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Vascular Plant Survey of Cumberland Island National Seashore, Camden County, Georgia

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ABSTRACT Cumberland Island National Seashore, Camden County, Georgia, is administered by the National Park Service, United States Department of the Interior, and comprises 14,740 ha (36,415 acres) that include property and historic residences once owned by the Thomas Carnegie family. A floristic survey of the 7,880 ha (19,472 acres) owned by the National Park Service was conducted to provide Park Service personnel with a vouchered plant species checklist, supplemented with salient information such as relative abundance, locality data, and general community type. Six intensive collecting trips conducted in 2004–2006 yielded 498 species of plants, including 233 species not previously vouchered for the Island. The four largest families were Poaceae, Cyperaceae, Asteraceae, and Fabaceae. Identifications of specimens in the Cumberland Island National Museum Herbarium were also verified and incorporated into the annotated list. Maps, descriptions, and photographs of the various plant communities are provided.

INTRODUCTION

Cumberland Island

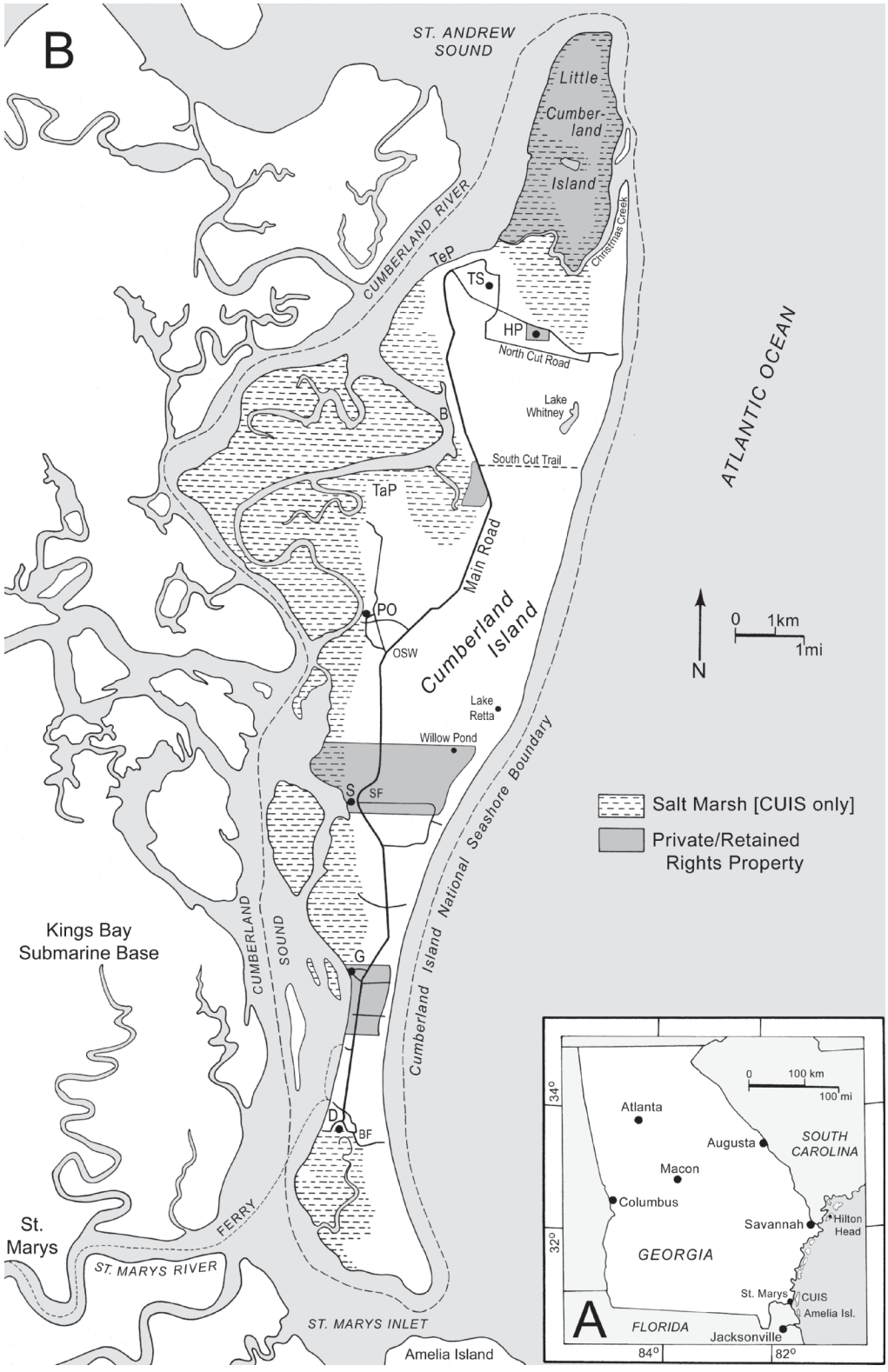
Cumberland Island is located just 0.37 km (0.23 mi) north of the Georgia–Florida border (and Amelia Island), ca. 6.4 km (4 mi) east of St. Marys, Camden County, Georgia (Figure 1A). It is bounded along the west by Cumberland Sound/Cumberland River (Intracoastal Waterway) and the Kings Bay Naval Submarine Base, to the east by the Atlantic Ocean, to the north by St. Andrew Sound, and to the south by St. Marys River/Inlet. The elongated island is 28 km (17.5 mi) long and ca. 0.8–9.7 km (0.5–6.0 mi) wide and comprises ca. 10,440 ha (25,800 acres) including the extensive salt marsh and tidal creek system along the western coast (ca. 4,041 ha; 10,000 acres; Figure 1B). The northern tip is actually a distinct isle, Little Cumberland Island (850 ha; 2,100 acres), separated from the larger island by salt marsh and a narrow waterway, Christmas Creek (Clayton et al. 1992; Morgan et al. 1984).

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Cumberland Island is the largest island along the Georgia coast and is part of a series of Atlantic barrier islands extending from southern Virginia to central Florida (Gibson 1948; Leatherman 1988). These islands, comprising mainly fine quartz sand, have been formed by accumulated silt and sand moved by ocean currents. Most of Cumberland Island proper is part of the Silver Bluff formation, a barrier island chain formed during the Pleistocene (50,000–5,000 ya); however, the eastern margin, southern tip, and all of Little Cumberland Island arose during the Holocene (ca. 5,000 ya to present) via glacier recession and concomitant sea-level rise (Henry et al. 1974; Johnson et al. 1974).

The topography of Cumberland Island ranges from sea level to 15 m (50 ft; at Terrapin Point, ''TeP'' in Figure 1B). The central uplands of the Island are vegetated with maritime oak forest and secondary pinelands (Figure 2A), and an extensive salt marsh system with tidal creeks forms most of the western border (see Figures 1B and 2A; Bozeman et al. 1974). The eastern perimeter along the Atlantic coast is a 28 km (17.5 mi)


B
ST. ANDREW SOUND
Little Cumberland Island
Christmas Creek
CUMBERLAND RIVER
TeP
TS
HP
North Cut Road
Lake Whitney
B
South Cut Trail
TaP
Main Road
PO
OSW
Cumberland Island
Lake Retta
Willow Pond
S
SF
ATLANTIC OCEAN
0 1km
1mi
N
Salt Marsh [CUIS only]
Private/Retained Rights Property
Cumberland Island National Seashore Boundary
Kings Bay Submarine Base
CUMBERLAND SOUND
G
D
BF
St. Marys
FERRY
ST. MARYS RIVER
ST. MARYS INLET
Amelia Island
A
0 100 km
100 mi
34°
32°
84°
82°
Atlanta
Augusta
SOUTH CAROLINA
Macon
Columbus
Savannah
Hilton Head
GEORGIA
St. Marys
CUIS
Amelia Isl.
FLORIDA
Jacksonville

band of continuous beach, nesting sites of the rare American Oystercatcher (*Haematopus palliatus* Temminck) and Loggerhead Sea Turtle (*Caretta caretta* L.; Ruckdeschel et al. 2000; Sabine et al. 2006). The climate is moderately subtropical: hot, humid summers (average 27.2°C [81°F]) with frequent convection thunderstorms and relatively mild, short winters (December–January average 12.2°C [54°F]) with periodic frontal storms. Yearly relative humidity averages are 90% in the morning and 60% in the afternoon. Average annual rainfall is 129.5 cm (51 inches) with heavy rainfall in September–October often associated with hurricane conditions (Stooksbury and Knox 2007).

Cumberland Island National Seashore (CINS)

Cumberland Island National Seashore (CINS) is administered by the National Park Service (NPS; U. S. Department of the Interior). Park headquarters, a visitor center, and the Cumberland Island National Museum are on the mainland in St. Marys (near the dock area). The CINS boundary (see Figure 1B) includes a ca. 0.5 km (0.3 mi) border around the Island (including surrounding waterways) and comprises 14,740 ha (36,415 acres). The majority (over 85%) of the terrestrial acreage of the Island is Park property (7,880 ha; 19,472 acres; Kinzer et al. 2003), and includes original historic homesteads (see *Brief History of Cumberland Island* below) with attendant grounds plus various park buildings and two boat docks. Approximately 1,578 ha (3,900 acres) are private/retained rights inholdings (dark gray areas in Figure 1B), including the entire Little Cumberland Island (Morgan et al. 1984). The majority of NPS land on Cumberland Island is closed to vehicle access: one 21.7 km (13.5 mi) long, sand and shell road (Main Road) runs the length of the Island. At the time of the survey, more than half of the northern end of the Island was a designated federal Wilderness Area (NPS 2005) and therefore, somewhat difficult for the survey team to access.

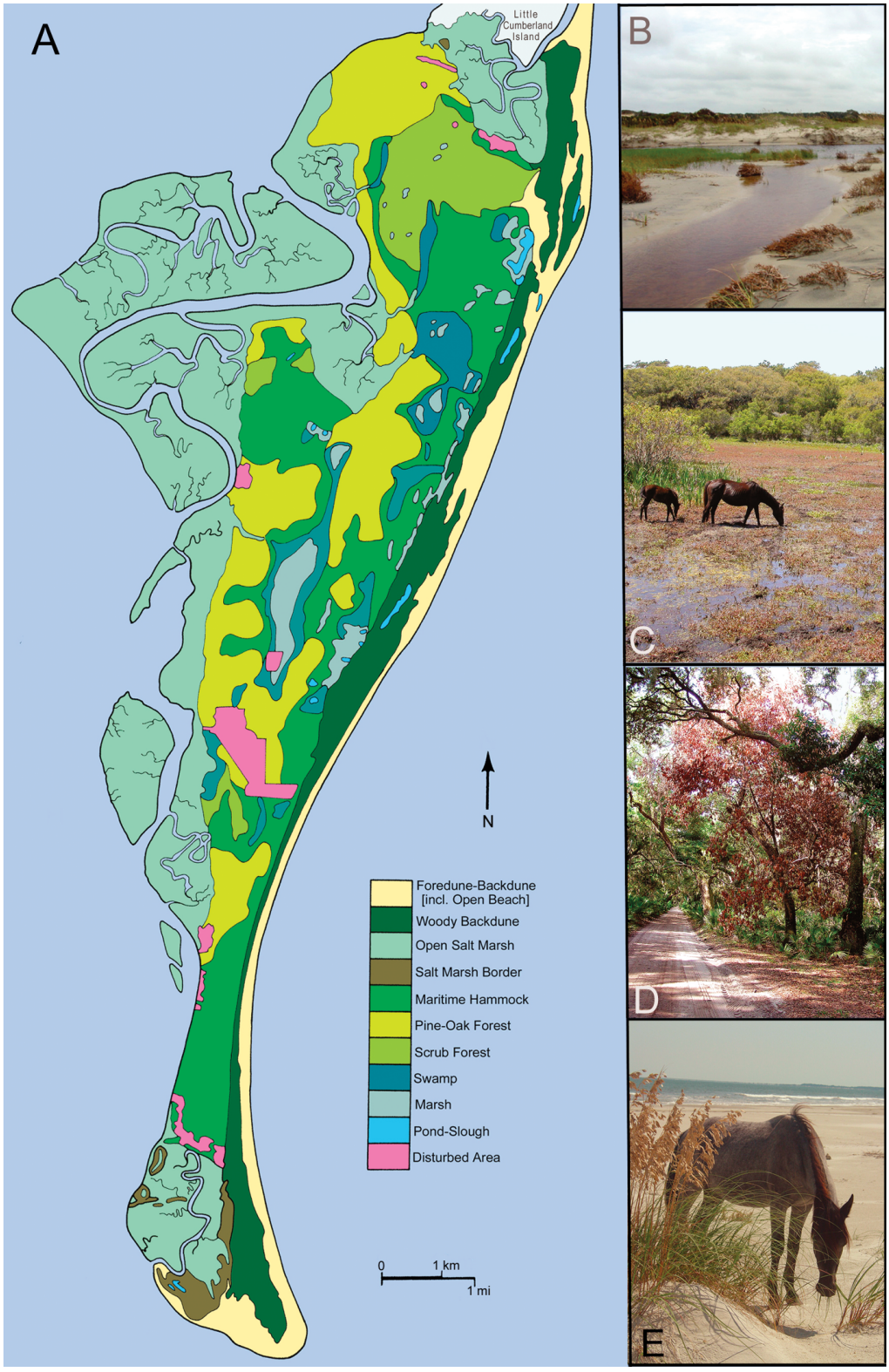
Forty to fifty thousand tourists visit the park annually (Kinzer et al. 2003). The Island is accessible only by a forty-five-minute boat ride via a concession-operated passenger ferry from St. Marys, usually two times daily with one late afternoon return trip, 1 March through 30 November. A maximum of 300 tourists per day are allowed on the Island, and overnight campers are limited to seven nights. The Island has essentially no tourism infrastructure, such as concession stands, hotels, or stores; visitors cannot bring vehicles or bikes, and roads and trails are not paved. Visitation is concentrated at the southern end of the Island. Despite the lack of amenities, tourists are attracted to the national seashore for the maritime habitats and colorful history. Main attractions include the undeveloped beach (Figure 3A); the picturesque Main Road lined with live oaks (*Quercus virginiana*); numerous, freely roaming, feral horses (Figures 2B, 2E, 3G); and the ruins of Dungeness (Figure 3H), the romantic nineteenth century Carnegie family mansion.

Brief History of Cumberland Island

The archeological history of Cumberland Island dates to ca. 4,000 ya (Dilsaver 2004). However, the composition of the current flora and plant communities are primarily the result of successive waves of human habitation and development over the past four centuries. By the time the Europeans arrived in the sixteenth century, the Tacatacuru Indians inhabited the western coast of the Island (''Missoe'' [sassafras] Island), subsisting by hunting and fishing. They spoke the dialect of the ''Timucua''—a general term referring to several culturally diverse tribes of northern Florida and southeastern Georgia who shared the same language (Hann 1996; Zomlefer et al. 2007). The environmental impact of the Tacatacuru people on Cumber-

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Figure 1. Location and boundaries of Cumberland Island National Seashore. A. Inset map of Georgia, showing location of Cumberland Island (indicated as ''CUIS''). B. Map of Cumberland Island showing boundaries of the national seashore, place names mentioned in the text, and roads (trail system not shown). All roads on the Island are unpaved. Areas with salt marsh indicated only for Cumberland Island. Dark gray areas = private inholdings/private property. Abbreviations: B = Brickhill Bluff, BF = Beach Field, D = Dungeness, G = Greyfield, HP = High Point, OSW = Old Swamp Field, PO = Plum Orchard, S = Stafford, SF = Stafford Field, TaP = Table Point, TeP = Terrapin Point, TS = The Settlement. A: Modified by W. B. Zomlefer from George Philips Ltd. (2001); B: Modified by W. B. Zomlefer from NPS (1975, 2005, 2007).


A
Little Cumberland Island
N
Foredune-Backdune [incl. Open Beach]
Woody Backdune
Open Salt Marsh
Salt Marsh Border
Maritime Hammock
Pine-Oak Forest
Scrub Forest
Swamp
Marsh
Pond-Slough
Disturbed Area
0
1 km
1 mi
B
C
D
E

land Island was evidently minimal, other than refuse accumulation comprising oyster shell middens near present-day Dungeness (''D'' in Figure 1B), which was mined by later inhabitants to build tabby buildings and roads (Dilsaver 2004).

The first substantial modifications of the Island's flora began when Europeans began erecting forts and military camps. During the Spanish missionary period (circa 1587–1686), the Franciscans established two missions on the northern and the southern ends of ''San Pedro'' (Cumberland Island) along the western coast; the military also maintained a relatively small fort that was abandoned a century later (Vanstory 1970). Support of these Spanish settlements involved expansion of agricultural fields, exploitation of timber, and the first introductions of European plants and animals to the Island.

From 1737 to the 1760's, the British occupied the Island, renamed by General James Oglethorpe after William Augustus, Duke of Cumberland. Oglethorpe established two forts on the western coast: Fort St. Andrew in the north, and Fort Prince William in the south. When the Treaty of Paris (1763) officially ended colonial conflict between the British and Spanish in Georgia, the British government granted land on Cumberland Island to several individuals. Relatively little development took place during the British occupation; however, tree harvesting was greatly accelerated, especially of live oak (*Quercus virginiana*), a source of valuable ship timber, and large herds of cattle freely roamed the Island.

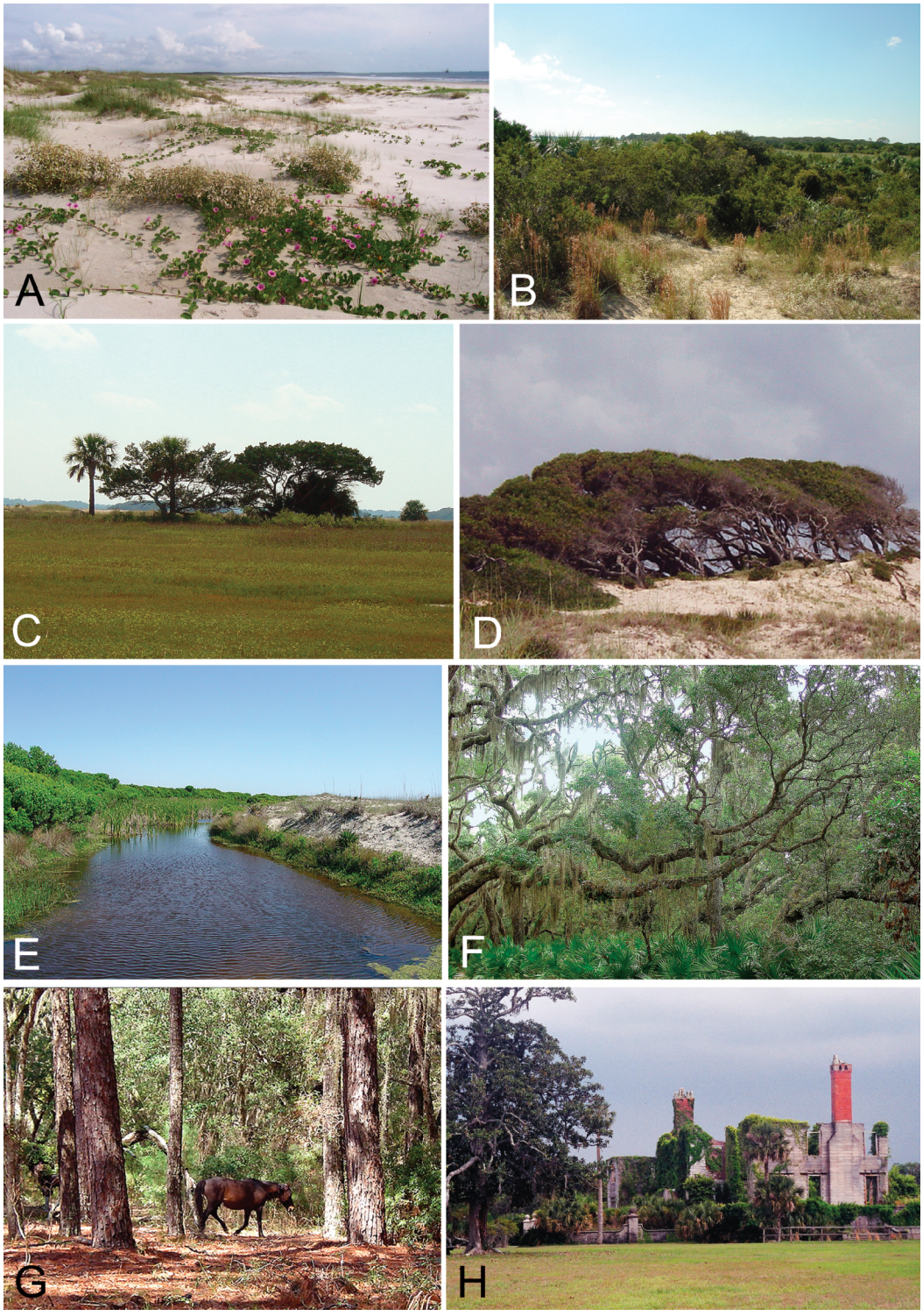
After the American Revolutionary War, more than half of Cumberland Island was cleared for plantation agriculture (Bullard 2003a), and at the zenith of the antebellum period (circa 1860), 13 plantations were operating there (e.g., see Bullard 2003b). The natural vegetation was reduced to isolated patches between fields primarily of sea island cotton (*Gossypium barbadense*), prized for its fine silky fibers (see Zomlefer et al. 2007). Other crops included various citrus, corn, dates, figs, indigo, olives, pomegranates, rice, sugar cane, and sweet potatoes. Harvest of pine and live oak also continued, as well as introduction of exotic plants and more animals (e.g., hogs, cattle, horses) to feral populations. When the plantation economy collapsed after the Civil War, most of the Island was abandoned, but some former slaves established a colony, ''The Settlement,'' at the northern end (''TS'' in Figure 1B).

