



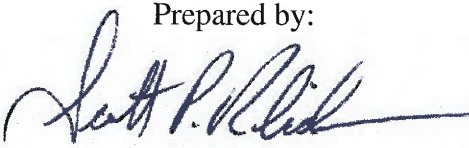
Natural Resource Services, Inc.

Written Narrative in Support of a
Request for Application to Alter a Freshwater Wetland

Single Family Home
Ocean Road; A.P. M, Lot 159-10
Narragansett, Rhode Island



Prepared for:
Robert and Tamarra Egan
421 Wickham Road
North Kingstown, RI 02852

Prepared by:

Scott P. Rabideau, PWS
Principal Biologist

February 28, 2022

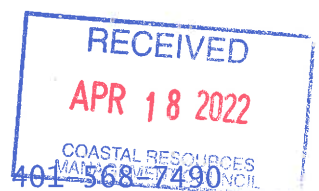


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Appendix A

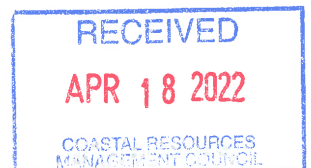
- USGS Topographic Map
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Appendix B

- Aerial Location Map
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Introduction

Natural Resource Services, Inc. (NRS) has been retained by Robert and Tamera Egan (hereafter referred to as the applicants) to assist with the preparation and submission of a Request for an Application to Alter a Freshwater Wetland to the RI Coastal Resources Management Council (CRMC). The applicant is proposing to construct a single family dwelling within a property located on Ocean Road. The construction of the home would require the alteration of freshwater marsh and its corresponding 50 foot perimeter wetland.

In addition to NRS, the applicant has retained DiPrete Engineering (DiPrete) for the surveying and engineering requirements of the project. They have prepared the site plan referenced throughout the narrative.

This narrative has been prepared pursuant to Section 2.10(B) of the Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast (hereafter the regulations).

Project Scope

The applicants are proposing to construct a single family home within the residential lot located on the northern side of Ocean Road. The 1.01 acre property consists of vacant undeveloped land, a majority of which is wetland.

NRS was originally retained by the applicants to delineate any freshwater wetlands present within or immediately adjacent to the project area. Edward Avizinis, PWS, CPSS performed the wetland delineation in December, 2018. This wetland edge was re-established by NRS in January of 2019. The flag series labeled A1 through A10 and B3-B7 on the DiPrete plans represent the limit of a marsh on the west side of the upland and a fringe of shrub wetland on the east side. This wetland receives a 50 foot perimeter wetland designation.

The development proposed is a 2 bedroom, single family dwelling. The property has access to town water, and the proposed connection is depicted on the plans. This location lacks access to town sewer so the home requires an onsite wastewater treatment system (OWTS) which has been designed by DiPrete and approved by the DEM. The DiPrete plans depict the home along with all the infrastructure and required elements. The appropriate Best Management Practices (BMPs) shall be utilized, including stormwater management on site via a rain garden and permeable pavers to construct the driveway. Screening vegetation comprised of Rosebay Rhododendron shall encircle the proposed development. The plans identify appropriate erosion controls in the form of a silt fence to be utilized throughout the construction. This project shall for the majority occur within the 50 foot perimeter wetland of the marsh. However 108 square feet of marsh shall be permanently disturbed within the scope of the project. The applicants provide for a wetland replication area double that of the proposed disturbance as required



by the regulations. The project as proposed has received approval in the form of a special use permit from the Narragansett Zoning Board.

Avoidance and Minimization

Section 2.10(B) of the regulations require Applications to Alter a Freshwater Wetland to include a written narrative which describes in detail the efforts made to avoid impacts to wetland functions and values. For any impacts which are considered unavoidable, the narrative must also address the efforts undertaken by the applicant to minimize these impacts to the maximum extent possible.

The assessment of impact avoidance and minimization must be made with a clear knowledge of the project's primary purpose. In this instance, the applicant is requesting to construct a single family home within the residential lot.

Avoidance

(AA) Whether the primary proposed activity is water-dependent or whether it requires access to freshwater wetlands as a central element of its primary purpose (e.g., a pier);

The primary purpose of constructing a home is not water dependent nor does it require access to freshwater wetlands as a central element of the primary purpose.

(BB) Whether any areas within the same property or other properties owned or controlled by the applicant could be used to achieve the project purpose without altering the natural character of any freshwater wetlands;

Due to the significant presence of wetlands within the property, there is no location which can achieve wetland avoidance. The entire property is within the marsh, or the 50 foot perimeter wetland.

(CC) Whether any other properties reasonably available to, but not currently owned or controlled by, the applicant could be used to achieve the project purpose while avoiding wetland alterations. A property is reasonably available if, in whole or in part, it can be acquired without excessive cost, taking individual circumstances into account, or, in the case of property owned or controlled by the same family, entity, group of affiliated entities, or local, state or federal government, may be obtained without excessive hardship;

There are no properties within the surrounding area which are reasonably available to the applicant and facilitate residential use of the property.

(DD) Whether alternative designs, layouts or technologies could be used to avoid freshwater wetlands or impacts on functions and values on the subject property or whether the project purpose could be achieved on other property that is reasonably available and would avoid wetlands;



There are no alternative designs or layouts which could be used to avoid wetlands within the property. Freshwater wetlands cannot be avoided as they encompass the entirety of the parcel. However the majority of the delineated marsh was avoided save for the 108 square feet of disturbance.

(EE) Whether the applicant has made any attempts (and if so what they were) to avoid alterations to freshwater wetlands by overcoming or removing constraints imposed by zoning, infrastructure, parcel size or the like;

The applicant has applied for and received relief for town setbacks. The front yard setback required by the town is 25 feet but the applicants have received a variance for a reduction to 16.8 feet in order to keep the structure of the home outside of biological wetland. A greater variance was not pursued as the land area south of the home is necessary for the placement of the OWTS.

(FF) Whether the feasible alternatives that would not alter the natural character of any freshwater wetlands on the subject property or on property that is reasonably available, if incorporated into the proposed project would adversely affect public health, safety or the environment.

There are no feasible alternatives which would not alter the natural character of freshwater wetlands but would negatively impact public health, safety, or the environment.

