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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia

**The Vascular Flora of Back Bay National Wildlife Refuge
and False Cape State Park, Virginia**

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ABSTRACT

The vascular flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia consists of 602 species within 343 genera and 123 families. Of these 519 are native (86%) while 83 are not native to the region. Thirty two species are listed as rare or endangered in Virginia including two small populations of *Bartonia verna* at False Cape State Park found nowhere else in the state. Several species with southern affinities reach their northern range limit on the Back Bay region, whereas only two northern taxa, *Hudsonia tomentosa* and *Myrica pensylvanica* are near their southern limit. Non-native varieties of *Phragmites australis* are a major component of the natural vegetation and pose a threat to native taxa. Each taxonomic entry in the checklist is accompanied by an annotation which includes the locality and habitat in which each taxon occurs, frequency of occurrence, range extensions, rarity status, and pertinent synonyms.

Key words: flora, distribution, biodiversity, Back Bay National Wildlife Refuge, False Cape State Park, Virginia.

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INTRODUCTION

The Back Bay National Wildlife Refuge, BBNWR (36° 39.00N, 75° 56.00W) encompassing 8,601 acres extends from False Cape State Park border northward along the Virginia coast. False Cape State Park, FCSP, (36° 35' 16"N, 75° 53' 3"W) borders Back Bay National Wildlife Refuge on the north and the North Carolina Virginia border. Comprising 17.49 km² the park and refuge are treated as a single botanical unit in our study. Back Bay, a shallow brackish estuary, separates the narrow spit of land from the mainland. The width of the spit ranges from 1000 feet (30.4 m) at its northern terminus to over 0.8 miles (1.1 km) near the North Carolina/Virginia border. The barrier spit bordering the Atlantic Ocean encompasses 781.46 hectares, the north side 1,416.8 ha while land on the west side of the bay includes 412.38 ha. Islands within the bay total 870.1 ha. Bay waters not in refuge ownership encompass an additional 1879 ha. The topography of the split is relatively flat on the western border with an elevation of approximately 10 feet (3 m) above mean sea level. Eastward undulating inland dune fields range in height from 20 feet (6 m) to 30 feet (9 m), reaching (54 feet/16m) at one point in False Cape State Park. The primary dune system, bordering the Atlantic Ocean, ranges from 4 to 7 meters in height. This dune system may be eroded during severe Nor-easter's and hurricanes. The most recent destructive hurricane to breach and erode this system was Hurricane Ivan in August, 2004.

In the 1930's M. L. Fernald botanized the region, an area he believed was neglected in the 7th edition of Grays Manual of Botany for his 8th edition of the manual (Fernald 1950). Notable among his floristic publications on his forays to southeastern Virginia in Rhodora were the following (Fernald 1935, 1936, 1938, 1939, 1942, 1947). He was also accompanied by L. Grissom on a three day botany foray in southeastern Virginia in 1935 (Fernald and Grissom 1935). When we initiated this study we planned to visit the sites described in Fernald's aforementioned papers but we soon realized that the work involved was beyond the scope of our floristic inventory of Back Bay and False Cape.

1. PLANT COMMUNITIES

Six distinct plant communities occur at BBNWR and FCSP. These include the sea-oats, dune-grass dominated primary dune community, the pine oak community on stable old dunes, a transitional shrub community, an extensive brackish marsh community, and a small but species rich moist depression community. A sixth community, the artificially created impoundment community, was created for water fowl. A seventh small ruderal community includes the disturbed roadside right-of-way and lawns near the visitor center.

1.1 PRIMARY DUNE COMMUNITY

The primary dune community is dominated by *Uniola paniculata* and *Ammophila breviligulata*. Other vascular plants here are *Carex kobomugi*, *Spartina patens*, *Panicum amarulum*, and *Panicum amarum*. *Ammophila breviligulata* invades sand in front of oceanfacing dunes, and is the primary vascular plant species involved in building and stabilizing embryonic dunes. Additional dune species are *Hydrocotyle umbellata*, *Iva imbricata*, *Chamaecybe polygonifolia*, *Salsola kali*, and *Xanthium echinatum*, though these taxa are not as abundant as the coastal dune grasses. *Ammophila*, *Uniola*, *Iva imbricata* and *Salsola kali* can tolerate high concentrations of salt spray; they are endemic to the coastal dune community.

1.2 TRANSITIONAL SHRUB COMMUNITY

The transitional shrub community borders the primary dune community. Some common taxa

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia are *Myrica cerifera*, *M. pennsylvanica*, *Toxicodendron radicans*, *Parthenocissus quinquefolia*, *Prunus serotina* and *Diospyros virginiana*. Plants on the primary dune side of this community may be buried by shifting sands. The shifting sand may be colonized by *Unicola paniculata*, *Spartina patens*, *Panicum amarum* and *Ammophila brevilulata*. The shrub community and the adjacent primary dune community experience the most extreme environmental conditions.

1.3 THE PINE-OAK COMMUNITY

Three species of pine including cultivated *P. elliotii* are present at Back Bay, though only *P. taeda* is common. *P. taeda* grows on old dunes and may be associated with *Quercus spp.* on dry dune ridges where salt spray is minimal. *Quercus falcata* is a common component of the moister oak-dominated forest while *Q. virginiana* is more common on old dunes bordering Back Bay. *Quercus phellos* and *Q. nigra* occur in moist forests bordering the western side of Back Bay. *Liquidambar styraciflua* is scattered throughout the oak-dominated community on both sides of the bay. *Magnolia grandiflora*, has become established in the moist woodlands on the west side of the bay.

1.4 BRACKISH MARSH COMMUNITY

Phragmites australis is the most common brackish marsh species at Back Bay. This aggressive rhizomatous perennial grass is sprayed with the herbicide Round-up in, August-September, when it flowers and sets seed, the period when the most susceptible to herbicide treatment all but one variety of *Phragmites* at BBNWR and FCSP are not native to North America (John Gallegos, personal communication). Some additional common marsh plant associates are *Juncus roemerianus*, *J. acuminatus*, *J. scirpoides*, *Scirpus pungens*, *Hibiscus moscheutos*, *Typha ssp.*, *Sagittaria spp.*, *Bidens spp.*, and *Coreopsis latifolia*.

Water salinity at Back Bay ranges from less than 0.1 ppt to 10 ppt. Highest salinity concentration is generally in the southern portion of Back Bay and in dry impoundments in late summer when water evaporation concentrates salt. Water salinity is lowest in the northern portion of the bay and during winter and spring when rainfall is high and water evaporation is lowest.

Four salt marsh taxa, *Spartina alterniflora*, *S. patens*, *Distichlis spicata*, *Borrchia frutescens* and *Iva frutescens* are minor components of the brackish marsh community. *Spartina alterniflora* is infrequent at Back Bay; a dozen populations bordering the bay, were identified in the summer of 2005. *Spartina patens* is more common than *S. alterniflora* populating both high dry edges of impoundments and wet swales. Typical salt marsh species, *Limonium carolinianum*, *Suaeda spp.*, and *Salicornia spp.*, are not present at Back Bay.

1.5 THE IMPOUNDMENT COMMUNITY

The impoundments at the refuge and at False Cape State Park support a vascular flora that is similar to the flora at Back Bay. Common impoundment species are *Eleocharis spp*, *Typha spp*, *Scirpus americaus* and *S. olenyi*, *Carex spp.*, *Ludwigia spp.*, *Bidens spp.*, *Coreopsis lanceolata*, *Bacopa monieri*, *Hydrocotyle spp.*, *Lilaeopsis carolinensis*, *L. chinensis*,

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia and *Rhexia mariana*. Populations of non-native *Nelumbo lutea* in 3 impoundments were treated with the herbicide during the summer of 2005 and has been largely eliminated. Species composition and zonation of vegetation in the impoundments are largely a function of water level.

1.6 MOIST DEPRESSION COMMUNITY

Moist depressions are formed when the water table is near or at the surface of the ground for varying periods of time during the year. Although the total acreage of these sites is but a few hectares, they support a wealth of species. Some of the more common vascular plants are *Aster spp.*, *Carex spp.*, *Drosera intermedia*, *Erigeron annua*, *Rhexia mariana*, *Juncus spp.*, *Spiranthes spp.*, *Rhynchospora colorata*, *Rhynchospora spp.*, *Xyris spp.*, and more. *Vaccinium macrocarpon* was observed in several moist depressions in 1990; it was not relocated in 2005.

Since many unique plant species are found exclusively in moist depressions, it may be helpful to maintain their habitat. One natural threat to the present plant populations is natural community development, plant succession. Succession can be arrested by mowing the depressions in the late fall when the herbaceous plants are dormant.

2. CLIMATE

The climate of southern Virginia is milder than that of sites directly northward or inland. Detailed climatological data for Norfolk can be found in the monthly publication of the National Oceanic and Atmospheric Administration: Mean annual temperature is 63.2°F (17.3°C), and the annual precipitation is about 55.8 inches (1417 mm). The average length of the frost-free period at Norfolk, the nearest weather station, is 233 days. Nor'easters may occur from late fall to mid spring. Though not as potentially severe as hurricanes, nor'easters may cause severe dune damage from strong northeast or east winds. Strong winds may account for unusually high tides that produce severe dune erosion. Strong continuous south winds may push water northward in Back Bay causing flooding, especially on the western side of Back Bay. Drought is frequent and may be especially injurious to vegetation if it is prolonged and occurs during the growing season. Back Bay and Norfolk have the States' highest minimum temperature, 31.4°F (-0.4°C). Back Bay has the state's lowest annual snowfall, 4.01 inches (10.2 mm).

METHODS

Collecting trips were made to the study area approximately once a month during the growing seasons from April 1990 through October 1993 and sporadically in 2002 through 2012. Objectives for each trip included the collection of voucher specimens and accumulation of information on abundance and apparent habitat preference for each species. More than 1,000 specimens form the basis for this study. Taxonomically problematic specimens were sent to various experts for annotation; experts consulted include Ihsan Al Shehbaz (*Brassicaceae*), Steven Clements (*Chenopodiaceae*), Richard Rabeler (*Caryophyllaceae*), Charles Sheviak (*Orchidaceae*) and Gordon Tucker (*Cyperaceae*). A set of voucher specimens has been deposited at the A.C. Moore Herbarium at the University of South Carolina. Partial duplicate sets have been placed at the University of Michigan

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia (MICH), Missouri Botanical Garden (MO), New York Botanical Garden (NY) and New York State Museum (NYS). Additional accession numbers will be assigned to specimens at the A.C. Moore Herbarium at the University of South Carolina by John Nelson where the primary set of taxa have been deposited.

The annotated checklist contains an inventory of the vascular plants that reproduce spontaneously and persist for more than one year without cultivation, including native taxa, naturalized and adventive weeds, and escapes from cultivation. In the checklist plants are arranged first by division, and then alphabetically by family and by species. Each entry includes the following information sequence: scientific name; pertinent synonym, enclosed in brackets; frequency relative to the study area, using the categories: rare (scarce, less than 5 populations), infrequent (uncommon, occasional, 5 to 20 populations), frequent (common, more than 20 populations). Estimates of species frequency are based upon our personal observations. Published reports by earlier investigators of the few species not collected by us have been included in the checklist with the statement "not recently observed," accompanied by a literature citation; in these cases we have not examined the original voucher specimens. Indication of species rarity across all of Virginia is based upon the Virginia Natural Heritage Program (indicated in the checklist as VF HP) list of rare plant species.

Nomenclature primarily follows Gleason and Cronquist (1991) taxonomic revisions in Kartesz (1994) were consulted to update the nomenclature in this flora. When the currently accepted name is different, the name as presented in Gleason and Cronquist (1991) immediately follows, enclosed in brackets. In most cases nomenclature presented in this flora agrees with Kartesz (1994), but when differences occur, the name as presented in Kartesz (1994) is listed as a synonym and enclosed in brackets.

