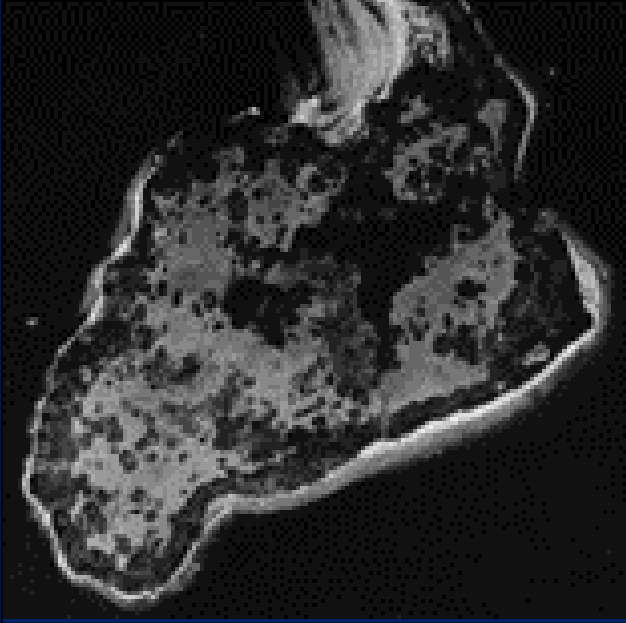


Henry L. Ferguson Museum Land Trust Ecological Community Parcel Compendium

Appendix B of Fishers Island Biodiversity: Rare Species and Natural Communities of the Henry L. Ferguson Museum Land Trust



New York
Natural Heritage
Program

Henry L. Ferguson Museum Land Trust Ecological Community Parcel Compendium

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Communities of the Henry L. Ferguson Museum Land Trust

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New York Natural Heritage Program

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Cover photos: Top left: Island Pond in mid-1920s. Top right: Island Pond in Betty Matthiessen Wildlife Sanctuary 2020 with ecological community delineations and Observation Points; Bottom: Maritime beech forest on Island Pond in Betty Matthiessen Wildlife Sanctuary at point 02.01.

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Henry L. Ferguson Museum Land Trust Parcel Compendium

Introduction and Compendium Structure

This Compendium is organized numerically by Land Trust parcel number (e.g., Parcel 1 to Parcel 56), then alphabetically for letter-coded and named parcels (e.g., Borland and Haver, CC1 and CC2, Cedar Ridge Parcel, Parcel E-01 to E-08). Parcels that share a boundary, or are proximate to each other, are often grouped together under the lowest parcel number of the group. For example, Parcel 4, Parcel 36a, and Parcel 36b in the L. F. Boker Doyle Sanctuary are grouped under Parcel 4 in this Compendium.

For each Land Trust parcel included in this Compendium we provide the following:

1. A map zoomed-in to the parcel showing delineated ecological communities (labeled with community codes) and numbered Observation Points on a 2020 air photo base layer.
2. For several parcels, we included a mid-1920s black and white air photo zoomed-in and cropped to the same scale as the 2020 map in #1 above.
3. Observation Point Field Form with vegetation structure and composition data collected in the field. Plant lists are presented in a top-down approach as follows (if present in the community): tree canopy (T2), tree subcanopy (T2), tree saplings (TS1 2-5 m), tall tree seedlings (TS2 0.5-2 m), short tree seedlings (TS3 <0.5 m), tall shrubs (SS1 2-5 m), short shrubs (SS2 0.5-2 m), dwarf shrubs (SS3 <0.5 m), tall vines (V1 >2 m), short vines (V2 <2 m), herbaceous plants (H), non-vascular plants (N). Unvegetated type (U) and cover included if present. All species are listed in descending percent cover within each layer. Botanical nomenclature follows Werier et al. (2023).
4. One or two photographs taken at each Observation Point if available.
5. A table with all polygons delineated within the parcel on map in #1 above that includes the following: polygon ID number, size in acres, community code on map, NYNHP community name (Edinger *et al.* 2014), System/Subsystem (Edinger *et al.* 2014), and comments. The total number of polygons, sum of acres, and number of community types is provided for each parcel at the bottom of those columns
6. General Description of the parcel including comments on notable species found, results of the Floristic Quality Assessment (FQA) of Observation Points, and the position of the parcel on the Landscape Condition Analysis (LCA).
7. Invasive Plants recorded in the parcel, including location (Observation Point) and percent cover at point.
8. Management Recommendations specific to the parcel.
9. Future Surveys (mostly ecology) needed to further confirm the community classification and ground-truth map accuracy.

Parcel 1 and Parcel 15. H. Lee Ferguson, Jr. Wildlife Sanctuary



Figure 1. Parcel 1: H. Lee Ferguson, Jr. Wildlife Sanctuary.

Table 1. 01.01 Mowed lawn with trees

Obs. pt. 01.01 ref Form 3: Form 2 occ #:

Community: Mowed lawn with trees

CEGL code:

Alliance code:

UTM: zone 18 749773 E, 4572140 N

Lat: 41.27608682 Long: -71.9576917

Comments: Take photos of Museum parcel and trails; Photo log: 147 face NW to building from sidewalk

Photo Photo name: 147 face NW to building

Position method Digital Ortho-Images

GPS average min, sec. WAAS



Figure 2. Mowed lawn with trees in Parcel 1 (01.01).

Table 2. 01.02 Mowed lawn

Obs. pt. 01.02 ref Form 3: Form 2 occ #:

Community: Mowed lawn

CEGL code:

Alliance code:

UTM: zone 18 749768 E, 4572132 N

Lat: 41.27674239 Long: -71.9581152

Comments: Photo log: 148 face N to building from sidewalk

Photo Photo name: 148 face N to building

Position method Digital Ortho-Images

GPS average min, sec. WAAS



Figure 3. Mowed lawn in Parcel 1 (01.02).

Table 3. 01.03 Mowed lawn with trees

Obs. pt. 01.03 ref Form 3: Form 2 occ #:
Community: Mowed lawn with trees CEGL code: Alliance code:
UTM: zone 18 749777 E, 4572185 N Comments: Photo log: 149 face W to building trail stairs
Lat: 41.27805771 Long: -71.9584493 Photo Photo name: 149 face W to building
Position method Digital Ortho-Images
GPS average min, sec. WAAS



Figure 4. Mowed lawn with trees in Parcel 1 (01.03).

Table 4. 01.04 Unpaved road/path

Obs. pt. 01.04 ref Form 3: Form 2 occ #:
Community: Unpaved road/path CEGL code: Alliance code:
UTM: zone 18 749758 E, 4572196 N Comments: Photo log: 150 face NW to pond trail
Lat: 41.27851282 Long: -71.9586131 Photo Photo name: 150 face NW to pond trail
Position method Digital Ortho-Images
GPS average min, sec. WAAS



Figure 5. Unpaved road/path in Parcel 1 (01.04).

Table 5. 01.05 Mowed roadside/pathway

Obs. pt. 01.05 ref Form 3: Form 2 occ #:
Community: Mowed roadside/pathway CEGL code: Alliance code:
UTM: zone 18 749816 E, 4572309 N Comments: Photo log: 151
Lat: 41.27887449 Long: -71.9585578 Photo Photo name: 151
Position method
GPS average min, sec. WAAS



Figure 6. Mowed roadside/pathway in Parcel 1 (01.05).

Table 6. 01.06 Farm pond/artificial pond

Obs. pt. 01.06 ref Form 3: Form 2 occ #:
Community: Farm pond/artificial pond Eutrophic pond CEGL code: Alliance code:
UTM: zone 18 749718 E, 4572206 N Comments: Photo log: 152, 153 of pond from shore through thicket
Lat: 41.27887099 Long: -71.960444 Photo Photo name: 152, 153
Position method Digital Ortho-Images
GPS average min, sec. WAAS



Figure 7. Farm pond/artificial pond in Parcel 1 (01.06).

Table 7. 01.07 Unpaved road/path

Obs. pt. 01.07 ref Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 18 749702 E, 4572203 N

Comments: Big crown tree in trail junction; Photo log: 154 face W to tree and road back

Lat: 41.28041599 Long: -71.9693368

Photo Photo name: 154 face W to tree and road back

Position method Digital Ortho-Images

GPS average min, sec.

WAAS



Figure 8. Unpaved road/path in Parcel 1 (01.07).

Table 8. 01.08 Mowed roadside/pathway

Obs. pt. 01.08 ref Form 3: Form 2 occ #:

Community: Mowed roadside/pathway

CEGL code:

Alliance code:

UTM: zone 18 749701 E, 4572221 N

Comments: Mowed path through shrub tunnel; Photo log: 155 face NE

Lat: 41.28035356 Long: -71.9689639

Photo Photo name: 155 face NE

Position method Digital Ortho-Images

GPS average min, sec.

WAAS



Figure 9. Mowed roadside/pathway in Parcel 1 (01.08).

Table 9. 01.09 Mowed roadside/pathway

Obs. pt. 01.09 ref Form 3: Form 2 occ #:

Community: Mowed roadside/pathway

CEGL code:

Alliance code:

UTM: zone 18 749709 E, 4572256 N

Comments: Photo log: 156 face NW to log benches

Lat: 41.27968921 Long: -71.9887046

Photo Photo name: 156 face NW to log benches

Position method Digital Ortho-Images

GPS average min, sec. WAAS



Figure 10. Mowed roadside/pathway in Parcel 1 (01.09).

Table 10. 01.10 Mowed roadside/pathway

Obs. pt. 01.10 ref Form 3: Form 2 occ #:

Community: Mowed roadside/pathway

CEGL code:

Alliance code:

UTM: zone 18 749719 E, 4572256 N

Comments: Photo log: 157 face E

Lat: 41.27927014 Long: -71.9885422

Photo Photo name: 157 face E

Position method Digital Ortho-Images

GPS average min, sec. WAAS



Figure 11. Mowed roadside/pathway in Parcel 1 (01.10).

Table 11. 01.11 Mowed roadside/pathway

Obs. pt. 01.11 ref Form 3: Form 2 occ #:

Community: Mowed roadside/pathway

CEGL code:

Alliance code:

UTM: zone 18 749746 E, 4572260 N

Comments: Photo log: 158 face S

Lat: 41.27849186 Long: -71.9879933

Photo Photo name: 158 face S

Position method Digital Ortho-Images

GPS average min, sec.

WAAS



Figure 12. Mowed roadside/pathway in Parcel 1 (01.11).

Parcel 1. Ecological Community Acreage

Table 12. Parcel 1. Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
28	0.16	B	Building	CTERCULT	house
482	0.04	MLWT	Mowed lawn with trees	CTERFOR	
483	0.08	MLWT	Mowed lawn with trees	CTERFOR	
484	0.22	MLWT	Mowed lawn with trees	CTERFOR	
29	0.07	pond	pond	CLAC	natural or artificial?
27	0.03	PR/P	Paved road/path	CTERCULT	driveway
30	0.72	SOF	Successional old field	CTEROPEN	
474	0.14	SOF	Successional old field	CTERFOR	
478	0.05	SSH	Successional southern hardwoods	CTERFOR	disturbed; Hydrangea paniculata invaded
475	0.13	SSH//SUC.S	Successional southern hardwoods//SUC.S?	CTERFOR	disturbed; Hydrangea paniculata invasion
477	0.75	SSH//SUC.S	Successional southern hardwoods//SUC.S?	CTERFOR	disturbed; Hydrangea paniculata invasion
479	0.39	SSH//SUC.S	Successional southern hardwoods	CTERFOR	disturbed; Hydrangea paniculata invasion
15	0.46	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT?	blanket vineland thicket on shrubs
481	0.04	SUC.S?	Successional shrubland?	CTERFOR	planted tees/shrubs?
476	0.39	UR/P	Unpaved road/path	CTERCULT	trail
480	0.04	UR/P?	Unpaved road/path?	CTERFOR	SOF? cleared
16 polys	3.73 acres	8 types			

Parcel 1. General Description

The grounds associated with the Ferguson Museum building are recovering from past clearing and landscaping activities and are now mostly overgrown with dense woody vegetation and vines. The primary non-native shrub/small tree in this parcel is panicled hydrangea (*Hydrangea paniculata*) that forms shady tunnels over most of the trails. A few interesting native plants persist in the parcel, such as netted chain fern (*Lorinseria areolata*) along the trail from the museum to the pond (Figure 13). The small pond is a prominent feature at the center of the parcel and is also heavily shaded by the surrounding vegetation.

Parcel 1 is one of six parcels with buildings within the parcel boundary (parcels with buildings include: 1 museum, 2 shed near dock, 32 pump station, E-03 private residence, E-04 private residence, and E-07b private residence).

Parcel 1 and Parcel 15 have two of the five lowest Landscape Condition Analysis Scores of the 77 Land Trust parcels (Parcel 1 LCA Score: 1267.80; Parcel 15 LCA Score: 1306.65; range 0 to 1728).



Figure 13. Netted chain fern (*Lorinseria areolata*) along the trail from the museum to the pond.

Parcel 1 Invasive Plants

The primary non-native shrub/small tree in this parcel is paniced hydrangea (*Hydrangea paniculata*).

Parcel 1 Management Recommendations

Vegetation management and restoration efforts are currently focused on the fields along the peripheral roads (Bell Hill Ave. to the west and West St. to the north). It appears that these areas are being managed as naturalistic “demonstration gardens” for educational purposes. Visitors to the museum would benefit from interpretive signage identifying the native and invasive plants in these areas. Signs should explain the goals of the management efforts.

Control of invasive plants on the museum parcel will be a long-term commitment of effort and resources compared to other parcels on the Island. Perhaps the focus should start with protecting existing native plant populations on the parcel, such as the netted chain fern (*Lorinseria areolata*) along the trail from the museum to the pond.

If sufficient resources were available to eradicate paniced hydrangea, and retain as much of the existing native flora as possible, natural community restoration could radiate out in concentric bands around the pond as follows: 1) 2-3 m zone of shrub swamp co-dominated by water willow (*Decodon verticillatus*) and sweet pepperbush (*Clethra alnifolia*); 2) 5-10 m zone of red maple-blackgum fringe swamp; and 3) coastal oak-hickory forest. This zonation pattern was repeatedly observed around most ponds surveyed during our ecology surveys. See the Classification of Natural and Semi-natural Communities of the Henry L. Ferguson Museum Land Trust (Edinger 2023a) for full species lists for each type.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 2. Island Pond Trail in Betty Matthiessen Wildlife Sanctuary



Figure 14. Parcel 2: Island Pond Trail in Betty Matthiessen Wildlife Sanctuary (Points E2 and E3 sampled 2003).

Parcel 2. Mid-1920s Air Photo

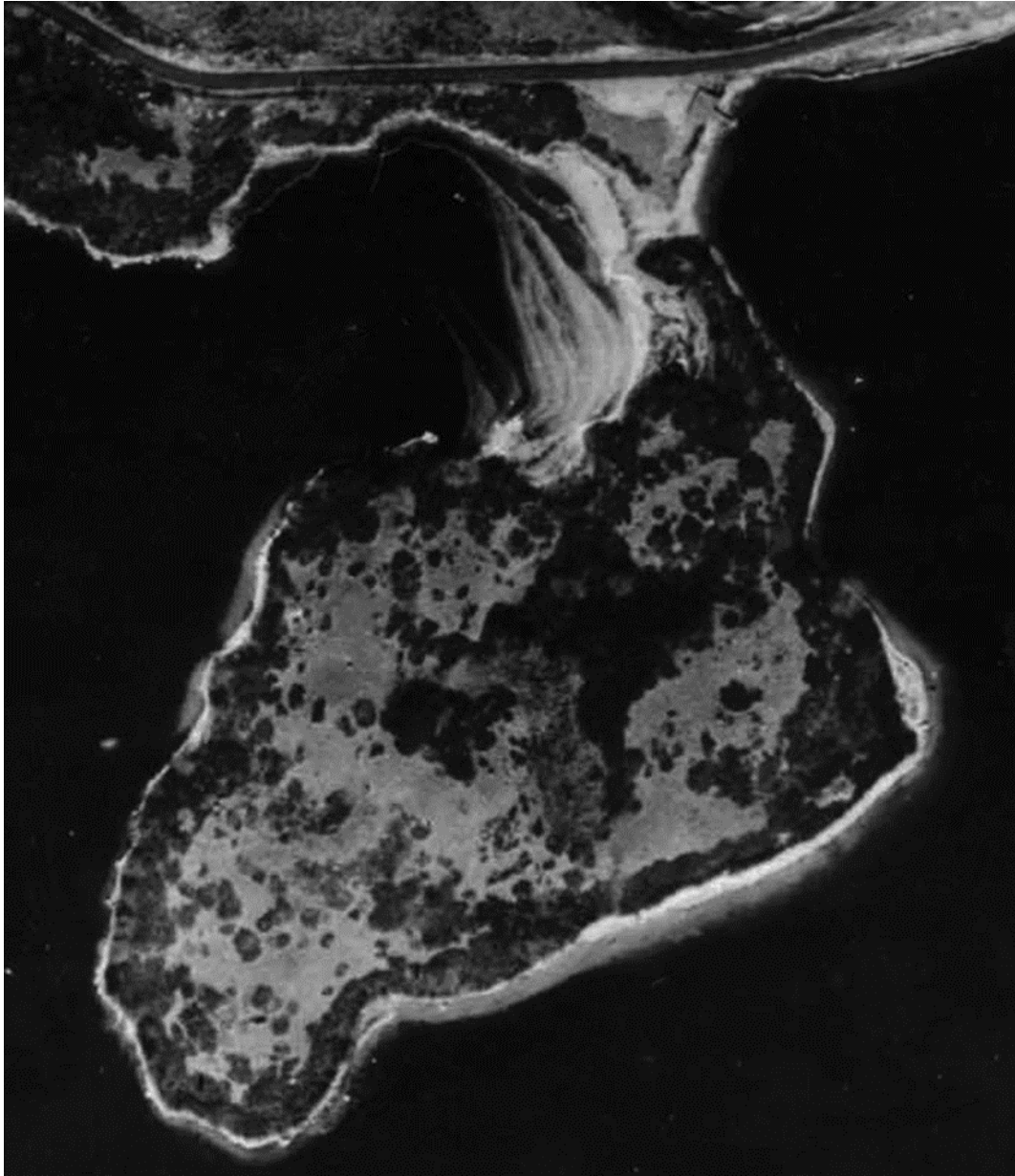


Figure 15. Parcel 2: Island Pond Trail in Betty Matthiessen Wildlife Sanctuary mid-1920s.

Portions of Parcel 2 that are now deciduous forest appear cleared on the mid-1920s black and white air photo (Figure 15), but are depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

Table 13. 02.01 Maritime beech forest (2021)

Obs. pt. 02.01 Form 3: Form 2 occ #: 1

Community: Maritime beech forest

CEGL code:

Alliance code:

UTM: zone 19 250054 E, 4573128 N

Lat: Long:

Comments: Small stand of stunted gnarly *Fagus grandifolia*. Aspect: 44 degrees. Slope: 22 degrees. Photo 134 facing E from this point toward *Phragmites* stand across pond out of parcel 02. Coastal oak-beech forest?

Photo Photo name: 130-133, 135, 134 face E *Phragmites* margin

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	80%, 12m	<i>Fagus grandifolia</i>	80%	
TS1	4%, 4m	<i>Fagus grandifolia</i>	4%	
TS2	5%, 1.5m	<i>Fagus grandifolia</i>	5%	
TS3	2%, 0.4m	<i>Fagus grandifolia</i>	2%	
SS2	10%, 1.5m	<i>Clethra alnifolia</i>	10%	
SS3	0.01%, 0.2m	<i>Frangula alnus</i>	0.01%	
V	5%	<i>Smilax rotundifolia</i>	5%	edge
H	1%	<i>Epifagus virginiana</i>	1%	
N	3%	Moss	3%	
U	98%	litter and duff	95%	
U		wood (FWD) <7.5 cm	8%	



Figure 16. Maritime beech forest in Parcel 2: Island Pond Trail in Betty Mattheissen Wildlife Sanctuary (02.01).

Table 14. 02.01 Maritime beech forest (2022)

Obs. pt. 02.01 ref Form 3: Form 2 occ #:

Community: Maritime beech forest

CEGL code:

Alliance code:

UTM: zone 19 250054 E, 4573128 N

Lat: 41.27125356 Long: -71.9771222

Comments: stop at Middle Island Middle Island to check Fagus grandifolia for beech leaf disease and take photos; First patch looks okay. Most leaves healthy;

Photo Photo name: 191-193

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
TS1	Fagus grandifolia			



Figure 17. Maritime beech forest in Parcel 2: Island Pond Trail in Betty Mattheissen Wildlife Sanctuary (02.01).

Table 15. 02.02 Maritime shrubland

Obs. pt. 02.02 Form 3: Form 2 occ #: 1

Community: Maritime shrubland CEGL code: Alliance code:

UTM: zone 19 250025 E, 4573071 N Comments: Trail access to CSP view. Tall maritime shrubland on slope both directions. Coastal salt pond?

Lat: Long: Photo Photo name: 136 face S CSP, 137 MS

Position method GPS

GPS average min, sec. WAAS

Stratum		Species	comments	Collection	Unsure of ID
SS1	75%, 3m	Clethra alnifolia	40%		
SS1		Morella caroliniensis	20%		
SS1		Viburnum dentatum var. lucidum	15%		
SS1		Rhus typhina	1%		
SS2	20%, 1.5m	Clethra alnifolia	20%		
SS3	7%, 0.2m	Clethra alnifolia	5%		
SS3		Viburnum dentatum var. lucidum	2%		
V	11%, 1.5m	Smilax rotundifolia	10%		
V		Celastrus orbiculatus	1%		
V		Smilax glauca	0.01%		
H	0.01%, 1m	Solidago rugosa var. rugosa	0.01%		



Figure 18. Maritime shrubland in Parcel 2: Island Pond Trail in Betty Matthei Wildlife Sanctuary (02.02).

Table 16. 02.03 Maritime beech forest

Obs. pt. 02.03 Form 3: Form 2 occ #: 1

Community: Maritime beech forest

CEGL code:

Alliance code:

UTM: zone 19 249966 E, 4573090 N

Lat: Long:

Comments: Second small stand of *Fagus grandifolia*. Aspect: 76 degrees. Slope: 22 degrees. Coastal oak-beech forest?

Photo Photo name: 138-140, 141-142 Quercus

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	70%, 12m	<i>Fagus grandifolia</i>	60%	
T2		<i>Quercus velutina</i>	25%	ID determined by Steve Young (Feb. 2022). collect:Y (2)
T3	20%, 6m	<i>Fagus grandifolia</i>	20%	
TS1	5%, 3m	<i>Fagus grandifolia</i>	5%	
TS2	2%, 1.5m	<i>Fagus grandifolia</i>	2%	
TS3	1%, 0.4m	<i>Fagus grandifolia</i>	1%	
H		<i>Dennstaedtia punctilobula</i>	0.01%	
H	1%	<i>Epifagus virginiana</i>	0.01%	
U	98%	litter and duff	98%	
U		wood (FWD) <7.5 cm	6%	
U		wood (CWD) >7.5 cm	1%	



Figure 19. Maritime beech forest in Parcel 2: Island Pond Trail in Betty Mattheiessen Wildlife Sanctuary (02.03) – 2021.

Table 17. 02.03 Maritime beech forest

Obs. pt. 02.03 ref Form 3: Form 2 occ #:

Community: Coastal oak-beech forest

CEGL code:

Alliance code:

UTM: zone 19 249966 E, 4573090 N

Lat: 41.27223161 Long: -71.9772622

Comments: Middle Island check *Fagus grandifolia* for beech leaf disease and take photos; Second patch on slope S of pond has moderate to severe leaf disease; >50% defoliated; can easily see through stand;

Photo Photo name: 194-201

Position method

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Fagus grandifolia</i>			



Figure 20. Coastal oak-beech forest with Beech Leaf Disease in Parcel 2 (02.03) – 2022.



Figure 21. Coastal oak-beech forest with Beech Leaf Disease in Parcel 2 (02.03) – 2022.

Table 18. 02.04 Maritime beech forest

Obs. pt. 02.04 ref Form 3: Form 2 occ #:

Community:
Maritime beech forest

CEGL code:

Alliance code:

UTM: zone 19 249959 E, 4573124 N

Lat: Long:

Comments: Beech continues to this point at pond shore. Reference point. Vegetation cover data not collected. Coastal oak-beech forest?

Photo Photo name:

Position method GPS

GPS average min, sec. WAAS

Table 19. 02.05a Eutrophic pond

Obs. pt. 02.05a ref Form 3: Form 2 occ #:

Community: Eutrophic pond

CEGL code:

Alliance code:

UTM: zone 19 249980 E, 4573123 N

Lat: Long:

Comments: Freshwater pond center of island (natural origin?). No floating leaved aquatics on pond. Mirror surface today. Quick list of plants along pond fringe. Reference point. Vegetation cover data not collected.

Photo Photo name: from W shore of pond: 285-286 face E.

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
TS2	Frangula alnus			
SS2	Sambucus nigra ssp. canadensis			
V	Solanum dulcamara			
H	Bidens connata			ID uncertain
H	Thelypteris palustris var. pubescens			



Figure 22. Eutrophic pond in Parcel 2: Island Pond Trail in Betty Matthiessen Wildlife Sanctuary (02.05a).

Table 20. 02.05b and 02.05c Coastal oak-beech forest

Obs. pt. 02.05b ref Form 3: Form 2 occ #:

Community: Coastal oak-beech forest

CEGL code:

Alliance code:

UTM: zone 19 249980 E, 4573123 N

Lat: Long:

Comments: Coastal oak-beech forest upslope from this point SW from pond edge. Reference point. Vegetation cover data not collected.

Photo Photo name: 287-291

Position method GPS

GPS average min, sec. WAAS

Obs. pt. 02.05c ref Form 3: Form 2 occ #:

Community: Coastal oak-beech forest

CEGL code:

Alliance code:

UTM: zone 19 249939 E, 4573128 N

Lat: Long:

Comments: Coastal oak-beech forest perimeter point. Extends SE of this point (but not NW). Photo 292 face SW from this point. Reference point. Vegetation cover data not collected.

Photo Photo name: 292 face SW

Position method GPS

GPS average min, sec. WAAS



Figure 23. Coastal oak-beech forest in Parcel 2: Island Pond Trail in Betty Matthiessen Wildlife Sanctuary: Left: point 02.05b; Right: point 02.05c.

Table 21. 02.05d and 02.05e Coastal oak-beech forest

Obs. pt. 02.05d ref Form 3: Form 2 occ #:

Community: Coastal oak-beech forest

CEGL code:

Alliance code:

UTM: zone 19 249951 E, 4573091 N

Lat: Long:

Comments: Upslope extent of coastal oak-beech forest. Switches to big black oak-big red maple forest uphill to WSW 250 degrees with *Dendrolycopodium obscurum* carpet. Coastal oak-hickory forest (no *Carya*). Reference point. Vegetation cover data not collected. No photo taken. Coastal oak-hickory forest?

Photo Photo name:

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Acer rubrum</i> var. <i>rubrum</i>			
T2	<i>Quercus velutina</i>			
H	<i>Dendrolycopodium obscurum</i>			

Obs. pt. 02.05e ref Form 3: Form 2 occ #:

Community: Coastal oak-beech forest

CEGL code:

Alliance code:

UTM: zone 19 249979 E, 4573063 N

Lat: Long:

Comments: Coastal oak-beech forest extends to south tip of pond and trail at this point. Two multi-trunk *Tilia americana* (photo 293) 208 degrees SSW of this point with yellow-bellied sapsucker holes. Reference point. Vegetation cover data not collected. Coastal oak-hickory forest?

Photo Photo name: 294 of COBF, 293 *Tilia americana*

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Tilia americana</i>	two multi-trunk trees with yellow-bellied sapsucker holes		



Figure 24. Coastal oak-beech forest in Parcel 2: Island Pond Trail in Betty Matthiessen Wildlife Sanctuary: Left: point 02.05e; Right: American basswood (*Tilia americana*) at point 02.05e.

Table 22. 02.06 Red maple-blackgum slope forest

Obs. pt. **02.06 ref** Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249857 E, 4573032 N

Lat: Long:

Comments: Along trail from this point north is big multi-trunk red maple with dense tall Clethra and a few TS1 Nyssa. Reference point. Vegetation cover data not collected.

Photo Photo name: 295,296

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum			
TS1	Nyssa sylvatica			
SS1	Clethra alnifolia			



Figure 25. Red maple-blackgum slope forest in Parcel 2: Island Pond Trail in Betty Matthiessen Wildlife Sanctuary (02.06).

Table 23. 02.07 Red maple-blackgum slope forest

Obs. pt. 02.07 ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249871 E, 4573080 N

Lat: Long:

Comments: Add trees to RMBG slope forest list. Reference point. Vegetation cover data not collected.

Photo Photo name: 295, 297 Betula lenta, 298 Betula populifolia

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	Amelanchier arborea			ID uncertain
T2	Betula lenta	photo 297		
T2	Betula populifolia			
T2	Prunus serotina var. serotina			
T2	Quercus velutina			



Figure 26. Red maple-blackgum slope forest in Parcel 2: Island Pond Trail in Betty Matthiessen Wildlife Sanctuary (02.07): Left: sweet birch (*Betula lenta* – 20 cm DBH); Right: gray birch (*Betula populifolia* – 13 cm DBH).

Table 24. 02.09 and 02.10 Red maple-blackgum slope forest

Obs. pt. 02.09 ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249984 E, 4573170 N
 Lat: Long:

Comments: Red maple/Clethra continues east along north shore of island to this point with two Juniperus virginiana (photo 302) and old trail sign post (photo 301). Reference point. Vegetation cover data not collected.

Photo Photo name: 302 Juniperus virginiana, 301 old trail sign post

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum			
T2	Juniperus virginiana var. virginiana			
SS1	Clethra alnifolia			

Obs. pt. 02.10 ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 250022 E, 4573218 N
 Lat: Long:

Comments: Causeway trail connector access to island is a weedy version of young "Red maple-blackgum slope forest" with Lonicera morrowii shrub invasion. Is this connector berm of natural or artificial origin? Reference point. Vegetation cover data not collected. Red maple-blackgum swamp? Successional shrubland? No photo taken.

Photo Photo name:

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum			
SS2	Clethra alnifolia			
SS2	Lonicera morrowii			

Parcel 2 Ecological Community Acreage

Table 25. Parcel 2 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
343	0.85	CO-BF	Coastal oak-beech forest	CTERFOR	mostly tall, straight trunk beech
63	0.37	CO-HF	Coastal oak-hickory forest	CTERFOR	
342	0.09	CO-HF	Coastal oak-hickory forest	CTERFOR	
344	0.20	CO-HF	Coastal oak-hickory forest	CTERFOR	No <i>Carya</i> ; Big black oak and big red maple forest.
349	0.69	CO-HF	Coastal oak-hickory forest	CTERFOR	
350	1.42	CO-HF	Coastal oak-hickory forest	CTERFOR	No <i>Carya</i> ; Big black oak and big red maple forest.
345	0.26	MBF	Maritime beech forest	CTERFOR	very small stand,; mostly stunted, contorted beech
346	0.03	MBF	Maritime beech forest	CTERFOR	very small stand
348	1.27	MS	Maritime shrubland	CTEROPEN	
65	0.44	pond	pond	CLAC	open water; pond
347	0.89	RM-BG (fringe)	Red maple-blackgum	CPALFOR/CTERFOR	edge of NWI wetland; narrow band
351	0.19	RM-BG (fringe)	Red maple-blackgum	CPALFOR/CTERFOR	edge of NWI wetland; narrow band
64	0.76	UR/P	Unpaved road/path	CTERCULT	trail
13 polys	7.46 acres	7 types			

Parcel 2 General Description

Parcel 2 includes the 7.5-acre peninsula-island that gives Island Pond its name. NYNHP classifies Island Pond as an occurrence of coastal salt pond (EOID 2925, EO Rank B, 52 acres, Figure 127). See the Classification of Natural and Semi-natural Communities of the Henry L. Ferguson Museum Land Trust (Edinger 2023a); and the coastal salt pond Element Occurrence Record (EOID_2925.pdf) for more information about this community.

At the center of the east half of the island is a 0.4-acre freshwater pond (presumed to be of natural origin, Figure 22) surrounded by tall shrubs that abruptly transitions to upland forest in all directions. The eastern side of the pond is mostly coastal oak-hickory forest (2.77 acres) while the western half is mostly coastal oak-beech forest (0.85 acres) with tall, straight-trunked beech trees (Figure 23). Along the eastern edge of the island is a small patch (0.3 acres) of maritime beech forest with stunted (4-12 m) beech trees with low, gnarly branches (Figure 19). Although maritime beech forest is considered a globally rare natural community by NYNHP and NatureServe, the patch on Island Pond is too small to be tracked as an occurrence of that community. The smallest occurrence of maritime beech forest (10 acres) in NY is at Wildwood State Park which is larger than the whole island in Parcel 2.

On the slopes of the southeastern shore of the island is a continuous band of maritime shrubland (Figure 18) covering 1.3 acres. Here the shrubs are tall (1.5-3 m) and dense (95% cover) and include sweet pepperbush (*Clethra alnifolia* – 60%), bayberry (*Morella carolinensis* – 20%), and arrowwood (*Viburnum dentatum* – 15%). The slope shoreline changes to a narrow 1-acre band of red maple-blackgum slope forest and fringe swamp (Figure 25).

Parcel 2 is one of six parcels with buildings within the parcel boundary (parcels with buildings include: 1 museum, 2 shed near dock, 32 pump station, E-03 private residence, E-04 private residence, and E-07b private residence).

Parcel 2 Invasive Plants and Beech Leaf Disease

Invasive plants are not a serious threat on the island in Parcel 2. We found the following species with low percent cover:

1. Oriental bittersweet (*Celastrus orbiculatus* – 1%) in the maritime shrubland.
2. Bitter-sweet nightshade (*Solanum dulcamara*) and glossy buckthorn (*Frangula alnus*) around the margin of the interior pond.
3. Morrow's honeysuckle (*Lonicera morrowii*) in the red maple-blackgum fringe.

Beech Leaf Disease

Beech Leaf Disease (BLD) affects and kills both native and ornamental beech tree species. It is associated with a nematode, *Litylenchus crenatae mccannii*. This disease has only been discovered in recent years and much about it, including the full cause and how it spreads, is still unknown. Beech Leaf Disease (BLD) appears to be a serious threat to the beech trees on Fishers Island. We did not notice BLD during our 2021 ecology surveys, but many beech trees were defoliated in Parcel 2 in 2022 (Figure 20 and Figure 21). Defoliation appeared to be more severe in the coastal oak-beech forest west of the interior pond compared to the small, stunted maritime beech forest on the east side of the island.

Beech Leaf Disease (BLD) is an emerging threat to the beech trees in Parcel 2. Its spread should be closely monitored and appropriate actions should be taken to reduce its impact. See NYS DEC webpage for more information on Beech Leaf Disease:

<<https://www.dec.ny.gov/lands/120589.html>>

Parcel 2 Management Recommendations

Control and remove glossy buckthorn (*Frangula alnus*) from around the margin of the interior pond. Encourage existing native shrubs to spread, or replace buckthorn with propagated native shrubs found growing around the other ponds on Fishers Island, such as sweet pepperbush (*Clethra alnifolia*), winterberry (*Ilex verticillata*), highbush blueberry (*Vaccinium corymbosum*), maleberry (*Lyonia ligustrina*), water willow (*Decodon verticillatus*). Cut or remove other invasives noted above in Parcel 2, such as Morrow's honeysuckle (*Lonicera morrowii*) and Oriental bittersweet (*Celastrus orbiculatus*), before they spread into other parts of the island.

Phragmites management around the shoreline of Island Pond may require consultation with neighboring landowners before taking any action on the ground.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 3. Beach Pond East



Figure 27. Parcel 3: Beach Pond East.

Table 26. 03.01 Maritime rocky beach (unvegetated)

Obs. pt. **03.01** Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach" CEGL code: Alliance code:

UTM: zone 19 250737 E, 4572940 N
 Lat: Long:

Comments: Survey beach and areas back from shore. 03.01 = Maritime rock beach (white rock zone) 8-12 m (9 m avg.) wide band. GPS taken on line between MRI (black rock zone) and MRB (white rock zone). Unvegetated variant.

Photo Photo name: 253 face E, 254 face W, 255 face N, 256 face down on rocks

Position method GPS
 GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
U	98%	large rocks >10 cm	80%	
U		very large rocks >1 m	15%	all <2 m
U		small rocks <10 cm	5%	
U		wrack	1%	dead Zostera and marine algae incl. Chondrus and Fucus
U		trash	0.01%	



Figure 28. Maritime rocky beach in Parcel 3 (03.01).

Table 27. 03.02 Maritime rocky beach (vegetated)

Obs. pt. 03.02 Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach - vegetated"

CEGL code:

Alliance code:

UTM: zone 19 250725 E, 4572951 N

Lat: Long:

Comments: Vegetated upper margin of maritime rocky beach. Zone is 75% exposed rock with 25% cover of vegetation 0.5-1.0 m tall. 26% total vegetation cover = vegetated variant >10% veg cover (sparsely vegetated definition <10% veg cover).

Photo Photo name: 257 face W, 258 face E

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	Baccharis halimifolia	5% 1 m		
SS2	11%, 1m Rosa rugosa	5% 1 m		
SS2	Morella caroliniensis	1%		
V2	0.01%, 0.2m Fallopia scandens	0.01%		ID uncertain
H	15% Solidago sempervirens	5%		
H	Calamagrostis breviligulata	3%		
H	Lathyrus japonicus var. maritimus	3%		
H	Panicum virgatum	3%		
H	Chenopodium sp.	1%		
H	Elymus sp.	0.01%		ID uncertain
U	98% large rocks >10 cm	63%		
U	small rocks <10 cm	25%		
U	very large rocks >1 m	12%		
U	trash	0.01%		
U	wood (CWD) >7.5 cm	0.01% washed up lumber		



Figure 29. Maritime rocky beach (left: vegetated; right: unvegetated white rocks) in Parcel 3 (03.02).

Table 28. 03.03 Maritime shrubland

Obs. pt. 03.03 Form 3: Form 2 occ #: 1

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 250726 E, 4572958 N

Lat: Long:

Comments: Dense tall maritime shrubland on rocks. Two tall red cedars between this point and house to N. Large maritime bluff to E off parcel (photo 262 zoom in face E).

Photo Photo name: 259 face W, 260 face NW, 261 face NE

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	8%, 3m	Prunus serotina var. serotina	8%	
SS1	22%, 2.1m	Morella caroliniensis	15%	
SS1		Baccharis halimifolia	5%	
SS1		Lonicera morrowii	2%	
SS2	42%, 1m	Morella caroliniensis	15%	0.85 m
SS2		Rosa rugosa	15%	0.75-1.0 m all pink no white flowers
SS2		Baccharis halimifolia	12%	1.5 m
SS3	10%, 0.5m	Morella caroliniensis	5%	
SS3		Rosa rugosa	5%	
V	25%, 1.5m	Toxicodendron radicans ssp. radicans	25%	
H	21%	Panicum virgatum	8%	
H		Solidago sempervirens	8%	
H		Elymus sp.	4%	ID uncertain
H		Sonchus sp.	1%	ID uncertain
U	97%	large rocks >10 cm	90%	all <1 m cannot see under vegetation
U		wood (CWD) >7.5 cm	5%	
U		wood (FWD) <7.5 cm	2%	



Figure 30. Maritime shrubland in Parcel 3 (03.03).

Parcel 3 Ecological Community Acreage

Table 29. Parcel 3 Ecological Community Acreage (clipped community coverage to Parcel 3 boundary)

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
3	0.57	MRB	Maritime rocky beach	CTEROPEN	unvegetated
1	0.10	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated
4	0.08	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated
2	1.05	MRI	Marine rocky intertidal	CMARINTER	
0	1.11	MS	Maritime shrubland	CTEROPEN	
5 polys	2.91 acres	4 types			

Parcel 3 General Description

Parcel 3 is a small, remote (for Fishers Island) barrier rocky beach with an ocean-facing shoreline that runs about 130 m northeast to southwest. Natural communities form narrow bands along the ocean shoreline as follows: Marine rocky intertidal community (EOID 3294) runs along the parcel's southeast property line occupying the rocky area between mean low water (MLW) and mean high water (MHW). At slightly higher elevation above MHW it becomes an unvegetated maritime rocky beach (Figure 28, EOID 17561) dominated by large rocks (>10 cm diameter with some over 1 m diameter). The maritime rocky beach becomes vegetated with characteristic beach plants, such as beach grass (*Calamagrostis breviligulata* – 3%) and seaside goldenrod (*Solidago sempervirens* – 5%) before it transitions to maritime shrubland and Beach Pond (coastal salt pond, EOID 2925).

Parcel 3 has the second best Landscape Condition Analysis Score of the 77 Land Trust parcels (LCA Score: 3.3; range 0 to 1728). The maritime rocky beach (vegetated) in Parcel 3 at point 03.02 has the highest Weighted Floristic Quality Index Score (FQI 14.75) for that community found during our ecology surveys.

Parcel 3 Invasive Plants

Invasive plants in Parcel 3 are found mostly in the maritime shrubland (point 03.03), and includes beach rose (*Rosa rugosa* – 20%) and Morrow's honeysuckle (*Lonicera morrowii* – 2 %).

Parcel 3 Management Recommendations

Reducing or eliminating beach rose (*Rosa rugosa*) in the maritime shrubland in Parcel 3 would greatly improve the floristic quality of the community, since it is the dominant invasive plant in this parcel.

The shoreline natural communities, such as the marine rocky intertidal and maritime rocky beach, extend southwest onto Parcel 38b. Management plans for adjacent parcels should be developed in tandem at the natural community level rather than following strict parcel boundaries.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 4, Parcel 36a, and Parcel 36b. L. F. Boker Doyle Sanctuary



Figure 31. Parcels 4, 36a, and 36b: L. F. Boker Doyle Sanctuary (points C2 and C3 in Parcel 36b sampled in 2003).

Parcel 4 and Parcel 36b. Mid-1920s Air Photo



Figure 32. Parcels 4, 36a, and 36b: L. F. Boker Doyle Sanctuary mid-1920s. Note the forested elliptical island at the center of the photo (see points 36b.05 and 36b.06 on previous Figure).

The southern half of the L. F. Boker Doyle Sanctuary may have been continuously forested, and perhaps uncut, for the last 100 years. The southern half of the Sanctuary is depicted as forested on the circa 1958 USGS 7.5 minute topographic map, and is among the few forested areas on the mid-1920s black and white air photo (Figure 32).

The wetland boundaries in Parcel 4 and Parcel 36b appear unchanged since the mid-1920s black and white air photo (Figure 32).

Table 30. 04.01 Shrub swamp (*Decodon verticillatus*)

Obs. pt. 04.01 ref Form 3: Form 2 occ #:

Community:

Mowed lawn

CEGL code:

Alliance code:

UTM: zone 19 248837 E, 4572584 N

Lat: Long:

Comments: Reference point. Vegetation cover data not collected. Follow trail north to mowed lawn with brick house with giant US flag. Stand on rock in lawn; take GPS and photos facing south into Decodon SS (photos 05-07) around all open water - mostly out of parcel. Center of swamp looks like young red maple/Clethra swamp (photo 08).

Photo Photo name: 05-07 Decodon SS, 08 red maple-Clethra swamp

Position method GPS

GPS average min, sec.

WAAS



Figure 33. Shrub swamp (*Decodon verticillatus*) in Parcel 4 (04.01) face S from lawn.

Table 31. 04.02 Coastal oak-hickory forest

Obs. pt. 04.02 ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 248919 E, 4572487 N

Lat: Long:

Comments: Coastal oak-hickory forest continues to this point from 36a.01; Quick obs pt to record additional species to add to community list. No photo taken.

Photo Photo name:

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T3	Betula lenta	2% 12 m		
T3	9.5m Pinus strobus	2% 7 m		
TS1	Frangula alnus	5% 0-5 m		
TS2	Frangula alnus	5%		
TS3	Frangula alnus	5%		
SS1	Vaccinium corymbosum	2%		
SS2	1m Gaylussacia baccata	5%		
H	Chimaphila maculata	0.01%		
H	Hypopitys monotropa	0.01% ID determined by Steve Young (Feb. 2022).	collect:Y	
H	Lysimachia quadrifolia	0.01%		

Table 32. 04.03 Shrub swamp (*Decodon verticillatus*)

Obs. pt. 04.03a Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Decodon verticillatus*)"

CEGL code:

Alliance code:

UTM: zone 19 248874 E, 4572457 N

Lat: Long:

Comments: GPS #331. *Decodon* SS//RM-BGS young (back). Photo taken from tree margin looking into swamp.

Photo Photo name: 09, 10, 11 phone pole from tree

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	20%, 3m	<i>Ilex verticillata</i>	20%	scattered
SS2	70%, 1.5m	<i>Decodon verticillatus</i>	70%	
H	22%	<i>Leersia oryzoides</i>	20%	ID uncertain
H		<i>Bidens frondosa</i>	2%	ID uncertain



Figure 34. Shrub swamp (*Decodon verticillatus*) in Parcel 4 (04.03a).

Table 33. 04.03b Red maple-blackgum swamp

Obs. pt. 04.03b ref Form 3: Form 2 occ #:

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 248874 E, 4572457 N

Lat: Long:

Comments: Quick list of species along the wetland/upland margin. Reference point. Vegetation cover data not collected. No photo taken. Quick transition to upland uphill behind this swamp margin.

Photo Photo name:

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum			
T2	Nyssa sylvatica			
SS1	Cephalanthus occidentalis			
SS1	Clethra alnifolia			
SS1	2.5m Ilex verticillata	2-3 m		
SS1	Rhododendron viscosum			ID uncertain
H	Osmundastrum cinnamomeum var. ci			
H	Sparganium sp.			ID uncertain

Table 34. 04.05 Coastal oak-beech forest

Obs. pt. 04.05 Form 3: Form 2 occ #: 1

Community: Coastal oak-beech forest

CEGL code:

Alliance code:

UTM: zone 19 248736 E, 4572168 N

Comments: Small stand of coastal oak-beech forest. Slope: 10 degrees. Aspect: 287 degrees.

Lat: Long:

Photo Photo name: 14-21

Position method GPS

GPS average 2000 readings WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	65%, 28m	Fagus grandifolia	40%	
T2		Quercus velutina	20%	ID confirmed by Steve Young (Feb. 2022)
T2		Betula lenta	14%	42 cm DBH out of plot
T2		Carya tomentosa	8%	not shaggy, seven leaflets, photos 22-24
T2		Quercus alba	8%	
T3	37%, 14m	Fagus grandifolia	30%	
T3		Acer rubrum var. rubrum	6%	
T3		Quercus alba	5%	Q. bicolor? ID uncertain
TS1	8%, 4.5m	Fagus grandifolia	5%	2.5 m
TS1		Acer rubrum var. rubrum	2%	
TS1		Betula lenta	1%	
TS2	4%, 1.2m	Betula lenta	2%	1-2 m
TS2		Frangula alnus	2%	0.65 m
TS3	6%, 0.4m	Quercus velutina	2%	
TS3		Fagus grandifolia	1%	0.2 m
TS3		Quercus alba	1%	
TS3		Acer rubrum var. rubrum	0.01%	0.2 m
TS3		Amelanchier arborea	0.01%	ID uncertain
TS3		Betula lenta	0.01%	
TS3		Frangula alnus	0.01%	
TS3		Ilex opaca var. opaca	0.01%	
SS1	4%, 2.75m	Vaccinium corymbosum	3%	2.5-3 m
SS1		Clethra alnifolia	1%	
SS2	3%, 1.5m	Vaccinium corymbosum	2%	
SS2		Ilex verticillata	1%	
SS3	0.01%, 0.2m	Viburnum dentatum var. lucidum	0.01%	
V	1%, 0.85m	Smilax rotundifolia	1%	0.2-1.5 m
H	14%	Dennstaedtia punctilobula	5%	
H		Thelypteris noveboracensis	5%	
H		Malanthemum canadense	2%	
H		Lysimachia quadrifolia	1%	
H		Carex sp.	0.01%	ID uncertain
H		Pyrola elliptica	0.01%	dead stalk collect:Y ID uncertain
N	0.01%	Leucobryum glaucum	0.01%	
U	98%	litter and duff	95%	
U		wood (FWD) <7.5 cm	7%	
U		large rocks >10 cm	3%	more large rocks to east
U		wood (CWD) >7.5 cm	3%	
U		small rocks <10 cm	2%	



Figure 35. Coastal oak-beech forest patch within coastal oak-hickory forest in Parcel 4 (04.05).



Figure 36. Coastal oak-beech forest patch within coastal oak-hickory forest in Parcel 4 (04.05).

Table 35. 04.06 Coastal oak-hickory forest

Obs. pt. 04.06 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest 2021

CEGL code:

Alliance code:

UTM: zone 19 248757 E, 4572215 N
 Lat: Long:

Comments: Large boulders in forest with stand of large *Betula lenta*. No *Carya* in T2, T3, TS1, TS2, but a few *Carya* seedlings in TS3. Variable aspect on top of hill in forest.

Photo Photo name: 25-27, 28-32

Position method GPS

GPS average 1490 readings WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	56%, 25m	<i>Quercus velutina</i>	35%	ID confirmed by Steve Young (Feb. 2022).
T2		<i>Betula lenta</i>	20%	
T2		<i>Nyssa sylvatica</i>	15%	
T3	30%, 14m	<i>Nyssa sylvatica</i>	20%	
T3		<i>Betula lenta</i>	8%	
T3		<i>Quercus velutina</i>	4%	
TS1		<i>Acer rubrum</i> var. <i>rubrum</i>	2%	
TS1	5%, 3m	<i>Nyssa sylvatica</i>	2%	
TS1		<i>Betula lenta</i>	1%	
TS2	3%, 2m	<i>Nyssa sylvatica</i>	2%	
TS2		<i>Frangula alnus</i>	1%	
TS3	4%, 0.2m	<i>Quercus velutina</i>	2%	0.2 m
TS3		<i>Carya tomentosa</i>	1%	0.15 m; 5-7 leaflets ID uncertain
TS3		<i>Acer rubrum</i> var. <i>rubrum</i>	0.01%	
TS3		<i>Amelanchier</i> sp.	0.01%	ID uncertain
TS3		<i>Frangula alnus</i>	0.01%	
SS1	5%, 3m	<i>Vaccinium corymbosum</i>	5%	
SS2	3%, 1m	<i>Vaccinium corymbosum</i>	2%	
SS2		<i>Viburnum dilatatum</i>	1%	odd looking, collected; ID determined by Steve Young (Feb. 2022). collect:Y ID uncertain
SS3		<i>Gaylussacia baccata</i>	1%	
SS3	2%, 0.3m	<i>Viburnum dilatatum</i>	1%	ID determined by Steve Young (Feb. 2022). collect:Y
SS3		<i>Rhododendron periclymenoides</i>	0.01%	ID uncertain
V2	0.4%	<i>Parthenocissus quinquefolia</i>	1%	
V2		<i>Smilax rotundifolia</i>	0.01%	0.4 m
H		<i>Dennstaedtia punctilobula</i>	1%	
H		<i>Eurybia divaricata</i>	1%	
H		<i>Malanthemum canadense</i>	1%	
H	7%	<i>Osmundastrum cinnamomeum</i> var. <i>cl</i>	1%	
H		<i>Carex</i> sp.	0.01%	
H		<i>Carex swanii</i>	0.01%	
H		<i>Chimaphila maculata</i>	0.01%	
H		<i>Dendrolycopodium obscurum</i>	0.01%	
H		<i>Hieracium</i> sp.	0.01%	ID uncertain
H		<i>Lysimachia borealis</i>	0.01%	
H		<i>Lysimachia quadrifolia</i>	0.01%	
H		<i>Pyrola elliptica</i>	0.01%	dead stalks ID uncertain
U	98%	litter and duff	75%	
U		very large rocks >1 m	16%	



Figure 37. Coastal oak-hickory forest in Parcel 4 (04.06).



Figure 38. Mockernut hickory (*Carya tomentosa*) seedling (left) and terminal bud (right) in coastal oak-hickory forest in Parcel 4 (04.06).

Table 36. 04.07 Shrub swamp (*Clethra alnifolia*)

Obs. pt. 04.07 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Clethra alnifolia*)" CEGL code: Alliance code:

UTM: zone 19 248873 E, 4572318 N Comments: Tall dense *Clethra* SS. No Decodon. Big red maple trees out in middle.

Lat: Long: Photo Photo name: 35

Position method GPS

GPS average min. sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	<i>Acer rubrum</i> var. <i>rubrum</i>	5%		
TS1	10%, 5m <i>Nyssa sylvatica</i>	5%		
SS1	90%, 3m <i>Clethra alnifolia</i>	85%		
SS1	<i>Ilex verticillata</i>	5%		
SS2	20%, 1m <i>Clethra alnifolia</i>	20%		
SS3	5%, 0.4m <i>Clethra alnifolia</i>	5%		
V	3%, 2.5m <i>Smilax rotundifolia</i>	3%		



Figure 39. Shrub swamp (*Clethra alnifolia*) in Parcel 4 (04.07).

Table 37. 04.08 Red maple-blackgum swamp

Obs. pt. 04.08 Form 3: Form 2 occ #: 1

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 248923 E, 4572301 N

Lat: Long:

Comments: Originally (incorrectly) labled as 36a.03, Point is in Parcel 04 not 36a. East of bike path bridge is a stand of large crown red maple trees with dense very tall Clethra thicket. A few Nyssa along margin of depression and east of bridge along road (drained swamp?). Grades into tall Clethra SS to W (see 04.07 F21EDI43). There is also a line of several Nyssa east of this point between the bike path and road.

Photo Photo name: 247 face W from bridge

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	66%, 20m	Acer rubrum var. rubrum	60%	
T2		Nyssa sylvatica	15%	edge
T3	5%, 8m	Sassafras albidum	5%	
SS1	50%, 5m	Clethra alnifolia	40%	
SS1		Ilex verticillata	5%	
SS1		Rubus allegheniensis	2%	
SS1		Viburnum dentatum var. lucidum	2%	
SS2	20%, 2m	Clethra alnifolia	20%	
SS3	10%, 0.5m	Clethra alnifolia	10%	
V	10%, 2m	Smilax rotundifolia	10%	
H	6%	Lorinseria areolata	5%	
H		Osmundastrum cinnamomeum var. ci		



Figure 40. Red maple-blackgum swamp by bike path in Parcel 4 (04.08).

Table 38. 04.09 Japanese knotweed (*Reynoutria japonica*)

Obs. pt. 04.09 ref Form 3: Form 2 occ #:

Community: Paved road/path

CEGL code:

Alliance code:

UTM: zone 19 248945 E, 4572311 N

Comments: At end of bridge, between bridge and road there is a tulip tree and small patch of Japanese knotweed. Reference point. Vegetation cover data not collected.

Lat: Long:

Photo Photo name: 249 tulip tree, 250 Japanese knotweed

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Liriodendron tulipifera</i>	photo 249		
H	<i>Reynoutria japonica</i>	photo 250		



Figure 41. Left: Japanese knotweed (*Reynoutria japonica*); Right: tulip tree (*Liriodendron tulipifera*). Both species at point 04.09 in Parcel 4.

Table 39. 04.10 Coastal oak-hickory forest

Obs. pt. 04.10 Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 248790 E, 4572170 N

Lat: Long:

Comments: Parcel 04 south end. Attempt to find CO-HICKF boundary; 1930s air photo shows this area cleared - no trees. Large black oak at this point. Point at flat spot at top of small hill. Note: Observation points 04.10, 04.11, 04.12, and 04.13 are actually in Parcel 36b. Point 04.05 in beech stand sampled in 2021 is also in Parcel 36b.

Photo Photo name: 01-11

Position method GPS

GPS average min, sec. WAAS

Stratum		Species	comments	Collection	Unsure of ID
T2	45%, 28m	Quercus velutina	40% photos 01-05		
T2		Nyssa sylvatica	6%		
T3	45%, 15m	Acer rubrum var. rubrum	30%		
T3		Nyssa sylvatica	25%		
T3		Carya glabra	5% photo 10		
T3		Quercus velutina	5%		
T3		Prunus serotina			
TS1	2%, 3m	Acer rubrum var. rubrum	2%		
TS2		Acer rubrum var. rubrum	5%		
TS2	11%, 0.9m	Frangula alnus	5% photos 06-07		
TS2		Prunus serotina	1%		
TS2		Betula lenta	0.01% or Carpinus?		ID uncertain
TS3	13%, 0.27m	Frangula alnus	5%		
TS3		Acer rubrum var. rubrum	3%		
TS3		Prunus serotina	3%		
TS3		Quercus velutina	2%		
SS1		Ilex verticillata	1%		
SS1		Vaccinium corymbosum	1%		
SS1	3%, 4m	Viburnum dentatum	1%		
SS2	4%, 1.25m	Ilex verticillata	3%		
SS2		Viburnum dilatatum	1%		
SS3	7%, 0.28m	Rubus hispidus	5%		
SS3		Ilex verticillata	1%		
SS3		Viburnum dentatum	1%		
SS3		Morella caroliniensis	0.01%		
V1	10%, 4m	Smilax rotundifolia	5% on oak trunks		
V1		Toxicodendron radicans ssp. radicans	5% on oak trunks		
V2	18%, 0.3m	Smilax rotundifolia	15%		
V2		Lonicera japonica	1%		
V2		Parthenocissus quinquefolia	1%		
V2		Toxicodendron radicans ssp. radicans	1%		
V2		Smilax glauca	0.01%		
H	61%	Maianthemum canadense	50%		
H		Lysimachia borealis	10%		
H		Chimaphila maculata	1%		
H		Monotropa uniflora	0.01%		
U	95%	litter and duff	85%		
U		wood (CWD) >7.5 cm	10%		
U		wood (FWD) <7.5 cm	8%		
U		large rocks >10 cm	2%		



Figure 42. Coastal oak-hickory forest in Parcel 4 (04.10).



Figure 43. Coastal oak-hickory forest in Parcel 4 (04.10).

Table 40. 04.11 Coastal oak-hickory forest

Obs. pt. 04.11 ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 248768 E, 4572159 N

Lat: Long:

Comments: Three large black oak trees forming 5 m sided triangle. Large crown oaks. Dense tall vine/shrub thicket underneath. No hickory. Reference point. Vegetation cover not collected.

Photo Photo name: 12

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Quercus alba			
T2	Quercus velutina			
T3	Acer rubrum var. rubrum			
T3	Prunus serotina			
T3	Quercus velutina			



Figure 44. Coastal oak-hickory forest in Parcel 4 (04.11).

Table 41. 04.12 Coastal oak-hickory forest

Obs. pt. 04.12 Form 3: Form 2 occ#:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 248761 E, 4572128 N

Comments: Found *Carya glabra* at this point. Large crown black oaks.

Lat: Long:

Photo Photo name: 13,14

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	48%, 24m	<i>Quercus velutina</i>	35%	
T2		<i>Acer rubrum</i> var. <i>rubrum</i>	14%	
T2		<i>Carya glabra</i>	7% photo 13	
T3	28%, 12m	<i>Acer rubrum</i> var. <i>rubrum</i>	20%	
T3		<i>Quercus velutina</i>	10%	
TS1	16%, 2.2m	<i>Frangula alnus</i>	15%	
TS1		<i>Carya glabra</i>	1%	
TS2	10%, 1m	<i>Frangula alnus</i>	10%	
TS2		<i>Carya glabra</i>	0.01%	
TS3	7%, 0.25m	<i>Frangula alnus</i>	5%	
TS3		<i>Quercus velutina</i>	1%	
TS3		<i>Acer rubrum</i> var. <i>rubrum</i>	0.01%	
TS3		<i>Nyssa sylvatica</i>	0.01%	
SS1	15%, 3m	<i>Viburnum dentatum</i>	10% insect damaged leaves - skeleton veins	
SS1		<i>Ilex verticillata</i>	5%	
SS2	2%, 1.2m	<i>Ilex verticillata</i>	2%	
SS3		<i>Rubus</i> sp.	0.01%	
SS3	1%, 0.2m	<i>Viburnum dentatum</i>	0.01%	
V1	10%, 4m	<i>Smilax rotundifolia</i>	10%	
V2	4%, 0.2m	<i>Smilax rotundifolia</i>	3%	
V2		<i>Parthenocissus quinquefolia</i>	1%	
V2		<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	0.01%	
H	74%	<i>Maianthemum canadense</i>	60%	
H		<i>Lysimachia borealis</i>	12%	
H		<i>Carex pensylvanica</i>	1%	ID uncertain
H		<i>Carex swanii</i>	0.01%	ID uncertain
H		<i>Chimaphila maculata</i>	0.01%	
H		<i>Dendrolycopodium obscurum</i>	0.01%	
U	95%	litter and duff	90% including under <i>Maianthemum canadense</i> carpet	
U		wood (FWD) <7.5 cm	10%	
U		very large rocks >1 m	3% can see large rocks on tablet air photo	
U		large rocks >10 cm	1%	
U		wood (CWD) >7.5 cm	1%	



Figure 45. Coastal oak-hickory forest in Parcel 4 (04.12).



Figure 46. Pignut hickory (*Carya glabra* – 35 cm DBH) in coastal oak-hickory forest in Parcel 4 (04.12).

Table 42. 04.13a and 04.13b Coastal oak-hickory forest and Successional vineland

Obs. pt. 04.13a ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 248730 E, 4572141 N

Lat: Long:

Comments: Large crown black oak continues down slope south to this point and overhangs road; trees appear similar size and equidistant along road (photo15), planted decades ago? Photo file name incorrectly labeled as

Photo Photo name: 15 oaks along road

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Quercus velutina			

Obs. pt. 04.13b Form 3: Form 2 occ #:

Community: "Successional vineland"

CEGL code:

Alliance code:

UTM: zone 19 248730 E, 4572141 N

Lat: Long:

Comments: Dense patch Smilax rotundifolia N of road in canopy gap. Vine thicket with overhanging T2 trees on three sides. Photo file name incorrectly labeled as 04.12b.

Photo Photo name: 16

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
V2	85%, 1.5m Smilax rotundifolia	80%		
V2	Toxicodendron radicans ssp. radicans	5%		



Figure 47. Large crown black oak (*Quercus velutina*) along road in Parcel 4 (04.13a); Successional vineland dominated by common greenbrier (*Smilax rotundifolia*) in Parcel 4 (04.13b).

Table 43. 36a.01 Coastal oak-hickory forest

Obs. pt. 36a.01 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest 2021

CEGL code:

Alliance code:

UTM: zone 19 249014 E, 4572511 N

Comments: Coastal oak-hickory forest. Flat.

Lat: Long:

Photo Photo name: 01, face NW, 02 face NE, 03 face SE, 04 face SW

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	62%, 26m	Acer rubrum var. rubrum	45%	
T2		Quercus velutina	30% ID determined by Steve Young (Feb. 2022)	collect:Y
T3	35%, 10m	Acer rubrum var. rubrum	18% 12m, multi-trunk	
T3		Amelanchier arborea	5% 7 m	
T3		Nyssa sylvatica	5% 6 m	
T3		Quercus velutina	5% 8 m	
T3		Sassafras albidum	5% 8 m	
T3		Frangula alnus	3%	
T3		Prunus serotina var. serotina	gnarly	
TS1	11%, 3.5m	Quercus velutina	5% 3-5 m	
TS1		Frangula alnus	3%	
TS1		Sassafras albidum	2% 2.2 m	
TS1		Prunus serotina var. serotina	1%	
TS2	12%, 1.5m	Frangula alnus	5% 1-2 m	
TS2		Acer rubrum var. rubrum	3% 1.7 m	
TS2		Quercus velutina	2% 1.5 m	
TS2		Nyssa sylvatica	1%	
TS2		Pinus strobus	1% 1.5 m	
TS3		Acer rubrum var. rubrum	2% 0.2-0.45 m	
TS3		Frangula alnus	2% 0.45 m	
TS3	8%, 0.4m	Quercus velutina	2% 0.2-0.6 m	
TS3		Prunus serotina var. serotina	1% 0.75 m	
TS3		Nyssa sylvatica	0.01% 0.25 m	
TS3		Sassafras albidum	0.01% 0.2 m	
SS1	14%, 4m	Ilex verticillata	5% 5 m	
SS1		Clethra alnifolia	4% 4 m	
SS1		Viburnum dentatum var. lucidum	2% 3 m	
SS2	7%, 1m	Ilex verticillata	5%	
SS2		Clethra alnifolia	1%	
SS2		Viburnum dentatum var. lucidum	1%	
SS3	23%, 0.1m	Rubus hispida	20%	
SS3		Ilex verticillata	1%	
SS3		Viburnum dentatum var. lucidum	1%	
SS3		Clethra alnifolia	0.01%	
SS3		Morella carolinensis	0.01%	
V1	32%, 4m	Toxicodendron radicans ssp. radicans	25% 3 m	
V1		Parthenocissus quinquefolia	5%	
V1		Smilax glauca	2%	
V2	52%, 0.5m	Toxicodendron radicans ssp. radicans	40% 0.3-0.75 m	
V2		Parthenocissus quinquefolia	10%	
V2		Lonicera japonica	2%	
H	6%, 0.2m	Dendrolycopodium obscurum	3%	
H		Eurybia divaricata	1%	
H		Maianthemum canadense	1%	
H		Lysimachia borealis	0.01%	
H		Solidago rugosa var. rugosa	0.01%	
U	98%	litter and duff	98%	
U		wood (FWD) <7.5 cm	8%	
U		wood (CWD) >7.5 cm	3%	



Figure 48. Coastal oak-hickory forest on both sides of trail in Parcel 36a (36a.01) face NW.



Figure 49. Coastal oak-hickory forest on both sides of trail in Parcel 36a (36a.01) face SE.

Table 44. 36b.01 Coastal oak-hickory forest

Obs. pt. 36b.01 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest 2021

CEGL code:

Alliance code:

UTM: zone 19 248705 E, 4572488 N

Comments: Near 2003 obs pt. Flat. Missing Hamamelis virginiana seen in 2003.

Lat: Long:

Photo Photo name: 39 face N, 36 face E, 37 face S, 38 face W, 40 general photo of forest w/o trail

Position method GPS

GPS average 500 readings

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	68%, 25m	Quercus velutina	60%	
T2		Nyssa sylvatica	15%	
T2		Acer rubrum var. rubrum	6%	
T3	20%, 15m	Acer rubrum var. rubrum	10%	
T3		Nyssa sylvatica	10%	
TS1	27%, 4.3m	Acer rubrum var. rubrum	15%	3.5 m
TS1		Nyssa sylvatica	5%	4.5 m
TS1		Quercus velutina	5%	5 m
TS1		Quercus alba	2%	
TS2	10%, 1.1m	Nyssa sylvatica	3%	1.5 m
TS2		Prunus serotina var. serotina	3%	1 m
TS2		Acer rubrum var. rubrum	2%	0.5-1.0 m
TS2		Amelanchier arborea	1%	2 m
TS2		Frangula alnus	1%	0.75-1.0 m
TS2		Quercus velutina	0.01%	
TS3	10%, 0.4m	Prunus serotina var. serotina	3%	0.75 m
TS3		Quercus velutina	3%	0.2 m
TS3		Acer rubrum var. rubrum	2%	0.3 m
TS3		Frangula alnus	1%	
TS3		Nyssa sylvatica	0.01%	
SS1	8%, 2.25m	Ilex verticillata	5%	2.5 m
SS1		Vaccinium corymbosum	3%	2 m
SS2	12%, 1.4m	Aronia arbutifolia	5%	1.5 m
SS2		Ilex verticillata	3%	1-1.5 m
SS2		Clethra alnifolia	2%	1.5 m
SS2		Morella caroliniensis	1%	0.75-1.5 m
SS2		Viburnum dentatum var. lucidum	1%	1.5-2 m
SS3	2%, 0.3m	Clethra alnifolia	1%	
SS3		Ilex verticillata	0.01%	
SS3		Morella caroliniensis	0.01%	0.35 m
SS3		Rubus hispidus	0.01%	
SS3		Viburnum dentatum var. lucidum	0.01%	0.2 m
V	5%, 1m	Toxicodendron radicans ssp. radicans	5%	no vines on tree trunks
H		Carex sp.	0.01%	
H		Chimaphila maculata	0.01%	photos 42-44
H		Hypopitys lanuginosa	0.01%	"Hypopitys monotropa if yellow, H. lanuginosa if red" per Steve Young.
H		Lysimachia borealis	0.01%	
H		Lysimachia quadrifolia	0.01%	
H		Maianthemum canadense	0.01%	
H	2%	Medeola virginiana	0.01%	phot 41
U	98%	litter and duff	98%	
U		wood (CWD) >7.5 cm	8%	
U		wood (FWD) <7.5 cm	5%	



Figure 50. Coastal oak-hickory forest in Parcel 36b (36b.01).



Figure 51. Canada mayflower (*Maianthemum canadense*) and starflower (*Lysimachia borealis*); spotted wintergreen (*Chimaphila maculata*) in coastal oak-hickory forest in Parcel 36b (36b.01).

Table 45. 36b.02 Shrub swamp (*Decodon verticillatus*)

Obs. pt. 36b.02 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Decodon verticillatus*)"
Glyceria obtusa habitat

CEGL code:

Alliance code:

UTM: zone 19 248745 E, 4572477 N

Comments: Decodon SS.

Lat: Long:

Photo Photo name: 45-47, 48 Nyssa fringe, 49-50 Lemna

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	5%, 2m	<i>Cephalanthus occidentalis</i>	3%	
SS1		<i>Ilex verticillata</i>	2%	
SS2	72%, 1m	<i>Decodon verticillatus</i>	70%	
SS2		<i>Cephalanthus occidentalis</i>	2%	
SS3	11%, 0.5m	<i>Decodon verticillatus</i>	10%	
SS3		<i>Cephalanthus occidentalis</i>	1%	
V	10%	<i>Aplos americana</i>	5% single leaf low, 3 leaflets mid, 5 leaflets top.	ID uncertain
V		<i>Cuscuta gronovii</i>	5% on Decodon; ID tentatively determined by Steve Young (Feb. 2022).	collect:Y ID uncertain
H	23%	<i>Bidens tripartita</i> ssp. <i>comosa</i>	15% 3 lobed, no rays; ID determined by Steve Young (Feb. 2022).	collect:Y
H		<i>Hypericum virginicum</i>	2%	
H		<i>Lycopus uniflorus</i>	2%	
H		<i>Calamagrostis canadensis</i> var. <i>canad</i>	1%	ID uncertain
H		<i>Carex bromoides</i>	0.01%	ID uncertain
H		<i>Carex interior</i>	0.01% <i>C. atlantica</i> ?	ID uncertain
H		<i>Carex stricta</i>	0.01%	
H		<i>Gallium</i> sp.	0.01%	ID uncertain
H		<i>Hypericum mutilum</i>	0.01% tiny yellow flowers; ID determined by Steve Young (Feb. 2022).	
H		<i>Proserpinaca palustris</i>	0.01%	
H		<i>Sagittaria latifolia</i>	0.01%	
H		<i>Dulichium arundinaceum</i>	in community at point 36b.03a (ref)	
H		<i>Glyceria obtusa</i>	in community at point 36b.03a (ref)	
H		<i>Lysimachia terrestris</i>	in community at point 36b.03a (ref)	
H		<i>Thelypteris palustris</i>	in community at point 36b.03a (ref)	
A2	2%	<i>Lemna minor</i>	1% photos 49,50; ID determined by Steve Young (Feb. 2022).	collect:Y
A2		<i>Ludwigia palustris</i>	1%	
A3	2%	<i>Utricularia</i> sp.	2% species ID "unknown" per Steve Young (Feb. 2022).	collect:Y ID uncertain
U	98%	water	98% 0.2 m deep	



Figure 52. Shrub swamp (*Decodon verticillatus*) in Parcel 36b (36b.02).



Figure 53. Red maple-blackgum swamp fringe (upper left) and shrub swamp (*Decodon verticillatus*) (front) in Parcel 36b (36b.02).

Table 46. 36b.03a Shrub swamp (*Decodon verticillatus*)

Obs. pt. 36b.03a ref Form 3: Form 2 occ #:

Community: "Shrub swamp (*Decodon verticillatus*)"

CEGL code:

Alliance code:

UTM: zone 19 248761 E, 4572463 N

Lat: Long:

Comments: *Glyceria obtusa* tally in Decodon SS. Associated spp. = 36b.02 plus spp. listed at this point. About 20 fertile spikes per 1 square meter. Patch 1: 15 m x 20 m = 300 spikes. Patch 2: 10 m x 20 m = 200 spikes next to Clethra SS. Patch 3: 10 m x 20 m = 200 spikes to west. Reference point. Vegetation cover data not collected.

Photo Photo name: 51-53

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	<i>Glyceria obtusa</i>	15% ID confirmed by Steve Young (Feb. 2022).	collect:Y	
H	<i>Dulichium arundinaceum</i>	1%		
H	<i>Thelypteris palustris</i> var. <i>pubescens</i>	0.01% less flooded, less Decodon		
H	<i>Lysimachia terrestris</i>	0% "red worms" photos 57, 58; ID determined by Steve Young (Feb. 2022).	collect:Y	



Figure 54. Left: Coastal manna grass (*Glyceria obtusa*); Right: swamp candles (*Lysimachia terrestris*) with red axillary bulblets; both in Parcel 36b (36b.03a).

Table 47. 36b.04 Shrub swamp (*Clethra alnifolia*)

Obs. pt. 36b.04 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Clethra alnifolia*)" EO1 CEGL code: Alliance code:

UTM: zone 19 248775 E, 4572468 N Comments: Dense tall *Clethra* SS//young RM-HS (maple invading). Impenetrable from edge.

Lat: Long: Photo Photo name: 54-56

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	25%, 4.5m	<i>Acer rubrum</i> var. <i>rubrum</i>	20%	4-5 m
TS1		<i>Nyssa sylvatica</i>	5%	
TS2	5%, 2m	<i>Acer rubrum</i> var. <i>rubrum</i>	5%	
SS1	55%, 3.2m	<i>Clethra alnifolia</i>	40%	3-4 m
SS1		<i>Ilex verticillata</i>	15%	2.5 m
SS2	40%, 1.5m	<i>Clethra alnifolia</i>	30%	
SS2		<i>Decodon verticillatus</i>	5%	
SS2		<i>Ilex verticillata</i>	5%	
SS3	5%, 0.5m	<i>Clethra alnifolia</i>	5%	
V	2%, 1m	<i>Apios americana</i>	2%	
H	13%	<i>Osmunda regalis</i> var. <i>spectabilis</i>	5%	
H		<i>Thelypteris palustris</i> var. <i>pubescens</i>	3%	
H		<i>Dulichium arundinaceum</i>	2%	
H		<i>Glyceria obtusa</i>	2%	= Patch #2 at 36b.03a
H		<i>Leersia oryzoides</i>	1%	
H		<i>Hypericum virginicum</i>	0.01%	



Figure 55. Shrub swamp (*Clethra alnifolia*) in Parcel 36b (36b.04) behind Biltmore stick (1 m).

Table 48. 36b.05 Red maple-blackgum slope forest

Obs. pt. 36b.05 Form 3: Form 2 occ #: 1

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 248764 E, 4572417 N
 Lat: Long:

Comments: RM-BG forest with dense tall Clethra upland island with Sassafras. Measured DBH of select large trees.

Photo Photo name: 59,60

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	54%, 22m	Nyssa sylvatica	25%	big trees wetland margin
T2		Acer rubrum var. rubrum	20%	
T2		Quercus velutina	15%	
T2		Quercus alba	10%	
T3	39%, 14m	Nyssa sylvatica	20%	
T3		Sassafras albidum	15%	
T3		Acer rubrum var. rubrum	10%	
TS1	3%, 5m	Nyssa sylvatica	3%	
SS1	47%, 3.5m	Clethra alnifolia	40%	3-4 m
SS1		Vaccinium corymbosum	5%	
SS1		Rhododendron viscosum	2%	ID uncertain
SS2	20%, 1.7m	Clethra alnifolia	20%	
SS3	10%, 0.2m	Clethra alnifolia	10%	
H	1%	Lysimachia borealis	0.01%	
H		Medeola virginiana	0.01%	photo 61
U	98%	litter and duff	98%	
U		wood (FWD) <7.5 cm	4%	



Figure 56. Red maple-blackgum slope forest on small island in Parcel 36b (36b.05).

Table 49. 36b.06 Red maple-blackgum slope forest

Obs. pt. 36b.06 ref Form 3: Form 2 occ #:

Community:

"Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 248781 E, 4572362 N

Lat: Long:

Comments: Reference point. Vegetation cover data not collected. Three large *Nyssa* at south end of island near this point. GPS taken at tree #1 48 cm DBH photo 62. Reference point. Vegetation cover data not collected.

Photo Photo name: 62 of 48 cm DBH, 63 of 45 cm DBH, 64-65 of 52 cm DBH

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Nyssa sylvatica</i>			



Figure 57. Large blackgum (*Nyssa sylvatica*) trees (36b.06): Left: 45 cm DBH; Right: 48 cm DBH.



Figure 58. Large blackgum (*Nyssa sylvatica*) trees (36b.06): Left: 52 cm DBH; Right: 62 cm DBH.

Table 50. 36b.07a Coastal oak-hickory forest

Obs. pt. 36b.07a ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 18 751309 E, 4572254 N

Lat: Long:

Comments: 12 m south of boulders on air photo. Hickory stand in coastal oak-hickory forest *Monotropa hypopythes*. GPS UTM 18 not 19! Reference point. Vegetation cover data not collected.

Photo Photo name:

Position method GPS

GPS average min. sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
H	<i>Eurybia divaricata</i>	photo 70		
H	<i>Hypopitys monotropa</i>	photos 71-73		



Figure 59. Left: white wood aster (*Eurybia divaricata*); Right: pinesap (*Hypopitys monotropa*) at point 36b.07a.

