favor of allowing hunting of deer, turkey, pheasant and raccoon, all in accordance with commonwealth regulations
scenic goals	(1)	maintain all grasslands using a variety of methods but primarily mowing; expand grassland habitat on the reservation as feasible and prudent
	(2)	encourage savannas where fitting and expand pond and sea vistas, via vegetation management and the highlighting of

specimen trees

recreational goals

(1) site loop trail systems that capitalize on various attractive features (e.g., sloughs and promontories; ponds and brooks; dunes), culminating in northerly terminus at the great-pond and southerly terminus at the ocean beach; lay out trails and install infrastructure (signage; fencing; gates; boardwalks; etc.) so as clearly to separate public and private lands and adjust as necessary as a result of annual neighborhood review; install benches at viewpoints and elsewhere

(2) while permitting all conventional ocean uses (e.g., swimming, fishing, beach-combing), conceptualize beach as a remote destination where arriving visitors have the privilege of space and solitude

(3) post roaming summer ranger to oversee public use while also performing field labor; expand hours as needed and judge, following initial several seasons, whether hours should, to any extent, contract

access

(1) create Moshup Trail trailhead accommodating up to twelve vehicles; institute during the bathing season, in order to forestall either vehicle queuing on the public road or trailhead monopolization, a software-helmed reservation system that allocates spaces *[a]* via the issuance of a barcode; *[b]* on a day-long basis and *[c]* refreshing at a set time each week; staff trailhead with an attendant to open gate upon presentation of valid barcode; allow managed pedestrian and bicycle access to trailhead

(2) create State Road trailhead accommodating up to ten vehicles for general hiking

plus a lower trailhead accommodating up to three vehicles for universal access hiking and for paddlers, with treated surfaces installed as warranted; attend as needed; in order to avoid trespassing, inform paddlers how to access the ocean beach

administrative goals

(1) install boundary markers to delineate clearly the distinction between private and public land; during hunting season supplement markers with signs advising hunters of the ownership line, offset from the line fifty feet (or more, owing to site conditions)

(2) allow dawn-to-dusk public use; study logistics — supervision, parking (including off-premises parking), etc. — associated with possibly allowing nighttime fishing

(3) prohibit any unauthorized vehicular access

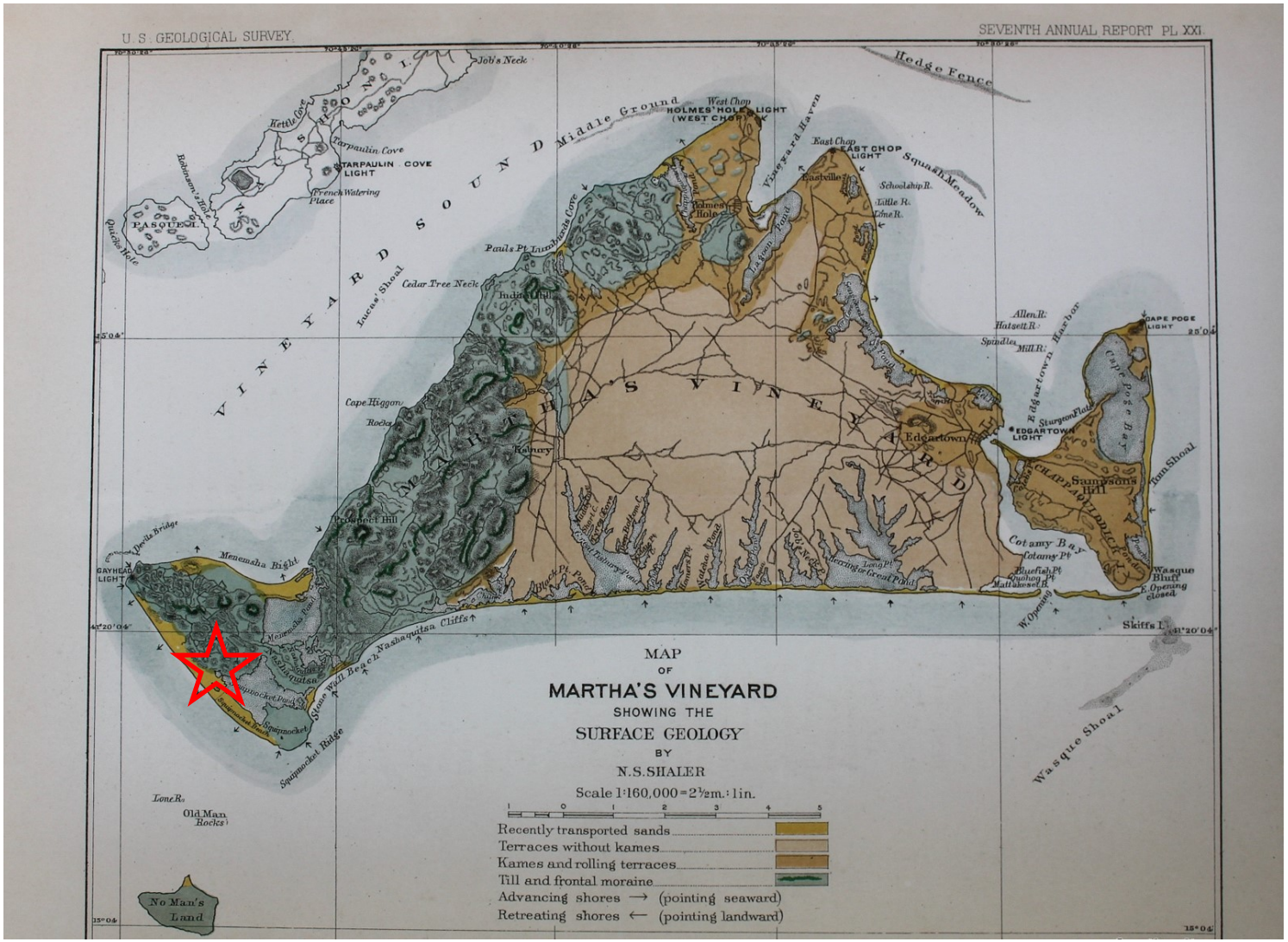
(4) supply to abutters contact information for land management team and confer regularly as to effectiveness of management plan and staffing; consult with abutters as to contemplated revisions to plan

approved by vote of the Aquinnah town advisory board: July 30, 2020

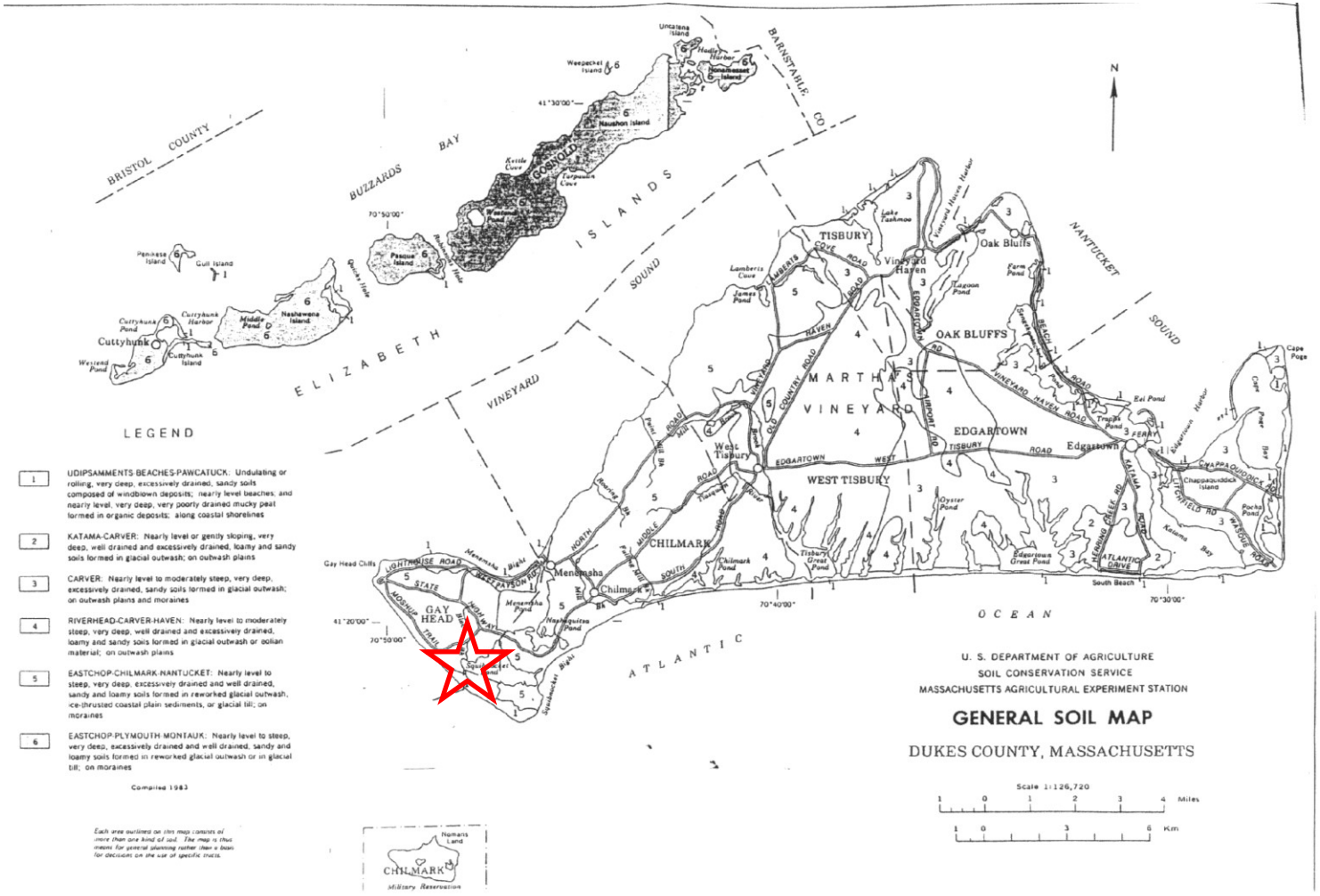
approved by vote of the land bank commission: August 3, 2020

Appendix C. Soils Maps and Descriptions

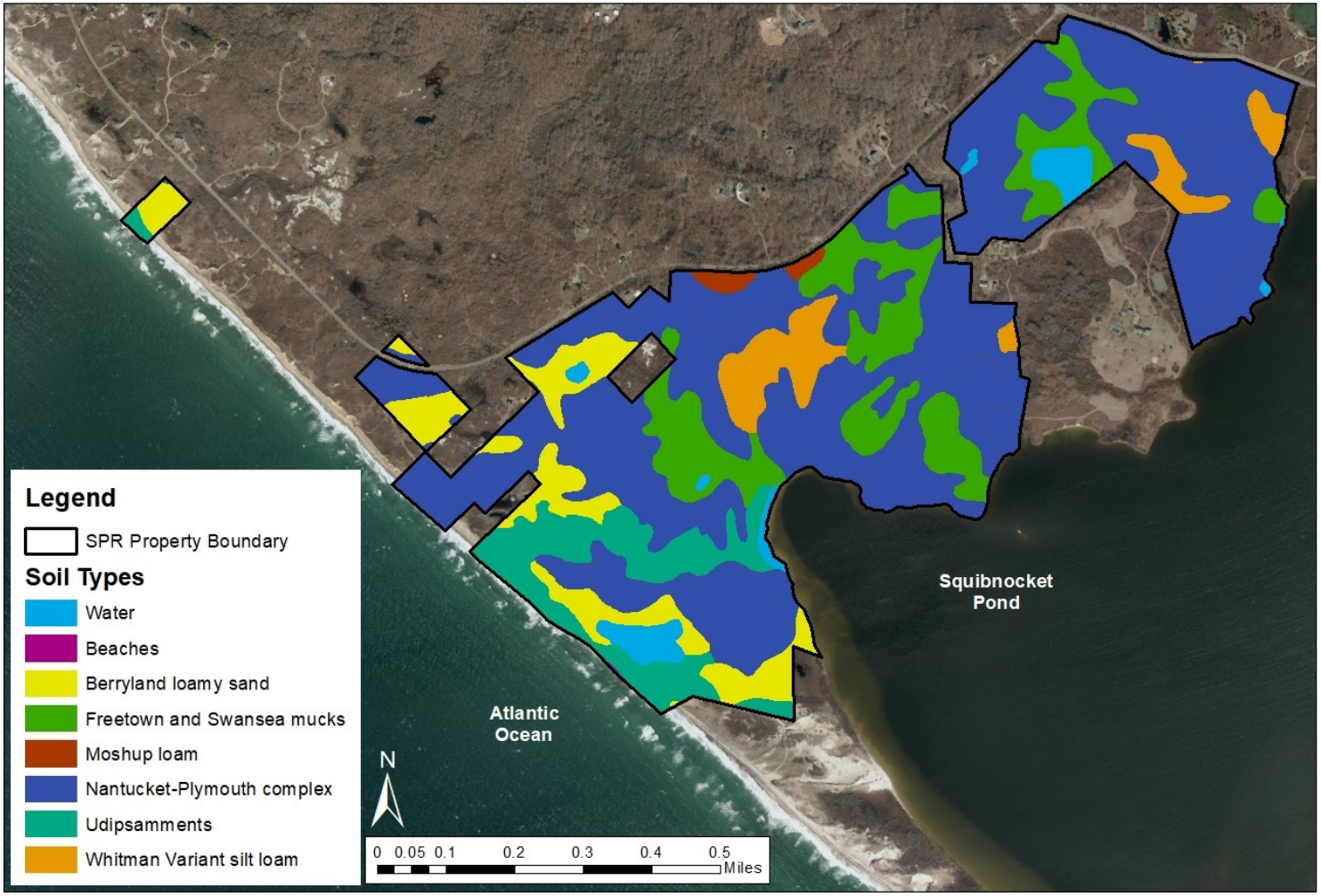
Map 16: Surface geology of Martha's Vineyard.



Map 17: General soil map of Martha's Vineyard.



Map 18: Soil types of Squibnocket Pond Reservation.



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

Soil Type Descriptions

The soils on Squibnocket Pond Reservation are from the Berryland loamy sand, Freetown and Swansea mucks, Moshup loam, Nantucket-Plymouth complex, Udipsamments, and Whitman Variant silt loam soil series. The following soil descriptions are derived from Fletcher & Roffinoli (1986) Dukes County Soil Surveys.

Beaches (Ba)

Ba – This soil is nearly level with some gentle sloping in areas adjacent to the ocean. These areas consist of deep sand that is mainly fine in nature. Beaches are generally used for recreation.

Berryland loamy sand (BeA)

BeA – The BeA soil is a very deep, poorly drained soil with a 0-2% slope. The poor drainage makes this soil unsuitable for farming, woodland productivity, and building. Wetness is a concern for trails, landings, and access roads.

Freetown and Swansea mucks (FsA)

FsA – The Freetown and Swansea mucks are very deep, level, and poorly drained soil with a 0-1% slope. These soils are unsuitable for farming, woodland productivity, and building due to their high-water table that is at or near the surface most of the year. Wetness is a concern for trails, landings, and access roads.

Moshup loam (MoA, MoB, MsB)

Moa – This very deep and moderately well drained soil has a 0-3% slope. This soil is suitable for farming and woodland productivity but is poor for building due to high water tables in the substratum. Slow percolation through the soil and wetness makes this soil type unfit for septic systems.

MoB -- This very deep and moderately well drained soil has a 3-8% slope. This soil is suitable for farming, haying, and woodland productivity, but is poor for building due to the high-water table in the substratum. Slow percolation through the soil and wetness makes this soil type unfit for septic systems.

MsB -- This very deep and moderately well drained soil has a 0-8% slope and is very stony. Farming and haying are not suited for this soil due to the large stones and boulders at the surface, but areas may be suitable for pasture. This soil is suitable for woodland productivity. Slow percolation through the soil and wetness makes this soil type unfit for building and septic systems.

Nantucket-Plymouth complex (NpC, NsB, NsC, NsD). Soils from this matrix dominate the Reservation.

NpC – This soil is a mix of Nantucket (60%), Plymouth, (20%) and other soil types (20%). Slopes generally range from 3-15 percent. This soil is suitable for

farming, woodland productivity, and building. Erosion is a concern at steeper slopes. The soil is not suitable for septic systems due to slow percolation and seepage.

NsB -- This soil is a mix of Nantucket (60%), Plymouth, (20%) and other soil types (20%). Slopes generally range from 3-8 percent. Stones and boulders make this soil unsuitable for farming. This soil is well suited for woodland productivity. This soil is suitable for building but is not suitable for septic systems due to hazards of ground-water pollution.

NsC -- This soil is a mix of Nantucket (60%), Plymouth, (20%) and other soil types (20%). Slopes generally range from 3-15 percent. Stones and boulders make this soil unsuitable for farming. This soil is well suited for woodland productivity. Erosion during building is a concern at steeper slopes. The soil is not suitable for septic systems due to slow percolation and seepage.

NsD -- This soil is a mix of Nantucket (60%), Plymouth, (20%) and other soil types (20%). Slopes generally range from 15-35 percent. The steep slope and large boulders generally make this soil unfit for farming and building. Woodland production is viable if any access trails and roads are built at lower slope areas to reduce erosion. The soil is not suitable for septic systems due to slow percolation and seepage.

Udipsamments (UaC)
UaC – Udipsamments are very deep, excessively drained soil on sand dunes along the coast, with a 3-15% slope. This soil is not suitable for farming, woodland productivity, or building.

Whitman Variant silt loam (WhA, WmA)
WhA – This soil is very deep and very poorly drained with a 0-3% slope. Due to the seasonably high-water table, this soil is not suitable for farming, woodland production, or building. Excessive wetness would be a concern for trails. This soil is not suitable for septic systems due to permeability in the soil.

WmA -- This soil is very deep, poorly drained, and stony, with a 0-3% slope. Due to the seasonably high-water table, this soil is not suitable for farming, woodland production, or building. Excessive wetness would be a concern for trails. This soil is best used as wetland wildlife habitat.

Appendix D: Vegetation

Survey Methods

During the spring and summer of 2021, formal vegetation surveys were conducted in the woodlands, shrublands, grasslands, and bogs of Squibnocket Pond Reservation. Point locations for all habitat survey spots, excluding the bogs, were generated with the random point generator function within ArcGIS Map 10.8.

In the woodlands, 16 points were inventoried using a point sampling method as described by Avery and Burkhart (2002). This method captures tree species composition, canopy density, and diameter at breast height (DBH) of trees within the plot. In addition to canopy measurements, $3m^2$ circular plots were used to inventory the understory at each woodland point. Density and percent cover of understory vegetation was recorded for all plots. One tree representing the dominant tree size and species was cored in each plot except for four plots that did not have suitable trees to core.

The shrublands and grasslands were inventoried following methods described by Dunwiddie (1986) which capture species diversity and stem density within plots. Shrubland habitats were assessed using 80 plots (2 m^2); grasslands, a smaller relative area of habitat, was assessed using 53 plots (1 m^2). Four major bogs on the property were inventoried following the methods of Bonham, C.D., (2013). Species presence and percent cover were estimated in 5 in blocks along a length of transect, which was laid out from open water to the edge of the bog habitat to capture plant species composition changes.

Species diversity

A total of 296 plant species was observed within the Squibnocket Pond Reservation across all habitats. A full list of non-commonwealth-listed flora can be found in Table 2 with proper nomenclature according to Haines (2011).

Table 2: Flora of Squibnocket Pond Reservation

Scientific name	Common name
Acer rubrum	Red maple
Achillea millefolium	Yarrow
Aclepias syriaca	Common milkweed
Acorus americanus	Sweet flag
Agalinis purpurea	Purple agalinis
Agropyron repens	Creeping wild-rye
Agrostis gigantea	Redtop
Agrostis spp.	Agrostis spp.
Aira praecox	Early silver-hairgrass
Allium vineale	Crow garlic
Alnus incana	Speckled alder
Amelanchier sp.	Shadbush
American tree moss	American tree moss
Ammophila breviligulata	American beach grass
Anagallis arvensis	Pimpernel
Anaphalis margaritacea	Pearly everlasting
Andropogon gerardii	Big bluestem
Andropogon glumeratis	Bushy bluestem
Andropogon virginicus	Broomsedge bluestem
Anemone quinquefolia	Wood anemone
Antennaria sp.	Pussytoes
Anthoxanthum odoratum	Sweet vernal grass

Aralia nudicaulis	Wild sasparilla
Arctostaphylus uva-ursi	Bearberry
Arethusa bulbosa	Dragons mouth
Arisaema triphyllum	Jack-in-the-pulpit
Aronia arbutifolia	Red chokeberry
Aronia floribunda	Purple chokeberry
Artemisia stelleriana	Beach wormwood
Asclepias incarnata	Swamp milkweed
Bacharus halimifolia	Eastern false willow
Baptisia tinctoria	Wild indigo
Barbarea vulgaris	Common bittercress
Berberis vulgaris	Common barberry
Betula populifolia	Grey birch
Boehmeria cylindrica	Small-spike false nettle
Bulboschoenus maritimus	Saltmarsh tuber-bulrush
Calamagrostis canadensis	Blue jointgrass
Calluna vulgaris	Heather
Calopogon tuberosus	Tuberous grass-pink
Calystegia sepium	Hedge false bindweed
Cardamine pensylvanica	Pennsylvania bitter-cress
Carex atlantica	Prickly bog sedge
Carex spp.	Carex spp.
Carex swansii	Swan sedge
Carex vulpinoidea	Fox sedge
Celastrus orbiculatus	Oriental bittersweeet
Cerastium fontanum	Mouse-eared chickweed
Circaea canadensis	Eastern enchanters nightshade
Cirsium horridulum	Yellow thistle
Cirsium spp.	Thistle
Cladium mericicoides	Smooth saw-sedge
Clethra alnifolia	Coastal sweet pepper bush
Comptonia peregrina	Sweet-fern
Corylus americana	American hazelnut
Crocanthemum canadense	Canadian frostweed
Crocanthemum dumosum	Bushy frostweed
Cuscuta gronovii	Common dodder
Danthonia spicata	Poverty grass
Dauca carrota	Queen annes lace
Decodon verticillatus	Swamp loosestrife
Denstaedtia punctilobula	Hay scented fern
Desmodium cilliare	Hairy small-leaved tick-treefoil
Dianthus armeria	Deptford pink
Dicanthelium depauperatum	Deer-tongue rosette-panicgrass
Dichanthelium clandestinum	Deer-tongue grass
Diervilla lonicera	Bush-honeysuckle
Digitalis purpurea	Purple foxglove
Distichlis spicata	Saltgrass

Drosera intermedia	Spatulate-leaved sundew
Drosera rotundifolia	Round-leaved sundew
Dulichium arundinaceum	Three-way sedge
Echinochloa crus-galli	Common barnyard grass
Elaeagnus umbellata	Autumn olive
Eleocharis palustris	Common spikesedge
Eleocharis spp.	Spike sedge spp.
Epilobium leptophyllum	Bog willow-herb
Equisetum spp.	Equisetum
Erechtites hieraciifolius	American burnweed
Eriophorum virginicum	Tawny cottongrass
Eupatorium hyssopifolium	Hyssop-leaved boneset
Eurpatorium pubescens	Hairy thoroughwort
Eurybia divaricata	White wood-aster
Euthamia gramnifolia	Grass-leaved goldenrod
Euthamia tenuifolia	Slender-leaved goldenrod
Fagus grandifolia	American beech
Fescue spp.	Fescue spp.
Festuca avina	Sheep fescue
Festuca cf. rubra	Red fescue
Festuca filliformes	Hair fescue
Fragaria vesca	Wild strawberry
Galium palustre	Marsh bed straw
Galium pilosum	Hairy bedstraw
Galium spp.	Cleaver
Gaultheria procumbens	Wintergreen
Gaylussacia baccata	Black huckleberry
Geranium maculatum	Wild geranium
Geum canadense	White avens
Geum laciniatum	Rough avens
Glyceria obtusa	Atlantic manna grass
Glyceria spp.	Manna grass
Gratiola aurea	Golden hedge-hyssop
Hamamelis virginiana	American witch-hazel
Heracleum maximum	American cow-parsnip
Hibiscus moscheutos	Swamp rose-mallow
Hieracium aurantiacum	Orange weed
Hieracium scabrum	Rough hawkweed
Hieracium spp.	Hawkweed
Holcus lanatus	Velvet grass
Houstonia caerulea	Little bluet
Hudsonia tomentosa	Woolly beach-heather
Hydrocotyle umbellata	Many-flowered marsh-pennywort
Hydrocotyle verticillata	Salt pond pennywort
Hypericium perforatum	Common st. John's wort
Hypericum mutilum	Dwarf st. John's wort
Hypericum virginicum	Marsh st johns wort
Ilex glabra	Inkberry

Ilex opaca	American holly
Ilex verticillata	Winterberry
Impatiens capensis	Jewelweed
Ionactis linariifolia	Flax-leaved stiff aster
Iris prismatica	Slender blue iris
Iris versicolor	Blue iris
Juncus articulatus	Joint-leaved rush
Juncus effusus	Soft rush
Juncus tenuis	Path rush
Juniperus virginiana	Red cedar
Justicia americana	Water willow
Kalmia angustifolia	Sheep-laurel
Lactuca serriola	Prickly lettuce
Lapsana communis	Common nipplewort
Lathyrus japonicus	Beach pea
Lechea maritima	Beach pinweed
Leucanthemam vulgare	Ox-eye daisy
Ligustrum spp.	Privet
Lilium philadelphicum	Wood lily
Lindera benzoin	Spicebush
Lindernia dubia	False pimpernel
Lobelia cardinalis	Cardinal flower
Lonicera japonicus	Japanese honeysuckle
Ludwigia palustris	Water purslane
Lycopus americanus	American water-horehound
Lycopus rubellus	Clasping water-horehound
Lyonia ligustrina	Maleberry
Lysimachia arvensis	Scarlet pimpernel
Lysimachia borealis	Star flower
Lysimachia quadrifolia	Whorled yellow-loosestrife
Lysimachia terrestris	Swamp candles
Maianthemom canadense	Canada mayflower
Medeola virginiana	Indan cucumber-root
Mentha spicata	Spearmint
Mikania scandens	Climbing hempvine
Miscanthus sinensis	Chinese silvergrass
Monotropa uniflora	Ghost pipe
Morella caroliniensis	Bayberry
Nabalus trifoliatus	Three-leaved rattlesnake-root
Nuphar variegata	Bullhead pond lily
Nuphar lutea	Yellow waterlily
Nuttalanthus canadensis	Blue toadflax
Nuttallanthus canadensis	Old-field toadflax
Nymphaea odorata	White water-lily
Nyssa sylvatica	Beetlebung
Oenothera biennis	Common evening-primrose
Onoclea sensibilis	Sensitive fern
Osmudastrum cinnamomeum	Cinnamon fern