In the 1880's, Cumberland Island became the retreat for one of America's wealthiest families: Thomas Morris Carnegie (brother and business partner of steel magnate Andrew Carnegie), his wife Lucy Coleman Carnegie, and their nine children. They oversaw construction of several palatial mansions and gardens along with associated infrastructure for the 200+ employees required to provide an idyllic lifestyle. Ultimately, the Carnegie family owned 90% of the southern part of the Island. By the 1930's, the Charles Howard Candler family, descendents of Coca-Cola magnate Asa Griggs Candler, had also developed a substantial vacation retreat via acquisition of most of the remaining northern portion of the Island (then a popular resort), including the site of a former hotel/hunting lodge at High Point (''HP' in Figure 1B; Vanstory 1970; Bullard 2003a).

During the estate era, many exotic horticultural plants became widely distributed, such as centipede grass (*Eremochloa ophiuroides*), introduced for cattle ranches. Crop plants included oranges, olives, and the potentially invasive tungoil tree (*Aleurites*

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Figure 2. Vegetation of Cumberland Island and abiotic and biotic agents altering these environments. A. General vegetation map of Cumberland Island proper (excluding Little Cumberland Island). Habitats often intergrade, and small areas (such as sloughs and ponds) cannot all be shown at this scale. B–E. Photographs of floristic modifications in progress. B. Saltwater intrusion into dune system caused by Hurricane Francis along the northeastern shore (September 2004). C. Feral mare and foal grazing (and trampling) *Polygonum* spp., *Pontederia cordata*, and other plants along eastern shore of Lake Retta (April 2004). D. One of many red bay (*Persea borbonia*) trees killed by laurel wilt along Main Road, south-central CUIS (June 2006). E. One feral horse (of a small herd) consuming sea oats (*Uniola paniculata*), an important dune stabilizer, along southeastern shore (September 2006). A. Modified and updated by W. B. Zomlefer from personal field observations; Bozeman et al. (1974); Google Maps, satellite view (http://maps.google.com/); and Microsoft Virtual Earth™, aerial view (http://maps.live.com/). Photo credits: B, D: Wendy B. Zomlefer; C: Alex Reynolds; E: Galen Burke.


A
B
C
D
E
F
G
H

fordii; Dilsaver 2004). Horses and cattle continued to freely graze the Island, and hogs were released to bolster the feral stock. The Carnegie family also engaged in intermittent logging for old-growth pine sold for telephone poles, and eventually pine plantations (mainly slash [*Pinus elliottii*] and loblolly [*P. taeda*]) covered more than 2,000 ha (5,000 acres).

Matriarch Lucy Carnegie had established a complex restrictive family trust for the estate, which terminated when her last child (Florence Carnegie Perkins) died in 1962. The dissolution of the Carnegie family trust resulted in division of the Island among the descendants. Over the decades, the family fortune had decreased substantially, and most heirs were unable to support their holdings on the Island. Several sold their portions to a developer (who had turned Hilton Head Island, South Carolina, into a resort), but most heirs wanted to maintain their claims and also protect the Island from commercial development (Bullard 2003a). A contingent of Carnegie and Candler landowners banded together (with environmental activist organizations and the Department of the Interior) to successfully lobby Congress for legislation (Public Law 92-536) that established Cumberland Island National Seashore in 1972 (Kinzer et al. 2003).

Although designed to preserve the Island, the designation as a national seashore did not resolve the issue of managing a federal refuge that still comprised significant private inholdings. The National Park Service subsequently embarked on a complicated (and often contentious) land acquisition program involving more than 140 tracts of land: landowners donated, bargain-sold, or voluntarily sold their property to the federal agency. Many negotiated long-term leases with the Park Service, which included permissive ''retained rights'' to build homes and maintain structures on their land and drive through federal wilderness lands [see Seabrook (2002) and Dilsaver (2004) for details]. Leaseholders who opted for immediate remuneration obtained forty-year leases, while those who sold for less kept their residences through the lives of their children or grandchildren.

Today, the people who still have houses in the western and northern regions of Cumberland Island are mainly descendants of property owners; only about 20 people (mostly caretakers) actually live on the Island all year (Bullard 2003a). A few Carnegie heirs (the Ferguson family) operate the only privately owned manor on the Island (the restored Carnegie mansion, Greyfield; ''G'' in Figure 1B) as an upscale inn (Jones 2007). Greyfield's owners and several Rockefellers (descendents of intermarriage with the Carnegies) comprise the remaining residents who still own title to their land.

The natural communities have been recovering in recent years: abandoned agricultural lands have been undergoing secondary succession, and several habitats, previously subjected to grazing and selective pine harvest, have reverted to a semi-natural condition (Hillestad et al. 1975). The northern portion of the Island (ca. 3,577 ha; 8,840 acres) excluding salt marsh achieved federal Wilderness Area status in 1982 (Public Law 97-250; see Morgan et al. 1984), and in 1986, CINS was designated a Biosphere Reserve [part of the South Atlantic–Carolinian unit; UNESCO (2007)]. Over 90 structures and sites, such as the Native American shell mounds, Plum Orchard (a mansion built in 1898 for Carne-

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Figure 3. Examples of plant communities of Cumberland Island National Seashore. A. Foredune (east-central shore, June 2004)—*Ipomoea pes-caprae* (foreground) and *Croton punctatus* (center). B. Backdune (southeastern shore, September 2006)—interdune (foreground): scattered *Andropogon glomeratus* and other grasses; impenetrable woody backdune (background). C. Salt marsh (southwestern CUIS, September 2006)—open marsh (foreground): *Batis maritima*, *Sarcocornia perennis*, and *Spartina alterniflora*; salt marsh border plants (background): *Juniperus virginiana*, *Quercus geminata*, and *Sabal palmetto*. D. Woody backdune (northeastern shore, June 2004)—salt-spray pruned *Juniperus virginiana* along dune ridge. E. Slough (northeastern shore, just north of South Cut Trail access; April 2004)—interdune, bordered by dunes (right), solid stand of *Typha domingensis* (left-center background), and woody backdune (far left). F. Maritime hammock (central CUIS, June 2006)—dense overstory: *Quercus virginiana*, branches covered with *Pleopeltis polypodioides* and *Tillandsia usneoides*; understory: *Serenoa repens*. G. Pine–oak forest (north-central CUIS, March 2005)—overstory: *Pinus taeda* and *P. elliottii* (foreground) with *Quercus virginiana* (background). H. Disturbed area (southwestern CUIS, April 2004)—Dungeness ruins. Photo credits: A: Amy Edgerton, B, D–G, Wendy B. Zomlefer, C: Galen Burke, H: Lisa A. Kruse.

gie son, George Lauder Carnegie; ''PO'' in Figure 1B), the First African Baptist Church (in The Settlement), and Main Road, are listed on the National Register of Historic Places (Kinzer et al. 2003; NPS 2007). Legislation in 2004 (Cumberland Island Wilderness Adjustment Act, Public Law 108-447) removed Main Road from the Wilderness Area restriction, allowing vehicular access (and tours) of The Settlement and other historic sites on the Island (see Brumbelow 2006, 2007).

Floristic Surveys of CINS

This study is the first comprehensive vouchered survey of the vascular plant flora of Cumberland Island National Seashore. Previous floristic inventories of the Island include several smaller scale studies by park biologists documenting plant regeneration after natural burns (circa 1977–1985), mainly in the pinelands and scrub areas in the northern part of the Island; these vouchers form the core of the herbarium collection of 690 vascular plant specimens maintained by NPS at their museum facility in St. Marys. A comprehensive annotated tabulation by Krakow and Ruckdeschel (1991) included these specimens plus unvouchered plant sightings (''sight records'') for the entire Island (i.e., including Little Cumberland Island). Krakow also reportedly deposited their vouchers in the University of Georgia Herbarium (GA; see Annotated List), but most of the specimens cited at GA in Krakow and Ruckdeschel (1991) are not currently among these collections (S. Echols, pers. obs.). A recent cursory survey of exotic species by T. Hunt (2003–2004) added 71 vouchers to the park herbarium.

METHODS The first author led six intensive field trips in 2004 (26–29 April, 14–18 June, 10–13 Sept.; *Giannasi & Zomlefer 720–1182*), 2005 (18–21 March; *Zomlefer 807–839*), and 2006 (26–29 June, 27 Sept.–1 Oct.; *Zomlefer 1022–1068*, *1264–1339*) to collect plant specimen vouchers in duplicate using standard field and herbarium techniques (under collecting permit # CUIS-2006-SCI-0002) with assistance of the coauthors and personnel listed in the acknowledgments. A complete set of vouchers are deposited at GA. A duplicate set is at the Cumberland Island National Museum in St. Marys, Georgia; that collection is hereafter designated ''CUIS,'' a Park Service acronym not registered in *Index Herbariorum* (Holmgren and Holmgren 2007). The floras of Wunderlin and Hansen (2000, 2003) were primary sources for plant identification, supplemented by Radford et al. (1968), Godfrey and Wooten (1979, 1981), and Godfrey (1988). The majority of specimens were identified by Zomlefer and Giannasi; Echols and Kruse identified most grass and sedge species. In addition to their own survey specimens, Zomlefer, Giannasi, and Echols verified identifications and annotated the holdings at CUIS with correct and/or current names and also searched GA Herbarium collections for additional species previously vouchered by researchers at Cumberland Island National Seashore.

RESULTS AND DISCUSSION

Floristics

The ANNOTATED LIST OF VASCULAR PLANTS (below) is the complete flora for Cumberland Island National Seashore represented by vouchers at GA and CUIS herbaria. Our survey comprised 620 new numbered collections of vascular plants representing 498 species and four varieties; of these, 233 species and four varieties are new vouchered taxa for the Island (underlined taxa in the ANNOTATED LIST). Added to the existing Cumberland Island collections deposited at GA and CUIS herbaria, the tally is 583 species (and four varieties) now vouchered for this flora: ferns (13 spp.), gymnosperms (13 spp.), and angiosperms (472 spp. and four varieties). Included in this total are 46 species in cultivation or persisting from cultivation but likely not naturalized (indicated as ''CULT''). The largest families are: Poaceae (74 spp. and three varieties), Cyperaceae (54 spp.), Asteraceae (52 spp. and one variety), Fabaceae (33 spp.), Euphorbiaceae (16 spp.), Ericaceae (13 spp.), Rubiaceae (11 spp.), Juncaceae (10 spp.), Polygonaceae (10 spp.), and Amaranthaceae (9 spp.). With deposition of duplicates from the current survey (587 specimens), CUIS holdings now comprise 1,277 sheets of vascular plants.

The list should be referenced with discretion in respect to specimens collected prior to our survey—specifically, the 54 species (circa 1979–1985) that we did not relocate. These may no longer exist on the Island due to habitat changes: for example, *Solidago sempervirens* (*Davison s.n.* [1984], CUIS) and *Thalia geniculata* (*Jordan s.n.* [1979], CUIS) have not been seen there in at least the past ten years

Table 1. List of 19 non-cultivated, ''special concern plants of Georgia'' (GA DNR 2007) vouchered for Cumberland Island. * = collected by Zomlefer et al. for the current survey; DA = disturbed area; NAT = (more or less) natural habitat; [ ] = notes from other vouchers, DES? = descriptive data (e.g., abundance) lacking on label

Species	Year(s) of Collection	Habitat/abundance Data; Other Comments
**Acacia farnesiana* [Sweet acacia]	1979, 2004	NAT (backdune), locally common; [DA (Dungeness) DES?]
**Aeschynomene viscidula* [Sticky jointvetch]	1982, 2004	DA (Beach Field), common
**Asclepias pedicellata* [Savannah milkweed]	2006	NAT (oak–palmetto scrub), locally common
**Buchnera americana* [American bluehearts]	2004	NAT (dunes), occasional
**Carex dasycarpa* [Sandywoods sedge]	2004	DA (Dungeness mansion; Plum Orchard), common
**Carex fissa* var. *aristata* [Hammock sedge]	2006	NAT (swamp); locally common
Eleocharis albida [White spikerush]	1983	[NAT (salt marsh), DES?]
Eleocharis fallax [Creeping spikerush]	1983	[NAT (dunes), DES?]
Eleocharis montevidensis [Sand spikerush]	1990	[NAT (dunes), DES?]
**Epidendrum conopseum* [Green-fly orchid]	2006	NAT (maritime hammock), rare
**Forestiera segregata* [Florida swampprivet]	1983, 1984, 2004	DA (Beach Field), infrequent; [NAT (salt marsh), DES?]
Pentodon pentandrus [Hale's pentodon]	1990	[NAT (slough), common]
**Phlebodium aureum* [Golden polyploidy]	1983, 1984, 2006	NAT (pine–oak forest), locally common
Quercus austrina [Bastard white oak]	1999	[NAT (pine–oak forest) infrequent]
Sageretia minutiflora [Smallflower mock buckthorn]	1990	[NAT (pine–oak forest), DES?]
Sapindus saponaria [Soapberry]	1990	[NAT (maritime hammock/salt marsh border), rare?]
**Tillandsia setacea* [Southern needleleaf]	2006 [2000]	Cultivated; originally collected (2000): maritime hammock, rare
**Vigna luteola* [Hairypod cowpea]	2006	NAT (dunes/slough), locally common
Websteria confervoides [Algal bulrush]	1982	[NAT (pond), DES?]

(C. Ruckdeschel, pers. comm.). Appendix 1 is a compilation of 59 additional species reported from Cumberland Island in unpublished/unvouchered reports and/or on labels removed from deaccessioned collections (specimens previously discarded) at CUIS. Since 20% of existing collections at CUIS had been originally misidentified, these unvouchered reports may represent some misidentifications as well.

In general, the flora of CINS comprises a representation of the basic habitat types (see section below), ''weedy'' plants common in disturbed areas of the southeastern Coastal Plain, and cultivated plants (some persisting). No Georgia endemics nor any federally listed endangered/threatened plants (U. S. Fish and Wildlife Service 2007) were found; *Liatris tenuifolia* var. *quadriflora* had been previously reported as endemic to Florida (Wunderlin and Hansen 2003). However, 19 non-cultivated species are listed by the Georgia Department of Natural Resources (GA DNR 2007) as species of special concern (Table 1; indicated as ''Con'' in the annotated list). These predominantly occur in a several relatively undisturbed areas throughout the Island, as noted in Table 1. Five of these species are protected plants in Georgia (Patrick et al. 1995; GA DNR 2008): *Carex dasycarpa* (state status: ''rare''), *Epidendrum conopseum* (''unusual''), *Forestiera segregata* (''rare''), *Sageretia minutiflora* (''threatened''), and *Sapindus marginatus* (''rare''). *Carex dasycarpa* (sandywoods sedge) was common (current survey) in weedy, lawn-like areas around Dungeness mansion. *Epidendrum conopseum* (green-fly orchid) is frequent in Florida (Wunderlin and Hansen 2003) and may be more abundant on Cumberland Island than indicated by our survey: the plants grow among lush carpets of resurrection fern (*Pleopeltis polypodioides*) on high, often inaccessible, horizontal branches of live oaks (*Quercus virginiana*; see Figure 3F). A few shrubby trees of *Forestiera segregata* (Florida swampprivet) were growing with *Quercus geminata* and

Table 2. List of 35 non-native invasive (or potentially invasive) species vouchered for Cumberland Island with rankings as assessed by the GA-EPPC (2007): Category 1 (serious invasive), Category 2 (moderate invasive), Category 3 (minor invasive or potential threat not yet known), and Category 4 (naturalized in Georgia, additional data needed). * = collected by Zomlefer et al. for the current survey; CULT = cultivated, DA = disturbed area; NAT = (more or less) natural habitat; [ ] = notes from other vouchers, BF = Beach Field; DUN = Dungeness mansion and surrounding disturbed areas (including Dungeness Mansion, dormitory, Carriage House, Laundry House, White Cottage); PO = Plum Orchard; SF = Stafford Field; DES? = descriptive data (e.g., abundance) lacking on label

Species	Rank	Year(s) of Collection	Locality/habitat/abundance Data; Other Comments
**Ailanthus altissima* [Tree-of-heaven]	1	2004	DA (DUN, 1 non-reproductive tree; [DUN, DES?]
Albizia julibrissin [Silktree]	1	1979	[DA (DUN), DES?]
**Aleurites fordii* [Tungoil tree]	3	1980, 1981, 1983, 2004	DA (SF), young reproductive trees + many seedlings; [DUN, DES?]
**Alternanthera philoxeroides* [Alligatorweed]	1	1982, 2004	NAT (freshwater slough, South Cut Trail), common; [Lake Whitney, DES?]
**Arundo donax* [Giant reed]	3	2004	CULT (PO), not naturalized
**Bidens alba* [Beggarticks]	4	2004	DA (DUN), common
**Bidens bipinnata* [Spanish needles]	4	2004	DA (BF), common
**Cinnamomum camphora* [Camphortree]	2	2004	CULT (DUN), not naturalized
**Cynodon dactylon* [Bermudagrass]	2	1979, 1982, 2004	DA (BF), common, heavily browsed; [DUN, DES?]
**Dioscorea bulbifera* [Air-potato]	3	2006	DA/CULT? (SF), a few vines, potential to spread
**Elaeagnus pungens* [Silverthorn]	2	2006	DA (DUN), persisting from cultivation, evidently not naturalized
Elaeagnus umbellata [Silverberry]	1	2004	[DA (BF), DES?]
**Ipomoea cordatotriloba* [Tievine]	4	2004	DA (DUN), infrequent
Lantana camara [Lantana]	3	2004	[DA (DUN), DES?]
**Ligustrum japonicum* [Japanese privet]	2	2004	CULT (PO)
**Ligustrum lucidum* [Glossy privet]	3	2004	CULT (DUN)
Ligustrum sinense [Chinese privet]	1	2004	CULT (DUN)
Lygodium japonicum [Japanese climbing fern]	1	1983	[DA (DUN), DES?]
**Melia azederach* [Chinaberrytree]	1	1981, 1982, 2004	DA (BF), 1 non-reproductive tree; [DUN, DES?]
**Panicum repens* [Torpedograss]	3	2006	NAT (along Main Road), occasional
**Paspalum notatum* [Bahiagrass]	2	1979, 1982, 2004	DA (BF), common; [DUN, DES?]
**Paspalum urvillei* [Vaseygrass]	3	1984, 2004	NAT (along North Cut Road), rare; [swamp (Bricklin Trail), DES?]
**Phyllostachys aurea* [Golden bamboo]	2	2004	NAT (along Main Road); escaped from cultivation, spreading clonally
**Poa annua* [Annual bluegrass]	3	1985, 2004	DA (DUN), common
Polygonum caespitosum [Oriental lady's-thumb]	4	2004	[NAT (Old Swamp Field, central Island), DES?]
Rosa laevigata [Cherokee rose]	4	2004	[CULT? (DUN), DES?]
**Sapium sebiferum* [Popcorntree]	1	2004	NAT (along Main Road), non-reproductive seedlings, rare
**Sesbania herbacea* [Danglepod]	2	2004	DA (DUN), infrequent, extensively browsed
**Sesbania punicea* [Rattlebox]	2	1979, 2004	DA (DUN), common
**Setaria faberi* [Japanese bristlegrass]	4	2004	DA (DUN), infrequent
**Sonchus asper* [Spiny sowthistle]	4	2005	NAT (along Main Road), rare
**Sonchus oleraceus* [Common sowthistle]	4	2004, 2005	DA (DUN), infrequent
**Tamarix parviflora* [Smallflower tamarisk]	2	1979, 2004	NAT (dunes, southern Island), occasional.
**Verbascum thapsus* [Common mullein]	4	1979, 1982, 2004, 2006	DA (BF), common; [DUN, DES?]
**Wisteria sinensis* [Chinese wisteria]	1	2004, 2006	CULT (The Settlement); [CULT? (DUN), DES?]