Minimization

(AA) Whether the proposed project is necessary at the proposed scale or whether the scale of the wetland alteration could be reduced and still achieve the project purpose;

The project is necessary at the proposed scale. The 648 square foot footprint of the home has been sized to fit within the small portion of upland available. Although the project will require disturbance to the marsh, this is not for the footprint of the structure, but for the 10 foot setback for the construction and maintenance of the home. There is no way to minimize the wetland alteration while still achieving the project purpose.

(BB) Whether the proposed project is necessary at the proposed location or whether another location within the site could achieve the project purpose while resulting in less impact to the wetland;

As described in the avoidance section, the entire property is located within regulated wetland areas. There is one other location within the property that has upland soils but is regulated as 50 foot perimeter wetland, located along the eastern side of the property. Developing this location would require a wetland crossing, and would provide a similar amount of regulated upland. As such there are no other locations on the property which could further minimize impacts to freshwater wetlands.



(CC) Whether there are feasible alternative designs, layouts, densities or technologies, that would result in less impact to the wetland while still achieving the project purpose;

The current design minimizes impacts to wetlands to the extent practicable while still achieving the project purpose. The project has been limited to the necessary elements in order to fit the majority of the project into upland regulated as wetland. The plans utilize BMP's and erosion controls to minimize any impacts to the freshwater wetland. There are no design alternatives or technological improvements which would further minimize impacts to wetlands.

(DD) Whether reduction in the scale or relocation of the proposed project to minimize impact to the wetland would result in adverse consequences to public health, safety or the environment.

Reducing the scale or relocating the project would not result in adverse consequences to public health, safety or the environment. However, such a reduction or relocation of the proposed features would undermine the primary purpose of the project.

Mitigation Measures

In addition to the design features mentioned in the previous avoidance and minimization sections, a series of mitigation measures will be implemented to control for erosion and mitigate storm water effects.

Soil erosion and sedimentation control measures in the form of a silt fence shall encircle the limit of disturbance. The erosion controls shall be installed prior to construction and be monitored throughout. The design, installation and maintenance of these measures have been configured in accordance with the RI Soil Erosion and Sediment Control Handbook (2016).

Details on the construction and maintenance of the rain garden, to address storm water management, have also been included on the site plans. Plantings in the rain garden will be in accordance with the Rhode Island Coastal Planting Guide. The roof leaders shall direct water from the roof into the BMP. The rain garden has been designed to accommodate stormflow from the new residence. The proposed driveway shall be constructed using permeable pavers. These measures have been designed in accordance with the RI Stormwater Design and Installation Standards Manual (2015).

Screening vegetation will also be used to mitigate disturbance to wetland functions and values. Rosebay Rhododendron will be planted along the inner edge of the limit of disturbance within the regulated wetland areas. Once established these plantings will provide a buffer between wetlands and human disturbances. Screening vegetation can provide additional benefits to water quality and minimize erosion by slowing the flow of runoff and promoting infiltration before surface water reaches wetland.



The last mitigation measure shall come in the form of a wetland replication area. The disturbance proposed within the marsh is approximately 108 square feet. The applicants shall provide a replication area at a 2 to 1 ratio (216 square feet of replication wetland). The wetland mitigation area shall be created within existing perimeter wetland adjacent to the shrub fringe of the marsh. The replication area will be undercut to a foot below grade and filled with a mixture of loam and well decomposed compost. The area will then be planted with a mix of shrubs, similar to those present within the adjacent wetland including highbush blueberry and winterberry. The plan details more of the specific guidance's on plantings and topography, hydrology, and soil use. The area will be monitored by a qualified professional to ensure survival of the plantings for three years after the work is completed.

Freshwater Wetland Characteristics & Surrounding Environments

Topography

The property is generally flat across the majority of the property within the wetland. The two delineated areas of unregulated wetland are generally higher in grade by 1 to 4 feet.

Soils

Soil Type	Map Unit	Hydric
Stissing silt loam	Se	Yes
Water	W	Yes

The Rhode Island Soil Survey (2018) depicts the Stissing silt loam soil series, and water, within the boundaries of the subject property.

All of the mapped soils are considered to be a hydric soil which is generally indicative of wetland features. Stissing silt loam soils are generally marsh and shrub wetland fringe within the property, but are slightly over represented on the map of the property in comparison to NRS findings. The seasonal high water table and the slow permeability in the substratum make this soil poorly suited to community development.

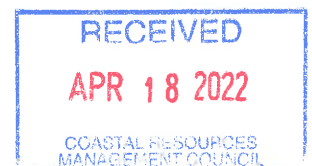
Water Resources

This property is located in the Narragansett Bay watershed (HU10), and the Pettaquamscutt River subwatershed (HU12). There are no flowing waterbodies located within the property.

Wildlife Habitat

Flora

- Red maple (*Acer rubrum*)
- Green briar (*Smilax rotundifolia*)



- Multiflora rose (*Rosa multiflora*)
- Black cherry (*Prunus serotina*)
- Winterberry (*Ilex verticillata*)
- Oriental bittersweet (*Celastrus orbiculatus*)
- Privet (*Ligustrum obtusifolium*)
- Common reed (*Phragmites australis*)
- Sensitive fern (*Onoclea sensibilis*)
- Grape (*Vitis sp.*)
- Highbush blueberry (*Vaccinium corymbosum*)
- Japanese honeysuckle (*Lonicera japonica*)
- Willow species (*Salix sp.*)
- Shadbush (*Amelanchier canadensis*)
- Japanese holly (*Ilex crenata*)
- Goldenrod (*Solidago sp.*)
- Morrows honeysuckle (*Lonicera morrowii*)
- Arrowwood (*Viburnum dentatum*)

Fauna

The subject property is composed of a mix between Phragmites marsh, deciduous shrub dominated wetland, and deciduous shrub dominated upland.

There were a few features observed throughout the property which provided evidence of wildlife use, or useful habitat features. Due to the seasonal timing and daytime temperatures only a few species were directly observed within the site visit. Direct observations included an eastern cottontail, a species of hawk (unidentifiable), and 7 red winged black-birds. The cottontail was observed within the brush of the upland along the roadway, the hawk circled the marsh numerous times over the habitat assessment time, and the red-winged black birds perched within the upland and wetland shrubs. Additionally, a white throated sparrow and Carolina wren were identified via their calls from somewhere in the shrub wetland. A number of other passerines were observed flying over the marsh, but their calls could not be distinguished due to the wind and noise create by the common reed, as well as some noise generated from the roadway.