Osmunda regalis	Royal fern
Oxalis europaea	Yellow wood sorrel
Panicum virgatum	Switch panicgrass
Parathelypteris noveboracensis	New York fern
Parathelypteris simulata	Massachusetts fern
Parthenocissus quinquefolia	Virginia creeper
Peltandra virginica	Green arrow arrum
Persicaria hydropiperoides	False water-pepper smartweed
Persicaria sagittata	American tearthumb
Phragmites australis	Common reed
Pityopsis falcata	Sickle-leaved golden-aster
Plantago lanceolata	English plantain
Plantago major	Common plantain
Platanus occidentalis	American sycamore
Pluchea odorata	Sweet -scented camphorweed
Poa pratensis	Kentucky bluegrass
Pogonia ophioglossoides	Rose pogonia
Polygala cruciata	Drum-heads milkwort
Populus gradidentata	Big tooth aspen
Potentilla canadensis	Dwarf cinquefoil
Potentilla simplex	Common cinquefoil
Proserpinaca palustris	Marsh mermaid-weed
Proserpinaca palustris	Mermaid-weed
Prunella vulgaris	Common selfheal
Prunus serotina	Black cherry
Prunus virginiana	Chokecherry
Pseudognaphalium obtusifolium	Blunt-leaved rabbit-tobacco
Pteridium aquilinum	Bracken fern
Pycnanthemum muticum	Broad-leaved mountain-mint
Pyrola americana	American shinleaf
Quercus alba	White oak
Quercus coccinea	Scarlet oak
Quercus ilicifolia	Scrub oak
Quercus velutina	Black oak
Rhododendron viscosum	Swamp azalea
Rhus copallina	Shining sumac
Rhus copallinum	Winged sumac
Rhynchospora alba	White beaksedge
Ribes americanum	Black currant
Ribes cynosbati	Prickly gooseberry
Ribes spp.	Gooseberry spp.
Rosa carolina	Pasture rose
Rosa multiflora	Multiflora rose
Rosa palustris	Swamp rose
Rosa virginiana	Virginia rose
Rubus allegheniensis	Common blackberry
Rubus flagellaris	Prickly dewberry
Rubus hispidus	Bristly dewberry

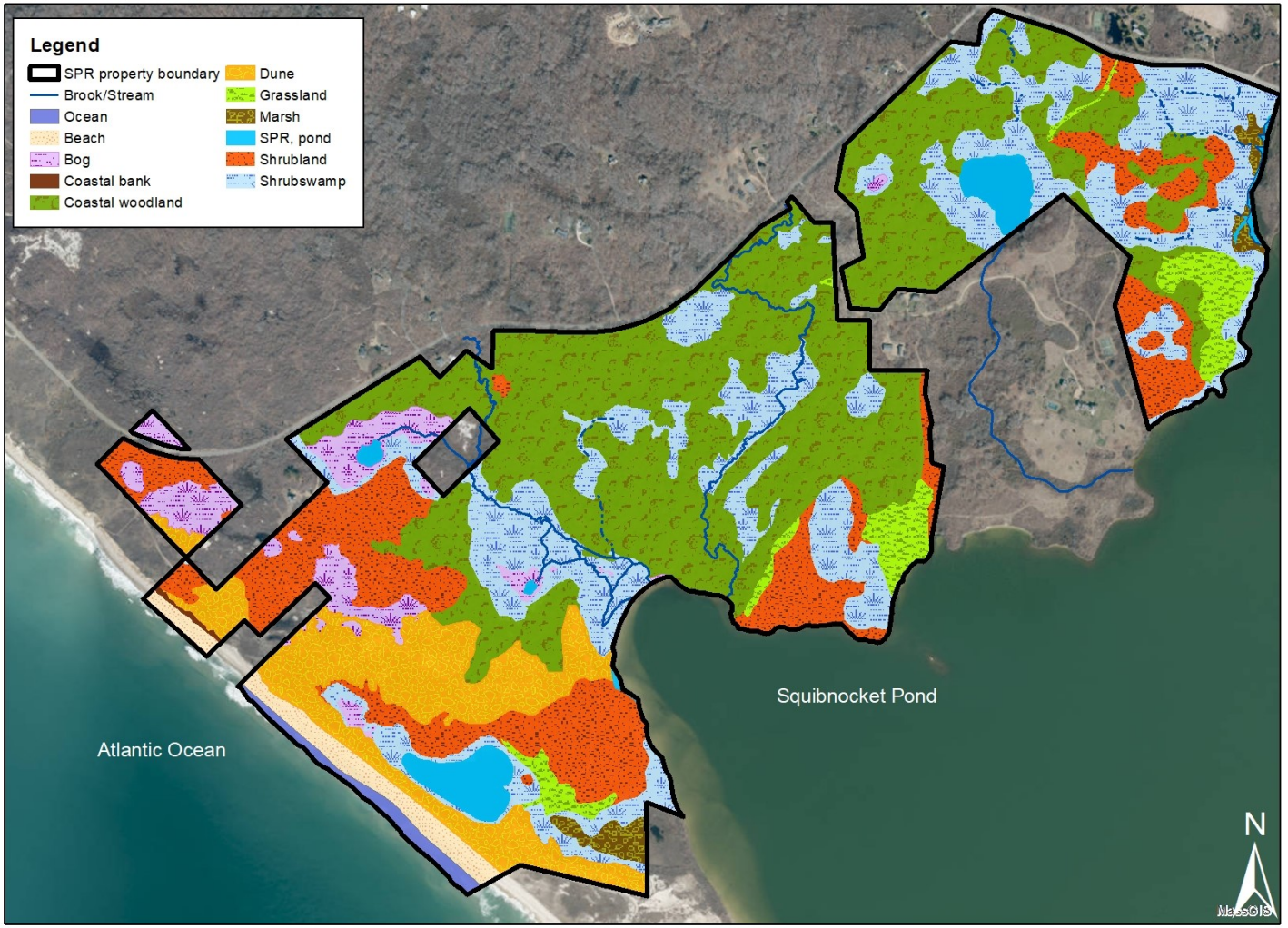
Rubus occidentalis	Black raspberry
Rubus phoenicolasius	Wine raspberry
Rumex acetosella	Field sorrel
Rumex britannica	Greater water dock
Sabatia stellaris	Marsh rose
Salix cinerea	Grey willow
Salix humilis	Prairie willow
Salix occidentalis	Dwarf prairie willow
Sambuscus nigra	Black elderberry
Sanicula canadensis	Canada sanicle
Sassafras albidum	Sassafras
Schizachyrium scoparium	Little bluestem
Schoenoplectus pungens	Three-square club-bulrush
Schoenoplectus subterminalis	Water annual-rush
Scirpus cyperinus	Woolgrass
Scirpus sp.	Bulrush
Sericocarpus asteroides	Toothed white-topped-aster
Shpagnum sp.	Sphagnum moss
Sisrynchium angustifolium	Narrow-leaved blue-eyed grass
Sisrynchium atlanticum	Eastern blue-eyed grass
Sisyrinchium fuscatum	Coastal plain blue-eyed-grass
Smilax glauca	Glaucaus-leaved greenbrier
Smilax herbacea	Carrion flower
Smilax rotundifolia	Common greenbrier
Solidago elliottii	Elliott's goldenrd
Solidago flexicaulis	Broadleaved goldenrod
Solidago nemoralis	Gray goldenrod
Solidago rugosa	Rough-stemmed goldenrod
Solidago sempervirens	Seaside goldenrod
Sparganium americanum	American bur-reed
Spartina alterniflora	Smooth cordgrass
Spartina cynosuroides	Salt reed-grass
Spartina pectinata	Prairie cordgrass
Sphagnum sp.	Peat moss
Spiraea tomentosa	Steeplebush
Spirathes cernua	Nodding lady tress
Sprugularia rubra	Red sandspurry
Strophostyles helvola	Annual wooly bean
Symphyotrichium undulatum	Wavy-leaved aster
Symphyotrichum novas-angliae	New England American aster
Symphyotrichum novi-belgii	New York American-aster
Symplocarpus foetidus	Skunk cabbage
Teucrium canadense	American germander
Thelypteris palustris	Marsh fern
Toxicodendron radicans	Poison ivy
Toxicodendron vernix	Poison sumac
Triadenum virginicum	Virginia marsh st. John's wort
Trifolium pratense	Pink clover

Trifolium procumbens	Low hop clover
Trifolium repens	White clover
Typha angustifolia	Narrow-leaved cattail
Uvularia sessifolia	Sessile-leaved bellwort
Vaccinium angustifolium	Lowbush blueberry
Vaccinium corymbosum	Highbush blueberry
Vaccinium macrocarpon	Large cranberry
Vaccinium oxycoccus	Small cranberry
Verbascum blattaria	Moth mullein
Verbascum thapsus	Common mullein
Verbena hastata	Blue vervain
Viburnum dentatum	Arrowwood
Viburnum nudum	Withe-rod
Vicia spp.	Vetch
Viola cucullata	Marsh violet
Viola lanceolata	Lance violet
Viola pallens	Smooth white violet
Viola primulifolia	Primrose violet
Viola sagittata	Arrow-leaved violet
Vitis aestivalis	Summer grape
Vitus labrusca	Fox grape
Vulpia myuros	Rat-tail six-weeks grass
Woodwardia areolata	Netted chain fern
Woodwardia virginica	Virgina chain fern
Xyris difformis	Yellow-eyed-grass

Natural Community Descriptions

There are eight different natural communities within the Squibnocket Pond Reservation. Classification of habitat types was made for the property utilizing the vegetation data collected as well as descriptions laid out in Classification of the Natural Communities of Massachusetts by Swain (2020). A map of the designated habitats can be seen in Map 19.

Map 19: Ecological communities of Squibnocket Pond Reservation.



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2023; habitat: MVLandBank
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map. Coordinate Reference: State Plane, Mass Mainland, Meters, NAD 83

0 500 1,000 2,000 Feet

A. Coastal Woodland:

The coastal woodland is the dominant ecological community on the Reservation totaling 122 acres, comprising both upland and wetland areas, the latter adjacent to Black Brook. The coastal woodland is dominated by black oak trees in the overstory, with scattered red maple, American beech, beetlebung, big-toothed aspen and black cherry in the upland areas and witch hazel, white oak and beetlebung in the wet areas. Black oak comprises approximately 82% and 70% of the stands, respectively. Larger trees may reach 37 inches in diameter at breast height ("dbh"), although the average diameter of these trees is 11 inches in the upland and 9 inches in the wet areas. There are an estimated 18.8 total trees per acre in the dbh class of 10 inches and greater and the woodland as a whole has a basal area of 143 ft^2 per acre. The average age of the cored trees was 57 years with the oldest being 72 and the youngest 40 years old.

The understory of the dry coastal woodland is sparse and primarily herbaceous; dominated by elliot's goldenrod, carex species and poison ivy. The understory of the wet coastal woodlands along Black Brook is dominated by dense stands of sweet pepperbush.


Upland woodland


Lowland woodland

Table 3: Dominant understory plant species of coastal woodland.

Scientific name	Common name	Importance value	Rank
Solidago elliottii	Elliott's goldenrod	50.7	1
Carex spp.	Carex	38.0	2
Toxicodendron radicans	Poison ivy	37.2	3
Clethra alnifolia	Coastal sweet pepperbush	18.5	4
Vaccinium corymbosum	Highbush blueberry	16.6	5
Viburnum dentatum	Arrowwood	15.3	6
Rubus allegheniensis	Common blackberry	14.7	7
Parthenocissus quinquefolia	Virginia creeper	11.1	8
Smilax rotundifolia	Common greenbrier	10.5	9
Quercus velutina	Black oak	9.7	10

B. Shrubswamp:

There are approximately 73 acres of shrubswamp on the Reservation. The shrubswamp areas are dominated by sweet pepperbush with a scattering of green briar, highbush blueberry, swamp azalea, fox grape, sphagnum, maleberry, viburnum and the occasional white oak. Areas of inundation contain deep mucky soils and pockets of skunk cabbage, iris, sedges, and sphagnum. Poison sumac abounds throughout this habitat.

Table 4: Dominant plant species of shrubswamp.

Scientific name	Common name	Importance value	Rank
Clethra alnifolia	Coastal sweet pepperbush	27.5	1
Smilax rotundifolia	Common greenbrier	10.1	2
Vaccinium corymbosum	Highbush blueberry	7.2	3
Toxicodendron radicans	Poison ivy	4.6	4
Rhododendron viscosum	Swamp azalea	4.1	5
Vitis labrusca	Fox grape	3.6	6
Sphagnum spp	Sphagnum moss	3.6	6
American tree moss	American tree moss	3.5	7
Lyonia ligustrina	Maleberry	2.8	8
Quercus alba	White oak	2.8	8
Viburnum dentatum	Arrowwood	2.6	9
Solidago elliottii	Elliott's goldenrod	2.4	10

C. Shrubland:

There are approximately 62 acres of shrubland on the Reservation. The shrub layers of these areas is dominated by huckleberry, fox grape, bayberry and winged sumac. The herbaceous layer is dominated by poison ivy, elliott's goldenrod and fescue.

Table 5: Dominant plant species of shrubland

Scientific name	Common name	Importance value	Rank
Toxicodendron radicans	Poison ivy	16.8	1
Solidago elliottii	Elliott's goldenrod	15.5	2
Gayluccacia baccata	Black huckleberry	12.9	3
Vitis labrusca	Fox grape	10.1	4
Solidago rugosa	Rough-stemmed goldenrod	8.5	5
Rhus copallinum	Winged sumac	7.9	6
Morella carolinensis	Bayberry	7.0	7
Fescue spp.	Fescue	6.3	8
Carex spp.	Carex	6.0	9
Quercus velutina	Black oak	4.9	10

D. Maritime Dune Community:

There are over 30 acres of maritime dune community pocketed with interdunal swales. The maritime dune community was dominated by woolly beach heather and beach grass interspersed among shrubs including beach plum, dwarf willow and stunted black oaks. Other herbaceous species present include poison ivy, beach pinweed, bristly dewberry and switchgrass.

E. Bog

There are a multitude of bogs on the Reservation totaling approximately 14 acres. The bogs range in type from interdunal swales to acidic graminoid fens. The acidic graminoid fens are dominated by sphagnum moss and carex and juncus species. Common shrub species present include cranberry, sweet pepperbush, steeplebush and inkberry. There is a diverse herbaceous community including many orchids, asters and ferns. The interdunal swale is dominated by small cranberry, with sphagnum, switchgrass, poison ivy and grass-leaved goldenrod peppered throughout. Both native water lilies occur in the ponds at the center of two of the bogs.

F. Cultural Grassland

There are approximately 12 acres of grassland on the Reservation. They are dominated primarily by agrostis species and velvet grass with sweet vernal grass, switchgrass, poison ivy, Virginia creeper and grape mixed in.

Table 6: Dominant species of grassland.

Scientific name	Common name	Importance value	Rank
Agrostis spp.	Agrostis spp.	36.4	1
Holcus lanatus	velvet grass	35.6	2
Agrostis gigantea	Redtop bentgrass	21.6	3
Parthenocissus quinquefolia	Virginia creeper	17.1	4
Toxicodendron radicans	Poison ivy	16.8	5
Panicum virgatum	Switch panicgrass	12.4	6
Vitis labrusca	Fox grape	12.4	6
Fescue spp.	Fescue spp.	9.6	7
Euthamia gramnifolia	Grass-leaved goldenrod	9.5	8
Solidago rugosa	Rough-stemmed goldenrod	8.9	9
Schizachyrium scoparium	Little bluestem	8.3	10

G. Pondshore

There are approximately 6,360 feet of shoreline along Squibnocket Pond. Much of the shoreline comprises large boulders with some scattered areas of sandy beach. The small stretches of sand beach have typical coastal pond shore vegetation including species of pennywort, spartina, cranberry and various juncus and carex species. The shoreline along Herring Creek comprises primarily cattails and spartina.

Lily Pond has a typical coastal plain pond shore community including golden pert, false pimpernel, pennywort, sedges, pipewort, Eleocharis species, and freshwater cordgrass.

Witch Pond does not have a shoreline due to its depth and topography. It occurs at 42feet in elevation on the property and is surrounded by a ring of dense shrubs including high bush blueberry, sweet pepperbush, azalea and maleberry.

H. Beach

There is sparse vegeation on the beach due to high tides and narrow width of the habitat. Species such as yellow-horned poppy, dusty miller, sea rocket, sea beach saltwort, seaside sandmat and American beach grass occur in few numbers at the toe of the dune and in protected areas behind logs and in blow-outs.

Appendix E. Wildlife

Squibnocket Pond Reservation provides a variety of habitats for nesting, roosting, and foraging wildlife. Characteristics like soil type, soil moisture, plant composition and vegetation structure combine to create niches used by different species of wildlife (Table 7, Appendix E).

Wildlife Habitat Descriptions

Both upland and lowland woodlands provide vertical structure for bird species that prefer to nest in trees; the productive soils with high input of decomposition materials support invertebrate species and fungi; acorns, berries and lush vegetation support the rodent and larger mammal community. A variety of plants found on the Reservation (red maple, oak, blueberry, blackberry, huckleberry, sumac, viburnum, witch-hazel, cherry, serviceberry, hazelnut, sassafras) are a suitable food sources for deer (Martin et al., 1961). During the summer, bats such as the big brown bat and eastern red bat are known to roost in trees in the woodland of the Reservation.

Dense shrublands provide shelter and protection for nesting songbirds, small mammals, reptiles and amphibians to avoid predation. Often these shrubs produce significant densities of fruit (e.g., fox grape) that feed a variety of wildlife. Deer and deer fawn may use shrubs and dense vegetation for shelter and deer fawns have been seen feeding discreetly in shrubby vegetation. Similarly, deer beds have been observed frequently and across habitat types.

Wetland habitats, especially those with standing water are ideal for shorebirds and waterfowl, as well as breeding reptiles and amphibians. Certain wetland

plants are rare with restricted populations and/or are hosts for developing pupa of rare or threatened invertebrates. Turtles may be seen basking in the Lily Pond or transitioning between open water and land. Various frogs such as the green frog and pickerel frog may be seen or heard in the bogs. Both utilize wetland habitat for breeding and feeding and are great wetland indicators. Turtles feed on vegetation such as berries and leaf matter, as well as small fish and invertebrates. Frogs feed on flying insects and other invertebrates. The wetland habitat on the Reservation is suitable for spotted turtle populations and there is a known population in the bog complex across from the Witch Pond.

Coastal river otters are present in both Lily and Squibnocket Pond. A playful pair was present in Lily Pond throughout the summer. Other signs of otter occupation have been seen on the shore of Squibnocket Pond, viz. latrines seen in 2020/21, and by trail cameras by Baldwin in 2013. Baldwin (2013) studied otter occupancy and behavior at 20 known latrine sites on Martha's Vineyard. Otter latrines are spaces used by river otters to defecate but are also important locations for a variety of social functions. Scents left behind communicate the diet, social status, and health of individuals. The latrine also acts as a space for social gathering, especially for males, as females of the species tend to operate more individually (Baldwin, 2013; Torgerson, 2014). Activity of Martha's Vineyard otters suggest that the island has a relatively high density of otters for the northeastern U.S. with peak activity occurring in the fall, winter, and spring seasons; Baldwin (2013) also found that human activity did not alter seasonal and daily visitation patterns to latrine sites, likely because human activity is the inverse of otter latrine use. This is a hopeful result for otters in Squibnocket Pond that will be exposed to higher human activity with the opening of the Reservation.

Grasslands are an important habitat type for many types of wildlife, due to a mixture of both graminoid and forb (herbaceous flowering plants) species. Flowering plants support native pollinators and other invertebrate communities. These insects as well as the seeds support birds and small mammals; and the open structure provides easy hunting grounds for raptor species.

Shorebirds and waterfowl, as well as coastal invertebrates can be found in the dune and beach habitats. Various mammals may use these habitats for translocation or hunting. In addition to otters, a charismatic species that has been spotted swimming in the ocean off the Reservation beach is the gray seal. Additionally, eDNA detected the presence of minke whale off the shore of Squibnocket beach during the 2021. Many fish, including various herring species, mummichog, white perch, and the inland silverside, may be found in the ocean off the Reservation beach. Striped bass are also a popular catch in the ocean waters of Martha's Vineyard and can likely be encountered. The American eel is also found in the ocean but may be found along brooks, streams, and ponds within Squibnocket Pond Reservation. These occurrences are a result of past dredging which created the herring run (see hydrology

section). Golden shiner is known to occur in Witch Pond and Lily Pond contains banded killifish, scup and black seabass. Perhaps these marine fish were dropped in the pond by predators.

Historical Wildlife

Several descriptions of interesting historical bird sightings within Squibnocket Pond Reservation have been recorded. Some species are still encountered today, albeit in smaller numbers. These include the great egret (formerly American egret) and the black-crowned night heron (Nichols, 1914). Nichols described sighting a large colony of night herons, while only one American egret was seen living “in perfect harmony with his cousins” in Squibnocket Pond. Another account from Phillips, 1920, recalls sightings of American widgeons on Squibnocket Pond, describing these widgeons as being a “very common duck” of the pond. Phillips stated widgeon numbers ranging from 50 in the beginning of September to possibly 2000 individuals in November of 1919. A flock of 7 whistling swans (tundra swan) were also seen by Phillips in November 1919, stating this was the largest flock of this species he had witnessed in Massachusetts. Phillips also mentions a number of black ducks ranging from 250 in September to 1200 in October.

An aquatic macroinvertebrate biomonitoring report was completed in Black brook for the Wampanoag Tribe of Aquinnah in 2001. This report presents evidence of a variety of organisms including worms, leeches, snails, clams and mussels, scuds, sowbugs, mites, springtails, mayflies, dragon/damselflies, true bugs, aquatic aphids, beetles, helgramites, caddisflies, aquatic moth, stoneflies, and spiders within the Black Brook and surrounding wetlands (Spring Street, 2001).

Table 7: Wildlife species recorded for Squibnocket Pond Reservation based on visual observation, eDNA identifications from Black Brook, Witch Pond and Lily Pond (unpublished data, Jesse H. Ausubel, The Rockefeller University, New York), and Goldstein and Ascher 2016 (with additional personal communication).