Zanthoxylum clava-herculis along the margin of Beach Field, a sandy field adjacent to backdune and salt marsh. We were unable to relocate *Sageretia minutiflora* (smallflower mock buckthorn) and *Sapindus marginatus* (soapberry), both collected on the Island in 1990 (GA: *Krakow 980* and *574*).

Excluding the 43 cultivated exotics, the remaining 73 introduced species (indicated with an asterisk in the ANNOTATED LIST) represent 13.6% of the flora. Thirty-five of the non-native species are invasive (Table 2) and ranked in four categories by Georgia Exotic Pest Plant Council (GA-EPPC 2007) depending on perceived threat to the native flora: Category 1 (serious invasive, extensively invading plant communities; displacing native species), Category 2 (moderate invasive; invading and displacing to a lesser degree that Category 1 species), Category 3 (minor invasive or potential threat not yet known; a threat in adjacent states), and Category 4 (naturalized in Georgia; generally not posing a threat but additional data needed). Seven species are cultivated plants or plants persisting from cultivation ("CULT" in Table 2) and are not naturalized. Of the remaining 28 noncultivated invasives, seven are ranked in Category 1; seven in Category 2; six in Category 3; and eight in Category 4. Twenty of these are concentrated in three general disturbed areas (see Figures 1B and 2A): Dungeness mansion (12 spp.), Beach Field (a former dump area in an interdune habitat; 6 spp.), and Stafford Field (a large overgrazed field; 2 spp.). Even though most of these species (e.g., Category 1 *Ailanthus altissima* and *Melia azederach*) are localized, they may eventually spread into adjacent, less disturbed habitats. For example *Sesbania punicea* (Category 2) is common along the edges of salt marsh west of Dungeness, and *Dioscorea bulbifera* (Category 3) on a fence near a residence has potential to invade nearby maritime hammock community. Extensive browsing by horses, noted for Category 2 species *Cynodon dactylon* and *Sesbanea herbacea*, may control some invasives.

Eight invasive species have been vouchered from relatively undisturbed areas ("NAT" in Table 2). Five species were found in the current survey along roads that bisect maritime hammock/pine–oak forest habitats: Main Road (*Panicum repens*, *Phyllostachys aurea*, *Sapium sebiferum*, *Sonchus asper*) and North Cut Road (*Paspalum urvillei*). These species are restricted to open roadside borders, with the exception of *Phyllostachys aurea* (Category 2) that is spreading clonally into the hammock. *Alternanthera philoxeroides* (alligatorweed), a serious aquatic invasive (Category 1), has been collected in a slough near South Cut Trail (our survey) and nearby Lake Whitney (*Davison s.n.* [1982], CUIS); *Tamarix parviflora* (smallflower tamarisk; Category 2) scattered in the foredunes (mainly in the southern part of the Island), does not appear to be displacing native flora. *Polygonum caespitosum* (Category 4) was collected recently in a wetland area (Old Swamp Field [west-central CINS], *T. Hunt s.n.* [2004], CUIS; no data on label).

A significant native species is in danger of extinction on Cumberland Island due to a recent (2006) invasion of an exotic beetle (*Xyleborus glabratus*, red bay ambrosia beetle) vectoring a fungal plant pathogen (red bay or laurel wilt, *Raffaelea lauricola*) related to the Dutch elm disease pathogen (Fraedrich et al. 2007, 2008; Harrington et al. 2008). As of this writing, all red bay trees (*Persea borbonia*) on CUIS are likely infected (Ruckdeschel and Mahoney 2006, 2007; USDA Forest Service 2007; J. Fry, pers. comm.), and sassafras (*Sassafras albidum*), also in Lauraceae, is imperiled as well. Trees infected with pathogen often exhibit rapid wilting of the foliage: dying leaves typically develop a reddish brown color (see Figure 2D) and may persist on branches for more than a year (Fraedrich et al. 2008). *Persea borbonia* is a dominant understory component, and large-scale red bay mortality will greatly alter the composition of various coastal forest community types (maritime, pine–oak, and scrub forests; woody backdune; swampland) of CINS.

Plant Communities

Eleven community types of the survey area are summarized below, and several are depicted in Figures 2 and 3: foredune–interdune, woody backdune, open salt marsh, salt marsh border, pond–slough, marsh, swamp, maritime hammock, pine–oak forest, scrub forest, and disturbed areas. The vegetation map, Figure 2A, is a broad overview: habitats actually often overlap, and many small areas (such as sloughs and ponds) cannot be shown at the scale of this map. These generalized habitat categories are based upon our field observations and the much more detailed classifications of CINS into 24 (or more)

vegetation zones by Bozeman et al. (1974) and Hillestad et al. (1975), as well as descriptions of similar areas by Johnson et al. (1974), Wharton (1978), Myers and Ewel (1990), FNAI (1990), Easley and Judd (1993), and Zomlefer et al. (2004, 2007). As of this writing, NatureServe in collaboration with the National Park Service and the U.S. Geological Survey (USGS 2007) is contracting the Georgia Natural Heritage Program to produce a revised and detailed vegetation classification (and maps) for Cumberland Island (L. Kruse, pers. comm.).

Foredune–interdune (Beach–dune System). The fluctuating eastern border of the Island is "open beach" (or "coastal beach"), the exposed sandy beach up to the high tide line. Immediately west of this unvegetated strip is foredune (Figure 3A), characterized by pioneer species that stabilize the shifting sand substrate of the harsh environment (Johnson and Barbour 1990; Zomlefer et al. 2004). The flora comprises mostly herbaceous plants tolerant of salt-spray, drought, wind, burial by drifting sand, and grazing by horses. Common species in this zone include: *Atriplex cristata*, *Cakile edentula*, *Cenchrus tribuloides*, *Chamaesyce bombensis*, *Chenopodium ambrosioides*, *Croton punctatus*, *Eragrostis secundiflora*, *Hydrocotyle bonariensis*, *Ipomoea imperati*, *I. pes-caprae*, *Iva imbricata*, *Oenothera humifusa*, *Panicum amarum*, *Phyla nodiflora*, *Phyllanthus abnormis*, *Salsola kali*, *Sesuvium portulacastrum*, *Spartina patens*, and *Yucca aloifolia*. Sea oats (*Uniola paniculata*), a dominant dune plant on other Atlantic barrier islands (Johnson et al. 1974; Oertel and Larsen 1976; Zomlefer et al. 2004), is mainly restricted to southern Cumberland Island, likely due to extensive horse browsing elsewhere along the coast (Figure 2E; Hillestad et al. 1975).

The interdune zone is composed of flat areas ("meadows") interspersed between foredune and woody backdune and is especially best developed along the southeastern coast of the Island (Figure 3B; Wharton 1978); a relatively large dune zone, 9 m (30 ft) high, intrudes into woody backdune around Lake Whitney (Figure 2A). Component plants may differ considerably depending on moisture, but typically include a predominance of grasses, sedges, and rushes, including: *Andropogon glomeratus*, *Cenchrus echinatus*, *Cyperus croceus*, *C. esculentus*, *Eremechloa ophiuroides*, *Eustachys petraea*, *Fimbristylis spadicea*, *Juncus dichtomus*, *J. megacephalus*, *Muhlenbergia capillaris*, *Paspalum setaceum*, *P. vaginatum*, *Rhynchospora colorata*, *Sphenopholis obtusata*, *Sporobolus virginicus*, and *Triplasis purpurea*. Other herbaceous species, such as *Conyza canadensis*, *Heterotheca subaxillaris*, *Physalis walteri*, *Polypremum procumbens*, *Sabatia stellaris*, and *Rumex hastatulus*, also commonly occur here, as well as plants more frequent in the foredune (e.g., *Phyla nodiflora* and *Chenopodium ambrosioides*). Many of these interdune meadow plants show signs of extreme browsing by horses (W. Zomlefer, pers. obs.).

Woody Backdune (Coastal Scrub or Strand, Shrub or Maritime Thicket). This ecotonal community generally occurs between foredune and maritime hammock and shares many species of both (FNAI 1990; Zomlefer et al. 2004). Along the eastern coast of Cumberland Island, the zone is best developed from the central to northern portion and also at the southern tip (Figure 2A). The dominant plants, salt-tolerant shrubs and small trees, form a low, dense, and often impenetrable thicket (Figure 3B) pruned by salt-spray laden winds (e.g., *Juniperus virginiana* in Figure 3D). Characteristic shrubby species include: *Baccharis halimifolia*, *Hypericum hypericoides*, *Ilex vomitoria*, *Myrica cerifera*, *Serenoa repens*, and *Sideroxylon tenax*. *Juniperus virginiana*, *Persea borbonia*, *Pinus taeda*, *Quercus geminata*, *Sabal palmetto*, and *Zanthoxylum clava-herculis* are common tree associates; *Acacia farnesiana* is also locally common at some sites in the southwestern part of the Island. *Ampelopsis arborea*, *Bignonia capreolata*, *Parthenocissus quinquefolia*, *Smilax auriculata*, and *Vitis rotundifolia* comprise the woody vines growing entangled in these thickets. Herbaceous species, generally uncommon in this dense, closed-canopy habitat, may include: *Cenchrus echinatus*, *Cyperus* spp., *Diodia teres*, *Eupatorium capillifolium*, *Galium obtusum*, *Juncus* spp., *Ludwigia maritima*, and the herbaceous vine, *Mikania scandens*.

Open Salt Marsh (Tidal Marsh) and Salt Marsh Border (Salt Marsh Shrub-border). Salt marshes are coastal communities of salt-tolerant plants occupying intertidal zones at least occasionally inundated with salt water, generally characterized by dense stands of *Spartina alterniflora* (saltmarsh cordgrass) and/or *Juncus roemerianus* (black rush; Montague and Wiegert 1990; Easley and Judd 1993;

Zomlefer et al. 2004, 2007). The extensive salt marsh community composing the western shore of Cumberland Island (ca. 4,041 ha; 10,000 acres) supports a network of tidal creeks/rivers interconnecting with open water (Figures 1B and 2A). The salt marsh proper (''open salt marsh,'' Figure 3C) is a broad flat expanse of ''grassland,'' dominated by *Spartina alterniflora*, commonly associated with *Agalinis maritima*, *Batis maritima*, *Borrichia frutescens*, *Distichlis spicata*, *Juncus roemerianus*, *Limonium carolinianum*, *Sarcocornia perennis*, *Sporobolus virginicus*, and *Symphyotrichum tenuifolium*. These species tolerate poorly aerated saline substrate, frequent submersion, and intense sunlight.

In the northwestern part of the Island, erosion has formed bluffs (e.g., Brickhill Bluff, Table Point, Terrapin Point) where upland forests on cliffs overlook the abrupt transition to the salt marsh three to 15 m (10 to 50 ft) below (see Figure 2A; Wharton 1978). In other areas (e.g., southeastern and northeastern ends of the Island) the transition from salt marsh to uplands is more gradual, and a more or less distinct ecotone of salt tolerant shrubs and shrubby trees, which may be inundated during tides, frames the marsh shoreline (Figure 3C). These plants include *Baccharis angustifolia*, *B. halimifolia*, *Forestiera segregata*, *Hypericum hypericoides*, *Iva frutescens*, *Juniperus virginina*, *Ilex vomitoria*, *Myrica cerifera*, *Quercus geminata*, *Sabal palmetto*, and *Serenoa repens*, often covered with vines of *Mikania scandens*, *Smilax auriculata*, *Vitis aestivalis*, and *V. rotundifolia*.

Pond–slough. This general category, comprising ponds, lakes, and sloughs, is characterized by open water that is fresh to slightly brackish. On Cumberland Island, these aquatic habitats vary considerably in size and depth and are most common in the northeastern interdunes (west of the dune system; Figures 2A and 3E), where rainwater and seepage from upland habitats fill depressions between dune ridges (Wharton 1978). The water, frequently shallow and darkly stained with tannins, may dry up during part of the year (Johnson et al. 1974). The aquatic plants growing in these habitats (especially those in sloughs) are often tolerant of low salinity. The largest ponds are Lake Whitney [ca. 16 ha (40 acres) of open water], Lake Retta (6 ha; 15 acres; Figure 2C) and Willow Pond [5 ha; 13 acres (Hillestad et al. 1975)]. Some ponds (e.g., Lake Retta) are connected to marine water systems.

Floating to submersed species occurring in these open waters include: *Alternanthera philoxeroides*, *Azolla caroliniana*, *Habenaria repens*, *Lemna aequinoctialis*, *L. valdiviana*, *Limnobium spongia*, *Nymphaea odorata*, *Nymphoides aquatica*, *Ruppia maritima*, *Sagittaria filiformis*, and *Utricularia* spp. *Bacopa monnieri*, *Carex* spp. (e.g., *C. longii*), *Cladium jamaicense*, *Cyperus* spp. (e.g., *C. odoratus*, *C. retrorsus*, *C. virens*), *Echinochloa muricata*, *Fimbristylis caroliniana*, *Fuirena pumila*, *Hydrocotyle umbellata*, *Hypericum cistifolium*, *Juncus effusus* (and other *Juncus* spp.), *Ludwigia* spp., *Oldenlandia uniflora*, *Panicum hemitomon*, *P. verrucosum*, *Polygonum* spp. (e.g., *P. hirsutum*, *P. punctatum*), *Pontederia cordata*, *Rhynchospora* spp., *Sacciolepis striata*, *Sagittaria latifolia*, *Saururus cernuus*, *Scirpus* spp. (e.g., *S. pungens*), *Setaria parviflora*, *Spartina bakeri*, *Typha dominguensis*, and *T. latifolia* commonly comprise emergent vegetation growing in the water and along the margins. A solid stand of dogfennel (*Eupatorium compositifolium*) often overtakes these areas in late summer, especially if they dry out. Salt intrusion via hurricane tides (Figure 2B) may also greatly alter vegetation, as noted after Hurricane Francis, a Category 4 storm, in Sept. 2004 (W. Zomlefer and D. Giannasi, pers. obs.).

Marsh (Grass–sedge Marsh and Shrub Marsh). Marsh is a general wetland type often developing around ponds (and sloughs) and swamp on Cumberland Island (see Figure 2A). As broadly defined here, the vegetation includes many of the emergent species listed above (especially the grasses, sedges, and rushes) plus shrubs (to juvenile trees). The woody species dominate the habitat in advanced stages of succession when the former pond has dried to mud (W. Zomlefer and D. Giannasi, pers. obs.). These include *Cephalanthus occidentalis*, *Decodon verticillatus*, *Hibiscus grandiflora*, *Ilex cassine*, *Lyonia ferruginea*, *Myrica cerifera*, *Nyssa sylvatica*, *Salix caroliniana*, and *Sambucus nigra*.

Swamp (Lowland Hardwood Forest). Swamp forest occurs in periodically flooded lowlands (often bordering stream banks) and is generally characterized as a closed canopy

of tall deciduous hardwoods with dense shrubby understory; ferns and herbaceous plants may also grow in more open areas (Ewel 1990; FNAI 1990). Patches of swamp occur in several areas on Cumberland Island (mostly in the northern half) and intergrade with surrounding maritime hammock or marsh (Figure 2A). The canopy varies from an evergreen/deciduous mix to predominately broadleaf evergreen, typically including *Acer rubrum*, *Nyssa sylvatica*, *Persea borbonia*, *Pinus serotina*, *P. taeda*, *Quercus nigra*, *Q. virginiana*, and *Sabal palmetto*. *Ampelopsis arborea*, *Cephalanthus occidentalis*, *Decodon verticillatus*, *Ilex cassine*, *Lyonia lucida*, *Myrica cerifera*, *Serenoa repens*, *Smilax laurifolia*, and *Vitis rotundifolia* are common components of the shrub and woody vine layer. Herbaceous species, often growing in standing water (and under other open areas in the canopy) include: *Boehmeria cylindrica*, *Carex lupulina* (and other *Carex* spp.), *Cuphaea carthagenensis*, *Echinochloa crus-galli*, *Eclipta prostrata*, *Eupatorium serotinum*, *Fimbristylis caroliniana*, *Juncus effusus*, *Mitreola petiolata*, *Polygonum setaceum*, *Proserpinaca pectinata*, *Rhynchospora leptocarpa* (and other *Rhynchospora* spp.), *Samolus valerandi*, *Saururus cernua*, and *Woodwardia virginica*.

Maritime Hammock (Coastal Hammock, Maritime Forest, Oak–Saw Palmetto Forest). This habitat, the terminal stage of succession in coastal areas, is a live oak (*Quercus virginiana*) dominated forest typically covering most of the interior of sea islands on old stabilized dunes (Laessle and Monk 1961; Wharton 1978; Stalter and Dial 1984). However, maritime forest on Cumberland Island (bright green areas in Figure 2A) has been fragmented by activities such as clearing and logging, resulting in secondary forest succession of pine–oak habitat and scrub, discussed below.

The long, gnarled, horizontal branches of live oak (Figure 3F) are covered with lush growth of predominately *Cynanchum scoparium*, *Pleopeltis polypodioides*, and *Tillandsia usneoides*. *Juniperus virginiana*, *Persea borbonia*, *Pinus taeda*, *Prunus serotina*, and *Sabal palmetto* are principal understory trees; other tree species common at some sites include *Asimina parviflora*, *Hamamelis virginiana*, *Liquidambar styraciflua*, *Osmanthus americanus*, *Pinus elliottii*, and *Platanus occidentalis*. Shrubs (or shrubby trees) and woody vines of the understory usually comprise *Aralia spinosa*, *Ilex opaca*, *I. vomitoria*, *Lyonia ferruginea*, *L. lucida*, *Myrica cerifera*, *Rubus argutus*, *Serenoa repens*, *Smilax auriculata*, *Toxicodendron radicans*, *Vaccinium arboreum*, *V. corymbosum*, *V. stamineum*, and *Vitis rotundifolia*. Herbaceous plants, most frequent along trails, Main Road (Figure 2D), and other open areas, include species such as: *Ageratina jucunda*, *Chasmanthium laxum*, *Corallorhiza wisteriana*, *Cyperus retrorsus*, *Dichanthelium portoricense*, *Dichondra carolinensis*, *Fimbristylis spadicea*, *Melica mutica*, *Oplismenus hirtellus*, *Passiflora lutea*, *Sanicula canadensis*, *Scleria oligantha*, *S. triglomerata*, *Viola sororia*, and *Woodwardia areolata*.

Pine–oak Forest (Xeric Hammock). Pine–oak forest naturally occurs on sandhills and deep sands on ridge tops (Wharton 1978). The trees are widely spaced, and the open canopy allows growth of ground cover comprising a variety of xeric herbaceous plants (along with ground-dwelling lichens). The habitat is maintained by periodic fire.

On Cumberland Island, pine–oak forest represents secondary forest in relatively large areas where the original maritime hammock was cleared for agricultural purposes and/or extensively logged for pine (Johnson et al. 1974). Loblolly pine (*Pinus taeda*) generally predominates along with slash (*P. elliottii*) and longleaf pine (*P. palustris*). Loblolly and slash pines are most common in the central portion of the Island (Figure 3G; Plum Orchard south to Greyfield), and longleaf pine is most frequent in former fields in the north (e.g., Terrapin Point) where there are patches of longleaf pine–turkey oak (*Quercus laevis*) sandhill type community (e.g., just south of The Settlement). Besides the pines, woody plants typically include: *Bejaria racemosa*, *Hypericum gentianoides*, *Ilex glabra*, *I. opaca*, *Lyonia ferruginea*, *L. lucida*, *Myrica cerifera*, *Parthenocissus quinquefolia*, *Persea borbonia*, *Quercus virginiana*, *Smilax* spp. (e.g., *S. bonanox*), *Vaccinium arboreum*, *V. myrsinites*, and *V. stamineum*, plus scattered *Serenoa repens*.