Table 51. 36b.07b Coastal oak-hickory forest

Obs. pt. **36b.07b** ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 248692 E, 4572288 N

Lat: Long:

Comments: Hickory stand continues to this point from 36b.01a add species below to coastal oak-hickory forest. See 9/30/2021 plot data at point 36b.09 Appears to be nicest patch of coastal oak-hickory forest on Fishers Island. Reference point. Vegetation cover data not collected.

Photo Photo name: 74-76

Position method

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Carya cordiformis</i>	ID determined by Steve Young (Feb. 2022).	collect:Y	
T2	<i>Carya glabra</i>	ID determined by Steve Young (Feb. 2022).	collect:Y	
H	<i>Polystichum acrostichoides</i>			



Figure 60. Hickories (*Carya* spp.) in Parcel 36b (36b .07b).

Table 52. 36b.08 Shrub swamp (*Decodon verticillatus*)

Obs. pt. 36b.08 ref Form 3: Form 2 occ #:

Community: "Shrub swamp (*Decodon verticillatus*)" CEGL code: Alliance code:

UTM: zone 19 248717 E, 4572365 N

Lat: Long:

Position method GPS

GPS average min, sec. WAAS

Comments: Decodon SS. Reference point. Vegetation cover data not collected.

Photo Photo name: 77

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS2	<i>Decodon verticillatus</i>			



Figure 61. Shrub swamp (*Decodon verticillatus*) in Parcel 36b (36b.08).

Table 53. 36b.09 Coastal oak-hickory forest

Obs. pt. **36b.09** Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest 2021

CEGL code:

Alliance code:

UTM: zone 18 751308 E, 4572290 N

Lat: 41.07283228 Long: -71.8578074

Comments: 20 m x 20 m plot - no tape. Likely the best remaining patch of coastal oak-hickory forest on Fishers Island. Photo log from GPS point: 214 face N, 215 face E, 216 face S, 217 face W. GPS on top of small hill - one of several undulating hills/coves that drain east to shrub swamp. Flat top of small hill with slopes facing N and S of plot and ridge. Aspect 72 degrees. Slope: 1 degree, becoming steeper closer to trail (18 degrees).

Photo Photo name: 214-226

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	68%, 27m	<i>Carya tomentosa</i>	55%	
T2		<i>Quercus velutina</i>	25%	
T2		<i>Acer rubrum</i> var. <i>rubrum</i>	5%	
T3		<i>Carya tomentosa</i>	25%	
T3	50%, 15m	<i>Quercus velutina</i>	25%	
T3		<i>Acer rubrum</i> var. <i>rubrum</i>	10%	
TS1	25%, 4.5m	<i>Carya tomentosa</i>	12% 4 m; tally 4	
TS1		<i>Quercus velutina</i>	10% 5 m; tally 3	
TS1		<i>Acer rubrum</i> var. <i>rubrum</i>	2%	
TS1		<i>Frangula alnus</i>	2% 2.5 m	
TS2	17%, 1m	<i>Quercus velutina</i>	12%	
TS2		<i>Carya tomentosa</i>	2%	
TS2		<i>Frangula alnus</i>	2% 1.5 m	
TS2		<i>Acer rubrum</i> var. <i>rubrum</i>	0.01%	
TS2		<i>Nyssa sylvatica</i>	0.01%	
TS3	6%, 0.5m	<i>Carya tomentosa</i>	2%	
TS3		<i>Quercus velutina</i>	2%	
TS3		<i>Frangula alnus</i>	1%	
TS3		<i>Acer rubrum</i> var. <i>rubrum</i>	0.01%	
TS3		<i>Prunus serotina</i> var. <i>serotina</i>	0.01%	
SS1		<i>Cornus racemosa</i>	5% 2.5 m; ID determined by Steve Young (Feb. 2022)	collect:Y ID uncertain
SS1	12%, 2.5m	<i>Vaccinium corymbosum</i>	5% 2.5 m	
SS1		<i>Ilex verticillata</i>	2% ID confirmed by Steve Young (Feb. 2022)	collect:Y
SS2	13%, 1m	<i>Cornus racemosa</i>	5%	ID uncertain
SS2		<i>Viburnum dentatum</i> var. <i>lucidum</i>	5%	
SS2		<i>Euonymus alatus</i>	2% 1 m	
SS2		<i>Ligustrum vulgare</i>	1%	
SS3		<i>Ligustrum vulgare</i>	2%	
SS3		<i>Rubus hispidus</i>	2%	
SS3	10%, 0.35m	<i>Rubus pubescens</i>	2% 0.2 m trailing	
SS3		<i>Cornus racemosa</i>	1%	
SS3		<i>Euonymus alatus</i>	1% 0.5 m	
SS3		<i>Viburnum dentatum</i> var. <i>lucidum</i>	1%	
SS3		<i>Ilex verticillata</i>	0.01%	
V2	10%, 0.25m	<i>Lonicera japonica</i>	5%	
V2		<i>Parthenocissus quinquefolia</i>	5%	
V2		<i>Smilax rotundifolia</i>	0.01%	
H	35%	<i>Eurybia divaricata</i>	25%	
H		<i>Carex pensylvanica</i>	8%	ID uncertain
H		<i>Maianthemum canadense</i>	1%	
H		<i>Polystichum acrostichoides</i>	1%	
H		<i>Chimaphila maculata</i>	0.01%	
H		<i>Lysimachia borealis</i>	0.01%	
H		<i>Monotropa uniflora</i>	0.01%	
H		<i>Pilosella caespitosa</i>	0.01% ID determined by Steve Young (Feb. 2022)	collect:Y
H		<i>Pyrola elliptica</i>	0.01%	ID uncertain

U	98%	litter and duff	80% oakleaves
U		wood (FWD) <7.5 cm	10%
U		wood (CWD) >7.5 cm	6%
U		very large rocks >1 m	5%
U		large rocks >10 cm	3%



Figure 62. Coastal oak-hickory forest in Parcel 36 (36b.09).



Figure 63. Coastal oak-hickory forest in Parcel 36 (36b.09).

Parcel 4, Parcel 36a, and Parcel 36b Ecological Community Acreage

Table 54. Parcel 4, Parcel 36a, and Parcel 36b Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
325	0.79	CO-BF	Coastal oak-beech forest	CTERFOR	road SW edge
324	5.65	CO-HF	Coastal oak-hickory forest	CTERFOR	road E edge
326	11.38	CO-HF	Coastal oak-hickory forest	CTERFOR	road E edge
43	1.30	CP	Conifer plantation	CTERCULT	
44	0.10	MR/P?	Mowed roadside/pathway?	CTERCULT	road shoulder
45	0.14	MR/P?	Mowed roadside/pathway?	CTERCULT	road shoulder between road and bike path
46	0.19	MR/P?	Mowed roadside/pathway?	CTERCULT	mixed conifer between road and bike path
42	0.22	PR/P	Paved road/path	CTERCULT	bike path?
34	1.57	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	narrow band; part NWI wetland
37	1.41	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	narrow band; part NWI wetland
301	0.47	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	edge of NWI wetland
36	0.25	RM-BG (slope)	Red maple-blackgum slope forest	CTERFOR	upland island; not NWI wetland
327	0.92	RM-BGS	Red maple-blackgum swamp	CPALFOR	edge of NWI wetland N end
446	0.27	RM-BGS	Red maple-blackgum swamp	CPALFOR	edge of NWI wetland N end
32	1.37	SS Clethra	Shrub swamp (Clethra)	CPALOPEN	Dense tall Clethra SS//young RM-HS (maple invading)
35	3.15	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	
39	0.02	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	
41	1.98	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	parts flooded, southern half maple invasion
335	0.02	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	
33	0.28	stream	stream	CRIV	open water; stream?
38	0.23	stream	stream	CRIV	open water; stream?
40	0.43	stream	stream	CRIV	open water; stream?
31	0.60	stream?	stream?	CRIV	natural or artificial?
497	0.06	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN	road SW edge
24 polys	32.79 acres	10 types			

Parcel 4, Parcel 36a, and Parcel 36b General Description

Parcel 4, Parcel 36a, and Parcel 36b comprise the L. F. Boker Doyle Sanctuary (henceforth in this section referred to as “the Sanctuary”). Straddling the boundary between Parcel 4 (to the east) and Parcel 36b (to the west) at about the center of the Sanctuary is an impressive shrub swamp of statewide significance (EOID 17533, EO Rank BC, 7.33 acres). The shrub swamp is surrounded by an occurrence of coastal oak-hickory forest that is also of statewide significance (EOID 17532, EO Rank BC, 26 acres, Figure 63).

Although this shrub swamp is very small compared to others in the state, it is likely one of the larger ones co-dominated by water willow (*Decodon verticillatus*) and sweet pepperbush (*Clethra alnifolia*). We are looking into the possibility of splitting out “water willow shrub swamp” as a new community type in NY. Until that time we will record new occurrences of this type under the broader shrub swamp concept in the NYNHP Biotics database. Data collected under this project will help further our goal of recognizing this new community.

The Sanctuary shrub swamp is comprised of two vegetation associations: 1) short (1.3 m) water willow (*Decodon verticillatus*) dominated patches (5.98 acres, 82% of occurrence, Figure 52); and 2) tall (3.2 m) sweet pepperbush (*Clethra alnifolia*) dominated patches (1.35 acres, 18% of occurrence, Figure 55). A narrow band of red maple-blackgum swamp lines the margin of the shrub swamp basin (Figure 53). The wetland basin is surrounded by a horseshoe-shaped polygon of coastal oak-hickory forest (36 acre natural area) with a network of hiking trails which is surrounded by roads on four sides (43 acre roadless block), East End Rd. is along the southeast boundary and Brickyard Rd. loops around the forest block along the west and north margins. A new population of coastal manna grass (*Glyceria obtusa*) was found in the water willow shrub swamp during our 2021 ecology surveys. The shrub swamp dominated by sweet pepperbush (*Clethra alnifolia*) in Parcel 36b at point 36b.04 has the highest Weighted Floristic Quality Index Score (FQI 22.15) for that community found during our ecology surveys. The shrub swamp dominated by water willow (*Decodon verticillatus*) in Parcel 36b at point 36b.02 has the highest Weighted Floristic Quality Index Score (FQI 29.60) for that community found during our ecology surveys. Point 36b.02 also has the second highest number of native species (22) recorded at any point sampled during our ecology surveys. Point 50.01 in Parcel 50 is #1 with 25 native species; however, point 36b.02 is invasive free (i.e., 100% native) compared to point 50.01 which has three invasive plant species.

The coastal oak-hickory forest in the Sanctuary appears to be the best example on Fishers Island. The forest is dominated by mature black oak with lesser amounts of red maple, mockernut hickory, blackgum, and sweet birch in the canopy. The forest forms a horseshoe-shape polygon on the slopes and hills around a 10-acre wetland basin. The forest has well-developed shrub and tree layers. The forest is comprised of two patches, one 18 acre, horseshoe-shaped polygon in the Sanctuary, west of East End Rd. and one irregular-shape, 7-acre patch east of East End Rd in Parcel 33 and Parcel 44. The forest is dominated by native species in all strata. Lack of deer browse is evident with good canopy tree recruitment and diverse herb layer (about 17 species, 13% cover avg.). A small (<1 acre) inclusion of coastal oak-beech forest is located at point 04.05.

Lastly, six of the top ten highest FQI scores generated for this study are in Parcel 4 and Parcel 36b in the L. F. Boker Doyle Sanctuary (Table 55). These scores help confirm that the Sanctuary is in very good condition floristically and worthy of protection into the future.

Table 55. Top 10 Observation Points in descending Weighted Floristic Quality Score. Six of the top ten highest FQI scores are in Parcel 4 and Parcel 36b in L. F. Boker Doyle Sanctuary.

Obs. Point	Richness	% Native	% Invasives	Mean C	Weighted Mean C	Floristic Quality	Weighted Floristic Quality	Field Code	Survey Date
32.05	23	91.30	8.70	5.22	6.51	25.02	31.21	F21EDI36NYUS	9/2/2021
50.01	28	89.29	10.71	4.89	5.88	25.89	31.10	F22EDI19NYUS	8/3/2022
04.06	23	91.30	8.70	5.39	6.43	25.86	30.83	F21EDI43NYUS	9/27/2021
36b.09	26	80.77	19.23	4.58	5.91	23.34	30.12	F21EDI46NYUS	9/30/2021
04.05	19	94.74	5.26	5.42	6.87	23.63	29.94	F21EDI43NYUS	9/27/2021
36b.02	22	100.00	0.00	5.77	6.31	27.08	29.60	F21EDI44NYUS	9/28/2021
20.02	17	100.00	0.00	5.18	6.78	21.34	27.95	F21EDI35NYUS	9/1/2021
36b.01	21	95.24	4.76	5.67	6.04	25.97	27.66	F21EDI44NYUS	9/28/2021
11.02	16	100.00	0.00	5.50	6.75	22.00	26.98	F21EDI34NYUS	8/31/2021
04.10	22	86.36	13.64	4.86	5.24	22.81	24.59	F22EDI18NYUS	8/2/2022

Parcel 4, Parcel 36a, and Parcel 36b Invasive Plants

Invasives plants are currently not a serious threat in the shrub swamp or red maple-blackgum fringe swamp in the Sanctuary. However, we found the following species that may warrant management attention:

1. Glossy buckthorn (*Frangula alnus*) is present throughout the coastal oak-hickory forest with the highest percent cover at the following points: 04.02 (15%); 04.10 (10%); 04.12 (30%); 36a.01 (13%).
2. Japanese knotweed (*Reynoutria japonica*) at point 04.09.
3. Old World reed grass (*Phragmites australis*) – a large patch of *Phragmites* is located 100-200 m north of the Sanctuary along Brickyard Road east of the private residence. Old World reed grass is the primary threat to the wetlands in the Sanctuary.

Parcel 4, Parcel 36a, and Parcel 36b Management Recommendations

Remove or reduce glossy buckthorn (*Frangula alnus*) from the coastal oak-hickory forest. At points where it is currently at low percent cover (e.g., 04.05 – 2%; 04.06 – 1%; 36b.01 – 2%; 36b.09 – 5%) cutting individual stems may be sufficient to improve floristic quality. Points with higher cover listed in #1 above may warrant more intensive management.

The Japanese knotweed (*Reynoutria japonica*) at point 04.09 is small and relatively easy to access from the paved bike path. It should be removed and prevented from spreading into the Sanctuary wetlands.

The Sanctuary wetlands should be monitored for Old World reed grass (*Phragmites australis*) invasion and any reed grass plants should be removed immediately after discovery.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 4, Parcel 36a, and Parcel 36b Future Surveys

Several large blackgum (*Nyssa sylvatica*) trees were found on the small upland island at the south end of the water willow shrub swamp at point 36b.06 (Figure 57 and Figure 58) and are worthy of increment coring to determine their age. This island may have been continuously forested, and perhaps uncut, for the last 100 years. The island is among the few forested areas on the mid-1920s black and white air photo (Figure 32).

We were fortunate to sample an Observation Point (36b.01) in 2021 at the same GPS coordinates sampled by the same NYNHP Chief Ecologist in 2003 (C2). The Floristic Quality Assessment scores of the two points are very similar (Table 56). Glossy buckthorn (*Frangula alnus*) was the only invasive recorded in both years (2003 – 5%; 2021 – 2%). Not surprisingly, the native trees and shrubs recorded in both years are similar, with one noticeable exception – witch hazel (*Hamamelis virginiana*) has vanished from this location. Interestingly, witch hazel was not found at any other Observation Point on Fishers Island during our 2021 and 2022 ecology surveys. NYNHP rare plant surveys did not report *Hamamelis virginiana* on the Ferguson Museum Land Trust Survey 2021-2022 Plant List. This raises several question: Does witch hazel occur on Fishers Island? Are there specimens of witch hazel confirming its presence on Fishers Island? What happened to the witch hazel recorded in the Sanctuary at point C2 in 2003? Was it a mis-identified? Future surveys in the Sanctuary should include searches for witch hazel and perhaps intentionally resampling the same GPS points to look for future changes in the flora.

Table 56. Floristic Quality Comparison of two coastal oak-hickory forest Observation Points in Parcel 4 sampled at the same location 18 years apart (2003 and 2021).

Obs. Point	Richness	% Native	% Invasives	Mean C	Weighted Mean C	Floristic Quality	Weighted Floristic Quality	Field Code	Survey Date
36b.01	21.00	95.24	4.76	5.67	6.04	25.97	27.66	F21EDI44NYUS	9/28/2021
C2	19.00	94.70	5.30	5.70	6.00	25.00	26.10	F03EDI60NYUS	10/8/2003

Parcel 5. Treasure Pond



Figure 64. Parcel 5

Table 57. 05.01 Maritime bluff

Obs. pt. 05.01 Form 3: Form 2 occ #: 1

Community: Maritime bluff

CEGL code:

Alliance code:

UTM: zone 19 251239 E, 4573321 N

Lat: Long:

Comments: = 23.01 Maritime bluff. Aspect: 165 degrees. Slope: 35 degrees. Photo log: 28 29, 30, 31, 36 face E MRB//MRI; 25, 26 MRB//MiG/SB.

Photo Photo name: 32,34,35 face E, 37 face N, 33 face W, 27 MBLUFF cont E off Parcel 23.

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS2	5%, 1.5m	Morella caroliniensis	5%	
SS3	4%, 0.5m	Rosa rubiginosa	2%	
SS3		Morella caroliniensis	1%	
SS3		Rubus flagellaris	1%	ID uncertain
V2	11%, 0.75m	Lonicera japonica	10%	
V2		Toxicodendron radicans ssp. radicans	1%	
H	25%, 0.75m	Solidago sempervirens	12%	
H		Erigeron canadensis var. canadensis	10%	
H		Panicum sp.	2%	ID uncertain
H		Achillea millefolium	1%	
H		Linaria canadensis	1% dead	ID uncertain
H		Carex silicea	0.01%	ID uncertain
U	98%	small rocks <10 cm	50%	
U		sand <2 mm	40%	
U		large rocks >10 cm	5%	
U		very large rocks >1 m	3%	



Figure 65. Maritime bluff in Parcel 5: Treasure Pond (05.01).



Figure 66. Maritime rocky beach in Parcel 5 facing E.

Parcel 5 Ecological Community Acreage

Table 58. Parcel 5 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
2	0.62	MBLUFF	Maritime bluff	CTEROPEN	
1	1.15	MRB	Maritime rocky beach	CTEROPEN	unvegetated
5	0.05	MRB	Maritime rocky beach	CTEROPEN	unvegetated
0	2.24	MRI	Marine rocky intertidal	CMARINTER	
3	0.20	MS	Maritime shrubland	CTEROPEN	
6	0.70	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	edge of NWI wetland; narrow band; RM-BGSF up slope
4	3.57	SMF	Successional maritime forest	CTERFOR	
7 polys	8.53 acres	6 types			

Parcel 5 General Description

Parcel 5 is an undeveloped, relatively inaccessible natural area with an ocean-facing shoreline that runs about 250 m from Key Post to the east, to the south shore of Treasure Pond to the west. Natural communities form narrow bands along the ocean shoreline as follows: Marine rocky intertidal community (EOID 3294) runs along the parcel's southeast property line occupying the rocky area between mean low water (MLW) and mean high water (MHW). At slightly higher elevation above MHW it becomes an unvegetated maritime rocky beach (Figure 66, EOID 17561) dominated by large rocks (>10 cm diameter with some over 1 m diameter). The maritime rocky beach is about 20 m wide and runs up to the base of the maritime bluff (Figure 65, EOID 17535).

At the top of the bluff and continuing north is a dense successional maritime forest covering about 3.6 acres making it the largest natural community in the parcel.

Parcel 5 has the fourth best Landscape Condition Analysis Score of the 77 Land Trust parcels (LCA Score: 38.28; range 0 to 1728).

Parcel 5 Invasive Plants

Invasive plants are currently not a major threat in Parcel 5. Beach rose (*Rosa rugosa* – 2%)* is present on the maritime bluff with low percent cover along with a few non-native herbs.

**Rosa rugosa* and *Rosa rubiginosa* were used interchangeably on ecology surveys. Both are non-native and naturalized in NY. Both species are present on Fishers Island and may be found together in the same habitat.

Parcel 5 Management Recommendations

Reducing or eliminating beach rose (*Rosa rugosa*) on the maritime bluff in Parcel 5 would improve the floristic quality of the community.

The shoreline natural communities, such as the marine rocky intertidal and maritime rocky beach, extend west onto Parcel 23. Management plans for adjacent parcels should be developed in tandem at the natural community level rather than following strict parcel boundaries.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 5 Future Surveys

The interior portions of the successional maritime forest in Parcel 5 were not surveyed in 2021 or 2022. The community was mapped based on air photo interpretation and its extent and condition needs to be evaluated. Likewise, the red maple-blackgum fringe swamp along the east shore of Treasure Pond needs to be surveyed for the same reasons.

A 41-m long marine rocky intertidal transect with five 1 m x 1 m quadrats was sampled at low tide on September 16, 2021 near Parcel 5 at Key Post. Resampling this transect on a 5-10 year rotational basis would document changes in the community structure and composition. More information on the marine rocky intertidal community can be found in Edinger (2023a); and the Fishers Island Marine Rocky Intertidal Survey Addendum (Edinger 2023b).

Parcel 6. Barlow Pond and Parcel 28. Brickyards South



Figure 67. Parcel 6: Barlow Pond and Parcel 28: Brickyards South.

Table 59. 06.01 Successional southern hardwoods

Obs. pt. 06.01 Form 3: Form 2 occ #: 1

Community: Successional southern hardwoods

CEGL code:

Alliance code:

UTM: zone 19 249614 E, 4572894 N

Comments: SSH - modified

Lat: 41.06686052 Long: -71.8600001

Photo Photo name: 260,261

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	50%, 18m	Acer rubrum var. rubrum	25%	
T2		Prunus serotina var. serotina	20%	
T2		Acer platanoides	10% Norway Maple	
T2		Robinia pseudoacacia	8% dying/dead	
T3	42%, 12m	Prunus serotina var. serotina	40%	
T3		Robinia pseudoacacia	3%	
TS1	5%, 3m	Frangula alnus	3%	
TS1		Prunus serotina var. serotina	1%	
TS1		Robinia pseudoacacia	1%	
TS2	8%, 1.5m	Frangula alnus	5%	
TS2		Robinia pseudoacacia	3%	
TS3	5%, 0.5m	Frangula alnus	5%	
SS1	3%, 4m	Viburnum dentatum var. lucidum	3%	
SS2	5%, 1.2m	Viburnum dentatum var. lucidum	5%	
SS3	2%, 0.5m	Viburnum dentatum var. lucidum	2%	
V	65%, 1m	Toxicodendron radicans ssp. radicans	30% 0.5-1.5 m	
V		Smilax rotundifolia	20%	
V		Lonicera japonica	10%	
V		Parthenocissus quinquefolia	5%	
H	10%	Thelypteris noveboracensis	5%	
H		Phytolacca americana	2%	
H		Maianthemum racemosum ssp. race	1%	
H		Onoclea sensibilis	1%	
H		Solidago rugosa var. rugosa	1%	
H		Impatiens capensis	0.01%	
H		Lysimachia quadrifolia	0.01%	



Figure 68. Successional southern hardwoods in Parcel 6 (06.01): Left: woodland along path; Right: false Solomon's seal (*Maianthemum racemosum*).

Parcel 6 Ecological Community Acreage

Table 60. Parcel 6 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
48	0.25	MR/P?	Mowed roadside/pathway?	CTERCULT	road shoulder
329	0.12	pond	pond	CLAC	open water
330	0.42	RM-BGS	Red maple-blackgum swamp	CPALFOR	part NWI wetland
47	0.87	SSH	Successional southern hardwoods	CTERFOR	modified
4 polys	1.67 acres	4 types			

Parcel 6 General Description

Parcel 6 appears modified by anthropogenic disturbance (e.g., tree cutting, trails, off-road vehicle tracks etc.). At less than 2 acres, Parcel 6 is tucked between East End Road to the southeast, and a residential lot to the northwest.

Parcel 6 Invasive Plants

Invasive trees are common in the southern successional hardwoods in Parcel 6. Black locust (*Robinia pseudoacacia* – 15%) is found in four of the five tree layers (T2, T3, TS1, and TS2) and Norway maple (*Acer platanoides* – 10%) is in the canopy (T2). Glossy buckthorn (*Frangula alnus* – 13%) is present in all three tree sapling and seedling layers (TS1, TS2, and TS3).

Parcel 6 Management Recommendations

Given the number of non-native trees in each layer, it may be best to let succession run its course in Parcel 6 and hopefully the increased canopy shade will help the woods transition to a forest with a greater number of native trees. Otherwise, removal of invasive species from Parcel 6 will be a long-term commitment of effort and resources compared to other parcels on the Island.

Parcel 6 Future Surveys

The pond and the red maple-blackgum swamp in the north half of the parcel were not surveyed in 2021 or 2022. These communities were mapped based on air photo interpretation and their extent and condition needs to be evaluated.

See APPENDIX A. Invasive Species Control Information available online.

Table 61. 28.01 Successional southern hardwoods

Obs. pt. 28.01 Form 3: Form 2 occ #: 1

Community: Successional southern hardwoods

CEGL code:

Alliance code:

UTM: zone 19 249608 E, 4572631 N

Comments: SSH

Lat: 41.06787673 Long: -71.8596990

Photo Photo name: 252 face S, 253 face N

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	30%, 18m	Acer rubrum var. rubrum	30%	
T3	20%, 8m	Frangula alnus	15%	
T3		Acer rubrum var. rubrum	5%	
TS1	42%, 4m	Frangula alnus	40%	
TS1		Acer rubrum var. rubrum	2%	
TS2	53%, 1.2m	Frangula alnus	50%	
TS2		Acer rubrum var. rubrum	3%	
TS3	30%, 0.4m	Frangula alnus	30%	
SS1	5%, 4.5m	Ilex verticillata	5%	
SS2	5%, 0.75m	Rubus allegheniensis	5% trail side	
SS3	2%, 0.3m	Rhus copallinum var. copallinum	1% trail side	
SS3		Rubus allegheniensis	1% trail side	
V	57%, 1.2557m	Smilax rotundifolia	40% 0.5-2 m	
V		Parthenocissus quinquefolia	12%	
V		Lonicera japonica	5%	
H	5%	Solidago rugosa var. rugosa	5% trail side	



Figure 69. Successional southern hardwoods in Parcel 28 (28.01).

Table 62. 28.02 Coastal oak-hickory forest

Obs. pt. 28.02 ref Form 3: Form 2 occ #:

Community:

Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 249578 E, 4572727 N

Lat: 41.06756759 Long: -71.8598165

Comments: Large red maple and large rock at top of hill along trail (photo 254 face S). Red maple/Frangula thicket continues to this point from 28.01 to S. North of this point it changes to coastal oak-hickory forest (no Carya) with big crown Quercus velutina with straight trunks and less Frangula. Quercus velutina/Acer rubrum/Prunus serotina forest. Reference point. Vegetation cover data not collected. Successional southern hardwoods?

Photo Photo name: 254 face S

Position method GPS

GPS average min, sec.

WAAS



Figure 70. Coastal oak-hickory forest in Parcel 28 (28.02).

Table 63. 28.03 Coastal oak-hickory forest

Obs. pt. 28.03 Form 3: Form 2 occ #: 1
 Community: Coastal oak-hickory forest CEGL code: Alliance code:
 UTM: zone 19 249569 E, 4572753 N Comments: About center of north half of parcel 28. Point by large 3 m diameter boulder.
 Lat: 41.06718647 Long: -71.8599309 COHICKF no Carya.
 Photo Photo name: 255 face N, 256 face S
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	58%, 20m	Acer rubrum var. rubrum	30%	multi-trunk
T2		Nyssa sylvatica	25%	straight trunk
T2		Quercus velutina	20%	uphill mostly
T3	28%, 8m	Acer rubrum var. rubrum	20%	
T3		Nyssa sylvatica	5%	
T3		Prunus serotina var. serotina	5%	gnarly
TS1	15%, 4m	Frangula alnus	10%	
TS1		Nyssa sylvatica	5%	
TS2	29%, 1.5m	Frangula alnus	25%	
TS2		Nyssa sylvatica	3%	
TS2		Quercus velutina	1%	
TS3	5%, 0.2m	Frangula alnus	3%	
TS3		Prunus serotina var. serotina	1%	
TS3		Quercus velutina	1%	
SS2	5%, 1.8m	Ilex verticillata	5%	
SS3	1%, 0.5m	Ilex verticillata	1%	
V2	15%, 0.4m	Toxicodendron radicans ssp. radicans	10%	
V2		Parthenocissus quinquefolia	5%	
H	22%	Dendrolycopodium obscurum	20%	photos 257, 258
H		Malanthemum canadense	1%	
H		Lysimachia borealis	0.01%	
H		Nabalus trifoliolatus	0.01%	photo 259 ID uncertain
U	98%	litter and duff	90%	
U		wood (FWD) <7.5 cm	6%	
U		large rocks >10 cm	5%	
U		very large rocks >1 m	5%	
U		wood (CWD) >7.5 cm	2%	



Figure 71. Coastal oak-hickory forest in Parcel 28 (28.03).

Parcel 28 Ecological Community Acreage

Table 64. Parcel 28 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
328	2.07	CO-HF	Coastal oak-hickory forest	CTERFOR	road N and W edge; NWI wetland to E
12	2.77	SSH	Successional southern hardwoods	CTERFOR	road S and W edge
2 polys	4.84 acres	2 types			

Parcel 28 General Description

Parcel 28 is a forested parcel with the north half being a slightly more mature coastal oak-hickory forest (tentative classification) and the southern half being a dense thicket of younger southern successional hardwoods. The parcel is bordered by roads on three sides (N, W, and S). Parcel 28 appears cleared on the mid-1920s air photo (Figure 72), however it is depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

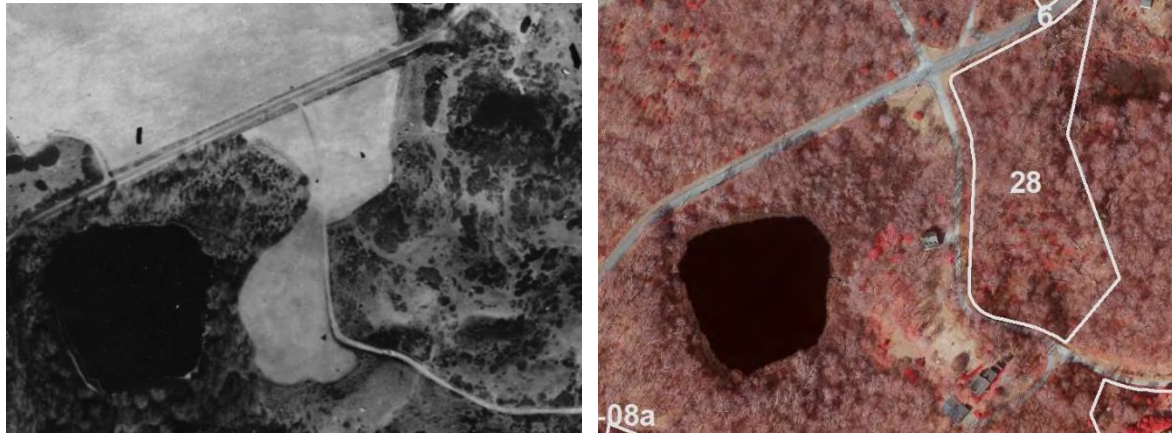


Figure 72. Parcel 28 on the east side of Isabella Beach Road and Brickyard Pond in the lower left: Left: mid-1920s; Right: 2020. Note that north half of Parcel 28 is cleared on the mid-1920s photo.

Parcel 28 Notes

- Visitors using the north-south trail through Parcel 28 will find it challenging to avoid the greenbrier (*Smilax rotundifolia*) stems that have invaded the path.
- Parcel 28 has the largest patch of tree clubmoss (*Dendrolycopodium obscurum* – 20%) found during our ecology surveys at point 28.03.

Parcel 28 Invasive Plants

Glossy buckthorn (*Frangula alnus* – 55%) is abundant and present in three of the four tree layers (T3, TS1, TS2, and TS3) in the successional southern hardwoods in the south half of the parcel. Glossy buckthorn is in the three lower tree layers (TS1, TS2, and TS3) of the coastal oak-hickory forest in the north half of the parcel, but at lower percent cover and it is not present in the tree canopy (T3) as it is in the southern successional hardwoods.

Parcel 28 Management Recommendations

Remove or reduce glossy buckthorn (*Frangula alnus*) from the coastal oak-hickory forest in the north half of the parcel. It may be best to let succession run its course in the successional southern hardwoods in the south half of the parcel. Hopefully the increased canopy shade will help the woods transition to a forest with a greater number of native trees.

Trails through Parcel 28 should be kept clear of greenbrier (*Smilax rotundifolia*) to reduce the chance of injury to hikers.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 28 Future Surveys

A network of trails extend east off the parcel and this area was not surveyed in 2021 or 2022. There appears to be a small pond or wetland adjacent to the northeastern parcel boundary line where there is a mapped NWI wetland. The northeast corner of Parcel 28 should be surveyed to assess the presence and condition of any wetlands on the property.

Survey the full extent of the coastal oak-hickory forest for hickories (*Carya* spp.) to confirm this tentative classification. If no hickories are found, then consider reclassifying this area as red maple-blackgum slope forest.

Parcel 7. Equestrian Avenue Woods



Figure 73. Parcel 7.

Table 65. 07.01 Red maple-blackgum swamp

Obs. pt. 07.01 Form 3: Form 2 occ #:
 Community: Red maple-blackgum swamp CEGL code: Alliance code:
 UTM: zone 18 749629 E, 4571859 N Comments: RM-BGS
 Lat: 41.27603437 Long: -71.9597307 Photo Photo name: 43,44
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	60%, 28m	Nyssa sylvatica	50%	over 12 trees in clump west of point
T2		Acer rubrum var. rubrum	20%	
T3	28%, 15m	Acer rubrum var. rubrum	20%	
T3		Nyssa sylvatica	10%	
TS1	5%, 3m	Acer rubrum var. rubrum	5%	
TS2	8%, 1.5m	Acer rubrum var. rubrum	5%	
TS2		Nyssa sylvatica	3%	
SS1	17%, 2.5m	Hydrangea paniculata	10%	
SS1		Clethra alnifolia	5%	
SS1		Ilex crenata	2%	
SS2	5%, 1m	Hydrangea paniculata	5%	
SS3	5%, 0.2m	Hydrangea paniculata	3%	
SS3		Clethra alnifolia	2%	
SS3		Rubus pubescens	0.01%	ID uncertain
V1	5%, 7m	Smilax rotundifolia	5%	
V2	2%, 0.5m	Smilax rotundifolia	2%	
H	23%	Osmundastrum cinnamomeum var. ci	15%	
H		Lorinseria areolata	8%	syn: Woodwardia aereolata
H		Dryopteris carthusiana	0.01%	
N	1%	Sphagnum palustre	1%	ID determined by Tom Phillips; collect:Y
N		Aulacomnium palustre		ID determined by Tom Phillips; percent cover not recorded collect:Y
U	88%	litter and duff	50%	most black; water stained
U		bare soil 30	30%	muck
U		wood (FWD) <7.5 cm	8%	



Figure 74. Netted chain fern (*Lorinseria areolata*) in red maple-blackgum swamp in Parcel 7 (07.01).



Figure 75. Red maple-blackgum swamp in Parcel 7 (07.01).



Figure 76. Red maple-blackgum swamp in Parcel 7 (07.01).

Table 66. 07.02 Red maple-blackgum slope forest

Obs. pt. 07.02 ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 18 749611 E, 4571921 N

Lat: 41.27597947 Long: -71.9597641

Comments: RM-BGS transitions to RM-BG upland; Nyssa dominated; dense tall shrub layer with Smilax on top; about 50 tall even age Nyssa; swamp from 07.01 to 07.02; N of 07.02 is upland;

Photo Photo name: 46-48

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Nyssa sylvatica	about 50 tall even age Nyssa around this point		
V1	Smilax rotundifolia	on top of dense shrub layer		



Figure 77. Red maple-blackgum slope forest in Parcel 7 (07.02).

Table 67. 07.03 Red maple-blackgum slope forest

Obs. pt. 07.03 ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 18 749593 E, 4571936 N

Comments: Large double trunk Acer rubrum

Lat: 41.27590689 Long: -71.9597847

Photo Photo name: 49

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum	photo 49		

Table 68. 07.04 Eutrophic pond

Obs. pt. 07.04 Form 3: Form 2 occ #:

Community: Eutrophic pond
Farm pond/artificial pond

CEGL code:

Alliance code:

UTM: zone 18 749614 E, 4571974 N

Comments: Eutrophic pond dominated by Wolffia; tall Clethra SS//RM-BGS margin

Lat: 41.27613486 Long: -71.9596756

Photo Photo name: 50

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
A2	98% Wolffia sp.	98%		



Figure 78. Left: Red maple (*Acer rubrum*) in red maple-blackgum slope forest in Parcel 7 (07.03) left trunk: 72.5 cm DBH; right trunk: 71 cm DBH; Right: Eutrophic pond in Parcel 7 (07.04).

Parcel 7 Ecological Community Acreage

Table 69. Parcel 7 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
181	0.01	MLWT	Mowed lawn with trees	CTERCULT	
495	0.17	pond	pond	CLAC	open water
106	0.03	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	edge of NWI wetland
496	0.12	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	edge of NWI wetland; narrow band
107	0.91	RM-BG (slope)	Red maple-blackgum forest	CPALFOR/CTERFOR	edge of NWI wetland; narrow band
494	0.76	RM-BGS	Red maple-blackgum swamp	CPALFOR	edge of NWI wetland; narrow band
6 polys	1.99 acres	5 types			

Parcel 7 General Description

Parcel 7 contains all three red maple-blackgum types found on Fishers Island:

1. There is a small (<1 acre) classic red maple-blackgum basin swamp at the south end of the property that may extend off the parcel onto adjacent private land. The blackgum trees are large (up to 45 cm DBH), grow close together, and have a lush fern-dominated ground layer (Figure 75). The ferns include cinnamon fern (*Osmundastrum cinnamomeum* – 15%), netted chain fern (*Lorinseria areolata* – 8%), and spinulose wood fern (*Dryopteris carthusiana* – <1%). The red maple trees in the swamp are also large (54 cm DBH and 55 cm DBH).
2. In the middle of the parcel is <1 acre of red maple-blackgum slope forest. This distinctly upland variant is on the mid-slope of small hills and mounds on Fishers Island (Figure 77). Shrubs and vines are thicker compared to the swamp and fern cover is negligible.
3. Around the margin of the pond is a narrow band of red maple-blackgum fringe swamp. This fringe swamp is found around most pond margins on Fishers Island and often transitions to the slope forest #2 above going uphill.

Parcel 7 has one the four lowest Landscape Condition Analysis Scores of the 77 Land Trust parcels (LCA Score: 1319.48; range 0 to 1728). This parcel is depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

Parcel 7 Invasive Plants

The primary non-native shrub/small tree in red maple-blackgum basin swamp is panicked hydrangea (*Hydrangea paniculata* – 10%). Japanese holly (*Ilex crenata* – 2%) is also present, but with lower percent cover and perhaps not as invasive as the hydrangea.

Parcel 7 Management Recommendations

The panicked hydrangea (*Hydrangea paniculata*) and Japanese holly (*Ilex crenata*) should be removed from the red maple-blackgum basin swamp at point 11.01 (point appears off parcel on map). The southern corner parcel boundary is not well marked and any invasive plant management may require consultation with neighboring landowners before taking any action on the ground.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 7 Future Surveys

Several large blackgum (*Nyssa sylvatica*) and red maple (*Acer rubrum*) trees were found on Parcel 7 and are worthy of increment coring to determine their age. Seek permission to survey the full extent of the red maple-blackgum basin swamp onto neighboring properties if possible.

Parcel 8.



Figure 79. Parcel 8.

Table 70. 08.01 Successional old field

Obs. pt. 08.01 Form 3: Form 2 occ #:

Community: Successional old field

CEGL code:

Alliance code:

UTM: zone 19 249250 E, 4573000 N

Comments: SOF with Hudsonia (GJE parcel 26 map 4)

Lat: 41.28766627 Long: -71.9345849

Photo Photo name: 142 face NW

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	15%, 1m	Frangula alnus	15%	
TS3	6%, 0.5m	Frangula alnus	6%	
SS3	16%, 0.4m	Rubus flagellaris	10%	
SS3		Hudsonia tomentosa	4%	collect:Y
SS3		Morella carolinensis	1%	
SS3		Rhus copallinum var. copallinum	1%	
V2	10%, 0.5m	Smilax rotundifolia	10%	
H	37%	Grass	15%	Dichanthelium? Photo 143 with stick; clump forming, dead arching spike
H		Schizachyrium scoparium var. scopari	15%	
H		Panicum virgatum	1%	
H		Solidago rugosa var. rugosa	1%	
H		Erigeron canadensis var. canadensis	0.01%	ID uncertain
H		Lechea sp.	0.01%	collect:Y ID uncertain
N	10%	Ceratodon purpureus	10%	ID determined by Tom Phillips; dome-shaped clumps on sand



Figure 80. Successional old field in Parcel 8: Left: face NW; Right: unidentified clump-forming grass.

Table 71. 08.02 Successional maritime forest

Obs. pt. 08.02 ref Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 249285 E, 4573009 N

Lat: 41.28785566 Long: -71.9349278

Comments: SMF east of field; stunted/gnarly Q, velutina, Prunus serotina, and Acer rubrum; Photo file name incorrectly labeled as 08.01;

Photo Photo name: 144

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum			
T2	Prunus serotina var. serotina			
T2	Quercus velutina			



Figure 81. Successional maritime forest in Parcel 8 (08.02).

Parcel 8 Ecological Community Acreage

Table 72. Parcel 8 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
77	0.21	SOF	Successional old field	CTEROPEN	Maritime grassland?; continues to NE off parcel
11	0.53	SMF	Successional maritime forest	CTERFOR	
2 polys	0.74 acres	2 types			

Parcel 8 General Description

Parcel 8 is a small (<1 acre), but interesting parcel located on the west side of Clay Pond Road and east of West Harbor. The parcel includes a piece of a larger field that extends about 100 m northwest to West Harbor. We tentatively classified the field as a successional old field, because the field is maintained by seasonal mowing and includes a few characteristic successional old field species. However, several plants present suggest a maritime influence, such as beach heather (*Hudsonia tomentosa*), bayberry (*Morella caroliniensis*), winged sumac (*Rhus copallinum*), switch grass (*Panicum virgatum*), and little bluestem (*Schizachyrium scoparium*). The field is adjacent to a confidently classified successional maritime forest on Parcel 8 further supporting a maritime setting. Many grasses lacked flowering and fruiting structures needed to make positive identification. Further surveys are needed to determine if this field should be reclassified as a maritime grassland.

This parcel and the field to the northwest are depicted as cleared with included open wetland labels on the circa 1958 USGS 7.5 minute topographic map.

Parcel 8 Invasive Plants

Glossy buckthorn (*Frangula alnus* – 21%) seedlings (0.5-1.0 m tall) are common the field.

Parcel 8 Management Recommendations

Glossy buckthorn (*Frangula alnus*) should be removed from the successional old field; however, any invasive plant management may require consultation with neighboring landowners before taking any action on the ground.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 8 Future Surveys

The full extent of the field needs to be surveyed earlier in the season (~July) to determine if this it should be reclassified as a maritime grassland. Permission from neighboring landowners would be needed to fully survey the field. A very small (70 m²), unmapped woodland patch (or perhaps *Phragmites?*), with a different air photo signature than the field, was overlooked in the southwest corner of Parcel 8. This patch should be surveyed and the community map updated based on ground-truthing (however this is low priority).

Parcel 9. Middle Farms Pond South and Parcel 11 Millers Point



Figure 82. Parcel 9: Middle Farms Pond South.

See Parcel 20 for points 20.17 (Table 123) and 20.18 (Table 124) sampled in Parcel 9. See Parcel 23 for point 23.11 (Table 158) sampled in Parcel 9.

Parcel 9 and Parcel 11 (Millers Point). Mid-1920s Air Photo



Figure 83. Millers Point (Parcel 11) and Parcel 9 wetland mid-1920s.

Millers Point (Parcel 11) may have been continuously forested, and perhaps uncut, for the last 100 years. Millers Point is depicted as forested on the circa 1958 USGS 7.5 minute topographic map, and is among the few forested areas on the mid-1920s black and white air photo (Figure 83).

The wetland boundaries in Parcel 9 appear unchanged since the mid-1920s black and white air photo (Figure 83).

Parcel 9 and Parcel 11 Ecological Community Acreage



Figure 84. Parcel 9 and Parcel 11 Ecological Community Polygons Assessed in Acreage Table below.

Table 73. Parcel 9 and Parcel 11 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
410	1.62	CO-HF	Coastal oak-hickory forest	CTERFOR	
160	0.71	pond	pond	CLAC	open water; tidal?
413	1.34	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	edge of NWI wetland; narrow band; RM-BGSF up slope
416	0.39	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	not surveyed 2021
162	1.81	SS Clethra	Shrub swamp (Clethra)	CPALOPEN	
412	0.56	SS Clethra	Shrub swamp (Clethra)	CPALOPEN	
161	1.23	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	
414	1.65	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	
415	0.41	SSH	Successional southern hardwoods	CTERFOR	
411	0.67	SSH?	Successional southern hardwoods?	CTERFOR	not surveyed 2021
10 polys	10.38 acres	6 types			

Parcel 9 General Description

Parcel 9 is almost entirely comprised of shrub swamp that covers 5.24 acres in a cove on the south shore of Middle Farms Pond. The shrub swamp is divided into two halves east and west of a small stream channel.

The west half is about 1.79 acres and is on the south side of Millers Point. It is comprised of two shrub swamp types as follows: 1) 0.56 acres of 1.8-3 m tall sweet pepperbush (*Clethra alnifolia* – 40%) dominated shrub swamp that forms a band along the south shore of Millers Point; and 2) 1.23 acres of 1-m tall water willow (*Decodon verticillatus*) dominated shrub swamp along the west side of the stream channel.

The east half is about 3.45 acres and north of a residential property. It is comprised of two shrub swamp types as follows: 1) 1.81 acres of 1.4-3 m tall sweet pepperbush (*Clethra alnifolia* – 80%) dominated shrub swamp; and 2) 1.65 acres of 1-m tall water willow (*Decodon verticillatus* – 75%) dominated shrub swamp along the east side of the steam channel.

All of the shrub swamp patches in Parcel 9 are part of a larger 8.27-acre shrub swamp occurrence (EOID 17534) of statewide significance with additional patches in Parcel 23.

Parcel 9 has the largest patch of *Sphagnum recurvum* (40%) found during our ecology surveys at point 23.11 (Table 158).

The Parcel 9 Landscape Condition Analysis Score of 267.98 (#11 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel 9 Invasive Plants

Invasive plants are essentially absent from Parcel 9 with a small amount of Oriental bittersweet (*Celastrus orbiculatus* – 1%) at point 20.18 being the only invasive found during our ecology surveys.

Parcel 9 Management Recommendations

Remove Oriental bittersweet (*Celastrus orbiculatus*) at point 20.18 before it spreads into the other parts of the shrub swamp. The shrub swamp in Parcel 9 should be monitored for Old World reed grass (*Phragmites australis*) invasion and reed grass plants should be removed immediately after discovery.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 9 Future Surveys

Although it may be a relatively low priority, it would be good to survey the margin of the water willow shrub swamp via canoe to fully document the extent of the state-rare many-flowered marsh pennywort (*Hydrocotyle umbellata*) and survey portions of the swamp that cannot be accessed by foot.

Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel



Figure 85. Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel.

See the Parcel 26 section for an assessment of the ecological communities in that parcel.

Table 74. 10.01 Successional maritime forest

Obs. pt. 10.01 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250853 E, 4573925 N
 Lat: Long:

Comments: Unmaintained winding trail parallel to bike path. Red maple - black oak - black cherry forest, later successional SMF. No photo taken. This forest continues west parallel to road into Parcel 17 (Greg Parcel 21). "Coastal oak-red maple-black cherry forest".

Photo Photo name:

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	38%, 16m	Acer rubrum var. rubrum	30% multi-trunk	
T2		Quercus velutina	12%	
T3	38%, 9m	Acer rubrum var. rubrum	25%	
T3		Prunus serotina var. serotina	15% slightly gnarly	
T3		Amelanchier canadensis	2%	ID uncertain
TS1		Acer rubrum var. rubrum	5%	
TS1	12%, 3m	Prunus serotina var. serotina	5%	
TS1		Frangula alnus	2%	
TS3	1%, 0.2m	Prunus serotina var. serotina	1%	
TS3		Quercus velutina	0.01%	
SS1	2%, 3m	Amelanchier canadensis	2% or A. arborea?	ID uncertain
V2	75%, 0.3m	Smilax rotundifolia	40%	
V2		Lonicera japonica	20%	
V2		Toxicodendron radicans ssp. radicans	10% 0.3 m tall	
V2		Parthenocissus quinquefolia	5%	
H	4%	Solidago rugosa var. rugosa	2%	
H		Maianthemum canadense	1%	
H		Lysimachia borealis	0.01%	
H		Lysimachia quadrifolia	0.01%	
U	98%	litter and duff	95%	
U		large rocks >10 cm	10%	
U		wood (FWD) <7.5 cm	6%	

Table 75. 17.01 Red maple-blackgum slope forest

Obs. pt. 17.01 Form 3: Form 2 occ #: 1

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 250790 E, 4573873 N

Lat: Long:

Comments: Walk south into red maple/blackgum slope margin w/ white coral fungus (photo 241) north of this point, then grades into tall Clethra SS south of this point.

Photo Photo name: 240, 241

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	65%, 16m Nyssa sylvatica	65% DBH ~20 cm not big or old		
T3	10%, 10m Acer rubrum var. rubrum	8%		
T3	Nyssa sylvatica	2%		
TS3	0.01%, 0.1m Acer rubrum var. rubrum	0.01%		
SS1	30%, 4m Clethra alnifolia	25% 3-5 m		
SS1	Vaccinium corymbosum	5%		
SS2	11%, 1.25m Clethra alnifolia	10%		
SS2	Viburnum dentatum var. lucidum	1%		
V2	5%, 0.2m Parthenocissus quinquefolia	5%		
H	1% Eurybia divaricata	1%		
H	Dryopteris carthusiana	0.01%		
N	Ramariopsis kunzei	percent cover not recorded		ID uncertain
U	98% litter and duff	98% Nyssa leaves		
U	wood (FWD) <7.5 cm	6%		



Figure 86. Red maple-blackgum slope forest (left) in Parcel 17 (17.01) with white coral fungi (*Ramariopsis kunzei*) in ground layer (right).

Table 76. 17.02 Shrub swamp (*Clethra alnifolia* – *Decodon verticillatus*)

Obs. pt. 17.02 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Clethra alnifolia*)" CEGL code: Alliance code:

UTM: zone 19 250806 E, 4573852 N

Lat: Long:

Comments: Climb red maple tree and record vegetation cover data from above. *Clethra* (65%) - *Decodon* (35%) SS with red maple invading. Photos taken from up in tree.

Photo Photo name: 242,243,244, 245

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	30%, 12m	<i>Acer rubrum</i> var. <i>rubrum</i>	30%	
T3	15%, 6m	<i>Acer rubrum</i> var. <i>rubrum</i>	15%	
TS1	15%, 4m	<i>Acer rubrum</i> var. <i>rubrum</i>	15%	
TS2	5%, 1.5m	<i>Acer rubrum</i> var. <i>rubrum</i>	5%	
TS3	1%, 0.5m	<i>Acer rubrum</i> var. <i>rubrum</i>	1%	
SS1	40%, 4.5m	<i>Clethra alnifolia</i>	30%	
SS1		<i>Vaccinium corymbosum</i>	10%	
SS2	60%, 1.5m	<i>Clethra alnifolia</i>	30%	
SS2		<i>Decodon verticillatus</i>	30%	
SS3		<i>Clethra alnifolia</i>	5%	
SS3	10%, 0.5m	<i>Decodon verticillatus</i>	5%	
H	0.01%	<i>Hypericum virginicum</i>	0.01%	
N	40%	<i>Sphagnum</i> spp.	40%	



Figure 87. Shrub swamp (*Clethra alnifolia* – *Decodon verticillatus*) in Parcel 17 (17.02).

Table 77. 17.03 Successional maritime forest or successional southern hardwoods

Obs. pt. 17.03 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250664 E, 4573893 N

Lat: Long:

Comments: = TownMidFarm Parcel (not a numbered parcel).SSH trail abandoned, but flagging in place. Standing dead black locust. Successional southern hardwoods?

Photo Photo name: 246,247,248

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	60%, 16m	Prunus serotina var. serotina	40%	
T2		Acer rubrum var. rubrum	20%	
T2		Robinia pseudoacacia	15% plus 6 standing dead	
T3	32%, 8m	Prunus serotina var. serotina	20%	
T3		Acer rubrum var. rubrum	15%	
TS1	18%, 5m	Prunus serotina var. serotina	10%	
TS1		Acer rubrum var. rubrum	5%	
TS1		Frangula alnus	3%	
TS2	6%, 1.25m	Frangula alnus	5%	
TS2		Quercus velutina	1%	
TS2		Juniperus virginiana var. virginiana	0.01%	
TS3	3%, 0.5m	Frangula alnus	3%	
SS2	1%, 0.75m	Ligustrum vulgare	1%	
SS3	25%, 0.2m	Rubus flagellaris	25%	
V	85%, 3m	Smilax rotundifolia	30%	
V		Lonicera japonica	25%	
V		Toxicodendron radicans ssp. radicans	25%	
V		Parthenocissus quinquefolia	5%	
H	7%	Maianthemum canadense	5%	
H		Solidago rugosa var. rugosa	2%	
U	98%	litter and duff	96%	
U		wood (FWD) <7.5 cm	5%	
U		wood (CWD) >7.5 cm	1%	



Figure 88. Successional maritime forest or successional southern hardwoods in TownMidFarm Parcel (17.03): Left: forest; Right: carpet of Canada mayflower (*Maianthemum canadense*).

Table 78. TMF.01 Unpaved road/path

Obs. pt. **TMF.01 ref** Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 19 250627 E, 4573902 N

Lat: 41.27635674 Long: -71.9723760

Comments: Town Middle Farms parcel (west of parcel 17); Middle Farms Pond Trail trailhead

Photo Photo name: 112 of sign

Position method GPS

GPS average min, sec.

WAAS



Figure 89. Unpaved road/path in Parcel Town Middle Farms Parcel (TMF.01).

Table 79. TMF.02 Shrub swamp (*Clethra alnifolia*)

Obs. pt. **TMF.02 ref** Form 3: Form 2 occ #:

Community: "Shrub swamp (*Clethra alnifolia*)"

CEGL code:

Alliance code:

UTM: zone 19 250678 E, 4573877 N

Lat: 41.27366650 Long: -71.9768022

Comments: South of this point is dense tall *Clethra* SS; point is south edge of previously surveyed black locust stand;

Photo Photo name: 113

Position method GPS

GPS average min, sec.

WAAS



Figure 90. Shrub swamp (*Clethra alnifolia*) in Parcel Town Middle Farms Parcel (TMF.02).

Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel Ecological Community Acreage

Table 80. Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
268	0.02	MR/P	Mowed roadside/pathway	CTERCULT	
269	0.06	MR/P	Mowed roadside/pathway	CTERCULT	
270	0.16	MR/P	Mowed roadside/pathway	CTERCULT	
67	0.74	pond	pond	CLAC	open water; pond/lake
272	0.30	PR/P	Paved road/path	CTERCULT	bike path
447	0.62	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	
448	0.82	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	
274	5.03	SMF	Successional maritime forest	CTERFOR	
271	0.20	SMF?	Successional maritime forest?	CTERFOR	SSH?
273	2.82	SS Clethra	Shrub swamp (Clethra)	CPALOPEN	
10 polys	10.76 acres	6 types			

Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel General Description

Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel are three neighboring parcels on the north shore of Middle Farms Pond on the south side of East End Road. The Middle Farms Pond Trail (Figure 89) runs parallel to East End Road through the successional maritime forest for about 0.2 mi. east to west through the three parcels

The successional maritime forest tree canopy is stunted (16 m tall) and many of the trees have twisted trunks and low gnarly branches, especially black cherry (*Prunus serotina*), that are characteristic of this community. There is a thick cover of greenbrier (*Smilax rotundifolia* – 30-40%) in the forest, which is also typical of this type.

Heading south, downhill toward Middle Farms Pond, the forest transitions to a narrow band of red maple-blackgum slope forest (an upland type) before it opens out to a sweet pepperbush (*Clethra alnifolia*) shrub swamp. No invasive plants were found in these communities.

Given the close proximity of the three parcels, it is not surprising that their Landscape Condition Analysis Scores fall within a relatively narrow range (Parcel 10: 518.55; Parcel 17: 548.61; and TMF: 551.7) and better than the average LCA score of 648 (range of 0 to 1728) generated for the 77 Land Trust parcels.

Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel Invasive Plants

Invasive plants were only found in the successional maritime forest. Japanese honeysuckle (*Lonicera japonica* – 20-25%) is the most abundant invasive in the forest. Glossy buckthorn (*Frangula alnus* – 2-11%) is found throughout the successional maritime forest, but it increases as you head west into the TMF Parcel. A small stand of black locust (*Robinia pseudoacacia* – 15%) trees was found in the TMF Parcel near the trail with about six standing dead locust snags at point 17.03.

Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel Management Recommendations

The trail is well-marked and appeared recently pruned and maintained in 2021. Removal of the top three invasives listed above in the successional maritime forest will be an ongoing challenge, but should continue.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 10, Parcel 17, and Town Middle Farms (TMF) Parcel Future Surveys

The margin of Middle Farms Pond should be surveyed by canoe to document the full extent of sweet pepperbush (*Clethra alnifolia*) shrub swamp and add it to the significant occurrence already documented on the south shore of the pond (EOID 17534).

Parcel 11. Millers Point



Figure 91. Parcel 11: Millers Point.

Table 81. 11.01 Red maple-blackgum swamp

Obs. pt. 11.01 Form 3: Form 2 occ #: 1

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 250633 E, 4573409 N

Lat: Long:

Comments: Dead end trail at point with bench (Millers Point) with *Hydrocotyle umbellata* in water. This peninsula is a coastal oak-hickory forest along ridge bisected by trail. Narrow fringe of RM-BGS along both N and S shore margins of peninsula. GPS taken at E tip of peninsula. Herb layer not recorded. Unvegetated layer not recorded. Measured DBH of select larger trees.

Photo Photo name: 29 RM-BGS fringe, 23-26 Hydro umbel, 27-29 face S to Parcel 9 pond and SS margin.

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	30%, 18m	<i>Nyssa sylvatica</i>	30%	
T3	25%, 8m	<i>Acer rubrum</i> var. <i>rubrum</i>	15%	
T3		<i>Nyssa sylvatica</i>	10%	
SS1	37%, 3m	<i>Clethra alnifolia</i>	25%	
SS1		<i>Vaccinium corymbosum</i>	10%	
SS1		<i>Rhododendron viscosum</i>	2%	ID uncertain
SS2	11%, 1.3m	<i>Clethra alnifolia</i>	10%	
SS2		<i>Rhododendron viscosum</i>	1%	ID uncertain
SS3	8%, 0.35m	<i>Clethra alnifolia</i>	8%	



Figure 92. Red maple-blackgum swamp fringe on Millers Point in Parcel 11 (11.01).

Table 82. 11.02 Coastal oak-hickory forest

Obs. pt. 11.02 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 250522 E, 4573414 N

Comments: Coastal oak-_____ forest? Along both sides (N and S) of trail to peninsula. No Carya present.

Lat: Long:

Photo Photo name: 30 face E, 31 face W

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	72%, 27m	Quercus coccinea		
		65% ID determined by Steve Young (Feb. 2022).		
T2		Acer rubrum var. rubrum	10%	
T2		Quercus alba	10%	76 cm DBH out of plot
T3	31%, 12m	Acer rubrum var. rubrum	20%	
T3		Quercus coccinea	10%	
T3		Prunus serotina var. serotina	2%	
T3		Sassafras albidum	2%	
TS1	4%, 2.5m	Acer rubrum var. rubrum	2%	
TS1		Quercus alba	1%	
TS1		Sassafras albidum	1%	
TS2		Quercus alba	1%	
TS2	2%, 1m	Sassafras albidum	1%	
TS3		Acer rubrum var. rubrum	0.01%	
TS3		Ilex opaca var. opaca	0.01%	
TS3		Prunus serotina var. serotina	0.01%	
TS3		Quercus coccinea	0.01%	
TS3	2%, 0.4m	Sassafras albidum	0.01%	
SS1	20%, 2m	Clethra alnifolia	20%	
SS2	32%, 1m	Clethra alnifolia	30%	
SS2		Morella caroliniensis	2%	
SS3	11%, 0.1m	Clethra alnifolia	10%	
SS3		Morella caroliniensis	0.01%	
SS3		Viburnum dentatum var. lucidum	0.01%	
V2	1%, 0.2m	Parthenocissus quinquefolia	1%	
H	6%, 0.15m	Eurybia divaricata	3%	
H		Maianthemum canadense	2%	
H		Chimaphila maculata	0.01%	
H		Lysimachia quadrifolia	0.01%	
H		Pyrola americana	0.01%	ID determined by Steve Young (Feb. 2022) syn: P. rotundifolia
H		Solidago rugosa var. rugosa	0.01%	
N		Leucobryum glaucum	1%	
N	2%	Mosses	1%	
U	98%	litter and duff	98%	
U		large rocks >10 cm	2%	
U		wood (CWD) >7.5 cm	2%	
U		wood (FWD) <7.5 cm	2%	



Figure 93. Coastal oak-hickory forest on Millers Point in Parcel 11 (11.02) face E.



Figure 94. Coastal oak-hickory forest on Millers Point in Parcel 11 (11.02) face W.

Parcel 11 Ecological Community Acreage

See Parcel 9 for Parcel 11 Ecological Community Acreage Assessment (Table 73, Figure 84).

Parcel 11 General Description

Millers Point is a narrow (50-60 m wide) peninsula that juts eastward about 170 m into Middle Farms Pond. Millers Point Trail runs the length of the peninsula through the center of a small 1.6-acre oak-dominated forest. This relatively mature forest is tentatively classified as a coastal oak-hickory forest, despite its lack of hickories (*Carya* spp.), because it does contain many other characteristic coastal oak-hickory forest species, such as red maple (*Acer rubrum*), sassafras (*Sassafras albidum*), and arrowwood (*Viburnum dentatum*).

A narrow band of red maple-blackgum fringe swamp wraps around the entire perimeter of the peninsula. To the south the fringe swamp grades into a tall shrub swamp dominated by sweet pepperbush (*Clethra alnifolia*), then to a short shrub swamp dominated by water willow (*Decodon verticillatus*). To the north the fringe swamp abruptly changes to the open water of Middle Farms Pond.

Millers Point (Parcel 11) may have been continuously forested, and perhaps uncut, for the last 100 years. Millers Point is depicted as forested on the circa 1958 USGS 7.5 minute topographic map, and is among the few forested areas on the mid-1920s black and white air photo (Figure 83).

The coastal oak-hickory forest on Millers Point at point 11.02 is #10 on the list of top ten highest FQI scores generated for this study (FQI 26.98). Point 11.02 is one of only two coastal oak-hickory forest points comprised of 100% native plants. The other 100% native coastal oak-hickory forest point is 31.02.

Parcel 11 Invasive Plants

No invasive plants were found on Millers Point in Parcel 11 during our 2021 ecology surveys.

Parcel 11 Management Recommendations

Regularly monitor Parcel 11 for new invasive plants, such as glossy buckthorn (*Frangula alnus*) and any invasive plants should be removed immediately after discovery.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 11 Future Surveys

Several large blackgum (*Nyssa sylvatica*) trees were found on Millers Point in Parcel 11 and are worthy of increment coring to determine their age (Figure 92). Continue to scour the 1.6-acre coastal oak-hickory forest for hickory trees at any height to help confirm the tentative classification. The margin of Middle Farms Pond should be surveyed by canoe to document the full extent of sweet pepperbush (*Clethra alnifolia*) shrub swamp vs. red maple-blackgum fringe swamp; and to fully document the extent of the state-rare many-flowered marsh pennywort (*Hydrocotyle umbellata*).

We were fortunate to sample an Observation Point (11.02) in 2021 near the same location sampled by the same NYNHP Chief Ecologist in 2003 (F1). The Floristic Quality Assessment scores of the two points are very similar (Table 83). No invasive plants were recorded in either year. Resampling an Observation Point on Millers Point every 10 -20 years would help keep track of the floristic quality of the community.

Table 83. Floristic Quality Comparison of two coastal oak-hickory forest Observation Points in Parcel 11 sampled at the same location 18 years apart (2003 and 2021).

Obs. Point	Richness	% Native	% Invasives	Mean C	Weighted Mean C	Floristic Quality	Weighted Floristic Quality	Field Code	Survey Date
F1	10.00	100.00	0.00	5.90	7.10	18.70	22.60	10/8/2003	F03EDI60NYUS
11.02	16.00	100.00	0.00	5.50	6.75	22.00	26.98	8/31/2021	F21EDI34NYUS

Parcel 12. American Legion Post 1045



Figure 95. Parcel 12: American Legion Post 1045.

Table 84. 12.01 Successional southern hardwoods (*Acer pseudoplatanus* - *Robinia pseudoacacia*)

Obs. pt. 12.01 Form 3: Form 2 occ #:

Community: Successional southern hardwoods (Ac) CEGL code: Alliance code:

UTM: zone 18 750016 E, 4572815 N
 Lat: 41.26305191 Long: -71.9915856

Comments: UTM Zone 18. Parcel 12 behind (west of) American Legion Post 1045 (photo 35); SSH with vine thicket understory; hard to see unvegetated layer under vine/Rubus thicket;

Photo Photo name: 31-34

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	42%, 25m	<i>Acer pseudoplatanus</i>	20%	
T2		<i>Robinia pseudoacacia</i>	20%	
T2		<i>Prunus serotina</i> var. <i>serotina</i>	10%	
T3	51%, 10m	<i>Acer pseudoplatanus</i>	35%	
T3		<i>Robinia pseudoacacia</i>	12%	
T3		<i>Frangula alnus</i>	10%	
T3		<i>Prunus serotina</i> var. <i>serotina</i>	5%	
TS1	9%, 4m	<i>Acer pseudoplatanus</i>	8%	
TS1		<i>Robinia pseudoacacia</i>	1%	
TS2	5%, 1.5m	<i>Acer pseudoplatanus</i>	4%	
TS2		<i>Robinia pseudoacacia</i>	1%	
TS3	1%, 0.5m	<i>Robinia pseudoacacia</i>	1%	
SS1	15%, 2.5m	<i>Viburnum dentatum</i>	10%	
SS1		<i>Rubus allegheniensis</i>	5%	
SS2	38%, 1.2m	<i>Rubus allegheniensis</i>	30%	
SS2		<i>Viburnum dentatum</i>	5%	
SS2		<i>Rosa multiflora</i>	3%	
SS3	1%, 0.3m	<i>Rubus allegheniensis</i>	1%	
V1	23%, 10m	<i>Smilax rotundifolia</i>	10%	
V1		<i>Parthenocissus quinquefolia</i>	8%	
V1		<i>Hedera helix</i>	5%	on T2 <i>Prunus</i>
V2	40%, 0.6m	<i>Lonicera japonica</i>	20%	
V2		<i>Smilax rotundifolia</i>	15%	
V2		<i>Parthenocissus quinquefolia</i>	5%	
H	7%, 1.25m	<i>Solidago rugosa</i> var. <i>rugosa</i>	5%	
H		<i>Phytolacca americana</i>	2%	
U	92%	litter and duff	90%	
U		wood (CWD) >7.5 cm	1%	
U		wood (FWD) <7.5 cm	1%	



Figure 96. American Legion Post 1045 east of Parcel 12



Figure 97. Sycamore maple (*Acer pseudoplatanus*) in Parcel 12 (12.01).



Figure 98. Successional southern hardwoods co-dominated by Sycamore maple (*Acer pseudoplatanus*) and black locust (*Robinia pseudoacacia*) in Parcel 12 (12.01).

Parcel 12 Ecological Community Acreage

Table 85. Parcel 12 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
111	0.03	MLWT	Mowed lawn with trees	CTERCULT	sliver along road
110	0.09	PR/P	Paved road/path	CTERCULT	
23	1.20	SSH	Successional southern hardwoods (<i>Acer pseudoplatanus</i>)	CTERFOR	
112	0.05	UR/P	Unpaved road/path	CTERCULT	
4 polys	1.37	4 types			

Parcel 12 General Description

Parcel 12 is a weedy, modified successional southern hardwoods dominated by invasive trees in all layers, such as sycamore maple (*Acer pseudoplatanus*) and black locust (*Robinia pseudoacacia*). The shrub layer is a dense thicket of thorny shrubs, such as blackberry (*Rubus allegheniensis*) and multiflora rose (*Rosa multiflora*), that is covered with a dense layer of vines, including greenbrier (*Smilax rotundifolia*) and Japanese honeysuckle (*Lonicera japonica*). There is also English ivy (*Hedera helix* – 5%) in the ground layer. This is the only location we found successional southern hardwoods dominated by sycamore maple during our ecology surveys. It is also the largest stand of sycamore maple found during our surveys.

Parcel 12 is among the bottom ten parcels with the lowest Landscape Condition Analysis Scores of the 77 Land Trust parcels (LCA Score: 1041.57; range 0 to 1728).

Parcel 12 Invasive Plants

See Parcel 12 General Description above.

Parcel 12 Management Recommendations

It may be impossible to restore Parcel 12 to a natural community dominated by native species without committing a significant amount of effort and resources. Perhaps there are two extreme options: 1) start with a clean slate by removing all vegetation except for black cherry trees, then follow-up by removing invasives as the parcel succeeds back to shrubland and eventually woodland; or 2) do nothing and let succession run its course in Parcel 12 and hopefully the increased canopy shade will help the woods transition to a forest with a greater number of native trees.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 13. M&M Harry Cant Wildlife Sanctuary



Figure 99. Parcel 13: M&M Harry Cant Wildlife Sanctuary.

Table 86. 13.01 Shallow emergent marsh

Obs. pt. 13.01 Form 3: Form 2 occ #: 1

Community: Shallow emergent marsh

CEGL code:

Alliance code:

UTM: zone 19 253956 E, 4574269 N

Comments: SEM with *Glyceria obtusa* at East Point by golf course, "Shrub swamp (*Decodon verticillatus*)"?

Lat: Long:

Photo Photo name: 143 face E, 144 face W to flag

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	2%, 2m	<i>Frangula alnus</i>	2%	
SS2	38%, 1.1m	<i>Decodon verticillatus</i>	35%	
SS2		<i>Clethra alnifolia</i>	2%	
SS2		<i>Rosa palustris</i>	1%	
SS3	10%, 0.5m	<i>Decodon verticillatus</i>	10%	
V2	1%, 1m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%	
H	45%	<i>Typha latifolia</i>	12%	
H		<i>Phragmites australis</i>	10%	
H		<i>Calamagrostis canadensis</i> var. <i>canad</i>	5%	
H		<i>Glyceria obtusa</i>	5%	ID confirmed by Steve Young (Feb. 2022). collect:Y
H		<i>Bidens tripartita</i> ssp. <i>comosa</i>	2%	ID determined by Steve Young (Feb. 2022). collect:Y
H		<i>Hypericum virginicum</i>	2%	ID confirmed by Steve Young (Feb. 2022). collect:Y
H		<i>Symphotrichum laeve</i>	2%	
H		<i>Carex stricta</i>	1%	
H		<i>Juncus canadensis</i>	1%	ID confirmed by Steve Young (Feb. 2022). collect:Y
H		<i>Lycopus uniflorus</i>	1%	
H		<i>Galium tinctorium</i>	0.01%	ID determined by Steve Young (Feb. 2022). collect:Y ID uncertain
H		<i>Juncus effusus</i> ssp. <i>solutus</i>	0.01%	ID confirmed by Steve Young (Feb. 2022). collect:Y
H		<i>Persicaria hydropiperoides</i>	0.01%	
H		<i>Scirpus cyperinus</i>	0.01%	
H		<i>Thelypteris palustris</i> var. <i>pubescens</i>	0.01%	
N	10%	<i>Sphagnum lescunii</i>	10%	cover uncertain due to flooding; ID confirmed by Tom Phillips 2022. collect:Y
U	90%	water	90%	0.25 mdeep



Figure 100. Shallow emergent marsh in Parcel 13: M&M Harry Cant Wildlife Sanctuary (13.01).

Table 87. 13.02 Shallow emergent marsh

Obs. pt. 13.02 Form 3: Form 2 occ #: 1
 Community: Shallow emergent marsh CEGL code: Alliance code:
 UTM: zone 19 253975 E, 4574286 N Comments: "Shrub swamp (Decodon verticillatus)"?
 Lat: Long: Photo Photo name: 145 face E, 146 face W flag
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	0.01%, 2m	Frangula alnus	0.01%	
SS2	56%, 1.1m	Decodon verticillatus	55%	
SS2		Clethra alnifolia	1%	
SS3	10%, 0.5m	Decodon verticillatus	10%	
H	65%	Typha latifolia	45%	
H		Glyceria obtusa	10%	
H		Juncus effusus ssp. solutus	3%	
H		Bidens frondosa	1%	ID uncertain
H		Calamagrostis canadensis var. canad	1%	
H		Hypericum virginicum	1%	
H		Juncus canadensis	1%	
H		Lycopus uniflorus	1%	
H		Thelypteris palustris var. pubescens	1%	
H		Scirpus cyperinus	0.01%	



Figure 101. Shallow emergent marsh in Parcel 13: M&M Harry Cant Wildlife Sanctuary (13.02) face E.



Figure 102. Shallow emergent marsh in Parcel 13: M&M Harry Cant Wildlife Sanctuary (13.02) face W.

Table 88. 13.03 Coastal oak-hickory forest

Obs. pt. 13.03 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 254015 E, 4574227 N

Lat Long:

Comments: Coastal oak-hickory forest? - no Carya. Mature maritime oak forest? Open understory where Dennstaedia punctilobula abundant. Aspect: 332 degrees. Slope: 10 degrees.

Photo Photo name: 150, 151

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	57%, 20m	Quercus velutina	48%	
T2		Quercus alba	12%	
T2		Quercus rubra	8%	ID uncertain
T2		Acer rubrum var. rubrum	in community 2%, but not at point	
T3	18%, 10m	Prunus serotina var. serotina	10%	
T3		Acer rubrum var. rubrum	8%	
T3		Quercus alba		
TS1	3%, 4.5m	Prunus serotina var. serotina	3% 5 cm dbh	
SS1	28%, 3.5m	Clethra alnifolia	25%	
SS1		Ilex verticillata	3%	
SS2	13%, 1.8m	Clethra alnifolia	12%	
SS2		Ilex verticillata	1%	
SS3	5%, 0.2m	Clethra alnifolia	5%	
SS3		Frangula alnus	0.01%	
V2	11%, 0.2m	Parthenocissus quinquefolia	5%	
V2		Toxicodendron radicans ssp. radicans	5% 2% on trunks, 3% on ground	
V2		Smilax rotundifolia	1% on ground and up to 3 m	
V2		Lonicera japonica	in community 1%, but not at point	
H	66%, 0.6m	Dennstaedia punctilobula	65%	
H		Hypericum virginicum	0.01%	
H		Maianthemum canadense	0.01%	
H		Eurybia divaricata	n community <1%, but not at point	
H		Thelypteris noveboracensis	in community 1%, but not at point	
N	1%	Thelia hirtella	1% on trunks; ID confirmed by Tom Phillips 2022.	collect: Y
U	98%	litter and duff	95%	
U		wood (FWD) <7.5 cm	3%	
U		wood (CWD) >7.5 cm	1%	
U		large rocks >10 cm	in community 1%, but not at point	



Figure 103. Coastal oak-hickory forest in Parcel 13: Mc&M Harry Cant Wildlife Sanctuary (13.03).



Figure 104. Coastal oak-hickory forest in Parcel 13: Mc&M Harry Cant Wildlife Sanctuary (13.03).

Table 89. 13.04 Shallow emergent marsh

Obs. pt. 13.04 Form 3: Form 2 occ #: 1

Community: Shallow emergent marsh

CEGL code:

Alliance code:

UTM: zone 19 253943 E, 4574213 N

Comments: SEM at metal pole west end of wetland. Dense tall Phragmites west of open water in front of house with US flag. "Shrub swamp (Decodon verticillatus)?"

Lat: Long:

Photo Photo name: 152 face E, 153 face W, 154-156 Glyceria obtusa

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
TS2	2%, 2m	Acer rubrum var. rubrum	1%	
TS2		Frangula alnus	1%	
SS2	36%, 1.25m	Decodon verticillatus	30% 1 m tall	
SS2		Clethra alnifolia	6% 1.5 m tall	
V	5%, 1.25m	Toxicodendron radicans ssp. radicans	5% 1.0-1.5 m tall	
H	66%	Glyceria obtusa	15%	
H		Calamagrostis canadensis var. canad	12%	
H		Phragmites australis	12%	
H		Typha latifolia	10%	
H		Juncus canadensis	5%	
H		Juncus effusus ssp. solutus	3%	
H		Hypericum virginicum	2%	
H		Lycopus uniflorus	2%	
H		Scirpus cyperinus	2%	
H		Carex stricta	1%	
H		Persicaria hydropiperoides	1% light pink, narrow, loose spike; ID determined by Steve Young (Feb. 2022).	collect:Y
H		Bidens frondosa	0.01%	ID uncertain
H		Galium tinctorium	0.01% 3 white petals, smooth capsule, mild cling, lvs 4 whorled; ID determined by Steve Young (Feb. 2022).	collect:Y
H		Persicaria sp.1	0.01% white, dense spike; ID confirmed as P. hydropiperoides by Steve Young (Feb. 2022).	collect:Y ID uncertain
N	10%	Sphagnum sp.	10% cover uncertain - flooded	ID uncertain



Figure 105. Shallow emergent marsh in Parcel 13: M&M Harry Cant Wildlife Sanctuary (13.04) face E.