Scientific Name	Common Name	Upland	Wetland	Coastal
Class Amphibia				
Order Anura				
Family Ranidae				
Lithobates palustris	Pickerel Frog		Lily Pond, bog	
Lithobates clamitans	Green Frog		Lily Pond, bog	
Lithobates catesbeianus	American Bullfrog		Lily Pond, bog	
Pseudacris crucifer	Spring peeper	Shrubland, Woodland		
Class Reptilia				
Order Testudines				
Family Emydidae				
Chrysemys picta	Painted turtle	Path	Shrubswamp, pond	
Trachemys scripta	Red-eared slider		Shrubswamp, pond	

Chelydra serpentina	Snapping turtle		Shrubswamp, pond	Dune
Order Squamata				
Family Colubridae				
Ppheodrys vernalis	Smooth green snake			Dune
Thamnophis sirtalis	Common Garter snake	Shrubland		
Class Arachnida				
Order Araneae				
Family Salticidae				
	Jumping spider spp.	Shrubland	Bog	
Family Ixodidae				
Amblyomma americanum	Lone star tick	Woodland, shrubland, grassland	Shrubswamp, bog	
Ixodes scapularis	Deer tick	Shrubland	Shrubswamp	Beach, Dune
Class Mammalia				
Order Artiodactyla				
Family Balaenopteridae				
Balaenoptera acutorostrata	Common minke whale			Offshore
Megaptera novaeangliae	Humpback whale			Offshore
Family Cervidae				
Odocoileus virginianus	White-tailed deer	Woodland, shrubland, grassland	Shrubswamp, pond shore	Beach, Dune
Order Carnivora				
Family Mephitidae				
Mephitis mephitis	Striped skunk	Woodland	Shrubswamp	Beach
Family Mustelidae				
Lontra canadensis	Coastal river otter		Lily Pond, Squibnocket Pond shore	
Family Phocidae				
Halichoerus grypus	Gray seal			Beach
Family Procyonidae				
Procyon lotor	Raccoon	Woodland	Shrubswamp	Beach
Order Rodentia				
Family Cricetidae				
Ondatra zibethicus	Muskrat		Lily Pond	
Microtus pennsylvanicus	Meadow vole	Woodland, shrubland		
Peromyscus maniculatus	Deer mouse	Woodland, shrubland		
Family Muridae				
Rattus norvegicus	Norway rat	woodland		
Family Sciuridae				
Sciurus carolinensis	Gray squirrel	woodland		
Family Chiroptera				
Eptesicus fuscus	Big brown bat	Woodland		
Lasiurus borealis	Eastern red bat	Woodland		
Class Actinopterygii				
Order Cyprinodontiformes				
Family Fundulidae				
Fundulus diaphanus	Banded killifish		Lily Pond	
Order Anguilliformes				

Family Anguillidae				
Anguilla rostrata	American eel		Black Brook	
Order Gasterosteiformes				
Family Gasterosteidae				
Pungitius pungitius	Ninespine stickleback		Black Brook	
Family Cyprinidae				
Notemigonus crysoleucas	Golden Shiner		Witch Pond	
Class Insecta				
Order Hemiptera				
Family Belostomatidae				
	Giant Water Bug spp.		Black Brook	
Family Cicadidae				
	Cicada spp.	Woodland, Grassland		
Family Lygaeidae				
Oncopeltus fasciatus	Milkweed bug	Grassland		
Order Lepidoptera				
Family Nymphalidae				
Danaus plexippus	Monarch butterfly	Grassland		
Family Papilionidae				
Papilio glaucus	Eastern tiger swallowtail	Grassland		
Family Lycaenidae				
Lycaena phlaeas	American copper	Grassland		
Order Hymenoptera				
Family Adrenidae				
Andrena asteris	Aster miner bee	Shrubland		Dune
Andrena bradleyi	Bradley's miner bee		Shrubswamp	
Andrena carlini	Carlinville miner bee	Shrubland	Shrubswamp	Dune
Andrena carolina	Carolina miner bee		shrubswamp	
Andrena cressonii	Dotted miner bee	Shrubland		Dune
Andrena heraclei	N/A (miner bee)		Shrubswamp	
Andrena hippotes	Hippotes's miner bee	Shrubland		
Andrena hirticincta	Hairy-belted miner bee			Dune
Andrena nasonii	Bumped miner bee	Shrubland, woodland		Dune
Andrena neonana	N/A (miner bee)	Shrubland		
Andrena perplexa	Perplexed miner bee	Shrubland		
Andrena rufosignata	Red-faced miner bee		Shrubswamp	
Andrena simplex	Simple miner bee			Dune
Andrena tridens	N/A (miner bee)		Shrubswamp	
Perdita octomaculata	Eight-spotted miner bee	Shrubland		Dune
Family Apidae				
Apis mellifera	Western honeybee	Shrubland		
Bombus bimaculatus	Two-spotted bumble bee	Successional grassland	Shrubswamp	
Bombus griseocollis	Brown-belted bumble bee			
Bombus impatiens	Common eastern bumble bee	Shrubland, woodland		Dune
Bombus perplexus	Confusing bumble bee		Shrubswamp	
Bombus sandersoni	Sanderson bumble bee	Shrubland		
Ceratina calcarata	Spurred ceratina	Shrubland, woodland	Shrubswamp	Dune

Ceratina dupla	Doubled ceratina	Shrubland		
Ceratina dupla sensu lato	N/A	Shrubland		
Ceratina strenua	Nimble ceratina			Dune
Melissodes desponsa	Thistle long-horned bee	Woodland		
Melissodes druriella	N/A (long-horned bee)	Shrubland		Dune
Nomada articulata	Articulated nomad	Shrubland		
Nomada bella	Belle nomad bee	Grassland		
Nomada denticulata	N/A (nomad bee)	Shrubland		
Nomada luteoloides	N/A (nomad bee)	Shrubland		
Nomada maculata	Spotted nomad bee	Shrubland		Dune
Nomada parva	N/A (nomad bee)	Shrubland		
Nomada pygmaea	Pygmy nomad bee	Grassland		Dune
Nomada sayi	Say's cuckoo nomad bee	Grassland, shrubland, woodland		
Nomada composita	N/A (nomad bee)		Shrubswamp	
Family Colletidae				
Colletes americanus	American cellophane bee	Shrubland		Dune
Colletes simulans armatus	Eastern spine-shouldered cellophane bee			Dune
Colletes speculiferus	Beach dune cellophane bee			Dune
Colletes validus	Blueberry cellophane bee	Shrubland		
Hylaeus affinis	Eastern masked bee	Shrubland, successional grassland, woodland		
Hylaeus mesillae cressoni	Mesilla masked bee	Shrubland		
Hylaeus modestus	Modest masked bee			Dune
Family Halictidae				
Agapostemon sericeus	Silky striped-sweat bee	Grassland, shrubland		
Agapostemon splendens	Brown-winged striped-sweat bee	Successional Grassland, woodland		Dune
Agapostemon texanus	Ultra green sweat bee	Shrubland, successional grassland		Dune
Agapostemon virescens	Bicolored striped-sweat bee	Shrubland, woodland		
Augochlora pura	Pure gold-green sweat bee		shrubswamp	
Augochlorella aurata	Golden green sweat bee	Grassland, successional grassland, woodland		dune
Augochloropsis metallica	N/A (sweat bee)	woodland		
Halictus confusus	Southern bronze furrow bee	Grassland, shrubland, successional grassland, woodland		Dune
Halictus ligatus	N/A (sweat bee)	Grassland, shrubland, successional grassland		Dune
Halictus rubicundus	Orange-legged furrow bee	Shrubland, successional grassland	Shrubswamp	Dune
Lasioglossum acuminatum	N/A (sweat bee)	Shrubland		Dune
Lasioglossum admirandum	N/A (sweat bee)	Shrubland		
Lasioglossum bruneri	N/A (sweat bee)	Shrubland, woodland	Shrubswamp	Dune
Lasioglossum cinctipes	N/A (sweat bee)		Shrubswamp	
Lasioglossum coriaceum	N/A (sweat bee)	Grassland, shrubland, woodland	Shrubswamp	Dune

Lasioglossum georgeickworti	N/A (sweat bee)	Shrubland	Shrubswamp	Dune
Lasioglossum heterognathum	N/A (sweat bee)			Dune
Lasioglossum imitatum	N/A (sweat bee)	Grassland, woodland		
Lasioglossum leucocomum	N/A (sweat bee)	Shrubland, successional grassland		Dune
Lasioglossum leucozonium	White-banded sweat bee	Shrubland, woodland		Dune
Lasioglossum lineatulum	N/A (sweat bee)	Shrubland	Shrubswamp	Dune
Lasioglossum macoupinense	N/A (sweat bee)	Grassland		
Lasioglossum marinum	N/A (sweat bee)	Shrubland, successional grassland		Dune
Lasioglossum nelumbonis	N/A (sweat bee)			Dune
Lasioglossum nigroviride	Black-and-green metallic sweat bee		Shrubswamp	
Lasioglossum nymphaearum	N/A (sweat bee)	Grassland, shrubland, successional grassland, woodland		Dune
Lasioglossum oblongum	Oblong sweat bee	Grassland, shrubland, woodland	Shrubswamp	Dune
Lasioglossum pectorale	Rugose-chested sweat bee	Shrubland, successional grassland, woodland	Shrubswamp	Dune
Lasioglossum pilosum	Hairy metallic-sweat bee	Shrubland, successional grassland		Dune
Lasioglossum pruinosum	Pruinose metallic-sweat bee			Dune
Lasioglossum quebecense	N/A (sweat bee)		Shrubswamp	
Lasioglossum rozeni	N/A (sweat bee)	Woodland		
Lasioglossum smilacinae	N/A (sweat bee)		Shrubswamp	
Lasioglossum subviridatum	N/A (sweat bee)			Dune
Lasioglossum tegulare	N/A (sweat bee)	Woodland, shrubland, successional grassland	Shrubswamp	Dune
Lasioglossum timothyi	Timothy's sweat bee	Woodland		
Lasioglossum versans	Dull metallic-sweat bee	Woodland	Shrubswamp	Dune
Lasioglossum versatum	Experienced sweat bee	Grassland, shrubland, successional grassland, woodland	Shrubswamp	Dune
Lasioglossum zephyrum	N/A (sweat bee)			Dune
Sphecodes coronus	N/A (blood bee)	Shrubland		
Sphecodes davisii	Davis's cuckoo sweat bee	Shrubland		Dune
Sphecodes ranunculi	N/A (blood bee)	Shrubland		
Sphecodes townesi	N/A (blood bee)	Grassland		
Family Megachilidae				
Hoplitis spoliata	Dialated-horned small-mason	Shrubland		
Megachile addenda	N/A (leaf-cutter bee)	Successional grassland,		Dune
Megachile brevis	N/A (leaf-cutter bee)	Shrubland, successional grassland		Dune

Megachile mendica	Flat-tailed leaf-cutter bee			Dune
Megachile petulans	Petulant leaf-cutter bee			Dune
Osmia atriventris	Maine blueberry bee	Shrubland	Shrubswamp	
Osmia pumila	N/A (leaf-cutter bee)	Shrubland		
Osmia simillima	N/A (leaf-cutter bee)	Successional grassland		
Stelis lateralis	Spot-sided dark bee	shrubland		
Family Nomadidae				
Epeolus pusillus	Cuckoo bee			Dune
Epeolus scutellaris	Notch-backed cellophane-cuckoo bee	Shrubland		Dune

Invertebrates

Squibnocket Pond Reservation and its many habitats is ideal for many invertebrate species. The dunes of Squibnocket beach provide breeding and feeding grounds for several species, including various tiger beetles. Beetles and other sand-dwelling invertebrates such as sand fleas, shoreline wolf spiders, and other insects and arachnids may be seen while on the beach or near the dunes. Milkweed and other important host plants provide suitable habitat for several species of butterflies, including the monarch, eastern tiger swallowtail, and the American copper butterfly. These can be seen fluttering about the various habitats. Other invertebrates that are found on the property include damselflies, dragonflies, and the less obvious jumping spiders. Cicadas may be heard in wooded habitats such as the mixed oak woodland during the summer months.

Lepidoptera

Although not often seen, moths play a vital role in the environment in a variety of ways. Moths are important pollinators for many flowering plants. Additionally, moths provide a valuable source of food for many animals, particularly bats and birds. In addition, caterpillars are an important source of food for diurnal birds, particularly nestlings.

An astounding number of lepidoptera (butterflies and moths) species is found on Squibnocket Pond Reservation. Some species are generalists, utilizing a large variety of host; other species are specialists and require specific host plants. These specialist species can be easily threatened with changes to host plant populations.

Nocturnal moth species were surveyed using a stainless-steel rigid vein 18-24 in “leptrap” with a 32-40 Watt quantum black light. Traps were set using a photoelectric switch from dusk to dawn on 9 trap nights from June 16th, 2021 to September 15th, 2021. Species were collected, packaged, and sent to Mark Mello, an entomologist with the Lloyd Center for the Environment, in New Bedford, MA for positive identification. A total of 359 species was observed across all trap sites (Table 8); 14 of these are commonwealth-listed species and are not identified in the table.

A variety of moth species utilize vegetation present on the Reservation for some portion of their life cycles. Some of the more recognizable macrolepidoptera that were found on the Reservation are from the Saturniidae family: the Luna, Cecropia, Io, Polyphemus, and Rosy Maple moths. Species such as maple, oak, black berry, hazelnut, hickory, grape and plum provide food for the newly hatched caterpillars.

Table 8: Summary of macrolepidoptera species recorded from Squibnocket Pond Reservation, Aquinnah, MA in 2021.

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
		Trap nights	n=8	n=5	n=9	n=3	n=8	
DREPANIDAE								
Drepaninae								
6251		*Drepana arcuata*	0	0	1	0	0	1
Oretinae								
6255		*Oreta rosea*	2	0	1	0	2	5
GEOMETRIDAE								
Ennominae								
6272		*Eumacaria madopata*	1	2	1	0	0	4
6273		*Macaria pustularia*	1	0	3	0	4	8
6326		*Macaria aemulitaria*	1	0	2	0	2	5
6353		*Macaria multilineata*	0	0	0	0	1	1
6386		*Digrammia ocellinata*	0	0	1	0	0	1
6443		*Glenoides texanaria*	3	0	2	0	1	6
6449		*Glena cribrataria*	3	0	3	0	0	6
6588		*Iridopsis larvaria*	0	0	1	0	1	2
6590		*Anavitrinelia pampinaria*	0	0	1	0	0	1
6597		*Ectropis crepuscularia*	2	0	2	0	1	5
6598		*Protoboarmia porcelaria*	1	0	3	0	1	5
6599		*Epimecis hortaria*	0	0	0	0	1	1
6620		*Melanolophia canadaria*	1	0	0	0	3	4
6640		*Biston betularia*	1	0	0	0	0	1
6654		*Hypagyrtis unipunctata*	1	1	2	0	1	5
6720		*Lytrosis unitaria*	1	0	1	0	1	3
6724		*Euchlaena serrata*	2	0	3	2	0	7
6725		*Euchlaena muzaria*	1	0	3	0	3	7
6729		*Euchlaena johnsonaria*	1	0	1	1	0	3
6739		*Euchlaena irraria*	0	1	1	0	1	3
6754		*Pero ancetaria*	2	0	3	0	2	7
6755		*Pero morrisonaria*	3	0	5	0	1	9
6796		*Campaea perlata*	1	0	1	0	0	2

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
6815		*Gueneria similaria*	1	0	0	0	1	2
6826		*Metarranthis hypochraria*	0	0	1	0	0	1
6835		*Cepphis armataria*	1	0	1	0	0	2
6836		*Plagodis pulveraria*	2	0	1	1	1	5
6837		*Probole alienaria complex*	0	1	1	0	0	2
6843		*Plagodis fervidaria*	2	0	3	0	2	7
6885		*Besma quercivoraria*	2	0	2	0	1	5
6888		*Lambdina fiscellaria*	2	0	2	0	1	5
6894		*Lambdina fervidaria*	1	0	0	0	0	1
6941		*Eusarca confusaria*	6	3	8	3	2	22
6963		*Tetracis crocallata*	1	0	2	0	1	4
6964		*Tetracis cachexiata*	1	0	1	0	0	2
6966		*Eutrapela clemataria*	1	0	1	0	0	2
6974		*Patalene olyzonaria puber*	1	0	0	0	1	2
6982		*Prochoerodes lineola*	5	0	5	3	4	17
6987		*Antepione thiosaria*	3	0	2	0	2	7
7009		*Nematocampa resistaria*	3	0	5	0	4	12
Geometrinae								
7046		*Nemoria bistriaria*	2	0	2	0	0	4
		Nemoria sp. lixaria?	1	0	0	0	0	1
7053		*Dichorda iridaria*	1	1	1	0	1	4
Sterrhinae								
7094		*Lobocleta ossularia*	1	0	1	0	0	2
7114		*Idaea demissaria*	2	0	0	1	0	3
7132		*Pleuroprucha insulsaria*	1	1	1	0	1	4
7136		*Cyclophora packardi*	1	0	3	0	2	6
7139		*Cyclophora pendulinaria*	4	0	4	0	5	13
7159		*Scopula limboundata*	1	1	1	0	1	4
7169		*Scopula inductata*	0	1	1	0	0	2
Larentiinae								
7196		*Eulithis diversilineata*	3	0	6	0	2	11
7206		*Eulithis explanata*	1	1	1	0	1	4
7399		*Euphya unangulata*	0	0	0	0	0	0
7414		*Orthonama obstipata*	0	0	1	0	0	1
7416		*Costaconvexa centrostrigaria*	2	0	2	0	2	6
		*Eupithecia spp.**	8	2	4	0	5	19
7648		*Dyspteris abortivaria*	0	0	2	0	0	2
MIMALLONIDAE								
7659		*Lacosoma chiridota*	1	0	0	0	1	2
LASIOCAMPIDAE								
Macromphalinae								
7663		*Apatelodes torrefacta*	0	1	1	0	1	3
7670		*Tolype velleda*	1	0	1	0	0	2

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
Lasiocampinae								
7701		*Malacosoma americanum*	1	3	1	0	1	6
SATURNIIDAE								
Ceratocampinae								
7715		*Dryocampa rubicunda*	1	1	1	0	0	3
7716		*Anisota stigma*	6	13	15	5	5	44
7719		*Anisota senatoria*	0	0	1	0	2	3
Hemileucinae								
7746		*Automeris io*	15	8	7	1	3	34
Saturniinae								
7757		*Antheraea polyphemus*	0	1	4	0	1	6
7758		*Actias luna*	2	0	0	0	0	2
7767		*Hyalophora cecropia*	1	1	0	0	0	2
SPHINGIDAE								
Sphinginae								
7784		*Dolba hyloeus*	0	0	0	1	0	1
7810		*Sphinx gordius*	1	3	2	0	0	6
7810.1		*Sphinx poecilla*	5	1	0	0	1	7
7824		*Paonias excaecata*	4	0	8	0	4	16
7825		*Paonias myops*	2	0	2	0	0	4
7826		*Paonias astylus*	3	2	4	1	2	12
Macroglossinae								
7859		*Eumorpha pandorus*	0	1	0	0	0	1
7884		*Darapsa versicolor*	1	0	1	0	0	2
7885		*Darapsa myron*	1	0	1	0	0	2
7886		*Darapsa choerilus*	5	3	10	0	1	19
NOTODONTIDAE								
Notodontinae								
7917	930010	*Paraeschra (="Hyperaeschra") georgica*	0	0	3	0	1	4
7931	930019	*Gluphisia septentrionis*	0	0	0	0	1	1
7936	930024	*Furcula borealis*	0	0	1	0	0	1
Phalerinae								
7902	930033	*Datana ministra*	1	0	2	0	1	4
7903	930034	*Datana angusii*	2	0	0	0	0	2
7904	930035	*Datana drexelii*	6	3	5	0	4	18
7906	930037	*Datana contracta*	1	0	2	0	3	6
7915	930046	*Nadata gibbosa*	6	1	6	0	4	17
7920	930049	*Peridea angulosa*	2	2	3	0	3	10
Heterocampinae								
7975	930067	*Macruocampa marthesia*	4	0	3	0	5	12
7983	930075	*Heterocampa obliqua*	2	1	3	0	4	10
7990	930082	*Heterocampa umbrata*	2	2	4	0	4	12

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
7994	930086	*Heterocampa guttivitta*	0	0	1	0	1	2
7995	930087	*Heterocampa biundata*	1	0	2	0	1	4
7998	930090	*Lochmaeus manteo*	0	0	1	0	1	2
8005	930098	*Schizura ipomoeae*	2	0	3	0	2	7
8006	930099	*Schizura badia*	1	1	4	0	4	10
8007	930100	*Schizura unicornis*	0	0	0	0	1	1
8010	930103	*Schizura concinna*	0	0	2	0	0	2
8011	930104	*Schizura leptinoides*	0	0	1	0	0	1
8017	930110	*Oligocentria lignicolor*	2	0	2	0	2	6
Nystaleinae								
7951	930127	*Symmerista albifrons*	2	0	3	0	2	7
7957	930133	*Dasylophia anguina*	2	0	0	0	1	3
7958	930134	*Dasylophia thyatiroides*	0	0	0	0	1	1
EREBIDAE								
Lymantriinae								
8318	930141	*Lymantria dispar*	0	0	1	0	0	1
8300	930152	*Dasychira cinnamomea*	1	0	1	1	0	3
8302	930154	*Dasychira obliquata*	3	0	1	1	2	7
8314	930166	*Orgyia definita*	4	0	3	0	0	7
8316	930168	*Orgyia leucostigma*	2	0	2	0	2	6
Arctiinae								
8089	930204	*Hypoprepia miniata*	1	0	0	1	0	2
8045.1	930219	*Crambidia pallida*	3	0	4	1	1	9
8197	930244	*Apantesis virgo*	1	1	0	1	0	3
8196	930246	*Apantesis parthenice*	2	1	2	1	1	7
8169	930278	*Apantesis phalerata*	0	1	4	2	1	8
8171	930280	*Apantesis nais*	0	1	3	0	1	5
8171.1	930281	*Apantesis carlotta*	0	0	1	1	0	2
8118	930297	*Virbia opella*	5	0	3	0	2	10
8121	930299	*Virbia aurantiaca*	0	2	1	2	0	5
8134	930309	*Spilosoma congrua*	1	3	3	0	2	9
8133	930311	*Spilosoma latipennis*	0	0	1	0	1	2
8137	930316	*Spilosoma virginica*	0	0	2	0	1	3
8140	930319	*Hyphantria cunea*	2	1	2	0	0	5
8146	930323	*Hypercompe scribonia*	1	3	4	0	1	9
8156	930332	*Phragmatobia fuliginosa*	2	0	2	1	0	5
8129	930335	*Pyrrharctia isabella*	0	3	2	0	5	10
8203	930360	*Halysidota tessellaris*	3	3	5	0	4	15
8211	930370	*Lophocampa caryae*	0	1	2	0	2	5
8230	930404	*Cycnia tenera*	1	0	0	0	0	1
8267	930440	*Cisseps fulvicollis*	1	0	0	0	0	1
Herminiinae								
8322	930469	*Idia americalis*	5	2	4	0	3	14

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
8323	930471	*Idia aemula*	4	1	4	0	3	12
8326	930474	*Idia rotundalis*	4	0	2	0	4	10
8328	930476	*Idia julia*	0	1	2	0	1	4
8329	930477	*Idia diminuendis*	2	0	1	0	2	5
8334	930482	*Idia lubricalis*	1	0	1	0	2	4
8338	930487	*Phalaenophana pyramusalis*	0	0	1	0	0	1
8340	930489	*Zanclognatha literalis*	2	0	1	0	1	4
8341	930490	*Zanclognatha theralis*	4	0	2	0	3	9
8345	930492	*Zanclognatha laevigata*	1	0	0	0	2	3
8349	930496	*Zanclognatha protumnusalis*	0	0	1	0	0	1
8351	930498	*Zanclognatha cruralis*	0	0	0	0	1	1
8352	930499	*Zanclognatha marcidilinea*	0	0	1	0	0	1
8353	930500	*Zanclognatha jacchusalis*	3	0	3	0	4	10
8355	930502	*Chytolita morbidalis*	0	1	0	0	1	2
8356	930503	*Chytolita petrealis*	0	0	0	0	0	0
8360	930511	*Macrochilo orciferalis*	1	1	1	2	0	5
8364	930514	*Phalaenostola larentioides*	0	1	1	0	0	2
8366	930516	*Tetanolita mynesalis*	0	0	0	1	0	1
8370	930520	*Bleptina caradrinalis*	3	3	7	1	5	19
8378	930529	*Renia salusalis*	2	1	4	0	2	9
8379	930530	*Renia factiosalis*	0	0	1	0	1	2
8380	930531	*Renia nemoralis*	0	0	0	1	1	2
8381	930532	*Renia discoloralis*	2	0	2	1	1	6
8384.1	930536	*Renia flavipunctalis*	2	0	4	0	0	6
8386	930538	*Renia adspergillus*	2	1	1	0	1	5
8387	930539	*Renia sobrialis*	1	0	2	0	1	4
8393	930547	*Lascoria ambigualis*	0	0	0	0	0	0
8397	930551	*Palthis angulalis*	1	0	0	0	1	2
Pangraptinae								
8490	930559	*Pangrapta decoralis*	4	0	4	0	1	9
8491	930560	*Ledaea perditalis*	1	0	0	0	0	1
Hypeninae								
8442	930562	*Hypena baltimoralis*	1	0	2	0	2	5
8444	930565	*Hypena palparia*	1	0	3	0	1	5
8465	930588	*Hypena scabra*	1	2	2	1	1	7
		Hypena sp.	1	0	0	0	0	1
Scolecocampinae								
8514	930637	*Scolecocampa liburna*	0	0	1	0	0	1
8522	930643	*Gabara subnivosella*	3	0	3	1	1	8
Hypenodinae								
8427	930670	*Dyspyralis puncticosta*	0	0	0	0	1	1
Boletobiinae								
8499	930679	*Metalectra discalis*	1	0	0	0	0	1

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
8500	930680	*Metalectra quadrisignata*	0	0	0	0	2	2
8505	930685	*Metalectra richardsi*	1	0	0	0	0	1
Aventiinae								
9025	930698	*Oruza albocostaliata*	0	0	1	0	1	2
Phytometrinae								
8481	930717	*Phytometra rhodarialis*	1	0	0	0	0	1
9038	930730	*Hyperstrotia villificans/nana*	0	1	1	0	1	3
9039	930731	*Hyperstrotia sp.*	0	0	0	0	1	1
Erebinae								
8777	930767	*Catocala badia*	0	0	3	0	0	3
8792	930782	*Catocala vidua*	0	0	1	0	0	1
8801	930792	*Catocala ilia*	2	2	2	0	2	8
8847	930833	*Catocala gracilis*	1	0	4	0	3	8
8849	930835	*Catocala andromedae*	2	0	1	0	2	5
8857	930841	*Catocala ultronia*	2	0	3	0	1	6
8864	930845	*Catocala grynea*	0	0	1	0	0	1
8865	930847	*Catocala praeclara*	3	0	2	0	0	5
8876	930857	*Catocala micronympha*	1	0	2	0	2	5
8878.1	930860	*Catocala lineella*	0	0	2	0	1	3
8598	930869	*Melipotus perpendicularis*	0	0	0	0	1	1
8618	930891	*Drasteria graphica*	0	4	0	0	2	6
8739	930924	*Caenurgina erechtea*	0	0	1	0	0	1
8767	930927	*Doryodes spadaria*	0	0	0	1	0	1
8743	930942	*Mocis latipes*	0	0	1	0	0	1
8745	930944	*Mocis texana*	0	0	3	0	0	3
8764	930956	*Argyrostrotis anilis*	2	5	0	1	1	9
8727	930961	*Parallelia bistriaris*	0	0	2	0	1	3
8721	930962	*Allotria elonympha*	2	0	4	0	1	7
8651	930970	*Lesmone detrahens*	0	0	1	0	0	1
8689	931023	*Zale lunata*	0	0	0	1	1	2
8697	931032	*Zale minerea*	0	0	1	0	1	2
8717	931053	*Zale horrida*	4	0	4	0	0	8
9818	931060	*Amolita fessa*	1	0	1	0	1	3
9821	931063	*Amolita roseola*	0	0	2	1	0	3
Eulepidotinae								
8587	931089	*Panopoda rufimargo*	4	2	3	1	3	13
EUTELIIDAE								
8955	931103	*Marathyssa inficita*	0	1	1	0	0	2
8957	931106	*Paectes oculatrix*	1	0	1	0	3	5
8959	931107	*Paectes pygmaea*	0	1	1	1	1	4
8962	931111	*Paectes abrostoloides*	1	0	0	0	0	1
8968	931118	*Eutelia pulcherrima*	0	0	0	0	1	1
NOLIDAE								

