13 Appendices

13.1 Lease Agreement

13.1.1 Original Lease Agreement 4034

Additional Lease Amendments are contained in Volume Two.

SAL8103

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

LEASE AGREEMENT

LAKE WALES RIDGE PLACID LAKES TRACT

Lease No. 4034

This lease is made and entered into this 6th day of March 1995, between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR", and the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, hereinafter referred to as "LESSEE".

WITNESSETH:

WHEREAS, the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA holds title to certain lands and property being utilized by the State of Florida for public purposes, and

WHEREAS, the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA is authorized in Section 253.03, Florida Statutes, to enter into leases for the use, benefit and possession of public lands by State agencies which may properly use and possess them for the benefit of the people of the State of Florida;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements hereinafter contained, LESSOR leases the below described premises to LESSEE subject to the following terms and conditions:

1. DELEGATIONS OF AUTHORITY: LESSOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, Department of Environmental Protection.

2. DESCRIPTION OF PREMISES: The property subject to this lease, is situated in the County of Highlands, State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter called the "leased premises".

3. TERM: The term of this lease shall be for a period of fifty (50) years, commencing on March 6, 1995 and ending

on March 5, 2045, unless sooner terminated pursuant to the provisions of this lease.

4. PURPOSE: LESSEE shall manage the leased premises only for the conservation and protection of natural and historical resources and resource based public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 7 of this lease.

5. QUIET ENJOYMENT AND RIGHT OF USE: LESSEE shall have the right of ingress and egress to, from and upon the leased premises for all purposes necessary to the full quiet enjoyment by said LESSEE of the rights conveyed herein.

6. UNAUTHORIZED USE: LESSEE shall, through its agents and employees, prevent the unauthorized use of the leased premises or any use thereof not in conformance with this lease.

7. MANAGEMENT PLAN: LESSEE shall prepare and submit a Management Plan for the leased premises, in accordance with Section 253.034, Florida Statutes, and Chapters 18-2 and 18-4, Florida Administrative Code, within 12 months of the effective date of this lease. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands. The leased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the leased premises without the prior written approval of LESSOR until the Management Plan is approved. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary public purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR at least every five (5) years. LESSEE shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under

this lease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

8. RIGHT OF INSPECTION: LESSOR or its duly authorized agents shall have the right at any and all times to inspect the leased premises and the works and operations thereon of LESSEE, in any matter pertaining to this lease.

9. INSURANCE REQUIREMENTS: LESSEE shall procure and maintain adequate fire and extended risk insurance coverage for any improvements or structures located on the leased premises in amounts not less than the full insurable replacement value of such improvements by preparing and delivering to the Division of Risk Management, Department of Insurance, a completed Florida Fire Insurance Trust Fund Coverage Request Form immediately upon erection of any structures as allowed by paragraph 4 of this lease. A copy of said form and immediate notification in writing of any erection or removal of structures or other improvements on the leased premises and any changes affecting the value of the improvements shall be submitted to the following: Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399.

10. LIABILITY: LESSEE shall assist in the investigation of injury or damage claims either for or against LESSOR or the State of Florida pertaining to LESSEE'S respective areas of responsibility under this lease or arising out of LESSEE'S respective management programs or activities and shall contact LESSOR regarding the legal action deemed appropriate to remedy such damage or claims.

11. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the Department of State, Division of Historical

Resources. The Management Plan prepared pursuant to Section 253.034, Florida Statutes, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the leased premises.

12. EASEMENTS: All easements including, but not limited to, utility easements are expressly prohibited without the prior written approval of LESSOR. Any easement not approved in writing by LESSOR shall be void and without legal effect.

13. SUBLEASES: This lease is for the purposes specified herein and subleases of any nature are prohibited, without the prior written approval of LESSOR. Any sublease not approved in writing by LESSOR shall be void and without legal effect.

14. SURRENDER OF PREMISES: Upon termination or expiration of this lease LESSEE shall surrender the leased premises to LESSOR. In the event no further use of the leased premises or any part thereof is needed, written notification shall be made to the Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399, at least six (6) months prior to the release of all or any part of the leased premises. Notification shall include a legal description, this lease number and an explanation of the release. The release shall only be valid if approved by LESSOR through execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon expiration or termination of this lease, all improvements, including both physical structures and modifications to the leased premises, shall become the property of LESSOR, unless LESSOR gives written notice to LESSEE to remove any or all such improvements at the expense of LESSEE. The decision to retain any improvements upon termination of this lease shall be at LESSOR'S sole discretion. Prior to surrender of all or any part of the leased premises, a representative of the Division of State Lands shall perform an on-site inspection and the keys to any

buildings on the leased premises shall be turned over to the Division. If the leased premises and improvements located thereon do not meet all conditions set forth in paragraphs 18 and 21 herein, LESSEE shall pay all costs necessary to meet the prescribed conditions.

15. BEST MANAGEMENT PRACTICES: LESSEE shall implement applicable Best Management Practices for all activities conducted under this lease in compliance with paragraph 18-2.004(1)(d), Florida Administrative Code, which have been selected, developed, or approved by LESSOR, LESSEE or other land managing agencies for the protection and enhancement of the leased premises.

16. PUBLIC LANDS ARTHROPOD CONTROL PLAN: LESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one year of the effective date of this lease all of the environmentally sensitive and biologically highly productive lands contained within the leased premises, in accordance with Section 388.4111, Florida Statutes and Chapter 5E-13, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

17. DUPLICATE ORIGINALS: This lease is executed in duplicate originals each of which shall be considered an original for all purposes.

18. UTILITY FEES: LESSEE shall be responsible for the payment of all charges for the furnishing of gas, electricity, water and other public utilities to the leased premises and for having all utilities turned off when the leased premises are surrendered.

19. ASSIGNMENT: This lease shall not be assigned in whole or in part without the prior written consent of LESSOR. Any assignment made either in whole or in part without the prior written consent of LESSOR shall be void and without legal effect.

20. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures, improvements, and signs shall be constructed at the expense of LESSEE in accordance with plans prepared by professional designers and shall require the prior written

approval of LESSOR as to purpose location, and design. Further, no trees, other than non-native species, shall be removed or major land alterations done without the prior written approval of LESSOR. Removable equipment and removable improvements placed on the leased premises by LESSEE which do not become a permanent part of the leased premises will remain the property of LESSEE and may be removed by LESSEE upon termination of this lease.

21. MAINTENANCE OF IMPROVEMENTS: LESSEE shall maintain the real property contained within the leased premises and any improvements located thereon, in a state of good condition, working order and repair including, but not limited to, keeping the leased premises free of trash or litter, maintaining all planned improvements as set forth in the approved Management Plan, meeting all building and safety codes in the location situated and maintaining any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be at the date of this lease; provided, however, that any removal, closure, etc., of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection, and enhancement of the natural and historical resources within the leased premises and with the approved Management Plan.

22. ENTIRE UNDERSTANDING: This lease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of LESSOR.

23. BREACH OF COVENANTS, TERMS, OR CONDITIONS: Should LESSEE breach any of the covenants, terms, or conditions of this lease, LESSOR shall give written notice to LESSEE to remedy such breach within sixty (60) days of such notice. In the event LESSEE fails to remedy the breach to the satisfaction of LESSOR within sixty (60) days of receipt of written notice, LESSOR may either terminate this lease and recover from LESSEE all damages LESSOR may incur by reason of the breach including, but not limited to, the cost of recovering the leased premises or maintain this lease in full force and effect and exercise all rights and remedies herein conferred upon LESSOR.

24. NO WAIVER OF BREACH: The failure of LESSOR to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this lease shall not be construed as a waiver of such covenants, terms and conditions, but the same shall continue in full force and effect, and no waiver of LESSOR of any one of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing, signed by LESSOR.

25. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the leased premises is held by LESSOR. LESSEE shall not do or permit anything which purports to create a lien or encumbrance of any nature against the real property contained in the leased premises including, but not limited to, mortgages or construction liens against the leased premises or against any interest of LESSOR therein.

26. CONDITIONS AND COVENANTS: All of the provisions of this lease shall be deemed covenants running with the land included in the leased premises, and construed to be "conditions" as well as "covenants" as though the words specifically expressing or imparting covenants and conditions were used in each separate provision.

27. DAMAGE TO THE PREMISES: (A) LESSEE shall not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises or adjacent properties, any act which may result in damage or depreciation of value to the leased premises or adjacent properties, or any part thereof. (B) Lessee shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants or pollution, including, but not limited to, hazardous or toxic substances, chemicals or other agents on, into, or from the leased premises or any adjacent lands or waters in any manner not permitted by law. For the purposes of this lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United

States Congress or the EPA or defined by any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant. "Pollutants" and "pollution" shall mean those products or substances defined in Florida Statutes, Chapter 376 and Chapter 403 and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE's failure to comply with this paragraph, LESSEE shall, at its sole cost and expense, promptly commence and diligently pursue any legally required closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the leased premises, and (2) all off-site ground and surface waters and lands affected by LESSEE's such failure to comply, as may be necessary to bring the leased premises and affected off-site waters and lands into full compliance with all applicable federal, state or local statutes, laws, ordinances, codes, rules, regulations, orders and decrees, and to restore the damaged property to the condition existing immediately prior to the occurrence which caused the damage. LESSEE's obligations set forth in this paragraph shall survive the termination or expiration of this lease. Nothing herein shall relieve LESSEE of any responsibility or liability prescribed by law for fines, penalties and damages levied by governmental agencies, and the cost of cleaning up any contamination caused directly or indirectly by LESSEE's activities or facilities. Upon discovery of a release of a hazardous substance or pollutant, or any other violation of local, state or federal law, ordinance, code, rule, regulation, order or decree relating to the generation, storage, production, placement, treatment, release or discharge of any contaminant, LESSEE shall report such violation to all applicable governmental agencies having jurisdiction, and to LESSOR, all within the reporting period of the applicable agency.

28. PAYMENT OF TAXES AND ASSESSMENTS: LESSEE shall assume full responsibility for and shall pay all liabilities that accrue

to the leased premises or to the improvements thereon, including any and all drainage and special assessments or taxes of every kind and all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against the leased premises.

29. RIGHT OF AUDIT: LESSEE shall make available to LESSOR all financial and other records relating to this lease and LESSOR shall have the right to audit such records at any reasonable time. This right shall be continuous until this lease expires or is terminated. This lease may be terminated by LESSOR should LESSEE fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this lease, pursuant to Chapter 119, Florida Statutes.

30. NON-DISCRIMINATION: LESSEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the leased premises or upon lands adjacent to and used as an adjunct of the leased premises.

31. COMPLIANCE WITH LAWS: LESSEE agrees that this lease is contingent upon and subject to LESSEE obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules, and laws of the State of Florida or the United States or of any political subdivision or agency of either.

32. TIME: Time is expressly declared to be of the essence of this lease.

33. GOVERNING LAW: This lease shall be governed by and interpreted according to the laws of the State of Florida.

34. SECTION CAPTIONS: Articles, subsections and other captions contained in this lease are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope, extent or intent of this lease or any provisions thereof.

35. ADMINISTRATIVE FEE: LESSEE shall pay LESSOR an annual administrative fee of $300.00. The initial annual administrative fee shall be payable within 30 days from the date of execution of this lease agreement and shall be prorated based on the number of months or fraction thereof remaining in the fiscal year of execution. For purposes of this lease agreement, the fiscal year shall be the period extending from July 1 to June 30. Each annual payment thereafter shall be due and payable on July 1 of each subsequent year.

IN WITNESS WHEREOF, the parties have caused this lease to be executed on the day and year first above written.

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

Witness
Gloria H. Maddox
Print/Type Witness Name

Witness
DAVID B. STEVENSON
Print/Type Witness Name

By: _____ (SEAL)
CHIEF, BUREAU OF LAND MANAGEMENT SERVICES, DIVISION OF STATE LANDS, DEPARTMENT OF ENVIRONMENTAL PROTECTION

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 6th day of March 1995, by Daniel T. Crabb, as Chief, Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, acting as agent on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

Notary Public, State of Florida

(SEAL)

Gloria H. Maddox
Print/Type Notary Name

Commission Number: _____

Commission Expires:

Approved as to Form and Legality

By: _____ 3/1/95
DEP Attorney

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STATE OF FLORIDA GAME AND FRESH
WATER FISH COMMISSION

Witness

Print/Type Witness Name

Witness

Print/Type Witness Name

By: William C. Sumner (SEAL)

Print/Type Name

Its: Assistant Executive Director

"LESSEE"

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
Commission Attorney

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 17th day of February, 1995, by William C. Sumner, as Assistant Executive Director, State of Florida Game and Fresh Water Fish Commission, who is/are personally known to me ~~or who has produced~~ _____ as identification.

(SEAL)

Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

My Commission Expires:

EXHIBIT "A" F:\common\TOE_REV.DOC

BK 1237 PG 1214

Section 27, Township 37 South, Range 29 East, Highlands County, Florida, and a portion of Sections 34 and 26, Township 37 South, Range 29 East, Highlands County, Florida and more particularly bounded and described as follows: Begin at the Southwest corner of aforesaid Section 27; run thence North 0°14'46" East for a distance of 1354.98 feet to a point, run thence North 0°37'01" West a distance of 3959.10 feet to the Northwest corner of said Section 27; run thence South 89°46'30" East along the North line of said Section 27 for a distance of 5092.15 feet to the Northeast corner of said Section 27; run thence North 89°17'55" East along the North line of above mentioned Section 26 for a distance of 50.00 feet to a point; run thence South 0°08'45" West parallel to the division line between said Sections 26 and 27 for a distance of 905.74 feet to a Point of Curve to the left, said curve having for its elements a radius of 950.00 feet and a central angle of 26°35'00"; run thence South and East along the arc of said curve for a distance of 440.77 feet to a Point of Tangency; run thence South 26°26'15" East for a distance of 1039.27 feet to a Point of Curve to the right, said curve having for its elements a radius of 1450.00 and a central angle of 58°33'45"; run thence South and West along the arc of said curve for a distance of 1482.06 feet to a Point of Tangency; run thence South 32°07'30" West for a distance of 497.56 feet to a Point of Curve to the left, said curve having for its elements a radius of 1550.00 feet and a central angle of 31°58'45"; run thence South and West along the arc of said curve for a distance of 865.12 feet to a Point of Tangency; run thence South 0°08'45" West parallel with the Division line between aforesaid Sections 26 and 27 for a distance of 372.73 feet to a point; run thence South 89°48'55" West parallel with the South line of said Section 26 for a distance of 49.73 feet to a point; run thence South 89°35'07" West parallel with the South line of aforesaid Section 27 for a distance of 1157.99 feet to a Point of Curve to the left, said curve having for its elements a radius of 1765.00 feet and a central angle of 19°13'56"; run thence West and South along the arc of said curve for a distance of 592.45 feet to a Point of Tangency; run thence South 70°21'11" West for a distance of 1045.07 feet to a Point of Curve to the right, said curve having for its elements a radius of 2135.00 feet and a central angle of 21°30'00"; run thence Westerly along the arc of said curve for a distance of 801.15 feet to a Point of Tangency; run thence North 88°08'49" West for a distance of 596.54 feet to a Point of Curve to the right, said curve having for its elements a radius of 835.00 feet and a central angle of 69°22'34"; run thence West and North along the arc of said curve for a distance of 1011.30 feet and intersecting the South line of aforesaid Section 27; run thence South 89°35'06" West along said South line of Section 27 for a distance of 172.49 feet to the Point or Place of Beginning.

LESS AND EXCEPT:
Jefferson Avenue lying in PLACID LAKES SECTION TWENTY-ONE as per plat Book 10, Page 19 of the Public Records of Highlands County, Florida.

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ALSO LESS AND EXCEPT:
The South 1/2 of Tobler Boulevard lying in PLACID LAKES SECTION TWENTY-ONE as per Plat Book 10, Page 19 of the Public Records of Highlands County, Florida.

A portion of Sections 26 and 35, Township 37 South, Range 29 East, Highlands County, Florida, being more particularly described as follows: Commence at the Northwest corner of said Section 26; run thence North 89°17'55" East along the North line of said Section 26 for a distance of 50.00 feet to the Point of Beginning: continue North 89°17'55" East along said North line of Section 26 for a distance of 3913.16 feet to the Northwest corner of the Northeast 1/4 of the Northeast 1/4 of said Section 26; run thence South 1°07'22" East along the West line of said Northeast 1/4 of the Northeast 1/4 for a distance of 1323.19 feet to the South line of the Northeast 1/4 of the Northeast 1/4 of said Section 26; run thence North 89°25'27" East along said South line of the Northeast 1/4 of the Northeast 1/4 for a distance of 1330.78 feet to a point; run thence South 1°32'29" East along the East line of aforesaid Section 26 for a distance of 3980.13 feet to the Southeast corner of said Section 26; run thence South 0°02'45" West along the East line of Section 35, Township 37 South, Range 29 East for a distance of 835.01 feet to a point; run thence South 89°48'55" West for a distance of 2184.86 feet to a Point of Curve to the right, said curve having for its elements a radius of 1435.00 feet and a central angle of 30°11'05"; run thence West and North along the arc of said curve for a distance of 755.99 feet to a Point of Tangency; run thence North 60°00'00" West for a distance of 674.22 feet to a Point of Curve to the left, said curve having for its elements a radius of 1965.00 feet and a central angle of 30°11'05"; run thence North and West along the arc of said curve for a distance of 1035.21 feet to a Point of Tangency; run thence South 89°48'55" West for a distance of 909.68 feet to a point; run thence North 0°08'45" East for a distance of 372.73 feet to a Point of Curve to the right, said curve having for its elements a radius of 1550.00 feet and a central angle of 31°58'45"; run thence North and East along the arc of said curve for a distance of 865.12 feet to a Point of Tangency; run thence North 32°07'30" East for a distance of 497.56 feet to a Point of Curve to the left, said curve having for its elements a radius of 1450.00 feet and a central angle of 58°33'45"; run thence Northerly along the arc of said curve for a distance of 1482.06 feet to a Point of Tangency; run thence North 26°26'15" West for a distance of 1039.27 feet to a Point of Curve to the right, said curve having for its elements a radius of 950.00 feet and a central angle of 26°35'00"; run thence Northerly along the arc of said curve for a distance of 440.77 feet to a Point of Tangency; run thence North 0°08'45" East for a distance of 905.74 feet to a Point or Place of Beginning.

LESS AND EXCEPT:
The South 1/2 of Tobler Boulevard lying in PLACID LAKES SECTION TWENTY-TWO as per Plat Book 10, Page 20 of the Public Records of Highlands County, Florida.

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ALSO LESS AND EXCEPT:
Placid View Drive lying in PLACID LAKES SECTION TWENTY-TWO as per Plat Book 10, Page 20 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
A portion of the East Half of the East Half of Section 26, Township 37 South, Range 29 East, Highlands County, Florida, being more particularly described as follows: Begin at the Southwest corner of the Northeast Quarter of the Northeast Quarter of said Section 26 for the Point of Beginning; thence North 89 degrees 25 minutes 27 seconds East along the South line of the Northeast Quarter of the Northeast Quarter of said Section 26 for a distance of 1289.32 feet to a point on the Westerly Right of Way line of Placid View Drive; thence South 3 degrees 10 minutes 42 seconds East along said Westerly Right of Way line of Placid View Drive for a distance of 380.01 feet to a point; thence South 1 degree 15 minutes 32 seconds East still along said Westerly Right of Way line of Placid View Drive for a distance of 599.48 feet to a point; thence South 1 degree 23 minutes 16 seconds East still along the said Westerly Right of Way line of Placid View Drive for a distance of 339.61 feet to a point; thence South 89 degrees 25 minutes 27 seconds West on a line parallel with the South line of the Northeast Quarter of the Northeast Quarter of said Section 26 for a distance of 1305.99 feet to a point on the West line of the East Half of the East Half of Section 26; thence North 1 degree 07 minutes 22 seconds West along the said West line of the East Half of the East Half of said Section 26 for a distance of 1319.59 feet to the Point of Beginning.

ALSO LESS AND EXCEPT:
Commence at the Northwest corner of Section 26, Township 37 South, Range 29 East, Highlands County, Florida; thence North 89°17'55" East along the North line of said Section 26 a distance of 50.00 feet; thence South 0°08'45" West a distance of 59.64 feet to a point on the East Right of Way line of Jefferson Avenue and for the Point of Beginning: thence continue South 0°08'45" West a distance of 846.10 feet to a Point of Curvature of a curve concave to the East; thence along said curve to the left and having for its elements a radius of 950.00 feet and a central angle of 3°47'17" for an arc distance of 62.61 feet; thence North 89°17'55" East a distance of 931.45 feet; thence North 0°08'45" East a distance of 933.53 feet to a point on the South Right of Way line Tabler Boulevard; thence South 89°17'55" West along said Right of Way line a distance of 908.90 feet to a Point of Curvature of a curve concave to the Southeast; thence along said curve to the left having for its elements a radius of 25.00 feet and a central angle of 89°09'20" for an arc distance of 38.90 feet to the Point of Beginning.

ALSO LESS AND EXCEPT:
A portion of the South Half of Section 26, Township 37 South, Range 29 East, Highlands County, Florida, described as follows: Commence at the Southeast corner of Section 26,

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Township 37 uth, Range 29 East, Highl ds County, Florida; thence South 89 degrees 48' 55" West along the South line of said Section 26 a distance of 35.40 feet to the West Right of Way line of Placid View Drive for the Point of Beginning: thence continue on the same line a distance of 2632.40 feet; thence North 00 degrees 42' 07" West, a distance of 1316.17 feet; thence North 89 degrees 25' 27" East a distance of 2620.97 feet to the West Right of Way line of said Placid View Drive; thence South 01 degrees 51' 22" East along said West Right of Way line a distance of 534.91 feet; thence South 00 degrees 44'29" East along said West Right of Way line a distance of 799.36 feet to the Point of Beginning.

ALSO LESS AND EXCEPT:
Commence at the Northeast corner of Section 35, Township 37 South, Range 29 East, Highlands County, Florida; thence run South 89°48'59" West and along the North line of Section 35 a distance of 1895.18 feet; thence South 26°29'31" West a distance of 42.94 feet to an iron rod for Point of Beginning: From said Point of Beginning run thence South 63°30'29" East a distance of 125.00 feet to an iron rod; thence South 26°29'31" West a distance of 80.00 feet to an iron rod; thence North 63°30'29" West a distance of 125.00 feet to an iron rod; thence North 26°29'31" East a distance of 80.00 feet to Point of Beginning.

A portion of Sections 34 and 35, Township 37 South, Range 29 East, Highlands County, Florida, more particularly bounded and described as follows: Begin at the Northwest corner of said Section 34; run thence North 89°35'07" East along the North line of said Section 34 for a distance of 172.49 feet to a Point on the arc of a curve, said point bearing South 71°14'45" West from the center of said curve which has for its elements a radius of 835.00 feet and a central angle of 69°23'34"; run thence South and East along the arc of said curve for a distance of 1011.30 feet to a Point of Tangent; run thence South 88°08'49" East for a distance of 596.54 feet to a Point of Curve to the left, said curve having for its elements a radius of 2135.00 feet and a central angle of 21°30'00"; run thence East and North along the arc of said curve for a distance of 801.15 feet to a Point of Tangency; run thence North 70°21'11" East for a distance of 1045.07 feet to a point of curve to the right, said curve having for its elements a radius of 1765.00 feet and a central angle of 19°13'56"; run Easterly al ng the arc of said curve for a distance of 592.45 feet to a Point of Tangent; run thence North 89°35'07" East for a distance of 1108.45 feet to a point; run thence South 1°03'44" East for a distance of 756.77 feet to a Point of Curve to the left, said curve having for its elements a radius of 2050.00 feet and a central angle of 36°22'10"; run thence South and East along the arc of said curve for a distance of 1301.27 feet to a Point of Tangent; run thence South 37°25'54" East for a distance of 620.98 feet to a Point of Curve to the right, said curve having for its elements a radius of 700.00 feet and a central angle of 37°25'54"; run thence South and East along the arc of said curve for a distance of 457.31 feet to a Point of Tangent; run thence South for a distance of 355.76 feet to a Point of Curve to the right, said curve having for its elements a radius of

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1150.00 feet and a central angle of 31°39'05"; run thence South and West along the arc of said curve for a distance of 635.28 feet to a Point of Tangent; run thence South 31°39'05" West for a distance of 304.82 feet to a Point of Curve to the left, said Curve having for its elements a radius of 800.00 feet and a central angle of 31°39'05"; run thence West and South along the arc of said curve for a distance of 441.94 feet to a Point of Tangent; run thence South for a distance of 709.23 feet to a point on the Northerly Right of Way line of State Road No. 70; run thence North 89°59'55" West along said Right of Way line for a distance of 249.18 feet to a point; run thence North 89°48'33" West along said Right of Way line for a distance of 5447.17 feet to a Point on the West line of aforementioned Section 34, run thence North 2°21'20" East along said West line of Section 34 for a distance of 3931.46 feet to a point; run thence North 1°32'45" East along said West line of Section 34 for a distance of 1285.91 feet to the Point or Place of Beginning.

BK 1237 PG 1218

A portion of Sections 34 and 35, Township 37 South, Range 29 East, Highlands County, Florida, more particularly bounded and described as follows: Commence at the NorthWest corner of said Section 35; run thence South 0°17'59" East for a distance of 35.00 feet to the Point of Beginning: run thence North 89°48'55" East for a distance of 959.40 feet to a Point of Curve to the right, said curve having for its elements a radius of 1965.00 feet and a central angle of 30°11'05"; run thence East and South along the arc of said curve for a distance of 1035.21 feet to a Point of Tangency; run thence South 60°00'00" East for a distance of 674.22 feet to a Point of Curve to the left, said curve having for its elements a radius of 1435.00 feet and a central angle of 30°11'05"; run thence South and East along the arc of said curve for a distance of 755.99 feet to a Point of Tangency; run thence North 89°48'55" East for a distance of 2184.86 feet to a Point on the East line of aforesaid Section 35 being 835.10 South of the Northeast corner of said Section 35; run thence South 0°02'45" West along the East line of said Section 35 for a distance of 4452.42 feet to the North Right of Way line of State Road No. 70; run thence North 89°58'56" West along said Right of Way line for a distance of 4977.64 feet to a point; run thence North for a distance of 709.23 feet to a Point of Curve to the right, said curve having for its elements a radius of 800.00 feet and a central angle of 31°39'05"; run thence North and East along the arc of said curve for a distance of 441.94 feet to a Point of Tangency; run thence North 31°39'05" East for a distance of 304.82 feet to a Point of Curve to the left, said curve having for its elements a radius of 1150.00 feet and a central angle of 31°39'05"; run thence East and North along the arc of said curve for a distance of 635.28 feet to a Point of Tangency; run thence North for a distance of 355.76 feet to a Point of Curve to the left, said curve having for its elements a radius of 700.00 feet and a central angle of 37°25'54"; run thence North and West along the arc of said curve for a distance of 457.21 feet to a Point of Tangency; run thence North 37°25'54" West for a distance of 620.98 feet to a Point of Curve to the right, said curve having for its elements a radius of 2050.00 feet and a central angle of 36°22'10"; run thence West and North along the arc of said curve for a distance of 1301.27 feet to a Point of Tangency; run thence North 1°03'44" West

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for a distance of 758.77 feet to a point; run thence North 89°35'07" East for a distance of 49.54 feet to the Point or Place of Beginning.

LESS AND EXCEPT:
Jefferson Avenue lying in PLACID LAKES SECTION TWENTY-FOUR as per Plat Book 10, Page 40 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
Placid View Drive lying in PLACID LAKES SECTION TWENTY-TWO as per Plat Book 10, Page 20 of the Public Records of Highlands County, Florida.

BK 1237 PG 1219

A portion of Section 36, Township 37 South, Range 29 East, and A portion of Section 31, Township 37 South, Range 30 East, Highlands County, Florida, more particularly described as follows: The Fractional Section 36, Township 37 South, Range 29 East, lying North of the Right of Way of State Road 70; also the Fractional West one half of Section 31, Township 37 South, Range 30 East lying North of the Right of Way of State Road 70, all lying and being in Highlands County, Florida.

LESS AND EXCEPT:
Lots 131 and 132 of Block 113 AND Lots 13 and 14 of Block 119 of PLACID LAKES SECTION TWENTY-FIVE according to the plat thereof as recorded in Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
Monroe Street lying in PLACID LAKES SECTION TWENTY-FIVE as per Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
That portion of Melbourne Avenue lying Northeasterly of the Westerly line of Lot 132, Block 113 (if projected) to the Easterly Right of Way of Wyatt Drive (if projected) lying in PLACID LAKES SECTION TWENTY-FIVE as per plat recorded in Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
That portion of Wyatt Dr lying Northeasterly of the Northerly Right of Way line of Melbourne Avenue to the Southerly line of Lot 14, Block 119 (if projected) lying in PLACID LAKES SECTION TWENTY-FIVE as per plat recorded in Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
Placid View Drive lying in PLACID LAKES SECTION TWENTY-FIVE as per Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

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13.1.2 IFAS-CREF Sublease 4034-01

ARCHBOLD BIOLOGICAL STATION

SUBLEASE AGREEMENT

THIS SUBLEASE AGREEMENT, is made and entered into this 17th day of March, 1995, between the FLORIDA GAME AND FRESH WATER FISH COMMISSION, 620 South Meridian Street, Tallahassee, Florida 32399-1600, hereinafter referred to as "SUBLESSOR" and ARCHBOLD BIOLOGICAL STATION, P.O. Box 2057, Lake Placid, Florida 33852, hereinafter referred to as "SUBLESSEE".

WITNESSETH:

In consideration of the covenants and conditions set forth herein, SUBLESSOR subleases the below-noted premises described in attached Exhibit "A" to SUBLESSEE on the following terms and conditions:

1. ACKNOWLEDGEMENTS: The parties acknowledge that title to the subleased premises is held by the BOARD OF TRUSTEES of the Internal Improvement Trust Fund of the State of Florida ("TRUSTEES") and is currently leased to and managed by SUBLESSOR as the Lake Placid Wildlife and Environmental Area, in accordance with that certain BOARD OF TRUSTEES Lease identified in paragraph eight (8), below.

2. DESCRIPTION OF PREMISES: The property subject to this sublease is situated in the County of Highlands, State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter referred to as the "subleased premises".

3. TERMS: The term of this sublease shall be for a period of

five (5) years commencing on the 17th day of March, 1995, and ending on the 16th day of March, 2000, unless sooner terminated pursuant to the provisions of this sublease.

4. PURPOSE: SUBLESSEE shall manage the subleased premises only for the conservation and protection of natural and historical resources and resource-based public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), Florida Statues, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph six (6) of this sublease.

5. QUIET ENJOYMENT AND RIGHT OF USE: SUBLESSEE shall have the right of ingress and egress to, from and upon the subleased premises for all purposes necessary to the full quiet enjoyment by said SUBLESSEE of the right conveyed herein.

6. MANAGEMENT PLAN: SUBLESSEE shall prepare and submit a Management Plan for the subleased premises, in accordance with Section 253.034, Florida Statutes and Chapters 18-2 and 18-4, Florida Administrative Code, within 12 months of the effective date of this sublease. The Management Plan shall be submitted to the TRUSTEES for approval through SUBLESSOR. The subleased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the subleased premises without the prior written approval of the SUBLESSOR until the Management Plan is approved (See Interim Activities List). The Management Plan shall emphasize the original management concept as

approved by the TRUSTEES at the time of acquisition which established the primary public purpose for which the subleased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by SUBLESSEE AND SUBLESSOR. The SUBLESSEE shall not use or alter the subleased premises except as provided for in the approved Management Plan without the prior written approval of the SUBLESSOR and the TRUSTEES. The Management Plan prepared under this sublease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

7. OPERATIONAL PLAN: SUBLESSEE shall prepare and submit an Operational Plan by May 1 of each calendar year covering the period of July 1 through June 30. The Operational Plan shall detail the planned activities and expenses of the SUBLESSEE and shall be submitted to the SUBLESSOR for approval prior to the beginning of the fiscal year. When approved by the SUBLESSOR, the SUBLESSEE shall be reimbursed for expenditures on a quarterly basis by the SUBLESSOR. Reimbursement by SUBLESSOR shall be made pursuant to legislative appropriation of funds to the SUBLESSOR by the TRUSTEES and after the submittal of invoices and quarterly reports by SUBLESSEE.

8. CONFORMITY: This sublease shall conform to all terms and conditions of that certain Board of Trustees lease # 4034, between the TRUSTEES and SUBLESSOR, dated March 6, 1995, a copy of which is attached and described by Exhibit "B".

DTC
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SUBLESSEE shall, through its agents and employees, prevent the unauthorized use of the subleased premises or any use thereof not in conformance with said Lease.

9. ASSIGNMENT: This sublease shall not be assigned in whole or in part by SUBLESSEE without the prior written consent of the SUBLESSOR and the TRUSTEES. Any assignment made either in whole or in part without the prior written consent of the SUBLESSOR and the TRUSTEES shall be void and without legal effect.

10. RIGHT OF INSPECTION: The SUBLESSOR and the TRUSTEES or their duly authorized agents shall have the right at any and all times to inspect the subleased premises and the works and operations thereon of SUBLESSEE in any matter pertaining to this sublease.

11. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures, improvements, and signs shall be constructed at the expenses of SUBLESSEE in accordance with plans prepared by professional designers and shall require the prior written approval of SUBLESSOR and the TRUSTEES as to purpose, location and design. Further, no trees, other than non-native species, shall be removed or major land alterations may be done by SUBLESSEE without the prior written approval of SUBLESSOR and the TRUSTEES. All such improvements shall become the property of the TRUSTEES, unless otherwise agreed to in writing as an amendment to this sublease by the parties hereto and with consent of the TRUSTEES.

12. INSURANCE REQUIREMENTS: SUBLESSEE shall procure and maintain adequate fire and extended risk insurance coverage for any improvements or structures located on the subleased premises in

amounts not less than the full insurable replacement value of such improvements or structures located on the subleased premises, by delivering to the SUBLESSEE a completed Florida Fire Insurance Policy immediately upon erection of any structures as allowed by paragraph four (4) of this sublease. A copy of said policy and immediate notification in writing of any erection or removal of structures or other improvement on the subleased premises and any changes affecting the value of the improvements will be submitted to SUBLESSOR.

13. LIABILITY: SUBLESSEE shall assist in the investigation of injury or damage claims either for or against SUBLESSOR, the TRUSTEES or the State of Florida pertaining to SUBLESSEE'S respective areas of responsibility under this sublease or arising out of SUBLESSEE'S respective management programs or activities and shall contact the SUBLESSOR and TRUSTEES regarding the legal action deemed appropriate to remedy such damage or claims.

14. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this sublease in no way affects any of the parties obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless written prior authorization has been obtained from the Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Section 253.034, Florida Statutes, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the subleased

premises.

15. EASEMENTS: All easements including, but not limited to, utility easements are expressly prohibited without the prior written approval of the SUBLESSOR and the TRUSTEES. Any easement not approved in writing by the SUBLESSOR and the TRUSTEES shall be void and without legal effect.

16. SURRENDER OF PREMISES: In the event no further use of the subleased premises or any part thereof is needed, written notification shall be made to SUBLESSOR, Game and Fresh Water Fish Commission, Division of Wildlife, 620 South Meridian Street, Farris Bryant Building, Tallahassee, Florida 32399-1600, at least six (6) months prior to the release of all or any part of the subleased premises. Notification shall include a legal description and an explanation of the release. The release shall only be valid if approved by the SUBLESSOR through the execution of a release of sublease instrument executed with the same formality as this sublease. The decision to retain any improvements upon termination of this sublease shall be at TRUSTEES sole discretion. Prior to surrender of all or any part of the subleased premises, a representative of SUBLESSOR shall perform an on-site inspection and the keys to any buildings on the sublease premises shall be turned over to SUBLESSOR. If the improvements or subleased premises do not meet all conditions as set forth in paragraphs twenty (20) and twenty-one (21) herein, SUBLESSEE shall pay all costs necessary to meet the prescribed conditions.

17. BEST MANAGEMENT PRACTICE: SUBLESSEE shall implement applicable Best Management Practices for all activities conducted

under this sublease in compliance with paragraph 18-2.004(1)(d), Florida Administrative Code, which have been selected, developed, or approved by the TRUSTEES and SUBLESSOR or other land managing agencies for the protection and enhancement of the subleased premises.

18. PUBLIC LANDS ARTHROPOD CONTROL PLAN: SUBLESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one year of the effective date of this sublease, all of the environmentally sensitive and biologically highly productive lands contained within the subleased premises, in accordance with Section 388.4111, Florida Statutes and Chapter 10D-54, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

19. TRIPLICATE ORIGINALS: This sublease is executed in triplicate originals each of which shall be considered an original for all purposes.

20. UTILITY FEES: SUBLESSEE shall be responsible for the payment of all charges for the furnishing of gas, electricity, water, telephone and other public utilities to the subleased premises and for having all utilities turned off when the subleased premises are surrendered.

21. MAINTENANCE: SUBLESSEE shall maintain the real property contained within the subleased premises and any improvements located thereon, in a state of good condition, working order and repair including, but not limited to, keeping the subleased premises free of trash or litter, meeting all building safety codes in the location situated, maintaining all planned improvements as

set forth in the approved Management Plan and maintaining any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be on the effective date of this sublease; provided, however, that any removal, closure, etc., of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection and enhancement of the natural and historical resources within the subleased premises and with the approved Management Plan.

22. ENTIRE UNDERSTANDING: This sublease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of the SUBLESSOR with consent of the TRUSTEES.

23. BREACH OF COVENANTS, TERMS, OR CONDITIONS: Should SUBLESSEE breach any of the covenants, terms, or conditions of this sublease, SUBLESSOR, shall give written notice to SUBLESSEE to remedy such breach within sixty (60) days of such notice. In the event SUBLESSEE fails to remedy the breach to the satisfaction of SUBLESSOR within sixty (60) days of receipt of written notice, SUBLESSOR may either terminate this sublease and recover from SUBLESSEE all damages SUBLESSOR may incur by reason of the breach including, but not limited to, the cost of recovering the subleased premises or maintain this sublease in full force and effect and exercise all rights and remedies herein conferred upon SUBLESSOR.

24. NO WAIVER OF BREACH: The failure of SUBLESSOR to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this sublease shall not be construed as a waiver of such covenants, terms and

conditions, but the same shall continue in full force and effect, and not constitute a waiver by SUBLESSOR of any one of the provisions hereof. In any event, a waiver shall not be deemed to have been made unless the waiver is set forth in writing, signed by SUBLESSOR.

25. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the subleased premises is held by the TRUSTEES. SUBLESSEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the subleased premises including, but not limited to, mortgages or construction liens against the subleased premises or against any interest of the TRUSTEES or SUBLESSOR.

26. CONDITIONS AND COVENANTS: All of the provisions of this sublease shall be deemed covenants running with the land included in the subleased premises and construed to be "conditions" as well as "covenants" as though the words specifically expressing or imparting covenants and conditions were used in each separate provision.

27. DAMAGE TO THE PREMISES: SUBLESSEE shall not do, or suffer to be done, in, on or upon the subleased premises or as affecting said subleased premises, any act which may result in damage or depreciation of value to the subleased premises, or any part thereof. SUBLESSEE shall not dispose of any contaminants including, but not limited to, hazardous or toxic substances, chemicals or other agents used or produced in SUBLESSEE'S operations, on the subleased premises or on any adjacent state land or in any manner not permitted by law.

28. PAYMENT OF TAXES AND ASSESSMENTS: SUBLESSEE shall assume full responsibility for and shall pay all liabilities that accrue to the subleased premises or to the improvements thereon, including all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against the subleased premises.

29. RIGHT OF AUDIT: SUBLESSEE shall make available to the SUBLESSOR all financial and other records relating to this sublease and the SUBLESSOR shall have the right to audit such records at any reasonable time. This right shall be continuous until this sublease expires or is terminated. This sublease may be terminated by the SUBLESSOR should SUBLESSEE fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this sublease, pursuant to Chapter 119, Florida Statutes.

30. NON-DISCRIMINATION: LESSEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the leased premises or upon lands adjacent to and used as an adjunct of the leased premises.

31. COMPLIANCE WITH LAWS: SUBLESSEE agrees that this sublease is contingent upon and subject to SUBLESSEE obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules, and laws of the State of Florida or the United States or of any political subdivision or agency of either.

32. GOVERNING LAW: This sublease shall be governed by and

interpreted according to the laws of the State of Florida.

33. VENUE: SUBLESSEE agrees that SUBLESSOR has venue privileges as to any litigation arising from matters relating to this sublease. Any such litigation between SUBLESSOR and SUBLESSEE shall be initiated and maintained only in Leon County, Florida.

"SUBLESSOR"

FLORIDA GAME AND FRESH WATER FISH COMMISSION

Witness

Typed or Printed Name

By: Allan L. Egbert, Ph.D.
Executive Director

APPROVED AS TO FORM AND LEGAL SUFFICIENCY
Commission Attorney

Witness

Typed or Printed Name

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 13th day of August, 19 95, by William C. Sumner, as Asst. Executive Director personally known to me ~~or presented as identification~~.

SEAL:

NOTARY PUBLIC
JIMMIE C. BEVIS
My Commission Expires:

"SUBLESSEE"

ARCHBOLD BIOLOGICAL STATION

Witness

Donald T. Shelfer
Typed or Printed Name

By: John W. Fitzpatrick
Title: Executive Director

Witness

Laura D. Cummings
Typed or Printed Name

STATE OF FLORIDA
COUNTY OF HIGHLANDS

The foregoing instrument was acknowledged before me this 19th day of January, 1995, by John W. Fitzpatrick, as _____, personally known to me or produced _____ as identification.

(SEAL)

OFFICIAL SEAL
PENNY M. DEVANE
My Commission Expires
March 17, 1996
Comm. No. CC 181920

NOTARY PUBLIC
My Commission Expires:

Consented to by the Board of Trustees on the 24th day of March, 1995.

by: CHIEF, BUREAU OF LAND MANAGEMENT SERVICES, DIVISION OF STATE LANDS, DEPARTMENT OF ENVIRONMENTAL PROTECTION

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EXHIBIT "A"

Section 27, Township 37 South, Range 29 East, Highlands County, Florida, and a portion of Sections 34 and 26, Township 37 South, Range 29 East, Highlands County, Florida and more particularly bounded and described as follows: Begin at the Southwest corner of aforesaid Section 27; run thence North 0°14'46" East for a distance of 1354.98 feet to a point, run thence North 0°37'01" West a distance of 3959.10 feet to the Northwest corner of said Section 27; run thence South 89°46'30" East along the North line of said Section 27 for a distance of 5092.15 feet to the Northeast corner of said Section 27; run thence North 89°17'55" East along the North line of above mentioned Section 26 for a distance of 50.00 feet to a point; run thence South 0°08'45" West parallel to the division line between said Sections 26 and 27 for a distance of 905.74 feet to a Point of Curve to the left, said curve having for its elements a radius of 950.00 feet and a central angle of 26°35'00"; run thence South and East along the arc of said curve for a distance of 440.77 feet to a Point of Tangency; run thence South 26°26'15" East for a distance of 1039.27 feet to a Point of Curve to the right, said curve having for its elements a radius of 1450.00 and a central angle of 58°33'45"; run thence South and West along the arc of said curve for a distance of 1482.06 feet to a Point of Tangency; run thence South 32°07'30" West for a distance of 497.56 feet to a Point of Curve to the left, said curve having for its elements a radius of 1550.00 feet and a central angle of 31°58'45"; run thence South and West along the arc of said curve for a distance of 865.12 feet to a Point of Tangency; run thence South 0°08'45" West parallel with the Division line between aforesaid Sections 26 and 27 for a distance of 372.73 feet to a point; run thence South 89°48'55" West parallel with the South line of said Section 26 for a distance of 49.73 feet to a point; run thence South 89°35'07" West parallel with the South line of aforesaid Section 27 for a distance of 1157.99 feet to a Point of Curve to the left, said curve having for its elements a radius of 1765.00 feet and a central angle of 19°13'56"; run thence West and South along the arc of said curve for a distance of 592.45 feet to a Point of Tangency; run thence South 70°21'11" West for a distance of 1045.07 feet to a Point of Curve to the right, said curve having for its elements a radius of 2135.00 feet and a central angle of 21°30'00"; run thence Westerly along the arc of said curve for a distance of 801.15 feet to a Point of Tangency; run thence North 88°08'49" West for a distance of 596.54 feet to a Point of Curve to the right, said curve having for its elements a radius of 835.00 feet and a central angle of 69°23'34"; run thence West and North along the arc of said curve for a distance of 1011.30 feet and intersecting the South line of aforesaid Section 27; run thence South 89°35'06" West along said South line of Section 27 for a distance of 172.49 feet to the Point or Place of Beginning.