RESULTS AND DISCUSSION

The vascular flora of False Cape State Park and Back Bay National Wildlife Refuge consists of 602 species within 343 genera and 123 families. Five hundred nineteen species 86% of the flora are native to the region. A summary of the vascular plant species is given in Table 1 and an annotated list of species is included below.

The major families include the *Poaceae* (70 species), *Asteraceae* (67), and *Cyperaceae* (50). Over 25% of the species comprising the total flora are contained in the *Poaceae* and *Asteraceae*. Other large families are the *Rosaceae* (15 species), *Polygonaceae* (14), *Fabaceae* (14), *Scrophulariaceae* (13), *Lamiaceae* (11) and *Rubiaceae* (10). Twelve species of orchids have been identified. The largest genus is *Juncus s. lat.* (16 species), followed by *Panicum* (15), *Eleocharis* (9), and *Carex* (9). The majority of the species are non-woody which underscores the generally graminoid and herbaceous appearance of the flora at the refuge.

More species of southern affinities reach their northern range limit on the at BBNWR and FCSP whereas only two northern species (*Hudsonia tomentosa* and *Myrica pennsylvanica*) are near their southern limit (Gleason and Cronquist 1991). Thirty two species occurring at BBNWR and or FCSP are listed as rare or endangered in Virginia or rare in southeast Virginia. This number of rare plant species is one of the highest for any area of equal size

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Rare plant status was defined by the latest edition of the Virginia Department of Conservation and Reservation, Division of National Heritage (VDCRDNH 2014). Rare plants in the present study include those listed in historical records and/or verified by GPS coordinates in 2005 collecting season. GPS coordinates for each of the following, vascular plant species are housed at Back Bay National Wildlife Refuge, False Cape State Park and VDCRDNH. A brief description including habitat, population size, flowering date (if pertinent) and the species status in Virginia (S) and globally (G) of the thirty two taxa reported in this study follows.

Aster puniceus var. elliotii (Tory. & Gray, A.G. Jones)

This species was relocated at a moist roadside using GPS coordinates provided by the VDCRDNH.

Bacopa monnieri (L.) Walt. (G5/S1S2)

This species is common in impoundments, moist roadsides, island margins and occasionally in moist interdunal swales. This taxon is locally abundant at Back Bay and False Cape.

Bartonia verna (Ell.) Fern. (G5/S1)

This species was first observed by Kyle Barbour and Garry Williamson at a moist depression at FCST. We observed a population of approximately 50 individuals. This is the first record of this species in Virginia.

Bulbostylis ciliatifolia

Historical record collected by Harvill and Wise (24907), FARM) in an interdunal swale near Barbour Heights.

Cladium mariscoides (Muhl.) Torr. (G5/S2)

This sedge, saw grass, was observed by Fernald on Cedar Island in 1935.

Carex haspan L. (G5/S2S3)

Carex haspan is common throughout the Back Bay region occurring in impoundments, moist roadsides and interdunal swales.

Carex reniformis (Baily) (G4/S 1)

Small historical record collected by Harvill and Wise (22936, FARM) in a swale near Dudley Club south of False Cape.

Drosera intermedia Hayne (G5/ S2S3)

This species of sundew is the most common sundew at Back Bay favoring moist sands and interdunal swales. There are tens of thousands of *D. intermedia* in the above habitats at Back Bay and False Cape.

Eleocharis halophila Fern. & Brack.(G4/S1)

This diminutive *Eleocharis* was observed in moist mud and sand at a number of sites at Back Bay and False Cape State Park. Because of its diminutive stature, it may have been overlooked by investigators in the past.

Eleocharis radicans (A. Dietr.) Kunth Historical Record.

Eleocharis radicans was collected by Fernald Grisean and Long (6030, URV) in 1934 by Fernald on one of his many historical collecting trips in southeast Virginia while updating the 7th edition of Gray's Manual.

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Erigeron vernus (L.) T & G. (G5/ S 1)

Erigeron vernus favors moist soil. It was also observed in several interdunal swales and moist roadsides.

Fimbristylis caroliniana (Lam.) Fern. (G4/ S 1)

Fimbristylis caroliniana is rare at Back Bay. Fernald collected *F. caroliniana* in the 1930's.

Chrysopsis gossypina ssp. Gossypina (Michx.) Ell. (G5/S1S2)

This taxon is relatively common on old dunes in back of the primary dune.

Galium hispidulum Michx. (G5/S 1 S2)

This taxon was collected by Harvill and Wise (24291, FARM) in dunes near Dudley Club south of False Cape, August 3, 1971.

Iresine rhizomatosa Standley (G5/ S 1)

Iresine rhizomatosa flowers and fruits in the fall. It is fairly common along moist shrubland borders and is common along the road to the club house dormitory that borders the bay. This species is often overlooked because it is only readily recognizable when it flowers and fruits in the fall.

Iva imbricata Walt. (G5/ S2 S3)

Iva imbricata plants occupy the front side of the ocean-facing primary dune. Hurricanes and strong nor'easters erode the primary dune and extirpated vulnerable populations of *I. imbricata*. Ludwig et al (1990) and the present authors have observed tens of plants on the ocean facing side of the primary dune in the past.

Juncus megacephalus M.A. Curtis (G4G5/ S 1 S2)

This rush is fairly common in moist interdunal swales throughout Back Bay.

Lilaeopsis carolinensis C. & R. (G3/S 1)

This state rare species is abundant locally on the shores of Back Bay. It is abundant in several impoundments at Back Bay National Wildlife Refuge.

Limnosella subulata Ives (G4/S 1) Historical Record.

Fernald collected *L. subulata* in interdunal swales in 1935.

Lobelia elongata Small (G3G5/S 1) Lobelia elongata grows in marshes bordering Back Bay.

Ludwigia alata Ell. (G3G4/S1) Historical Record.

Ludwig et al (1990) found one individual plant of *L. alata* on August 16 on the eastern side of Big Ball Island.

Ludwigia brevipes (Long) Eames (G4G5/S2)

This taxon is common in impoundments and interdunal swales at Back Bay.

Paspalum distichum L. (G5/S2S3)

Populations of this *Paspalum* were relocated using GPS coordinates of the population observed by Ludwig et al (1990). *Paspalum distichum* was observed on the banks of an impoundment at False Cape State Park.

Phyla nodiflora (L.) Greene (G5/S 1)

The population of *L. nodiflora* observed by Ludwig et al (1990) was relocated east of Little Ball Island, associated with *Spartina patens*.

Phalaris caroliniana Walt. (G5/S1) Historical Record

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia Fernald (1936) observed this taxon at the border of a marsh at Cedar Island.

Physalis viscosa L. (G4/ S 1)

Physalis viscosa grows in dry sands behind the primary dune system. It was observed on dry sands from the North Carolina border north to BBNWR.

Quercus hemisphaerica Bartr. ex Willd.

Quercus hemisphaerica occupies high dry old dunes. It's morphology is similar to *Quercus laurifolia* which generally grows on lower moister sites.

Rhynchospora colorata

[*Dichromona colorata* (L.) Hitchc.] Fernald (1934) observed *D.*

colorata in 1934 in an interdunal swale south of False Cape (Fernald & Long 3740, UPI). Many populations were observed in June 2005 on the edges of impoundments and along moist roadsides. The largest population contained several hundred individuals.

Rhynchosporafascicularis (Michx.) Vahl. (G5/S 1)

This taxon is common along moist roadsides and in interdunal swales.

Spiranthes odorata (Nutt.) Lindl.

Individuals of *S. odorata* were relocated in marshes along Real Creek and Big Ball Island. They were observed by Ludwig et al at this site in October 1990.

Tillandsia usneoides L. (G5/ S2S3)

This epiphyte is found occasionally on live oak. A good location to observe Spanish moss is the old village at Wash Woods.

Typha domingensis Pers. (G4G5/ S2S3)

This cattail species is common in the marshes at Back Bay.

Rare Plant Preservation

Tall reed, *P. australis* may be the biggest threat to rare plants in Back Bay marshes (Ludwig et al 1990). This coarse rhizomatous perennial grass occupies more marsh area than any other vascular plant. Both Back Bay National Wildlife Refuge and False Cape State Park have initiated control measures to eliminate *Phragmites*. Treatment with Round Up have eradicated *Phragmites* from a number of impoundments at the refuge and state park. Even if the Tall Reed is eventually eliminated within the state park and refuge, marshes at Back Bay and the impoundments will be continually saturated with Tall reed seed from populations bordering the park and refuge. Moist sites throughout Back Bay should be continually monitored in the future for the presence of this aggressive rhizomatous perenial grass.

Additional non-native vascular plant species may also pose a threat to native plant species. At the present time, the most insidious threat is non-native varieties of *Phragmites* described above. A second alien species is *Microstegium vimineum*. *Microstegium* favors moist sites, where it forms pure stands where it may exclude native plant species. A more recent invader is *Eragrostis curvula* that thrives on dry roadsides, and may become the dominant grass on the dry berms of the impoundments. Additional non-native grasses such as *Digitaria*, *Festuca* and *Poa* are not native to the United States. These grasses may have been established in the United States for several hundred years; they are not as potentially dangerous to native vascular plant species as the *Phragmites*, *M. vimineum* and *E. curvula*.

Additional species of foreign origin, though numerous in the flora, are only a minor component

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia of the natural vegetation and pose little danger to native plant species. They occur principally in ruderal sites, lawns, and along the edges of trails and roads. Exotic species will continue to invade and become established at BBNWR and FCSP as the human visitation increases scattering seeds, while maintenance may create new open habitats of disturbance.

Other threats to rare plants are rooting of feral pigs and grazing by deer and feral horses. Feral pigs pose the most serious threat to rare plants because of their mode of feeding and high rate of reproduction. It has been estimated that 70% of the pigs need to be harvested each year just to stabilize the pig population (John Gallegos personal communication).

A natural threat to rare plants favoring open moist swales is natural community development, plant succession. Mowing roadsides early and late in the growing season may arrest or control succession. Open habitat is needed to sustain populations of rare vascular plant species such as *Bartonia verna*, *Calopogon sp.*, *Juncus spp.*, *Drosera intermedia* and *Pogonia sp.*

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References

- Fernald, M. L. 1935. Midsummer vascular plants of southeastern Virginia. *Rhodora* 37: 378-413, 423-454.
- Fernald, M. L. 1936. Plants from the outer coastal plain of Virginia. *Rhodora* 38: 376-404, 414-451.
- Fernald, M. L. 1938. Noteworthy plants of southeastern Virginia. *Rhodora* 40: 364-424.
- Fernald, M. L. 1939. Last survivors of the flora of Tidewater, Virginia. *Rhodora* 41: 465-504, 529-559, 564-574.
- Fernald, M. L. 1942. The seventh century of additions to the flora of Virginia. *Rhodora*: 341-354, 400-477.
- Fernald, M. L. 1947. Additions to and subtractions from the flora of Virginia. *Rhodora* 49: 85-115, 121-142, 145-159, 175-193.
- Fernald, M. L. 1950. *Gray's Manual of Botany*, eighth (Centennial) edition illustrated. American Book Company. New York. 1632 p.
- Fernald, M. L. and L. Griscom. 1935. Three days of botanizing in southeastern Virginia. *Rhodora* 37: 128-157, 167-189.
- Gleason, H. A. and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*. 2nd ed. The New York Botanical Garden, Bronx. 910p.
- Harvill, A. M., Jr., T. R. Bradley, C. E. Stevens, T. F. Wieboldt, D. M. E. Ware, D. Ogle, G. W. Ramsey, and G. F. Fleming. 1992. *Atlas of the Virginia flora, III. Virginia Botanical Associates*, Burkeville, VA. 144pp.
- Kartesz, J. T. 1994. *A synonymized checklist of the vascular flora of the United States, Canada, and Greenland*. 2nd ed. Volume 1 - Checklist. Timber Press, Inc. Portland, OR.
- Ludwig, J. C. 2014. *National Heritage Resources of Virginia: Rare vascular plants*. Natural Heritage Technical Report 14-1. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia. Unpublished report. January 1997. 34 pages plus appendices.