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
Nolinae								
8983	931121	*Meganola minuscula*	1	0	0	0	0	1
8983.1	931122	*Meganola phylla*	0	0	0	0	3	3
8983.2	931123	*Meganola spodia*	0	1	0	0	1	2
8989	931129	*Nola pustulata*	1	1	1	0	1	4
8996	931136	*Nola clethrae*	4	0	2	0	4	10
NOCTUIDAE								
Plusiinae								
8890	931170	*Chrysodeixis includens*	1	1	0	0	0	2
8904	931186	*Chrysanympha formosa*	0	0	1	0	0	1
8908	931191	*Autographa precationis*	0	0	1	0	1	2
8924	931234	*Anagrapha falicfera*	1	0	0	0	0	1
Bagisarinae								
9169	931241	*Bagisara rectifascia*	4	1	33	0	12	50
Eustrotiinae								
9044	931284	*Marimatha nigrofimbria*	1	0	3	0	0	4
9046	931289	*Deltote bellicula*	1	0	1	0	1	3
9047	931290	*Lithacodia muscosula*	0	0	1	0	2	3
9049	931295	*Maliattha synochitis*	0	0	1	0	0	1
Pantheinae								
9189	931406	*Charadra deridens*	1	1	3	0	1	6
Balsinae								
9664	931419	*Balsa labecula*	1	0	1	0	1	3
Acronictinae								
9200	931421	*Acronicta americana*	1	2	2	0	2	7
9281	931442.1	*Acronicta fallax*	4	0	6	0	2	12
9226	931443	*Acronicta superans*	0	0	0	0	1	1
9228	931445	*Acronicta hasta*	1	0	2	0	0	3
9237	931454	*Acronicta interrupta*	0	1	0	0	0	1
9238	931455	*Acronicta lobeliae*	0	0	1	0	1	2
9243	931463	*Acronicta ovata*	0	0	1	0	1	2
9242.1	931464	*Acronicta immodica*	0	0	0	0	2	2
9244	931465	*Acronicta modica*	0	0	0	0	1	1
9249	931467	*Acronicta increta (+"inclara")*	0	0	2	0	4	6
9247	931469	*Acronicta tristis*	0	0	1	0	1	2
9254	931471	*Acronicta afflicta*	4	0	2	0	3	9
9257	931474	*Acronicta impleta*	0	1	2	0	2	5
9259	931476	*Acronicta noctivaga*	2	0	0	0	2	4
9264	931478	*Acronicta longa*	1	1	0	0	1	3
9266	931480	*Acronicta lithospila*	1	1	0	0	2	4
9272	931485	*Acronicta oblinita*	2	0	2	1	0	5
9281	931493	*Simyra insularis*	0	0	1	0	0	1
9285	931497	*Polygrammate hebraeicum*	5	2	3	0	6	16

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
9286	931498	*Harrisimemna trisignata*	3	0	3	0	3	9
8104	931499	*Comachara cadburyi*	0	0	0	0	2	2
9062	931501	*Cerma cerintha*	0	1	1	0	1	3
Amphipyrinae								
9638	931544	*Amphipyra pyramidoides*	1	0	1	0	2	4
Agaristinae								
9299	931964	*Eudryas unio*	1	1	4	0	1	7
9301	931966	*Eudryas grata*	1	1	3	0	4	9
Condicinae								
9690	931989	*Condica videns*	2	2	2	1	0	7
9714	932015	*Condica conferderata*	0	0	1	0	0	1
9057	932025	*Homophoberia apicosa*	3	0	0	0	1	4
9065	932026	*Leuconycta diphtheroides*	1	1	2	0	2	6
Heliothinae								
11055	932039	*Derrima stellata*	1	0	0	0	0	1
11068	932045	*Helicoverpa zea*	1	1	1	0	0	3
11104	932129	*Schinia spinosae*	1	27	0	2	0	30
11128	932134	*Schinia arcigera*	0	0	2	1	0	3
Eriopinae								
9631	932192	*Callopistria mollissima*	2	0	2	1	3	8
9633	932194	*Callopistria cordata*	0	0	1	0	1	2
Noctuinae								
9053	932205	*Pseudeustrotia carneola*	0	0	1	0	0	1
9618	932208	*Phosphila turbulenta*	1	0	3	0	4	8
9619	932209	*Phosphila miseloides*	1	0	4	0	4	9
9666	932216	*Spodoptera frugiperda*	2	1	2	0	1	6
9669	932219	*Spodoptera ornithogalli*	2	1	2	0	0	5
9679	932230	*Elaphria chalcedonia*	0	1	0	0	0	1
9681.1	932233	*Elaphria alapallida*	0	1	0	0	0	1
9684	932238	*Elaphria grata*	0	1	0	0	0	1
9688	932249	*Galgula partita*	1	1	2	0	0	4
9647	932266	*Proxenus miranda*	1	0	0	0	0	1
9650	932269	*Athetis tarda*	2	0	1	0	1	4
9522	932287	*Iodopepla u-album*	1	0	0	1	0	2
9545	932290	*Euplexia benesimilis*	1	0	2	0	2	5
9547	932292	*Phlogophora periculosa*	1	0	0	0	0	1
9378	932339	*Apamea burgessi*	1	0	0	0	0	1
9395	932356	*Apamea lintneri*	0	0	0	1	0	1
9454	932358	*Loscopia velata*	0	0	1	0	0	1
9393	932369	*“Resapamea” stipata*	0	0	0	1	0	1
9406	932370	*Mesapamea fractilinea*	0	0	1	0	0	1
9435	932419	*Photedes inops*	0	0	0	1	0	1
9441	932424	*Photedes enervata*	0	0	1	0	0	1

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
9449	932438	*Globia (="Capsula) oblonga*	0	0	1	0	0	1
9456	932446	*Amphipoea interoceanica*	0	0	5	0	0	5
9488	932480	*Papaipema insulidens*	0	0	2	0	0	2
9480	932489	*Papaipema ptersii*	0	0	0	0	1	1
9485	932494	*Papaipema baptisiae*	0	0	1	0	0	1
9578	932664	*Hyppa xylinoides*	0	0	2	0	1	3
9815	932672	*Cosmia calami*	2	1	2	0	1	6
9420	932695	*Fishia illocata*	1	0	0	0	0	1
9989	932707	*Sutnya privata*	2	0	2	0	0	4
9556	932713	*Chytonix palliatricula*	5	1	3	0	5	14
9629	932749	*Fagitana littera*	0	0	0	1	0	1
10519	932801	*Morrisonia mucens*	0	0	0	1	0	1
10291	932805	*Morrisonia latex*	0	1	0	0	1	2
10524	932810	*Nephelodes minians*	2	0	2	0	1	5
10300	932882	*Lacanobia grandis*	2	1	2	0	2	7
10301	932883	*Spiramater lutra*	1	0	0	0	0	1
10265	932906	*Siderdis rosea*	0	1	0	0	0	1
10431	932928	*Dargida diffusa*	0	0	2	0	0	2
10434	932931	*Dargida rubripennis*	1	0	0	0	0	1
10436	932933	*Mythimna oxygala*	1	0	0	0	0	1
10438	932935	*Mythimna unipuncta*	1	2	2	1	0	6
10439	932937	*Leucania extincta*	2	0	1	0	0	3
10440.1	932938.1	*Leucania amygdalina (prev. "linita")*	0	0	1	0	0	1
10444	932943	*Leucania phragmatidicola*	2	1	2	1	1	7
10445	932944	*Leucania linda*	1	0	3	0	0	4
10456	932960	*Leucania adjuta*	0	1	0	0	0	1
10459	932963	*Leucania inermis*	0	1	1	0	0	2
10461	932965	*Leucania ursula*	1	0	1	0	0	2
10462	932966	*Leucania pseudargyria*	0	0	1	0	0	1
10393	933039	*Lacinipolia vicina**	1	1	1	1	0	4
10397	933044	*Lacinipolia renigera*	0	3	2	0	0	5
10405	933052	*Lacinipolia lorea*	0	0	1	0	0	1
10532.1	933089	*Homorthodes lindseyi*	1	1	3	0	3	8
10585	933136	*Orthodes majuscula*	3	1	3	0	1	8
10587	933138	*Orthodes cynica*	0	2	3	0	4	9
10288	933146	*Orthodes detracta*	1	2	2	0	1	6
10627	933193	*Tricholita signata*	2	0	0	1	0	3
10911	933212	*Anicla infecta*	1	1	1	0	1	4
10903	933216	*Anicla illapsa*	0	2	1	1	0	4
10878	933228	*Striacosta albicosta*	0	0	0	0	1	1
10870	933232	*Dichagyris acclivis*	0	0	0	0	1	1
10715	933329	*Euxoa scandens*	0	2	0	0	0	2
10805	933395	*Euxoa tessellata*	0	0	1	0	0	1

			Bog	Dune	Grassland	Coastal Plain Pond Shore	Woodland	Total
10838	933461	*Euxoa detersa*	1	2	1	1	1	6
10680	933495	*Feltia geniculata*	1	1	0	0	1	3
10670	933498	*Feltia jaculifera*	0	0	1	0	0	1
10675	933502	*Feltia tricosa*	0	0	2	0	0	2
10676	933503	*Feltia herilis*	1	0	2	0	0	3
10641	933506	*Agrotis vetusta*	2	1	0	1	0	4
10648	933515	*Agrotis gladiaria*	0	0	1	0	0	1
10663	933528	*Agrotis ipsilon*	2	1	2	0	2	7
10891	933529	*Ochropleura implecta*	2	1	1	0	0	4
10993	933546	*Hemipachnobia monochromatea*	2	0	0	0	0	2
11010	933547	*Lycophotia phyllophora*	2	0	2	0	2	6
11012.2	933551	*Noctua pronuba*	4	0	5	1	2	12
11000	933564	*Anaplectoides prasina*	0	0	1	0	0	1
10969	933586	*Xestia dilucida*	2	0	0	0	0	2
10942.1	933589	*Xestia dolosa*	1	0	1	0	1	3
10950	933629	*Pseudohermonassa bicarnea*	2	0	2	0	0	4
11006	933649	*Protolampra brunneicollis*	4	2	4	1	2	13
11024.1	933663.1	*Abagrotis benjamini*	5	37	6	3	1	52
11029	933680	*Abagrotis alternata*	3	3	3	0	5	14
11044	933683	*Abagrotis brunneipennis*	0	1	0	0	0	1
11043	933685	*Abagrotis cupida*	1	0	1	0	0	2
-	933686	*Abagrotis magnicupida*	0	0	1	0	0	1

Ticks

Discussions of white-tailed deer are not complete without consideration of ticks. Ticks are present on a variety of habitats within the Reservation. Lone star ticks are particularly abundant and, as such, are of special concern to visitors. It is known that females deposit approximately 5,000 eggs after finishing a blood meal (Holderman & Kaufman, 2013). These are deposited on the soil in protected locations such as leaf litter or grass, making it difficult to see. Hatched larvae climb up vegetation such as a blade of grass or twig (both short and tall) and cling to hosts upon contact. Therefore, special care should be taken to avoid ticks in all habitats, including on the designated trails. Larval ticks are especially concerning due to their miniscule size and large numbers in tick “bombs” (Figure 9). Deer ticks are also found in a variety of habitats, including dunes, where they wait for hosts on tall grasses near paths. Tick safety and vigilance should be practiced when hiking on the Reservation; for example, a lint roller or duct tape is very useful for removing ticks from clothing.

Figure 9: Example of a tick “bomb”.

Appendix F. Avian Checklist and Seasonal Tables

Land bank and SMF staff conducted 5-minute point count surveys of birds at Squibnocket Pond Reservation from September 2020 to August 2021 following methods described by Ralph and Scott (1981). Data from the Christmas Bird Count of 2018 and 2021 (Brad Winn, unpublished data) at the Reservation were used to assess additional winter species on the property. The presence of occasional migrant and resident birds throughout the fall migration, spring migration and breeding season was recorded during a total of 17 visits. Birds were sampled from eleven survey locations that spanned all habitats on the Reservation (Map 20, Avian survey points). All birds seen or heard during the five-minute period including birds flying overhead were recorded. Birds seen or heard by land bank and SMF staff outside of the count period were noted as present on the property but were not included in quantitative analyses.

Bird species in various habitats are seasonally dependent. Some bird species occur in more than one habitat type and during more than one season. Total species counts do not include multiple sightings of an individual species.

Ground nesting is the most common nest strategy displayed by birds of the Reservation followed by tree, shrub, and cavity nesting (Table 9-Summer 2021). Ground nesters utilize the various shrub and woodlands on the Reservation to build well-secluded nests sheltered from predators. Eastern towhees, for example, generally build nests sunken into leaf litter but also build nests in shrubs or in tangles of greenbrier and grape, which are commonly found on the property. Black-and-white warblers place their nests at the bases of trees, rocks, stumps and fallen logs, and under shrubs and bushes. The open woodland habitats are suitable for species such as eastern whip-poor-will, that lay eggs directly onto the leaf litter of the woodland.

Of the 58 birds observed during the summer surveys, seven species were

commonly found in most habitats and include the eastern towhee, common yellowthroat, bank swallow, song sparrow, grey catbird, double-crested cormorant, and the Carolina wren (Table 9). Four-listed bird species were observed during the bird surveys in the coastal habitats, three in the summer months and one in the spring.

Overall, Squibnocket Pond Reservation's tremendous variety of vegetation and food sources makes for ideal avian conservation habitat. The great variety of avian species is also a great source for bird and nature enthusiasts alike. During a stroll in the Reservation, a bird watcher or recreational hiker may encounter hundreds of species found in various habitats and in different seasons. Notably, Lily Pond provides a great opportunity to observe a large group of cormorants as well as many other waterfowl species and charismatic shorebirds. During the winter, various species of loons, grebes, mergansers, ducks, and other species of interest to bird watchers, may be seen in the lily pond habitat. In the summer, interesting species such as the glossy ibis may also be seen. The beach is also of particular interest to bird enthusiasts, as many waterfowl and shorebird species may be sighted during different seasons. Various scoter, eider, scaup, and gannet species are potential winter visitors on the beach habitat. In addition, the razorbill and the dovekie can be seen as they winter on the shores of Martha's Vineyard. The grassland habitat has an established osprey nest where visitors may witness an Osprey pair from a respectful distance. Visitors may watch osprey "fishing" and feeding their young. Belted kingfishers may also be seen "fishing", and a variety of birds of prey such as northern harrier, red-tailed hawk, and sharp-shinned hawk may be seen searching and hunting for prey. Many species of swallows can be seen in a variety of habitats. If fortunate, a visitor may come across the seldom-seen American woodcock, as well as a great variety of other interesting birds, including a variety of breeding and migrating warblers.

Observations of behaviors associated with nesting or rearing of young such as adults carrying nesting material or food to a nest, carrying fecal sacs from a nest or attending hatch-year birds can confirm that a species is breeding on the property, as can locating an active nest. A species is probably breeding if singing territorial males are present on the property on two occasions at least a week apart. A species is possibly breeding if it is detected in suitable breeding habitat during the breeding season. Of the 58 bird species observed on the Reservation during the summer breeding season, 4 are confirmed breeders, 19 are probable breeders and 36 are possible breeders (Table 9—Summer 2021).

The probable and possible breeding birds on the Reservation are associated with various habitats, each of which provides specific nesting requirements. Warblers such as common yellowthroat, yellow warbler and prairie warbler and other familiar year-round residents such as the northern cardinal and American goldfinch may nest in the expansive shrublands. Common yellowthroat nest in

ground supported by greenbrier, sedges and grasses, cattails, and other low plants. They may also nest in marshy areas and sometimes on emerging aquatic vegetation. Northern cardinals wedge their nests into forks of small sapling and shrub branches, or vine tangles; blackberry, rose shrubs, and grape are commonly used shrubs and vines which are plentiful on the Reservation. American goldfinches build their nests high in shrubs where vertical branches join and are generally shaded by leaves from above but open and visible from below. Those species who nest in the open ground, such as killdeer and Canada geese, may nest near or in several habitats such as the grassland and savanna.

The woodland trees provide suitable nesting options for birds such as the familiar American robin, blue jay, mourning dove, and great blue heron. American robins and blue jays nest in tree branches while black crowned night heron and the great blue heron not only nest in trees, but will also nest in marsh vegetation. The woodlands support other less commonly observed species, such as the eastern kingbird, eastern wood-pewee, red-eyed vireo, and wood thrush. Red-eyed vireos and wood thrushes use forks in branches. Eastern wood-pewees may use oak and maple saplings. The trees and snags of the woodland habitats are important for cavity nesting species such as Carolina wrens and tree swallows. Tree swallows often nest in old woodpecker cavities, therefore, suitable year-round habitat for woodpeckers is important for breeding tree swallows.

Map 20: Avian survey point locations

Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Martha's Vineyard Land Bank and Sheriff's Meadow Foundation are not responsible for the end-users interpretation of this map

Table 9: Bird species observed in Squibnocket Pond Reservation over the course of four seasons. O=Occasional; U= Uncommon; C=Common; P=Present. PO=Possible breeding; CO=Confirmed breeding; PR=Probably breeding.

Fall 2020	**Woodland (Swamp)**	**Shrubland (successional)**	**Shrubswamp**	**Shrubland**	**Coastal Plain Pond and shore**	**Bog**	**Grassland**	**Shrubswamp**	**Woodland**	**Dune**	**Beach**
Point ID	A	B	C	D	E	F	G	H	I	J	K
Species	n=5	n=5	n=5	n=5	n=5	n=5	n=5	n=5	n=5	n=5	n=5
Year-round residents											
American crow	O	U	U	O	U	C	O	U			
American robin								U	U		
Belted kingfisher			U								
Black-capped chickadee	U	O	O			C				O	
Blue jay	C	C	O	O	U	C	C	C	C	C	
Bufflehead					U						
Canada goose					U		U				
Carolina wren	U	U	U			U	U	U			
Common eider											P
Double-crested		U	O	O	C		C			U	O
Downy woodpecker		P							P		
Golden-crowned kinglet	P								P		
Gray catbird	C	O	O	C		U	O	C	O		
Great black-backed gull					U		U			U	O
Great blue heron			U				U				
Greater yellowlegs					U						
Harlequin duck											P
Herring gull			U	U	O						C
Hooded merganser					P						
Mallard					U	U					
Northern bobwhite							P				
Northern flicker	U	O	C	U	U					U	
Northern gannet											P
Northern mockingbird								U			
Red-tailed hawk								U			
Ring-billed gull											P
Sanderling					U						

Fall 2020	Woodland (Swamp)	Shrubland (successional)	Shrubswamp	Shrubland	Coastal Plain Pond and shore	Bog	Grassland	Shrubswamp	Woodland	Dune	Beach
Sharp-shinned hawk						U					
Song sparrow						U	U				
Tufted titmouse		O	O	U		U			U		
White-breasted nuthatch	U	O						U			
White-throated sparrow			C								
White-winged scoter											P
Summer breeders											
Baltimore oriole								U			
Common yellowthroat							U	U			
Barn swallow					U		U				
Connecticut warbler		O									
Eastern kingbird						U					
Eastern phoebe						U	U				
Eastern towhee	C	C	C	U		O		C	U	U	
Eastern wood-pewee						U					
Great crested flycatcher			U								
Marsh wren					U						
Ovenbird			U								
Palm warbler				U	U					U	
Red-eyed vireo										U	
Tree swallow			U	U							
Yellow-rumped warbler			C		U	O	U			C	

Winter 2021	Woodland (Swamp)	Shrubland (successional)	Shrubswamp	Shrubland	Coastal Plain Pond and shore	Bog	Grassland	Shrubswamp	Woodland	Dune	Beach
Point ID	A	B	C	D	E	F	G	H	I	J	K
Species	n=2	n=2	n=2	n=2	n=2	n=2	n=2	n=2	n=2	n=2	n=2
Year-round residents											
American black duck					P						P

Winter 2021	Woodland (Swamp)	Shrubland (successional)	Shrubswamp	Shrubland	Coastal Plain Pond and shore	Bog	Grassland	Shrubswamp	Woodland	Dune	Beach
American crow				P							
American robin	O	O									
American goldfinch		P									
American tree sparrow		P									
Barn owl							P				
Belted kingfisher			P								
Black-capped chickadee	O				O	O			O		
Black scoter											P
Blue jay		O									
Brown creeper									P		
Brown-headed cowbird							P				
Bufflehead						O					
Canada goose					P						
Carolina wren		O	O								
Common eider											P
Common goldeneye				P							P
Dark-eyed junco									P		
Double-crested cormorant			O								O
Dovekie											P
Downy woodpecker	P								P		
Eastern bluebird							P				
Eastern screech-owl	P										
European starling							P				
Gadwall					P						
Golden-crowned kinglet	P								P		
Great black-backed gull											P
Great blue heron			P		P						
Great cormorant											P
Gray catbird							O				
Greater scaup											P
Harlequin duck											P
Hermit thrush		P		P							
Herring gull											O
Hooded merganser					P						
Horned grebe											P
House finch							P				
Lesser black-backed gull											P

Winter 2021	Woodland (Swamp)	Shrubland (successional)	Shrubswamp	Shrubland	Coastal Plain Pond and shore	Bog	Grassland	Shrubswamp	Woodland	Dune	Beach
Lesser scaup			P								
Long-tailed duck					P						P
Northern cardinal									P		
Northern flicker										O	
Northern gannet											P
Northern harrier							P				
Northern mockingbird								P			
Mallard					P						
Mourning dove								P			
Mute swan			P								
Purple sandpiper											P
Razorbill											P
Red-bellied woodpecker	P										
Red-breasted merganser					P						
Red-breasted nuthatch									P		
Red-tailed hawk								P			
Red-throated loon					P						
Ring-billed gull											P
Ruby-crowned kinglet				P							
Sanderling											O
Savannah sparrow			P								
Sharp-shinned hawk							P				
Snow bunting							P				
Song sparrow					O						
Surf scoter											P
Swamp sparrow						P					
Tufted titmouse		P									
Turkey vulture					P						
White-breasted nuthatch	O										
White-throated sparrow			P								
White-winged scoter											P
Yellow-bellied sapsucker									P		
Summer breeders											
Black-and-white warbler	P										
Eastern towhee	P										
Yellow-rumped warbler					O						
Yellow-breasted chat				P							

Winter 2021	Woodland (Swamp)	Shrubland (successional)	Shrubswamp	Shrubland	Coastal Plain Pond and shore	Bog	Grassland	Shrubswamp	Woodland	Dune	Beach
Virginia rail						P					

Spring 2021	Woodland (Swamp)	Shrubland (successional)	Shrubswamp	Shrubland	Coastal Plain Pond and	Bog	Grassland	Shrubswamp	Woodland	Dune	Beach
Point ID	A	B	C	D	E	F	G	H	I	J	K
Species	n=3	n=3	n=3	n=3	n=3	n=3	n=3	n=3	n=3	n=3	n=3
Year-round residents											
American crow	O				O						
American goldfinch						O					
American robin	C		O				O	O			
Black-capped chickadee	C	O		O		C		O	O	O	
Black scoter											P
Blue jay	O	O				O				C	
Bufflehead					O						
Canada goose			O		C	O				O	O
Carolina wren			O			C	O	C	O		
Common grackle							O				
Common merganser			O								
Great black-backed gull					C						O
Greater yellowlegs					P						
Gray catbird	C					C	O		O		
Hairy woodpecker										O	
Herring gull											C
Mallard					O						
Mourning dove								O			
Mute swan			O								
Northern cardinal	O					O		O	C	O	
Northern harrier						O					
Red-winged blackbird					O	O			O	O	
Sanderling											P
Song sparrow					C		O				
Tufted titmouse		C			O			O			
Turkey vulture							P				
White-breasted nuthatch	O		O							O	
Summer breeders											
American oystercatcher											C
Bank swallow											

Spring 2021	Woodland (Swamp)	Shrubland (successional)	Shrubswamp	Shrubland	Coastal Plain Pond and	Bog	Grassland	Shrubswamp	Woodland	Dune	Beach
Black-and-white warbler										O	
Brown thrasher			O								
Cliff swallow					O						
Chipping sparrow				O			O	O			
Common yellowthroat	O								O	O	
Common tern											P
Eastern kingbird										O	
Eastern towhee											
Great egret					O						
Osprey	O						C	O			
Red-eyed vireo	O										
Rough-winged swallow					O					O	
Tree swallow					P						
Willet											O
Yellow warbler		O	O	O		O			O		

Summer 2021	Red Maple Swamp	Savannah	Maritime Shrubland	Successional Grassland	Lily Pond	Bog	Grassland	Witch Pond	Mixed Oak Woodland	Dune	Beach	Nest Placement	Breeding
Point ID	A	B	C	D	E	F	G	H	I	J	K		
Species	n=7	n=7	n=7	n=7	n=7	n=7	n=7	n=7	n=7	n=7	n=7		
Year-round residents													
American crow		U		O	U	P	U				U	tree	PO
American goldfinch		U	O	O	O	O	O	O	O	U		shrub	PR
American robin	O	O	O	O		O	O	O	P			tree	PR
Belted kingfisher			P	U				U				burrow	PO
Black-bellied plover											U	ground	PO

Summer 2021	Red Maple Swamp	Savannah	Maritime Shrubland	Successional Grassland	Lily Pond	Bog	Grassland	Witch Pond	Mixed Oak Woodland	Dune	Beach	Nest Placement	Breeding
Black-capped chickadee	C	C	U	U		U	U	O	O			cavity	PR
Black-crowned night heron			U			U						tree	PO
Blue jay	C	U	O	U	P	P	U		U			tree	PR
Brown-headed cowbird		O	U			U						tree	PO
Canada goose					U							ground	PO
Carolina wren	C	O	O			O	C	C	C			cavity	PR
Cedar waxwing	O	C		U			O	O				tree	PO
Common grackle			P									tree	PO
Double-crested cormorant			U	O	C					O	C	ground	CO
Downy woodpecker		U				U			U			cavity	PO
Glossy ibis					P							ground	PO
Gray catbird	C	C	C	C	C	C	C	C	O	C		shrub	PR
Great black-backed gull			O	U	O					U	C	ground	PO
Great blue heron			P				U				P	tree	PO
Great egret				U	U		U					tree	PO
Hairy woodpecker	O								U			cavity	PR
Herring gull				U	O					O	C	ground	PO
Killdeer					O					P		ground	PO
Mallard					O							ground	PO
Mourning dove	U	U		O	U	O		O	U	C		tree	PR
Mute swan			P									ground	PO
Northern cardinal	U	O				U	O	U	C			shrub	CO
Northern flicker	P	U				U						cavity	PO
Northern harrier			P								U	ground	PO
Northern mockingbird							U			P		shrub	PR
Red-tailed hawk			U									tree	PO
Red-winged blackbird		O	O	O	C	C	O			O	O	shrub	PR
Ring-billed gull				O							O	ground	PO
Sanderling					U						O	ground	PO

Summer 2021	Red Maple Swamp	Savannah	Maritime Shrubland	Successional Grassland	Lily Pond	Bog	Grassland	Witch Pond	Mixed Oak Woodland	Dune	Beach	Nest Placement	Breeding
Semi-palmated sandpiper					U						U	ground	PO
Song sparrow			O	C	C					C	O	shrub	PR
Tufted titmouse	U	U					O	O	U			cavity	PR
Turkey vulture					U							cliff	PO
Summer breeders													
American oystercatcher											O	ground	PO
American woodcock						P						ground	PO
Bank swallow		O	C	O	C	U				O	C	burrow	PO
Barn swallow					O						O	building	PO
Black-and-white warbler	U	P						U				ground	PR
Common tern				P	O					U	O	ground	PO
Common yellowthroat	C	C	C	C	C	C	C	C	O	C	U	shrub	CO
Eastern kingbird		P										tree	PR
Eastern phoebe	P							U				building	PO
Eastern towhee	C	C	C	C	O	C	C	C	C	C		ground	PR
Eastern wood-pewee	O			P	O		P					ground	PO
Glossy ibis					U							ground	PO
Great crested flycatcher								U				cavity	PO
Osprey		U		O	P	U	C			U		tree	CO
Ovenbird	U								O			ground	PR
Prairie warbler	P					U						shrub	PO
Red-eyed vireo	O	O	U						O			tree	PR
Tree swallow						O						cavity	PO
Wood thrush			U					U				tree	PO
Yellow warbler		C	U	U		O	O	O		U		shrub	PR

Appendix G. Endangered Species

Portions of Squibnocket Pond Reservation fall within both Estimated habitat for Rare Wildlife and Priority Habitat of Rare species. This plan includes management goals that balance the needs of rare species and ensures protection of the thirty-four listed species and their habitats known to occur on the Reservation.