LESS AND EXCEPT:
Jefferson Avenue lying in PLACID LAKES SECTION TWENTY-ONE as per plat Book 10, Page 19 of the Public Records of Highlands County, Florida.

BK 1237 PG 1214

ALSO LESS AND EXCEPT:
The South 1/2 of Tobler Boulevard lying in PLACID LAKES SECTION TWENTY-ONE as per Plat Book 10, Page 19 of the Public Records of Highlands County, Florida.

A portion of Sections 26 and 35, Township 37 South, Range 29 East, Highlands County, Florida, being more particularly described as follows: Commence at the Northwest corner of said Section 26; run thence North 89°17'55" East along the North line of said Section 26 for a distance of 50.00 feet to the Point of Beginning: continue North 89°17'55" East along said North line of Section 26 for a distance of 3913.16 feet to the Northwest corner of the Northeast 1/4 of the Northeast 1/4 of said Section 26; run thence South 1°07'22" East along the West line of said Northeast 1/4 of the Northeast 1/4 for a distance of 1323.19 feet to the South line of the Northeast 1/4 of the Northeast 1/4 of said Section 26; run thence North 89°25'27" East along said South line of the Northeast 1/4 of the Northeast 1/4 for a distance of 1330.78 feet to a point; run thence South 1°32'29" East along the East line of aforesaid Section 26 for a distance of 3980.13 feet to the Southeast corner of said Section 26; run thence South 0°02'45" West along the East line of Section 35, Township 37 South, Range 29 East for a distance of 835.01 feet to a point; run thence South 89°48'55" West for a distance of 2184.86 feet to a Point of Curve to the right, said curve having for its elements a radius of 1435.00 feet and a central angle of 30°11'05"; run thence West and North along the arc of said curve for a distance of 755.99 feet to a Point of Tangency; run thence North 60°00'00" West for a distance of 674.22 feet to a Point of Curve to the left, said curve having for its elements a radius of 1965.00 feet and a central angle of 30°11'05"; run thence North and West along the arc of said curve for a distance of 1035.21 feet to a Point of Tangency; run thence South 89°48'55" West for a distance of 909.68 feet to a point; run thence North 0°08'45" East for a distance of 372.73 feet to a Point of Curve to the right, said curve having for its elements a radius of 1550.00 feet and a central angle of 31°58'45"; run thence North and East along the arc of said curve for a distance of 865.12 feet to a Point of Tangency; run thence North 32°07'30" East for a distance of 497.56 feet to a Point of Curve to the left, said curve having for its elements a radius of 1450.00 feet and a central angle of 58°33'45"; run thence Northerly along the arc of said curve for a distance of 1482.06 feet to a Point of Tangency; run thence North 26°26'15" West for a distance of 1039.27 feet to a Point of Curve to the right, said curve having for its elements a radius of 950.00 feet and a central angle of 26°35'00"; run thence Northerly along the arc of said curve for a distance of 440.77 feet to a Point of Tangency; run thence North 0°08'45" East for a distance of 905.74 feet to a Point or Place of Beginning.

LESS AND EXCEPT:
The South 1/2 of Tobler Boulevard lying in PLACID LAKES SECTION TWENTY-TWO as per Plat Book 10, Page 20 of the Public Records of Highlands County, Florida.

BK 1237 PG 1215

ALSO LESS AND EXCEPT:
Placid View Drive lying in PLACID LAKES SECTION TWENTY-TWO as per Plat Book 10, Page 20 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
A portion of the East Half of the East Half of Section 26, Township 37 South, Range 29 East, Highlands County, Florida, being more particularly described as follows: Begin at the Southwest corner of the Northeast Quarter of the Northeast Quarter of said Section 26 for the Point of Beginning; thence North 89 degrees 25 minutes 27 seconds East along the South line of the Northeast Quarter of the Northeast Quarter of said Section 26 for a distance of 1289.32 feet to a point on the Westerly Right of Way line of Placid View Drive; thence South 3 degrees 10 minutes 42 seconds East along said Westerly Right of Way line of Placid View Drive for a distance of 380.01 feet to a point; thence South 1 degree 15 minutes 32 seconds East still along said Westerly Right of Way line of Placid View Drive for a distance of 599.48 feet to a point; thence South 1 degree 23 minutes 16 seconds East still along the said Westerly Right of Way line of Placid View Drive for a distance of 339.61 feet to a point; thence South 89 degrees 25 minutes 27 seconds West on a line parallel with the South line of the Northeast Quarter of the Northeast Quarter of said Section 26 for a distance of 1305.98 feet to a point on the West line of the East Half of the East Half of Section 26; thence North 1 degree 07 minutes 22 seconds West along the said West line of the East Half of the East Half of said Section 26 for a distance of 1319.59 feet to the Point of Beginning.

ALSO LESS AND EXCEPT:
Commence at the Northwest corner of Section 26, Township 37 South, Range 29 East, Highlands County, Florida; thence North 89°17'55" East along the North line of said Section 26 a distance of 50.00 feet; thence South 0°08'45" West a distance of 59.64 feet to a point on the East Right of Way line of Jefferson Avenue and for the Point of Beginning: thence continue South 0°08'45" West a distance of 846.10 feet to a Point of Curvature of a curve concave to the East; thence along said curve to the left and having for its elements a radius of 950.00 feet and a central angle of 3°47'17" for an arc distance of 62.61 feet; thence North 89°17'55" East a distance of 931.45 feet; thence North 0°08'45" East a distance of 903.53 feet to a point on the South Right of Way line Tobler Boulevard; thence South 89°17'55" West along said Right of Way line a distance of 908.90 feet to a Point of Curvature of a curve concave to the Southeast; thence along said curve to the left having for its elements a radius of 25.00 feet and a central angle of 89°09'20" for an arc distance of 38.90 feet to the Point of Beginning.

ALSO LESS AND EXCEPT:
A portion of the South Half of Section 26, Township 37 South, Range 29 East, Highlands County, Florida, described as follows: Commence at the Southeast corner of Section 26,

BK 1237 PG 1216

Township 37 S h, Range 29 East, Highl: 's County, Florida; thence South 89 degrees 48' 55" West along the South line of said Section 26 a distance of 35.40 feet to the West Right of Way line of Placid View Drive for the Point of Beginning: thence continue on the same line a distance of 2632.40 feet; thence North 00 degrees 42' 07" West, a distance of 1316.17 feet; thence North 89 degrees 25' 27" East a distance of 2620.97 feet to the West Right of Way line of said Placid View Drive; thence South 01 degrees 51' 23" East along said West Right of Way line a distance of 534.91 feet; thence South 00 degrees 44'29" East along said West Right of Way line a distance of 799.36 feet to the Point of Beginning.

ALSO LESS AND EXCEPT:
Commence at the Northeast corner of Section 35, Township 37 South, Range 29 East, Highlands County, Florida; thence run South 89°48'59" West and along the North line of Section 35 a distance of 1895.18 feet; thence South 26°29'31" West a distance of 42.94 feet to an iron rod for Point of Beginning: From said Point of Beginning run thence South 63°30'29" East a distance of 125.00 feet to an iron rod; thence South 26°29'31" West a distance of 80.00 feet to an iron rod; thence North 63°30'29" West a distance of 125.00 feet to an iron rod; thence North 26°29'31" East a distance of 80.00 feet to Point of Beginning.

BK 1237 PG 1211

A portion of Sections 34 and 35, Township 37 South, Range 29 East, Highlands County, Florida, more particularly bounded and described as follows: Begin at the Northwest corner of said Section 34; run thence North 89°35'07" East along the North line of said Section 34 for a distance of 172.49 feet to a Point on the arc of a curve, said point bearing South 71°14'45" West from the center of said curve which has for its elements a radius of 835.00 feet and a central angle of 69°23'34"; run thence South and East along the arc of said curve for a distance of 1011.30 feet to a Point of Tangent; run thence South 88°08'49" East for a distance of 596.54 feet to a Point of Curve to the left, said curve having for its elements a radius of 2135.00 feet and a central angle of 21°30'00"; run thence East and North along the arc of said curve for a distance of 801.15 feet to a Point of Tangency; run thence North 70°21'11" East for a distance of 1045.07 feet to a point of curve to the right, said curve having for its elements a radius of 1765.00 feet and a central angle of 19°13'56"; run Easterly along the arc of said curve for a distance of 592.45 feet to a Point of Tangent; run thence North 89°35'07" East for a distance of 1108.45 feet to a point; run thence South 1°03'44" East for a distance of 758.77 feet to a Point of Curve to the left, said curve having for its elements a radius of 2050.00 feet and a central angle of 36°22'10"; run thence South and East along the arc of said curve for a distance of 1301.37 feet to a Point of Tangent; run thence South 37°25'54" East for a distance of 620.96 feet to a Point of Curve to the right, said curve having for its elements a radius of 700.00 feet and a central angle of 37°25'54"; run thence South and East along the arc of said curve for a distance of 457.31 feet to a Point of Tangent; run thence South for a distance of 255.76 feet to a Point of Curve to the right, said curve having for its elements a radius of

1150.00 feet and a central angle of 31°39'05". run thence South and West along the arc of said curve for a distance of 635.28 feet to a Point of Tangent; run thence South 31°39'05" West for a distance of 304.82 feet to a Point of Curve to the left, said Curve having for its elements a radius of 800.00 feet and a central angle of 31°39'05"; run thence West and South along the arc of said curve for a distance of 441.94 feet to a Point of Tangent; run thence South for a distance of 709.23 feet to a point on the Northerly Right of Way line of State Road No. 70; run thence North 89°59'55" West along said Right of Way line for a distance of 249.18 feet to a point; run thence North 89°48'33" West along said Right of Way line for a distance of 5447.17 feet to a Point on the West line of aforementioned Section 34, run thence North 2°21'20" East along said West line of Section 34 for a distance of 3931.46 feet to a point; run thence North 1°32'45" East along said West line of Section 34 for a distance of 1285.91 feet to the Point or Place of Beginning.

BK 1 23 / PG 1 2 1 8

A portion of Sections 34 and 35, Township 37 South, Range 28 East, Highlands County, Florida, more particularly bounded and described as follows: Commence at the Northwest corner of said Section 35; run thence South 0°17'59" East for a distance of 35.00 feet to the Point of Beginning: run thence North 89°48'55" East for a distance of 959.40 feet to a Point of Curve to the right, said curve having for its elements a radius of 1965.00 feet and a central angle of 30°11'05"; run thence East and South along the arc of said curve for a distance of 1035.31 feet to a Point of Tangency; run thence South 60°00'00" East for a distance of 674.22 feet to a Point of Curve to the left, said curve having for its elements a radius of 1435.00 feet and a central angle of 30°11'05"; run thence South and East along the arc of said curve for a distance of 755.99 feet to a Point of Tangency; run thence North 89°48'55" East for a distance of 2184.86 feet to a Point on the East line of aforesaid Section 35 being 835.10 South of the Northeast corner of said Section 35; run thence South 0°02'45" West along the East line of said Section 35 for a distance of 4452.42 feet to the North Right of Way line of State Road No. 70; run thence North 89°58'56" West along said Right of Way line for a distance of 4977.64 feet to a point; run thence North for a distance of 709.23 feet to a Point of Curve to the right, said curve having for its elements a radius of 800.00 feet and a central angle of 31°39'05"; run thence North and East along the arc of said curve for a distance of 441.94 feet to a Point of Tangency; run thence North 31°39'05" East for a distance of 304.82 feet to a Point of Curve to the left, said curve having for its elements a radius of 1150.00 feet and a central angle of 31°39'05"; run thence East and North along the arc of said curve for a distance of 635.28 feet to a Point of Tangency; run thence North for a distance of 355.76 feet to a Point of Curve to the left, said curve having for its elements a radius of 700.00 feet and a central angle of 37°25'54"; run thence North and West along the arc of said curve for a distance of 457.31 feet to a Point of Tangency; run thence North 37°25'54" West for a distance of 620.98 feet to a Point of Curve to the right, said curve having for its elements a radius of 2050.00 feet and a central angle of 36°22'10"; run thence West and North along the arc of said curve for a distance of 1301.37 feet to a Point of Tangency; run thence North 1°03'44" West

for a distance of 758.77 feet to a point; run thence North 89°35'07" East for a distance of 49.54 feet to the Point or Place of Beginning.

LESS AND EXCEPT:
Jefferson Avenue lying in PLACID LAKES SECTION TWENTY-FOUR as per Plat Book 10, Page 40 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
Placid View Drive lying in PLACID LAKES SECTION TWENTY-TWO as per Plat Book 10, Page 20 of the Public Records of Highlands County, Florida.

A portion of Section 36, Township 37 South, Range 29 East, and A portion of Section 31, Township 37 South, Range 30 East, Highlands County, Florida, more particularly described as follows: The Fractional Section 36, Township 37 South, Range 29 East, lying North of the Right of Way of State Road 70; also the Fractional West one half of Section 31, Township 37 South, Range 30 East lying North of the Right of Way of State Road 70, all lying and being in Highlands County, Florida.

LESS AND EXCEPT:
Lots 131 and 132 of Block 113 AND Lots 13 and 14 of Block 119 of PLACID LAKES SECTION TWENTY-FIVE according to the plat thereof as recorded in Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
Monroe Street lying in PLACID LAKES SECTION TWENTY-FIVE as per Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
That portion of Melbourne Avenue lying Northeasterly of the Westerly line of Lot 132, Block 113 (if projected) to the Easterly Right of Way of Wyatt Drive (if projected) lying in PLACID LAKES SECTION TWENTY-FIVE as per plat recorded in Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
That portion of Wyatt Dr lying Northeasterly of the Northerly Right of Way line of Melbourne Avenue to the Southerly line of Lot 14, Block 119 (if projected) lying in PLACID LAKES SECTION TWENTY-FIVE as per plat recorded in Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

ALSO LESS AND EXCEPT:
Placid View Drive lying in PLACID LAKES SECTION TWENTY-FIVE as per Plat Book 10, Page 29 of the Public Records of Highlands County, Florida.

BK 1231 PG 1219

13.1.3 Approved Management Plan for the IFAS-CREF Sublease 4034-01

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

October 9, 2014

Ms. Jacqueline K. Burns
Citrus Research and Education Foundation
UF-IFAS Citrus Research and Education Center
700 Experiment Station Road
Lake Alfred, FL 33850

Re: Lake Wales Ridge WEA, Royce Unit, IFAS-CREF Sublease
Sublease # 4034-01

Dear Ms. Burns:

The Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the above referenced management plan. The next management plan update is due October 9, 2024.

Approval of this land management plan does not waive the authority or jurisdiction of any governmental entity that may have an interest in this project. Implementation of any upland activities proposed by this management plan may require a permit or other authorization from federal and state agencies having regulatory jurisdiction over those particular activities. Pursuant to the conditions of your lease, please forward copies of all permits to this office upon issuance.

Sincerely,

Marianne S. Gengenbach
Office of Environmental Services
Division of State Lands

www.dep.state.fl.us

Revised November 2013

1. Purpose and Scope

Management guidelines are required for the citrus grove being subleased by the Citrus Research and Education Foundation, Inc. ("CREF") from the Florida Fish and Wildlife Conservation Commission ("FWC") under Sublease dated April 2, 2008 ("Sublease") at Lake Placid, FL in accordance with subsection 253.034 Florida Statutes and subsection 18-2.021 (4) Florida Administrative Code. The management plan is specified in the Sublease and will be implemented by responsible faculty and grove maintenance personnel at the Citrus Research and Education Center (CREC) as well as the grove caretaker company and other subcontractors hired on the property. Best Management Practices ("BMP") will be followed as a rule. The Management Plan is subject to change as new procedures for grove care are planned, approved, and implemented by the CREF Board of Directors. Irrigation practices and grove management research is conducted at this site, and as such, management within the grove may temporarily deviate from the general plan stated below.

2. Fences, Gates, and Signs

Fences will be constructed and maintained around the groves as described in the Sublease. At each of the six entrance gates, the following messages will be displayed on a signpost.

Area Closed (Open to the public by guided tours only)

This public land is leased to the Citrus Research and Education Foundation, Inc.

All personnel and vehicles must first pass through the Canker Wash at the northwest gate

Additionally "Area Closed" signs provided by FWC shall be placed along the boundary fence at set distances. CREC shall maintain all signage and place additional signage as is deemed appropriate by CREC and/or FWC.

3. Animal Control

Feral hogs can be a significant problem in citrus groves. Both parties understand and agree that exclusionary fencing is the only known available strategy to effectively reduce or eliminate damage caused by feral hogs. The installation of fabric ('hog-wire' or 'field') fencing is most effective, but is cost prohibitive in this particular situation. Therefore, electric fencing has been determined by CREC and FWC representatives to be the most feasible initial strategy to employ.

CREC has properly installed and maintained electric fencing on existing barbed wire fencing on the grove boundary. The electric fence is installed on the grove-side of the boundary fence to reduce the likelihood of accidental contact by persons outside the grove. CREC has worked with FWC to report problems with installation and maintenance to FWC. Upon request by CREC, FWC has provided technical guidance regarding fence construction, modifications, and/or maintenance. After the electric fence was installed properly, a Hog Control Permit was required to remove hogs contained within the grove after fencing (Permit No. HC12-08). This permit was renewed in July 2013 (Permit HC13-08).

In addition to the signage described above (Section 2. Fences, Gates, and Signs), CREC will install the following signs at 300-ft intervals on the grove boundary:

"Area Closed" – supplied FWC

"Warning: Electric Fence" – supplied by CREC

As permit conditions and provisions require, our grove caretakers will continue to document in writing any feral hog problems observee in the groves while conducting routine daytime work. If hogs penetrate properly installed and maintained fencing and cause significant damage to the grove, FWC will work CREC to modify exclusionary practices and/or initiate appropriate control methods to reduce damage.

4. Environmental and Worker Protection

To protect the environment and grove workers, guidelines set forth by the State of Florida Agrochemical Handling and Farm Equipment Management Guidelines will be followed. Only licensed applicators will be allowed to apply agrochemicals. Agrochemicals that may be applied are referred to as pesticides and may include insecticides, fungicides, bactericides, nematicides, and herbicides.

4.1) Liquid fertilizer and diesel tanks will be installed at the well pump locations and will be protected with the necessary containment structures prescribed in BMPs.

4.2) Granular fertilizer will be dispensed from bulk hauling trailers at the staging area and contractors will comply with the BMPs to avoid ground contamination.

4.3) When needed, excess pesticide materials will be disposed according to pesticide waste management guidelines contained in the BMP Agrochemical Handling and Farm Equipment Maintenance Guidelines.

4.4) Ground sprayer loading, agrochemical application and equipment cleaning procedures will be conducted according to established BMP Agrochemical Handling and Farm Equipment Maintenance Guidelines.

4.5) Burning of plant debris may be conducted to eliminate plant waste or manage citrus disease inoculum when warranted. Burning will be conducted according to the guidelines established by the Florida Division of Forestry.

5. Mineral nutrition

Proper and balanced mineral nutrition may be applied to young and mature trees in various ways and timing as described below. When possible, variable rate technologies will be used to minimize application costs and environmental impact. Nutrient amounts applied will not exceed those recommended for statewide Citrus Best Management Practices (DACS-P-01756).

5.1) Variable rate fertilizer technology may be used to apply granular fertilizer to achieve a portion of the prescribed annual nutrient requirements.

5.2) Variable rate air-blast technology will be used to apply foliar nutrient spray fertilizer to achieve a portion of the prescribed annual nutrient requirements.

5.3) Fertigation (nutrition applied through irrigation water) will be used to provide the balance of nutrients not supplied by 5.1 and 5.2 as described by Advanced Citrus Production System (ACPS) protocols.

5.4) Leaf samples may be collected annually to verify adequate tree nutrition.

6. Irrigation

To meet citrus tree water requirements and to protect trees from freeze damage (see 9. Freeze Protection), water may be applied in various ways and frequencies as described below. Wells are located throughout the property, and irrigation lines have been run to all plots. Irrigation may be delivered using under-tree microsprinkler and/or drip emitters. For freeze protection, microsprinklers have been added throughout the grove.

6.1) Irrigation will be applied on prescribed frequency as required by soil moisture measurements, rainfall and ET (evapotranspiration).

6.2) When necessary, the irrigation stream may contain dilute fertilizer solution (fertigation) as described above.

6.3) The irrigation system will be maintained through prescribed inspection to prevent leaks or blockages, and to repair damage due to routine grove care practices.

7. Pest and disease control

Citrus trees must be protected from pests and diseases. As such, a range of agrochemicals may be applied according to recommendations in the Florida Pest Management Guide. Routine scouting and/or established rates and timing of pesticides may guide application.

7.1) Ground sprayers and/or airplanes may be used to apply pesticide agrochemicals.

7.2) Pest and disease scouting may be conducted to guide application timing and frequency.

8. Weed control

Herbicide applications may be necessary to prevent competition between citrus and unwanted plants in and around citrus trees, fence lines, and equipment areas. A range of agrochemicals targeting weed species may be applied according to recommendations in the Florida Pest Management Guide.

8.1) A ground sprayer may be used to control weeds in the tree rows or fence lines as needed.

8.2) A tractor-drawn mower may be used to keep the vegetation in row middles and around fence lines at a manageable height.

8.3) Vine weeds may be manually removed from tree canopies at prescribed times.

9. Freeze protection

Water application at precise times as temperatures drop to the freezing level is a proven means to protect trees against freezing damage. The current wells located on the property do not provide sufficient water for freeze protection. We propose to add two additional wells with diesel pumps to protect the trees from freeze damage.

9.1) Irrigation water will be run in various blocks within the grove to protect against freezing when temperatures warrant.

10. Tree removal and resetting

Tree removal and subsequent resetting is an established means to maintain productivity in the grove.

10.1) Trees will be removed when deemed unproductive, regardless of the cause for decline.

10.2) Removed trees will be collected and burned according to established guidelines (see above).

10.3) Resets will be planted from certified disease-free nursery stock in spaces vacated by the removed trees.

10.4) Nutrients and water will be supplied to resets by irrigation, fertigation and/or granular controlled release fertilizer applications.

10.5) Appropriate pesticides will be used to maintain continuous protection from pests (see 7. and 8. above).

11. Young tree solid plantings

From time to time, it may be necessary or desirable to plant young trees in solid plantings.

11.1) Disease-free trees from certified citrus nurseries will be used.

11.2) All trees will be fertigated and irrigated initially, and may be planted at higher densities than the existing old blocks, in line with new citrus planting systems.

11.3) Agrochemicals may be applied by spray applications or through the irrigation system as described above.

11.4) Agrochemicals that may be applied, rates and timing, can be found in the Pest Management Guide.

12. Windbreaks

Trees may be planted as necessary to control diseases carried by wind-blown spores. Species selected for windbreaks will be those recommended by NRCS Field Office Technical Guide for Windbreak/Shelterbelt Establishment and IFAS (http://www.crec.ifas.ufl.edu/extension/windbreaks/species.shtml). In particular, planting of windbreaks are recommended for control of the spread of citrus canker.

13. Harvesting

Harvesting of fruit will be done annually by block and governed by fruit maturity and price. Harvesting will be done by licensed harvesting contractors or by CREC research personnel.

14. Water drainage and ditch maintenance (Florida Fish and Wildlife Conservation Commission Restoration Plan)

To maintain proper water flow and meet objectives of the above, CREF will participate through maintenance of ditches in and immediately surrounding the subleased property, even though some ditches, notably west of blocks 33 and 34A, are outside of the lease boundary but adjacent to these blocks. Such ditches and associated water flow are deemed crucial for water management in blocks west of Royce Ranch Avenue. Ditch maintenance can include mowing and debris removal.

14.1) Ditches that parallel blocks 33 and 34A will be maintained to encourage flow of water away from the grove site and to Peace Pond.

14.2) Ditches on the east side of Royce Ranch Avenue will be maintained to encourage flow of water to Lake Istokpoga.

13.2 Public Input

13.2.1 Management Advisory Group Meeting

Lake Wales Ridge Wildlife and Environmental Area (LWRWEA)
Management Advisory Group (MAG)
Consensus Meeting Results

March 27, 2013 in Sebring, Florida

The intent of convening a consensus meeting is to involve a diverse group of stakeholders in assisting the Florida Fish and Wildlife Conservation Commission (FWC) in development of a rational management concept for lands within the agency's managed area system. FWC does this by asking spokespersons for these stakeholders to participate in a half-day meeting to provide ideas about how FWC-managed lands should be protected and managed.

The MAG consensus meeting was held on the morning of March 27, 2013 at Highlands Hammock State Park, in Sebring, Florida in Highlands County. The ideas found below were provided by stakeholders for consideration in the 2013 - 2023 Management Plan (MP) with priority determined by vote. These ideas represent a valuable source of information to be used by biologists, planners, administrators, and others during the development of the MP. Upon approval by FWC, the Acquisition and Restoration Council (ARC), and the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the MP will guide the activities of FWC personnel over the ten-year duration of the management plan and will help meet agency, state, and federal planning requirements.

Numbers to the left of **bold-faced ideas** listed below represent the total number of votes and the score of each idea. Rank is first determined by the number of votes (vote cards received for each idea) and then by score. Score is used to break ties when two or more ideas have the same number of votes. A lower score indicates higher importance because each voter's most important idea (recorded on card #1) received a score of 1, and their fifth most important idea (recorded on card #5) received a score of 5. Ideas not receiving any votes are listed, and were considered during the development of the MP, but carry no judgment with regard to priority.

Statements following the bold-faced ideas represent a synopsis of the clarifying discussion of ideas as transcribed and interpreted by the FWC recorder at the meeting. As indicated above, the ideas below are presented in priority order:

Rank	# of Votes	Score	Idea
1.	[9]	[27]	3. **Increase public awareness and environmental importance of Lake Wales Ridge Wildlife Environmental Area as a community asset and plus community support, including technology** Public awareness environmental purpose, related to managed lands being a resource for educational opportunities; quality of life. Helps communicate to community why this area is important.

Rank	# of Votes	Score	Idea	
2.	[5]	[19]	1.	**Provide more affective land management of mega parcels and law enforcement.** 7 of 19 properties termed mega parcels, not all owned by the State. Difficult to do assessments of property that is in private ownership. Exotic, prescribed fire...etc.
3.	[4]	[7]	14.	**Increase acquisition of in holdings through alternative acquisition techniques. 3rd party acquisitions, donations, land exchanges.** Not saying increase only through these ways but any creative way to increase acquisition.
4.	[4]	[10]	15.	**Control invasive exotic plant and animal species.** Self explanatory.
5.	[4]	[13]	35.	**Prioritize wildlife corridor acquisition to enhance connectivity within the area and surrounding lands, education.** This region is key for wildlife - how aware is public that this area is critical.
6.	[4]	[14]	25.	**Restore and maintain native floral and fauna to maintain natural communities.** Self explanatory
7.	[3]	[4]	9.	**Plan and implement expanded trail system.** Self explanatory
8.	[3]	[8]	12.	**Implement a comprehensive hog eradication program.** Hogs cause thousands of dollars in damage, look at other success stories and see how we can implement ideas.
9.	[3]	[13]	16.	**Work with Governmental agencies on land use planning and policy for compatible development and set aside adjacent lands.**

2

Rank	# of Votes	Score	Idea	
10.	[2]	[4]	18.	**Increase conservation partners through conservation easements, landowner assistance program, private landowners, NGO's and others.** To make the most of what we have and make a bigger impact. This preserves the natural heritage. Private landowners, managers. We work with big partnerships and landowners.
				Two items of equal rank:
11.	[2]	[6]	8.	**Improve wildlife habitat nutrition to increase wildlife population with wildlife plots.** You want animals to be able to eat if we do it right, it will be easiest way to do it. If we plant native plants in appropriate place it should be more effective.
11.	[2]	[6]	22.	**Creative ideas to generate funding for land acquisition, management and education.** Trying to find creative ways for acquisition and education purposes - better to keep acquiring land or educate land owners how to better manage their lands.
13.	[2]	[7]	24.	**Improve listed species management and monitoring.** Self explanatory
14.	[2]	[8]	39.	**Consider law enforcement's impute implications when providing recreational opportunities to enhance and promote more effective law enforcement.** Whenever you create new opportunities need to be new rules. If rules could be tweaked so it is less enforcement for offices - wouldn't require LE resources as much. By considering how rules can best be applied. Trying to make things as effective as possible without increasing LE in areas.
				Two items of equal rank:
15.	[1]	[1]	5.	**Review hunting quota permits and increase hunting opportunities on LWRWEA.** Permits are not going to the persons who wants to hunt - only 1/3 of permit holders are showing up. People without permits are having to wait to hunt.

3

Rank	# of Votes	Score	Idea	
15.	[1]	[1]	23.	**Expand education of public via media on importance of prescribed fire to the area and surrounding lands.** Importance of fire to ecosystem. Use the media as a tool.
				Three items of equal rank:
17.	[1]	[2]	10.	**Develop hydrological assessment and implement hydrological restoration for surface water drainage.** Surface water drainage specifically. Very wide spread, fundamental.
17.	[1]	[2]	19.	**Increase signage and information on the areas signs.** Want people to know who you are and how to contact you. Personal service in Tallahassee to answer the phone and provide answers. Need to better identify what you can do on the area. When people pull up they need to know where they are i.e... A contact name, wed site and phone number of contact person.
17.	[1]	[2]	30.	**Reassess staffing needs.** Self explanatory
				Two items of equal rank:
20.	[1]	[3]	6.	**Consider impacts of climate change on LWRWEA as well as sea level rise.** Be thinking ahead of time how we will manage this area. May have direct impacts.
20.	[1]	[3]	29.	**Address current groundwater quality issues and causes.** Self explanatory
				Three items of equal rank:
22.	[1]	[5]	17.	**Increase educational community awareness resources and obtain assistance for use.** Contact Archibald for scrub resource and assistance.

4

Rank	# of Votes	Score	Idea
22.	[1]	[5]	21. **Assess Highlands and Glades County Black Bear and develop a plan to improve habitat and population.** Self explanatory
22.	[1]	[5]	34. **Develop an area for non-traditional recreational use (ATV) to reduce the impact to the area.** Try to steer them to an area where they can do their activities - maybe promote the idea to the private owners to let people use their lands.
			The following item received no votes. All ideas represent valuable input, and are considered in development of the MP, but carry no rank with regard to the priority perceptions of the MAG.
25.	[]	[]	4. **Increase educational resources for students and professional development for teachers to utilize importance for LWRWEA.** Uses area frequently with students, inform community and teachers to what resources are there so they know what is available and are aware.
26.	[]	[]	31. **Continue application of fire regimes.** Self explanatory
27.	[]	[]	33. **Consider and allow non-FWC research.** Self explanatory
28.	[]	[]	36. **Consider adding camping facilities.** Self Explanatory. Whatever type of camping that might be appropriate.
29.	[]	[]	38. **Continue to promote volunteer opportunities and expand the volunteer base.** Volunteers can do all kinds of things.

5

Lake Wales Ridge Wildlife and Environmental Area
MAG Meeting Participants

Name	Affiliation
Active Participants	
Nicole Ranalli	FWC Area Biologist
Lt. Joe Allen	FWC Law Enforcement
Jeff Mclemore	South Florida Water Management District
Mark Hurst	Southwest Florida Water Management District
Steve Dale	Highlands Hammock State Park Manager DEP
David Waldrop	Florida Trails Association
Tom Schultz	Landowner
Tom Deardorff	Polk County Office of Planning and Development
Bob Bennett	Bicycling Stakeholder
Chet Pryor	Hunting Stakeholder
Karen Hillier	U.S. Fish and Wildlife Service
Molly Garrett	Janie Howard Wilson Elementary School
Supportive Participants	
Jeff McGrady	FWC Habitat and Species Conservation (HSC), Regional Biologist
Shane Belson	FWC HSC, District Biologist
Jennifer Myers	FWC HSC Conservation Biologist
Bill Parken	Ridge Rangers Volunteer, ORS
Jacqueline Smith	FWC Invasive Plant Management
Brian Pinson	Highlands Hammock State Park
Tom M. Matthews	FWC Office of Public Access and Wildlife Viewing Services
Invited but Unable to Attend	
Rick Britt	Florida Forest Service
Edward J. Sheehan	NRCS
Dan Hipes	Florida Natural Areas Inventory
Hillary Swain	Archbold Biological Station
David Price	Bok Tower Gardens
Melony Bell	Polk County Commission
Jack Richie	Highlands County Commission
Mike Wisenbaker	Division of Historical Resources
Tim Elder	Florida Forest Service
Ricky Lackey	National Wild Turkey Federation
Nancy Slater	Equestrian Stakeholder
Cary Lightsey	Rancher
Jackie Burns	IFAS
Steve Morrison	Nature Conservancy
Kathleen Swanson	FWC
Dan Sullivan	FWC Conservation Biologist
Betty piper	Florida trail Association
Paul Gray	Audubon Society
Red Camp	Highland Pedaler's Bike Club

FWC Planning Personnel

Gary Cochran	Land Conservation and Planning Administrator, Facilitator
Tom Houston	Recorder
Diana Kilgore	Recorder

13.2.2 Public Hearing Notice and Press Release

NOTICE

The Florida Fish and Wildlife Conservation Commission (FWC)
Announces Two

PUBLIC HEARINGS

For the

FWC Lead Managed Portions of

Lake Wales Ridge Wildlife and Environmental Area

Management Plan

Highlands and Polk Counties, Florida

7:00 P.M. Wednesday, May 1st, 2013
Highlands County Government Center
600 S Commerce Ave
Sebring, FL 33870

7:00 P.M. Thursday, May 2nd, 2013
Polk County Commission Chambers
330 West Church St
Bartow, FL 33830

PURPOSE: To receive public comment regarding considerations for the FWC ten-year Land Management Plan for the FWC Lead Managed Portions of Lake Wales Ridge Wildlife and Environmental Area (WEA). This hearing is being held EXCLUSIVELY for discussion of the DRAFT Lake Wales Ridge WEA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development go online to: myfwc.com/about/rules-regulations/rule-changes/ or call (850) 487-1764.

A Management Prospectus for the Lake Wales Ridge WEA is available upon request. For a copy, please contact Rebecca Shelton, Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning, 620 South Meridian Street, Tallahassee, Florida 32399-1600. Telephone: (850) 487-9982.

NOTICE

The Florida Fish and Wildlife Conservation Commission (FWC) announce two PUBLIC HEARINGS for the FWC Lead Managed Portions of Lake Wales Ridge Wildlife and Environmental Area located in Highlands and Polk Counties, Florida.

7:00 P.M. Wednesday, May 1st, 2013
Highlands County Government Center
600 S Commerce Ave
Sebring, FL 33870

7:00 P.M. Thursday, May 2nd, 2013
Polk County Commission Chambers
330 West Church St
Bartow, FL 33830

PURPOSE: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Lake Wales Ridge Wildlife and Environmental Area (LWRWEA).

This hearing is being held EXCLUSIVELY for discussion of the DRAFT Lake Wales Ridge WEA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development go online to: myfwc.com/about/rules-regulations/rule-changes/ or call (850) 487-1764.

A Management Prospectus for Lake Wales Ridge WEA and copy of the agenda is available upon request from the Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning Group, 620 South Meridian Street, Tallahassee, Florida 32399-1600. Telephone: (850) 487-9982 or (850) 487-9767 or by e-mail at Rebecca.Shelton@MyFWC.com.
#1821 4/21/2013

Highlands Today and The Tampa Tribune

Published Daily

Sebring, Highlands County, Florida

State of Florida }
County of Highlands } SS

Before the undersigned authority personally appeared C. Pugh, who on oath says that she is the Advertising Billing Analyst of Highlands Today & The Tampa Tribune, daily newspapers published at Sebring in Highlands County, Florida, that the attached copy of advertisement being a

Legal Ads IN THE Highlands Today

In the matter of Legal Notices

was published in said newspaper in the issues of

04/21/2013

Affiant further says that the said Highlands Today & The Tampa Tribune are newspapers published at Sebring in said Highlands County, Florida, and that the said newspapers have heretofore been continuously published in said Highlands County, Florida, each day and have been entered as second class mail matter at the post office in Sebring, in said Highlands County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.

Sworn to and subscribed by me, this 22 day of April, A.D. 2013

Personally Known ✓ or Produced Identification ___
Type of Identification Produced _____

Notary Public State of Florida
Charlotte A Offner
My Commission DD895783
Expires 06/03/2013

Order # 0003285279 1204373 -- FLORIDA FISH & WILDLIFE CON

AFFIDAVIT OF PUBLICATION
THE LEDGER
Lakeland, Polk County, Florida

STATE OF FLORIDA)
COUNTY OF POLK)

Before the undersigned authority personally appeared Paula Freeman, who on oath says that she is Supervisor of the Call Center at The Ledger a daily newspaper published at Lakeland in Polk County, Florida; that the attached copy of advertisement, being a

PUBLIC NOTICE

In the matter of **FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION PUBLIC HEARINGS**

Concerning **FWC LEAD MANAGED PORTIONS OF LAKE WALES RIDGE WILDLIFE AND ENVIRONMENTAL AREA**

was published in said newspaper in the issues of

4-21; 2013

Affiant further says that said The Ledger is a newspaper published at Lakeland, in said Polk County, Florida, and that the said newspaper has heretofore been continuously published in said Polk County, Florida, daily, and has been entered as second class matter at the post office in Lakeland, in said Polk County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Signed Paula Freeman
Paula Freeman
Call Center Supervisor
Who is personally known to me.

Sworn to and subscribed before me this 22nd day of April A.D. 2013

Patricia Ann Rouse
Notary Public

(SEAL)

My Commission Expires - October 17, 2016

PATRICIA ANN ROUSE
MY COMMISSION EXPIRES
October 17, 2016
#EE 220993
Bonded thru Notary Public Underwriters
NOTARY PUBLIC, STATE OF FLORIDA

PUBLIC NOTICE
The Florida Fish and Wildlife Conservation Commission (FWC) announce two PUBLIC HEARINGS for the FWC Lead Managed Portions of Lake Wales Ridge Wildlife and Environmental Area located in Highlands and Polk Counties, Florida. Sebring, FL 33870
7:00 P.M. Thursday, May 2nd, 2013
Polk County Commission Chambers
330 West Church St, Bartow, FL 33830
PURPOSE: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Lake Wales Ridge Wildlife and Environmental Area (LWRWEA).
This hearing is being held EXCLUSIVELY for discussion of the DRAFT Lake Wales Ridge WEA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development go online to:
myfwc.com/about/rules-regulations/rulechanges/ or call (850) 487-1764.
A Management Prospectus for Lake Wales Ridge WEA and copy of the agenda is available upon request from the Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning Group, 620 South Meridian Street, Tallahassee, Florida 32399-1600. Telephone: (850) 487-9982 or (850) 487-9767 or by e-mail at Rebecca.Shelton@MyFWC.com.
L8428 4-21; 2013

13.2.3 Public Hearing Report

PUBLIC HEARING REPORT

FOR THE

LAKE WALES RIDGE WILDLIFE AND ENVIRONMENTAL AREA MANAGEMENT PLAN

HELD BY THE

LAKE WALES WEA RIDGE MANAGEMENT ADVISORY GROUP AND THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

MAY 1ST, 2013 – HIGHLANDS COUNTY, FLORIDA

The following report documents the public input that was received at the Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) Management Advisory Group's (MAG) Public Hearing for the LWRWEA Draft Management Plan for LWRWEA that was held at 7:00-9:00 PM, on May 1, 2013, at the Highlands County Government Center in Sebring, Florida.

LWRWEA Management Advisory Group Introduction:
The meeting was introduced by Mr. Bob Bennett, a LWRWEA MAG participant, who represented the LWRWEA MAG. Mr. Bennett indicated that he was one of twelve stakeholders that attended the Florida Fish and Wildlife Conservation Commission (FWC) facilitated MAG meeting held on March 27, 2013. Mr. Bennett stated that the Draft Management Plan was being presented tonight by FWC staff, and that hardcopies of the LWRWEA Draft Management Plan, the Management Prospectus and the MAG meeting report were available at the front door for the public's review. Mr. Bennett thanked everyone for attending and then introduced FWC staff, Mr. Gary Cochran, Land Conservation and Planning Administrator, with FWC, to facilitate and coordinate the presentation of an overview of LWRWEA; FWC's planning process, and the draft components of the Management Plan.

Presentation on an Overview of LWRWEA and the FWC Planning Process: Mr. Cochran welcomed everyone and thanked the public for their attendance. Mr. Cochran then went over an orientation of the material and explained that the purpose of the public hearing was to solicit public input regarding the Draft Management Plan for LWRWEA, and not hunting and fishing regulations, indicating there is a separate public input process for FWC rule and regulation development. Mr. Cochran then described the materials that were available at the door for public review, including the Draft Management Plan and the LWRWEA MAG Meeting Report and Accomplishment Report. Mr. Cochran then presented the agenda for the public hearing and facilitated the introduction of all FWC staff in

attendance to the audience. Mr. Cochran then presented an overview and orientation of LWRWEA, including a description of the natural communities, data about park visitors, money generated for the state by the park, wildlife species, recreational opportunities found on the area, surrounding conservation lands, surrounding Florida Forever lands, acquisition history, etc. He also explained FWC's planning process and asked if there were any questions regarding that process.

Questions, Answers and Discussion on the LWRWEA Overview and FWC's Planning Process: Mr. Cochran facilitated an informal question and answers session where members of the public in attendance, without necessarily identifying themselves, could ask questions of the FWC staff, and discuss the answers. Mr. Cochran again emphasized that the exclusive purpose for the Public Hearing was to collect public input regarding the Draft Management Plan for LWRWEA, and not to discuss area hunting, fishing and use regulations since, as was noted earlier, FWC has a separate process for input on hunting and fishing regulations. No question or comments were received after the presentation for this part of the Public Hearing.