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Table 1. A summary of the vascular flora at Back Bay National Wildlife Refuge and False Cape State Park, Virginia.

	Lycopods	Ferns	Conifers	Dicots	Monocots	Total
Families	1	8	2	87	25	123
Genera	1	8	3	232	99	343
Species	1	11	5	379	204	602
Native	1	11	4	319	184	519
Non-Native	0	0	1	60	22	83

(Native and introduced taxa that reproduce spontaneously.)

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APPENDIX

LYCOPODIOPHYTA

Lycopodiaceae

Lycopodiella appressa (Chapman) Cranfill [*Lycopodium appressum* (Chapman) Lloyd & Underwood]. Sandy moist depressions; infreq. Stalter 12,271

POLYPODIOPHYTA

Aspleniaceae

Asplenium platyneuron (L.) BSP. Mature maritime forests; freq. Stalter 11,621

Azollaceae

Azolla caroliniana Willd. Wet roadside ditches; infreq. Stalter 11,987

Blechnaceae

Woodwardia areolata (L.) Moore. Wet depressions in maritime forest; infreq. Stalter 11,988

Woodwardia virginica (L.) J. E. Smith. Wet depressions in maritime forest; infreq. Stalter 11,989

Dennstaedtiaceae

Pteridium aquilinum (L.) Kuhn var. *latiusculum* (Desv.) Underw. ex Heller. Fields, open woodlands; freq. Stalter 12,393

Ophioglossaceae

Ophioglossum petiolatum Hook. Disturbed soils, edge of maritime forest; rare. Stalter 12,394

Ophioglossum vulgatum L. Reported by Fernald (1935); not recently observed.

Osmundaceae

Osmunda cinnamomea L. Wet depressions in maritime forest; infreq. 11,990

Osmunda regalis L. var. *spectabilis* (Willd.) A. Gray. Moist woodlands; infreq. Exploitably Vulnerable. Stalter 11,991

Polypodiaceae

Pleopeltis polypodioides (L.) Andrews & Windham var. *michauxiana* (Weatherby)

Andrews & Windham [*Polypodium polypodioides* (L.) Watt var. *michauxianum*

Weatherby]. Maritime forests, mostly on *Quercus virginiana*; freq. Stalter 11,622

Thelypteridaceae

Thelypteris palustris (Salisb.) Schott var. *pubescens* (Lawson) Fern. Swamps, shallow marshes; freq. Exploitably Vulnerable. Stalter 11,992

PINOPHYTA

Cupressaceae

Juniperus virginiana L. var. *silicicola* (Small) E. Murray [*J. silicicola* (Small) Bailey].

Coastal foredunes and swales; freq. Stalter 11,537

Taxodium distichum (L.) Rich. [Previously included in the Taxodiaceae]. Marsh edges; rare east infrequent west. Stalter 12,395

Pinaceae

Pinus elliotii Engelm. Persistent after cultivation at False Cape Education Center; rare*. Stalter 11,623

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia
Pinus serotina Michx. [*P. rigida* Miller subsp. *serotina* (Michx.) Clausen]. Moist depressions, rare. Stalter 12,396
Pinus taeda L. Pine woodlands; freq. Stalter 11,538

MAGNOLIOPHYTA-MAGNOLIOPSIDA

Aceraceae

Acer negundo L. rare.* Stalter 12,763 *Acer rubrum* L. var. *rubrum*. Moist woods, wetlands; freq. Stalter 11,625

Amaranthaceae

Alternanthera philoxeroides (Mart.) Griseb. Wet roadside ditches; rare. Stalter 12,559
Amaranthus cannabinus (L.) Sauer. Brackish marshes; infreq. Stalter 11,624
Iresine rhizomatosa Standley. Edges of tidal marshes; infreq. Stalter 12,613

Anacardiaceae

Rhus copallinum L. Fields, thickets; freq. Stalter 11,539
Toxicodendron radicans (L.) Kuntze ssp. *radicans* [*Rhus radicans* L.]. Fields, woodlands, wetland borders; freq.
Toxicodendron vernix (L.) Kuntze [*Rhus vernix* L.]. Reported by Fernald (1935); not recently observed

Apiaceae

Centella erecta (L. f.) Fern. [*C. asiatica* (L.) Urban.]. Moist soil; freq. Stalter 13,376
Cicuta maculata L. Borders of swamps and marshes; infreq. Stalter 12,560 *Daucus carota* L. Fields, roadsides, disturbed sites; freq.* Stalter 11,626 *Foeniculum vulgare* Mill. Roadsides; infreq. Stalter 12,561
Hydrocotyle bonariensis Lam. Coastal foredunes; freq. Stalter 12,562 *Hydrocotyle ranunculoides* L. f. Edge of freshwater marshes; infreq. Stalter 12,764
Hydrocotyle umbellata L. Moist and dry sands; freq. Stalter 11,627
Hydrocotyle verticillata Thunb. Moist sands, swamps and marshes; freq. Stalter 12,563
Lilaeopsis caroliniensis Coult. & Rose [*L. attenuata* (Hook. & Arn.) Fern.]. Freshwater marshes and pond edges; infreq, but locally abundant (listed as rare in Virginia by VANHP). Stalter 12,564
Lilaeopsis chinensis (L.) Kuntze. Tidal mud and brackish marshes; infreq. Stalter 12,565
Ptilimnium capillaceum (Michx.) Raf. Marshes; rare. State Rare, S3. Stalter 12,566
Sanicula canadensis L. Maritime forests; infreq. Stalter 11,628
Sium suave Walt. Marshes, pond margins; infreq. Stalter 12,765

Apocynaceae

Apocynum cannabinum L. Fields, disturbed sites; freq. Stalter 11,630 *Vinca minor* L. Persistent after cult.; infreq.* Stalter 12,567

Aquifoliaceae

Ilex glabra (L.) A. Gray. Moist woods; infreq. Stalter 11,540
Ilex opaca Aiton. Maritime forests and shrublands; freq. Stalter 11,541
Ilex vomitoria Aiton. Edges of maritime forests and old stable dunes; freq. Stalter 11,542

Araliaceae

Aralia spinosa L. Maritime forests and shrublands; infreq. Stalter 11,629

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia
Hedera helix L. Escaped from cultivation; rare. Stalter 12,766.

Aristolochiaceae

Hexastylis arifolium (Michx.) Small. Moist woods; rare.

Asclepiadaceae

Asclepias incarnata L. var. *pulchra* (Ehrh. ex Willd.) Pers. Marshes; infreq. Stalter 12,768

Asclepias lanceolata Walter. Brackish marshes; infreq. Stalter 12,769

Cynanchum anustifolium Pers. [*C. palustre* (Pursh) Heller]. Upper margins of salt marshes; infreq. Stalter 12,767

Asteraceae

Achillea millefolium L. ssp. *Lanulosa* (Nutt.) Piper [*A. m.* var. *occidentalis* DC. *sensu* Mitchell & Tucker 1997]. Fields, roadsides, open areas; freq.* Stalter 11,631

Ambrosia artemisiifolia L. Fields, roadsides, disturbed sites; freq. Stalter 11,543

Artemisia stelleriana Bess. Primary dune; rare.* Stalter 11,993

Aster dumosus L. Dry or moist sandy places; freq.

Aster elliotii T. & G. [*A. puniceus* L. var. *elliotii* (T. & G.) A. G. Jones].

Moist roadside depressions; rare. Stalter 12,773

Aster pilosus var. *demotus* Blake [*Aster racemosus* Ell.]. Moist roadsides; infreq. Stalter 12,772

Aster puniceus L. Wet roadsides; infreq. Stalter 12,771

Aster tenuifolius L. Salt marshes; freq. Stalter 12,770

Baccharis halimifolia L. Fields, wetland edges, disturbed sites; freq. Stalter 11,544

Bidens bipinnata L. Roadsides and disturbed sands, infreq. Stalter 12,774

Bidens cernua L. Wetland edges; rare. Stalter 12,775

Bidens mitis (Michx.) Sherff. Tidal marshes; rare. Stalter 13,243

Bidens vulgata Greene Moist roadsides; infreq. Stalter 13,244

Borrichia frutescens (L.) DC. Upper salt marsh; freq. Stalter 11,545

Chrysopsis gossypina (Michx.) Elliott [*Heterotheca gossypina* (Michx.) Shinnery]. Stable coastal dunes; freq. Stalter 11,546

Chrysopsis graminifolia (Michx.) Elliott [*Heterotheca graminifolia* (Michx.) Shinnery; 12,776. *Pityopsis graminifolia* (Michx.) Nutt.]. Maritime forests and forest edges; freq. Stalter 11,547

Chrysopsis mariana (L.) Ell. [*Heterotheca mariana* (L.) Shinnery]. Open sandy places, roadsides; freq. Stalter 11,548

Cichorium intybus L. Roadsides, fields, disturbed sites; freq.* Stalter 12,780

Cirsium horridulum Michx. [*Carduus spinosissimus* Walter]. Dunes, swales, roadsides; freq. Stalter 13,112

Conya bonariensis (L.) Cronq. var. *bonariensis*. [*Erigeron bonariensis* L.]. Roadsides, BBNWR; infreq. Stalter 11,549

Conyza canadensis (L.) Cronq. var. *pusilla* (Nutt.) Cronq. [*Erigeron canadensis* L. var. *pusillus* (Nutt.) Boivin; *E. pusillus* Nutt.]. Dunes, swales; rare. Stalter 13,111

Coreopsis lanceolata L. Roadsides; freq. Stalter 13,147

Coreopsis latifolia Michx. Reported by Fernald (1935); not recently observed. *Eclipta prostrata* (L.) L. [*E. alba* (L.) Hasskarl]. Edge of freshwater ponds; infreq. Stalter 12,777