Initial rare species inventories were conducted in 2020-2021 of the entire Reservation and included amphibian and mammal acoustic monitoring, lepidoptera black-light trapping, visual surveys, passive observations, 5-minute avian point counts, vegetation line-transect and circular surveys, and woodland non-point surveys. Subsequent inventories of rare species were conducted annually. Management objectives including trails, access roads, trailheads and beach access stairs impact 2.24 acres of the Reservation within and outside of NHESP habitat. Habitat management objectives for rare species include 27 acres of shrubland, coastal woodland, bog, and grassland and are exempt from MESA review.

Table 10: Rare Species Surveys, Impacts, Mitigation

	1	2	3	4	5	6	7	8	9
Rare Species Group	Lepidoptera	Lepidoptera	Lepidoptera	Lepidoptera	Lepidoptera	Lepidoptera	Lepidoptera	Lepidoptera	Lepidoptera
Rank	T	T	T	SC	SC	SC	T	SC	T
Observed in 2020-2023 surveys	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observation date	July, 7, 15, 20, 28, 2021	15-Jul-21	20-Jul-21	20-Jul-21	June 23, July 7, 15, 20, 28, 2021	7-Sep-21	15-Jul-21	July 7, 15, 20, Sept 7, 15, 2021	16-Sep-22
Species New to NHESP database	YES	YES	YES	YES	NO	YES	NO	NO	NO
Habitat	Pine barrens, woodlands	Pitch pine scrub oak barrens, sandplain grassland/heathlands	Sandplain grassland/heathland	Scrub oak barrens	Coastal Dune/ sandplain grassland/heathland	Coastal marsh/ pond shore	Open grassland, meadow, dune and wetland habitats	Coastal grassland, dune	Freshwater marsh
Host plant	Pitch pine, post oak	Scrub, post and dwarf chestnut oak	Butterfly weed	Scrub oak	Beach plum	Freshwater cordgrass	Switch grass	Beach plum	Water-willow
Surveys conducted for species	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Visual survey with Mark Mello
Survey Dates	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	16-Sep-21

	1	2	3	4	5	6	7	8	9
Estimated Survey Hours	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	4 hours
Surveyors*	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	MM, TB, KM
Habitat observed in	bog and grassland	woodland, grassland	grassland	bog	dune, grassland, coastal pond	coastal pond	bog	bog, dune, woodland, grassland, coastal pond	bog
Management occurring in Species Habitat	create trail and south entrance	create trail and south entrance	mow/graze grassland	create trail, mow woodland understory in designated areas; restore shrubland	create trail and beach access	kayak launch and landing	create trail, viewing platform, mow grassland	create trail and beach access	mowing of bog edge at Luther's Bog
Strategies to mitigate impact	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; do not use exterior lights.	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; do not use exterior lights.	fence butterfly weed from livestock grazers; mow grassland in the late fall/early spring.	site trails to avoid cutting scrub oak; avoid cutting scrub oak in the shrubland and woodland mowing areas	site trails to avoid cutting beach plum; use boardwalks, dune-matt and adjustable stairs in dune and wetland habitats	site kayak launch and landing outside of any freshwater cordgrass stands; prohibit any use of the pond shoreline with the exception of the designated kayak launch and landing sites; use fencing and signs as necessary to minimize unauthorized use of the pond shores	use fencing, signs, raised boardwalks and viewing platforms to minimize off-trail use of sensitive dune and wetland habitats	site trails to avoid cutting beach plum; use boardwalks, dune-matt and adjustable stairs in dune and wetland habitats	site trails outside of bogs and interior pond shores; prohibit use of pond shore with the exception of designated kayak landing and launch sites

	1	2	3	4	5	6	7	8	9
Future monitoring	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval
Total acres of habitat	122	133	12	61	42	8315	116	42	13
Acres of habitat impacted by trail system and trailhead	1.71	1.79	0.08	0.19	0.12	8	0.157	0.12	0
% of habitat impacted by trail and trailhead	1.40%	1.35%	0.67%	0.31%	0.29%	0.10%	0.14%	0.29%	0.00%
acres of habitat improved for rare species	12	22	10	5.6	15.6		10.29	10	0.29
% of habitat managed for rare species	9.84%	16.54%	83.33%	9.18%	37.14%	0.00%	8.87%	23.81%	2.23%

	10	11	12	13	14	15	16	17	18
Rare Species Group	Lepidoptera	Lepidoptera	Lepidoptera	Lepidoptera	Lepidoptera	Beetle	Avian	Avian	Avian
Rank	SC	SC	SC	SC	SC	E/T	SC	E/E	SC
Observed in 2020-2023 surveys	NO	NO	NO	NO	NO	YES	YES	NO	YES
Observation date						observed on all dates surveyed	Feeding: June 24, July 8, July 23, 2022, June-August 2023, June-August 2024		Feeding: 6/24/2022, June-August 2022, June-August 2023
Species New to NHESP database	NO	NO	NO	NO	NO	NO	NO	NO	NO

Habitat	Pitch pine scrub oak barrens	Coastal shrubland, sandplain grassland and dunes	Freshwater wetlands	Pitch pine scrub oak barrens	Pitch pine scrub oak barrens and sandplain grasslands, bogs	Barrier beach with dynamic dune system	Barrier beach	Barrier beach, dunes	Barrier beach
Host plant	Low-bush blueberry	Ericaceae species	Wetland grasses	Blueberry and cranberry	Lowbush blueberry	Ground nester	Ground nester	Ground nester	Ground nester
Surveys conducted for species	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Black light trapping in woodland, grassland, bog, dune, coastal pond, 9 trap nights in 2021	Surveyed beach in transects with Paul Goldstein and BioDiversity Works	Visual survey of beach, 19 visits 2021, 22 visits 2022, 23 visits 2023	Visual survey of beach, 19 visits 2021, 22 visits 2022, 23 visits 2023	Visual survey of beach, 19 visits 2021, 22 visits 2022, 23 visits 2023
Survey Dates	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	June 16, 23; July 7, 15, 20, 28; August 10; Sept 7, 15, 2021	July 7, July 16, 2021; July 7, July 11, July 20, July 27 2022; June 30, July 7, July 12, July 20 2023	April 5 - July 5, 2021; March 23-July 30, 2022; March 21-July 19, 2023	April 5 - July 5, 2021; March 23-July 30, 2022; March 21-July 19, 2023	April 5 - July 5, 2021; March 23-July 30, 2022; March 21-July 19, 2023
Estimated Survey Hours	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	dawn-dusk, photoelectric switch	10 hours	average 40 hours	average 40 hours	average 40 hours
Surveyors*	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	JR, SM, TB, KM, NF	KG, PG, JR, NF, KS, LP, TB, EO, KM, SM	IC, NF, KM, SM, TB, JR, KG	IC, NF, KM, SM, TB, JR, KG	IC, NF, KM, SM, TB, JR, KG
Habitat observed in						coastal beach	coastal beach	coastal beach	coastal beach
Management occurring in Species Habitat	create trail and south entrance	Mowing grassland and shrubland to control woody vegetation	mowing of bog edge at Luther's Bog	create trail, south and north entrances	restore coastal shrubland through annual mowing initially and reduce to 3-5 year intervals, maintain grassland, create trails and south entrance	use symbolic fencing to fence from the toe of the dune to the high-tide mark during shorebird nesting season April to September	use symbolic fencing to fence from the toe of the dune to the high-tide mark during shorebird nesting season April to September	use symbolic fencing to fence from the toe of the dune to the high-tide mark during shorebird nesting season April to September	use symbolic fencing to fence from the toe of the dune to the high-tide mark during shorebird nesting season April to September
Strategies to mitigate impact	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; do not use exterior lights.	maintain coastal grasslands and shrublands; minimize the use/creation of trails in grasslands and shrublands	site trails outside of bogs and interior pond shores; prohibit use of pond shore with the exception of designated kayak landing and launch sites	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; do not use exterior lights.	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; do not use exterior lights.	Prohibit dogs on the beach from April - September; require dogs be leashed remainder of year; Utilize a reservation system and limit total number of people on the	expand symbolic fencing or close the beach during if necessary to protect nesting colonies; trap predators (skunks, racoons, crows); prohibit dogs on the beach from	expand symbolic fencing or close the beach during if necessary to protect nesting colonies; trap predators (skunks, racoons, crows); prohibit dogs on the beach from	expand symbolic fencing or close the beach during if necessary to protect nesting colonies; trap predators (skunks, racoons, crows); prohibit dogs on the beach from

						Reservation at any given time between the end of May and October 1. Start at 125 and increase, as experience justifies, up to 175.	April - September; Utilize a reservation system and limit total number of people on the Reservation at any given time between the end of May and October 1. Start at 125 and increase, as experience justifies, up to 175.	April - September; Utilize a reservation system and limit total number of people on the Reservation at any given time between the end of May and October 1. Start at 125 and increase, as experience justifies, up to 175.	April - September; Utilize a reservation system and limit total number of people on the Reservation at any given time between the end of May and October 1. Start at 125 and increase, as experience justifies, up to 175.
Future monitoring	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor one year prior to any future proposed habitat management changes conditional on NHESP and ConCom approval	Monitor annually, twice during peak activity when feasible (minimum once)	Monitor annually April - August	Monitor annually April - August	Monitor annually April - August
Total acres of habitat	122	104	13	122	141	37	7	37	7
Acres of habitat impacted by trail system and trailhead	1.71	0.31	0	1.71	1.79	0.54	0.5	0.54	0.5
% of habitat impacted by trail and trailhead	1.40%	0.30%	0.00%	1.40%	1.27%	1.46%	7.14%	1.46%	7.14%
acres of habitat improved for rare species	12	15.6	0.29	12	22.29	2.3	2.3	2.3	2.3
% of habitat managed for rare species	9.84%	15.00%	2.23%	9.84%	15.81%	6.22%	32.86%	6.22%	32.86%

	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Rare Species Group	Avian	Avian	Avian	Avian	Mammal	Mammal	Reptile	Plant	Plant	Plant	Plant	Plant	Plant	Plant	Plant	Plant
Rank	T/T	T	E	SC	E	E	SC	SC	T	T	T	T	SC	T	E	T
Observed in 2020-	YES	YES	No	No	YES	YES	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES

2023 surveys																
Observation date	Nest: 6-14-21, 5-25-22, 6-10-2022, 5-10-2023, 6-1-2023,6-4-2023	April 9, July 23 2021, April-July 2022, April-July 2023	early 2000's	early 2000's	12-Jul-05	12-Jul-05	early 2000's			5/26/2021, 7/6/2022, 5/31/2024, 6/5/2024	22-Jul-21	September 16, October 12, 2021	May 26, July 1, 2021; June 7, 2022; June 13, 2023	July 1, 13, Sept 1, 2021; October 12, 2022; October 2023	July 1, 21, 22, 2021; July 25, 2022; August 23, 2023; June 26, 2024	25-Aug-21
Species New to NHESP database	NO	NO	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES	NO	NO	YES	YES
Habitat	Barrier beach	Coastal grassland, shrubland, dune	Sandplain grassland and heathland	Grassland and woodlands	Woodlands, caves	Mature woodlands	Agriculture, grasslands, woodlands	Coastal saltpond shore and barrier beach	Forested swamps and wet meadows	Peaty wetlands	Deciduous woodland	Sandplain grassland	Sandplain grassland	Coastal pond shore	Open woodlands and thickets	Coastal pond shore
Host plant	Ground nester	Ground nester	Ground nester	Cavity nester	trees	trees	grassland nester									
Surveys conducted for species	Visual survey of beach, 19 visits 2021, 22 visits 2022, 23 visits 2023	5-minute point counts, 17 visits over 12 months	acoustic monitor set July 9-August 10, 2021	acoustic monitor set July 9-August 10, 2021	acoustic monitor set September 17 to 27, 2020	acoustic monitor set September 17 to 27, 2020	visual search, transects and perimeter walk, 9 visits	visual search, shoreline transect every 2 meters	visual search, non-point woodland survey	visual search, line transect survey (5, 100'-transects), transect survey every 2 meters	visual search, non-point woodland survey (16 plots)	visual search, circular plot survey (53, 1-meter squared plots)	visual search, circular plot survey (53, 1-meter squared plots)	visual search, shoreline transect	visual search, non-point woodland survey (16 points), circular plot survey (80, 2-meter squared plots)	visual search, transects every 1 meter
Survey Dates	April 5 - July 5, 2021; March 23-July 30, 2022; March	9-24-2020 to 8-27-2021	Dusk - Dawn first 15 minutes of every hour	Dusk - Dawn first 15 minutes of every hour	2 hours prior to Dusk - Dawn	2 hours prior to Dusk - Dawn	April - October 2021	May 26, June 10, 17, July 1, 7, 13, 14, 22, Sept 1, October 18	June 13, July 8, 22, August 6, Sept 1	May 26, June 17, July 14, 22, 19, Aug 6, 12, 16, September 1, July 6-	June 13, July 8, 22, 29, August 2, 4, 6, September 1, 2021, July 21,	June 10, 17, July 7, September 16, 10, October 12	June 10, 17, July 7, September 10, 2021; June 7, 2022;	May 26, April 7, June 10, 17, July 1, 7, 13, 14, 20, Sept 1, October 18,	May 4, 13, June 10, 17, 24, July 1, 8, 10, 19, 20, 22, August 26, 27	May 26, April 7, June 10, 17, July 1, 7, 13, 14, 20, Sept 1, October 18,

	21-July 19, 2023									2022, June 7, 2023, May 31, 2024, June 5, 2024	2022, August 23, 2023		June 13, 2023	2021, October 12, 2022, Occtober 2023		2021, September 9, 2022, September 15, 2023
Estimated Survey Hours	40 hours	51 hours	99 hours	99 hours	240 hours	240 hours	9 hours	60 hours	30 hours	54 hours	48 hours	36 hours	24 hours	66 hours	78 hours	66 hours
Surveyors *	IC, NF, KM, SM, TB, JR, KG	IC, NF, KM, SM, TB, JR	JR, TB	JR, TB	JR, TB	JR, TB	JR, NF, TB, KM, KG	JR, KG	JR, KG	JR, KG	JR, KG, EL, TB	JR, KG	JR, KG	JR, KG	JR, KG, KM, TB	JR, KG, SM
Habitat observed in	coastal beach	coastal beach and bog	bog, dune, woodland	bog, dune, woodland	woodland	woodland	grassland			bog	woodland	mowed path	mowed path	coastal pond shore	shrubland	coastal plain pond shore
Management occurring in Species Habitat	use symbolic fencing to fence from the toe of the dune to the high-tide mark during shorebird nesting season April to September	annual mowing/grazing of grasslands	annual mowing/grazing of grasslands	create trail, south and north entrances	create trail, south and north entrances	create trail, south and north entrances	annual mowing/grazing of grasslands	use symbolic fencing to fence from the toe of the dune to the high-tide mark during shorebird nesting season April to September	continue to mow the upland edge of Luther's Bog to control woody vegetation	continue to mow the upland edge of Luther's Bog to control woody vegetation	create trails and south entrance trailhead; mow understory in woodland in designated areas	create trails with an initial mow of 8' and maintain at 6' in-season through mowing; mow/graze grasslands annually to maintain an open and diverse habitat	create trails with an initial mow of 8' and maintain at 6' in-season through mowing; mow/graze grasslands annually to maintain an open and diverse habitat	kayak launch and landing	annual mowing and shoulder season grazing	none

Strategies to mitigate impact	Use exclosures for observed nests; trap predators (skunks, racoons, crows), prohibit dogs on the beach from April - September; Utilize a reservation system and limit total number of people on the Reservation at any given time between the end of May and October 1. Start at 125 and increase, as experience justifies, up to 175.	maintain coastal grasslands and shrublands; require dogs be leashed; minimize the use/creation of trails in grasslands and shrublands	maintain coastal grasslands and shrublands; require dogs be leashed; minimize the use/creation of trails in grasslands and shrublands	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; do not use exterior lights; maintain grasslands	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; do not use exterior lights.	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; do not use exterior lights	graze during the box turtle breeding season if necessary to control woody vegetation and otherwise mow the grassland between November and March outside of the box turtle breeding season	Monitor for rare beach/shoreline plants; site trails away from Lilly Pond and prohibit recreational use along the pond shore; Utilize a reservation system and limit total number of people on the Reservation at any given time between the end of May and October 1. Start at 125 and increase, as experience justifies, up to 175.	Mow in the late fall or early spring before the end of March when the ground is dry or frozen; site trails outside of the bog habitat	Mow in the late fall or early spring before the end of March when the ground is dry or frozen; site trails outside of the bog habitat	minimize tree cutting when siting trails and trailhead; 20 oak trees are estimated to be cut for the south entrance trailhead area; maintain open understory in designated areas through annual mowing, possibly every 3-5 years.	allow one foot of vegetation on either side of the trail to colonize with species that depend on disturbance for colonization or growth; do not create new trails in the grasslands; reroute trails outside of the grassland where possible	allow one foot of vegetation on either side of the trail to colonize with species that depend on disturbance for colonization or growth; do not create new trails in the grasslands; reroute trails outside of the grassland where possible	site kayak launch and landing areas well outside of observed population locations; used raised, light-penetrating boardwalk and railing system to discourage off-trail excursions, site shore-term kayak storage racks off pond shore	mow overgrown shrubland to increase light penetration to low growing vegetation	route trails away from coastal plain pond shore

Future monitoring	Monitor annually April - August	Monitor annually following detection of nesting activity	Monitor once per decade	Monitor once per decade	Monitor once per decade	Monitor once per decade	Monitor prior to any growing season mowing of the grasslands	Monitor annually	Monitor annually	Monitor annually in May-June	Monitor once every 5 years in June-July	Monitor once every 5 years in September-October	Monitor once every 5 years in June	Monitor once every 5 years in July-August	Monitor annually in June-July	Monitor annually in July-August
Total acres of habitat	7	105	12	134	122	122	134	10774	36	13	122	12	12	8315	194	8315
Acres of habitat impacted by trail system and trailhead	0.5	0.31	0.27	1.79	1.71	1.71	1.79	2467	1.71	0	1.71	0.08	0.08	8	1.746	8
% of habitat impacted by trail and trailhead	7.14%	0.30%	2.25%	1.34%	1.40%	1.40%	1.34%	22.90%	4.75%	0.00%	1.40%	0.67%	0.67%	0.10%	0.90%	0.10%
acres of habitat improved for rare species	2.3	15.6	10.75	22	12	12	22		12.29	0.29	12	10	10		17.6	
% of habitat managed for rare species	32.86%	14.86%	89.58%	16.42%	9.84%	9.84%	16.42%	0.00%	34.14%	2.23%	9.84%	83.33%	83.33%	0.00%	9.07%	0.00%

Cultural grassland, G1 and G2

Goal: maintain existing grassland

Acidic Graminoid Fen, B1

Goal: maintain existing bog, control woody vegetation along road edge to promote rare species

Viewshed, VS-1 and W2

Goals: maintain mowed trail to the right and enhance existing viewshed above through hand trimming

Goals: restore grassland/shrubland mosaic understory, highlight open-growth trees and historic features and promote rare species

Viewshed and mixed-oak woodland W4

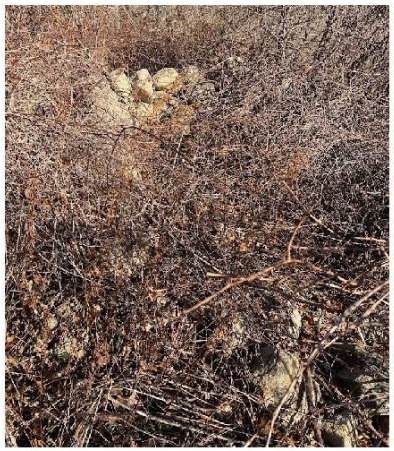
Goal: maintain open understory in open-growth tree grove and promote rare woodland understory species

Mixed-oak woodland, W2

Goal: maintain open understory to highlight open-growth trees and promote rare woodland understory species

Mixed-oak woodland, W3

Existing



Goal: clear stone walls and surrounding understory to highlight cultural features as depicted below

Mixed-oak woodland , W1

Goal: maintain open understory to highlight open-growth trees and promote rare woodland understory species

Cultural grassland, G3

Goal: maintain open area including grass road to promote rare species

Early successional shrubland, S2

Existing

Goal: manage woody vegetation to promote a grassland/shrubland mosaic as depicted above.

Late successional shrubland, S1

Existing

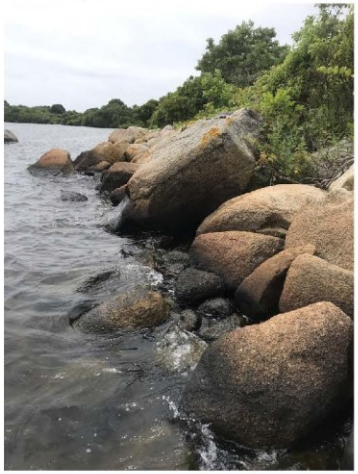
Goal: manage woody vegetation to restore a grassland/shrubland mosaic that promotes rare species

Kayak launch and landing sites

launch

landing

Rocky shore



Steep grade

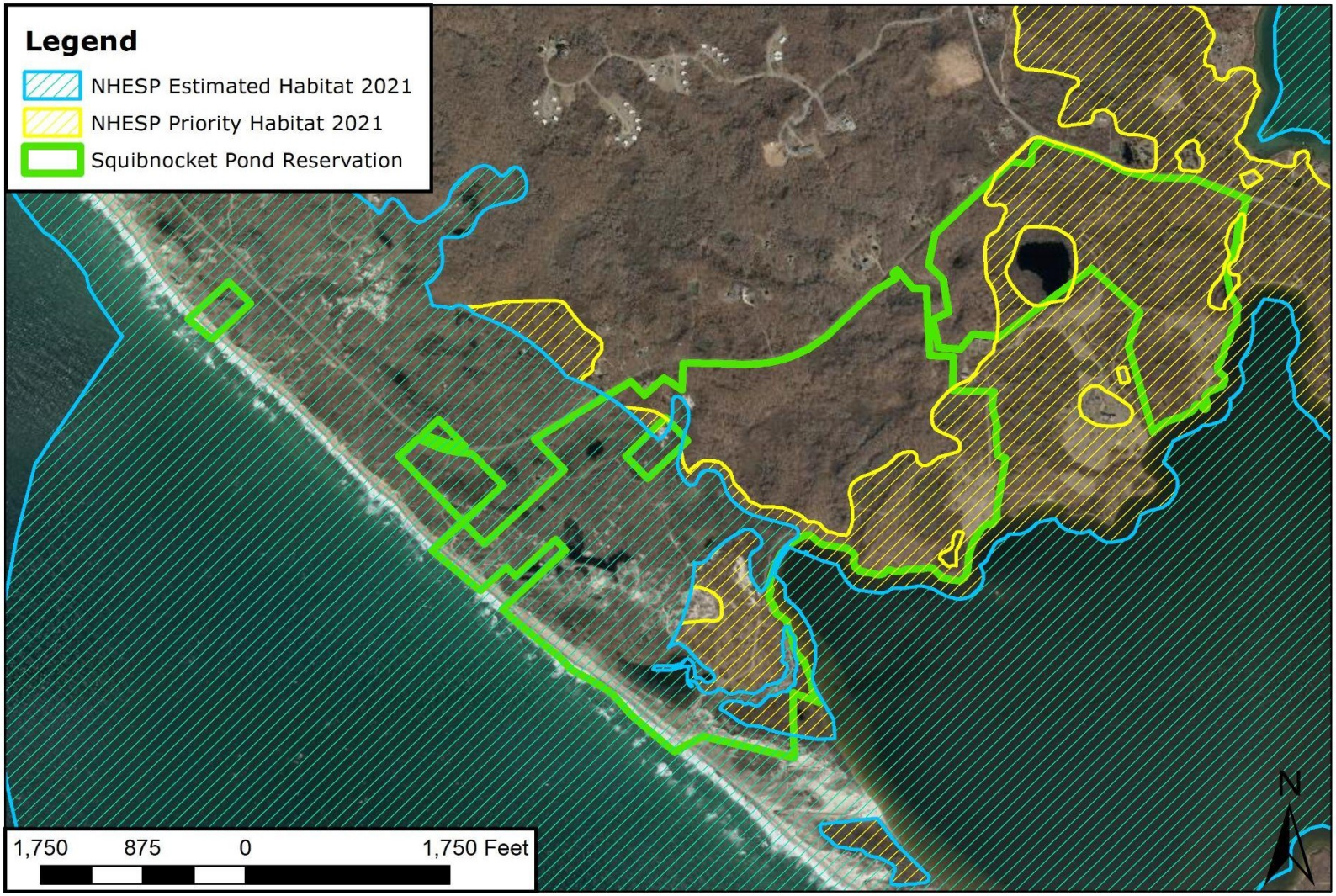
Rare plants

Beach access

Existing beach access

Example adjustable stair system

Map 21: NHESP priority habitat and estimated habitat in Squibnocket Pond Reservation.