Presentation of the LWRWEA Draft Management Plan
At this point, Ms. Nicole Ranalli, the LWRWEA Area Biologist/Manager began the presentation of the Draft Management Plan. Ms. Ranalli, the Area Biologist then completed and concluded the presentation of the LWRWEA Draft Management Plan.

Questions and Comments on the LWRWEA Draft Management Plan Presentation
Mr. Cochran encouraged everyone to fill out a speaker card for public testimony. He informed them that all cards will be considered equally.

Public Question: An anonymous member of the public audience had a question about the species that were unique to LWRWEA. They wanted to know if those species FWC was referring to were within areas under FWC's conservation lands or if they were included within Florida in general.

FWC Response: Mr. Cochran informed the individual that scrub plant and animal species that are referred to that way in the Plan are endemic to only this particular ecosystem that only occurs on LWRWEA.

Public Question: An anonymous member of the public audience wanted to know about any recent studies done to determine the impact of FWC's management programs and if those programs are as beneficial as those lands that remain in a private sector ownership?

FWC Response: Mr. Cochran explained that public agencies are not the only entities that are involved in conservation efforts (ex. Archibald Biological Preserve). As far as trends

that occur, this particular area has seen a tremendous amount of development over the past twenty or thirty years. The general trend in this particular area has been increasing development until we had the economic downturn around 2007 or 2008. In terms of the effects of our management, Mr. Cochran explained that public conservation lands provide for conservation of wildlife, air and water quality, and they provide recreational opportunities that attract visitors for recreational activities and visitors for wildlife viewing. He explained that people can come to Florida to view very rare and unique species; tourists provide economic benefits at restaurants and hotels, etc., in order to visit conservation areas. FWC's management has continued to conserve and improve the conservation viability of these lands. Many of the lands had been used for illegal dumping which we've cleaned, as well as a number of other illegal activities. Many have exotic invasive species, which if left alone will eradicate the native plant species that exist there and migrate onto private lands causing negative impacts there as well.

Public Comment: An anonymous member of the public audience wanted to know if FWC interfaces with the other agencies involved with land conservation and acquisition, or coordinating with the acquisition of land.

FWC Response: Mr. Cochran responded that FWC does cooperate with other agencies, our primary partner agencies in the state of Florida is the Florida Forest Service (FFS), the Department of Environmental Protection (DEP), the Water Management District (WMD), and local/county governments. He added that FWC works with them on their comprehensive plans. Mr. Cochran also added that FWC also work with fellow agencies like the US Fish and Wildlife Service (USFWS), US Forest Service (USFS), and EPA. Mr. Cochran informed the individual that most agencies that FWC works with are focused on fish and wildlife conservation as well as land and water conservation in general. Acquisition programs are guided by Florida legislative framework and requirements and laws and that under those we have criteria about how land acquisition programs are administered. Those are ultimately the Governor in Cabinet, DEP, and the Acquisition Restoration Council (ARC) who provide advice and information to FWC under the Florida Forever program. Mr. Cochran added that in our case we also have the Commission who administers our agency and also has authority and final approval on any final acquisition efforts that FWC participates in. Mr. Cochran added that there are many steps of approval to get the lands on the acquisition list and they go through the public governing bodies (the ARC commission and the Governor in Cabinet) and we also cooperate with other agencies on acquisition. Mr. Cochran added that FWC also participates in grant programs when they're feasible or cooperates with other agencies on acquisition. He said that all lands in LWRWEA, as other public conservation lands within the lake Wales Ridge Ecosystem such as those that are managed by the Florida Forest Service, and the Florida Park Service were acquired through voluntary land acquisition.

Public Comment: An anonymous member of the public audience made a comment about the way the lands are set up, referring to the checkerboard effect. They made the comment about the difficulty associated with managing different plots/areas because of the 'checkerboard effect.' They felt like there should be some coordination there between the different tracts of land.

FWC Response: Mr. Cochran informed them that FWC coordinates a lot with other landowners; other agencies such as those mentioned earlier and with the DEP who manages the Office of Greenway Trails and they also focus on ecological greenways and corridors just like FWC does, so FWC does coordinate with them a great deal. Mr. Cochran added that it can be difficult to coordinate with private landowners because we're not authorized to do anything to their land without their permission. So, for example, if there are exotic invasive species on their land, FWC cannot do anything about it without the owner's permission. Mr. Cochran added that FWC will conduct a surplus land survey on the area and will look at the potential of even selling some of these lands and trying to consolidate our ownership through the sale. What makes it difficult here is that some of those scattered checkerboard areas may have very rare and imperiled species on them that occur nowhere else on earth, so FWC would still need to protect those patches of land.

Public Comment: An anonymous member of the public audience asked about the area of land off US Highway 27 where they saw new street lights were put up and went on to say that these street lights have been put there within the last six months and that there is no population or crossroads around that area. They added that they were trying to discern if this is what is listed on the map that shows Henscratch Road off of US Highway 27 and that they were concerned about the light pollution and the glow from the streetlights and how this would have an effect on the area. The individual also said that FWC has also cut several swaths through the area because it doesn't look like there's not much re-growth that's come back yet. The individual also asked about the land on Henscratch Road between Lake Miller and Lake June and asked if FWC was planning to acquire that area? Another question this individual had was in regards to changes in vegetation: They wanted to know what FWC bases their criteria on to determine which vegetation is supposed to be in certain areas (which vegetation has been there for a long time, or something that has just recently started to grow there, or what you see at the time you're looking at it?) They added that seeds do not always stay in the same place, animals or wind spreads them around and they wants to know how FWC makes that determination as to which plants are native to which areas. A final question they had was that they wanted to know what FWC's overall goal was for LWRWEA; they asked if FWC was trying to get Florida back where it was in 1900? 1850? What is the long-term goal here? They wanted to know if FWC plans to move all of the residents out of that area to try to preserve the water quality and conserve the area.

FWC Response: Ms. Nicole Ranalli, FWC area biologist, informed the individual that there is a sign on the Henscratch Road off of the US 27 parcel and that FWC has done some mowing around the edge of the property. Mr. Cochran informed the individual that the streetlights are something the Department of Transportation (DOT) or the County was responsible for and that issues or questions about the streetlights would need to be addressed by those groups. Mr. Shane Belson, FWC biologist, then showed everyone where that area is on the map as well as some of the surrounding areas. Mr. Cochran informed the individual that the area they were referring to would be eligible for acquisition because it's not developed (it's a residential area), but it would then depend on if the owners were interested in selling. Mr. Cochran informed the public that FWC focuses their acquisition efforts on areas where they feel they can get the most 'bang for their buck' and that it all depends on the specific lot and if it has critically important plants or animals. Mr. Cochran then addressed the second question about determining which plants are native to certain areas by saying that FWC has a way of mapping the historical natural communities that occur on the area. He explained that this is done by using earlier aerial maps of Florida (sometimes from the 1940s) and through these, biologists and botanists can begin to put together the puzzle of what types of native vegetative communities are on area and then they go out there and do inventories of plants and they map their communities. Mr. Belson added that there's one parcel (one of the smallest pieces) where there is a very rare plant which doesn't occur anywhere else on the area. He then added that they've recently found that seed bank on other parts of the area so it's hard to determine what's on the land by just looking at the vegetation and that you never really know what's going to pop up. Mr. Belson added that they also look at the soils that are in a certain area to determine where different vegetation occurs and the historic community type that's there. He added that the goal is to maintain as many of those rare species as they can. Mr. Cochran then addressed the final question by explaining that FWC will never have Florida back to where it was in 1850. Mr. Cochran added that FWC's goal is to conserve the fish and wildlife species and their habitats as well as the associated plant species, water, soil and everything that makes up natural resources to provide as much sustainability for those species as we can overtime so that they will survive – because many of them are threatened. Mr. Cochran added that there is one specific criterion, and that is the protection of air and water quality in Florida. Mr. Cochran added that it's a conservation issue to conserve the drinking water and the oxygen quality so we need the plants and animals. Mr. Cochran explained that FWC's goal is to coexist with the people who are already on the land and not to move them out.

Public Testimony on the LWRWEA Draft Management Plan: One member of the public audience submitted a speaker card indicating their intention to provide formal public testimony. Mr. Cochran again emphasized that the public hearing was for taking input regarding the LWRWEA Draft Management Plan, and called the first speaker to the podium.

Public Testimony Comment: Mr. John Nelson: Mr. Nelson informed the public that he is a member of the Highlands County Tea Party group, which he explained was an educational organization who works in conjunction with various politicians. He made the comment that UN Agenda 21is one of the issues they have been educating people on and that the discussions tonight are all leading up to UN Agenda 21. Mr. Nelson explained to the public that, according to his research, by 2060 there will be a new world order where land acquisition is primary - the plan that Florida is following in which much of the land will be uninhabitable by humans. Mr. Nelson explained that the State is buying public lands to reestablish those areas and will make them uninhabitable by humans. He said that the core job is to move people into 'sustainable communities' and out of the wilderness area. Mr. Nelson added that he's sure that FWC does a lot of good conservation work but the problem is the long-term plan for Highlands County. Mr. Nelson further explained that (national goal of, conservation agencies and organizations are working on a long-term plan: across the 48 states that will leave 50% of this land will be uninhabitable by humans. He added that he can understand protecting some species but said that since we've come on this planet, species have naturally been able to take care of their own population. He said that we've had ice caps melt and then ice caps refreeze; he said that over the past couple years the Antarctic ice cap has almost doubled in size and that the northern one has melted back and is now starting to reestablish it. Mr. Nelson then went on to discuss climate change, and said the change in climate is due to the way the earth rotates on its axis in relation to the sun more than it is about us putting carbon dioxide in the air. He said that if we did not have the carbon dioxide out there, our trees would not survive and that one volcanic explosion puts more carbon dioxide in the air than man has ever put in the air in its history. He said that there's no way we can control that and that while we can reduce the amount of CO2 emitted in the air, it's only to an extent. He also added that human beings inflict pain on their natural resources and that this is not going to be changed. Mr. Nelson used Boca Raton as an example and said that Boca Raton originally was under protection because of an endangered mouse species that was there. And that now Boca Raton is all development. He made the comment that money was more important, in this particular instance, than protecting this species. He also made the comment that if FWC is so concerned about protecting endangered species, then why we set fires which kill these species (referring to the prescribed burning of habitat). Mr. Nelson added that forest fires are natural, and the man-made fires are not natural. He also mentioned, after looking over the UN Agenda 21 and the biodiversity, it appeared that the needs of the non-human species will take precedence over the human needs and desires and he feels like this makes humans the endangered species. A woman asks him who the author is of this document that he's quoting and keeps referring to. He told her that it's a very large document and to look it up online, and that he's got so many documents at home that he does research on that he just pulled this out of there tonight just to give people an idea. He also told her to go online and to search 'sustainability,' and UN 'Agenda 21,' and/or 'biodiversity' and you'll get all the information you need. He said that in the end, the consequences of this are that

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we're going to have no government controlling anything and that it's going to be professional management groups running everything that goes on. He added that he still believes that conservation is important, to a degree, but that when you start moving in on people's property, (ranches that have been there for 100 years) over a watershed or a species that was found on the land, that as a result they've lost everything (they can't split the land up and sell parcels, they can't improve on the land, they can't give some of it to their children to build homes, they can't put buildings up on their land). He made the claim that FWC and the state is ultimately taking away the property rights of people and turning it into a government controlled situation. He said that he wishes the ranchers were here tonight (at the hearing) and that he doesn't understand why there is not more of the public present. Mr. Nelson also added that he didn't believe that there was much advertisement about this public hearing and so it looked like a meeting for only FWC people.

Adjournment: Mr. Cochran asked if there were any other members of the public that wished to give public testimony. No other speakers offered further comments. Then Mr. Cochran declared the public hearing adjourned.

PUBLIC HEARING REPORT

FOR THE

LAKE WALES RIDGE WILDLIFE AND ENVIRONMENTAL AREA MANAGEMENT PLAN

HELD BY THE

LAKE WALES RIDGE WEA MANAGEMENT ADVISORY GROUP AND THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

MAY 2ND, 2013 – POLK COUNTY, FLORIDA

The following report documents the public input that was received at the Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) Management Advisory Group's (MAG) Public Hearing for the Draft Management Plan for LWRWEA that was held at 7:00-9:00 PM, on May 2, 2013, at the Polk County Commission Chambers in Bartow, Florida.

LWRWEA Management Advisory Group Introduction:
The meeting was introduced by Mr. Mark Hurst, a LWRWEA MAG participant, who represented the Southwest Florida Water Management District. Mr. Hurst indicated that he was one of twelve stakeholders that attended the Florida Fish and Wildlife Conservation Commission (FWC) facilitated MAG meeting held on March 27, 2013. Mr. Hurst stated that the Draft Management Plan was being presented tonight by FWC staff, and that hardcopies of the draft plan and the MAG meeting report were available at the front door for the public's review. Mr. Hurst thanked everyone for attending and then introduced FWC staff, Mr. Gary Cochran, Land Conservation and Planning Administrator, with FWC, to facilitate and coordinate the presentation of an overview of LWRWEA; FWC's planning process, and the draft components of the Management Plan.

Presentation on an Overview of LWRWEA and the FWC Planning Process: Mr. Cochran welcomed everyone and thanked the public for their attendance. Mr. Cochran then went over an orientation of the material and explained that the purpose of the public hearing was to solicit public input regarding the Draft Management Plan for LWRWEA, and not hunting and fishing regulations, indicating there is a separate public input process for FWC rule and regulation development. Mr. Cochran then described the materials that were available at the door for public review, including the Draft Management Plan and the LWRWEA MAG Meeting Report and Accomplishment Report. Mr. Cochran then presented the agenda for the public hearing and facilitated the introduction of all FWC staff in attendance to the audience. Mr. Cochran then presented an overview and orientation of

LWRWEA, including a description of the natural communities, data about park visitors, money generated for the state by the area, wildlife species, recreational opportunities found on the area, surrounding conservation lands, surrounding Florida Forever lands, acquisition history, etc. He also explained FWC's planning process and asked if there were any questions regarding that process.

Questions, Answers and Discussion on the LWRWEA Overview and FWC's Planning Process: Mr. Cochran facilitated an informal question and answer session where members of the public in attendance, without necessarily identifying themselves, could ask questions of the FWC staff, and discuss the answers. Mr. Cochran again emphasized that the exclusive purpose for the public hearing was to collect public input regarding the Draft Management Plan for LWRWEA, and not to discuss area hunting, fishing and use regulations since, as was noted earlier, FWC has a separate process for input on hunting and fishing regulations. No question or comments were received after the presentation for this part of the public hearing.

Presentation of the LWRWEA Draft Management Plan

At this point, Mr. Shane Belson, the LWRWEA District Biologist began the presentation of the Draft Management Plan. Mr. Belson, the District Biologist then completed and concluded the presentation of the LWRWEA Draft Management Plan.

Questions and Comments on the LWRWEA Draft Management Plan Presentation

Mr. Cochran encouraged everyone to fill out a speaker card for public testimony. He informed them that all cards will be considered equally.

Public Question: An anonymous member of the public audience asked if someone could explain the Sunray mitigation strategy. He also wanted to know what the plan is for public access on the Sunray Tract. An additional question that they had was in regards to how often FWC checks the trails.

FWC Response: Mr. Shane Belson, FWC District Biologist, explained that Polk County was expanding some water treatment activities and that their expansion area impacted sand skinks so mitigation was required by the US Fish and Wildlife Service to mitigate sand skinks and there is a restoration plan underway to restore groundcover out there. He explained that south of the pond is the big sandy area, which used to be a grove and all of that was cleared out and now it's being restored, at least the groundcover component. Once the restoration plan was in place and everything was all worked out, then the land was transferred over to the State from the County. It's adjacent to the northern portion of the Sunray tract and so now it is affecting a part of the Sunray Tract. Mr. Tom Matthews informed the gentleman that there are currently no plans related to public access on the Sunray Tract. Mr. Belson added that if they did do anything with public access, they would

make the mitigation area out-of-bounds for the public. He added that Sunray is made up of three separate parcels that are separated by railroad tracks and US Highway 27. Mr. Belson added that he does not believe they have any plans for that piece. They are evaluating different available hunting opportunities throughout the WEA which may or may not come into play on any of those tracts. Mr. Tom Matthews, FWC Trails Coordinator, informed the public that FWC checks the trails twice every year.

Public Question: An anonymous member of the public audience asked for further clarification on how we monitor the trails.

FWC Response: Mr. Tom Matthews, FWC, explained that they monitor the trails visually. They either walk or ride all the trails to look for trouble spots, check GPS, and take photographs. He explained that they used to do fixed photo points between certain distances on trails, but they were missing too many trouble spots and had too many trails to do that.

Public Comment: An anonymous member of the public audience made the comment that the current plant and animal list was incomplete (table 4, 12, and 6). The lists were missing some species.

FWC Response: Mr. Cochran explained that the plant and animal list should be up to date but that if it is not then to contact Ms. Nicole Ranalli, LWRWEA Area Biologist about that.

Public Testimony on the LWRWEA Draft Management Plan: Mr. Cochran again emphasized that the public hearing was for taking input regarding the LWRWEA Draft Management Plan. No one from the public audience submitted a speaker card indicating their intention to provide formal public testimony.

Adjournment: Mr. Cochran asked if there were any other members of the public that wished to give public testimony. No other speakers offered further comments. Then Mr. Cochran declared the public hearing adjourned.

13.2.4 DRAFT Management Plan and Prospectus

Lake Wales Ridge Wildlife and Environmental Area
DRAFT Management Plan 2013 - 2023
Management Intent, Goals and Objectives, Challenges and Strategies

~15,657 acres, Polk County and Highlands County, Florida

Owned by the State of Florida

Title held by the Florida Governor and Cabinet sitting as the Board of Trustees of the Internal Improvement Trust Fund

Managed by the Florida Fish and Wildlife Conservation Commission

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DRAFT

1 Introduction

The following are the draft management plan elements that have been developed for the Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) and are proposed for submittal to the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Board of Trustees) and the Acquisition and Restoration Council (ARC) through the Florida Department of Environmental Protection's (DEP) Division of State Lands (DSL) pursuant to Chapters 253 and 259 Florida Statutes (FS) and Chapters 18-2 and 18-4, Florida Administrative Code (FAC). Format and content were drafted in accordance with ARC requirements for management plans and the model plan outline provided by the staff of the DSL.

The LWRWEA stretches along the high sandy ridges of Lake Wales Ridge, an ancient and rare geological and environmental area that is one of the oldest and most endangered ecosystems in North America. Many of the species of plants and animals that occur here are found nowhere else on Earth. Composed of 19 separate tracts and scattered over roughly 75 miles of the Lake Wales Ridge in Polk and Highlands Counties, the LWRWEA is composed of a mosaic of scrub, flatwoods, wetlands and lakes. The properties are key parts of a mosaic of public lands that protect the unique ecology of the Lake Wales Ridge and link to Fisheating Creek in the south and the Green Swamp in the north.

Notably, LWRWEA preserves substantial components of this endangered ecosystem that provide critically important habitat for many rare and imperiled plant species while providing exceptional opportunities for fish and wildlife based public outdoor recreation.

The LWRWEA is managed by the Florida Fish and Wildlife Conservation Commission (FWC) to conserve and restore natural wildlife habitat for an array of endemic, imperiled, and other native wildlife including the Florida pine snake (*Pituophis melanoleucus*), gopher tortoise (*Gopherus polyphemus*) and bluetail mole skink (*Eumeces egregius lividus*), among others, while also providing high-quality opportunities for hunting, fishing, wildlife viewing, and other fish and wildlife based public outdoor recreation opportunities including horseback riding, bicycling, and hiking.

Since the Lake Wales Ridge itself averages less than ten miles wide throughout its length, with a few exceptions, the tracts are generally within a few miles of U.S. 27 along the Ridge. The Lake Blue tract of the LWRWEA is actually located on the Winter Haven Ridge, not the Lake Wales Ridge. Tracts within the LWRWEA are adjacent to the Archbold Biological Station (private), Lake June in Winter Scrub State Park, Carter Creek portion of Lake Wales Ridge National Wildlife Refuge (LWRNWR), The Nature Conservancy's (TNC) Carter Creek acquisition, Highlands County's Sun N Lakes Preserve, and the Southwest Florida Water Management District's (SWFWMD) Jack Creek site. Not adjacent, but located near one or more of the LWRWEA tracts are: Highlands Hammock State Park (DEP), Saddle Blanket Lakes State Preserve (DEP), the Catfish Creek property leased to

DEP, TNC's Tiger Creek Preserve, Florida Forest Service's (FFS) Lake Wales Ridge State Forest, Lake Arbuckle State Reserve (DEP), Avon Park Air Force Range (U.S. Department of Defense), and Bok Tower Gardens (private).

2 Accomplishments from the 2002 – 2012 LWRWEA Management Plan

The following Resource Management Goals and Objectives are from the **2002 - 2012 LWRWEA Management Plan**. Planned activities for LWRWEA during this period were detailed in the Objectives listed below. The degree to which FWC was able to accomplish the planned activities during this period is reflected as Percent Accomplished with each associated objective.

Objectives Accomplished from the 2002 - 2012 LWRWEA Management Plan	
Goals and Objectives	**Percent Accomplished**
Goal 1. Protect, restore, and maintain native habitats and the threatened and endangered plant and animal species that they support.	
Objective 1: Continue to post boundaries and place signs along currently purchased CARL boundaries.	100%
Objective 2: Continue to secure property against uses, including ORV and ATV use that threaten the resources that the purchase of these sites is intended to protect.	100%
Objective 3: Continue to use chemical and/or mechanical means to control or eradicate Cogon Grass, Tropical Soda Apple, Climbing Fern, Brazilian Pepper, Air Potato, and other invasive, exotic plant species. *FWC continues to treat exotic invasive plants on the LWRWEA, but the disjunct and checkerboard configuration of the megaparcel sites, such as Leisure Lakes, makes it difficult to aggressively treat those tracts.*	80%

Objectives Accomplished from the 2002 - 2012 LWRWEA Management Plan	
Goals and Objectives	**Percent Accomplished**
Objective 4: Continue to implement hydrologic restoration activities on Lake Placid site. *Funding has been unavailable to continue implementation. The 2013 plan will recommend hydrological assessment for the entire area.*	25%
Objective 5: In order to maintain a fire control buffer, continue evaluation of restoration technologies, provide open habitat space for sandhill cranes and other wildlife, and/or to allow certain recreational uses, continue to allow disturbed areas to recover naturally.	100%
Objective 6: By 2002 complete and begin implementation of a fire management plan for LWRWEA that recognizes fire as the primary tool for management, recognizing that other tools may be necessary in certain situations.	100%
Objective 7: Develop an economic and environmental analysis comparing retention and maintenance of citrus groves to the restoration of the groves to native ecosystem by 2003. *FWC with ARC/DEP approval subleased Royce Unit citrus grove to IFAS for citrus research. Consequently, the analysis was not needed or completed. However, the IFAS sublease agreement requires restoration of the grove upon expiration of the lease.*	0%
Objective 8: By 2003, prioritize ecologically degraded lands within the LWRWEA for the purpose of natural community restoration.	100%
Objective 9: Contract with Florida Natural Areas Inventory (FNAI) to identify and map historic and current vegetative community types pursuant to objective-based vegetation management by 2003. *FWC, through FNAI, has completed approximately 75% of the mapping. The current vegetative community type mapping is nearly complete with only minor data processing pending. Many areas do not have historic vegetative community type maps available. The disjunct and checkerboard configuration of the megaparcel sites make it more difficult to complete the mapping.*	75%

Objectives Accomplished from the 2002 - 2012 LWRWEA Management Plan	
Goals and Objectives	**Percent Accomplished**
Objective 10: Using FNAI's historical vegetative community data develop quantifiable vegetation management objectives for desired future conditions by 2004.	100%
Objective 11: By 2006 complete vegetation maps for Highlands Ridge (currently known as Leisure Lakes), Henscratch, Silver Lake South, Orange Blossom, Lake Blue and Lake Apthorpe South (currently Clements and part of Royce Unit) sites. *FWC, through FNAI, has completed 90% of the mapping. The remainder is pending. The disjunct and checkerboard configuration of the megaparcel sites make it more difficult to complete the mapping.*	90%
Objective 12: Implement hydrologic restoration on the Royce Unit by 2007. *The Peace Pond restoration project has been completed.*	100%
Objective 13: Implement scrub restoration on the pastures on the Royce Unit by 2007. *Two restoration projects are in progress, including a 64 acre former pasture site and a 27 acre former citrus grove site. Additional acreage is planned for the near future. Additional restoration will be initiated as funding allows.*	90%
Goal 2. Monitor populations of listed plant and animal species, and the relevant structural characteristics of their habitats, to ensure successful achievement of management objectives for those species' survival.	
Objective 1: Continue to monitor the effects of prescribed fire on habitat structure using aerial over-flights and/or ground surveys.	100%

Objectives Accomplished from the 2002 - 2012 LWRWEA Management Plan	
Goals and Objectives	**Percent Accomplished**
Objective 2: Continue to monitor population sizes of listed plant species on the LWRWEA. *FWC is cooperatively working with Archbold Biological Station on select population demographics work. FWC is working on a rare plant management plan.*	10%
Objective 3: Continue to monitor scrub jay populations on the LWRWEA.	100%
Objective 4: Continue to manage some disturbed habitats (e.g., citrus groves, off-site planted pines) to generate revenue needed for management until analyses are complete. *The citrus grove was subleased to IFAS; they were allowed to keep the grove revenue to fund ongoing research. FWC determined there were no off site pine plantation on any of the LWRWEA.*	0%
Objective 5: By 2002, develop quantifiable objectives for achieving a desired future condition for vegetation on the LWRWEA.	100%
Objective 6: Contract with FNAI to conduct a comprehensive floral and faunal inventory by 2003. *FWC has completed comprehensive vertebrate surveys on 10 tracts of LWRWEA. Further plant and animal surveys will be completed upon available funding.*	40%
Goal 3. Engender public support for the WEA and increase appropriate public access and compatible recreational and educational opportunities while minimizing adverse impacts on threatened and endangered species and other endemic resources.	
Objective 1: As part of a coordinated effort to increase public awareness of the Ridge and its resources, use materials developed by Lake Wales Ridge Ecosystem Working Group, or other materials, to make public contact at opportune times.	100%

Objectives Accomplished from the 2002 - 2012 LWRWEA Management Plan	
Goals and Objectives	**Percent Accomplished**
Objective 2: Continue to protect sensitive natural resources on the area by creating recreational opportunities with minimal facilities.	100%
Objective 3: Continue to encourage public participation in and provide funding support for the "Ridge Rangers" volunteer program.	100%
Objective 4: By 2002, contact appropriate local and regional planning entities (including the Regional Planning Council) to coordinate dispensation of public utility easements and other local government concerns.	100%
Objective 5: Develop appropriate access off Virginia Avenue for public recreational uses on the Royce Unit by 2002. *Virginia Avenue has been renamed to Royce Ranch Avenue.*	100%
Objective 6: In order to facilitate access to the Royce Unit, upgrade existing roads (approximately three miles) by 2002.	100%
Objective 7: By 2002, develop small game hunting and other appropriate hunting opportunities at the Royce Unit.	100%
Objective 8: By 2003, develop and present a proposal for a Ridge ecosystem interpretive plan to the Lake Wales Ridge Ecosystem Working Group.	100%
Objective 9: Evaluate the suitability of limited-access hog hunting for the Lake Placid Scrub and Lake Apthorpe (currently Clements and part of Royce Unit) sites by 2003. *FWC implemented hog hunting at the Royce unit and also provided youth hunting opportunities on the Carter creek tract. FWC also evaluated all other LWRWEA tracts for potential hunting opportunities.*	100%
Objective 10: In order to increase public access to the nature trail and lake, by 2003 develop a shell rock parking area at the Lake Placid site.	100%

Objectives Accomplished from the 2002 - 2012 LWRWEA Management Plan	
Goals and Objectives	**Percent Accomplished**
Objective 11: By 2003 establish fence crossovers and public entrance signage at Carter Creek, Lake Placid and Lake Apthorpe (currently Clements and part of Royce Unit) sites. *FWC established entrance facilities at each of these locations and also on Mountain Lake Cutoff, Lake Blue, and Henscratch 27 tracts.*	100%
Goal 4. Provide opportunities to conduct scientific research, consistent with protection and maintenance of ecosystems.	
Objective 1: Continue to cooperate with Archbold Biological Station, universities, and private research institutions to provide natural resource research opportunities.	100%
Objective 2: Through the FWC Plant Community Monitoring Section, continue research on long-term effects and effectiveness of mechanical treatments as an alternative or precursor to prescribed fire. *FWC/FWRI completed the study and is cooperating with Archbold Biological Station on other studies.*	100%
Objective 3: Evaluate the efficacy of developing cattle grazing leases on improved pastures by 2004.	100%
Goal 5: Manage the LWRWEA in the context of the whole Lake Wales Ridge ecosystem and in partnership with other agencies who manage land on and adjacent to the Ridge.	
Objective 1: Continue to coordinate resource management activities, including reciprocal work partnerships, through the Lake Wales Ridge Ecosystem Working Group.	100%
Objective 2: Provide staff and equipment to assist with management activities on areas other than LWRWEA.	100%
Goal 6: Identify and protect archaeological, historic, and cultural resources.	
Objective 1: Continue to locate, identify and map cultural and archaeological sites within the lands of the LWRWEA.	100%

Objectives Accomplished from the 2002 - 2012 LWRWEA Management Plan	
Goals and Objectives	**Percent Accomplished**
Goal 7: Provide direction for acquisition efforts necessary to achieve an optimum boundary delineation for LWRWEA.	
Objective 1: By 2002, meet with local government acquisition personnel, The Nature Conservancy and Division of State Lands acquisition agents to determine a role for FWC in completing the LWRWEA final boundary configuration. *FWC continues to work with all conservation partners for further conservation of the LWRWEA ecosystem.*	100%
Objective 2: By 2003, identify areas within Florida Forever boundaries where Scrub Jay populations are declining and where acquisition is necessary to conduct management to enhance Scrub Jay populations.	100%
Objective 3: Complete an analysis of the role of less-than-fee purchase arrangements in completing the LWRWEA project by 2004.	100%

3 Management Activities and Intent

The following section provides a description of agency plans to locate, identify, protect, preserve or otherwise use fragile natural resources and nonrenewable cultural resources. In general, the FWC management intent for the LWRWEA is to restore and maintain natural communities in a condition that sustains ecological processes and conserves biological diversity especially fish and wildlife resources. In conjunction with this primary emphasis, it is FWC's intent to provide quality natural resource-based recreational opportunities on the LWRWEA. The FWC will utilize the best available data, guidelines, natural resource management practices and recreational management practices to achieve these outcomes in accordance with the original purposes for acquisition. Furthermore, the management activities described in this section are in compliance with those of the Conceptual State Lands Management Plan.

3.1 Management Activities

Since acquisition of the LWRWEA began in 1993, FWC has undertaken a number of management activities. To address the management goal of habitat restoration and improvement, the FWC contracted with FNAI to identify and map historic and current natural community types. The FWC has also implemented scrub restoration on the pastures on the Royce Unit to further this management goal. A prescribed burn plan has

been developed and implemented to address habitat maintenance needs and to help achieve desired future conditions in native plant communities. Existing roads have been upgraded and public access has been enhanced within the Royce Unit. Public access enhancements have also been made at the Lake Placid Scrub, Royce Unit, and Carter Creek sites. The Royce Unit has been opened to hunting, providing archery, muzzle-loading gun, migratory bird, general gun, wild hog, small game, and spring turkey hunting seasons.

Occurrences of Florida Exotic Pest Plant Council (FEPPC) Category I and II exotic invasive plant species were known to be distributed throughout the area at relatively high densities. Since acquisition, FWC has contracted for, and completed, the survey and mapping of invasive exotic plant species, and begun treating these occurrences. Exotic and invasive plant species known to occur on LWRWEA include air-potato, brazilian pepper, caesar's weed, camphor tree, chinaberry, cogon grass, earpod tree, eucalyptus, guinea grass, Japanese climbing fern, natal grass, peruvian primrose willow, rosary pea, torpedo grass, tropical soda apple, water-hyacinth, west indian marsh grass, woman's tongue.

3.2 Habitat Restoration and Improvement

3.2.1 Objective-Based Vegetation Management

The FWC uses a comprehensive resource management approach to managing FWC-managed areas. Restoring the form and function of Florida's natural communities is the foundation of this management philosophy. FWC uses Objective-based Vegetation Management (OBVM) to monitor how specific vegetative parameters are responding to FWC management. OBVM includes the delineation of management units and quantification of the desired future condition for the natural community.

The first step in implementing OBVM is to map the current and historic natural communities on the managed area using the Florida Natural Areas Inventory (FNAI) Natural Community Classification. FWC contracts with FNAI to provide these mapping services. A natural community, as defined by FNAI, is a distinct and recurring assemblage of populations of plants, animals, fungi and microorganisms naturally associated with each other and their physical environment.

After natural communities have been mapped, management units are delineated. Delineating management units takes into account the distribution and extent of the current and/or historic mapped natural communities, existing and proposed infrastructure and other management considerations. FWC land managers then identify the predominant current or historic natural community within each management unit that guides the type and frequency of management activities that should be applied.

At the same time, measurable habitat management objectives referred to as "desired future conditions" are established for predominate natural communities identified for

management units. Desired future conditions are defined by desirable ranges for vegetation structural attributes such as canopy cover, shrub height and cover and ground cover.

Vegetation monitoring samples the selected parameters with the results being compared to the established desired future conditions. All monitoring performed under OBVM is completed using the program's Vegetation Monitoring Standard Operating Procedures (May 2007).

Initial mapping and vegetation sampling provides FWC staff with baseline data indicating natural community structure, distribution and condition on the area. Comparing the subsequent monitoring results to desired future conditions, provides key operational information on a management unit's vegetation structural status at a given point in time and trend over time. Using this information, managers can evaluate, adjust and modify their management practices to meet the stated objectives.

3.2.2 Prescribed Fire and Fire Management

Periodic spring and summer fires occurred in fire-adapted communities under natural conditions. Plant species composition reflects the frequency and intensity of these fires. In the absence of fire, fallow fields on former longleaf sites follow a successional pattern through mixed pine-hardwood forests to an exclusively hardwood community rather than to the original plant community. The plant species composition may differ slightly on poorer soils of the slash pine flatwoods, but the dominant role of fire in controlling hardwoods is equally important in either ecosystem.

The FWC employs a fire management regime to increase both species and habitat diversity and will continue a prescribed burning program on the LWRWEA in accordance with vegetative management objectives. As fire moves across a landscape, some areas carry fire better than others. Areas with higher vegetative fuel loads typically burn more evenly and with greater intensity. Areas with lower vegetative fuel loads or wetland areas inundated with water typically will not carry fire as evenly and usually burn at a lower intensity. Employing a burning program with different burning frequencies, intensities and seasonality (dormant season vs. growing season) of prescribed burns create habitat diversity and a mosaic of vegetation patterns. This mosaic is designed to have both frequently burned and infrequently burned aspects.

On some areas, prescribed burning is limited by the buildup of mid-story brush and a lack of pyrogenic groundcover fuels. This trend is distinctly negative for most wildlife species. Mechanical control of brush on upland sites can reduce shading and encourage the grasses and forbs that are necessary to sustain prescribed fire.

Whenever possible, existing firebreaks such as roads and trails, as well as natural breaks such as creeks and wetlands, will be used to define burning compartments. Disk harrows,

species. Resident wildlife will be managed for optimum diversity and abundance. In addition to resident wildlife, the LWRWEA provides resources critical to many migratory birds including waterfowl, passerines, raptors, shorebirds and others. Habitats important to migratory species will be protected, maintained or enhanced. FWC will continue to update inventories for certain species with emphasis on rare and imperiled fish and wildlife species. Monitoring of wildlife species will continue as an ongoing effort for the area.

Rare and imperiled species and their habitats will be protected and restored by following approved Federal and FWC recovery plans, guidelines and other scientific recommendations. Land management activities including prescribed burning and timber stand improvements will take into account imperiled species requirements and habitat needs. Potential for negative impacts from recreational activities will also be considered and monitored.

3.3.2 Wildlife Conservation Prioritization and Recovery

The FWC has identified the need to 1) demonstrate optimal wildlife habitat conservation on FWC-managed lands; 2) develop science-based performance measures to evaluate management; 3) recover imperiled species; and 4) prevent future imperilment of declining wildlife species. To help meet these needs, the FWC uses a comprehensive resource management approach to managing FWC-managed areas. Restoring the form and function of Florida's natural communities is the foundation of this management philosophy. The FWC uses OBVM to monitor how specific vegetative parameters are responding to FWC management and uses the Wildlife Conservation Prioritization and Recovery (WCPR) program to ensure management is having the desired effect on wildlife.

The goal of WCPR is to provide assessment, recovery and planning support for the FWC-managed areas to enhance management of focal species and the recovery of imperiled species. The WCPR program objectives include prioritizing what FWC does for imperiled and focal species on FWC-managed areas; ensuring the actions taken on these areas are part of statewide conservation programs and priorities; and informing others about the work accomplished on lands FWC manages.

The WCPR program helps FWC take a proactive, science-based approach to species management on FWC-managed lands. This approach assesses information from statewide potential habitat models and Population Viability Analysis, and in conjunction with input from species experts and people with knowledge of the area, creates site-specific wildlife assessments for imperiled wildlife species and a select suite of focal species. Staff combines these assessments with area-specific management considerations to develop a wildlife management strategy for the area. Each strategy contains area-specific measurable objectives for managing priority species and their habitat, prescribes management actions to achieve these objectives and establishes monitoring protocols to verify progress towards

meeting the objectives. The FWC intends for the strategy to promote the presence of, and ensure the persistence of, imperiled wildlife and select focal species on the area by providing FWC managers with information on actions they should take (provided the necessary resources are available).

The FWC hosted the LWRWEA WCPR workshop in 2011. Staff used input received at the workshop to draft the Strategy, and species experts reviewed the draft Strategy. After incorporating input from the experts, the Strategy was approved in 2012 and included needed management and/or monitoring actions for 28 focal species. Area staff are implementing the Strategy and have initiated many of the actions called for in the Strategy. The information developed for the Strategy was used in the development of this Management Plan.

In summary, for FWC-managed areas, the WCPR program helps assess imperiled and focal wildlife species needs and opportunities, prioritize what FWC does for imperiled and focal species, prescribe management actions to aid in species recovery, prescribe monitoring protocols to allow evaluation of the species' response to management and ensure the information is shared with others. Through the actions of this program, FWC will facilitate fulfilling the needs of focal and imperiled wildlife species on the LWRWEA. In the long-term, by implementing these strategies on FWC-managed lands and continuing to assess wildlife species' needs, FWC will continue to play an integral role in aiding the recovery of imperiled species and preventing the future imperilment of declining wildlife species.

3.4 Game and Nongame Wildlife Habitat Maintenance, Enhancement, Restoration, or Population Restoration.

FWC intends to manage game populations on a sustained-yield basis to assure healthy game populations and a high-quality recreational experience. In general, game wildlife populations will be managed to provide continued recreational sport hunting and wildlife viewing opportunities. However, due to the limited size of the area, some of the hunting opportunities may be regulated through a limited entry hunt program to ensure the persistence of viable game species populations as well as hunter safety and satisfaction.

3.5 Public Access and Recreational Opportunities

3.5.1 Americans with Disabilities Act

When public facilities are developed on FWC-managed areas, FWC complies with the Americans with Disabilities Act [ADA (Public Law 101-336)]. As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions. Recreation facilities in semi-primitive or

primitive zones will be planned to be universally accessible to the degree possible except as allowed by the ADA[1] where:

1. Compliance will cause harm to cultural or historic sites, or significant natural features and their characteristics.

2. Compliance will substantially alter the nature of the setting and therefore the purpose of the facility.

3. Compliance would not be feasible due to terrain or prevailing construction practices.

4. Compliance would require construction methods or materials prohibited by federal or state statutes, or local regulations.

3.5.2 Recreation Master Plan

The FWC has adopted a comprehensive approach to the planning and administration of fish and wildlife based recreational opportunities for the LWRWEA. To accomplish this, FWC worked with recreational stakeholders and the general public to develop a Recreation Master Plan for the LWRWEA. This plan is used to design and develop appropriate infrastructure that supports the recreational use of the area by the general public. In the long-term of this Management Plan (i.e., 2015 – 2023), FWC will update the Recreation Master Plan; however FWC will reassess recreational opportunities every three years.

3.5.3 Recreation Carrying Capacity

Baseline carrying capacities for recreational users on FWC-managed lands are established by conducting a site specific sensitivity analysis using available data for the site. The intent of the carrying capacity analysis is to minimize wildlife and habitat disturbance and provide the experience of being "immersed in nature" that visitors to FWC-managed areas desire. Carrying capacities are just a first step; management of recreational use requires a means of monitoring visitor impacts. Responding to these impacts may require adjusting the carrying capacities as necessary. The carrying capacities generated though this process are used as a tool to help plan and develop recreation opportunities.

Based on an analysis of the overall approved uses and supported recreational opportunities, and the anticipated proportional visitation levels of the various user groups, FWC has determined that the LWRWEA can currently support 289 visitors per day. This recreation carrying capacity will be periodically reevaluated and additional capacity may be contemplated as part of the Recreation Master Plan development and implementation process.

3.5.4 Wildlife Viewing

The LWRWEA provides a wide variety of native wildlife species, both resident and seasonally migratory, that are available for visitors' enjoyment for observation and photography. The quality of habitat found on the LWRWEA attracts a suite of species including various birds, mammals, reptiles and amphibians throughout the LWRWEA. Nesting pairs of osprey occur at the Lake Placid Scrub tract and the Royce Unit. Bald eagles nest at the Lake Placid Scrub site and the Royce Unit. The threatened Florida scrub-jay is relatively common on several of the tracts. A 1992-93 survey located 164 scrub jay groups on acquired sites and 153 additional groups on lands sought for acquisition. Together these lands contain nearly 10 percent of the entire population of scrub jays that still exist in Florida.

3.5.5 Hunting

Currently, hunting opportunities are only allowed on the Royce Unit and include archery, muzzle-loading gun, migratory bird, general gun, small game, alligator and spring turkey hunting seasons. A re-evaluation of the potential for hunting opportunities will be periodically performed by FWC in order to determine the feasibility of expanding hunting opportunities..

3.5.6 Trails

Currently, 17.4 miles of multi-use trails are available for public recreation on the LWRWEA. The FWC will continue to periodically reevaluate the potential for additional trails as well as trail connectivity opportunities to other conservation areas, and will monitor new trails biannually for user impacts to natural communities.

3.5.7 Camping

Currently, camping is prohibited on the LWRWEA. Due to the limited size of individual tracts, minimal staffing, the lack of appropriate sites, and proximity to several State Parks and privately operated RV/campgrounds that provide camping opportunities, FWC has not identified a need to provide camping facilities on the LWRWEA. FWC will periodically reassess the need and feasibility of providing camping facilities on the LWRWEA.

3.5.8 Horseback Riding

Horseback riding is permitted on the Royce Unit outside of the general gun and spring turkey seasons. At other times during the year, horseback riding is allowed on the Royce Unit on firebreaks and named and numbered roads. Horseback riding is also permitted in the western and central areas of the Lake Placid Scrub tract and the Carter Creek tract. Permits are required for these two tracts.