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia
Elephantopus carolinianus. Rausch. Maritime forests; freq. Stalter 13,110
Elephantopus nudatus A.Gray. Maritime forests; freq. Stalter 12,778 *Elephantopus tomentosus* L. Maritime forests; freq. Stalter 12,779
Erechtites hieraciifolius (L.) Raf. ex DC. var. *hieraciifolius*. Fields, clearings; freq. Stalter 11,550
Erigeron annuus (L.) Pers. Disturbed sands; infreq. Stalter 11,994
Erigeron philadelphicus L. Fields; rare. Stalter 11,995
Erigeron vernus (L.) T. & G. Moist swales and depressions; freq. Stalter 11,996
Eupatorium capillifolium (Lam.) Small. Roadsides and disturbed sites; freq. Stalter 11,551
Eupatorium coelestinum L. Moist roadsides; freq. Stalter 11,552
Eupatorium hyssopifolium L. [*E. h.* var. *calcaratatum* Fern. & Schub.]. Fields, roadsides; freq. Stalter 11,553
Eupatorium perfoliatum L. Marshes, pond margins; infreq. Stalter 11,554
Eupatorium rotundifolium L. var. *rotundifolium*. Open sandy soils; freq. Stalter 13,114
Eupatorium serotinum Michx. Roadsides and shrubland borders; infreq. Stalter 13,113
Euthamia graminifolia (L.) Nutt. [*Solidago graminifolia* (L.) Salisbury]. Open usually moist places; freq. Stalter 11,555
Euthamia tenuifolia (Pursh) Nutt. var. *microcephala* Nutt. [*Solidago microcephala* (Greene) Bush]. Open sandy places; freq. Stalter 12,782
Gaillardia pulchella Foug. var. *pulchella*. Dry, sandy soil; rare.* Stalter 12,781
Gnaphalium obtusifolium L. Open sandy places; freq. Stalter 11,997
Gnaphalium purpureum L. var. *purpureum*. [*Gamochaeta purpurea* (L.) Cabrera]. Open sandy places; freq. Stalter 11,998
Helenium amarum (Raf.) H. Rock. Roadsides; freq. Stalter 11,556
Hieracium gronovii L. Dry open woods and shrublands; freq. Stalter 11,999
Hieracium venosum L. Dry open words and roadsides; freq. Stalter 12,000
Hypochoeris glabra L. Roadsides and sandy disturbed soils; infreq. Stalter 13,115
Hypochaeris radicata L. Fields, disturbed sites; freq.* Stalter 12,001
Iva frutescens L. Upper borders of brackish marshes; freq. Stalter 12,783
Iva imbricate Walter. Primary dunes bordering ocean; rare. Stalter 12,784
Krigia virginica (L.) Willd. Open sandy places; freq. Stalter 12,002
Mikania scandens (L.) Willd. Marshes, thickets bordering wetlands; infreq. Stalter 11,557
Pluchea foetida (L.) DC. Freshwater and brackish marshes; freq. Stalter 11,558
Pluchea odorata (L.) Cass. var. *succulenta* (Fern.) Cronq. [*P. purpurascens* (Sw.) DC. var. *succulenta* Fern.]. Marshes, pond edges; infreq. Stalter 12,785
Senecio tomentosus Michx. Open sandy places and roadsides; freq. Stalter 13,116
Solidago erecta Pursh [*S. speciosa* Nutt. var. *erecta* (Pursh) MacM.]. Dry roadsides; infreq. Stalter 12,786
Solidago fistulosa Miller. Roadsides and shrubland borders; infreq. Stalter 12,787

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia

Solidago nemoralis Ait. ssp. *nemoralis*. Fields, dry sands; infreq. Stalter 12,788

Solidago odora Ait. ssp. *odora*. Border of woodland and field; rare. Stalter 13,117

Solidago puberula Nutt. Roadsides and edge of maritime forest; infreq. Stalter 12,789

Solidago sempervirens L. var. *sempervirens*. Beaches, dunes; freq. Stalter 11,559

Sonchus oleraceus L. Fields, disturbed sites; infreq.* Stalter 13,118

Taraxacum officinale G. H. Weber ex Wiggers. Lawns, fields, disturbed sites; freq.* Stalter 13,119

Verbesina occidentalis (L.) Walt. Roadsides; infreq. Stalter 12,790

Vernonia glauca (L.) Willd. Edge of woods; rare. Stalter 12,791

Vernonia novaborascensis (L.) Michx. Moist roadsides; infreq. Stalter 12,792

Xanthium strumarium L. var. *canadense* (P. Mill.) Torr. & A. Gray [*X. canadense*

P. Mill.; *X. echinatum* Murr.; *X. italicum* Moretti; *X. speciosum* Kearney]. Beaches, dunes; infreq. Stalter 11,560

Betulaceae

Betula nigra L. Moist maritime forests; infreq. Stalter 12,568

Carpinus caroliniana Walter. Maritime forests; infreq. Stalter 12,569

Bignoniaceae

Campsis radicans (L.) Seemann. Maritime forests, swales, disturbed sands and roadsides;

freq. Stalter 12,794 *Paulownia tomentosa* (Thunb.) Sieb. & Zucc. Ex. Steud. Ragged Island, BBNWR; rare.* Stalter 12,039

Brassicaceae

Arabidopsis thaliana (L.) Heynh. Roadsides, disturbed sites; freq.* Stalter 13,149

Cakile edentula (Bigelow) Hook. var. *edentula*. Dunes, beaches; freq. Stalter 12,793

Capsella bursa-pastoris (L.) Medik. Disturbed sites; infreq.* Stalter 13,150

Cardamine hirsuta L. Lawns, disturbed sites; infreq.* Stalter 13,151

Cardamine parviflora L. var. *arenicola* (Britton) O. E. Schulz. Roadsides and open sandy soils; infreq. Stalter 13,152

Lepidium virginicum L. var. *virginicum*. Fields, roadsides, disturbed sites; freq. Stalter 13,152

Buddlejaceae

Buddleja davidii Franchet. Ecology education center, west. Rare.* Stalter 13,246

Polypremum procumbens L. [Previously included in the Loganiaceae]. Dry sandy soil; freq. Stalter 13,120

Cactaceae

Opuntia humifusa (Raf.) Raf. [*O. compressa* J. F. Macbride]. Sandy soils; rare. Stalter 13,121

Opuntia pusilla (Haw.) Nutt. [*O. drummondii* Graham]. Coastal dunes and swales; locally freq. Stalter 13,122

Caesalpinaceae

Chamaecrista fasciculata (Michx.) Greene [*Cassia fasciculata* Michx.]. Roadsides and disturbed sands; freq. Stalter 13,247

Chamaecrista nictitans (L.) Moench [*Cassia nictitans* L.]. Roadsides and disturbed sands; freq. Stalter 13,248

Campanulaceae

Lobelia cardinalis L. Freshwater marshes; infreq. Stalter 12,798

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Lobelia elongate Small. Freshwater marshes; infreq. Stalter 13,124

Lobelia inflata L. Fields; infreq. Stalter 13,123

Triodanis perfoliata (L.) Nieuwl. [*Legousia perfoliata* (L.) Britt.; *Specularia perfoliata* (L.) A. DC.]. Fields, disturbed sites; infreq. Stalter 13,249

Caprifoliaceae

Lonicera japonica Thunb. Fields, thickets, woodland edges, disturbed sites; freq.* Stalter 11,561

Lonicera sempervirens L. Maritime forests; infreq. Stalter 12,795

Sambucus Canadensis L. Wet depressions; infreq. Stalter 12,796

Viburnum nudum L. Wet maritime forests; infreq. Stalter 12,797

Caryophyllaceae

Arenaria lanuginosa (Michx.) Rohrb. Maritime forest; rare. Stalter 13,153

Arenaria serpyllifolia L. Disturbed sites; freq.* Stalter 13,126

Cerastium glomeratum Thuillier [*C. viscosum* L.]. Disturbed sites; infreq.*

Paronychia riparia Chapm. [*P. baldwinii* (T. & G.) Fenzl subsp. *riparia* (Chapm.) Chaudhri]. Maritime forests; rare. Stalter 13,154

Scleranthus annuus L. Disturbed sites; rare.* Stalter 13,155

Silene caroliniana Walt. ssp. *pensylvanica* (Michx.) Clausen. Sandy soils along roadside; rare. State Threatened, S2. Stalter 13,125

Spergularia marina (L.) Griseb. [*S. salina* J. & K. Presl]. Infrequently flooded high salt marshes; infreq. Stalter 12,799

Stellaria media (L.) Vill. [*S. m.* var. *procera* Klatt & Richter]. Lawns; infreq.* Stalter 13,156

Celastraceae

Euonymus americanus L. Maritime forests; infreq. Stalter 13,127

Ceratophyllaceae

Ceratophyllum demersum L. Back Bay, BBNWR and FCSP; infreq. Stalter 12,800

Chenopodiaceae

Atriplex prostrata Boucher [*A. hastata sensu* Aellen, non L., *A. patula* L. var. *hastata* (L.) A. Gray]. Beaches and upper borders of brackish and salt marshes; locally freq. Stalter 11,562

Chenopodium album L. Roadsides and waste places; freq.* Stalter 11,563

Chenopodium ambrosioides L. Swales and disturbed sands; freq.* Stalter 12,802

Salsola kali L. Upper beaches and primary dunes; locally freq. Stalter 12,801

Cistaceae

Helianthemum canadense (L.) Michx. Maritime forest edges and swales; infreq. Stalter 13,129

Helianthemum corymbosum Michx. Open sandy areas in maritime forest; infreq. (listed as rare in Virginia by VANHP). Stalter 13,128

Hudsonia tomentosa Nutt. Dunes, dry sands; freq. Stalter 11,564

Lechea maritima Leggett ex B.S.P var. *maritima*. Dunes, dry sands; freq. Stalter 13,250

Lechea mucronata Raf. [*L. villosa* Ell.]. Dry sandy soils; freq. Stalter 13,251

Clethraceae

Clethra alnifolia L. Wetlands; rare. Stalter 13,130

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Clusiaceae (Formerly Hypericaceae)

Hypericum crux-andreae (L.) Crantz. [*H. stans* (Michx.) Adams & Robson.]. Dry maritime forest; infreq. Stalter 12,397

Hypericum gentianoides (L.) BSP. Swales and disturbed sands; locally freq. Stalter 12,398

Hypericum hypericoides (L.) Crantz. [*Ascyrum hypericoides* L.]. Maritime forests and shrublands; freq. Stalter 12,399

Hypericum mutilum L. Freshwater marshes and pond margins; freq. Stalter 12,400

Hypericum prolificum L. Reported by Fernald (1935); not recently observed. Moist woods and moist roadsides; infreq. Stalter 12,401

Triadenum virginicum (L.) Raf. [*Hypericum virginicum* L.]. Freshwater marshes; rare. Stalter 13,131

Convolvulaceae

Calystegia sepium (L.) R. Br. ssp. *sepium* [*Convolvulus sepium* L.]. Fields, disturbed sites; infreq.* Stalter 11,565

Dichondra carolinensis Michx. Woods; infreq. Stalter 13,133

Ipomoea coccinea L. Roadsides and disturbed soils; infreq. Stalter 13,132

Ipomoea hederacea Jacq. Sandy shrubland; rare. Stalter 13,252

Ipomoea lacunosa L. Swales and maritime forest margins, CLNS; infreq. Stalter 13,377

Ipomoea pandurata (L.) G. Meyer. Roadsides; infreq. Stalter 13,134

Ipomoea purpurea (L.) Roth. Roadsides; rare.* Stalter 13,253

Cornaceae

Cornus florida L. [*Benthamidia florida* (L.) Spach]. Woodlands; rare. Exploitably Vulnerable. Stalter 12,402

Cornus stricta Lam. [*C. foemina* P. Mill.]. Moist woods; infreq. Stalter 12,403

Nyssa biflora Walt. [*N. sylvatica* Marshall var. *biflora* (Walter) Sargent]. Swamps in maritime forests; infreq. Stalter 11,566

Cucurbitaceae

Melothria pendula L. Maritime forests; infreq. Stalter 13,135

Cuscutaceae (Formerly Convolvulaceae)

Cuscuta campestris Yunker [*C. pentagona* Engelm.]. Shrublands; infreq. Stalter 12,404

Droseraceae

Drosera capillaris Poir. Wet depressions; infreq. Stalter 12,570

Drosera intermedia Hayne. Marshes, pond margins; infreq, but locally abundant. Exploitably Vulnerable. Stalter 13,157

Drosera rotundifolia L. Wet depressions; rare. Stalter 12,571

Ebenaceae

Diospyros virginiana L. Maritime forests and shrublands; freq. Stalter 11,567

Elaeagnaceae

Elaeagnus pungens Thunb. Escaped from cultivation; infreq., but spreading.* Stalter 12,406

Elaeagnus umbellata Thunb. Fields, thickets; freq.* Stalter 12,405

Ericaceae

Gaylussacia baccata (Wangenh.) K. Koch. Woodlands; freq. Stalter 12,407

Gaylussacia frondosa (L.) Torr. & Gray Reported by Fernald (1935); not recently observed.