Figure 106, Shallow emergent marsh in Parcel 13: M&M Harry Cant Wildlife Sanctuary (13.04) face W.



Figure 107. Coastal manna grass (*Glyceria obtusa*) in shallow emergent marsh in Parcel 13; M&M Harry Cant Wildlife Sanctuary (13.04).

Parcel 13 Ecological Community Acreage

Table 90. Parcel 13 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
99	2.39	CO-HF	Coastal oak-hickory forest	CTERFOR	No <i>Carya</i> ; large <i>Quercus velutina</i>
101	0.07	RGM	Reed grass marsh	CPALCULT	<i>Phragmites</i> dominant
505	2.25	RGM	Reed grass marsh	CPALOPEN	<i>Phragmites</i> 10-12%
19	2.25	SEM//SS	Shallow emergent marsh//Shrub swamp	CPALOPEN	<i>Phragmites</i> 10-12%
100	0.38	stream?	stream?	CRIV	open water
5 polys	7.34 acres	4 types			

Parcel 13 General Description

Parcel 13 is known as the M&M Harry Cant Wildlife Sanctuary (henceforth in this section referred to as “the Cant Sanctuary”). The Cant Sanctuary is one of six other Land Trust parcels located on the far east end of Fishers Island. Along the southern property line is a small 2.4-acre coastal oak-hickory forest dominated by three species of large oaks: black oak (*Quercus velutina* – up to 60 cm DBH), white oak (*Q. alba* – up to 38 cm DBH), and red oak (*Q. rubra* – 35 cm DBH). The herb layer is dominated by a thick cover of hay-scented fern (*Dennstaedtia punctilobula* – 65%) – the largest patch found during our ecology surveys. The Cant Sanctuary forest abuts a golf course fairway to the south.

In the basin north of the forest is a very diverse mosaic of shallow emergent marsh and water willow (*Decodon verticillatus*) shrub swamp. The marsh is dominated by several graminoids including broad-leaved cattail (*Typha latifolia* – 22%), state-rare coastal manna grass (*Glyceria obtusa* – 10%), bluejoint grass (*Calamagrostis canadensis* – 6%), Canada rush (*Juncus canadensis* – 2%), and soft rush (*Juncus effusus* ssp. *solutus* – 2%).

The shallow emergent marsh in the Cant Sanctuary at point 13.04 has the highest Weighted Floristic Quality Index Score (FQI 23.61) for that community found during our ecology surveys.

Parcel 13 Invasive Plants

Old World reed grass (*Phragmites australis*) is the primary threat to the shallow emergent marsh in the Cant Sanctuary. The current cover of *Phragmites* was very variable at our Observation Points: 13.01 (10%), 13.02 (0%), and 13.04 (12%). The biggest threats are the dense patches of *Phragmites* east and west of the marsh that appear to be encroaching toward the center. Glossy buckthorn (*Frangula alnus*) is also in the marsh at low percent cover (<1-2%).

Parcel 13 Management Recommendations

Existing plants of Old World reed grass (*Phragmites australis*) in the Cant Sanctuary shallow emergent marsh should be removed. Priority should be given to the population of the state-rare coastal manna grass (*Glyceria obtusa*), so that it is not out-competed by *Phragmites*. Glossy buckthorn (*Frangula alnus*) should be removed from these areas as well. Given the proximity of large *Phragmites* to the marsh, control of invasive plants in the Cant Sanctuary will be a long-term commitment of effort and resources. Management of the *Phragmites* off the parcel may require consultation with neighboring landowners before taking any action on the ground.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 14. Hay Harbor Access



Figure 108. Parcel 14: Hay Harbor Access.

Parcel 14 Ecological Community Acreage

Parcel 14 was not surveyed in 2021 or 2022.

Table 91. Parcel 14 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
2	0.19	UR/P?	Unpaved road/path?	CTERCULT	ROW access to water
1 polygon	0.19 acres	1 type			

Parcel 14 General Description

Parcel 14 appears to be a mowed access lane to Hay Harbor. Parcel 14 was designated as a low priority to survey by NYNHP ecologists, because of its small size and landscape context.

Parcel 14 has one the four lowest Landscape Condition Analysis Scores of the 77 Land Trust parcels (LCA Score: 1408.66; range 0 to 1728).

See APPENDIX A. Invasive Species Control Information available online.

Parcel 16a, Parcel 16b, and Parcel 52. Chocomount Cove West



Figure 109. Parcels 16a, 16b, and 52: Chocomount Cove West.



Figure 110. Parcel 16b: Chocomount Cove West (zoom-in).

Table 92. 16a.01 Successional old field

Obs. pt. 16a.01 Form 3: Form 2 occ #: 1

Community: Successional old field

CEGL code:

Alliance code:

UTM: zone 19 250271 E, 4574034 N

Comments: Small open SOF in middle of parcel. Surrounded by SMF with red cedar.

Lat: Long:

Photo Photo name: 49 face N, 50 big red cedar

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS3	27%, 0.4m	Rhus copallinum var. copallinum	20%	
SS3		Ligustrum vulgare	5%	
SS3		Rubus flagellaris	2%	
V2	35%, 0.2m	Lonicera japonica	20%	
V2		Clematis virginiana	10%	
V2		Toxicodendron radicans ssp. radicans	5%	
H		Agrostis capillaris	15%	ID uncertain
H		Agrostis capillaris	15%	ID uncertain
H	38%, 0.75m	Solidago juncea	15%	
H		Anthoxanthum odoratum	5%	
H		Panicum virgatum	3%	
H		Hypericum perforatum	0.01%	



Figure 111. Successional old field in Parcel 16a (16a.01).

Table 93. 16a.02 Successional maritime forest

Obs. pt. 16a.02 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250275 E, 4574013 N

Lat: Long:

Comments: SMF around open patches of SOF. Possibly former MRCF? No herbs recorded. Maritime red cedar forest?

Photo Photo name: 49 SMF back, 50 SMF back

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>		<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	70%, 16m	Prunus serotina var. serotina	50%		
T2		Juniperus virginiana var. virginiana	10%		
T2		Quercus velutina	10%		
T3	32%, 6m	Prunus serotina var. serotina	25%		
T3		Nyssa sylvatica	5%		
T3		Juniperus virginiana var. virginiana	3%		
TS1	8%, 4m	Juniperus virginiana var. virginiana	6%		
TS1		Malus torngo	2%		ID uncertain
TS2	9%, 1.8m	Juniperus virginiana var. virginiana	6%		
TS2		Frangula alnus	3%		
TS3	2%, 0.2m	Frangula alnus	2%		
SS1	35%, 2.5m	Ligustrum vulgare	30%		
SS1		Rhus copallinum var. copallinum	5%		
SS2	40%, 1.5m	Ligustrum vulgare	25%		
SS2		Rhus copallinum var. copallinum	10%		
SS2		Morella caroliniensis	5%		
SS3	30%, 0.4m	Ligustrum vulgare	20%		
SS3		Morella caroliniensis	5%		
SS3		Rubus flagellaris	5%		
V		Lonicera japonica	5%		
V	14%, 1.5m	Toxicodendron radicans ssp. radicans	5%		
V		Parthenocissus quinquefolia	2%		
V		Smilax glauca	2%		



Figure 112. Successional maritime forest in background in Parcel 16a (16a.02).

Table 94. 16b.01 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 16b.01 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250348 E, 4574083 N

Lat: Long:

Comments: Tall grassland co-dominated by *Panicum virgatum* and *Sorghastrum nutans*. Planted? A few scattered *Prunus serotina*. Combine nearby grassland polygons.

Photo Photo name: 47 face E, 48 face W

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
V	15%, 0.7m	<i>Clematis virginiana</i>	15%	
H	97%, 2m	<i>Panicum virgatum</i>	40%	
H		<i>Sorghastrum nutans</i>	35%	
H		<i>Agrostis capillaris</i>	10%	ID uncertain
H		<i>Dichanthelium clandestinum</i>	10%	
H		<i>Andropogon gerardi</i>	1%	
H		<i>Erigeron canadensis</i> var. <i>canadensis</i>	1%	



Figure 113. Semi-natural grassland (*Panicum virgatum*) in Parcel 16b (16b.01).

Table 95. 16b.02 Marine rocky intertidal

Obs. pt. 16b.02 Form 3: Form 2 occ #:

Community: Marine rocky intertidal

CEGL code:

Alliance code:

UTM: zone 19 250433 E, 4574119 N

Comments: MRI east of tall grassland. High tide ~5pm. Rock cover not collected.

Lat: Long:

Photo Photo name: 52 face E MRI flooded, 53 face S, 54 face N, 55 MRI island

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
N	60%	Ascophyllum nodosum	45%	
N		Fucus vesiculosus	15%	



Figure 114. Marine rocky intertidal community in Parcel 16b (16b.02).

Table 96. 16b.03 High salt marsh

Obs. pt. **16b.03** Form 3: Form 2 occ #: 1

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 19 250421 E, 4574103 N

Comments: HSM fringe (~3 m wide) meanders in front of, and between, large white boulders.

Lat: Long:

Photo Photo name: 51 face S

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
H	54%	<i>Sporobolus alterniflorus</i>	20%	
H		<i>Sporobolus pumilus</i>	15%	
H		<i>Salicornia depressa</i>	10%	
H		<i>Limonium carolinianum</i>	8%	
H		<i>Atriplex</i> sp.	0.01%	ID uncertain
H		<i>Suaeda maritima</i>	0.01%	ID uncertain
U	5%	wrack	5% includes dead eelgrass	



Figure 115. High salt marsh fringe in Parcel 16b (16b.03).

Parcel 16a, Parcel 16b, and Parcel 52 Ecological Community Acreage

Table 97. Parcel 16a, Parcel 16b, and Parcel 52 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
252	0.02	HSM	High salt marsh	CESTINTER	
95	0.03	MRB	Maritime rocky beach	CTEROPEN	unvegetated
94	0.08	MRI	Marine rocky intertidal	CMARINTER	
251	0.04	MS//SALS	Maritime shrubland//Salt shrub	CTEROPEN	human disturbance - clearing, weedy invasives
7	3.29	SMF//MRCF	Successional maritime forest	CTERFOR	red cedar all strata = 25%
16	0.65	S-NG Panicum	Semi-natural grassland (Panicum virgatum)	CTEROPEN	Panicum virgatum + Sorghastrum nutans co-dominant
249	0.11	SOF	Successional old field	CTEROPEN	artificial origin?
250	0.33	SOF//MR/P	Successional old field//Mowed roadside/pathway	CTEROPEN	road NE edge
8 polys	4.55 acres	7 types			

Parcel 16a, Parcel 16b, and Parcel 52 General Description

These three neighboring parcels are on the north shore of Fishers Island along Clay Point Road. Parcel 52 and Parcel 16a share a boundary and are on the west side of Clay Point Road. These two parcels are mostly successional maritime forest (Parcel 52 is on the north side of Parcel 16a). Parcel 16b is located on the east side of the road reaching the shore of Chocomount Cove about 120 m to the east.

The successional maritime forest is the largest community on the three parcels (3.3 acres). Point 16a.02 in the successional maritime forest is tied with point E08b.03 for having the highest total cover (25%) of red cedar (*Juniperus virginiana*) recorded during our ecology surveys. Strand forests on dunes dominated by red cedar are classified as maritime red cedar forest (e.g., Orient Point State Park). The forest in Parcel 16a is dominated by black cherry (*Prunus serotina*) and not on a dune, so it is classified as successional maritime forest.

There are two types of fields on these parcels: the small opening in the successional maritime forest in Parcel 16a is a successional old field dominated by non-native bent grass (*Agrostis capillaris*) growing with other characteristic old field species (Question: is this opening natural, or the result of past clearing?); the field in Parcel 16b is a semi-natural grassland dominated by planted switch grass (*Panicum virgatum*) and big bluestem (*Andropogon gerardi*).

Parcel 16b includes small pieces of larger marine and estuarine natural communities that line Chocomount Cove. Natural communities form narrow bands along the shoreline as follows: Marine rocky intertidal community (EOID 3294) runs along the parcel's eastern property line occupying the rocky area between mean low water (MLW) and mean high water (MHW) (Figure 114). At slightly higher elevation above MHW it becomes an unvegetated maritime rocky beach dominated by large rocks. There is also a small patch of high salt marsh tucked in between the rocks (Figure 115). Lastly, off the parcel to the east in Chocomount Cove is a mapped occurrence of marine eelgrass meadow (EOID 15050).

Given the close proximity of the three parcels, it is not surprising that their Landscape Condition Analysis Scores fall within a relatively narrow range (Parcel 16a: 636.94; Parcel 16b: 489.7; and 52: 454.9) and better than the average LCA score of 648 (range of 0 to 1728) generated for the 77 Land Trust parcels.

Parcel 16a, Parcel 16b, and Parcel 52 Invasive Plants

Invasive and non-native plants in the successional old field at point 16a.01 include Japanese honeysuckle (*Lonicera japonica* – 20%), bent grass (*Agrostis capillaris* – 15%), sweet vernal grass (*Anthoxanthum odoratum* – 5%), and privet (*Ligustrum vulgare* – 5%).

Invasive and non-native plants in the successional maritime forest at point 16a.02 include privet (*Ligustrum vulgare* – 45%), glossy buckthorn (*Frangula alnus* – 5%), and Japanese honeysuckle (*Lonicera japonica* – 20%).

The only non-native plant recorded in the semi-natural grassland at point 16b.01 was bent grass (*Agrostis capillaris* – 10%).

Parcel 16a, Parcel 16b, and Parcel 52 Management Recommendations

Currently the rocky beach at the east end of Parcel 16b abruptly transitions to field west of the narrow band of maritime shrubland. Restoring a wider buffer of shrubland that grades into successional maritime forest would provide more protection to the shoreline that is currently exposed.

Control of invasive plants in Parcel 16a and Parcel 52 will be a long-term commitment of effort and resources compared to other parcels on the Island, and thus may be a lower priority.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 16a, Parcel 16b, and Parcel 52 Future Surveys

The interior portion of Parcel 52 was not surveyed in 2021 or 2022. The forest in Parcel 52 needs to be surveyed to assess its condition and to confirm its tentative classification as successional maritime forest.

Parcel 18 and Parcel 55. Barlow Pond North



Figure 116. Parcels 18 and 55: Barlow Pond North.

Parcel 18 and Parcel 55. Mid-1920s Air Photo



Figure 117. Parcels 18 and 55: Barlow Pond North mid-1920s. Note two parallel ditches that run northwest from Barlow Pond through the vicinity of Parcel 18 to West Harbor.

Parcel 18 and Parcel 55 may have been continuously forested, and perhaps uncut, for the last 100 years. These parcels are depicted as forested on the circa 1958 USGS 7.5 minute topographic map, and they are among the few forested areas on the mid-1920s black and white air photo (Figure 117).

Table 98. 18.01 Red maple-blackgum swamp

Obs. pt. 18.01 Form 3: Form 2 occ #: 1

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 249414 E, 4573159 N

Comments: Low basin with giant red maples. Not obviously wetland. Not on NWI or DEC wetland maps.

Lat: Long:

Photo Photo name: 172-176,179-180

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	60%, 22m	Acer rubrum var. rubrum	50%	
T2		Nyssa sylvatica	15%	
T3	12%, 14m	Acer rubrum var. rubrum	12%	
TS1	7%, 4m	Acer rubrum var. rubrum	5%	
TS1		Frangula alnus	2%	
SS1	55%, 3m	Clethra alnifolia	40%	
SS1		Ilex verticillata	10%	
SS1		Viburnum dentatum var. lucidum	5%	
SS2	25%, 1.5m	Clethra alnifolia	25%	
SS3	15%, 0.2m	Rubus hispidus	10%	
SS3		Clethra alnifolia	5%	
V1	14%, 3m	Toxicodendron radicans ssp. radicans	14%	
V2	22%, 0.2m	Toxicodendron radicans ssp. radicans	10%	
V2		Smilax rotundifolia	2%	
H	0.9m	Dryopteris carthusiana	55%	
H		Osmundastrum cinnamomeum var. ci	10%	
H		Maianthemum canadense	8%	
H		Dennstaedtia punctilobula	5%	
H		Lysimachia ciliata	5%	
H		Lorinseria areolata	3%	



Figure 118. Red maple-blackgum swamp in Parcel 18 (18.01).

Table 99. 18.02 Coastal oak-hickory forest

Obs. pt. 18.02 ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 249420 E, 4573240 N
 Lat: Long:

Comments: Large boulder next to large *Quercus velutina*. Giant red maple stand continues to this point from 18.01 - *Woodwardia aerolata* by boulder too. Reference point. Vegetation cover data not collected.

Photo Photo name: 177

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Quercus velutina</i>			



Figure 119. Large black oak (*Quercus velutina* – 92 cm DBH) in coastal oak-hickory forest in Parcel 18 (18.02).

Table 100. 55.01 Coastal oak-hickory forest

Obs. pt. 55.01 ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 249397 E, 4573240 N

Lat: Long:

Comments: Giant *Betula lenta* (or non-peely *B. alleghaniensis*). Note: all *Carya* in forest on slopes and hill tops in Parcel 55 (Greg Parcel 25) is coastal oak-hickory forest. Reference point. Vegetation cover data not collected.

Photo Photo name: 178

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Betula lenta</i>			
T2	<i>Carya cordiformis</i>	thin husk, split 1/2 way on side; ID determined by Steve Young (Feb. 2022).		



Figure 120. Large (67 cm DBH) Sweet birch (*Betula lenta*) in Parcel 55 (55.01).

Table 101. 55.02 Coastal oak-hickory forest

Obs. pt. 55.02 Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 249453 E, 4573287 N

Lat: 41.26163232 Long: -71.9994102

Comments: Revisit CO-Hickory Forest center of parcel 55; Hickory dominated forest; may be up to 4 Carya spp. here; tree canopy heights not recorded; big trees north out of "plot" Q. velutina 75 cm DBH and 70 cm DBH (photos 135,136); dense tall Smilax thicket to NE; Slope: 8 degrees. Aspect: 167 degrees. CO-HickF continues E on other side of road to pond;

Photo Photo name: 133-134 of community; from GPS boulder: 137 face S; 138 face W

Position method GPS

GPS average 2800 readings

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	80%	Carya glabra	40%	
T2		Quercus velutina	16%	
T2		Acer rubrum var. rubrum	8%	
T2		Carya cordiformis	8%	
T2		Carya ovata	8%	
T2		Carya tomentosa	8%	ID uncertain
T3	36%	Carya glabra	18%	
TS3		Sassafras albidum	5%	
TS3		Prunus serotina var. serotina	2%	
TS3		Quercus velutina	1%	
TS3		Nyssa sylvatica	0.01%	
SS1	1%, 3m	Vaccinium corymbosum	1%	
SS2	11%, 1.25m	Lonicera morrowii	10%	
SS2		Ilex verticillata	1%	
SS3	3%, 0.3m	Lonicera morrowii	2%	
SS3		Viburnum dentatum	1%	
V1	4%, 5m	Smilax rotundifolia	2%	
V1		Toxicodendron radicans ssp. radicans	2%	
V2	55%, 0.9m	Smilax rotundifolia	25%	
V2		Toxicodendron radicans ssp. radicans	15%	
V2		Parthenocissus quinquefolia	10%	
V2		Lonicera japonica	5%	
H	15%	Eurybia divaricata	10%	
H		Maianthemum canadense	5%	
H		Monotropa uniflora	0.01%	
U	95%	litter and duff	90%	
U		very large rocks >1 m	8%	
U		wood (FWD) <7.5 cm	3%	
U		large rocks >10 cm	2%	
U		wood (CWD) >7.5 cm	2%	



Figure 121. Coastal oak-hickory forest in Parcel 55 (55.02).



Figure 122. Coastal oak-hickory forest in Parcel 55 (55.02).

Parcel 18 and Parcel 55 Ecological Community Acreage

Table 102. Parcel 18 and Parcel 55 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
10	3.46	CO-HF	Coastal oak-hickory forest	CTERFOR	road SE edge
265	1.97	RM-BGS	Red maple-blackgum swamp	CPALFOR	not NWI wetland; large red maple trees; dense fern
2 polys	5.44	2 types			

Parcel 18 and Parcel 55 General Description

Parcel 18 and Parcel 55 are located northwest of Barlow Pond on the northwest side of Barlow Pond Road. Both parcels are forested and have large trees in the canopy. The west half of Parcel 18 is red maple-blackgum swamp and the east half is coastal oak-hickory forest. Whereas, Parcel 55 is entirely coastal oak-hickory forest. Both communities appear to extend off Land Trust property. The parcels share an east-west boundary, with Parcel 55 on the north side of the line and Parcel 18 on the south.

The red maple-blackgum swamp in Parcel 18 is dominated by large red maple (*Acer rubrum*) with six trees over 50 cm DBH at point 18.01 (e.g., 52, 55, 64, 65, 82, 82.5, 105!). The blackgum (*Nyssa sylvatica*) trees in the swamp are also large with two trees over 50 cm DBH at point 18.01 (e.g., 52 and 52.5). The shrub layer is dominated by sweet pepperbush (*Clethra alnifolia* – 65%). The herb layer is dominated by ferns, such as spinulose wood fern (*Dryopteris carthusiana* – 55%) – largest patch found during our ecology surveys, cinnamon fern (*Osmundastrum cinnamomeum* – 10%), hay-scented fern (*Dennstaedtia punctilobula* – 5%), and netted chain fern (*Lorinseria areolata* – 3%). Interestingly, there are no mapped NWI wetlands in either parcel.

The coastal oak-hickory forest in Parcel 55 appears to have four species of hickory (*Carya* spp.) trees in the canopy. Hickory species identification is challenging, especially when needed structures are missing (e.g., nuts) or out of reach (e.g., leaves and buds in canopy). Nonetheless, at point 55.02 we identified pignut hickory (*Carya glabra* – 40%), bitternut hickory (*Carya cordiformis* – 8%), mockernut hickory (*Carya tomentosa* – 8%), and shagbark hickory (*Carya ovata* – 6%). If our tree identifications are confirmed by an independent botanist or forester, then this is likely the only location where four species of hickory occur together in the canopy (T2) on Land Trust property.

Given the close proximity of these two parcels, it is not surprising that their Landscape Condition Analysis Scores fall within a relatively narrow range (Parcel 18: 531.04 and 55: 484.98) and better than the average LCA score of 648 (range of 0 to 1728) generated for the 77 Land Trust parcels.

Parcel 18 and Parcel 55 Invasive Plants

Glossy buckthorn (*Frangula alnus* – 2%) is the only invasive plant found in the red maple-blackgum swamp at point 18.01.

Three invasive plants were found in the coastal oak-hickory forest at point 55.02: Morrow's honeysuckle (*Lonicera morrowii* – 12%), Japanese honeysuckle (*Lonicera japonica* – 5%), and glossy buckthorn (*Frangula alnus* – 1%).

Parcel 18 and Parcel 55 Management Recommendations

Since glossy buckthorn (*Frangula alnus*) is the only invasive plant recorded in the red maple-blackgum swamp, and it has low percent cover (2%), removing it would restore the swamp to 100% native species.

Remove or reduce Morrow's honeysuckle (*Lonicera morrowii*), Japanese honeysuckle (*Lonicera japonica*), and glossy buckthorn (*Frangula alnus*) from the coastal oak-hickory forest before they become unmanageable.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 18 and Parcel 55 Future Surveys

Several large blackgum (*Nyssa sylvatica*) and red maple (*Acer rubrum*) trees were found in Parcel 18 and are worthy of increment coring to determine their age. A soil core in the swamp would help confirm its classification as a swamp; if wetland soils are confirmed present, and the water table is relatively close to the surface.

Several large black oak (*Quercus velutina*) trees were found on Parcel 55 and are worthy of increment coring to determine their age. An independent botanist or forester should confirm our hickory tree identification in Parcel 55 at point 55.02.

Parcel 19. Penni's Path in the Matty Matthiessen Wildlife Sanctuary



Figure 123. Parcel 19: Penni's Path in the Matty Matthiessen Wildlife Sanctuary.

Table 103. 19.01 Successional maritime forest

Obs. pt. 19.01		Form 3: <input type="checkbox"/> Form 2 occ #: 1	
Community: Successional maritime forest		CEGL code:	Alliance code:
UTM: zone 19	250196 E, 4573162 N	Comments: SMF both sides (N and S) of trail. Yellow-rumped warbler very close.	
Lat:	Long:	Photo <input checked="" type="checkbox"/> Photo name: 266-268	
Position method GPS			
GPS average min, sec.		WAAS <input type="checkbox"/>	

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	46%, 8m	Prunus serotina var. serotina	40%	
T2		Malus sp.	10%	not M. toringo per Steve Young. collect:Y ID uncertain
TS1	11%, 2.5m	Prunus serotina var. serotina	10%	
TS1		Malus sp.	1%	not M. toringo per Steve Young.
TS2	2%, 1.5m	Frangula alnus	2%	
TS3	5%, 0.45m	Frangula alnus	5%	
TS3		Juniperus virginiana var. virginiana	0.01%	
SS1	50%, 3m	Viburnum dentatum var. lucidum	20%	
SS1		Morella caroliniensis	15%	
SS1		Ilex verticillata	10%	
SS1		Lonicera morrowii	5%	
SS2	70%, 1.25m	Lonicera morrowii	30%	1-1.5 m
SS2		Morella caroliniensis	20%	
SS2		Viburnum dentatum var. lucidum	20%	
SS2		Ilex verticillata	1%	
SS3		Lonicera morrowii	5%	
SS3	15%, 0.5m	Morella caroliniensis	5%	
SS3		Rubus flagellaris	3%	
SS3		Viburnum dentatum var. lucidum	2%	
V	38%, 1.65m	Celastrus orbiculatus	15%	
V		Toxicodendron radicans ssp. radicans	10%	
V		Lonicera japonica	8%	
V		Parthenocissus quinquefolia	8%	
V		Smilax rotundifolia	5%	
H	0.01%	Solidago rugosa var. rugosa	0.01%	



Figure 124. Successional maritime forest in Parcel 19 (19.01).

Table 104. 19.02 Successional maritime forest

Obs. pt. 19.02 Form 3: Form 2 occ#: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250158 E, 4573163 N

Lat: Long:

Comments: Unusual young black oak-sassafras forest between trail and pond. Note: pond fringe is Phragmites. Coastal oak-hickory forest?

Photo Photo name: 269 face N, 270 face S

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	68%, 20m	Quercus velutina	60%	
T2		Sassafras albidum	15%	
T2		Acer rubrum var. rubrum	5%	
T3	20%, 10m	Sassafras albidum	10%	
T3		Acer rubrum var. rubrum	5%	
T3		Quercus velutina	5%	
T3		Juniperus virginiana var. virginiana	2%	
TS1	8%, 4m	Sassafras albidum	5%	
TS1		Quercus velutina	3%	
TS2	12%, 1.5m	Sassafras albidum	5% 1-2 m	
TS2		Quercus velutina	3%	
TS2		Frangula alnus	1% 0.5-0.9m	
TS2		Fagus grandifolia	0.01% 0.75 m	
TS2		Juniperus virginiana var. virginiana	0.01%	
TS3		Frangula alnus	1%	
TS3	3%, 0.4m	Quercus velutina	1%	
TS3		Fagus grandifolia	0.01%	
TS3		Juniperus virginiana var. virginiana	0.01%	
TS3		Sassafras albidum	0.01%	
SS3	5%, 0.5m	Morella carolinensis	5%	
V2	4%, 0.2m	Smilax rotundifolia	2%	
V2		Toxicodendron radicans ssp. radicans	2%	
H	35%	Carex sp.	30%	ID uncertain
H		Maianthemum canadense	5%	



Figure 125. Successional maritime forest in Parcel 19 (19.02).

Table 105. 19.03 and 19.04 Successional maritime forest

Obs. pt. 19.03 ref Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250168 E, 4573124 N

Lat: Long:

Comments: Black oak sassafras forest continues south to this point from 19.02 at "Sharp" bench (photo 272). Two workers at oysterfarm today (photo 273). Phragmites fringe still along shore with tall maritime shrubland behind then sassafras on slope and on flat top. Reference point. Vegetation cover data not collected. Coastal oak-hickory forest?

Photo Photo name: 272 bench, 273 oyster farm pond

Position method GPS

GPS average min, sec.

WAAS

Obs. pt. 19.04 ref Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250200 E, 4573104 N

Lat: Long:

Comments: SMF gnarly *Prunus serotina* 6-8 m tall along trail (photo 274). Reference point. Vegetation cover data not collected.

Photo Photo name: 274

Position method GPS

GPS average min, sec.

WAAS

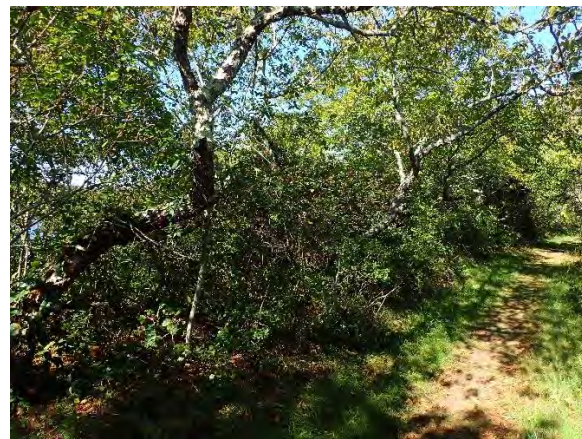


Figure 126. Successional maritime forest by "Sharp" bench in Parcel 19: left: point 19.03; Right: point 19.04.



Figure 127. Coastal salt pond on Island Pond: Left: face W from Parcel 19 (19.03); Right: face E from Parcel 2 (02.01).

Parcel 19. Penni's Path Ecological Community Acreage

Table 106. Parcel 19. Penni's Path Ecological Community Acreage (excludes trails)

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
387	0.37	HSM Phragmites	High salt marsh	CESTINTER	CSP fringe; Phragmites invaded
390	0.43	MOF?	Maritime oak forest?	CTERFOR	SMF? Q. vel 65%, Sas alb 25%, Acer rub 10%
388	0.75	MS	Maritime shrubland	CTEROPEN	cleared on USGS topo maps
138	2.34	SMF	Successional maritime forest	CTERFOR	cleared on USGS topo maps
154	0.41	SMF	Successional maritime forest	CTERFOR	
159	0.25	SMF	Successional maritime forest	CTERFOR	cleared on USGS topo maps
389	0.35	SMF	Successional maritime forest	CTERFOR	cleared on USGS topo maps
7 polys	4.90 acres	4 types			

Note: Parcel 19 is also included in Parcel 20 acreage assessment (Table 106, Figure 123).

Parcel 19 General Description

The successional maritime forest tree canopy at point 19.01 is dominated by stunted (8 m tall) black cherry (*Prunus serotina*) trees with twisted trunks and low gnarly branches, that are characteristic of this community (Figure 124). The interior parts of the forest are inaccessible, because of the dense thicket of vines and shrubs, most of which are non-native, invasive plants.

An unusual variant of successional maritime forest (or possibly maritime oak forest?) has become established on the west-facing slope of Parcel 19 at point 19.02 along Island Pond that is dominated by young black oak (*Quercus velutina* – 60%). What is interesting and unusual about this forest is the absence of characteristic black cherry and the presence of sassafras (*Sassafras albidum*) in all five tree layers (T2 – 15%, T3 – 10%, TS1 – 5%, TS2 – 5%, TS3 – <1%). This is likely the only Land Trust parcel where sassafras is found in each layer. Also unusual in this setting is the lack of a thick vine and shrub layer, and very low cover of only one invasive plant, glossy buckthorn (*Frangula alnus*).

Parcel 19 is depicted as cleared on the circa 1958 USGS 7.5 minute topographic map and cleared on the mid-1920s black and white air photo (see Figure 129 in Parcel 20 section). It is likely that the forest along Penni's Path is much younger than areas that have been continuously forested since those years.

The Parcel 19 Landscape Condition Analysis Score of 279.69 (#12 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel 19 Invasive Plants

Invasive plants in the successional maritime forest at point 19.01 include Morrow's honeysuckle (*Lonicera morrowii* – 40%), Oriental bittersweet (*Celastrus orbiculatus* – 15%), Japanese honeysuckle (*Lonicera japonica* – 8%), and glossy buckthorn (*Frangula alnus* – 7%).

Glossy buckthorn (*Frangula alnus* – 2%) is the only invasive found at point 19.02.

Old World reed grass (*Phragmites australis*) has invaded the high salt marsh fringe on the east shore of Island Pond along Parcel 19. In some areas it is dominant.

Parcel 19 Management Recommendations

Since glossy buckthorn (*Frangula alnus*) is the only invasive plant recorded in the successional maritime forest (or maritime oak forest?) at point 19.02, and it has low percent cover (2%), removing it would restore the forest to 100% native species.

Control of invasive plants in the successional maritime forest at point 19.01 will be a long-term commitment of effort and resources compared to other parcels on the Island, and thus may be a lower priority. One proposal is to convert this area to semi-natural grassland expanding Middle farms grassland into Parcel 19 (*pers. comm.* Jack Schneider).

Existing plants of Old World reed grass (*Phragmites australis*) in the high salt marsh along the north shore of Beach Pond (moderate invasion) and the east shore of Island Pond (severe invasion) should be removed if possible. Given the proximity of large *Phragmites* patches to the marsh, control of invasive plants on these shorelines will be a long-term commitment of effort and resources.

Phragmites management around the shores of Island Pond and Beach Pond may require consultation with neighboring landowners before taking any action on the ground.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 20. Matty Matthiessen Wildlife Sanctuary



Figure 128. Parcel 20: Matty Matthiessen Wildlife Sanctuary (North of Beach Pond).

Parcel 20 and Parcel 19. Mid-1920s Air Photo



Figure 129. Parcel 20: Matty Matbiessen Wildlife Sanctuary mid-1920s. Note that agricultural fields extend to the east shore of Island Pond and present day Parcel 19 is cleared. Note Millers Point on the south shore of Middle Farms Pond center right of photo.

Table 107. 20.01 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.01 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250394 E, 4573266 N

Lat: Long:

Comments: SNSG *Panicum virgatum* dominant. Directions to this point 20.01: From the Henry L. Ferguson Museum 1109 Equestrian Ave., Fishers Island, NY 06390 head northeast on Equestrian Ave toward Oriental Ave. about 500 feet. Turn southeast (right) onto Oriental Ave. and go east about 1.9 mi. Continue east onto East End Rd. about 1.0 mi. Turn south (right) onto Middle Farm Pond Rd. and go about 0.4 mi. Park at the Matty Matthiesen Wildlife Sanctuary Grassland parking area on the west side of the road and walk south about 260 m south to the center of grassland patch surrounded by mowed hiking trails.

Photo Photo name: 56 face N house, 57 face S

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	<i>Morella caroliniensis</i>	5%		
SS2	12%, 1m <i>Viburnum dentatum</i> var. <i>lucidum</i>	5%		
SS2	<i>Frangula alnus</i>	1%		
SS2	<i>Rhus copallinum</i> var. <i>copallinum</i>	1%		
SS2	<i>Rosa palustris</i>	0.01%		
SS3	11%, 0.25m <i>Rubus flagellaris</i>	5%		
SS3	<i>Morella caroliniensis</i>	3%		
SS3	<i>Rhus copallinum</i> var. <i>copallinum</i>	3%		
V2	1%, 0.25m <i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%		
H	84%, 1.5m <i>Panicum virgatum</i>	60%		
H	<i>Eutrochium dubium</i>	20%		
H	<i>Dichanthelium</i> sp.	1% Panicum?	collect:090121	ID uncertain
H	<i>Solidago rugosa</i> var. <i>rugosa</i>	1%		
H	<i>Thelypteris palustris</i> var. <i>pubescens</i>	1%		
H	<i>Agrostis capillaris</i>	0.01%		ID uncertain
H	<i>Eupatorium pilosum</i>	0.01% ID confirmed by Steve Young (Feb. 2022).	collect:Y	
H	<i>Euthamia graminifolia</i>	0.01%		



Figure 130. Semi-natural grassland (*Panicum virgatum*) in Parcel 20; Matty Matthiesen Wildlife Sanctuary (20.01); Left: face N; Right: face S.

Table 108. 20.02 Shallow emergent marsh (*Calamagrostis canadensis*)

Obs. pt. 20.02 Form 3: Form 2 occ #: 1

Community: "SEM (*Calamagrostis canadensis*)" CEGL code: Alliance code:

UTM: zone 19 250425 E, 4573194 N Comments: Wet swale. *Calamagrostis canadensis* dominated grassland.
 Lat: Long: Photo Photo name: 58 face N parking spot back, 59 face S osprey nest back
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	2%, 0.75m	<i>Rubus allegheniensis</i>	2%	
SS2		<i>Rosa palustris</i>	0.01%	
V2	5%, 0.4m	<i>Apios americana</i>	5%	
V2		<i>Fallopia scandens</i>	0.01% ID confirmed by Steve Young (Feb. 2022).	collect:Y
H	90%, 0.75m	<i>Calamagrostis canadensis</i> var. canad	60%	
H		<i>Eutrochium dubium</i>	10%	
H		<i>Persicaria</i> sp.1	5% dark pink narrow flower spike dominant; annual or perennial?	collect:Y ID uncertain
H		<i>Panicum virgatum</i>	3%	
H		<i>Asclepias incarnata</i> ssp. pulchra	2%	
H		<i>Euthamia graminifolia</i>	1%	
H		<i>Osmundastrum cinnamomeum</i> var. ci	1%	
H		<i>Solidago rugosa</i> var. rugosa	1%	
H		<i>Thelypteris palustris</i> var. pubescens	1%	
H		<i>Galium tinctorium</i>	0.01%	ID uncertain
H		<i>Iris prismatica</i>	0.01% I. versicolor?	ID uncertain
H		<i>Lycopus</i> sp.	0.01%	ID uncertain
H		<i>Osmunda regalis</i> var. spectabilis	0.01%	
H		<i>Persicaria pensylvanica</i>	0.01% light pink fatter spike minor cover; ID determined by Steve Young (Feb. 2022).	collect:Y
H		<i>Scutellaria galericulata</i>	0.01%	ID uncertain



Figure 131. Shallow emergent marsh (*Calamagrostis canadensis*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.02): Left: face N; Right: face S.

Table 109. 20.03 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.03		Form 3: <input type="checkbox"/> Form 2 occ #: 1			
Community: "Grassland (<i>Panicum virgatum</i>)"		CEGL code:	Alliance code:		
UTM: zone 19	250369 E, 4573136 N	Comments: SNSG <i>Panicum virgatum</i> dominant NE of trail jct.			
Lat:	Long:	Photo <input checked="" type="checkbox"/>	Photo name: 60 face NE		
Position method	GPS				
GPS average	min, sec.	WAAS	<input type="checkbox"/>		
Stratum		Species	comments	Collection	Unsure of ID
SS2	16%, 1m	<i>Rhus copallinum</i> var. <i>copallinum</i>	10%		
SS2		<i>Viburnum dentatum</i> var. <i>lucidum</i>	5%		
SS2		<i>Morella caroliniensis</i>	1%		
SS3	41%, 0.2m	<i>Rubus flagellaris</i>	40%		
SS3		<i>Morella caroliniensis</i>	1%		
H	88%, 1.5m	<i>Panicum virgatum</i>	65%		
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	15%		
H		<i>Euthamia graminifolia</i>	4%		
H		<i>Dichanthelium clandestinum</i>	2%		
H		<i>Achillea millefolium</i>	0.01%		
H		<i>Cirsium</i> sp.	0.01%		ID uncertain
H		<i>Eupatorium hyssopifolium</i>	0.01%		
H		<i>Eupatorium perfoliatum</i>	0.01%		
H		<i>Rudbeckia hirta</i>	0.01%		
H		<i>Sorghastrum nutans</i>	0.01%		



Figure 132. Semi-natural grassland (*Panicum virgatum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.03) face NE.

Table 110. 20.04 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.04 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250369 E, 4573136 N

Comments: SNSG *Panicum virgatum* dominant SE of trail jct.

Lat: Long:

Photo Photo name: 61 face SE

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	1%, 1.25m	<i>Prunus serotina</i> var. <i>serotina</i>	1%	
SS2	20%, 0.75m	<i>Rhus copallinum</i> var. <i>copallinum</i>	15%	
SS2		<i>Morella caroliniensis</i>	5%	
SS3	7%, 0.4m	<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS3		<i>Morella caroliniensis</i>	2%	
H	98%, 1.5m	<i>Panicum virgatum</i>	60%	
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	25%	
H		<i>Dichanthelium clandestinum</i>	6%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	5%	
H		<i>Cirsium</i> sp.	1%	
H		<i>Achillea millefolium</i>	0.01%	
H		<i>Daucus carota</i>	0.01%	
H		<i>Symphytotrichum dumosum</i>	0.01%	collected 10/01/2021, ID determined by Steve Young (Feb. 2022).



Figure 133. Semi-natural grassland (*Panicum virgatum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.04) face SE.

Table 111. 20.05 Semi-natural grassland (*Panicum virgatum*) or Successional old field

Obs. pt. 20.05 Form 3: Form 2 occ #: 1

Community: Successional old field CEGL code: Alliance code:

UTM: zone 19 250369 E, 4573136 N Comments: SNSG//SOF Andropogon gerardi and Panicum virgatum co-dominant SW of trail jct. Rubus-Solidago SOF in abandoned mowed trail - no longer mowed.

Lat: Long: Photo Photo name: 62 face SW

Position method GPS
GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	5%, 1.5m Rhus copallinum var. copallinum	5%		
SS3	60%, 0.5m Rubus flagellaris	45%		
SS3	Rhus copallinum var. copallinum	15%		
V	2%, 1m Celastrus orbiculatus	2% on Rhus		
H	88%, 1.5m Solidago canadensis var. canadensis	30%		
H	Andropogon gerardi	20%		
H	Panicum virgatum	20%		
H	Dichanthelium clandestinum	10%		
H	Solidago rugosa var. rugosa	5%		



Figure 134. Semi-natural grassland (*Panicum virgatum*) in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.05) face SW.

Table 112. 20.06 Semi-natural grassland (*Andropogon gerardi*)

Obs. pt. 20.06 Form 3: Form 2 occ #: 1

Community: "Grassland (*Andropogon gerardi*)"

CEGL code:

Alliance code:

UTM: zone 19 250369 E, 4573136 N

Comments: SNSG *Andropogon gerardi* dominant NW of trail jct.

Lat: Long:

Photo Photo name: 63 face NW

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	2%, 1.8m	<i>Prunus serotina</i> var. <i>serotina</i>	2%	
SS2	10%, 1.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	10%	
SS3		<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS3	10%, 0.25m	<i>Rubus flagellaris</i>	5%	
V2	35%, 0.4m	<i>Lonicera japonica</i>	35%	
H	90%, 1.5m	<i>Andropogon gerardi</i>	40%	
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	15%	
H		<i>Dichanthelium clandestinum</i>	10%	
H		<i>Panicum virgatum</i>	10%	
H		<i>Euthamia graminifolia</i>	5%	
H		<i>Phleum pratense</i>	5%	
H		<i>Sorghastrum nutans</i>	5%	
H		<i>Daucus carota</i>	0.01%	



Figure 135. Semi-natural grassland (*Andropogon gerardi*) in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.06) face NW.

Table 113. 20.07 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.07 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)" CEGL code: Alliance code:

UTM: zone 19 250440 E, 4573103 N Comments: SNSG *Panicum virgatum* dominant NE of trail jct.

Lat: Long: Photo Photo name: 64 face NE

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	1%, 1.1m	<i>Prunus serotina</i> var. <i>serotina</i>	1%	
SS2	1%, 1.25m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	1%	
SS3		<i>Rubus allegheniensis</i>	2%	
SS3	4%, 0.4m	<i>Rubus flagellaris</i>	2%	
H	85%, 1.5m	<i>Panicum virgatum</i>	55%	
H		<i>Euthamia graminifolia</i>	25%	
H		<i>Ambrosia artemisiifolia</i>	2%	
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	2%	
H		<i>Achillea millefolium</i>	0.01%	
H		<i>Asclepias incarnata</i> ssp. <i>pulchra</i>	0.01%	
H		<i>Eupatorium perfoliatum</i>	0.01%	



Figure 136. Semi-natural grassland (*Panicum virgatum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.07) face NE.

Table 114. 20.08 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.08 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250440 E, 4573103 N

Comments: SNSG *Panicum virgatum* dominant SE of trail jct.

Lat: Long:

Photo Photo name: 65 face SE

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	1%, 1.25m	<i>Rhus copallinum</i> var. <i>copallinum</i>	1%	
SS3	4%, 0.3m	<i>Rubus allegheniensis</i>	2%	
SS3		<i>Rubus flagellaris</i>	2%	
V2	5%, 0.5m	<i>Apios americana</i>	5%	
H	90%, 1.5m	<i>Eutrochium dubium</i>	25%	
H		<i>Panicum virgatum</i>	25%	
H		<i>Dichanthelium clandestinum</i>	20%	
H		<i>Ambrosia artemisiifolia</i>	8%	
H		<i>Eupatorium perfoliatum</i>	8%	
H		<i>Agrostis capillaris</i>	5%	ID uncertain
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	5%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	2%	
H		<i>Iris prismatica</i>	1% 1 m tall	ID uncertain
H		<i>Asclepias incarnata</i> ssp. <i>pulchra</i>	0.01%	



Figure 137. Semi-natural grassland (*Panicum virgatum*) in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.08) face SE.

Table 115. 20.09 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.09 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250440 E, 4573103 N

Comments: SNSG *Panicum virgatum* dominant SW of trail jct.

Lat: Long:

Photo Photo name: 66 face SW

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS2	12%, 1.2m	<i>Rhus copallinum</i> var. <i>copallinum</i>	12%	
SS3	1%, 0.25m	<i>Rhus copallinum</i> var. <i>copallinum</i>	1%	
V2	2%, 0.25m	<i>Apios americana</i>	2%	
H	80%, 1.8m	<i>Panicum virgatum</i>	55%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	12%	
H		<i>Dichanthelium clandestinum</i>	5%	
H		<i>Eutrochium dubium</i>	5%	
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	2%	
H		<i>Iris prismatica</i>	1% 1 m tall	ID uncertain
H		<i>Ambrosia artemisiifolia</i>	0.01%	



Figure 138. Semi-natural grassland (*Panicum virgatum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.09) face SW.

Table 116. 20.10 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.10 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)" CEGL code: Alliance code:

UTM: zone 19 250440 E, 4573103 N Comments: SNSG *Panicum virgatum* dominant NW of trail jct.

Lat: Long: Photo Photo name: 67 face NW

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS2	2%, 1m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	2%	
SS3	3%, 0.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	2%	
SS3		<i>Rosa carolina</i>	1% not <i>R. palustris</i> , not <i>R. multiflora</i>	ID uncertain
V2	2%, 0.2m	<i>Apios americana</i>	2%	
H	40%, 1.5m	<i>Panicum virgatum</i>	40%	
H		<i>Dichanthelium clandestinum</i>	15%	
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	5%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	5%	
H		<i>Ambrosia artemisiifolia</i>	2%	
H		<i>Eutrochium dubium</i>	2%	
H		<i>Potentilla canadensis</i>	2%	ID uncertain
H		<i>Apocynum cannabinum</i>	0.01%	ID uncertain



Figure 139. Semi-natural grassland (*Panicum virgatum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.10) face NW.

Table 117. 20.11 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.11 Form 3: Form 2 occ #: 1
 Community: "Grassland (*Panicum virgatum*)" CEGL code: Alliance code:
 UTM: zone 19 250529 E, 4573066 N Comments: SNSG *Panicum virgatum* dominant NE of trail jct.
 Lat: Long: Photo Photo name: 68 face NE house back
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS3	0.01%, 0.25m	<i>Prunus serotina</i> var. <i>serotina</i>	0.01%	
SS2	5%, 1.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS3		<i>Rhus copallinum</i> var. <i>copallinum</i>	2%	
SS3	5%, 0.4m	<i>Rubus flagellaris</i>	2%	
SS3		<i>Morella caroliniensis</i>	1%	
V2	1%, 0.2m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%	
H	98%, 1.5m	<i>Panicum virgatum</i>	55%	
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	35%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	5%	
H		<i>Agrostis capillaris</i>	3%	ID uncertain



Figure 140. Semi-natural grassland (*Panicum virgatum*) in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.11) face NE.

Table 118. 20.12 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.12 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250529 E, 4573066 N

Comments: SNSG *Panicum virgatum* dominant SE of trail jct.

Lat: Long:

Photo Photo name: 69 face SE

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	13%, 1m	<i>Rhus glabra</i>	8%	
SS2		<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS3	10%, 0.5m	<i>Morella caroliniensis</i>	5%	
SS3		<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS3		<i>Rhus glabra</i>	0.01%	
V2	2%, 0.2m	<i>Lonicera japonica</i>	2%	
H	97%, 1.5m	<i>Panicum virgatum</i>	60%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	30%	
H		<i>Agrostis capillaris</i>	5%	
H		<i>Achillea millefolium</i>	1%	
H		<i>Dichanthelium clandestinum</i>	1%	
H		<i>Sonchus</i> sp.	0.01%	ID uncertain



Figure 141. Semi-natural grassland (*Panicum virgatum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.12) face SE.

Table 119. 20.13 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.13 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250529 E, 4573066 N

Comments: SNSG *Panicum virgatum* dominant SW of trail jct.

Lat: Long:

Photo Photo name: 70 face SW

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	11%, 1.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	10%	
SS2		<i>Viburnum dentatum</i> var. <i>lucidum</i>	1% 1 m tall	
SS3	7%, 0.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS3		<i>Rubus flagellaris</i>	2%	
V2	25%, 0.2m	<i>Lonicera japonica</i>	25%	
H	87%, 1.5m	<i>Panicum virgatum</i>	55%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	20%	
H		<i>Dichanthelium clandestinum</i>	10%	
H		<i>Eutrochium dubium</i>	1%	
H		<i>Achillea millefolium</i>	0.01%	
H		<i>Daucus carota</i>	0.01%	
H		<i>Osmundastrum cinnamomeum</i> var. <i>ci</i>	0.01%	



Figure 142. Semi-natural grassland (*Panicum virgatum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.13) face SW.

Table 120. 20.14 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.14 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250529 E, 4573066 N

Comments: SNSG *Panicum virgatum* dominant NW of trail jct.

Lat: Long:

Photo Photo name: 71 face NW

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	5%, 1.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS3	5%, 0.5m	<i>Rubus flagellaris</i>	3%	
SS3		<i>Rhus copallinum</i> var. <i>copallinum</i>	2%	
V2	3%, 0.2m	<i>Lonicera japonica</i>	3%	
V2		<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	0.01%	
H	85%, 1.5m	<i>Panicum virgatum</i>	50%	
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	25%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	5%	
H		<i>Agrostis capillaris</i>	3%	
H		<i>Dichanthelium clandestinum</i>	1%	
H		<i>Daucus carota</i>	0.01%	



Figure 143. Semi-natural grassland (*Panicum virgatum*) in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.14) face NW.

Table 121. 20.15 Shallow emergent marsh (*Calamagrostis canadensis*)

Obs. pt. 20.15 Form 3: Form 2 occ #: 1
 Community: "SEM (*Calamagrostis canadensis*)" CEGL code: Alliance code:
 UTM: zone 19 250438 E, 4573246 N Comments: SEM *Calamagrostis canadensis* dominated wet swale. East of point
 Lat: Long: Photo Photo name: 72 face E
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2 14%, 1m	<i>Rubus allegheniensis</i>	12%		
SS2	<i>Sambucus nigra</i> ssp. <i>canadensis</i>	2%		
SS3 3%, 0.5m	<i>Rubus allegheniensis</i>	3%		
V2 2%, 0.25m	<i>Apios americana</i>	1%		
V2	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%		
H 90%, 0.75m	<i>Calamagrostis canadensis</i> var. <i>canad</i>	70%		
H	<i>Eutrochium dubium</i>	12%		
H	<i>Euthamia graminifolia</i>	4%		
H	<i>Persicaria</i> sp. 2	2% light pink, fat		ID uncertain
H	<i>Eupatorium perfoliatum</i>	1% large patches E of point center of polygon		
H	<i>Panicum virgatum</i>	1%		
H	<i>Solidago rugosa</i> var. <i>rugosa</i>	1%		
H	<i>Lycopus</i> sp.	0.01%		ID uncertain



Figure 144. Shallow emergent marsh (*Calamagrostis canadensis*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.15) face E.

Table 122. 20.16 Shallow emergent marsh (*Calamagrostis canadensis*)

Obs. pt. **20.16** Form 3: Form 2 occ #: 1
 Community: "SEM (*Calamagrostis canadensis*)" CEGL code: Alliance code:
 UTM: zone 19 250438 E, 4573246 N Comments: SEM *Calamagrostis canadensis* dominated wet swale. West of point.
 Lat: Long: Photo Photo name: 73 face W
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	5%, 1m	<i>Rubus allegheniensis</i>	5%	
SS3	5%, 0.4m	<i>Rubus allegheniensis</i>	5%	
V2	2%, 0.5m	<i>Calystegia sepium</i>	1%	
V2		<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%	
H	87%, 0.75m	<i>Calamagrostis canadensis</i> var. <i>canad</i>	75%	
H		<i>Panicum virgatum</i>	5%	
H		<i>Eutrochium dubium</i>	3%	
H		<i>Persicaria</i> sp.2	2% light pink fat	ID uncertain
H		<i>Asclepias incarnata</i> ssp. <i>pulchra</i>	1%	
H		<i>Eupatorium pilosum</i>	1%	collect:Y
H		<i>Eupatorium perfoliatum</i>	0.01%	
H		<i>Lycopus</i> sp.	0.01%	ID uncertain
H		<i>Persicaria hydropiperoides</i>	0.01%	ID uncertain
H		<i>Thelypteris palustris</i> var. <i>pubescens</i>	0.01%	



Figure 145. Shallow emergent marsh (*Calamagrostis canadensis*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.16) face W.

Table 123. 20.17 Shrub swamp (*Clethra alnifolia*)

Obs. pt. 20.17 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Clethra alnifolia*)" EO2 CEGL code: Alliance code:

UTM: zone 19 250501 E, 4573335 N Comments: SS *Clethra alnifolia* dominant. This point is actually in Parcel 9.

Lat: Long: Photo Photo name: 74, 75

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	2%, 4m	<i>Acer rubrum</i> var. <i>rubrum</i>	2%	
SS1	25%, 3m	<i>Clethra alnifolia</i>	25%	
SS2	40%, 1.8m	<i>Clethra alnifolia</i>	15%	
SS2		<i>Rosa palustris</i>	15%	
SS2		<i>Decodon verticillatus</i>	10%	
SS3	5%, 0.5m	<i>Rosa palustris</i>	5%	
H	35%	<i>Sparganium eurycarpum</i>	30%	
H		<i>Boehmeria cylindrica</i>	2%	
H		<i>Thelypteris palustris</i> var. <i>pubescens</i>	2%	
H		<i>Hypericum virginicum</i>	1%	



Figure 146. Shrub swamp (*Clethra alnifolia*) in Parcel 9: Matty Matthiessen Wildlife Sanctuary (20.17) face E.

Table 124. 20.18 Shrub swamp (*Decodon verticillatus*)

Obs. pt. 20.18 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Decodon verticillatus*)" CEGL code: Alliance code:

UTM: zone 19 250634 E, 4573272 N Comments: SS *Decodon verticillatus* dominant. North (left) of Miller's driveway. Two mallards sleeping at point - did not move. C
 Lat: Long: Photo Photo name: 76,77

Position method Digital Ortho-Images
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2 75%, 1m	<i>Decodon verticillatus</i>	75%		
V	<i>Celastrus orbiculatus</i>	1%		
V 3%, 1m	<i>Clematis virginiana</i>	1%		
V	<i>Parthenocissus quinquefolia</i>	1%		
H 5%	<i>Sparganium eurycarpum</i>	5%		



Figure 147. Shrub swamp (*Decodon verticillatus*) in Parcel 9: Matty Matthiessen Wildlife Sanctuary (20.18).

Table 125. 20.19 Shallow emergent marsh (*Calamagrostis canadensis*)

Obs. pt. 20.19 Form 3: Form 2 occ #: 1

Community: "SEM (*Calamagrostis canadensis*)" CEGL code: Alliance code:

UTM: zone 19 250501 E, 4573281 N Comments: SEM *Calamagrostis canadensis* dominated wet swale.

Lat: Long: Photo Photo name: 78

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	8%, 0.85m	<i>Rubus allegheniensis</i>	5%	
SS2		<i>Viburnum dentatum</i> var. <i>lucidum</i>	3%	
SS3	2%, 0.3m	<i>Rubus flagellaris</i>	2%	
V2		<i>Apios americana</i>	1%	
V2	2%, 0.5m	<i>Calystegia sepium</i>	1%	
H	93%, 0.75m	<i>Calamagrostis canadensis</i> var. <i>canad</i>	60%	
H		<i>Eutrochium dubium</i>	12%	
H		<i>Eupatorium perfoliatum</i>	6% more to N	
H		<i>Panicum virgatum</i>	5%	
H		<i>Asclepias incarnata</i> ssp. <i>pulchra</i>	2%	
H		<i>Osmundastrum cinnamomeum</i> var. <i>ci</i>	2% more to E	
H		<i>Persicaria</i> sp.2	2% lite pink fat	
H		<i>Thelypteris palustris</i> var. <i>pubescens</i>	2%	
H		<i>Impatiens capensis</i>	1%	
H		<i>Osmunda regalis</i> var. <i>spectabilis</i>	1%	
H		<i>Persicaria hydropiperoides</i>	0.01%	



Figure 148. Shallow emergent marsh (*Calamagrostis canadensis*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.19) face NW.

Table 126. 20.20 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.20 ref Form 3: Form 2 occ #:

Community: "Grassland (*Panicum virgatum*)" CEGL code: Alliance code:

UTM: zone 19 250553 E, 4573056 N
 Lat: Long:

Comments: Photo reference point. Vegetation cover data not collected. 81 face N *Panicum virgatum* 1 m, 82 face NE *Panic virg* 1 m, 83 face SSE tall *Panic virg* 1.8 m, 84 face W *Panic virg* 1 m osprey nest

Photo Photo name: 81 face N, 82 face NE, 83 face SSE, 84 face W osprey nest

Position method GPS

GPS average min, sec. WAAS



Figure 149. Semi-natural grassland (*Panicum virgatum*) in Parcel 20; Matty Mattheissen Wildlife Sanctuary (20.20): Left: face N; Right: face NE.



Figure 150. Semi-natural grassland (*Panicum virgatum*) in Parcel 20; Matty Mattheissen Wildlife Sanctuary (20.20): Left: face SSE; Right: face W toward osprey nest platform.

Table 127. 20.21 Successional shrubland (*Rhus copallinum*)

Obs. pt. 20.21 Form 3: Form 2 occ #: 1

Community: "Successional shrubland (*Rhus copallii*)

CEGL code:

Alliance code:

UTM: zone 19 250578 E, 4573152 N

Lat: Long:

Comments: SUC.S dominated by short *Rhus copallinum* with low cover of *Panicum virgatum*. Vegetation cover recorded N of point/trail. Successional northern sandplain grassland?

Photo Photo name: 79 face N

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	50%, 0.6m	<i>Rhus copallinum</i> var. <i>copallinum</i>	30%	
SS2		<i>Morella caroliniensis</i>	20%	
SS3	50%, 0.25m	<i>Rubus flagellaris</i>	20%	
SS3		<i>Rhus copallinum</i> var. <i>copallinum</i>	15%	
SS3		<i>Morella caroliniensis</i>	10%	
SS3		<i>Rhus glabra</i>	5%	
V2	10%, 0.5m	<i>Celastrus orbiculatus</i>	10%	
H	56%, 0.6m	<i>Agrostis capillaris</i>	35%	0.6 m tall
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	10%	
H		<i>Schizachyrium scoparium</i> var. <i>scopari</i>	6%	
H		<i>Panicum virgatum</i>	5%	1 m tall



Figure 151. Successional shrubland (*Rhus copallinum*) in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.21) face N.

Table 128. 20.22 Successional shrubland (*Rhus copallinum*)

Obs. pt. 20.22 Form 3: Form 2 occ #: 1

Community: "Successional shrubland (*Rhus copallini*) CEGL code: Alliance code:

UTM: zone 19 250578 E, 4573152 N
 Lat: Long:

Comments: SUC.S dominated by short *Rhus copallinum* with 15% cover of *Panicum virgatum*. Vegetation cover recorded S of point/trail. Successional northern sandplain grassland?

Photo Photo name: 80 face S

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2 22%, 1m	<i>Rhus copallinum</i> var. <i>copallinum</i>	20%		
SS2	<i>Morella caroliniensis</i>	2%		
SS3 42%, 0.25m	<i>Rubus flagellans</i>	30%		
SS3	<i>Rhus copallinum</i> var. <i>copallinum</i>	10%		
SS3	<i>Morella caroliniensis</i>	2%		
V2 5%, 0.25m	<i>Celastrus orbiculatus</i>	5%		
H 36%, 1m	<i>Agrostis capillaris</i>	20% 0.6 m tall		ID uncertain
H	<i>Panicum virgatum</i>	15% 1.5. m tall		
H	<i>Achillea millefolium</i>	0.01%		
H	<i>Asclepias tuberosa</i>	0.01%		



Figure 152. Successional shrubland (*Rhus copallinum*) in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.22) face S.

Table 129. 20.23 Maritime shrubland

Obs. pt. 20.23 Form 3: Form 2 occ #: 1

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 250545 E, 4573003 N

Comments: CSP N shore.

Lat: Long:

Photo Photo name: 86 face E, 85 face W, 89 face E from top of slope

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS1	14%, 3m	Morella caroliniensis	8%	
SS1		Baccharis halimifolia	4%	
SS1		Rhus typhina	2%	
SS2	45%, 1.8m	Morella caroliniensis	30%	
SS2		Baccharis halimifolia	15%	
SS3	15%, 0.3m	Morella caroliniensis	15%	
V2	21%, 1m	Celastrus orbiculatus	10%	
V2		Toxicodendron radicans ssp. radicans	10%	
V2		Clematis virginiana	1%	
H	8%	Sporobolus pumilus	5%	at water edge
H		Dichanthelium clandestinum	2%	
H		Panicum virgatum	1%	
H		Solidago sempervirens	0.01%	at water edge



Figure 153. Maritime shrubland in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.23) face E.

Table 130. 20.24 Coastal salt pond

Obs. pt. 20.24 ref Form 3: Form 2 occ #:

Community: Coastal salt pond

CEGL code:

Alliance code:

UTM: zone 19 250545 E, 4573003 N

Comments: CSP photo face S. Reference point. Vegetation cover data not collected.

Lat: Long:

Photo Photo name: 87-88 face S

Position method GPS

GPS average min, sec.

WAAS



Figure 154. Coastal salt pond in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.24) face S.

Table 131. 20.25 Red maple-blackgum slope forest

Obs. pt. 20.25 ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 250482 E, 4573020 N

Lat: Long:

Comments: Nyssa stand E of osprey platform. N shore of CSP and S of this GPS point. Community type uncertain. Reference point. Vegetation cover data not collected.

Photo Photo name: 90

Position method GPS



Figure 155. Red maple-blackgum slope forest in Parcel 20; Matty Matbiessen Wildlife Sanctuary (20.25) face S.

Table 132. 20.26 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.26 Form 3: Form 2 occ #: 1
 Community: "Grassland (*Panicum virgatum*)" CEGL code: Alliance code:
 UTM: zone 19 250390 E, 4572967 N Comments: SNSG *Panicum virgatum* dominant.
 Lat: Long: Photo Photo name: 91 face N
 Position method GPS
 GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS2	28%, 1.5m	<i>Rhus typhina</i>	25%	1-2 m tall
SS2		<i>Baccharis halimifolia</i>	2%	1 m tall
SS2		<i>Morella caroliniensis</i>	1%	0.75 m tall
SS3	10%, 0.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS3		<i>Rhus typhina</i>	5%	
V2	2%, 0.25m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	2%	
H	66%, 1.3m	<i>Panicum virgatum</i>	50%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	15%	
H		<i>Dichanthelium clandestinum</i>	1%	
H		<i>Thalictrum pubescens</i>	0.01%	



Figure 156. Semi-natural grassland (*Panicum virgatum*) in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.26) face N.

Table 133. 20.27 Maritime shrubland

Obs. pt. 20.27 Form 3: Form 2 occ #: 1

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 250390 E, 4572967 N

Lat: Long:

Comments: Tall maritime shrubland extends to SE south of trail heading E from this point; MS on both sides (E and W) of trail heading S from this point; MS west of this point and along the W side of the trail heading NW from this point. Vegetation cover recorded represents all directions and patches.

Photo Photo name: 92 face SE, 93 face S, 94 face NW

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>		<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS1	40%, 4m	Morella caroliniensis	20%		
SS1		Baccharis halimifolia	15%		
SS1		Rhus typhina	5%		
SS2		Baccharis halimifolia	15%		
SS2	30%, 1m	Morella caroliniensis	15%		
SS3	2%, 0.5m	Morella caroliniensis	2%		
V	25%, 3m	Celastrus orbiculatus	10%		
V		Lonicera japonica	10%		
V		Toxicodendron radicans ssp. radicans	5% 0.2 m tall		
H	5%	Panicum virgatum	3%		
H		Dichanthelium clandestinum	1%		
H		Solidago rugosa var. rugosa	1%		



Figure 157. Maritime shrubland in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.27): Left: face S; Right: face NW.

Table 134. 20.28 Maritime shrubland

Obs. pt. 20.28 ref Form 3: Form 2 occ #:

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 250412 E, 4572955 N

Lat: Long:

Comments: Second access trail to N shore of CSP. GPS point on large boulder. Maritime shrubland continues E and W along slope from this point. Scattered *Phragmites australis* first appears here. Reference point. Vegetation cover data not collected.

Photo Photo name: 97-98 face W, 95-96 face E, 94 face S to CSP and sand beach

Position method GPS

GPS average min, sec.

WAAS



Figure 158. Maritime shrubland and high salt marsh fringe in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.28): Left: face E; Right: face W.

Table 135. 20.29 . High salt marsh

Obs. pt. 20.29 Form 3: Form 2 occ #: 1

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 19 250332 E, 4572949 N

Lat: Long:

Comments: Phragmites australis invaded HSM. HSM fringe 1-2 m wide extends E and W from this point along the N shore of the CSP. Note: Need to split HSM fringe from MS polygon on map.

Photo Photo name: 100

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	10%, 1m	Baccharis halimifolia	10%	
H	93%, 0.25m	Sporobolus pumilus	90% 0.25 m tall	
H		Phragmites australis	25% 1.8 m tall	
H		Atriplex prostrata	1% ID determined by Steve Young (Feb. 2022).	collect:Y
H		Panicum virgatum	1%	
H		Sporobolus alterniflorus	1%	
H		Distichlis spicata	0.01%	
H		Solidago sempervirens	0.01%	



Figure 159. High salt marsh in Parcel 20; Matty Matthiessen Wildlife Sanctuary (20.29) face E.

Table 136. 20.30 Semi-natural grassland (*Andropogon gerardi*)

Obs. pt. 20.30 Form 3: Form 2 occ #: 1

Community: "Grassland (*Andropogon gerardi*)"

CEGL code:

Alliance code:

UTM: zone 19 250280 E, 4573129 N

Lat: Long:

Comments: SNSG *Andropogon gerardi* dominant. Vegetation cover recorded E of point/trail.

Photo Photo name: 102 face E

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS2 20%, 1.5m	<i>Morella caroliniensis</i>	15% 1 m tall		
SS2	<i>Rhus typhina</i>	5% 2 m tall		
SS3 13%, 0.5m	<i>Morella caroliniensis</i>	10%		
SS3	<i>Rhus copallinum</i> var. <i>copallinum</i>	2%		
SS3	<i>Rhus typhina</i>	1%		
V2 25%, 0.25m	<i>Celastrus orbiculatus</i>	15%		
V2	<i>Lonicera japonica</i>	10%		
V2	<i>Clematis virginiana</i>	0.01%		
H 58%, 1.2m	<i>Andropogon gerardi</i>	30% 1.8 m tall		
H	<i>Schizachyrium scoparium</i> var. <i>scopari</i>	15% 1 m tall		
H	<i>Solidago canadensis</i> var. <i>canadensis</i>	5%		
H	<i>Sorghastrum nutans</i>	3% 1.3 m tall		
H	<i>Eupatorium hyssopifolium</i>	2%		
H	<i>Agrostis capillaris</i>	1% 0.5 m tall		
H	<i>Panicum virgatum</i>	1%		
H	<i>Solidago rugosa</i> var. <i>rugosa</i>	1%		



Figure 160. Semi-natural grassland (*Andropogon gerardi*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.30) face E.

Table 137. 20.31 Successional maritime forest

Obs. pt. 20.31 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250280 E, 4573129 N

Comments: SMF gnarly *Prunus serotina* with tall dense shrub layer underneath. Vegetation cover recorded W of point/trail.

Lat: Long:

Photo Photo name: 101 gnarly *Prunus serotina*, 103 face E

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	35%, 8m	<i>Prunus serotina</i> var. <i>serotina</i>	30%	
T2		<i>Juniperus virginiana</i> var. <i>virginiana</i>	5% back from trail	
TS2	6%, 2m	<i>Prunus serotina</i> var. <i>serotina</i>	5%	
TS2		<i>Juniperus virginiana</i> var. <i>virginiana</i>	1%	
SS1	28%, 4m	<i>Rhus typhina</i>	12%	
SS1		<i>Morella caroliniensis</i>	5%	
SS1		<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS1		<i>Frangula alnus</i>	3%	
SS1		<i>Viburnum dentatum</i> var. <i>lucidum</i>	3%	
SS2		<i>Ligustrum vulgare</i>	10%	
SS2		<i>Lonicera morrowii</i>	10%	
SS2	35%, 1.5m	<i>Morella caroliniensis</i>	10%	
SS2		<i>Frangula alnus</i>	5%	
SS3		<i>Frangula alnus</i>	5%	
SS3	10%, 0.5m	<i>Morella caroliniensis</i>	5%	
V		<i>Celastrus orbiculatus</i>	10%	
V	35%, 1.5m	<i>Lonicera japonica</i>	10% 0.5 m tall	
V		<i>Parthenocissus quinquefolia</i>	10%	
V		<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	5%	
H	1%	<i>Dichanthelium clandestinum</i>	0.01%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	0.01%	



Figure 161. Successional maritime forest in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.31) face E.

Table 138. 20.32 Successional shrubland (*Rhus copallinum*)

Obs. pt. 20.32 Form 3: Form 2 occ #: 1

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 250294 E, 4573219 N

Comments: SUC.S *Rhus copallinum* dominant. More *Morella caroliniensis* to E. SUC.S NW and NE of point.trail junction

Lat: Long:

Photo Photo name: 104 face NW, 105 face NNE

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2 66%, 1.2m	<i>Rhus copallinum</i> var. <i>copallinum</i>	65%		
SS2	<i>Rhus typhina</i>	1%		
SS2	<i>Morella caroliniensis</i>	0.01%		
SS3 5%, 0.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	5%		
SS3	<i>Morella caroliniensis</i>	0.01%		
V2	<i>Celastrus orbiculatus</i>	10%		
V2 20%, 0.25m	<i>Lonicera japonica</i>	10%		
H	<i>Andropogon gerardi</i>	5%		
H	<i>Panicum virgatum</i>	5%		
H 37%	<i>Solidago canadensis</i> var. <i>canadensis</i>	5%		
H	<i>Dichanthelium clandestinum</i>	2%		
H	<i>Eupatorium hyssopifolium</i>	2%		
H	<i>Solidago rugosa</i> var. <i>rugosa</i>	2%		
H	<i>Sorghastrum nutans</i>	2%		
H	<i>Apocynum cannabinum</i>	0.01%		ID uncertain



Figure 162 Successional shrubland (*Rhus copallinum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.32) face SW.

Table 139. 20.33 Semi-natural grassland (*Andropogon gerardi*)

Obs. pt. 20.33 Form 3: Form 2 occ #: 1

Community: "Grassland (*Andropogon gerardi*)"

CEGL code:

Alliance code:

UTM: zone 19 250294 E, 4573219 N

Lat: Long:

Comments: Impressive tall grassland dominated by *Andropogon gerardi* SW and SE of point/trail junction.

Photo Photo name: 107 face SW, 106 face SE, 108, 109

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS2	9%, 1m	<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
SS2		<i>Rhus typhina</i>	2%	
SS2		<i>Morella caroliniensis</i>	1%	
SS2		<i>Viburnum dentatum</i> var. <i>lucidum</i>	1%	
SS3	1%, 0.4m	<i>Rubus flagellaris</i>	1%	
V2	15%, 0.5m	<i>Lonicera japonica</i>	15%	
H	80%, 2m	<i>Andropogon gerardi</i>	55%	
H		<i>Solidago canadensis</i> var. <i>canadensis</i>	15%	
H		<i>Dichanthelium clandestinum</i>	5%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	5%	
H		<i>Sorghastrum nutans</i>	5%	
H		<i>Asclepias tuberosa</i>	0.01%	
H		<i>Eupatorium hyssopifolium</i>	0.01%	
H		<i>Eutrochium dubium</i>	0.01%	



Figure 163. Semi-natural grassland (*Andropogon gerardi*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.33) face S.

Obs. pt. 20.34 ref Form 3: Form 2 occ #:

Community: Grassland (*Panicum virgatum*)

CEGL code:

Alliance code:

UTM: zone 19 250401 E, 4573296 N

Lat: Long:

Comments: Quick stop to take photos of grassland in Parcel 20 at sunset. No GPS taken. Converted photo GPS degrees, minutes, seconds to UTM. Reference point. Vegetation cover data not collected.

Photo Photo name: 250-251 face S

Position method

GPS average min, sec.

WAAS



Figure 164. Semi-natural grassland (*Panicum virgatum*) in Parcel 20: Matty Matthiessen Wildlife Sanctuary (20.34).

Table 140. 20.35 and 20.36 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.35 ref Form 3: Form 2 occ #:

Community: Grassland (*Panicum virgatum*)

CEGL code:

Alliance code:

UTM: zone 19 250373 E, 4573119 N

Lat: Long:

Comments: Interesting small white aster in grassland; collected specimen; photos 275-279; Reference point. Vegetation cover data not collected. Determined: *Symphotrichum dumosum*

Photo Photo name:

Position method GPS

GPS average min, sec.

WAAS

Stratum

Species

comments

Collection

Unsure of ID

H

Symphotrichum dumosum

ID determined by Steve Young (Feb. 2022)

collect:Y



Figure 165. Bushy aster (*Symphotrichum dumosum*) in semi-natural grassland (*Panicum virgatum*) in Parcel 20.

Table 141. 20.36 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 20.36 ref Form 3: Form 2 occ #:

Community: Grassland (*Panicum virgatum*)

CEGL code:

Alliance code:

UTM: zone 19 250400 E, 4573400 N

Lat: Long:

Comments: Pioneer oak sapling with bayberry shrubs around basepresumably from bird droppings. Theory re: successional trajectory: Open grown trees in pastures/cleared land succeed to tall shrubs with blanket vines on top. Reference point. Vegetation cover data not collected.

Photo Photo name: 280,281

Position method Digital Ortho-Images

GPS average min, sec. WAAS



Figure 166. Oak sapling with bayberry growing around base in field in Parcel 20 (20.36).



Figure 167. Parcel 20, Parcel 19, Parcel 35b, and Parcel E-01 Ecological Community Polygons Assessed in Acreage Table below.