3.5.9 Paddling

Currently, no paddling opportunities exist on the LWRWEA.

3.5.10 Fishing

Fishing is available from the lakeshore on the Lake Placid Scrub tract with largemouth bass, red-ear sunfish, and bluegill being common.

3.5.11 Geocaching

Geocaching, also known as Stash Hunt or Geo-Stash, is a contemporary combination of orienteering and scavenger hunting generally utilizing a Geographic Positioning System receiver unit. Geocache websites routinely promote good stewardship. However, the potential exists for resource damage, user conflicts or safety issues caused by inappropriately placed caches and/or links that do not provide adequate information about the area.

It is the policy of FWC to allow placement of geocaches only in those locations that do not present the potential for resource damage, user conflicts or threats to the safety of the activity participants. The placement of geocaches on FWC-managed lands is governed by specific guidelines. These guidelines may be found on the following FWC website: http://myfwc.com/media/1074886/FWC_Geocache_Guidelines.pdf .

3.6 Environmental Education, Outreach and Partnerships

FWC will assess the need for and pursue research and environmental education partnership opportunities as appropriate. FWC will develop and conduct periodic environmental education and outreach programs. FWC will continue to coordinate with the Archbold Biological Station, universities, and the Fish and Wildlife Research Institute to identify opportunities to provide and/or expand as feasible interpretive and educational programs and continue management support and assistance. FWC will continue to identify partnerships that could provide for environmental educational programs and outreach opportunities including Polk and Highlands counties Tourism Bureau, other agencies, and stakeholders.

3.7 Hydrological Preservation and Restoration

3.7.1 Hydrological Assessment, Restoration and Management

FWC installs and maintains culverts as appropriate. In the long-term of this Management Plan (i.e., 2015 – 2025), FWC plans to conduct or obtain a hydrological assessment to identify potential hydrology restoration needs. Pursuant to the recommendations of the hydrological assessment, FWC will implement hydrological restoration as feasible and appropriate.

3.7.2 Water Resource Monitoring

The FWC will cooperate with the South Florida Water Management District (SFWMD), Southwest Florida Water Management District (SWFWMD) and DEP to develop and

implement any necessary surface water quality and quantity monitoring protocols for the LWRWEA. In this capacity, FWC will primarily rely on the expertise of SFWMD, SWFWMD and DEP to facilitate these monitoring activities. Additionally, FWC may also initiate and facilitate water resources monitoring, in cooperation with DEP and the SFWMD, SWFWMD, as deemed necessary.

3.8 Forest Resource Management

The FWC will cooperate with the FFS or a qualified professional forestry consultant to update the Timber Assessment. FWC contracted with a professional forestry consultant to prepare and implement a Forest Management Plan which included reforestation, harvesting and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of the LWRWEA.

Pursuant to OBVM management goals, FWC will continue to manage timber resources for wildlife benefits and natural community restoration. Management activities including the use of timber thinning and harvesting will be utilized. The primary management technique for encouraging reforestation is protection of young trees and seedlings on these sites from damage. However, where natural regeneration is lacking, artificial reforestation may be implemented. Planting trees on these selected sites is used to increase the rate of reforestation and to ensure diversity. Forested wetlands are managed for stands with old growth characteristics. Snags will be protected to benefit cavity-nesting species.

3.9 Exotic and Invasive Species Maintenance and Control

The FWC will continue efforts to control the establishment and spread of Florida Exotic Pest Plant Council (EPPC) Category I or II plants on the LWRWEA. Exotic and invasive plant species known to occur on the LWRWEA include air-potato brazilian pepper, caesar's weed, camphor tree, chinaberry, cogon grass, carpod tree, eucalyptus, guinea grass, Japanese climbing fern, natal grass, peruvian primrose willow, rosary pea, torpedo grass, tropical soda apple, water-hyacinth, west indian marsh grass, woman's tongue. Also, FWC will continue eradication efforts on Bermuda grass.

Control technologies may include mechanical, chemical, biological and other appropriate treatments. Treatments utilizing herbicides will comply with instructions found on the herbicide label and employ the Best Management Practices for their application.

An exotic animal species of concern on the LWRWEA is the feral hog. These animals have high reproductive rates, and when populations reach high densities, feral hogs can significantly degrade natural communities through foraging activity (rooting). FWC will consult with other regional natural resource managing agencies and private landowners to coordinate feral hog control measures as necessary. FWC will also evaluate the efficacy of implementing additional population control measures, such as additional public hunting

opportunities. FWC will monitor for additional exotic animal species and control as necessary.

3.10 Capital Facilities and Infrastructure

When public facilities are developed on FWC-managed areas, FWC complies with the ADA (Public Law 101-336). As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions (e.g., where handicap access is structurally impractical or where providing such access would change the fundamental character of the facility being provided).

3.11 Cultural and Historical Resources

Procedures outlined by the Florida Department of State's Division of Historical Resources (DHR) will be followed to preserve any such sites. The FWC will consult with DHR in an attempt to locate features on the area. As appropriate and necessary, FWC will contact professionals from DHR for assistance prior to any ground-disturbing activity on the area.

To date, the DHR Master Site File indicates eight known cultural sites on the LWRWEA. FWC will submit subsequently located cultural sites on the LWRWEA to DHR for inclusion in their Master Site file. In addition, FWC will ensure management staff has DHR Archaeological Resources Monitoring training. Furthermore, FWC will refer to and follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for management of these resources and prior to any facility development or other ground disturbing activities.

3.12 Research Opportunities

The FWC intends to cooperate with researchers, universities and others as feasible and appropriate. For the LWRWEA, the FWC will continue to assess and identify research needs and pursue research partnership opportunities as appropriate. Research proposals involving the use of the area are evaluated on an individual basis. All research activities on the LWRWEA must have prior approval by FWC.

3.13 Land Conservation and Stewardship Partnerships

The FWC utilizes a three-tiered approach to identifying, acquiring or otherwise protecting important conservation lands adjacent to or in proximity to existing FWC-managed areas. This involves development of an Optimal Resource Boundary (ORB), Optimal Conservation Planning Boundary (OCPB) and associated Conservation Action Strategy (CAS). Increasingly, cooperative land steward partnership efforts with private landowners plays an integral role in this effort as does ongoing conservation acquisition, either through fee-simple or less-than-fee conservation easements. In combination, this tiered model helps

FWC to further the regional conservation of important fish and wildlife habitats through a proactive, comprehensive and cooperative approach towards conservation.

3.13.1 Optimal Resource Boundary

This three tiered model begins with the development of an ORB, which is a resource-based analysis on a regional scale that integrates important FWC conservation research and analysis into practical planning, acquisition and management efforts through GIS analysis. The ORB focuses on critical and important wildlife species or habitat considerations such as rare and imperiled species habitat within a particular region or ecosystem-like area on a landscape scale within which a FWC managed area is contained while eliminating urban areas or lands that have already been conserved or protected.

3.13.2 Optimal Conservation Planning Boundary

The second tier is known as the OCPB. The OCPB combines the regional natural resources identified in the ORB, as well as regional and local area conservation planning including habitat conservation and restoration, habitat linkages, management challenges, land use and zoning issues, infrastructure including roads and developments, improving access, eliminating inholdings, providing prescribed burn buffers, resolving boundary irregularities, water resource protection and conserving other important natural and cultural resources.

The OCPB provides the basis for development of a broader CAS for the LWRWEA. Although the OCPB provides the basis for potential future voluntary, willing-seller conservation acquisitions, it is designed to function primarily as a conservation planning boundary. The OCPB identifies surrounding lands and natural resources that may be important to the continued viability of fish and wildlife populations in the region. As they are currently managed, these lands appear to contribute to regional conservation and may support conservation landscape linkages.

3.13.3 Conservation Action Strategy

The CAS is the third tier and implements the results of the ORB and OCPB tiers. This element of the process incorporates the conservation planning recommendations into an action strategy that prioritizes conservation needs. The CAS is integral to the development of conservation stewardship partnerships and also implements the current approved process for establishing the FWC Florida Forever Inholdings and Additions acquisition list.

Primary components of the CAS may include:

- FWC Landowner Assistance Program (LAP)
- FWC conservation planning
- FWC Additions and Inholdings Program Land Conservation Work Plan
- Forest Stewardship Program proposals

- Florida Forever project proposals and boundary modifications
- Conservation easements
- Federal or State grant conservation proposals
- Regional or local conservation proposals
- Local, state and federal planning proposals
- Non-governmental organization conservation proposals

Continued conservation of these lands may be aided by available voluntary landowner stewardship programs, conservation easements, and in some cases, potential voluntary conservation acquisitions. Participation in any FWC conservation effort is entirely voluntary and at the sole choice of willing landowners.

Private landowners seeking assistance with habitat management will likely find it offered within FWC's LAP. The FWC employs biologists who are available to provide wildlife-related assistance with land-use planning and habitat management. There are many forms of assistance that include technical, financial, educational and various forms of recognition that seek to award landowners who manage their wildlife habitat responsibly. More information on FWC's LAP program and online habitat management tools are available online at: http://myfwc.com/conservation/special-initiatives/lap/ .

3.14 Climate Change

Because of Florida's unique ecology and topography, any potential impacts as a result of climate change may be particularly acute and affect multiple economic, agricultural, environmental, and health sectors across the state. The impact of climate change on wildlife and habitat may already be occurring, from eroding shorelines and coral bleaching to increases in forest fires and saltwater intrusion into inland freshwater wetlands.

The Intergovernmental Panel on Climate Change (IPCC), a multi-national scientific body, reports that climate change is likely proceeding at a rate where there will be unavoidable impacts to humans, wildlife and habitat. Given current levels of heat-trapping greenhouse gas emissions, shifts in local, regional and national climate patterns including changes in precipitation, temperature, increased frequency and intensity of extreme weather events, rising sea levels, tidal fluctuations and ocean acidification are projected. The current trend of global temperature increase has appeared to accelerate in recent decades, and continued greenhouse gas emissions may result in projected global average increases of 2 – 11.5° F by the end of the century [3].

This apparent change in global climate has the potential to disrupt natural processes; in some areas, climate change may cause significant degradation of ecosystems that provide services such as clean and abundant water, sustainable natural resources, protection from flooding, as well as hunting, fishing and other recreational opportunities. Consequently,

climate change is a challenge not only because of its likely direct effects but also because of its potential to amplify the stress on ecosystems, habitats and species from existing threats such as exponential increases in surface and ground water use, habitat loss due to increased urbanization, introduction of invasive species and fire suppression.

Potential impacts that may be occurring as a result of climate change include change in the timing of biological processes such as flowering, breeding, hibernation, and migration [4, 5, 6]; more frequent invasions and outbreaks of exotic invasive species [7]; and loss of habitat in coastal areas due to sea level rise [8]. Some species are projected to adjust to these conditions through ecological or evolutionary adaptation, whereas others are projected to exhibit range shifts as their distributions track changing climatic conditions. Those species that are unable to respond to changing climatic conditions are projected to go extinct. Some estimates suggest that as many as 20% - 30% of the species currently assessed by the IPCC are at risk of extinction within this century if global mean temperatures exceed increases of 2.7 – 4.5° F [9]. A number of ecosystems are projected to be affected at temperature increases well below these levels.

At this time, the potential effects of climate change on Florida's conservation lands are just beginning to be studied and are not yet well understood. For example, FWC has begun a process for currently developing climate change adaptation strategies for monitoring, evaluating and determining what specific actions, if any, may be recommended to ameliorate the projected impacts of climate change on fish and wildlife and their associated habitats. Currently, FWC is continuing its work on the development of these potential adaptation strategies. However, as noted above, the effects of climate change are projected to become more frequent and severe within the time period covered by this plan.

For these reasons, there is a continuing need for increased information and research to enable adaptive management to cope with potential long-term climate change impacts. The most immediate actions that FWC can take are to work with partners to gather the best scientific data possible for understanding natural processes in their current state, model possible impacts and subsequent changes from climate change, develop adaptive management strategies to enhance the resiliency of natural communities to adapt to climate change and formulate criteria and monitoring for potential impacts when direct intervention may be necessary to protect a species.

Elements of climate change that may potentially affect the LWRWEA include inundation and saltwater intrusion from sea level rise, more frequent and/or more potent storm events, alteration of vegetation reproductive cycles and changes in the fire regime. When the adaptation strategies described above are developed and approved, goals and objectives relating to the potential climate change impacts may be developed in the LWRWEA Management Plan depending on the recommendations within the adaptation strategies.

3.15 Soil and Water Conservation

Soil disturbing activities will be confined to areas that have the least likelihood of experiencing erosion challenges. On areas that have been disturbed prior to acquisition, an assessment will be made to determine if soil erosion is occurring, and if so, appropriate measures will be implemented to stop or control the effects of this erosion. Water conservation is accomplished through hydrological restoration, management and monitoring as described in Section 2.6 above.

3.16 Cooperating Agencies

The FWC is responsible for the overall management and operation of the LWRWEA as a provision in the lease agreement with the Board of Trustees. These include cooperating with DHR to ensure all requirements of the Management Procedures Guidelines - Management of Archaeological and Historical Resources document are followed with regard to any ground-disturbing activities. In addition, the FFS is a designated cooperating agency, and assists FWC by providing technical assistance on forest resource management. Also, the FWC cooperates and consults with DEP, SFWMD, and SWFWMD for the monitoring and management of both ground and surface water resources of the LWRWEA. FWC will continue to coordinate and cooperate with the Archbold Biological Station on research opportunities, interpretive and educational programs, land management and operational activities.

4 Resource Management Goals and Objectives

The management goals described in this section are considered broad, enduring statements designed to guide the general direction of management actions to be conducted in order to achieve an overall desired future outcome for the LWRWEA. The objectives listed within each management goal offer more specific management guidance and measures and are considered the necessary steps to be completed to attain the management goal. Many of the objectives listed have specific end-of-the-calendar-year target dates for completion and all of them are classified as having either **short-term** (2013 – 2015) or **long-term** (2016 – 2023) timelines for completion.

Habitat Restoration and Improvement

Goal: Improve native habitat and restore disturbed areas.

4.1.1 Short-term (FIRST TWO YEARS)

1. Continue to prescribe burn 1,000 acres per year.
2. Continue to maintain 100 acres (2% of fire adapted communities outside of mega-parcel tracts) within three year target fire return interval.

3. Continue to maintain 1,900 acres (32% of fire adapted communities outside of mega-parcel tracts) within four to five year target fire return interval.
4. Continue to maintain 800 acres (13% of fire adapted communities outside of mega-parcel tracts) within ten year target fire return interval.
5. Continue to maintain 800 acres (13% of fire adapted communities outside of mega-parcel tracts) within twenty year target fire return interval.
6. Update prescribed burn plan.
7. Conduct habitat/natural community improvement on 50 acres per year including gyrotrac, mowing, herbicide and other viable vegetation management techniques.
8. Conduct habitat/natural community restoration activities on 11 acres per year including restoration actions on former pasture, former grove, and formerly cleared scrub within the Royce Unit.
9. Continue to implement OBVM, and determine need for adjusting and/or revising DFCs, management units, etc.
10. Work with the Lake Wales Ridge Ecosystem Working Group, Archbold Biological Station, and other partners on potential grant funding opportunities for natural community restoration.
11. Continue to coordinate and utilize Ridge Rangers Program volunteers to assist with habitat improvement and restoration.
12. Continue to work in cooperation with Polk County, USFWS to implement mitigation project, restoration at the Sunray donation site.
13. Continue to cooperate with Highlands County and private landowners to address resource protection and management issues on mega parcels site (littering, dumping, off-road vehicle use, etc.)

4.1.2 Long-term (UP TO 10 YEARS)

1. Continue to prescribe burn 1,000 acres per year.
2. As feasible given the disjunct distribution of the management area and the high degree of urban interface and associated smoke management issues, re-establish a three year target fire return interval on 300 acres (5% of fire adapted communities outside of mega-parcel tracts).
3. As feasible given the disjunct distribution of the management area and the high degree of urban interface and associated smoke management issues, re-establish a four to five year target fire return interval on 3,200 acres (53% of fire adapted communities outside of mega-parcel tracts).
4. As feasible given the disjunct distribution of the management area and the high degree of urban interface and associated smoke management issues, re-establish a ten year target fire return interval on 1,500 acres (25% of fire adapted communities outside of mega-parcel tracts).
5. As feasible given the disjunct distribution of the management area and the high degree of urban interface and associated smoke management issues, re-establish a ten year target fire return interval on 1,000 acres (17% of fire adapted communities outside of mega-parcel tracts).

6. Conduct habitat/natural community improvement and restoration on 50 acres per year including gyrotrac, mowing, herbicide and other viable vegetation management techniques.
7. Conduct habitat/natural community restoration activities on 11 acres per year including restoration actions on former pasture, former grove, and formerly cleared scrub within the Royce Unit.
8. Continue to implement OBVM, and determine need for adjusting and/or revising DFCs, management units, etc.
9. Work with the Lake Wales Ridge Ecosystem Working Group, Archbold Biological Station, and other partners on potential grant funding opportunities for natural community restoration.
10. Continue to coordinate and utilize Ridge Rangers Program volunteers to assist with habitat improvement and restoration.
11. Continue to work in cooperation with Polk County, USFWS to implement mitigation project, restoration at the Sunray donation site.
12. Continue to cooperate with Highlands County and private landowners to address resource protection and management issues on mega parcels site (littering, dumping, off-road vehicle use, etc.)

Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration

Goal: Maintain, improve, or restore imperiled species populations and habitats.

4.1.3 Short-term

1. Continue to implement a WCPR strategy.
2. As described in the WCPR strategy, continue to monitor seven imperiled and focal species (Florida scrub-jay, southeastern American kestrel, Bachman's sparrow, American swallow-tailed kite, Florida mouse, gopher frog, and gopher tortoise).
3. As described in the WCPR strategy, continue to maintain and monitor at least 17 southeastern American kestrel nest boxes.
4. As described in the WCPR strategy conduct a baseline Bachman's sparrow survey on the Royce Unit and Lake Placid Scrub tract by 2015 and repeat annually.
5. As described in the WCPR Strategy, continue to monitor American swallow-tailed kite nesting platforms on the Royce Unit and Carter Creek tract.
6. Complete a Rare Plant Management Plan by 2015 as described in the WCPR Strategy.
7. Manage black bear habitat across LWRWEA and The Florida Black Bear Population Sub-center Protection Strategic Management Area as identified in the WCPR Strategy.
8. Continue to coordinate with cooperators (Bok Tower Gardens, Archbold Biological Station, and USFWS on rare plant reintroductions at Lake Blue tract and Silver Lake tract as well as other areas that are identified.

9. Continue to manage and monitor scrub-jay and other scrub endemics to enhance and maintain the populations.
10. Collect opportunistic wildlife occurrence data for listed species per WCPR Opportunistic Wildlife Observations Standard Monitoring Protocol.
11. Continue to collect opportunistic wildlife species occurrence data.

4.1.4 Long-term

1. Continue to implement the WCPR strategy.
2. As described in the WCPR strategy, continue to monitor seven imperiled and focal species (Florida scrub-jay, southeastern American kestrel, Bachman's sparrow, American swallow-tailed kite, Florida mouse, gopher frog, gopher tortoise).
3. As described in the WCPR strategy, continue to maintain and monitor at least 17 southeastern American kestrel nest boxes.
4. As described in the WCPR strategy, conduct annual Bachman's sparrow surveys on the Royce Unit and Lake Placid Scrub tract.
5. Continue to collect opportunistic wildlife occurrence data for listed species per WCPR Standard Monitoring Protocol.
6. By 2022, revise and update WCPR strategy.
7. Continue to coordinate with cooperators (Bok Tower Gardens, Archbold Biological Station, and USFWS) on rare plant reintroductions at Lake Blue tract and Silver Lake tract as well as other areas that are identified.
8. Continue to manage and monitor scrub-jay and other scrub endemics to enhance and maintain the populations.
9. Complete a Rare Plant Management Plan by 2015 as described in the WCPR Strategy.
10. Continue to manage black bear habitat across LWRWEA and The Florida Black Bear Population Sub-center Protection Strategic Management Area as identified in the WCPR Strategy.

Other Wildlife (Game and Nongame) Habitat Maintenance, Enhancement, Restoration, or Population Restoration

Goal: Maintain, improve, or restore other wildlife populations and habitat.

4.1.5 Short-term

1. Continue to monitor and maintain bat houses per FWC's Bat House Occupancy Protocol.
2. Continue to monitor and maintain bluebird houses.
3. Continue to monitor and maintain primary and secondary zones per USFWS criteria around active bald eagle nests as described in the WCPR Strategy.
4. Continue to monitor and maintain nesting and brood-rearing habitat, including pastures, for sandhill cranes as described in the WCPR Strategy.

5. Continue to actively manage Sherman's fox squirrel habitat, including pastures, and protect known nesting sites.
6. Continue to manage upland habitats for sand skinks, bluetail mole skinks, Eastern indigo snakes, and Florida pine snake as described in the WCPR Strategy
7. Continue to collect biological harvest data for mourning doves at Royce Unit check station.
8. Continue to collect opportunistic wildlife occurrence data for focal species per WCPR Standard Monitoring Protocol.

4.1.6 Long-term

1. Continue to monitor bat houses per FWC's Bat House Occupancy Protocol.
2. Continue to monitor and maintain bluebird houses.
3. Continue to monitor and maintain primary and secondary zones per USFWS criteria around active bald eagle nests as described in the WCPR Strategy.
4. Continue to monitor and maintain nesting and brood-rearing habitat, including pastures, for sandhill cranes as described in the WCPR Strategy.
5. Continue to actively manage Sherman's fox squirrel habitat, including pastures, and protect known nesting sites.
6. Continue to manage upland habitats for sand skinks, bluetail mole skinks, Eastern indigo snakes, and Florida pine snake as described in the WCPR Strategy
7. Continue to collect biological harvest data for mourning doves at Royce Unit check station.
8. Continue to collect opportunistic wildlife occurrence data for focal species per WCPR Standard Monitoring Protocol.

Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities.

4.1.7 Short-term

1. Continue to maintain public access and recreational opportunities to allow for a recreational carrying capacity of 289 visitors per day.
2. Continue to provide webpage, two informational kiosks, and bird list for interpretation and education.
3. Develop approximately two miles of additional trails.
4. Develop educational programs through the Ridge Ranger Program
5. Continue to maintain 17 miles of trails.
6. Implement the Ridge Rangers volunteer Program Management Plan.
7. Continue to offer hunting opportunities for deer, turkey, mourning dove, small game and feral hogs.

4.1.8 Long-term

1. Monitor trails biannually for visitor impacts.
2. Reassess recreational opportunities every three years.
3. Develop additional public access and recreational opportunities to increase the recreational carrying capacity to 496 visitors per day.
4. Develop a recreation guide.
5. Continue to offer hunting opportunities for deer, turkey, mourning dove, small game and feral hogs.
6. Cooperate with other agencies, county, stakeholders, and regional landowners to investigate regional recreational opportunities.
7. Continue to identify partnerships that could provide for environmental educational programs and outreach.
8. Continue to implement the Ridge Rangers Program Management Plan.
9. Evaluate LWRWEA tracts for potential public hunting opportunities.
10. Continue to provide webpage, two informational kiosks, and bird list for interpretation and education.

Hydrological Preservation and Restoration

Goal: Protect water quality and quantity, restore hydrology to the extent feasible, and maintain the restored condition.

4.1.9 Short-term

1. Maintain and enhance natural hydrological functions and/or access, replace/repair/maintain low-water crossings and culverts as appropriate
2. Continue to cooperate with the Southwest Florida Water Management District, South Florida Water Management District, and Florida Department of Environmental Protection (DEP) for the monitoring of surface and ground water quality and quantity.

4.1.10 Long-term

1. Maintain and enhance natural hydrological functions, continue to replace/repair/ maintain low-water crossings and culverts as appropriate.
2. Conduct or obtain a hydrological assessment to identify potential hydrology restoration needs.
3. Implement hydrological assessment restoration as feasible.
4. Continue to cooperate with the Southwest Florida Water Management District, South Florida Water Management District, and Florida Department of Environmental Protection (DEP) for the monitoring of surface and ground water quality and quantity.

Forest Resource Management

Goal: Manage timber resources to improve or restore natural communities for the benefit of wildlife.

4.1.11 Short-term

1. Consult with the Florida Forest Service or a professional forestry consultant regarding forest management activities as appropriate.

4.1.12 Long-term

1. Continue to consult with the Florida Forest Service or a professional forestry consultant regarding forest management activities as appropriate.

Exotic and Invasive Species Maintenance and Control

Goal: Remove exotic and invasive plants and animals and conduct needed maintenance and control.

4.1.13 Short-term

1. Continue to treat and GPS record 150 acres per year of EPPC Category I and Category II invasive exotic plant species including cogon grass, tropical soda apple, climbing fern, Brazilian pepper, and air potato as necessary.
2. Continue to use volunteers, contractors, and staff to survey and document the presence of invasive species.
3. As necessary and feasible, implement control measures on feral hogs.
4. Continue to monitor for exotic animal species and control as necessary, including Cuban brown anoles and Eurasian collared dove.

4.1.14 Long-term

1. Continue to treat and GPS record 150 acres per year of EPPC Category I and Category II invasive exotic plant species including cogon grass, tropical soda apple, climbing fern, Brazilian pepper, and air potato as necessary.
2. Continue to use volunteers, contractors, and staff to survey and document the presence of invasive species.
3. As necessary and feasible, continue to implement control measures on wild hogs.
4. Continue to monitor for exotic animal species and control as necessary, including Cuban brown anoles and Eurasian collared dove.

Capital Facilities and Infrastructure

Goal: Develop the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

4.1.15 Short-term

1. Continue to maintain 36 facilities.
2. Continue to maintain 4 miles of roads.
3. Continue to maintain 17 miles of trails.

4.1.16 Long-term

1. Monitor trails and infrastructure biannually for visitor impacts.
2. Continue to maintain 36 facilities.
3. Continue to maintain 4 miles of roads.
4. Construct and/or designate two additional miles of trails.
5. Continue to maintain 19 miles of trails.
6. Improve or repair 36 facilities 4 miles of roads, and 17 miles of trails.
7. Develop up to three wildlife viewing structures at Royce Unit (Peace Pond and Lake Istokpoga) and Lake Placid Scrub tract.

Cultural and Historical Resources

Goal: Protect, preserve, and maintain the cultural resources.

4.1.17 Short-term

1. Ensure all known sites are recorded in the Florida Division of Historical Resources Master Site File.
2. Continue to monitor, protect, and preserve as necessary 8 identified sites.
3. Coordinate with DHR to assess the need for conducting a cultural resource survey.

4.1.18 Long-term

1. Cooperate with DHR or trained FWC Staff in designing site plans for development of infrastructure.
2. Cooperate with DHR to manage and maintain known existing cultural resources.
3. Continue to monitor, protect, and preserve as necessary eight identified sites.
4. Coordinate with DHR for cultural resource management guideline staff training.

Climate Change Adaptation

Goal: Develop appropriate adaptation strategies in response to projected climate change effects and their potential impacts on natural resources, including fish and wildlife, and the operational management.

Long-term

1. Coordinate with FWC-FWRI Climate Change Adaptation Initiative to identify potential impacts of projected climate change on fish and wildlife resources and operational management of the LWRWEA.

2. Incorporate appropriate climate change monitoring protocols and management strategies into the OBVM program for the LWRWEA.

3. Incorporate appropriate climate change adaptation strategies into the WCPR for the LWRWEA.

4. As appropriate, update the LWRWEA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of LWRWEA's fire-adapted habitats.

5. As science, technology, and climate policy evolve, educate natural resource management partners and the public about the agency's policies, programs and efforts to study, document and address potential climate change; assess the need to incorporate public education about climate change into the update of the LWRWEA Recreation Master Plan.

Research Opportunities

Goal: Explore and pursue cooperative research opportunities.

4.1.19 Long-term

1. Explore and pursue cooperative research opportunities through the Archbold Biological Station, universities, Fish and Wildlife Research Institute, etc.
2. Continue to cooperate with researchers, universities, and others as appropriate.
3. Continue to assess the need for and pursue research and environmental education partnership opportunities as appropriate.
4. Continue to partner with IFAS to continue citrus research on the Royce Unit citrus grove.
5. Continue to coordinate and cooperate with the Black Bear Hair Snare study, Orianne Society Eastern indigo snake study, USDA, Red bay ambrosia beetle study, Archbold Biological Station Florida scrub-jay long term demographic study, populations demographics of endangered plants study, etc.

Land Conservation and Stewardship Partnerships

Goal: Enhance wildlife conservation, resource and operational management through development of an optimal boundary.

4.1.20 Short-term

1. Identify potential important wildlife resources, habitat, landscape-scale linkages, and wildlife corridors for operational/resource management that may be important to the continued viability of fish and wildlife populations in the region.
2. Develop a Conservation Action Strategy.
3. Contact and inform adjoining landowners about the FWC Landowners Assistance Program to pursue non-acquisition conservation stewardship, partnerships, and potential conservation easements.
4. Identify and recommend parcels for addition to the FWC acquisition list and parcels to declare as surplus property.
5. Identify potential non-governmental organization partnerships and grant program opportunities.
6. Determine efficacy of conducting an adjacent landowner's assistance/conservation stewardship partnership workshop.
7. Develop partnerships with adjacent landowners to facilitate cooperative habitat management activities.
8. Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as Gulf Regional Air Space Initiative (GRASI) and other initiatives as appropriate and compatible with the conservation of the LWRWEA.

4.1.21 Long-term

9. To minimize fragmentation of the area, continue to identify strategic parcels to revise the completed optimal conservation planning boundary for the LWRWEA as deemed necessary.
10. Continue to identify and recommend parcels for addition to the FWC acquisition list.
11. Pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow.
12. Coordinate landowner assistance/ conservation stewardship partnership workshop as deemed appropriate.
13. Periodically (at least every three to five years) continue to contact and meet with adjacent landowners for willingness to participate in the Conservation Action Strategy. Coordinate landowner assistance/ conservation stewardship partnership workshop as deemed appropriate.
14. Continue partnerships with adjacent landowners to facilitate cooperative habitat management activities.
15. Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as Gulf Regional Air Space Initiative (GRASI) and other initiatives as appropriate and compatible with the conservation of the LWRWEA.

5 Resource Management Challenges and Strategies

The following section identifies and describes further management needs and challenges associated with the LWRWEA and provide solution strategies that will address these challenges. These specific challenges may not be fully addressed in the broader goals and objectives (Section 3) above and are therefore provided here.

Challenge 1: 6,792 acres (43% of LWRWEA) within the Mega-parcels tracts are currently unmanageable due to the checkerboard state/private property ownership pattern. This prevents essential resource management activities necessary to preserve and protect imperiled plant and animal species population that are critical to maintain the Lake Wales Ridge ecosystem.

Strategy: Utilize alternative land conservation techniques (third party acquisitions, conservation easements, land exchanges, donations, etc) as well as traditional land acquisition to consolidate ownership and management of LWRWEA mega-parcel tracts.

Challenge 2: Potential annexation of tracts into city limits by local municipalities (e.g. Silver Lake / Avon Park) of the LWRWEA tracts may impact resource management of the area.

Strategy: cooperate with local governmental planning zoning departments to ensure compatibility of proposed annexations with continued effective resource management of the area.

Challenge 3: There are several prohibited activities occurring on the LWRWEA including off-road vehicle travel; erection of permanent or semi-permanent structures; illegal clearing of native habitat on state lands; facility vandalism; and dumping/littering that have negative impacts on sensitive plant communities and water quality, degrade aesthetic qualities of the area, and damage wildlife species or their habitats.

Strategy: Through news media outlets, postings at entrance kiosks and signage, inform public about these activities and their detrimental effects on the area.

Strategy: Install additional gates and fences/guard rails adjacent to gates as needed to control off-road vehicle access.

Strategy: Improve compliance with designated road regulations, litter laws and protection of facilities through directed law enforcement patrols of problem areas.

Strategy: Utilize existing regulations and enforcement authority to reduce upland impacts resulting from illegal activities.

Challenge 4: Currently there is insufficient habitat on certain the LWRWEA tracts to maintain viable populations of rare and imperiled plant and animal species including the Florida panther and the Florida black bear.

Strategy: Explore conservation stewardship and acquisition opportunities to secure habitat necessary for far-ranging species such as the Florida panther and the Florida black bear.

Challenge 5: Currently there is insufficient staffing at the LWRWEA to optimally manage the LWRWEA resources.

Strategy: Pursue funding for increased staffing.

Strategy: Explore potential volunteer resources for assisting with management.

Challenge 6: Currently some LWRWEA tracts do not have boundary surveys, increasing land management impacts.

Strategy: Pursue funding to acquire boundary surveys.

6 Endnotes

[1] Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas, Final Report (1999).

[2] Florida Fish and Wildlife Conservation Commission. 2012. Florida Black Bear Management Plan. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida, 215 p.

[3] Karl, T. R., J. M. Melillo, and T. C. Peterson (Eds.). 2009. Global Climate Change Impacts in the United States. Cambridge University Press, New York, NY.

[4] McCarty, J. P. 2001. Ecological consequences of recent climate change. Conservation Biology 15:320-331.

[5] Walther, G. R., E. Post, P. Convey, A. Menzel, C. Parmesan, T. J. . Beebee, J. M. Fromentin, O. Hoegh-Guldberg, and F. Bairlein. 2002. Ecological responses to recent climate change. Nature 416:389–395.

[6] Parmesan, C. 2006. Ecological and evolutionary responses to recent climate change. Annual Review of Ecology, Evolution, and Systematics 37:637-669.

[7] Logan, J. A., and J. A. Powell. 2009. Ecological consequences of climate change altered forest insect disturbance regimes. In Climate Warming in Western North America:

Evidence and Environmental Effects (F. H. Wagner, Ed.). University of Utah Press, Salt Lake City, UT.

[8] Stevenson, J. C., M. S. Kearney, and E. W. Koch. 2002. Impacts of sea level rise on tidal wetlands and shallow water habitats: A case study from Chesapeake Bay. American Fisheries Society Symposium 32:23-36.

[9] IPCC. 2007b. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK.

[10] Emanuel, K.A. 1987. The Dependence of Hurricane Intensity on Climate. Nature 326: 483-485.

[11] Emanuel, K.A. 2005. Increasing Destructiveness of Tropical Cyclones Over the Past 30 Years.

[12] Webster et al. 2005; Webster, P. J., et al. 2005. Changes in Tropical Cyclone Number, Duration, and Intensity, in a Warming Environment. Science 309: 1844–1846.

[13] Mann, M.E. and K.A. Emanuel. 2006. Atlantic Hurricane Trends Linked to Climate Change. Eos Trans. AGU 87: 233-244.

[14] Stanton, E.A. and F. Ackerman. 2007. Florida and Climate Change: The Costs of Inaction. Tufts University Global Development and Environment Institute and Stockholm Environment Institute–US Center, Tufts University, Medford, MA.

[15] Clough, J.S. 2008. Application of the Sea-Level Affecting Marshes Model (SLAMM 5.0) to Crystal River NWR. Warren Pinnacle Consulting, Inc. for U.S. Fish and Wildlife Service. 46 pp.

LAKE WALES RIDGE WILDLIFE AND ENVIRONMENTAL AREA
Management Prospectus
Florida Fish and Wildlife Conservation Commission
April 2013

Introduction

The Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) stretches along the high sandy ridges of Lake Wales Ridge, an ancient and rare geological and environmental area that is one of the oldest and most endangered ecosystems in North America. Many of the species of plants and animals that occur here are found nowhere else on Earth. Composed of 19 separate tracts scattered over roughly 75 miles of the Lake Wales Ridge in Polk and Highlands Counties (Figure 1), the LWRWEA is composed of a mosaic of scrub, flatwoods, wetlands and lakes. Notably, the LWRWEA preserves substantial components of this endangered ecosystem that provide critically important habitat for many rare and imperiled plant and wildlife species while providing exceptional opportunities for fish and wildlife based public outdoor recreation.

As noted above, the LWRWEA protects a variety of natural communities such as scrub, mesic flatwoods, scrubby flatwoods, and prairie with associated swamps, marshes, and seepage slopes. These conservation lands are key parts of a mosaic of public conservation lands that protect the unique ecology of the Lake Wales Ridge and link to Fisheating Creek in the south and the Green Swamp in the north.

FWC has lead management authority on approximately 15,657 acres within the establishment boundary of LWRWEA. The LWRWEA is managed to conserve and restore natural wildlife habitat for an array of endemic, imperiled, and other native wildlife including the Florida scrub jay (*Aphelocoma coerulescens*), Florida pine snake (*Pituophis melanoleucus*), gopher tortoise (*Gopherus polyphemus*) and bluetail mole skink (*Eumeces egregius lividus*), among others, while also providing high-quality opportunities for hunting, fishing, wildlife viewing, and other fish and wildlife based public outdoor recreation opportunities including horseback-riding, bicycling, and hiking.

The LWRWEA consists of separate tracts scattered over roughly 75 miles of the Lake Wales Ridge in Polk and Highlands counties. Since the Lake Wales Ridge itself averages less than ten miles wide throughout its length, with a few exceptions, the tracts are generally within a few miles of U.S. Highway 27 along the Ridge. The Lake Blue tract of the LWRWEA is actually located on the Winter Haven Ridge, not the Lake Wales Ridge. Tracts within the LWRWEA are adjacent to the privately held Archbold Biological Station, Lake June in Winter Scrub State Park, U.S. Fish and Wildlife Service's Carter Creek portion of Lake Wales Ridge National Wildlife Refuge (LWRNWR), The Nature Conservancy's (TNC) Carter Creek holdings, Highlands County's Sun N Lakes Preserve, and the Southwest Florida Water Management District's (SWFWMD) Jack Creek site. Not

adjacent, but located near one or more of the LWRWEA tracts are: Highlands Hammock State Park (DEP), Saddle Blanket Lakes State Preserve (DEP), the Catfish Creek property leased to DEP, TNC's Tiger Creek Preserve, Florida Forest Service's (FFS) Lake Wales Ridge State Forest, Lake Arbuckle State Reserve (DEP), Avon Park Air Force (U.S. Department of Defense), and Bok Tower Gardens (private).

Adjacent Public and Private Conservation Lands and Florida Forever Projects

The LWRWEA is located in the vicinity of a large number of publicly owned conservation areas and several Florida Forever projects (Figure 3). Tables 1 and 2 list the Florida Forever projects and conservation lands within a 20-mile radius of the LWRWEA, including lands managed by public and private entities, that conserve cultural and natural resources within this region of Florida.

Most of the conservation lands listed in Table 2 are owned in full-fee by a public entity. However, some of these areas fall within a less-than-fee ownership classification where the land is owned and being managed by a private landowner while a public agency or not-for-profit organization holds a conservation easement on the land.

Table 1. Florida Forever Projects in the Vicinity of LWREA

Project Name	GIS Acres
Al Bar/Cross Bar Ranch	12,440
Blue Head Ranch	40,559
Bombing Range Ridge	47,095
Catfish Creek	19,479
Fisheating Creek Ecosystem	177,319
Green Swamp - Hilochee Corridor	93,056
Green Swamp - Peace River Headwaters	4,0016
Green Swamp - Withlacoochee River Headwaters	103,458
Lake Hatchineha Watershed	5,473
Lake Wales Ridge Ecosystem	57,173
Old Town Creek Watershed	7,303
Triple Diamond	7,998

Table 2. Conservation Lands in the Vicinity of LWREA

Federal Government	Managing Agency
Avon Park Air Force Range	DOD
Everglades Headwaters National Wildlife Refuge	USFWS
Lake Wales Ridge National Wildlife Refuge	USFWS

Table 2. Conservation Lands in the Vicinity of LWREA

State of Florida	Managing Agency
Allen David Broussard Catfish Creek Preserve State Park	DEP
Bowlegs Creek	DEP
Camp Meeting Ground Branch Conservation Easement	DEP
Clear Springs	DEP
Crooked Lake WEA	FWC
Cypress Gardens Conservation Easement	DEP
Fisheating Creek WMA	FWC
Fisheating Creek/Lykes Brothers Conservation Easement	FWC
Fisheating Creek/Smoak Groves Conservation Easement	DEP
FL DEP Green Swamp Conservation Easements	DEP
General James A. Van Fleet State Trail	DEP
Green Swamp Land Authority Land Protection Agreements	DEP
Green Swamp/Bass Conservation Easement	DEP
Highlands Hammock State Park	DEP
Hilochee WMA	FWC
Homeland	DEP
Kissimmee Prairie Preserve State Park	DEP
Lake June-in-Winter Scrub State Park	DEP
Lake Kissimmee State Park	DEP
Lake Wales Ridge State Forest	DACS
Morgan Conservation Easement	DEP
Morgan Lake Wales Preserve Conservation Bank	FWC
Osprey Unit	FWC
Platt Branch Mitigation Park WEA	FWC
Polk Lake	DEP
South Fort Meade Hardee County Conservation Easement	DEP
South Peace River	DEP
Tenoroc Fish Management Area	FWC
Tiger Lake Ranch Conservation Easement	DACS

Water Management District	Managing Agency
Appleton and Gurov Parcel	SWFWMD
Bright Hour Watershed	SWFWMD
Green Swamp	SWFWMD
Henscratch Conservation Easement	SFWMD
Jack Creek	SWFWMD
Kissimmee Chain of Lakes	SFWMD
Kissimmee River	SFWMD
Lake Hancock	SWFWMD

Table 2. Conservation Lands in the Vicinity of LWREA

Polk County Conservation Easement	SWFWMD
Upper Lake Marion Creek Watershed	SWFWMD
Upper Lakes Basin Watershed	SFWMD
County/City	**Managing Agency**
Bartow Trailhead at Fort Fraser	City of Bartow
Circle B Bar Reserve	Polk County
Crooked Lake Prairie	Polk County
Crooked Lake Sandhill	Polk County
Crooked Lake West	Polk County
Crooked Lake West - Britt Tract	Polk County
Crooked Lake West - Stuart Tract	Polk County
Gator Creek Reserve	Polk County
Hickory Lake Scrub County Park	Polk County
IMC - Peace River Park	Polk County
Lake Bonnet Marsh	Polk County
Lake Lowery Marsh	Polk County
Lake Wales Trailways	City of Lake Wales
Lakeland Highlands Scrub	Polk County
Laurent/Peace River	Polk County
MacKay Gardens and Lakeside Preserve	City of Lake Alfred
North/Walk-in-Water Creek	Polk County
Peace River Hammock	Polk County
Saddle Creek County Park	Polk County
Sherwood L. Stokes Preserve/Lake Marion	Polk County
SUMICA	Polk County
The Preserve	Highlands County
Winter Haven to Lake Alfred Trail	City of Winter Haven
Private/Public Conservation Organization	**Managing Agency**
Archbold Biological Station	Archbold Expeditions, Inc.
Bass Ranch Conservation Easement	TNC
Bok Tower Gardens Knoll	BTGF
Bok Tower Gardens Pine Ridge Preserve	BTGF
Bok Tower Gardens Planted Pines	BTGF
Bok Tower Gardens Preserve	BTGF
Carter Creek	TNC
Disney Wilderness Preserve	TNC
Hammock Lake Mitigation Bank	Mitigation Resources, LLC
Hancock Commons Tract	TNC
Hatchineha Ranch	TNC

Table 2. Conservation Lands in the Vicinity of LWREA

Holmes Avenue	TNC
Mary Male Sanctuary	Florida Audubon Society
Peace River Mitigation Bank	EarthBalance
Saddle Blanket Scrub Preserve	TNC
Saddle Creek Sanctuary	Florida Audubon Society
Scrub Conservation Bank	Archbold Expeditions, Inc.
Serenoa Preserve	Green Horizon Land Trust
Street Sanctuary	Florida Audubon Society
Sun Ray Scrub	TNC
Tiger Creek Preserve	TNC
TNC/Dellock	TNC
Venus Flatwoods Preserve	TNC
XL Ranch Conservation Easement	TNC

Acronym Key	Agency Name
BTGF	Bok Tower Gardens Foundation, Inc.
DEP	Florida Department of Environmental Protection
DOD	United States Department of Defense
DACS	Florida Department of Agriculture and Consumer Services
FWC	Florida Fish and Wildlife Conservation Commission
SWFWMD	Southwest Florida Water Management District
SFWMD	South Florida Water Management District
TNC	The Nature Conservancy
USFWS	United States Fish and Wildlife Service

Acquisition History and the Purpose for Acquisition

All lands within the LWRWEA have been acquired through the Conservation and Recreation Lands Program (CARL), Preservation-2000 Program and the Florida Forever Program. Several sites are only partially acquired. Using funds from the CARL, Preservation-2000, and Florida Forever programs, the State, along with other cooperating partners such as the SWFWMD, SFWMD, Polk County, Highlands County, TNC, Archbold Biological Station, Audubon Society, BTGF, and others, began purchasing the LWRWEA tracts in the 1990s.