Oxydendrum arboreum (L.) DC. Maritime forest; rare. Stalter 12,572

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Rhododendron viscosum (L.) Torr. Moist woodlands; rare. Exploitably vulnerable. Stalter 12,274

Vaccinium corymbosum L. Wetlands; freq. Stalter 12,273

Vaccinium macrocarpon Ait. Wet depressions; infreq. Stalter 12,272

Vaccinium stamineum L. Dry sands; rare. Stalter 12,408

Euphorbiaceae

Acalypha rhomboidea Raf. [*A. virginica* L var. *rhomboidea* (Raf.) Cooperrider]. Fields, disturbed sites; infreq. Stalter 12,573

Chamaesyce maculata (L.) Small [*Euphorbia maculata* L., *E. supina* Raf.]. Roadsides and waste places; freq. Stalter 13,158

Chamaesyce polygonifolia (L.) Small [*Euphorbia polygonifolia* L.]. Upper beaches and foredunes; freq. Stalter 13,159

Cnidoscolus stimulosus (Michx.) Engelm. & A. Gray. Dry sands in maritime forests; freq. Stalter 13,254

Croton glandulosus L. var. *septentrionalis* Muell.-Arg. Disturbed sands and roadsides; freq. Stalter 12,574

Fabaceae

Aeschynomene indica L. moist roadsides, BBNWR west; infreq.* Stalter 13,378

Apios americana Medicus Roadsides, BBNWR west; infreq. Stalter 12,409

Desmodium paniculatum (L.) DC. Roadsides; rare. Stalter 13,294

Desmodium strictum (Pursh) DC. Roadsides and dry open woods; freq. Stalter 11,568

Galactia regularis (L.) BSP. Dry sands; rare. Stalter 12,410

Lespedeza capitata Michx. Fields; freq. Stalter 11,569

Lespedeza cuneata (Dum.-Cours.) G. Don. Roadsides and disturbed sites; infreq.*

Melilotus albus Medik. Fields, disturbed sites; freq.* Stalter 12,003

Strophostyles helvola (L.) Elliott. Dunes; infreq. Stalter 12,411

Strophostyles umbellata (Muhl. Ex Willd.) Britt. Disturbed sands; rare. Stalter 12,412

Trifolium arvense L. Fields, disturbed sites; freq.* Stalter 11,570

Trifolium dubium Sibth. Roadsides and disturbed sands; freq.* Stalter 12,004

Trifolium pratense L. Lawns, fields; freq.* Stalter 12,005

Trifolium repens L. Lawns, fields; freq.* Stalter 12,006

Vicia sativa L. ssp. *nigra* (L.) Ehrh. [*V. angustifolia* L.]. Fields; infreq.* Stalter 12,007

Fagaceae

Castanea pumila (L.) Miller. Maritime forest; rare. Stalter 12,278

Quercus alba L. Woodlands; infreq. Stalter 12,279

Quercus falcata Michx. Maritime forests; freq. Stalter 11,571

Quercus hemisphaerica Bartram. Dry sandy soil, maritime forests. This oak can be confused with *Q. laurifolia*; infreq. Stalter 12,413

Quercus laurifolia Michx. Maritime forests; infreq. Stalter 11,573

Quercus michauxii Nutt. Moist maritime forests; rare. Stalter 12,414

Quercus nigra L. Moist soil, maritime forests, BBNWR west; infreq. Stalter 12,280

Quercus phellos L. Maritime forests, BBNWR west; infreq. Stalter 12,281

Quercus virginiana Miller. Maritime forests; freq. Stalter 11,572

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Gentianaceae

Bartonia verna (Michx.) Muhl. Moist soil, FCSP, 2 populations; rare. Virginia state record.

Bartonia virginica (L.) BSP. Moist soil, maritime forests FCSP; infreq. Stalter 12,275

Obolaria virginica L. maritime forests, FCSP; rare. Stalter 13,255

Sabatia brachiata Ell. Reported by Fernald (1935); not recently observed.

Sabatia dodecandra (L.) BSP. Brackish marsh; rare. Stalter 13,256

Sabatia stellaris Pursh. Upper fringes of brackish marshes; freq. Stalter 12,008

Geraniaceae

Geranium carolinianum L. Roadsides and disturbed sands; infreq. Stalter 12,276

Geranium molle L. Roadsides; rare. Stalter 12,277

Haloragaceae

Myriophyllum aquaticum (Vell. Conc.) Verdc. [*M. brasiliense* Camb.].

Freshwater marsh bordering Back Bay; rare.* Stalter 13,258

Myriophyllum pinnatum (Walter) BSP. Back Bay; rare. Stalter 13,257

Myriophyllum sibiricum Komarov [*Myriophyllum exalbescens* Fern.]. Back Bay; rare. Stalter 13,295

Proserpinaca palustris L. Freshwater marshes and pool margins; infreq. Stalter 13,259

Hamamelidaceae

Hamamelis virginiana L. Maritime forest; infreq. Stalter 12,418

Liquidambar styraciflua L. Maritime forests and shrublands; infreq. Stalter 11,574

Hydrophyllaceae

Hydrolea quadrivalis Walter Reported by Fernald (1935); not recently observed.

Juglandaceae

Carya alba (L.) Nutt. ex Ell. [*Carya tomentosa* (Lam, ex. Poir.) Nutt.].

Maritime forests; infreq. Stalter 12,415 *Carya glabra* (P. Mill.) Sweet. Woodlands; rare. Stalter 12,416

Carya illinoensis (Wangenh.) K. Koch [*C. pecan* (Marsh.) Angl. & Graebn.]. One small tree, "cloverfield", BBNWR; rare. Stalter 13,296

Lamiaceae

Glechoma hederacea L. Lawns; infreq.*

Lamium amplexicaule L. var. *amplexicaule*. Fields, disturbed sites; freq.* Stalter 12,009

Lamium purpureum L. Roadsides; infreq.* Stalter 12,010

Lycopus rubellus Moench var. *angustifolius* (Ell.) Ahles. Stalter 12,417

Lycopus virginicus L. Marshes; infreq. Stalter 11,575

Monarda punctata L. Stable dunes, swales and disturbed sands; freq. Stalter 13,298

Prunella vulgaris L. ssp. *vulgaris*. Fields, disturbed sites; infreq.* Stalter 13,379

Scutellaria integrifolia L. Dry and moist sands, roadsides; freq. Stalter 13,381

Stachys nuttallii Schuttler Moist sands; rare. Stalter 13,380

Teucrium canadense L. Upper fringes of southside marshes and moist shrublands; freq. Stalter S11,576

Trichostema dichotomum L. Fields, open sandy sites; infreq. Stalter 13,299

Lauraceae

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia
Persea borbonia (L.) Sprengel. Old stable dunes at maritime forests; infreq. Stalter 12,421
Sassafras albidum (Nutt.) Nees. Woodlands, thickets; infreq. Stalter 12,420

Lentibulariaceae

Utricularia gibba L. [*Utricularia biflora* Lam.]. Shallow ponds; infreq. Stalter 12,012
Utricularia inflata Walter. Freshwater ponds and Back Bay; rare. Stalter 14025
Utricularia subulata L. Moist sands; rare. Stalter 12,013

Linaceae

Linum medium (Planchon) Britton [*L. virginianum* L. var. *medium* Planchon]. Moist sandy soils; infreq. Stalter 13,300

Loganiaceae

Cynoctonum mitreola (L.) Britton [*Mitreola petiolata* (J.F. Gmel.) Torr. & Gray]. Moist sands; rare. Stalter 13,301
Gelsemium sempervirens (L.) Aiton f. Maritime forests and shrublands; freq. Stalter 12,011
Polypremum procumbens L. Dry soils; infreq. Stalter 12,419

Lythraceae

Ammania coccinea Rottb. Wet depressions, FCSP; rare. Stalter 13,302
Ammania latifolia [A. *teres* Raf.] freshwater marshes, FCSP; rare. Stalter 13,303
Decodon verticillatus (L.) Elliott. Marshes, pond edges; freq. Stalter 12,803
Lythrum lineare L. Upper edges of fresh and slightly brackish marshes; freq. Stalter 11,577
Rotala ramosior (L.) Koehne. Wet depressions; rare. Stalter 12,423

Magnoliaceae

Liriodendron tulipifera L. Several trees at BBNWR Ecology Center; rare. Stalter 12,422
Magnolia grandiflora L. BBNWR west; rare. Stalter 12,421
Magnolia virginiana L. Freshwater marshes in maritime forests and shrublands; infreq. Stalter 12,016

Malvaceae

Abutilon theophrasti Medick. Disturbed sites; rare.* Stalter 12,576
Hibiscus moscheutos L. ssp. *moscheutos* [*H. palustris* L.]. Marshes; infreq. Stalter 12,805
Kosteletskya virginica (L.) C. Presl. Brackish marshes, BBNWR west; Rare. Stalter 12,804
Sida rhombifolia L. fields; infreq. Stalter 11,578

Melastomataceae

Rhexia mariana L. Wet depressions; freq. Stalter 12,575

Meliaceae

Melia azedarach L. Persistent after cultivation; infreq.* Stalter 11,579, Stalter 12,015

Mimosaceae

Albizia julibrissin Durazz. One tree at old hunt club site, one tree BBNWR north visitors center parking lot, FCSP; rare.* Stalter 12,014

Molluginaceae

Mollugo verticillata L. Disturbed sites; infreq.* Stalter 13,382

Monotropaceae

Monotropa uniflora L. BBNWR; Ecology Nature Center; one population; rare. Stalter 12,808

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Moraceae

Ficus carica L. one individual, interdunal roadside, FCSP; rare.* Stalter 12,806

Morus alba L. Fields; infreq* Stalter 13,304

Morus rubra L. Maritime forests, west; infreq. Stalter 12,807

Myricaceae

Myrica cerifera L. Maritime forests, shrublands and fringes of tidal marshes; freq. Stalter 12,018

Myrica heterophylla Raf. Reported by Fernald (1935); not recently observed

Myrica pennsylvanica Mirbel. Coastal dunes and shrublands; freq. Stalter 12,017

Nelumbonaceae

Nelumbo lutea (Willd.) Pers. Freshwater ponds near visitor center, impoundments. This taxon is targeted for eradication at BBNWR in the impoundments; freq. Stalter 12,019

Nymphaeaceae

Nymphaea odorata Ait. Ponds; infreq. Stalter 11,580

Nyssaceae

Nyssa sylvatica var. *biflora* (Walt.) Sarg. Moist woods; infreq. Stalter 12,809

Oleaceae

Fraxinus caroliniana Miller. Edge of “clover field”, BBNWR; rare. Stalter 13,305

Ligustrum sinense Louro BBNWR, west woods; freq.* Stalter 12,020

Onagraceae

Ludwigia alata Elliott. Brackish and freshwater marshes; rare. Stalter 12,811

Ludwigia alternifolia L. Freshwater marshes and wet roadside ditches; infreq. Stalter 12,814

Ludwigia brevipes (Long) Eames. Freshwater marshes; rare. Stalter 12,810

Ludwigia palustris (L.) Elliott. Marshes, pond margins; infreq. Stalter 13,308

Ludwigia repens J. R. Forster [*L. natans* Elliott]. Freshwater pools and ditches; rare. Stalter 12,812

Ludwigia sphaerocarpa Ell. Wet roadsides and wet depressions; infreq. Stalter 12,813

Oenothera biennis L. Fields, roadsides, disturbed sites; freq. Stalter 13,306

Oenothera humifusa Mutt. Coastal dunes, swales and disturbed sands; freq. Stalter 13,307

Oenothera laciniata Hill. Disturbed sands and successional shrublands; freq. Stalter 12,815

Oxalidaceae

Oxalis florida var. *filipes* (Small) Ahles. Stalter 13,309

Passifloraceae

Passiflora incarnata L. East end of “clover field”, BBNWR; rare. Stalter 13,310

Phytolaccaceae

Phytolacca americana L. var. *americana*. Fields, disturbed sites; freq. Stalter 11,581

Plantaginaceae

Plantago aristata Michx. Fields, dry sands; infreq.* Stalter 13,311

Plantago lanceolata L. Lawns, fields, disturbed sites; freq.* Stalter 12,021

Plantago major L. Lawns, fields, disturbed sites; freq.* Stalter 12,023

Plantago rugelii Dcne. Fields, disturbed sites; infreq. Stalter 12,022

Plantago virginica L. Roadsides and disturbed sands; freq. Stalter 12,024

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Plantanaceae

Plantanus occidentalis L. BBNWR, Ecology Center. Back Bay; infreq. Stalter 11,582

Polygalaceae

Polygala curtissii A. Gray Reported by Fernald (1935); not recently observed.