Indirect observation of species included white tailed deer tracks within the shrub upland and wetland of the property. There were only a few identifiable habitat features within the property. *Phragmites* marsh dominates the wetland and provides little habitat value to the native fauna. The dense shrub fringe found along the eastern side of the property provides better habitat opportunities including resting and escape cover for small mammals and birds. There are also more berry producing shrubs including highbush blueberry, winterberry and shadbush for mammals and bird species.

Freshwater Wetland Characteristics

NRS was originally retained by the applicant to delineate the freshwater wetlands within the subject property in December of 2018. This field work was completed by



NRS staff biologist Edward Avizinis, PWS on December 12th. Two wetland flag series, A1-A10 and B1-B13, was established depicting the limit of the marsh. The end of the B series delineation strayed off property. The existing conditions plan prepared by DiPrete accurately represents the NRS delineation within the project area.

NRS staff biologist Hannah Chace conducted an on-site habitat assessment on February 15th 2022. The worksheet and graphic included in Appendix B provide a description of the habitat types present within the property. These include the common reed dominated marsh, shrub dominated wetland, and shrub dominated upland.

It should be mentioned that at the beginning of this project, in 2018, a portion of the marsh still existed as a pond. Historic aerial photographs depict what exists presently to be marsh to have been a pond.



1939 Aerial



1972 Aerial

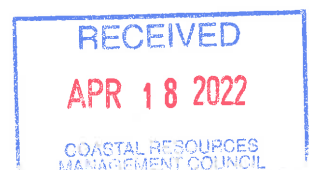
However, over time this area has shifted to a marsh system, dominated by *Phragmites australis*. The 2008 aerials depict the beginning of this transformation, and every subsequent year the open water area has become smaller. The spring 2021 aerials do not show any location which does not have common reed present.



2008 Aerial



Spring 2021 Aerial



Anticipated Impacts – Wildlife Habitat

As proposed, the project will result in the permanent alteration of marsh and 50 foot perimeter wetland. Screening vegetation is proposed along the entire limit of disturbance as a visual barrier for the homeowner. Once fully established, the vegetation will also help to attenuate visual and auditory impacts generated from the permanent human habitation within the property.

Post construction, there will be a direct loss of natural habitat available for wildlife feeding, resting, breeding and escape cover, especially within the 50 foot perimeter wetland, as well as a small portion of marsh. However, as the marsh has a significantly lower habitat value compared to the shrub wetland, the replication area shall be created adjacent to the shrub wetland in order to mitigate some of this loss of habitat. Although this replication area shall occur along the edge of the roadway, it shall provide higher quality habitat than attempting to replicate wetland adjacent to the phragmites marsh. Additionally, there will still be shrub habitat within the 50 foot perimeter wetland which shall remain untouched along the eastern side of the property, further from the roadway. Although there was only a small amount of traffic along the roadway at the time of the habitat assessment, the roadway does receive high levels of traffic during the warmer months due to the publicly accessible beach parking at the Point Judith Fisherman's Memorial and surrounding residential homes. As such the permanent habitation of the property should not present a significant change in human activity in the area.

This project shall afford the property owner reasonable use of his property while minimizing impacts to wildlife habitat on the property.

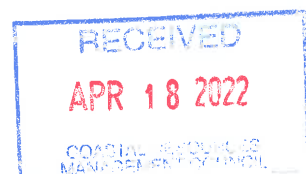
Recreation and Aesthetics

The wetland systems described in the previous section of this report provides minimal active and passive wetland associated recreational pursuits. Hunting, trapping and fishing are not appropriate activities within this wetland. Hiking is not supported due to the small property size and thick *Phragmites australis* dominated marsh. The aesthetic quality of the resource area does support some nature study, photography and birdwatching. The recreational pursuits are limited due to the small property size, thick marsh vegetation, and surrounding residential development.

The construction of a single-family dwelling within the 50 foot perimeter wetland should not result in a significant reduction in these pursuits. The highest quality wildlife habitat is within the shrub fringe of the marsh. This area shall remain undisturbed for the majority, and available for wetland related recreational activities.

Flood Protection, Groundwater and Surface Water Supplies, and Water Quality

The applicant is seeking to construct a single family home on the property. The project components consist of a 648 square foot residential structure, permeable



driveway, town water connection, OWTS, a rain garden and screening vegetation, and wetland replication area.

As proposed, the construction should not impact the capacity of the marsh to provide flood protection. The majority of activity is confined to upland areas regulated as wetland by the CRMC. However there will be 108 square feet of marsh disturbance. The engineers have developed a plan to provide a wetland replication area of 216 square feet in order to mitigate the lost wetland area and shall not diminish the capacity of the marsh to store flood waters.

The engineer has developed a stormwater management plan consistent with the RI Stormwater Design and Implementation Standards Manual. Stormwater will be managed on site by a rain garden. The rain garden is oversized to meet the Town of Narragansett zoning requirements for a 25-year design storm. The driveway shall be constructed using permeable pavement that shall be monitored after storms and inspected annually for deterioration. There should be no impact to any wetlands ability to provide water quality improvements as a result of the project.

As a result of the combination of these measures, there should be no significant impact to the surface or groundwater within the project area.

Conclusion

The applicant is seeking permission to construct a single-family residence on the 1.01 acre property located in Narragansett.

Due to the significant coverage of the marsh located within the property, there is no unregulated upland available within the property. This application to alter is being submitted to the CRMC requesting permission to alter a portion of the 50 foot perimeter wetland and marsh to allow for the construction of a house and driveway. The storm water shall be managed onsite via a rain garden, and the driveway shall be constructed using permeable pavers. Screening vegetation shall be placed along the edge of the LOD between the home and marsh. Erosion controls in the form of a silt fence shall be placed along the entire LOD. A replication area shall be created at a two to one ratio of the 108 square feet of disturbed marsh.

The applicant has demonstrated through the submission materials that the project does not represent a random alteration of freshwater wetlands. While the loss of marsh and its perimeter wetland is significant, the design and mitigation measures are such that the alteration should not rise to the level of undesirable as defined in the rules.