The Lake Wales Ridge Ecosystem Florida Forever Project and its predecessor projects described above, has focused on completing acquisitions throughout the length of its scattered or archipelago-like project boundary. Many of the selected "tracts" within the project boundary have been acquired as larger consolidated blocks of land. However, many of the tracts are a checker board of unconsolidated land holdings interspersed with privately owned lands. As previously noted, the LWRWEA boundary encompasses approximately 15,657 acres. Twelve tracts within LWREA are larger consolidated public

land holdings, comprising approximately 8,865 acres. Seven other tracts are partially owned and are referred to as mega-parcels with a checker board pattern of public ownership and management and comprise approximately 6,792.

The first acquisition of the LWRWEA, the Lake Placid Scrub tract, was purchased under the CARL program in 1993. The State purchased Lake Placid Scrub (3,161 acres) from a company that owned much of the platted subdivision to the north of this tract. The second tract to be acquired was the Carter Creek tract (3,505 acres total, of which2,303 acres are state-owned). Carter Creek is a mega-parcel tract east of Sebring. The State initiated acquisition of this tract in 1994. The Leisure Lakes Complex contains several tracts located northwest of Lake Placid. Of the tracts in this complex, the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Board of Trustees) owns all of Henscratch 27 (197 acres), Messana (61 acres) and Tubbs (56 acres). Orange Blossom (189 acres, of which 103 acres are State-owned), Henscratch (1,282 acres, of which 815 acres are state-owned) and Leisure Lakes/Highlands Ridge (3,356 acres total, of which 1,531 acres are state-owned) are mega-parcel tracts. All of these tracts are within a few miles of U.S. Highway 27; Henscratch 27 and Messana are immediately adjacent to and west of U.S. Highway 27. Acquisition of these tracts began with Henscratch 27 in 1995. Gould Road (193 acres) is a small, isolated tract surrounded by citrus groves along U.S. Highway 27 south of State Road 70, which the State also acquired in 1995.

Holmes Avenue (1,096 acres total, of which 492 acres are state-owned), a mega-parcel tract in Lake Placid, is a key corridor for wildlife moving from south to north on the east side of U.S. Highway 27 , which the State began acquiring in 1996. Highland Park Estates is a mega-parcel tract immediately south of the Royce Unit of the LWRWEA, which the State also began acquiring in 1996.

The Clements tract was acquired in 1997. This tract is located immediately west of Royce Unit Silver Lake (909 acres) and Sun-n-Lakes (426 acres total, of which 282 acres are state-owned) are contiguous tracts located north of Sebring. Also in 1997, the State acquired Silver Lake in its entirety. Acquisition in the Sun-n-Lakes mega-parcel tract began in 1997.

Lake Blue (79 acres) was acquired in 2001. It is a remnant piece of scrub on the Winter Haven Ridge near Auburndale, and is nearly surrounded by residential and industrial areas. The Sunray tract, (419 acres), was acquired from 2000-2003, is adjacent to a railroad track on its eastern boundary, and is located along U.S. Highway 27 between Frostproof and Avon Park. Mountain Lake Cutoff (208 acres), in Lake Wales, was acquired in 2003. The Royce Unit (2,641 acres), Clements (520 acres) and Highland Park Estates (3,079 acres total, of which 1,148 acres are state-owned) are contiguous parcels east of Lake Placid. The Royce Unit originated with the purchase of scrub in the southwest corner of Royce Ranch, a cattle ranch that the Royce family owned and managed for approximately 70 years. TNC purchased this small corner of scrub in 1990 and donated it over to the State in 1995. The State and FWC acquired the rest of the Royce Ranch in 2002. The McJunkin tract (805

acres), which is located south of State Road (S.R.) 70 adjacent to Lake Placid Scrub, was also acquired in December 2001.

Many of the remaining acquisition sites within the Lake Wales Ridge Ecosystem Florida Forever project are old, abandoned subdivisions with only a scattering of roads and houses. Currently, these subdivisions are approximately 45-65% acquired. The checkerboard of ownership in these subdivisions greatly reduces opportunities for active land management. Acquisition of larger tracts of land on the Ridge is also ongoing.

The original purposes for acquisition of the lands that now comprise the LWRWEA were to provide conservation and protection of natural and cultural resources and to provide resource-based public outdoor recreation that is compatible with the conservation and protection of these public lands.

Essentially, all of the lands acquired within the LWRWEA under the CARL, Preservation-2000, and Florida Forever programs include the following as primary goals of acquisition:

- To conserve and protect environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within a region of the state or a larger geographic area;
- To conserve and protect significant habitat for native species or endangered and threatened species; and
- To conserve, protect, manage or restore important ecosystems, landscapes, and forests, in order to enhance or protect significant surface water, coastal, recreational, timber, fish or wildlife resources which local or state regulatory programs cannot adequately protect.

The LWRWEA is managed by FWC for the purpose of operating a Wildlife and Environmental Area, providing ecological diversity, providing managed habitat for both common and imperiled wildlife, and for providing the public with fish and wildlife-oriented outdoor recreational opportunities.

Topography Soils and Hydrology

The LWRWEA is part of the Lake Wales Ridge. The Ridge extends roughly 100 miles to the south of Orlando, terminating at the town of Venus in southern Highlands County. As noted above, this ridge is one of the oldest and most endangered ecosystems in North America. The lands comprising the Ridge have been above sea level in excess of two million years. The hill and swale land forms of the Lake Wales Ridge are relict dunes and bays, formed when sea level was about 200 ft. above its current position.

Tracts covered in this overview vary in their topography and range of natural community types. Topography on the Carter Creek tract is typical of the Lake Wales Ridge, with

significant relief covered with scrub, scrubby flatwoods, sandhill, baygall, marshes, and seepage slopes on the slopes and lower areas. Carter Creek flows through the center of the area and contributes floodplain forest and floodplain swamp to the natural features. The Royce Unit is at the edge of the Istokpoga Prairie province of the Eastern Flatwoods physiographic district with less relief, except for the western edge where it begins to ascend the Lake Wales Ridge. Mesic flatwoods, wet flatwoods, baygall, and seepage slopes dominate with scrub and scrubby flatwoods along the western edge of the tract. The Lake Placid Scrub tract is on the western side of the Lake Wales Ridge. As a result, the eastern side of the tract has a more pronounced topography. Scrub, scrubby flatwoods, sandhill, and baygall in the lower areas grade into the Carlton Ranch Ridge province of the Southwestern Flatwoods district to the west, as evidenced by large, contiguous stretches of mesic flatwoods on the western two-thirds of the tract. The soils type map associated with each tract are shown in Figures 4-13. The depth to water table maps are shown in Figures 14-23.

All waters on the LWRWEA, including that found in lakes and all isolated wetlands, are considered Class III waters by the DEP. According to the DEP, Bureau of Surface Water Management, all waters within the jurisdictional boundaries of the LWRWEA have been designated as Outstanding Florida Waters. The LWRWEA is not within or adjacent to any aquatic preserves or a designated area of critical state concern, nor is it under study for such designation. The LWRWEA does not contain beaches, dunes, or virgin timber. However, there are numerous isolated wetlands and scenic vistas.

Natural and Anthropogenic Communities

The Florida Natural Areas Inventory (FNAI) describes 30 natural and anthropogenic community types existing on the LWRWEA. These include artificial pond, basin marsh, basin swamp, baygall, blackwater stream, borrow area, clearing/regeneration, depression marsh, floodplain forest, floodplain swamp, hydric hammock, impoundment, mesic flatwoods, mesic hammock, pasture-improved, pasture-semi-improved, pasture - semi-improved/restored wetland, restoration sandhill, restoration scrub, ruderal, sandhill, scrub, sandhill upland lake, scrubby flatwoods, seepage slope, spoil area , wet flatwoods, wet prairie and xeric hammock (Table 3, Figures 24-34).

A variety of rare species (Table 4) and some invasive exotic plant species (Table 5) have been documented as occurring on the LWRWEA by FWC biologists, along with contracted surveys through FNAI and scientists at Archbold Biological Station. The native plant species found on LWRWEA are shown in Table 6.

Table 3. Natural Community Types of the LWRWEA

Community Type	GIS Acres	Percentage
Artificial pond	3.9	0.0%
Basin marsh	394.5	2.6%
Basin swamp	89.3	0.6%
Baygall	1,558.5	10.2%
Blackwater stream	2.9	0.0%
Borrow area	2.2	0.0%
Clearing/regeneration	71.0	0.5%
Depression marsh	185.9	1.2%
Floodplain forest	29.6	0.2%
Floodplain swamp	2.0	0.0%
Hydric hammock	48.4	0.3%
Impoundment	3.3	0.0%
Mesic flatwoods	2,873.1	18.8%
Mesic hammock	76.5	0.5%
Pasture	0.2	0.0%
Pasture - improved	574.7	3.8%
Pasture - semi-improved	44.8	0.3%
Pasture - semi-improved/restored wetland	153.0	1.0%
Restoration sandhill	2.8	0.0%
Restoration scrub	16.2	0.1%
Ruderal	997.8	6.5%
Sandhill	579.0	3.8%
Sandhill upland lake	47.5	0.3%
Scrub	2,064.5	13.5%
Scrubby flatwoods	3,995.7	26.1%
Seepage slope	290.0	1.9%
Spoil area	6.2	0.0%
Wet flatwoods	1,130.1	7.4%
Wet prairie	3.9	0.0%
Xeric hammock	55.2	0.4%

Table 4. Rare Plant Species of the LWRWEA

Common Name	Scientific Name
Ashe's savory	*Calamintha ashei*
Britton's beargrass	*Nolina brittoniana*
Curtiss's milkweed	*Asclepias curtissii*
Cutthroat grass	*Panicum abscissum*

Edison's ascyrum	*Hypericum edisonianum*
Florida blazing star	*Liatris ohlingerae*
Florida bonamia	*Bonamia grandiflora*
Florida Jointweed	*Polygonella basiramia*
Giant orchid	*Pteroglossaspis ecristata*
Hairy jointweed	*Polygonella basiramia*
Highlands scrub hypericum	*Hypericum cumulicola*
Nodding pinweed	*Lechea cernua*
Paper-like nailwort	*Paronychia chartacea*
Pygmy fringe tree	*Chionanthus pygmaeus*
Scrub bay	*Persea humilis*
Scrub bluestem	*Schizachyrium niveum*
Scrub plum	*Prunus geniculata*
Scrub stylisma	*Stylisma abdita*
Short-leaved Rosemary	*Conradina brevifolia*
Small's jointweed	*Polygonella myriophylla*
Wedge-leaved button-snakeroot	*Eryngium cuneifolium*

Table 5. Exotic Invasive Plant Species Known to Occur on the LWRWEA

Common Name	Scientific Name
Air-potato	*Dioscorea bulbifera*
Brazilian pepper	*Schinus terebinthifolius*
Caesar's weed	*Urena lobata*
Camphor tree	*Cinnamomum camphora*
Chinaberry	*Melia azedarach*
Cogon grass	*Imperata cylindrica*
Earpod tree	*Enterolobium contortisiliquum*
Eucalyptus	*Eucalyptus sp.*
Guinea grass	*Panicum maximum*
Japanese climbing fern	*Lygodium japonicum*
Natal grass	*Melinis repens*
Peruvian primrose willow	*Ludwigia peruviana*
Rosary pea	*Abrus precatorius*
Torpedo grass	*Panicum repens*
Tropical soda apple	*Solanum viarum*
Water-hyacinth	*Eichhornia crassipes*
West Indian marsh grass	*Hymenachne amplexicaulis*
Woman's tongue	*Albizia lebbeck*

Table 6. Native Plant Species Known to Occur on the LWRWEA

Common Name	Scientific Name
Air-plants	*Tillandsia spp.*
American beautyberry	*Callicarpa americana*
American elm	*Ulmus americana*
American hornbeam	*Carpinus caroliniana*
Bald cypress	*Taxodium distichum*
Baldwin's nutrush	*Scleria baldwinii*
Beakrush	*Rhynchospora sp.*
Beggarticks	*Bidens mitis*
Big carpetgrass	*Axonopus furcatus*
Black willow	*Salix nigra*
Blue maidencane	*Amphicarpum muhlenbergianum*
Bracken fern	*Pteridium aquilinum*
Broom grass	*Andropogon brachystachyus*
Bushy broomgrass	*Andropogon glomeratus*
Butterweed	*Packera glabella*
Carolina ash	*Fraxinus caroliniana*
Carolina redroot	*Lachnanthes caroliana*
Carolina scalystem	*Elytraria caroliniensis*
Cattail	*Typha sp.*
Chapman's oak	*Quercus chapmanii*
Cinnamon fern	*Osmunda cinnamomea*
Climbing aster	*Symphyotrichum carolinianum*
Climbing hydrangea	*Decumaria barbara*
Coastal plain willow	*Salix caroliniana*
Coastal plain yellow-eyed grass	*Xyris ambigua*
Common buttonbush	*Cephalanthus occidentalis*
Common gallberry	*Ilex glabra*
Common persimmon	*Diospyros virginiana*
Creeping primrosewillow	*Ludwigia repens*
Cut-throat grass	*Panicum abscissum*
Dahoon holly	*Ilex cassine*
Deerberry	*Vaccinium stamineum*
Dog fennel	*Eupatorium leptophyllum*
Dollarweed	*Hydrocotyle sp.*
Dotted smartweed	*Polygonum punctatum*
Duck potato	*Sagittaria lancifolia*
Dwarf palmetto	*Sabal minor*
Eastern poison ivy	*Toxicodendron radicans*
Eastern swamp privet	*Forestiera acuminata*

Common Name	Scientific Name
False nettle	*Boehmeria cylindrica*
Featherbristle beaksedge	*Rhynchospora oligantha*
Fetter bush	*Lyonia lucida*
Flattened pipewort	*Eriocaulon compressum*
Flat-topped goldenrod	*Euthamia minor*
Florida mudmidget	*Wolffiella gladiata*
Golden polypody	*Phlebodium aureum*
Goldenclub	*Orontium aquaticum*
Goldenrod	*Solidago fistulosa*
Gopher apple	*Licania michauxii*
Grass-leaf aster	*Pityopsis graminifolia*
Green arum	*Peltandra virginica*
Green ash	*Fraxinus pennsylvanica*
Green hawthorn	*Crataegus viridis*
Highbush blueberry	*Vaccinium corymbosum*
Huckleberry	*Gaylussacia spp.*
Laurel greenbrier	*Smilax laurifolia*
Laurel oak	*Quercus laurifolia*
Live oak	*Quercus virginiana*
Lizard's tail	*Saururus cernuus*
Loblolly bay	*Gordonia lasianthus*
Loblolly pine	*Pinus taeda*
Long leaved threeawn	*Aristida palustris*
Longleaf pine	*Pinus palustris*
Lopsided Indian grass	*Sorghastrum secundum*
Maiden ferns	*Thelypteris spp.*
Maidencane	*Panicum hemitomon*
Milk pea	*Galactia elliotii*
Muscadine	*Vitis rotundifolia*
Myrsine	*Rapanea punctata*
Myrtle oak	*Quercus myrtifolia*
Myrtle-leaved hypericum	*Hypericum myrtifolia*
Needle palm	*Rhapidophyllum hystrix*
Netted chain fern	*Woodwardia areolata*
Ogeechee tupelo	*Nyssa ogeche*
Overcup oak	*Quercus lyrata*
Panic grass	*Panicum sp.*
Pennywort	*Hydrocotyle sp.*
Peppervine	*Ampelopsis arborea*
Pickerel weed	*Pontederia cordata*
Pignut hickory	*Carya glabra*

Common Name	Scientific Name
Pineland rayless goldenrod	*Bigelowia nudata*
Pitcher plants	*Sarracenia spp.*
Planer tree	*Planera aquatica*
Plume grass	*Erianthus giganteus*
Plumed beaksedge	*Rhynchospora plumosa*
Possum-haw	*Ilex decidua*
Primrose willow	*Ludwigia peruviana*
Rattan vine	*Berchemia scandens*
Red cedar	*Juniperus virginiana*
Red maple	*Acer rubrum*
Redtop panicum	*Panicum rigidulum*
Rhexia	*Rhexia mariana*
River birch	*Betula nigra*
Rosemary	*Ceratiola ericoides*
Royal fern	*Osmunda regalis var. spectabilis*
Runner oak	*Quercus minima*
Rusty lyonia	*Lyonia ferruginea*
Sabal palm	*Sabal palmetto*
Sand cordgrass	*Spartina bakeri*
Sand live oak	*Quercus geminata*
Sand pine	*Pinus clausa*
Savannah panicum	*Phanopyrum gymnocarpon*
Saw palmetto	*Serenoa repens*
Sawgrass	*Cladium jamaicense*
Sawtooth fern	*Blechnum serrulatum*
Scrub hickory	*Carya floridana*
Scrub oak	*Quercus inopina*
Scrub palmetto	*Sabal etonia*
Sedges	*Cyperus sp.*
Shiny blueberry	*Vaccinium myrsinites*
Shoestring fern	*Vittaria lineata*
Slash pine	*Pinus elliottii*
Slenderfruit nutrush	*Scleria georgiana*
Small-leaf viburnum	*Viburnum obovatum*
Smooth elephantsfoot	*Elephantopus nudatus*
Soft rush	*Juncus effusus*
Southern magnolia	*Magnolia grandiflora*
Spadeleaf	*Centella asiatica*
Sparkleberry	*Vaccinium arboreum*
Spatterdock	*Nuphar lutea*
Sphagnum moss	*Sphagnum spp*

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Common Name	Scientific Name
St. John's wort	*Hypericum fasciculatum*
Staggerbush	*Lyonia fruticosa*
String lily	*Crinum americanum*
Sugarberry	*Celtis laevigata*
Sugarcane plumegrass	*Saccharum giganteum*
Summer grape	*Vitis aestivalis*
Sundews	*Drosera spp.*
Swamp bay	*Persea palustris*
Swamp dogwood	*Cornus foemina*
Swamp smartweed	*Polygonum hydropiperoides*
Swamp tupelo	*Nyssa biflora*
Sweet bay	*Magnolia virginiana*
Sweetgum	*Liquidambar styraciflua*
Tarflower	*Befaria racemosa*
Titi	*Cyrilla racemiflora*
Toothache grass	*Ctenium aromaticum*
Triadenum	*Triadenum virginicum*
Trumpet creeper	*Campsis radicans*
Turkey oak	*Quercus laevis*
Virginia chain fern	*Woodwardia virginica*
Virginia willow	*Itea virginica*
Water cowbane	*Oxypolis filifolia*
Water hickory	*Carya aquatica*
Water locust	*Gleditsia aquatica*
Wax myrtle	*Myrica cerifera*
White water lily	*Nymphaea odorata*
Wild coffee	*Psychotria nervosa*
Wiregrass	*Aristida stricta*
Woodoats	*Chasmanthium spp.*
Woodsgrass	*Oplismenus hirtellus*
Yellow jessamine	*Gelsemium sempervirens*
Yellow pondlily	*Nuphar advena*
Yellow-eyed grasses	*Xyris spp.*

Natural and Anthropogenic Communities Descriptions

Impoundment/artificial pond* – Stream or watershed impoundment, water retention ponds, cattle ponds, and borrow pits.

Basin marsh is an herb-dominated wetland community usually occurring in large irregularly shaped areas. On the surveyed part of the LWRWEA, basin marsh is found only

along the Lake Istokpoga shoreline on the Royce Unit. These grassy, generally treeless, areas are located on the shoreline and may extend inland into baygall or basin swamp. Graminoids dominate in this community and include sand cordgrass, maidencane, blue maidencane, big carpetgrass, bushy broomgrass, panic grass, sedges and soft rush. Other herbaceous species are duck potato, pickerel weed, cinnamon fern, spadeleaf, triadenum, yellow-eyed grasses, Sphagnum moss, beggarticks, smartweed, pennywort, rhexia, and goldenrod. Occasional shrubs such as wax myrtle and primrose willow and trees like bald cypress and swamp tupelo are interspersed. Many sections of the marsh have been disturbed by cattle grazing. In addition, huge mounds of spoil dirt have been deposited in the marsh at various points along the lake edge. These mounds harbor the exotic pest plants tropical soda apple and Caesar weed. Other weedy species may invade portions of basin marshes where the soil has been disturbed.

Basin swamp is characterized as a relatively large basin vegetated with hydrophytic trees and shrubs that can withstand an extended hydroperiod. Basin swamp occurs on the surveyed part of the LWRWEA only along the Lake Istokpoga shoreline on the Royce Unit. The open to moderately dense canopy is dominated by bald cypress, red maple, laurel oak, and swamp tupelo. Sabal palm may be present as trees and saplings. The shrub cover is sparse and dominated by wax myrtle and primrose willow; coastal plain willow is less common. Herbaceous cover generally includes maidencane, panic grass, sedges, beakrush, soft rush, pickerel weed, lizard's tail, Virginia chain fern, sawtooth fern, swamp smartweed, and dollarweed. Peppervine and grape vine are occasional. In the edge of the lake, bald cypress and primrose willow are locally abundant. The emergents spatterdock, cattail, and pickerel weed often cover the water surface, and may extend hundreds of feet from shore. The floating exotic pest plant water hyacinth is also present.

Baygall is a forested wetland typically at the base of sandy slopes where water seepage maintains a saturated peat substrate. Baygall on the surveyed part of the LWRWEA generally supports a dense canopy of loblolly bay, sweet bay, and slash pine. The percentage of each species varies greatly by site, with some having all loblolly bay or all sweet bay or a mixture of the two. Some locations have a high percentage of slash pine and others have none. Swamp bay and dahoon holly are usually in the subcanopy and shrub strata along with younger trees of the other two bay species. Wax myrtle and fetterbush are the dominant shrubs, with highbush blueberry and Virginia willow less common. Saw palmetto also may be present. The herbaceous groundcover frequently includes Virginia chain fern, netted chain fern, sawtooth fern, cinnamon fern, green arum, and sphagnum moss.

Blackwater Streams* are perennial or intermittent seasonal watercourses originating deep in sandy lowlands where extensive wetlands with organic soils function as reservoirs, collecting rainfall and discharging it slowly to the stream. The tea-colored waters of Blackwater Streams are laden with tannins, particulates, and dissolved organic matter and iron derived from drainage through swamps and marshes. The dark-colored water reduces light penetration and, thus, inhibits photosynthesis and the growth of submerged aquatic

plants. Emergent and floating aquatic vegetation may occur along shallower and slower moving sections, but their presence is often reduced because of typically steep banks and considerable seasonal fluctuations in water level.

Blackwater Streams have sandy bottoms overlain by organics and frequently underlain by limestone. Limestone outcrops may also occur. Blackwater Streams generally lack the continuous extensive floodplains and natural levees of Alluvial Streams. Instead, they typically have high, steep banks alternating with Floodplain Swamps. High banks confine water movement except during major floods. The absence of significant quantities of suspended sediments reduces their ability to construct natural levees. Blackwater Streams are the most widely distributed and numerous Riverine systems in the southeast Coastal Plain.

Clearing/regeneration areas are defined as dove fields, wildlife food plots, or other clearings that have significantly altered the historic groundcover. At the LWRWEA, clearing/regeneration most commonly refer to areas that have been cleared of most of the preexisting groundcover. These areas are commonly adjacent to developed, agriculture, roads, and other anthropogenic areas. Clearing/regeneration at the LWRWEA are often characterized by weedy grasses.

Depression marsh is an herbaceous wetland found in shallow depressions. The vegetation often occurs in concentric bands along the hydrologic gradient. A canopy is generally absent, but may include an occasional slash pine. The shrub layer is typically sparse but may reach significant coverage depending on time elapsed since last fire. Wax myrtle, myrtle-leaved hypericum, and the listed Edison's ascyrum are three of the most common shrubs. St. John's wort occurs in a small percentage of marshes. Herb cover is high and usually dominated by grasses. The composition of the vegetation varies greatly with location and depth of the depression. Some depression marshes have many species while others have low diversity. The periphery often has some combination of the listed cutthroatgrass, sand cordgrass, blue maidencane, and broom grass. The middle zone typically has maidencane, broom grass, and Virginia chain fern. In some cases, a deeper zone of white water lily, and/or pickerelweed may occur in the center. Other herbs in depression marshes may include big carpetgrass, dog fennel, flat-topped goldenrod, redroot, plume grass, spadeleaf, yellow-eyed grasses, and various sedges.

The McJunkin Unit has a series of very shallow depressions dominated by cutthroat grass. These relatively small openings in the scrubby flatwoods often had populations of Edison's ascyrum. It was frequently difficult to classify these depressions as they appeared intermediately between depression marsh, wet flatwoods cutthroat phase, and cutthroat seepage slope.

Floodplain forest* is a hardwood forest found in river floodplains on low levees, ridges and terraces that are slightly elevated above floodplain swamp and are regularly flooded for a portion of the growing season. The physical environment is greatly influenced by ongoing disturbances created by a fluctuating river bed which is both eroding and depositing

substrates. Primary trees found include overcup oak, laurel oak, water hickory, American elm, green ash, water locust, river birch, and red maple. A great diversity of less flood-tolerant hardwoods or swamp species such as cypress and tupelo may also be present, but not dominant elements. Shrubs, small trees, and vines are usually sparse or moderate in abundance with green hawthorn, swamp dogwood, eastern swamp privet, dwarf palmetto, coastal plain willow, black willow, American hornbeam, possum-haw, and laurel greenbrier common. Groundcover is variable in abundance with false nettle, butterweed, netted chain fern, redtop panicum, and big carpet-grass among the herbs most commonly encountered. The ability of both adult plants and seedlings to withstand specific flooding regimes throughout the "ridge and swale" topography of the floodplain often creates a mix of mesophytic and hydrophytic tree species.

Floodplain forest occurs in river floodplains and occupies low levees along channels, expansive flats located behind levees, low ridges alternating with swamps, and successional point bars. It is usually intermixed with lower areas of floodplain swamp and higher areas of bottomland forest, baygall, or upland hardwood forest. This forest develops along tertiary or higher order streams where deposition of alluvium becomes a significant factor in floodplain development (rather than simply erosional forces). Soils are variable mixtures of sand and alluvial sediments that have been deposited by the current drainage system and are often distinctly layered.

Floodplain swamp* is a closed-canopy forest of hydrophytic trees occurring on frequently or permanently flooded hydric soils adjacent to stream and river channels and in depressions and oxbows within floodplains. Trees are often buttressed, and the understory and groundcover are sparse. The canopy is sometimes a pure stand of bald cypress, but more commonly bald cypress shares dominance with one or more of the following tupelo species: water tupelo, swamp tupelo, or ogeechee tupelo. The "knees" arising from the root systems of both cypress and tupelo are common features in floodplain swamp. Other canopy trees capable of withstanding frequent inundation may be present but rarely dominant, including water hickory, overcup oak, red maple, green ash, American elm, and laurel oak. Pond cypress is sometimes present in back-swamps and depressions of the more hydrologically isolated areas of the floodplain. Floodplain swamp can often occur within a complex mixture of communities including alluvial forest, bottomland forest, and baygall. This produces a variable assemblage of canopy and subcanopy species, with less flood tolerant trees and shrubs found on small hummocks and ridges within the swamp. Shrubs and smaller trees such as Carolina ash, planer tree, black willow, titi, Virginia willow, common buttonbush, cabbage palm, and dahoon may be present. A groundcover of flood tolerant ferns and herbs are found in some floodplain swamps, including lizard's tail, false nettle, creeping primrosewillow, savannah panicum, royal fern, dotted smartweed, climbing aster, and string lily. Swamps with stagnant water typically have a mixture of floating aquatics such as duckweeds and Florida mudmidget. Eastern poison ivy is a frequent vine.

Floodplain swamp is located within floodplains of any permanently moving stream or river. It ranges from narrow strips of cypress along primary and secondary streams to expansive

stands along large rivers to tidally influenced freshwater swamps near river mouths. Often, floodplain swamps immediately border the stream or river channel. In many cases, however, floodplain swamps are isolated from the main channel by riverbank levees and restricted to oxbows, overflow channels, old stream beds, and expansive flats commonly called backswamps. Soils are variable mixtures of alluvial and organic materials, sometimes with layers of sand in the subsoil. Inundation is seasonal and usually prolonged, restricting the growth of most shrubs and herbs and leaving most of the ground surface open or thinly mantled with leaf litter.

Hydric hammock* is an evergreen hardwood and/or palm forest with a variable understory typically dominated by palms and ferns occurring on moist soils, often with limestone very near the surface. While species composition varies, the community generally has a closed canopy of oaks and palms, an open understory, and a sparse to a moderate groundcover of grasses and ferns. The canopy is dominated by laurel oak and/or live oak with varying amounts of cabbage palm, American elm, sweetbay, red cedar, red maple, sugarberry, sweetgum, and water oak. Cabbage palm is a common to dominant component of hydric hammock throughout most of Florida. Loblolly pine may be frequent in some areas, but slash pine is less frequently encountered. In addition to saplings of canopy species, the understory may contain a number of small trees and shrubs. American hornbeam is often frequent, and various other woody species may be present including swamp dogwood, small-leaf viburnum, common persimmon, swamp bay, wax myrtle, dwarf palmetto, American beautyberry, and needle palm. Vines may be frequent and diverse; common species are eastern poison ivy, peppervine, rattan vine, trumpet creeper, climbing hydrangea, yellow jessamine, greenbriers, summer grape, and muscadine. Herb cover, when present includes mostly graminoids and ferns with the following species commonly encountered: sedges woodoats, smooth elephantsfoot, Carolina scalystem, woodsgrass, maiden ferns, cinnamon fern, royal fern, toothed midsorus fern, netted chain fern, and Virginia chain fern. Epiphytes such as golden polypody, air-plants, and shoestring fern increase in frequency to the south along with other more subtropical shrubs such as myrsine and wild coffee.

Species composition is mainly influenced by flooding patterns. In saturated and frequently flooded environments, hydrophytic trees such as swamp tupelo become more abundant. Frequency and depth of inundation have a pronounced effect on oak canopy composition as well, with saturated soils supporting more swamp laurel oak, and areas of infrequent flooding supporting more live oak. Increased salinity is a factor often limiting certain species. Rises in terrain as well as ecotones to mesic hammock and upland hardwood forest induce a greater cover of upland species, specifically southern magnolia, pignut hickory, and saw palmetto.

Hydric hammock occurs on low, flat, wet sites where limestone may be near the surface and soil moisture is kept high mainly by rainfall accumulation on poorly drained soils. Periodic flooding from rivers, seepage, and spring discharge may also contribute to hydric conditions.

Mesic flatwoods is an upland forest with an open pine canopy and understory composed of varying mixtures of shrubs and grasses. On the surveyed part of the LWRWEA, mesic flatwoods often grade downslope into wet flatwoods and upslope into scrubby flatwoods. Mesic flatwoods typically have a canopy of slash pine, a shrub layer with saw palmetto, and an herbaceous cover with wiregrass. Longleaf pine may form the canopy in limited areas such as on Highlands Ridge. Other shrubs may include live oak, myrtle oak, runner oak, common gallberry, fetterbush, shiny blueberry, huckleberry, wax myrtle, and tarflower. Many flowering herbs may contribute to the diversity of this community.

Mesic hammock is an upland forest of evergreen broadleaved trees typically dominated by live oak in the canopy. On the surveyed part of the LWRWEA, this community is uncommon and is found primarily along the edge of Lake Istokpoga on the Royce Unit. The canopy generally has live oak, cabbage palm, and laurel oak. Sabal palmetto and laurel oak may also be in the subcanopy. It usually has a shrub layer of saw palmetto varying from dense to light. The herb stratum is frequently very thin, with oak leaf litter covering most of the ground.

Pasture-improved is not a natural community but a type of disturbance where most of the natural vegetation has been removed. It occurs in the central part of the Royce Unit where it is actively grazed by cattle. Improved pasture is defined as areas cleared of woody vegetation, planted with pasture grass such as bahia grass, and maintained to eliminate other species. Many of these areas have been hydrologically altered by canals and ditches used to lower the water table.

Pasture-semi-improved is not a natural community but a type of disturbance where the natural vegetation has been altered to improve grazing conditions. It occurs on the Royce Unit where it is actively grazed by cattle. Semi-improved pasture is defined as areas mainly of native vegetation altered to increase forage. These areas have most or all of the woody vegetation removed and a lower than normal water table due drainage by canals and ditches.

Restoration Sandhill is characterized by a canopy of widely spaced pine trees, a sparse midstory of deciduous oaks, and a moderate to dense groundcover of grasses, herbs, and low shrubs occurring over a rolling topography with deep, well drained sands. The canopy consists of scattered older mature longleaf pine over various xeric oak species, most commonly turkey oak. The open shrub stratum includes sparkleberry and deerberry, gopher apple, and scattered clumps of saw palmetto. The ground cover is often sparse to moderately dense and contains wiregrass, panic grass, grass-leaf aster, bracken fern, and lopsided Indian grass. Canopy and shrub covers are sparse and low enough to allow ample light to penetrate the ground layer to support herbaceous ground cover.

Restoration sandhill is historic sandhill that is undergoing management with the end goal of restoring the natural pine canopy and structure, shrub and groundcover composition, and groundcover components. Approximately 3 acres of former citrus grove at the LWRWEA has been cleared and replanted with historic groundcover species. These areas are in the

first stages of restoration and groundcover reestablishment is limited. This site is currently dominated by open bare sand.

Restoration scrub occurs in many forms but is often characterized by thickets of scrub oaks and other shrubs occurring on xeric, sandy soils with numerous open patches of barren sand. The ground cover is generally very sparse, and is typically dominated by ground lichens or, rarely, herbs.

Restoration scrub is historic scrub that is undergoing management with the end goal of restoring the historic structure of the shrub and groundcover strata. Approximately 16 acres of former citrus grove at the LWRWEA has been clearcut and replanted with historic groundcover species. These areas are in the first stages of restoration and groundcover reestablishment has been initiated. This site is currently dominated by open bare sand.

Ruderal is not a natural community but a type of disturbance where the natural vegetation has been altered to such a degree that the original natural community is no longer functioning. Examples are canal banks, roadsides, borrow pits, spoil piles, parking lots, etc.

Sandhill is a xeric upland community characterized by widely spaced pine trees with a sparse understory of deciduous oaks and fairly dense groundcover on well-drained hills of sand. The only example in the survey area on the LWRWEA is a small remnant in the northwest corner of the northwest section of the Lake Blue site. The canopy has scattered older mature longleaf pines over turkey oak. The groundcover is dominated by wiregrass.

Sandhill Upland Lakes are generally characterized as shallow rounded solution depressions occurring in sandy upland communities. They are generally permanent water bodies, although water levels may fluctuate substantially, sometimes becoming completely dry during extreme droughts. They are typically lentic water bodies without significant surface inflows or outflows. Instead, water may be largely derived from lateral ground water seepage through the surrounding well-drained uplands and/or from artesian sources via connections with the underlying limestone aquifer.

Sandhill upland lake has two occurrences at the Mountain Lake Cutoff Tract. This community has disturbances of hydrology alteration, ditching, and invasive exotic species presence. The eastern sandhill upland lake has been partially filled in as evident by comparing the historic and current aerial photography. This fill was not conducted on the LWRWEA parcel, but has negatively impacted the health of the lake.

Both sandhill upland lakes contain dense amounts of herbaceous and woody vegetation and minimal open water that was present in the historic photography. Shrub cover is most dense around the perimeter of these communities and is composed of common buttonbush, Peruvian waterwillow, and coastalplain willow. Herbaceous cover is dense and is characterized by sawgrass, Carolina redroot, yellow pondlily, pickerelweed, sugarcane plumegrass, and Duck Potato.

Scrub is an upland shrub or forest community on dry sand ridges dominated by scrub oaks and other shrubs, with or without a pine canopy. On the Lake Wales Ridge, scrub is separated into white sand scrub and yellow sand scrub. White sand scrub is further classified into rosemary-oak scrub and scrubby flatwoods. Rosemary-oak scrub is distinguished as having: greater than 10% bare sand, or greater than 20% of the area is shrubless, or white sand site and individuals of rosemary spaced an average of less than 20 meters apart. Yellow sand scrub is always on yellow sand and contains scrub hickory and dense oaks, particularly myrtle oak.

White sand scrub varies greatly in species composition. Typically, it has a canopy of widely scattered slash pine growing over the shrubs sand live oak, Chapman's oak, scrub oak, saw palmetto, scrub palmetto, and rusty lyonia. Other areas have an open or closed canopy of sand pine. Still other areas may not have any trees at all. Other shrubs include lyonia, huckleberry, and shiny blueberry.

On the surveyed portions of the LWRWEA, yellow sand scrub occurred primarily at the north end of the McJunkin site. It also occurred infrequently at the Henscratch site.

Scrubby flatwoods is an upland community similar to mesic flatwoods in structure but with a higher cover of scrub oaks. Flatwoods with a scrub oak component greater than 20% were identified as scrubby flatwoods. Scrubby flatwoods can be distinguished from yellow sand scrub by the white sand substrate, the presence of fetterbush, and the lack of dominance by myrtle oak. It occurs in the transitional areas between scrub and mesic flatwoods and on slightly elevated areas within a mesic flatwoods matrix.

On the surveyed parts of the LWRWEA, the vegetation is a combination of scrub and mesic flatwoods species. The canopy is typically scattered slash pine and the tall shrub layer is sand live oak and Chapman's oak. The short shrub layer is generally a dense cover of sand live oak, Chapman's oak, myrtle oak, saw palmetto, scrub palmetto, rusty lyonia, staggerbush, and tarflower. Other common shrubs include fetterbush, shiny blueberry, and gopher apple. Herbaceous cover within the scrubby flatwoods is sparse to moderate. Wiregrass may be present but is not a dominant species.

The Royce Ranch Unit has a long and narrow strip of scrubby flatwoods on the west side. The dense oak scrub covering the north half is dominated by the tall shrubs. Scattered mature slash pine make up the thin canopy and herbaceous species are generally restricted to the edges and along the few jeep trails. Occasional pockets of xeric hammock have a solid canopy of live oak over tall saw palmetto. The south half has been cleared for pasture but scrub vegetation persists, including a large and vigorous population of the listed Wedge-leaved button-snakeroot on the low ridges of white sand.

Seepage slope is a wetland at the base of a slope where the ground is usually saturated but rarely inundated. The moisture is maintained by downslope seepage from an adjacent sandy ridge. On the surveyed part of the LWRWEA, these areas are typically found at the edges of baygall and are dominated by cutthroat grass. Frequent fires are needed to limit

shrub and tree invasion. In the absence of fire, woody plants may cover the seepage slope. A typical and widespread example on the LWRWEA is when loblolly bay spread outward from baygall. Another example is the southwest end of the Henscratch site where a dense thicket 10 to 15 feet tall of wax myrtle has grown over the cutthroat grass.

Spoil areas are where dredge or spoil material is deposited; it may be re-colonized by plants. These areas often harbor weedy and/or invasive plant populations. At the LWRWEA, these areas have been created by ditch creation and dredge material.

Wet flatwoods is a forest of relatively open scattered pine canopy, a sparse understory and a dense groundcover of hydrophytic herbs and shrubs, or a thick shrubby understory and a sparse groundcover. On the surveyed part of the LWRWEA, wet flatwoods is found in two phases: the cutthroat phase and the gallberry palmetto phase. In the wet flatwoods-cutthroat dominates the groundcover. On the Royce Unit, areas of solid cutthroat grass form a uniform blanket over the ground beneath a canopy of slash pine. Only a few shrubs of highbush blueberry, Darrow's Blueberry, and maleberry are present. This type is also common in the southern portion of Henscratch.

The wet flatwoods-gallberry palmetto phase typically occurs around depression marshes and next to baygall. The typical vegetation is a canopy of slash pine over dense saw palmetto, gallberry, and fetterbush, and a sparse herbaceous groundcover of cinnamon fern.

Wet prairie is an herbaceous community found on continuously wet, but not inundated, soils on somewhat flat or gentle slopes between lower lying depression marshes, shrub bogs, or dome swamps and slightly higher wet or mesic flatwoods, or dry prairie. It is typically dominated by dense wiregrass in the drier portions. In the wetter portions, wiregrass may occur with, or be replaced by, species in the sedge family, such as plumed beaksedge, featherbristle beaksedge, Baldwin's nutrush, or slenderfruit nutrush, plus long leaved threeawn. Also common in wetter areas are toothache grass, cutthroat grass, pineland rayless goldenrod, flattened pipewort, water cowbane, and coastal plain yellow-eyed grass. Carnivorous species, such as pitcher plants, sundews, butterworts, and bladderworts are also common.

On the LWRWEA, these areas are typically found at the edges of baygall and are dominated by cutthroat grass. Frequent fires are needed to limit shrub and tree invasion. In the absence of fire, woody plants may cover the seepage slope. A typical and widespread example on the LWRWEA is when loblolly bay spread outward from baygall habitats.

Xeric hammock is dry upland forests characterized by a scrubby, dense, low canopy of xeric oaks with little understory other than saw palmetto, or a multistoried forest with tall trees, or somewhere in between. Xeric hammock is considered to be an advanced successional stage of scrub or sandhill resulting from the long term lack of fire.

Xeric hammock typically has a closed canopy dominated by sand live oak and an understory of saw palmetto, fetterbush, and shrubby oaks. A few sand pine or slash pine may emerge

above the oaks. The groundcover is often suppressed by abundant leaf litter and may be limited to large-fruit beaksedge.

* All natural and anthropogenic communities descriptions designated with an * were incorporated from the FNAI produced document entitled, "Guide to the Natural Communities of Florida 2010 Edition."

Fish and Wildlife

The LWRWEA has a variety of natural communities and currently supports many wildlife species. Active wildlife management practices and a diversity of natural communities make the LWRWEA an excellent place to view wildlife. The LWRWEA has a variety of wildlife indigenous to the scrub, sandhill, seasonal ponds, bayheads, and lakeshores. Table 7 lists some of the rare and imperiled wildlife species that have been documented as occurring on or in the vicinity of the LWRWEA.