Polygala mariana P. Mill. Reported by Fernald (1935); not recently observed.

Polygonaceae

Polygonella articulata (L.) Meisn. [*Polygonum articulatum* L.]. Dunes; infreq. Stalter 12,577

Polygonum arenastrum Boreau. Roadsides and waste places; infreq.* Stalter 12,578

Polygonum arifolium L. Wet roadsides and moist maritime forests; freq. Stalter 12,434

Polygonum aviculare L. ssp. *depressum* (Meisn.) Arcang. [*P. arenastrum* Jord. ex Boreau]. Dunes, dry sands; rare.* Stalter S12,025

Polygonum hydropiperoides Michx. Freshwater marshes; freq. Stalter 12,435

Polygonum pennsylvanicum L. Roadsides and disturbed sites; freq. Stalter 12,437

Polygonum persicaria L. Roadsides; rare.* Stalter 12,436

Polygonum prolificum (Small) B. L. Robinson [*P. ramosissimum* Michx. var. *prolificum* Small]. Brackish marsh; rare. Stalter 12,438

Polygonum punctatum Elliott. Freshwater marshes; freq. Stalter 12,579

Polygonum sagittatum L. Freshwater marshes west side; infreq. Stalter 12,026

Rumex acetosella L. Fields, disturbed sites; freq.* Stalter 12,027

Rumex conglomeratus Murray. Roadsides; rare.* Stalter 12,028

Rumex crispus L. ssp. *crispus*. Fields, disturbed sites; infreq. Stalter 12,439

Rumex verticillatus L. Freshwater marshes; rare. Stalter 12,440

Primulaceae

Anagallis arvensis L. Lawns; rare.* Stalter 12,029

Samolus valerandi L. subsp. *parviflorus* (Raf.) Hulten [*S. floribundus* Kunth, *S. parviflorus* Raf.]. Fresh and brackish marshes; freq. Stalter 12,580

Pyrolaceae

Chimaphila maculata (L.) Pursh. Dry pine woodlands; rare. Stalter 13,312

Ranunculaceae

Ranunculus hederaceus L. Wet depressions and wet roadsides; freq. Stalter 12,030

Ranunculus pusillus Poir. Wet depressions; infreq. Stalter 12,284

Ranunculus sceleratus L. Freshwater marshes and moist roadside ditches; infreq. Stalter 12,031

Rhamnaceae

Berchemia scandens (Hill) K. Koch. Maritime forests and shrublands; infreq.

Rosaceae

Agrimonia parviflora Ait. Moist maritime forests; infreq. Stalter 12,282

Agrimonia pubescens Wallr. [*A. mollis* (Torr. & Gray Britt.)]. Moist maritime forests; rare. Stalter 12,283

Amelanchier canadensis (L.) Medik. Woodlands, thickets; freq. Stalter 12,441

Aronia arbutifolia (L.) Pers. [*Photinia pyrifolia* (Lam.) Robertson & Phipps]. Border of woodland and wetland; rare. Stalter 12,581

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Crataegus crus-galli L. Reported by Fernald (1935); not recently observed.

Crataegus phaenopyrum (L. f.) Medik. Reported by Fernald (1935); not recently observed.

Duchesnea indica (Andrz.) Focke. Moist roadsides; infreq. Stalter 12,032

Geum canadense Jacq. Maritime forests; rare. Stalter 12,033

Potentilla Canadensis L. Fields, disturbed sites; freq. Stalter 12,442

Prunus caroliniana Aiton. Maritime forests; freq. Stalter 11,583

Prunus serotina Ehrh. var. *serotina*. Fields, woodlands, thickets; freq. Stalter 12,034

Rosa palustris Marsh. Marshes, swamps; infreq. Stalter 12,443

Rubus argutus Link. Shrublands and margins of woodlands; rare. Stalter 12,444

Rubus cuneifolius Pursh. Dry sands; infreq. Stalter 12,445

Rubiaceae

Cephalanthus occidentalis L. Ponds, marshes, swamps; infreq. Stalter 12,582

Diodia teres Walt. var. *teres*. Dunes, dry sands; infreq. Stalter 12,583

Diodia virginiana L. Moist sands; freq. Stalter 11,584

Galium aparine L. Fields; rare. Stalter 11,585

Galium circaezans Michx. Dry maritime forests; infreq. Stalter 13,313

Galium hispidulum Michx. Sandy soils in maritime forests; infreq. Stalter 12,584

Galium obtusum Bigelow. Swamps and freshwater marshes; rare. Stalter 12,816

Galium tinctorium (L.) Scop. [*G. trifidum* L. ssp. *tinctorium* (L.) Hara].

Marshes; infreq. Stalter 12,817

Hedyotis uniflora (L.) Lam. [*Oldenlandia uniflora* L.]. Moist roadsides and clearings under powerlines; infreq. Stalter 13,314

Mitchella repens L. Maritime forests; freq. Stalter 12,446

Rutaceae

Zanthoxylum clava-herculis L. Widely scattered in maritime forests and protected coastal dunes; infreq. Stalter 12,036

Salicaceae

Populus heterophylla L. Two populations; moist depression at FCSP; small population at BBNWR west; rare. Stalter 12,447

Salix caroliniana Michx. Wet or moist sandy soils; freq. Stalter 12,038

Salix nigra Marsh. Swamps, marshes; rare. Stalter 12,037

Sapotaceae

Sideroxylon lycioides L. Calcareous soils, Little Cedar Island; rare. Stalter 13,384

Saururaceae

Saururus cernuus L. Pools and ditches; infreq. Stalter 12,586

Scrophulariaceae

Agalinis purpurea (L.) Pennell. Moist sandy soils; freq. Stalter 11,586

Bacopa monnieri (L.) Pennell. Sandy margins of brackish and freshwater marshes; freq. Stalter 12,587

Gratiola pilosa Michx. Roadsides and maritime forests; infreq. Stalter 13,385

Limosella austalis R. Br. [*Limosella subulata* Ives]. Margins of brackish marshes; infreq. Stalter 13,315

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Linaria canadensis (L.) Dumort. [*Nuttallanthus canadensis* (L.) D. A. Sutton]. Swales
and disturbed sands; freq. Stalter 12,038

Linderna dubia (L.) Pennell var. *anagallidea* (Michx.) Cooperrider [*L. anagallidea* (Michx.)
Pennell]. Moist sands and clearings under powerlines; infreq. Stalter 12,588

Mimulus alatus Ait. Moist maritime forests; infreq. Stalter 12,448

Verbascum blattaria L. Fields, waste places; freq.* Stalter 11,588

Verbascum thapsus L. Roadsides and disturbed sites; infreq.* Stalter 11,587

Veronica arvensis L. Roadsides, lawns, disturbed sites; freq.* Stalter 12,449

Veronica officinalis L. Moist roadsides; rare.* Stalter 12,450

Veronica serpyllifolia L. Disturbed sites; rare. Stalter 12,040

Solanaceae

Datura stramonium L. Fields, disturbed sites; infreq.* Stalter 11,633

Physalis pubescens Moist sands, FCSP; rare. Stalter 13,316

Physalis walteri Nutt. [*P. viscosa* L. subsp. *maritima* (M. A. Curtis) Waterfall]. Protected
coastal dunes and swales; freq. Stalter 13,318

Solanum americanum Mill. Disturbed sites; infreq. Stalter 13,317

Solanum carolinense L. var. *carolinense*. Fields, disturbed sites; infreq. Stalter 11,634

Ulmaceae

Celtis laevigata Willd. Widely scattered in maritime forests and old dunes; infreq. Stalter
11,589

Celtis occidentalis L. Widely scattered in maritime forests; infreq. Stalter 11,632

Celtis tenuifolia Nutt. [*Celtis laevigata* var. *smallii* (Beadle) Sarg.]. Reported by Fernald
(1935); not recently observed.

Urticaceae

Boehmeria cylindrica (L.) Swartz. Freshwater marshes and swamps; freq. Stalter 11,590

Pilea pumila (L.) Gray marshes; rare. Stalter 13,319

Valerianaceae

Valerianella radiata (L.) Dufur. Roadsides; infreq. Stalter 12,451

Verbenaceae

Callicarpa americana L. Maritime forests; freq. Stalter 11,591

Phyla lanceolata (Michx.) Greene [*Lippia lanceolata* Michx.]. Moist sands; freq. Stalter
12,452

Phyla nodiflora (L.) Greene [*Lippia nodiflora* (L.) Michx.]. Old dunes and waste places; freq.
Stalter 12,453

Verbena officinalis L. Reported by Fernald (1935); not recently observed.

Verbena scabra Vahl. Brackish marsh margins; infreq. Stalter 12,895

Violaceae

Viola brittoniana Pollard. Moist depressions, FCSP; infreq. Stalter 14,023

Viola lanceolata L. ssp. *lanceolata*. Marshes; infreq. Stalter 14,024

Viola palmata var. *soraria* (Willd) Pollard. Woodlands; infreq. Stalter 14,025

Viscaceae

Phoradendron leucarpum (Raf.) Reveal & M. C. Johnston [*P. serotinum* (Raf.) L. C.
Johnston]. Parasitic on trees in maritime forests; infreq. Stalter 12,894

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Vitaceae

Ampelopsis arborea (L.) Koehne. Dunes, swales and maritime forests; freq. Stalter 11,592

Parthenocissus quinquefolia (L.) Planch. Woodlands, fields, thickets; freq. Stalter 11,594

Vitis aestivalis Michx. Protected dunes, shrublands and maritime forests; freq. Stalter 11,593

Vitis cinera (Engelm.) Moist maritime forests; rare. Stalter 12,897

Vitis labrusca L. Woodlands, thickets; freq. Stalter 12,896

Vitis rotundifolia Michx. Protected dunes and maritime forests; freq. Stalter 12,898

Vitis vulpina L. Maritime forests and shrublands; infreq. Stalter 12,899

MAGNOLIOPHYTA – LILIOPSIDA

Acoraceae

Acorus calamus L. Freshwater marshes; rare. Stalter 12,454

Agavaceae

Yucca filamentosa L. Fields; rare. Stalter 12,455

Yucca gloriosa L. Protected dunes; infreq. Stalter 12,456

Alismataceae

Sagittaria calicina ssp. *spongiosa* Englem. [*S. satnolata* (J.G. Sm.) Buch.; *S. montevidensis* ssp. *spongiosa* (Englem) Bogin] impoundments at Back Bay; infreq. Stalter 12,542

Sagittaria graminea Michx. Shallow Back Bay waters; freq. (Flowers when strong prolonged east winds push water to west sides of Bay.) Stalter 12,892

Sagittaria lancifolia L. [*S. falcata* Pursh]. Freshwater marshes; infreq. Stalter 12,541

Sagittaria latifolia Willd. Freshwater marshes; freq. Stalter 12,540

Sagittaria subulata (L.) Buchenau. Tidal mudflats at Back Bay; rare. Stalter 12,891

Arcaceae

Orontium aquaticum L. Reported by Fernald (1935); not recently observed.