This habitat type supports a diversity of herbaceous understory species, particularly grasses. Species of *Andropogon* (*A. gyrans*, *A. ternarius*, *A. virginicus*), *Aristida* (*A. lanosa*, *A. longespica*, *A. pupurascens*), and *Dichanthelium* (*D. aciculare*, *D. oligosanthes*, *D. strigosum*) often predominate; other common grasses are: *Chasmanthium laxum*, *Eragrostis elliottii*, *E. secundiflora*, *Eustachys petraea*, *Melica mu-*

tica, *Oplismenus hirtellus*, *Panicum repens*, and *Sporobolus compositus*. Other understory herbs (many indicator sandhill species), include: *Asclepias amplexicaule*, *A. humistrata*, *Bulbostylis ciliatifolia*, *Cnidoscolus stimulosus*; *Crotalaria rotundifolia*, *Cyperus* spp. (e.g., *C. retrorsus*), *Dicerandra linearifolia*, *Eupatorium mohrii*, *Gaillardia aestivalis*, *Galactia elliottii*, *Galium pilosum*, *Gelsemium sempervirens*, *Helianthemum carolinianum*, *Hieracium gronovii*, *Indigofera caroliniana*, *Liatris tenuifolia*, *Lupinus villosus*, *Monotropa uniflora*, *Oldenlandia corymbosum*, *Oxalis lyonii*, *Pediomelum canescens*, *Polygonella gracilis*, *Rhynchospora megalocarpa*, *Scleria oligantha*, *S. trigomerata*, *Solidago odora*, *Stylisma patens*, *Tragia urens*, *Trichostema setaceum*, *Yucca filamentosa*, and *Zornia bracteata*.

Scrub Forest (Oak or Pine–oak Scrub Forest). This general category refers to a secondary succession habitat with a very dense woody vegetation (Wharton 1978). As with pine–oak forest, scrub habitat is maintained by fire. On Cumberland Island, scrub forest occurs on moderately to poorly drained soils, mainly on the northern end (Figure 2A), where land (primarily maritime hammock) was historically utilized for timber production and pastures. These areas burned via wildfires at least two (and often more) decades ago. Scrub vegetation often intergrades gradually with the surrounding, more mesic maritime hammock and swamp.

Scattered trees of *Pinus elliottii* (and sometimes also *Quercus virginiana*) typically form an overstory above a dense shrubby canopy of shrubs, juvenile trees, and vines, including: *Bejaria racemosa*, *Gaylussacia tomentosa*, *Hypericum tetrapetalum*, *Ilex cassine*, *I. glabra*, *I. vomitoria*, *Lyonia ferruginea*, *L. lucida*, *Myrica cerifera*, *Persea borbonia*, *Serenoa repens*, *Vaccinium myrsinites*, and *Vitis rotundifolia*. Another shrub, *Asimina angustifolia*, grows only in more open areas (especially along trails) with herbaceous species, such as: *Arnoglossum ovatum*, *Asclepias pedicillata*, *Carphephorus odoratissimus*, *Elephantopus nudatus*, *Eleocharis robbinsii*, *Eragrostis secundiflora*, *Galactia elliottii*, *Liatris tenuifolia*, *Pluchea rosea*, *Pteris aquilinum*, *Pterocaulon pychnostachyum*, and *Vulpia myuros*.

Disturbed Areas (Ruderal Areas). Disturbed habitats, the areas of greatest diversity in our survey, include fields, pine plantations, and high foot-traffic areas around buildings (e.g., Figure 3H), roads, docks, and trailheads. Common weedy species occurring in these areas include: *Acalypha graciliens*, *Aeschynomene viscidula*, *Bidens alba*, *Cerastium glomeratum*, *Chamaesyce* spp., *Cirsium nuttallii*, *Cnidoscolus stimulosus*, *Commelina erecta*, *Croton glandulosus*, *Cynodon dactylon*, *Dactyloctenium aegyptium*, *Desmodium incanum*, *Digitaria ciliaris*, *Diodia teres*, *Eleusine indica*, *Eupatorium compositifolium*, *Galactia volubilis*, *Gaura angustifolia*, *Helianthemum carolinianum*, *H. corymbosum*, *Lepidium virginicum*, *Lespedeza hirta*, *Linaria canadensis*, *Oenothera humifusa*, *Oxalis corniculata*, *Paspalum notatum*, *Plantago lanceolata*, *P. virginica*, *Pyrrhopappus carolinianus*, *Rhus copallinum*, *Rubus trivialis*, *Ruellia caroliniensis*, *Salvia lyrata*, *Senna obtusifolia*, *Solanum carolinense*, *Sonchus asper*, *S. oleraceus*, *Stellaria media*, *Verbascum thapsus*, and *Veronica arvensis*.

Flora of CINS and NPS Management Issues

The National Park Service is required to balance potentially conflicting management directives: preservation of historic and natural (ecological) resources while encouraging and supporting public visitation (see Hillestad et al. 1975). Plant communities on Cumberland Island continue to undergo succession under the influence of human factors despite concerns about deleterious impacts on these fragile environments. One new challenge is the impending increased public access to previously secluded historic areas, mandated by recent legislation that lifts Wilderness Area restrictions to permit regular vehicle access over Main Road and two road spurs (see *Brief History of Cumberland Island*). Another issue is the effect of decades of fire suppression: judicious application of prescribed fire is required for maintaining certain community types on the Island (see *Plant Communities*), especially pine forests and scrub, sloughs, and pastures (Johnson et al. 1974). Fire could also effectively thin the unusually dense understory/leaf litter of the Island's maritime hammock, a mature habitat type not usually sustained by fire (Hillestad et al. 1975). However, the Park Service is constrained from implementing effective fire management of habitats because of potential danger to remaining private properties on the Island.

Another major ongoing quandary in natural resource management on the Island is population control of feral hogs and horses. Currently ca. 300 hogs and up to 200 horses

roam the Island (J. Fry and D. Hoffman, pers. comm.). Their destruction of natural habitats has been well documented: for example, they destroy dunes by consuming stabilizing plants (Figure 2E) and cause extensive erosion around open freshwaters and marshes by grazing, trafficking, and rooting along the shores (Figure 2C; summaries in Johnson et al. 1974 and Hillestad et al. 1975). In our survey, specimens of 37 species (7% of the native flora), indicated as "[Br]" in the annotated list, exhibited extensive browsing damage (likely by horses). The hog population is now more or less controlled (through intense ongoing efforts by NPS personnel) so that their damage to habitats and sea turtle nests is minimized (D. Hoffman, pers. comm.). However, management of feral horse populations on public lands is restricted to non-lethal methods (Goodloe et al. 2000). Further, Cumberland Island horses, descended primarily from stock released during the Carnegie period, are one of the main attractions for visitors and residents, and NPS has difficulty managing the population under public and private scrutiny. Presently, the only action by NPS is conducting an annual horse census (W. Zomlefer and K. Bettinger, pers. obs.), resulting in 120–140 horses observed per year, over the past five years, during two days in the early spring (D. Hoffman, pers. comm.).

ANNOTATED LIST OF VASCULAR PLANTS A list of 582 vascular plant species (plus four varieties), representing 365 genera in 133 families is here compiled from *Giannasi & Zomlefer* (*720–1182*) and *Zomlefer* (*807–839*, *1022–1068*, *1264–1339*) collections plus 84 species previously deposited at GA and CUIS herbaria from other, more limited surveys (circa 1979–1985 and 2004). *Giannasi & Zomlefer* and *Zomlefer* specimens are mainly duplicates with one deposited at GA, and one, at CUIS; thirty-four of these collections designated as unicate ("UNI") are at GA. Genera, species, and infraspecific taxa are alphabetical within each family under three major groups (ferns, gymnosperms, and angiosperms). Family circumscriptions follow the following sources: Smith et al. (2006) for ferns; FNA (1993) for gymnosperms; and APG (2003) for angiosperms. Scientific nomenclature and common names follow Wunderlin and Hansen (2003); exceptions are vernacular names of a few horticultural plants (not included in their flora) that conform to Huxley (1992).

Specimen notations: ***G & Z*** = Giannasi & Zomlefer; ***Z*** = Zomlefer; [UNI] = unicate *G & Z* or *Z* specimen (i.e., at GA, no duplicate at CUIS); * = exotic (Wunderlin and Hansen 2003); underlined taxa = new vouchered record for the Island; [NV] = identification not verified (GA Herbarium lacking comparison specimens for verification of three cultivated plants collected by T. Hunt); invasive exotics (GA-EPPC 2007): [CAT 1] = Category 1, [CAT 2] = Category 2, [CAT 3] = Category 3, [CAT 4] = Category 4; CULT = cultivated (i.e., planted on park grounds); [Con] = species of special concern in Georgia (GA DNR 2007); [Pro] = protected species in Georgia (Patrick et al. 1995; GA DNR 2008); [Br] = *G & Z* or *Z* specimen with extensive browsing damage. Habitat/locality data: DA = disturbed area; FI = foredune–interdune; MA = marsh; MH = maritime hammock; PO = pine–oak forest; PS = pond–slough; SB = salt marsh border; SC = scrub forest; SM = salt marsh; SW = swamp; WB = woody backdune. Relative abundance: c = common (generally abundant throughout a particular habitat; species easily found); o = occasional (locally common and/or several individuals distributed within a habitat; species not too difficult to locate); i = infrequent (sporadic occurrence of a small number of individuals; species relatively scarce and not easily found); r = rare (very few individuals encountered); ab? = no abundance data on label.

FERNS

ASPLENIACEAE

Asplenium platyneuron (L.) Britton et al., Ebony spleenwort—DA, i; ***G & Z 784*** [UNI]; CUIS: *Davison s.n.* [1983], *Jordan s.n.* [1979, 1981]

BLECHNACEAE

Woodwardia areolata (L.) Moore, Netted chain fern—MH/PS, i; ***G & Z 849***; CUIS: *Davison s.n.* [1982, 1983]

Woodwardia virginica (L.) Sm., Virginia chain fern—SW, r; ***Z 1335***; CUIS: *Davison s.n.* [1982, 1983], *Jordan s.n.* [1979]

DENNSTAEDTIACEAE

Pteridium aquilinum (L.) Kuhn var. *latiusculum* (Desv.) Underw. ex A. Heller, Eastern bracken fern—DA, o; ***G & Z 862***; CUIS: *Davison s.n.* [1982, 1983], *Jordan s.n.* [1981]

LYGODIACEAE (SCHIZAEACEAE)

**Lygodium japonicum* (Thunb.) Sw., Japanese climbing fern—[CAT 1], DA, r?; CUIS: *Davison s.n.* [1983]

OPHIOGLOSSACEAE

Ophioglossum petiolatum Hook., Stalked adder's-tongue—MH, ab?; CUIS: *Jordan s.n.* [1979]

OSMUNDACEAE

Osmunda cinnamomea L., Cinnamon fern—PS, i; ***G & Z 1129***
Osmunda regalis L. var. *spectabilis* (Willd.) A. Gray, Royal fern—PS, i; ***G & Z 1131***; CUIS: *Davison s.n.* [1982]

POLYPODIACEAE

Phlebodium aureum (L.) J. Sm., Golden polyploidy—[Con], PO, o; ***Z 1038***; CUIS: *Davison s.n.* [1983], *Jordan s.n.* [1984]
Pleopeltis polypodioides (L.) E. G. Andrews & Windham var. *michauxiana* (Weath.) E. G. Andrews & Windham, Resurrection fern—MH, c; ***G & Z 815***; CUIS: *Davison s.n.* [1983], *Jordan s.n.* [1980]

PTERIDACEAE (VITTARIACEAE)

Vittaria lineata (L.) Sm., Shoestring fern—PO, r; ***Z 817*** [UNI], ***1039***

SALVINIACEAE (AZOLLACEAE)

Azolla caroliniana Willd., Mosquito fern—PS, i; ***Z 1060*** [UNI]; CUIS: *Davison s.n.* [1984]

THELYPTERACEAE

Thelypteris kunthii (Desv.) C. V. Morton, Widespread maiden fern—DA, c; ***G & Z 782***

GYMNOSPERMS
CUPRESSACEAE

Cupressus sempervirens* L., Italian cypress—CULT; ***G & Z 1157*; CUIS: *Hunt s.n.* [2004]
Juniperus virginiana L., Red cedar—SB, c; ***G & Z 760***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983], *Norris 3132* [1983], *Turner s.n.* [1983]
**Platycladus orientalis* (L.) Franco, Oriental arborvitae, [NV]—CULT; CUIS: *Hunt s.n.* [2004]
Taxodium distichum (L.) Rich., Bald-cypress—CULT; ***Z 1328***
Thuja standishii* (Gordon) Carr., Japanese thuja—CULT; ***Z 832*; CUIS: *Turner s.n.* [1983]

CYCADACEAE

Cycas revoluta* Thunb., Sago palm—CULT; ***G & Z 831*, ***924*** [UNI]; CUIS: *Davison s.n.* [1985], *Hunt s.n.* [2004]

PINACEAE

Cedrus deodara* (Roxb. ex Lambert) G. Don, Himalayan cedar—CULT; ***G & Z 830*; CUIS: *Hunt s.n.* [2004]
Pinus echinata Mill., Shortleaf pine—PO, r; ***Z 1331***
Pinus elliottii Engelm., Slash pine—PO, c; ***G & Z 1017***; CUIS: *Davison s.n.* [1985]
Pinus palustris Mill., Longleaf pine—PO, o; ***G & Z 1168***; CUIS: *Davison s.n.* [1985]
Pinus serotina Michx., Pond pine—PO, r; ***Z 815***; CUIS: *Davison s.n.* [1985]
Pinus taeda L., Loblolly pine—DA/FI/PO, c–i; ***G & Z 800***, ***858***, ***901***, ***902***, ***944***, ***945***, ***990***, ***1113***, ***1161***; CUIS: *Davison s.n.* [1985]

ZAMIACEAE

Zamia pumila L., Florida arrowroot—CULT; ***Z 834***

ANGIOSPERMS
ACANTHACEAE

Ruellia caroliniensis (J. F. Gmel.) Steud., Carolina wild petunia—DA, o; ***G & Z 864***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1981]

ADOXACEAE

Sambucus nigra L. subsp. *canadensis* (L.) R. Bolli [= *Sambucus canadensis* L.], American elder—PS, r; ***G & Z 964***; CUIS: *Jordan s.n.* [1979]
Viburnum odoratissimum* Ker-Gawl., Sweet viburnum—CULT; ***Z 1310*; CUIS: *Hunt s.n.* [2004], *Turner s.n.* [1983]

AGAVACEAE

Yucca aloifolia L., Spanish bayonet—FI, c; ***G & Z 1075***
Yucca filamentosa L., Adam's needle—PO, r; ***G & Z 946***

AIZOACEAE

Sesuvium portulacastrum (L.) L., Shoreline seapurslane—FI, c; ***G & Z 840***; CUIS: *Davison s.n.* [1982]

ALISMATACEAE

Sagittaria filiformis J. G. Sm., Threadleaf arrowhead—PS, c; ***Z 1064*** [A specimen (CUIS: *Davison s.n.*, 1982), comprising only the base of a sterile plant and that we annotated as *Sagittaria* cf. *isoetiformis* J. G. Sm., may be *S. filiformis*.]
Sagittaria graminea Michx. var. *graminea*, Grassy arrowhead—SW, c, [Br]; ***Z 1046***
Sagittaria lancifolia L., Bulltongue arrowhead—PS, ab?; CUIS: *Davison s.n.* [1984]
Sagittaria latifolia Willd., Broadleaf arrowhead—PS, i; ***Z 1312***

ALLIACEAE

Nothoscordum bivalve (L.) Britton, Crowpoison—DA, o; ***G & Z 764***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983]

ALTINGIACEAE

Liquidambar styraciflua L., Sweetgum—MH, o; ***G & Z 808***; CUIS: *Grumbine s.n.* [1983]

AMARANTHACEAE

Alternanthera philoxeroides* (Mart.) Griseb., Alligatorweed—[CAT 1], PS, c; ***G & Z 978*; CUIS: *Davison s.n.* [1982], *Hunt s.n.* [2004]
Amaranthus viridis* L., Slender amaranth—DA, i; ***G & Z 879*
Atriplex cristata Humb. & Bonpl. ex Willd., Crested saltbush—FI, i; ***G & Z 1080***
Chenopodium album* L., Lamb'squarters—DA, o; ***G & Z 1094*
Chenopodium ambrosioides* L., Mexican tea—FI, c; ***G & Z 975*; CUIS: *Hunt s.n.* [2004]
Froelichia floridana (Nutt.) Moq., Cottonweed—DA, o, [Br]; ***G & Z 1041***
Salicornia bigelovii Torr., Annual glasswort—SM, c; ***Z 1308***
Salsola kali* L., Prickly Russian thistle—FI, c; ***G & Z 959*; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1980]
Sarcocornia perennis (Mill.) A. J. Scott [= *Salicornia perennis* Mill.], Perennial glasswort—SM, c; ***G & Z 893***; CUIS: *Davison s.n.* [1982] [The segregation of the perennial from the annual species of *Salicornia* may render *Sarcocornia* paraphyletic (Kandereit et al. 2006), and *Salicornia* s.l. (including both perennial and annual species) is likely monophyletic on the basis of the truncate perianth apices, pubescent nonperispermous

seeds, and membranous testa (Judd and Ferguson 1999).]

AMARYLLIDACEAE

Crinum asiaticum L., Poisonbulb—CULT; ***G & Z 1010***; CUIS: *Hunt s.n.* [2004]

Galanthus plicatus* M. Bieb. subsp. *plicatus* [= *Galanthus nivalis* L. subsp. *plicatus* (M. Bieb) Gottl.-Tann.], Snowdrop—CULT; ***Z 827*; CUIS: *Hunt* [2004]

**Hippeastrum* ×*hybridum* Hort., Rosy amaryllis, [NV]—CULT; CUIS: *Hunt s.n.* [2004]

**Lecojum vernum* L., Spring snowflake—CULT; CUIS: *Hunt s.n.* [2004]

Narcissus tazetta* L., Cream narcissus—CULT; ***Z 826*; CUIS: *Hunt s.n.* [2004]

ANACARDIACEAE

Rhus copallinum L., Winged sumac—DA, r; ***G & Z 1098***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983], *Norris 3116* [1983]

Toxicodendron radicans (L.) Kuntze, Eastern poison ivy—MH, o; ***G & Z 1115***; CUIS: *Jordan s.n.* [1979]

ANNONACEAE

Asimina angustifolia Raf., Slimleaf pawpaw—DA/SC, o–i; ***G & Z 807***, ***1008***; CUIS: *Davison s.n.* [1983]

Asimina incana (W. Bartram) Exell, Woolly pawpaw—DA, o; ***G & Z 806***, ***855***, ***856*** [UNI]; CUIS: *Davison s.n.* [1982]

Asimina parviflora (Michx.) Dunal, Smallflower pawpaw—MH, i; ***G & Z 859***; CUIS: *Davison s.n.* [1982]

APIACEAE

Centella asiatica (L.) Urb., Spadeleaf—SB/WB, o; ***G & Z 1064***; CUIS: *Davison s.n.* [1982, 1985]

Cyclospermum leptophyllum* (Pers.) Sprague ex Britton & P. Wilson, Marsh parsley—DA, o; ***G & Z 1090*

Lilaeopsis chinensis (L.) Kuntze, Eastern grasswort—SM, ab?; GA: *Ruckdeschel s.n.* [1987]

Ptilimnium capillaceum (Michx.) Raf., Mock bishopsweed—DA/PS, c–o; ***G & Z 746***, ***972***; CUIS: *Davison s.n.* [1982, 1983]

Sanicula canadensis L., Canadian blacksnakeroot—MH/PO, o; ***G & Z 810***

APOCYNACEAE

Asclepias amplexicaulis Sm., Clasping milkweed—PO, i; ***Z 1037***

Asclepias humistrata Walter, Pinewoods milkweed—PO, i; ***G & Z 935***

Asclepias pedicellata Walter, Savannah milkweed—[Con], SC, o; ***Z 1050***

Cynanchum scoparium Nutt., Leafless Swallowwort—MH, o; ***G & Z 1144***

Matalea gonocarpos (Walter) Shinners, Angle pod—MH/PO, o–i; ***G & Z 1013***; ***Z 1026***

Nerium oleander* L., Oleander—WB, i; ***G & Z 907*; CUIS: *Hunt s.n.* [2004]

Trachelospermum jasminoides* (Lindl.) Lem., Confederate jasmine—DA, i; ***G & Z 835*; CUIS: *Hunt s.n.* [2004] [Persisting from cultivation but not naturalized.]