Parcel 20, Parcel 19, Parcel 35b, and Parcel E-01 Ecological Community Acreage

Table 142. Parcel 20, Parcel 19, Parcel 35b, and Parcel E-01 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
66	0.12	HSM Phragmites	High salt marsh	CESTINTER	CSP fringe; Phragmites invaded
67	0.20	HSM Phragmites	High salt marsh	CESTINTER	CSP fringe; Phragmites invaded
68	0.04	HSM Phragmites	High salt marsh	CESTINTER	CSP fringe; Phragmites invaded
69	0.37	HSM Phragmites	High salt marsh	CESTINTER	CSP fringe; Phragmites invaded
5	0.11	ML	Mowed lawn	CTERCULT	end of driving range
72	0.43	MOF?	Maritime oak forest?	CTERFOR	SMF? Q. vel 65%, Sas alb 25%, Acer rub 10%
52	0.09	MR/P	Mowed roadside/pathway	CTERCULT	
54	0.19	MR/P	Mowed roadside/pathway	CTERCULT	
80	0.04	MR/P	Mowed roadside/pathway	CTERCULT	
13	0.94	MS	Maritime shrubland	CTEROPEN	
20	0.65	MS	Maritime shrubland	CTEROPEN	cleared on USGS topo maps
70	0.75	MS	Maritime shrubland	CTEROPEN	cleared on USGS topo maps
2	0.22	PR/P	Paved road/path	CTERCULT	bike path
26	0.26	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	blackgum stand; not NWI wetland
14	1.42	SEM Calamagrostis	Shallow emergent marsh (Calamagrostis canadensis)	CPALOPEN	wetland swale
23	0.85	SEM Calamagrostis	Shallow emergent marsh (Calamagrostis canadensis)	CPALOPEN	wetland swale
40	0.20	SEM Calamagrostis	Shallow emergent marsh (Calamagrostis canadensis)	CPALOPEN	wetland swale
41	0.19	SEM Calamagrostis	Shallow emergent marsh (Calamagrostis canadensis)	CPALOPEN	wetland swale
43	0.15	SEM Calamagrostis	Shallow emergent marsh (Calamagrostis canadensis)	CPALOPEN	
47	0.41	SEM Calamagrostis	Shallow emergent marsh (Calamagrostis canadensis)	CPALOPEN	
51	0.31	SEM Calamagrostis	Shallow emergent marsh (Calamagrostis canadensis)	CPALOPEN	wetland swale
58	0.87	SEM Calamagrostis	Shallow emergent marsh (Calamagrostis canadensis)	CPALOPEN	wetland swale
8	2.34	SMF	Successional maritime forest	CTERFOR	cleared on USGS topo maps
24	0.41	SMF	Successional maritime forest	CTERFOR	
27	0.25	SMF	Successional maritime forest	CTERFOR	cleared on USGS topo maps
71	0.35	SMF	Successional maritime forest	CTERFOR	cleared on USGS topo maps
9	1.67	S-NG Andropogon	Semi-natural grassland (Andropogon gerardi)	CTEROPEN	
10	1.00	S-NG Andropogon	Semi-natural grassland (Andropogon gerardi)	CTEROPEN	
0	0.32	S-NG Panicum	Semi-natural grassland (Panicum virgatum)	CTEROPEN	
1	0.30	S-NG Panicum	Semi-natural grassland (Panicum virgatum)	CTEROPEN	
3	2.72	S-NG Panicum	Semi-natural grassland (Panicum virgatum)	CTEROPEN	
4	0.81	S-NG Panicum	Semi-natural grassland (Panicum virgatum)	CTEROPEN	includes NWI wetland
6	4.69	S-NG Panicum	Semi-natural grassland (Panicum virgatum)	CTEROPEN	

11	0.69	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
12	1.46	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
15	0.49	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
16	0.92	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
17	0.40	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
18	0.59	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
19	0.13	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
21	0.31	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
22	0.77	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
25	0.07	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
28	0.64	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
29	0.05	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
37	0.44	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
38	0.65	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
39	0.16	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
42	0.06	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
44	0.56	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
45	0.23	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	includes NWI wetland
46	0.19	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
48	1.55	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	<i>Panicum virgatum</i> dominant
49	0.38	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	<i>Panicum virgatum</i> dominant
50	0.33	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	<i>Panicum virgatum</i> dominant
53	1.49	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
55	0.22	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
56	0.35	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
57	2.93	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	includes NWI wetland
59	2.09	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
62	0.07	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
65	0.21	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	includes abandoned trail
73	0.10	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
74	0.16	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	includes abandoned trail
77	0.05	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
78	0.02	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
79	0.02	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
82	0.10	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	

83	0.06	S-NG Panicum	Semi-natural grassland (<i>Panicum virgatum</i>)	CTEROPEN	
7	1.10	SSH	Successional southern hardwoods	CTERFOR	
32	0.76	SSH	Successional southern hardwoods	CTERFOR	
34	0.20	SSH?	Successional southern hardwoods?	CTERFOR	
75	0.09	SSH?	Successional southern hardwoods?	CTERFOR	narrow band of trees along road
76	0.10	SSH?	Successional southern hardwoods?	CTERFOR	successional
81	0.05	SSH?	Successional southern hardwoods?	CTERFOR	
30	0.26	SUC.S Rhus	Successional shrubland (<i>Rhus copallinum</i>)	CTEROPEN	
35	0.18	SUC.S Rhus	Successional shrubland (<i>Rhus copallinum</i>)	CTEROPEN	
36	0.33	SUC.S Rhus	Successional shrubland (<i>Rhus copallinum</i>)	CTEROPEN	
61	0.15	SUC.S Rhus	Successional shrubland (<i>Rhus copallinum</i>)	CTEROPEN	
63	0.14	SUC.S Rhus	Successional shrubland (<i>Rhus copallinum</i>)	CTEROPEN	
64	0.06	SUC.S Rhus	Successional shrubland (<i>Rhus copallinum</i>)	CTEROPEN	
31	0.03	UR/P	Unpaved road/path	CTERCULT	
33	0.02	UR/P	Unpaved road/path	CTERCULT	
60	3.96	UR/P	Unpaved road/path	CTERCULT	mowed hiking trails
83 polys	50.00 acres	14 types			

Note: Parcel 19 Ecological Community Acreage also assessed separately (Figure 123, Table 106).

Parcel 20, Parcel 19, and Parcel 35b General Description

The Middle Farms Trail network in Parcel 20 and Parcel 35b is part of the Matty Matthiessen Wildlife Sanctuary. The area has long been referred to as the “Middle Farms grassland” and we follow that convention in this section. The most impressive feature of Middle Farms grassland is the 35-acre grassland itself, that extends for a half-mile, north to south, from the osprey platform at the junction of East End Road and Middle Farm Pond Road (at the north tip of Parcel 35b), to a second osprey platform to the south near the north shore of Beach Pond.

The field is comprised of three grassland vegetation associations and one shrubland association as follows:

1. Semi-natural grassland dominated by switch grass (*Panicum virgatum*) – This is the dominant grassland type found in the Middle Farms grassland covering almost 28 acres. The semi-natural grassland (*Panicum virgatum*) in Parcel 20 at point 20.01 has the highest Weighted Floristic Quality Index Score (FQI 18.13) for that association found during our ecology surveys.
2. Semi-natural grassland dominated by big bluestem (*Andropogon gerardi*) – There are two polygons of this grassland type that cover 2-3 acres on the west side of the field adjacent to Parcel 19 and Penni’s Path woodland.
3. Shallow emergent marsh dominated by bluejoint grass (*Calamagrostis canadensis*) – This type is a palustrine natural community covering 4-5 acres in the slightly lower elevation swale that extends about ¼ mile north to south down the center of the field. The shallow emergent marsh (*Calamagrostis canadensis*) in Parcel 20 at point 20.02 has the highest Weighted Floristic Quality Index Score (FQI 27.95) for that community found during our ecology surveys. In addition, point 20.02 is #7 on the list of top ten highest FQI scores generated for this study.

4. Successional shrublands dominated by short (0.25-1.2 m) winged sumac (*Rhus copallinum*) – This type was found in two separate areas of the field. One $\frac{3}{4}$ -acre area is on the east edge of the field in Parcel E-01 and the other is on the west edge adjacent to the golf course (0.4 acre). The successional shrubland (*Rhus copallinum*) in Parcel 20 at point 20.32 has the highest Weighted Floristic Quality Index Score (FQI 18.31) for that community found during our ecology surveys.

Semi-natural Grasslands

In this study the semi-natural grasslands in the Middle Farms grassland (Parcel 20 and other Land Trust parcels) are classified as a ruderal association in the National Vegetation Classification (NatureServe 2023a) and as a cultural community in the NYS Ecological Community Classification (Edinger et al. 2014). Agricultural activities at Middle Farms ceased in the mid-1920s (see <https://fergusonmuseum.org/2020/05/the-history-of-farming-on-fishers-island-2/>) and eventually the upland portions of the abandoned farmland transitioned to grassland dominated by switchgrass (*Panicum virgatum*). This successional trajectory of abandoned agricultural fields on the coastal plain to switchgrass has been documented from Massachusetts to Maryland by NatureServe and classified as a [Switchgrass - \(Broomsedge Bluestem\) Ruderal Meadow](#). This community is not considered of conservation concern (NatureServe 2023a) but may have significant local biodiversity value.

The origin of the tall, warm-season grasses at Middle Farms, such as switchgrass (*Panicum virgatum*), big bluestem (*Andropogon gerardi*), and Indian grass (*Sorghastrum nutans*) is uncertain. While all three species are considered native to New York (Werier et al. 2023) their native status in the Middle Farms grassland on Fishers Island is uncertain and undocumented. Across the U.S., switchgrass has been planted and managed as a livestock forage plant. In the Southeast, switchgrass has been mostly used for pasture, and less frequently cut for hay (Uchytel 1993). We may never know if these native grasses were part of the Middle Farms hay fields 100 years ago, or if they spread into the field from nearby natural communities (discussed below), were brought in from afar via migratory birds, or were intentionally or unintentionally introduced to the site by humans.

Switchgrass is listed as a characteristic plant in 13 natural communities described by NYNHP (Edinger et al. 2014). Seven of those communities occur on Long Island (Edinger 2006a, 2006b) and we documented three of those on Fishers Island under this study (salt shrub, high salt marsh, and coastal salt pond). Switchgrass was found in those three natural communities on Land Trust parcels, and was also found in the following natural communities as a minor associated species: maritime rocky beach, maritime shrubland, and successional old field. All six of these communities occur around the periphery of Middle Farms grassland and may have been one of many sources of switchgrass to the field.

Middle Farms grassland does not align with the current NYNHP concept of maritime grassland, for which switchgrass is not listed as a characteristic plant (Edinger et al. 2014, New York Natural Heritage Program 2023a). Of the nine occurrences of maritime grassland tracked by NYNHP, only two mention *Panicum virgatum*, and in those it is a very minor component (<1% to 5% cover).

Regardless of its origin, the four vegetation associations that comprise the 35-acre Middle Farms grassland provide abundant and unique wildlife habitat not available elsewhere on Fishers Island, except for maybe the Ferry District managed grasslands that are being restored by the Fishers Island Conservancy. The size and location of the Middle Farms grassland in the Atlantic flyway, its lack of large herbivores, its predominately native plant composition, and its protected natural area

status makes it a rare, valuable Fishers Island resource that is worthy of preserving and enhancing into the future for all to enjoy and learn about. Note that warm-season grasslands found on other Land Trust parcels dominated by little bluestem (*Schizachyrium scoparium*) in this study are classified as successional old field – a natural community.



Figure 168. Middle Farms grassland in Parcel 20 facing south.

Parcel 20 Other Ecological Communities at Middle Farms

At the south end of Parcel 20, along the north shore fringe of Beach Pond (part of coastal salt pond EOID 2925), there is a 1-2 m wide band of high salt marsh that is invaded with Old World reed grass (*Phragmites australis* – 25%). On the slope behind the salt marsh is an 8-30 m wide band of maritime shrubland dominated by bayberry (*Morella caroliniensis* – 35-50%) with groundsel tree (*Baccharis halimifolia* – 20-30%). The maritime shrubland abruptly changes to the mowed perimeter path around Middle Farms grassland.

Parcel 20 has the seventh best Landscape Condition Analysis Score of the 77 Land Trust parcels (LCA Score: 199.44; range 0 to 1728).

Parcel 20 Invasive Plants

Semi-natural grassland (*Panicum virgatum*) invasives (avg. cover): *Lonicera japonica* (6%), *Agrostis capillaris* (3%), *Frangula alnus* (<1%), *Celastrus orbiculatus* (<1%), *Daucus carota* (<1%), and *Sonchus arvensis* (<1%).

Semi-natural grassland (*Andropogon gerardi*) invasives (avg. cover): *Lonicera japonica* (15%), *Celastrus orbiculatus* (4%), *Phleum pratense* (1%), *Agrostis capillaris* (<1%), and *Daucus carota* (<1%).

Shallow emergent marsh (*Calamagrostis canadensis*) invasives (avg. cover): No invasive species found in this community during ecology surveys.

Successional shrubland (*Rhus copallinum*) invasives (avg. cover): *Agrostis capillaris* (18%), *Celastrus orbiculatus* (8%), and *Lonicera japonica* (3%).

High salt marsh invasives (avg. cover): Old World reed grass (*Phragmites australis* – 25%).

Parcel 20 Management Recommendations

Reduce grassland fragmentation by reducing the number of mowed trails. One proposal is to have one mowed trail around the perimeter of the field and two crossing trails acting as firebreaks (*pers. comm.* Jack Schneider). During the years when a burn is not scheduled, one firebreak would not be mowed.

It appears that current mowing and prescribed burning is doing a great job at controlling invasive plants and woody plant invasion in the Middle Farms grassland. Regular monitoring of the grassland vegetation is recommended. If the cover of individual invasive species listed above rise above 10%, then targeted removal should be employed at those locations.

Existing plants of Old World reed grass (*Phragmites australis*) in the high salt marsh along the north shore of Beach Pond (moderate invasion) and the east shore of Island Pond (severe invasion) should be removed if possible. Given the proximity of large *Phragmites* patches to the marsh, control of invasive plants on these shorelines will be a long-term commitment of effort and resources.

Phragmites management around the shores of Island Pond and Beach Pond may require consultation with neighboring landowners before taking any action on the ground.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 21a and Parcel 21b.



Figure 169. Parcels 21a and 21b.

Table 143. 21a.01 Successional maritime forest

Obs. pt. 21a.01 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250120 E, 4573743 N

Comments: Impenetrable thicket viewed from mowed lawn.

Lat: Long:

Photo Photo name: 126,127

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	60%, 12m	Prunus serotina var. serotina	30%	
T2		Quercus velutina	20%	
T2		Acer rubrum var. rubrum	10%	
T2		Juniperus virginiana var. virginiana	10%	
T2		Quercus alba	10%	
TS1	10%, 3m	Prunus serotina var. serotina	5%	
TS1		Quercus velutina	5%	
TS2		Juniperus virginiana var. virginiana	1%	
TS2	2%, 1m	Quercus alba	1%	
SS1	21%, 2m	Ligustrum vulgare	15%	
SS1		Rhus copallinum var. copallinum	5%	
SS1		Frangula alnus	1%	
SS2	30%, 1m	Ligustrum vulgare	15%	
SS2		Morella caroliniensis	10%	
SS2		Lonicera morrowii	5%	
SS2		Rhus copallinum var. copallinum	2%	
SS3	5%, 0.5m	Morella caroliniensis	5%	
V2	37%, 0.5m	Lonicera japonica	15%	
V2		Celastrus orbiculatus	10%	
V2		Smilax rotundifolia	10%	1-3 m tall
V2		Vitis sp.	2%	rusty hairs underside



Figure 170. Successional maritime forest in Parcel 21a (21a.01).

Parcel 21a and Parcel 21b Ecological Community Acreage

Table 144. Parcel 21a and Parcel 21b Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
157	0.87	CO-HF?	Coastal oak-hickory forest?	CTERFOR	looks different from S half of parcel
6	1.63	SMF	Successional maritime forest	CTERFOR	looks different from N half of parcel
66	0.11	SUC.S	Successional shrubland	CTEROPEN	
65	0.06	SUC.S?	Successional shrubland?	CTEROPEN	shrubland? SOF?
4 polys	2.68 acres	3 types			

Parcel 21a and Parcel 21b General Description

Parcel 21a and Parcel 21b are neighboring parcels that share a boundary line on the north side of Barlow Pond Lane. Parcel 21a has road frontage with Parcel 21b set back behind Parcel 21a to the north. The successional maritime forest in Parcel 21a is an impenetrable thicket. The trees are stunted reaching only 12 m and the canopy has a good mix of characteristic successional maritime forest trees, such as black cherry (*Prunus serotina* – 30%), black oak (*Quercus velutina* – 20%), red cedar (*Juniperus virginiana* – 10%), and white oak (*Quercus alba* – 10%). Each parcel appears to have a small included patch of successional shrubland.

These parcels are depicted as forested on the circa 1958 USGS 7.5 minute topographic map, but were likely cleared earlier based on the mid-1920s black and white air photo where it is difficult to accurately place the parcels on the old photo.

Given the close proximity of these two parcels, it is not surprising that their Landscape Condition Analysis Scores fall within a relatively narrow range (Parcel 21a: 944.59 and 21b: 878.98) and below the average LCA score of 648 (range of 0 to 1728) generated for the 77 Land Trust parcels.

Parcel 21a and Parcel 21b Invasive Plants

Invasive plants in the successional maritime forest include common privet (*Ligustrum vulgare* – 30%), Japanese honeysuckle (*Lonicera japonica* – 15%), Oriental bittersweet (*Celastrus orbiculatus* – 10%), and Morrow’s honeysuckle (*Lonicera morrowii* – 5%).

Parcel 21a and Parcel 21b Management Recommendations

Control of invasive plants in Parcel 21a and Parcel 21b will be a long-term commitment of effort and resources compared to other parcels on the Island, and thus may be a lower priority.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 21a and Parcel 21b Future Surveys

The interior portions of the coastal oak-hickory forest in Parcel 21b were not surveyed in 2021 or 2022. The community was mapped based on air photo interpretation and its extent and condition needs to be evaluated.

Parcel 22. Ben Gray



Figure 171. Parcel 22: Ben Gray.

Table 145. 22.01 Successional southern hardwoods (*Acer platanoides*)

Obs. pt. 22.01 Form 3: Form 2 occ #:

Community: Successional northern hardwoods (Ace) CEGL code: Alliance code:

UTM: zone 18 749744 E, 4572927 N
 Lat: 41.26177518 Long: -71.992888

Comments: Parcel 22 on sharp turn; even age widely spaced Norway maple on slope with dense hay scented fern herb layer. Aspect: 30 degrees. Slope: 12 degrees; No T3 layer; No TS or SS layers;

Photo Photo name: 36,37

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	70%, 28m	<i>Acer platanoides</i>	70%	
V2	42%, 0.25m	<i>Lonicera japonica</i>	30%	
V2		<i>Celastrus orbiculatus</i>	12%	
H	65%, 0.5m	<i>Dennstaedtia punctilobula</i>	55%	
H		<i>Eurybia divaricata</i>	10%	downslope from point
U	95%	litter and duff	95%	under fern/vines



Figure 172. Successional southern hardwoods (*Acer platanoides*) in Parcel 22 (22.01).

Table 146. 22.02 Successional vineland

Obs. pt. 22.02 Form 3: Form 2 occ #:

Community: "Successional vineland"

CEGL code:

Alliance code:

UTM: zone 18 749720 E, 4572893 N

Comments: upslope is impenetrable successional vine thicket

Lat: 41.26138806 Long: -71.9928822

Photo Photo name: 38

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
V1	85%, 8m Smilax rotundifolia	85%		



Figure 173. Successional vineland in Parcel 22 (22.02).

Table 147. 22.03 Successional vineland

Obs. pt. 22.03 ref Form 3: Form 2 occ #:

Community: "Successional vineland"

CEGL code:

Alliance code:

UTM: zone 18 749677 E, 4572908 N

Lat: 41.26153075 Long: -71.9922442

Comments: vine thicket continues to sharp turn in road; vines under low hanging powerline; a few scattered trees along road popping out of vine thicket - Norway maple and black cherry;

Photo Photo name: 39

Position method GPS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Acer platanoides</i>			
T2	<i>Prunus serotina</i> var. <i>serotina</i>			
V1	<i>Smilax rotundifolia</i>			



Figure 174. Successional vineland in Parcel 22 (22.03).

Table 148. 22.04 Successional old field

Obs. pt. **22.04** Form 3: Form 2 occ #:

Community: Successional old field

CEGL code:

Alliance code:

UTM: zone 18 749765 E, 4572846 N

Lat: 41.27600228 Long: -71.9592279

Comments: Follow mowed road to house being remodeled; double back to SOF invaded with *Prunus serotina*.

Photo Photo name:

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
TS2	15%, 1.25m	<i>Prunus serotina</i> var. <i>serotina</i>	15%	
SS3	5%, 0.5m	<i>Rhus copallinum</i> var. <i>copallinum</i>	5%	
V2		<i>Smilax rotundifolia</i>	15%	
V2	30%, 0.4m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	15%	
H		<i>Anthoxanthum odoratum</i>	20%	
H	70%, 0.5m	<i>Juncus tenuis</i>	20%	ID uncertain
H		<i>Agrostis capillaris</i>	15%	ID uncertain
H		<i>Festuca rubra</i> ssp. <i>rubra</i>	15%	ID uncertain
U	25%	litter and duff	25%	matted thatch



Figure 175. Successional old field in Parcel 22 (22.04).

Parcel 22 Ecological Community Acreage

Table 149. Parcel 22 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
9	1.47	SOF	Successional old field	CTEROPEN	Surveyed 2022
498	0.35	SOF	Successional old field	CTEROPEN	Surveyed 2022
75	0.75	SSH	Successional southern hardwoods (<i>Acer platanoides</i>)	CTERFOR	Surveyed 2022
74	0.35	SSH?	Successional southern hardwoods?	CTERFOR	CO-HF?; not surveyed 2021
76	1.16	SUC.S//SUC.V	Successional shrubland/vineland	CTERFOR	Surveyed 2022
499	0.17	UR/P	Unpaved road/path	CTERCULT	Former road converted to trail.
6 polys	4.26 acres	4 types			

Parcel 22 General Description

Parcel 22 is set within a sharp, ninety degree corner of Fox Ave. The road borders the north and west sides of the parcel. The north end of parcel is a $\frac{3}{4}$ -acre successional southern hardwoods dominated by Norway maple (*Acer platanoides* – 70%). The herb layer is dominated by a thick cover of hay-scented fern (*Dennstaedtia punctilobula* – 55%) – the second largest patch found during our ecology surveys. This is the only location we found successional southern hardwoods dominated by Norway maple during our ecology surveys. It is also the largest stand of Norway maple found during our surveys.

Crossing east to west through the center of Parcel 22 is a dense, impenetrable vine thicket dominated by greenbrier (*Smilax rotundifolia* – 85%). South of the vine thicket is a 1.5-acre successional old field dominated by cool-season grasses, such as sweet vernal grass (*Anthoxanthum odoratum* – 20%), bent grass (*Agrostis capillaris* – 15%), and red fescue (*Festuca rubra* – 15%). Path rush (*Juncus tenuis* – 20%) is found in between the grasses.

Parcel 22 Invasive Plants

The ecological communities in Parcel 22 are mostly dominated by non-native, invasive plants. See the General Description above for their distribution and abundance.

Parcel 22 Management Recommendations

Control of invasive plants in Parcel 22 will be a long-term commitment of effort and resources compared to other parcels on the Island, and thus may be a lower priority. Furthermore, it may be impossible to restore the Norway maple forest to a natural community dominated by native species without sufficient resources to do so.

If possible, it would be better if the successional old field in Parcel 22 could be converted to an old field dominated by little bluestem (*Schizachyrium scoparium*), like the one in Parcel 32.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 23. Charles B. Ferguson Sanctuary

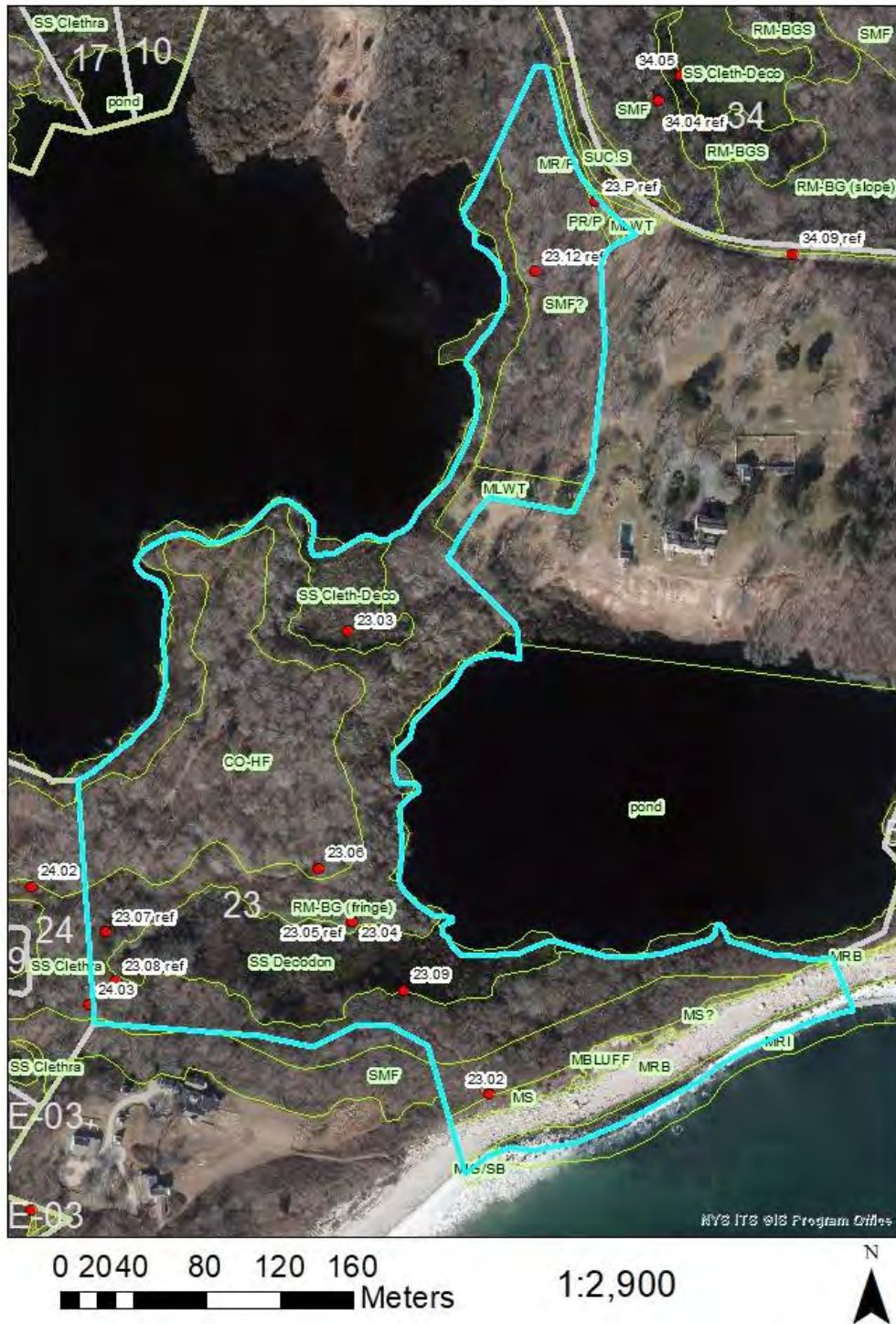


Figure 176. Parcel 23: Charles B. Ferguson Sanctuary.

Parcel 23. Mid-1920s Air Photo



Figure 177. Parcel 23 between Middle Farms Pond (upper left) and Treasure Pond (center right) appears cleared on the mid-1920s air photo.

Table 150. 23.02 Maritime shrubland

Obs. pt. 23.02 Form 3: Form 2 occ #: 1

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 250995 E, 4573250 N

Comments: Maritime shrubland on bluff face and on top going back. "Lookout" access trail to beach.

Lat: Long:

Photo Photo name: 39 face E, 38 face W

Position method GPS

Stratum		Species	comments	Collection	Unsure of ID
TS2	30%, 1.5m	<i>Prunus serotina</i> var. <i>serotina</i>	25% taller 5 m and more 60% back		
TS2		<i>Juniperus virginiana</i> var. <i>virginiana</i>	4%		
TS3	0.01%, 0.5m	<i>Juniperus virginiana</i> var. <i>virginiana</i>	0.01%		
SS2	50%, 1.4m	<i>Morella caroliniensis</i>	45%		
SS2		<i>Baccharis halimifolia</i>	5%		
SS3	2%, 0.4m	<i>Rubus flagellaris</i>	2%		ID uncertain
V	58%, 1.5m	<i>Smilax rotundifolia</i>	25%		
V		<i>Lonicera japonica</i>	20%		
V		<i>Celastrus orbiculatus</i>	5%		
V		<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	5%		
V		<i>Parthenocissus quinquefolia</i>	3%		
H	5%	<i>Panicum virgatum</i>	5%		



Figure 178. Maritime shrubland in Parcel 23; Charles B. Ferguson Sanctuary (23.02) face E.

Table 151. 23.03 Shrub swamp (*Clethra alnifolia*)

Obs. pt. 23.03 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Clethra alnifolia*)" EO2 CEGL code: Alliance code:

UTM: zone 19 250935 E, 4573509 N Comments: *Clethra* (50%) - *Decodon* (35%) co-dominant SS

Lat: Long: Photo Photo name: 77,78

Position method GPS

GPS average 550 readings WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	8%, 5.5m	<i>Acer rubrum</i> var. <i>rubrum</i>	8%	5-6 m
TS2	1%, 1.75m	<i>Acer rubrum</i> var. <i>rubrum</i>	1%	1.5-2.0 m
TS3	1%, 0.1m	<i>Acer rubrum</i> var. <i>rubrum</i>	1%	
SS1	45%, 4.5m	<i>Clethra alnifolia</i>	30%	4-5 m
SS1		<i>Ilex verticillata</i>	10%	
SS1		<i>Vaccinium corymbosum</i>	5%	
SS2	48%, 1.6m	<i>Decodon verticillatus</i>	25%	1.6 m
SS2		<i>Clethra alnifolia</i>	15%	
SS2		<i>Ilex verticillata</i>	5%	1.5 m
SS2		<i>Vaccinium corymbosum</i>	3%	
SS3	15%, 0.35m	<i>Decodon verticillatus</i>	10%	0.2-0.5 m
SS3		<i>Clethra alnifolia</i>	5%	
SS3		<i>Vaccinium corymbosum</i>	0.01%	
N	30%	<i>Sphagnum recurvum</i>	30%	some flooded; ID confirmed by Tom Phillips 2022. collect:Y ID uncertain
U	90%	water	90%	0.3 m deep



Figure 179. Shrub swamp (*Clethra alnifolia*) in Parcel 23; Charles B. Ferguson Sanctuary (23.03).

Table 152. 23.04 Shrub swamp (*Decodon verticillatus*)

Obs. pt. 23.04 Form 3: Form 2 occ #. 1

Community: "Shrub swamp (*Decodon verticillatus*)"

CEGL code:

Alliance code:

UTM: zone 19 250926 E, 4573349 N

Comments: *Decodon* (85%) dominant SS. Large *Nyssa* around margin of shrub swamp.

Lat: Long:

Photo Photo name: 79 E - 83 W

Position method GPS

GPS average 650 readings

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	5%, 8m	<i>Acer rubrum</i> var. <i>rubrum</i>	5%	
TS1	8%, 2.5m	<i>Acer rubrum</i> var. <i>rubrum</i>	8%	
TS2	0.01%, 1.5m	<i>Acer rubrum</i> var. <i>rubrum</i>	0.01%	
TS3	0.01%, 0.1m	<i>Acer rubrum</i> var. <i>rubrum</i>	0.01%	
SS1	45%, 3.3m	<i>Clethra alnifolia</i>	20% 4.5 m	
SS1		<i>Ilex verticillata</i>	12% 2.5 m	
SS1		<i>Vaccinium corymbosum</i>	12% 3 m	
SS2	78%, 1.5m	<i>Decodon verticillatus</i>	75%	
SS2		<i>Clethra alnifolia</i>	3%	
SS3	10%, 0.3m	<i>Decodon verticillatus</i>	10%	
H	5%	<i>Bidens discoidea</i>	5% ID determined by Steve Young (Feb. 2022)	collect.Y
U	98%	water	98% 0.25 m deep	



Figure 180. Shrub swamp (*Decodon verticillatus*) in Parcel 23: Charles B. Ferguson Sanctuary (23.04).

Table 153. 23.05 Red maple-blackgum swamp

Obs. pt. 23.05 ref Form 3: Form 2 occ #:

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 250926 E, 4573349 N

Lat: Long:

Comments: Large Nyssa in RM-BGS fringe. 64 cm DBH. Hollow gap at base of trunk. Near obs pt 23.04. Reference point. Vegetation cover data not collected.

Photo Photo name: 85-88

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Nyssa sylvatica	Avg 3 Biltmore cnm DBH: 62.5, 57, 72.5		



Figure 181. Large (64 cm DBH) blackgum (*Nyssa sylvatica*) tree in red maple-blackgum swamp fringe in Parcel 23: Charles B. Ferguson Sanctuary (23.05).

Table 154. 23.06 Red maple-blackgum slope forest

Obs. pt. 23.06 Form 3: Form 2 occ #: 1

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 250910 E, 4573380 N

Comments: RM-BG upland slope forest. Nyssa and Acer straight trunks. Prunus serotina gnarly.

Lat: Long:

Photo Photo name: 89

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	62%, 22m	Nyssa sylvatica	45%	
T2		Acer rubrum var. rubrum	20%	
T2		Prunus serotina var. serotina	dead, gnarly	
T3	30%, 14m	Acer rubrum var. rubrum	15%	
T3		Nyssa sylvatica	10%	
T3		Prunus serotina var. serotina	8% gnarly	
TS1	9%, 4m	Acer rubrum var. rubrum	6%	
TS1		Nyssa sylvatica	3%	
TS2		Acer rubrum var. rubrum	2%	
TS2	4%, 1.5m	Prunus serotina var. serotina	2%	
SS2	2%, 1.25m	Viburnum dentatum var. lucidum	2%	
V2	65%, 0.4m	Toxicodendron radicans ssp. radicans	60%	
V2		Parthenocissus quinquefolia	5%	
H	3%	Lysimachia quadrifolia	1%	
H		Maianthemum canadense	1%	
H		Lysimachia borealis	0.01%	
H		Solidago rugosa var. rugosa	0.01%	



Figure 182. Red maple-blackgum slope forest in Parcel 23: Charles B. Ferguson Sanctuary (23.06).

Table 155. 23.07 and 23.08 Unpaved road/path

Obs. pt. 23.07 ref Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 19 250791 E, 4573353 N

Lat: Long:

Comments: Large *Pinus rigida* (55 cm DBH) along trail. Reference point. Vegetation cover data not collected. No photo taken.

Photo Photo name:

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Pinus rigida</i>			

Obs. pt. 23.08 ref Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 19 250795 E, 4573326 N

Lat: Long:

Comments: "Lookout" trail junction sign. Reference point. Vegetation cover data not collected. SMF on both sides (E+W) of Lookout trail S to beach

Photo Photo name: 90 "Lookout" sign

Position method GPS

GPS average min, sec. WAAS



Figure 183. Lookout trail junction forest in Parcel 23: Charles B. Ferguson Sanctuary (23.08).

Table 156. 23.09 Red maple-blackgum slope forest

Obs. pt. 23.09 Form 3: Form 2 occ #: 1

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 250952 E, 4573310 N

Comments: RMBG upland slope forest. Slope: 22 degrees. Aspect: 7 degrees N. Ivory coral fungus (*Ramariopsis kunzei*) photos 92-95

Lat: Long:

Photo Photo name: 91, Ivory coral fungus (*Ramariopsis kunzei*) photos 92-95

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	50%, 24m	<i>Nyssa sylvatica</i>	50%	
T3	10%, 16m	<i>Prunus serotina</i> var. <i>serotina</i>	10%	
SS1	60%, 4.5m	<i>Clethra alnifolia</i>	60%	
SS2	10%, 1.5m	<i>Clethra alnifolia</i>	10%	
SS3	3%, 0.2m	<i>Clethra alnifolia</i>	3%	
V2	1%, 0.2m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%	
H	1%	<i>Osmundastrum cinnamomeum</i> var. <i>ci</i>	1%	at water edge, not on slope
N	3%	<i>Ramariopsis kunzei</i>	3%	photos 92-95
U	98%	litter and duff	98%	
U		wood (CWD) >7.5 cm	10%	
U		wood (FWD) <7.5 cm	2%	
U		large rocks >10 cm	0.01%	



Figure 184. Red maple-blackgum slope forest in Parcel 23: Charles B. Ferguson Sanctuary (23.09).



Figure 185. White coral fungi (*Ramariopsis kunzei*) in red maple-blackgum slope forest in Parcel 23; Charles B. Ferguson Sanctuary (23.09); Left: fruiting body close-up; Right: dozens of fruiting bodies in habitat.

Table 157. 23.10 Unpaved road/path

Obs. pt. 23.10 ref Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 19 250740 E, 4573204 N

Comments: W trailhead with split rail fence. Reference point. Vegetation cover data not collected.

Lat: Long:

Photo Photo name: 96,97

Position method GPS

GPS average min, sec.

WAAS



Figure 186. Treasure Pond Trail in Parcel 23 (actually in eastern corner of Parcel E-03); Charles B. Ferguson Sanctuary (23.10).

Table 158. 23.11 Shrub swamp (*Clethra alnifolia*)

Obs. pt. 23.11 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Clethra alnifolia*)" EO2 CEGL code: Alliance code:

UTM: zone 19 250718 E, 4573283 N Comments: *Clethra* (90%) - *Decodon* (45%) co-dominant SS

Lat: Long: Photo Photo name: 98,99,100

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	7%, 10m	<i>Acer rubrum</i> var. <i>rubrum</i>	7%	
TS1	5%, 4m	<i>Acer rubrum</i> var. <i>rubrum</i>	5%	
TS2	1%, 1.8m	<i>Acer rubrum</i> var. <i>rubrum</i>	1%	
TS3	0.01%, 0.5m	<i>Acer rubrum</i> var. <i>rubrum</i>	0.01%	
SS1	50%, 3m	<i>Clethra alnifolia</i>	45%	
SS1		<i>Ilex verticillata</i>	5%	
SS2		<i>Clethra alnifolia</i>	35%	
SS2	73%, 1.4m	<i>Decodon verticillatus</i>	35%	
SS2		<i>Ilex verticillata</i>	3%	
SS3	20%, 0.5m	<i>Clethra alnifolia</i>	10%	
SS3		<i>Decodon verticillatus</i>	10%	
H	3%	<i>Hypericum virginicum</i>	2%	
H		<i>Peltandra virginica</i>	1% ID confirmed by Steve Young (Feb. 2022)	collect:Y
H		<i>Osmundastrum cinnamomeum</i> var. <i>ci</i>	0.01%	
N	40%	<i>Sphagnum recurvum</i>	40% ID confirmed by Tom Phillips 2022.	collect:Y
U	15%	water	15% edge moat	



Figure 187. Shrub swamp (*Clethra alnifolia*) in Parcel 23; Charles B. Ferguson Sanctuary (23.11).

Table 159. 23.12 Successional southern hardwoods

Obs. pt. 23.12 ref Form 3: Form 2 occ #:

Community: Successional southern hardwoods

CEGL code:

Alliance code:

UTM: zone 19 251051 E, 4573698 N

Lat: 41.26860923 Long: -71.9801175

Comments: SSH with planted Japanese yew? Fir?(at least 4 small trees; 17 cm DBH); large Acer rubrum in T2; Frangula alnus common in all layers; Maianthem canadense carpet with Toxicodendron radicans and Trientalis borealis.

Photo Photo name: 25

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	Acer rubrum	large crown		
T3	Frangula alnus			
TS1	Frangula alnus			
TS1	Taxus cuspidata	planted Japanese yew? Fir?(at least 4 small trees; 17 cm DBH);		ID uncertain
TS2	Frangula alnus			
TS3	Frangula alnus			
V2	Toxicodendron radicans ssp. radicans			
H	Lysimachia borealis			
H	Maianthemum canadense	carpet		



Figure 188. Japanese yew (*Taxus cuspidata* – identification uncertain) in successional southern hardwoods in Parcel 23 (23.12).

Parcel 23 Ecological Community Acreage



Figure 189. Parcel 23 Ecological Community Polygons Assessed in Acreage Table below.

Table 160. Parcel 23 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
248	5.04	CO-HF	Coastal oak-hickory forest	CTERFOR	yellow groundlayer signature on CIR
170	0.62	MBLUFF	Maritime bluff	CTEROPEN	
257	0.14	MBLUFF	Maritime bluff	CTEROPEN	
166	0.34	MLWT	Mowed lawn with trees	CTERCULT	
169	2.25	MRB	Maritime rocky beach	CTEROPEN	unvegetated
422	0.05	MRB	Maritime rocky beach	CTEROPEN	unvegetated
164	3.26	MRI	Marine rocky intertidal	CMARINTER	
171	0.09	MS?	Maritime shrubland?	CTEROPEN	
421	10.09	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	edge of NWI wetland; narrow band; RM-BGSF up slope
247	3.57	SMF	Successional maritime forest	CTERFOR	
435	2.50	SMF	Successional maritime forest	CTERFOR	
434	2.49	SMF?	Successional maritime forest?	CTERFOR	RM-BG?; SSH//SUC.S?; not surveyed 2021
165	0.75	SS Cleth-Deco	Shrub swamp (Clethra-Decodon)	CPALOPEN	
168	2.28	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	
14 polys	33.47 acres	10 types			

Parcel 23 General Description

Parcel 23 is a very irregularly shaped parcel that extends for about a half mile north to south, from the Treasure Pond Trail parking area on Chocomount Road (aka Treasure Pond Road), through the area between Middle Farms Pond and Treasure Pond, to the rocky beach of Block Island Sound.

Natural communities form narrow bands along the ocean shoreline in Parcel 23 as follows: Marine rocky intertidal community (EOID 3294) runs along the parcel's southern property line occupying the rocky area between mean low water (MLW) and mean high water (MHW). At slightly higher elevation above MHW it becomes an unvegetated maritime rocky beach (EOID 17561) dominated by large rocks. The maritime rocky beach is about 20 m wide and runs up to the base of the maritime bluff (EOID 17535). At the top of the bluff and behind the rocky beach are bands of either maritime shrubland or successional maritime forest.

A narrow band of red maple-blackgum fringe swamp runs along the margins of Middle Farms Pond and Treasure Pond in Parcel 23. This fringe swamp also surrounds two patches of shrub swamp co-dominated by sweet pepperbush (*Clethra alnifolia*) and water willow (*Decodon verticillatus*). The first, larger 2¼-acre shrub swamp is located in a cove on the west side of Treasure Pond. The second smaller ¾-acre patch is on the south shore of Middle Farms Pond. No invasive plants were found in these shrub swamps during our ecology surveys. All of the shrub swamp patches in Parcel 23 are part of a larger 8.27-acre shrub swamp occurrence (EOID 17534) of statewide significance with additional patches in Parcel 9. The wetland boundaries in Parcel 23 appear unchanged since the mid-1920s black and white air photo (Figure 177).

The upland area between Middle Farms Pond and Treasure Pond is mapped as coastal oak-hickory forest. This area appears cleared on the mid-1920s air photo (Figure 177), however it is depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

On the south side of Treasure Pond, the fringe swamp grades into upland red maple-blackgum slope forest at point 23.09. This location has the largest population of white coral fungi (*Ramariopsis kunzei*) found during our ecology surveys (Figure 185).

The Parcel 23 Landscape Condition Analysis Score of 91.51 (#6 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel 23 Invasive Plants

Beach rose (*Rosa rugosa*) is present on the maritime bluff with low percent cover along with a few non-native herbs (See Parcel 5 section for more information). The maritime shrubland has two invasive vines: Japanese honeysuckle (*Lonicera japonica* – 20%) and Oriental bittersweet (*Celastrus orbiculatus* – 5%).

No invasive plants were found in the two shrub swamp patches or in the red maple-blackgum fringe swamp/slope forest during our ecology surveys.

Glossy buckthorn (*Frangula alnus*) and possibly Japanese yew (*Taxus cuspidata*) were found in the successional southern hardwoods north of the Treasure Pond Trail parking area on Chocomount Road at point 23.12.

Parcel 23 Management Recommendations

The shoreline natural communities, such as the marine rocky intertidal and maritime rocky beach, extend east onto Parcel 5. Likewise, the coastal oak-hickory forest between Middle Farms Pond and Treasure Pond in Parcel 23 extends west onto Parcel 24. Management plans for adjacent parcels should be developed in tandem at the natural community level rather than following strict parcel boundaries.

The shrub swamp patches at points 23.03 and 23.04 should be monitored for Old World reed grass (*Phragmites australis*) invasion and any reed grass plants should be removed immediately after discovery.

Removing Japanese honeysuckle and Oriental bittersweet from the maritime shrubland would improve its floristic quality, however its isolated location and tangled growth habit would make it a very challenging endeavor.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 23 Future Surveys

Several large blackgum (*Nyssa sylvatica*) trees were found in the red-maple fringe swamp at points 23.05 and 23.09 (Figure 181) and are worthy of increment coring to determine their age.

The interior portion of the 5-acre coastal oak-hickory forest in Parcel 23 was not surveyed in 2021 or 2022. The community was mapped based on air photo interpretation and its extent and condition needs to be evaluated.

Parcel 24. Charles B. Ferguson Sanctuary



Figure 190. Parcel 24: Charles B. Ferguson Sanctuary.

Table 161. Shrub swamp (*Clethra alnifolia*)

Obs. pt. 24.01 ref Form 3: Form 2 occ #:

Community: Shrub swamp (*Clethra*)

CEGL code:

Alliance code:

UTM: zone 19 250670 E, 4573412 N

Lat: 41.26807869 Long: -71.9821704

Comments: Tall *Clethra* pond margin grades into RMBG slope forest to east. Arrowwood leaf insect holes (photos 26, 27); Photos 28 and 29 of *Bartonia* along trail to point. Note: *Pyrrhalta viburni* is a species of leaf beetle native to Europe and

Asia, commonly known as the viburnum leaf beetle.

Photo Photo name: 30 at point

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	<i>Clethra alnifolia</i>			
SS1	<i>Viburnum dentatum</i>			
H	<i>Bartonia virginica</i>			ID uncertain



Figure 191. Shrub swamp (*Clethra alnifolia*) in Parcel 24 (24.01).



Figure 192. *Viburnum* leaf beetle (*Pyrrhalta viburni*) damage on arrowwood (*Viburnum dentatum*) (24.01).

Table 162. 24.02 Red maple-blackgum slope forest

Obs. pt. 24.02 Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 250752 E, 4573381 N

Lat: 41.26152501 Long: -71.9990353

Comments: Survey of small parcel SE of large grassland; Tall Clethra in low dip in trail (both sides); not SS - upland slope to E; RM-BG slope woodland (more open than other sites with this type);

Photo Photo name: 99

Position method GPS

GPS average min, sec.

WAAS

Stratum		Species	comments	Collection	Unsure of ID
T2	46%, 20m	Acer rubrum var. rubrum	40%		
T2		Nyssa sylvatica	10%		
T3	10%, 12m	Prunus serotina var. serotina	10%		
TS1		Frangula alnus	3%		
TS1	9%, 3m	Quercus alba	3%		
TS1		Quercus velutina	3%		
TS2	5%, 1m	Frangula alnus	5%		
TS3	3%, 0.2m	Frangula alnus	3%		
SS1	55%, 4.5m	Clethra alnifolia	50%		
SS1		Viburnum dentatum var. lucidum	5%		
SS2	23%, 1.5m	Clethra alnifolia	20%		
SS2		Viburnum dentatum var. lucidum	3%		
SS3	12%, 0.5m	Clethra alnifolia	10%		
SS3		Viburnum dentatum var. lucidum	2%		
V2	22%, 1.5m	Smilax rotundifolia	20% on Clethra		
V2		Toxicodendron radicans ssp. radicans	2%		
H	15%	Maianthemum canadense	15%		



Figure 193. Red maple-blackgum slope forest in Parcel 24 (24.02).

Table 163. 24.03 Successional southern hardwoods

Obs. pt. **24.03** Form 3: Form 2 occ #:

Community: Successional southern hardwoods

CEGL code:

Alliance code:

UTM: zone 19 250779 E, 4573314 N

Lat: 41.26163232 Long: -71.9994102

Comments: Red maple-black cherry forest along trail (both sides); large crown red maple almost touching and one large black oak with gnarly black cherry in subcanopy with red maple;

Photo Photo name: 100-103

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	50%, 20m	Acer rubrum var. rubrum	42%	
T2		Quercus velutina	8%	at Lookout trail junction (measured in 2021?)
T2		Prunus serotina var. serotina	6%	
T3	28%, 12m	Prunus serotina var. serotina	20%	gnarly
T3		Acer rubrum var. rubrum	10%	
TS1	15%, 3.5m	Frangula alnus	10%	
TS1		Prunus serotina var. serotina	5%	
TS2	14%, 1.75m	Frangula alnus	5%	
TS2		Prunus serotina var. serotina	5%	
TS2		Acer rubrum var. rubrum	2%	
TS2		Quercus velutina	2%	
TS3	2%, 0.3m	Frangula alnus	1%	
TS3		Prunus serotina var. serotina	0.01%	
TS3		Quercus velutina	0.01%	
SS1	7%, 4m	Clethra alnifolia	5%	
SS1		Viburnum dentatum var. lucidum	2%	leaf insect present
SS2	3%, 1m	Clethra alnifolia	3%	
SS3	0.01%, 0.2m	Viburnum dentatum var. lucidum	0.01%	
V2	9%, 0.2m	Toxicodendron radicans ssp. radicans	5%	
V2		Smilax rotundifolia	2%	
V2		Lonicera japonica	1%	
V2		Parthenocissus quinquefolia	1%	
H	41%	Maianthemum canadense	40%	
H		Lysimachia borealis	1%	
H		Solidago rugosa var. rugosa	0.01%	
U	95%	litter and duff	90%	
U		wood (FWD) <7.5 cm	6%	
U		large rocks >10 cm	5%	
U		very large rocks >1 m	3%	
U		wood (CWD) >7.5 cm	2%	



Figure 194. Successional southern hardwoods in Parcel 24 (24.03) face E.



Figure 195. Successional southern hardwoods in Parcel 24 (24.03) face W.

Table 164. 24.04 Shrub swamp (*Clethra alnifolia*)

Obs. pt. 24.04 Form 3: Form 2 occ #:

Community: "Shrub swamp (*Clethra alnifolia*)"

CEGL code:

Alliance code:

UTM: zone 19 250731 E, 4573298 N

Lat: 41.27683218 Long: -71.9686131

Comments: Tall *Clethra* SS with open *Decodon* included patches; viewed from edge while standing on log; see also Obs. Pt. 23.11 sampled in 2021 for SS cover; large *Amelanchier arborea* on slope 24 cm DBH

Photo Photo name: 104 zoom in

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Amelanchier arborea</i>	not in SS but on slope nearby		ID uncertain
TS1	6%, 6m <i>Acer rubrum</i> var. <i>rubrum</i>	6%		
TS2	3%, 2m <i>Acer rubrum</i> var. <i>rubrum</i>	3%		
SS1	60%, 4m <i>Clethra alnifolia</i>	60%		
SS2	12%, 125m <i>Decodon verticillatus</i>	12%		
H	1% <i>Bidens tripartita</i>	0.01%		ID uncertain
H	<i>Juncus effusus</i> ssp. <i>solutus</i>	0.01%		



Figure 196. Shrub swamp (*Clethra alnifolia*) in Parcel 24 (24.04 and 23.11).

Parcel 24 Ecological Community Acreage

Parcel 24 is included in the Parcel 9 (Table 73, Figure 84) and Parcel 23 (Table 160, Figure 189) Ecological Community Acreage Assessments.

Parcel 24 General Description

Parcel 24 is very similar to the north half of Parcel 23 to the east where these two parcels share a boundary. A narrow band of red maple-blackgum fringe swamp runs along the south shore of Middle Farms Pond at the north end of Parcel 24. The fringe swamp is also along the margin of the shrub swamp to the west (mostly in Parcel 9) that is co-dominated by sweet pepperbush (*Clethra alnifolia*) and water willow (*Decodon verticillatus*).

The upland area between Middle Farms Pond and Treasure Pond is mapped as coastal oak-hickory forest. It is mostly in Parcel 23, but a lobe of it extends into Parcel 24. This area appears cleared on the mid-1920s air photo (Figure 177), however it is depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

The Parcel 24 Landscape Condition Analysis Score of 58.58 (#5 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel 24 Invasive Plants

No invasive plants were found in the shrub swamp or in the red maple-blackgum fringe swamp in parcel 24 during our ecology surveys. However, glossy buckthorn (*Frangula alnus* – 11%) was found in the red maple-blackgum slope forest at point 24.02.

The successional southern hardwoods at point 23.04 has the following invasive plants: glossy buckthorn (*Frangula alnus* – 16%) and Japanese honeysuckle (*Lonicera japonica* – 1%).

Point 24.01 is the first location we noticed viburnum leaf beetle (*Pyrrhalta viburni*) damage on arrowwood (*Viburnum dentatum*) in 2022. *Pyrrhalta viburni* is a native of Europe. It is known to be established in New York, Maine, New Hampshire, Vermont, Washington State, and a small part of Pennsylvania and Ohio. Heavy infestations of *Pyrrhalta viburni* cause defoliation, and plants continuously defoliated for two to three consecutive years may be killed.

Parcel 24 Management Recommendations

Removal of glossy buckthorn (*Frangula alnus*) from the forests in parcel 24 would improve the floristic quality at those points.

The best management option for *Pyrrhalta viburni* is to prune and destroy the twigs infested with egg masses and while beetles are inactive, usually from October to April. Soil application of systemic insecticides can be effective, but their use may be restricted.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 25. Stony Beach North



Figure 197. Parcel 25: Stony Beach North.

Parcel 25. Stony Beach South

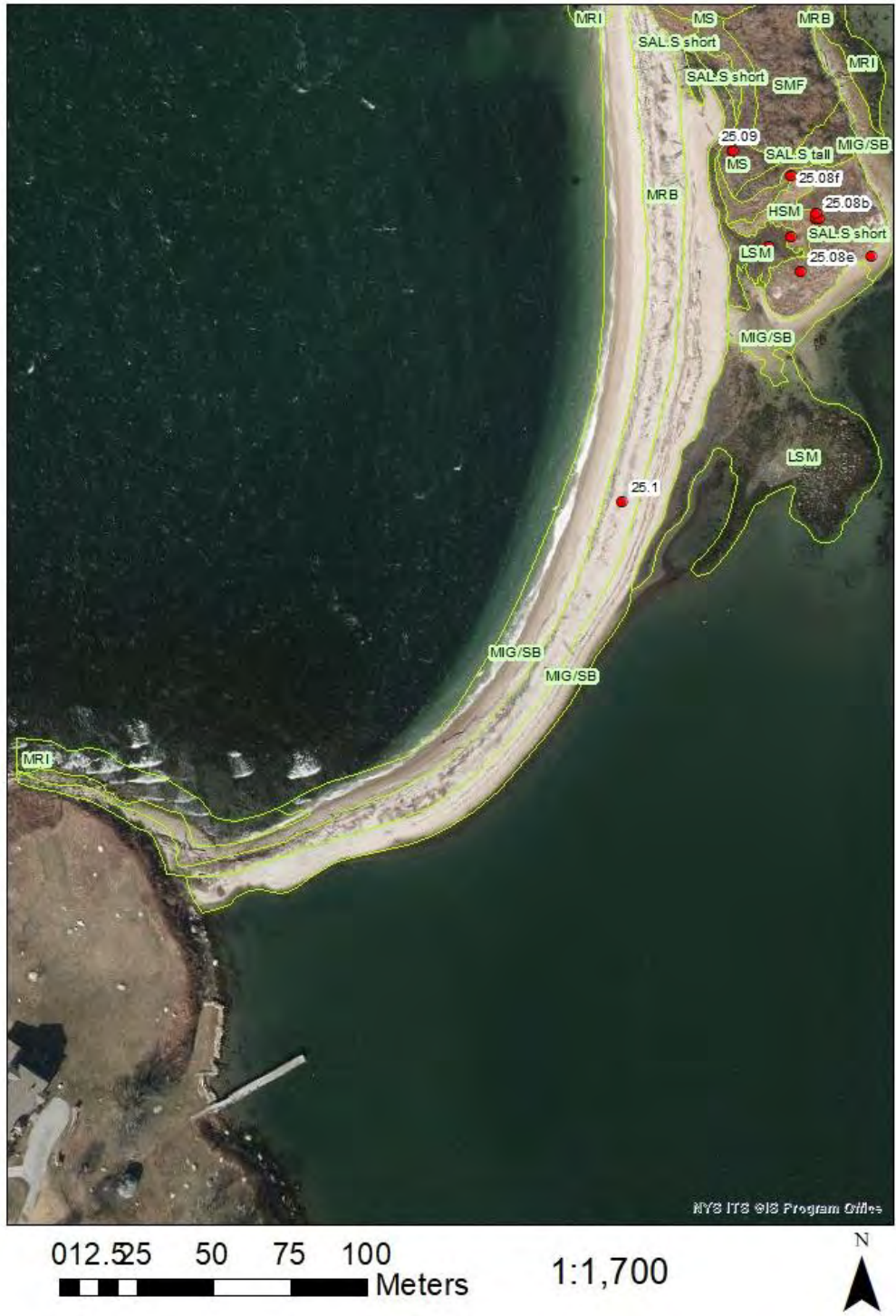


Figure 198. Parcel 25: Stony Beach South.

Table 165. 25.01 Marine rocky intertidal

Obs. pt. 25.01 Form 3: Form 2 occ #: 1

Community: Marine rocky intertidal

CEGL code:

Alliance code:

UTM: zone 18 749157 E, 4572597 N
 Lat: Long:

Comments: MRI GPS taken on largest boulder at presumed east most point of spit. UTM 18 not 19 for entire Stony Point Parcel 25.

Photo Photo name: 96-120 except 100,101,110,118,121 of MRB

Position method GPS

GPS average 2875 readings WAAS

Stratum	Species	comments	Collection	Unsure of ID
E	1%	red filamentous algae	1% on Ascophyllum nodosum	
N	80%	Ascophyllum nodosum	55%	
N		Fucus vesiculosus	20%	
N		Fucus spiralis	5% out on rocks side	
N		Hildenbrandia sp.	0.01% thalloid red alga	ID uncertain
U	100%	large rocks >10 cm	80%	
U		small rocks <10 cm	10% under Ascophyllum	
U		very large rocks >1 m	10%	
U		green filamentous alga	2% segmented, wiry	ID uncertain
U		trash	1% rope, large truck tire	
U		Codium fragile	0.01%	
U		dead eelgrass	0.01%	
U		red barrel weed	0.01%	ID uncertain
ZA		barnacles	2%	
ZA		snails		



Figure 199. Marine rocky intertidal community on Stony Beach in Parcel 25 (25.01).

Table 166. 25.02 Maritime rocky beach

Obs. pt. 25.02 Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach - vegetated" CEGL code: Alliance code:

UTM: zone 18 749159 E, 4572586 N
 Lat: Long:

Comments: Maritime rocky beach. Large white boulders on beach above MHW behind MRI. 16% total vegetation cover = vegetated variant >10% veg cover (sparsely vegetated definition <10% veg cover).

Photo Photo name: 100,101,110,118,121

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	16%	Sporobolus pumilus	10%	
H		Sporobolus alterniflorus	5%	
H		Atriplex sp.	1%	
U	90%	very large rocks >1 m	50%	
U		small rocks <10 cm	20%	
U		large rocks >10 cm	15%	
U		wrack	3% dead eelgrass, marine algae	
U		wood (CWD) >7.5 cm	2% drift wood	
U		trash	0.01%	
U		wood (FWD) <7.5 cm	0.01% drift wood	



Figure 200. Maritime rocky beach on Stony Beach in Parcel 25 (25.02).

Table 167. 25.03 High salt marsh

Obs. pt. 25.03 Form 3: Form 2 occ #: 1

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 18 749178 E, 4572573 N

Lat: Long:

Comments: Set up 5m x 10 m plot fit in HSM patch parallel to SAL.S and HSM line. Small patch of HSM south of 25.01 GPS taken at SW corner of plot: 18T 749180 4572568 Long axis (10 m) of rectangular plot oriented on 303 degree bearing. Slope: 5 degrees. Aspect: 33 degrees.

Photo Photo name: 119-120,122-128,130-136,139

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	92%	Distichlis spicata	84%	
H		Sporobolus pumilus	3%	
H		Sporobolus alterniflorus	2% short form	
H		Limonium carolinianum	1%	
H		Salicornia depressa	1%	
H		Atriplex patula	0.01% ID determined by Steve Young (Feb. 2022)	collect:Y
H		Suaeda maritima	0.01% "Would have to rehydrate to ID" per Steve Young	collect:Y ID uncertain
U	9%	litter and duff	5% Distichlis thatch	
U		wrack	3% dead eelgrass, Ascophyllum nodosum, green filamentous algae	
U		large rocks >10 cm	0.01%	
U		small rocks <10 cm	0.01%	
U		trash	0.01%	
U		wood (FWD) <7.5 cm	0.01%	



Figure 201. High salt marsh plot (5 m x 10 m) on Stony Beach in Parcel 25 (25.03).

Table 168. 25.04 Salt shrub

Obs. pt. 25.04 Form 3: Form 2 occ #: 1

Community: Salt shrub

CEGL code:

Alliance code:

UTM: zone 18 749179 E, 4572565 N

Comments: Salt shrub back behind (west of) smal patch of HSM

Lat: Long:

Photo Photo name: 120,136,137

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	5%, 2.2m	Baccharis halimifolia	5%	
SS2	48%, 1.25m	Iva frutescens	45%	1-1.5 m
SS2		Baccharis halimifolia	3%	
SS3	5%, 0.5m	Iva frutescens	5%	
H		Atriplex patula	5%	ID determined by Steve Young (Feb. 2022) collect:Y
H	18%	Panicum virgatum	5%	
H		Distichlis spicata	3%	
H		Solidago sempervirens	3%	
H		Raphanus raphanistrum	2%	
H		Sonchus arvensis	0.01%	ID determined by Steve Young (Feb. 2022) collect:Y
U	90%	litter and duff	75%	
U		wood (FWD) <7.5 cm	10%	
U		small rocks <10 cm	5%	
U		wood (CWD) >7.5 cm	2%	



Figure 202. Salt shrub on Stony Beach in Parcel 25 (25.04).

Table 169. 25.05a Coastal salt pond

Obs. pt. 25.05a Form 3: Form 2 occ #: 1

Community: Coastal salt pond

CEGL code:

Alliance code:

UTM: zone 18 749166 E, 4572553 N

Comments: Cover estimated from shore of aquatic portion of CSP.

Lat:

Long:

Photo Photo name: 140-145

Position method Digital Ortho-Images

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
N	marine algae	1% free floating		
U	mud bottom	95%		
U	100% water	93% Estimated depth: 0.5 m deep at center - not measured		
U	mud	5% narrow 20 cm wide fringe		
U	large rocks >10 cm	1%		
U	wood (CWD) >7.5 cm	1% drift wood		
U	wrack	0.01% dead eelgrass		
ZM	minnow-size fish			



Figure 203. Coastal salt pond on Stony Beach in Parcel 25 (25.05a).

Table 170. 25.05b High salt marsh

Obs. pt. 25.05b Form 3: Form 2 occ #: 1

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 18 749162 E, 4572563 N
 Lat: Long:

Comments: CSP shore cover includes the fringe of the pond excluding the open water aquatic portion.

Photo Photo name: 142,143

Position method GPS

GPS average min, sec. WAAS

Stratum		Species	comments	Collection	Unsure of ID
SS2	30%, 0.9m	Iva frutescens	30%		
SS3	8%, 0.4m	Iva frutescens	8%		
H	85%	Distichlis spicata	40%		
H		Sporobolus pumilus	20%		
H		Salicornia depressa	12%		
H		Sporobolus alterniflorus	8%		
H		Atriplex sp.	3%		ID uncertain
H		Limonium carolinianum	2%		
U	25%	mud	25%		



Figure 204. High salt marsh fringe of coastal salt pond on Stony Beach in Parcel 25 (25.05b).

Table 171. 25.05c Salt shrub

Obs. pt. **25.05c** Form 3: Form 2 occ #:

Community: Salt shrub

CEGL code:

Alliance code:

UTM: zone 18 749151 E, 4572568 N
 Lat: Long:

Comments: Hill NW of CSP. Mix of salt shrub//maritime shrubland//maritime grassland//brackish meadow. Birds behind spit: oyster catcher, double crested comorant, gulls, great blue heron, great egret, killdeer. Maritime shrubland? Brackish meadow?

Photo Photo name: 144

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>		<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
TS1	3%, 3m	<i>Prunus serotina</i> var. <i>serotina</i>	3%		
SS1	10%, 2.5m	<i>Baccharis halimifolia</i>	10%		
SS2	40%, 1.5m	<i>Iva frutescens</i>	35%		
SS2		<i>Baccharis halimifolia</i>	3%		
SS3	6%, 0.5m	<i>Iva frutescens</i>	6%		
V	16%, 1.5m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	15%		
V		<i>Smilax rotundifolia</i>	1%		
H	50%	<i>Euthamia caroliniana</i>	12% ID determined by Steve Young (Feb. 2022).	collect:Y	
H		<i>Panicum virgatum</i>	12%		
H		<i>Phragmites australis</i>	10%		
H		<i>Distichlis spicata</i>	5%		
H		<i>Juncus gerardi</i>	5%		
H		<i>Elymus virginicus</i> var. <i>virginicus</i>	3% ID determined by Steve Young (Feb. 2022).	collect:Y	
H		<i>Solidago sempervirens</i>	2%		
H		<i>Althaea officinalis</i>	1% ID determined by Steve Young (Feb. 2022).	collect:Y	
H		<i>Carex silicea</i>	1%		
H		<i>Sporobolus cynosuroides</i>	0.01% ID confirmed by Steve Young (Feb. 2022).		
H		<i>Symphotrichum dumosum</i>	0.01% ID determined by Steve Young (Feb. 2022).	collect:Y	



Figure 205. Salt shrub on Stony Beach in Parcel 25 (25.05c).

Table 172. 25.06 Maritime shrubland

Obs. pt. 25.06 Form 3: Form 2 occ #: 1

Community:

Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 18 749189 E, 4572517 N

Lat: Long:

Comments: Maritime shrubland or successional shrubland covered with blanket of vines. No Rhus copallinum. Surrounded by SMF. Successional shrubland?

Photo Photo name: 148

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	57%, 2.2m	Lonicera morrowii	40%	
SS1		Morella caroliniensis	10%	
SS1		Rhus glabra	5%	
SS1		Baccharis halimifolia	2%	
SS2	22%, 1.25m	Lonicera morrowii	20%	
SS2		Rubus allegheniensis	2%	
SS3	2%, 0.5m	Rubus allegheniensis	2%	
V	85%, 1.5m	Smilax glauca	40%	
V		Celastrus orbiculatus	15%	
V		Lonicera japonica	15%	
V		Smilax rotundifolia	10%	
V		Parthenocissus quinquefolia	5%	
H	10%, 1.5m	Solidago rugosa var. rugosa	10%	
H		Solidago sempervirens	0.01%	



Figure 206. Maritime shrubland on Stony Beach in Parcel 25 (25.06).

Table 173. 25.07a Successional maritime forest

Obs. pt. 25.07a Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 18 749182 E, 4572500 N

Lat: Long:

Comments: Old salt-sprayed contorted stunted English oak. Leaves: very irregular margin, very leathery, shiny, many desiccated.

Photo Photo name: 157-159, 160 face N from S

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	75%, 6m	Prunus serotina var. serotina	25%	
T2		Quercus robur	25%	crown about 20 m diam; 0.5 m from ground below 1st big (57 cm DBH) horizontal branch; ID confirmed by Steve Young (Feb. 2022).
SS2	40%, 1.5m	Lonicera morrowii	40%	
SS3	15%, 0.25m	Lonicera morrowii	10%	0.1-0.4 m
SS3		Rubus sp.	5%	
V	70%, 2.4m	Smilax glauca	50%	0.5-5 m; big leaves, hand size
V		Toxicodendron radicans ssp. radicans	20%	1-3 m
H	0.01%	Solidago rugosa var. rugosa	0.01%	

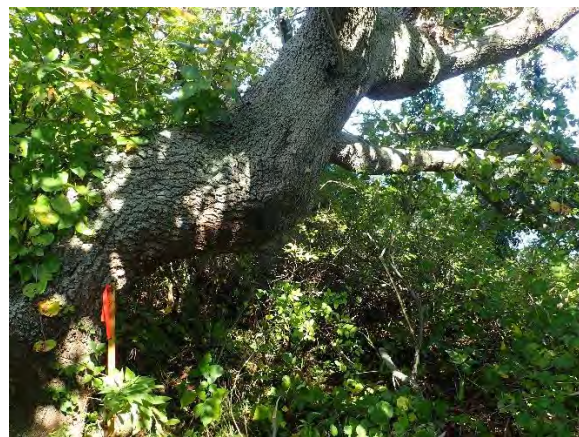


Figure 207. Successional maritime forest on Stony Beach in Parcel 25 (25.07a); Left: forest canopy; Right: English oak (*Quercus robur*).

Table 174. 25.07b Marine intertidal gravel/sand beach

Obs. pt. **25.07b ref** Form 3: Form 2 occ #:

Community:

Maritime beach

CEGL code:

Alliance code:

UTM: zone 18 749211 E, 4572417 N

Lat: Long:

Comments: GPS point at point where pebble beach changes to sand around hook at this point. Marine intertidal gravel/sand beach?

Photo Photo name: 157-158 pebble beach, 160 face N SMF back

Position method GPS

GPS average min, sec.

WAAS



Figure 208. Marine intertidal gravel/sand beach on Stony Beach in Parcel 25 (25.07b); Left: face W beach substrate changes from gravel to sand; Right: face N. Maritime beach above wrack line.

Table 175. 25.08 Low salt marsh

Obs. pt. **25.08 ref** Form 3: Form 2 occ #:

Community:

Low salt marsh

CEGL code:

Alliance code:

UTM: zone 18 749185 E, 4572423 N

Lat: Long:

Comments: GPS point on line between LSM to W and HSM to E. Reference point. Vegetation cover data not collected.

Photo Photo name:

Position method GPS

GPS average min, sec.

WAAS

Table 176. 25.08a Low salt marsh

Obs. pt. 25.08a Form 3: Form 2 occ #: 1

Community: Low salt marsh

CEGL code:

Alliance code:

UTM: zone 18 749178 E, 4572420 N

Comments: LSM west of GPS point

Lat: Long:

Photo Photo name: 161, 171

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
H	52%, 1m	Sporobolus alterniflorus	50%	
H		Salicornia depressa	2%	0.2 m
U	77%	water	45%	
U		mud	20%	
U		green algae	12%	on mud
ZA		Geukensia demissa	ribbed mussels; 100s in mud verticle; photos 177-179	



Figure 209. Low salt marsh on Stony Beach in Parcel 25 (25.08a); Left: smooth cord grass (*Sporobolus alterniflorus*); Right: ribbed mussel (*Geukensia demissa*).

Table 177. 25.08b High salt marsh

Obs. pt. **25.08b** Form 3: Form 2 occ #: 1

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 18 749193 E, 4572429 N

Comments: HSM east of GPS point.

Lat: Long:

Photo Photo name:

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum		Species	comments	Collection	Unsure of ID
SS3	5%, 0.5m	Iva frutescens	5%		
H	85%	Distichlis spicata	40%		
H		Salicornia depressa	25%		
H		Sporobolus pumilus	15%		
H		Juncus gerardi	5%		
H		Plantago maritima var. juncoides	1%		
H		Symphyotrichum tenuifolium var. tenui	1%		ID uncertain
H		Limonium carolinianum	0.01%		
N	1%	green algae	1% in bare spots		
U		wood (CWD) >7.5 cm	1% drift wood		



Figure 210. High salt marsh on Stony Beach in Parcel 25 (25.08b).

Table 178. 25.08c and 25.08d High salt marsh

Obs. pt. 25.08c ref Form 3: Form 2 occ #:

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 18 749194 E, 4572429 N

Lat: Long:

Comments: Salt marsh aster stats. 170 plants had about 200 flower heads total in <0.1 acre HSM patch; not in LSM. About 145 plants have a single flower head; about 20 had 2 heads; less than five plants had 3 heads. This count likely missed plants that were past flower.

Photo Photo name: 163-169

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	<i>Symphotrichum tenuifolium</i> var. <i>tenuifolium</i>	photos 163-169; ID determined by Steve Young 11/24/2021	collect:Y	ID uncertain

Obs. pt. 25.08d ref Form 3: Form 2 occ #:

Community:

High salt marsh

CEGL code:

Alliance code:

UTM: zone 18 749193 E, 4572431 N

Lat: Long:

Comments: *Plantago maritima* stats: Patch #1: about 4 m diameter circle; about 20 clumps/square meter; about 15 fertile spikes per clump. Patch #2: about 3 m diameter circle; same density/fertility numbers as Patch #1; Total: 393 plants with about 5,892 fertile spikes covering <20 square meters.

Photo Photo name:

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	<i>Plantago maritima</i> var. <i>juncooides</i>	ID confirmed by Steve Young (Feb. 2022).	collect:Y	



Figure 211. High salt marsh on Stony Beach in Parcel 25: Left: perennial saltmarsh aster (*Symphotrichum tenuifolium* var. *tenuifolium*) (25.08c); Right: seaside plantain (*Plantago maritima* var. *juncooides*) (25.08d).

Table 179. 25.08e Salt shrub (short)

Obs. pt. 25.08e Form 3: Form 2 occ #: 1

Community: Salt shrub

CEGL code:

Alliance code:

UTM: zone 18 749188 E, 4572412 N

Comments: Salt shrub short variant. South side of HSM patch.

Lat: Long:

Photo Photo name: 160,180

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum		Species	comments	Collection	Unsure of ID
SS2	60%, 0.85m	Iva frutescens	60% 0.7-1.0 m		
SS3	15%, 0.3m	Iva frutescens	15%		
H	17%	Distichlis spicata	15%		
H		Limonium carolinianum	1%		
H		Plantago maritima	1%		
H		Symphotrichum tenuifolium var. tenui	0.01% ID confirmed by Steve Young (Feb. 2022).	collect:Y	



Figure 212. Salt shrub (short) on Stony Beach in Parcel 25 (25.08e).

Table 180. 25.08f Salt shrub (tall)

Obs. pt. **25.08f** Form 3: Form 2 occ #: 1

Community: Salt shrub

CEGL code:

Alliance code:

UTM: zone 18 749185 E, 4572443 N

Comments: Salt shrub tall variant. North side of HSM patch.

Lat: Long:

Photo Photo name: 170,172,181

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>		<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS1	35%, 3m	Baccharis halimifolia	35%		
SS2	75%, 1.5m	Iva frutescens	60% 1-1.5 m		
SS2		Baccharis halimifolia	15% 1.5-2 m		
SS3	5%, 0.5m	Iva frutescens	5%		
H	27%	Distichlis spicata	20%		
H		Juncus gerardi	5%		
H		Salicornia depressa	2%		



Figure 213. Salt shrub (tall) on Stony Beach (left side of photo) in Parcel 25 (25.08e)

Table 181. 25.09 Maritime shrubland (tall)

Obs. pt. **25.09** Form 3: Form 2 occ #: 1
 Community: Maritime shrubland CEGL code: Alliance code:
 UTM: zone 18 749166 E, 4572451 N Comments: Maritime shrubland tall variant.
 Lat: Long: Photo Photo name: 173,182,183,184
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	75%, 3m	Morella caroliniensis	75%	
SS2	30%, 1.75m	Morella caroliniensis	25%	
SS2		Iva frutescens	5%	
SS3	3%, 0.5m	Rhus copallinum var. copallinum	3%	
V	40%, 2m	Smilax glauca	35%	1-3 m
V		Toxicodendron radicans ssp. radicans	5%	
H	2%	Solidago sempervirens	2%	



Figure 214. Maritime shrubland (tall) behind 1 m Biltmore stick on Stony Beach in Parcel 25 (25.08e).

Table 182. 25.10 Maritime rocky beach

Obs. pt. 25.10 Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach" CEGL code: Alliance code:

UTM: zone 18 749130 E, 4572337 N
 Lat: Long:

Comments: 10 m x 10 m plot. GPS at SW corner. N-S orientation. Two linear drift wood wrack lines: #1 0.4 m x 10 m = 4%; #2 2.3 m x 10 m = 23%. All rocks under 15 cm diameter: 50% are 8 cm diameter, 50% are 4 cm diameter. Size of rocks same for all zones on beach slope, spit crest, and and back spit slope. The crest and back side of spot has greater cover of vegetation (e.g., 5-10% rather than 3% on front slope). Slope: 10 degrees. Aspect: 284 degrees. Zone widths: Zone 1: Water line/Zostera wrack line to first low crest: 3.8 m; Zone 2: First low crest to first wrack line: 1.1 m; Zone 3: first woody wrack line width: 0.4 m; Zone 4: interwrack stone beach width: 1.4 m; Zone 5: second woody wrack line width: 2.3 m; stones above second wrack line with sparse vegetation: 2.0 m.

Photo Photo name: 185-207

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
V2	Fallopia scandens	0.01% ID confirmed by Steve Young (Feb. 2022).	collect:Y	
V2	1% Solanum dulcamara	0.01%		
H	Lathyrus japonicus var. maritimus	1%		
H	Raphanus raphanistrum	1% ID confirmed by Steve Young (Feb. 2022).	collect:Y	
H	3% Sonchus oleraceus	1% ID determined by Steve Young (Feb. 2022).	collect:Y	
H	Atriplex patula	out of plot; possibly 2 spp.; ID determined by Steve Young (Feb.	collect:Y	
U	99% small rocks <10 cm	72% 50% 8 cm diameter, 50% 4 cm diameter, all rocks <15 cm diameter		
U	wood (CWD) >7.5 cm	14% drift wood in 2 wrack lines		
U	wood (FWD) <7.5 cm	13% drift wood in 2 wrack lines		



Figure 215. Maritime rocky beach plot on Stony Beach in Parcel 25 (25.08e).



Figure 216. Maritime rocky beach substrate (smooth pebbles): 50% of rocks 8 cm diameter; 50% of rocks 4 cm diameter.



Figure 217. Maritime rocky beach on Stony Beach in Parcel 25 (25.08e).