Source: MassGIS 2019 Aerials, National Geographic Society USA Topo Maps, NHESP Habitat Maps 2021
Note: Map prepared for planning purposes only. The Land Bannk and Sheriff's Meadow are not responisble for the end-user's interpretation of the map.

Appendix H. Land Use History in Detail

The landscape of Martha's Vineyard was shaped by deposits placed over a bedrock foundation in the Pleistocene Epoch (2.5 million -11,650 before present (BP)) followed by the last glacial period (Chamberlain 1964). It was this last stage of formation, some 26,000 years ago, as glaciers crushed and molded older clay deposits, then melted and receded and raised the surrounding sea level, that resulted in the formation of Squibnocket Pond and the hilly terrain surrounding it to the east that comprises the Squibnocket Pond Reservation. The Reservation is referred to as the "locus" in this section.

As glacial ice receded, flora and fauna were established atop the locus' glacial debris. Subsequent biotic successions followed. An initial treeless, low-vegetation tundra developed into a spruce-pine-lichen woodland, dominating much of northern America until approximately 9,000 years ago (Byers 1954). Like much of New England 10,000 ago, the locus was heavily forested with pines, as evidenced by the pollen records from cores of Aquinnah's Black Pond (i.e., Witch Pond) (Manning 2001) and Round Pond (Deeds 49:105). Pollen records from other sites on Martha's Vineyard indicate the island did have a period of Spruce-Jack Pine woodland for 28,000 years from 13,800 - 11,000 BP (Foster 2017). However, pollen records from Black/Witch Pond were not old enough to display this characteristic vegetation community.

Early Paleo-Indian hunters of the "Fluted-Point" tradition trekked along the melting ice margins in the expansive moorland covering morainal ridges and plains (Foster 2017, Dincauze 1974). The archaeological discovery of a fluted lanceolate stone spear point of Pennsylvania yellow jasper from a Martha's Vineyard artifact collections provides limited evidence that nomadic Paleo-Indians traveled across the land, at this point still attached to the mainland, 12,000-10,000 years BP (Bouck et al. 1983; Massachusetts Historical Commission/MHC 2007). Evidence of humans in the paleo-ecological record of Black/Witch Pond dating back 10,000 years suggest the indigenous peoples of Martha's Vineyard were migratory and left little impact on the landscape (Foster 2017).

Neville Point (Richardson 1985)

During the **Early Archaic period (10,000-7,500 BP)** a mixed deciduous-conifer forest (much like that found presently at the Southern Woodlands Reservation in Oak Bluffs) replaced the subarctic woodland in southern New England some 9,000 years ago (Davis 1969). On the locus the tree coverage transformed from mostly open-canopy jack pines and white pines to an oak, pitch pine, and alder mixed-deciduous woodland (Foster 2017). About 9,000 ago, a substantial three-fold spike in charcoal in the sediment core at Black/Witch Pond provides evidence of increased temperatures and fire-prone conditions (Foster 2017), indicating that lightning-induced fires were shaping the landscape until fire-tolerant species such as oak became established. By 7,500 BP the forest of the Reservation was dominated by fire-tolerant oaks (Oswald et al. 2018), much like we experience today on the property.

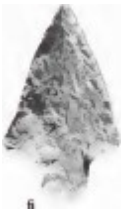
The Paleo-Indians in New England adapted to the cooler climate and mixed-deciduous woodland that, along the coast, offered adequate food supplies to small groups of nomads (Dincauze 1974). The spear- and arrowhead of choice in southern New England transformed from the fluted point to one with a bifurcated base (Dincauze 1974). One such bifurcated-based projectile point was discovered in Aquinnah near Menemsha Pond (Herbster 2004 in Doucette 2013). The lack of evidence of numerous Early Archaic indigenous peoples on the Reservation may be due to coastal submergence (Richardson 1985).

Bifurcated base points from Coxsackie and nearby New Baltimore (Curtin, Edward, The Early archaic Period and the "Missing 2000 years" in Hudson Valley Prehistory, 2017, http://curtin.com/blog/2017/9/19)

About 5,800 years ago during the **Middle Archaic Period (7,500-5,000 BP)**, the dominating oaks of the locus yielded to sharing the forest floor with hickory, chestnuts, and other broad-leaf trees as well as shrubs such as bayberry (Foster 2017, Oswald et al 2018). Wildlife such as deer and turkey expanded into southern New England at about this time, colonizing the island. Birds and salt-water fish developed modern-day migration patterns and nutrient-rich coastal ecosystems continued to evolve (Dincauze 1974). Sea level was 10 or more meters lower than current levels, creating a coastline that was 1000 meters or more farther from the present-day Squibnocket Pond Reservation. Eventually, sea level rose to such an extend as to separate Martha's Vineyard from the mainland in about 5,000 BP (Figure 10).

Figure 10. Bathymetric map of sea-level changes south of Martha's Vineyard for the last 10,000 years. The rising sea cut the island off from the mainland only 5,000 years ago. (Adapted from U.S. Department of Commerce map) (Richardson 1985)

During the latter part of the Middle Archaic period, the new island supported a year-round population. Their numbers, much debated, perhaps ranged from 1,500 to 3,000 (MHC 1987). Increasing visitation of the littoral areas of the locus is evidenced in the number of Middle Archaic artifacts discovered. Surrounding hills along the northern shores of Squibnocket Pond would have provided protection from winter northeastly winds and caught beneficial southwestly winds in the summer (Ritchie 1969).



Neville Point (Richardson 1985)

Stark Point (Richardson 1985)

Middle Archaic Neville and Stark spear- or arrowpoints have been discovered in several locations near Menemsha Pond, on the Reservation, and in inland Aquinnah (MHC site files; Glover and McBride 1992 cited in Doucette 2013).

Late Archaic period (5000-3000 BP): The island population continued to grow, evidenced by the volume of artifacts discovered in widespread locations from coastal to interior ecosystems (Doucette 2013). Late Archaic projectiles (e.g. Brewerton, Squibnocket triangle, Orient Fishtail and Small Stemmed points) are well documented on the locus (Doucette 2013, Ritchie 1969, Richardson 1985, Watson 2019). Hearth contents dating from about 4,250 BP as well as post molds (used for the construction of a wigwam) indicate forest-adaptive indigenous people seasonally camped on the shores of Squibnocket Pond. Radiocarbon dating of various features discovered on the Hornblower II archaeological site in Aquinnah indicates 900 years of continuous seasonal settlement (Ritchie 1969; Richardson 1986).

During this period (c. 4000 BP), the locus cycled between oak, hickory, and chestnut woodlands to oak and beech woodlands before changing back to a more mixed-deciduous coverage. The once prolific oak and beech woodland now occurs only in very small pockets on the locus.

Protein sustenance would have relied heavily on white-tailed deer and shellfish, mainly quahogs and other clams and oysters. White-tailed deer remained the favored hunted mammals (Ritchie 1969). Evidence of predators is minimal (Watson 2019). A deer population without large predators is an available and inexhaustible food source. In the later period, scallops replaced quahogs as the preferred shellfish, although neither was prolifically present in hearths. There is no direct evidence of cultivated agriculture.

Lack of radiocarbon data from the Late Archaic (around 4,000 BP) into the Middle Woodland (around 2,000 BP) suggests a period of near abandonment of the locus for virtually 2,000 years (Watson 2019).

Woodland Period (2700 to 1000 BP): Early Wampanoag culture resembled other Algonquian-speaking tribes. The non-permanent village was the center of socializing and political organization, shellfish-intensive food gathering and now agriculture was being done within this unit. In addition to common ownership of land, individual use was recognized in the form of homesteads (U.S. Dept. of the Interior 1985).

Midden (shell refuse piles) and hearth analysis indicate an increase in the variety of shellfish consumed as well as a broadening of indigenous peoples' adaptation to the littoral ecology at the locus. More bones from fish and birds are observed in the hearths along with a larger variety of hunting and fishing equipment. The change from a quahog-dominated shellfish diet to one of bay scallops is congruent with the observation of more

advanced fishing equipment. Dependence of shellfish in the diet of indigenous peoples was greatest in the Middle and Late Woodland periods (Watson 2019).

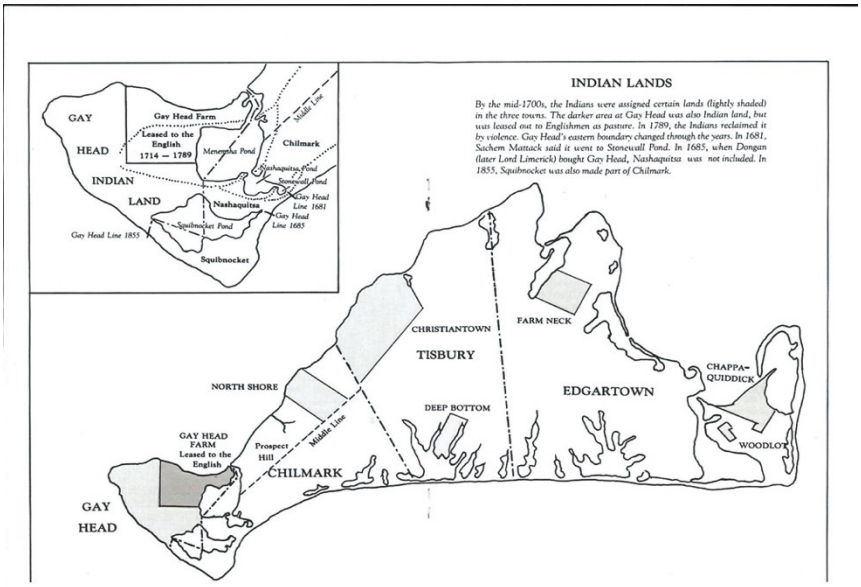
The increase in wildlife species observed in the stratum from the Late Woodland period indicates a broadening of food procurement strategies and a utilization of more diverse habitats by local people. The presence of axes and gouges, in addition to a variety of agricultural artifacts (e.g., Plummet grinding tools, corn, and acorns), indicate that the Late Archaic/Late Woodland people lived in a mosaic landscape of plowed fields nestled within woodlands (Ritchie 1969, Doucette 2013). Mixed artifacts in the top stratum from two very different time periods on the shore of the Reservation suggest a plow line (Watson 2019, Richardson 1986). Pasturing was not evident in the pollen records of Black/Witch Pond until approximately 500 BP when introduced grass and ragweed is in evidence (Foster 2017).

At the time of the first documented European contact in 1602, Martha's Vineyard was heavily wooded with the surrounding ocean abundant with fish. John Bremerton, sailing with Captain Gosnold wrote: "in *five or sixe hours absence, we had pestered our ship so with Cod fish, that we threw numbers of them over-board again*" (Brereton 1602). Brereton went on to describe the island as full of "*Beeches and Cedars*" with the shore of a "*great standing lake of fresh water, neere the sea side*" covered in "*lowe bushie trees, three or foure foot in height, which beare some kind of fruits*" and an "*incredible store of Vines, as well in the woodie part of the Island*". His description could be of the shore of Squibnocket Pond as it is today.

The English found the island divided into four sachemships, or ruling communities, of the Wampanoag tribe – Chappaquiddick, Nunpaug, Takemmy and Aquinnah. The earliest documented sachem of Gay Head (re-named Aquinnah in 1998) was Nohtoaksaet, succeeded by his second son Mittark in 1675. The eldest son, Ompohhannut, who was absent at his father's death, contested the succession of his younger brother. Although he was granted rights to ¼ of Aquinnah lands, he departed the island to fight in King Philip's War and never returned to his entitled lands (Banks 1966 (written 1911)).

The Aquinnah indigenous people (Wampanoags) were unique in their belief in a mythical giant named Moshup (Manning 2001, Hine 1908). Moshup's wife Squant was spoken of in many of the old stories. In one such story, Squant is harmed by a spirit envious of her beauty. In another story, a crone tried to wake the spirit-people at "Witch Pond". The crone, walking around the edge of the dark, apparently bottomless pond, was frightened away, her straight hair now forevermore kinky and tangled (Scoville 1970). In another story it was told that Moshup dug a deep pool (Witch Pond), connecting it to the sea by way of an underground passage for his favorite pet, a white whale, to protect it from hunters. The heavy fog observed on the locus was thought to be this white whale spouting in Witch Pond (Simmons 1986). Black Brook, not far from Witch Pond, is the source of many other disconcerting stories of headless men, black riderless horses, and mysterious footsteps (Scoville 1970). However, Black Brook is named not for its eeriness but for the dark waters resulting from the large peat-bog that it originates from (Burgess 1926).

In 1641, nearly forty years after Gosnold gave Martha's Vineyard its current name (the Wampanoag called it Noepe), Thomas Mayhew Sr. of Watertown purchased the island of Martha's Vineyard from William, Earl of Stirling (Dukes County Registry of Deeds (DCRD) 5:165). Mayhew was not, however, deeded the rights to the lands of the Wampanoags in Aquinnah. Thomas Mayhew Jr. arrived in 1643 to establish a settlement (subsequently named Edgartown) and to convert the indigenous people to Christianity. Sachems began selling their lands to Europeans and many of their tribes converted to Christianity, with ten percent of the population having converted by the time of the younger Mayhew's death in 1657. Wampanoag that did not convert were increasingly coerced to move up-island (Manning 2001). It was not until 1663 that sachem Mittark of Aquinnah converted to Christianity. Tribal members in Aquinnah, apprehensive regarding Christianity, met Mittark's conversion with resistance. He was banished for three years until returning as preacher and sachem in 1666.



At the middle of the 17th century the change in the landscape from one of woodland occupied by hunter-gatherers to woodlands with larger and more numerous fields was well underway. The woodlands on the island as a whole changed from the cedar-beech forests that Brereton had described in 1602 to predominantly oaks, evidenced by buildings with oaken roof-boards as early as 1658. Using oak for building framing suggests that the softer and easier to handle cedar and pine wood was exhausted (Mayhew 1956). However, the influence of European settlers was delayed in Aquinnah compared to the rest of the island as Aquinnah remained isolated from the rest of the island, the "south road" only a footpath and poorly developed.

On Mittark's death in 1683, his son, Josiah Mittark, defied the tribal covenant to maintain native lands in native hands and, with the help of Matthew Mayhew, sold "Gay Head Neck" to Thomas Dongan, the governor of New York and Earl of Limerick (DCRD 4:128). Despite this change in ownership, Aquinnah remained occupied solely by indigenous people. The Wampanoags became tenants of their ancestral lands and leased 40-acre parcels from the absentee Earl in exchange for quitrents as well as a symbolic quitrent in the form of ears of corn (Banks 1966).

During the late 17th century as European settlement was expanding, the English settlers of Chilmark began purchasing leases for pastureland from Aquinnah Wampanoag and

claiming land leases to satisfy unpaid debt, whether real or fabricated. This practice stopped in 1711 when the Society for the Propagation of the Gospel in New England (The Society) purchased Aquinnah from Dongan and built a ditch between Chilmark and Aquinnah, planting it with thorny bushes (Banks 1966, DCRD 2:311)). The Society's purported aim was to protect the Wampanoags from English encroachment while at the same time generating revenue by leasing land to settlers. To turn a profit for the Wampanoags the Society leased 400 acres (East Pasture) to Ebenezer Allen in exchange for 60 sheep, 400 lambs, 6 oxen, 6 cows and 3 horses (Banks 1966). The tribal members were not in unanimous agreement to the lease. The Society and the tribe came to an agreement in 1727 to lease an additional 400 acres of East Pasture to Allen, in total 800 acres of the "*best grassland of any of that size on Martha's Vineyard*", in exchange for sole use of the remainder of Aquinnah by the Wampanoags (DCRD 4:199, 4:242, Railton 1993). This agreement left the locus under continuous use by the indigenous people of Aquinnah without their having explicit ownership.

During this period of oversight by the Society, Aquinnah (with the notable exception of East Pasture) remained divided into three large areas: South Pasture, North Pasture, Middle Place. These were used in common for hunting, planting, and harvesting. Small areas were claimed as homesteads by families within these larger tracts, with boundaries defined by stone walls. The locus comprises a portion of South Pasture, Amos Place, Solomon Place, Gershom Place and various other smaller homesteads.

Deeds describe "Amos Place" as belonging to Elisha Amos (Ianoxoo), an "*Indian man of Chilmark*" (DCRD 8:203) born in 1704 and married to Rebecca Suncansin, a descendant of Ompohhunnit, the eldest son of Mittark. In a 1776 petition to the General Courts, several Wampanoags claimed Elisha Amos (Ianoxoo) unlawfully acquired some 200 acres in Gay Head and in his will deeded them to his nephew, Henry Amos (DCRD 9:735). Amos was allegedly notorious for his deceptive land deals and was sued in court for "*many appalling crimes*" (Mandell 2000).

The Solomon Place is ascribed to Solomon Hosuit, son of Jonah Horsewit, an Anabaptist preacher in Aquinnah in 1733 (Pierce & Segel 2016). Solomon Hosuit had a large tract of land in Aquinnah that was later called "S*olomon's Field*" (Pierce & Segel 2016, p. 366). Solomon apparently used some portion of his acreage to grow corn, filing a suit against other "*gayheaders*" for cutting 40 shillings worth of corn from his fields. There might have been some confusion: Jeremiah Sowamog had chosen a lot for the "Gay Header's" use that was next to Solomon's lot, or part of it (SF#144020 in Pierce & Segel 2016 p634). This suggests that Solomon's Place and Amos Place were not used by the families in their entirety and were from time to time designated to other tribal members to work.

The Gershom Place, a small stonewall enclosed homestead, is named for the Gershom family of the 17th Century, previously of Chilmark. Gershom Wompanummoo, born 1665, married Sarah Amos and had 5 children, beginning a lineage of many misfortunes. One such Gershom was Patience (Wamsley) who married Joel Gershom in the late 18th Century. Patience was an herbalist, and some suspected her of practicing witchcraft. It was told she could shapeshift into the form of a bear and on her deathbed had been heard

pleading with the Devil. Her homestead is described as near a swamp and nearby a path leading from a pair of bars in Solomon's Place (DCRD 33:163).

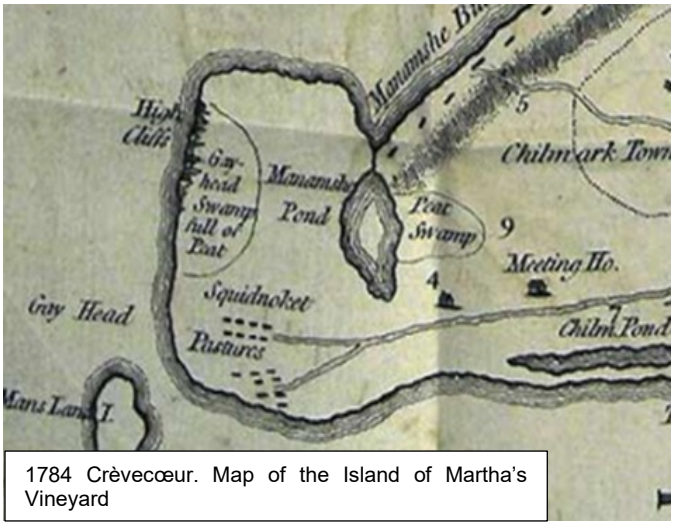
Two additional homesteads of considerable size on the locus are the Cook homestead, northwest of Witch Pond, and the Francis homestead, abutting Spider Hill on Squibnocket Pond. Jonathan Francis was the son of Nathan Francis and Sarah Amos of Aquinnah. He was born in 1789 and married Mary Ann Thompson. He was a farmer and had a homestead lot at Solomon Place on Squibnocket Pond. Jonathan Francis died of consumption in 1874 and left his estate to his wife Mary Anne. When she died in 1884, she left her land in Aquinnah to her sister Caroline L. Tillman who sold the estate to Ephraim Mayhew in 1887 (DCRD 78:14). Their homestead was a lot on the south side of Spider Hill and at Solomon's Place "at Squibnocket Pond near the Stone Wall and around a Lagoon," (1871 Land Set off lot descriptions, land later argued to be owned by Orland S. Mayhew in 1923). Their house appears to be the nearest known permanent dwelling place on the west side of Squibnocket Pond ever.

The Cook family homestead is traced back to Thaddeus Cook who was born in 1786 to Lewis Cook and Mary (Johnson) Gardner. Thaddeus married his cousin, Mary Johnson, and lived in Chappaquiddick and Aquinnah. In 1813, Thaddeus was paid for "overseeing the Crick" (Pierce & Segel 2016). Thaddeus and Mary had nine children. Thaddeus W. Cook, one of the later children, was born in 1819 and married Emily Salisbury. They worked 8.5 acres of land in Aquinnah and had three cows and 2 pigs. The land was divided between Thaddeus' daughters in the 1871 land divisions (Pierce & Segel 2016).

In 1746, Aquinnah Wampanoag tribe became wards of the Massachusetts Bay Province and were appointed three guardians to look after their lands (Province of Mass Bay 1746). As wards of the state, they could not sell their lands unless the sale was to another Wampanoag but they—and the guardians—could lease lands to non-tribe members (Massachusetts 1985). This arrangement caused a great deal of friction as farming became an increasingly important part of island economy. Sheep farming was at its peak prior to the end of the Revolutionary War with sheep numbering more than 20,000 prior to Grey's Raid in 1776 (Banks 1966). Between 1745 and 1767 the Wampanoag petitioned the general court thirteen times regarding land disputes or disagreements with the colony-appointed guardians (US Dep Interior 1985). The guardians reported 26 houses with 113 inhabitants living in Gay Head in 1747. Two years later, in a Wampanoag petition to the general court regarding their lands, "*165 Indians and their 400 cattle and an unknown number of sheep*" were reported residing in Aquinnah (page 643, Petition of Gay Head Property 1750). It was common practice for the Wampanoags to work a piece of land for a year, then leave it fallow for several years, and then burn it in the spring prior to planting (Manning 2001). Additionally, the assignment of family shares in common lands was still being practiced. In the 1749 and 1753 petitions, the Aquinnah Wampanoag argued that too much of their land was being leased to the settlers and neither the funds that they received, or the remaining land left was not sufficient to feed their animals or people (Archive Vol 31, Doc 643-644, Vol 32, Doc 356).

It can be imagined that the landscape on the locus during the mid-18th century was one of clean stonewalls around the Gershom Place, the Amos Place, and the Solomon Place with boundary walls projecting from Witch Pond like spokes on a wheel. Large boulders along the edge of Squibnocket Pond are visible from cleared hills planted with corn, beans, squash, and pumpkin. Small herds of sheep and cattle roam under the shade of large oak trees in the valleys and ridges of the Reservation. The Crèvecœur map of 1748 goes as far as showing the Squibnocket Pastures and not even the pond itself, indicating the importance of the land surrounding the pond as pasturage. Rafts of ducks may have been visible paddling about Squibnocket Pond. To hunt duck or "Quequecum" with a bow and arrow (Travers 1960), one need only crouch in the pockets of tall marsh grasses along the shore of Squibnocket or Lily Pond. The Des Barres map of the coast of New England indicates the settlement along the area of Old South Road as well as two homesteads on the Reservation, that of Cook and Francis. The Des Barres and Blaskowitz maps from the 1700's show Squibnocket Pond open to the ocean on the southern shore suggesting that a breach of the barrier beach occurred from time to time.

