Wetland Reserve Plan of Operation Lonesome Island

Appendix B Ecological Communities Characteristics

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1.0 INTRODUCTION

Several authors have described the characteristics and distribution of Florida's pre-development ecological communities. While generally in agreement about the major types of communities found throughout the state, the various authors have applied differing terminology and characteristics to describe and map the communities. The Florida Natural Areas Inventory (2010) developed a "crosswalk" to identify similar communities identified by differing names. For example, FNAI (2010) considered the USDA-SCS (1989) freshwater marsh and pond community equivalent to FNAI basin and depression marsh communities. Table B.1 provides a crosswalk, based on information in FNAI (2010), for ecological communities occurring in the vicinity of the Lonesome Island parcels.

Subsequently, Tables B.2 through B.4 summarize hydrologic, soil, and vegetative characteristics of the ecological communities.

REFERENCES

FNAI. 2010. *Guide to the Natural Communities of Florida: 2010 Edition*. Florida Natural Areas Inventory. Tallahassee, FL.

USDA-SCS. 1989a. 26 Ecological Communities of Florida. United States Department of Agriculture, Soil Conservation Service.

 Table B.1 Ecological Communities Crosswalk¹

USDA-SCS ²	FNAI ³	FLUCCS ⁴	Davis ⁵	Myers and Ewel ⁶	Zahina et al. ^{7,8}
26/Slough	Slough marsh	641/Freshwater Marshes 643/Wet Prairies 644/Emergent Aquatic Vegetation	7/Cypress Swamp Forests	Freshwater Marshes - Swale	5.11 Ridge & Slough Marsh
25/Freshwater Marsh and Ponds	Basin Marsh	641/Freshwater Marshes 643/Wet Prairies 644/Emergent Aquatic Vegetation	13/Grasslands of Prairie Type 16/Fresh Water Marshes	Freshwater Marshes - Basin or Depression Marshes	5.1 Long Hydroperiod Marsh 5.2 Medium Hydroperiod Marsh
25/Freshwater Marsh and Ponds	Depression Marsh	641/Freshwater Marshes 644/Emergent Aquatic Vegetation	13/Grasslands of Prairie Type	Freshwater Marshes - Basin or Depression Marshes	5.1 Long Hydroperiod Marsh 5.2 Medium Hydroperiod Marsh
10/Cutthroat Seep 23/Pitcher Plant Bog	Wet Prairie	310/Herbaceous 641/Wet Prairies	13/Grasslands of Prairie Type 2/Pine Flatwoods	Freshwater Marshes - Wet Prairies Flatwoods - Wet Flatwoods and Seepage Savannas	5.3 Wet Prairie
6/South Florida Flatwoods	Dry Prairie	321/Palmetto Prairies 310/Herbaceous	13/Grasslands of Prairie Type	Flatwoods - Mesic Flatwoods, Dry Prairies	7.1 Dry Prairie
12/Wetland Hardwood Hammock 13/Cabbage Palm Hammocks	s Hydric Hammock	617/Mixed Wetland Hardwoods	8/Swamp Forests 12/Hardwood Forests	Hydric Hammocks	6.2 Hydric Hammock
6/South Florida Flatwoods	Mesic Hammock	321/Palmetto Prairies 310/Herbaceous	13/Grasslands of Prairie Type	Flatwoods - Mesic Flatwoods, Dry Prairies	7.3 Mesic Hammock
15/Oak Hammock 3/Sand Pine Scrub	Xeric Hammock	421/Xeric Oak 425/Temperate Hardwood 432/Sand Live Oak	12/Hardwood Forests	Temperate Hardwood Forests	8.2 Scrub
11/Upland Hardwood Hammocks 15/Oak Hammocks	Upland Hardwood Forest	431/Beech - Magnolia 434/Hardwood - Conifer Mixed 438/Mixed Hardwoods	4/Mixed Hardwoods and Pines 12/Hardwood Forests	Temperate Hardwood Forests	8.0 Xeric Upland

Table B.1 Ecological Communities Crosswalk¹

USDA-SCS ²	FNAI ³	FLUCCS ⁴	Davis ⁵	Myers and Ewel ⁶	Zahina et al. ^{7,8}
17/Cypress Swamp	Dome Swamp	616/Inland Ponds and Sloughs 621/Cypress		Freshwater Swamp /Stillwater Swamp /Groundwater Swamp	4.1 Cypress Swamp

¹From FNAI (2010) (except as noted).