Parcel 25 Ecological Community Acreage

Table 183. Parcel 25 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
174	0.07	CSP	Coastal salt pond	CEST	open water; small pond with outlet
179	0.00	CSP?	Coastal salt pond?	CEST	open water; tiny pond; salt panne?
304	0.05	HSM	High salt marsh	CESTINTER	CSP shore
305	0.01	HSM	High salt marsh	CESTINTER	CSP shore
308	0.06	HSM	High salt marsh	CESTINTER	
313	0.06	HSM	High salt marsh	CESTINTER	NE half LSM; SW half HSM
337	0.07	HSM	High salt marsh	CESTINTER	
124	0.64	LSM	Low salt marsh	CESTINTER	may include MRI and MIG/SB
246	0.04	LSM	Low salt marsh	CESTINTER	NE half LSM; SW half HSM
309	0.14	LSM	Low salt marsh	CESTINTER	N end may be brackish interdunal swale
22	1.20	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	pebble/cobble substrate
125	0.87	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	pebble/cobble substrate
178	0.16	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	pebble substrate
306	0.01	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	
311	0.15	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	sand substrate
128	1.12	MRB	Maritime rocky beach	CTEROPEN	unvegetated; pebble/cobble substrate
180	0.03	MRB	Maritime rocky beach	CTEROPEN	unvegetated; large and very large rock substrate
336	0.07	MRB	Maritime rocky beach	CTEROPEN	unvegetated; large and very large rock substrate
123	0.88	MRI	Marine rocky intertidal	CMARINTER	
126	0.21	MRI	Marine rocky intertidal	CMARINTER	
127	0.07	MRI	Marine rocky intertidal	CMARINTER	
177	0.31	MS	Maritime shrubland	CTEROPEN	covered with blanket of vines
445	0.13	MS	Maritime shrubland	CTEROPEN	
176	0.05	SALS short	Salt shrub (short)	CESTINTER	short
307	0.31	SALS short	Salt shrub (short)	CESTINTER	0.3-1.0 m; Iva dominant
312	0.03	SALS short	Salt shrub (short)	CESTINTER	tall
175	0.33	SALS tall	Salt shrub (tall)	CESTINTER	tall
338	0.09	SALS tall	Salt shrub (tall)	CESTINTER	1.0-3.0 m; Baccharis dominant
303	0.10	SALS//ERGM	Salt shrub//Estuarine reed grass marsh	CESTINTER	Phragmites 10%
310	0.30	SMF	Successional maritime forest	CTERFOR	
30 polys	7.57 acres	11 types			

Parcel 25 General Description

Stony Beach in Parcel 25 is a 7.5-acre, narrow (25 m – 80 m), rocky peninsula at the mouth of Hay Harbor. It juts out into the harbor from the west side then arches north for about 0.3 mi. In the southern half, the cobble beach forms a long, low, sparsely vegetated barrier spit (see Figure 215 and

Figure 217 at point 25.08e). The northern end is wider (80 m) and more vegetated on the back side of the cobble beach barrier (Figure 197).

Parcel 25 includes small pieces of larger significant occurrences of natural communities that wrap around most of Fishers Island, including the following:

1. **Marine rocky intertidal community** (EOID 3294) occupying the rocky area between mean low water (MLW) and mean high water (MHW) (Figure 199). This community is restricted to the north end of Stony Beach where it warps around the tip with a disjunct patch on the backside of the barrier.
2. At slightly higher elevation above MHW it becomes an unvegetated **maritime rocky beach** dominated by smooth 4-8 cm diameter pebbles and cobbles (Figure 216, EOID 17561).
3. Off the parcel to the east in Hay Harbor is a mapped occurrence of **marine eelgrass meadow** (EOID 15050).

Several small tidal communities occur at the north end of Stony Beach, including a coastal salt pond, high (0.25 acre) and low (0.82 acre) salt marsh, tall (0.42 acre) and short (0.39 acre) salt shrub, and marine intertidal gravel/sand beach (2.39 acres). In addition, five rare plant species tracked by NYNHP are mapped in these communities: seaside plantain (*Plantago maritima* var. *juncooides*), coastal fireweed (*Erechtites hieracifolius* var. *megalocarpus*), perennial saltmarsh aster (*Symphotrichum tenuifolium* var. *tenuifolium*), annual saltmarsh aster (*Symphotrichum subulatum* var. *subulatum*), and coastal silverweed (*Potentilla anserina* ssp. *pacifica*).

The high salt marsh in Stony Beach (Parcel 25) at point 25.03 has the highest Weighted Floristic Quality Index Score (FQI 23.43) for that community found during our ecology surveys. The salt shrub in Stony Beach (Parcel 25) at point 25.05c has the highest Weighted Floristic Quality Index Score (FQI 21.26) for that community found during our ecology surveys. Of the 13 points on Stony Beach with recorded vascular plant cover 5 (38%) were comprised of 100% native species and 10 (77%) had no invasive species.

The Parcel 25 Landscape Condition Analysis Score of 285.56 (#14 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel 25 Invasive Plants

Invasive and non-native plants on Stony Beach listed by community type (Obs. Pt.):

Successional maritime forest (25.07a): Morrow's honeysuckle (*Lonicera morrowii* – 50%) and one large, old English oak (*Quercus robur*).

Maritime shrubland (25.06): Morrow's honeysuckle (*Lonicera morrowii* – 60%), Oriental bittersweet (*Celastrus orbiculatus* – 15%), and Japanese honeysuckle (*Lonicera japonica* – 15%).

Salt shrub (25.05c and 25.04): Old World reed grass (*Phragmites australis* – 10%), marsh mallow (*Althaea officinalis* – 1%), and spear orach (*Atriplex patula* – 5%).

High salt marsh (25.03 and 25.05b): spear orach (*Atriplex patula* – <1-3%).

Maritime rocky beach (25.02 and 25.10): spear orach (*Atriplex patula* – 1%).

Parcel 25 Management Recommendations

Invasive plant management on Stony Beach should focus on rare plant habitat. For example, the small high salt marsh at point 25.08 should be monitored for Old World reed grass (*Phragmites australis*) invasion and any reed grass plants should be removed immediately after discovery. *Phragmites* should be removed from the salt shrub community at point 25.05c while it is still at relatively low cover (10%), so it does not spread into rare plant habitat.

The salt shrub patch at point 25.08e is one of only two salt shrub locations on Land Trust parcels with no invasives found on during our ecology surveys. The other 100% native plant salt shrub is at point 38b.03 at Beach Pond. The salt shrub area should be monitored for invasive species and any invasives should be removed immediately after discovery.

The large English oak in the successional maritime forest was a curious find, but it is not an invasive concern. It looks like it may have been planted there a long time ago. Stony Beach is not on the mid-1920s black and white air photo we used to review other parcels, so its presence could not be checked in the same manner. The large patch of Morrow's honeysuckle around the oak may be a lost cause, fortunately it appears that oceanic processes, such as salt spray and storm surges, are keeping it in check for the time being.

Stony Beach would benefit from an annual beach clean-up day. Ocean derived trash that is deposited on the beach should be removed.

Lastly, this cobble spit landform with no sand at Stony Beach may be a unique geologic feature for New York. Most back-barrier lagoons in the state are set behind barriers of sandy substrate, such as sand spits with dunes, like those along the south shore of Long Island. However, more surveys are needed to prove this one-of-a-kind claim.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 26.



Figure 218. Parcel 26.

Table 184. 26.01a Marine rocky intertidal

Obs. pt. 26.01a Form 3: Form 2 occ #:
 Community: Marine rocky intertidal CEGL code: Alliance code:
 UTM: zone 19 250717 E, 4574048 N Comments: MRI
 Lat: Long: Photo Photo name: 338-339 face E
 Position method Digital Ortho-Images
 GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
N	55%	Ascophyllum nodosum	40%	
N		Fucus vesiculosus	15%	



Figure 219. Marine rocky intertidal community (left: 26.01a) and high salt marsh (right: 26.01b) in Parcel 26 face E.

Table 185. 26.01b High salt marsh

Obs. pt. 26.01b Form 3: Form 2 occ #: 1
 Community: High salt marsh CEGL code: Alliance code:
 UTM: zone 19 250717 E, 4574042 N Comments: HSM
 Lat: Long: Photo Photo name: 339-339 faceE
 Position method Digital Ortho-Images
 GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
H	50%	Sporobolus pumilus	40%	
H		Sporobolus alterniflorus	7% short form	
H		Limonium carolinianum	2%	
H		Phragmites australis	1%	
H		Salicornia depressa	1%	
U	10%	wrack	10% dead Zostera	

Table 186. 26.01c Marine intertidal gravel/sand beach

Obs. pt. 26.01c Form 3: Form 2 occ #: 1

Community: Marine intertidal gravel/sand beach

CEGL code:

Alliance code:

UTM: zone 19 250685 E, 4574028 N

Comments: MIG/SB

Lat: Long:

Photo Photo name: 333 face E, 335 face E, 334 face W, 336 face W

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
U	100%	sand <2 mm	60%	
U		small rocks <10 cm	40%	<2.5 cm diameter
U		wrack	10%	dead Zostera on sand



Figure 220. Marine intertidal gravel/sand beach in Parcel 26 face W.

Table 187. 26.01d Maritime sand beach

Obs. pt. 26.01d Form 3: Form 2 occ #: 1

Community: "Maritime sand beach"

CEGL code:

Alliance code:

UTM: zone 19 250695 E, 4574023 N

Comments: MB sandy substrate

Lat: Long:

Photo Photo name: 342

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	8%	Honckenya peploides	8%	upper beach
U	100%	sand <2 mm	100%	
U		wrack	5%	dead Zostera



Figure 221. Maritime sand beach (left) and maritime dune (right) in Parcel 26 face E.

Table 188. 26.01e Maritime dunes

Obs. pt. 26.01e Form 3: Form 2 occ #: 1

Community: Maritime dunes

CEGL code:

Alliance code:

UTM: zone 19 250693 E, 4574015 N

Comments: MD

Lat: Long:

Photo Photo name: 340 and 341 face W

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
V2	0.01%, 0.25m Parthenocissus quinquefolia	0.01%		
H	96%, 1m Calamagrostis breviligulata	95%		
H	Raphanus raphanistrum	0.01%		
H	Solidago sempervirens	0.01%		
H	Xanthium strumarium	0.01%		



Figure 222. Maritime dunes (center), maritime sbrubland (left), and maritime sand beach (right) in Parcel 26 face E.

Table 189. 26.01f Maritime shrubland

Obs. pt. 26.01f Form 3: Form 2 occ #: 1

Community: Maritime shrubland C EGL code: Alliance code:

UTM: zone 19 250705 E, 4574011 N Comments: MS

Lat: Long: Photo Photo name: 340 and 341 face W

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS1	90%, 3m	Rosa rugosa	90%	
V	25%, 2m	Celastrus orbiculatus	25%	



Figure 223. Maritime shrubland (left) and maritime dune (right) in Parcel 26 face E.

Parcel 26 Ecological Community Acreage

Table 190. Parcel 26 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
117	0.08	HSM	High salt marsh	CESTINTER	Phragmites 1%
116	0.05	MD	Maritime dunes	CTEROPEN	
114	0.19	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	
468	0.02	MR/P	Mowed roadside/pathway	CTERCULT	road shoulder
115	0.09	MRI	Marine rocky intertidal	CMARINTER	
470	0.10	MS	Maritime shrubland	CTEROPEN	
396	0.35	SMF	Successional maritime forest	CTERFOR	Acer rubrum - Prunus serotina (gnarly)
469	0.10	SSH	Successional southern hardwoods	CTEROPEN	Acer rubrum - Norway Maple - Black Locust
8 polys	0.97 acres	8 types			

Parcel 26 General Description

Parcel 26 is on the north shore of Fishers Island on the shore of Chocomount Cove on the north side of East End Road. The southern half of the parcel is forested and to the north is a small, secluded tidal beach.

Parcel 26 includes small pieces of larger, significant occurrences of two marine natural communities that wrap around most of Fishers Island:

1. Marine rocky intertidal community (EOID 3294) occupying the rocky area between mean low water (MLW) and mean high water (MHW) (Figure 219).
2. Off the parcel to the north in the open waters of Chocomount Cove, is a mapped occurrence of marine eelgrass meadow (EOID 15050).

A small patch of marine rocky intertidal community (EOID 3294) is located on the eastern half of the beach just below mean high water (MHW). At slightly higher elevation, above the rocky intertidal zone, there is a small, flat patch of high salt marsh dominated by salt-meadow cord grass (*Sporobolus pumilus* – 40%) that abruptly changes to successional maritime forest to the south. The west half of the beach has three distinct community zones parallel to the shoreline as follows: the intertidal zone is unvegetated marine intertidal gravel/sand beach (Figure 220); next is a narrow 5-m band of maritime dunes dominated by beach grass (*Calamagrostis breviligulata* – 95%); behind the dune is a narrow band of maritime shrubland dominated by non-native beach rose (*Rosa rugosa* – 90%).

South of the beach is a 0.3-acre successional maritime forest that grades into a successional southern hardwoods back to East End Road.

The maritime dunes in Parcel 26 at point 26.01e has the highest Weighted Floristic Quality Index Score (FQI 17.89) for that community found during our ecology surveys.

Parcel 26 Invasive Plants

Old World reed grass (*Phragmites australis* – 1%) is in the high salt marsh patch at point 26.01b. Oriental bittersweet (*Celastrus orbiculatus* – 25%) and beach rose (*Rosa rugosa* – 90%) are in the maritime shrubland at point 26.01f.

Parcel 26 Management Recommendations

Reducing or eliminating beach rose (*Rosa rugosa*) and Oriental bittersweet (*Celastrus orbiculatus*) in the maritime shrubland in Parcel 26 would greatly improve the floristic quality of the community.

Unfortunately, the beach rose cover may be too dense at 90% cover to successfully eradicate it. The opposite is true for the Old World reed grass in the high salt marsh where it has 1% cover. In this case success of eradication would likely be achieved with much less effort.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 27, Parcel 41, and Parcel 42.



Figure 224. Parcels 27, 41, and 42.

Table 191. 27.10 Successional maritime forest

Obs. pt. 27.01 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 249976 E, 4573539 N

Comments: SMF

Lat: Long:

Photo Photo name: 124,125

Position method GPS

GPS average min, sec.

WAAS

Stratum		Species	comments	Collection	Unsure of ID
T2	50%, 14m	Prunus serotina var. serotina	45% gnarly		
T2		Acer rubrum var. rubrum	5%		
T2		Rhus copallinum var. copallinum	5% tree form, gnarly		
SS1	50%, 6m	Rhus copallinum var. copallinum	45% gnarly		
SS1		Ilex verticillata	5%		
SS2	33%, 2m	Lonicera morrowii	15%		
SS2		Ilex verticillata	10%		
SS2		Vaccinium corymbosum	8%		
V2	22%, 0.2m	Lonicera japonica	15%		
V2		Parthenocissus quinquefolia	5%		
V2		Celastrus orbiculatus	2%		
H	41%, 1m	Dennstaedtia punctilobula	40%		
H		Eurybia divaricata	1%		
H		Solidago rugosa var. rugosa	0.01%		
U	92%	litter and duff	90%		
U		very large rocks >1 m	2%		
U		wood (FWD) <7.5 cm	1%		



Figure 225. Successional maritime forest in Parcel 27 (27.01).

Table 192. 41.01 Coastal oak-hickory forest

Obs. pt. 41.01 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest CEGL code: Alliance code:

UTM: zone 19 250106 E, 4573628 N Comments: Young coastal oak-hickory forest. Successional maritime forest?

Lat: Long: Photo Photo name: 122

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	57%, 14m	Quercus velutina	30%	
T2		Prunus serotina var. serotina	20%	
T2		Carya tomentosa	15%	
T2		Acer rubrum var. rubrum	10%	
T3	15%, 6m	Acer rubrum var. rubrum	5%	
T3		Carya tomentosa	5%	
T3		Prunus serotina var. serotina	5%	
TS1		Frangula alnus	5%	
TS1	16%, 4m	Prunus serotina var. serotina	5%	
TS1		Carya tomentosa	3%	
TS1		Quercus velutina	3%	
TS2	2%, 1m	Quercus velutina	2%	
SS1	17%, 3m	Rhus copallinum var. copallinum	5%	
SS1		Viburnum dentatum var. lucidum	5%	
SS1		Frangula alnus	3%	
SS1		Ilex verticillata	2%	
SS1		Vaccinium corymbosum	2%	
SS2	11%, 1.5m	Frangula alnus	5%	
SS2		Viburnum dentatum var. lucidum	3%	
SS2		Ilex verticillata	2%	
SS2		Lonicera morrowii	1%	
SS2		Vaccinium corymbosum	0.01%	
SS3	6%, 0.4m	Frangula alnus	3%	
SS3		Viburnum dentatum var. lucidum	2%	
SS3		Rhus copallinum var. copallinum	1%	
V2	12%, 0.2m	Parthenocissus quinquefolia	5%	
V2		Toxicodendron radicans ssp. radicans	5%	
V2		Lonicera japonica	2%	
H		Eurybia divaricata	5%	
H	12%	Maianthemum canadense	5%	
H		Solidago rugosa var. rugosa	2%	
H		Lysimachia borealis	0.01%	



Figure 226. Young coastal oak-hickory forest in Parcel 41 (41.01).

Table 193. 42.01 Successional maritime forest in

Obs. pt. 42.01 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250045 E, 4573582 N

Comments: SMF with gnarly *Prunus serotina*.

Lat: Long:

Photo Photo name: 123

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	68%, 12m	<i>Prunus serotina</i> var. <i>serotina</i>	65%	
T2		<i>Robinia pseudoacacia</i>	8%	
T3	10%, 7m	<i>Prunus serotina</i> var. <i>serotina</i>	5%	
T3		<i>Robinia pseudoacacia</i>	5%	
TS1	5%, 4m	<i>Robinia pseudoacacia</i>	5%	
SS1	35%, 3m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	30%	
SS1		<i>Ilex verticillata</i>	5%	
SS2	6%, 1.5m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	5%	
SS2		<i>Ligustrum vulgare</i>	1%	
SS3	0.01%, 0.5m	<i>Lonicera morrowii</i>	0.01%	
V2	35%, 0.15m	<i>Parthenocissus quinquefolia</i>	20%	
V2		<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	10%	
V2		<i>Lonicera japonica</i>	5%	
V2		<i>Smilax rotundifolia</i>	0.01%	
H	7%	<i>Maianthemum canadense</i>	3%	
H		<i>Lysimachia quadrifolia</i>	2%	
H		<i>Lysimachia borealis</i>	1%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	1%	
U	95%	litter and duff	90%	
U		very large rocks >1 m	7%	
U		wood (FWD) <7.5 cm	5%	
U		wood (CWD) >7.5 cm	2%	



Figure 227. Successional maritime forest in Parcel 42 (42.01).

Parcel 27, Parcel 41, and Parcel 42 Ecological Community Acreage

Parcel 27, Parcel 41, and Parcel 42 are included in the Parcel 32 Ecological Community Acreage Assessment (Table 215, Figure 256).

Parcel 27, Parcel 41, and Parcel 42 General Description

Parcel 27, Parcel 41, and Parcel 42 are three neighboring parcels of similar size located next to each other on the south side of Barlow Pond Lane. All three parcels have road frontage with Parcel 42 in the center; parcel 27 to the southwest and Parcel 41 to the east. We successfully sampled the vegetation in the center of each of the three parcels despite the dense thicket of vines (12-35%) and shrubs (35-90%).

All three parcels are forested as follows: the west halves of Parcels 27 and 42 are successional maritime forest and the east halves are red maple-blackgum slope forest (see Parcel 32). Parcel 41 is coastal oak-hickory forest to the northwest at point 41.01, and successional maritime forest to the southeast and into Parcel 32. The coastal oak-hickory forest in Parcel 41 at point 41.01 has a higher Weighted Floristic Quality Index Score (FQI 19.62) compared to points 27.01 (FQI 15.32) and 42.01 (FQI 12.34) in the successional maritime forest.

The successional maritime forest tree canopy in all three parcels is stunted (12-14 m tall) and many of the trees have twisted trunks and low gnarly branches, especially black cherry (*Prunus serotina*), that are characteristic of this community.

Parcel 27, Parcel 41, and Parcel 42 Invasive Plants

Parcel 27 invasives: Oriental bittersweet (*Celastrus orbiculatus* – 2%), Japanese honeysuckle (*Lonicera japonica* – 15%), and Morrow’s honeysuckle (*Lonicera morrowii* – 15%).

Parcel 41 invasives: Glossy buckthorn (*Frangula alnus* – 16%), Japanese honeysuckle (*Lonicera japonica* – 2%), and Morrow’s honeysuckle (*Lonicera morrowii* – 1%).

Parcel 42 invasives: Privet (*Ligustrum vulgare* – 1%), Japanese honeysuckle (*Lonicera japonica* – 5%), Morrow’s honeysuckle (*Lonicera morrowii* – <1%), and black locust (*Robinia pseudoacacia* – 18%).

Parcel 27, Parcel 41, and Parcel 42 Management Recommendations

The coastal oak-hickory forest in Parcel 41 should be the priority location for invasive plant management of these three parcels, because native species are more abundant and invasives have less cover.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 29. West Harbor



Figure 228. Parcel 29: West Harbor.

Table 194. 29.01 Marine intertidal gravel/sand beach

Obs. pt. 29.01 Form 3: Form 2 occ #: 1
 Community: Marine intertidal gravel/sand beach CEGL code: Alliance code:
 UTM: zone 19 249245 E, 4573191 N Comments: MIG/SB cobble substrate. 8 m wide band with 4 m exposed above water line.
 Lat: Long: Photo Photo name: 161 face N, 162 face S
 Position method Digital Ortho-Images
 GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
U	98%	small rocks <10 cm	88%	
U		large rocks >10 cm	12%	
U		wrack	3%	dead Zostera and marine algae
U		shells	0.01%	



Figure 229. Marine intertidal gravel/sand beach in Parcel 29 (29.01) face S.

Table 195. 29.02 Marine intertidal gravel/ sand beach

Obs. pt. 29.02 Form 3: Form 2 occ #:
 Community: Marine intertidal gravel/sand beach (wr) CEGL code: Alliance code:
 UTM: zone 19 249245 E, 4573191 N Comments: Zostera wrack zone 1.75 m wide
 Lat: Long: Photo Photo name: 161, 162
 Position method Digital Ortho-Images
 GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
U	99%	wrack	99%	dead Zostera
U		green filamentous alga wrack	0.01%	
U		trash	0.01%	



Figure 230. Marine intertidal gravel/ sand beach in Parcel 29 (29.02) face N.

Table 196. 29.03 Maritime rocky beach

Obs. pt. 29.03 Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach"

CEGL code:

Alliance code:

UTM: zone 19 249259 E, 4573191 N

Comments: Maritime rocky beach - cobble substrate. 3 m wide. Storm overwash into CSP

Lat: Long:

Photo Photo name: 163, 164

Position method

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	2%, 0.7m Baccharis halimifolia	1%		
SS2	Iva frutescens	1%		
H	8% Solidago sempervirens	8%		
H	Panicum virgatum	0.01%		
U	98% large rocks >10 cm	65%		
U	shells	15%		
U	wrack	10% dead Zostera		
U	wood (CWD) >7.5 cm	6% drift logs and one cut timber		
U	small rocks <10 cm	3%		
U	wood (FWD) <7.5 cm	3%		



Figure 231. Maritime rocky beach in Parcel 29 (29.03): Left: face E; Right: face SE.

Table 197. 29.04 Coastal salt pond

Obs. pt. 29.04 Form 3: Form 2 occ #: 1

Community: Coastal salt pond

CEGL code:

Alliance code:

UTM: zone 19 249255 E, 4573191 N

Lat: Long:

Comments: CSP degraded, not connected to sound. H cover represents CSP shore margin/zone 5-10+ m wide band. Red maple/blackcherry behind Phragmites to E - not accessible.

Photo Photo name: 165

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	98% Phragmites australis	90% back 3 sides of CSP 5-10+ m band		
H	Sporobolus pumilus	20%		
U	98% water	95%		
U	wrack	50% dead Zostera in water column		
U	wood (CWD) >7.5 cm	12% margin		
U	small rocks <10 cm	5%		
U	wood (FWD) <7.5 cm	5% margin		
U	shells	0.01%		
U	trash	0.01%		



Figure 232. Coastal salt pond in Parcel 29 (29.04).

Table 198. 29.05a Maritime rocky beach (vegetated)

Obs. pt. 29.05a Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach - vegetated" CEGL code: Alliance code:

UTM: zone 19 249235 E, 4573135 N Comments: Dune appearance on cobble substrate.
 Lat: Long: Photo Photo name: 167, 168
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	5%, 2.5m Prunus serotina var. serotina	5%		
SS2	10%, 1.5m Lonicera morrowii	10%		
SS3	2%, 0.4m Rosa rugosa	2%		
V2	20%, 0.25m Toxicodendron radicans ssp. radicans	20%		
H	42% Sporobolus pumilus	35% ID determined by Steve Young (Feb. 2022).	collect:Y	
H	Solidago sempervirens	5%		
H	Lathyrus japonicus var. maritimus	1%		
H	Raphanus raphanistrum	1%		



Figure 233. Maritime rocky beach (vegetated) in Parcel 29 (29.05a).

Table 199. 29.05b and 29.06 Maritime shrubland

Obs. pt. 29.05b Form 3: Form 2 occ #: 1

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 249235 E, 4573135 N

Comments: Maritime shrubland tall

Lat: Long:

Photo Photo name: 166

Position method GPS

Stratum	Species	comments	Collection	Unsure of ID
TS1 2%, 2.2m	Prunus serotina var. serotina	2%		
SS1 55%, 2m	Rosa rugosa	50%		
SS1	Lonicera morrowii	5%		
SS2 25%, 1m	Rosa rugosa	25%		
V	Celastrus orbiculatus	5%		
V 10%, 2.2m	Toxicodendron radicans ssp. radicans	5%		
H 3%	Solidago sempervirens	3%		

Obs. pt. 29.06 Form 3: Form 2 occ #: 1

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 249237 E, 4573230 N

Comments: Maritime shrubland tall - mostly native.

Lat: Long:

Photo Photo name: 169, 170, 171

Position method GPS

GPS average 540 readings WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1 15%, 5m	Prunus serotina var. serotina	15%		
SS1 43%, 3m	Morella caroliniensis	30% 3 m		
SS1	Rhus copallinum var. copallinum	6%		
SS1	Lonicera morrowii	5%		
SS1	Baccharis halimifolia	2%		
SS2 13%, 1.5m	Morella caroliniensis	10%		
SS2	Lonicera morrowii	3%		
SS3 8%, 0.5m	Morella caroliniensis	8%		
V 24%, 2m	Smilax glauca	12%		
V	Parthenocissus quinquefolia	8%		
V	Celastrus orbiculatus	2%		
V	Clematis virginiana	2%		
H 11%, 1.3m	Solidago sempervirens	5%		
H	Panicum virgatum	3%		
H	Raphanus raphanistrum	3%		



Figure 234. Maritime shrubland in Parcel 29 (29.05b and 29.06): Left: face NE; Center: face E; Right: face SE.

Parcel 29 Ecological Community Acreage

Table 200. Parcel 29 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
264	0.08	CSP	Coastal salt pond	CEST	small, disturbed, no outlet
263	0.36	ERGM	Estuarine reed grass marsh	CESTCULT	Phragmites 90%; around CSP
103	0.28	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	cobble substrate; Marine subtidal sand flats to W
102	0.01	ML	Mowed lawn	CTERCULT	neighbor lawn encroaching?
259	0.04	MR/P	Mowed roadside/pathway	CTERCULT	
258	0.02	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated; cobble substrate
260	0.06	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated; cobble substrate
262	0.06	MRI	Marine rocky intertidal	CMARINTER	or MIG/SB?
261	0.05	MS	Maritime shrubland	CTEROPEN	tall
104	0.83	SMF	Successional maritime forest	CTERFOR	
10 polys	1.79 acres	9 types			

Parcel 29 General Description

Parcel 29 is on the north shore of Fishers Island on the east shore of West Harbor. Parcel 29 is also on the west side of Clay Pond Road and about 200 m west of Barlow Pond.

The most prominent feature of Parcel 29 is the small coastal salt pond at the center of the parcel. Unfortunately, it is surrounded on three sides (N, E, and S) by a dense estuarine reed grass marsh dominated by tall Old World reed grass (*Phragmites australis*). The east side of the *Phragmites* marsh is surrounded by successional maritime forest that extends a short distance east to Clay Pond Road.

The shoreline communities are in better shape than the salt pond. A small patch of marine rocky intertidal community (EOID 3294) is located at the northwest corner of the parcel property line occupying the rocky area between mean low water (MLW) and mean high water (MHW). South of the rocky area in the same tidal zone is a marine intertidal gravel/sand beach that runs along the west parcel boundary line for about 130 m, but this community continues off Parcel 29 for about 0.5 mi. north to Clay Point and 0.2 mi. to the south.

At slightly higher elevation above MHW it becomes a vegetated maritime rocky beach. Point 29.03 sampled on this beach has the highest Weighted Floristic Quality Index Score (FQI 9.2) for that community found during our ecology surveys. This type is typically unvegetated elsewhere on Fishers Island.

At the south end of the parcel behind the rocky beach is a maritime shrubland. Despite its small size the maritime shrubland in Parcel 29 at point 29.06 has the highest Weighted Floristic Quality Index Score (FQI 18.05) for that community found during our ecology surveys.

Parcel 29 includes small pieces of larger, significant occurrences of two marine natural communities that wrap around most of Fishers Island:

1. Marine rocky intertidal community (EOID 3294) occupying the rocky area between mean low water (MLW) and mean high water (MHW).

2. In deeper water just beyond the rocky intertidal zone in West Harbor is a mapped occurrence of marine eelgrass meadow (EOID 15050).

Lastly, Parcel 29 Landscape Condition Analysis Score of 419.84 (#20 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel 29 Invasive Plants

The stand of Old World reed grass (*Phragmites australis* – 90%) around the pond in Parcel 29 is one of the two largest patches found on Land Trust parcels during our ecology surveys. The other large stand is on Parcel 37 at point 37.04 with 95% cover.

Parcel 29 Invasives by Observation Point:

Maritime rocky beach (vegetated) point 29.05a: Morrow's honeysuckle (*Lonicera morrowii* – 10%) and Beach rose (*Rosa rugosa* – 2%).

Maritime shrubland point 29.05b: Beach rose (*Rosa rugosa* – 75%), Morrow's honeysuckle (*Lonicera morrowii* – 5%), and Oriental bittersweet (*Celastrus orbiculatus* – 5%).

Maritime shrubland point 29.06: Morrow's honeysuckle (*Lonicera morrowii* – 8%) and Oriental bittersweet (*Celastrus orbiculatus* – 2%).

Parcel 29 Management Recommendations

The invasive plants in Parcel 29 seem overwhelming. Ideally, the coastal salt pond shore would be restored to a high salt marsh fringe surrounded by a taller backdrop of salt shrub and maritime shrubland like the coastal salt pond at point 25.05a on Stony Beach (Figure 203).

At a minimum, it would be good to maintain the current high floristic quality of points 29.03 (vegetated maritime rocky beach) and 29.06 (maritime shrubland) by reducing or preventing the further spread of invasive plants at these locations.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 30.



Figure 235. Parcel 30.

Parcel 30. Mid-1920s Air Photo



Figure 236. Parcel 30 mid-1920s Air Photo. Note grassy openings between clumps of trees in Parcel 30 south of East End Road. The salt marsh south of the parcel with meandering saltwater tidal creek has been converted to a pond since this photo was taken.

Table 201. 30.01 Successional maritime forest

Obs. pt. 30.01 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 252652 E, 4574265 N

Comments: SSH//SMF? Open woodland with widely spaced large crown trees with dense vines blanketing the shrubs in between. Successional southern hardwoods?

Lat: Long:

Photo Photo name: 157

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	25%, 16m	Prunus serotina var. serotina	25%	
T3	10%, 5m	Rhus typhina	10%	
SS1	15%, 2m	Rhus copallinum var. copallinum	10%	
SS1		Rhus typhina	5%	
SS2	5%, 1m	Rubus allegheniensis	5%	
V	80%, 1.5m	Ampelopsis glandulosa	60%	
V		Lonicera japonica	10%	
V		Smilax rotundifolia	10%	
H	6%, 1.5m	Reynoutria japonica	5%	
H		Artemisia vulgaris	1%	
H		Solidago rugosa var. rugosa	0.01%	



Figure 237. Successional maritime forest in Parcel 30 (30.01).

Table 202. 30.02 Coastal oak-hickory forest

Obs. pt. 30.02 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 252582 E, 4574234 N

Lat: Long:

Comments: Large multi-trunk trees, big crown non-overlapping. No *Carya*. Vines blanket shrub layer - shrubs unidentifiable cannot see, maybe dead. "Coastal oak-red maple-black cherry forest"

Photo Photo name: 158

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	80%, 25m	<i>Quercus velutina</i>	60%	
T2		<i>Acer rubrum</i> var. <i>rubrum</i>	20%	
T3	8%, 14m	<i>Prunus serotina</i> var. <i>serotina</i>	8%	
TS1	5%, 4m	<i>Prunus serotina</i> var. <i>serotina</i>	3%	
TS1		<i>Frangula alnus</i>	2%	
SS1	5%, 3m	<i>Rubus allegheniensis</i>	5%	
V	85%, 3.5m	<i>Smilax rotundifolia</i>	80%	vines 2-5 m tall
V		<i>Ampelopsis glandulosa</i>	5%	
H		<i>Artemisia vulgaris</i>	1%	
H	2%, 1m	<i>Solidago rugosa</i> var. <i>rugosa</i>	1%	



Figure 238. Coastal oak-hickory forest in Parcel 30 (30.02).

Table 203. 30.03 Successional vineland

Obs. pt. 30.03 Form 3: Form 2 occ #: 1

Community: "Successional vineland"

CEGL code:

Alliance code:

UTM: zone 19 252536 E, 4574209 N

Lat: Long:

Comments: Opening to south at phone pole #6012. Vines blanket shrub layer - shrubs unidentifiable cannot see, maybe dead. "Successional vineland"?

Photo Photo name: 159

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS2	Rubus allegheniensis			
V	70%, 4m Ampelopsis glandulosa	70%		
V	Lonicera japonica	20%		
H	Phytolacca americana	5%		
H	Artemisia vulgaris	1%		



Figure 239. Successional vineland in Parcel 30 (30.03).

Parcel 30 Ecological Community Acreage

Table 204. Parcel 30 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
455	0.16	MR/P	Mowed roadside/pathway	CTERCULT	
456	0.01	MR/P	Mowed roadside/pathway	CTERCULT	
457	0.10	PR/P	Paved road/path	CTERCULT	
454	2.50	SSH//SUC.S vineland	Successional southern hardwoods//SUC.S	CTERFOR	Large multi-trunk trees, big crown non-overlapping
459	0.47	SSH//SUC.S vineland	Successional southern hardwoods//SUC.S	CTERFOR	Large multi-trunk trees, big crown non-overlapping
458	0.72	SSH?	Successional southern hardwoods?	CTERFOR	steep to water S end
452	0.41	SUC.S	Successional shrubland	CTEROPEN	mowed lawn on 2001 air photo
451	0.17	tennis court abandon	tennis court abandoned	CTERCULT	abandoned tennis court; visible on 2001 air photo
453	0.04	UR/P	Unpaved road/path	CTERCULT	road visible on 2003 air photo; unmaintained 2021
9 polys	4.57 acres	7 types			

Parcel 30 General Description

The vegetation in Parcel 30 is a result of its past land-use history. On the mid-1920s black and white air photo this area shows scattered clumps of trees with open areas in between (perhaps grassland or pasture? Figure 236). In addition, the pond south of Parcel 30 was a salt marsh with a meandering saltwater tidal creek on this photo. Parcel 30 is depicted as forested on the circa 1958 USGS 7.5 minute topographic map. Since the 1920s and 1950s the open areas between the trees have filled in with tall shrubs that are blanketed with a dense cover of vines, often killing the shrubs. The large, broad crowns of the widely-spaced trees have extended into the open areas forming “domed-shaped tree islands” in the thicket that is easy to see on a color-infrared air photo (Figure 240)

Parcel 39 appears to have an overgrown, abandoned tennis court that is visible on 2003 air photos.

Parcel 30 Invasive Plants

Invasive vines are abundant in Parcel 30 (70-90% cover; 1.5-4 m height on shrubs):

Point 30.01: Porcelain berry (*Ampelopsis brevipedunculata* – 60%) and Japanese honeysuckle (*Lonicera japonica* – 10%).

Point 30.02: Porcelain berry (*Ampelopsis brevipedunculata* – 5%), glossy buckthorn (*Frangula alnus* – 2%), and native greenbrier (*Smilax rotundifolia* – 80%).

Point 30.03: Porcelain berry (*Ampelopsis brevipedunculata* – 70%) and Japanese honeysuckle (*Lonicera japonica* – 20%).

Parcel 30 Management Recommendations

The invasive vines in Parcel 30 are overwhelming. It may be impossible to restore Parcel 30 to a natural community dominated by native species without sufficient resources to do so.

See APPENDIX A. Invasive Species Control Information available online.



Figure 240. Parcel 30 showing large crown trees with bright red vine-covered shrubs filling the interstitial space. These vine-covered areas appear as open grassland or pasture on the mid-1920s air photo.

Parcel 30 Future Surveys

Due to the impenetrable, dense shrub and vine thickets in Parcel 30, the forest was surveyed by looking in from the paved bike path along the north edge of the parcel at points 30.01, 30.02, and 30.03. The southern half of the parcel was mapped based on air photo interpretation and its extent and condition needs to be evaluated.

Parcel 31.



Figure 241. Parcel 31.

Parcel 31. Mid-1920s Air Photo and 2020 CIR Air Photo

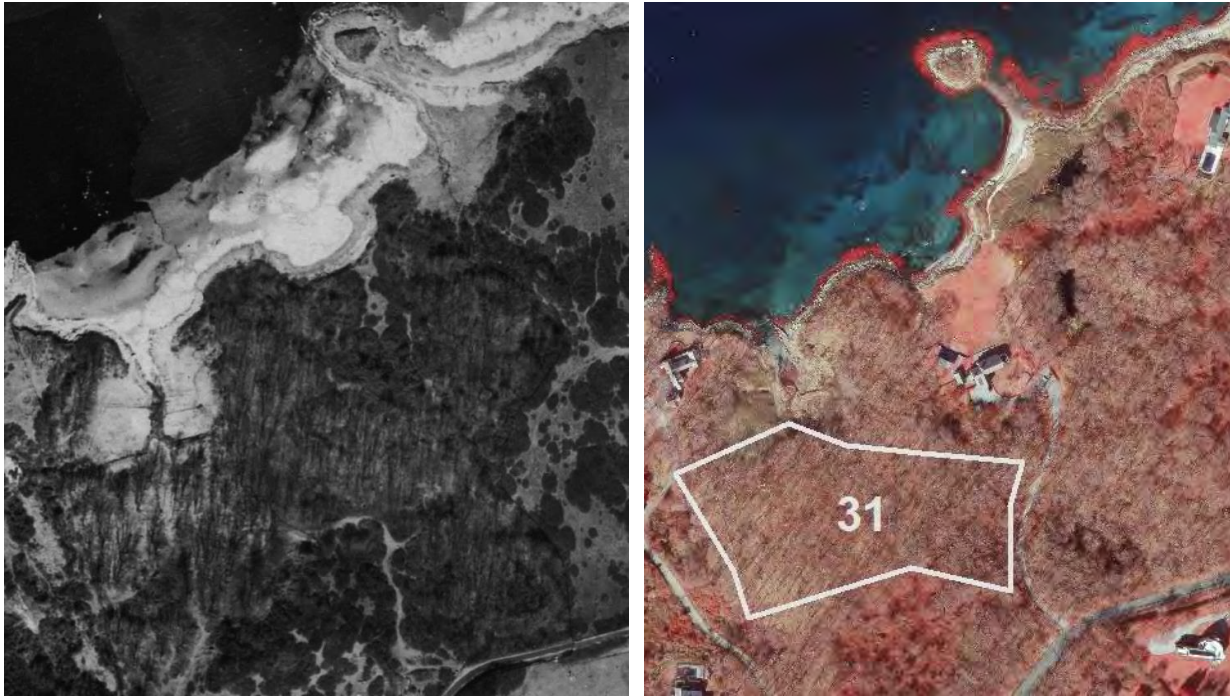


Figure 242. Parcel 31. Left: mid-1920s; Right: 2020. Note glacial erratic at center top of each photo; bend in East End Road in lower right corner; and apparent beach loss on north shore .

Parcel 31 and the FIDCO parcel to the east of Parcel 31 may have been continuously forested, and perhaps uncut, for the last 100 years. This area is depicted as forested on the circa 1958 USGS 7.5 minute topographic map, and is among the few forested areas on the mid-1920s black and white air photo (Figure 242).

Table 205. 31.01 Coastal oak-hickory forest

Obs. pt. 31.01 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 252235 E, 4574249 N

Lat: Long:

Comments: Coastal oak-hickory forest with very tall, straight, large trees and dense vine ground layer. Successional maritime forest?

Photo Photo name: 160 face W, 161 face W

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>		<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	68%, 32m	<i>Quercus velutina</i>	55% 75-100		
T2		<i>Acer rubrum</i> var. <i>rubrum</i>	25%		
T2		<i>Carya glabra</i>	6% 5 leaflets, smooth twigs, not shagbark; ID confirmed by Steve Young (Feb. 2022).		
SS3	2%, 0.5m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	2%		
V	90%, 3.25m	<i>Smilax rotundifolia</i>	80%		
V		<i>Lonicera japonica</i>	5%		
V		<i>Parthenocissus quinquefolia</i>	5%		



Figure 243. Coastal oak-hickory forest in Parcel 31 (31.01).



Figure 244. 60 cm DBH yellow birch (*Betula alleghaniensis*) or sweet birch (*Betula lenta*) at point 31.02.

Table 206. 31.02 Coastal oak-hickory forest

Obs. pt. 31.02 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 252310 E, 4574253 N

Comments: Coastal oak-hickory forest with very tall, straight, impressively large trees and patchy vine ground layer. Slope:12 degrees.Aspect: 28 degrees.

Lat: Long:

Photo Photo name: 162 face E to 82 cm dbh Q. vel, 163 face W, 164-166 Betula

Position method GPS

GPS average min, sec. WAAS

Stratum		Species	comments	Collection	Unsure of ID
T2	57%, 32m	Quercus velutina	40% collect lvs and acorns; ID confirmed by Steve Young (Feb. 2022).	collect:Y	
T2		Acer rubrum var. rubrum	15%		
T2		Betula alleghaniensis	15% or B. lenta?		ID uncertain
T3		Acer rubrum var. rubrum	10%		
T3	20%, 15m	Carya tomentosa	10% 9 leaflets, hairy twigs and petioles; ID confirmed by Steve Young (Feb. 2022).	collect:Y	
TS1	5%, 4m	Prunus serotina var. serotina	5%		
TS3	1%, 0.5m	Acer rubrum var. rubrum	1%		
SS1	5%, 3m	Viburnum dentatum var. lucidum	5%		
SS2	5%, 1.7m	Ilex verticillata	5%		
SS3	1%, 0.1m	Ilex verticillata	1%		
SS3		Viburnum dentatum var. lucidum	0.01%		
V	30%, 1.25m	Smilax rotundifolia	30% 0.5-2 m tall		
H	6%, 0.5m	Dennstaedtia punctilobula	5%		
H		Lysimachia borealis	0.01%		
H		Maianthemum canadense	0.01%		
H		Pyrola elliptica	0.01%		
U	98%	litter and duff	90%		
U		wood (FWD) <7.5 cm	8%		
U		wood (CWD) >7.5 cm	5%		



Figure 245. Coastal oak-hickory forest in Parcel 31 (31.02).

Parcel 31 Ecological Community Acreage

Table 207. Parcel 31 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
1	4.80	CO-HF	Coastal oak-hickory forest	CTERFOR	roads E, W sides; wetland N edge? Rock wall W edge
253	0.14	ERGM	Estuarine reed grass marsh	CESTCULT	not surveyed 2021
2 polys	4.94 acres	2 types			

Parcel 31 General Description

Parcel 31 is located on the north side of East Ed Road and east of Brook Point Road. The nearly 5-acre parcel is almost entirely forested, excepted for a small patch of estuarine reed grass marsh dominated by Old World reed grass (*Phragmites australis*) in the northwest corner. The forest is classified as coastal oak-hickory forest dominated by large black oak (*Quercus velutina* – 40%; 65 to 100 cm DBH) along with yellow birch (*Betula alleghaniensis* – 15%; 60 cm DBH) and red maple (*Acer rubrum* – 15%); with mockernut hickory (*Carya tomentosa* – 10%) and pignut hickory (*Carya glabra* – 6%) in the subcanopy. Native shrubs include arrowwood (*Viburnum dentatum*) and winterberry (*Ilex verticillata*); and the vine layer (62%) is co-dominated by greenbrier (*Smilax rotundifolia* – 30-80%) and poison ivy (*Toxicodendron radicans* – 35%).

There appears to be a rock wall just inside, and parallel to, the western property line of Parcel 31 on the 2020 air photo.

Parcel 31 Invasive Plants

Other than the Old World reed grass in the northwest corner of the property, Japanese honeysuckle (*Lonicera japonica* – 5%) in the forest at point 31.01 was the only other invasive found in the parcel.

Parcel 31 Management Recommendations

Removing Japanese honeysuckle (*Lonicera japonica*) from the coastal oak-hickory forest would improve the floristic quality of the forest, since it is the only invasive recorded and currently has relatively low percent cover (5%) at point 31.01.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 31 Future Surveys

It appears that the large black oak trees are mostly in the eastern half of the parcel on air photos. The western half of the parcel needs to be surveyed to assess its condition and to confirm its inclusion with the coastal oak-hickory forest to the east.

Large black oak trees (>100 cm DBH) continue to the east off Parcel 31 onto FIDCO land. It also looks like there is a small red maple-blackgum swamp with large blackgum (*Nyssa sylvatica*) trees on FIDCO property east of Parcel 31. This area looks to be in very good condition and worthy of ecological survey.

Parcel 32.



Figure 246. Parcel 32.

Table 208. 32.01 Successional old field (*Schizachyrium scoparium*)

Obs. pt. 32.01 Form 3: Form 2 occ #: 1

Community: "Successional old field (Schizachyrium CEGL code:

Alliance code:

UTM: zone 19 250172 E, 4573530 N

Lat: Long:

Comments: SOF Schizachyrium scoparium dominant. Carex pen? present in field to east nearby. Short shrubs abundant, but overtopped by dominant little bluestem. Successional shrubland?

Photo Photo name: 111 face E, 110 face W, 121

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	5%, 1m	Prunus serotina var. serotina	5%	
TS3	3%, 0.5m	Prunus serotina var. serotina	3%	
SS2	25%, 0.9m	Rhus copallinum var. copallinum	20%	
SS2		Viburnum dentatum var. lucidum	3%	
SS2		Morella caroliniensis	2% 0.75 m tall	
SS3	70%, 0.4m	Rubus flagellaris	35%	
SS3		Rhus copallinum var. copallinum	15%	
SS3		Lonicera morrowii	2%	
SS3		Viburnum dentatum var. lucidum	2%	
V2	17%, 0.25m	Lonicera japonica	15%	
V2		Celastrus orbiculatus	2%	
V2		Clematis virginiana	0.01%	
H	66%, 1m	Schizachyrium scoparium var. scopari	60% overtopping short shrubs	
H		Agrostis capillaris	3%	
H		Solidago rugosa var. rugosa	3%	



Figure 247. Successional old field (*Schizachyrium scoparium*) in Parcel 32 (32.01).

Table 209. 32.02 Shrub swamp (*Clethra alnifolia*)

Obs. pt. 32.02 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Clethra alnifolia*)" CEGL code: Alliance code:

UTM: zone 19 250080 E, 4573418 N Comments: SS? Dense tall *Clethra* upland thicket around pond to edge of water.

Lat: Long: Photo Photo name: 112

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	30%, 3m	<i>Clethra alnifolia</i>	30%	
SS2	45%, 1.5m	<i>Clethra alnifolia</i>	45%	
SS3	10%, 0.5m	<i>Clethra alnifolia</i>	10%	
U	98%	litter and duff	98%	



Figure 248. Shrub swamp (*Clethra alnifolia*) in Parcel 32 (32.02).

Table 210. 32.03 Shrub swamp (*Decodon verticillatus*)

Obs. pt. 32.03 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Decodon verticillatus*)"

CEGL code:

Alliance code:

UTM: zone 19 250076 E, 4573447 N

Lat: Long:

Comments: Tall *Decodon verticillatus* SS 20 m x 50 m surrounded by dense tall *Clethra alnifolia* and *Lyonia ligustrina*.

Photo Photo name: 113 shows *Clethra* SS around *Decodon* SS

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS1	80%, 2.5m <i>Decodon verticillatus</i>	80%		
U	water	98% 0.5 m deep		



Figure 249. Shrub swamp (*Decodon verticillatus*) in Parcel 32 (32.03).

Table 211. 32.04 Shrub swamp (*Clethra alnifolia*)

Obs. pt. 32.04 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Clethra alnifolia*)" CEGL code: Alliance code:

UTM: zone 19 250076 E, 4573447 N Comments: SS co-dominated by *Clethra alnifolia* and *Lyonia ligustrina*.

Lat: Long: Photo Photo name: 113 shows *Clethra* SS around Decodon SS

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	3%, 6m	<i>Acer rubrum</i> var. <i>rubrum</i>	3%	
SS1	90%, 4m	<i>Clethra alnifolia</i>	70%	
SS1		<i>Ilex verticillata</i>	10%	
SS1		<i>Lyonia ligustrina</i>	10%	
SS2	35%, 1.5m	<i>Clethra alnifolia</i>	25%	
SS2		<i>Ilex verticillata</i>	5%	
SS2		<i>Lyonia ligustrina</i>	5%	
SS3	5%, 0.5m	<i>Clethra alnifolia</i>	5%	
U	8%	wood (CWD) >7.5 cm	8%	

See Figure 249 at point 32.03.

Table 212. 32.05 Coastal oak-hickory forest

Obs. pt. 32.05 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 250105 E, 4573388 N

Comments: Coastal oak-hickory forest grades into RM-BGS around pond. Flat.

Lat: Long:

Photo Photo name: 114 face E, 115 face W

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	70%, 27m	Quercus velutina	60%	
T2		Carya glabra	15%	Dying top, not Carya ovata
T3	15%, 6m	Acer rubrum var. rubrum	5%	6 m tall
T3		Nyssa sylvatica	5%	6-14 m tall
T3		Quercus velutina	5%	14 m
TS1	10%, 2.5m	Acer rubrum var. rubrum	3%	
TS1		Quercus velutina	3%	
TS1		Juniperus virginiana var. virginiana	2%	
TS1		Quercus alba	2%	
TS2	8%, 0.7m	Nyssa sylvatica	3%	1.5-2 m tall
TS2		Prunus serotina var. serotina	2%	
TS2		Quercus velutina	2%	
TS2		Carya glabra	1%	1 m tall, 7 leaflets, smooth twig, photos 116,117; ID determined by Steve Young (Feb. 2022).
TS2		Acer rubrum	0.01%	
TS2		Juniperus virginiana var. virginiana	0.01%	
TS3	3%, 0.2m	Prunus serotina var. serotina	2%	
TS3		Amelanchier sp.	0.01%	ID uncertain
TS3		Carya glabra	0.01%	ID uncertain
TS3		Juniperus virginiana var. virginiana	0.01%	
TS3		Quercus velutina	0.01%	
SS1	25%, 2.25m	Clethra alnifolia	20%	
SS1		Vaccinium corymbosum	5%	
SS2	12%, 1m	Clethra alnifolia	10%	
SS2		Frangula alnus	2%	
SS3	7%, 0.2m	Clethra alnifolia	5%	
SS3		Clethra alnifolia	5%	
SS3		Frangula alnus	1%	
SS3		Rubus pubescens	1%	ID uncertain
SS3		Viburnum dentatum var. lucidum	0.01%	
V2	4%, 0.2m	Parthenocissus quinquefolia	3%	
V2		Lonicera japonica	0.01%	
V2		Smilax glauca	0.01%	
V2		Toxicodendron radicans ssp. radicans	0.01%	on Carya
H		Carex sp.	1%	
H	4%	Maianthemum canadense	1%	
H		Carex swanii	0.01%	
H		Chimaphila maculata	0.01%	
H		Lysimachia borealis	0.01%	
H		Lysimachia quadrifolia	0.01%	
H		Nabalus trifoliolatus	0.01%	ID uncertain
U	98%	litter and duff	95%	oak leaves
U		wood (FWD) <7.5 cm	7%	
U		wood (CWD) >7.5 cm	5%	



Figure 250. Coastal oak-hickory forest in Parcel 32 (32.05): Left: face W; Right: face E.



Figure 251. Pignut hickory (*Carya glabra*) at point 32.05: Left: seedling with 7 leaflets per leaf; Right: terminal bud.

Table 213. 32.06 Shrub swamp (*Decodon verticillatus*) and Eutrophic pond

Obs. pt. 32.06 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Decodon verticillatus*)" CEGL code: Alliance code:

UTM: zone 19 250090 E, 4573385 N

Lat: Long:

Comments: Pond edge flooded by hurricane Ida last night. 5 m wide band of *Decodon verticillatus* dominated SS around pond shore with dense tall *Clethra alnifolia* SS back behind (see photo 118).

Photo Photo name: 118

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2 80%, 1m	<i>Decodon verticillatus</i>	80%		
U 100%	water	100% >0.5 m deep		

Obs. pt. 32.07 Form 3: Form 2 occ #: 1

Community: Eutrophic pond CEGL code: Alliance code:

UTM: zone 19 250086 E, 4573388 N

Lat: Long:

Comments: *Hydrocotyle umbellata* patch by rock in water on pond shore under low hanging *Nyssa* branches. Hyd umb tally: 150 lvs no flowers 1 m x 3 m patch; cont. S along shore

Photo Photo name: 119,120

Position method GPS

GPS average 300 readings WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2 5%, 1m	<i>Decodon verticillatus</i>	5%		
V2 5%	<i>Solanum dulcamara</i>	5%		
A1	<i>Hydrocotyle umbellata</i>	3%		
A1 6%	<i>Ludwigia palustris</i>	3%		
A1	<i>Bidens frondosa</i>	0.01%		ID uncertain
A1	<i>Leersia oryzoides</i>	0.01%		



Figure 252. Shrub swamp (*Decodon verticillatus*) around margin of eutrophic pond in Parcel 32 (32.06 and 32.07).

Obs. pt. 32.08 ref Form 3: Form 2 occ #:

Community: Shallow emergent marsh

CEGL code:

Alliance code:

UTM: zone 19 250036 E, 4573292 N

Lat: 41.07140646 Long: -71.8539253

Comments: Perch Pond (aka "Borland Pond" per SteveYoung) north side of main road. Obs. Point on wood guard rail. Sign: "Fragile Area Stay Out" (photo 306). Thin *Typha latifolia*/*Bidens* SEM fringes shore. SUC.S along road margin. Reference point. Vegetation cover data not collected.

Photo Photo name: 303 and 304 face N, 305-308

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	<i>Bidens</i> sp.			
H	<i>Symphotrichum novae-angliae</i>	photo 305		
H	<i>Typha latifolia</i>			
A2	<i>Hydrocotyle umbellata</i>	photos 307-308; 2-5 m fringe at water edge whole south shore		



Figure 253. Perch Pond (aka "Borland Pond") in Parcel 32 (32.08).



Figure 254. Shallow emergent marsh at the south shore of Perch Pond (aka "Borland Pond") in Parcel 32 (32.08): Left: face; Right: face W New England aster (*Symphotrichum novae-angliae*).

Table 214. 32.09 Successional maritime forest

Obs. pt. 32.09 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 249954 E, 4573353 N
 Lat: Long:

Comments: Point at three parcel junction (Borland to SW, Haver to N; 32 to E) at property boundary stick (photo 309 face N). West of Perch Pond. Walk north along west property line of Parcel 32 to "Y" property junction. Weedy SMF//SUC.S in all directions. Widely spaced large black oak and red maple with dense tall shrubs in between. Not wetland in low areas. Successional shrubland?

Photo Photo name: 309 face N, 310 general shot

Position method GPS

GPS average min, sec. WAAS

Stratum		Species	comments	Collection	Unsure of ID
T2	35%, 11m	Prunus serotina var. serotina	15% 8-14 m		
T2		Acer rubrum var. rubrum	10%		
T2		Quercus velutina	10%		
SS1	35%, 3.5m	Lonicera morrowii	20% 3-4 m		
SS1		Ilex verticillata	5%		
SS1		Rhus typhina	5%		
SS1		Viburnum dentatum var. lucidum	5%		
SS2	20%, 1.25m	Lonicera morrowii	20%		
SS3	10%, 0.5m	Lonicera morrowii	10%		
V	20%, 2m	Celastrus orbiculatus	15%		
V		Parthenocissus quinquefolia	5%		
H	1%	Eurybia divaricata	1%		



Figure 255. Successional maritime forest in Parcel 32 (32.09): Left: face N; Right: without stick.



Figure 256. Parcel 32 (Parcel 27, Parcel 41, Parcel 42, Borland, Haver) Ecological Community Polygons Assessed in Acreage Table below.

Parcel 32 (Parcel 27, Parcel 41, Parcel 42, Borland, Haver) Ecological Community Acreage

Table 215. Parcel 32 (Parcel 27, Parcel 41, Parcel 42, Borland, Haver) Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
404	0.02	B	Building	CTERCULT	
402	0.80	CO-HF	Coastal oak-hickory forest	CTERFOR	
405	0.60	CO-HF	Coastal oak-hickory forest	CTERFOR	stand of large tall <i>Carya</i> W of pond
406	0.97	CO-HF	Coastal oak-hickory forest	CTERFOR	young
332	0.29	HP Pop grand	Hardwood plantation (Populus)	CTERCULT	Populus grandidentata
331	0.17	MR/P	Mowed roadside/pathway	CTERCULT	
403	0.08	MR/P	Mowed roadside/pathway	CTERCULT	
129	1.72	pond	pond	CLAC	open water
131	0.10	pond	pond	CLAC	open water
398	3.99	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	SS Decodon pond edge; RM-BGSF up slope
460	0.07	SEM	Shallow emergent marsh	CPALOPEN	
5	4.04	SMF	Successional maritime forest	CTERFOR	
397	0.15	SMF//SUC.S	Successional maritime forest//SUC.S	CTERFOR	
399	2.06	SMF//SUC.S	Successional maritime forest//SUC.S	CTERFOR	
400	0.10	SMF//SUC.S	Successional maritime forest//SUC.S	CTERFOR	
401	0.73	SOF	Successional old field	CTEROPEN	cleared since 2016
132	2.61	SOF Schizachyrium	Successional old field (Schizachyrium)	CTEROPEN	
130	1.59	SS Clethra	Shrub swamp (Clethra)	CPALOPEN	SS Decodon pond fringe; RM-BGSF up slope;
407	0.38	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	Includes patches of tall Clethra
19 polys	20.45 acres	13 types			

Parcel 32 General Description

Parcel 32 is along the west side of East End Road and south of Barlow Pond Lane. The west side of Parcel 32 shares a boundary going north to south with Parcels 41, 42, and 27.

There is a 2.6-acre successional old field dominated by little bluestem (*Schizachyrium scoparium* – 60%) in the northeast quarter of Parcel 32. Along the west boundary with Parcel 27 is a round, 0.4-acre shrub swamp dominated by 2.5-m tall water willow (*Decodon verticillatus* – 80%). The water willow swamp is surrounded by a dense, tall 1.6-acre shrub swamp dominated by 1.5 to 4.0-m tall sweet pepperbush (*Clethra alnifolia* – 70%). The *Clethra* shrub swamp also extends around the margin of Perch Pond (aka “Borland Pond”) to the south, but there it has blackgum trees that overhang the swamp fringe. Uphill from the shrub swamp to the west is red maple-blackgum slope forest that extends into the neighboring parcels.

Perch Pond is a 1.7-acre eutrophic pond surrounded by a narrow band of water willow shrub and the sweet pepperbush shrub swamp mentioned earlier. North and south of the pond are patches of coastal oak-hickory forest dominated by large black oak (*Quercus velutina* – 60%; up to 46 cm DBH) along with pignut hickory (*Carya glabra* – 15%) including good hickory seedling recruitment in the lower tree layers.

The coastal oak-hickory forest in Parcel 32 at point 32.05 has the highest Weighted Floristic Quality Index Score (FQI 31.21) for that community found during our ecology surveys; and is #1 on the list of top ten highest FQI scores generated for this study.

Parcel 32 is one of six parcels with buildings within the parcel boundary (parcels with buildings include: 1 museum, 2 shed near dock, 32 pump station, E-03 private residence, E-04 private residence, and E-07b private residence).

Parcel 32 Invasive Plants

There are four invasive plants In Parcel 32:

1. Oriental bittersweet (*Celastrus orbiculatus*): successional old field 32.01 (2%) and successional maritime forest 32.09 (15%).
2. Japanese honeysuckle (*Lonicera japonica*): successional old field 32.01 (15%) and coastal oak-hickory forest 32.05 (<1%).
3. Morrow's honeysuckle (*Lonicera morrowii*): successional old field 32.01 (2%) and successional maritime forest 32.09 (50%).
4. Glossy buckthorn (*Frangula alnus*): coastal oak-hickory forest 32.05 (3%)

Parcel 32 Management Recommendations

The first priority in Parcel 32 should be removal of glossy buckthorn and Japanese honeysuckle from the coastal oak-hickory forest, because native species are more abundant, invasives have less cover, and would be great to maintain the #1 FQI score status.

The second priority is removal of Oriental bittersweet, Japanese honeysuckle, and Morrow's honeysuckle from the successional old field, and maintain the cover and dominance of little bluestem. Prevent woody plant invasion into the field via mowing or cutting. If possible, this field would likely benefit from a prescribed fire management plan.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 32 Future Surveys

The red maple-blackgum slope forest west of the pond was not surveyed in 2021 or 2022. The community was mapped based on air photo interpretation and its extent and condition needs to be evaluated.

Parcel 33. Clay Pit Trail



Figure 257. Parcel 33: Clay Pit Trail North

Fisher Island Land Trust Parcels 33, 44, 39, and E-08a together comprise the Clay Pit Trail area.



Figure 258. Parcel 33: Clay Pit Trail South

Table 216. 33.01a Hardwood plantation (*Tilia cordata*)

Obs. pt. 33.01a Form 3: Form 2 occ #: 1

Community: Hardwood plantation (*Tilia cordata*)

CEGL code:

Alliance code:

UTM: zone 19 248828 E, 4571886 N

Comments: Forested patch W of maintenance shed. Tilia plantation? Close growing, straight, tall, Tilia, dense shade, monoculture. Dense privet shrub layer, but walkable.

Lat: Long:

Photo Photo name: 21 face N, 22 face S

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	85%, 28m	<i>Tilia cordata</i>	85%	
T3	12%, 12m	<i>Tilia cordata</i>	12%	
TS2	5%, 1.65m	<i>Tilia cordata</i>	5%	
SS2	70%, 1m	<i>Ligustrum vulgare</i>	70%	
SS3	20%, 0.25m	<i>Ligustrum vulgare</i>	20%	
SS3		<i>Viburnum dentatum</i> var. <i>lucidum</i>	0.01%	
V2	2%, 0.2m	<i>Lonicera japonica</i>	2%	
V2		<i>Smilax glauca</i>	0.01%	
H	41%	<i>Eurybia divaricata</i>	40%	
H		<i>Maianthemum stellatum</i>	1%	
H		<i>Chimaphila maculata</i>	0.01%	
U	99%	litter and duff	98%	
U		large rocks >10 cm	1%	



Figure 259. Hardwood plantation (*Tilia cordata*) on Parcel 33 (33.01).

Table 217. 33.01b Successional old field (*Schizachyrium scoparium*)

Obs. pt. 33.01b ref Form 3: Form 2 occ #:

Community: Successional old field

CEGL code:

Alliance code:

UTM: zone 19 248915 E, 4572068 N

Lat: Long:

Comments: Reference point, Vegetation cover data not collected. Old trap shooting range with *Spiranthes ochroleuca* in *Schizachyrium scoparium* dominated SOF. Young COHICKF to N and W. Multi-trunk successional red maple - black

Photo Photo name: 307 face NW, 311 face SE, 306 face N

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	<i>Schizachyrium scoparium</i> var. <i>scopari</i>			
H	<i>Spiranthes ochroleuca</i>	ID confirmed by Mike Hough SUNY Cortland 11/19/2021 email		



Figure 260. Successional old field (*Schizachyrium scoparium*) in Parcel 33 (33.01b): Trap shooting range.



Figure 261. Yellow ladies' tresses (*Spiranthes ochroleuca*) in successional old field (*Schizachyrium scoparium*) in Parcel 33 (33.01b).

Table 218. 33.02 and 33.03 Successional southern hardwoods

Obs. pt. 33.02 ref Form 3: Form 2 occ #: _____
 Community: Unpaved road/path CEGL code: _____ Alliance code: _____
 UTM: zone 19 248928 E, 4571942 N Comments: Reference point. Vegetation cover data not collected. Trail from trap shooting
 range leads south to maintenance shed and field. Trail ends at fence at this
 Lat: Long: GPS point. No photo taken
 Photo Photo name: _____
 Position method GPS
 GPS average min, sec. WAAS

Obs. pt. 33.03 Form 3: Form 2 occ #: 1
 Community: Successional southern hardwoods CEGL code: _____ Alliance code: _____
 UTM: zone 19 248955 E, 4571989 N Comments: Along both sides (E and W) of the trail heading south from the trap shooting
 field is a forest dominated by red maple with some black cherry and some
 Lat: Long: Populus grandidentata emergent and dying. Successional maritime forest?
 Photo Photo name: 312, 313
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	70%, 14m	Acer rubrum var. rubrum	70%	multi-trunk
T3	20%, 7m	Acer rubrum var. rubrum	20%	
TS2	38%, 1.5m	Frangula alnus	35%	1-2 m
TS2		Acer rubrum var. rubrum	2%	
TS2		Picea sp.	1%	planted
TS3	0.01%, 0.15m	Quercus velutina	0.01%	
SS1	3%, 3m	Clethra alnifolia	3%	
SS2	2%, 1m	Clethra alnifolia	2%	
SS3	3%, 0.5m	Kalmia angustifolia	2%	
SS3		Clethra alnifolia	1%	
V	45%	Toxicodendron radicans ssp. radicans	30%	
V		Lonicera japonica	15%	
H	1%	Solidago rugosa var. rugosa	1%	



Figure 262. Successional southern hardwoods in Parcel 33 (33.03).

Table 219. 33.04 Successional southern hardwoods

Obs. pt. 33.04 ref Form 3: Form 2 occ #:

Community: Successional southern hardwoods

CEGL code:

Alliance code:

UTM: zone 19 248947 E, 4572023 N

Lat: Long:

Comments: Reference point. Vegetation cover data not collected. Line between successional red maple forest and *Populus grandidentata* stand. No photo taken. Successional northern hardwoods?

Photo Photo name:

Position method GPS

GPS average min, sec.

WAAS



Figure 263. Big-toothed aspen (*Populus grandidentata*) in Parcel 33 (33.04).

Table 220. 33.05 Unpaved road/path

Obs. pt. **33.05 ref** Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 19 248960 E, 4572317 N

Comments: [= 39.08 in field notes] Phone pole #773 at trailhead by road - no parking. Reference point. Vegetation cover data not collected.

Lat: Long:

Photo Photo name: 94

Position method GPS

GPS average min, sec.

WAAS



Figure 264. Trailhead at phone pole #773 into Parcel 33 (33.05): Clay Pit Trail North.

Table 221. 33.06 Successional shrubland or successional vineland

Obs. pt. **33.06** Form 3: Form 2 occ #: 1

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249013 E, 4572324 N

Lat: 41.07098733 Long: -71.8562993

Comments: Low opening in forest with tall shrubs blanketed with vines. Ditch in woods parallel to road (intermittent stream?). Surrounded by large red maple trees hanging into opening. "Successional vineland"?

Photo Photo name: 235

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	80%, 1.75m	dead shrubs	25%	
SS2		Ilex verticillata	25%	
SS2		Rubus allegheniensis	20%	
SS2		Sambucus nigra ssp. canadensis	10%	
V	80%, 1.75m	Lonicera japonica	80%	
H	4%	Impatiens capensis	3%	
H		Dryopteris carthusiana	1%	



Figure 265. Successional shrubland or successional vineland in Parcel 33 (33.06).

Table 222. 33.07 Red maple-blackgum swamp

Obs. pt. 33.07 ref Form 3: Form 2 occ #:

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 248898 E, 4572329 N

Comments: Stream source by giant red maple. ~RM-BGS along shore both sides of stream with big trees. Reference point. Vegetation cover data not collected.

Lat: 41.07027908 Long: -71.8572564

Photo Photo name: 236

Position method GPS

GPS average min. sec.

WAAS



Figure 266. Red maple-blackgum swamp in Parcel 33 (33.07).

Table 223. 33.08 Coastal oak-hickory forest

Obs. pt. **33.08 ref** Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 248918 E, 4572232 N

Lat: 41.07215914 Long: -71.8573498

Comments: Trailhead at main road. Quercus velutina/Acer rubrum/Prunus serotina forest both sides of trail. Big crowns with straight trunks. Successional maritime forest? Incomplete list. No Herbs listed.

Photo Photo name:

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	48%, 18m Quercus velutina	30%		
T2	Acer rubrum var. rubrum	25%		
T3	Acer rubrum var. rubrum	10%		
T3	20%, 10m Prunus serotina var. serotina	10%		
V	Lonicera japonica	35%		
V	70%, 1.75m Smilax rotundifolia	35%		

Table 224. 33.09 Red maple-blackgum swamp

Obs. pt. 33.09 Form 3: Form 2 occ #: 1

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 248964 E, 4572203 N

Comments: RM-BGS drawn down. Stream dry today. GPS pt on bridge.

Lat: 41.07217772 Long: -71.8573268

Photo Photo name: 237 face WNW, 238 face NNE, 239 face ESE, 240 face SSW, 241 RMBGS no bridge

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	75%, 22m	<i>Nyssa sylvatica</i>	55%	
T2		<i>Acer rubrum</i> var. <i>rubrum</i>	45%	
T3	28%, 12m	<i>Acer rubrum</i> var. <i>rubrum</i>	20%	
T3		<i>Nyssa sylvatica</i>	10%	
TS1	7%, 4.5m	<i>Nyssa sylvatica</i>	5%	4-5 m
TS1		<i>Acer rubrum</i> var. <i>rubrum</i>	2%	
TS2	0.01%, 1m	<i>Acer rubrum</i> var. <i>rubrum</i>	0.01%	
TS3	1%, 0.2m	<i>Frangula alnus</i>	1%	
SS1	18%, 3.75m	<i>Ilex verticillata</i>	5%	2.5-5 m
SS1		<i>Viburnum dentatum</i> var. <i>lucidum</i>	5%	ID uncertain
SS1		<i>Clethra alnifolia</i>	3%	
SS1		<i>Vaccinium corymbosum</i>	3%	
SS1		<i>Rhododendron viscosum</i>	2%	ID uncertain
SS2	4%, 0.75m	<i>Aronia arbutifolia</i>	2%	ID uncertain
SS2		<i>Viburnum dentatum</i> var. <i>lucidum</i>	2%	
SS3	25%, 0.15m	<i>Rubus hispidus</i>	25%	
V2	2%, 0.25m	<i>Smilax rotundifolia</i>	2%	
H	63%	<i>Osmundastrum cinnamomeum</i> var. <i>ci</i>	60%	
H		<i>Dryopteris carthusiana</i>	2%	
H		<i>Glyceria striata</i>	1%	ID uncertain



Figure 267. Red maple-blackgum swamp in Parcel 33 (33.09).

Table 225. 33.10 Coastal oak-hickory forest

Obs. pt. 33.10 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 248935 E, 4572119 N
 Lat: 41.07224424 Long: -71.8571868

Comments: Trail to trap shooting range. T2 big crown Quercus velutina widely spaced with straight single trunks; big crown multi-trunk Acer rubrum. T3 gnarly Prunus serotina and straight Acer rubrum. Planted spruce 0.5-2 m. Successional maritime forest?

Photo Photo name: 242-244

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	55%, 20m	Acer rubrum var. rubrum	40%	
T2		Quercus velutina	25%	
T3	43%, 8m	Prunus serotina var. serotina	25%	
T3		Acer rubrum var. rubrum	20%	
T3		Amelanchier arborea	5%	
TS1	29%, 4m	Frangula alnus	20%	
TS1		Amelanchier arborea	5%	ID uncertain
TS1		Picea sp.	2% planted	
TS1		Quercus velutina	2%	
TS2	22%, 1.5m	Frangula alnus	20%	
TS2		Picea sp.	2% planted	
TS3	24%, 0.5m	Frangula alnus	20%	
TS3		Picea sp.	2%	
TS3		Acer rubrum var. rubrum	1%	
TS3		Quercus velutina	1%	
SS1	15%, 3m	Viburnum dentatum var. lucidum	15%	
SS2	5%, 1.5m	Viburnum dentatum var. lucidum	5%	
SS3	2%, 0.1m	Rubus hispidus	2%	
V2	6%, 0.2m	Parthenocissus quinquefolia	3%	
V2		Toxicodendron radicans ssp. radicans	2%	
V2		Smilax glauca	1%	
H	2%	Dendrolycopodium obscurum	1%	
H		Maianthemum canadense	1%	
H		Lysimachia borealis	0.01%	



Figure 268. Coastal oak-hickory forest in Parcel 33 (33.10).



Figure 269. Parcel 33, Parcel 39, Parcel 44, Parcel E-08a, Parcel E-08b Ecological Community Polygons Assessed in Acreage Table below.

Parcel 33 (incl. Parcel 39, Parcel 44, Parcel E-08a, Parcel E-08b) Ecological Community Acreage

Table 226. Parcel 33 (incl. Parcel 39, Parcel 44, Parcel E-08a, Parcel E-08b) Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
49	0.99	CO-BF	Coastal oak-beech forest	CTERFOR	beech stand
39	7.18	CO-HF	Coastal oak-hickory forest	CTERFOR	
19	0.21	HP Pop grand	Hardwood plantation (Populus)	CTERCULT	Populus grandidentata
20	0.53	HP Pop grand	Hardwood plantation (Populus)	CTERCULT	Populus grandidentata
18	0.64	HP Tilia cord	Hardwood plantation (Tilia cordata)	CTERCULT	Mis-identified as "Alder" in 2016 Management Plan
30	0.55	MLWT	Mowed lawn with trees	CTERCULT	off parcel, but has trails and paths
41	0.26	MR/P	Mowed roadside/pathway	CTERCULT	includes road shoulder and powerline ROW
21	1.96	QP	Quarry pond	CLACCULT	abandoned; road E edge
23	0.76	QP	Quarry pond	CLACCULT	abandoned
28	0.02	RGM	Reed grass marsh	CPALCULT	small patch of Phragmites
53	0.47	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	
54	0.15	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	not NWI wetland
55	1.21	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	wetland fringe
33	0.44	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	not NWI wetland
34	0.65	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	not NWI wetland
36	1.44	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	edge of NWI wetland
56	1.84	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	edge of NWI wetland
51	1.21	RM-BGS	Red maple-blackgum swamp	CPALFOR	point on bridge over intermittent stream
52	1.48	RM-BGS	Red maple-blackgum swamp	CPALFOR	confirmed RM-BGS; but not NWI wetland
29	1.02	SMF	Successional maritime forest	CTERFOR	
1	0.52	SOF Schizachyrium	Successional old field (Schizachyrium)	CTEROPEN	Skeet range; Spiranthes ochroleuca habitat
24	11.94	SSH	Successional southern hardwoods	CTERFOR	mostly cleared on USGS topo map
40	0.29	SSH	Successional southern hardwoods	CTERFOR	mostly cleared on USGS topo map
42	0.46	SSH	Successional southern hardwoods	CTERFOR	mostly cleared on USGS topo map
57	0.45	SSH//SUC.S	Successional southern hardwoods//SUC.S	CTERFOR	black oak wolf tree
38	1.27	SSH//SUC.S vineland	Successional southern hardwoods//SUC.S	CTERFOR	Large multi-trunk trees, big crown non-overlapping
22	1.67	SSH?	Successional southern hardwoods?	CTERFOR	
25	0.05	SSH?	Successional southern hardwoods?	CTERFOR	
27	0.86	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT ?	blanket vineland thicket on shrubs
31	0.45	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT ?	blanket vineland thicket on shrubs
32	0.40	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT ?	blanket vineland thicket on shrubs
37	0.56	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT ?	blanket vineland thicket on shrubs

43	0.19	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT ?	blanket vineland thicket on shrubs
26	0.03	UR/P	Unpaved road/path	CTERCULT	trail N to pond
34 polys	42.19 acres	15 types			

Parcel 33 General Description

Parcel 33 is along the east side of East End Road and across the street from the L. F. Boker Doyle Sanctuary. The parcel is almost 0.4 mi. long north to south and about 0.1 mi. wide on average east to west. Parcel 33 is mostly forested except for the skeet range which is a successional old field dominated by little bluestem (*Schizachyrium scoparium*) that provides habitat for yellow ladies' tresses (*Spiranthes ochroleuca*).

The skeet field is surrounded by successional southern hardwoods except to the east where there is a 1/2-acre big-tooth aspen (*Populus grandidentata*) plantation. A second smaller (0.2 acre) big-tooth aspen plantation is located about 80 m south of the first one. These two plantations are easy to spot on 2020 air photos (Figure 258).

At the south end of Parcel 33 near the shared boundary with Parcel 53a at point 33.01 is another hardwood plantation dominated by non-native, small-leaved linden (*Tilia cordata* – 85% canopy). The linden may be naturalizing in this area, because there are younger trees in the subcanopy (12%) and tree sapling layer (5%). Privet (*Ligustrum vulgare* – 90%) is dominant in the shrub layer.

North of the successional southern hardwoods in Parcel 33 is a red maple-blackgum swamp. Around the swamp is a coastal oak-hickory forest that grades into successional southern hardwoods at the very north end of Parcel 33 at point 33.06. In this area, canopy gaps are filled with tall, mostly dead shrubs that are blanketed with vines.

A 7.5 acre opening is depicted in the middle of Parcel 33 around the skeet field on the circa 1958 USGS 7.5 minute topographic map.

Parcel 33 Invasive Plants

Successional southern hardwoods at point 33.03: Glossy buckthorn (*Frangula alnus* – 35%) and Japanese honeysuckle (*Lonicera japonica* – 15%).

Successional shrubland or successional vineland at point 33.06: Japanese honeysuckle (*Lonicera japonica* – 80%).