It is the applicant's position that based upon all of the information provided with this application that the project does in fact qualify for a Permit to Alter from the CRMC.

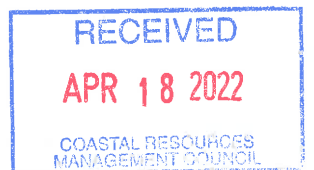


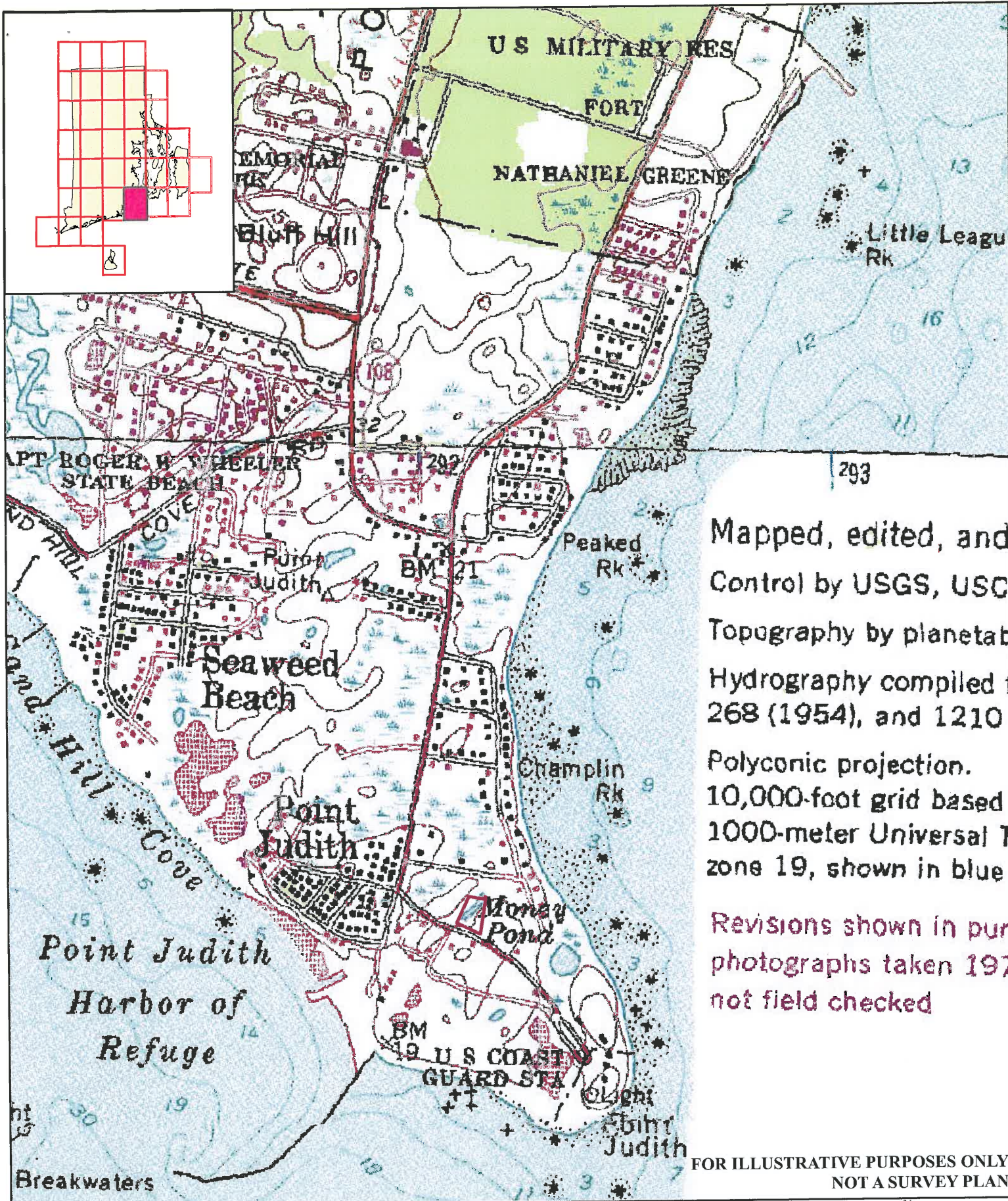
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Appendix A





Mapped, edited, and
 Control by USGS, USC
 Topography by planetab
 Hydrography compiled 1
 268 (1954), and 1210
 Polyconic projection.
 10,000-foot grid based
 1000-meter Universal T
 zone 19, shown in blue

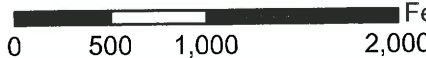
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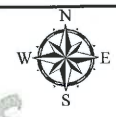
USGS Topographic Map
Ocean Rd
A.P. M, Lot 159-10

Narragansett, RI
 Narragansett Pier Quad Map

— Approximate Site Location
 USGS Topographic Series
 Contour Interval 10 Feet
 National Geodetic Vertical Datum of 1929



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USDA Soil Survey Map
Ocean Rd
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Narragansett, RI