AQUIFOLIACEAE

Ilex ambigua (Michx.) Torr., Carolina holly—MH, ab?; CUIS: *Grumbine s.n.* [1983]

Ilex cassine L., Dahoon—MA/PS, o–r; ***G & Z 940***, ***1179***, ***1180***; CUIS: *Davison s.n.* [1984]

Ilex glabra (L.) A. Gray, Inkberry—PO/SC, c; ***Z 1299***; CUIS: *Bratton s.n.* [1981], *Davison s.n.* [1982], *Grumbine s.n.* [1983]

Ilex opaca Aiton var. *opaca*, American holly—MH, o; ***G & Z 818***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983], *Jordan s.n.* [1980]

Ilex vomitoria Aiton, Yaupon—MH, c; ***G & Z 817***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983], *Jordan s.n.* [1981], *Turner s.n.* [1983]

ARACEAE

Landoltia punctata* (G. Mey.) Les & D. J. Crawford, Dotted duckweed—DA, c; ***G & Z 834*

Lemna aequinoctialis Welw., Lesser duckweed—PS, c; ***Z 1066***, ***1338***

Lemna valdiviana Phil., Valdivia duckweed—PS/SW, c–o; ***G & Z 843***; ***Z 829***; CUIS: *Davison s.n.* [1985]

ARALIACEAE

Aralia spinosa L., Devil's walkingstick—MH, o; ***G & Z 1104***

**Hedera helix* L., English ivy—DA/MH, ab?; CUIS: *Davison s.n.* [1982]

Hydrocotyle bonariensis Comm. ex Lam., Largeleaf marshpennywort—FI, c; ***G & Z 722***, ***798***; CUIS: *Davison s.n.* [1982, 1983], *Grumbine s.n.* [1983]

Hydrocotyle ranunculoides L. f., Floating marshpennywort—MA, ab?; CUIS: *Davison s.n.* [1982]

Hydrocotyle umbellata L., Manyflower marshpennywort—PS, c; ***G & Z 793***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983], *Norris 3125* [1983]

Hydrocotyle verticillata Thunb. var. *triradiata* (A. Rich.) Fernald, Whorled marshpennywort—PS, c; ***G & Z 962***

ARECACEAE

Butia capitata* (Mart.) Becc., Yatay Palm—CULT; ***Z 1318*

**Chamaerops humilis* L., Dwarf fan palm—CULT; CUIS: *Hunt s.n.* [2004]

Cocos nucifera* L., Coconut palm—FI, r; ***Z 1067* [Collection comprises two drupes, likely not viable, washed up into the foredunes along the east-central coast, near trail entrance to Lake Retta.]

Livistona chinensis* (Jacq.) R. Br. ex Mart., Chinese fan palm—CULT; ***Z 1303*; CUIS: *Hunt s.n.* [2004]

Phoenix canariensis* Hort. ex Chabaud, Canary Island date palm—CULT; ***G & Z 838*; ***Z 1313***; CUIS: *Hunt s.n.* [2004]

Sabal palmetto (Walter) Lodd. ex Schult. & Schult. f., Cabbage palm—DA, c; ***G & Z 926***

Serenoa repens (W. Bartram) Small, Saw palmetto—MH, c; ***G & Z 927***

**Washingtonia robusta* H. Wendl., Washington fan palm—CULT; CUIS: *Hunt s.n.* [2004]

ASPARAGACEAE

**Asparagus setaceus* (Kunth) Jessop, Common asparagus-fern—CULT?; CUIS: *Hunt s.n.* [2004]

ASTERACEAE

Ageratina jucunda (Greene) Clewell & Wooten, Hammock snakeroot—MH, c; ***G & Z 1101***; CUIS: *Davison s.n.* [1981], *Jordan s.n.* [1979], *Norris 3050* [1983]

Ambrosia artemisiifolia L., Common ragweed—MH, i, [Br]; ***G & Z 1103***

Arnoglossum ovatum (Walter) H. Rob., Ovateleaf Indian plantain—SC, c; ***Z 1049***

Baccharis angustifolia Michx., Saltwater falsewillow—SB/SM, o; ***Z 1307***

Baccharis halimifolia L., Groundsel tree—SB/WB, o; ***G & Z 737***
Bidens alba (L.) DC., Beggarticks—[CAT 4], DA, c, [Br]; ***G & Z 767***
Bidens bipinnata L., Spanish needles—[CAT 4], DA, c; ***G & Z 1038***
Bidens laevis (L.) Britton et al., Burrmarigold—PS, c, [Br]; ***G & Z 790***
Borrichia frutescens L. (DC.), Bushy seaside oxeye—SM, c; ***G & Z 894***; CUIS: *Bratton s.n.* [1983], *Jordan s.n.* [1983]
Carphephorus odoratissimus (J. F. Gmel) H. Hebert var. *odoratissimus*, Vanillaleaf—SC, c; ***Z 1280***; CUIS: *Jordan s.n.* [1981]
Cirsium horridulum Michx., Purple thistle—FI, o; ***G & Z 743***
Cirsium nuttallii DC., Nuttall's thistle—DA, o; ***G & Z 909***
Conyza canadensis (L.) Cronquist var. *pusilla* (Nutt.) Cronquist, Dwarf Canadian horseweed—FI, c; ***G & Z 976***; CUIS: *Norris 3111* [1983]
Eclipta prostrata (L.) L., False daisy—SW, o; ***G & Z 1147***
Elephantopus nudatus A. Gray, Smooth elephantsfoot—DA, o; ***G & Z 1036***; CUIS: *Norris 3049* [1983]
Erechtites hieraciifolius (L.) Raf. ex DC., American burnweed—DA/MH, i; ***G & Z 1143***; CUIS: *Davison s.n.* [1981, 1982], *Norris 3110* [1983]
Erigeron quercifolius Poir., Oakleaf fleabane—FI, c; ***G & Z 725***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1977]
Eupatorium capillifolium (Lam.) Small ex Porter & Britton, Dogfennel—SB/WB, c; ***G & Z 1070***
Eupatorium compositifolium Walter, Yankeeweed—DA, o; ***G & Z 1105***
Eupatorium leptophyllum DC., Falsefennel—PS, r; ***Z 1270***
Eupatorium mohrii Greene, Mohr's thoroughwort—PO/SC, o; ***Z 1285***
Eupatorium serotinum Michx., Lateflowering thoroughwort—SW, i; ***G & Z 1151***
Euthamia caroliniana (L.) Greene ex Porter & Britton, Slender flattop goldenrod—DA, o; ***G & Z 1137***
**Facelis retusa* (Lam.) Sch. Bip., Annual trampweed, [NV]—DA, ab?; CUIS: *Hunt s.n.* [2004]
Gaillardia aestivalis (Walter) H. Rock, Lanceleaf blanketflower—PO, o; ***G & Z 1171***; CUIS: *Grumbine s.n.* [1983]
Gamochaeta antillana (Urban) Anderberg, Caribbean purple everlasting—FI, o; ***G & Z 739*** [UNI]; CUIS: *Bratton s.n.* [1983] [*Gamochaeta falcata* (Lam.) Cabrera, misapplied, as listed in Wunderlin and Hansen (2003); see Nesom (2006) and Wunderlin and Hansen (2007).]
Gamochaeta pensylvanica (Willd.) Cabrera, Pennsylvania everlasting—FI, i; ***G & Z 741***
Gamochaeta purpurea (L.) Cabrera, Spoonleaf purple everlasting—DA/FI?, ab?; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979]
Heterotheca subaxillaris (Lam.) Britton & Rusby, Camphorweed—FI, c, [Br]; ***G & Z 1043***
Hieracium gronovii L., Queendevil—PO, o; ***G & Z 1169***
Iva frutescens L., Bigleaf sumpweed—SB/SM, c; ***G & Z 1077***; CUIS: *Davison s.n.* [1982]
Iva imbricata Walter, Seacoast marshelder—FI, i; ***G & Z 1079***
Krigia virginica (L.) Willd., Virginia dwarfdandelion—DA, i; ***G & Z 869***
Lactuca graminifolia Michx., Grassleaf lettuce—WB, i; ***G & Z 994***
Liatris tenuifolia Nutt. var. *quadriflora* Chapm., Shortleaf gayfeather—PO/SC, r; ***Z 1287***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1981] [Reported endemic to Florida in Wunderlin and Hansen (2003).]
Liatris tenuifolia Nutt. var. *tenuifolia*, Shortleaf gayfeather—PO, o; ***Z 1290***
Melanthera nivea (L.) Small, Snow squarestem—DA, o, [Br]; ***Z 1316***
Mikania scandens (L.) Willd., Climbing hempvine—SB/WB, c; ***G & Z 1055***; CUIS: *Grumbine s.n.* [1983], *Jordan s.n.* [1983], *Norris 3073* [1983]
Pityopsis graminifolia (Michx.) Nutt., Narrowleaf silkgrass—DA, c; ***G & Z 1114***; CUIS: *Davison s.n.* [1983], *Grumbine s.n.* [1983]
Pluchea foetida (L.) DC., Stinking camphorweed—PS, r; ***G & Z 1178***; CUIS: *Bratton s.n.* [1981], *Davison s.n.* [1982], *Finn s.n.* [1977]
Pluchea odorata (L.) Cass., Sweetscent—SB/WB, i; ***G & Z 1061***; CUIS: *Jordan s.n.* [1980], *Norris 3002* [1983]
Pluchea rosea R. K. Godfrey, Rosy camphorweed—SC, o; ***G & Z 1003***
Pseudognaphalium obtusifolium (L.) Hilliard & B. L. Burtt, Rabbit tobacco—DA, i; ***G & Z 1142***
Pterocaulon pychnostachyum (Michx.) Elliott, Blackroot—SC, o; ***G & Z 1005***; CUIS: *Davison s.n.* [1982]
Pyrrhopappus carolinianus (Walter) DC., Carolina desertchicory—DA, i; ***G & Z 825***; CUIS: *Jordan s.n.* [1979]
Solidago odora Aiton var. *chapmanii* (A. Gray) Cronquist, Champman's goldenrod—PO, o; ***G & Z 1154***; CUIS: *Norris 3100* [1983]
Solidago sempervirens L., Seaside goldenrod—FI/SM?, ab?; CUIS: *Davison s.n.* [1984], *Grumbine s.n.* [1983]
Sonchus asper* (L.) Hill, Spiny sowthistle—[CAT 4], DA, r; ***Z 822*
Sonchus oleraceus* L., Common sowthistle—[CAT 4], DA, i; ***G & Z 761*; ***Z 831***; CUIS: *Hunt s.n.* [2004]
Symphyotrichum subulatum (Michx.) G. L. Nesom, Annual saltmarsh aster—SW, i, [Br]; ***G & Z 1149***
Symphyotrichum tenuifolium (L.) G. L. Nesom, Perennial saltmarsh aster—SM, o, [Br]; ***Z 1321***; CUIS: *Davison s.n.* [1982, 1984], *Grumbine s.n.* [1983]
Xanthium strumarium L. var. *glabratum* (DC.) Cronquist, Rough cockleburr—DA, r; ***Z 1029*** [UNI] [Specimen comprises one detached infructescence.]
Youngia japonica* (L.) DC., Oriental false hawksbeard—DA/PO, i–r; ***G & Z 874* [UNI]; ***Z 838***; CUIS: *Hunt s.n.* [2004]

BATACEAE

Batis maritima L., Saltwort—SM, c; ***G & Z 892***

BIGNONIACEAE

Bignonia capreolata L., Crossvine—DA, o–i; ***G & Z 783***, ***919***; CUIS: *Bratton s.n.* [1983], *Jordan s.n.* [1977, 1979, 1980, 1981, 1982], *Turner s.n.* [1983]
Campsis radicans (L.) Seemann, Trumpet creeper—DA, i; ***G & Z 912***; CUIS: *Jordan s.n.* [1981]

BORAGINACEAE

Heliotropium curassavicum L., Seaside heliotrope—DA/SM, o; ***G & Z 1091***; CUIS: *Jordan s.n.* [1980, 1981]

BRASSICACEAE

Cakile edentula (Bigelow) Hook. subsp. *harperi* (Small) Rodman, American searocket—FI, c; ***G & Z 787***; CUIS: *Grumbine s.n.* [1983]
Cardamine pensylvanica Muhl. ex Willd., Pennsylvania bittercress—PS, i; ***G & Z 794***
Descurainia pinnata (Walter) Britton, Western tansymustard—DA, c; ***Z 819***; CUIS: *Davison s.n.* [1982]
Lepidium virginicum L., Virginia pepperweed—DA, c; ***G & Z 880***; CUIS: *Jordan s.n.* [1979]

BROMELIACEAE

Tillandsia setacea Sw., Southern needleleaf—[Con], CULT [MH/PO]; ***Z 1329*** [Cultivated in pots (The Settlement); originally collected by C. Ruckdeschel in 2000 on the ground, dislodged from tree, north of Willow Pond Rd. (C. Ruckdeschel, pers. comm.)]

Tillandsia recurvata (L.) L., Ballmoss—DA, c; ***G & Z 829***; CUIS: *Norris 3130* [1983]

Tillandsia usneoides (L.) L., Spanish moss—PO, o; ***G & Z 1021***; CUIS: *Norris 3109* [1983]

BURMANNIACEAE

Burmannia biflora L., Bluethread—SW, i; ***Z 1030*** [UNI]

CACTACEAE

Opuntia humifusa (Raf.) Raf., Pricklypear—DA, o–r; ***G & Z 836***, ***837***, ***925***

Opuntia pusilla (Haw.) Haw., Cockspur pricklypear—DA, o; ***G & Z 1026***

CAMPANULACEAE

Triodanis perfoliata (L.) Nieuwl., Clasping Venus' looking-glass—DA, i, [Br]; ***G & Z 751***, ***765*** [UNI]; CUIS: *Turner s.n.* [1983]

Wahlenbergia marginata* (Thunb.) A. DC., Southern rock-bell—DA, o; ***G & Z 745*

CANNABACEAE

Celtis laevigata Willd., Sugarberry—DA, i; ***G & Z 886***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983], *Turner s.n.* [1983]

CARYOPHYLLACEAE

Arenaria serpyllifolia* L. subsp. *serpyllifolia*, Thymeleaf sandwort—DA, c; ***G & Z 752*

Cerastium glomeratum* Thuill., Mouse-ear chickweed—DA, i; ***G & Z 778*

Silene antirrhina L., Sleepy catchfly—DA, c; ***G & Z 762***

Stellaria media* (L.) Mill., Common chickweed—SW, c; ***G & Z 860*; CUIS: *Davison s.n.* [1985], *Hunt s.n.* [2004]

CISTACEAE

Helianthemum carolinianum (Walter) Michx., Carolina frostweed—DA, c; ***G & Z 823***; CUIS: *Davison s.n.* [1981], *Jordan s.n.* [1981], *Turner s.n.* [1983]

Helianthemum corymbosum Michx., Pinebarren frostweed—DA, c; ***G & Z 866***; CUIS: *Davison s.n.* [1981, 1985]

Lechea torreyi (Chapm.) Legg. ex Britton, Piedmont pinweed—PO/SC, ab?; CUIS: *Davison s.n.* [1982, 1983]

COLCHICACEAE

Gloriosa superba* L. 'Rothschildiana,' Flamelily—CULT; ***G & Z 1086*; CUIS: *Hunt s.n.* [2004]

COMMELINACEAE

Commelina erecta L., Whitemouth dayflower—DA, o; ***G & Z 929***; CUIS: *Davison s.n.* [1983]

Tradescantia ohiensis Raf., Ohio spiderwort—FI, o; ***G & Z 841***

CONVOLVULACEAE

Calystegia sepium (L.) R. Br., Hedge false bindweed—PS/WB, r; ***G & Z 985***

Cuscuta pentagona Englem., Fiveangled dodder—MH/PO, o; ***G & Z 931***; CUIS: *Davison s.n.* [1982, 1983], *Jordan s.n.* [1979]

Dichondra carolinensis Michx., Carolina ponysfoot—MH/PO, o; ***G & Z 813***; CUIS: *Davison s.n.* [1983]

Ipomoea cordatotriloba Dennst., Tievine—[CAT 4], DA, i; ***G & Z 1093***

Ipomoea imperati (Vahl) Griseb., Beach morning-glory—FI, o; ***G & Z 974***

Ipomoea pandurata (L.) G. Mey., Man-of-the-earth—DA, r; ***Z 1068***

Ipomoea pes-caprae (L.) R. Br., Railroad vine—FI, c; ***G & Z 961***; CUIS: *Davison s.n.* [1984], *Jordan s.n.* [1977]

Stylisma patens (Desr.) Myint, Coastalplain dawnflower—DA/PO, o; ***G & Z 1009***

CORNACEAE

Cornus foemina Mill., Swamp dogwood—PO, o–i; GA: *Krakow 981* [1990]

Nyssa sylvatica Marshall var. *biflora* (Walter) Sarg., Swamp tupelo—PS, i; ***G & Z 1177***; CUIS: *Davison s.n.* [1982, 1985], *Grumbine s.n.* [1983]

CUCURBITACEAE

Melothria pendula L., Creeping cucumber—SB/WB, c; ***G & Z 1054***

CYPERACEAE

Bulbostylis barbata* (Rottb.) C. B. Clarke, Watergrass—DA, c; ***Z 1317*

Bulbostylis ciliatifolia (Elliott) Fernald, Capillary hairsedge—DA/PO/PS, c–o; ***G & Z 1109***; ***Z 1055***, ***1271***, ***1295***

Carex bromoides Schkuhr ex Willd., Bromelike sedge—DA, o, [Br]; ***Z 808***

Carex dasycarpa Muhl., Sandywoods sedge—[Con; Pro], DA, c–i; ***G & Z 777***, ***822***

Carex fissa Mack. var. *aristata* F. J. Herm., Hammock sedge—[Con], SW, o; ***Z 1056***

Carex longii Mack., Long's sedge—SB/WB, c; ***G & Z 733***; CUIS: *Davison s.n.* [1982]

Carex lupulina Muhl. ex Willd., Hop sedge—SW, i, [Br]; ***Z 1032***

Carex muhlenbergii Schkuhr, Muhlenberg's sedge—DA, c; ***G & Z 771***

Carex nigromarginata Schwein. var. *floridana* Schwein., Blackedge sedge—DA/MH, ab?; CUIS: *Davison s.n.* [1985]

Carex stipata Muhl. ex Willd., Owlfruit sedge—SW, o; ***G & Z 861***; CUIS: *Davison s.n.* [1982]

Carex verrucosa Muhl., Warty sedge—MA, ab?; CUIS: *Davison s.n.* [1982]

Cladium jamaicense Crantz, Jamaica swamp sawgrass—MA/PO, i; ***G & Z 1004***; CUIS: *Davison s.n.* [1982, 1983]

Cyperus croceus Vahl, Baldwin's flatsedge—DA/FI, o–i; ***G & Z 883***, ***904***, ***954***; CUIS: *Bratton s.n.* [1981], *Davison s.n.* [1982, 1983], *Diffenderfer s.n.* [1980]

Cyperus distinctus Steud., Swamp flatsedge—SB/WB, o; ***G & Z 1062***

Cyperus erythrorhizos Muhl., Redroot flatsedge—DA/FI, ab?; CUIS: *Jordan s.n.* [1983]

Cyperus esculentus* L., Yellow nutgrass—FI, o; ***G & Z 1058*; CUIS: *Davison s.n.* [1981], *Jordan s.n.* [1979]

Cyperus filiculmis Vahl, Wiry flatsedge—PO, o; ***G & Z 1024***

Cyperus haspan L., Haspan flatsedge—FI/PS, o–i; GA: *Krakow 975* [1990]

Cyperus odoratus L., Fragrant flatsedge—PS, i; ***G & Z 969***; CUIS: *Davison s.n.* [1984]

Cyperus plukenetii Fernald, Plukenet's flatsedge—PO, r; ***G & Z 1173*** [UNI]

Cyperus polystachyos Rottb., Manyspike flatsedge—PS, o–i; ***G & Z 971***, ***981***, ***982***; CUIS: *Davison s.n.* [1983], *Jordan s.n.* [1979]

Cyperus pseudovegetus Steud., Marsh flatsedge—FI/MA, r; GA: *Krakow 963* [1990]