Table 7. Imperiled Wildlife Species Occurring on or near the LWRWEA

Common Name	Scientific Name	Status
American alligator	*Alligator mississippiensis*	FT(S/A)
Bluetail mole skink	*Eumeces egregius lividus*	FT
Eastern indigo snake	*Drymarchon corais couperi*	FT
Florida gopher frog	*Rana capito aesopus*	SSC
Florida mouse	*Podomys floridanus*	SSC
Florida pine snake	*Pituophis melanoluecus mugitus*	SSC
Florida Scrub jay	*Aphelocoma coerulescens*	FT
Gopher tortoise	*Gopherus polyphemus*	ST
Osprey	*Pandion haliaetus*	SSC
Roseate spoonbill	*Platalea ajaja*	SSC
Sand skink	*Neoseps reynoldsi*	FT
Sandhill crane	*Grus canadensis pratensis*	ST

Acronym	Status
FT	Federal Threatened
FT(S/A)	Federal Threatened due to Similarity of Appearance
SSC	State Species of Special Concern
ST	State Threatened
NL	Not Listed

The scrub and scrubby flatwoods are home to the scrub jay. Alligators, gopher tortoises, white-tailed deer, and wild turkey are common. The LWRWEA has potential habitat for both the federally threatened Eastern indigo snake and Bluetail mole skin. Figures 35-45

depict the rare and imperiled element occurrences of plant and wildlife species documented on the LWRWEA. The Integrated Wildlife Habitat Ranking System models are shown in Figures 46-55.

An FWC Wildlife Conservation Prioritization and Recovery (WCPR) strategy was completed for the LWRWEA in 2012. A standardized focal species list by area is shown in Table 8. Of the 60 focal species, 28 were modeled to have potential habitat on the LWRWEA. Species that have a measurable objective are indicated with a "1" and species for which some level of monitoring is recommended are indicated with a "2". Occasionally, models indicate a species has potential habitat on the area when using statewide data; however, the local assessment indicates there is little opportunity to manage for the species on the area and the species should not influence management. These species are identified with an "*".

Table 8. Focal Species Identified as having Potential Habitat on the LWRWEA

Common Name	Scientific Name	Status
American swallow-tailed kite[1]	*Elanoides forficatus*	NL
Bachman's sparrow[1,2]	*Aimophila aestivalis*	NL
Bluetail mole skink	*Plestiodon egregius lividus*	FT
Brown-headed nuthatch	*Sitta pusilla*	NL
Burrowing owl*	*Athene cunicularia*	SSC
Cooper's hawk	*Accipiter cooperii*	NL
Crested caracara	*Caracara plancus audubonii**	FT
Eastern indigo snake	*Drymarchon couperi*	FT
Florida black bear	*Ursus americanus floridanus*	NL
Florida mouse	*Podomys floridanus*	SSC
Florida pine snake	*Pituophis melanoleucus mugitus*	SSC
Florida grasshopper sparrow	*Ammodramus savannarum floridanus**	FE
Florida mottled duck	*Anas fulvigula*	NL
Florida panther	*Felis concolor coryi* *	FE
Florida sandhill crane	*Grus canadenses pratensis*	ST
Florida scrub-jay	*Aphelocoma coerulescens*[2]	FT
Gopher frog[2]	*Lithobates capito*	SSC
Limpkin	*Aramus guarauna*	SSC
Northern bobwhite	*Colinus virginianus*	NL
Red-cockaded woodpecker	*Picoides borealis**	FE
Sand skink	*Plestiodon reynoldsi*	FT
Sherman's fox squirrel	*Sciurus niger shermani*	SSC
Short-tailed hawk	*Butea brachyurus*	NL
Snail kite	*Rostrhamus sociabilis plumbeus*	FE
Southeastern American kestrel	*Falco sparverius paulus* [1,2]	ST

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Southern bald eagle	*Haliaeetus leucocephalus*	NL
Wading birds (multiple species)		NL

Abbreviation	Status
FE	Federal Endangered
FT	Federal Threatened
SSC	State Species of Special Concern
ST	State Threatened
NL	Not Listed

All abbreviations and status determinations were derived from *Florida's Endangered and Threatened Species* published by FWC in October 2012. FWC maintains the state list of animals designated as Federally-designated Endangered or Threatened, State-designated Threatened, or State-designated Species of Special Concern, in accordance with Rules 68A-27.003 and 68A-27.005, respectively, of the Florida Administrative Code https://www.flrules.org/.

In January, 2013, new threatened species rules approved by the FWC went into effect. The list of wildlife presented here reflects those changes to the rules. All federally listed species that occur in Florida are now included on Florida's list as Federally-designated Endangered or Federally-designated Threatened species. In addition, the state has a listing process to identify species that are not federally listed but at risk of extinction. These species will be called State-designated Threatened. All State-designated species that have recently undergone status reviews were presented and approved at the June 2011 Commission meeting. FWC will continue to maintain a separate Species of Special Concern category until all the species have been reviewed and those species are either designated as State-Threatened and given a management plan or removed from the list. More detailed descriptions and management prescriptions are available on the FWC website: http://www.myfwc.com/wildlifehabitats/profiles/. Table 9 lists mammalian species occurring on LWRWEA, Table 10 lists reptile and amphibian species occurring on LWRWEA, Table 11 lists fish species occurring on LWRWEA, and Table 12 lists bird species occurring on LWRWEA.

Table 9. Mammal Species Documented on the LWRWEA

Common Name	Scientific Name
Bobcat	*Lynx rufus*
Brazilian free-tailed bat	*Tadarida brasiliensis*
Brown rat	*Rattus norvegicus*
Cotton mouse	*Peromyscus gossypinus*
Coyote	*Canis latrans*

Table 9. Mammal Species Documented on the LWRWEA

Common Name	Scientific Name
Easten pipistrelle	*Perimyotis subflavus*
Eastern cottontail	*Sylvilagus floridanus*
Eastern harvest mouse	*Reithrodontomys humulis*
Eastern mole	*Scalopus aquaticus*
Eastern spotted skunk	*Spilogale putorius*
Eastern woodrat	*Neotoma floridana*
Evening bat	*Nycticeius humeralis*
Florida black bear	*Ursus americanus floridanus*
Florida mouse	*Podomys floridanus*
Golden mouse	*Ochrotomys nuttalli*
Gray fox	*Urocyon cinereoargentues*
Gray squirrel	*Sciurus carolinensis*
Hispid cotton rat	*Sigmodon hispidus*
Hog	*Sus scrofa*
Least shrew	*Cryptotis parva*
Long-tailed weasle	*Mustela frenata*
Marsh rabbit	*Sylvilagus palustris*
Marsh rice rat	*Oryzomys palustris*
Nine-banded Armadillo	*Dasypus novemcinctus*
Northern yellow bat	*Lasiurus intermedius*
Oldfield mouse	*Peromyscus polionotus*
Florida panther	*Puma concolor*
Raccoon	*Procyon lotor hirtus*
Red fox	*Vulpes vulpes*
River otter	*Lontra canadensis*
Round-tailed muskrat	*Neofiber alleni*
Seminole bat	*Lasiurus seminolus*
Sherman's fox squirrel	*Sciurus niger shermani*
Southeastern shrew	*Sorex longirostris*
Southern flying squirrel	*Glaucomys volans*
Southern Short-tailed shrew	*Blarina carolinensis*
Striped skunk	*Mephitis mephitis*
Virginia opossum	*Didelphis virginiana*
White-tailed deer	*Odocoileus virginianus*

Table 10. Reptile and Amphibian Species Documented on the LWRWEA

Common Name	Scientific Name
American alligator	*Alligator mississippiensis*
Barking tree frog	*Hyla gratiosa*
Bluetail mole skink	*Eumeces egregius lividus*
Bullfrog	*Rana catesbeiana*
Chicken turtle	*Deirochelys reticularia*
Common musk turtle	*Sternotherus oderatus*
Corn snake	*Pantherophis guttatus*
Cuban brown anole	*Anolis sagrei*
Cuban tree frog	*Osteopilus septentrionalis*
Dusky pygmy rattlesnake	*Sistrurus miliarius barbouri*
Dwarf salamander	*Eurycea quadridigitata*
Eastern box turtle	*Terrapene carolina carolina*
Eastern coachwhip	*Masticophis flagellum flagellum*
Eastern coral snake	*Micrurus fulvius*
Eastern cottonmouth	*Agkistrodon piscivorus piscivorus*
Eastern diamondback rattlesnake	*Crotalus adamanteus*
Eastern garter snake	*Thamnophis sirtalis*
Eastern glass lizard	*Ophisaurus ventralis*
Eastern indigo snake	*Drymarchon couperi*
Eastern kingsnake	*Lampropeltis getula getula*
Eastern narrow-mouthed toad	*Gastrophryne carolinensis*
Eastern slender Glass lizard	*Ophisaurus attenuatus longicaudus*
Eastern smooth Earth snake	*Virginia valeriae valeriae*
Eastern spadefoot toad	*Leptobrachium*
Florida box turtle	*Terrapene carolina bauri*
Florida brown snake	*Storeria victa*
Florida chorus frog	*Pseudacris nigrita verrucosa*
Florida cottonmouth	*Agkistrodon piscivorus conanti*
Florida cricket frog	*Acris gryllus dorsalis*
Florida green Water snake	*Nerodia floridana*
Florida leopard frog	*Rana sphenocephala utricularia*
Florida mud turtle	*Kinosternon subrubrum steindachneri*
Florida pine snake	*Pituophis melanoleucus mugitus*
Florida redbelly turtle	*Pseudemys nelsoni*
Florida scarlet snake	*Cemophora coccinea coccinea*
Florida scrub lizard	*Sceloporus woodi*
Florida scrub lizard	*Sceloporus woodi*
Florida softshell turtle	*Apalone ferox*

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Table 10. Reptile and Amphibian Species Documented on the LWRWEA

Florida water snake	*Nerodia fasciata pictiventris*
Florida worm lizard	*Rhineura floridana*
Gopher frog	*Rana capito*
Gopher tortoise	*Gopherus polyphemus*
Greater siren	*Siren lacertina*
Green anole	*Anolis carolinensis*
Green tree frog	*Hyla cinerea*
Green water snake	*Nerodia cyclopion*
Green house frog	*Eleutherodactylus planirostris*
Ground skink	*Scincella lateralis*
Indo-Pacific gecko	*Hemidactylus garnotii*
Island glass lizard	*Ophisaurus compressus*
Little grass frog	*Pseudacris ocularis*
Mediterranean gecko	*Hemidactylus turcicus*
Oak toad	*Anaxyrus quercicus*
Peninsula cooter	*Pseudemys peninsularis*
Peninsula crowned snake	*Tantilla relicta relicta*
Peninsula newt	*Notophthalmus viridescens*
Peninsula ribbon snake	*Thamnophis sauritus sackenii*
Pig frog	*Rana grylio*
Pinewoods tree frog	*hyla femoralis*
Red-bellied slider	*Trachemys scripta scripta*
Rough green snake	*Opheodrys aestivus*
Sand skink	*Neoseps reynoldsi*
Scarlet kingsnake	*Lampropeltis elapsoides*
Short-tailed snake	*Lampropeltis extenuatum*
Six-lined racerunner	*Cnemidophorus sexlineatus*
Soft shell Florida snake	*Apalone ferox*
South Florida black swamp snake	*Seminatrix pygaea*
Southeastern five-lined skink	*Eumeces inexpectatus*
Southern black racer	*Coluber constrictor priapus*
Southern ring-neck snake	*Diadophis punctatus punctatus*
Southern toad	*Anaxyrus terrestris*
Squirrel treef rog	*Hyla squirella*
Striped mud turtle	*Kinosternon baurii*
Two-toed amphiuma	*Amphiuma means*
Yellow rat snake turtle	*Elaphe obsoleta obsoleta*

Table 11. Observed Fish Species on the LWRWEA

Common Name	Scientific Name
Armored catfish	*hoplosternum littorale*
Banded topminnow	*Fundulus cingulatus*
Black crappie	*Poxomis nigromaculatus*
Bluegill	*Lepomis macrochirus*
Bluespotted sunfish	*Enneacanthus gloriosus*
Bowfin	*Amia calva*
Brook silverside	*Labidesthes sicculus*
Brown bullhead	*Ictalurus nebulosus*
Chain pickerel	*Esox niger*
Coastal shiner	*Notropis petersoni*
Dollar sunfish	*Lepomis marginatus*
Everglades pygmy sunfish	*Elassima evergladei*
Florida gar	*Lepisosteus osseus*
Golden shiner	*Notemigonus crysoleucas*
Golden topminnow	*Fundulus chrysotus*
Lake chubsucker	*Erimyzon sucetta*
Largemouth bass	*Micropterus salmoides*
Least killfish	*Heterandria Formosa*
Mosquitofish	*Gambusia affinis*
Redear sunfish	*Lepomis microlophus*
Redfin pickerel	*Esox americanus*
Starhead topminnow	*Fundulus notti*
Swamp darter	*Etheostoma fusiforme*
Tadpole madtom	*Noturus gyrinus*
Walking catfish	*Clarias batrachus*
Warmouth	*Lepomis gulosus*
White catfish	*Ictalurus catus*
Yellow bullhead	*Ictalurus natalis*

Table 12. Observed Bird Species on the LWRWEA

Common Name	Scientific Name
American bittern	*Botaurus lentiginosus*
American black duck	*Anas rubripes*

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Table 12. Observed Bird Species on the LWRWEA

Common Name	Scientific Name
American crow	*Corvus brachyrhynchos*
American goldfinch	*Carduelis tristis*
American kestrel	*Falco sparverius*
American pipit	Anthus rubescens
American robin	*Turdus migratorius*
American widgeon	*Anas americana*
Anhinga	*Anhinga anhinga*
Bachman's sparrow	*Peucaea aestivalis*
Bald eagle	*Haliaeetus leucocephalus*
Baltimore oriole	*Icterus galbula*
Barn owl	*Tyto alba*
Barn swallow	*Hirundo rustica*
Barred owl	*Strix varia*
Belted kingfisher	*Ceryle alcyon*
Black vulture	*Coragyps atratus*
Black-and-white warbler	*Mniotilta varia*
Black-bellied whistling duck	*Dendrocygna autumnalis*
Black-crowned Night-heron	*Nycticorax nycticorax*
Black-necked stilt	*Himantopus mexicanus*
Blackpoll warbler	*Setophaga striata*
Black-throated blue warbler	*Setophaga caerulescens*
Blue grosbeak	*Passerina caerulea*
Blue jay	*Cyanocitta cristata)*
Blue-gray gnatcatcher	*Polioptila caerulea*
Blue-winged teal	*Anas discors*
Blue-winged warbler	*Vermivora cyanoptera*
Boat-tailed grackle	*Quiscalus major*
Bobolink	*Dolichonyx oryzivorus*
Bonaparte's gull	Larus philadelphia
Brewer's blackbird	*Euphagus cyanocephalus*
Brown pelican	Pelecanus occidentalis
Brown thrasher	*Toxostoma rufum*
Brown-headed cowbird	*Molothrus ater*
Cape may warbler	*Setophaga tigrina*
Carolina wren	*Thryothorus ludovicianus*

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Table 12. Observed Bird Species on the LWRWEA

Common Name	Scientific Name
Cattle egret	*Bubulcus ibis*
Cedar waxwing	*Bombycilla cedrorum*
Chestnut-sided warbler	*Setophaga pensylvanica*
Chimney swift	*Chaetura pelagica*
Chipping sparrow	*Spizella passerina*
Chuck-will's-widow	*Antrostomus carolinensis*
Common grackle	*Quiscalus quiscula*
Common ground dove	*Columbina passerina*
Common ground dove	*Columbina passerina*
Common mloon	*Gavia immer*
Common moorhen	*Gallinula chloropus*
Common nighthawk	*Chordeiles minor*
Common yellowthroat	*Geothlypis trichas*
Cooper's hawk	*Accipiter cooperii*
Crested caracara	*Caracara cheriway*
Double-crested cormorant	*Phalacrocorax auritus*
Dowitcher	*Limnodromus sp.*
Downy woodpecker	*Picoides pubescens*
Eastern bluebird	*Sialia sialis*
Eastern Kingbird	*Tyrannus tyrannus*
Eastern phoebe	*Sayornis phoebe*
Eastern screech owl	*Megascops asio*
Eastern towhee	*Pipilo erythrophthalmus*
Eastern wood-pewee	*Contopus virens*
Eurasian collared dove	*Streptopelia decaocto*
European starling	*Sturnus vulgaris*
Field sparrow	*Spizella pusilla*
Fish crow	*Corvus ossifragus*
Florida scrub-jay	*Aphelocoma coerulescens*
Glossy ibis	*Plegadis falcinellus*
Grasshopper sparrow	*Ammodramus savannarum*
Gray catbird	*Dumetella carolinensis*
Great Bblue heron	*Ardea herodias*
Great crested flycatcher	*Myiarchus crinitus*
Great egret	*Ardea alba*

Table 12. Observed Bird Species on the LWRWEA

Common Name	Scientific Name
Great horned owl	*Bubo virginianus*
Greater yellowlegs	*Tringa melanoleuca*
Green heron	*Butorides virescens*
Green-winged teal	*Anas crecca*
Hairy woodpecker	*Picoides villosus*
Hermit thrush	*Catharus guttatus*
Horned grebe	*Podiceps auritus*
House wren	*Troglodytes aedon*
Indigo bunting	*Passerina cyanea*
Killdeer	*Charadrius vociferus*
Laughing gull	Larus atricilla
Least bittern	*Ixobrychus exilis*
Least flycatcher	*Empidonax minimus*
Least sandpiper	*Calidris minutilla*
Lesser yellowlegs	*Tringa flavipes*
Limpkin	*Aramus guarauna*
Little blue heron	*Egretta caerulea*
Loggerhead shrike	*Lanius ludovicianus*
Magnolia warbler	*Setophaga magnolia*
Mallard (feral)	*Anas platyrhynchos*
Marsh wren	*Cistothorus palustris*
Martin Purple	*Progne subis*
Meadowlark Eastern	*Sturnella magna*
Merlin	*Falco columbarius*
Mottled duck	*Anas fulvigula*
Mourning dove	*Zenaida macroura*
Northern bobwhite	*Colinus virginianus*
Northern cardinal	*Cardinalis cardinalis*
Northern flicker	*Colaptes auratus*
Northern harrier	*Circus cyaneus*
Northern mockingbird	*Mimus polyglottos*
Northern parula	*Setophaga americana*
Northern Rough-winged swallow	*Stelgidopteryx serripennis*
Northern waterthrush	*Parkesia noveboracensis*
Orchard oriole	*Icterus spurius*

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Table 12. Observed Bird Species on the LWRWEA

Common Name	Scientific Name
Osprey	*Pandion haliaetus*
Ovenbird	*Seiurus aurocapilla*
Painted bunting	*Passerina ciris*
Palm warbler	*Setophaga palmarum*
Peregrine falcon	*Falco peregrinus*
Pied-billed grebe	*Podilymbus podiceps*
Pileated woodpecker	*Dryocopus pileatus*
Pine warbler	*Setophaga pinus*
Prairie warbler	*Setophaga discolor*
Prothonotary warbler	*Protonotaria citrea*
Purple gallinule	*Porphyrio martinicus*
Quail Bobwhite	*Colinus virginianus*
Rail King	*Rallus elegans*
Red-bellied woodpecker	*Melanerpes carolinus*
Red-eyed viero	*Vireo olivaceus*
Red-headed woodpecker	*Melanerpes erythrocephalus*
Red-shouldered hawk	*Buteo lineatus*
Redstart American	*Setophaga ruticilla*

Management Intent

The LWRWEA is managed by FWC as a Wildlife and Environmental Area in conformance with the original purposes for acquisition to ensure the preservation of fish and wildlife resources, other natural and cultural resources, and to provide for fish and wildlife-based public outdoor recreation. The FWC uses a comprehensive resource management approach to managing FWC-managed areas. Restoring the form and function of Florida's natural communities is the foundation of this management philosophy. FWC uses Objective-based Vegetation Management (OBVM) to monitor how specific vegetative parameters are responding to FWC management. OBVM includes the delineation of management units and quantification of the desired future condition for the natural community. OBVM desired future condition objectives shall continue to be implemented on the LWRWEA.

In addition, FWC uses the WCPR program to ensure management is having the desired effect on wildlife as another important component of FWC's comprehensive resource management approach to managing FWC-managed areas. The goal of WCPR is to provide assessment, recovery and planning support for FWC-managed areas to enhance management of focal species and recovery of imperiled species. The WCPR program

objectives include prioritizing what FWC does for imperiled and focal species on FWC-managed areas; ensuring the actions taken on these areas are part of statewide conservation programs and priorities; and informing others about the work accomplished on lands FWC manages.

Conditions Affecting Intensity of Management

Resources described in this management prospectus are indicative of the conditions that affect the intensity of FWC's management. These include natural community types, topography and soils, surface and ground water conditions, extent of historic disturbance and already existing improvements. Environmentally sensitive areas, such as erosion-prone sites, important habitats, outstanding natural areas, and wetlands shall continue to be identified, appropriately managed and protected.

When necessary, the FWC conducts analysis of historic vegetation of natural community types to determine appropriate desired future conditions. Upland wildlife management concentrates on appropriate vegetative manipulations, primarily the application of prescribed fire, to achieve conditions acceptable to a broad range of wildlife species. Areas sometimes require ecological restoration of ground cover, control of invasive species and reforestation. Such resource management projects may be necessary to accomplish restoration objectives to attain the desired future condition. This is especially important for conservation of habitats and populations of imperiled or rare species. Landscape-scale ecology is also important. Land use changes in the vicinity of a managed area may affect attainment of resource conservation goals for the area and effectiveness of necessary resource management projects.

Timetable for Implementing Management Provisions

A management plan has been developed by FWC describing the management goals and objectives, along with short-term (2 years) and long-term (3-10 years) completion timelines, necessary to implement future resource and operational management of the LWRWEA. The management plan also establishes the current and future roles of cooperating entities including governmental agencies, non-governmental organizations, and other stakeholders.

Long-range plans will stress ecosystem management and the protection and management of focal species, species of special concern, rare and imperiled species. The FWC shall continue to assess the condition of wildlife resources and provide planning support to enhance management of these species on the LWRWEA. To maintain and restore natural communities and vegetation types to benefit native wildlife resources, the use of prescribed fire and other essential resource management activities will continue to be implemented.

Revenue Generating Potential

FWC economic analysis indicates that the LWRWEA generates an estimated annual economic impact of $3,500,000 for the State that has resulted in the creation of an estimated 35 jobs to the local economies of the region. The revenue generating potential of the LWRWEA will depend upon future uses to be approved in the management plan. Currently, a limited amount of land within the LWRWEA is leased for citrus production and research. Additional revenue from environmental lands such as the LWRWEA might include sales of various permits and recreational user fees and ecotourism activities, if such projects could be economically developed. Revenue may also be generated from potential timber sales and apiary leases. The annual area regulations can be consulted to clarify the necessary and required permits, fees, and regulations. The long-term values of ecosystem services to local and regional land and water resources, and to human health, are expected to be significant.

Recommendations for Other Governmental Agency Involvement

Among others, FWC will cooperate with other state and local governmental agencies including Polk and Highlands County, DEP, SWFWMD, SFWMD, DOD and FFS in the continuing management of the LWRWEA.

Estimate of Costs

Following is an estimate of costs to operate and manage the LWRWEA as outlined in the LWRWEA Management Plan. Optimal management of the LWRWEA would require four full-time equivalent (FTE) positions. Salary requirements for these FTE positions, as well as those of other needed FWC staff, and costs to operate and manage the LWRWEA are reflected in the cost estimates below. All land management funding is dependent upon annual legislative appropriations

Lake Wales Ridge WEA Management Plan Cost Estimate

Maximum expected one year expenditure

Resource Management	Expenditure	Priority	Priority schedule:
Exotic Species Control	$45,129	(1)	(1) Immediate (annual)
Prescribed Burning	$142,393	(1)	(2) Intermediate (3-4 years)
Cultural Resource Management	$1,503	(1)	(3) Other (5+ years)
Timber Management	$0	(1)	
Hydrological Management	$66,742	(1)	
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$325,754	(1)	
Subtotal	**$581,521**		
Administration			
General administration	**$55,170**	(1)	
Support			
Land Management Planning	$27,514	(1)	
Land Management Reviews	$0	(3)	
Training/Staff Development	$1,503	(1)	
Vehicle Purchase	$142,854	(2)	
Vehicle Operation and Maintenance	$33,102	(1)	
Other (Technical Reports, Data Management, etc.)	$5,463	(1)	
Subtotal	**$210,436**		
Capital Improvements			
New Facility Construction	$0	(2)	
Facility Maintenance	$55,113	(1)	
Subtotal	**$55,113**		
Visitor Services/Recreation			
Info./Education/Operations	**$82,087**	(1)	
Law Enforcement			
Resource protection	**$13,939**	(1)	
Total	**$998,267 ***		

* Based on the characteristics and requirements of this area, four FTE positions would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

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Lake Wales Ridge WEA Management Plan Cost Estimate

Ten-year projection

Resource Management	Expenditure	Priority	Priority schedule:
Exotic Species Control	$396,506	(1)	(1) Immediate (annual)
Prescribed Burning	$1,251,076	(1)	(2) Intermediate (3-4 years)
Cultural Resource Management	$13,209	(1)	(3) Other (5+ years)
Timber Management	$0	(1)	
Hydrological Management	$586,403	(1)	
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$2,862,111	(1)	
Subtotal	**$5,109,304**		
Administration			
General administration	**$484,727**	(1)	
Support			
Land Management Planning	$241,743	(1)	
Land Management Reviews	$9,952	(3)	
Training/Staff Development	$13,209	(1)	
Vehicle Purchase	$502,709	(2)	
Vehicle Operation and Maintenance	$290,836	(1)	
Other (Technical Reports, Data Management, etc.)	$48,000	(1)	
Subtotal	**$1,106,448**		
Capital Improvements			
New Facility Construction	$108,724	(2)	
Facility Maintenance	$484,230	(1)	
Subtotal	**$592,954**		
Visitor Services/Recreation			
Info./Education/Operations	**$721,229**	(1)	
Law Enforcement			
Resource protection	**$122,473**	(1)	
Total	**$8,137,137 ***		

* Based on the characteristics and requirements of this area, four FTE positions would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

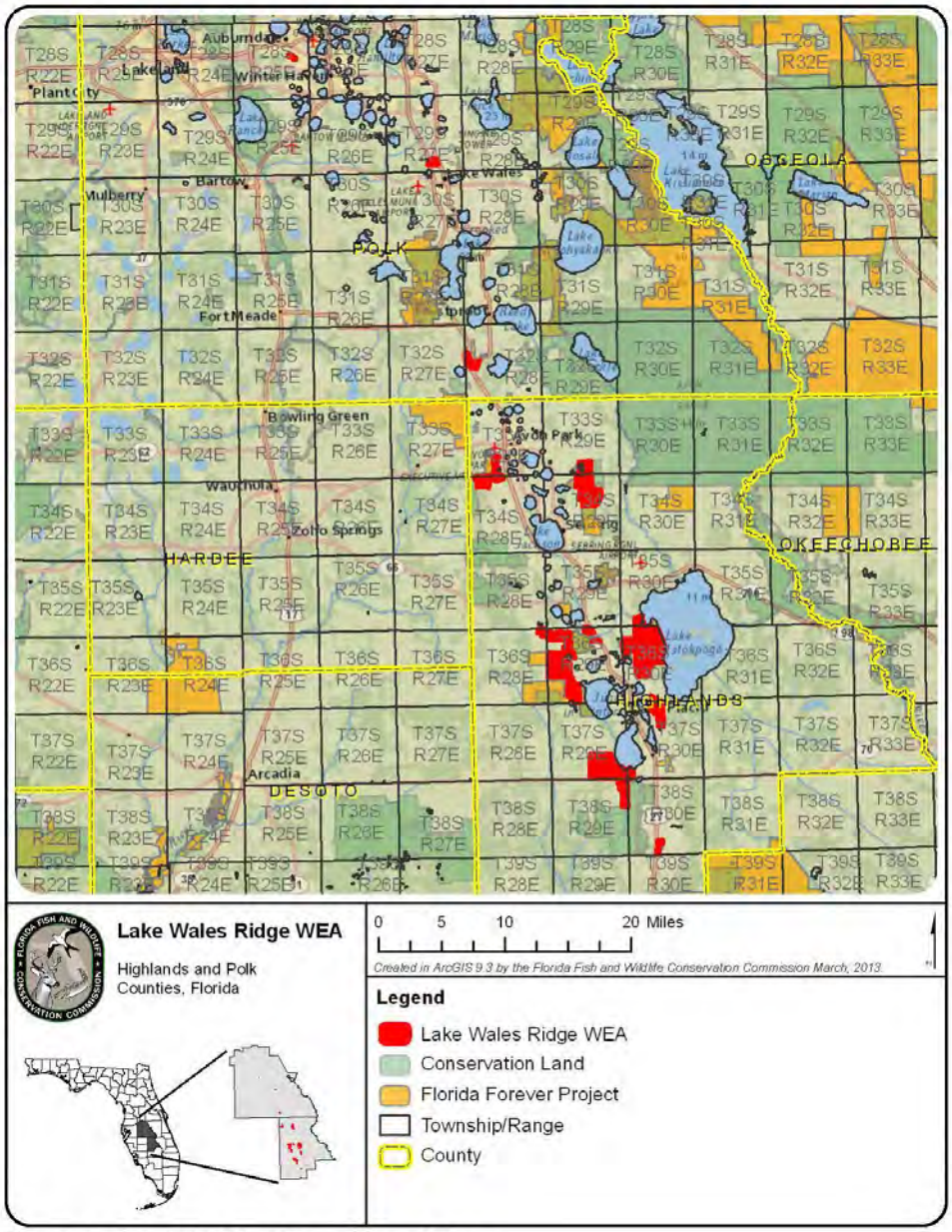

Figure 1. Proximity Map, Township and Range

38

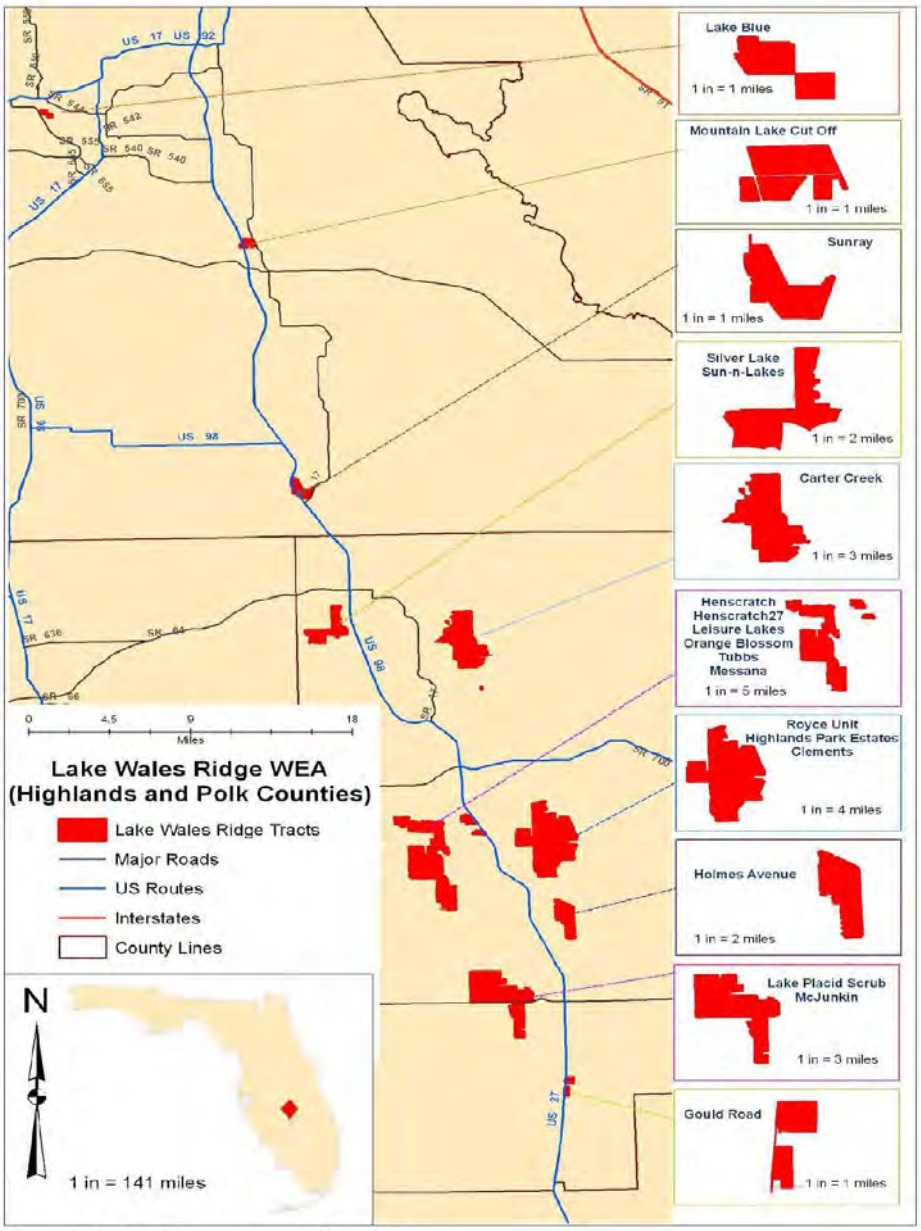

Figure 2. Lead Management Interests

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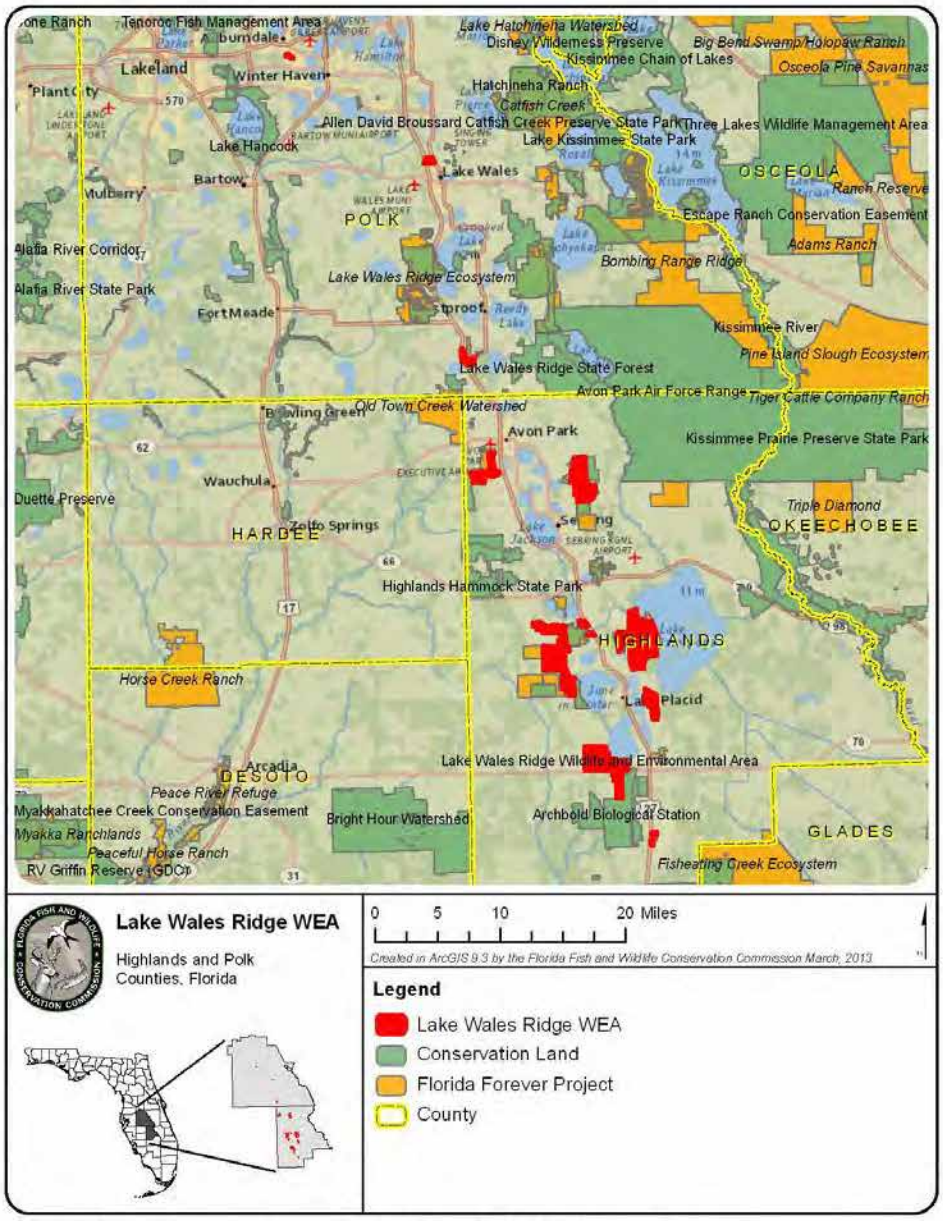