— Approximate Site Location



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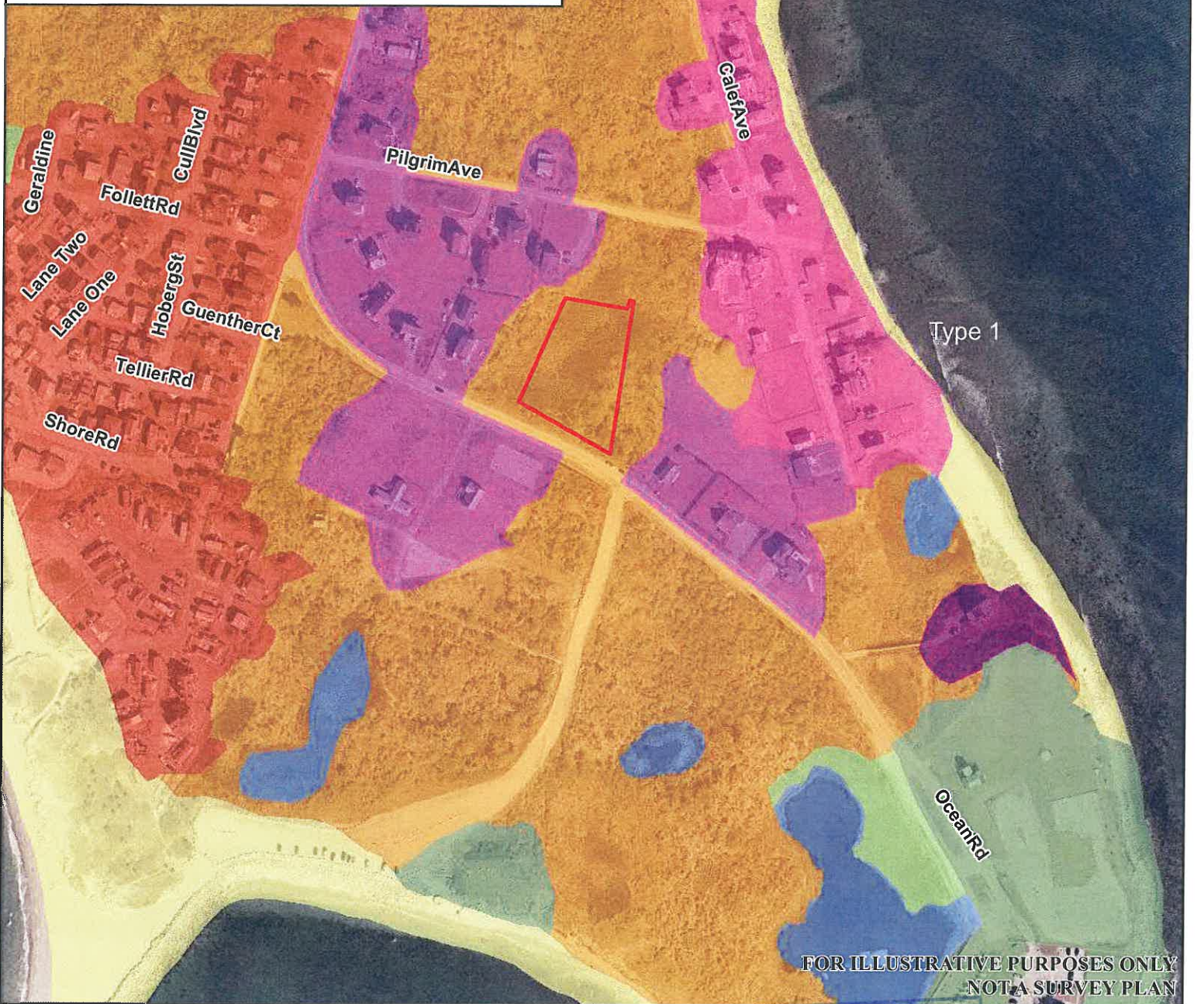


April 2021 aerial
RI DEM Mapping

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Legend

- Approximate Wetland Delineation
- Beaches
- Brushland (shrub and brush areas, reforestation)
- Developed Recreation (all recreation)
- High Density Residential (<1/8 acre lots)
- Low Density Residential (>2 acre lots)
- Medium Density Residential (1 to 1/4 acre lots)
- Medium High Density Residential (1/4 to 1/8 acre lots)
- Water
- Wetland



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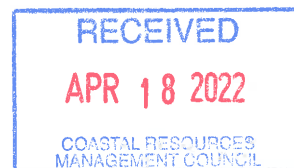
Landuse Map
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A.P. M, Lot 159-10
Narragansett, RI

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April 2021 aerial
RI DEM Mapping

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Appendix B





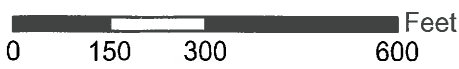
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Aerial Location Map
Ocean Rd
A.P. M, Lot 159-10

Narragansett, RI

— Approximate Site Location



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APR 18 2021

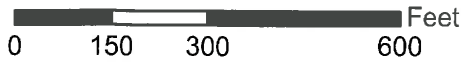
April 2021 aerial
RI DEM Mapping

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180 Park Ave EAST GUILF (001) 968-7490
1111 Main Street, Narragansett, RI 02882

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Legend

- Approximate Wetland Delineation
- Approximate Wetland Area
- DEM Approximated Wetlands

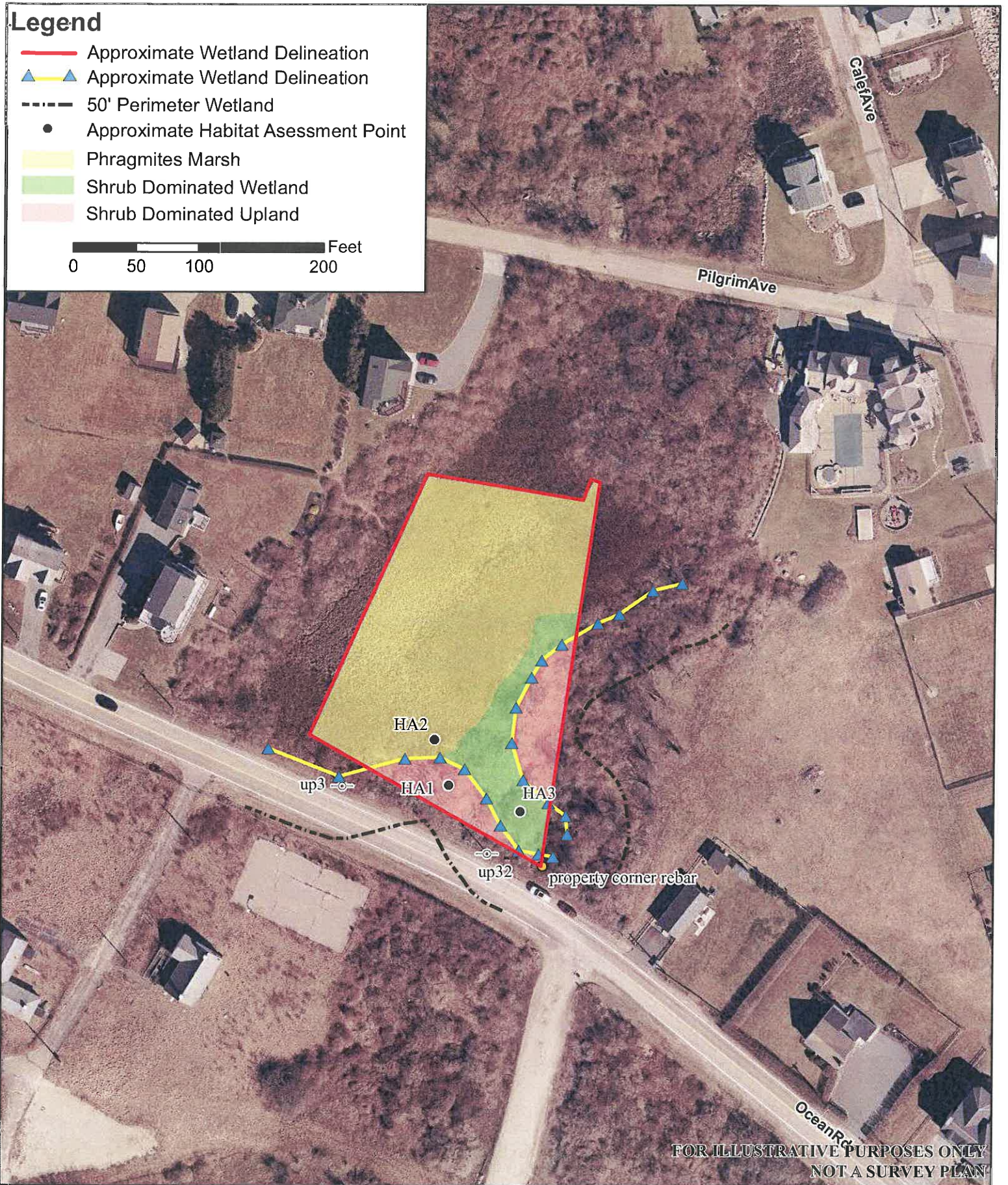
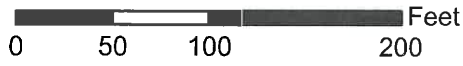