²USDA-SCS. 1989. 26 Ecological Communities of Florida. United States Department of Agriculture, Soil Conservation Service.

³FNAI. 2010. Guide to the Natural Communities of Florida, 2010 Edition. Florida Natural Areas Inventory, Tallahassee, FL.

⁴FDOT. 1999. Florida Land Use, Cover and Forms Classification System. Florida Department of Transportation, Tallahassee, FL.

⁵Davis, J. H., Jr. 1967. General Map of the Natural Vegetation of Florida. Circular S-178. Institute of Food and Agricultural Science. University of Florida, Gainesville, FL.

⁶Myers, R. L. and J. J. Ewel (eds.). 1990. *Ecosystems of Florida*. University Presses of Florida, Gainesville, FL.

⁷Zahina, J. G., W. P. Said, R. Grein, and M. Duever. 2007. *Pre-Development Vegetation Communities of Southern Florida*. Technical Publication HESM-02, South Florida Water Management District, West Palm Beach, FL.

⁸Zahina et al. 2007 not included in the FNAI 2010 crosswalk.

Table B.2 Ecological Community Hydrologic Characteristics

Community	Hydrologic Characteristics Hydrologic Characteristics					
USDA-SCS ¹ Type (FNAI ² Type)	NRCS ³	USDA-SCS	FNAI	Duever ⁴		Myers & Ewel ⁶
26/Slough (Slough marsh)	Below surface 12 in (wet season), inundated periodically; Below surface 12 - 40 in (dry season)	Saturated during rainy season	Frequently flooded with slow moving water. Geotraphically restricted to south Florida	ND ⁷	soil surface to 1.5 ft above; in sloughs 1.0 to	Freshwater Marshes - swale. NOTE: no "swale" category hydrologic description in E&M.
25/Freshwater Marsh and Ponds (Basin marsh)	At surface to 12 - 24 in above surface (wet season) inundated 6 - 9 mos; Below surface > 12 in (dry season)	Saturated or inundated 2+ mos	Regularly inundated	ND	=	"Water lily marsh", "Submersed Marsh" seldom dry out completely, long hydroperiod(>9 mo./yr).
10/Cutthroat Seep (Wet prairie)	ND	Soil wet most of the time. Water seeps from adjacent communities.	Continuously wet but not inundated	Inundated 50 to 100 days/yr		Short; less than six months flooding; flooded 50-150 days/yr.
6/South Florida Flatwoods (Dry prairie)	Below surface 6 - 18 in (wet season) inundated briefly; Below surface 18 - 40 in (dry season)	May have water at or near surface during rainy season	ND	ND		Varies with elevation and topography; mesic flatwoods - infrequently and briefly inundated during during rainy seasons extreme high water periods.
12/Wetland Hardwood Hammocks 13/Cabbage Palm Hammocks (Hydric hammock)	ND	12/Constant seepage or high water tables. Not flooded as long as swamp hardwoods. 13/ND	Inundated short periods following heavy rains, seldom > 60 days/yr	ND	surface to 0.5 ft above soil surface; annural	Hydric Hammock-short (<6 mo); inundated less than 1/2 the growing season. wetland hardwood hammock not described.
6/South Florida Flatwoods (Mesic hammock)	ND	May have water at or near surface during rainy season	Rarely inundated	ND		Infrequently and briefly inundated only during extreme high water periods in the rainy season. Water table 1 m below surface during dry season, and many cm deep during wet season; may reach several inches above surface for brief periods.
15/Oak Hammock 3/Sand Pine Scrub (Xeric hammock)	ND	15/ND 3/ND	ND	ND	ND	ND

Table B.2 Ecological Community Hydrologic Characteristics

Community		Hydrologic Characteristics					
USDA-SCS ¹ Type (FNAI ² Type)	NRCS ³	USDA-SCS	FNAI	Duever ⁴	Z ahina et al. ⁵	Myers & Ewel ⁶	
15/Oak Hammock (Upland hardwood forest)	ND	ND	ND	ND	ND	ND	

¹USDA-SCS. 1989. 26 Ecological Communities of Florida. United States Department of Agriculture, Soil Conservation Service.