Cyperus retrorsus Chapm., Pinebarren flatsedge—MH/PO/SB/WB, c–o; ***G & Z 1065***, ***1132***, ***1175***; ***Z 1027***

**Cyperus rotundus* L., Nutgrass—FI, o; GA: *Krakow 942* [1990]

Cyperus tetragonus Elliott, Fourangle flatsedge—PO, o; ***Z 1268***

Cyperus virens Michx., Green flatsedge—PS, o; ***G & Z 986***

Dulichium arundinaceum (L.) Britton, Threeway sedge—PO, ab?; CUIS: *Jordan s.n.* [1979]

Eleocharis albida Torr., White spikerush—[Con], SM, ab?; CUIS: *Bratton s.n.* [1983]

Eleocharis equisetoides (Elliott) Torr., Jointed spikerush—MA/PS, ab?; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979, 1981]

Eleocharis fallax Weath., Creeping spikerush—[Con], FI, ab?; CUIS: *Bratton s.n.* [1983]

Eleocharis montevidensis Kunth, Sand spikerush—[Con], FI, ab?; GA: *Krakow 590* [1990]

Eleocharis obtusa (Willd.) Schult., Blunt spikerush—DA/SB/WB, c–o; ***G & Z 729***; ***Z 1302***

Eleocharis robbinsii Oakes, Robbins' spikerush—SC, c; ***Z 1054***; CUIS: *Davison s.n.* [1983]

Eleocharis vivipara Link, Viviparous spikerush—MA, o; ***G & Z 938***; CUIS: *Bratton s.n.* [1981], *Davison s.n.* [1982]

Fimbristylis autumnalis (L.) Roem. & Schult., Slender fimbry—PS, ab?; CUIS: *Jordan s.n.* [1979]

Fimbristylis caroliniana (Lam.) Fernald, Carolina fimbry—PS/SW, c–o; ***G & Z 970***, ***983***; ***Z 1031***; CUIS: *Bratton s.n.* [1983]

Fimbristylis puberula (Michx.) Vahl, Hairy fimbry—DA, o; ***G & Z 989***

Fimbristylis spadicea (L.) Vahl, Marsh fimbry—MH/WB, c; ***G & Z 991***; CUIS: *Bratton s.n.* [1981], *Davison s.n.* [1983], *Jordan s.n.* [1981]

Fuirena pumila (Torr.) Spreng., Dwarf umbrellasedge—PS, c; ***G & Z 1121***; ***Z 1306***

Fuirena squarrosa Michx., Hairy umbrellasedge—PS, ab?; CUIS: *Davison s.n.* [1984]

Lipocarpha micrantha (Vahl) G. C. Tucker, Smallflower halfchaff sedge—FI, ab?; CUIS: *Bratton s.n.* [1983]

Rhynchospora colorata (L.) H. Pfeiff., Starrush whitetop—SB/WB, o; ***G & Z 727***; CUIS: *Davison s.n.* [1983], *Jordan s.n.* [1980, 1981, 1982]

Rhynchospora corniculata (Lam.) A. Gray, Shortbristle horned beaksedge—PS, c; ***Z 1298***

Rhynchospora inexpansa (Michx.) Vahl, Nodding beaksedge—MA, ab?; CUIS: *Davison s.n.* [1982]

Rhynchospora leptocarpa (Chapm. ex Britton) Small, Brownish beaksedge—SW, o, [Br]; ***Z 1928***

Rhynchospora megalocarpa A. Gray, Sandyfield beaksedge—PO, o; ***Z 1265***

Rhynchospora microcephala (Britton) Britton ex Small, Bunched beaksedge—PS, c–r; ***G & Z 1022***, ***1136***

Rhynchospora miliacea (Lam.) A. Gray, Millet beaksedge—PS, c; GA: *Krakow 976* [1990]

Rhynchospora mixta Britton ex Small, Mingled beaksedge—SW, r; ***Z 1048***

Scirpus pungens Vahl, Threesquare bulrush—PS, c; ***G & Z 984***

Scleria oligantha Michx., Littlehead rush—MH/PO, c; ***Z 1025***

Scleria reticularis Michx., Netted nutrush—PS, o; ***Z 1284***

Scleria triglomerata Michx., Tall nutgrass—MH/PO, c–o; ***G & Z 846***, ***933*** [UNI]; CUIS: *Davison s.n.* [1983, 1984]

Websteria confervoides (Poir.) S. S. Hooper, Algal bulrush—[Con], PS, ab?; CUIS: *Davison s.n.* [1982]

DIOSCOREACEAE

Dioscorea bulbifera* L., Air-potato—[CAT 3], DA, r; ***Z 1314* [Possibly cultivated.]

DROSERACEAE

Drosera intermedia Hayne, Water sundew—MA, ab?; CUIS: *Davison s.n.* [1983]

EBENACEAE

Diospyros virginiana L., Common persimmon—DA, r; ***G & Z 1088***; CUIS: *Norris 3047* [1983] [One tree, possibly planted.]

ELAEAGNACEAE

Elaeagnus pungens* Thunb., Silverthorn—[CAT 2], DA, r; ***Z 1310* [Likely persisting from cultivation; not naturalized.]

**Elaeagnus umbellata* Thunb., Silverberry—[CAT 1], DA, ab?; CUIS: *Hunt s.n.* [2004]

ERICACEAE

Bejaria racemosa Vent., Tarflower—PO/SC, c; ***G & Z 941***, ***1000*** [UNI]; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979]

Gaylussacia tomentosa (A. Gray) Small], Blue huckleberry—SC, o; ***Z 1281***; CUIS: *Davison s.n.* [1982] [= *Gaylussacia frondosa* (L.) Torr. & A. Gray ex Torr. var. *tomentosa* A. Gray, as listed in Wunderlin and Hansen (2003). *Gaylussacia frondosa* s.s. is morphologically distinct and occurs disjunctly in Florida only in Santa Rosa County; see Duncan and Brittain (1966) and Luteyn et al. (1996)].

Kalmia hirsuta Walter, Hairy laurel—SC, o; ***Z 1059a***; CUIS: *Davison s.n.* [1983]

Leucothoe racemosa (L.) A. Gray, Swamp doghobble—SC, ab?; CUIS: *Jordan s.n.* [1979]

Lyonia ferruginea (Walter) Nutt., Rusty staggerbush—MH/PS, c; ***G & Z 845***; CUIS: *Bratton s.n.* [1981], *Davison s.n.* [1982, 1983], *Jordan s.n.* [1979, 1981], *Norris 3028* [1983]

Lyonia fruticosa (Michx.) G. S. Torr., Coastalplain staggerbush—SC, i; ***Z 1059*** [UNI]

Lyonia lucida (Lam.) K. Koch, Fetterbush—PO, o; ***G & Z 937a***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983], *Jordan s.n.* [1979]

Monotropa uniflora L., Indianpipe—PO, o; ***Z 812***

Rhododendron simsii* Planch., Indian azalea—CULT; ***G & Z 947*; CUIS: *Hunt s.n.* [2004]

Vaccinium arboreum Marshall, Sparkleberry—MH, c; ***G & Z 816***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983], *Jordan s.n.* [1979, 1981]

Vaccinium corymbosum L., Highbush blueberry—MH, o; ***G & Z 850***; CUIS: *Davison s.n.* [1982]

Vaccinium myrsinites Lam., Shiny blueberry—PO/SC, c; ***G & Z 943***, ***1002***; CUIS: *Davison s.n.* [1982]

Vaccinium stamineum L., Deerberry—PO, o; ***Z 811***; CUIS: *Davison s.n.* [1982, 1983, 1985], *Jordan s.n.* [1979]

EUPHORBIACEAE

Acalypha gracilens A. Gray, Slender threeseed mercury—DA/PO, o; ***G & Z 1159***, ***1174***; CUIS: *Davison s.n.* [1982]

Acalypha ostryifolia Riddell, Pineland threeseed mercury—DA, c; ***G & Z 1034***

Aleurites fordii* Hemsl., Tungoil tree—[CAT 3], DA, o; ***G & Z 853*; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1980, 1981], *Norris 3096* [1983], *Turner s.n.* [1983]

Chamaesyce bombensis (Jacq.) Dugand, Dixie sandmat—FI, C–O; ***G & Z 956***, ***1071***

Chamaesyce hirta (L.) Millsp., Pillpod sandmat—DA, O; ***G & Z 1158***

Chamaesyce hypericifolia (L.) Millsp., Graceful sandmat—DA, I; ***G & Z 922***, ***1029***

Chamaesyce hyssopifolia (L.) Small, Hyssopleaf sandmat—DA, O; ***G & Z 871***

Chamaesyce maculata (L.) Small, Spotted sandmat—DA, O; ***G & Z 950***; CUIS: *Davison s.n.* [1982]

Cnidoscolus stimulosus (Michx.) Engelm. & A. Gray, Tread softly—DA, C; ***G & Z 753***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979]

Croton glandulosus L. var. *glandulosus*, Vente conmigo—DA; I, [Br]; ***G & Z 1032***

Croton punctatus Jacq., Gulf croton—FI, C; ***G & Z 958***; CUIS: *Davison s.n.* [1982]

Manihot grahamii* Hook., Graham's cassava—DA, I; ***Z 1045* [Escaped from cultivation and persisting.]

Poinsettia cyathophora (Murray) Bartl., Paintedleaf—DA, O; ***G & Z 951***; CUIS: *Grumbine s.n.* [1983]

Sapium sebiferum* (L.) Roxb., Popcorntree—[CAT 1], DA/MH, R; ***Z 1332*; CUIS: *Hunt s.n.* [2004]

Stillingia sylvatica L., Queensdelight—DA, C; ***G & Z 803***; CUIS: *Davison s.n.* [1981, 1982, 1983], *Jordan s.n.* [1979, 1981]

Tragia urens L., Wavyleaf noseburn—PO, O; ***G & Z 934***

FABACEAE

Acacia farnesiana* (L.) Willd., Sweet acacia—[Con], WB, O; ***G & Z 738*; CUIS: *Jordan s.n.* [1979]

Aeschynomene viscidula Michx., Sticky jointvetch—[Con], DA, C; ***G & Z 882***; CUIS: *Davison s.n.* [1982]

**Albizia julibrissin* Durazz., Silktree—[CAT 1], DA, ab?; CUIS: *Jordan s.n.* [1979]

Centrosema virginianum (L.) Benth., Spurred butterfly pea—DA, O; ***G & Z 881***; CUIS: *Jordan s.n.* [1979]

Chamaecrista nictitans (L.) Moench var. *nictitans*, Sensitive pea—DA, O; ***G & Z 1106***

Crotalaria pallida* Aiton, Smooth rattlebox—DA/SB, R, [Br]; ***G & Z 876*, ***1033***; ***Z 1023*** [UNI]; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1979], *Norris 3076* [1983]

Crotalaria rotundifolia J. F. Gmel., Rabbitbells—DA/PO, O–I; ***G & Z 748***, ***1170***

Crotalaria spectabilis* Roth, Showy rattlebox—CULT?; ***Z 836* [Two bush-like plants in flower bed adjacent to building (White Cottage); likely persisting from cultivation.]

Desmodium incanum* DC., Zarzabacoa comun—DA, C–O, [Br]; ***G & Z 824*, ***1108***

Desmodium paniculatum (L.) DC., Panicled ticktrefoil—PO/SW, C–O, [Br]; ***Z 1292***, ***1334***

Erythrina herbacea L., Coralbean—DA/SB, I; ***G & Z 875***; CUIS: *Norris 3101* [1983]

Galactia elliottii Nutt., Elliott's milkpea—PO/SC, C; ***G & Z 942***, ***1001***; CUIS: *Davison s.n.* [1982]

Galactia volubilis (L.) Britton, Downy milkpea—DA, O; ***G & Z 877***, ***1039***; CUIS: *Davison s.n.* [1982]

Indigofera caroliniana Mill., Carolina indigo—PO, I; ***G & Z 1019***

Lespedeza hirta (L.) Hornem., Hairy lespedeza—DA, C–O, [Br]; ***G & Z 805***, ***1140*** [UNI], ***1160***; CUIS: *Davison s.n.* [1982, 1983]

Lupinus villosus Willd., Lady lupine—PO, O; ***G & Z 1016***

Medicago lupulina* L., Black medick—DA, I; ***G & Z 781*; CUIS: *Hunt s.n.* [2004]

Medicago minima* (L.) Bartal., Burr medick—DA, I; ***G & Z 780* [UNI]; CUIS: *Davison s.n.* [1982]

Mimosa quadrivalvis L. var. *angustata* (Torr. & A. Gray) Barneby, Sensitive brier—DA, I; ***G & Z 932***

Pediomelum canescens (Michx.) Rydb., Buckroot—PO, O; ***Z 1041***

Rhynchosia difformis (Elliott) DC., Doubleform snoutbean—DA, C–O; ***G & Z 804***, ***1112*** [UNI], ***1181***

Senna obtusifolia* (L.) H. S. Irwin & Barneby—DA, C; ***G & Z 1028*; CUIS: *Hunt s.n.* [2004]

Senna occidentalis* (L.) Link, Septicweed—DA, R; ***Z 1043*

Sesbania herbacea (Mill.) McVaugh, Danglepod—[CAT 2], DA, I, [Br]; ***G & Z 1097***

Sesbania punicea* (Cav.) Benth., Rattlebox—[CAT 2], DA, C–R; ***G & Z 917*, ***920***; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1979]

Strophostyles helvola (L.) Elliott, Trailing fuzzybean—FI/PS, O; ***G & Z 1083***

Tephrosia florida (F. Dietr.) C. E. Wood, Florida hoarypea—DA, C; ***G & Z 928***

Vicia acutifolia Elliott, Fourleaf vetch—PO/PS, ab?; CUIS: *Davison s.n.* [1982, 1983]

Vicia lathyroides* L., Spring vetch—DA, O, [Br]; ***Z 810*

Vicia minutiflora D. Dietr., Pigmyflower vetch—MH/PO, ab?; CUIS: *Davison s.n.* [1984]

Vigna luteola (Jacq.) Benth., Hairypod cowpea—[Con], FI/PS, O; ***Z 1304***

Wisteria sinensis* (Sims) Sweet, Chinese wisteria—[CAT 1], CULT; ***Z 1044*; CUIS: *Hunt s.n.* [2004]

Zornia bracteata J. F. Gmel., Viperina—PO, O; ***G & Z 1011***

FAGACEAE

Quercus austrina Small, Bastard white oak—[Con], PO, I; GA: *Ruckdeschel s.n.* [1999]

Quercus chapmanii Sarg., Chapman's oak—DA, O; ***G & Z 1045***, ***1048***; CUIS: *Davison s.n.* [1982]

Quercus geminata Small, Sand live oak—DA/WB, C–O; ***G & Z 857***, ***1046***

Quercus laevis Walter, Turkey oak—PO, O; ***Z 1300***; CUIS: *Davison s.n.* [1983]

Quercus laurifolia Michx., Laurel oak—PO, R; ***G & Z 937b***; CUIS: *Davison s.n.* [1982]

Quercus margaretta Ashe ex Small, Sand post oak—SC/SW, ab?; CUIS: *Davison s.n.* [1983] [Collection likely represents a hybrid with *Q. margaretta* in the parentage.]

Quercus nigra L., Water oak—SW, R; ***Z 1323***; CUIS: *Davison s.n.* [1983]

Quercus virginiana Mill., Live oak—SB/WB, O; ***G & Z 891***, ***913***; CUIS: *Davison s.n.* [1985], *Norris 3044*, *3087* [1983]

GELSEMIACEAE

Gelsemium sempervirens (L.) W. T. Aiton, Carolina jessamine—PO, I; ***Z 833***; CUIS: *Jordan s.n.* [1980, 1981]

GENTIANACEAE

Sabatia stellaris Pursh, Rose-of-Plymouth—FI/PS, C; ***G & Z 979***; CUIS: *Bratton s.n.* [1983]

GERANIACEAE

Geranium carolinianum L., Carolina cranesbill—DA, ab?; CUIS: *Davison s.n.* [1982]

HALORAGACEAE

Proserpinaca pectinata Lam., Combleaf mermaidweed—SW, C; ***Z 1048***; CUIS: *Davison s.n.* [1982]

HAMAMELIDACEAE

Hamamelis virginiana L., American witchhazel—MH/PO, O; ***Z 1033***; CUIS: *Jordan s.n.* [1977, 1980]

HYDROCHARITACEAE

Limnobium spongia (Bosc) Rich. ex Steud., Frog's-bit—PS, c; ***G & Z 999***; CUIS: *Davison s.n.* [1982]

HYPERICACEAE

Hypericum cistifolium Lam., Roundpod St. John's-wort—PS, i; ***G & Z 1122***; CUIS: *Davison s.n.* [1982, 1983], *Grumbine s.n.* [1983]

Hypericum gentianoides (L.) Britton et al., Pineweed—SB/WB, i; ***G & Z 1053***; CUIS: *Norris 3071* [1983]

Hypericum hypericoides (L.) Crantz, St. Andrew's-cross—SB/WB, o–i; ***G & Z 1052***, ***1125***

Hypericum mutilum L., Dwarf St. John's-wort—SC, o; ***Z 1052***; CUIS: *Davison s.n.* [1982]

Hypericum tetrapetalum Lam., Fourpetal St. John's-wort—SC, o, [Br]; ***Z 1325***; CUIS: *Davison s.n.* [1982, 1983]

HYPOXIDACEAE

Hypoxis juncea Sm., Fringed yellow stargrass—SC, ab?; CUIS: *Davison s.n.* [1982]

ILLICIACEAE

Illicium parviflorum* Michx. ex Vent., Yellow anisetree—DA/SB, o; ***G & Z 949* [Likely persisting from cultivation.]

IRIDACEAE

**Gladiolus* ×*gandavensis* Van Houtte, Gladiolus, [NV]—CULT; CUIS: *Hunt s.n.* [2004]

Sisyrinchium rosulatum* E. P. Bicknell, Annual blue-eyed grass—DA, i; ***G & Z 755*

JUGLANDACEAE

Carya glabra (Mill.) Sweet, Pignut hickory—DA, r; ***G & Z 915***; CUIS: *Davison s.n.* [1982, 1984]

Carya illinoinensis* (Wangenh.) K. Koch, Pecan—CULT; ***G & Z 921*; CUIS: *Hunt s.n.* [2004]

JUNCACEAE

Juncus acuminatus Michx., Tapertip rush—PS, i; ***G & Z 998***

Juncus bufonius L., Toad rush—FI, ab?; CUIS: *Davison s.n.* [1982]

Juncus coriaceus Mack., Leathery rush—SW, o; ***G & Z 1156***

Juncus dichotomus Elliott, Forked rush—FI/PS/SB/WB, c–i; ***G & Z 728***, ***802***, ***997***; CUIS: *Davison s.n.* [1982]

Juncus effusus L. subsp. *solutus* (Fernald & Wiegand) Hämet-Ahti, Soft rush—SW, c; ***Z 1277***; CUIS: *Davison s.n.* [1985]

Juncus marginatus Rostk., Shore rush—FI, ab?; GA: *Krakow 588* [1990]

Juncus megacephalus M. A. Curtis, Bighead rush—SB/WB, c; ***G & Z 726***; CUIS: *Davison s.n.* [1983]

Juncus repens Michx., Lesser creeping rush—PS, o; ***G & Z 1023***

Juncus roemerianus Scheele, Needle rush—SB/SM/WB, c; ***G & Z 730***; ***Z 1319***; CUIS: *Davison s.n.* [1982]

Juncus scirpoides Lam., Needlepod rush—FI/PS, o; ***G & Z 1084***; CUIS: *Davison s.n.* [1984]

JUNCAGINACEAE

Triglochin striata Ruiz & Pav., Arrowgrass—PS/SM, o–i; ***G & Z 980***; ***Z 1322***; CUIS: *Davison s.n.* [1984]

LAMIACEAE

Callicarpa americana L. American beautyberry—DA, i; ***G & Z 884***; CUIS: *Jordan s.n.* [1980]

Dicerandra linearifolia (Elliott) Beth. var. *linearifolia*, Coastalplain balm—PO, c–o; ***G & Z 1172***; ***Z 1289***; CUIS: *Grumbine s.n.* [1983], *Jordan s.n.* [1984], *Norris s.n.* [1983]

Leonotis nepetifolia* (L.) R. Br., Lion's-ear—DA, i; ***G & Z 1145*; CUIS: *Davison s.n.* [1984]

Salvia coccinea P. J. Buchoz ex Etl., Tropical sage—DA, o, [Br]; ***G & Z 763***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979]

Salvia lyrata L., Lyreleaf sage—DA, c; ***G & Z 749***; CUIS: *Jordan s.n.* [1979], *Turner s.n.* [1983]

Trichostema dichotomum L., Forked bluecurls—DA, i; ***G & Z 1107***; CUIS: *Grumbine s.n.* [1983], *Norris s.n.* [1983]

Trichostema setaceum Houtt., Narrowleaf bluecurls—PO, c; ***Z 1291***

LAURACEAE

Cinnamomum camphora* (L.) J. Presl, Camphortree—[CAT 2], CULT; ***G & Z 769*, ***910*** [UNI]; CUIS: *Hunt s.n.* [2004] [Persisting from cultivation but not naturalized.]