Red maple-blackgum swamp at point 33.09: Glossy buckthorn (*Frangula alnus* – 1%)

Hardwood plantation at point 33.01: Small-leaved linden (*Tilia cordata* – 85% canopy) and privet (*Ligustrum vulgare* – 90%)

Coastal oak-hickory forest at point 33.08: Japanese honeysuckle (*Lonicera japonica* – 35%).

Parcel 33 Management Recommendations

The glossy buckthorn should be removed from the red maple-blackgum swamp at point 33.09, since it is the only invasive plant recorded in the swamp and it is present at very low percent cover. The second priority would be Japanese honeysuckle in the coastal oak-hickory forest at point 33.08, because it is part of the significant occurrence of this community (EOID 17532).

Remove invasive species from the successional old field at the skeet range, and maintain the cover and dominance of little bluestem. Prevent woody plant invasion into the field via mowing or cutting. If possible, this field would likely benefit from a prescribed fire management plan.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 34. Chocomount Trail

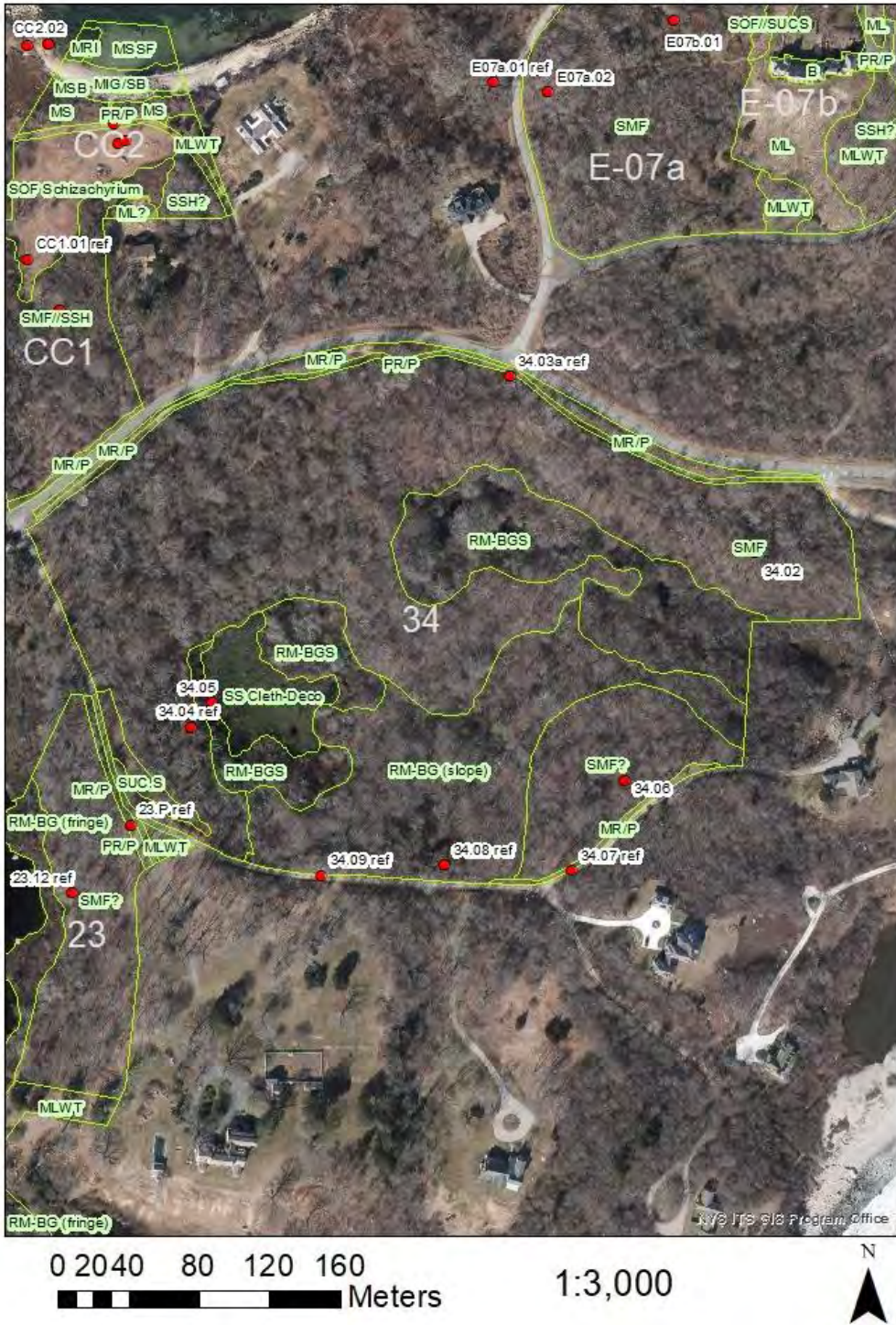


Figure 270. Parcel 34: Chocomount Trail.

Parcel 34. Mid-1920s Air Photo



Figure 271. Most of Parcel 34 appears cleared on the mid-1920s black and white air photo. The shrub swamp wetland boundaries appear unchanged since the mid-1920s black and white air photo (dark blotches lower left and lower right).

Table 227. 34.01 Successional maritime forest

Obs. pt. 34.01 ref Form 3: Form 2 occ #:

Community:
Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 251555 E, 4573845 N
Lat: Long:

Comments: Photo 11 and 12 of Chocomount Trail trailhead heading W. Reference point. Vegetation cover data not collected. SMF on both sides of trail (N+S) of trail head. Gnarly, stunted *Prunus serotina*. Unpaved road/path

Photo Photo name: 11 Chocomount Trail trailhead sign, 12 trail and SMF

Position method GPS

GPS average min, sec. WAAS



Figure 272. Successional maritime forest along Chocomount Trail in Parcel 34 (34.01).

Table 228. 34.02 Successional maritime forest

Obs. pt. 34.02 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 251451 E, 4573864 N

Lat: Long:

Comments: High point of Chocomount Trail in Parcel 34. Assess forest on both sides of trail. Oaks have big straight trunks, but stunted and big spreading crowns. Later successional stage of SMF. Flat top of small hill that goes downhill in all directions.

Photo Photo name: 13 face NE of trail, 14 face SE along trail, 15 face SW of trail, 16 face NW along trail.

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	45%, 13m	Quercus velutina	30%	straight trunk, but stunted
T2		Prunus serotina var. serotina	10%	gnarly
T2		Amelanchier arborea	8%	
T2		Juniperus virginiana var. virginiana	5%	
T2		Nyssa sylvatica	5%	
T3	21%, 5.5m	Quercus velutina	8%	
T3		Acer rubrum var. rubrum	6%	
T3		Prunus serotina var. serotina	6%	
T3		Nyssa sylvatica	3%	
TS1		Ilex opaca var. opaca	3%	
TS1	12%, 4.5m	Nyssa sylvatica	3%	
TS1		Frangula alnus	2%	
TS1		Quercus alba	2%	
TS1		Quercus velutina	2%	
TS2	10%, 1.5m	Frangula alnus	5%	
TS2		Nyssa sylvatica	2%	
TS2		Acer rubrum var. rubrum	1%	
TS2		Juniperus virginiana var. virginiana	1%	
TS2		Quercus alba	1%	
TS3	10%, 0.35m	Frangula alnus	8%	
TS3		Acer rubrum var. rubrum	0.01%	
TS3		Nyssa sylvatica	0.01%	
TS3		Quercus alba	0.01%	
TS3		Quercus velutina	0.01%	
SS1	23%, 6m	Vaccinium corymbosum	15%	4.5 m
SS1		Morella caroliniensis	5%	
SS1		Rhus copallinum var. copallinum	3%	gnarly
SS2	3%, 2m	Vaccinium corymbosum	2%	
SS2		Morella caroliniensis	1%	0.75 m
SS3	3%, 0.4m	Rubus pubescens	2%	trailing ID uncertain
SS3		Lonicera morrowii	0.01%	
SS3		Morella caroliniensis	0.01%	
SS3		Rhus copallinum var. copallinum	0.01%	0.25 m
SS3		Viburnum dentatum var. lucidum	0.01%	
V2	20%, 0.3m	Toxicodendron radicans ssp. radicans	15%	0.2-0.75 m
V2		Lonicera japonica	5%	0.2 m
V2		Smilax rotundifolia	0.01%	
H	22%, 0.1m	Maianthemum canadense	15%	plus more that has died back
H		Dennstaedtia punctilobula	5%	
H		Eurybia divaricata	1%	
H		Lysimachia borealis	0.01%	
H		Solidago rugosa var. rugosa	0.01%	
N	1%	Polytrichum commune	1%	ID uncertain
U	98%	litter and duff	90%	oak leaves
U		wood (FWD) <7.5 cm	8%	
U		very large rocks >1 m	3%	
U		large rocks >10 cm	2%	



Figure 273. Successional maritime forest along the Chocomount Trail in Parcel 34 (34.02) face E.



Figure 274. Successional maritime forest along the Chocomount Trail in Parcel 34 (34.02) face S.

Table 229. 34.03 and 34.04 Unpaved road/path

Obs. pt. 34.03a ref Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 19 251319 E, 4573973 N

Comments: Side trail N to "bananas" painted on main road. Reference point. Vegetation cover data not collected.

Lat: Long:

Photo Photo name:

Position method GPS

GPS average min, sec.

WAAS

Obs. pt. 34.04 ref Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 19 251125 E, 4573787 N

Comments: Slant boulder landmark access to SS to E. Reference point. Vegetation cover data not collected.

Lat: Long:

Photo Photo name: 20 of rock

Position method GPS

GPS average min, sec.

WAAS



Figure 275. Large rock in Chocomount Trail in Parcel 34 (34.04).

Table 230. 34.05 Shrub swamp (*Clethra alnifolia* – *Decodon verticillatus*)

Obs. pt. 34.05 Form 3: Form 2 occ #: 1

Community: "Shrub swamp (*Decodon verticillatus*)" CEGL code: Alliance code:

UTM: zone 19 251138 E, 4573800 N Comments: *Decodon* (50%) - *Clethra* (30%) co-dominant SS

Lat: Long: Photo Photo name: 22-24 face E, 21 face E from rock at 34.04

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	1%, 1.5m	<i>Acer rubrum</i> var. <i>rubrum</i>	1%	
SS1	30%, 3m	<i>Clethra alnifolia</i>	25%	
SS1		<i>Frangula alnus</i>	5%	
SS2	55%, 1.5m	<i>Decodon verticillatus</i>	50%	
SS2		<i>Clethra alnifolia</i>	5%	
H	3%	<i>Calamagrostis canadensis</i> var. <i>canad</i>	3%	
H		<i>Bidens frondosa</i>	1%	ID uncertain
N	5%	<i>Sphagnum torreyanum</i>	5% cover uncertain flooded; ID confirmed by Tom Phillips 2022.	collect:Y ID uncertain
U	90%	water	90%	



Figure 276. Shrub swamp (*Clethra alnifolia* – *Decodon verticillatus*) near the Chocomount Trail in Parcel 34 (34.05).

Table 231. 34.06 Successional maritime forest or Successional southern hardwoods

Obs. pt. 34.06		Form 3: <input type="checkbox"/> Form 2 occ #:	
Community: Successional maritime forest Successional southern hardwoods		CEGL code:	Alliance code:
UTM: zone 19 251368 E, 4573740 N Lat: 41.26876636 Long: -71.9789190		Comments: Parcel 34 north of road/private driveway; mowed to east; young SSH//SMF? This natural community continues from road to north; late successional SMF grading to young SSH; Prunus gnarly;	
Position method GPS		Photo <input checked="" type="checkbox"/> Photo name: 17,18	
GPS average min, sec.		WAAS <input type="checkbox"/>	

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	35%, 20m	Acer rubrum var. rubrum	15%	
T2		Prunus serotina var. serotina	12%	
T2		Quercus alba	7%	
T2		Quercus velutina	7%	
T3	22%, 10m	Acer rubrum var. rubrum	10%	
T3		Quercus velutina	5%	
T3		Nyssa sylvatica	3%	
T3		Frangula alnus	2%	
T3		Juniperus virginiana var. virginiana	2%	
T3		Prunus serotina var. serotina	2%	
TS1	18%, 4m	Acer rubrum var. rubrum	10%	
TS1		Frangula alnus	5%	
TS1		Quercus velutina	3%	
TS2	5%, 1.5m	Frangula alnus	3%	
TS2		Quercus alba	2%	
TS3	3%, 0.25m	Frangula alnus	2%	
TS3		Acer rubrum var. rubrum	1%	
TS3		Quercus velutina	0.01%	
V1		Parthenocissus quinquefolia	3%	
V1	6%, 6m	Toxicodendron radicans ssp. radicans	3%	
V2	10%, 0.4m	Toxicodendron radicans ssp. radicans	8%	
V2		Parthenocissus quinquefolia	2%	
H	63%	Maianthemum canadense	55%	
H		Lysimachia borealis	5%	
H		Carex sp.	3%	ID uncertain
H		Dendrolycopodium obscurum	0.01%	
U	90%	litter and duff	90% under Maianthemum canadense mat	
U		large rocks >10 cm	0.01%	
U		very large rocks >1 m	0.01%	



Figure 277. Successional maritime forest or successional southern hardwoods in Parcel 34 (34.06).



Figure 278. Successional maritime forest or successional southern hardwoods in Parcel 34 (34.06).

Table 232. 34.07 Successional maritime forest

Obs. pt. 34.07 ref Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 251335 E, 4573691 N

Lat: 41.26819944 Long: -71.9799437

Comments: SMF? Continues west to this point from 34.06; T2 canopy tree become large crown and big trunks from this point west along road; powerline parallel to road north side; dense carpet of *Lonicera japonica* and *Celastrus orbiculatus* under powerline.

Photo Photo name: 19 face N, 20 face E, 21 face W

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Acer rubrum</i> var. <i>rubrum</i>			
T2	<i>Prunus serotina</i> var. <i>serotina</i>			
T2	<i>Quercus velutina</i>			



Figure 279. Successional maritime forest in Parcel 34 (34.07) face N.



Figure 280. Successional maritime forest in Parcel 34 (34.07): Left: face E; Right: face W.

Table 233. 34.08 Successional southern hardwoods (*Robinia pseudoacacia*)

Obs. pt. 34.08 ref Form 3: Form 2 occ #:
 Community: Successional southern hardwoods (Ro) C EGL code: Alliance code:
 UTM: zone 19 251263 E, 4573699 N Comments: From this point west changes to SSH dominated by black locust with hay-scented fern carpet on steep slope; stand of dead *Viburnum dentatum* with brown dried up skeletal leaves (photos 23, 24); Note: *Pyrrhalta viburni* is a species of leaf beetle native to Europe and Asia, commonly known as the viburnum leaf beetle.
 Lat: 41.26856610 Long: -71.9800439
 Position method GPS
 GPS average min, sec. WAAS
 Photo Photo name: 22-24

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Robinia pseudoacacia</i>			
SS2	<i>Viburnum dentatum</i>	skeletal leaves		
H	<i>Dennstaedtia punctilobula</i>			



Figure 281. Successional southern hardwoods (*Robinia pseudoacacia*) in Parcel 34 (34.08).



Figure 282. *Viburnum* leaf beetle (*Pyrrhalta viburni*) damage on arrowwood (*Viburnum dentatum*) (34.08).

Table 234. 34.09 Successional southern hardwoods (*Robinia pseudoacacia*)

Obs. pt. 34.09 ref Form 3: Form 2 occ #:

Community: Successional southern hardwoods (Ro) CEGL code: Alliance code:

UTM: zone 19 251193 E, 4573698 N
 Lat: 41.26872524 Long: -71.9801586

Comments: Black locust continues west to this point from 34.08; Photos incorrectly labeled as 34.07;

Photo Photo name: 20,21

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Robinia pseudoacacia</i>			

Parcel 34 Ecological Community Acreage

Table 235. Parcel 34 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
203	0.24	MR/P	Mowed roadside/pathway	CTERCULT	with trees
204	0.26	MR/P	Mowed roadside/pathway	CTERCULT	with trees
206	0.09	MR/P	Mowed roadside/pathway	CTERCULT	with trees
489	0.12	MR/P	Mowed roadside/pathway	CTERCULT	
205	0.36	PR/P	Paved road/path	CTERCULT	bike path
437	4.28	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	part NWI wetland; not surveyed 2021
438	0.65	RM-BGS	Red maple-blackgum swamp	CPALFOR	NWI and DEC wetland
439	2.75	RM-BGS	Red maple-blackgum swamp	CPALFOR	NWI and DEC wetland
483	0.62	RM-BGS	Red maple-blackgum swamp	CTERFOR	part NWI wetland; not surveyed 2021
3	12.93	SMF	Successional maritime forest	CTERFOR	includes a couple hiking trails
482	1.83	SMF?	Successional maritime forest?	CTERFOR	not surveyed 2021
49	0.84	SS Cleth-Deco	Shrub swamp (Clethra-Decodon)	CPALOPEN	
490	0.23	SUC.S	Successional shrubland	CTERFOR	powerline ROW
13 polys	25.18 acres	7 types			

Parcel 34 General Description

Parcel 34 is on the south side of East End Road between Chocomount Road to the west and Chocomount Beach Road to the east. This 25-acre parcel is mostly forested with successional maritime forest covering almost 13 acres of the north half of the parcel along East End Road. The south end of the parcel is a red maple-blackgum slope forest covering 4.2 acres. There are two small wetland basins in Parcel 34: to the west is a 0.8-acre shrub swamp co-dominated by sweet pepperbush (*Clethra alnifolia*) and water willow (*Decodon verticillatus*) at point 34.05; to the east is a 2.7-acre red maple-blackgum swamp that extends east off of the parcel. Lastly, there is a small patch of successional maritime forest at the southeast edge of the parcel along a private driveway.

Most of Parcel 34 appears cleared on the mid-1920s black and white air photo (Figure 271). However, this area is depicted as forested on the circa 1958 USGS 7.5 minute topographic map. The shrub swamp wetland boundaries appear unchanged since the mid-1920s black and white air photo.

Parcel 34 Invasive Plants

Successional maritime forest at point 34.02: Glossy buckthorn (*Frangula alnus* – 15%), Japanese Honeysuckle (*Lonicera japonica* – 5%), and Morrow’s honeysuckle (*Lonicera morrowii* – <1%).

Shrub swamp at point 34.05: Glossy buckthorn (*Frangula alnus* – 5%).

Successional maritime forest at point 34.06: Glossy buckthorn (*Frangula alnus* – 4%).

Black locust (*Robinia pseudoacacia*) at points 34.08 and 34.09.

We noticed viburnum leaf beetle (*Pyrrhalta viburni*) damage on arrowwood (*Viburnum dentatum*) at point 34.08. *Pyrrhalta viburni* is a native of Europe. It is known to be established in New York, Maine, New Hampshire, Vermont, Washington State, and a small part of Pennsylvania and Ohio. Heavy infestations of *Pyrrhalta viburni* cause defoliation, and plants continuously defoliated for two to three consecutive years may be killed.

Parcel 34 Management Recommendations

Remove the glossy buckthorn from the shrub swamp at point 34.05. Remove black locust from forest at points 34.08 and 34.09.

The best management option for *Pyrrhalta viburni* is to prune and destroy the twigs infested with egg masses and while beetles are inactive, usually from October to April. Soil application of systemic insecticides can be effective, but their use may be restricted.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 34 Future Surveys

The red maple-blackgum slope forest on the east side of Parcel 34 was not surveyed in 2021 or 2022. The community was mapped based on air photo interpretation and DEC and NWI wetland maps and its extent and condition needs to be evaluated.

Parcel 35a. Betty Matthiessen Wildlife Sanctuary



Figure 283. Parcel 35a: Betty Matthiessen Wildlife Sanctuary.

Table 236. 35a.01a Red maple-blackgum swamp

Obs. pt. **35a.01a ref** Form 3: Form 2 occ #:

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 249921 E, 4573280 N

Lat: 41.07097111 Long: -71.8562272

Comments: GPS at W edge of bike path bridge. To east is red maple-Nyssa fringe with Clethra understory. Additional photo 315 taken from this point of Populus grandidentata stand in Borland parcel N of road (=Borland.02). Reference point. Vegetation cover data not collected. "Red maple-blackgum slope forest"?

Photo Photo name: 317

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum			
T2	Nyssa sylvatica			
SS2	Clethra alnifolia			



Figure 284. Red maple-blackgum swamp fringe in Parcel 35a (35a.01).

Table 237. 35a.01b Coastal oak-hickory forest

Obs. pt. 35a.01b ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 249864 E, 4573265 N

Comments: Coastal oak-hickory forest west of bike path bridge. *Carya tomentosa*? Thick husk; 5 to mostly 7 leaflets (Photos 318-324). Reference point. Vegetation cover data not collected.

Lat: 41.07097199 Long: -71.8561915

Photo Photo name: 316 COHICKF

Position method Digital Ortho-Images

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Carya tomentosa</i>	Thick husk; 5 to mostly 7 leaflets (Photos 318-324); ID confirmed by Steve Young (Feb. 2022).	collect:Y	



Figure 285. Mockernut hickory (*Carya tomentosa*) in coastal oak-hickory forest in Parcel 35a (35a.01a): upper left: nuts; upper right: terminal bud; lower left: leaf with five leaflets; tomentose leaflet axils.

Table 238. 35a.02 Red maple-blackgum swamp

Obs. pt. **35a.02 ref** Form 3: Form 2 occ #:

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 249826 E, 4573302 N
 Lat: 41.07019959 Long: -71.8571934

Comments: North-protruding lobe/notch of pond toward bike path bridge. Phragmites fringe. RMBG/Clethra back on both sides E and W of notch. Powerline crosses notch. Reference point. Vegetation cover data not collected. Reed grass marsh?

Photo Photo name: 325 not in DIB

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	Acer rubrum var. rubrum			
T2	Nyssa sylvatica			
SS2	Clethra alnifolia			
H	Phragmites australis			



Figure 286. Red maple-blackgum swamp fringe in Parcel 35a (35a.02).

Table 239. 35a.03a Red maple-blackgum swamp

Obs. pt. **35a.03a ref** Form 3: Form 2 occ #:

Community:

"Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249768 E, 4573290 N

Lat: 41.07019959 Long: -71.8571934

Comments: Peter Crisp scenic lookout and bench pullover along bike path bridge. RMBG fringe continues in both directions from this point (E and S). Phragmites australis fringe along water only goes to east not south. Photo log: 328 of plaque, 329-330 face E, 331 face W, 332 face S. Note: Nice coastal oak-hickory forest north of main road from this point (not on Ferguson land). Reference point. Vegetation cover data not collected. Red maple-blackgum swamp?

Photo Photo name: 328-332

Position method GPS

GPS average min, sec.

WAAS



Figure 287. Reed grass marsh east of the Peter Crisp lookout in Parcel 35a (35a.03a). West end of Phragmites patch.



Figure 288. Red maple-blackgum swamp fringe southwest of the Peter Crisp lookout in Parcel 35a (35a.03a) along west shore of Island Pond. Note no Phragmites.

Table 240. 35a.03b Coastal oak-hickory forest

Obs. pt. 35a.03b ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 249753 E, 4573321 N

Lat: 41.07016714 Long: -71.8570492

Comments: Note: Nice coastal oak-hickory forest north of main road from point 35a.03a (not on Ferguson land) and north of Parcel 35a. Not surveyed. No photo taken. Reference point. Vegetation cover data not collected.

Photo Photo name:

Position method Digital Ortho-Images

GPS average min, sec.

WAAS

Table 241. 35a.04 Red maple-blackgum slope forest

Obs. pt. **35a.04 ref** Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249716 E, 4573230 N

Lat: 41.26141598 Long: -71.9925015

Comments: At turn in fence rail slope divided 50/50 RMBG - Clethra lower half; coastal oak-hickory forest upper half. Reference point. Vegetation cover data not collected. Coastal oak-hickory forest?

Photo Photo name: 333 fence corner,334 young Nyssa

Position method GPS

GPS average min. sec.

WAAS



Figure 289. Red maple-blackgum slope forest in Parcel 35a (35a.04).

Parcel 35a Ecological Community Acreage

Table 242. Parcel 35a Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
59	1.64	CO-HF	Coastal oak-hickory forest	CTERFOR	
333	0.53	CO-HF	Coastal oak-hickory forest	CTERFOR	
57	0.29	MR/P	Mowed roadside/pathway	CTERCULT	
58	0.43	PR/P	Paved road/path	CTERCULT	
392	0.22	RGM	Reed grass marsh	CPALCULT	Phragmites fringe
334	1.12	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	edge of NW1 wetland; narrow band
391	0.73	RM-BG (fringe)	Red maple-blackgum (fringe)	CPALFOR/CTERFOR	edge of NW1 wetland; narrow band
60	0.02	SUC.S?	Successional shrubland?	CTEROPEN	shrubland?
8 polys	4.99 acres	6 types			

Parcel 35a General Description

Parcel 35a is a narrow strip of land located on the inside of a curve of East End Road on the northeast shore of Island Pond. There is a narrow band of estuarine reed grass marsh dominated by Old World reed grass (*Phragmites australis*) that starts at the dock at Parcel 2 to the east and continues west along the north shore of Island Pond about 275 m to the Peter Crisp lookout on the paved bike path. Behind the *Phragmites* on the north shore is a 0.7 acre red maple-blackgum fringe swamp that wraps around a 0.5-acre patch of coastal oak-hickory forest on a hill that bulges into Island Pond.

There appears to be no *Phragmites* along the west shore of Island Pond in Parcel 35a, instead red maple-blackgum fringe swamp fills that position on the shoreline with a strip of coastal oak-hickory forest back behind it along the paved bike path.

Parcel 35a Invasive Plants

Estuarine reed grass marsh dominated by Old World reed grass (*Phragmites australis*) is at point 35a.02 and along the north shore of Island Pond.

Parcel 35a Management Recommendations

Existing plants of Old World reed grass (*Phragmites australis*) along the north shore of Island Pond (severe invasion) should be removed if possible. Given the size of the *Phragmites* patches, control of invasive plants on this shoreline will be a long-term commitment of effort and resources

The west shore of Island Pond in Parcel 35a should be monitored for Old World reed grass (*Phragmites australis*) invasion and any reed grass plants should be removed immediately after discovery.

Phragmites management around the shoreline of Island Pond may require consultation with neighboring landowners before taking any action on the ground.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 35b. Matty Matthiessen Wildlife Sanctuary



Figure 290. Parcel 35b: Matty Matthiessen Wildlife Sanctuary.

Table 243. 35b.01 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 35b.01 Form 3: Form 2 occ #: 1

Community: "Grassland (*Panicum virgatum*)"

CEGL code:

Alliance code:

UTM: zone 19 250391 E, 4573734 N

Lat: Long:

Comments: SNSG *Panicum virgatum* dominant by osprey platform "triangle". Photo 129 facing south the grassland becomes more shrubby - SUC.S low *Rhus copallinum* dominant. Woody plant invasion: *Prunus serotina*, *Viburnum dentatum*, and *Rhus copallinum*.

Photo Photo name: 128 face N, 129 face S more shrubby

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2 6%, 1.5m	<i>Prunus serotina</i> var. <i>serotina</i>	6%		
SS2 23%, 1m	<i>Rhus copallinum</i> var. <i>copallinum</i>	20%		
SS2	<i>Viburnum dentatum</i> var. <i>lucidum</i>	3%		
SS3 23%, 0.5m	<i>Rubus flagellaris</i>	15%		
SS3	<i>Rhus copallinum</i> var. <i>copallinum</i>	8%		
V2 63%, 0.3m	<i>Lonicera japonica</i>	60%		
V2	<i>Celastrus orbiculatus</i>	2%		
V2	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%		
H 68%, 1m	<i>Panicum virgatum</i>	50%		
H	<i>Agrostis capillaris</i>	10%		
H	<i>Schizachyrium scoparium</i> var. <i>scopari</i>	5%		
H	<i>Eupatorium hyssopifolium</i>	1%		
H	<i>Solidago rugosa</i> var. <i>rugosa</i>	1%		
H	<i>Solidago juncea</i>	0.01%		
H	<i>Sonchus</i> sp.	0.01%		ID uncertain



Figure 291. Semi-natural grassland (*Panicum virgatum*) in Parcel 35b: Matty Matthiessen Wildlife Sanctuary (35b.01) face N.

Table 244. 35b.02 Eutrophic pond

Obs. pt. **35b.02 ref** Form 3: Form 2 occ #:

Community: Eutrophic pond

CEGL code:

Alliance code:

UTM: zone 19 250435 E, 4573501 N

Lat: 41.06753603 Long: -71.8596367

Comments: Middle Farms Pond West Shore. *Hydrocotyle umbellata* 20 m x 20 m patch south of concrete square with utility covers. Originally entered as 20.36, but this point is in Parcel 35b, not Parcel 20. Reference point. Vegetation cover data not collected.

Photo Photo name: 282-284

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
A2	<i>Hydrocotyle umbellata</i>	20 m x 20 m patch south of concrete square with utility covers.		



Figure 292. Many-flowered marsh pennywort (*Hydrocotyle umbellata*) on the west shore of Middle Farms Pond at point 35b.02.

Table 245. 35b.03 Semi-natural grassland (*Panicum virgatum*)

Obs. pt. 35b.03 ref Form 3: Form 2 occ #:

Community: Grassland (*Panicum virgatum*)

CEGL code:

Alliance code:

UTM: zone 19 250288 E, 4573318 N

Lat: 41.06752099 Long: -71.859517

Comments: North end of Parcel 20 in Parcel 35b by edge of golf course is a large crown open grown oak. Originally entered as 20.37, but this point is in Parcel 35b, not Parcel 20. Theory re: successional trajectory: Open grown trees in pastures/cleared land succeed to tall shrubs with blanket vines on top. Add two species to grassland list. Reference point. Vegetation cover data not collected.

Photo Photo name: 264.265

Position method Digital Ortho-Images

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	<i>Miscanthus sinensis</i>			ID uncertain
H	<i>Symphotrichum laeve</i>			



Figure 293. Open grown oak with large crown in field at the north end of Parcel 20 in Parcel 35b (35b.03).

Parcel 35b Ecological Community Acreage

Parcel 35b is included in the Parcel 20 Ecological Community Acreage Assessment (Table 142, Figure 167).

Parcel 35b General Description

Although Parcel 35b is smaller (15 acres) than Parcel 20 (22 acres) to the south, it has the same set of open communities in roughly the same proportion as follows:

Semi-natural grassland (*Panicum virgatum*) is the dominant type covering the wider north half of Parcel 35b continuing southeast along the golf course property boundary into the narrow, southern half of the parcel.

Semi-natural grassland (*Andropogon gerardi*) – small parts of this type extend onto Parcel 35b from Parcel 20 at the south end of Parcel 35b near the boundary with Parcel 19 (Penni's Path).

Shallow emergent marsh (*Calamagrostis canadensis*) – a small patch of this type straddles the southeast line with Parcel 20 in the narrow, southern half of Parcel 35b.

Successional shrubland (*Rhus copallinum*) – a few small patches of this type are located at the south end of Parcel 35b near the trail junction at point 20.32.

Parcel 35b Invasive Plants

Parcel 35b is included in the Parcel 20 Invasive Plants section.

Parcel 35b Management Recommendations

Parcel 35b is included in the Parcel 20 Management Recommendations section.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 37.



Figure 294. Parcel 37 (red points 2021 and 2022; green points 2003).

Table 246. 37.01 Successional maritime forest

Obs. pt. 37.01 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 252208 E, 4573612 N

Comments: SMF on top of bluff. Impenetrable thicket N of this point. Former TNC trade land. Flat. Compare to 2003 Obs point.

Lat: Long:

Photo Photo name: 36 face N, 32-33 MRB from top of bluff

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	45%, 7m	<i>Prunus serotina</i> var. <i>serotina</i>	45%	
TS1	12%, 4m	<i>Prunus serotina</i> var. <i>serotina</i>	12%	
TS2	5%, 1.8m	<i>Prunus serotina</i> var. <i>serotina</i>	5%	
SS1	15%, 2.1m	<i>Ligustrum vulgare</i>	15%	
SS2	10%, 1m	<i>Ligustrum vulgare</i>	10%	
SS3	5%, 0.2m	<i>Rubus allegheniensis</i>	5%	
V2	25%, 0.75m	<i>Lonicera japonica</i>	15%	
V2		<i>Celastrus orbiculatus</i>	10%	
H	6%	<i>Solidago rugosa</i> var. <i>rugosa</i>	5%	
H		<i>Solidago sempervirens</i>	1%	



Figure 295. Successional maritime forest in Parcel 37 (37.01).

Table 247. 37.02 Maritime shrubland

Obs. pt. 37.02 Form 3: Form 2 occ #: 1

Community: Maritime shrubland CEGL code: Alliance code:

UTM: zone 19 252207 E, 4573590 N Comments: MS on bluff slope. Aspect: 195 degrees. Slope: 44 degrees. Maritime bluff?

Lat: Long: Photo Photo name: 34 face W, 35 and 37 face E

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	3%, 1m Prunus serotina var. serotina	3%		
TS3	5%, 0.4m Prunus serotina var. serotina	5%		
TS3	Quercus alba	0.01%		
SS2	35%, 0.75m Morella caroliniensis	35%		
SS3	25%, 0.25m Morella caroliniensis	15%		
SS3	Rubus flagellaris	10%		
V2	37%, 0.75m Lonicera japonica	15%		
V2	Celastrus orbiculatus	10%		
V2	Toxicodendron radicans ssp. radicans	10%		
V2	Parthenocissus quinquefolia	2%		
H	12% Schizachyrium scoparium var. scopari	5%		
H	Solidago sempervirens	5%		
H	Grass	1%		
H	Achillea millefolium	0.01%		
H	Erigeron canadensis var. canadensis	0.01%		



Figure 296. Maritime shrubland in Parcel 37 (37.02).

Table 248. 37.03 Maritime rocky beach

Obs. pt. 37.03a Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach"

CEGL code:

Alliance code:

UTM: zone 19 252209 E, 4573593 N

Lat: Long:

Comments: Maritime rocky beach. Aspect: 200 degrees. Slope: 12 degrees. Unvegetated variant.

Photo Photo name: 38 face W, 39 face W with stick

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
U	100%	large rocks >10 cm	40%	
U		very large rocks >1 m	40%	
U		small rocks <10 cm	20%	



Figure 297. Maritime rocky beach in Parcel 37 (37.03a).



Figure 298. Maritime rocky intertidal community in Parcel 37 (quadrat 37A_10m) with Meaghan McCormack.

Table 249. 37.04 Reed grass marsh

Obs. pt. 37.04 Form 3: Form 2 occ #: 1
 Community: Reed grass marsh CEGL code: Alliance code:
 UTM: zone 19 252089 E, 4573672 N Comments: Phragmites marsh around pond
 Lat: Long: Photo Photo name: 42
 Position method GPS
 GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
V	30%, 1.5m	Toxicodendron radicans ssp. radicans	30% on Phragmites	
H	96%, 4m	Phragmites australis	95%	
H		Hibiscus moscheutos	1%	



Figure 299. Reed grass marsh in Parcel 37 (37.04).

Table 250. 37.05 Maritime shrubland

Obs. pt. 37.05 Form 3: Form 2 occ #:

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 252245 E, 4573599 N

Comments: Possibly off parcel;

Lat: 41.26791679 Long: -71.9793817

Photo Photo name: 68 face E, 69 face W, 70 face NNE along trail

Position method GPS

GPS average 800 readings

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
TS1 20%, 3m	Prunus serotina var. serotina	15%		
TS1	Juniperus virginiana var. virginiana	3%		
TS1	Quercus velutina	2%		
TS2 8%, 1m	Prunus serotina var. serotina	5%		
TS2	Quercus velutina	2%		
TS2	Frangula alnus	1%		
SS1 38%, 2m	Morella caroliniensis	20%		
SS1	Lonicera morrowii	10%		
SS1	Rhus copallinum var. copallinum	8%		
SS2 50%, 1m	Lonicera morrowii	20%		
SS2	Morella caroliniensis	15%		
SS2	Rhus copallinum var. copallinum	15%		
SS2	Viburnum dentatum var. lucidum	2%		
SS2	Rubus allegheniensis	1%		
SS3 15%, 0.5m	Lonicera morrowii	5%		
SS3	Morella caroliniensis	5%		
SS3	Rhus copallinum var. copallinum	5%		
V2 65%, 1.25m	Celastrus orbiculatus	30%		
V2	Lonicera japonica	25%		
V2	Parthenocissus quinquefolia	5%		
V2	Toxicodendron radicans ssp. radicans	5%		
H 5%, 0.6m	Dichanthelium clandestinum	5%		
H	Achillea millefolium	0.01%		



Figure 300. Maritime shrubland in Parcel 37 (37.05): Left: face E; Right: face NE.

Table 251. 37.06 Successional maritime forest

Obs. pt. 37.06 Form 3: Form 2 occ #:

Community: Mowed roadside/pathway
Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 252280 E, 4573626 N

Comments: Mowed path junction (likely off parcel); SMF N and W of this point;

Lat: 41.26773005 Long: -71.9792897

Photo Photo name: 71 face NW from trail jct

Position method GPS

GPS average 650 readings

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	50%, 8m	Quercus velutina	25%	
T2		Prunus serotina var. serotina	20%	
T2		Frangula alnus	10%	
T2		Quercus alba	5%	
TS1	15%, 2.5m	Prunus serotina var. serotina	10%	
TS1		Frangula alnus	5%	
TS2	5%, 1m	Frangula alnus	5%	
TS3	1%, 0.5m	Quercus alba	1%	
TS3		Quercus velutina	0.01%	
SS1	10%, 3m	Amelanchier canadensis	5%	
SS1		Viburnum dentatum var. lucidum	5%	
SS2	10%, 1.5m	Lonicera morrowii	10%	
SS3	5%, 0.5m	Rubus sp.	5%	
V2	38%, 0.5m	Toxicodendron radicans ssp. radicans	30%	
V2		Celastrus orbiculatus	5%	
V2		Parthenocissus quinquefolia	3%	
H	0.01%	Solidago rugosa var. rugosa	0.01%	



Figure 301. Successional maritime forest in Parcel 37 (37.06).

Table 252. 37.08 Successional maritime forest

Obs. pt. 37.08 ref Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 252247 E, 4573700 N

Lat: 41.26765963 Long: -71.9792268

Comments: SMF continues to this point from 37.06; point on Parcel 37; but now has large crown widely spaced wolf trees black oaks (*Quercus velutina*) visible on table air photos; Phot 72 95 cm DBH *Q. velutina* just below first horizontal branch at 1 m height;

Photo Photo name: 73,74

Position method GPS

GPS average 325 readings

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Quercus velutina</i>	photo 72		



Figure 302. Black oak (*Quercus velutina* – 95 cm DBH) in successional maritime forest in Parcel 37 (37.08).



Figure 303. Successional maritime forest in Parcel 37 (37.08).

Table 253. 37.09 Successional vineland

Obs. pt. 37.09 ref Form 3: Form 2 occ #:

Community: "Successional vineland"

CEGL code:

Alliance code:

UTM: zone 19 252224 E, 4573847 N

Lat: 41.26797953 Long: -71.9800889

Comments: take photo of dense tall Smilax rotundifolia thicket face~W impenetrable: point on parcel 37;

Photo Photo name: 75

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
V2	Smilax rotundifolia			



Figure 304. Successional vineland in Parcel 37 (37.09).

Obs. pt. 37.10 ref Form 3: Form 2 occ #:

Community: "Successional vineland"

CEGL code:

Alliance code:

UTM: zone 19 252212 E, 4573898 N

Lat: 41.26787996 Long: -71.9801082

Comments: Second photo of Smilax thicket; point off parcel, but vine thicket mostly on Parcel 37;

Photo Photo name: 76

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
V1	Smilax rotundifolia			



Figure 305. Successional vineland in Parcel 37 (37.10).

Obs. pt. 37.11 ref Form 3: Form 2 occ #:

Community:

CEGL code:

Alliance code:

UTM: zone 19 252218 E, 4573938 N

Lat: 41.27334639 Long: -71.9679298

Comments: From this point north SMF transitions to coastal oak-hickory forest with tall straight *Carya glabra* in T2; point off parcel but forest type is on northern tip of Parcel 37;

Photo Photo name: 77 face N

Position method GPS

GPS average min, sec.

WAAS



Figure 306. Coastal oak-hickory forest in Parcel 37 (37.11).

Obs. pt. 37.12

Form 3: Form 2 occ #:

Community: "Successional vineland"
Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 252060 E, 4573943 N
Lat: 41.27326728 Long: -71.9678546

Comments: Widely spaced T2 of *Prunus serotina*; vine covered lower half of all T2 trees; dense tall shrub thicket between trees with blanket of vines on top; Obs. Point on bike trail bridge; Photo log: 79 face S and 83 face S (looking down on vine cover); 80 face SE; 81 face W; 82 face E; 78 face S with bridge rail; osprey platform S of bike path to E; cannot identify shrubs under dense vine layer

Photo Photo name:

Position method GPS

GPS average 815 readings

WAAS

<u>Stratum</u>		<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	30%, 22.5m	<i>Prunus serotina</i> var. <i>serotina</i>	30%		
SS1	10%, 4m	<i>Rubus allegheniensis</i>	10%		
V2	75%, 5m	<i>Ampelopsis glandulosa</i>	50%		
V2		<i>Smilax rotundifolia</i>	25%		
H	5%	<i>Phytolacca americana</i>	3%		
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	2%		



Figure 307. Successional vineland and successional maritime forest in Parcel 37 (37.12).

Parcel 37 Ecological Community Acreage

Table 254. Parcel 37 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
86	0.17	BCL?	Brushy cleared land?	CTERCULT	cleared land
84	0.01	MRB	Maritime rocky beach	CTEROPEN	unvegetated
90	1.02	MRB	Maritime rocky beach	CTEROPEN	unvegetated
91	0.13	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated
89	1.05	MRI	Marine rocky intertidal	CMARINTER	
92	0.36	MS	Maritime shrubland	CTEROPEN	on bluff slope
85	0.48	MS?	Maritime shrubland?	CTEROPEN	SS Clethra?
81	1.39	pond	pond	CLAC	fresh or salt water?
394	0.59	RGM	Reed grass marsh	CPALCULT	Phragmites 95%; fringe of pond
80	5.29	SMF	Successional maritime forest	CTERFOR	
88	0.06	SMF?	Successional maritime forest?	CTERFOR	
395	0.49	SS Clethra	Shrub swamp (Clethra)	CPALOPEN	MS? SUC.S?
82	0.30	SSH?	Successional southern hardwoods?	CTERFOR	
83	0.56	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT ?	pink CIR air photo; vine thicket?
87	1.41	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT ?	pink CIR air photo; vine thicket?
158	0.17	SUC.S?	Successional shrubland?	CTEROPEN	shrubland?
16 polys	13.48 acres	12 types			

Parcel 37 General Description

Parcel 37 is an irregular, U-shaped parcel on the south shore of Fishers Island that surrounds a private residence to the north. The parcel is mostly covered by successional communities back from the shoreline up to the north end of the parcel at East End Road.

Natural communities form narrow bands along the ocean shoreline as follows (Figure 308): Marine rocky intertidal community (EOID 3294) runs along the parcel's southern property line occupying the rocky area between mean low water (MLW) and mean high water (MHW). At slightly higher elevation above MHW it becomes an unvegetated maritime rocky beach (Figure 297, EOID 17561) dominated by large rocks (>10 cm diameter with some over 1 m diameter). The maritime rocky beach is 15-25 m wide and the natural communities behind the rocky beach differ east to west.

On the east half of the parcel the beach abruptly changes to maritime shrubland on a steep bluff face. At the top of the bluff and continuing north is a dense successional maritime forest. East of the private residence is successional southern hardwoods with included impenetrable patches of successional vineland.

On the west half of the parcel, the unvegetated rocky beach becomes more vegetated before it meets a thin band of Old World reed grass (*Phragmites australis*) on the south shore of a small pond. Reed grass continues around the west and north shore of the pond where it becomes wider and denser. The east shore of the pond is mapped as shrub swamp dominated by sweet pepperbush (*Clethra alnifolia*). North of the pond and along the private residence fence on the slope is a patch of Japanese knotweed (*Reynoutria japonica*) that is targeted for management. The west side of the private

residence is similar to the east, dominated by successional southern hardwoods with included impenetrable patches of successional vineland.



Figure 308. Parcel 37 shoreline natural community zones facing east (photo by Troy Weldy 2003).

Most of Parcel 37 is depicted as forested on the circa 1958 USGS 7.5 minute topographic map. However, the currently forested area between Parcel 37 and Barley Field Cove to the east is fully cleared on the mid-1920s black and white air photo. That area is now successional maritime forest.



Figure 309. The pond on Parcel 37 is presumed to be the white patch (sand?) in the middle-bottom part of the photo. Note fully cleared area (large white patch) between Parcel 37 and Barley Field Cove to the east.

Parcel 37 Invasive Plants

The stand of Old World reed grass (*Phragmites australis* – 95%) around the pond in Parcel 37 at point 37.04 is one of the two largest patches found on Land Trust parcels during our ecology surveys. The other large stand is on Parcel 29 with 90% cover.

North of the pond and along the private residence fence on the slope is a patch of Japanese knotweed (*Reynoutria japonica*) that is targeted for management.

Successional maritime forest at point 37.01: Oriental bittersweet (*Celastrus orbiculatus* – 10%), privet (*Ligustrum vulgare* – 25%), and Japanese honeysuckle (*Lonicera japonica* – 15%).

Maritime shrubland at point 37.02: Oriental bittersweet (*Celastrus orbiculatus* – 10%) and Japanese honeysuckle (*Lonicera japonica* – 15%).

Maritime shrubland at point 37.05: Oriental bittersweet (*Celastrus orbiculatus* – 30%), glossy buckthorn (*Frangula alnus* – 1%), Japanese honeysuckle (*Lonicera japonica* – 25%), and Morrow's honeysuckle (*Lonicera morrowii* – 35%).

Successional maritime forest at point 37.06: Oriental bittersweet (*Celastrus orbiculatus* – 5%), glossy buckthorn (*Frangula alnus* – 20%), and Morrow's honeysuckle (*Lonicera morrowii* – 10%).

Successional vineland at point 37.12: porcelain berry (*Ampelopsis brevipedunculata* – 50%).

Parcel 37 Management Recommendations

Invasive plant management should focus on areas around the pond. The pond in Parcel 37 appears to be freshwater, but it likely becomes brackish after storm surges. Restoration and management could take two directions:

1. Freshwater pond option: this pond appeared mostly freshwater to slightly brackish in 2003 based on the vegetation observed on NYNHP surveys. If sufficient resources were available to eradicate Old World reed grass and Japanese knotweed around the pond, while retaining as much of the existing native flora as possible, natural community restoration could radiate out in concentric bands around the pond as follows: 1) 2-3 m zone of shrub swamp co-dominated by water willow (*Decodon verticillatus*) and sweet pepperbush (*Clethra alnifolia*) – *Clethra* already present in some spots; 2) 5-10 m zone of red maple-blackgum fringe swamp; grading to 3) existing maritime shrubland and successional maritime forest. This zonation pattern was repeatedly observed around most freshwater ponds surveyed during our ecology surveys. However, nearly all of these ponds were more interior and embedded within forests, not set behind a maritime rocky beach as this one. See the Classification of Natural and Semi-natural Communities of the Henry L. Ferguson Museum Land Trust (Edinger 2023a) for full species lists for each type.
2. Brackish to saltwater pond option (i.e., create a coastal salt pond): since there is not a permanent outlet allowing tidal processes this may not be the preferred option, but it may make sense given predicted sea level rise. In which case, after removal of Old World reed grass and Japanese knotweed, the coastal salt pond shore could be created by establishing a high salt marsh fringe surrounded by a taller backdrop of salt shrub and maritime shrubland like the coastal salt pond at point 25.05a on Stony Beach (Figure 203).

The invasive plants in the upland portions of Parcel 37 seem overwhelming. Total invasive cover ranges from 25% at point 37.02 to 90% at point 37.05. The maritime shrubland on the bluff slope might be good place to start (west of point 37.01).

See APPENDIX A. Invasive Species Control Information available online.

Parcel 37 Future Surveys

Two marine rocky intertidal transects (14.6 m and 10.2 m) with seven 1 m x 1 m quadrats were sampled at low tide on September 14, 2021 near Parcel 37. Resampling these transects on a 5-10 year rotational basis would document changes in the community structure and composition. More information on the marine rocky intertidal community can be found in Edinger (2023a); and the Fishers Island Marine Rocky Intertidal Survey Addendum (Edinger 2023b).

Parcel 38. Matty Matthiesen Wildlife Sanctuary (Island Pond Beach)



Figure 310. Parcel 38: Matty Matthiesen Wildlife Sanctuary (Island Pond Beach).

Table 255. 38.01 Maritime dunes

Obs. pt. 38.01 Form 3: Form 2 occ #:

Community: Maritime dunes

CEGL code:

Alliance code:

UTM: zone 19 250386 E, 4572814 N

Comments: Small patch of maritime dunes.

Lat: Long:

Photo Photo name: 274 face W, 275 face W

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
H 71%	Calamagrostis breviligulata	70%		
H	Lathyrus japonicus var. maritimus	1%		
U 99%	sand <2 mm	99%		
U	litter and duff	35%	beach grass thatch	
U	wood (CWD) >7.5 cm	2%	log	



Figure 311. Maritime dunes in Parcel 38 (38.01) face W.



Figure 312. Beach grass (*Calamagrostis breviligulata*) in maritime dunes in Parcel 38 (38.01).

Table 256. 38.02 Maritime dunes

Obs. pt. 38.02 ref Form 3: Form 2 occ #:

Community: Maritime dunes

CEGL code:

Alliance code:

UTM: zone 19 250379 E, 4572855 N

Lat: Long:

Comments: GPS taken on ridge of small dune. To the N is an overwash dune swale that is surrounded by maritime shrubland on 3 sides (W, N, E). The dune ridge continues E and W of point. Immediately S is an unvegetated interdunal sand flat/swale then a patch of typical beach grass dominated dunes. Reference point, Full vegetation cover data not collected.

Photo Photo name: 276 face N, 277 face E, 278 face S, 279 face W

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	<i>Euphorbia polygonifolia</i>	0.01% photo 281		
H	<i>Honckenya peploides</i>	0.01% photo 285		
H	<i>Triplasis purpurea</i>	0.01% photo 282, 283		



Figure 313. Left: Beach grass (*Calamagrostis breviligulata*); Right: northern seaside spurge (*Euphorbia polygonifolia*) in maritime dunes in Parcel 38 (38.02).



Figure 314. Left: Seabeach sandwort (*Honckenya peploides*); Right: Purple sand grass (*Triplasis purpurea*) in maritime dunes in Parcel 38 (38.02).

Table 257. 38.03 Maritime shrubland

Obs. pt. 38.03 Form 3: Form 2 occ #: 1

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 250370 E, 4572873 N

Comments: Tall maritime shrubland surrounds (20 m x 20 m) flat overwash dune flats on three sides (W, N, E).

Lat: Long:

Photo Photo name: 276 back face N

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	20%, 3m	Baccharis halimifolia	15%	
SS1		Morella caroliniensis	5%	
SS2	57%, 1.5m	Morella caroliniensis	30%	
SS2		Baccharis halimifolia	25%	
SS2		Rosa rugosa	2%	
V	5%	Toxicodendron radicans ssp. radicans	5%	
H	10%	Phragmites australis	10%	



Figure 315. Maritime shrubland in Parcel 38 (38.01).

Table 258. 38.04 Maritime dunes (over-wash)

Obs. pt. 38.04 Form 3: Form 2 occ #: 1

Community: Maritime dunes

CEGL code:

Alliance code:

UTM: zone 19 250373 E, 4572860 N

Lat: Long:

Comments: Maritime dune overwash swale flat. This vegetation association is also on dune ridge at GPS point and extends east into Phragmites marsh. "Maritime dunes overwash swale"?

Photo Photo name: 276 face N front

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
V2	5%, 0.2m	Parthenocissus quinquefolia	5%	
H	60%	Sporobolus pumilus	30%	
H		Calamagrostis breviligulata	20%	
H		Solidago sempervirens	10%	
H		Erigeron canadensis var. canadensis	0.01%	
U	98%	sand <2 mm	98%	
U	10%	litter and duff	10%	Sporobolus pumilus thatch



Figure 316. Maritime dunes over-wash swale in Parcel 38 (38.04).

Table 259. 38.05 Maritime shrubland

Obs. pt. 38.05 Form 3: Form 2 occ #: 1
 Community: Maritime shrubland CEGL code: Alliance code:
 UTM: zone 19 250199 E, 4572807 N Comments: GPS in overwash notch into tall maritime shrubland that is succeeding into SMF.
 Lat: Long: Photo Photo name: 290-292
 Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	30%, 5m	Prunus serotina var. serotina	20%	
TS1		Juniperus virginiana var. virginiana	10%	
TS2	18%, 2m	Prunus serotina var. serotina	15%	
TS2		Juniperus virginiana var. virginiana	3%	
TS2		Frangula alnus	0.01%	
SS1	12%, 3m	Morella caroliniensis	7%	
SS1		Rhus copallinum var. copallinum	5%	
SS2	39%, 1.5m	Morella caroliniensis	30%	
SS2		Rosa rugosa	5%	
SS2		Baccharis halimifolia	2%	
SS2		Lonicera morrowii	2%	
SS3		Morella caroliniensis	5%	
SS3	13%, 0.5m	Rhus copallinum var. copallinum	5%	
SS3		Rosa rugosa	3%	
V	20%, 0.8m	Toxicodendron radicans ssp. radicans	20%	
H	2%	Gnaphalium uliginosum	1%	ID uncertain
H		Solidago sempervirens	1%	
H		Erigeron canadensis var. canadensis	0.01%	
U	37%	litter and duff	30%	bayberry and poison ivy leaves
U		wood (CWD) >7.5 cm	4%	logs
U		wood (FWD) <7.5 cm	3%	



Figure 317. Maritime shrubland in Parcel 38 (38.05).

Parcel 38 Ecological Community Acreage

Table 260. Parcel 38 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
283	0.58	HSM Phragmites	High salt marsh	CESTINTER	Phragmites 30%
441	0.12	HSM Phragmites	High salt marsh	CESTINTER	
279	0.07	MD	Maritime dunes	CTEROPEN	
282	0.02	MD	Maritime dunes	CTEROPEN	
284	0.34	MD	Maritime dunes	CTEROPEN	
285	2.48	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	cobble substrate 2020
484	0.13	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	sand substrate 2020
485	0.38	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	sand substrate 2020
286	1.80	MRB	Maritime rocky beach	CTEROPEN	unvegetated; cobble substrate
487	0.19	MRB	Maritime rocky beach	CTEROPEN	rocky substrate
488	0.25	MRB	Maritime rocky beach	CTEROPEN	rocky substrate
213	0.25	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated
118	0.41	MRI	Marine rocky intertidal	CMARINTER	
120	0.08	MS	Maritime shrubland	CTEROPEN	
121	3.73	MS	Maritime shrubland	CTEROPEN	Phragmites 10%; incl short & tall MS + young SMF
280	0.03	MS	Maritime shrubland	CTEROPEN	includes short and tall variant and young SMF
281	0.10	MS	Maritime shrubland	CTEROPEN	includes short and tall variant and young SMF
486	0.66	MSB	Maritime sand beach	CTEROPEN	unvegetated; sand substrate
18 polys	11.61	8 types			

Parcel 38 General Description

Parcel 38 is a barrier rocky beach with an ocean-facing shoreline that runs about 550 m northeast to southwest on the south side of Island Pond. Natural communities form narrow bands along the ocean shoreline as follows: A small patch of marine rocky intertidal community (EOID 3294) is located at the east end of the parcel and continues east onto Parcel 38b. However, most of the shore to the west is marine intertidal gravel/sand beach composed of large cobbles in the area between mean low water (MLW) and mean high water (MHW).

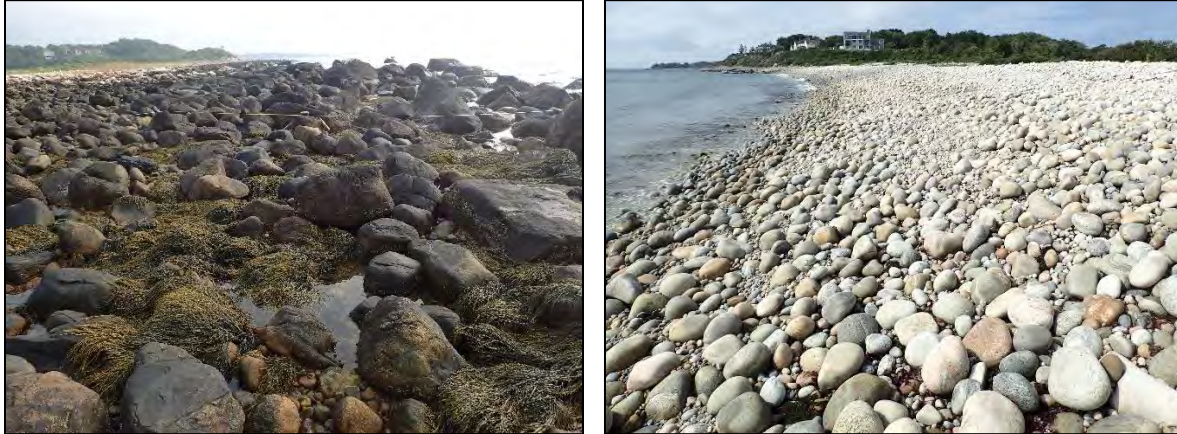


Figure 318. Parcel 38. Left: marine rocky intertidal community face E toward Parcel 38b; Right: marine intertidal gravel/sand beach along water and maritime rocky beach above tide line right, face W.

At slightly higher elevation above MHW it becomes an unvegetated maritime rocky beach dominated by large round cobbles (Figure 318, EOID 17561). The maritime rocky beach becomes sparsely vegetated with characteristic beach plants, such as beach grass (*Calamagrostis breviligulata*) and seaside goldenrod (*Solidago sempervirens*) before it transitions to maritime shrubland dominated by bayberry (*Morella caroliniensis* – 35%) and Island Pond (coastal salt pond, EOID 2925) to the north.

There are a few small patches of maritime dunes and maritime sandy beach at the east end of the parcel where sand has accumulated and buried the cobbles (Figure 311, point 38.01), including a small maritime dune over-wash area that might be evidence of a past storm surge (Figure 316) at point 38.04. Sandy beaches were only found at three locations on Land Trust parcels (Parcel 43, Parcel CC2, and on the line between Parcel 38 and Parcel 38b).

Parcel 38 has the third best Landscape Condition Analysis Score of the 77 Land Trust parcels (LCA Score: 13.08; range 0 to 1728).

Parcel 38 Invasive Plants

Maritime shrubland at point 38.03: Old World reed grass (*Phragmites australis* – 10%) and beach rose (*Rosa rugosa* – 2%).

Maritime shrubland at point 38.05: beach rose (*Rosa rugosa* – 8%), Morrow's honeysuckle (*Lonicera morrowii* – 2%), and glossy buckthorn (*Frangula alnus* – <1%).

Parcel 38 Management Recommendations

Invasive plants should be removed from the maritime shrubland at points 38.03 and 38.05, while there are only four species present, and each one currently has 10% or less cover.

The shoreline natural communities, such as the marine rocky intertidal and maritime rocky beach, extend east onto Parcel 38b. Management plans for adjacent parcels should be developed in tandem at the natural community level rather than following strict parcel boundaries.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 38 Future Surveys

Two marine rocky intertidal transects (70 m and 17 m) with eight 1 m x 1 m quadrats were sampled at low tide on September 15, 2021 near Parcel 38 and Parcel 38b. Resampling these transects on a 5-10 year rotational basis would document changes in the community structure and composition. More information on the marine rocky intertidal community can be found in Edinger (2023a); and the Fishers Island Marine Rocky Intertidal Survey Addendum (Edinger 2023b).

Parcel 38b. Beach Pond Outlet



Figure 319. Parcel 38b: Beach Pond Outlet.

Table 261. 38b.01 Maritime rocky beach

Obs. pt. **38b.01** Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach" CEGL code: Alliance code:

UTM: zone 19 250567 E, 4572856 N
 Lat: Long:

Comments: GPS taken on line between MRI (black rock zone) and Maritime rocky beach (white rock zone). 38b.01 cover is taken from maritime rocky beach (white rock zone).

Photo Photo name: 263 face E, 264, face W, 265 face N, 266 face E

Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	1%, 0.2m	Distichlis spicata	1%	
U	98%	large rocks >10 cm	65%	
U		small rocks <10 cm	25%	
U		very large rocks > 1 m	10%	
U		wood (CWD) >7.5 cm	1%	
U		wood (FWD) <7.5 cm	1%	
U		wrack	0.01%	



Figure 320. Maritime rocky beach (white rocks) and marine rocky intertidal community (black rocks) in Parcel 38b (38b.01): Left: face E; Right: face W.

Table 262. 38b.02 Maritime rocky beach (vegetated)

Obs. pt. **38b.02** Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach - vegetated"

CEGL code:

Alliance code:

UTM: zone 19 250549 E, 4572887 N

Lat: Long:

Comments: Upper vegetated zone of maritime rocky beach. Photo 271 of artificial tidal ditch outlet to CSP between Parcels 38 and 38b. >50% total vegetation cover = vegetated variant >10% veg cover (sparsely vegetated definition <10% veg cover).

Photo Photo name: 267 face E to MRB, 268 face W to MS, 269 face N to CSP

Position method GPS

GPS average min, sec.

WAAS

Stratum		Species	comments	Collection	Unsure of ID
SS2	3%, 0.8m	Rosa rugosa	2% 0.6-1.0 m		
SS2		Baccharis halimifolia	1%		
V2	6%, 0.5m	Toxicodendron radicans ssp. radicans	6%		
H	50%, 0.5m	Lathyrus japonicus var. maritimus	20% 0.2 m		
H		Solidago sempervirens	20% 0.5 m		
H		Elymus sp.	5%		
H		Nipponanthemum nipponicum	3%		
H		Ambrosia artemisiifolia	0.01%		
H		Persicaria sp.	0.01% fat spike pink		
H		Sonchus sp.	0.01%		
U		large rocks >10 cm	50% no rocks >1 m		
U	98%	small rocks <10 cm	50%		



Figure 321. Left: Maritime rocky beach (vegetated) in Parcel 38b (38b.02); Non-native Nippon daisy (*Nipponanthemum nipponicum*) at point 38b.02.

Table 263. 38b.03 Salt shrub

Obs. pt. **38b.03** Form 3: Form 2 occ #: 1

Community: Salt shrub

CEGL code:

Alliance code:

UTM: zone 19 250533 E, 4572882 N

Comments: Salt shrub.> Maritime shrubland.patch located west of GPS point.

Lat:

Long:

Photo Photo name: 268 face W

Position method Digital Ortho-Images

GPS average min. sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	50%, 1.8m	Baccharis halimifolia	50%	1.6-2.0 m
SS3	10%, 0.5m	Baccharis halimifolia	10%	
V	25%, 1m	Toxicodendron radicans ssp. radicans	25%	0.5-1.5 m
H	25%	Lathyrus japonicus var. maritimus	10%	
H		Solidago sempervirens	10%	
H		Elymus sp.	5%	ID uncertain



Figure 322. Salt shrub in Parcel 38b (38b.03).

Table 264. 38b.04 High salt marsh

Obs. pt. **38b.04** Form 3: Form 2 occ #: 1

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 19 250474 E, 4572874 N

Lat: Long:

Comments: HSM invaded by Phragmites at top of artificial channel west side. Estuarine reed grass marsh?

Photo Photo name: 273

Position method GPS

GPS average min. sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	10%, 1.35m	Iva frutescens	10%	1.2-1.5 m
SS3	2%, 0.5m	Iva frutescens	2%	
H	70%	Phragmites australis	30%	
H		Sporobolus pumilus	20%	
H		Juncus gerardi	15%	
H		Solidago sempervirens	5%	



Figure 323. High salt marsh invaded by Old World reed grass (*Phragmites australis*) in Parcel 38b (38b.04).

Parcel 38b Ecological Community Acreage

Table 265. Parcel 38b Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
440	0.03	HSM Phragmites	High salt marsh	CESTINTER	
211	1.55	MRB	Maritime rocky beach	CTEROPEN	unvegetated
487	0.19	MRB	Maritime rocky beach	CTEROPEN	rocky substrate
488	0.25	MRB	Maritime rocky beach	CTEROPEN	rocky substrate
213	0.25	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated
275	0.46	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated
364	0.10	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated
93	4.89	MRI	Marine rocky intertidal	CMARINTER	
14	1.11	MS	Maritime shrubland	CTEROPEN	
276	0.36	SAL.S tall	Salt shrub (tall)	CESTINTER	
10 polys	9.21 acres	6 types			

Parcel 38b General Description

Parcel 38 is a barrier rocky beach with an ocean-facing shoreline that runs about 260 m northeast to southwest on the south side of Beach Pond (coastal salt pond EOID 2925). An artificial tidal channel cuts through the center of Parcel 38b allowing tidal flow into and out of Beach Pond. Natural communities form narrow bands along the ocean shoreline as follows: Marine rocky intertidal community (Figure 320, EOID 3294) runs along the parcel's southeast property line occupying the rocky area between mean low water (MLW) and mean high water (MHW). At slightly higher elevation above MHW it becomes an unvegetated maritime rocky beach (Figure 320, EOID 17561) dominated by large rocks (>10 cm diameter with some over 1 m diameter). In the northeast corner of the parcel, on the shore of Beach Pond, the maritime rocky beach becomes more vegetated (Figure 321) grading into salt shrub to the southwest ending with a small patch of *Phragmites* by the artificial tidal channel outlet.

On the west side of the tidal channel is a mosaic of several maritime communities as follows: maritime rocky beach, maritime rocky beach (vegetated), maritime shrubland, maritime sand beach*, and maritime dunes. A narrow band of high salt marsh invaded with Old World reed grass (*Phragmites australis*) extends from the tidal channel outlet to the north along the west shore of Beach Pond.

*Sandy beaches were only found at three locations on Land Trust parcels (Parcel 43, Parcel CC2, and on the line between Parcel 38 and Parcel 38b).

The Parcel 38b Landscape Condition Analysis Score of 0.0 is the best score of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel 38b Invasive Plants

Maritime rocky beach (vegetated) at point 38b.02: beach rose (*Rosa rugosa* – 2%) and sow thistle (*Sonchus arvensis* – <1%)

High salt marsh invaded by Old World reed grass (*Phragmites australis* – 30%) at point 38b.04.

Parcel 38b Management Recommendations

Removal of the few invasive and non-native plants, currently with low percent cover, from the vegetated maritime rocky beach at point 38b.02 would improve the floristic quality of this community.

The salt shrub patch at point 38b.03 is one of only two salt shrub locations on Land Trust parcels with no invasives found during our ecology surveys. The other 100% native plant salt shrub is at point 25.08e on Stony Beach. The salt shrub area should be monitored for invasive species and any invasives should be removed immediately after discovery.

The shoreline natural communities, such as the marine rocky intertidal and maritime rocky beach, extend west onto Parcel 38 and east onto Parcel 3. Management plans for adjacent parcels should be developed in tandem at the natural community level rather than following strict parcel boundaries.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 38b Future Surveys

Two marine rocky intertidal transects (70 m and 17 m) with eight 1 m x 1 m quadrats were sampled at low tide on September 15, 2021 near Parcel 38 and Parcel 38b. Resampling these transects on a 5-10 year rotational basis would document changes in the community structure and composition. More information on the marine rocky intertidal community can be found in Edinger (2023a); and the Fishers Island Marine Rocky Intertidal Survey Addendum (Edinger 2023b).

Parcel 40. Gordon Field



Figure 324. Parcel 40.

Table 266. 40.01 Mowed lawn with trees

Obs. pt. 40.01 ref Form 3: Form 2 occ #:

Community: Mowed lawn with trees

CEGL code:

Alliance code:

UTM: zone 18 749973 E, 4571928 N

Lat: 41.27792389 Long: -71.9876689

Comments: Drive by survey of MLWT; Stream drainage along east margin of parcel; stone wall along north edge of lawn;

Photo Photo name: 160 face NE

Position method Digital Ortho-Images

GPS average min, sec.

WAAS



Figure 325. Mowed lawn with trees in Parcel 40 (40.01).

Table 267. 40.02 Successional southern hardwoods

Obs. pt. 40.02 ref Form 3: Form 2 occ #:

Community: Successional southern hardwoods
Japanese knotweed thicket

CEGL code:

Alliance code:

UTM: zone 18 750973 E, 4571928 N

Lat: 41.27800109 Long: -71.986777

Comments: Modified SSH invaded by Japanese knotweed; no photo taken; observed from road facing W

Photo Photo name:

Position method Digital Ortho-Images

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	Acer pseudoplatanus			
T2	Ailanthus altissima			
H	Reynoutria japonica			

Parcel 40 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
95	0.74	MLWT	Mowed lawn with trees	CTERCULT	
505	0.03	rock wall	rock wall	CTERCULT	
506	0.25	SSH	Successional southern hardwoods	CTERCULT	stream drainage
3 polys	1.02 acres	3 types			

Parcel 40 General Description

Parcel 40 appears to be part of a residential property bounded by three roads that form a triangle: Oriental Ave. to the east; Ettrick Ave. to the south; and Oceanic Ave. to the west. The Land Trust part of the triangle is comprised of 0.75-acre mowed lawn with a few scattered trees along Ettrick Ave.; and a weedy, modified successional southern hardwoods with a small stream drainage parallel to Orient Ave.

Parcel 14 has the lowest Landscape Condition Analysis Score of the 77 Land Trust parcels (LCA Score: 1728.48; range 0 to 1728).

Parcel 40 Invasive Plants

The successional southern hardwoods has the following invasive plants: sycamore maple (*Acer pseudoplatanus*), tree of heaven (*Ailanthus altissima*), and Japanese knotweed (*Reynoutria japonica*).

Parcel 40 Management Recommendations

It would be good to reduce or remove the invasive plants from the successional southern hardwoods, but the parcel's small size and poor landscape setting makes it a low priority for management compared to other parcels on the Island. It may be best to let succession run its course in Parcel 40 and hopefully the increased canopy shade will help the woods along the stream drainage transition to a forest with a greater number of native trees.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 43. Chocomount Trail Beach Access



Figure 326. Parcel 43: Gordon Field.

Table 268. 43.01 Marine intertidal gravel/sand beach

Obs. pt. 43.01 Form 3: Form 2 occ #: 1

Community: Marine intertidal gravel/sand beach

CEGL code:

Alliance code:

UTM: zone 19 251712 E, 4573664 N

Comments: From waterline walk inland and sample obs pts in the center each zone encountered. Slope: 8 degrees. Aspect: 143 degrees.

Lat: Long:

Photo Photo name: 01 face E, 02 face W

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
U	100%	sand <2 mm	99%	
U		shells	0.01%	
U		small rocks <10 cm	0.01%	
U		wrack	0.01%	stranded marine algae, Ulva, red filamentous, and dead eelgrass



Figure 327. Marine intertidal gravel/sand beach in Parcel 43 (43.01): Left: face E; Right: face W.

Table 269. 43.02 Maritime sand beach

Obs. pt. 43.02 Form 3: Form 2 occ #: 1

Community: "Maritime sand beach" CEGL code: Alliance code:

UTM: zone 19 251708 E, 4573674 N Comments: Maritime sandy beach. Active recreation beach. Slope: 8 degrees. Aspect: 143 degrees.
 Lat: Long:

Photo Photo name: 03 face E, 04 face W

Position method GPS
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
U	100% sand <2 mm	99% dry sand with 85% cover of foot prints		
U	wrack	0.01% dead eelgrass, Fucus		

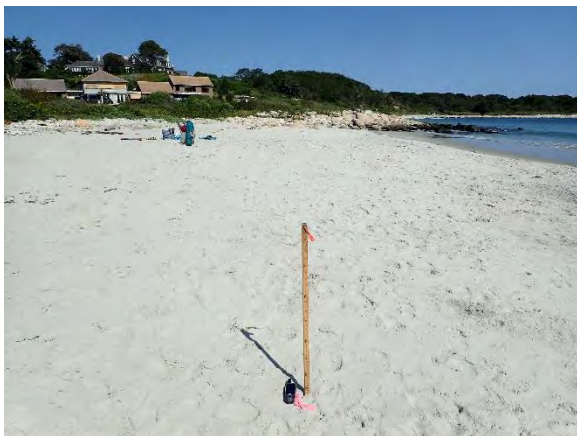


Figure 328. Maritime sand beach in Parcel 43 (43.02): Left: face E; Right: face W.

Table 270. 43.03 Maritime rocky beach (vegetated)

Obs. pt. 43.03 Form 3: Form 2 occ #: 1

Community: "Maritime rocky beach - vegetated" CEGL code: Alliance code:

UTM: zone 19 251704 E, 4573898 N Comments: Vegetated upper rocky beach. Slope: 4 degrees. Aspect: 143 degrees. >50% total vegetation cover = vegetated variant >10% veg cover (sparsely vegetated definition <10% veg cover).

Lat: Long: Photo Photo name: 05 face E, 06 face W

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	2%, 1.1m	Prunus serotina var. serotina	2%	
SS2	40%, 1m	Rosa rugosa	25% 1.0 m	
SS2		Morella caroliniensis	12% 1.3 m	
SS2		Baccharis halimifolia	3% 0.9 m	
SS2		Rhus copallinum var. copallinum	1% 0.6 m	
SS3	7%, 0.3m	Rosa rugosa	5%	
SS3		Rhus copallinum var. copallinum	1%	
SS3		Rubus allegheniensis	1%	ID uncertain
V2		Fallopia scandens	5%	
V2	11%, 0.2m	Toxicodendron radicans ssp. radicans	5%	
V2		Ampelopsis glandulosa	1%	
H		Lathyrus japonicus var. maritimus	12% 0.5 m	
H	33%, 0.4m	Solidago sempervirens	12% 0.25-0.7 m	
H		Atriplex sp.	8% 0.3 m	
H		Dichanthelium sp.	0.01%	ID uncertain
H		Raphanus raphanistrum	0.01%	ID uncertain
H		Verbascum thapsus	0.01% dead	
H		Xanthium strumarium	0.01%	
U	98%	small rocks <10 cm	45%	
U		large rocks >10 cm	40%	
U		wood (CWD) >7.5 cm	12% logs and tmbers washed up on shore	
U		very large rocks >1 m	1%	



Figure 329. Maritime rocky beach (vegetated) in Parcel 43 (43.03): Left: face E; Right: face W.

Table 271. 43.04 Maritime shrubland

Obs. pt. 43.04 Form 3: Form 2 occ #: 1

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 251710 E, 4573714 N

Comments: Maritime shrubland tall//SMF. Flat.

Lat: Long:

Photo Photo name: 07 face N, 08 face W

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	25%, 4.5m	Prunus serotina var. serotina	25%	
TS3	0.01%, 0.15m	Quercus velutina	0.01%	ID uncertain
SS1	55%, 3.5m	Baccharis halimifolia	30%	SS1 3-4 m
SS1		Lonicera morrowii	25%	
SS2		Rhus copallinum var. copallinum	1%	
SS2		Rubus allegheniensis	1%	
SS2	3%, 1.2m	Sambucus nigra ssp. canadensis	1%	
SS2		Lonicera morrowii	0.01%	
SS3	5%, 0.3m	Rubus allegheniensis	3%	
SS3		Morella caroliniensis	1%	
SS3		Rhus copallinum var. copallinum	1%	
V	6%, 0.8m	Ampelopsis glandulosa	5%	1.5 m
V		Parthenocissus quinquefolia	1%	
H		Solidago rugosa var. rugosa	2%	1.0 m
H	5%, 1m	Solidago sempervirens	2%	1.0 m
H		Artemisia vulgaris	0.01%	1.5 m
H		Eurybia divaricata	0.01%	ID uncertain
U	98%	litter and duff	98%	dead plant stalks and leaves
U		sand <2 mm	1%	
U		large rocks >10 cm	0.01%	
U		small rocks <10 cm	0.01%	



Figure 330. Maritime shrubland in Parcel 43 (43.04): Left: face N; Right: face W.

Table 272. 43.05 Maritime shrubland

Obs. pt. **43.05 ref** Form 3: Form 2 occ #:

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 251673 E, 4573679 N

Lat: Long:

Comments: Photo 09 of beach trail to parking lot. Reference point. Vegetation cover data not collected. Unpaved road/path?

Photo Photo name: 09

Position method Digital Ortho-Images

GPS average min, sec. WAAS



Figure 331. Beach access trail in Parcel 43 (43.05).

Table 273. 43.06 Successional vineland and Successional maritime forest

Obs. pt. 43.06 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 251634 E, 4573717 N

Comments: Ampelopsis vineland//SMF back. Note: tablet air photos light gray branches are large Prunus serotina = SMF back E of parking lot.

Lat: Long:

Photo Photo name: 10 face E

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	Prunus serotina var. serotina	35%		
V	Ampelopsis glandulosa	55%		
V	Clematis virginiana	10%		
H	Solidago canadensis var. canadensis	15% 1 m		
H	Artemisia vulgaris	8% 1-3 m		
H	Solidago rugosa var. rugosa	5%		
H	Impatiens capensis	4%		
H	Dichanthelium clandestinum	0.01%		
H	Tridens flavus var. flavus	0.01%		



Figure 332. Successional vineland (front) grading into successional maritime forest (back) in Parcel 43 (43.06) face E.