²FNAI. 2010. Guide to the Natural Communities of Florida, 2010 Edition. Florida Natural Areas Inventory, Tallahassee, FL.

³NRCS information from Woerner 24 September 2013 SOW, page 35, source unidentified.

⁴Duever, L. C. 1997. Natural communities of Florida's wet prairies. *The Palmetto (Quarterly Magazine of the Florida Native Plant Society)*, 7(2): 6

⁵Zahina, J. G., W. P. Said, R. Grein, and M. Duever. 2007. Pre-Development Vegetation Communities of Southern Florida. Technical Publication HESM-02, South Florida Water Management District, West Palm Beach, FL.

⁶Myers, R. L. and J. J. Ewel (eds.). 1990. Ecosystems of Florida. University Presses of Florida, Gainesville, FL.

⁷ND - No hydrologic data

Table B.3 Ecological Community Soil Characteristics

Community				Soils ¹		
USDA-SCS ² Type (FNAI ³ Type)	NRCS ⁴	USDA-SCS	FNAI	Duever ⁵	Zahina et al. ⁶	Myers & Ewel ⁷
26/Slough (Slough marsh)	Basinger fine sand	Basinger Pineda Pineda, thematic variant	Sand or peat	ND ⁸	No description	Peat overlying sand or limestone (Everglades)
25/Freshwater Marsh and Ponds (Depression marsh)	ND	Basinger, depressional Immokalee, depressional Pineda, depressional	Sand or peat Basinger, depressional	ND	Highly organic to mixed soils with mineral components. Sands Peats	Sand or sand overlain with peat
10/Cutthroat Seep (Wet prairie)			Basinger	Basinger Immokalee	Sand or marl	Sand
6/South Florida Flatwoods (Dry prairie)	Basinger fine sand	Immokalee Pineda	Sandy spodosols Immokalee	ND	Poorly drained Nutrient-poor Acidic Sandy	Imperfectly drained to poorly drained lightly textured find sands. Generally acidic, low clay (<2%), low OM, low CEC.
12/Wetland Hardwood Hammocks 13/Cabbage Palm Hammocks (Hydric hammock)	ND	Pineda, thermic variant	Sands	ND	ND	ND
6/South Florida Flatwoods (Mesic hammock)	ND	Immokalee Pineda	Sands	ND	ND	Great variety; typical soils imperfectly to poorly drained, lightly textured find sands, acidic, low reserves of extractable nutrients, low clay content, organic matter, cationic exchange capacity
15/Oak Hammock 3/Sand Pine Scrub (Xeric hammock)	ND	ND	Sands	ND	ND	Entisols, quartzipsamments, excessively well drained siliceous sands practically devoid of silt, clay, organic matter, droughty and extremely nutrient poor

Table B.3 Ecological Community Soil Characteristics

Community		Soils ¹					
USDA-SCS ² Type (FNAI ³ Type)	NRCS ⁴	USDA-SCS	FNAI	Duever ⁵	Zahina et al. ⁶	Myers & Ewel ⁷	
15/Oak Hammock (Upland hardwood forest)	ND		Sandy clay Clayey sands	ND	Excessively drained sterile sands	ND	

¹Soil types listed in this table are only those mapped on the Lonesome Island parcels

²USDA-SCS. 1989. 26 Ecological Communities of Florida. United States Department of Agriculture, Soil Conservation Service.

³FNAI. 2010. Guide to the Natural Communities of Florida, 2010 Edition. Florida Natural Areas Inventory, Tallahassee, FL.

⁴NRCS information from Woerner 24 September 2013 SOW, page 35, source unidentified.

⁵Duever, L. C. 1997. Natural communities of Florida's wet prairies. *The Palmetto (Quarterly Magazine of the Florida Native Plant Society)*, 7(2): 6

⁶Zahina, J. G., W. P. Said, R. Grein, and M. Duever. 2007. Pre-Development Vegetation Communities of Southern Florida. Technical Publication HESM-02, South Florida Water Management District, West Palm Beach, FL.