A significant change to the landscape in Aquinnah occurred during the 19th and 20th centuries. In a description of Dukes County in 1807, Dr. Freeman, a founder of the Massachusetts Historical Society, wrote that Aquinnah was excellent land "*destitute of trees*", many swamps, some with peat, and other "*springs of good water*". He described land broken by hills and without roads, boasting 26 framed houses and seven wigwams sheltering a total of 34 families and 142 persons. An estimated additional 100 Aquinnah Wampanoags were whaling at sea or were children living outside their homes as servants. Each person of Aquinnah, present or not, was considered a proprietor and entitled to land use equivalent to the pastorage of three sheep. Sheep, by this time, were no longer kept but a cow was considered equivalent to 6 sheep, an ox to 8 sheep, and a horse to ten. Corn was no longer a major



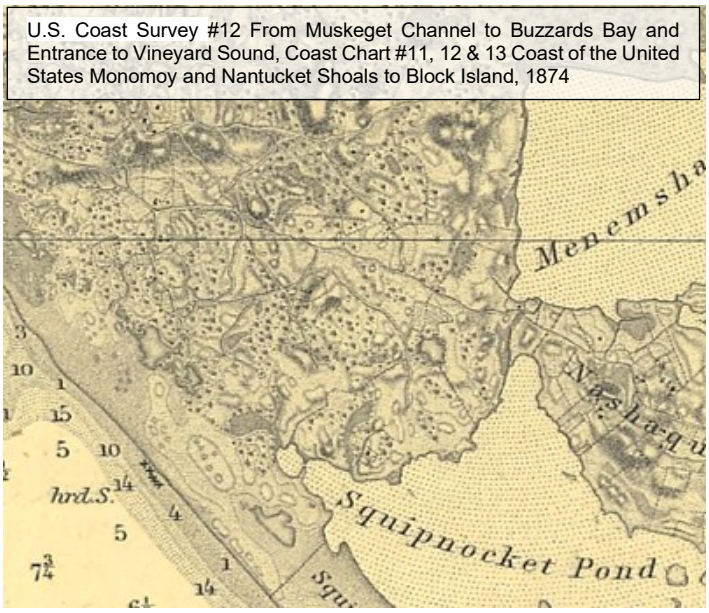
1784 Crèvecœur. Map of the Island of Martha's Vineyard

1781 Des Barres. Coast of New England from Chatham Harbor to Narraganset Bay

crop. Instead, Aquinnah Wampanoag kept gardens close to their homes. They continued to lease land to settlers. Fishing, harvesting cranberries and selling clay were main local industries supporting the Wampanoags (Freeman 1971). The stonewalls that increasingly appeared in Aquinnah during the 19th century were a result of field clearings, boundary marking of common lands, and the enclosure of smaller homestead gardens and crops from livestock (Foster 2017). In 1844 the Aquinnah landscape was depicted by Dr. Albert C. Koch in 1844 as one of remote pastoral beauty during a journey to cliffs of Gay Head. For a portion of his trip he was able to take the mail cart from Holmes Hole but once he arrived at Stonewall Pond or thereabouts he was forced to travel the remainder of the way to the cliffs on foot. Dr. Koch described Aquinnah as a "barren land" undulating with "great earthen upheavals from prehistoric times". "*Bare hills divided by somewhat more fertile valleys which were frequently broken by ocean inlets and small sand steppes. Yet those hills and desolate valley were separated into irregular fields by man-made walls of field stones, and here and there rose a house…. looked lonely without a garden of the shadow of a tree*" (Koch, translated by Stadler 1990).

The Gershom Place was occasionally plowed (Pierce & Segel 2016). One of Patience and Joel Gershom's children, Elizabeth, born in 1814, was possibly the subject of a Wampanoag tale of the "good Gershum girl" who is said to have drowned in a boat off Cuttyhunk with her drunken father while returning from New Bedford after having seen her betrothed off to sea. Jeremiah Pease wrote in his diary in 1837 that "the body of Betsy Gersham of Gayhead was picked up. She drowned last night" (Pierce & Segel 2016).

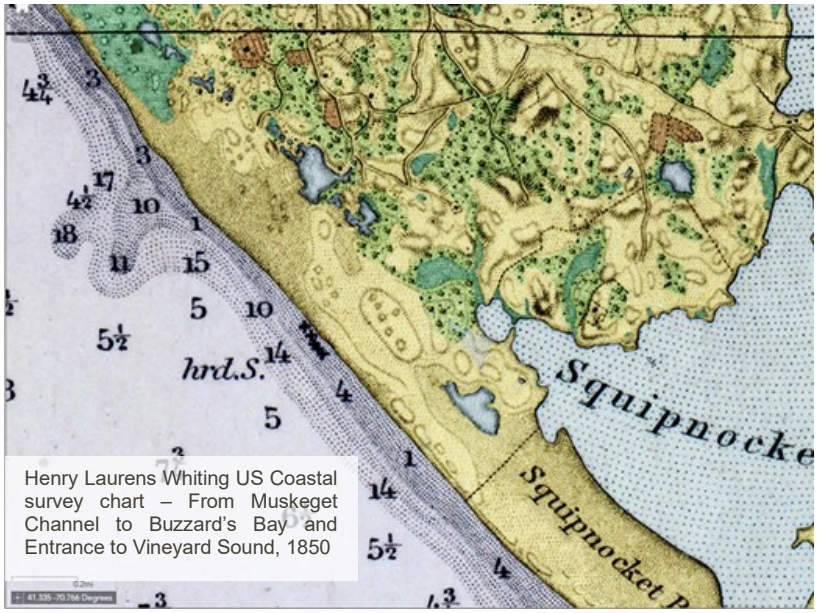
The State Road (not shown on the 1844 map) connecting Chilmark and Aquinnah was built in 1847 to reach the lighthouse. Prior to State Road, the only passage to Gay Head Neck was along the barrier beach between Stonewall Pond and the sea. The new road facilitated the migration of the Aquinnah from Old South Road to State Road (Manning 2001). A formal boundary line between Chilmarkers and land of the Wampanoags depicted in the 1858 map was delineated in 1855 by Jeremiah Pease, placing some of Squibnocket Pond in Chilmark. In his description of the dunes and barrier beach he described a wasteland of sand covering acres of meadow and village land (Railton 1993).



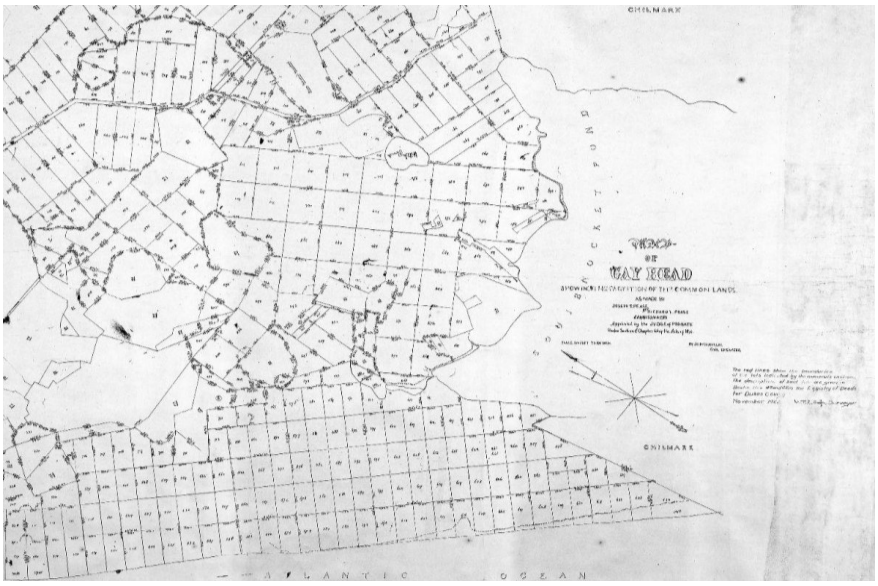
U.S. Coast Survey #12 From Muskeget Channel to Buzzards Bay and Entrance to Vineyard Sound, Coast Chart #11, 12 & 13 Coast of the United States Monomoy and Nantucket Shoals to Block Island, 1874

Throughout the 19th century the commonland practice of use and ownership used by the indigenous people remained a way of life. Hon. John Milton Earle, in his report concerning the "*Indians of the Commonwealth*" (House Doc. No. 215, 1862), wrote, "*Any member of the tribe may take up, fence in and improve as much of this land as he pleases, and when enclosed it becomes his own. The benefit to the subdivided and brought into cultivation, is considered a fair equivalent for its value in the natural state*" (Massachusetts 1871). In 1859 a census of all Wampanoags was taken and by 1862 Aquinnah was designated as a district.

Following this re-districting the Wampanoag lands were divided along terms established in an 1866 report completed by Richard Pease and the town of Aquinnah was subsequently established in 1870 (US Dept Interior 1985). Richard Pease noted in his report the use of land in Aquinnah, enumerating 4 sheep, 71 cows, 69 oxen, 51 pigs and an estimated 136 acres of tillage land growing mostly corn, potatoes, and hay. The census of 1870 indicated 227 people living in Aquinnah, the most common occupation being seaman, followed by seaman/farmer (Massachusetts 1871). The land at this time was described as irregular and abounding with fine pastureland with patches of trees and tilled land (Massachusetts 1871). One such patch was drawn on the 1850 Whiting map. This map also depicted the stonewalls dividing Amos and Solomon Place as well as the northern outline of the Gershom Place. All three areas were shown to be predominantly in pasturage with wooded areas occurring in the wetlands around Black Brook and elsewhere scattered in

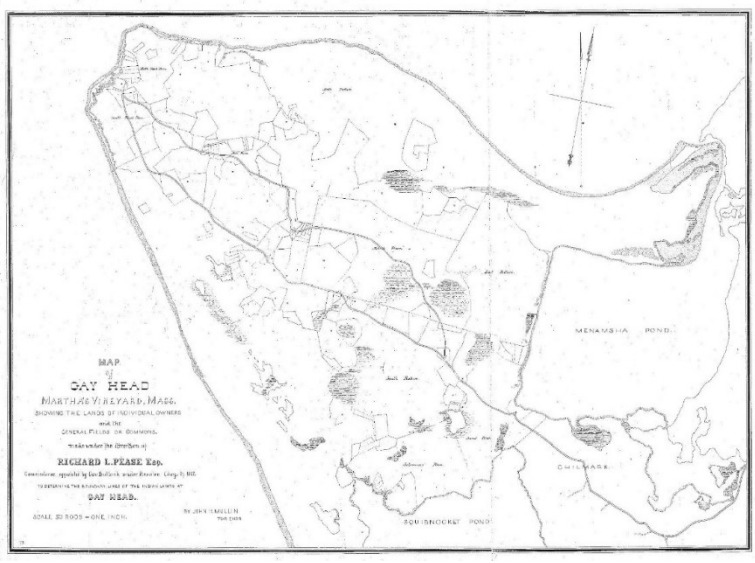


Henry Laurens Whiting US Coastal survey chart – From Muskeget Channel to Buzzard's Bay and Entrance to Vineyard Sound, 1850



small groves. The homestead of Francis, Spider Hill, Lily Pond, Witch Pond, the parabolic dune system, and the Herring Run are all visible landmarks on Whiting's map.

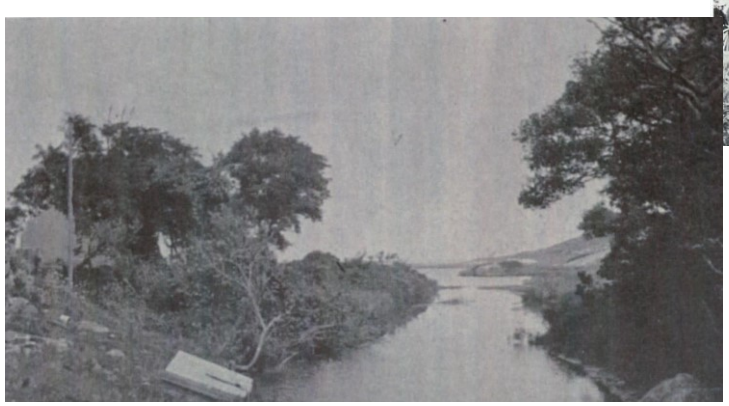
The Richard L. Pease 1865 Map of Aquinnah depicts the lands of individual owners and the general fields or commons (DCRD 5:34). It clearly defines the various divisions on the locus that were documented in the 1600's.



The Pease map shows the "Division of Indian Lands" of 1871 and depicts the homesteads as well as the division of Amos Place, Solomon Place and South Pasture indicating those were still considered common land, despite their lengthy usage by the same family members. Books 49 and 65 at the Dukes County Registry of Deeds describe the legal boundaries of the commonlands as well as individual lots run out within them.

The individuals assigned the lots on the locus are numerous and their names familiar, with Francis, Cook, Gershom among them. In the petition to partition the land in Gay Head once it became a town, Aquinnah Wampanoag named in the census were granted several lots representing the various subsistence needs, e.g., farmland, beach, woodland, swampland (DCRD Book 65).

In a description of Old South Road from 1929 it is clear that the land on the locus remained relatively treeless. A visitor standing near the intersection of State Road and the entrance to Old South Road could see Squibnocket Pond with "*two little promontories and a wading-place to a little island, all in sight. Sweeping the eyes south-westward, there rises first an abrupt hill...Indian hill...Bo-yer's hill and Tallman Hill and finally Spider hill follow to the west*" (Burgess 1926). The photo of the pavilion near the lighthouse and Herring Creek offers a glimpse of treeless Aquinnah in the late 19th century (Chamberlain 1977).



The Chilmark side of Squibnocket Pond was the location of the Squibnocket Club, an angling association. At one point around 1900 it was owned by Gardiner Green Hammond. Mr. Hammond was an outdoorsman and hunted waterfowl on Squibnocket Pond. Marshall Norton was employed as his gunning-master and was listed in the 1907 Chilmark directory as Mr. Hammond's manager at Squibnocket (Leavens 1963, Martha's Vineyard Directory 1907). Marshall Norton lived in Chilmark and was listed in 1918 as having permits to use seines to remove fish from Squibnocket in (Massachusetts 1918). Mr. Hammond not only owned land on the Chilmark side of the pond but also purchased land on the Aquinnah side from Harry F. Norton, from Marshall Norton, and from others (DCRD 104:151, 223). Harry F. Norton purchased land from Phebe Mitchell and Elisha Mosher who had both inherited the land from their father Ephraim Mayhew. Between the years of 1881 and 1890, Ephraim Mayhew purchased many of the Wampanoag set-off lots in Aquinnah, some situated on the locus. It is plausible that the hunting cabin that is still nestled within a dense shrub thicket was built by Mr. Hammond or Mr. Norton. The 1913 US Coast Guard Geodactic survey map indicates a relatively cleared landscape on the locus with trees occuring in small patches around Black Brook.

Ralph Hornblower Jr. purchased portions of the Reservation from Mr. Hammond and in 1926 was the successor to the Squibnocket Club, by this time called the Squibnocket Bass and Surf Club (Bramhall 2017). Between the years of 1929 and 1931 Hornblower expanded his holdings to include both sides of Squibnocket Pond, including portions of the Reservation, and created the Cape Cod Company. Hornblower was a businessman, philanthropist, amateur archeologist and a lover of wildlife (Gazette obituary). He and four fellow hunters spent a few days hunting the pond in December 1930, bagging 19 black ducks, 9 redheads, 2 baldplates, 3 bluebills, 1 canvasback, 1 mallard, 1 green-winged teal, 1 golden-eye, 1 bufflehead and 1 white-winged scoter (Shang 1930). Prior to his death in 1987, Ralph Hornblower Jr. sold land holdings owned by the Cape Cod Company to Alexander Forger, trustee for Jacqueline Kennedy Onassis, predominantly between 1978 and 1981. Mrs. Onassis named the property Red Gate Farm after the gate at the bars off State Road which opened onto the road to Squibnocket (depicted on the 1907 U.S. Coast Guard map). When she acquired the land the only structure on the property was a hunting cabin. Mrs. Onassis was the third person in the 1900's to amass much of the large tract of land that is the Reservation for the purpose of conservation and protection of the natural beauty of the land that had been molded and cared for by the Indians for thousands of years.

Treeless landscape surrounding the Old Squibnocket Club House across the pond from the Reservation (photo courtesy of Tony Rezendes)

Interior of the hunting cabin

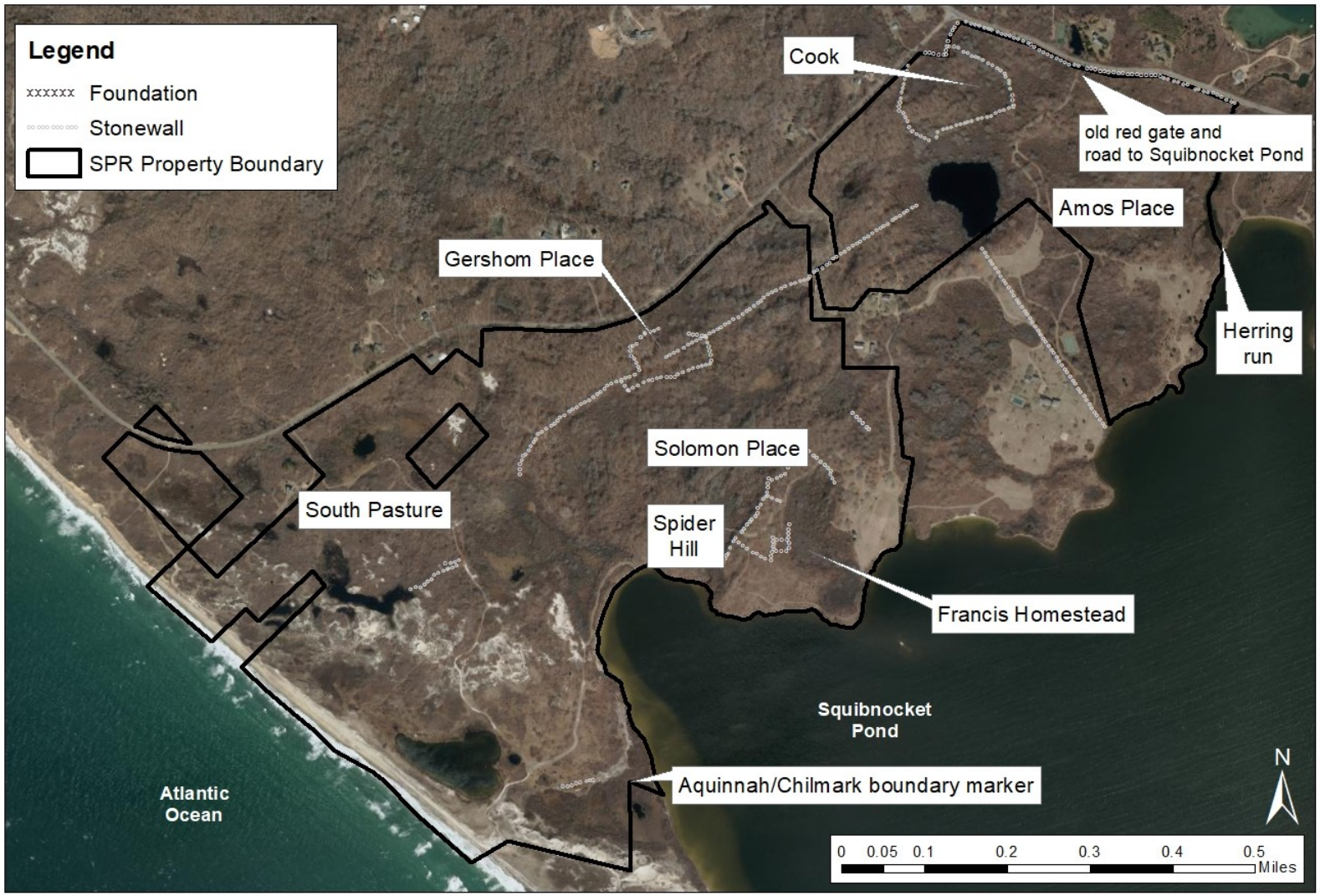
Under the insightful and caring eye of Albert Fisher from 1974 to 2014, the Reservation was managed for the seller's family for wildlife, plants, and scenic views, and his experiences provide unique insight and memories associated with the land. At the start of his tenure there were two roads on the property, one from State Road to Squibnocket

Pond where an osprey pole stands near the shore, and the other from Moshup trail to an old hunting cabin in the vicinity of the town bound. The current roads that wander through the property, culverts, and bridges that navigate wetland crossings were installed after the seller's house was built. Livestock was not present on the Reservation during this time period; vegetation was managed through mowing. The grasslands were mowed in season to maintain a dominant cover of forbs, and understory vegetation along the roadsides, and interior woodlands were mowed as needed. Mr. Fisher was fascinated by the large spreading oaks that are visible throughout the Reservation and took great care to trim and shape them so as to accentuate their broad winding branches. Mr. Fisher recalls discovering locust posts with remnants of fencing attached suggesting livestock were once in the area. Mr. Fisher recalls hearing the hunting cabin was leased to Dr. Orlando Mayhew in the early 20th century. At one time there was evidence of a smaller camp near the cabin on the shore of Squibnocket Pond where the goose keepers would stay during hunting season. The goose keepers would raise and care for live decoys (geese with a clipped wing) that would be set loose on corn in the field to attract migratory geese for the hunters to shoot. During the 40 years as caretaker of the land, Mr. Fisher became an avid naturalist and hunter: he remembers taking anywhere from 5 to 18 deer a season from the Reservation and hunting black duck on the pond with Augusta Hornblower: during one of the grassland mows by the Osprey pole, Mr. Fisher observed a box turtle; he once had a short-eared owl land next to his deer stand: at night a barn owl would call; and occasionally trumpeter swans were visible in the pond.

In 2021 the land surrounding the Onassis homestead was purchased by the Martha's Vineyard land bank and the Sheriff's Meadow Foundation from Mrs. Onassis' daughter, Caroline Kennedy, and son-in-law Edwin Schlossberg.

In the nearly 100 years since sweeping views of bare hilltops were witnessed from Old South Road, the land of the Reservation has filled in with a secondary woodland of oak, maple and beetlebung trees. The once open lands are now covered in dense brambles and impenetrable shrub thickets. While several areas of ancient woodland remain on the Reservation where trees were depicted on the 1855 Whiting map, they are difficult to discern from the secondary growth due to the continued use of woodlots well into the late 19th Century (Foster 2017). In 1969, Gale Huntington made reference to these dense brambles and the poison ivy surrounding Witch Pond which was said to contain cod-sized yellow perch (Huntington 1969). There is also a reference to Zack's Cliff once being isolated before tourists started arriving in Gay Head and sheltering the wild horses of Gay Head that existed into the early 1900's (Huntington 1969). A tramping group visiting the island in 1925 described the breathtaking beauty of the dunes and the utterly miserable time they had accessing them. One of the party "*climbed a tree in despair to discover if there was ever to be an end to the seemingly interminable horsebriar which tangled and impeded every step*" (Goell 1925). In this respect, little has changed on Squibnocket Pond Reservation as it stands today, as it stood when Gosnold arrived, and as it stood for many thousands of years prior.

Map 22: Historical features reference map of Squibnocket Pond Reservation, Aquinnah, MA



Sources: Office of Geographic and Environmental Information (MassGIS); aerial: USGS Ortho Imagery 2019
Note: Map prepared for planning purposed only, The Land Bank and Sheriff's Meadow are not responsible for the end-users interpretation of this map

Appendix I. Carrying Capacity and Beach Access Analysis

I. Metrics for Carrying Capacity

A. Calculation of potential carrying capacity of Squibnocket Pond Reservation barrier beaches.

i. The Squibnocket Pond Reservation management plan proposes an initial carrying capacity for the property of 125 visitors between end of May and October 1 with a maximum proposed increase of 50 people per day.

ii. The Reservation has 150,000 ft^2 of coastal beach. The proposed 125-175 visitor maximum range equates to a carrying capacity of 1 person per 1,200-857 ft^2 of the entire available beach utilizing access points A and B.

1. Access point A is 0.69 miles from south entrance trailhead and leads to a 30,000 ft^2 of coastal beach situated between private property. If all the beach use is limited to access point A the proposed carrying capacity would be 1 person per 240-171 ft^2.
2. Access point B is 0.75 miles from south entrance trailhead and 0.50 miles from the kayak landing. If all the beach use is limited to access point B the proposed carrying capacity would be 1 person per 960-686 ft^2.

B. Existing carrying capacity of similar island beaches for comparison.

i. Lambert's Cove Beach (Town of West Tisbury, north shore) supports 500 people per day on 39,400 ft^2 of coastal beach or 1 person per 78 ft^2. The Lambert's Cove Beach was used for comparison due to similar access (vehicle, walk-on and bicycle) and trailhead size (35). The trailhead for Lambert's Cove Beach is 0.20 miles from the beach.

ii. Long Point Beach (Trustees of Reservation, south shore) supports 200-250 people per day on 319,380 ft^2 of coastal beach or 1 person per 1,277 ft^2. This beach supports similar endangered species to the Reservation. The trailhead for Long Point is 0.13 miles from the beach and can hold an estimated 115 vehicles.

iii. Great Rock Bight Preserve (MV Land Bank, north shore) supports 85,800 ft^2 of coastal beach and an average of 100 people per day during the summer or 1 person per 858 ft^2. The 18-vehicle trailhead is 0.5 miles from the beach.

C. Trailhead proposed capacities:

i. Northern access trailhead.

1. Create 13 spaces for vehicles (3 spaces for kayak users to borrow a maximum of 8 kayaks provided in-season).
2. The proposed north trailhead provides access for an estimated 40 visitors (4 visitors per vehicle) who are restricted to the trails of the northern portion of the Reservation and up to 8 kayakers that can access the barrier beach and south entrance trails.

ii. Southern access trailhead.

1. Create 12 spaces for vehicles that would provide an estimated 48 visitors with access to the trails and beach of the south entrance parcels including beach parcels.

iii. Walk on and bicycle access.

1. If vehicle access accounts for 96 visitors to the Reservation an additional 29 visitors could access the Reservation by foot and bicycle.
2. A bicycle rack accommodating approximately 6 bicycles is proposed for each trailhead.

D. Analysis of beach carrying capacity findings

i. Limiting use of the beach on the Reservation to access point A results in a similar carrying capacity to Lambert's Cove Beach and permitting usage of the entire Reservation beach via access points A and B results in a similar carrying capacity to Great Rock Bight and Long Point Beach.

ii. The Reservation trailhead to beach distance is 3-5 times longer than Lambert's Cove and Long Point. The Reservation trailhead to beach access distance is more comparable to Menemsha Hills Reservation (1 mile) where beach use is not the primary activity. Due to the trailhead to beach distance on the Reservation we anticipate the usage of the Reservation to focus less on beach use and the beach use to focus more on through hiking, picnicking and the occasional swim.

iii. The distance from the trailhead to bus routes and dense residential neighborhoods contributes to the unlikely event that an additional 29 visitors will arrive on foot or bicycle and as a result we do not anticipate reaching full capacity on any given day.

iv. Access between the North and South entrances of the Reservation is limited as they are separated by private property.

a. Northern and southern trailhead portions of the property are not contiguous and access between them is restricted to kayaks.
b. Access by foot between the two trailheads along Moshup trail is undesirable, dangerous, and long (1 mile) and will be discouraged through language posted on land managers websites and in trail apps.