Wetlands Map
Ocean Rd
A.P. M, Lot 159-10
Narragansett, RI

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Wetlands
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Legend

- Approximate Wetland Delineation
- ▲ — ▲ Approximate Wetland Delineation
- - - - 50' Perimeter Wetland
- Approximate Habitat Assessment Point
- Phragmites Marsh
- Shrub Dominated Wetland
- Shrub Dominated Upland



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Habitat Assessment Map
Ocean Rd
A.P. M, Lot 159-10
 Narragansett, RI

Performed by:
 Staff biologist Hannah Chace - 2/15/2022
 Located using hand-held Trimble GeoXH

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HABITAT ASSESSMENT WORKSHEET

NRS Project #: Ocean Rd, A.P. M, Lot 159-10, Narragansett

Date: 2/15/2022 Time: 12:00 -2:00 Weather: 30°F

Cloud Cover: mostly clear sunny Observer: Staff biologist Hannah Chace

Overall throughout wetlands on property

- In watershed of public drinking water supply?
 - No
- Any existing development on-site?
 - None
- Surrounding upland development (i.e. residential community; commercial development; busy roadways; etc.).
 - Busy roadway in the summer, water access across the roadway. Marsh is surrounded by other residential development

Rule 10.02E.4.b – Recreation and Aesthetics

- Overall aesthetic value of wetland?
 - Moderate. Primarily made up of phragmites.

- Potential onsite for:

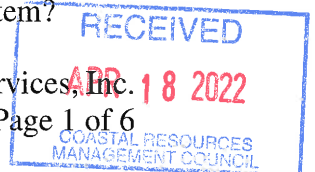
Hunting		No
Trapping		No
Wildlife observation	Yes	
Photography		No
Bird watching	Yes	
Swimming		No
Canoeing		No
Fishing		No
Hiking		No

- Public access to wetland?
 - The property is private, and surrounded by other private properties.

Wetland (HA2) – Common Reed

- At least seven (7) vegetative species listed.
 - Common reed (*Phragmites australis*)
 - Sensitive fern (*Onoclea sensibilis*)
 - Grape (*Vitis sp.*)
- Evidence of flooding?
 - Yes, surface water and evidence of flooding
- Any evidence of human disturbance present?
 - Yes, DOT fill along roadway
- Does the wetland extend off-site/ is it connected to a larger wetland system?

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- Yes, extends moderately off site
- Flowing waterbodies?
 - No

Wetland (HA3) – Shrub wetland

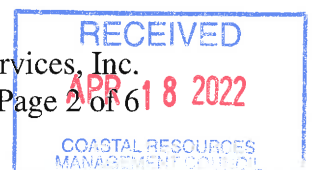
- At least seven (7) vegetative species listed.
 - Highbush blueberry (*Vaccinium corymbosum*)
 - Winterberry (*Ilex verticillata*)
 - Japanese honeysuckle (*Lonicera japonica*)
 - Willow species (*Salix sp.*)
 - Shadbush (*Amelanchier canadensis*)
- Evidence of flooding?
 - Yes, surface water and evidence of flooding
- Any evidence of human disturbance present?
 - Not in this location other than proximity to the roadway
- Does the wetland extend off-site/ is it connected to a larger wetland system?
 - Yes, extends moderately off site
- Flowing waterbodies?
 - No

Perimeter wetland (HA1)

- At least seven (7) vegetative species listed.
 - Japanese holly (*Ilex crenata*)
 - Border privet (*Ligustrum obtusifolium*)
 - Japanese honeysuckle (*Lonicera japonica*)
 - Multiflora rose (*Rosa multiflora*)
 - Goldenrod (*Solidago sp.*)
 - Grapevine (*Vitus sp.*)
 - Bittersweet (*Celastrus orbiculatus*)
 - Black cherry (*Prunus serotina*)
 - Morrow's honeysuckle (*Lonicera morrowii*)
 - Sensitive fern (*Onoclea sensibilis*)
 - Shadbush (*Amelanchier canadensis*)
 - Arrowwood (*Viburnum dentatum*)
- Evidence of human disturbances?
 - Yes, trash, brush cutting for test pipes along roadside edge.