⁷Myers, R. L. and J. J. Ewel (eds.). 1990. Ecosystems of Florida. University Presses of Florida, Gainesville, FL.

⁸ND - No soils data

Table B.4 Ecological Community Vegetation Characteristics

Community			Table B.4 Ecological Community Vegetation C Vegetati			
USDA-SCS ¹ Type						
(FNAI ² Type)	NRCS ³	USDA-SCS	FNAI	Duever ⁴	Zahina et al. ⁵	Myers & Ewel ⁶
26/Slough (Slough marsh)	ND ⁷	Beak rushes Blue maidencane Bluejoint panicum Bottleebrush threeawn Panicum Low panicum Sand cordgrass Sloughgrass Soft rush Pickerelweed Sundew Marsh pink Meadowbeauty Milkwort Yellow-eyed grass St. Peter's wort	Bulltongue arrowhead Pickerelweed Alligator flag Maidencane Sawgrass Cattail Sand cordgrass Longleaf threeawn Beaksedges Elliot's yellow-eyed grass Narrowfruit horned beaksedge Spikerushes Fringed yellow-eye grass Pipeworts Lemon bacopa Water cowbane Clustered bushmint Piedmont marshelder Peelbark St. John's wort Water toothleaf Coastalplain willow Common buttonbush Pond apple Wax myrtle	ND		Wet Prairie Maidencane Tracy's beakrush Saw grass Muhly Cordgrass White-topped sedge St. John's Wort
25/Freshwater Marsh and Ponds (Basin marsh)	ND	Beak rushes Blue maidencane Bottlebrush threeawn Bulrushes Caric sedges Clubhead cutgrass Common reed Flat sedge Maidencane Rush Sawgrass Spike rushes Umbrella grass Wild millet Arrowhead Blue flag Cattail Fire flag Pickerelweed Pennywort St. John's wort Primrose willow Elderberry	White waterlily American lotus Yellow pond lily Pickerelweed Bulltongue arrowhead Cattail Sawgrass Softstem bulrush Maidencane Smooth beggarticks Dotted smartweed Sand cordgrass Sweetscent Spadeleaf Lemon bacopa Coastalplain willow Common buttonbush Elderberry Was myrtle	ND	Spatterdock Spikerush Bladderworts Sawgrass Cattail St. John's wort Arrow arum Arrowhead	Water lily marsh White water lily Neverwet Yellow lotus Naiad Bladderwort Submerged marsh Naiad Pondweed Bladderwort

Table B.4 Ecological Community Vegetation Characteristics

Community			Table B.4 Ecological Community V	Vegetation		
USDA-SCS ¹ Type (FNAI ² Type)	NRCS ³	USDA-SCS	FNAI	Duever ⁴	Zahina et al. ⁵	Myers & Ewel ⁶
10/Cutthroat Seep (Wet prairie)	ND	Slash pine Wax myrtle Cutthroat grass Chalky bluestem Creeping bluestem Maidencane Toothache grass Low panicum	Wiregrass Foxtail club-moss Cutover muhly Yellow butterwort Savannah meadowbeauty Plumed beaksedge Featherbristle beaksedge Baldwin's nutrush Slenderfruit nutrush Longleaved threeawn Pitcher plants Sundews Butterworts Bladderworts Toothache grass Pineland rayless goldenrod Flattened pipewort Water cowbane Coastalplain yellow-eyed grass	Hatpins, Meadow beauty, Pink sundew, Yellow colic root, Floating heart, Common St. John's wort, Common pipewort, Purple bladderwort, Floating bladderwort, Pickerelweed, Sagittaria, Lemon bacopa, Nash's blueeyed grass, Grass pink, Grassleaf ladies' tresses, Yellow-eyed grass, Colic root, Marsh pink Candyweed Wild bachelor's button White-spike milkwort Yellow milkwort Rain lily Piriqueta Gerardia Wiregrass Toothache grass Maidencane Sand cordgrass Striped beakrush Stoloniferous spikerush Whitetop sedge Star rush Sawgrass	Grasses Sedges St. John's wort Tenangle pipewort Sundews Yellow-eyed grass Marsh pinks Terrestrial orchids Wax myrtle Cypress Coastal plain willow Bays and cabbage palm	Wet Prairie Maidencane Tracy's beakrush Saw grass Muhly Cordgrass White-topped sedge St. John's Wort
6/South Florida Flatwoods (Dry prairie)	ND	Live oak Slash pine South Florida slash pine Dwarf huckleberry Gallberry Saw palmetto Tarflower Shining sumac Wax myrtle Chalky bluestem Creeping bluestem Lopsided indiangrass Fall panicum Low panicum Pineland threeawn	Saw palmetto Dwarf live oak Gallberry Fetterbush Shiny blueberry Netted pawpaw Atlantic St. John's wort Dwarf wax myrtle Dwarf huckleberry Wiregrass Bottlebrush threeawn Hemlock witchgrass Broomsedge bluestem Lopsided indiangrass Cypress witchgrass Narrowleaf silkgrass Milkworts Meadowbeauty	ND	Saw palmetto Wiregrass Dwarf live oak Grasses Gallberry Lyonias Tarflower Shiny blueberry	Wiregrass Bottlebrush threeawn Arrowfeather Broomsedge Lovegrass Saw palmetto Fetterbush Rusty lyonia Dwarf blueberry Wax myrtle