Parcel 43 Ecological Community Acreage

Table 274. Parcel 43 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
68	0.35	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	
72	0.21	MRB vegetated	Maritime rocky beach (vegetated)	CTEROPEN	vegetated
69	0.05	MS	Maritime shrubland	CTEROPEN	
256	0.38	MS	Maritime shrubland	CTEROPEN	
73	0.16	MSB	Maritime sand beach	CTEROPEN	public swimming beach
8	0.84	SMF	Successional maritime forest	CTERFOR	parking lot W side of parcel
70	0.10	SUC.S//SUC.V	Successional shrubland/vineland	CTEROPEN/CTERCULT ?	blanket vineland thicket on shrubs
71	0.14	UR/P	Unpaved road/path	CTERCULT	
8 polys	2.23 acres	7 types			

Parcel 43 General Description

Parcel 43 is a relatively small parcel on the south shore of Fishers Island. The parcel is located at the terminus of Chocomount Beach Road where there is a parking area and beach access trail.

Natural communities form 80-m long narrow bands east to west along the ocean shoreline as follows:

1. A small patch of marine rocky intertidal community (EOID 3294) barely touches the southeast corner of the parcel and extends for a short distance to the east.
2. Most of the shore of the rocky patch is unvegetated marine intertidal gravel/sand beach composed of mostly sand with scattered rocks in the area between mean low water (MLW) and mean high water (MHW).
3. At slightly higher elevation above MHW it becomes an unvegetated maritime beach with sandy substrate. Sandy beaches were only found at three locations on Land Trust parcels (Parcel 43, Parcel CC2, and on the line between Parcel 38 and Parcel 38b).
4. Behind the sandy beach it changes to rocky substrate co-dominated by beach pea (*Lathyrus japonicus* – 12%) and seaside goldenrod (*Solidago sempervirens* – 12%) classified as maritime rocky beach (vegetated) on map.
5. Further back from the beach to the north it becomes maritime shrubland.
6. Dense successional maritime forest dominated by stunted black cherry (*Prunus serotina*) with gnarly branches occupies the north half of the parcel.

The maritime sandy beach and the maritime rocky beach (vegetated) patches in Parcel 43 are part of a larger significant occurrence of maritime beach (EOID 17561) that wraps around most of Fishers Island.

Parcel 43 Invasive Plants

Maritime rocky beach (vegetated) at point 43.03: beach rose (*Rosa rugosa* – 30%) and porcelain berry (*Ampelopsis brevipedunculata* – 1%).

Maritime shrubland at point 43.04: porcelain berry (*Ampelopsis brevipedunculata* – 5%) and Morrow's honeysuckle (*Lonicera morrowii* – 25%).

Successional vineland at point 43.06: porcelain berry (*Ampelopsis brevipedunculata* – 50%).

Parcel 43 Management Recommendations

Removal of the invasive plants from the vegetated maritime rocky beach at point 43.03 would improve the floristic quality of that community.

The sandy beach at Parcel 43 with public access is likely the most visited and heavily used beach on Land Trust property. Vegetation trampling and trash may be more frequent here compared other beaches. Monitoring these activities and signage may be the only management needed.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 44. Clay Pit Trail



Figure 333. Parcel 44: Clay Pit Trail.

Fisher Island Land Trust Parcels 33, 44, 39, and E-08a together comprise the Clay Pit Trail area.

Table 275. 39.06, 39.07, and 39.09

The following Parcel 39 Observation Points appear on Parcel 44 map:

Obs. pt. 39.06 ref Form 3: Form 2 occ #:

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 249188 E, 4572330 N

Lat: Long:

Comments: Point on trail but not on Ferguson parcel. Big 20 m x 20 m patch of Equisetum arvense with large-fruited Arisaema triphyllum. Nice swamp with big, large-crown red maples and continuous fern cover (similar to 18.01). Reference point. Vegetation cover data not collected.

Photo Photo name: 90-92

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum			
SS3	Rubus hispidus			
H	Arisaema triphyllum			
H	Dryopteris carthusiana			
H	Equisetum arvense			ID uncertain
H	Lorinseria areolata			
H	Osmundastrum cinnamomeum var. cl			

Obs. pt. 39.07 ref Form 3: Form 2 occ #:

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 249156 E, 4572274 N

Lat: Long:

Comments: [= 44.03 point actually in Parcel 44.] Large Nyssa with white tile trail marker 65 cm DBH. Reference point. Vegetation cover data not collected.

Photo Photo name: 93

Position method GPS

GPS average min, sec. WAAS

Obs. pt. 39.09 ref Form 3: Form 2 occ #:

Community: Conifer plantation

CEGL code:

Alliance code:

UTM: zone 19 249005 E, 4572386 N

Lat: Long:

Comments: [= 36a.02 point actually in Parcel 36] New parcel across street from Parcel 39. Abandoned conifer plantation. Norway spruce and white pine with oak growing up in between. Reference point. Vegetation cover data not collected.

Photo Photo name: 95

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Picea abies			
T2	Pinus strobus			
T2	Quercus sp.			

Table 276. 44.04 Red maple-blackgum swamp

Obs. pt. 44.04 Form 3: Form 2 occ #: 1

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 249161 E, 4572298 N

Lat: Long:

Comments: RM-BGS plot 20 m x 20 m - no tape. Small patch swamp. Swamp extends off parcel to N. Note: 60 cm DBH *Betula lenta*, not *B. alleghaniensis*, at S end of swamp on low slope. Photo 232 of this big birch with swamp in background from trail face N. No standing water in swamp. Hollows squishy wet but firm. Flat.

Photo Photo name: 229 face N, 230 face S, 231 general shot of swamp

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	65%, 20m	<i>Acer rubrum</i> var. <i>rubrum</i>	60%	
T2		<i>Nyssa sylvatica</i>	12%	edge of swamp near upland line
T3	33%, 13m	<i>Acer rubrum</i> var. <i>rubrum</i>	25%	
T3		<i>Betula alleghaniensis</i>	6%	
T3		<i>Nyssa sylvatica</i>	5%	
TS1	5%, 5m	<i>Acer rubrum</i> var. <i>rubrum</i>	3%	
TS1		<i>Betula alleghaniensis</i>	3%	
TS2	1%, 1.25m	<i>Frangula alnus</i>	1%	1 m
TS2		<i>Betula alleghaniensis</i>	0.01%	1.5 m
TS3	0.01%, 0.2m	<i>Nyssa sylvatica</i>	0.01%	
SS1	32%, 3.25m	<i>Ilex verticillata</i>	15%	2.2-4 m
SS1		<i>Viburnum dentatum</i> var. <i>lucidum</i>	10%	3 m
SS1		<i>Hydrangea paniculata</i>	5%	5 m
SS1		<i>Sambucus nigra</i> ssp. <i>canadensis</i>	2%	2.2 m
SS2	19%, 1.3m	<i>Ilex verticillata</i>	7%	1.25 m
SS2		<i>Hydrangea paniculata</i>	5%	1.5 m; ID confirmed by Steve Young (Feb. 2022)
SS2		<i>Ligustrum vulgare</i>	2%	1.2 m
SS2		<i>Sambucus nigra</i> ssp. <i>canadensis</i>	2%	
SS2		<i>Viburnum dentatum</i> var. <i>lucidum</i>	2%	
SS2		<i>Rosa multiflora</i>	1%	
SS3	16%, 0.2m	<i>Rubus hispidus</i>	15%	
SS3		<i>Viburnum dentatum</i> var. <i>lucidum</i>	1%	
SS3		<i>Sambucus nigra</i> ssp. <i>canadensis</i>	0.01%	
V2	18%, 0.2m	<i>Parthenocissus quinquefolia</i>	10%	
V2		<i>Lonicera japonica</i>	8%	
H	40%	<i>Equisetum arvense</i>	15%	ID confirmed by Steve Young (Feb. 2022)
H		<i>Dryopteris carthusiana</i>	8%	
H		<i>Lorinseria areolata</i>	5%	
H		<i>Osmundastrum cinnamomeum</i> var. <i>ci</i>	5%	
H		<i>Poa trivialis</i>	3%	or <i>P. palustris</i> ? ID uncertain
H		<i>Carex bromoides</i>	2%	ID uncertain
H		<i>Carex lurida</i>	2%	ID determined by Steve Young (Feb. 2022)
H		<i>Impatiens capensis</i>	1%	
H		<i>Viola</i> sp.	1%	ID uncertain
H		<i>Arisaema triphyllum</i> ssp. <i>triphyllum</i>	0.01%	
H		<i>Maianthemum canadense</i>	0.01%	
H		<i>Scutellaria lateriflora</i>	0.01%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	0.01%	
H		<i>Symphotrichum laeve</i>	0.01%	ID uncertain
N	15%	<i>Auiaconium palustre</i>	13%	other mosses; mostly on hummocks or logs; ID confirmed by Tom Phillips 2022
N		<i>Sphagnum palustre</i>	2%	ID confirmed by Tom Phillips 2022
U	95%	litter and duff	85%	
U		muck	10%	muck/blackleaves in hollows
U		wood (CWD) >7.5 cm	5%	
U		wood (FWD) <7.5 cm	5%	



Figure 334. Red maple-blackgum swamp in Parcel 44 (44.04).



Figure 335. Red maple-blackgum swamp in Parcel 44 (44.04): Left: face N; Right: face S.

Table 277. 44.05 Coastal oak-hickory forest

Obs. pt. 44.05 ref Form 3: Form 2 occ #:

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 249081 E, 4572294 N

Lat: Long:

Comments: Quick obs pt to record tree cover. Along trail west of RM-BGS is COHICKF (no *Carya*). Not dense thicket to parcel 44 and parcel 33. Photo 233, 234 of black oak with tile trail marker. Reference point. Shrub and herb cover data not collected.

Photo Photo name: 233,234

Position method GPS

GPS average min. sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	60% <i>Quercus velutina</i>	60% big, straight trunk		
T3	40% <i>Nyssa sylvatica</i>	25%		
T3	<i>Acer rubrum</i> var. <i>rubrum</i>	20%		



Figure 336. Coastal oak-hickory forest in Parcel 44 (44.05).

Table 278. 44.06 Successional southern hardwoods

Obs. pt. 44.06 Form 3: Form 2 occ #: 1

Community: Successional southern hardwoods

CEGL code:

Alliance code:

UTM: zone 19 249008 E, 4572147 N

Comments: Very young red maple forest both sides of trail.

Lat: Long:

Photo Photo name: 245,246

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	80%, 10m	Acer rubrum var. rubrum	80%	
TS1	20%, 4.5m	Acer rubrum var. rubrum	20%	
SS1	10%, 3m	Vaccinium corymbosum	5%	
SS1		Ilex verticillata	3%	
SS1		Rhododendron viscosum	2%	ID uncertain
SS2		Clethra alnifolia	2%	
SS2	4%, 1.5m	Ilex verticillata	2%	
SS3		Clethra alnifolia	5%	
SS3	12%, 0.4m	Rubus hispidus	5%	
SS3		Ilex verticillata	1%	
SS3		Kalmia angustifolia	1%	
V2	3%, 0.15m	Toxicodendron radicans ssp. radicans	2%	
V2		Smilax rotundifolia	1%	



Figure 337. Successional southern hardwoods in Parcel 44 (44.06).

Parcel 44 Ecological Community Acreage

Parcel 44 is included in the Parcel 33 Ecological Community Acreage Assessment (Figure 269, Table 226).

Parcel 44 General Description

Parcel 44 is in the center of the Clay Pit Trail area on the east side of East End Road within the enclosed loop formed by Isabella Beach Road. The southern third of the parcel is successional southern hardwoods dominated by very young red maple (*Acer rubrum* – 80%) at point 44.06. No invasive plants were found at point 44.06 making this the only successional southern hardwoods comprised of 100% native plants found during our ecology surveys.

The middle third of Parcel 44 is young coastal oak-hickory forest (or perhaps red maple-blackgum slope forest) at point 44.05. This middle portion is part of the coastal oak-hickory occurrence (EOID 17532) on the west side of East End Road in the L. F. Boker Doyle Sanctuary. At the north end of Parcel 44 at point 44.04 there is a small 1.5-acre red maple-blackgum swamp that extends west into Parcel 33. The swamp includes several large red maple (up to 75 cm DBH) and large blackgum (up to 52.5 cm DBH).

The red maple-blackgum swamp in Parcel 44 at point 44.04 has the highest Weighted Floristic Quality Index Score (FQI 22.66) for that community found during our ecology surveys.

Parcel 44 Invasive Plants

Red maple-blackgum swamp at point 44.04: paniced hydrangea (*Hydrangea paniculata* – 10%), Japanese honeysuckle (*Lonicera japonica* – 8%), privet (*Ligustrum vulgare* – 2%), glossy buckthorn (*Frangula alnus* – 1%), and multiflora rose (*Rosa multiflora* – 1%).

Parcel 44 Management Recommendations

Invasive and non-native plants should be removed from the red maple-blackgum basin swamp at point 44.04, especially the paniced hydrangea (*Hydrangea paniculata*), because it has the highest cover and looks like it will spread further into the swamp.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 44 Future Surveys

Several large red maple (*Acer rubrum*) and blackgum (*Nyssa sylvatica*) trees were found in the red maple-blackgum swamp in Parcel 44 at point 44.04. These trees are worthy of increment coring to determine their age.

Survey the interior portion of the coastal oak-hickory forest, away from the red maple-blackgum swamp, to confirm its classification, condition, and extent.

Parcel 46.



Figure 338. Parcel 46.

Table 279. 46.01 Coastal oak-hickory forest

Obs. pt. 46.01 Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest

CEGL code:

Alliance code:

UTM: zone 19 251583 E, 4574309 N

Lat: Long:

Comments: GPS point on 2 m x 5 m boulder height 2 m. Young coastal oak-hickory forest with no *Carya*. 2001 air photos show cleared areas in parcel that have since filled with dense vine thicket (see 46.02).

Photo Photo name: 168 face N

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	65%, 24m	<i>Quercus velutina</i>	65%	
T3	20%, 10m	<i>Prunus serotina</i> var. <i>serotina</i>	15%	
T3		<i>Nyssa sylvatica</i>	5%	
TS1	18%, 5m	<i>Prunus serotina</i> var. <i>serotina</i>	12%	
TS1		<i>Frangula alnus</i>	6%	
TS2	6%, 2m	<i>Frangula alnus</i>	5%	
TS2		<i>Prunus serotina</i> var. <i>serotina</i>	1%	
TS3	3%, 0.5m	<i>Frangula alnus</i>	2%	
TS3		<i>Quercus velutina</i>	0.01%	
SS2	5%, 0.75m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	5%	
V	62%	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	35%	
V		<i>Smilax rotundifolia</i>	15%	
V		<i>Parthenocissus quinquefolia</i>	10%	
V		<i>Hedera helix</i>	2% by road	
H	6%	<i>Dennstaedtia punctilobula</i>	5%	
H		<i>Lysimachia borealis</i>	0.01%	
H		<i>Maianthemum canadense</i>	0.01%	



Figure 339. Coastal oak-hickory forest in Parcel 46 (46.01) face N.

Table 280. 46.02 Successional vineland

Obs. pt. 46.02 Form 3: Form 2 occ #: 1

Community: "Successional vineland"

CEGL code:

Alliance code:

UTM: zone 19 251604 E, 4574279 N

Lat: Long:

Comments: Successional vineland thicket. 2001 air photos show this area cleared and has since filled with dense vine thicket. Photo 167 taken from boulder at obs point 46.01.

Photo Photo name: 167 face S up hill

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
V	50%, 2m	Smilax rotundifolia	50%	vine layer 1-3 tall
H	40%, 1m	Dennstaedtia punctilobula	40%	
U	95%	litter and duff	95%	oak lvs from overhanging trees



Figure 340. Successional vineland in Parcel 46 (46.02) face S uphill.

Parcel 46 Ecological Community Acreage

Table 281. Parcel 46 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
254	2.96	CO-HF	Coastal oak-hickory forest	CTERFOR	Young, no Carya, vine thicket, W side cleared 2001 photo
255	0.65	SUC.V	Successional vineland	CTEROPEN/CTERCULT ?	cleared 2001 air photo, blanket vineland thicket
50	0.16	SUC.S?	Successional shrubland?	CTEROPEN	SOP?
3 polys	3.76 acres	23 types			

Parcel 46 General Description

Parcel 46 is on the south side of Brooks Point Road about 350 m SSE of Brooks Point on the north shore of Fishers Island. At the center of the parcel there is a 0.6-acre opening with a dense thicket of 1 to 3-m tall greenbrier (*Smilax rotundifolia* – 50%) at point 46.02. Around the successional vineland, and covering most of the parcel, is a young coastal oak-hickory forest dominated by black oak (*Quercus velutina* – 65%).

Parcel 46 appears cleared on the mid-1920s black and white air photo. However, this area is depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

The Parcel 46 Landscape Condition Analysis Score of 246.96 (#8 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel 46 Invasive Plants

Coastal oak-hickory forest at point 46.01: glossy buckthorn (*Frangula alnus* – 13%) and English ivy (*Hedera helix* – 2%).

Parcel 46 Management Recommendations

Remove glossy buckthorn (*Frangula alnus*) and English ivy (*Hedera helix*) from coastal oak-hickory forest at point 46.01.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 47, Parcel 48, Parcel 50, and Parcel 51



Figure 341. Top to Bottom: Parcel 50, Parcel 48, Parcel 47, and Parcel 51.

Parcel 50, Parcel 48, Parcel 47, and Parcel 51 are clustered near each other on the far east end of Fishers Island. Each parcel is separately described in this section.

Table 282. 47.01 Successional maritime forest

Obs. pt. 47.01 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 254317 E, 4574672 N

Comments: SMF. Point at top of small knoll - flat then downhill in all directions. Two Quercus alba nearby 22.5 cm DBH

Lat: Long:

Photo Photo name: 06

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	54%, 12m	Prunus serotina var. serotina	30%	gnarly branches
T2		Acer rubrum var. rubrum	15%	
T2		Quercus velutina	15%	straight trunk, but stunted; ID confirmed by Steve Young (Feb. 2022). collect:Y
T2		Nyssa sylvatica	10%	straight trunk, but stunted
T3	24%, 8m	Amelanchier arborea	15%	gnarly branches
T3		Prunus serotina var. serotina	10%	
TS1	3%, 3m	Nyssa sylvatica	3%	
TS2	0.01%, 1m	Acer rubrum var. rubrum	0.01%	
TS3	0.01%, 0.2m	Acer rubrum var. rubrum	0.01%	
SS1		Frangula alnus	5%	
SS1	10%, 4m	Viburnum dentatum var. lucidum	5%	
SS2	12%, 1.1m	Frangula alnus	5%	
SS2		Viburnum dentatum var. lucidum	5%	
SS2		Lonicera morrowii	2%	
SS3		Frangula alnus	2%	
SS3	7%, 0.4m	Lonicera morrowii	2%	
SS3		Viburnum dentatum var. lucidum	2%	
SS3		Rubus sp.	1%	
V	20%, 1m	Smilax rotundifolia	10%	
V		Parthenocissus quinquefolia	5%	
V		Smilax glauca	2%	
V		Toxicodendron radicans ssp. radicans	2%	
V		Lonicera japonica	1%	
V		Vincetoxicum nigrum	0.01%	
H	22%	Carex sp.	15%	incl. C. swanii
H		Solidago rugosa var. rugosa	5%	
H		Lysimachia borealis	1%	
H		Maianthemum canadense	1%	
U	98%	litter and duff	90%	
U		wood (FWD) <7.5 cm	12%	
U		wood (CWD) >7.5 cm	2%	



Figure 342. Successional maritime forest in Parcel 47 (47.01).

Parcel 47. Ecological Community Acreage

Table 283. Parcel 47 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
371	0.1278	MR/P	Mowed roadside/pathway	CTERCULT	maintained powerline ROW along road shoulder
0	2.0292	SMF	Successional maritime forest	CTERFOR	roads along W, S, E sides; dense shrub layer
2 polys	2.16	2 types			

Parcel 47 General Description

Parcel 47 is a dense successional maritime forest on a low knoll comprised of stunted (8-12 m) native trees with gnarly branches. The parcel is bound by roads on three sides, with Castle Road (paved) forming the south boundary and two unpaved, unnamed roads forming the east and west boundaries of the parcel (private driveways?). Access into the parcel is moderately difficult. This parcel is depicted as forested on the circa 1958 USGS 7.5 minute topographic map, but appears open (pasture?) on the mid-1920s black and white air photo. Black cherry (*Prunus serotina* – 30%) is dominant in the canopy and shadbush (*Amelanchier arborea*) is dominant in the subcanopy. All trees are under 25 cm DBH. Arrowwood (*Viburnum dentatum* – 2-5%) is present in all shrub layers with low percent cover. The vine and herb layers are mostly native with each layer having about 20% cover.

Parcel 47 Invasive Plants

Glossy buckthorn (*Frangula alnus* – 12%) is present in all shrub layers.

Morrow's honeysuckle (*Lonicera morrowii* – 4%) is in the short and dwarf shrub layers.

Japanese honeysuckle (*Lonicera japonica* – 1%).

Black swallowwort (*Vincetoxicum nigrum* - <1%).

Parcel 47 Management Recommendations

Control of invasive plants in the successional maritime forest in Parcel 47 will be a long-term commitment of effort and resources compared to other parcels on the Island, and thus may be a lower priority.

See APPENDIX A. Invasive Species Control Information available online.



Figure 343. Parcel 48 (zoom-in).

Table 284. 48.02 Successional southern hardwoods

Obs. pt. 48.02 Form 3: Form 2 occ #: 1

Community: Successional southern hardwoods

CEGL code:

Alliance code:

UTM: zone 19 254254 E, 4574699 N

Comments: SSH red maple - black cherry. Aspect: 40 degrees NE. Slope: 12 degrees.

Lat: Long:

Photo Photo name: 01 face SE, 02 face NW

Position method GPS

GPS average 530 readings WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	57%, 25m	Acer rubrum var. rubrum	36%	
T2		Frangula alnus	25%	
T2		Prunus serotina var. serotina	10%	
T3	20%, 10m	Frangula alnus	10%	
T3		Prunus serotina var. serotina	10%	
TS1	3%, 4m	Malus sp.	3% not M. toringio per Steve Young	collect:Y ID uncertain
TS2	12%, 1m	Frangula alnus	12%	
TS3	16%, 0.5m	Frangula alnus	15%	
TS3		Quercus alba	0.01%	ID uncertain
TS3		Quercus velutina	0.01%	ID uncertain
SS1	5%, 2.2m	Ilex verticillata	5%	
SS2	2%, 1m	Ilex verticillata	2%	
SS3	17%, 0.3m	Rubus allegheniensis	1%	
SS3		Viburnum dentatum var. lucidum	1%	
SS3		Ilex verticillata	0.01%	
V2	3%, 0.25m	Smilax glauca	3%	
H	23%	Dennstaedtia punctilobula	20%	
H		Maianthemum canadense	2%	
H		Carex swanii	1% ID confirmed by Steve Young (Feb. 2022).	collect:Y
H		Solidago rugosa var. rugosa	0.01%	
U	98%	litter and duff	90%	
U		wood (FWD) <7.5 cm	7%	
U		very large rocks >1 m	4%	
U		large rocks >10 cm	1%	
U		wood (CWD) >7.5 cm	1%	



Figure 344. Successional southern hardwoods in Parcel 48 (48.02).

Table 285. 48.03 Coastal Plain pond

Obs. pt. **48.03** Form 3: Form 2 occ #: 1
 Community: Coastal plain pond CEGL code: Alliance code:
 UTM: zone 19 254273 E, 4574739 N Comments: Small pond at about center of parcel surrounded by forest/thicket. Dense
 Lat: Long: Ludwigia palustris covers nearly entire pond surface.
 Position method GPS Photo Photo name: 03 face E, 04 face W, 05 face N
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
N	90%	Calliergonella sp.	90%	ID uncertain
A1	45%	Ludwigia palustris	35%	
A1		Persicaria longiseta	5% ID determined by Steve Young (Feb. 2022)	collect:Y ID uncertain
A1		Bidens sp.	3%	ID uncertain
A1		Leersia oryzoides	1%	
A1		Sium suave	1%	
A1		Scirpus cyperinus	0.01%	
A3	35%	Ludwigia palustris	35%	
U	100%	water	100%	0.5 m deep



Figure 345. Coastal Plain pond in Parcel 48 (48.03): Left: 2021; Right: 2022.

Table 286. 48.04 Coastal Plain pond shore

Obs. pt. 48.04 Form 3: Form 2 occ #: 1

Community: Coastal plain pond shore

CEGL code:

Alliance code:

UTM: zone 19 254273 E, 4574734 N

Comments: Open pond shore. Above waterline. Mostly along S half of pond.

Lat: Long:

Photo Photo name: 03 face E, 04 face W, 05 face N

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	39%	Ludwigia palustris	25%	
H		Bidens frondosa	5%	ID uncertain
H		Lysimachia terrestris	3% tall; "red worms" buds?; ID determined by Steve Young (Feb. 2022).	
H		Leersia oryzoides	2%	
H		Sium suave	2%	
H		Proserpinaca palustris	1% ID confirmed by Steve Young (Feb. 2022).	collect:Y ID uncertain
H		Thelypteris palustris var. pubescens	1%	



Figure 346. Coastal Plain pond shore in Parcel 48 (48.04): Left: face E; Right: face W.

Table 287. 48.05 and 48.06 Shrub swamp and Coastal Plain pond shore

Obs. pt. **48.05** Form 3: Form 2 occ #: 1

Community: Shrub swamp

CEGL code:

Alliance code:

UTM: zone 19 254273 E, 4574734 N

Comments: Tall, dense shrub margin around pond. Mostly around N half of pond.

Lat: Long:

Photo Photo name: 03 face E, 04 face W, 05 face N

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	30%, 3.5m Frangula alnus	30%		
TS2	5%, 1.5m Frangula alnus	5%		
TS3	0.2%, 3m Frangula alnus	3%		
SS1	50%, 3.5m Ilex verticillata	30%		
SS1	Clethra alnifolia	15%		
SS1	Vaccinium corymbosum	5%		
SS2	25%, 1.5m Ilex verticillata	20%		

Obs. pt. **48.06 ref** Form 3: Form 2 occ #:

Community: Coastal plain pond shore

CEGL code:

Alliance code:

UTM: zone 19 254281 E, 4574741 N

Comments: Revisit CPPS at Parcel 48; Pond fully drained down on this visit; squishy wet boot soles, but firm and walkable; list of plants on shore percent cover not recorded

Lat: Long:

Photo Photo name: 51

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	Dulichium arundinaceum			
H	Eleocharis sp.	in center wet spot; soft lax; or Juncus?; no spikes;		
H	filamentous plant	small	collect:Y	
H	Ludwigia palustris			
H	Lysimachia terrestris			
H	Persicaria sp.		collect:Y	
H	Potamogeton sp.	small leaves	collect:Y	
H	Proserpinaca palustris			
H	Utricularia sp.	branches no flowers	collect:Y	



Figure 347. Coastal plain pond shore surrounded by narrow band of tall shrub swamp in Parcel 48 (48.06).

Table 288. Parcel 48 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
26	0.12	CPPS	Coastal Plain pond shore	CPALOPEN	very faint on 2013 air photo; flooded other years
369	0.08	CPP	Coastal Plain pond	CLAC	fluctuating water levels
368	0.57	SS Clethra	Shrub swamp (Clethra alnifolia)	CPALOPEN	dense tall shrub thicket around pond
370	0.34	SUC.S	Successional shrubland	CTEROPEN	shrub thicket on slope along road
17	2.06	SSH	Successional southern hardwoods	CTERFOR	access from SE corner of parcel
5 polys	3.16	5 types			

Parcel 48 General Description

The most prominent feature of Parcel 48 is the small 0.2-acre pond at the center. The pond appears to have fluctuating water levels exposing a vegetated shore when drawn down (Figure 345). For that reason, it is tentatively classified as a coastal plain pond with an associated coastal plain pond shore. The reason the classification is tentative is that we are not certain about the origin of this pond (i.e., is it natural or artificial?). The pond cannot be confidently located on the mid-1920s black and white air photo; however, the pond is depicted on the circa 1958 USGS 7.5 minute topographic map.

Surrounding the pond is a tall shrub swamp dominated by three native shrubs: winterberry (*Ilex verticillata* – 50%), sweet pepperbush (*Clethra alnifolia* – 15%), and highbush blueberry (*Vaccinium corymbosum* – 5%). Unfortunately, this 1/2-acre shrub swamp has been invaded by glossy buckthorn (*Frangula alnus* – 35%).

A 2-acre, C-shaped, weedy successional southern hardwoods wraps around the pond and shrub swamp on the north, west, and south sides of the of the parcel (see point 48.02). On the slope east of the pond there is an impenetrable thicket of successional shrubland. Cover of greenbrier (*Smilax rotundifolia*) increases along the parcel’s east (along the road) and south boundary line making access difficult.

Parcel 48 Invasive Plants

The shrub swamp around the pond has been invaded by glossy buckthorn (*Frangula alnus* – 35%).

Bristly Lady's-thumb (*Persicaria longiseta* – 5%) was collected from the center of the pond in 2022 when the water was drawn down.

Parcel 48 Management Recommendations

Removal of glossy buckthorn (*Frangula alnus*) from the shrub swamp around the pond in parcel 48 would improve the floristic quality of that community. Fortunately, native shrubs are still present and they should be encouraged to spread into areas where buckthorn is removed.

It would be good to reduce or remove the invasive plants from the successional southern hardwoods, but the parcel’s small size makes it a lower priority for management compared to other parcels on the Island. It may be best to let succession run its course in Parcel 48 and hopefully the increased canopy shade will help the woods transition to a forest with a greater number of native trees.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 48 Future Surveys

The pond should be surveyed for rare plants when the water level is drawn down. Research into the land-use history of this parcel is needed to determine if this pond is of natural or artificial origin. For example, is there evidence that this is an excavated farm pond from when this area was used as a pasture?

Table 289. 50.01 Red maple-blackgum slope forest

Obs. pt. 50.01		Form 3: <input type="checkbox"/> Form 2 occ #:		
Community: "Red maple-blackgum slope forest"		CEGL code:	Alliance code:	
UTM: zone 19	254259 E, 4574846 N	Comments: Survey Parcel 50 missed in 2021; RM-BG slope forest; Slope: 18 degrees.		
Lat:	Long:	Aspect: 244 degrees W.		
Position method	GPS	Photo <input checked="" type="checkbox"/>	Photo name: 54 face W, 55 face E, 56 face NE	
GPS average	3740 readings	WAAS	<input type="checkbox"/>	
Stratum	Species	comments	Collection	Unsure of ID
T2	68%, 23m	Quercus velutina	42%	large crown oaks >40 cm DBH are 25 m tall; all other T2 are 20 m tall;
T2		Quercus alba	21%	
T2		Nyssa sylvatica	18%	
T2		Acer rubrum var. rubrum	14%	
T3	40%, 8m	Nyssa sylvatica	27%	
T3		Quercus alba	9%	
T3		Acer rubrum var. rubrum	6%	
T3		Prunus serotina	3%	
TS1	30%, 4m	Nyssa sylvatica	20%	
TS1		Acer rubrum var. rubrum	5%	
TS1		Frangula alnus	5%	
TS2	11%, 1.5m	Frangula alnus	5%	
TS2		Nyssa sylvatica	5%	
TS2		Acer rubrum	0.01%	
TS2		Quercus alba	0.01%	
TS3		Frangula alnus	1%	
TS3	4%, 0.3m	Prunus serotina	1%	
TS3		Quercus alba	1%	
TS3		Acer rubrum var. rubrum	0.01%	
TS3		Quercus velutina	0.01%	
SS1		Clethra alnifolia	5%	
SS1	10%, 3m	Vaccinium corymbosum	5%	
SS2		Clethra alnifolia	2%	
SS2	6%, 1.5m	Ilex verticillata	2%	
SS2		Vaccinium corymbosum	2%	
SS3	3%, 0.35m	Clethra alnifolia	2%	
SS3		Gaylussacia baccata	0.01%	
SS3		Lonicera morrowii	0.01%	
SS3		Rubus pubescens	0.01%	ID uncertain
SS3		Viburnum dentatum	0.01%	
V1	2%, 3.5m	Smilax glauca	1%	on SS1; 2.5 m
V1		Smilax rotundifolia	1%	
V2	7%, 0.75m	Smilax rotundifolia	5%	
V2		Parthenocissus quinquefolia	1%	
V2		Toxicodendron radicans	1%	
V2		Lonicera japonica	0.01%	
H	38%, 0.2m	Maianthemum canadense	15%	
H		Dennstaedtia punctilobula	12%	
H		Carex pensylvanica	5%	ID uncertain
H		Carex swanii	1%	collect:Y
H		Deschampsia sp.	1%	photo 64 collect:Y ID uncertain
H		Lysimachia borealis	1%	
H		Solidago rugosa var. rugosa	1%	1m
H		Chimaphila maculata	0.01%	
H		Hypopitys monotropa	0.01%	photos 63,65
H		Lysimachia quadrifolia	0.01%	
H		Viola sagittata	0.01%	photos 57-62; blade 70 mm L x 33 mm W; petiole 13 cm L; petiole + blade 20 cm L; growing at base of Q. velutina ID uncertain
U	95%	litter and duff	90%	
U		wood (FWD) <7.5 cm	3%	
U		wood (CWD) >7.5 cm	2%	



Figure 348. Red maple-blackgum slope forest in Parcel 50 (50.01): Left: face NE; Right: face W.



Figure 349. Red maple-blackgum slope forest in Parcel 50 (50.01): Left: yellow pinesap (*Hypopitys monotropa*); Right: arrow-leaved violet (*Viola sagittata*).

Table 290. 50.02 Estuarine reed grass marsh

Obs. pt. 50.02 ref Form 3: Form 2 occ #:

Community: Estuarine reed grass marsh CEGL code: Alliance code:

UTM: zone 19 254231 E, 4574868 N Comments: Phragmites marsh - off parcel; dense tall Clethra band (5 m wide) along south edge of Phragmites marsh and along north side of parcel; Photo log: 52 into Phrag marsh face N, 53 face ENE ecotone, 66 photo of Phrag marsh from lawn face NW.

Lat: Long: Photo Photo name: 52, 53, 66

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
H	Phragmites australis			



Figure 350. Estuarine reed grass marsh north of Parcel 50 (50.02): Left: face Old World reed grass (*Phragmites australis*) at point 50.02; Right: view of reed grass marsh through woods from lawn face NW.

Table 291. Parcel 50 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
21	0.92	RM-BG	Red maple-blackgum slope forest	CTERFOR	forested on USGS topo (no houses E or W);
106	0.22	SS Clethra	Shrub swamp (Clethra alnifolia)	CPALOPEN	5 m band of tall Clethra hangs over muck channel; Phragmites to N; steep slope back uphill S;
2 polys	1.14	2 types			

Parcel 50 General Description

Parcel 50 is a very small, secluded parcel (presumably seldomly visited by people) on the 18-degree slopes of a northwest-facing C-shaped cove. To the north, off of the parcel, is a large estuarine reed grass marsh dominated by Old World reed grass (*Phragmites australis*) at point 50.02. To the east is a private residence and to the south is Parcel 48 described earlier. To the west, off of the parcel, there are two large storage buildings (presumably metal-clad structures).

Despite the parcel's small size, we were surprised to find a nice example of red maple-blackgum slope forest. The canopy is dominated by large, straight-trunked trees including black oak (*Quercus velutina* – 42%; up to 67.5 cm DBH), red maple (*Acer rubrum* – 14%; up to 55 cm DBH), white oak (*Quercus alba* – 21%; up to 48 cm DBH), and blackgum (*Nyssa sylvatica* – 18%; up to 20 cm DBH). Canopy tree species were found in all lower sapling and seedling layers indicating good recruitment of canopy trees at this site.

The red maple-blackgum slope forest in Parcel 50 at point 50.01 has the highest Weighted Floristic Quality Index Score (FQI 31.10) for that community found during our ecology surveys. In addition, point 50.01 is #2 on the list of top ten highest FQI scores generated for this study and has the highest number of native species (25) recorded at any point sampled during our ecology surveys.

Parcel 50 Invasive Plants

Invasive plants at point 50.01 in the red maple-blackgum slope forest:

Glossy buckthorn (*Frangula alnus* – 11%).

Morrow's honeysuckle (*Lonicera morrowii* – <1%).

Japanese honeysuckle (*Lonicera japonica* – <1%).

Parcel 50 Management Recommendations

Remove the three invasive plants listed above from the red maple-blackgum slope forest at point 50.01 with the goal to make it composed of 100% native species. Despite its close proximity along the parcel's north boundary, the Old World reed grass (*Phragmites australis*) should not pose a threat to the upland red maple-blackgum slope forest.

See APPENDIX A. Invasive Species Control Information available online.

Table 292. 51.01 Coastal oak-hickory forest

Obs. pt. **51.01** Form 3: Form 2 occ #: 1

Community: Coastal oak-hickory forest CEGL code: Alliance code:

UTM: zone 19 254200 E, 4574492 N Comments: No Carya in canopy, in TS1. T2 too tall for SMF or MOF. With rock wall. Lawn debris by driveway. Miscanthus planted along parcel driveway. Successional southern hardwoods?

Lat: Long: Photo Photo name: 11 face E rock wall

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	60%, 22m	Prunus serotina var. serotina	35%	
T2		Quercus alba	30%	
T3	15%, 10m	Quercus velutina	15%	
TS1	8%, 4m	Malus toringo	5%	ID uncertain
TS1		Carya ovata	3% 7 leaflets	ID uncertain
TS3	0.01%, 0.3m	Quercus alba	0.01%	
SS1	7%, 2m	Viburnum dentatum var. lucidum	5%	
SS1		Frangula alnus	2%	
SS2		Frangula alnus	5%	
SS2	18%, 0.75m	Ligustrum vulgare	5%	
SS2		Rubus allegheniensis	5%	
SS2		Viburnum dentatum var. lucidum	3%	
SS3	2%, 0.1m	Frangula alnus	2%	
V2	7%, 0.1m	Lonicera japonica	5%	
V2		Parthenocissus quinquefolia	2%	
H	12%	Eurybia divaricata	10%	
H		Phytolacca americana	1%	
U	15%	large rocks >10 cm	rock wall	



Figure 351. Disturbed coastal oak-hickory forest in Parcel 51 (51.01) face E toward rock wall.

Table 293. Parcel 51 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
13	1.1035	CO-HF	Coastal oak-hickory forest	CTERFOR	No <i>Carya</i>
79	0.0395	ML	Mowed lawn	CTERCULT	
80	0.0629	ML?	Mowed lawn?	CTERCULT	Not surveyed
3 polys	3.16	2 types			

Parcel 51 General Description

Parcel 51 is a small, disturbed parcel on the north side of a private driveway on the far east end of Fishers Island. It is mostly forested and set between two private residences; one to the east and one to the west with a rock wall running along the west property line. It appears that there may be some minor encroachment onto the parcel as follows: a small clearing inside the rock wall on the west side; an extension of mowed lawn onto the east side of the parcel; and dumping of yard waste onto the parcel along the driveway.

Despite the lack of hickory in the canopy, we classified this forest as a young coastal oak-hickory forest, because of the dominance of tall, straight-trunked oaks in the canopy and finding a little shagbark hickory (*Carya ovata*; or possibly pignut *C. glabra*) in the sapling layer.

Parcel 51 Invasive Plants

Invasive plants at point 51.01:

- Glossy buckthorn (*Frangula alnus* – 9%)
- Privet (*Ligustrum vulgare* – 5%)
- Japanese honeysuckle (*Lonicera japonica* – 5%)
- Crabapple (*Malus* sp. – 5%).
- Eulalia (*Miscanthus sinensis*) planted along parcel driveway.

Parcel 51 Management Recommendations

It would be good to reduce or remove the invasive plants from the coastal oak-hickory forest, but the parcel's small size and human disturbance makes it a low priority for management compared to other parcels on the Island. It may be best to let succession run its course in Parcel 51 and hopefully the increased canopy shade will help increase the native plant populations.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 49.



Figure 352. Parcel 49.

Table 294. 49.01 and 49.02 Japanese knotweed (*Reynoutria japonica*)

Obs. pt. 49.01 ref Form 3: Form 2 occ #:

Community: "Japanese knotweed"

CEGL code:

Alliance code:

UTM: zone 18 751242 E, 4572158 N

Lat: 41.07261887 Long: -71.857334

Comments: Japanese knotweed 3 m tall patch (25 m along road x 5 m back from road) along south side of unpaved road in Parcel 49. Reference point. Vegetation cover data not collected.

Photo Photo name: 208

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
H	90%, 3m <i>Reynoutria japonica</i>	90%		

Obs. pt. 49.02 ref Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 18 751182 E, 4572164 N

Lat: 41.07326472 Long: -71.8585283

Comments: Northwest corner of Parcel 49 with hydrant/cable box?/power box? Boat shed at end of road off parcel. Reference point. Vegetation cover data not collected.

Photo Photo name: 209

Position method GPS

GPS average min, sec. WAAS



Figure 353. Parcel 49: Left: Japanese knotweed (*Reynoutria japonica*) (49.01); Right: hydrant and utility box (49.02).

Table 295. 49.03 Red maple-blackgum slope forest

Obs. pt. 49.03 Form 3: Form 2 occ #: 1

Community: "Red maple-blackgum slope forest" CEGL code: Alliance code:

UTM: zone 18 751218 E, 4572141 N
 Lat: 41.07309481 Long: -71.8581163

Comments: 20 m x 20 m plot - no tape. Big red maple/black cherry/blackgum forest; straight trunks, mid-successional age; on slope with large rocks. This forest has openings of tall shrubs blanketed with Smilax. Three big Quercus velutina trees to west out of plot, but in forest community (25-30%) with very large crowns and big trunks. Slope: 12 degrees. Aspect: 102 degrees. Successional maritime forest?

Photo Photo name: 210-213

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	70%, 18m	Acer rubrum var. rubrum	60%	
T2		Nyssa sylvatica	16%	
T2		Prunus serotina var. serotina	10%	
T2		Quercus velutina	out of plot; 25% cover in natural community; very large crown and trunk.	
T3	20%, 10m	Nyssa sylvatica	12% T3 8-12 m	
T3		Prunus serotina var. serotina	5%	
T3		Acer rubrum var. rubrum	3% 8 m	
T3		Quercus velutina	out of plot; 5% cover in natural community	
TS1	10%, 3m	Nyssa sylvatica	10%	
TS2	9%, 1.5m	Frangula alnus	5%	
TS2		Acer rubrum var. rubrum	2%	
TS2		Nyssa sylvatica	2%	
TS3	1%, 0.4m	Frangula alnus	1%	
TS3		Quercus velutina	0.01%	
SS1	3%, 2.5m	Viburnum dentatum var. lucidum	3%	
SS2	10%, 1m	Ligustrum vulgare	5% SS2 0.5-1.5 m	
SS2		Viburnum dentatum var. lucidum	5%	
SS3		Rubus pubescens	2%	ID uncertain
SS3	4%, 0.5m	Viburnum dentatum var. lucidum	2%	
V1	51%, 4.5m	Smilax rotundifolia	40% V1 1-8 m; on tree trunks and on top of shrubs	
V1		Toxicodendron radicans ssp. radicans	8%	
V1		Parthenocissus quinquefolia	2%	
V1		Celastrus orbiculatus	1%	
V2	25%, 0.2m	Toxicodendron radicans ssp. radicans	15%	
V2		Parthenocissus quinquefolia	5%	
V2		Celastrus orbiculatus	2%	
V2		Lonicera japonica	2%	
V2		Smilax rotundifolia	1%	
H	7%	Dennstaedtia punctilobula	4%	
H		Dryopteris intermedia	2%	
H		Dendrolycopodium obscurum	0.01%	
H		Lysimachia borealis	0.01%	
H		Maianthemum canadense	0.01%	
N	35%	lichens	35% on rocks	
U	95%	litter and duff	75% oak leaves	
U		very large rocks >1 m	22%	
U		large rocks >10 cm	5%	



Figure 354. Red maple-blackgum slope forest in Parcel 49 (49.03).



Figure 355. Red maple-blackgum slope forest in Parcel 49 (49.03).

Parcel 49 Ecological Community Acreage

Table 296. Parcel 49 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
314	0.09	knotweed	Japanese knotweed	CTERCULT	Japanese knotweed patch
4	1.32	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	road N edge; not NWI wetland
2 polys	1.41 acres	2 types			

Parcel 49 General Description

Parcel 49 is small parcel on the southwest side of Brickyard Road and south of the L. F. Boker Doyle Sanctuary. An unpaved road runs along the north side of the property passing the following landmarks (distance west of Brickyard Rd.): west corner of Parcel 48 at water hydrant and utility box (140 m; Figure 353); boat shed off parcel (170 m); dock on the east shore of Darby Cove (270 m).

The parcel is almost entirely red maple-blackgum slope forest, except for the patch of Japanese knotweed (*Reynoutria japonica*) at point 49.01. At point 49.03 the canopy is dominated by large red maple (*Acer rubrum* – 60%; up to 65 cm DBH). Other canopy trees include black oak (*Quercus velutina* – 25-30%; up to 52.5 cm DBH) and blackgum (*Nyssa sylvatica* – 16%; up to 24 cm DBH). The tall (1-8 m) and short (0.2 m) vine layers have higher cover (tall vines >50%; short vines 25%) compared to other parcels sampled with this community type (avg. tall vines >10%; short vines 19%).

Parcel 49 Invasive Plants

Invasive plants in red maple-blackgum slope forest at point 49.03:

- Oriental bittersweet (*Celastrus orbiculatus* – 3%)
- Glossy buckthorn (*Frangula alnus* – 6%)
- Privet (*Ligustrum vulgare* – 5%)
- Japanese honeysuckle (*Lonicera japonica* – 2%)

Japanese knotweed (*Reynoutria japonica*) at point 49.01: There is small 5 m x 25 m patch of Japanese knotweed along the north parcel boundary on the south side of the unpaved road.

Parcel 49 Management Recommendations

The Japanese knotweed (*Reynoutria japonica*) at point 49.01 is small and relatively easy to access from the unpaved road. It should be removed and prevented from spreading into Parcel 49 and the L. F. Boker Doyle Sanctuary to the north.

Remove the three invasive plants listed above from the red maple-blackgum slope forest at point 49.03 with the goal to make it composed of 100% native species. This will be challenging, because the cover of greenbrier (*Smilax rotundifolia* – 41%) and poison ivy (*Toxicodendron radicans* – 23%) in this parcel prevents easy access.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 53a-c and Parcel 54



Figure 356. Parcel 53a-c and 54.

Table 297. 53b.01 Successional old field

Obs. pt. 53b.01 Form 3: Form 2 occ #: 1

Community: Successional old field

CEGL code:

Alliance code:

UTM: zone 19 248840 E, 4571782 N

Lat: Long:

Comments: SOF//SUC.S near maintenance shed; fence along road. This type spills into parcels 53a and 53c. Successional shrubland?

Photo Photo name: 17 face W fence, 18 face E house

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	1%, 1.3m	Prunus serotina var. serotina	1%	
SS2	56%, 0.75m	Rhus copallinum var. copallinum	55%	
SS2		Viburnum dentatum var. lucidum	1%	
SS2		Lonicera morrowii	0.01%	
V2	56%, 0.45m	Lonicera japonica	45%	
V2		Celastrus orbiculatus	5%	
V2		Parthenocissus quinquefolia	5%	
V2		Vincetoxicum nigrum	1%	
V2		Clematis virginiana	0.01%	
H		Dactylis glomerata	10%	
H	38%, 1m	Phleum pratense	10%	
H		Agrostis capillaris	5%	ID uncertain
H		Bromus inermis	5%	
H		Asclepias syriaca	2%	
H		Vicia cracca	2%	ID uncertain
H		Daucus carota	1%	
H		Cirsium sp.	0.01%	ID uncertain
H		Cyperus strigosus	0.01%	ID uncertain
H		Erigeron canadensis var. canadensis	0.01%	
H		Hypericum perforatum	0.01%	
H		Oenothera biennis	0.01%	
H		Panicum virgatum	0.01%	
H		Pseudognaphalium obtusifolium	0.01%	
H		Schizachyrium scoparium var. scopari	0.01%	
H		Solidago canadensis var. canadensis	0.01%	
H		Solidago juncea	0.01%	
H		Trifolium pratense	0.01%	



Figure 357. Successional old field succeeding to successional shrubland (*Rhus copallinum*) in Parcel 53b (53b.01).



Figure 358. Successional old field succeeding to successional shrubland (*Rhus copallinum*) in Parcel 53a face E (2022)



Figure 359. Successional old field succeeding to successional shrubland (*Rhus copallinum*) in Parcel 53a face SE (2022).

Table 298. 54.01 Successional shrubland (*Rhus copallinum*)

Obs. pt. 54.01 Form 3: Form 2 occ #: 1

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 248776 E, 4571766 N

Lat: Long:

Comments: Point taken at top of knoll/ridge about center of parcel. Mosaic of 0.5-1.0 m *Rhus copallinum* and *Schizachyrium scoparium* in between with scattered 2-3 m *Juniperis virginiana* and small round islands of *Prunus serotina*/*Frangula alnus*. More trees than 53b.01. Successional old field?

Photo Photo name: 19 face NE maint shed, 20 face W fence

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	3%, 2.5m	<i>Juniperus virginiana</i> var. <i>virginiana</i>	2%	
TS1		<i>Malus toringo</i>	1%	ID uncertain
TS2	1%, 1.75m	<i>Prunus serotina</i> var. <i>serotina</i>	1%	
TS3	1%, 0.5m	<i>Prunus serotina</i> var. <i>serotina</i>	1%	
SS2	51%, 0.8m	<i>Rhus copallinum</i> var. <i>copallinum</i>	45%	
SS2		<i>Frangula alnus</i>	2% 1.25 m	
SS2		<i>Morella caroliniensis</i>	2%	
SS2		<i>Viburnum dentatum</i> var. <i>lucidum</i>	2% 1.5 m	
SS3	17%, 0.3m	<i>Rhus copallinum</i> var. <i>copallinum</i>	10% 0.3 m	
SS3		<i>Rubus flagellaris</i>	5% 0.3 m	
SS3		<i>Morella caroliniensis</i>	2% 0.5 m	
V2	61%, 0.2m	<i>Lonicera japonica</i>	60%	
V2		<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%	
V2		<i>Smilax glauca</i>	0.01%	
H	27%, 0.8m	<i>Schizachyrium scoparium</i> var. <i>scopari</i>	20% 1 m	
H		<i>Agrostis capillaris</i>	5% 0.5 m	ID uncertain
H		<i>Solidago juncea</i>	1% 1 m	
H		<i>Achillea millefolium</i>	0.01% 0.6 m	
H		<i>Nabalus trifoliolatus</i>	0.01%	ID uncertain
H		<i>Solidago nemoralis</i> ssp. <i>nemoralis</i>	0.01%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	0.01%	



Figure 360. Successional old field succeeding to Successional shrubland (*Rhus copallinum*) in Parcel 54 (54.01): Left: face E toward shed; Right: face E toward fence.

Parcel 53a-c and Parcel 54 Ecological Community Acreage

Table 299. Parcel 53a-c and Parcel 54 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
108	0.63	CO-HF?	Coastal oak-hickory forest?	CTERFOR	Forested 1925 air photo (2016 Management Plan) Parcel 54
98	3.62	SOF	Successional old field//Successional shrubland (<i>Rhus copallinum</i>)	CTEROPEN	open 1925 air photo (2016 Management Plan) Parcel 53
24	1.43	SOF//SUC.S	Successional old field//Successional shrubland (<i>Rhus copallinum</i>)	CTEROPEN	SOF invaded by woody plants; Open 1925 air photo. Parcel 54
109	0.66	SSH	Successional southern hardwoods	CTERFOR	open? 1925 air photo (2016 Management Plan) Parcel 54
113	0.18	SUC.S	Successional shrubland	CTEROPEN	open 1925 air photo (2016 Management Plan) Parcel 54
319	0.06	UR/P	Unpaved road/path	CTERCULT	
6 polys	6.59 acres	5 types			

Parcel 53a-c General Description

Parcel 53a, Parcel 53b, and Parcel 53c are similar-sized, neighboring parcels located on the north side of Isabell Beach Road. These parcels are located at the southern end of the Clay Pit Trail area and east of the security gate on East End Road. Since all three parcels are mapped as the same transitioning natural community: successional old field succeeding to successional shrubland (*Rhus copallinum*); we describe them as one parcel in this section.

The field is dominated by 0.75-m tall winged sumac (*Rhus copallinum* – 55%) that is overtopped by 1-m tall herbaceous layer dominated by several cool-season grasses, including orchard grass (*Dactylis glomerata* – 10%), timothy (*Phleum pratense* – 10%), bent grass (*Agrostis capillaris* – 5%), and brome grass (*Bromus inermis* – 5%). Under the shrub and herb layers is a hidden 0.45-m vine layer covering 56% of the field dominated by Japanese honeysuckle (*Lonicera japonica* – 45%).

The successional old field in Parcel 53b at point 53b.01 has the highest Weighted Floristic Quality Index Score (FQI 14.19) for that community found during our ecology surveys.

Parcel 53a-c Invasive Plants

Invasive plants at point 53b.01:

- Smooth brome (*Bromus inermis* – 5%)
- Oriental bittersweet (*Celastrus orbiculatus* – 5%)
- Queen Anne's lace (*Daucus carota* – 1%)
- Japanese honeysuckle (*Lonicera japonica* – 45%)
- Morrows honeysuckle (*Lonicera morrowii* – <1%)
- Black Swallowwort (*Vincetoxicum nigrum* – 1%)

Parcel 53a-c Management Recommendations

Remove invasive plants listed above from the field and increase the cover of little bluestem, so that it becomes a successional old field dominated by *Schizachyrium scoparium*, like the one found in Parcel 32. Prevent woody plant invasion into the field via mowing or cutting. If possible, this field would likely benefit from a prescribed fire management plan.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 54 General Description

Parcel 54 is located on the south side of Isabella Beach Road east of the security gate on East End Road. It is a patchy mosaic of mostly successional shrubland with openings of successional old field dominated by 1-m tall little bluestem (*Schizachyrium scoparium* – 20%). The shrubland portion is dominated by 0.3-0.8-m tall shrubs (68% cover) including winged sumac (*Rhus copallinum* – 55%). Under the shrub and herb layers is a hidden 0.2-m vine layer dominated by Japanese honeysuckle (*Lonicera japonica* – 60%).

The successional shrubland in Parcel 54 at point 54.01 has the highest Weighted Floristic Quality Index Score (FQI 13.33) for that community found during our ecology surveys.

Parcel 54 Invasive Plants

Invasive plants at point 54.01:

Glossy buckthorn (*Frangula alnus* – 2%)

Japanese honeysuckle (*Lonicera japonica* – 60%)

Crabapple (*Malus* sp. – 1%)

Parcel 54 Management Recommendations

Remove invasive plants listed above from the field and increase the cover of little bluestem, so that it becomes a successional old field dominated by *Schizachyrium scoparium*, like the one found in Parcel 32. Prevent woody plant invasion into the field via mowing or cutting. If possible, this field would likely benefit from a prescribed fire management plan.

See APPENDIX A. Invasive Species Control Information available online.

Parcel 54 Future Surveys

The forested western half of this parcel was not surveyed in 2021 or 2022. The communities west of the fence were mapped based on air photo interpretation and its extent and condition needs to be evaluated.

Parcel 56.



Figure 361. Parcel 56.

Table 300. 56.01 Successional old field or Successional vineland

Obs. pt. **56.01** Form 3: Form 2 occ #: 1
 Community: Successional old field CEGL code: Alliance code:
 UTM: zone 19 254632 E, 4574629 N Comments: ROW under powerline. Weed vine thicket with SOF herbs.
 Lat: Long: Photo Photo name: 07 face E, 09 face W
 Position method GPS
 GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
V	40%	Ampelopsis glandulosa	35%	
V		Lonicera japonica	5%	
H	40%	Ambrosia artemisiifolia	25%	
H		Solidago rugosa var. rugosa	5%	
H		Eutrochium dubium	3%	
H		Setaria viridis	3%	
H		Dichanthelium clandestinum	2%	
H		Erigeron canadensis var. canadensis	1%	
H		Oxalis stricta	0.01%	
H		Persicaria lapathifolia	0.01%	ID uncertain



Figure 362. Successional old field / Successional vineland in Parcel 56 (56.01).

Table 301. 56.02 Successional maritime forest

Obs. pt. 56.02 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 254633 E, 4574649 N

Comments: Weedy SMF/vine thicket

Lat: Long:

Photo Photo name: 08 face N, 10 vine thicket

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	50%, 12m	Prunus serotina var. serotina	50%	
T3	10%, 6m	Malus toringo	10%	ID uncertain
SS1	20%, 2.5m	Rosa multiflora	15%	
SS1		Ligustrum vulgare	5%	
SS2	17%, 1.25m	Lonicera morrowii	15%	
SS2		Ligustrum vulgare	2%	
V1	12%, 12m	Celastrus orbiculatus	12%	
V2	41%, 1m	Lonicera japonica	30%	
V2		Smilax rotundifolia	5%	
V2		Vincetoxicum nigrum	5%	
V2		Vitis riparia	1%	
H	0.01%	Solidago rugosa var. rugosa	0.01%	



Figure 363. Successional maritime forest in Parcel 56 (56.02).

Parcel 56 Ecological Community Acreage

Table 302. Parcel 56 Ecological Community Acreage

FID	ACRE S	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
20	1.21	SMF	Successional maritime forest	CTERFOR	road S and E edge
369	0.25	SOF//MR/P	Successional old field//Mowed roadside/pathway	CTEROPEN	maintained powerline ROW along road shoulder
2 polys	1.46 acres	2 types			

Parcel 56 General Description

Parcel 56 is the furthest east Land Trust parcel on Fishers Island. The parcel is mostly weedy successional maritime forest comprised of stunted (6-12 m) black cherry (*Prunus serotina* – 50%) trees with gnarly branches. The parcel is located on an inside corner of Castle Road (paved) that forms the south and east boundary of the parcel. Along the road is a maintained powerline ROW field dominated by non-native and invasive species.

Weighted Floristic Quality Index Scores for points 56.01 (FQI 1.7) and 56.02 (FQI 4.9) are both in the lowest, bottom 20 FQI scores calculated for this study (bottom 20 range 0.0 to 5.1). Furthermore, of the 11 species recorded at point 56.02, only four were native.

This parcel is depicted as forested on the circa 1958 USGS 7.5 minute topographic map, but appears open (pasture?) on the mid-1920s black and white air photo.

Parcel 56 Invasive Plants

Invasive plants at point 56.01 (ROW):

- Porcelain berry (*Ampelopsis brevipedunculata* – 35%)
- Japanese honeysuckle (*Lonicera japonica* – 5%)

Invasive plants at point 56.02 (Successional maritime forest):

- Oriental bittersweet (*Celastrus orbiculatus* – 12%)
- Privet (*Ligustrum vulgare* – 7%)
- Japanese honeysuckle (*Lonicera japonica* – 30%)
- Morrows honeysuckle (*Lonicera morrowii* – 15%)
- Crabapple (*Malus* sp. – 10%)
- Multiflora rose (*Rosa multiflora* – 15%)
- Black swallowwort (*Vincetoxicum nigrum* – 5%)

Parcel 56 Management Recommendations

The invasive plants in Parcel 56 are overwhelming. It may be impossible to restore Parcel 56 to a natural community dominated by native species without sufficient resources to do so.

See APPENDIX A. Invasive Species Control Information available online.

Borland and Haver Parcels



Figure 364. Borland and Haver Parcels.

Table 303. Borland.01 Successional maritime forest

Obs. pt. Borland.01 Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 249932 E, 4573317 N
Lat: 41.07137567 Long: -71.8562566

Comments: SMF//SUC.S north of point facing N to 32.09 Reference point. Vegetation cover data not collected. Successional shrubland?

Photo Photo name: 313

Position method GPS

GPS average min. sec. WAAS

Obs. pt. Borland.01 Form 3: Form 2 occ #:

Community: Brushy cleared land

CEGL code:

Alliance code:

UTM: zone 19 249957 E, 4573307 N
Lat: 41.07097052 Long: -71.8562509

Comments: Brush pile photo 314. GPS not recorded. Coordinates estimated from air photo in GIS east of Carya stand. Reference point. Vegetation cover data not collected.

Photo Photo name: 314 not in DIDB

Position method Digital Ortho-Images

GPS average min. sec. WAAS



Figure 365. Successional maritime forest (left) and brush pile in Borland Parcel (Borland.01).

Table 304. Borland.02 Hardwood plantation (*Populus grandidentata*)

Obs. pt. **Borland.02** Form 3: Form 2 occ #:

Community: Hardwood plantation (*Populus grandid*) CEGL code: Alliance code:

UTM: zone 19 249911 E, 4573302 N
 Lat: 41.07097052 Long: -71.8562509

Comments: *Populus grandidentata* stand even age. Planted? Photo 315 face N from 35a.01 Reference point. Vegetation cover data not collected. Successional northern hardwoods?

Photo Photo name: 315 face N from 35a.01

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Populus grandidentata</i>			



Figure 366. Hardwood plantation (*Populus grandidentata*) in Borland Parcel (Borland.02).

Table 305. HAV.01 Semi-natural grassland (*Andropogon gerardi*)

Obs. pt. HAV.01 Form 3: Form 2 occ #:

Community: "Grassland (*Andropogon gerardi*)"

CEGL code:

Alliance code:

UTM: zone 19 249964 E, 4573409 N

Comments: Haver parcel; Grassland dominated by *Andropogon gerardi*;

Lat: 41.27341294 Long: -71.9758118

Photo Photo name: 185 face N, 186 face E, 187 face S, 188 face W, 189 face S of SUC.S, 190 face W of SMF

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	12%, 1m	<i>Carya glabra</i>	8%	
TS2		<i>Quercus velutina</i>	4%	
TS3	6%, 0.5m	<i>Quercus velutina</i>	4%	
TS3		<i>Carya glabra</i>	2%	
SS3	14%, 0.5m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	8%	
SS3		<i>Rubus flagellaris</i>	5%	
SS3		<i>Rhus copallinum</i> var. <i>copallinum</i>	1%	
V2	2%, 0.2m	<i>Celastrus orbiculatus</i>		
H	92%	<i>Andropogon gerardi</i>	40%	
H		<i>Panicum virgatum</i>	20%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	12%	
H		Grass	10%	dead grass with arching spikes
H		<i>Schizachyrium scoparium</i> var. <i>scopari</i>	10%	
H		<i>Cyperus grayi</i>	5%	ID uncertain
H		<i>Erigeron canadensis</i> var. <i>canadensis</i>	0.01%	
H		<i>Sorghastrum nutans</i>	0.01%	



Figure 367. Semi-natural grassland (*Andropogon gerardi*) in Haver Parcel (HAV.01).

Table 306. HAV.02 Successional shrubland

Obs. pt. HAV.02 Form 3: Form 2 occ #:

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249962 E, 4573377 N

Comments:

Lat: 41.27281856 Long: -71.9754624

Photo Photo name: 189 face S

Position method GPS

GPS average min, sec. WAAS

TS1	20%, 3m	Prunus serotina var. serotina	12%
TS1		Acer rubrum var. rubrum	5%
TS1		Quercus velutina	3%
TS2	5%, 1m	Prunus serotina var. serotina	5%
TS3	4%, 0.4m	Prunus serotina var. serotina	3%
TS3		Frangula alnus	1%
SS1	35%, 4m	Lonicera morrowii	20%
SS1		Viburnum dentatum var. lucidum	10%
SS1		Rhus typhina	5%
SS2	25%, 1m	Lonicera morrowii	15%
SS2		Rhus typhina	10%
SS3		Morella caroliniensis	5%
SS3	10%, 0.5m	Rhus typhina	5%
V2	25%, 1.5m	Smilax rotundifolia	15%
V2		Toxicodendron radicans ssp. radicans	



Figure 368. Successional shrubland in Haver Parcel (HAV.02).

Table 307. HAV.03 Successional maritime forest

Obs. pt. **HAV.03 ref** Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 249987 E, 4573422 N

Comments: East side of parcel is SMF with old gnarly *Prunus serotina*.

Lat: 41.27265982 Long: -71.9760282

Photo Photo name: 190

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Prunus serotina</i> var. <i>serotina</i>	old gnarly		



Figure 369. Successional maritime forest in Haver Parcel (HAV.03).

Borland and Haver Parcels Ecological Community Acreage

Borland and Haver Parcels are included in the Parcel 32 Ecological Community Acreage Assessment (Table 215, Figure 256).

Borland and Haver Parcels General Description

The **Borland Parcel** is located on the north side of East End Road and north of Island Pond. The western half of the parcel is mapped as a mix of successional maritime forest and successional shrubland that extends northeast into the Haver Parcel. A little east of center of the parcel, along East End Road, there is a ¼-acre stand of big-tooth aspen (*Populus grandidentata*) (Figure 366). The aspen trees look even-age, suggesting they may have been planted, but the trees do not appear to be in strict rows. Nonetheless, we classified this patch as hardwood plantation rather than successional northern hardwoods.

Between the aspen stand and Perch Pond (aka “Borland Pond”) to the east, there is small patch of coastal oak-hickory forest with several large mockernut hickory (*Carya tomentosa*) trees. It appears that some recent brush cutting occurred near the hickory stand, as evidenced by placed brush piles (Figure 365).

At the northeast corner of Borland Parcel there is a small piece of a larger red maple-blackgum slope forest that continues northeast into Parcel 32.

The **Haver Parcel** is located northeast of the Borland Parcel and northwest of Perch Pond (aka “Borland Pond”). Easiest access to the parcel is from the north by parking along Barlow Pond Lane and walking south through the field. Obtain permission from private landowners on Barlow Pond Lane before accessing Haver Parcel from this direction. Most of the parcel is a 0.7-acre semi-natural grassland dominated by planted big bluestem (*Andropogon gerardi* – 40%) and switch grass (*Panicum virgatum* – 20%). The field is surrounded by a mix of successional maritime forest and successional shrubland (with more forest than shrubland to the east).

The semi-natural grassland (*Andropogon gerardi*) in the Haver Parcel at point HAV.01 has the highest Weighted Floristic Quality Index Score (FQI 19.81) for that community found during our ecology surveys.

Borland and Haver Parcels Invasive Plants

Borland Parcel Invasive Plants at point 32.09:

- Oriental bittersweet (*Celastrus orbiculatus* – 15%)
- Morrows honeysuckle (*Lonicera morrowii* – 50%)

Haver Parcel Invasive Plants at point HAV.01:

- Oriental bittersweet (*Celastrus orbiculatus*)

Haver Parcel Invasive Plants at point HAV.02:

- Glossy buckthorn (*Frangula alnus* – 1%)
- Morrows honeysuckle (*Lonicera morrowii* – 35%)

Borland and Haver Parcels Management Recommendations

Remove Oriental bittersweet from the grassland at point HAV.01. Prevent woody plant invasion into the field via mowing or cutting. If possible, this field would likely benefit from a prescribed fire management plan.

It may be best to let succession run its course in the successional maritime forest and successional shrubland and hopefully the increased canopy shade will help transition these areas to a forest with a greater number of native trees

See APPENDIX A. Invasive Species Control Information available online.

Parcel CC1 and Parcel CC2. Spofford

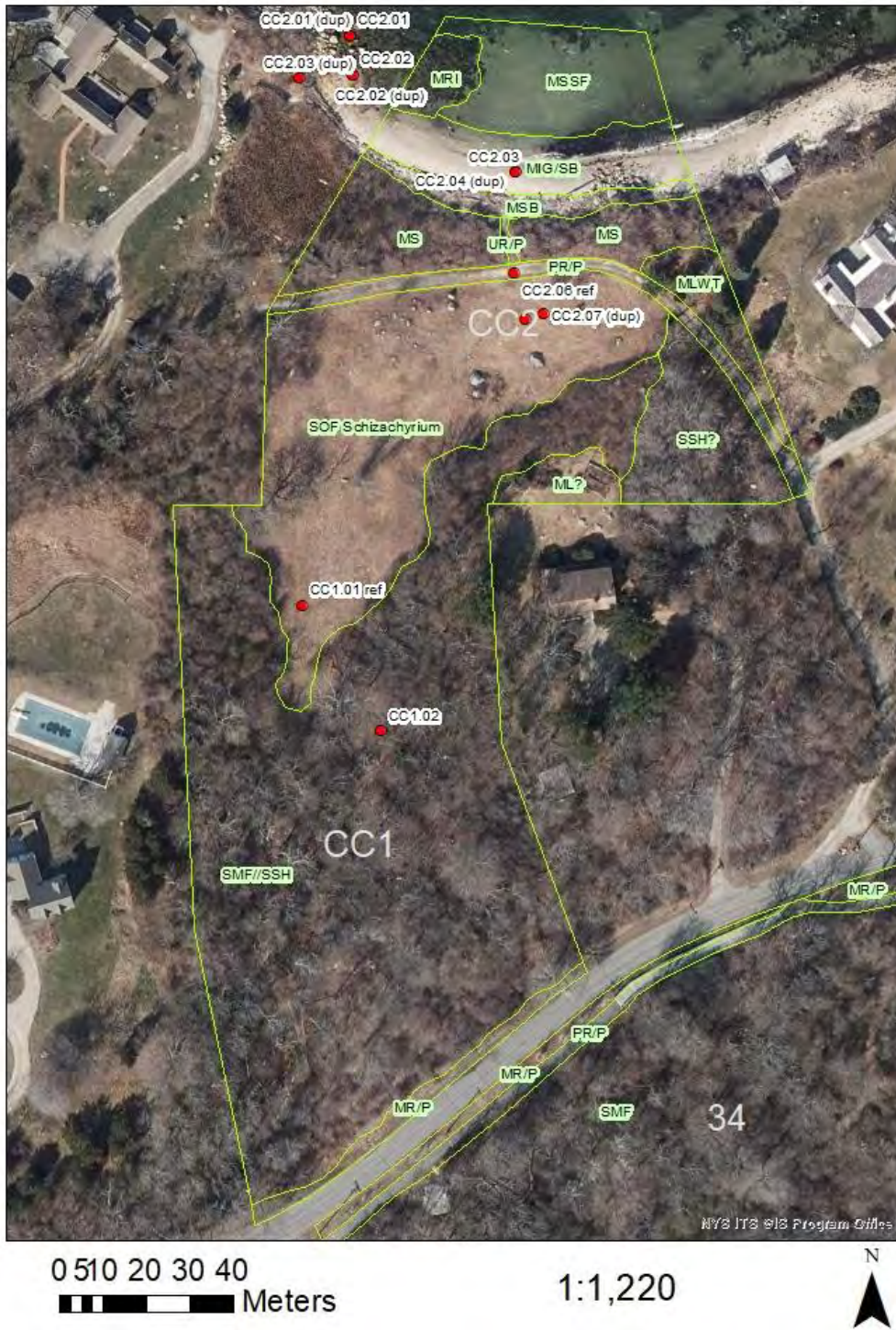


Figure 370. Parcel CC1 and CC2: Spofford.



Figure 371. Parcel CC2 (zoom-in of shoreline).

Table 308. CC1.01 Successional old field (*Schizachyrium scoparium*)

Obs. pt. **CC1.01 ref** Form 3: Form 2 occ #:

Community: "Successional old field (*Schizachyrium*) CEGL code: Alliance code:

UTM: zone 19 251051 E, 4574058 N Comments: *Frangula alnus* big problem south edge of field where trail enters woods. SOF
 Lat: Long: *Schizachyrium scoparium*

Photo Photo name: 238

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
TS2	70%, 0.75m	<i>Frangula alnus</i>	70%	
H	<i>Schizachyrium scoparium</i>			



Figure 372. Successional old field (*Schizachyrium scoparium*) invaded by glossy buckthorn (*Frangula alnus*) in Parcel CC1 (CC1.01).

Table 309. CC1.02 Successional maritime forest

Obs. pt. CC1.02 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 251067 E, 4574028 N

Lat: Long:

Comments: Later age SMF or SSH? Trees are gnarly, but older and taller than typical SMF. Successional southern hardwoods?

Photo Photo name: 239

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	52%, 17m	Prunus serotina var. serotina	42%	
T2		Acer rubrum var. rubrum	18%	
T3	34%, 12m	Prunus serotina var. serotina	30%	
T3		Acer rubrum var. rubrum	6%	
TS1	5%, 3.5m	Frangula alnus	5%	
TS2	10%, 1.5m	Frangula alnus	10%	
SS1	16%, 3m	Lonicera morrowii	15%	
SS1		Sambucus nigra ssp. canadensis	1%	
V	60%, 5m	Lonicera japonica	25%	
V		Smilax rotundifolia	25%	
V		Toxicodendron radicans ssp. radicans	15%	on trunks; V layer dense 0.5-10 m
V		Celastrus orbiculatus	10%	
V		Ampelopsis glandulosa	5%	
V		Parthenocissus quinquefolia	5%	
V		Hedera helix	1%	English ivy dense carpet at S trail head both sides of trail
H	6%	Phytolacca americana	3%	
H		Solidago rugosa var. rugosa	2%	
H		Eurybia divaricata	1%	



Figure 373. Successional maritime forest in Parcel CC1 (CC1.02).

Table 310. CC2.01 Marine rocky intertidal

Obs. pt. **CC2.01** Form 3: Form 2 occ #: 1

Community: Marine rocky intertidal

CEGL code:

Alliance code:

UTM: zone 19 251071 E, 4574188 N

Comments: Small patch of MRI. See also CC2.01 (dup) F21EDI41.

Lat: Long:

Photo Photo name: 12

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
N	80%	Ascophyllum nodosum	60%	
N		Fucus vesiculosus	20%	
U	100%	water	90%	
U		large rocks >10 cm	30%	
U		small rocks <10 cm	30%	
U		very large rocks >1 m	30%	

Obs. pt. **CC2.01 (du)** Form 3: Form 2 occ #: 1

Community: Marine rocky intertidal

CEGL code:

Alliance code:

UTM: zone 19 251071 E, 4574188 N

Comments: Note: Obs Pts CC2.01, CC2.02, and C02.03 are just off Parcel CC2 to W.

Lat: Long:

Photo Photo name: 228, 226

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
N	60%	Ascophyllum nodosum	60%	
U	98%	water	50%	tide half in
U		large rocks >10 cm	40%	
U		very large rocks >1 m	12%	



Figure 374. Marine rocky intertidal community west side of Parcel CC2 (CC2.01): Left: high tide; Right: low tide.

Table 311. CC2.02 High salt marsh

Obs. pt. CC2.02 Form 3: Form 2 occ #: 1

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 19 251071 E, 4574179 N

Comments: Very small patch of HSM. See also CC2.02 (dup) F21EDI41.

Lat: Long:

Photo Photo name: 13

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	80%	Sporobolus pumilus	50%	
H		Sporobolus alterniflorus	15%	
H		Limonium carolinianum	10%	
H		Salicornia depressa	5%	
U	10%	wrack	10%	

Obs. pt. CC2.02 (du) Form 3: Form 2 occ #: 1

Community: High salt marsh

CEGL code:

Alliance code:

UTM: zone 19 251071 E, 4574179 N

Comments: Small patch og HSM.

Lat: Long:

Photo Photo name: 227, 229

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	80%	Sporobolus pumilus	50%	
H		Limonium carolinianum	10%	
H		Salicornia depressa	10%	
H		Sporobolus alterniflorus	10%	edge of water
U	10%	wrack	10%	



Figure 375. High salt marsh west side of Parcel CC2 (CC2.02).

Table 312. CC2.03 and CC2.04 Marine intertidal gravel/sand beach

Obs. pt. CC2.03 Form 3: Form 2 occ #: 1
 Community: Marine intertidal gravel/sand beach CEGL code: Alliance code:
 UTM: zone 19 251107 E, 4574154 N Comments: MIG/SB; Slope: 8 degrees. Aspect: 24 degrees. See also CC2.04 (dup)
 Lat: Long: F21EDI41.
 Position method GPS Photo Photo name: 14
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H 2%	Honckenya peploides	2% at upper beach zone		
U 100%	sand <2 mm	98%		
U	wrack	12%		
U	small rocks <10 cm	1%		
U	shells	0.01%		

Obs. pt. CC2.04 (du) Form 3: Form 2 occ #: 1
 Community: Marine intertidal gravel/sand beach CEGL code: Alliance code:
 UTM: zone 19 251107 E, 4574154 N Comments: MIG/SB narrow band dense wrack at upper margin. H cover is for vegetated
 Lat: Long: beach behind wrack zone.
 Position method GPS Photo Photo name: 231, 232
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H 36%	Atriplex sp.	20%		
H	Solidago sempervirens	10%		
H	Raphanus raphanistrum	5%		
H	Honckenya peploides	1%		
U 100%	sand <2 mm	100%		
U	wrack	12% dead Zostera/marine algae		



Figure 376. Marine intertidal gravel/sand beach in Parcel CC2 (CC2.03 and CC2.04): Left: face W; Right: face E.

Table 313. CC2.03b and CC2.05 Maritime shrubland

Obs. pt. **CC2.03b** Form 3: Form 2 occ #: 1
 Community: Maritime shrubland CEGL code: Alliance code:
 UTM: zone 19 251103 E, 4574138 N Comments: Maritime shrubland back from beach. Herbs at fringe of upper beach and shrubland margin. See also CC2.05 (dup) F21EDI41. Salt shrub? Originally labelled as CC2.04, but that is used for MIG/SB on second visit.
 Lat: Long: Photo Photo name: 15
 Position method Digital Ortho-Images
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	Baccharis halimifolia	10%		
SS1	Lonicera morrowii	10%		
SS1	30%, 3m Rhus typhina	10%		
SS2	45%, 1m Rosa rugosa	40%		
SS2	Baccharis halimifolia	5%		
SS3	5%, 0.5m Rosa rugosa	5%		
V2	15%, 1m Toxicodendron radicans ssp. radicans	15%		
H	32% Phragmites australis	15%		
H	Solidago sempervirens	6%		
H	Suaeda maritima	6%		
H	Atriplex sp.	5%		

Obs. pt. **CC2.05 (du)** Form 3: Form 2 occ #: 1
 Community: Maritime shrubland CEGL code: Alliance code:

UTM: zone 19 251103 E, 4574138 N Comments: Dense tall maritime shrubland E and W of beach access trail.
 Lat: Long: Photo Photo name: 233, 234,235 Prunus maritima
 Position method Digital Ortho-Images
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS1	10%, 4m Prunus serotina var. serotina	10%		
SS1	65%, 3m Lonicera morrowii	40%		
SS1	Baccharis halimifolia	15%		
SS1	Rhus typhina	10%		
SS2	20%, 1.5m Rosa rugosa	10%		
SS2	Morella caroliniensis	5%		
SS2	Rosa sp.	5% white		
SS3	0.01%, 0.3m Prunus maritima	0.01% planted photo 235		
V	10%, 1.5m Celastrus orbiculatus	5%		
V	Parthenocissus quinquefolia	5%		



Figure 377. Maritime shrubland in Parcel CC2 (CC203b and CC2.05): Left: face S; Right: face E.