Persea borbonia (L.) Spreng. var. *borbonia*, Red bay—DA, o; ***G & Z 895***; CUIS: *Grumbine s.n.* [1983], *Jordan s.n.* [1979, 1980, 1981]

Persea palustris (Raf.) Sarg., Swamp bay—MA, o; ***G & Z 939***; CUIS: *Davison s.n.* [1982]

Sassafras albidum (Nutt.) Nees, Sassafras—MH, i; ***Z 1339*** [Seedlings.]

LENTIBULARIACEAE

Pinguicula pumila Michx., Small butterwort—MA/SW, ab?; CUIS: *Davison s.n.* [1982, 1983]

Utricularia gibba L., Humped bladderwort—PS, o; ***Z 1061***; CUIS: *Davison s.n.* [1983]

Utricularia inflata Walter, Floating bladderwort—PS, o; ***Z 1035***; CUIS: *Davison s.n.* [1984]

Utricularia purpurea Walter, Eastern purple bladderwort—PS, i; ***Z 1034***; CUIS: *Davison s.n.* [1983]

Utricularia subulata L., Zigzag bladderwort—MA, ab?; CUIS: *Davison s.n.* [1982]

LOGANIACEAE

Mitreola petiolata (J. F. Gmel.) Torr. & A. Gray, Lax hornpod—SW, i; ***Z 1333***

LYTHRACEAE

Ammannia latifolia L., Pink redstem—PS, r; ***Z 1305***

Cuphea carthagenensis (Jacq.) J. F. Macbr., Columbian waxweed—SW, o; ***G & Z 1148***

Decodon verticillatus (L.) Elliott, Willow-herb—PS, c; ***G & Z 795*** [UNI], ***1130***; CUIS: *D* [1983], *Jordan s.n.* [1980]

MAGNOLIACEAE

Magnolia grandiflora L., Southern magnolia—DA, i; ***G & Z 908***; CUIS: *Davison s.n.* [1985], *Grumbine s.n.* [1983], *Norris 3072* [1983]

Magnolia virginiana L., Sweetbay—SW, r?; ***G & Z 1150*** [Collection comprises leaf clusters (attached to twigs) blown onto the trail by hurricane winds; tree(s) not seen.]

**Magnolia figo* (Lour.) Figlar [= *Michelia figo* (Lour.) Spreng.], Bananashrub—CULT; CUIS: *Turner s.n.* [1983]

MALVACEAE

Hibiscus grandiflorus Michx., Swamp rosemallow—MA/PS; c; ***G & Z 1128***

Kosteletzkya virginica (L.) C. Presl ex A. Gray, Virginia saltmarsh mallow—PS, o; ***G & Z 1117***; CUIS: *Grumbine s.n.* [1983]

Sida acuta Burm. f., Common wireweed—DA, i; ***G & Z 1089***

Tilia americana L. var. *caroliniana* (P. Mill.) Castigl., Southern basswood—MH, o; ***G & Z 948***
**Triumfetta pentandra* A. Rich., Fivestamen burrbark—DA/CULT?, ab?; GA: *Ruckdeschel s.n.* [1979]

MARANTACEAE

Thalia geniculata L., Alligatorflag—SW, ab?; CUIS: *Jordan s.n.* [1979]

MELASTOMATACEAE

Rhexia mariana L., Pale meadowbeauty—FI/PS, i; ***G & Z 1120***; CUIS: *Davison s.n.* [1982]

MELIACEAE

Melia azedarach* L., Chinaberrytree—[CAT 1], DA, r; ***G & Z 900*; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1981, 1982]

MENYANTHACEAE

Nymphoides aquatica (J. F. Gmel.) Kuntze, Big floatingheart—PS, c; ***Z 1063***; CUIS: *Davison s.n.* [1982]

MOLLUGINACEAE

Mollugo verticillata* L., Indian chickweed—DA, o; ***G & Z 1138*

MORACEAE

Ficus carica* L., Common fig—CULT; ***Z 1327* [UNI]
Ficus pumila* L., Climbing fig—CULT; ***G & Z 770*, ***773***; CUIS: *Hunt s.n.* [2004], *Turner s.n.* [1983]
Morus rubra L., Red mulberry—PO, r; ***Z 1042***

MYRICACEAE

Myrica cerifera L., Southern bayberry—SB/WB, c; ***G & Z 736***; CUIS: *Davison s.n.* [1985]

NELUMBONACEAE

Nelumbo lutea Willd., American lotus—PS, c; CUIS: *Norris 3103* [1983]

NYCTAGINACEAE

Boerhavia diffusa L., Red spiderling—DA, r, [Br]; ***G & Z 1096***

NYMPHAEACEAE

Nymphaea odorata Sol., American white waterlily—PS, c; ***Z 1036***; CUIS: *Davison s.n.* [1982]

OLEACEAE

Forestiera segregata (Jacq.) Krug & Urb., Florida swampprivet—[Con; Pro], DA, i; ***G & Z 889***; CUIS: *Davison s.n.* [1984], *Grumbine s.n.* [1983]
Ligustrum japonicum* Thunb., Japanese privet—[CAT 2], CULT; ***G & Z 833*; CUIS: *Hunt s.n.* [2004]
Ligustrum lucidum* W. T. Aiton, Glossy privet—[CAT 3], CULT; ***G & Z 914*; CUIS: *Hunt s.n.* [2004]
**Ligustrum sinense* Lour., Chinese privet—[CAT 1], CULT; CUIS: *Hunt s.n.* [2004]
Olea europea* L., Common olive—CULT; ***G & Z 873*; CUIS: *Hunt s.n.* [2004], *Turner s.n.* [1983]
Osmanthus americanus (L.) Benth. & Hook f. ex A. Gray, Wild olive—MH, o; ***G & Z 1027***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983]

ONAGRACEAE

Gaura angustifolia Michx., Southern beeblossom—DA, o, [Br]; ***G & Z 865***; CUIS: *Davison s.n.* [1982]
Ludwigia arcuata Walter, Piedmont primrosewillow—PS, c–o; ***G & Z 844***, ***1162***; CUIS: *Davison s.n.* [1982]
Ludwigia lanceolata Elliott, Lanceleaf primrosewillow—SW, i; ***Z 1278*** [UNI]
Ludwigia leptocarpa (Nutt.) H. Hara, Anglestem primrosewillow—PS, o; ***G & Z 1126***
Ludwigia maritima R. M. Harper, Seaside primrosewillow—SB/WB, i; ***G & Z 993***, ***1050***
Ludwigia palustris (L.) Elliott, Marsh seedbox—PS, o; ***G & Z 842***
Oenothera humifusa Nutt., Seabeach eveningprimrose—FI/DA, c–o, [Br]; ***G & Z 723***, ***885***; ***Z 823***
Oenothera laciniata Hill, Cutleaf eveningprimrose—DA/FI, ab?; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979]

ORCHIDACEAE

Corallorhiza wisteriana Conrad, Spring coralroot—MH, o; ***Z 818***
Epidendrum conopseum R. Br., Green-fly orchid—[Con; Pro], MH, r; ***Z 1024*** [UNI]; CUIS: *Jordan s.n.* [1980]
Habenaria repens Nutt., Waterspider false reinorchid—PS, o; ***Z 1062***; CUIS: *Davison s.n.* [1984]
Spiranthes praecox (Walter) S. Watson, Greenvein ladies-tresses—MH, ab?; CUIS: *Bratton s.n.* [1983], *Davison s.n.* [1982]

OROBANCHACEAE

Agalinis fasciculata (Elliott) Raf., Scaleleaf false foxglove—FI/PS, r; ***G & Z 1081***; CUIS: *Jordan s.n.* [1981], *Norris 3053* [1983]
Agalinis maritima (Raf.) Raf., Saltmarsh false foxglove—SM, c, [Br]; ***Z 1320***
Agalinis obtusifolia Raf., Tenlobe false foxglove—DA, i; ***G & Z 1111***
Buchnera americana L., American bluehearts—[Con], FI, o; ***G & Z 786***

OXALIDACEAE

Oxalis corniculata L., Common yellow woodsorrel—DA, c; ***G & Z 863***; CUIS: *Davison s.n.* [1982], *Querin s.n.* [1983]
Oxalis lyonii Pursh, Tufted yellow woodsorrel—DA/PO, c; ***Z 824***, ***828***
Oxalis rubra* A. St.-Hil., Windowbox woodsorrel—DA, i; ***G & Z 766*; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1979, 1982]

PAPAVERACEAE

Argemone albiflora Hornem., Bluestem pricklypoppy—DA, i; ***G & Z 757***
Argemone mexicana L., Mexican pricklypoppy—DA, i; ***G & Z 756***

PASSIFLORACEAE

Passiflora lutea L., Yellow passionflower—MH, o; ***G & Z 1100***; CUIS: *Grumbine s.n.* [1983]

PENTAPHYLACACEAE

Ternstroemia gymnanthera* (Wight & Arn.) T. Sprague, Cleyera—CULT; ***Z 839*

PHYLLANTHACEAE

Phyllanthus abnormis Baill., Drummond's leafflower—FI, o; ***G & Z 1044***
Phyllanthus tenellus* Roxb., Mascarene island leafflower—DA, o; ***G & Z 868*; CUIS: *Hunt s.n.* [2004]
Phyllanthus urinaria* L., Chamber bitter—SW, o; ***Z 1326*

PHYTOLACCACEAE

Phytolacca americana L. var. *rigida* (Small) Caulkins & Wyatt, American pokeweed—WB, r; ***G & Z 960***; CUIS: *Davison s.n.* [1972], *Jordan s.n.* [1979] [This distinct geographical race, previously included in the flora by Wunderlin (1998) but not in the recent edition (Wunderlin and Hansen 2003), merits recognition (see Caulkins and Wyatt 1990).]

PLANTAGINACEAE (VERONICACEAE)

Bacopa monnieri (L.) Pennell, Herb-of-grace—PS, o; ***G & Z 963***; CUIS: *Turner s.n.* [1983]

Gratiola ramosa Walter, Branched hedgehyssop—MH, ab?; CUIS: *Davison s.n.* [1982]

Linaria canadensis (L.) Chaz., Canada toadflax—DA, o; ***G & Z 747***

Micranthemum umbrosum (J. F. Gmel.) S. F. Blake, Shade mudflower—SC, i; ***Z 1053***; CUIS: *Davison s.n.* [1982]

Plantago lanceolata* L., English plantain—DA, o, [Br]; ***G & Z 867*; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1979]

Plantago virginica L., Virginia plantain—FI, o; ***G & Z 721***; CUIS: *Jordan s.n.* [1979]

Veronica arvensis* L., Corn speedwell—DA, o; ***Z 807*; CUIS: *Davison s.n.* [1985]

PLATANACEAE

Platanus occidentalis L., American sycamore—MH, o; ***G & Z 809***; CUIS: *Davison s.n.* [1982], *Hunt s.n.* [2004]

PLUMBAGINACEAE

Limonium carolinianum (Walter) Britton, Carolina sealavender—SM, i; ***G & Z 1076***; CUIS: *Jordan s.n.* [1979, 1981]

POACEAE

Andropogon glomeratus (Walter) Britton et al. var. *glaucopis* (Elliott) C. Mohr, Purple bluestem—FI/WB, o; ***G & Z 1134***

Andropogon glomeratus (Walter) Britton et al. var. *glomeratus*, Bushy bluestem—FI, i; ***G & Z 1072***

Andropogon gyrans Ashe var. *gyrans*, Elliott's bluestem—PO, c; ***Z 1276***; CUIS: *Davison s.n.* [1981]

Andropogon ternarius Michx., Splitbeard bluestem—PO, o; ***Z 814***

Andropogon virginicus L. var. *glaucus* Hack., Chalky bluestem—PO, c; ***Z 1275***

Aristida lanosa Muhl. ex. Elliott, Woollysheath threeawn—PO, i; ***Z 1267***; CUIS: *Davison s.n.* [1981]

Aristida longespica Poir. var. *geniculata* (Raf.) Fernald, Red threeawn—PO, i; ***Z 1273***

Aristida purpurascens Poir. var. *purpurascens*, Arrowfeather threeawn—DA/PO, c–o; ***G & Z 1110***, ***1176***

Aristida purpurascens Poir. var. *virgata* (Trin.) Allred, Slender arrowfeather threeawn—PO, i; ***Z 813***

Aristida spiciformis Elliott, Bottlebrush threeawn—PO, c; ***Z 1274***; CUIS: Davison [1983]

Arundo donax* L., Giant reed—[CAT 3], CULT; ***G & Z 839*; CUIS: *Hunt s.n.* [2004]

Bambusa multiplex* (Lour.) Raeusch. ex Schult. & Schult. f., Hedge bamboo—CULT; ***Z 837*; CUIS: *Hunt s.n.* [2004]

Bromus catharticus* Vahl, Rescuegrass—DA, o; ***G & Z 774*; CUIS: *Davison s.n.* [1982]

Cenchrus echinatus L., Southern sandbur—FI/WB, c–o; ***G & Z 977***, ***1116***

Cenchrus spinifex Cav., Coastal sandbur—DA, c; ***G & Z 890***, ***1040***

Cenchrus tribuloides L., Sanddune sandbur—FI, c; ***G & Z 1163***; CUIS: *Davison s.n.* [1981, 1982]

Chasmanthium laxum (L.) Yates var. *sessilifolium* (Poir.) Wipff & S. D. Jones [= *Chasmanthium sessilifolium* (Poir.) Yates], Longleaf woodoats—PO, c; ***G & Z 1015***; CUIS: *Davison s.n.* [1984]

Cymbopogon citratus* (DC. ex Nees) Stapf, Lemon grass—CULT; ***Z 1330*

Cynodon dactylon* (L.) Pers., Bermudagrass—[CAT 2], DA, c, [Br]; ***G & Z 903*; CUIS: *Bratton s.n.* [1982], *Hunt s.n.* [2004], *Jordan s.n.* [1979]

Dactyloctenium aegyptium* (L.) Willd. ex Asch. & Schweinf., Durban crowfootgrass—DA, i, [Br]; ***G & Z 1183*

Dichanthelium aciculare (Desv. ex Poir.) Gould & C. A. Clark, Needleaf witchgrass—PO/SC, ab?; CUIS: *Davison s.n.* [1982]

Dichanthelium commutatum (Schult.) Gould, Variable witchgrass—DA, o; ***G & Z 821***, ***826***

Dichanthelium dichotomum (L.) Gould, Cypress witchgrass—PO, ab?; CUIS *Davison s.n.* [1982]

Dichanthelium ensifolium (Baldwin ex Elliott) Gould, Cypress witchgrass—PO, ab?; CUIS: *Davison s.n.* [1982]

Dichanthelium leucothrix (Nash) Freckmann, Rough witchgrass—MA/PO, ab?; CUIS: *Bratton s.n.* [1981], *Davison s.n.* [1982]

Dichanthelium oligosanthes (Schult.) Gould, Heller's witchgrass—PO, c; ***Z 1324***

Dichanthelium portoricense (Desv. ex Ham.) B. F. Hansen & Wunderlin, Hemlock witchgrass—MH, c; ***G & Z 847***; CUIS: *Davison s.n.* [1982]

Dichanthelium strigosum (Muhl. ex Elliott) Frechmann var. *leucoblepharis* (Trin.) Freckmann, Roughhair witchgrass—MH/PO, c; ***G & Z 930***; CUIS: *Bratton s.n.* [1981]

Digitaria ciliaris (Retz.) Koeler, Southern crabgrass—DA, c; ***G & Z 1031***

Digitaria serotina (Walter) Michx., Blanket crabgrass—MA/PS, ab?; CUIS: *Davison s.n.* [1982]

Distichlis spicata (L.) Greene, Saltgrass—SM, c; ***G & Z 896***; CUIS: *Bratton s.n.* [1981], *Davison s.n.* [1982], *Jordan s.n.* [1979]

Echinochloa crus-galli* (L.) P. Beauv., Barnyardgrass—SW, r; ***G & Z 1152* [UNI]; CUIS: *Davison s.n.* [1981]

Echinochloa muricata (P. Beauv.) Fernald, Rough barnyardgrass—MH/PS, o–i, [Br]; ***G & Z 848***, ***967*** [UNI]

Echinochloa walteri (Pursh) A. Heller, Coast cockspur—PS, i; ***G & Z 1124***

Eleusine indica* (L.) Gaertn., Indian goosegrass—DA, o; ***G & Z 1139*; CUIS: *Davison s.n.* [1982]

Eragrostis amabilis* (L.) Wight & Arn. ex Hook. & Arn., Feather lovegrass—DA, i; ***G & Z 1182*

Eragrostis elliottii S. Watson, Elliott's lovegrass—FI/PO, c–i; ***G & Z 1060***, ***1118***; ***Z 1264***

Eragrostis pectinacea (Michx.) Nees ex Jedwabn. var. *pectinacea*, Tufted lovegrass—FI, ab?; CUIS: *Davison s.n.* [1983]

**Eragrostis pilosa* (L.) P. Beauv., Indian lovegrass—FI, ab?; CUIS: *Fitch s.n.* [1983]

Eragrostis secundiflora J. Presl subsp. *oxylepis* (Torr.) S. D. Koch, Red lovegrass—FI/PO/SC, c–o; ***G & Z 957***, ***1059***; ***Z 1288***

Eremochloa ophiuroides* (Munro) Hack., Centipedegrass—FI, c; ***G & Z 1057*; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1980], *Querin s.n.* [1983]

Eustachys petraea (Sw.) Desv., Pinewoods fingergrass—FI/PO, c–i; ***G & Z 740***, ***955***; ***Z 1294***; CUIS: *Jordan s.n.* [1979]

Melica mutica Walter, Twoflower melicgrass—MH/PO, c; ***G & Z 811***

Muhlenbergia capillaris (Lam.) Trin. var. *filipes* (M. A. Curtis) Chapm. ex Beal [= *Muhlenbergia sericea* (Michx.) P. M. Peterson], Gulf hairawn muhly—FI/PS, o; ***G & Z 1164***

Muhlenbergia capillaris (Lam.) Trin. var. *trichopodes* (Elliott) Vasey [= *Muhlenbergia expansa* (Poir.) Trin.], Cutover Muhly—DA, o; ***G & Z 1102***

Oplismenus hirtellus (L.) P. Beauv., Woodsgrass—MH/PO, c; ***G & Z 814***

Panicum amarum Elliott, Bitter panicgrass—FI, o; ***G & Z 1082***

Panicum anceps Michx., Beaked panicum—FI/SB/WB, c–o; ***G & Z 1067***, ***1068***, ***1135***

Panicum hemitomon Schult., Maidencane—PS, c; ***Z 1269***

Panicum repens* L., Torpedograss—[CAT 3], PO, o; ***Z 1266*

Panicum rigidulum Bosc ex Nees, Redtop panicum—PS, o–i; GA: *Krakow 971* [1990]

Panicum verrucosum Muhl., Warty panicgrass—PS, c; ***G & Z 1127***; ***Z 1283***, ***1336***; CUIS: *Norris 3113* [1983]

Paspalum notatum* Flüggé var. *saurae* Parodi, Bahiagrass—[CAT 2], DA, c–o; ***G & Z 906*, ***911***; CUIS: *Davison s.n.* [1982], *Hunt s.n.* [2004], *Jordan s.n.* [1979]

Paspalum setaceum Michx., Thin paspalum—DA/FI, c–o; ***G & Z 905***, ***1167***; CUIS: *Bratton s.n.* [1983]

Paspalum urvillei* Steud., Vaseygrass—[CAT 3], SC, r; ***G & Z 1006* [UNI]; CUIS: *Davison s.n.* [1984]