Bromeliaceae

Tillandsia usneoides (L.) L. Maritime forests; infreq. Stalter 11,595

Commelinaceae

Commelina communis L. Fields, disturbed soils; freq.* Stalter 12,537

Commelina diffusa Burm. f. Reported by Fernald (1935); not recently observed.*

Commelina virginica L. Moist maritime forests, BBNWR west; infreq. Stalter 12,538

Murdannia keisak (Hassk.) Hand.-Maz. [*Aneilema keisak* Hassk.]. Moist roadsides; infreq.* Stalter 12,893

Cyperaceae

Bulbostylis capillaris (L.) Kunth ex C.B. Clarke. Dry sands; infreq. Stalter 12,539

Bulbostylis ciliatifolia (Ell.) Fern. Reported by Fernald (1935) and by Harvill and Wise (24907) in an interdunal swale; not recently observed.

Carex alata Torr. Marshes and moist maritime forest; infreq. Stalter 12,542

Carex atlantica ssp. *capillacea* (Bailey) Reznicek [*C. howei* Mackenzie]. Wet depressions; infreq. Stalter 13,386

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- Carex comosa* F. Boott. Freshwater marshes; rare. Stalter 12,547
- Carex frankii* Kunth Reported by Fernald (1935); not recently observed.
- Carex haspan* L. Moist roadsides and interdunal swales.
- Carex kobomugi* Ohwi. Coastal dunes, intermittent from BBNWR to FCSP; freq.* Stalter 11,598
- Carex nigromarginata* Schwein. Dry maritime forests; rare. Stalter 12,546
- Carex reniformis* (Bailey) Small Reported by Fernald (1935); not recently observed.
- Carex retroflexa* Muhl. Ex Willd. Reported by Fernald (1935); not recently observed.
- Carex vulpinoidea* Michx. Marshes, wet meadows; freq. Stalter 12,543
- Cladium jamaicense* Crantz [*C. mariscus* (L.) Pohl subsp. *jamaicense* (Cranz) Kukenth.]. Brackish and freshwater marshes, one population, BBNWR; extirpated. Stalter 11,596
- Cladium mariscoides* (Muhl.) Torr. Wet depressions; freq. Stalter 11,597
- Cyperus compressus* L. Sandy roadsides infreq. Stalter 12,544
- Cyperus echinatus* (L.) Wood. [*Cyperus ovularis* (Michx.) Torr.]. Stalter 12,545
- Cyperus erythrorhizos* Muhl. Marshes, pond shores; rare. State Rare, S3. Stalter 13,387
- Cyperus flavescens* L. Reported by Fernald (1935); not recently observed.
- Cyperus flavicomus* Michx. [*Cyperus albomarginatus* (Mart. & Schrad. ex Nees) Steud.]. Stalter 13,388
- Cyperus odoratus* L. [*C. engelmannii* Steud.]. Moist soils and freshwater marshes; infreq. Stalter 12,548
- Cyperus retrorsus* Chapm. Dry sands; rare. State Endangered, S1. Stalter 12,992
- Cyperus strigosus* L. Fields, pond shores, disturbed soils; freq. Stalter 12,553
- Dulichium arundinaceum* (L.) Britton. Wet depressions; rare. Stalter 12,558
- Eleocharis albida* Torr. Brackish marshes; infreq. Stalter 12,554
- Eleocharis flavescens* (Poiret) Urban var. *olivacea* (Torr.) Gleason [*E. olivacea* Torr.]. Pond margins; infreq. Stalter 12,555
- Eleocharis halophila* (Fern. & Brack.) Fern. & Brack. Reported by Fernald (1935); moist mud and sand, no specimen collected. *Eleocharis obtusa* (Willd.) Schultes var. *obtusa* [*E. ovata* (Roth) Roemer & J. A. Schultes var. *obtusa* (Willd.) Kükenth.]. Pond margins; rare. Stalter 12,592
- Eleocharis parvula* (Roemer & Schultes) Link. Reported Fernald (1935); not recently observed.
- Eleocharis quadrangulata* (Michx.) Roemer & Schultes. Marshes; freq. Stalter 12,556
- Eleocharis radicans* (A. Dietr.) Kunth Reported by Fernald (1935); not recently observed.
- Eleocharis rostellata* (Torr.) Torr. Brackish marshes; rare. Stalter 12,593
- Eleocharis tuberculosa* (Michx.) R. & S. Wet depressions; infreq. Stalter 12,557
- Fimbristylis autumnalis* (L.) Roemer & Schultes. Moist to wet sands; infreq. Stalter 11,599
- Fimbristylis caroliniana* (Lam.) Fern. Collected by Fernald at Back Bay.
- Fimbristylis puberula* (Michx.) Vahl Reported by Fernald (1935); not recently observed.
- Fimbristylis thermalis* S. Wats. [*F. spadicea* auct non (L.) Vahl]. Dry sands; infreq. Stalter 13,389
- Fuirena pumila* (Torr.) Sprengel. Moist sands; rare. Stalter 12,589

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Kyllinga pumila Michx. [*Cyperus tenuifolius* (Steud.) Dandy]. Moist sands; infreq.

Lipocarpa maculata (Michx.) Torr. Brackish marshes; rare. Stalter 13,390

Rhynchospora caduca Ell. [*R. patula* Gray,]. Moist maritime forest; rare. Stalter 12,549

Rhynchospora colorata (L.) H. Pfeiffer [*Dichromena colorata* (L.) Hitchc.]. Wet roadside ditches; freq. Stalter 12,550

Rhynchospora fascicularis (Michx.) Vahl Wet depressions; infreq. Stalter 12,551

Rhynchospora inexpansa (Michx.) Vahl Wet depressions and moist roadsides infreq. Stalter 12,55

Rhynchospora macrostachya Torr. ex. Gray Reported by Fernald (1935); not recently observed.

Rhynchospora rariflora (Michx.) Ell. Reported by Fernald (1935); not recently observed.

Scirpus acutus Muhl. ex Bigelow. Brackish marshes; rare. Stalter 12,590

Scirpus americanus Pers. [*S. olneyi* A. Gray] Brackish marshes; rare. Stalter 11,600

Scirpus cyperinus (L.) Kunth. [incl. *S. rubricosus* Fern.]. Roadside ditches; infreq. Stalter 13,493

Schoenoplectus pungens (Vahl) Palla var. *pungens* [*Scirpus pungens* Vahl; *Scirpus americanus* Pers., misapplied]. Marshes; freq. Stalter 11,601

Scirpus robustus Pursh. Brackish marshes; infreq. Stalter 11,602

Schoenoplectus tabernaemontani (K. C. Gmel.) Palla [*Scirpus tabernaemontani* K. C. Gmel.]. Marshes; rare. Stalter 12,552

Scleria verticillata Muhl. ex Willd. With *Rhynchospora colorata*; rare. Stalter 12,591

Hydrocharitaceae

Elodea nuttallii (Planchon) St. John. Back Bay; infreq. Stalter 12,594

Limnobium spongia (Bosc) Steudel. Freshwater pools; rare. Stalter 13,391

Vallisneria americana Michx. Back Bay; freq. Stalter 12,595

Iridaceae

Iris virginica L. Freshwater marshes; rare.

Sisyrinchium angustifolium P. Mill. Roadsides; infreq.

Sisyrinchium atlanticum Bickn. Fields; freq.

Juncaceae

Juncus abortivus Chapman [*J. pelocarpus* E. Mey.]. Wet roadsides; infreq. Stalter 12,041

Juncus acuminatus Michx. Edges of freshwater marshes and moist sands; freq. Stalter 12,596

Juncus biflorus Elliott. [incl. *J. longii* Fern.]. Edges of freshwater pools; infreq. Stalter 12,598

Juncus bufonius L. Moist disturbed sands and edges of freshwater marshes and pools; freq. Stalter 12,042

Juncus canadensis J. Gay ex Laharpe. Pond shores, marshes; freq. Stalter 12,597

Juncus coriaceous Mackenzie. Moist sands; freq. Stalter 12,043 Ludwig et al on October 1990 at Wash Woods, Back Bay.

Juncus effusus L. ssp. *solutus* (Fern. & Wieg.) Hämet-Ahti. Pond shores, marshes, moist fields; freq. Stalter 12,044

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Juncus elliotii Chapman. Reported by Fernald (1935);relocated by Ludwig in 1990; not recently observed.

Juncus marginatus Rostk. Moist sandy depressions; rare. Stalter 12,045

Juncus megacephalus M. A. Curtis. Marshes; infreq. Stalter 12,046

Juncus repens Michx. Back Bay, FCSP; infreq. Stalter 12,599

Juncus roemerianus Scheele. Brackish tidal marshes; freq. Stalter 11,603

Juncus scirpoides Lam. Disturbed moist or wet sands; freq. Stalter 12,995

Juncus tenuis Willd. var. *dichotomus* (Elliott) A. Wood [*J. dichotomus* Elliott]. Edges of freshwater marshes and roadside ditches; freq. Stalter 12,996

Juncus tenuis Willd. var. *tenuis*. Dry or moist sandy soil, roadsides and paths; freq. Stalter 11,604

Juncus validus Cov. Back Bay; infreq. Stalter 13,392

Juncaginaceae

Triglochin striatum Ruiz & Pavon. Freshwater swamps and marshes; infreq. Stalter 12,600

Lemnaceae

Lemna perpusilla Torr. Freshwater pools; infreq. Stalter 12,047

Spirodela polyrrhiza (L.) Schleiden. Freshwater pools; rare. Stalter 12,601

Spirodela punctata (G. F. W. Mey.) C. H. Thompson [*S. oligorrhiza* (Kurz) Hegelm.].
Freshwater pools; infreq. Stalter 12,048

Wolffia brasiliensis Weddell [*W. papulifera* C. H. Thimpson]. Freshwater pools at FCSP; rare.
Stalter 12,602

Wolffia columbiana Karsten. Freshwater pools; rare. Stalter 12,603

Wolffiella gladiata (Hegelm.) Hegelm. [*W. floridana* (Donnell-Smith) C. H. Thompson].
Freshwater pools; rare. Stalter 12,604

Liliaceae

Allium vineale L. Roadsides; infreq.* Stalter 12,051

Hemerocallis fulva (L.) L. Escaped from cultivation; rare.* Stalter 12,050

Ornithogalum umbellatum L. Roadsides; freq.* Stalter 12,049

Najadaceae

Najas guadalupensis (Sprengel) Magnus. Back Bay; infreq. Stalter 12,605

Orchidaceae

Calopogon tuberosus (L.) B.S.P. var. *tuberosus*. [*Calopogon pulchellus* R. Br. ex Ait. F.].
moist depressions east of BBNWR maintenance shed, one population; rare. Stalter 12,285

Cypripedium acaule Ait. Pine oak woods, FCSP; rare. Stalter 12,052

Goodyera pubescens (Willd.) R. Br. Reported by Fernald (1935); not recently observed.

Liparis liliifolia (L.) L.C. Rich. Ex Ker- Gawl. Reported by Fernald (1935); not recently observed.

Listera australis Lindl. Shaded moist pine oak woods; infreq. Stalter 12,614

Pogonia ophioglossoides (L.) Ker-Gawl. One population 40-50 individuals, FCSP; rare.
Stalter 12,286

Spiranthes odorata (Nutt.) Lindl. [*S. cernua* (L.) Rich. var. *odorata* (Nutt.) Correll].
Open moist sandy sites and roadside ditches; infreq. Stalter 13,083

Spiranthes praecox (Walter) S. Wats. Freshwater marshes and wet open sites; infreq.