Table B.4 Ecological Community Vegetation Characteristics

Community	munity Vegetation Characteristics Vegetation						
USDA-SCS ¹ Type							
(FNAI ² Type)	NRCS ³	USDA-SCS	FNAI	Duever ⁴	Zahina et al. ⁵	Myers & Ewel ⁶	
12/Wetland Hardwood Hammocks 13/Cabbage Palm Hammocks (Hydric hammock)	ND ND	Cabbage palm Hawthorn Laurel oak Live oak Red bay Red maple Sweet bay Sweet gum Water oak Magnolia Wax myrtle Witchhazel Saw palmetto Cinnamon fern Crossvine Poison ivy Royal fern Spanish moss Virginia creeper Wild grape Yellow jessamine Longleaf uniola Low panicum American beautyberry Creeping bluestem Stiffleaf windmillgrass Caesar weed	Swamp laurel oak Live oak, Cabbage palm, American elm, Sweet bay, Red cedar, Red maple, Sugarberry, Sweetgum, Water oak, Cabbage palm, Loblolly pine, American hornbeam, Swamp dogwood, Small-leaf viburnum, Common persimmon, Swamp bay, Wax myrtle, Dwarf palmetto, American beautyberry, Needle palm, Eastern poison ivy, Peppervine, Rattan vine, Trumpet creeper, Climbing hydrangea, Yellow jessamine, Greenbriers, Summer grape, Muscadine, Sedges, Woodoats, Smooth elephantsfoot, Carolina scalystem, Woodsgrass, Maiden ferns, Cinnamon fern, Royal fern, Toothed midsorus fern, Netted chain fern, Virginia chain fern, Golden polypody, Air plants, Shoestring fern	ND ND	Laurel oak Sugarberry Red mulberry Red bay Cabbage palm Wild coffee American beautyberry Myrsine Wax myrtle Marlberry Stoppers Poison ivy Catbriar	Southern red cedar Loblolly pine Needle palm Dwarf palmetto Cabbage palm Southern red maple American hornbeam Hackberry Stiff cornel Persimmon Water ash Loblolly bay Sweet gum Sweet bay Swamp bay American sycamore Swamp laurel oak Basket oak Water oak Spanish oak Live oak American elm, May haw, Parsley haw, Dahoon holly, Large galberry, Possum haw, Virginia willow, Wax myrtle, Northern bayberry, Wild coffee, Elderberry	
6/South Florida Flatwoods (Mesic hammock)	ND	Live oak Slash pine South Florida slash pine Dwarf hucklebery Gallberry Saw palmetto Tarflower Shining sumac Wax myrtle Chalky bluestem Creeping bluestem Lopsided indiangrass Fall panicum Low panicum Pineland threeawn	Live oak, Cabbage palm, Southern magnolia, Pignut hickory, Water oak, Laurel oak, Sweet gum, Sugarberry, Slash pine, Loblolly pine, Saw palmetto, American beautyberry, American holly, Gallberry, Sparkleberry, Hog plum, Common persimmon, Highbush blueberry, Carolina laurelcherry, Yaupon, Wild olive, Wax myrtle, Low panic grasses, Witchgrasses, Woodsgrass, Longleaf woodoats, Sedges, Whip nutrush, Bracken fern, Partridgeberry, Spanish moss, Resurrection fern, Golden polypody, Shoestring fern, Muscadine, Sarsaparilla vine, Greenbriers, Yellow jessamine, Eastern poison ivy, Crossvine, Virginia creeper	ND	Live oak Cabbage palm	Highlands Hammock Live oak Sabal palmetto Pignut hickory Sugarberry Laurel oak Sweetgum	