Rule 10.02E.4.a – Wildlife and Wildlife Habitat

- A listing of observed and potential wildlife species; see attached
 - Observed
 - White tailed deer (tracks)
 - Eastern cottontail (scat)
 - Red winged blackbird (7)
 - Carolina wren



- Hawk Species (unidentifiable)
- Numerous passerines, hard to identify calls due to noise of phragmites and difficult to observe due to thick vegetation
- What type of wildlife species benefit most in this wetland? What features are available to support this determination? Place corresponding number next to feature:

1.) Birds; 2.) Small mammals; 3.) Large mammals; 4.) Reptiles 5.) Amphibians; 6.) Odonata 7.) Fish

Feature:

Tree cavities/nest holes: none observed

dead snags: none observed

rock crevices: none observed

flat rocks: none observed

Beaver lodges/dams: none

stone walls: none

organic debris/leaf litter: phragmites debris

Water soaked/rotten logs: none observed

overhanging branches: none observed

steep, dirt banks with nest holes: none

sphagnum carpet: none observed

emergent vegetation : primarily phragmites, 1

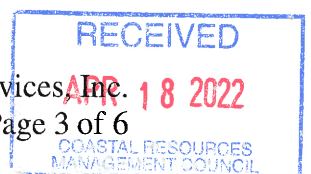
Nests observed: none observed

Extreme dense vegetation: dense phragmites as well as fringe of dense shrub, 1,2,3

- Are there travel corridors within the wetland or property? List exact location:
 - None observed

Rule 10.02E.4.c – Flood Protection

- Can the wetland temporarily store flood waters?
 - Yes
- Will the inflow of flood waters endanger surrounding upland development?
 - No evidence that flood waters would endanger surrounding development.
- Does the wetland currently receive waters from existing adjacent stormwater facilities?
 - None observed
- What is the hydrology of the wetland?
 - Flooded in the interior, seasonally flooded along the edges
- Will an influx of flood waters (as a result of the filling of a portion of the wetland) result in an increase potential for flood events in areas surrounding the wetland/ downstream?
 - No, there is no downstream of the wetland, however, filling large portions could increase the potential for flooding outside the wetland.

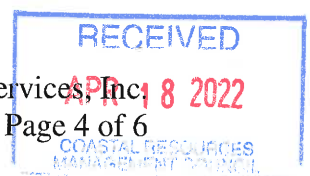


Rule 10.02E.4.d – Groundwater and Surface Water Supplies

- Is the wetland groundwater fed?
 - Yes
- Does the wetland receive surface waters from surrounding uplands or via a culvert?
 - Surrounding uplands and a culvert
- Does water flow out of the wetland or is it retained?
 - Retained

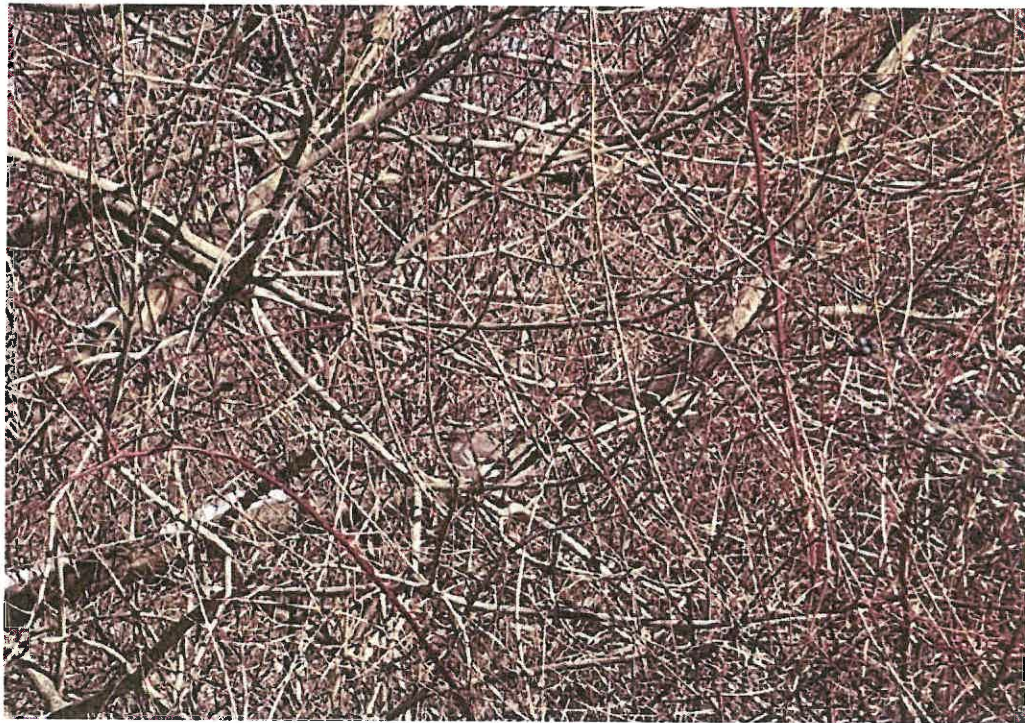
Rule 10.0E.4.e – Water Quality

- Evidence of human disturbances that negatively impacted water quality?
 - The significant expansion of the phragmites within the marsh is most likely partially due to the previous agricultural activity and expansion of residential development surrounding the area which was once a pond.
- Inflow of waters from culverts, stormwater runoff, etc. that may negatively affect water quality?
 - Yes, there is a stormwater runoff area which is directed to the marsh. The level of treatment is unknown but assumed to be minimal.
- Evidence of eutrophication?
 - Yes, the expansion of the phragmites could indicate eutrophication





Upland Vegetation



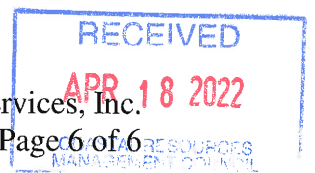
Bird within dense shrub wetland vegetation



Flooding within shrub wetland



Upland and Phragmites dominated portion of marsh



Appendix C





Natural Resource Services, Inc.

SCOTT P. RABIDEAU, PWS President and Principal Biologist

EXPERIENCE

President/Principal Biologist

1987–Present

Natural Resource Services, Inc., Harrisville, RI

- NRS is a private environmental consulting firm specializing in freshwater and coastal wetland studies in Rhode Island and Massachusetts. The company was started in 1987 and has been in continuous operation since that time. Experience within the company includes wetland delineations, designing replacement wetlands, restoring wetlands, wildlife habitat evaluations, permitting alterations through state and federal agencies, representation at public hearing and expert testimony.