Figure 3. Proximate Conservation Lands and Florida Forever Projects

40

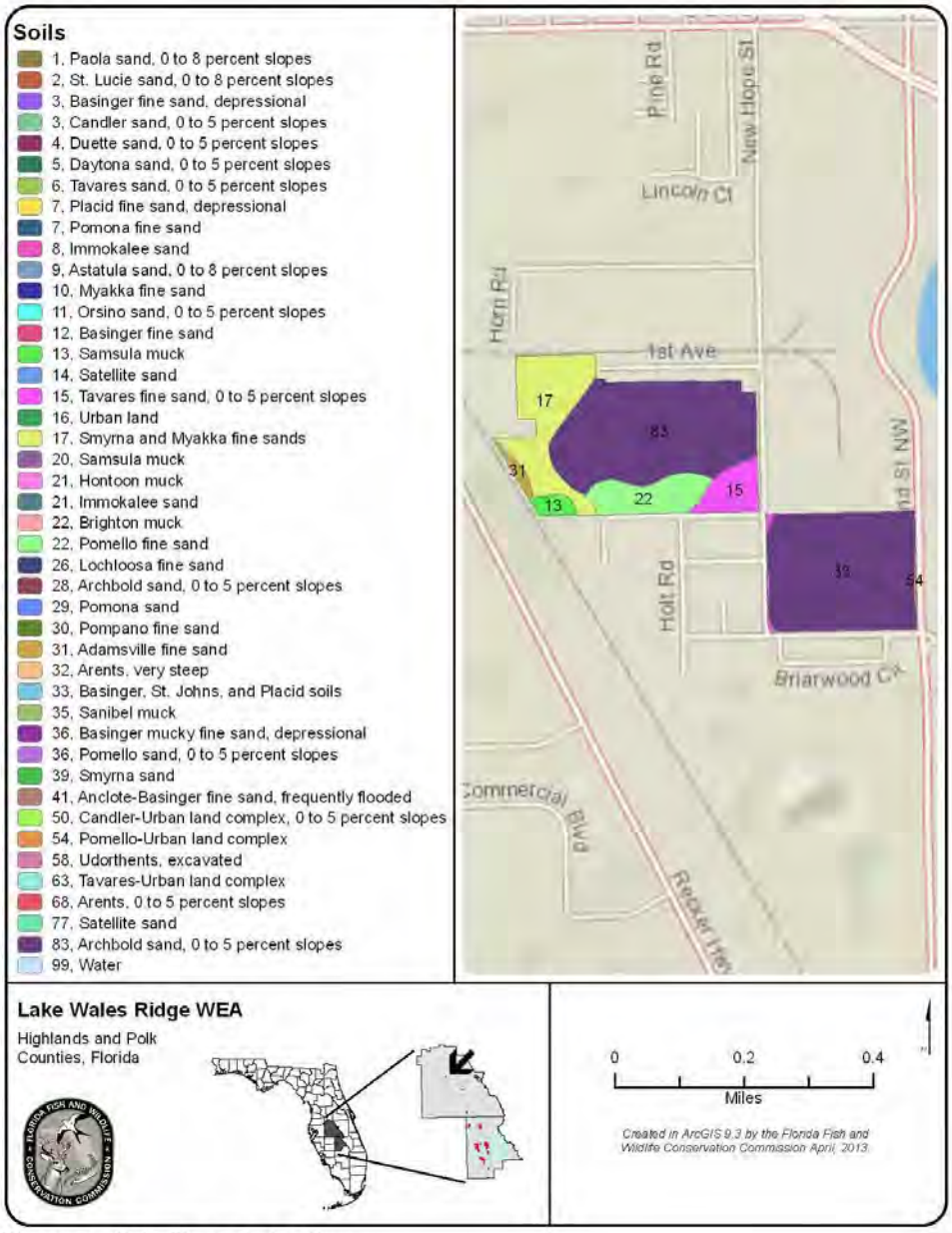

Figure 4. Soils Type –Lake Blue

41

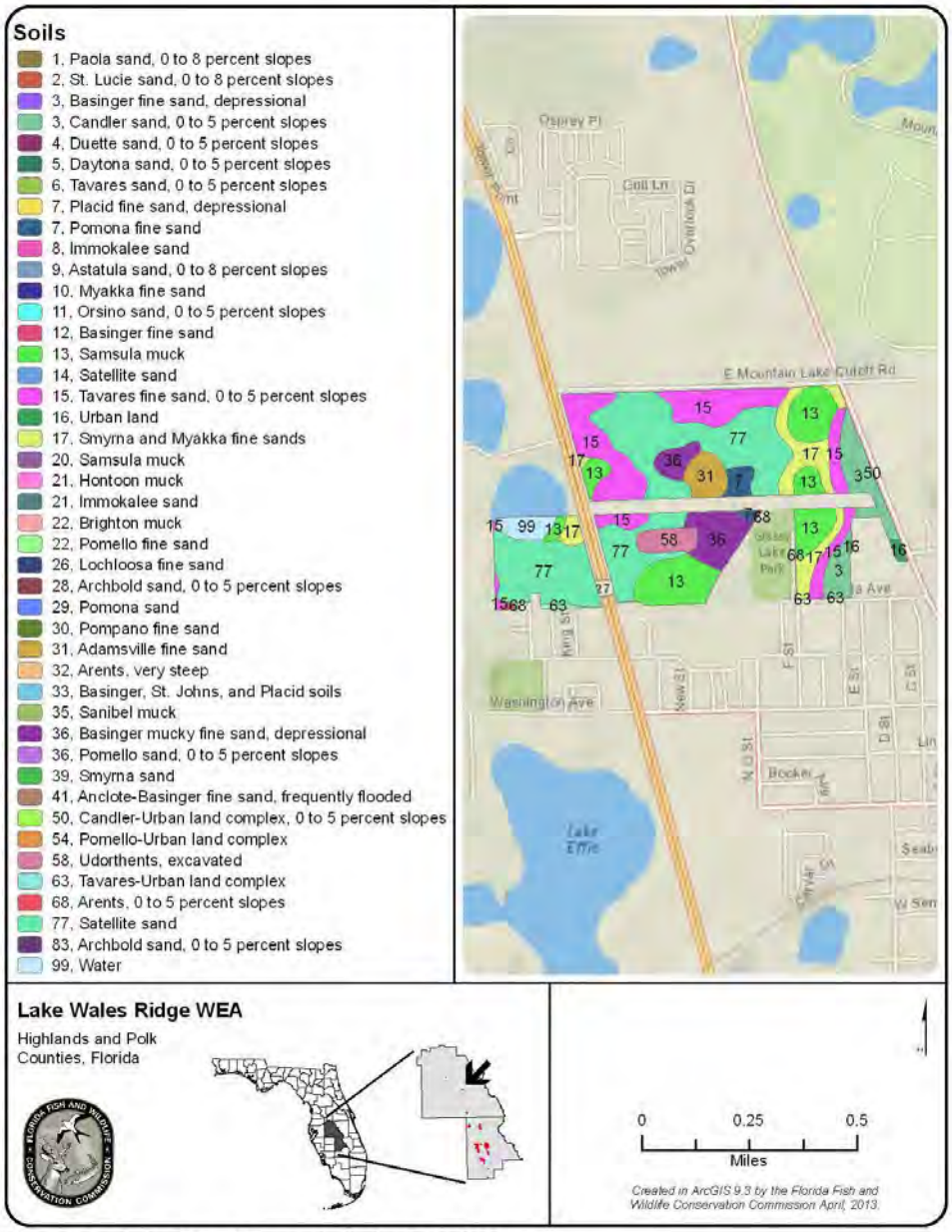

Figure 5. Soils Type- Mountain Lake Cut off Tract

42

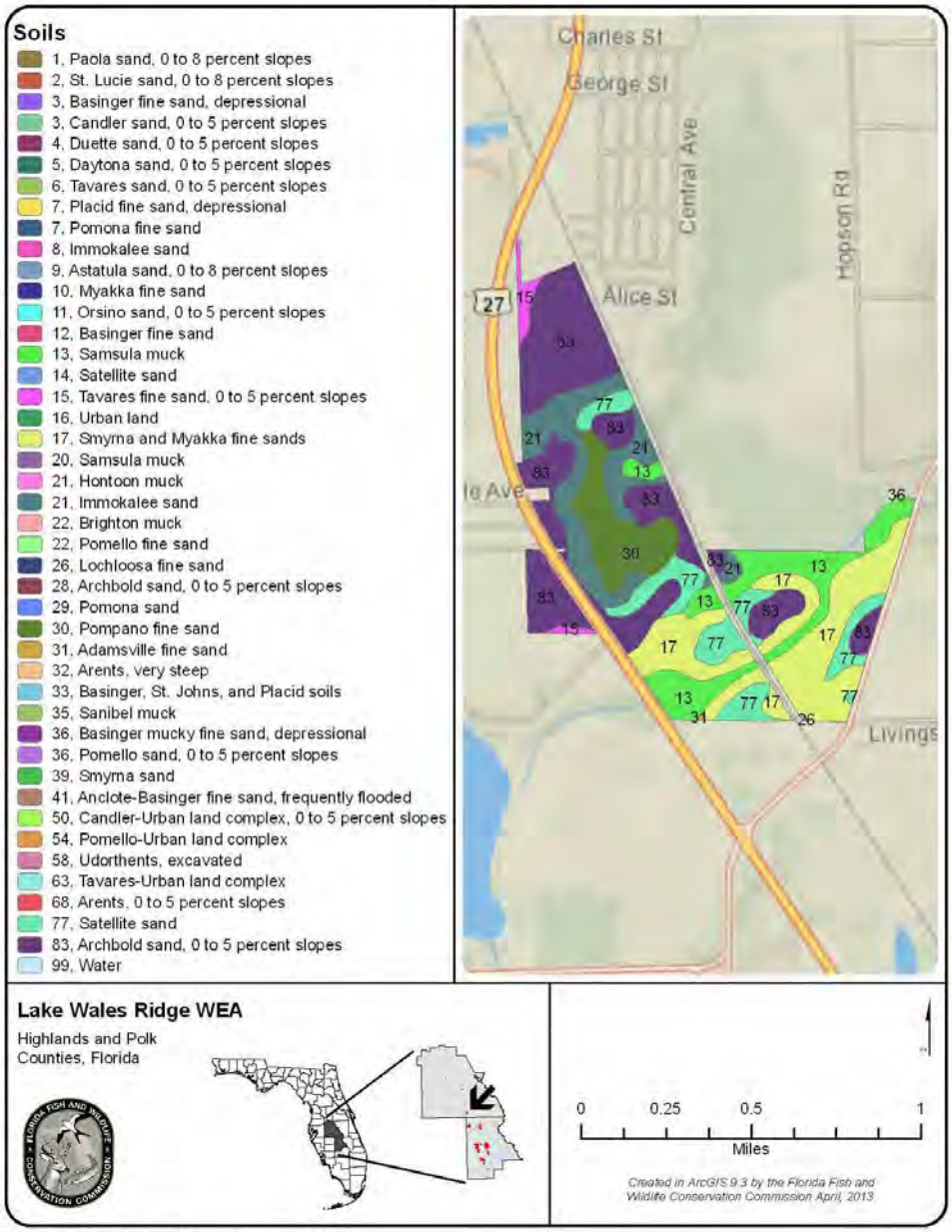

Figure 6. Soils Type-Sunray Tract

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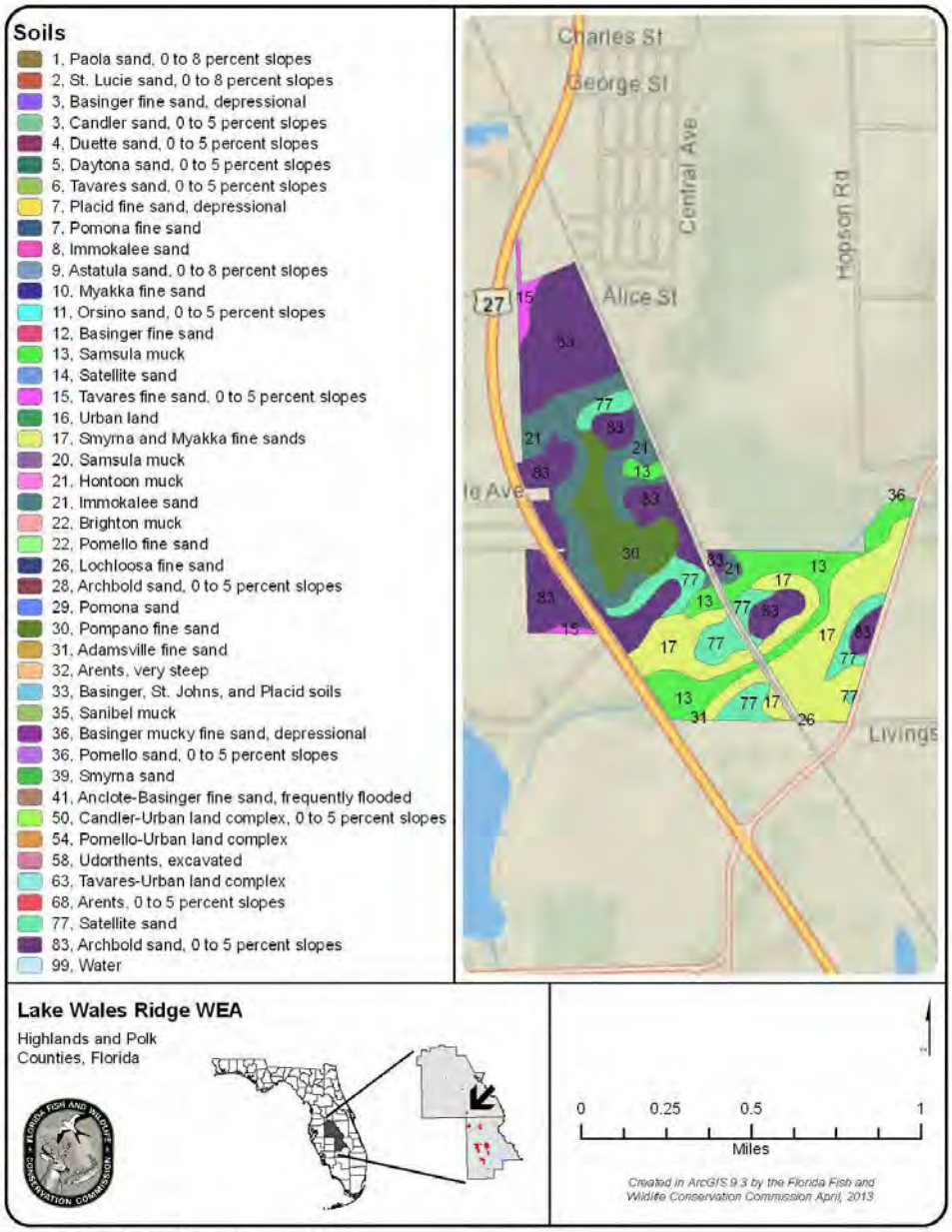

Figure 6. Soils Type-Sunray Tract

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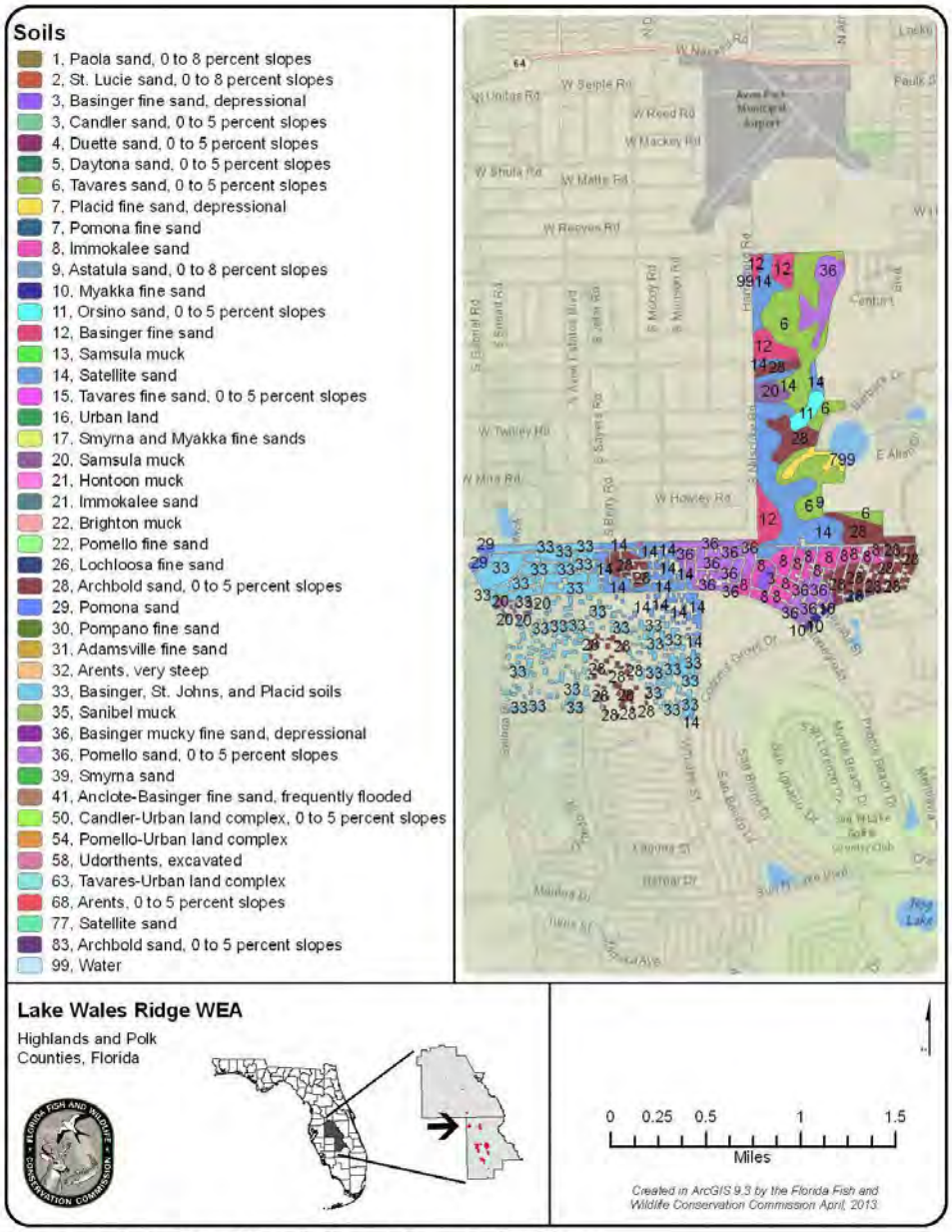

Figure 7. Soils Type-Silver Lake and Sun-n-Lakes Tracts

44

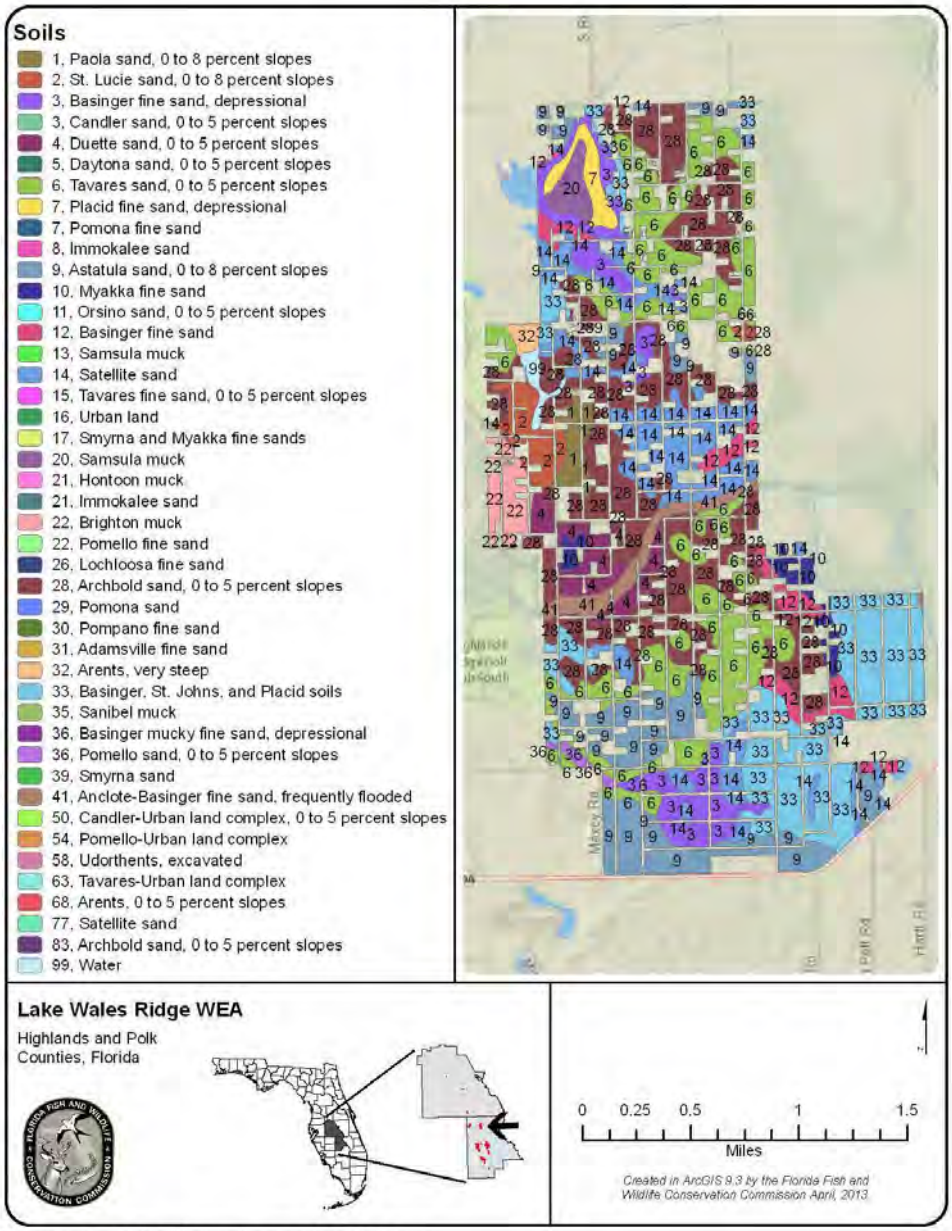

Figure 8. Soils Type-Carter Creek Tract

45

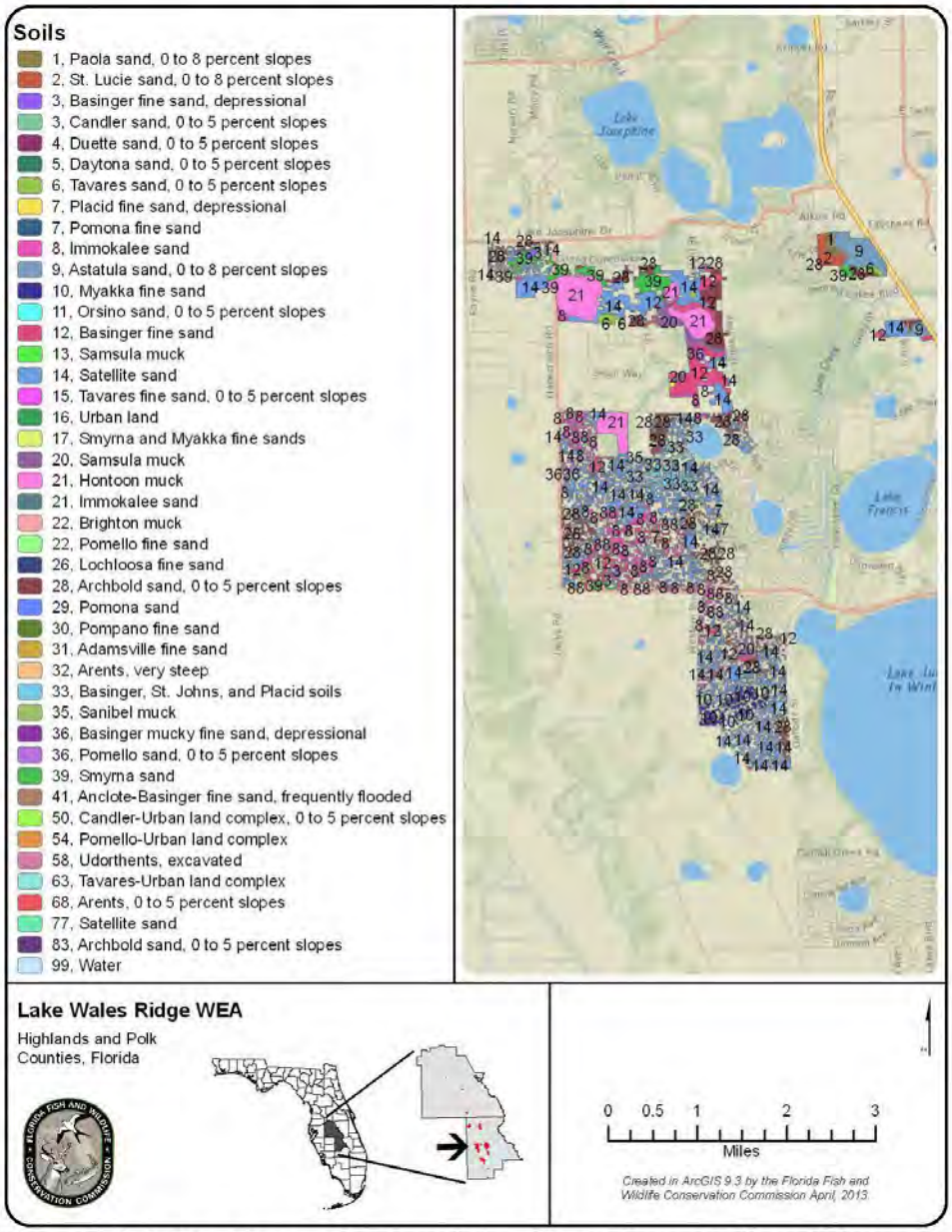

Figure 9. Soils Type- Henscratch, Leisure Lakes, Orange Blossom, Tubbs and Messana

46

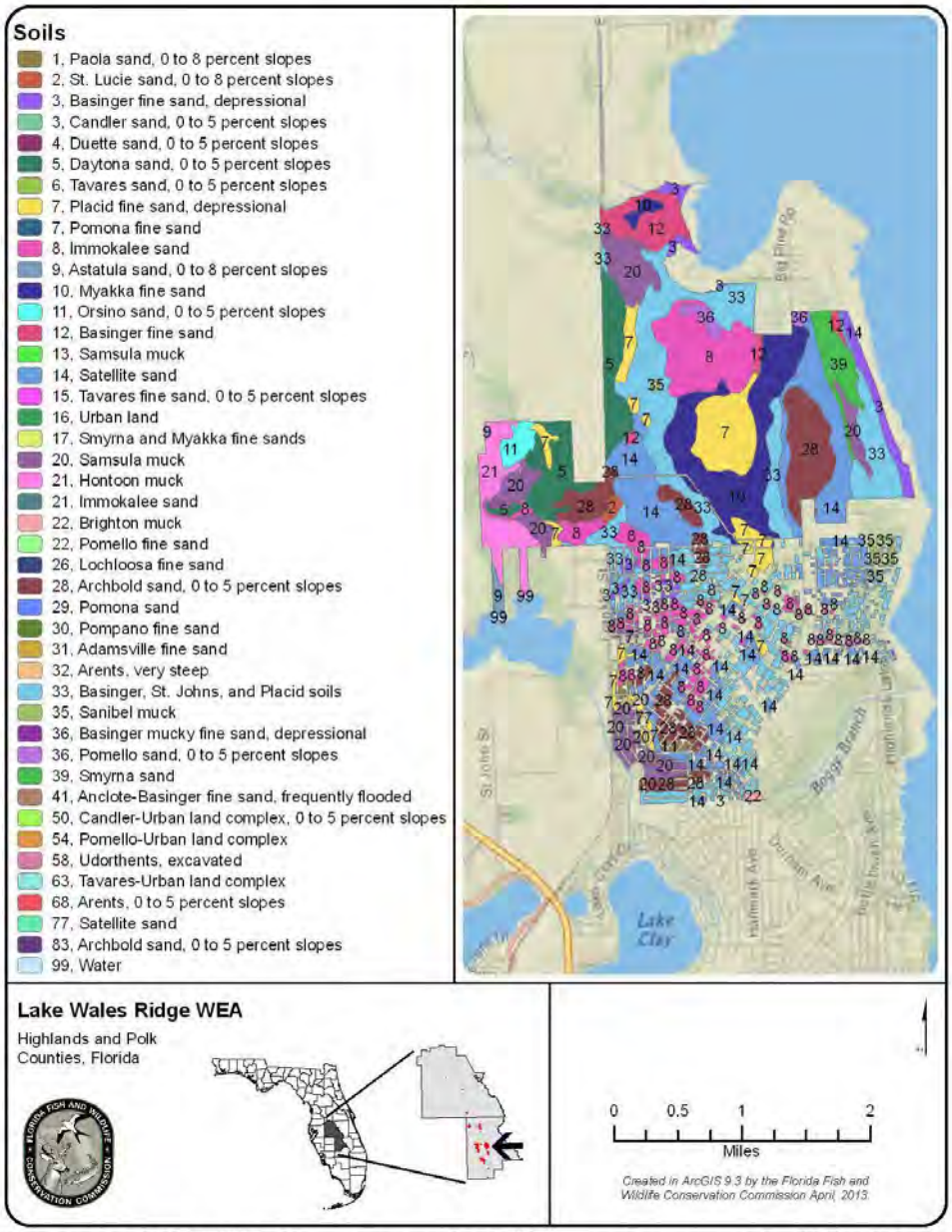

Figure 10. FWC Wildlife Observations and FNAI Element Occurrences-Gould Road Tract