Table B.4 Ecological Community Vegetation Characteristics

Community		Vegetation						
USDA-SCS ¹ Type (FNAI ² Type)	NRCS ³	USDA-SCS	FNAI	Duever ⁴	Z ahina et al. ⁵	Myers & Ewel ⁶		
15/Oak Hammock 3/Sand Pine Scrub (Xeric hammock)	ND	Live oak American beautyberry Saw palmetto Yellow indiangrass Purple nutsedge Longleaf uniola Low panicum Poison ivy Resurrection fern Spanish moss Still-leafed wild pine Bluejack oak Chapman oak Myrtle oak Sand live oak Sand pine Dwarf huckleberry Gopher apple Prickly pear Grassleaf goldenmaster Deer moss Cat greenbriar	Sand live oak, Chapman oak, Turkey oak, Blackjack oak, Sand post oak, Laurel oak Sand pine, Slash pine, Longleaf pine, Saw palmetto, Myrtle oak, Rusty staggerbush, Fetterbush Sparkleberry Deerberry Black cherry American beautyberry Common persimmon Scrub palmetto Hercules club Wild olive Scrub wild olive Garberia Florida rosemary Yaupon Wiregrass Sandyfield beaksedge Witchgrass Sweet goldenrod Muscadine Earleaf greenbrier Spanish moss Ballmoss	ND	Sand pine Scrub oak Myrtle oak Sand live oak Rosemary Saw palmetto Silk bay Rusty lyonia Scrub holly Scrub hickory Scrub palm Garberia Palafoxia Wild olive Curtiss' milkweed	Scrub and high pine Myrtle oak Scrub oak Sand live oak Chapman oak Turkey oak Blackjack oak Sandpost oak Longleaf pine Sand pine Southern red cedar Rusty lyonia Rosemary silk bay Gopher apple Milk pea Broomsedge		

Table B.4 Ecological Community Vegetation Characteristics

Community	Vegetation					
USDA-SCS ¹ Type						
(FNAI ² Type)	NRCS ³		FNAI	Duever ⁴		Myers & Ewel ⁶
15/Oak Hammock (Upland hardwood forest)	ND	Live oak American beautyberry Saw palmetto Yellow indiangrass Purple nutsedge Longleaf uniola Low panicum Poison ivy Resurrection fern Spanish moss Still-leafed wild pine	Southern magnolia, Pignut hickory, Sweet gum, Florida maple, Live oak, Laurel oak, Swamp chestnut oak, Southern hackberry, White ash, Loblolly pine, American holly, Red bay, American hornbeam, Gum bully, Devil's walkingstick Eastern hophornbeam Flowering dogwood Eastern redbud Horse sugar American strawberrybush Silverbells Winged elm Black cherry Basswood Partridgeberry Virginia creeper Violets Sedges Sarsaparilla vine Ebony spleenwort Woodsgrass Longleaf woodoats		Sand pine Scrub oaks	Mesic Hammock Southern live oak Sabal palmetto Pignut hickory Hackberry Laurel oak Sweet gum

¹USDA-SCS. 1989. 26 Ecological Communities of Florida. United States Department of Agriculture, Soil Conservation Service.

²FNAI. 2010. Guide to the Natural Communities of Florida, 2010 Edition. Florida Natural Areas Inventory, Tallahassee, FL.

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