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Stalter 13,084

Spiranthes vernalis Engelm. & A. Gray. Reported by Fernald (1935); Edge of roadside
marsh; infreq. Stalter 13,393

Tipularia discolor (Pursh) Nutt. One population of 37 individuals at Ecological Center,
BBNWR; rare. Stalter 13,146

Poaceae

Aira caryophyllea L. var. *caryophyllea*. Disturbed sands; infreq.* Stalter 11,604

Ammophila breviligulata Fern. ssp. *breviligulata*. Dunes; freq. Stalter 12,613

Andropogon glomeratus (Walt.) Britt. var. *glomeratus*. Wetland margins; infreq. Stalter
12,612

Andropogon ternarius Michx. Old dunes; infreq. Stalter 12,611

Andropogon virginicus L. var. *virginicus*. Fields, woodland openings; freq. Stalter 12,610

Anthoxanthum odoratum L. Fields; freq.* Stalter 12,053

Aristida lanosa Muhl. ex Ell. Dry sands; infreq. Stalter 12,054

Bromus catharticus. Vahl. Roadsides; freq.* Stalter 12,056

Arundinaria gigantea (Walter) Muhl. subsp. *tecta* (Walter) McClure [*A. tecta* (Walter)
Muhl.]. Moist maritime forests; freq. Stalter 11,607

Cenchrus tribuloides L. Coastal dunes and dry sands; freq. Stalter 11,606

Chasmanthium laxum (L.) Yates [*Uniola laxa* (L.) B.S.P.]. Moist soils; rare. Stalter 12,615

Cynodon dactylon (L.) Pers. Roadsides and disturbed sites; freq.* Stalter 12,616

Dactylis glomerata L. Fields; freq.* Stalter 13,394

Dichantherium caerulescens (Hack. Ex A.S. Hitchc.) Corell With *Rhynchospora colorata*
on impoundments; infreq. Stalter 12,617

Digitaria sanguinalis (L.) Scop. Fields, lawns, disturbed sites; freq.* Stalter 11,608

Distichlis spicata (L.) Greene. Salt and brackish marshes; freq. Stalter 11,609

Echinochloa crus-galli (L.) Beauv. Moist sands, disturbed sites, freq.* Stalter 12,055

Echinochloa walteri (Pursh) Heller. Interdunal swales bordering marsh; rare. Stalter 12,618

Eleusine indica (L.) Gaertn. Fields, disturbed sites; infreq.* Stalter 12,619

Elymus riparius Wieg. Moist maritime forests; infreq. Stalter 11,605

Elymus villosus Muhl. ex Willd. Reported by Fernald (1935); not recently observed.

Elymus virginicus L. var. *virginicus*. Dunes; infreq. Stalter 11,615

Eragrostis campestris Trin. [*E. elliotii* Wats.]. Freshwater marshes, Back Bay; rare.
Stalter 13,085

Eragrostis curvula (Schrad.) Nees. Dry sands, disturbed sites; infreq.* Stalter 12,997

Eragrostis hirsuta (Michx.) Nees Dry sands; freq. Stalter 13,086

Eragrostis pilosa (L.) Beauv. [*E. peregrina* Weig.]. Dry sands; infreq. Stalter 13,087

Eragrostis refracta (Muhl.) Scribn. Disturbed sands; rare. Stalter 13,088

Eragrostis spectabilis (Pursh) Steud. Fields, roadsides; freq. Stalter 11,616

Erianthus contortus Elliott [*Saccharum contortum* (Elliott) Nutt.]. Moist border of
woodlands; rare. Stalter 12,620

Erianthus giganteus (Walter) Muhl. [*Saccharum giganteum* (Walter) Pers.]. Moist roadside
ditches and woodland borders; freq. Stalter 12,621

Festuca arundinacea Schreb. [*F. elatior* L. var. *arundinacea* (Schreb.) Wimmer]. Roadsides

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The Vascular Flora of Back Bay National Wildlife Refuge and False Cape State Park, Virginia and disturbed sites; freq.* Stalter 12,057

Glyceria septentrionalis A. Hitchc. Freshwater marshes Back Bay; rare. Stalter 13,395

Leersia oryzoides (L.) Sw. Swamps, marshes; rare. Stalter 12,622

Leptochloa fascicularis (Lam.) A. Gray var. *maritima* (Bicknell) Gleason. Tidal marshes; infreq. Stalter 13,396

Melica mutica Walter. Roadsides; infreq. Stalter 12,058

Microstegium vimineum (Trin.) Moist woods, and roadsides; freq.* Stalter 12,059

Panicum aciculare Desv [*Dichanthelium aciculare* (Desv.) Gould & Clark]. Roadsides; infreq. Stalter 12,623

Panicum amarulum A. Hitchc. & Chase. Coastal dunes and swales; freq. Stalter 12,624

Panicum amarum Elliott. Dunes; infreq. Stalter 12,625

Panicum anceps Michx. Dry sands; infreq. Stalter 13,094

Panicum boscii Poir. [*Dichanthelium boscii* (Poir.) Gould & Clark]. Maritime forests; infreq. Stalter 13,095

Panicum dichotomiflorum Michx. var. *dichotomiflorum*. Moist sands, disturbed sites; freq. Stalter 13,093

Panicum dichotomum L. [incl. *P. lucidum* Ashe, *P. mattamuskeetense* Ashe, *P. roanokense* Ashe, *P. sphagnicola* Nash; *Dichanthelium dichotomum* (L.) Gould]. Maritime forests; infreq. Stalter 12,626

Panicum ensifolium Baldwin ex Ell. Moist and wet depressions; infreq. Stalter 13,089

Panicum lancearium Trin. [*Dichanthelium sabulorum* (Lam.) Gould & Clark var. *patulum* (Scribn. & Merr.) Gould & Clark]. Dry woods; rare. Stalter 13,096

Panicum rigidulum var. *condensum* (Nash) Mohlenbrook [*P. agrostoides* var. *condensum* (Nash) Fern.]. Moist soils in maritime forest; infreq. Stalter 13,097

Panicum scoparium Lam. [*Dichanthelium scoparium* (Lam.) Gould]. Freshwater marshes; infreq. Stalter 13,090

Panicum sphagnicola Nash [*Dichanthelium dichotomum* (L.) Gould var. *dichotomum*]. Reported by Fernald (1935); not recently observed.

Panicum spretum Schultes [*Dichanthelium spretum* (Schultes) Freckmann]. Moist depressions and roadsides; infreq. Stalter 13,091

Panicum villosissimum var. *pseudopubescens* (Nash) Fern. [*Dichanthelium villosissimum* (Nash) Freckmann var. *villosissimum*]. Stalter 13,092

Panicum virgatum L. Fields, pond margins; freq. Stalter 12,627

Paspalum dilatatum Poir. Roadsides and waste places; freq.* Stalter 12,608

Paspalum distichum L. Upland borders of fresh and brackish marshes; infreq. Stalter 13,193

Paspalum setaceum Michx. var. *muhlenbergii* (Nash) D. Banks. Fields; rare. Stalter 12,603

Paspalum floridanum Michx. Moist fields, roadsides; infreq. Stalter 12,607

Phalaris caroliniana Walter. Reported by Fernald (1936); not recently observed.

Phragmites australis (Cav.) Trin. ex Steud. var. *australis* [*P. communis* Trin.]. Marshes, pond margins; freq.* Stalter 11,610

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Poa annua L. Fields, lawns, disturbed soils; freq.* Stalter 12,060

Polypogon monspeliensis (L.) Desf. Upland borders of brackish marshes; freq. Stalter
12,609

Sacciolepis striata (L.) Nash. Freshwater marshes and pools; infreq. Stalter 12,610

Schizachyrium scoparium (Michx.) Nash var. *scoparium* [*Andropogon scoparius* Michx.].
Fields, roadsides; freq. Stalter 11,611

Setaria geniculata (Lam.) Beauv. Roadsides and waste places; freq. Stalter 13,098

Setaria magna Griseb. Brackish and freshwater marshes; infreq. Stalter 11,613

Setaria viridis (L.) Beauv. Roadsides and disturbed sites; freq. Stalter 13,099

Sorghum halepense (L.) Pers. Roadsides; infreq. Stalter 11,612

Spartina alterniflora Loisel. Brackish marsh, two populations, BBNWR; rare. Stalter 11,615

Spartina cynosuroides (L.) Roth. Brackish marshes; infreq. Stalter 11,614

Spartina patens (Ait.) Muhl. [*S. patens* var. *monogyna* (M. A. Curtis) Fern.]. Dunes; infreq.
but locally common. Stalter 11,616

Sphenopholis obtusata (Michx.) Scribn.

Roadsides and disturbed sites; infreq. Stalter 12,611

Sphenopholis pennsylvanica (L.) A. Hitchc. [*Trisetum pennsylvanicum* (L.) Beauv. Ex
R&S.]. Moist maritime forests; infreq. Stalter 12,612

Sporobolus compositus (Poir.) Mer. var. *compositus* [*S. asper* (Beauv.) Kunth]. Fields; rare.
Stalter 13,100

Triplasis purpurea (Walt.) Chapman var. *purpurea*. Dunes; infreq. Stalter 13,101

Tridens flavus (L.) A. S. Hitchc. var. *flavus* [*Triodia flava* (L.) Smyth]. Fields, roadsides;
freq. Stalter 13,102

Tripsacum dactyloides (L.) L. BBNWR west, roadsides; rare. Stalter 13,103

Uniola paniculata L. Coastal dunes; freq. Stalter 11,617

Vulpia myuros (L.) K. C. Gmel. [*Festuca myuros* L.]. Fields, disturbed soils; infreq.* Stalter
13,194

Vulpia octoflora (Walt.) Rydb. var. *tenella* (Willd.) Fern. [*Festuca octoflora* Walt. var.
glauca (Nutt.) Fern.; *F. tenella* Willd.; *Vulpia octoflora* (Walt.) Rydb. var. *glauca* (Nutt.)
Fern.]. Fields; rare. Stalter 13,195

Zizania aquatica L. Freshwater marshes; freq. Stalter 13,104

Pontederiaceae

Eichornia crassipes (Mart.) Solvn. BBNWR west, Roadside ditch.* Stalter 13,196

Heteranthera reniformis R. & P. Reported by Fernald (1935); not recently observed.

Pontederia cordata L. Freshwater marshes; freq. Stalter 13,105

Potamogetonaceae

Potamogeton pectinatus L. Back Bay; infreq. Stalter 13,197

Potamogeton perfoliatus L. Back Bay; infreq. Stalter 13,106

Potamogeton pulcher Tuckerman. Freshwater pools; rare. Stalter 13,398

Ruppiaceae

Ruppia maritima L. Back Bay; infreq. Stalter 12,061

Smilacaceae

Smilax bona-nox L. Maritime forests, successional shrublands and swales; freq.

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Stalter 11,618

Smilax glauca Walt. Woodlands, swamps; infreq. Stalter 13,198

Smilax laurifolia L. Maritime forests and thickets; infreq. Stalter 13,199

Smilax rotundifolia L. Woodlands, swamps, thickets; freq. Stalter 11,619

Sparganiaceae

Sparganium androcladum (Engelm.) Morong Shallow water, Back Bay; infreq. Stalter 13,200

Typhaceae

Typha angustifolia L. Marshes; infreq. Stalter 13,201

Typha domingensis Pers. Brackish marshes; infreq. Stalter 13,399

Typha latifolia L. Freshwater marshes and wet roadsides ditches; freq. Stalter 11,620

Xyridaceae

Xyris caroliniana Walter. Moist depressions; infreq. Stalter 13,202

Xyris difformis Chapman. Wet depressions; infreq. Stalter 13,203

Xyris jupicai J. C. Rich. Moist roadsides; infreq. Stalter 13,204

Zannichelliaceae

Zannichellia palustris L. Back Bay; rare. Stalter 13,205