Paspalum vaginatum Sw., Seashore paspalum—FI/PS, o; ***G & Z 1165***

Phyllostachys aurea* Carriére ex Riviére & C. Riviére, Golden bamboo—[CAT 2], DA, o; ***G & Z 819*; CUIS: *Hunt s.n.* [2004]

Piptochaetium avenaceum (L.) Parodi, Blackseed needlegrass—DA, o; ***G & Z 776***; CUIS: *Davison s.n.* [1982, 1984]

Poa annua* L., Annual bluegrass—[CAT 3], DA, c; ***G & Z 772*; CUIS: *Davison s.n.* [1985], *Hunt s.n.* [2004]

**Pseudosasa japonica* (Siebold & Zucc. ex Steud.) Makino ex Nakai, Arrow bamboo—CULT; CUIS: *Hunt s.n.* [2004]

Sacciolepis striata (L.) Nash, American cupscale—PS/SB/WB, c; ***G & Z 1063***; ***Z 1295***

Setaria corrugata (Elliott) Schult., Coastal bristlegrass—PS, ab?; CUIS: *Davison s.n.* [1984]

Setaria faberi* Herrm., Japanese bristlegrass—[CAT 4], DA, i; ***G & Z 1099*

Setaria magna Griseb., Giant bristlegrass—SB/WB, i; ***G & Z 1066***; CUIS: *Davison s.n.* [1984], *Norris 3099* [1983]

Setaria parviflora (Poir.) Kerguélen, Yellow bristlegrass—DA/FI/PS, o–i; ***G & Z 1035***, ***1166***; ***Z 1282***; CUIS: *Davison s.n.* [1982]

Spartina alterniflora Loisel., Saltmarsh cordgrass—SM, c; ***G & Z 1073***

Spartina bakeri Merr., Sand cordgrass—PS, c; ***G & Z 851***; CUIS: *Davison s.n.* [1982, 1983]

Spartina patens (Aiton) Muhl., Marshhay cordgrass—FI, i; ***G & Z 1119***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979]

Sphenopholis obtusata (Michx.) Scribn., Prairie wedgescale—FI/DA, c–i, [Br]; ***G & Z 724***, ***775***, ***827***

Sporobolus compositus (Poir.) Merr. var. *clandestinus* (Biehler) Wipff & S. D. Jones, Hidden dropseed—PO, c; ***Z 1293***

Sporobolus indicus* (L.) R. Br. var. *indicus*, Smutgrass—DA, o–i; ***G & Z 988*, ***1037***; CUIS: *Hunt s.n.* [2004]

Sporobolus junceus (P. Beauv.) Kunth, Pineywoods dropseed—PO, ab?; GA: *Ruckdeschel s.n.* [2004]

Sporobolus virginicus (L.) Kunth, Seashore dropseed—SM, c; ***G & Z 1078***; CUIS: *Jordan s.n.* [1979]

Stenotaphrum secundatum* (Walter) Kuntze, St. Augustinegrass—CULT; ***G & Z 1092*; CUIS: *Diffenderfer s.n.* [1980], *Jordan s.n.* [1979]

Tridens flavus (L.) Hitchc. var. *chapmannii* (Small) Shinners, Chapman's lovegrass—DA, o; ***G & Z 1087***

Triplasis americana P. Beauv., Perennial sandgrass—DA, c; ***Z 1301***

Triplasis purpurea (Walter) Champm., Purple sandgrass—FI/WB, c; ***Z 1309***

Tripsacum dactyloides (L.) L., Eastern gamagrass—DA, ab?; CUIS: *Jordan s.n.* [1979]

Uniola paniculata L., Seaoats—FI, c; ***G & Z 1074***

Vulpia myuros* (L.) C. C. Gmel., Rattail fescue—DA/SC, o; ***G & Z 1007*

Vulpia octoflora (Walter) Rydb., Sixweeks fescue—DA, o–i; ***G & Z 744***, ***779***; CUIS: *Davison s.n.* [1982, 1985]

POLYGALACEAE

Polygala grandiflora Walter, Showy milkwort—DA, i; ***G & Z 820***; CUIS: *Davison s.n.* [1983]

Polygala lutea L., Orange milkwort—MA/SC, ab?; CUIS: *Davison s.n.* [1983]

POLYGONACEAE

Antigonon leptopus* Hook. & Arn., Coral vine—CULT; ***Z 1315*

Polygonella gracilis Meisn., Tall jointweed—PO, c, [Br]; ***Z 1272***

**Polygonum caespitosum* Blume, Oriental lady's-thumb—[CAT 4], SW, ab?; CUIS: *Hunt s.n.* [2004]

Polygonum densiflorum Meisn., Denseflower knotweed—PS, o; ***G & Z 995***

Polygonum hirsutum Walter, Hairy smartweed—PS, c; ***G & Z 1123***; CUIS: *Davison s.n.* [1982]

Polygonum hydropiperoides Michx., Mild waterpepper—PS, o; ***Z 1297***

Polygonum punctatum Elliott, Dotted smartweed—SB/WB, c; ***G & Z 1056***; CUIS: *Davison s.n.* [1982], *Grumbine s.n.* [1983]

Polygonum scandens L. var. *cristatum* (Engelm. & A. Gray) Gleason, Climbing false buckwheat—SB/WB, c; ***G & Z 1051***

Polygonum setaceum Baldwin, Bog smartweed—SW, o; ***G & Z 1155***

Rumex hastatulus Baldwin, Heartwing dock—FI, c; ***G & Z 797***

PONTEDERIACEAE

Pontederia cordata L., Pickerelweed—PS, c–o, [Br]; ***G & Z 965***; ***Z 1065***; CUIS: *Jordan s.n.* [1979], *Norris 3034* [1983]

PORTULACACEAE

Portulaca oleracea L., Little hogweed—DA, r; ***Z 1057*** [UNI] [A few plants growing in abandoned flower pot; likely persisting from cultivation.]

Portulaca pilosa L., Pink purslane—DA, o; ***G & Z 1095***

RANUNCULACEAE

Clematis reticulata Walter, Netleaf leather-flower—PO, r; ***G & Z 1012***

RHAMNACEAE

Berchemia scandens (Hill) K. Koch, Alabama supplejack—SC, r; ***Z 1051***; CUIS: *Jordan s.n.* [1981]

Sageretia minutiflora (Michx.) C. Mohr, Smallflower mock buckthorn—[Con; Pro], PO, ab?; GA: *Krakow 980* [1990]

ROSACEAE

Photinia pyrifolia (Lam.) K. R. Robertson & J. B. Phipps [= *Aronia arbutifolia* (L.) Pers.], Red chokeberry—PO/SC, ab?; CUIS: *Davison s.n.* [1983]

Prunus caroliniana (Mill.) Aiton, Carolina laurelcherry—DA, o–i; ***G & Z 828***, ***887***; CUIS: *Davison s.n.* [1982]

Prunus serotina Ehrh. var. *serotina*, Black cherry—MH, i; ***G & Z 812***

Pyracantha koidzumii* (Hayata) Rehder, Formosa fire-thorn—CULT; ***G & Z 918*; CUIS: *Hunt s.n.* [2004]
**Rosa laevigata* Michx., Cherokee rose—[CAT 4], CULT?; CUIS: *Hunt s.n.* [2004]
Rubus argutus Link, Sawtooth blackberry—MH, c; ***G & Z 852***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1981]
Rubus cuneifolius Pursh, Sand blackberry—MH/PO, ab?; CUIS: *Davison s.n.* [1982, 1983], *Jordan s.n.* [1981]
Rubus trivialis Michx., Southern dewberry—DA, c, [Br]; ***G & Z 754***; CUIS: *Querin s.n.* [1983]

RUBIACEAE

Cephalanthus occidentalis L., Common buttonbush—PS, o; ***G & Z 966***; CUIS: *Jordan s.n.* [1980, 1981]
Diodia teres Walter, Poor joe—DA, c; ***G & Z 1030***
Diodia virginiana L., Virginia buttonweed—SB/WB; i; ***G & Z 953***
Galium obtusum Bigelow, Bluntleaf bedstraw—SB/WB, c; ***G & Z 732***; CUIS: *Davison s.n.* [1982, 1983]
Galium pilosum Aiton, Hairy bedstraw—PO/WB, c–o; ***G & Z 996***, ***1014***; CUIS: *Davison s.n.* [1983]
Houstonia procumbens (J. F. Gmel.) Standl., Innocence—DA, o; ***G & Z 750***; CUIS: *Turner s.n.* [1983]
Mitchella repens L., Partridgeberry—MH/PO, i; ***Z 1058***
Oldenlandia corymbosa* L., Flattop mille graines—PO/SC, o; ***Z 1286*; CUIS: *Hunt s.n.* [2004]
Oldenlandia uniflora L., Clustered mille graines—PS, c; ***G & Z 1133***; CUIS: *Davison s.n.* [1982]
Pentodon pentandrus (Schumach. & Thonn.) Vatke, Hale's pentodon—[Con], PS, c; GA: *Krakow 968* [1990]
Richardia brasiliensis* Gomes, Tropical Mexican clover—DA, o; ***G & Z 1047*

RUPPIACEAE

Ruppia maritima L., Wigeongrass—PS, o; ***Z 1337***

RUTACEAE

Citrus ×aurantium* L., Citrus hybrid—DA, r; ***G & Z 1025*; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1981] [One tree: escaped and/or persisting from cultivation; not naturalized.]
Zanthoxylum clava-herculis L., Hercules-club—DA/WB, c; ***G & Z 742***, ***898*** [UNI]

SALICACEAE

Salix caroliniana Michx., Carolina willow—SM/PS, o; ***G & Z 720***, ***789***

SANTALACEAE

Phoradendron leucarpum (Raf.) Reveal & M. C. Johnst., Oak mistletoe—PO, r; ***G &Z 1153***; CUIS: *Norris 3128* [1983]

SAPINDACEAE

Acer rubrum L., Red maple—PS, r; ***G & Z 1020***; CUIS: *Davison s.n.* [1985]
Aesculus pavia L., Red buckeye—DA, r; ***G & Z 832***
Sapindus saponaria L., Soapberry—[Con; Pro], MH/SB, r?; GA: *Krakow 574* [1990]

SAPOTACEAE

Sideroxylon tenax L., Tough bully—DA/WB, o–i; ***G & Z 916***, ***992*** [UNI]; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979], *Turner s.n.* [1983]

SAURURACEAE

Saururus cernuus L., Lizard's tail—PS, o; ***G & Z 791***, ***968***

SCROPHULARIACEAE

Verbascum thapsus* L, Common mullein—[CAT 4], DA, c; ***G & Z 758* [UNI]; ***Z 1022***; CUIS: *Davison s.n.* [1982], *Hunt s.n.* [2004], *Jordan s.n.* [1979]

SIMAROUBACEAE

Ailanthus altissima* (Mill.) Swingle, Tree-of-heaven—[CAT 1], DA, r; ***G & Z 1042*; CUIS: *Hunt s.n.* [2004]

SMILACACEAE

Smilax auriculata Walter, Earleaf greenbrier—DA/FI, c–o; ***G & Z 799***, ***897*** [UNI]; CUIS: *Davison s.n.* [1981, 1982], *Grumbine s.n.* [1983], *Jordan s.n.* [1980]
Smilax bona-nox L., Saw greenbrier—PO/SB/WB, o–i; ***G & Z 735***; ***Z 821***; CUIS: *Davison s.n.* [1982]
Smilax glauca Walter, Cat greenbrier—FI, i; ***G & Z 801***
Smilax laurifolia L., Laurel greenbrier—PO, o; ***G & Z 936***
Smilax tamnoides L., Bristly greenbrier—PO, o; ***G & Z 1018*** [UNI]; ***Z 1040***

SOLANACEAE

Datura stramonium L., Jimsonweed—DA, o; GA: *Worthington 228* [1974]
Physalis walteri Nutt., Walter's groundcherry—FI, c; ***G & Z 734***; CUIS: *Jordan s.n.* [1979, 1981]
Solanum americanum Mill., American black nightshade—SW, c; ***G & Z 1146***
Solanum carolinense L. var. *carolinense*, Carolina horse-nettle—DA, c; ***G & Z 1085***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1979]

SYMPLOCACEAE

Symplocos tinctoria (L.) L'Hér., Common sweetleaf—DA, o; ***G & Z 854***, ***1141*** [UNI]; ***Z 820***; CUIS: *Davison s.n.* [1983], *Jordan s.n.* [1981]

TAMARICACEAE

Tamarix parviflora* DC. [*T. gallica* L., misapplied], Small-flower tamarisk—[CAT 2], FI, o; ***G & Z 952*; CUIS: *Hunt s.n.* [2004], *Jordan s.n.* [1979]

TETRACHONDRACEAE

Polypremum procumbens L., Rustweed—FI, c; ***G & Z 796***; CUIS: *Bratton s.n.* [1983], *Jordan s.n.* [1980]

THEACEAE

Camellia japonica* L., Camellia—CULT; ***Z 825*; CUIS: *Hunt s.n.* [2004]
Gordonia lasianthus (L.) J. Ellis, Loblolly bay—SW, ab?; *Davison s.n.* [1983, 1985]

THEOPHRASTACEAE (PRIMULACEAE s.l.)

Samolus valerandi L. subsp. *parviflorus* (Raf.) Hultén, Pineland pimpernel—PS, c; ***G & Z 792***; CUIS: *Davison s.n.* [1982]

TYPHACEAE

Typha domingensis Pers. [*T. angustifolia* L., misapplied], Southern cattail—PS, c; ***G & Z 987***
Typha latifolia L., Broadleaf cattail—PS, c; ***G & Z 973***

ULMACEAE

Ulmus americana L., American elm—SW, ab?; CUIS: *Davison s.n.* [1985]

URTICACEAE

Boehmeria cylindrica (L.) Sw., False nettle—SB/WB, c; ***G & Z 1049***

Parietaria floridana Nutt., Florida pellitory—SB/WB, c; ***G & Z 731***; CUIS: *Davison s.n.* [1982]

Pilea microphylla (L.) Liebm., Artillery plant—DA, c, [Br]; ***G & Z 785***

VERBENACEAE

**Lantana camara* L., Lantana—[CAT 3], DA, ab?; CUIS: *Hunt s.n.* [2004]

Phyla nodiflora (L.) Greene, Turkey tangle fogfruit—FI, o; ***G & Z 788***; CUIS: *Norris 3007* [1983]

Verbena scabra Vahl., Sandpaper vervain—DA, o; ***G & Z 923***

VIOLACEAE

Viola lanceolata L., Bog white violet—MA/SW, ab?; CUIS: *Davison s.n.* [1982, 1985]

Viola palmata L., Early blue violet—DA, o, [Br]; ***Z 809***; CUIS: *Davison s.n.* [1982, 1985]

Viola sororia Willd., Common blue violet—MH, o; ***Z 816***; CUIS: *Davison s.n.* [1985]

VITACEAE

Ampelopsis arborea (L.) Koehne, Peppervine—DA, o; ***G & Z 878***

Parthenocissus quinquefolia (L.) Planch., Virginia creeper—DA, c–o; ***G & Z 872***, ***899***; CUIS: *Davison s.n.* [1982], *Jordan s.n.* [1980]

Vitis aestivalis Michx., Summer grape—SB/DA, c; ***G & Z 759***, ***888*** [UNI]; CUIS: *Davison s.n.* [1982, 1983], *Jordan s.n.* [1979]

Vitis palmata Vahl, Catbird grape— DA, r; GA: *Krakow 978* [1990]

Vitis rotundifolia Michx., Muscadine—DA, c; ***G & Z 768***; CUIS: *Jordan s.n.* [1979], *Norris 3106* [1983], *Turner s.n.* [1983]

Vitis vulpina L., Frost grape—DA, o; ***G & Z 870***; CUIS: *Davison s.n.* [1983]

XYRIDACEAE

Xyris elliottii Chapm., Elliott's yelloweyed grass—MA, ab?; CUIS: *Davison s.n.* [1982]

Xyris platylepis Chapm., Tall yelloweyed grass—SW, r, [Br]; ***Z 1279***

ZINGIBERACEAE

Alpinia zerumbet* (Pers.) B. L. Burtt & R. M. Sm., Shell-flower—CULT; ***Z 835*

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APPENDIX I The following 59 additional species have been reported from NPS-controlled areas of Cumberland Island National Seashore in unpublished/unvouchered reports (see Krakow and Ruckdeschel 1991) and/or on labels removed from deaccessioned collections (specimens previously discarded) at CUIS herbarium. Where applicable, the name on the original lists/labels (in brackets) follows the current accepted synonym. Although many of these species may presently occur (or may have occurred) on the island, a significant percentage of these names likely represent misidentifications.

APOCYNACEAE: *Asclepias longifolia* Michx.; *Asclepias verticillata* L.; *Cynanchum angustifolium* Pers.
ARACEAE: *Arisaema triphyllum* (L.) Schott; *Colocasia esculenta* (L.) Schott; *Wolffia columbiana* H. Karst.; *Wolffiella gladiata* (Hegelm.) Hegelm. [*W. floridana* (Donn. Sm.) C. H. Thompson]
ASTERACEAE: *Chrysopsis mariana* (L.) Elliott; *Cirsium repandum* Michx.; *Helianthus argophyllus* Torr. & A. Gray; *Oclemena reticulata* (Pursh) G. L. Nesom [*Aster reticulatus* Pursh]; *Solidago tortifolia* Elliott; *Symphyotrichum dumosum* (L.) G. L. Nesom [*Aster dumosus* L.]
BRASSICACEAE: *Barbarea vulgaris* Ait. f.
CAPRIFOLIACEAE: *Lonicera japonica* Thunb.
CARYOPHYLLACEAE: *Sagina decumbens* (Elliott) Torr. & Gray
CONVOLVULACEAE: *Ipomoea quamoclit* L.; *Ipomoea sagittata* Poir.
CORNACEAE: *Cornus florida* L.
CUPRESSACEAE: *Taxodium ascendens* Brongn.
CYPERACEAE: *Bulbostylis stenophylla* (Elliott) C. B. Clarke; *Carex atlantica* L. H. Bailey subsp. *capillacea* (L. H. Bailey) Reznicek [*C. howei* Mack.]; *Carex festucacea* Schkukr ex Willd.; *Carex lurida* Wahlenb.; *Carex normalis* Mack.; *Cyperus involucratus* Rottb. [*C. alternifolius* L., misapplied]; *Cyperus surinamensis* Rottb.; *Eleocharis flavescens* (Poir.) Urb.; *Kyllinga brevifolia* Rottb. [*Cyperus brevifolius* (Rottb.) Hassk.]; *Scirpus americanus* Pers.; *Scirpus cyperinus* (L.) Kunth
EUPHORBIACEAE: *Chamaescyce polygonifolia* (L.) Small
FABACEAE: *Strophostyles umbellata* (Muhl. ex Willd.) Britton; *Trifolium carolinianum* Michx.; *Wisteria frutescens* (L.) Poir.
HALORAGACEAE: *Myriophyllum aquaticum* (Vell.)Verdc.
HYPOXIDACEAE: *Hypoxis curtissii* Rose [*H. hirsuta* (L.) Coville, misapplied]; *Hypoxis wrightii* (Baker) Brackett [*H. micrantha* Pollard]
JUNCACEAE: *Juncus tenuis* Willd.
LAMIACEAE: *Stachys floridana* Schuttlew. ex Benth.; *Teucrium canadense* L.
MALVACEAE: *Sida rhombifolia* L.
MYRSINACEAE (PRIMULACEAE s.l.): *Anagallis minima* (L.) E. H. L. Krause [*Centrunculus minimus* L.]
ONAGRACEAE: *Ludwigia alata* Elliott; *Ludwigia suffruticosa* Walter
ORCHIDACEAE: *Zeuxine strateumatica* (L.) Schltr.
PASSIFLORACEAE: *Passiflora incarnata* L.
PAPAVERACEAE: *Corydalis micrantha* (Engelm. ex A. Gray) A. Gray
PLANTAGINACEAE: *Gratiola virginiana* L.; *Veronica peregrina* L.
POACEAE: *Arundinaria gigantea* (Walter) Walter ex Muhl.; *Panicum virgatum* L.; *Sorghastrum nutans* (L.) Nash; *Sorghastrum secundum* (Elliott) Nash
RHAMNACEAE: *Rhamnus caroliniana* Walter
RUBIACEAE: *Richardia scabra* L.
SOLANACEAE: *Lycium carolinianum* Walter
URTICACEAE: *Urtica chamaedryoides* Pursh
VIOLACEAE: *Viola primulifolia* L.