Table 314. CC2.05 and CC2.07 Successional old field (*Schizachyrium scoparium*)

Obs. pt. CC2.05 Form 3: Form 2 occ #: 1
 Community: "Successional old field (Schizachyrium) CEGL code: Alliance code:
 UTM: zone 19 251107 E, 4574120 N Comments: SOF Schizachyrium scoparium dominated. See also CC2.07 (dup) F21EDI41.
 Lat: Long: Successional northern sandplain grassland?
 Position method GPS Photo Photo name: 16
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	10%, 1m Prunus serotina var. serotina	10%		
TS3	10%, 0.25m Prunus serotina var. serotina	10%		
SS3	Frangula alnus	10%		
SS3	20%, 0.25m Rhus copallinum var. copallinum	10%		
H	74% Schizachyrium scoparium var. scopari	70%		
H	Panicum virgatum	2%		
H	Eupatorium pilosum	1% ID confirmed by Steve Young (Feb. 2022).	collect:Y	
H	Euthamia graminifolia	0.01%		
H	Sonchus sp.	0.01%		ID uncertain

Obs. pt. CC2.07 (du) Form 3: Form 2 occ #: 1
 Community: "Successional old field (Schizachyrium) CEGL code: Alliance code:
 UTM: zone 19 251111 E, 4574121 N Comments: Schizachyrium scoparium dominated SOF south of abandoned paved road. E
 Lat: Long: half more Schizachyrium scoparium dominant vs. west half which has more
 forbs mixed with lesser amounts of Schizachyrium scoparium.
 Position method GPS Photo Photo name: 236 face E, 237 face W
 GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS2	7%, 0.75m Prunus serotina var. serotina	5%		
TS2	Frangula alnus	2%		
TS3	9%, 0.3m Frangula alnus	5%		
TS3	Prunus serotina var. serotina	3%		
TS3	Quercus velutina	1%		
TS3	Juniperus virginiana var. virginiana	0.01%		
SS3	Rhus copallinum var. copallinum	5%		
SS3	10%, 0.2m Rubus flagellaris	5%		
V2	5%, 0.2m Lonicera japonica	5%		
H	57% Schizachyrium scoparium var. scopari	55%		
H	Nabalus trifoliolatus	1%		ID uncertain
H	Dichanthelium sp.	0.01%		
H	Eupatorium pilosum	0.01%		
H	Euthamia graminifolia	0.01%		

Table 315. Comparison of Floristic Quality Scores of two points sampled at the same location in Parcel CC2 three and one-half weeks apart.

Obs. Point	Richnes	% Native	% Invasive	Mean C	Weighted C	FQI	Weighted FQI	Survey Date	FCODE
CC2.05	8	75.00	25.00	3.00	3.91	8.49	11.06	8/30/2021	F21EDI33NYU S
CC2.07 (dup)	11	81.82	18.18	3.36	3.51	11.16	11.63	9/16/2021	F21EDI41NYU S



Figure 378. Successional old field (*Schizachyrium scoparium*) in Parcel CC2 (CC2.05 and CC2.07): Left: Aug. 30, 2021; Right: Sept. 16, 2021.

Parcel CC1 and Parcel CC2 Ecological Community Acreage

Table 316. Parcel CC1 and Parcel CC2 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
194	0.23	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	mostly sand substrate
201	0.07	ML?	Mowed lawn?	CTERCULT	gardens?
239	0.10	MLWT	Mowed lawn with trees	CTERCULT	
207	0.08	MR/P	Mowed roadside/pathway	CTERCULT	road shoulder
195	0.06	MRI	Marine rocky intertidal	CMARINTER	MRI continues off parcel to W
198	0.21	MS	Maritime shrubland	CTEROPEN	Phragmites 15% (90% W off parcel); tall MS
267	0.13	MS	Maritime shrubland	CTEROPEN	Phragmites 15%; tall
197	0.09	MSB	Maritime sand beach	CTEROPEN	vegetated beach above/behind wrack
196	0.27	MSSF	Marine subtidal sand flats	CMARSUB	off parcel
199	0.13	PR/P	Paved road/path	CTERCULT	abandoned
183	2.56	SMF//SSH	Successional maritime forest//SSH	CTERFOR	
200	1.08	SOF Schizachyrium	Successional old field (Schizachyrium)	CTEROPEN	Schizachyrium scoparium dominant
202	0.24	SSH?	Successional southern hardwoods?	CTERFOR	Not surveyed 2021
266	0.01	UR/P	Unpaved road/path	CTERCULT	beach access trail
14 polys	5.26 acres	13 types			

Parcel CC1 and Parcel CC2 General Description

Parcels CC1 and CC2 are located on the north shore of Fishers Island; with Parcel CC2 on the shore of Chocomount Cove; and Parcel CC1 on the north side of East End Road. The parcels share an east-west boundary as follows: Parcel CC1 is to the south and has 95 m of road frontage on East End Road; and Parcel CC2 is to the north and has 75 m of beach front on Chocomount Cove.

Parcel CC1 is mostly successional maritime forest, except for a ¼ acre of successional old field that continues to the north onto Parcel CC2. The successional maritime forest at point CC1.02 is dominated by black cherry (*Prunus serotina* – 42%) with red maple (*Acer rubrum* – 18%) in the canopy and subcanopy. These were the only two tree species recorded at this point in these layers between

12 m and 17 m height. Most trees have twisted trunks and low gnarly branches, that are characteristic of this community.

Parcel CC2 includes small pieces of larger, significant occurrences of two marine natural communities that wrap around most of Fishers Island:

1. Marine rocky intertidal community (EOID 3294) occupying the rocky area between mean low water (MLW) and mean high water (MHW) (Figure 374).
2. Off the parcel to the north in the open waters of Chocomount Cove is a mapped occurrence of marine eelgrass meadow (EOID 15050).

A small patch of marine rocky intertidal community (EOID 3294) is located in the northwest corner of Parcel CC2 just below mean high water (MHW). This community continues west off of the parcel along the shore of Chocomount Cove. To the east of the rocky zone, the area between MLW and MHW in Parcel CC2 is marine intertidal gravel/sand beach covering about 0.2 acres with 100% sand substrate*.

At slightly higher elevation, above MHW, there is a narrow (3-6 m) band of maritime beach with a slightly wider (10-15 m) band of maritime shrubland behind the beach. An abandoned paved road bisects Parcel CC2 east to west with the maritime shrubland on the north side and a successional old field dominated by little bluestem (*Schizachyrium scoparium*) on the south side.

The successional old field is a little over 1 acre in size. The northern two-thirds on Parcel CC2 is in relatively good condition and dominated mostly by native species. However, the southern third of the field is invaded with 0.75 m tall glossy buckthorn (*Frangula alnus* – 70%) at point CC1.01. Here the field abruptly changes to successional maritime forest to the east, south, and west.

*Sandy beaches were only found at three locations on Land Trust parcels (Parcel 43, Parcel CC2, and on the line between Parcel 38 and Parcel 38b).

The marine intertidal gravel sand beach in Parcel CC2 at point CC2.03 has the highest Weighted Floristic Quality Index Score (FQI 8.00) for that community found during our ecology surveys. This community is typically unvegetated.

Parcel CC1 and Parcel CC2 Invasive Plants

Parcel CC1 invasive plants:

- Point CC1.01 (successional old field):
 - Glossy buckthorn (*Frangula alnus* – 70%)
- Point CC1.02 (successional maritime forest):
 - Porcelain berry (*Ampelopsis brevipedunculata* – 5%)
 - Oriental bittersweet (*Celastrus orbiculatus* – 10%)
 - Glossy buckthorn (*Frangula alnus* – 15%)
 - Japanese honeysuckle (*Lonicera japonica* – 25%)
 - Morrow's honeysuckle (*Lonicera morrowii* – 15%)
 - English ivy (*Hedera helix* – 1%).

Parcel CC2 invasive plants:

- Point CC2.03 (off parcel to west in salt shrub):
 - Old World reed grass (*Phragmites australis* ssp. *australis* – 5%)
- Point CC2.03b (maritime shrubland):
 - Morrow's honeysuckle (*Lonicera morrowii* – 10%)
 - Old World reed grass (*Phragmites australis* ssp. *australis* – 15%)

Beach rose (*Rosa rugosa* – 45%)
Point CC2.05 (successional old field):
Glossy buckthorn (*Frangula alnus* – 10%)
Point CC2.05 dup (maritime shrubland):
Oriental bittersweet (*Celastrus orbiculatus* – 5%)
Morrow's honeysuckle (*Lonicera morrowii* – 40%)
Beach rose (*Rosa rugosa* – 10%)
Point CC2.07 (successional old field):
Glossy buckthorn (*Frangula alnus* – 7%)
Japanese honeysuckle (*Lonicera japonica* – 5%)

Parcel CC1 and Parcel CC2 Management Recommendations

The invasive plants in Parcel CC1 and Parcel CC2 are overwhelming. There are at least eight species of invasive plants in these two parcels and most have 10% cover or more at any given point.

The field should be the first priority for invasive plant management. Glossy buckthorn (*Frangula alnus*) should be removed from the successional old field, especially the south portion in Parcel CC1. Maintain the cover and dominance of little bluestem in the field. Prevent woody plant invasion into the field via mowing or cutting. If possible, this field would likely benefit from a prescribed fire management plan.

As for the successional maritime forest in Parcel CC1, the good news is that the tree canopy and subcanopy are dominated by native trees, so those layers are in great shape. However, it may be impossible to restore the lower layers of trees, shrubs, and vines to native species without committing a significant amount of effort and resources.

Old World reed grass and beach rose should be removed from the maritime shrubland. Since these two species also occur off Land Trust property, invasive plant management may require consultation with neighboring landowners before taking any action on the ground

See APPENDIX A. Invasive Species Control Information available online.

Cedar Ridge Parcel



Figure 379. Cedar Ridge Parcel.

Cedar Ridge Parcel. Mid-1920s Air Photo and 2020 CIR Air Photo

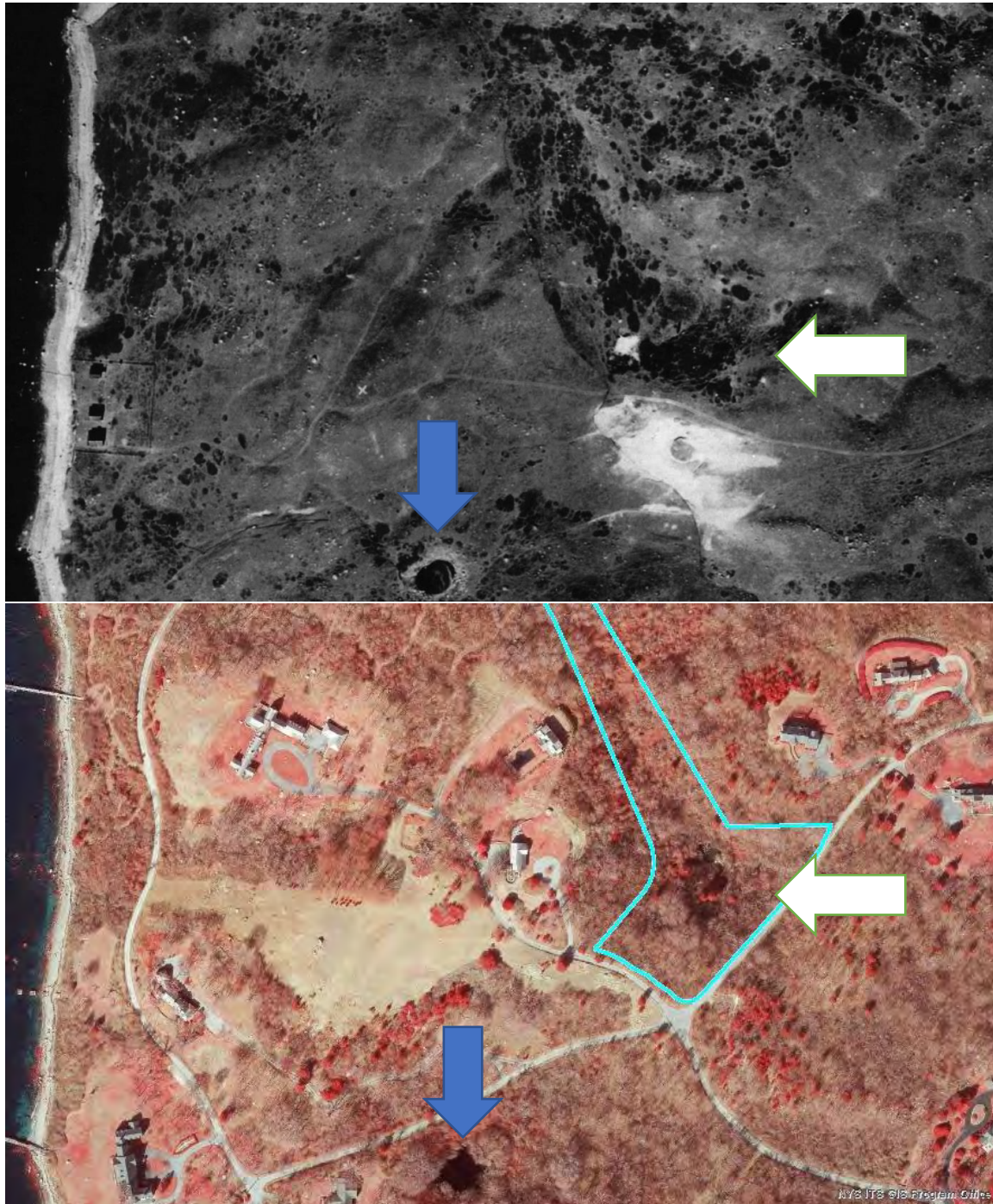


Figure 380. Cedar Ridge Parcel. Top: mid-1920s; Bottom: 2020. Note kettle hole pond at bottom-center of both photos (blue arrows). White arrows point to kettle hole wetland in Cedar Ridge Parcel.

The narrow north-south valley on Cedar Ridge Parcel appears mostly forested on the mid-1920s black and white air photo, while the surrounding landscape looks cleared. Cedar Ridge and the surrounding landscape are depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

Table 317. CR.01 Red maple-blackgum slope forest

Obs. pt. CR.01 ref Form 3: Form 2 occ #:

Community: Unpaved road/path
"Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249696 E, 4574115 N
Lat: 41.27305723 Long: -71.9676183

Comments: survey of Cedar Ridge (CR) parcel; relatively new; "Kettle Hole Trail" N trail head (photo 87); room for one car parking; iron survey pin near trail head sign; Established mowed path along west property line from N tip of property; goes almost to house on west side; very new trail with brush chips; follow trail along E property line N to S full length this transect;

Photo Photo name: 87

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Nyssa sylvatica	about 10 m S of trail head; large Nyssa		



Figure 381. Red maple-blackgum slope forest at north trailhead in Cedar Ridge Parcel (CR.01).

Table 318. CR.02 Red maple-blackgum slope forest

Obs. pt. CR.02 ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249708 E, 4574068 N

Lat: 41.27346833 Long: -71.9680905

Comments: "Red maple-blackgum slope forest" both sides of trail; Nyssa sylvatica dominant; dense tall (2 m) Smilax rotundifolia thicket under Nyssa;

Photo Photo name: 88 face E, 89 face W

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	Nyssa sylvatica			
V1	2m Smilax rotundifolia			



Figure 382. Red maple-blackgum slope forest in Cedar Ridge Parcel (CR.02).

Table 319. CR.03 Successional vineland

Obs. pt. CR.03 ref Form 3: Form 2 occ #:

Community: "Successional vineland"

CEGL code:

Alliance code:

UTM: zone 19 249751 E, 4573980 N

Lat: 41.26803381 Long: -71.9800794

Comments: Tall Smilax thicket W of this point; visible on air photos; size? split out on map?; No Nyssa in Smilax thicket; switches to widely spaced gnarly Prunus serotina to N;

Photo Photo name: 90

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
V1	Smilax rotundifolia			



Figure 383. Successional vineland in Cedar Ridge Parcel (CR.03).

Table 320. CR.04 Shallow emergent marsh

Obs. pt. **CR.04** Form 3: Form 2 occ #:

Community: Shallow emergent marsh CEGL code: Alliance code:

UTM: zone 19 249776 E, 4573916 N
 Lat: 41.26191183 Long: -71.9987069

Comments: SEM in kettlehole; N half Decodon dominated SS (photo 91); S half Carex lurida? And Juncus effusus dominated (photo 92); drained nor water; surrounded by dense 3-5 m shrubs, Ilex verticillata, Frangula alnus; also tall SS in south basin lobe;

Position method GPS
 GPS average min, sec. WAAS

Photo Photo name: 91,92

Stratum	Species	comments	Collection	Unsure of ID
TS1 4m	Frangula alnus	margin; 3-5 m		
SS1 4.5m	Ilex verticillata	margin; 3-5 m		
SS1	Salix bebbiana	margin by Populus deltoides; 4 m		ID uncertain
SS2 15%, 1.5m	Decodon verticillatus	15%		
V2 15%, 1m	Solanum dulcamara	15%		
H 58%, 0.9m	Carex lurida	20%		ID uncertain
H	Juncus effusus ssp. solutus	15%		
H	Leersia oryzoides	10%		
H	Alliaria petiolata	5% south end		
H	Impatiens capensis	5%		
H	Lythrum salicaria	5% south end		
H	Bidens tripartita	3%		
H	Sagittaria latifolia	2%		
H	Alisma subcordatum	1%		
H	Juncus sp.	0.01% small brown round head		ID uncertain
H	Scutellaria galericulata	0.01% large flower in axil		



Figure 384. Shallow emergent marsh in Cedar Ridge Parcel (CR.04): Left: face N; Right: face S.

Table 321. CR.05 Red maple-blackgum slope forest

Obs. pt. CR.05 ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249851 E, 4573922 N

Lat: 41.26180604 Long: -71.9989646

Comments: Kettle Hole Trail S trailhead; from kettle hole pond/SEM (CR.04) to S trailhead (CR.05) it is "Red maple-blackgum slope forest" but younger than N half of parcel; and more *Prunus serotina* in campoy;

Photo Photo name: 93

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Nyssa sylvatica</i>			
T2	<i>Prunus serotina</i> var. <i>serotina</i>			



Figure 385. Red maple-blackgum slope forest at south trailhead in Cedar Ridge Parcel (CR.05).

Cedar Ridge Parcel Ecological Community Acreage

Table 322. Cedar Ridge Parcel Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	SYSTEM/SUBSYSTEM	COMMENTS
500	0.02	MR/P	Mowed roadside/pathway	CTERCULT	mowed road shoulder; one car parking; trailhead
501	0.18	MR/P	Mowed roadside/pathway	CTERCULT	mowed road shoulder; one car parking; trailhead
185	2.46	RM-BG (slope)	Red maple-blackgum forest	CTERFOR	
503	0.06	SS Decodon	Shrub swamp (Decodon)	CPALOPEN	S half SEM
502	0.56	SSH	Successional southern hardwoods	CTERFOR	not surveyed
504	1.13	SSH//SUC.S vineland	Successional southern hardwoods//SUC.S	CTERFOR	Smilax thicket with widely scattered Prunus
6 polys	4.41 acres	5 types			

Cedar Ridge Parcel General Description

Cedar Ridge Parcel is located about center of the headland that includes Clay Point, between West Harbor and Chocomount Cove, on the north shore of Fishers Island. The parcel is long and narrow: 280 m north to south; 50 m east to west in the northern three-quarters; widening to 150 m along the south boundary on Cedar Ridge Road (the parcel's namesake). A trail runs the length of the parcel with trailheads at the north end on Clay Point Road; and at the south end on Cedar Ridge Road.

The parcel's name "Cedar Ridge" is a bit of a misnomer, because the prominent landform on the parcel is small kettle hole wetland and small valley (intermittent stream drainage?) that runs the length of the parcel.

Most of the parcel is forested except for the kettle hole wetland. There are two forest types on the parcel: 1) red maple-blackgum slope forest runs along the west side of the parcel from Clay Point Road to the north (older trees), to the kettle hole wetland to south (younger trees); and 2) younger successional southern hardwoods mapped at the southern end of the parcel. Successional southern hardwoods with openings of sedge successional vineland dominated by greenbrier (*Smilax rotundifolia*) runs along the eastern boundary of the parcel.

The kettle hole wetland is mostly a shallow emergent marsh dominated by three graminoid species: sallow sedge (*Carex lurida* – 20%), soft rush (*Juncus effusus* – 15%), and rice cut grass (*Leersia oryzoides* – 10%). The north half of the kettle hole is shrub swamp dominated by water willow (*Decodon verticillatus*), but is too small to map as a separate community in this parcel. The marsh is surrounded by a dense 3-5 m tall shrub swamp margin that also fills the southern end of the kettle hole, but also too small to map as a separate community.

Cedar Ridge Parcel Invasive Plants

Invasive plants at point CR.04 (shallow emergent marsh):

Garlic mustard (*Alliaria petiolata* – 5%)

Glossy buckthorn (*Frangula alnus*) around the margin of the marsh.

Purple loosestrife (*Lythrum salicaria* – 5%)

Cedar Ridge Parcel Management Recommendations

Garlic mustard and purple loosestrife should be removed from the shallow emergent marsh in the kettle hole while their cover is still under 10%. Glossy buckthorn should be removed from around the wetland, but that will be a long-term commitment of effort and resources.

Greenbrier is abundant in this parcel and the Kettle Hole Trail will likely need regular management of this native species to keep it safe and accessible to visitors.

See APPENDIX A. Invasive Species Control Information available online.

Cedar Ridge Parcel Future Surveys

The kettle hole wetland should be more thoroughly searched for rare plants.

Parcel E-01. Matty Matthiessen Wildlife Sanctuary



Figure 386. Parcel E-01: Matty Matthiessen Wildlife Sanctuary.

Table 323. E01.01 Successional shrubland

Obs. pt. **E01.01** Form 3: Form 2 occ #:

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 250634 E, 4573145 N

Lat: 41.27638123 Long: -71.9689867

Comments: Along road/driveway on both sides at turn by utility box is successional shrubland;

Photo Photo name: 105 face N, 106 face E

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS1	80%, 3m	Lonicera morrowii	80%	
SS2	0.01%, 1m	Rhus glabra	0.01%	
V2	60%, 2m	Celastrus orbiculatus	30%	
V2		Parthenocissus quinquefolia	20%	
V2		Lonicera japonica	10%	



Figure 387. Successional shrubland in Parcel E-01 (E01.01) face N.

Table 324. E01.02 Successional maritime forest

Obs. pt. **E01.02 ref** Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250626 E, 4573254 N

Lat: 41.27643104 Long: -71.9698485

Comments: on both sides of road at this point is black cherry dominated SMF; black cherry is gnarly and old

Photo Photo name: 107,108

Position method GPS

GPS average min, sec.

WAAS



Figure 388. Successional maritime forest in Parcel E-01 (E01.02).

Table 325. E01.03 Successional maritime forest

Obs. pt. **E01.03** Form 3: Form 2 occ #:

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 250561 E, 4573306 N

Comments: grades into old T2 black oak/Sassafras with large crowns with Sassafras in T3; "Late successional maritime forest"

Lat: 41.27640049 Long: -71.9706828

Photo Photo name: 109 face SE, 110 face SW, 111 face NW

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	60%, 22m	Sassafras albidum	35%	
T2		Acer rubrum var. rubrum	15%	
T2		Prunus serotina var. serotina	15%	
T2		Quercus velutina	15%	
T3	20%, 9m	Acer rubrum var. rubrum	10%	
T3		Prunus serotina var. serotina	6%	
T3		Sassafras albidum	6%	
SS1	31%, 3m	Lonicera morrowii	30%	
SS1		Sambucus nigra ssp. canadensis	1%	
SS2	10%, 1m	Lonicera morrowii	10%	
V1	9%, 7.5m	Toxicodendron radicans ssp. radicans	6%	
V1		Celastrus orbiculatus	2%	
V1		Parthenocissus quinquefolia	1%	
V2	40%, 0.2m	Lonicera japonica	30%	
V2		Parthenocissus quinquefolia	5%	
V2		Toxicodendron radicans ssp. radicans	5%	
V2		Solanum dulcamara	0.01%	
H	4%	Onoclea sensibilis	3%	
H		Symphotrichum lanceolatum	1%	ID uncertain
H		Dichanthelium clandestinum	0.01%	



Figure 389. Successional maritime forest in Parcel E-01 (E01.03).

Parcel E-01 Ecological Community Acreage

Parcel E-01 is included in the Parcel 20 Ecological Community Acreage Assessment (Table 142, Figure 167).

Parcel E-01 General Description

Parcel E-01 is located on the east side of the Matty Matthiessen Wildlife Sanctuary and along the east side of the Middle Farms grassland in Parcel 20. The western third of Parcel E-01 has small pieces of grassland and shrubland that extend west onto Parcel 20, including semi-natural grassland (*Panicum virgatum*), shallow emergent marsh (*Calamagrostis canadensis*), and successional shrubland (*Rhus copallinum*). These types are discussed in the Parcel 20 section.

The eastern two-thirds of Parcel E-01 is successional maritime forest (labeled incorrectly as SSH on Figure 386) along the east and west sides of Middle Farm Pond Road (unpaved). In the southern half of the forest the trees are stunted with gnarly branches (Figure 388); and in the north half the trees are taller (22 m), straighter, and tree crowns are bigger (Figure 389).

Parcel E-01 Invasive Plants

Invasive plants at point E01.01 (successional shrubland):

Oriental bittersweet (*Celastrus orbiculatus* – 30%)

Japanese honeysuckle (*Lonicera japonica* – 10%)

Morrow's honeysuckle (*Lonicera morrowii* – 80%)

Invasive plants at point E01.03 (successional maritime forest):

Oriental bittersweet (*Celastrus orbiculatus* – 2%)

Japanese honeysuckle (*Lonicera japonica* – 30%)

Morrow's honeysuckle (*Lonicera morrowii* – 40%)

Parcel E-01 Management Recommendations

It would be good to reduce or remove the invasive plants from the successional communities along both sides of Middle Farm Pond Road, but the small patch size and high cover of invasives makes it a low priority for management compared to other parcels on the Island. It may be best to let succession run its course in Parcel E-01 and hopefully the increased canopy shade will help the communities transition to a greater number of native plants.

See APPENDIX A. Invasive Species Control Information available online.

Parcel E-03. Matty Matthiessen Wildlife Sanctuary

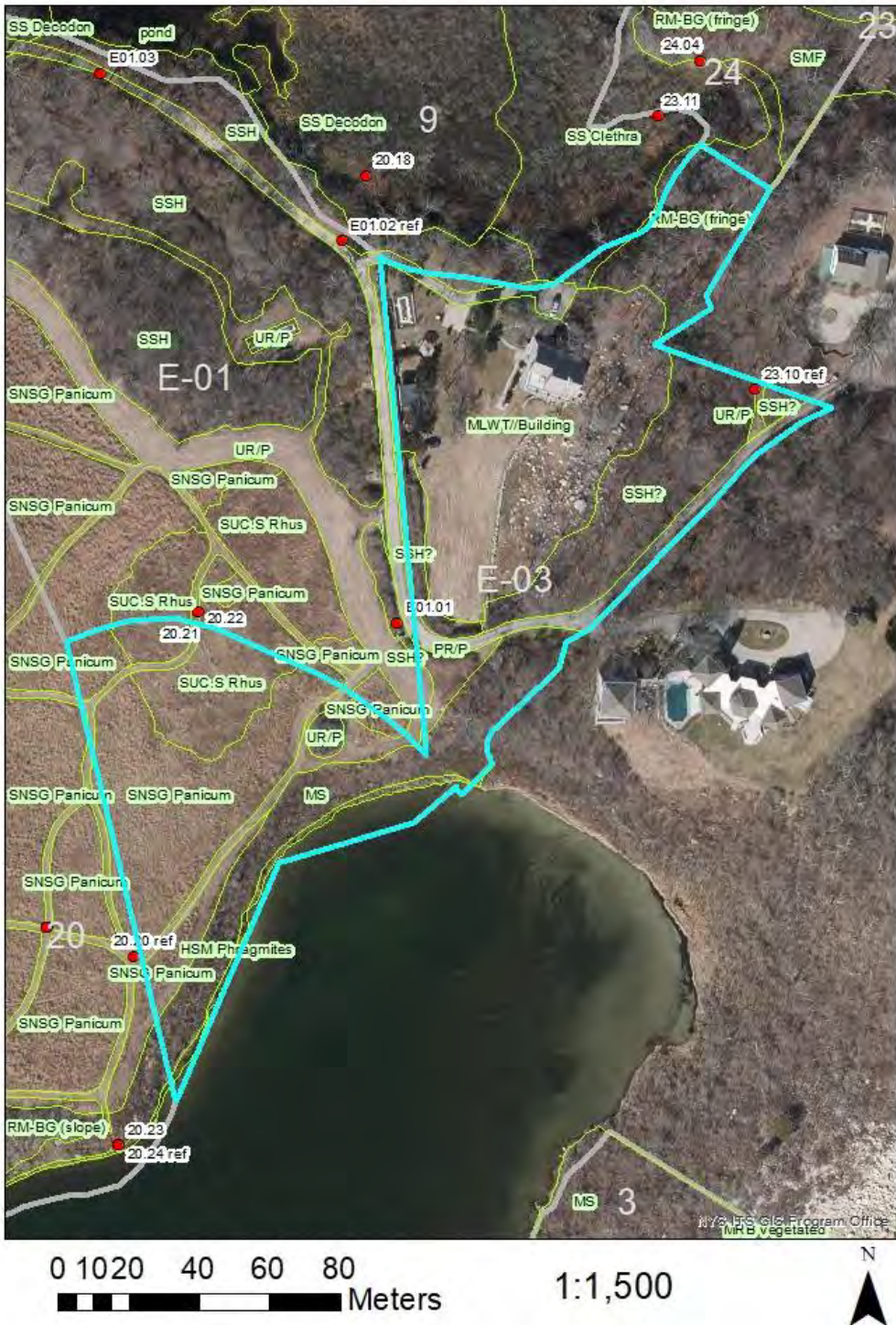


Figure 390. Parcel E-03: Matty Matthiessen Wildlife Sanctuary.

Parcel E-03 Ecological Community Acreage

Parcel E-03 is included in the Parcel 20 Ecological Community Acreage Assessment (Table 226, Figure 269).

Parcel E-03 General Description

Parcel E-03 is similar to Parcel E-01 to the north in that both are located on the east side of the Matty Matthiessen Wildlife Sanctuary and along the east side of the Middle Farms grassland in Parcel 20. They are also similar in that both have small pieces of grassland and shrubland that extend west onto Parcel 20, including semi-natural grassland (*Panicum virgatum*) and successional shrubland (*Rhus copallinum*). These types are discussed in the Parcel 20 section. One big difference between the two parcels is that the eastern half of Parcel E-03 is a private residence. Parcel E-03 is one of six parcels with buildings within the parcel boundary (parcels with buildings include: 1 museum, 2 shed near dock, 32 pump station, E-03 private residence, E-04 private residence, and E-07b private residence).

There is a band of maritime shrubland along the southeast boundary of Parcel E-03 that runs along the north shore of Beach Pond, and continues southwest into Parcel 20 (see point 20.23). North of the residence is a small patch of red maple-blackgum fringe swamp along the shrub swamp to the northeast. The fringe swamp grades into red maple-blackgum slope forest uphill to the south, but the slope forest is too small to map as a separate community. The area to the southeast of the residence is mapped as successional southern hardwoods.

The Parcel E-03 Landscape Condition Analysis Score of 260.68 (#10 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728). This relatively good landscape score is a bit surprising given that a house with a mowed lawn occupies almost half of the parcel.

Parcel E-03 Invasive Plants

See the following parcel sections and observation points for Parcel E-03 invasive plant information:

Parcel 20 at points 20.20 and 20.22

Parcel 23 at point 23.10 (actually in Parcel E-03)

Parcel E-01 at points E01.01 and E01.02

Parcel E-03 Management Recommendations

It would be good to reduce or remove the invasive plants from the successional communities along both sides of Middle Farm Pond Road, but the small patch size and high cover of invasives makes it a low priority for management compared to other parcels on the Island.

See APPENDIX A. Invasive Species Control Information available online.

Parcel E-04. Vartanian Easement



Figure 391. Parcel E-04: Vartanian Easement.

Parcel E-04 was not surveyed in 2021 or 2022. The ecological communities were mapped based on air photo interpretation and their extent and condition need to be evaluated.

Parcel E-04 Ecological Community Acreage

Table 326. Parcel E-04 Ecological Community Acreage

FID	ACRES	COMMCODE	COMMNAME	System/Subsystem	COMMENTS
232	0.03	B	Buildings	CTERCULT	sheds?
230	0.02	CP	Conifer plantation?	CTERCULT	
227	0.21	CP?	Conifer plantation?	CTERCULT	
243	0.06	CP?	Conifer plantation?	CTERCULT	planted evergreen border
224	0.63	MIG/SB	Marine intertidal gravel/sand beach	CMARINTER	
237	0.57	ML	Mowed lawn	CTERCULT	includes pool
186	1.92	MLWT//Building	Mowed lawn with trees//Building	CTERCULT	MLWT//Building
231	0.02	MR/P	Mowed roadside/pathway	CTERCULT	road shoulder
225	0.47	MRB	Maritime rocky beach	CTEROPEN	unvegetated
428	0.08	MBLUFF	Maritime bluff	CTEROPEN	labeled as MRB vegetated
429	0.12	MBLUFF	Maritime bluff	CTEROPEN	labeled as MRB vegetated
223	0.83	MRS	Marine rocky subtidal	CMARSUB	
242	0.53	MS	Maritime shrubland	CTEROPEN	
430	0.03	MS	Maritime shrubland	CTEROPEN	
226	0.15	PR/P	Paved road/path	CTERCULT	
229	0.60	SMF?	Successional maritime forest?	CTERFOR	
233	0.49	SMF?	Successional maritime forest?	CTERFOR	
241	0.51	SMF?	Successional maritime forest?	CTERFOR	
431	0.14	SMF?	Successional maritime forest?	CTERFOR	
235	0.09	SSH?	Successional southern hardwoods?	CTERFOR	
234	0.01	SUC.S?	Successional shrubland?	CTEROPEN	
228	0.04	UR/P	Unpaved road/path	CTERCULT	
236	0.12	UR/P	Unpaved road/path	CTERCULT	trail?
23 polys	7.67 acres	15 types			

Note: Parcel E-04 was not surveyed in 2021 or 2022. The ecological communities above were mapped based on air photo interpretation and their extent and condition need to be evaluated.

Parcel E-04 General Description

Parcel E-04 was not surveyed in 2021 or 2022. The ecological communities were mapped based on air photo interpretation and their extent and condition need to be evaluated.

Parts of two natural community occurrences of statewide significance are found along the shoreline parcel boundary: maritime bluff (E-04 17535) and maritime beach (E-04 17561).

Parcel E-04 is one of six parcels with buildings within the parcel boundary (parcels with buildings include: 1 museum, 2 shed near dock, 32 pump station, E-03 private residence, E-04 private residence, and E-07b private residence).

Parcel E-04 Invasive Plants

Parcel E-04 was not surveyed for invasive plants in 2021 or 2022.

Parcel E-04 Management Recommendations

General management recommendations for maritime bluff (EOID 17535): Although it may be impractical in this steep-slope setting, it would be good to reduce, control, or eliminate the following invasive plants: *Lonicera japonica* and *Rosa rugosa*. Prevent trampling of bluff face by visitors. Avoid building structures on bluff face (e.g., stairs to access beach). Ideally, development should be set back from the top of bluff to allow for erosional processes that may coincide with sea level rise.

See APPENDIX A. Invasive Species Control Information available online.

Parcel E-04 Future Surveys

Parcel E-04 was not surveyed in 2021 or 2022. The ecological communities were mapped based on air photo interpretation and their extent and condition need to be evaluated.

Parcel E-05 and Parcel E-06



Figure 392. Parcels E-05 and E-06.

Table 327. E05.01 Successional old field (*Schizachyrium scoparium*)

Obs. pt. E05.01 ref Form 3: Form 2 occ #:

Community: Successional old field CEGL code: Alliance code:

UTM: zone 19 249541 E, 4573602 N Comments: New parcel - not on Greg map. *Schizachyrium scoparium* dominated SOF with golf flag. Reference point. Vegetation cover data not collected.

Lat: Long: Photo Photo name: 181

Position method GPS

GPS average min. sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
H	<i>Schizachyrium scoparium</i> var. <i>scopari</i>			



Figure 393. Successional old field (*Schizachyrium scoparium*) in Parcel E-05 (E05.01).

Table 328. E05.02 Pine plantation

Obs. pt. E05.02 ref Form 3: Form 2 occ #:

Community: Pine plantation CEGL code: Alliance code:

UTM: zone 19 249521 E, 4573580 N Comments: ~3 white pine trees at bottom of hill. Reference point. Vegetation cover data not collected.

Lat: Long: Photo Photo name:

Position method Digital Ortho-Images

GPS average min. sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Pinus strobus</i>			

Table 329. E05.03 Successional old field (*Schizachyrium scoparium*)

Obs. pt. **E05.03** Form 3: Form 2 occ #:

Community: "Successional old field (Schizachyrium CEGL code: Alliance code:

UTM: zone 19 249589 E, 4573550 N
 Lat: 41.28672839 Long: -71.9342802

Comments: Revisit little bluestem SOF with golf flag; Photo log: 139 face N downhill to golf flag, 140 face S uphill to house, 141 Liatris?; Slope: 10 degrees. Aspect: 328 degrees.

Photo Photo name: 139-141

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
TS3	4%, 0.4m	Frangula alnus	1%	
TS3		Juniperus virginiana	1%	
TS3		Pinus thunbergii	1% two needle cluster	ID uncertain
TS3		Carya glabra	0.01%	
TS3		Prunus serotina var. serotina	0.01%	
TS3		Quercus velutina	0.01%	
SS3	15%, 0.35m	Rubus flagellaris	15%	
SS3		Rhus copallinum var. copallinum	0.01%	
V2	6%, 0.2m	Lonicera japonica	5%	
V2		Smilax glauca	1%	
H	87%	Schizachyrium scoparium var. scopari	60%	
H		Agrostis capillaris	10%	
H		Juncus greenei	10%	collect:Y ID uncertain
H		Eupatorium hyssopifolium	5%	
H		Solidago rugosa var. rugosa	1%	
H		Cyperus grayi	0.01%	collect:Y ID uncertain
H		Dichanthelium columbianum	0.01%	ID uncertain
H		Erigeron canadensis var. canadensis	0.01%	ID uncertain
H		Solidago nemoralis	0.01%	
U	21%	bare soil	20% with crustose lichen on surface	
U		sand <2 mm	0.01%	
U		wood (FWD) <7.5 cm	0.01%	



Figure 394. Successional old field (*Schizachyrium scoparium*) (E05.03): Left: face N downhill; Right: face S uphill.

Table 330. E06.01 Successional southern hardwoods

Obs. pt. **E06.01ref** Form 3: Form 2 occ #:

Community: Successional southern hardwoods

CEGL code:

Alliance code:

UTM: zone 19 249568 E, 4573629 N

Lat: Long:

Comments: Parcel to N (Parcel E06) is SSH with abundant Smilax canes draping down. Red maple with scattered black cherry and young Nyssa sylvatica. Aronia prunifolia per Steve Young. Reference point. Vegetation cover data not collected.

Photo Photo name: 182

Position method Digital Ortho-Images

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	Acer rubrum var. rubrum			
T2	Prunus serotina var. serotina			
T3	Nyssa sylvatica			
SS1	Aronia prunifolia	not A. arbutifolia. "looks like A. prunifolia" per Steve Young; lvs not very hairy below, FR looks more prple than red.	collect:Y	ID uncertain



Figure 395. Successional southern hardwoods in Parcel E-06 (E06.01).

Parcel E-05 and Parcel E-06 Ecological Community Acreage

Table 331. Parcel E-05 and Parcel E-06 Ecological Community Acreage

FID	ACRES	COMMCOD E	COMMNAME	System/Subsystem	COMMENTS
209	0.15	PP	Pine plantation	CTERCULT	planted? conifers - 3 white pine trees
210	1.61	SOF Schizachyrium	Successional old field (Schizachyrium)	CTEROPEN	Schizachyrium scoparium dominated; with golf flag
184	2.69	SSH	Successional southern hardwoods	CTERFOR	
208	0.26	SSH?	Successional southern hardwoods?	CTERFOR	not surveyed 2021
4 polys	4.71 acres	3 types			

Parcel E-05 and Parcel E-06 General Description

Parcel E-05 and Parcel E-06 are located about 350 m north of Barlow Pond on the west side of Barlow Pond Road; and about 200 m east of West Harbor. The parcels share an east-west boundary, with Parcel E-06 on the north side of the line and Parcel E-05 on the south.

Easiest access to Parcel E-05 is from the southeast by parking at the private residence and walking northwest past the house to the field. Obtain permission from private landowners before accessing Parcel E-05 from this direction.

Parcel E-06 is entirely forested by successional southern hardwoods comprised of young red maple (*Acer rubrum*), black cherry (*Prunus serotina*), and blackgum (*Nyssa sylvatica*). Greenbrier (*Smilax rotundifolia*) is abundant and hangs down from the canopy. The Parcel E-06 Landscape Condition Analysis Score of 255.52 (#9 overall) falls in the top 25th percentile of the 77 Land Trust parcels (LCA score range 0 to 1728).

Parcel E-05 is mostly successional old field dominated by little bluestem (*Schizachyrium scoparium* – 60%). The successional old field (*Schizachyrium scoparium*) in Parcel E-05 at point E05.03 has the highest Weighted Floristic Quality Index Score (FQI 12.69) for that community found during our ecology surveys, and is in the best landscape context compared to other locations (CC2. 05 and 32.01).

Parcel E-05 and Parcel E-06 Invasive Plants

Invasive plants at point E05.03 (successional old field):

- Glossy buckthorn (*Frangula alnus* – 1%)
- Japanese honeysuckle (*Lonicera japonica* – 5%)
- Japanese black pine (*Pinus thunbergii* – 1%)

Parcel E-05 and Parcel E-06 Management Recommendations

Remove glossy buckthorn, Japanese honeysuckle, and Japanese black pine from the successional old field, and maintain the cover and dominance of little bluestem. Prevent woody plant invasion into the field via mowing or cutting. If possible, this field would likely benefit from a prescribed fire management plan, but that may be impractical in this setting.

See APPENDIX A. Invasive Species Control Information available online.

Parcel E-05 Future Surveys

The successional old field in Parcel E-05 should be more thoroughly searched for rare plants.

Parcel E-07a and Parcel E-07b



Figure 396. Parcels E-07a and E-07b.

Table 332. E07a.01 Red maple-blackgum slope forest

Obs. pt. **E07a.01** ref Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 251321 E, 4574140 N

Lat: 41.27316179 Long: -71.9677543

Comments: Reference point west side of road stand of tall *Nyssa sylvatica* behind (west of) phone pole.

Photo Photo name: 84

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	<i>Nyssa sylvatica</i>			



Figure 397. Red maple-blackgum slope forest west of Parcel E-07a (E07a.01).

Table 333, E07a.02 Red maple-blackgum slope forest

Obs. pt. **E07a.02** Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 251352 E, 4574132 N

Comments: Slope: 15 degrees. Aspect: 272 degrees W.

Lat: 41.27307429 Long: -71.9676549

Photo Photo name: 85,86

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	63%, 20m	<i>Nyssa sylvatica</i>	60%	
T2		<i>Quercus velutina</i>	8%	
T3		<i>Acer rubrum</i> var. <i>rubrum</i>	10%	
T3	23%, 8m	<i>Nyssa sylvatica</i>	10%	
T3		<i>Prunus serotina</i> var. <i>serotina</i>	5%	
TS1	17%, 4m	<i>Frangula alnus</i>	10%	
TS1		<i>Nyssa sylvatica</i>	5%	
TS1		<i>Acer rubrum</i> var. <i>rubrum</i>	2%	
TS2	7%, 1m	<i>Frangula alnus</i>	5%	
TS2		<i>Nyssa sylvatica</i>	2%	
TS3	4%, 0.5m	<i>Frangula alnus</i>	3%	
TS3		<i>Nyssa sylvatica</i>	1%	
SS1	8%, 4m	<i>Ilex verticillata</i>	5%	
SS1		<i>Viburnum dentatum</i> var. <i>lucidum</i>	2% dying	
SS1		<i>Viburnum dilatatum</i>	1%	
SS2	10%, 1m	<i>Lonicera morrowii</i>	10%	
SS2		<i>Rosa multiflora</i>	0.01%	
SS3	1%, 0.25m	<i>Rubus pubescens</i>	1%	
V1	25%, 9m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	15% V1 2-15 m	
V1		<i>Celastrus orbiculatus</i>	10%	
V1		<i>Hedera helix</i>	0.01%	
V2	35%, 1m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	20% V2 0.5-1.5 m	
V2		<i>Parthenocissus quinquefolia</i>	15%	
H	7%, 0.75m	<i>Eurybia divaricata</i>	5%	
H		<i>Solidago rugosa</i> var. <i>rugosa</i>	2%	
H		<i>Lactuca</i> sp.	0.01% or <i>Sonchus</i> ?	ID uncertain
U	95%	litter and duff	90%	
U		wood (FWD) <7.5 cm	3%	
U		large rocks >10 cm	2%	
U		very large rocks >1 m	1%	
U		wood (CWD) >7.5 cm	1%	



Figure 398. Red maple-blackgum slope forest in Parcel E-07a (E07a.02).



Figure 399. Red maple-blackgum slope forest in Parcel E-07a (E07a.02).

Table 334. E07b.01 Successional maritime forest

Obs. pt. E07b.01 Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 251426 E, 4574168 N

Comments: SMF on both sides (E and W) of 3 m wide mowed path. Vegetation cover recorded from E side of trail.

Lat: Long:

Photo Photo name: 43 face N car, 44 face S house/lawn, 45 face W, 46 face E

Position method GPS

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	48%, 12m	Prunus serotina var. serotina		30%
T2		Acer rubrum var. rubrum		25%
T3	5%, 7m	Acer rubrum var. rubrum		5%
TS1	3%, 3m	Acer rubrum var. rubrum		4%
TS2	2%, 1m	Acer rubrum var. rubrum		1%
TS2		Frangula alnus		1%
TS2		Quercus velutina		0.01%
SS1	40%, 2.5m	Ligustrum vulgare		25%
SS1		Lonicera morrowii		15%
SS2		Ligustrum vulgare		5%
SS2	10%, 1m	Lonicera morrowii		5%
V2	60%, 0.75m	Lonicera japonica		35%
V2		Ampelopsis glandulosa		10%
V2		Parthenocissus quinquefolia		10%
V2		Toxicodendron radicans ssp. radicans		5%
V2		Smilax rotundifolia		1%
H	1%	Eurybia divaricata		0.01%
H		Phytolacca americana		0.01%



Figure 400. Successional maritime forest in Parcel E-07b (E07b.01): Left: face E; Right: face W.

Parcel E-07a and Parcel E-07b Ecological Community Acreage

Table 335. Parcel E-07a and Parcel E-07b Ecological Community Acreage

FID	ACRES	COMMCOD E	COMMNAME	System/Subsystem	COMMENTS
187	0.14	B	Building	CTERCULT	house
189	0.07	ML	Mowed lawn	CTERCULT	
191	1.49	ML	Mowed lawn	CTERCULT	ML + gardens; SOF?
188	0.73	MLWT	Mowed lawn with trees	CTERCULT	
192	0.19	MLWT	Mowed lawn with trees	CTERCULT	
186	0.12	PR/P	Paved road/path	CTERCULT	driveway
507	1.06	RM-BG (slope)	Red maple-blackgum slope forest	CTERFOR	Surveyed in 2022
181	4.50	SMF	Successional maritime forest	CTERFOR	Surveyed in 2022
190	0.10	SOF//SUCS	Successional old field//Successional shrubland	CTEROPEN	SUCS?
237	0.56	SSH?	Successional southern hardwoods?	CTERFOR	not surveyed 2021
10 polys	8.96 acres	8 types			

Parcel E-07a and Parcel E-07b General Description

Parcel E-07a and Parcel E-07b (referred to as one Parcel E-07 in the section) are on the east side of Brooks Point Road and about 100 m east of Chocomount Cove on the north shore of Fishers Island. The west half of Parcel E-07 is forested and the east half is mostly a private residence with mowed lawn. Firestone Drive runs along the south and east parcel boundaries.

Most of the western half of Parcel E-07 is dense, impenetrable successional maritime forest covering about 4.5 acres. The successional maritime forest tree canopy is stunted (7-12 m tall) and many of the trees have twisted trunks and low gnarly branches, especially black cherry (*Prunus serotina*), that are characteristic of this community. This forest is easiest to view on both sides of the 120-m long, east-west path that runs from the house to Brooks Point Road

At the west edge of Parcel E-07, along Brooks Point Road, is a one-acre red maple-blackgum slope forest that was surveyed in 2022 and not shown on the community map (Figure 396). The slope forest continues to the west off Parcel E-07 onto private property on the west side Brooks Point Road (observed from roadside, Figure 397).

Parcel E-07b is one of six parcels with buildings within the parcel boundary (parcels with buildings include: 1 museum, 2 shed near dock, 32 pump station, E-03 private residence, E-04 private residence, and E-07b private residence).

Parcel E-07a and Parcel E-07b Invasive Plants

Invasive plants at point E07a.02 (red maple-blackgum slope forest):

- Oriental bittersweet (*Celastrus orbiculatus* – 10%)
- Glossy buckthorn (*Frangula alnus* – 18%)
- Morrow's honeysuckle (*Lonicera morrowii* – 10%)
- Multiflora rose (*Rosa multiflora* - <1%)
- Linden arrowwood (*Viburnum dilatatum* – 1%)
- English ivy (*Hedera helix* – <1%).

Invasive plants at point E07b.01 (successional maritime forest):

- Porcelain Berry (*Ampelopsis brevipedunculata* – 10%)

Glossy buckthorn (*Frangula alnus* – 1%)
Privet (*Ligustrum vulgare* – 30%)
Japanese honeysuckle (*Lonicera japonica* – 35%)
Morrow's honeysuckle (*Lonicera morrowii* – 20%)

Parcel E-07a and Parcel E-07b Management Recommendations

Control of invasive plants in the successional maritime forest at point E07b.01 and the red maple-blackgum slope forest at point E07a.02 will be a long-term commitment of effort and resources compared to other parcels on the Island, and thus may be a lower priority.

See APPENDIX A. Invasive Species Control Information available online.

Parcel E-07a and Parcel E-07b Future Surveys

The forest patches along Firestone Drive, on the south and east sides of the parcel, were not surveyed in 2021 or 2022. The ecological communities were mapped based on air photo interpretation and their extent and condition need to be evaluated.

Parcel E-08a and Parcel 39. Clay Pit Trail (Brickyard Pond North)



Figure 401. Parcel E-08a and Parcel 39: Clay Pit Trail (Brickyard Pond North).

Fisher Island Land Trust Parcels 33, 44, 39, and E-08a together comprise the Clay Pit Trail area.

Parcel E-08a and Parcel E-08b. Mid-1920s and 2020 Air Photos

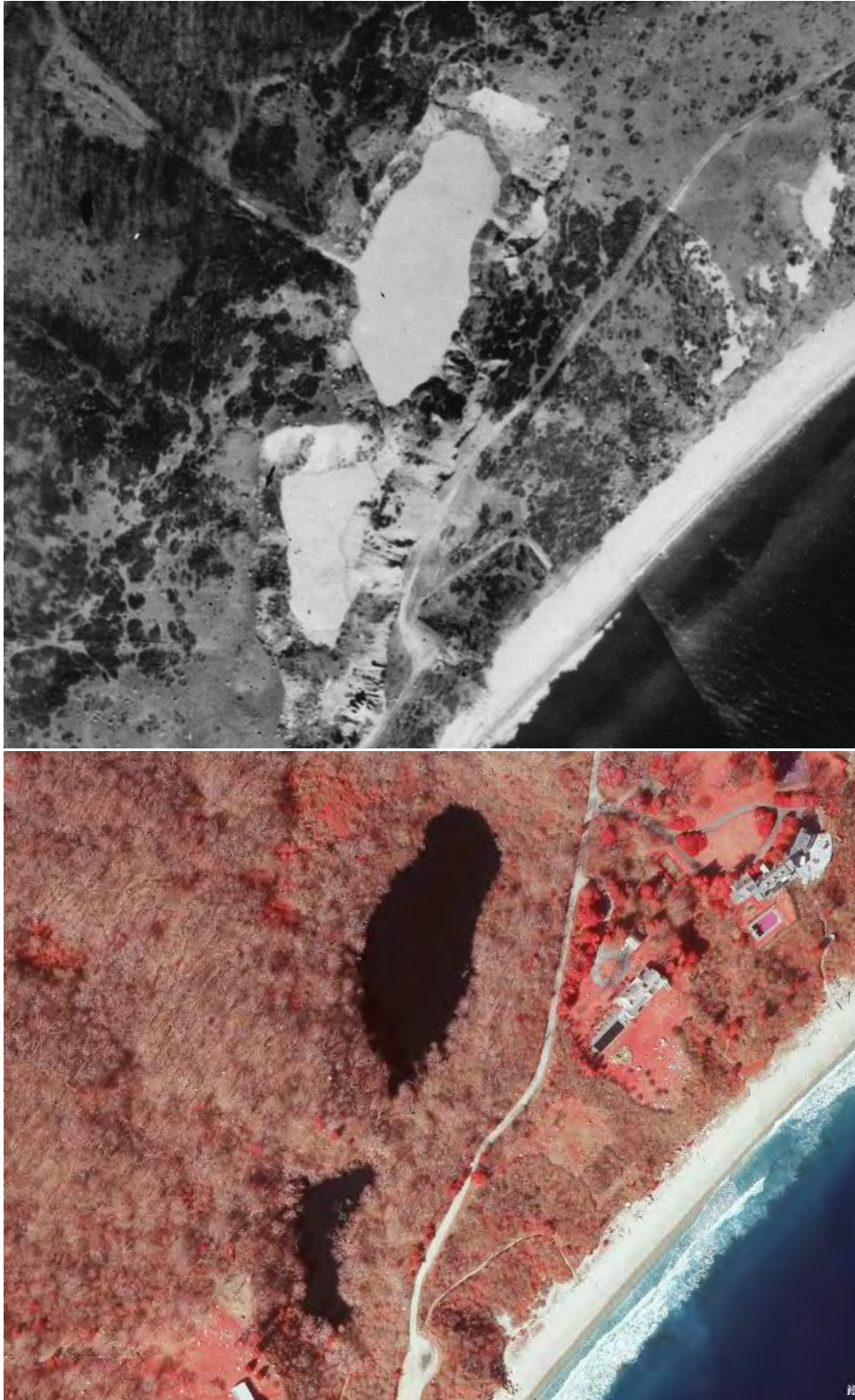


Figure 402. Parcel E-08a and Parcel E-08b. Quarry Ponds. Top: Mid-1920s; Bottom: 2020.

Table 336. E08a.01 Red maple-blackgum slope forest

Obs. pt. E08a.01 Form 3: Form 2 occ #: 1

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249350 E, 4572254 N

Comments: "Red maple-blackgum slope forest" on the east slope of the larger north pond

Lat: Long:

Photo Photo name: 301 of pond, 302 of forest

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
T2	70%, 16m	<i>Nyssa sylvatica</i>	55%	
T2		<i>Acer rubrum</i> var. <i>rubrum</i>	20%	
T3	16%, 8m	<i>Nyssa sylvatica</i>	16%	
TS1	12%, 4.5m	<i>Nyssa sylvatica</i>	12%	
TS2	1%, 1m	<i>Nyssa sylvatica</i>	1%	
SS1	1%, 3m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	1%	
SS2	7%, 1m	<i>Lonicera morrowii</i>	5%	
SS2		<i>Ligustrum vulgare</i>	2%	
V2	57%, 0.4m	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	40%	
V2		<i>Lonicera japonica</i>	10%	
V2		<i>Celastrus orbiculatus</i>	5%	
V2		<i>Parthenocissus quinquefolia</i>	2%	
H	6%	<i>Solidago rugosa</i> var. <i>rugosa</i>	3%	
H		<i>Maianthemum canadense</i>	2%	
H		<i>Eurybia divaricata</i>	0.01%	
H		<i>Lysimachia borealis</i>	0.01%	



Figure 403. Red maple-blackgum slope forest in Parcel E-08a (E08a.01).

Table 337. E08a.02, E08a.03, and E08a. P Successional shrubland or Successional vineland

Obs. pt. E08a.02 ref Form 3: Form 2 occ #:

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249412 E, 4572377 N

Lat: Long:

Comments: North half of north pond very steep slope. Looks like 1/3 of slope up from pond (~20 m wide band) is Ampelopsis vine thicket like trail to south pond shore (see E08b.02a). Small patch of Phragmites at NE corner of pond. Nyssa forest continues north to this point from E08a.01 "Successional vineland"?

Photo Photo name: 303 Phrag

Position method GPS

GPS average min, sec. WAAS

Obs. pt. E08a.03 ref Form 3: Form 2 occ #:

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249430 E, 4572406 N

Lat: Long:

Comments: Photo of north pond from NE parcel corner across the street from (west of) private driveway. Reference point. Vegetation cover data not collected. "Successional vineland"?

Photo Photo name: 303-304 face W

Position method Digital Ortho-Images

GPS average min, sec. WAAS

Obs. pt. E08a.P ref Form 3: Form 2 occ #:

Community: Unpaved road/path

CEGL code:

Alliance code:

UTM: zone 19 249391 E, 4572276 N

Lat: Long:

Comments: FIDCO parking sign. Parking for Prcels E08a and E08b. Reference point. Vegetation cover data not collected.

Photo Photo name: 294 of sign

Position method GPS

GPS average min, sec. WAAS



Figure 404. Left: Quarry pond in Parcel E-08a (E08a.03); FIDCO parking area at point E08a.P.

Table 338. E08a.04 Successional shrubland or Successional vineland

Obs. pt. **E08a.04** Form 3: Form 2 occ #: 1

Community:
Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249294 E, 4572420 N
Lat: 41.07250441 Long: -71.8575908

Comments: Steep slope drainage. Photo face N from GPS point. Tall successional shrubland blanketed with vines. NW of larger north quarry pond. Surrounded by very large upland red maple and Nyssa on top of slopes. "Successional vineland"?

Photo Photo name: 227,228

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS1	70%, 4.5m Ligustrum vulgare	20%		
SS1	Lonicera morrowii	20%		
SS1	Rhus typhina	20%		
SS1	Ilex verticillata	10%		
SS1	Rosa multiflora	5%		
V	85%, 3.75m Lonicera japonica	85% 3-4.5 m		



Figure 405. Successional shrubland in Parcel E-08a (E08a.04) covered with Japanese honeysuckle (*Lonicera japonica*).

Table 339. 39.01 Red maple-blackgum slope forest

Obs. pt. 39.01 Form 3: Form 2 occ #: 1

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249286 E, 4572255 N

Lat: Long:

Comments: Walk out to overlook of Clay Pit Pond. NE facing slope on west side of pond is RM-BG upland slope forest, but younger (and more *Juniperus virginiana*) than the west facing slope on the east side of the pond.

Photo Photo name: 79,80, 78 Clay Pit Pond Trail sign

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	47%, 18m	<i>Quercus velutina</i>	30%	
T2		<i>Nyssa sylvatica</i>	12%	
T2		<i>Acer rubrum</i> var. <i>rubrum</i>	10%	
T2		<i>Juniperus virginiana</i> var. <i>virginiana</i>	5%	
T3	30%, 11m	<i>Nyssa sylvatica</i>	15%	
T3		<i>Juniperus virginiana</i> var. <i>virginiana</i>	10%	
T3		<i>Quercus velutina</i>	5%	
T3		<i>Acer rubrum</i> var. <i>rubrum</i>	3%	
TS1	5%, 3m	<i>Nyssa sylvatica</i>	3%	
TS1		<i>Acer rubrum</i> var. <i>rubrum</i>	2%	
TS2	1%, 1.5m	<i>Nyssa sylvatica</i>	1%	
TS3	1%, 0.2m	<i>Quercus velutina</i>	1%	
SS1	3%, 4m	<i>Viburnum dentatum</i> var. <i>lucidum</i>	3%	
SS2		<i>Ligustrum vulgare</i>	5%	
SS2	13%, 1.25m	<i>Morella caroliniensis</i>	5%	
SS2		<i>Lonicera morrowii</i>	3%	
SS3		<i>Ligustrum vulgare</i>	2%	
SS3	4%, 0.25m	<i>Morella caroliniensis</i>	2%	
V	6%, 1.5m	<i>Smilax rotundifolia</i>	5%	1-2 m
V		<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	1%	0.5 m
H	7%	<i>Eurybia divaricata</i>	5%	
H		<i>Carex</i> sp.	1%	ID uncertain
H		<i>Maianthemum canadense</i>	1%	



Figure 406. Red maple-blackgum slope forest in Parcel 39 (39.01).

Table 340. 39.02 and 39.03 Red maple-blackgum slope forest

Obs. pt. **39.02 ref** Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249255 E, 4572242 N
 Lat: Long:

Comments: "Sea Heights" sign. RM-BG upland forest continues west to this point from 39.01 and beyond on steep slope (photo 81). Nyssa trees are bigger than 39.01 Severe privet invasion both sides of trail along edge of slope. Reference point. Vegetation cover data not collected.

Photo Photo name: 81

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS2	Euonymus alatus			
SS2	Ligustrum vulgare			
SS2	Lonicera morrowii			

Obs. pt. **39.03 ref** Form 3: Form 2 occ #:

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249232 E, 4572143 N
 Lat: Long:

Comments: [= 44.01 point actually in Parcel 44.] Follow trail to mowed lawn with half-log bench. Slope east/northeast down to pond is invasive SUC.S Reference point. Vegetation cover data not collected.

Photo Photo name: 82,83

Position method GPS

GPS average min, sec. WAAS



Figure 407. Left: "Sea Heights" sign at point 39.02; Right: half-log bench at point 39.03.

Table 341. 39.04 Successional shrubland and Successional southern hardwoods

Obs. pt. 39.04 ref Form 3: Form 2 occ #:

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249218 E, 4572245 N

Lat: Long:

Comments: [= 44.02 point actually in Parcel 44.] Black oak wolf tree in trail at this point 97.5 cm DBH. Possible parcel boundary corner "witness tree" (tree <20 m to Parcel 44 corner). Dense tall shrubs with scattered young trees in all directions from this point. Reference point. Vegetation cover data not collected. Successional southern hardwoods?

Photo Photo name: 84.85

Position method GPS

GPS average min, sec.

WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	Quercus velutina	"wolf tree" possible parcel boundary corner "witness tree"		



Figure 408. Large crown black oak (*Quercus velutina*) at point 39.04.

Table 342. 39.05a and 39.05b Red maple-blackgum slope forest

Obs. pt. **39.05a ref** Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249263 E, 4572362 N
 Lat: Long:

Comments: Point on trail but not on Ferguson parcel. Unusual line of about seven *Betula alleghaniensis* along trail. Reference point. Vegetation cover data not collected. Successional northern hardwoods?

Photo Photo name: 86,87

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Betula alleghaniensis</i>			

Obs. pt. **39.05b ref** Form 3: Form 2 occ #:

Community: "Red maple-blackgum slope forest"

CEGL code:

Alliance code:

UTM: zone 19 249208 E, 4572359 N
 Lat: Long:

Comments: Point on trail but not on Ferguson parcel. More *Betula alleghaniensis* on side trail with planted conifers: three spruce 0.5-1.5 m. Plus 10 m x 10 m patch of *Lorinseria areolata* nearby. Reference point. Vegetation cover data not collected.

Photo Photo name: 88-89 of *Lorinseria areolata*

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	<i>Acer rubrum</i> var. <i>rubrum</i>	large big crown		
T2	<i>Quercus velutina</i>	large big crown		
T3	<i>Acer rubrum</i> var. <i>rubrum</i>			
T3	<i>Nyssa sylvatica</i>			
H	<i>Lorinseria areolata</i>	10 m x 10 m patch; photos 88-89		



Figure 409. Left: Yellow birch (*Betula alleghaniensis*) in red maple-blackgum slope forest (39.05a); Right: netted chain fern (*Lorinseria areolata*) at point 39.05b.

Parcel E-08a and Parcel 39 Ecological Community Acreage

Parcel E-08a and Parcel 39 are included in the Parcel 33 Ecological Community Acreage Assessment (Table 226, Figure 269).

Parcel E-08a and Parcel 39 General Description

The most prominent feature of Parcel E-08a is the 2-acre abandoned quarry pond at the center of the parcel. The southern half of the pond is lined with a narrow band of red maple-blackgum fringe swamp. The north half of the pond is lined by a wider band of dense, impenetrable successional shrubland and vineland thicket. On the steep slopes above the pond margin vegetation, on the east and west sides of the pond, it becomes young red maple-blackgum slope forest.

Beyond the slope forest to the northwest, the following communities are found (east to west): ½-acre successional shrubland/vineland in forest canopy gap; 1.7-acre successional southern hardwoods (classification unconfirmed); and a purported coastal oak-beech forest in the north corner of the parcel covering about one acre and possibly continuing off the parcel to the north.

The 1.4-acre red maple-blackgum slope forest on the east side of the pond covers most of the west-facing slope and continues south for about 250 m into Parcel E-08b. At the top of the slope, and along the east parcel boundary of Isabella Beach Road, there is a narrow (6-18 m wide) band of successional maritime forest that runs north to south for about 390 m covering one acre (half in Parcel E-08a and half in Parcel E-08b).

Parcel E-08a and Parcel E-08b appear cleared and very disturbed around the quarry ponds on the mid-1920s black and white air photo (Figure 402). However, areas around both ponds are depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

Parcel E-08a and Parcel 39 Invasive Plants

Invasive plants at point E08a.01 (red maple-blackgum slope forest):

- Oriental bittersweet (*Celastrus orbiculatus* – 5%)
- Privet (*Ligustrum vulgare* – 2%)
- Japanese honeysuckle (*Lonicera japonica* – 10%)
- Morrow's honeysuckle (*Lonicera morrowii* – 5%)

Invasive plants at point E08a.04 (successional shrubland and vineland):

- Privet (*Ligustrum vulgare* – 20%)
- Japanese honeysuckle (*Lonicera japonica* – 85%)
- Morrow's honeysuckle (*Lonicera morrowii* – 20%)
- Multiflora rose (*Rosa multiflora* – 5%)

Parcel E-08a and Parcel 39 Management Recommendations

Control of invasive plants in Parcel E-08a will be a long-term commitment of effort and resources compared to other parcels on the Island, and thus may be a lower priority.

See APPENDIX A. Invasive Species Control Information available online. .

Parcel E-08a Future Surveys

The forests in the northern corner of Parcel E-08a were not surveyed in 2021 or 2022. These communities were mapped based on air photo interpretation and their extent and condition need to be evaluated. In addition, the coastal oak-beech forest polygon in the far-north corner was delineated based on a map of American beech (*Fagus grandifolia*) locations tracked by Ferguson Museum staff and may actually be off of the parcel.

Parcel E-08b. Clay Pit Trail (Brickyard Pond South)



Figure 410. Parcel E-08b: Clay Pit Trail (Brickyard Pond South).

Table 343. E08b.01 Red maple-blackgum swamp

Obs. pt. **E08b.01** Form 3: Form 2 occ #: 1

Community: Red maple-blackgum swamp

CEGL code:

Alliance code:

UTM: zone 19 249277 E, 4572138 N
 Lat: Long:

Comments: Access smaller south pond from south via well-maintained trail. Pond has negligible wetland fringe. Trees on steep slope hang into pond. Note: later learned that these two ponds are old quarry ponds, and thus of artificial origin. Quarry pond?

Photo Photo name: 295

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
T2	65%, 16m	Acer rubrum var. rubrum	60%	
T2		Nyssa sylvatica	10%	
SS1	10%, 4m	Clethra alnifolia	10%	
SS2	5%, 1.5m	Decodon verticillatus	5%	
H	7%	Osmundastrum cinnamomeum var. ci	3%	
H		Onoclea sensibilis	2%	
H		Iris sp.	1%	ID uncertain
H		Osmunda regalis var. spectabilis	1%	



Figure 411. Red maple-blackgum swamp fringe around quarry pond in Parcel E-08b (E08b.01).

Table 344. E08b.02 Successional shrubland and Successional vineland

Obs. pt. **E08b.02a** Form 3: Form 2 occ #: 1

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249276 E, 4572095 N

Lat: Long:

Comments: On both sides (E and W) of trail to south shore of smaller south pond is SUC.S blanketed with *Amelopsis*. "Successional vineland"?

Photo Photo name: 296-299

Position method GPS

GPS average min, sec. WAAS

Stratum	Species	comments	Collection	Unsure of ID
SS1	56%, 4m	<i>Ligustrum vulgare</i>	25%	
SS1		<i>Lonicera morrowii</i>	20%	
SS1		<i>Frangula alnus</i>	5%	
SS1		<i>Morella caroliniensis</i>	5%	
SS1		<i>Rosa multiflora</i>	1%	
V	85%, 2.5m	<i>Ampelopsis glandulosa</i>	60%	1-4 m; plus on red maple 12 m
V		<i>Lonicera japonica</i>	20%	0.5-1.5 m
V		<i>Celastrus orbiculatus</i>	5%	
H		<i>Eutrochium dubium</i>	5%	ID uncertain
H	10%	<i>Onoclea sensibilis</i>	5%	along trail



Figure 412. Unpaved path (left) through successional shrubland/vine thicket in Parcel E-08b (E08b.02).

Obs. pt. **E08b.02b r** Form 3: Form 2 occ #:

Community: Maritime shrubland

CEGL code:

Alliance code:

UTM: zone 19 249330 E, 4572109 N
Lat: Long:

Comments: Reference point. Vegetation cover data not collected. Take photo (300) of beach face NE from south parking lot with beach access trail at north end of lot. Maritime beach.

Photo Photo name: 300 face NE

Position method Digital Ortho-Images

GPS average min. sec. WAAS



Figure 413. Maritime shrubland on bluff face east of Parcel E-08b (E08b.02).

Table 345. E08b.03 Successional maritime forest

Obs. pt. **E08b.03** Form 3: Form 2 occ #: 1

Community: Successional maritime forest

CEGL code:

Alliance code:

UTM: zone 19 249308 E, 4572097 N

Comments: SMF along west edge of parking lot/road and west of trailhead access to beach to the east.

Lat: Long:

Photo Photo name: 305

Position method GPS

GPS average min, sec.

WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
TS1	47%, 4m	Juniperus virginiana var. virginiana	25%	
TS1		Prunus serotina var. serotina	12%	
TS1		Acer rubrum var. rubrum	10%	
SS1	10%, 3.3m	Morella caroliniensis	5%	
SS1		Rhus copallinum var. copallinum	5%	
SS2	45%, 1.75m	Morella caroliniensis	25%	
SS2		Rhus copallinum var. copallinum	15%	
SS2		Lonicera morrowii	5%	
SS3	18%, 0.5m	Morella caroliniensis	15%	
SS3		Rhus copallinum var. copallinum	3%	
V	60%, 2.25m	Toxicodendron radicans ssp. radicans	25%	
V		Lonicera japonica	15%	
V		Celastrus orbiculatus	8%	
V		Smilax rotundifolia	8%	
V		Parthenocissus quinquefolia	3%	
H	6%	Schizachyrium scoparium var. scopari	5%	
H		Solidago nemoralis ssp. nemoralis	1%	
H		Carex silicea	0.01%	ID uncertain



Figure 414. Successional maritime forest in Parcel E-08b (E08b.03).

Table 346. E08a.04 Successional shrubland and Successional vineland

Obs. pt. **E08a.04** Form 3: Form 2 occ #: 1

Community: Successional shrubland

CEGL code:

Alliance code:

UTM: zone 19 249294 E, 4572420 N

Lat: 41.07250441 Long: -71.8575908

Comments: Steep slope drainage. Photo face N from GPS point. Tall successional shrubland blanketed with vines. NW of larger north quarry pond. Surrounded by very large upland red maple and Nyssa on top of slopes. "Successional vineland"?

Photo Photo name: 227,228

Position method Digital Ortho-Images

GPS average min, sec. WAAS

<u>Stratum</u>	<u>Species</u>	<u>comments</u>	<u>Collection</u>	<u>Unsure of ID</u>
SS1	70%, 4.5m	Ligustrum vulgare	20%	
SS1		Lonicera morrowii	20%	
SS1		Rhus typhina	20%	
SS1		Ilex verticillata	10%	
SS1		Rosa multiflora	5%	
V	85%, 3.75m	Lonicera japonica	85%	3-4.5 m



Figure 415. Successional vineland in Parcel E-08a (E08a.04)

Parcel E-08b Ecological Community Acreage

Parcel E-08b is included in the Parcel 33 Ecological Community Acreage Assessment (Table 226, Figure 269).

Parcel E-08b General Description

The most prominent feature of Parcel E-08b is the $\frac{3}{4}$ -acre abandoned quarry pond at the center of the parcel. The pond is lined with a narrow band of red maple-blackgum fringe swamp. On the steep slopes above the pond margin vegetation, on the east and west sides of the pond, it becomes young red maple-blackgum slope forest similar to Parcel E-08a to the north.

On both sides of the trail that leads to the south shore of the pond is a dense, impenetrable successional shrubland/vine thicket at point E08b.02a.

Parcel E-08a and Parcel E-08b appear cleared and very disturbed around the quarry ponds on the mid-1920s black and white air photo (Figure 402). However, areas around both ponds are depicted as forested on the circa 1958 USGS 7.5 minute topographic map.

Parcel E-08b Invasive Plants

Point E08b.02a had the lowest Floristic Quality Index Score (FQI 1.99) for points with at least 10 plant species recorded. This successional shrubland is dominated by four invasive shrubs and three invasive vines.

Invasive plants at point E08b.02a (successional shrubland/vine thicket):

- Porcelain berry (*Ampelopsis brevipedunculata* – 60%)
- Oriental bittersweet (*Celastrus orbiculatus* – 5%)
- Glossy buckthorn (*Frangula alnus* – 5%)
- Privet (*Ligustrum vulgare* – 25%)
- Japanese honeysuckle (*Lonicera japonica* – 20%)
- Morrow's honeysuckle (*Lonicera morrowii* – 20%)
- Multiflora rose (*Rosa multiflora* – 1%)

Invasive plants at point E08b.03

- Oriental bittersweet (*Celastrus orbiculatus* – 8%)
- Japanese honeysuckle (*Lonicera japonica* – 15%)
- Morrow's honeysuckle (*Lonicera morrowii* – 5%)

Parcel E-08b Management Recommendations

Control of invasive plants in Parcel E-08b will be a long-term commitment of effort and resources compared to other parcels on the Island, and thus may be a lower priority. The invasive plants in the successional shrubland/vine thicket at point E08b.02a are overwhelming. It may be impossible to restore this area to a natural community dominated by native species without sufficient resources to do so.

See APPENDIX A. Invasive Species Control Information available online.

References

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Edinger, G.J. 2023b. Fishers Island Marine Rocky Intertidal Survey Addendum. New York Natural Heritage Program, Albany, NY.

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NatureServe. 2023a. *Panicum virgatum* - (*Andropogon virginicus*) Ruderal Meadow | NatureServe Explorer [Online]. Available: https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.816015/Panicum_virgatum_-_Andropogon_virginicus_Ruderal_Meadow [Accessed: 10-Jul-2023].

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APPENDIX A. Invasive Species Control Information

Table 347. Invasive Species Control Information

Common Name	Scientific Name	Invasive Species Info. link
Norway maple	<i>Acer platanoides</i>	https://nyis.info/invasive_species/norway-maple/
Porcelain-berry	<i>Ampelopsis brevipedunculata</i>	https://www.invasive.org/weedcd/pdfs/wgw/porcelainberry.pdf
Oriental bittersweet	<i>Celastrus orbiculatus</i>	https://www.wnyprism.org/invasive_species/oriental-bittersweet/
Glossy buckthorn	<i>Frangula alnus</i>	https://www.lhprism.org/species/frangula-alnus-rhamnus-frangula https://www.wnyprism.org/invasive_species/glossy-buckthorn/
Privet	<i>Ligustrum vulgare</i>	https://wiki.bugwood.org/index.php?title=Ligustrum_spp&redirect=no
Japanese honeysuckle	<i>Lonicera japonica</i>	https://nyis.info/invasive_species/honeysuckle/
Morrow's honeysuckle	<i>Lonicera morrowii</i>	https://nyis.info/invasive_species/honeysuckle/
Old World common reed	<i>Phragmites australis</i>	https://nyis.info/invasive_species/common-reed/
Black locust	<i>Robinia pseudoacacia</i>	https://www.lhprism.org/species/robinia-pseudoacacia
Multiflora rose	<i>Rosa multiflora</i>	https://nyis.info/invasive_species/multiflora-rose/
Beach rose	<i>Rosa rugosa</i>	https://www.maine.gov/dacf/mnap/features/invasive_plants/rosa_rugosa.htm