II. Evaluation of public and private easement access to the Reservation beach.

A. Other individuals' rights to beach access on the Reservation and to abutting private beaches via the Reservation.

i. Map 12 Lot 87 has rights to cross the Reservation on an exclusive use trail to access the existing trail that leads to access point A and use the Reservation beach.

Reservation Trail

Exclusive Use Trail

ii. Zack's Cliff Beach Association has dispersed 25 keys to its members who have the right to cross the Reservation on lot 85 along an existing path on the dune bluff to an access point to the north of access point A and travel north along the beach to their abutting beach lots. The access point in the easement has eroded beyond use. The plan proposes to create a sustainable access for beach easement holders to protect the cliff and dune by limiting trespassing along the bluff and to deposit easement holders further away from the public beach and closer to the easement holders beach area to the north.

iii. The grantor of the Reservation reserved an exclusive use easement on 11.6 acres of the property that includes 2 acres of beach.

B. Proposed public access to the Reservation beach.

i. Of the 96 visitors arriving to the entire Reservation by vehicle only 56 will

have access to the beach due to the non-contiguous nature of the trailheads. This includes:

1. A total of 48 visitors from 12 vehicles with an estimated 4 visitors per vehicle parked at the south entrance per day.
2. A total of up to 8 kayakers per day parked in 3 vehicles at the northern trailhead access that utilize the kayak launch/landing sites and the south entrance trail system.

III. Alternative analysis of beach access points.

A. Evaluation of existing beach access areas

i. Zack's Cliff access (existing)

1. Pros:
    a. Existing path.
2. Cons:
    a. Location of existing path on dune parallel to beach is limited by its proximity to cliff edge.
    b. Path on dune face has a slope greater than 45° and is too steep to support use.

ii. Access point A (existing)

1. Pros:
    a. Path on dune face is less than 45°.

    b. Existing use easement area
2. Cons:
    a. Boardwalks are required to cross low areas on trail subject to flooding.

iii. Access point C (existing)

1. Pros:

   a. Path on beach dune face is less than 35°.
   b. Existing path over dune.

2. Cons:
   a. Path on back-dune face was greater than 45° and would require dune-mat and dune fencing.
   b. Proximity to roads that are not proposed to be included in the trail system.

iv. Analysis of existing access points.

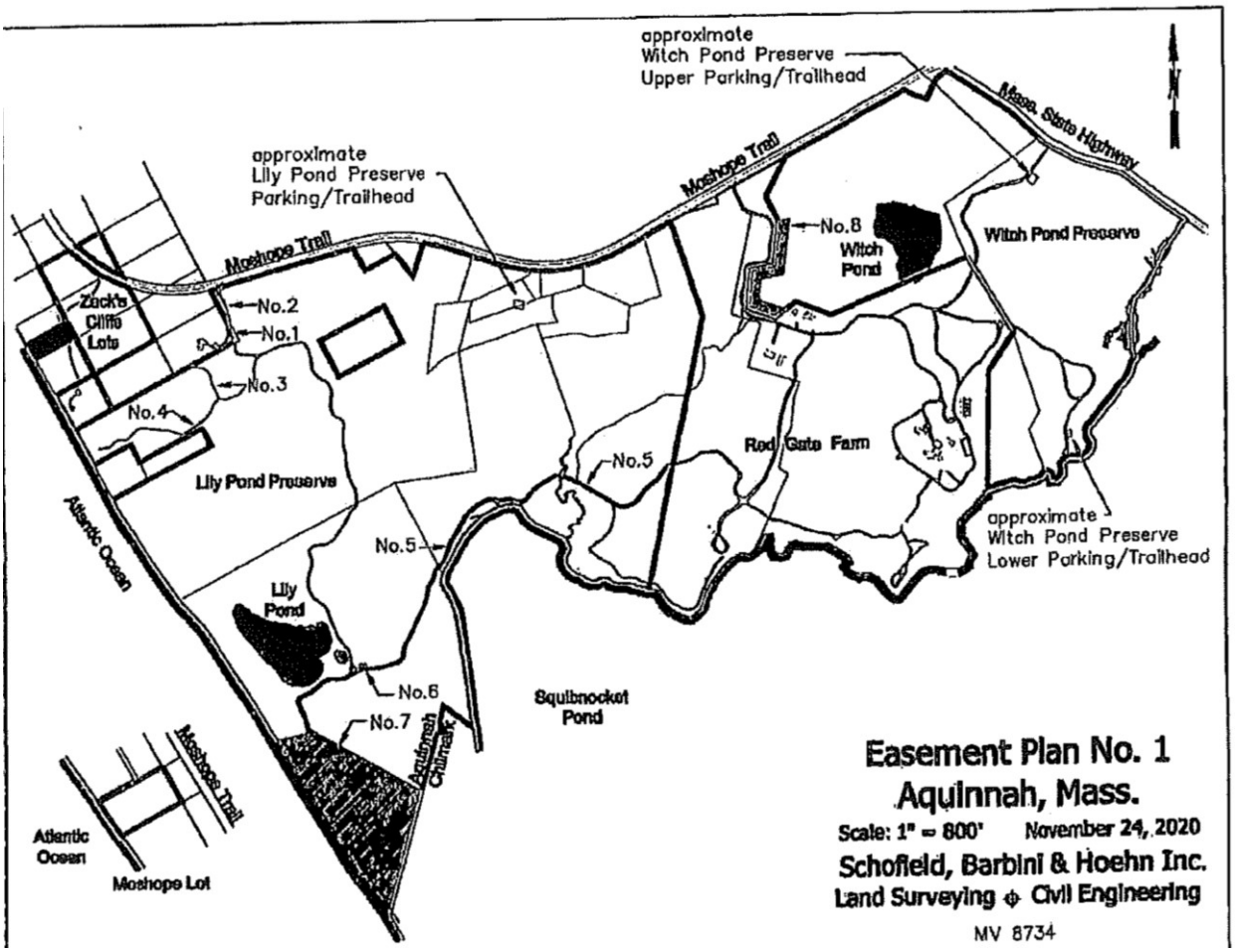
1. Access points C and Zack's Cliff were excluded as possibilities for public access the following reasons:
   a. Dune slope
   b. Potential trespass on roads not incorporated in the trail system and exclusive use area
   c. Requires additional trails through the dune habitat.
2. Access point A is proposed as an acceptable public access point to the beach on the Reservation for the following reason:
   a. Paths are existing and required by easement holders.
   b. Dune slope can be mitigated using dune mat and adjustable stairs.
3. Disperse use across more than one access point

B. Evaluation of proposed new beach access point B
    i. Toe of dune slopes
        1. Surveyed the length of beach to identify locations of gentle dune slope less than 45°
    ii. Wetlands in back dune
        1. Delineated wetlands
        2. Surveyed for rare wetland plants to avoid impacts to these plants
    iii. Access point B was sited based on:
        1. Location of lowest dune slope

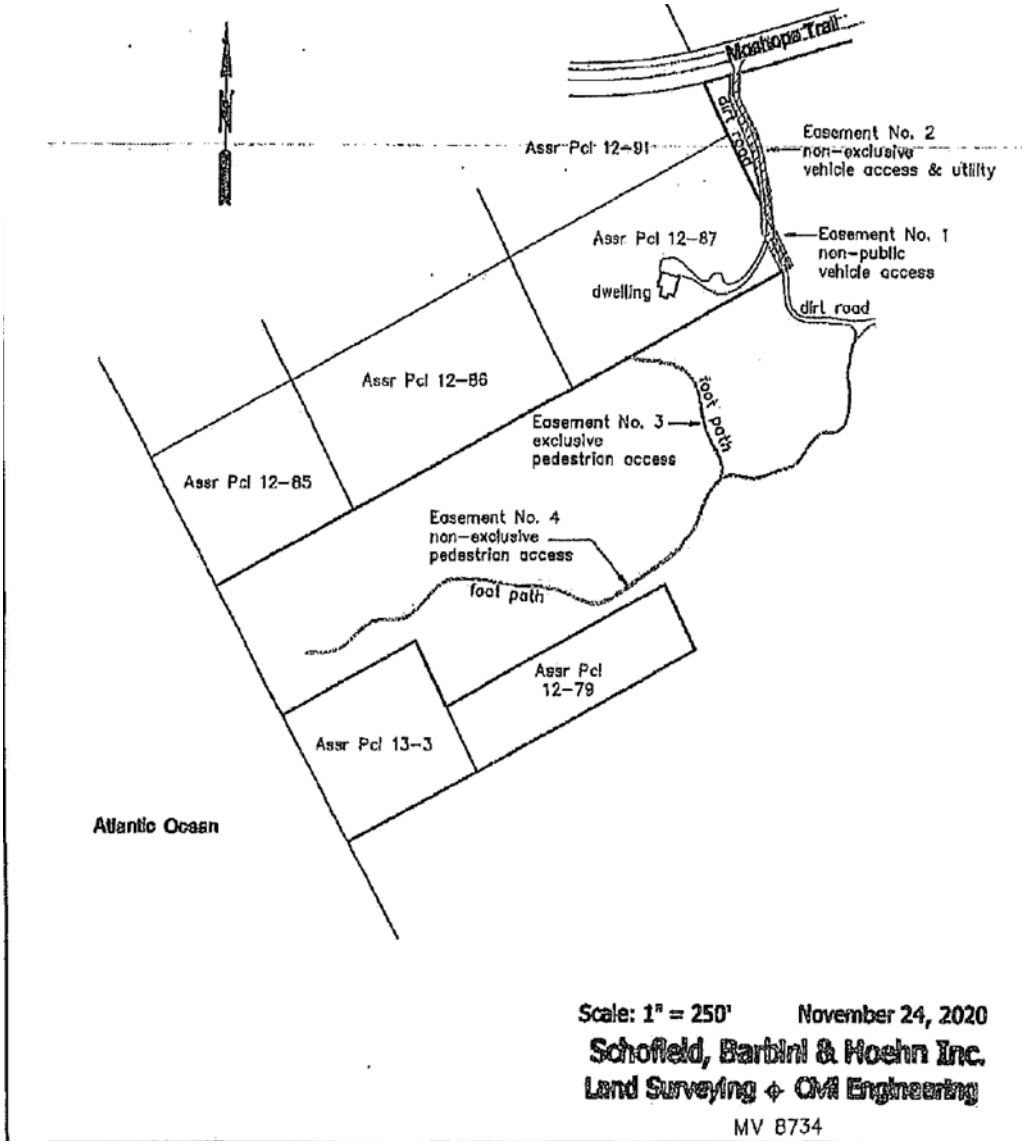
        2. Narrowest wetland crossing.

Appendix J. Easements

Map 23: Easement Map of Squibnocket Pond Reservation. Details of each specific easement can be found in deeds, Appendix B



Map 24: Detailed easement map of Zack's Cliff area.



Appendix K. Abutters

Map 25: Abutters map of Squibnocket Pond Reservation

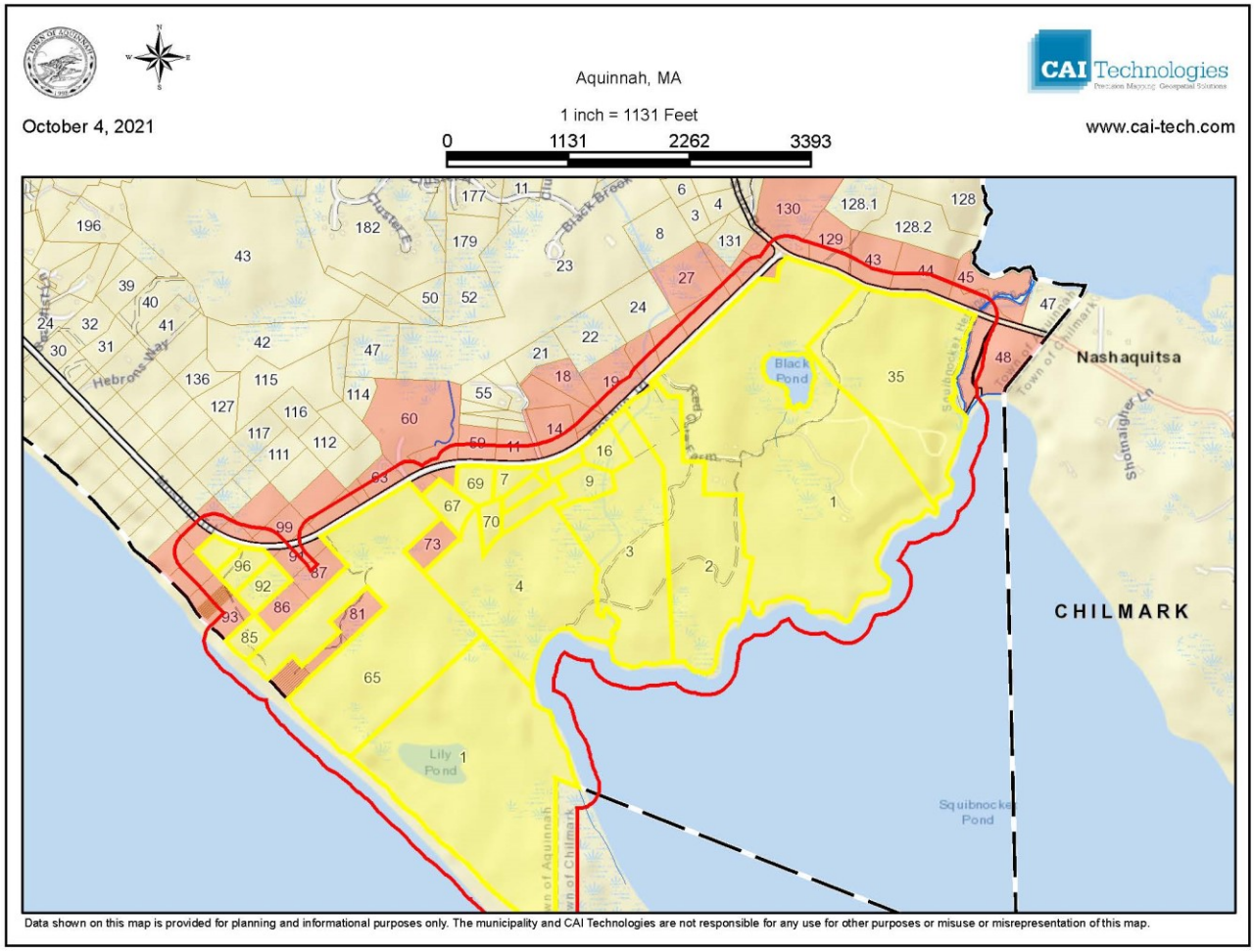


Table 11: List of Abutters or those individuals that are within 200 ft of the Squibnocket Pond Reservation boundary.

Parcel Number	Property Address	Owner Name	Co-Owner Name	Owner Address	Owner Address 2	Owner City	Owner State	Owner Zip
11-11	MOSHUP TR	VINEYARD CONSERVATION SOCIETY INC	VANDERHOOP JOSEPHINE EST OF	PO BOX 2189		VINEYARD HAVEN	MA	02568
11-13	MOSHUP TR	STUTZ MICHAEL & HEIDI B ETAL	TRIMMER/DALY & FISHEL	PO BOX 90		CHILMARK	MA	02535
11-14	MOSHUP TR	TALLMAN PETER HEIRS ETAL	C/O DAVID SPENCER	134 SQUIRE ST		NEW LONDON	CT	06320
11-15	MOSHUP TRAIL	SYLVIA ELEANOR EST OF	C/O VCS	PO BOX 2189		VINEYARD HAVEN	MA	02568
11-17	MOSHUP TRAIL	VINEYARD CONSERVATION SOCIETY INC		PO BOX 2189		VINEYARD HAVEN	MA	02568
11-18	5 NOMAN'S WATCH ROAD	CRAIG CYNTHIA S		626 TEMPLE ST		DUXBURY	MA	02332
11-18.1	1 NOMAN'S WATCH ROAD	GORDON DAN K	GORDON MAUREEN T	3 GREENLAWN AVE		WELLESLEY	MA	02481
11-19	9 MOSHUP TR	JMW MOSHUP LLC		20 WEST 33RD ST	7TH FLR	NEW YORK	NY	10001
11-20	9 MOSHUP TR	JMW MOSHUP LLC		20 WEST 33RD ST	7TH FLR	NEW YORK	NY	10001
11-25.1	MOSHUP TR	SILVA DONALD R	SILVA KELLY	298 DIGHTON AVE		TAUNTON	MA	02780
11-25.2	7 MOSHUP TR	SHAY DAVID M	SHAY ELIZABETH J	PO BOX 464		CHILMARK	MA	02535
11-26	5 MOSHUP TR	PRATT MARY ELIZABETH		5 MOSHUP TRAIL		AQUINNAH	MA	02535
11-27	MOSHUP TR	VANDERHOOP LEONARD F JR & BARBARA EST OF	C/O DON WORLEY	3213 CALLE DE DEBESA		CAMARILLO	CA	93010
11-28	MOSHUP TR	EVANS LAWRENCE B BEVERLY A		116 COOLIDGE HILL RD		CAMBRIDGE	MA	02138
11-29	1 MOSHUP TR	EVANS LAWRENCE B	EVANS BEVERLEY ANN	116 COOLIDGE HILL RD		CAMBRIDGE	MA	02138
11-30	472 STATE ROAD	HARRISON SCOTT TR	HARRISON KAREN N TR	20 HOPE DR		DARIEN	CT	06820
11-42	MOSHUP TR	EVANS LAWRENCE B	EVANS BEVERLY ANN	116 COOLIDGE HILL RD		CAMBRIDGE	MA	02138
11-43	415 STATE ROAD	LANE JUDITH		114 DENNIS WHITNEY RD		OAKHAM	MA	01068
11-44	371 STATE ROAD	HYDEMAN AIKO	C/O EDWIN HYDEMAN	333 EAST 43RD ST APT 401		NEW YORK	NY	10017
11-45	345 STATE ROAD	WAMPANOAG TRIBE OF GAY HEAD (AQUINNAH)		20 BLACK BROOK RD		AQUINNAH	MA	02535
11-46	345 STATE ROAD	WAMPANOAG TRIBE OF GAY HEAD (AQUINNAH)		20 BLACK BROOK RD		AQUINNAH	MA	02535
11-48	320 STATE ROAD	SHERIFFS MEADOW FOUNDATION		PO BOX 1088		VINEYARD HAVEN	MA	02568
11-49	320 STATE ROAD	SHERIFFS MEADOW FOUNDATION		PO BOX 1088		VINEYARD HAVEN	MA	02568
12-100	MOSHUP TR	AQUINNAH TOWN OF		955 STATE RD		AQUINNAH	MA	02535
12-102	MOSHUP TR	VINEYARD CONSERVATION SOCIETY		P.O. BOX 2189		VINEYARD HAVEN	MA	02568

12-103	MOSHUP TR	MARTHA'S VINEYARD LAND BANK COMMISSION	SHERIFF'S MEADOW FOUNDATION	PO BOX 2057	167 MAIN ST	EDGARTOWN	MA	02539
12-105	MOSHUP TR	VINEYARD CONSERVATION SOCIETY		P.O. BOX 2189		VINEYARD HAVEN,	MA	02568
12-106	MOSHUP TR	VINEYARD CONSERVATION SOCIETY		PO BOX 2189		VINEYARD HAVEN	MA	02568
12-107	MOSHUP TR	VINEYARD CONSERVATION SOCIETY		P.O. BOX 2189		VINEYARD HAVEN	MA	02568
12-108	MOSHUP TR	VINEYARD CONSERVATION SOCIETY		PO BOX 2189		VINEYARD HAVEN	MA	02568
12-59	MOSHUP TR	VINEYARD CONSERVATION SOCIETY INC		PO BOX 2189		VINEYARD HAVEN	MA	02568
12-60	1 TOWHEE LANE	WICE DAVID H	WICE BETSY W	1901 WALNUT ST APT. 1201		PHILADELPHIA	PA	19103-4643
12-61	15 MOSHUP TR	WHITCOMB ALEXANDRA NANCY		P.O. BOX 618		CHILMARK	MA	02535
12-63	4 TOWHEE LANE	OBERG KEITH	OBERG KATHLEEN	5707 DURBIN RD		BETHESDA	MD	20817
12-63.1	MOSHUP TR	M V LAND BANK COMMISSION		PO BOX 2057		EDGARTOWN	MA	02539
12-66	2 MOSHUP TR	CAMPER NAOMI GENDLER	CAMPER CLARKE DRYDEN	101 E KIRKE ST		CHEVY CHASE	MD	20815
12-68	MOSHUP TR	WAMPANOAG TRIBE OF GAY HEAD (AQUINNAH)		20 BLACK BROOK RD		AQUINNAH	MA	02535
12-73	MOSHUP TR	AQUINNAH TOWN OF		955 STATE RD.		AQUINNAH	MA	02535
12-79	MOSHUP TR	COURNOYER NOMINEE TRUST	MARTHA'S VINEYARD SAVINGS BANK TRT	PO BOX 984		WEST TISBURY	MA	02575-984
12-81	MOSHUP TR	MARTHA'S VINEYARD LAND BANK COMMISSION	SHERIFF'S MEADOW FOUNDATION	PO BOX 2057	167 MAIN ST	EDGARTOWN	MA	02539
12-86	MOSHUP TR	HARDING CHARLES D TR	C/O HARDING WILSON D	1 WAMPANOAG DR APT L-1		MASHPEE	MA	02649
12-87	4 MOSHUP TR	CCS SANCTUARY LLC	C/O MARILYN H VUKOTA ESQ	PO BOX 1270		EDGARTOWN	MA	02539
12-89	MOSHUP TR	VINEYARD CONSERVATION SOCIETY INC		PO BOX 2189		VINEAYARD HAVEN	MA	02568
12-90	MOSHUP TR	AQUINNAH TOWN OF		955 STATE RD		AQUINNAH	MA	XXXXX
12-91	MOSHUP TR	AQUINNAH TOWN OF		955 STATE RD		AQUINNAH	MA	XXXXX
12-93	MOSHUP TR	WELCH BERTA G TRUSTEE	MCGUIRE GEORGIANNA S TRUSTEE	10 RAYMONDS HILL		AQUINNAH	MA	02525
12-95	MOSHUP TR	SCHEPICI ANTHONY & WIGHTMAN JOHN C TRS	1 L MARE NOMINEE TRUST	PO BOX 779		CHILMARK	MA	02535
12-97	MOSHUP TR	VINEYARD CONSERVATION SOCIETY		P.O. BOX 2189		VINEYARD HAVEN	MA	02568

12-98	MOSHUP TR	MARTHA'S VINEYARD LAND BANK COMM	SHERIFF'S MEADOW FOUNDATION	PO BOX 2057		EDGARTOWN	MA	02539
12-99	MOSHUP TR	VINEYARD CONSERVATION SOCIETY		P.O. BOX 2189		VINEYARD HAVEN	MA	02568
8-129	437 STATE ROAD	COHEN DANIEL AKA COHEN DANIEL STUART	LEVY ALISON AKA LEVY ALISON ROSE	14 RHODE ISLAND AVE		PROVIDENCE	RI	02906
8-130	461 STATE ROAD	NOBLE JUNE C D	LINDA T HOBBS EXEC	245 TATE AVE		BUCHANAN	NY	10511
11-1	MOSHUP TR	RED GATE FARM LLC	ESI DESIGN - SCHLOSSBERG	11 FIFTH AVE, 12TH FL		NEW YORK	NY	10003
CHILMARK								
35-1.29		VINEYARD OPEN LAND FOUNDATION		PO BOX 4608		VINEYARD HAVEN	MA	02568
38-1		SQUIBNOCKET ASSOCAITES LTD	C/O SQUIBNOCKET BASS & SURF CLUB C/O EMILY BRAMHALL	215 NORTH ROAD		CHILMARK	MA	02535

Appendix L. Universal Access

The Recreational Opportunities Spectrum (ROS) classification for Squibnocket Pond Reservation is “Semi-Primitive Non-motorized”. The ROS is a model designed and used by the U.S.D.A. Forest Service to categorize conservation areas or universal access planning. The land bank framework for describing the accessibility of its properties is applied to Squibnocket Pond Reservation as follows.

Property Name: Squibnocket Pond Reservation
Size: 323 acres
Primary Activities: birding, hiking, kayaking, beach-going
Primary Elements: two trailheads, two sign stations, shelter, maintenance shed, two lavatories, 10+ benches, ± 2,500 feet of raised boardwalk, two sets of adjustable stairs, viewing platforms, kayak storage, launch and landing.
Primary Spaces: Squibnocket Pond, Witch Pond, Lily Pond, parabolic dunes, Atlantic Ocean, interior views of stonewalls, “wolf” trees, foundations grasslands and wetland features
Obstacles that Limit Accessibility: Topography, archeology, Aquinnah town zoning bylaws
Existing or Potential Alternatives: Gay Head Moraine
Proposed ROS Classification: semi-primitive non-motorized
Proposed Expectation of Accessibility: extremely limited

For all less-developed land bank properties, the Universal Access Plan states the following (Potter 1997):

> *Use outdoor recreation access routes to link primary elements and primary spaces within one-quarter mile of a trailhead or drop-off and use accessible recreation trails to connect other primary elements and primary spaces on all less-developed land bank conservation areas, but only if modifications are minimal, will provide continuous barrier-free access, do not require a fundamental alteration of the setting, and are not in conflict with natural and scenic resource protection goals.*

Universal access is feasible at the southern entrance trailhead and provides interior views of historic features. Due to topography, substrate, sensitive habitats and archaeology, the remainder of the Reservation is not suitable for Universal Access. Pursue potential for universal access parking with views of the Atlantic Ocean with the Zack’s Cliff beach association.