Soil Scientist

1989–1990

Project Earth Team, Middlebridge, MA

- Project Earth Team was a volunteer program sponsored by the University of Massachusetts and the USDA, Natural Resource Conservation Service. The project required individuals to classify 1,000 acres of soils in Wareham, Massachusetts for the US Soil Conservation Service. Experience included both field work and aerial photo interpretation.

Wetlands Consultant

1986–1987

Drown and Rabideau Wetland Consulting

- This partnership was formed in 1986 as a Massachusetts entity. The private environmental consulting firm specialized in wetland delineations, wetland evaluations, septic system designs and perc tests. Experience with the partnership included wetland delineations and evaluations.

Manager of Faxon Farm

1982–1985

Lincoln School, Providence, RI

- The Lincoln School is a private K-12 girls school in Providence, RI. Faxon Farm is the urban school's off-site center for athletics. Experience at the school included managing a 32 acre environmental education center and athletic facility. Responsibilities included developing nature programs and managing wetland and upland habitat.

EDUCATION

M.S. Business Management

Jan. 1986

Lesley College, Cambridge, MA

B.S. Natural Resource Science

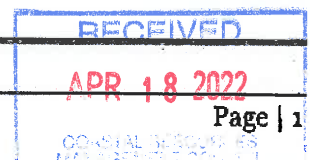
May 1982

University of Rhode Island, Kingston, RI

Graduate Credit, Soil Science

Jan. 1991

University of Massachusetts, Amherst, MA



CERTIFICATIONS

Senior Professional Wetland Scientist #1410

Society of Wetland Scientists

ELECTED POSITIONS

State Representative, District 60

1995-2002

RI General Assembly, Burrillville, RI

- Ranking minority member of House Committee on Environmental
 - Accountability
 - Ranking minority member of Committee on Judiciary
 - Ranking minority member, Joint Committee on Energy and the Environment
-

PUBLIC APPOINTMENTS

Judicial Nominating Commission

2014-Present

State of Rhode Island

- Appointed by Governor Lincoln Chafee. The JNC is responsible for vetting candidates seeking appointments to all state courts (Supreme, Superior, District, Family, Workers Compensation and Traffic). The commission meets a minimum of quarterly and as required during the year to fulfill the statutory mandate for providing the governor with qualified candidates for judicial vacancies.

Special Master, Superior Court

2009-Present

Tillinghast v. RI Dept. of Environmental Management

State of Rhode Island

- The court appointed the special master to act on its behalf to seek resolution of all matters in dispute between the defendant and the plaintiff. These matters are all of a technical nature related to freshwater wetland alterations.

Legislative Commission

2013-2015

Freshwater Wetlands Act Review

- Appointed to the commission as a small business representative. The commission held hearings and heard testimony on changes to the R.I. Freshwater Wetlands Act. The commission prepared a final draft of a bill to replace the current statute. The act was passed by the General Assembly and signed into law by Governor Raimondo in July 2015.

Vice Chairman, Conservation Commission

1983-1985

Town of Rehoboth, MA

Board of Sewer Commissioners

2004-2008

Town of Burrillville, RI

Chairman

2006-2007

PROFESSIONAL ORGANIZATIONS

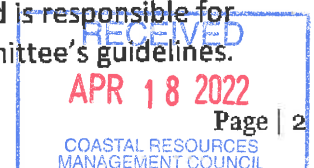
The Wildlife Society

1985-Present

Investment Review Committee Member

2013-Present

- The IRC meets on a quarterly basis to review the TWS Endowment Accounts and is responsible for adjusting the account allocations in conformance with the TWS Executive Committee's guidelines.



RI Association of Wetland Scientists

Charter Member

President/Member of Board of Directors

1993–1994

Treasurer/Member of Board of Directors

1992–1993

Soil Science Society of America

Society of Wetland Scientists

PHILANTHROPIC ORGANIZATIONS

June Rockwell Levy Foundation

2018–present

Trustee

RI Forest Conservators Organization

2001–2002

Board of Directors

Ocean State Power Scholarship Foundation

1995–2002

Board of Directors

Ocean State Power Community Grant Foundation

2001–2002

Board of Directors

EXPERT QUALIFICATIONS

Wetland Delineations, Habitat Evaluations, Wetland Permitting

- RI Department of Environmental Management
- Administrative Adjudication Division

Wetland Delineations, Habitat Evaluations, Soil Science, Coastal Permitting

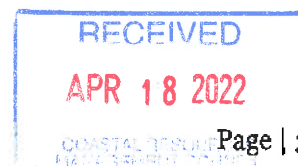
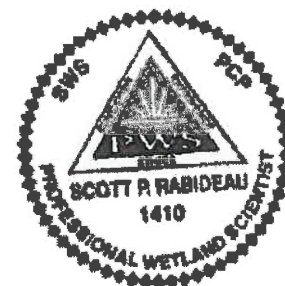
- RI Coastal Resources Management Council

Wetland Delineations, Habitat Evaluations, Soil Science

- Superior Court, Worcester County, Massachusetts
- Superior Court, Bristol County, Massachusetts
- Superior Court, Fall River, Massachusetts

Wetland Delineations, Habitat Evaluations, Soil Science, Wetland Permitting

- Superior Court, Providence County, Rhode Island
- Superior Court, Kent County, Rhode Island
- Superior Court, Newport County, Rhode Island





Natural Resource Services, Inc.

HANNAH CHACE
Wetland Biologist

EXPERIENCE

Wetland Biologist

6/2020 – Present

Natural Resource Services, Inc. Harrisville, RI

- **Field Work Experience:** Conducted field work including wetland delineations, habitat assessments, wetland restorations, buffer zone management projects and submerged aquatic vegetation surveys throughout Rhode Island, Massachusetts, and Connecticut;
- **Technical Writer:** Interpret plan sets and provide technical written documentation of impact avoidance and minimization techniques for written narratives submitted for permitting to DEM and CRMC.

EDUCATION

Bachelor of Science Degree, Environmental Science and Management

May 2020

Soil Science Minor

University of Rhode Island Kingston, RI

RELATED SKILLS

Wetland delineation; vegetation identification; avian, herp and mammal identification; aerial photograph interpretation; working knowledge of GPS; utilization of the ESRI ArcGIS software and manipulation of RIGIS and MassGIS data; inventorying of wildlife and vegetation.

P.O. Box 311 Harrisville, RI 02830

401-568-7390