47

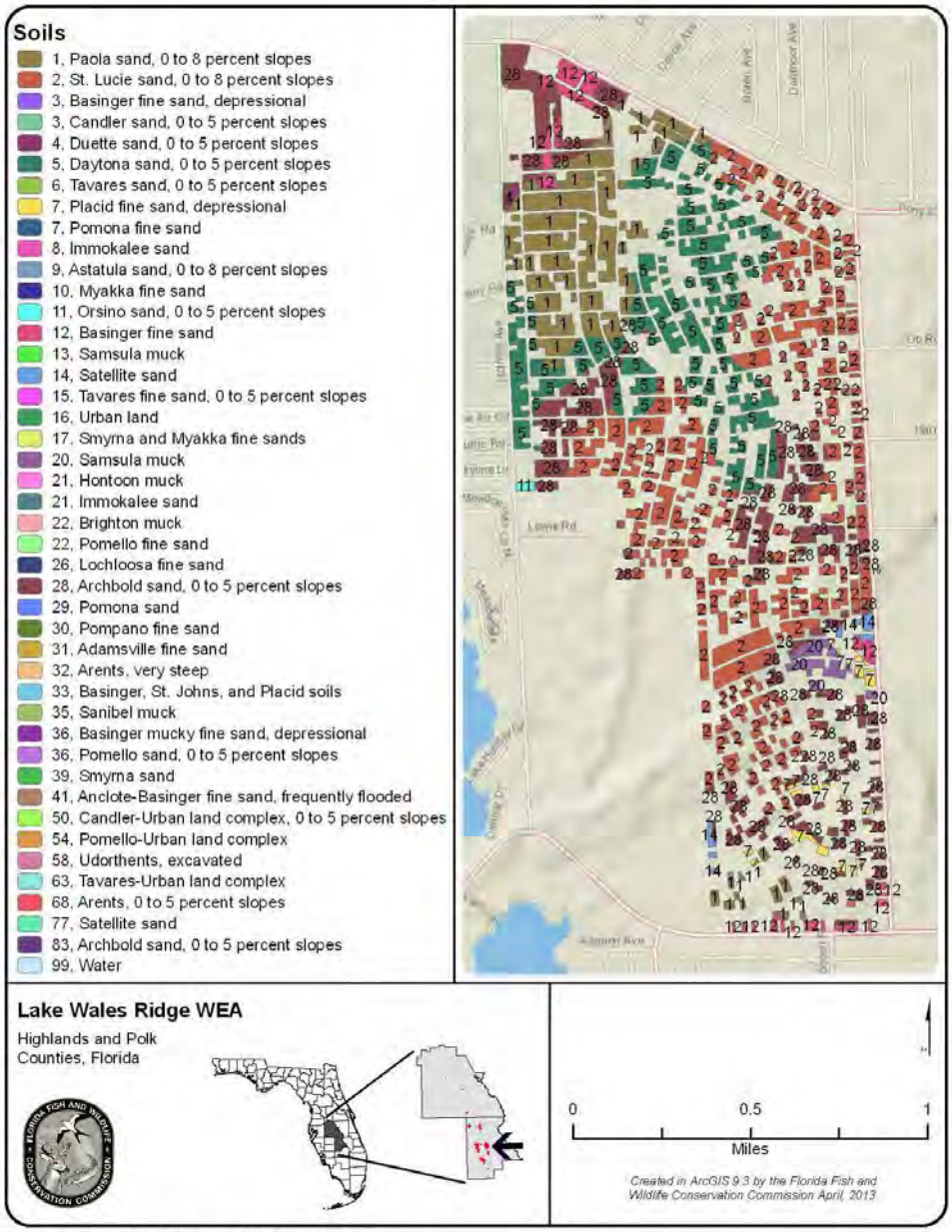

Figure 11. Soils Type-Holmes Tract

48

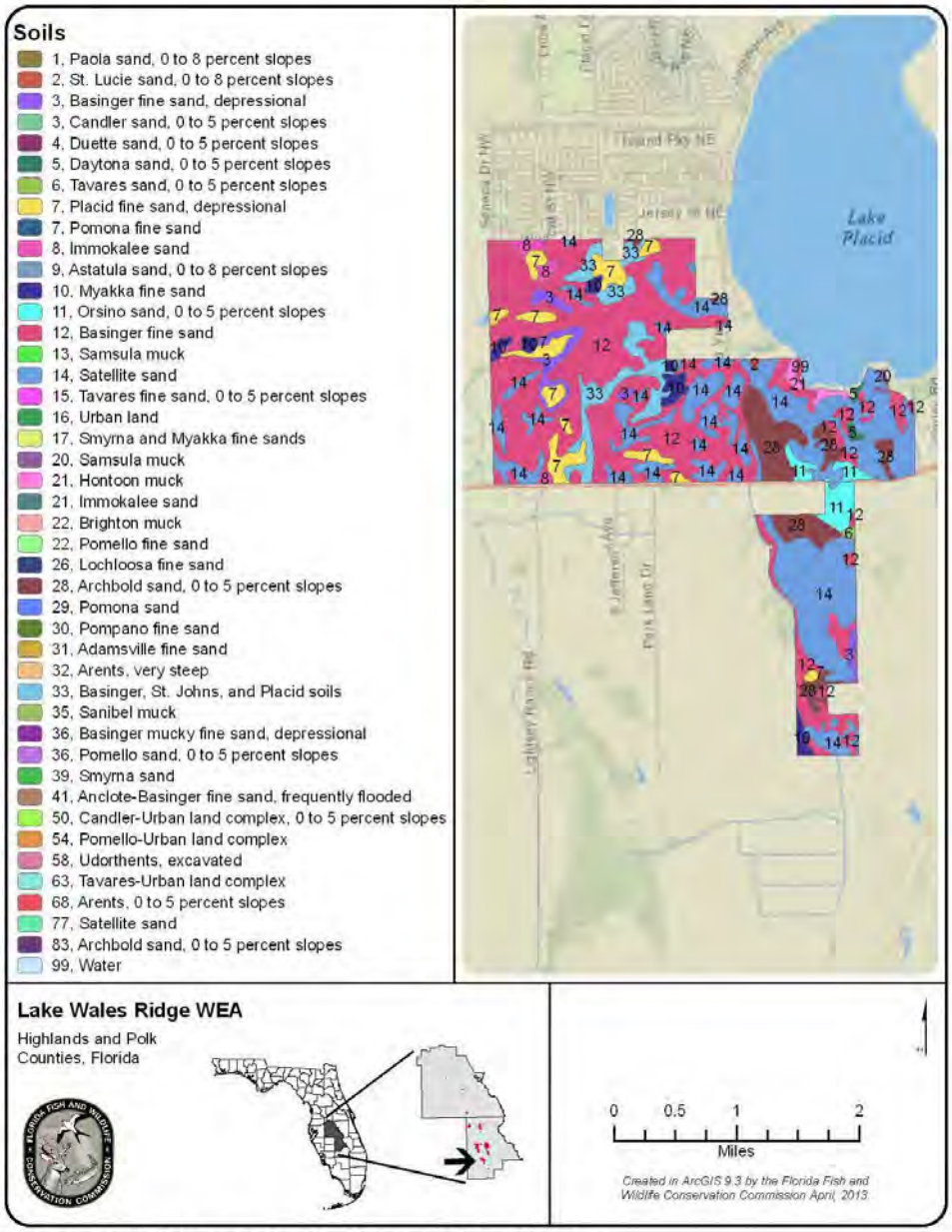

Figure 12. Soils Type-Lake Placid Scrub, McJunkin Tract

49

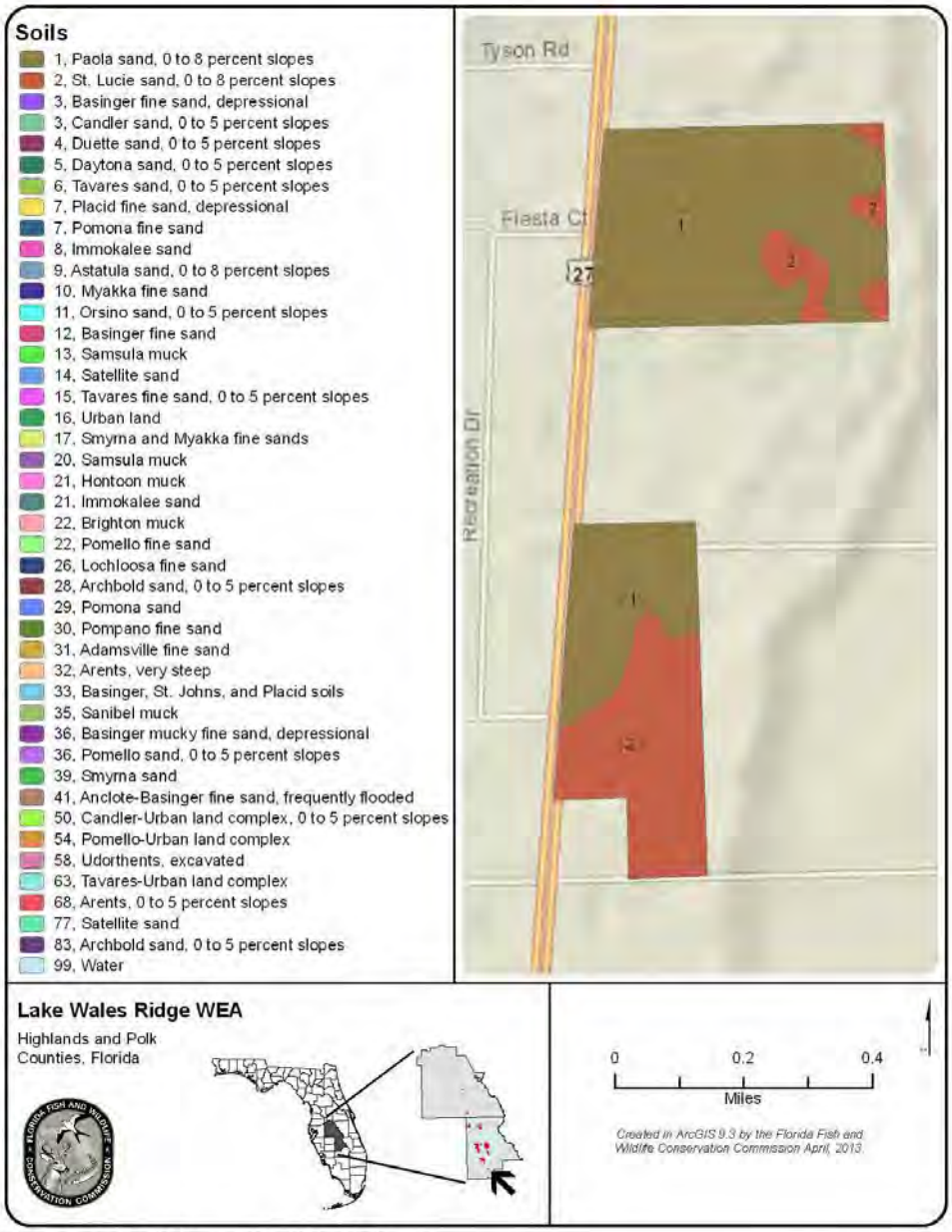

Figure 13. Soils Type-Gould Road Tract

50

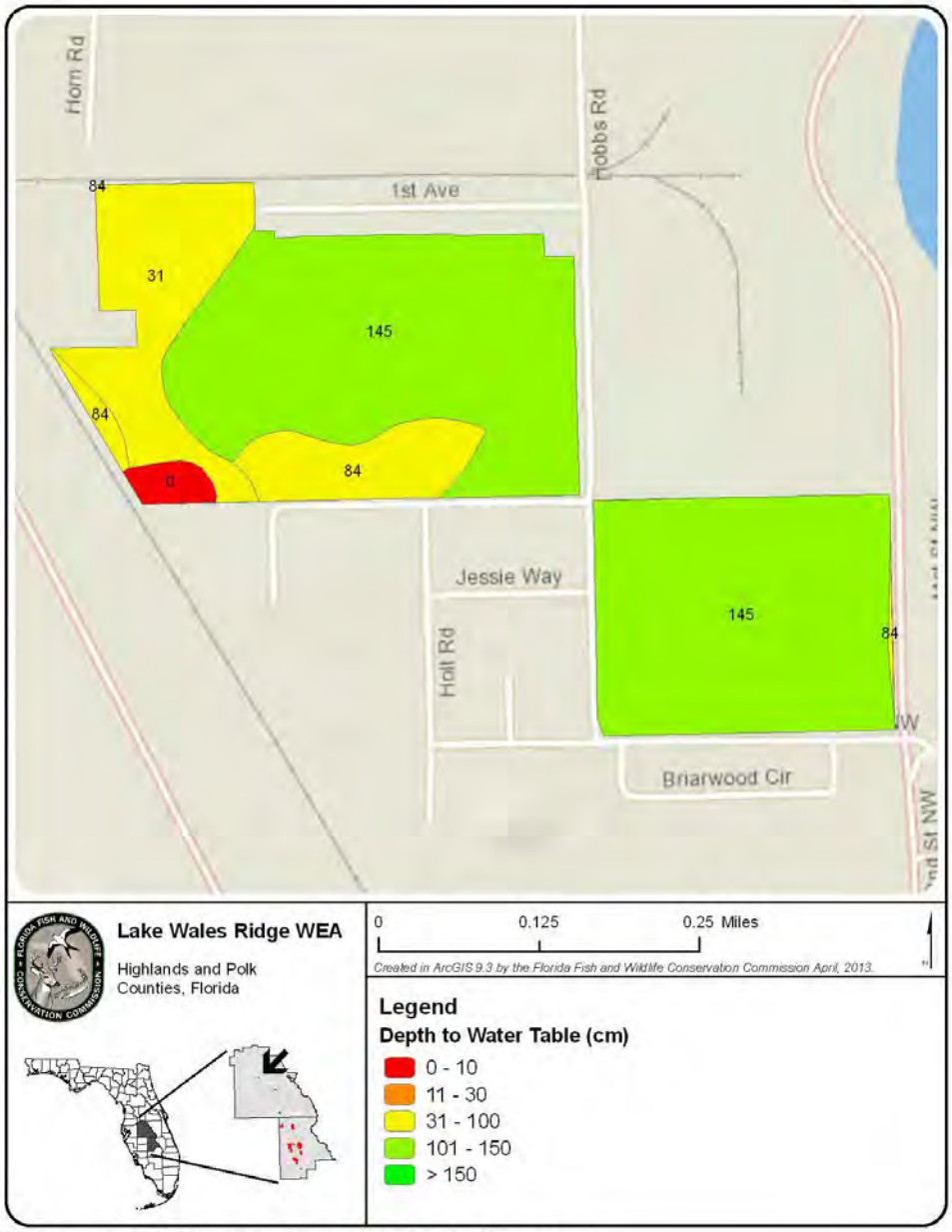

Figure 14. Soils, Depth to Water Table-Lake Blue Tract

51

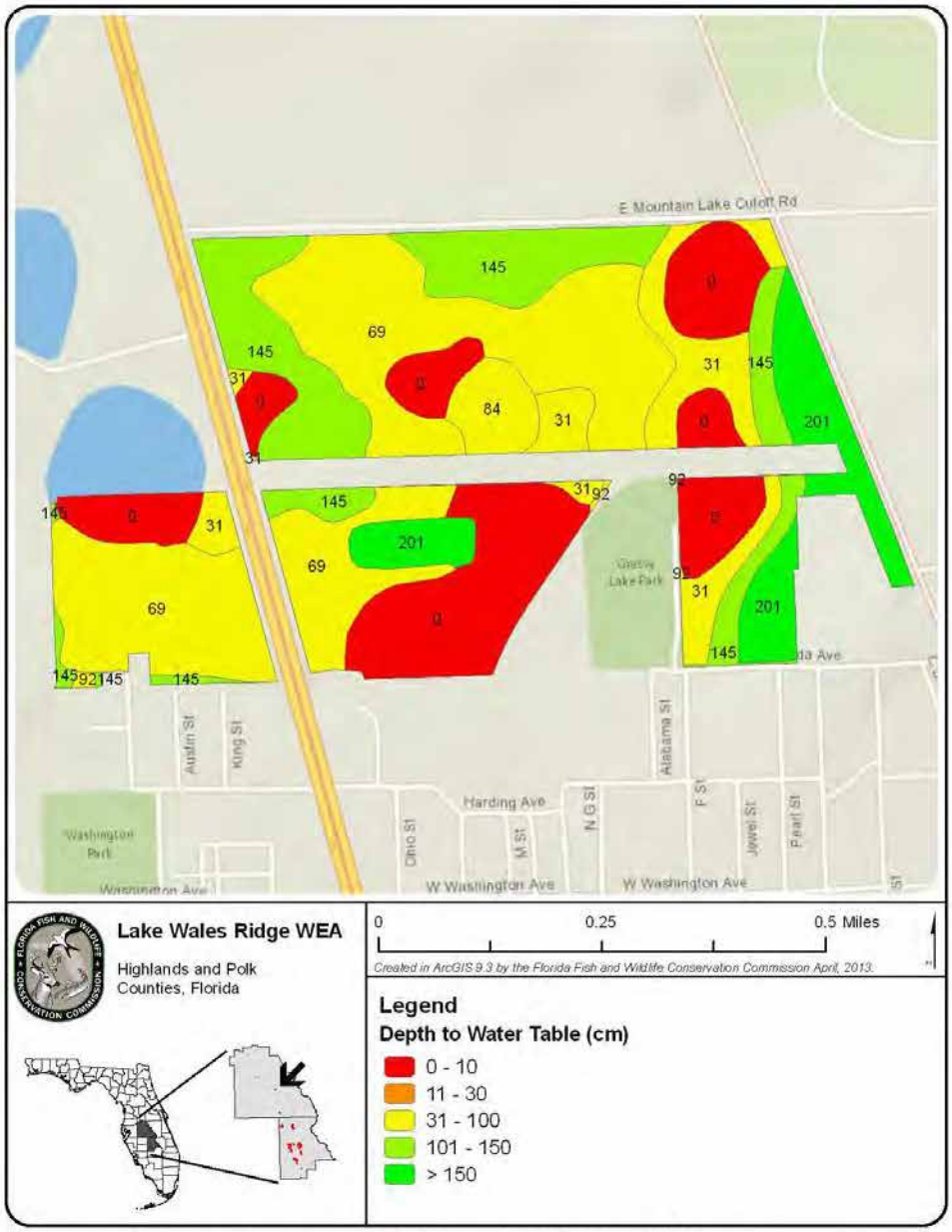

Figure 15. Soils, Depth to Water Table-Mountain Lake Cut Off Tract

52

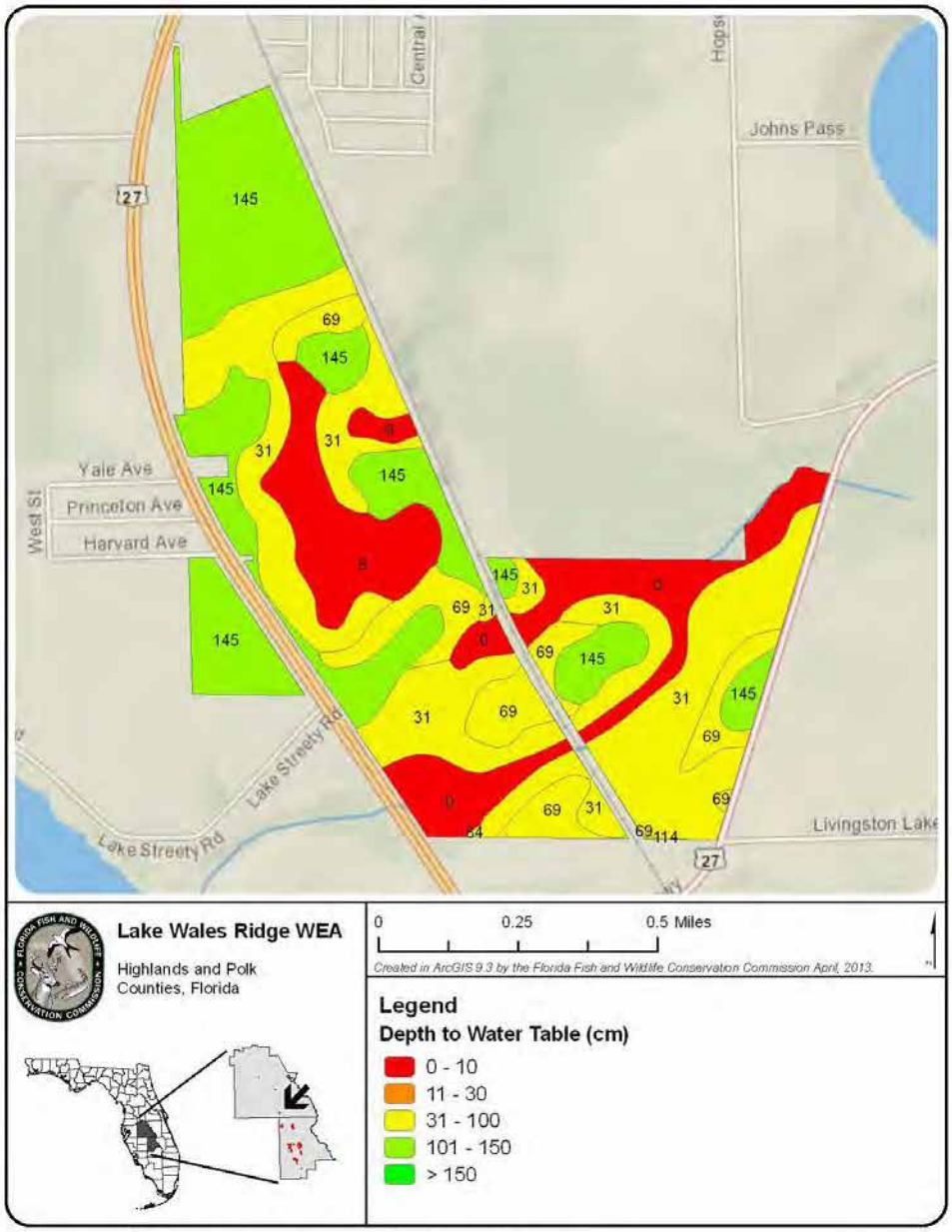

Figure 16. Soils, Depth to Water Table-Sunray Tract

53

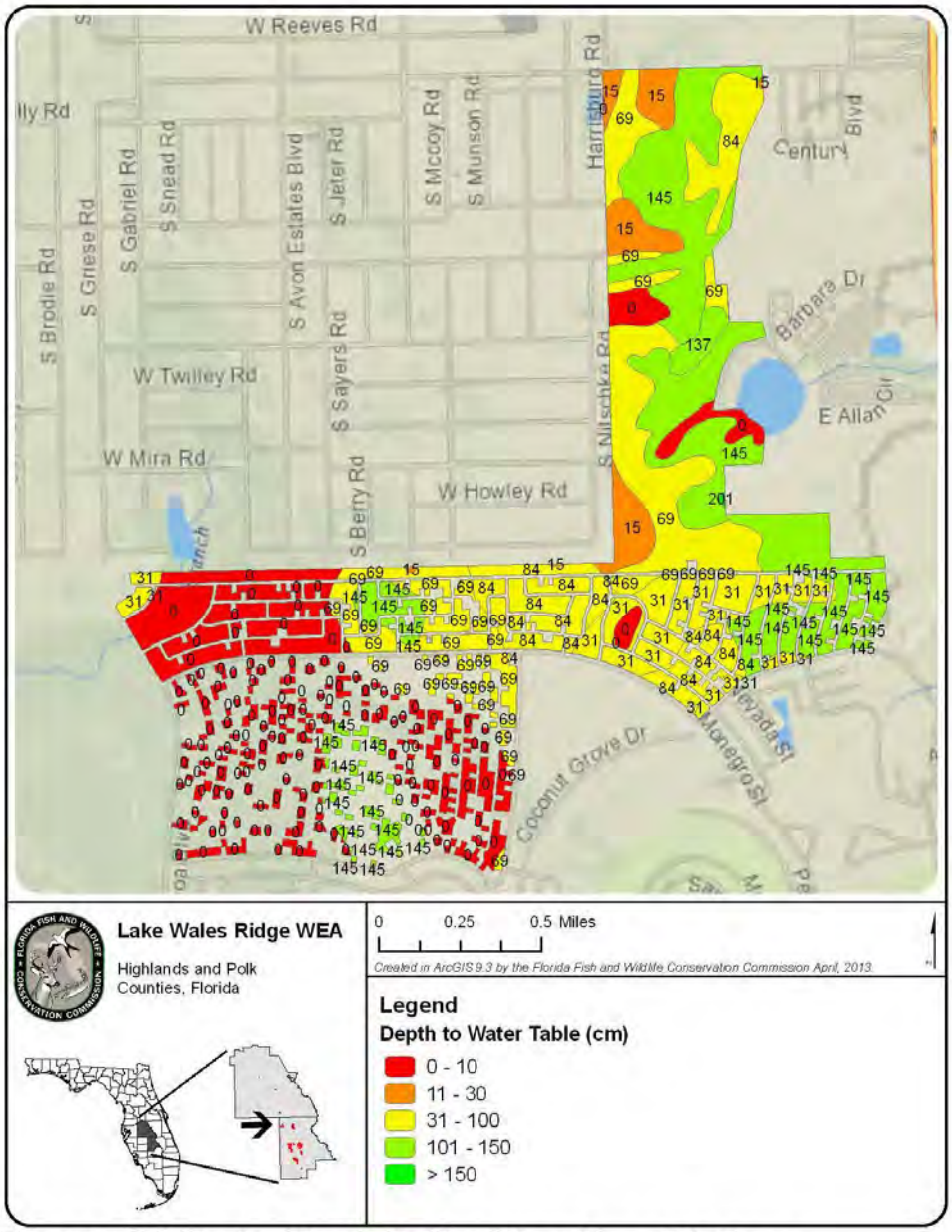

Figure 17. Soils, Depth to Water Table-Silver Lake and Sun-n-Lake Tracts

54

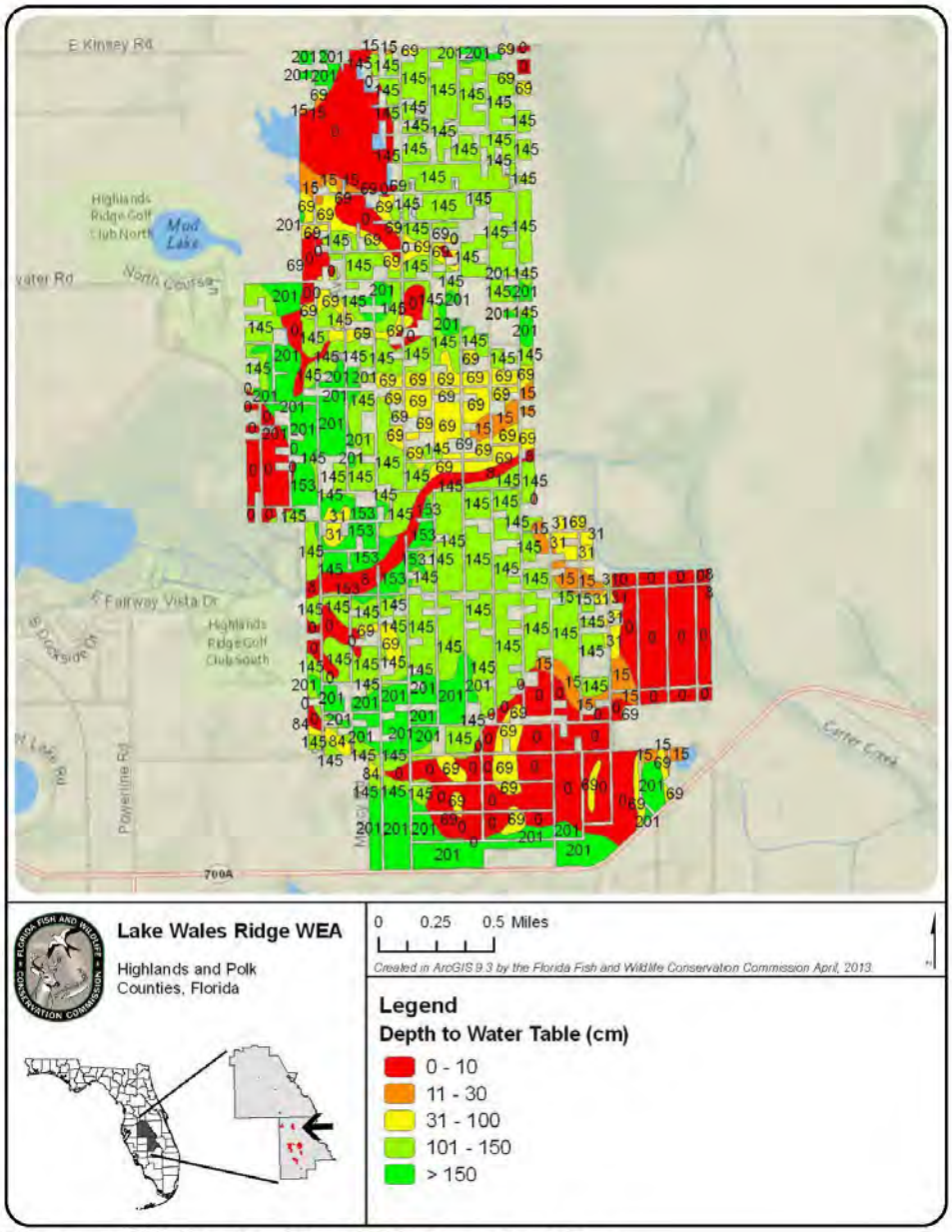

Figure 18. Soils, Depth to Water Table-Carter Creek Tract

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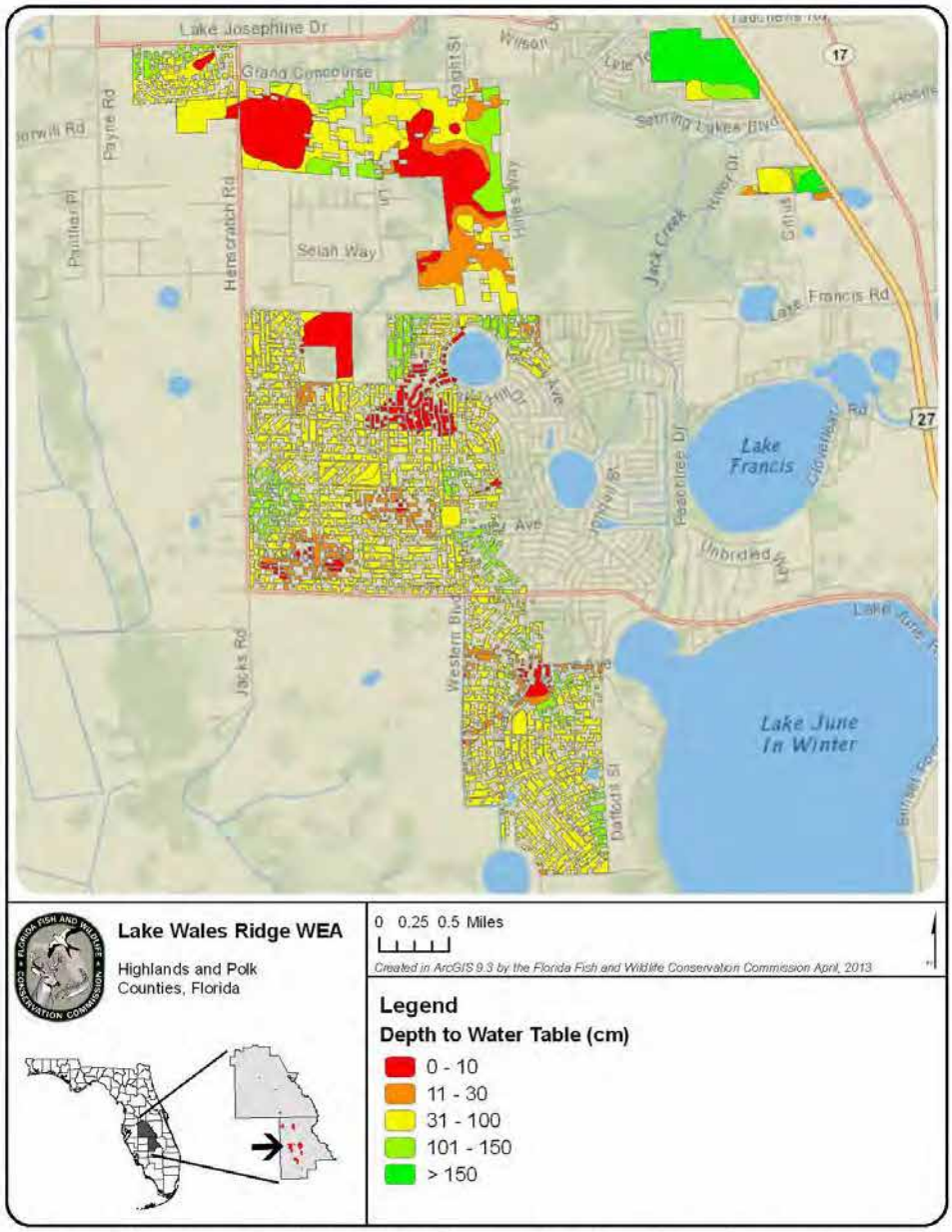

Figure 19. Soils, Depth to Water Table- Henscratch, Leisure Lakes, Orange Blossom

56

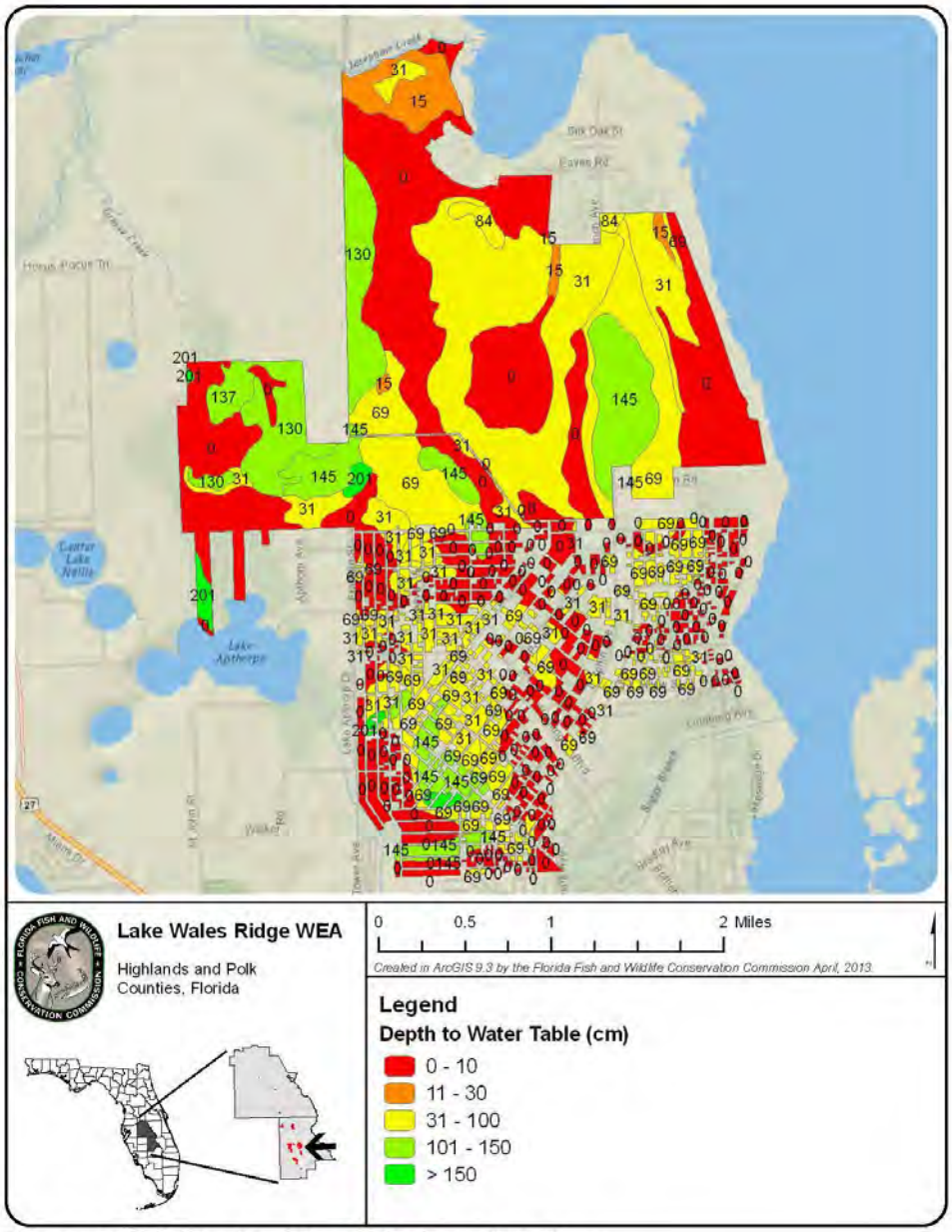

Figure 20. Soils, Depth to Water Table-Royce Unit Tract

57

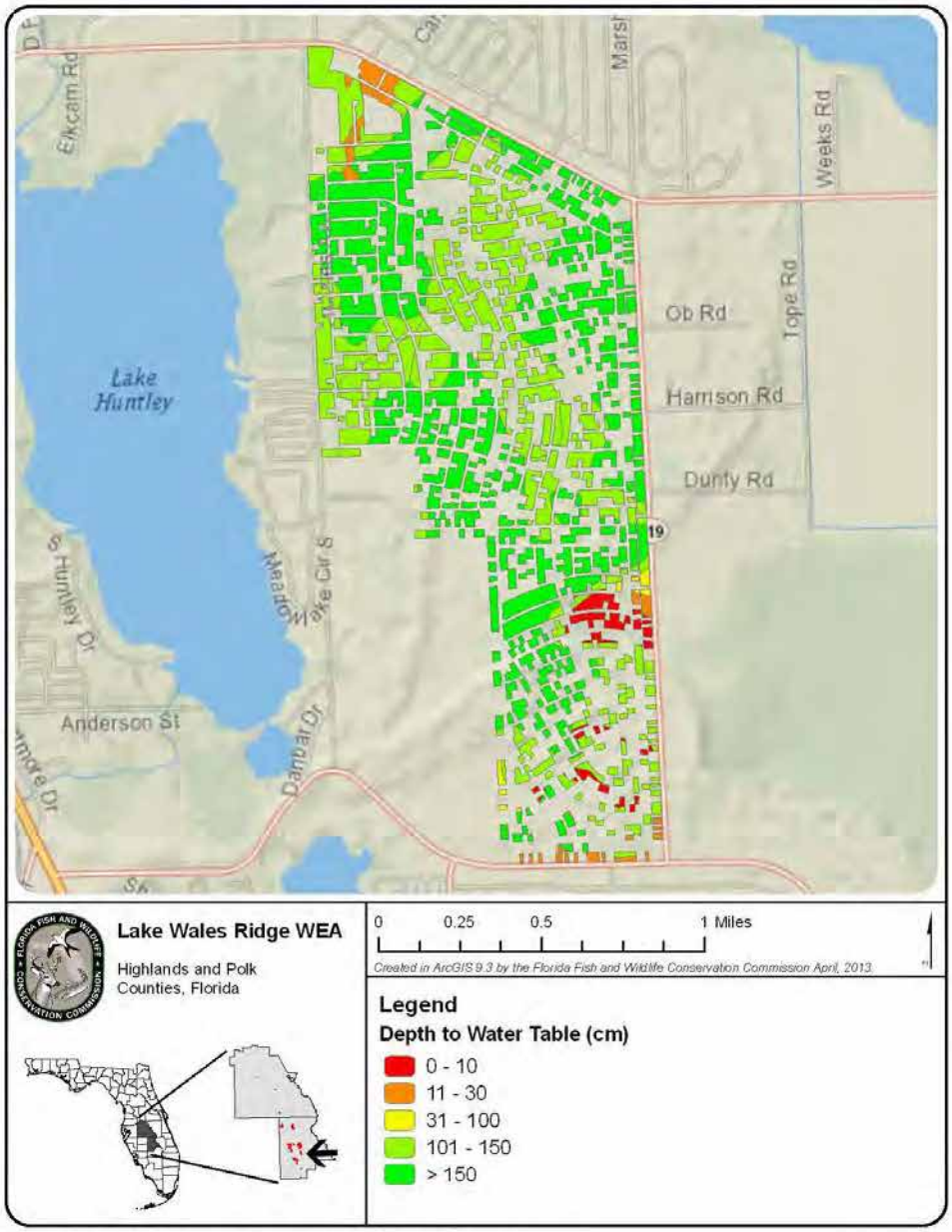

Figure 21. Soils, Depth to Water Table-Holmes Tract

58

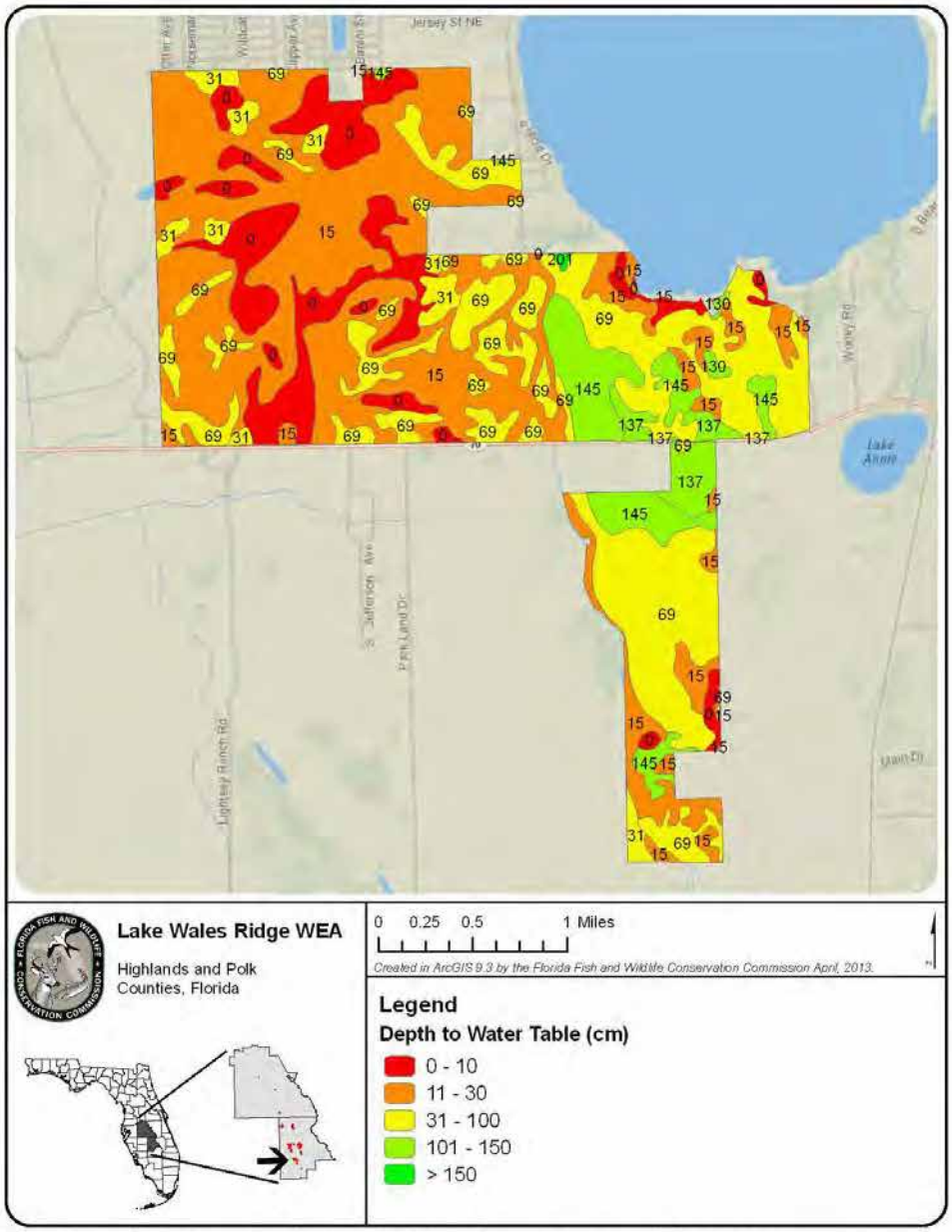

Figure 22. Soils, Depth to Water Table-Lake Placid Scrub and McJunkin Tract

59

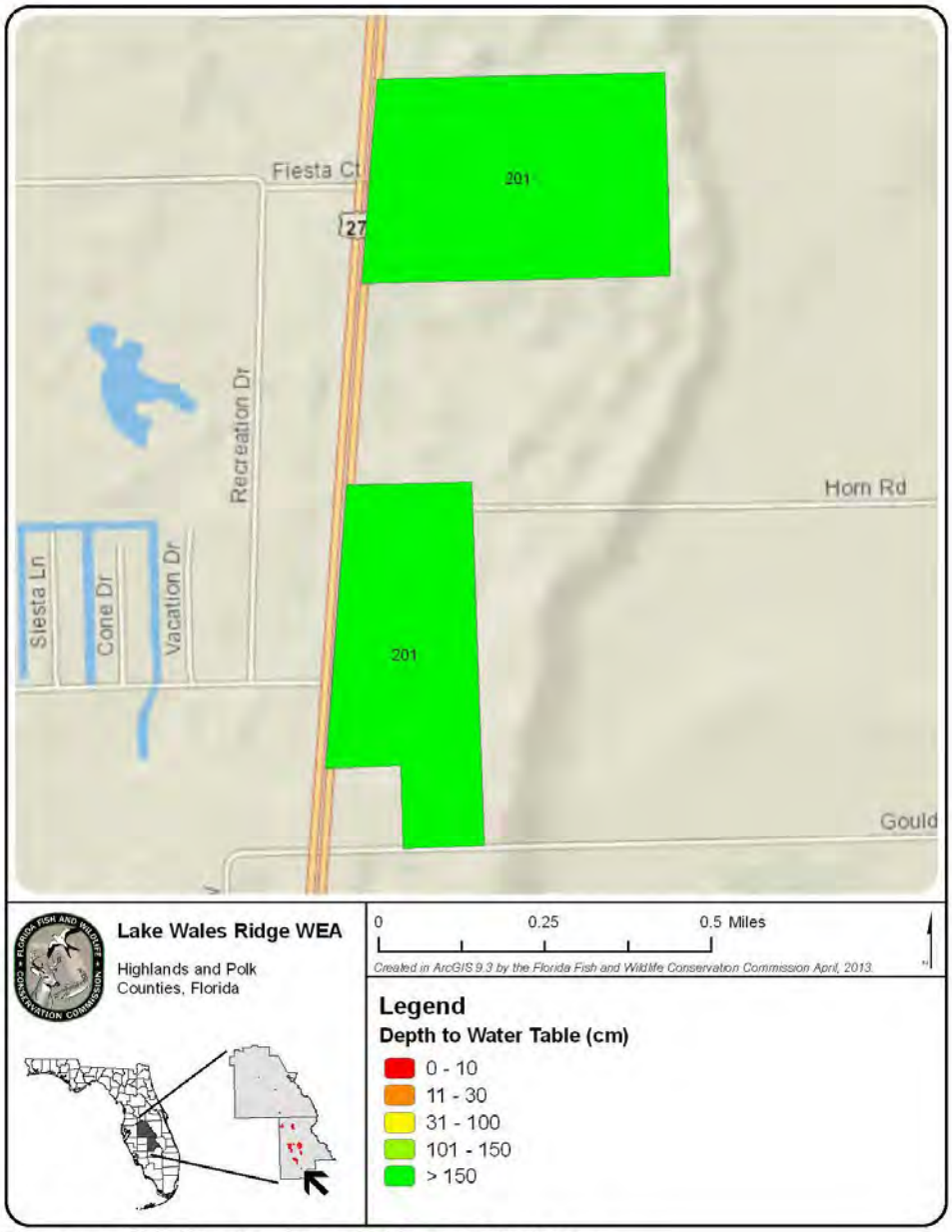

Figure 23. Soils, Depth to Water Table-Gould Road Tract

60

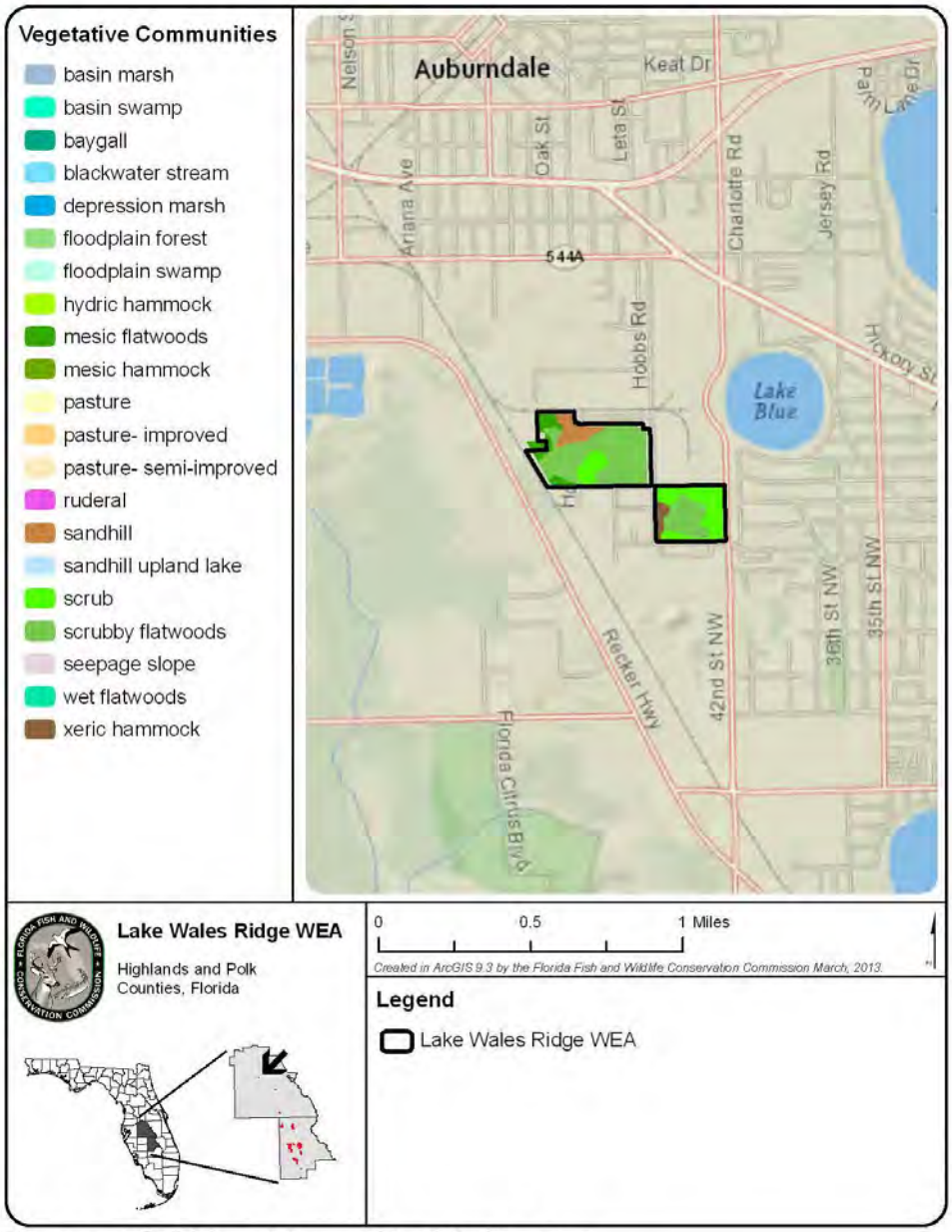

Figure 24. FNAI Natural Communities-Lake Blue Tract

61

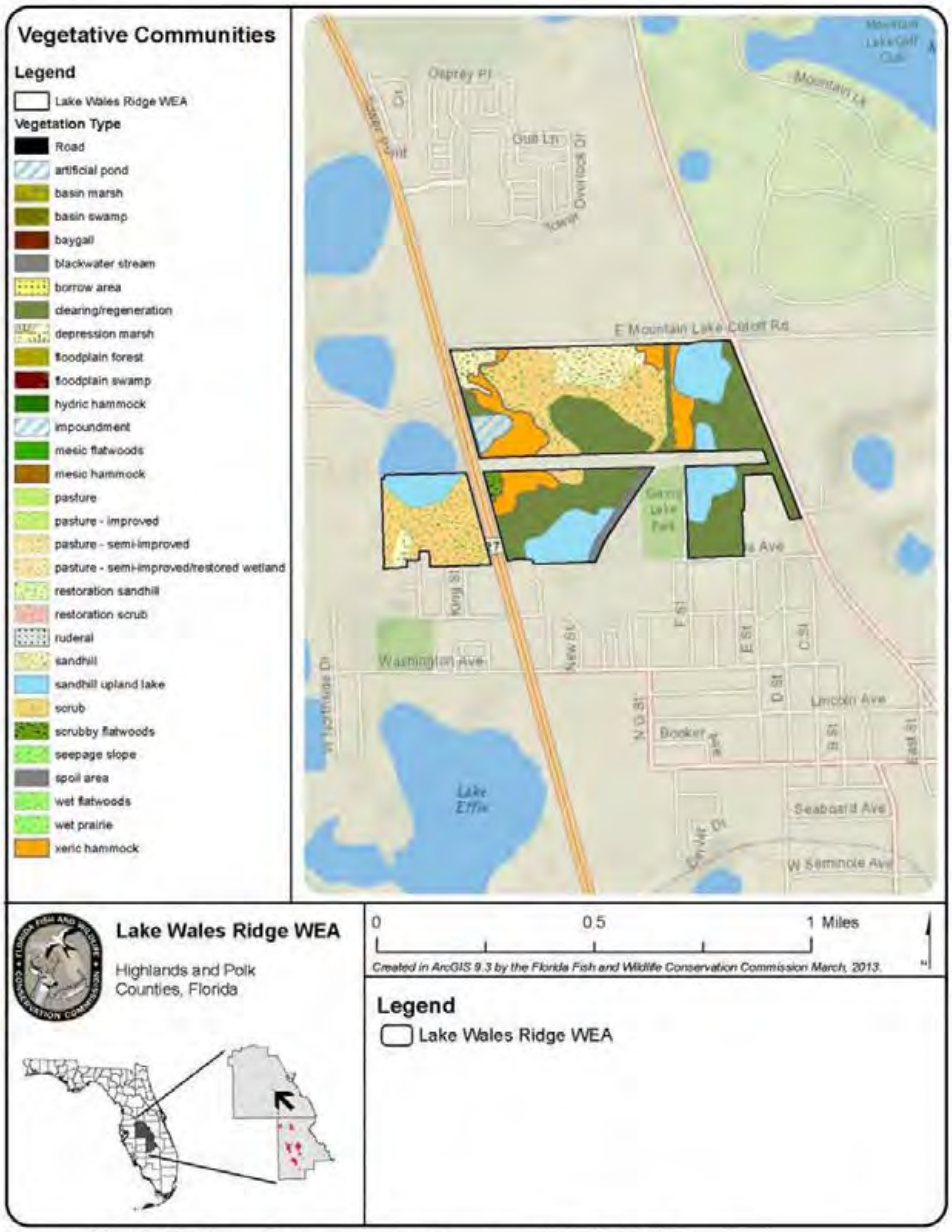

Figure 25. FNAI Natural Communities-Mountain Lake Cut Off Tract

62

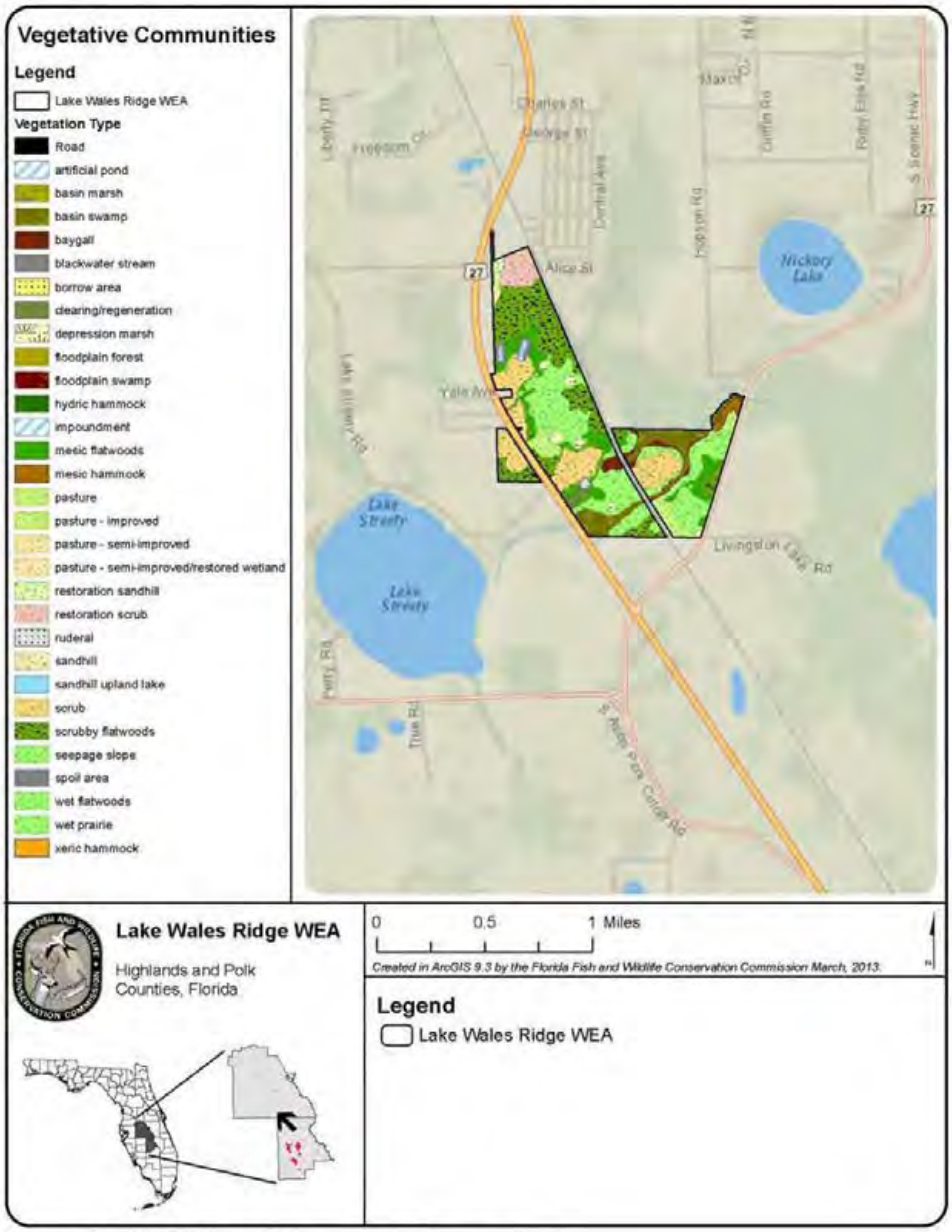

Figure 26. FNAI Natural Communities-Sunray Tract

63

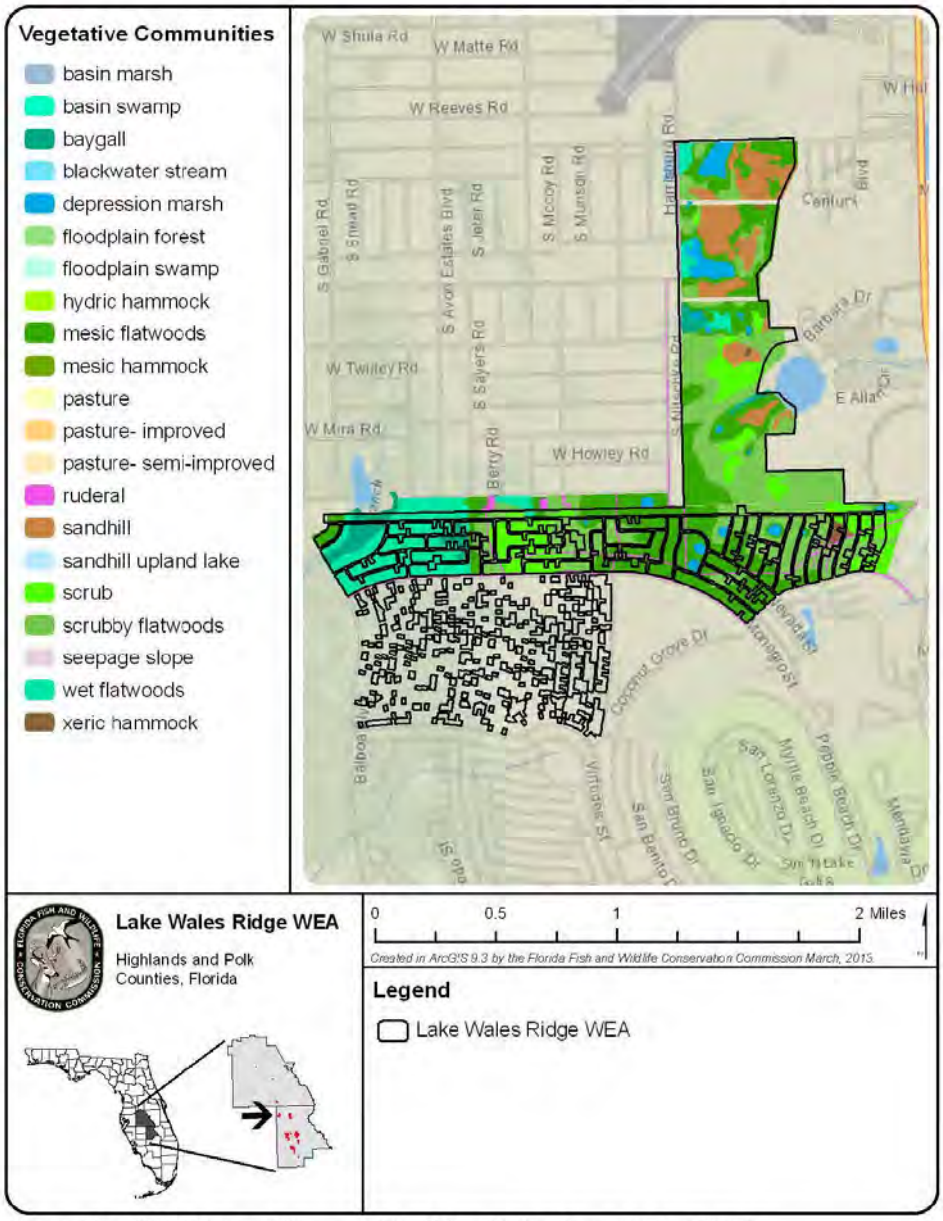

Figure 27. FNAI Natural Communities-Silver Lakes/Sun-n-Lakes Tracts

64

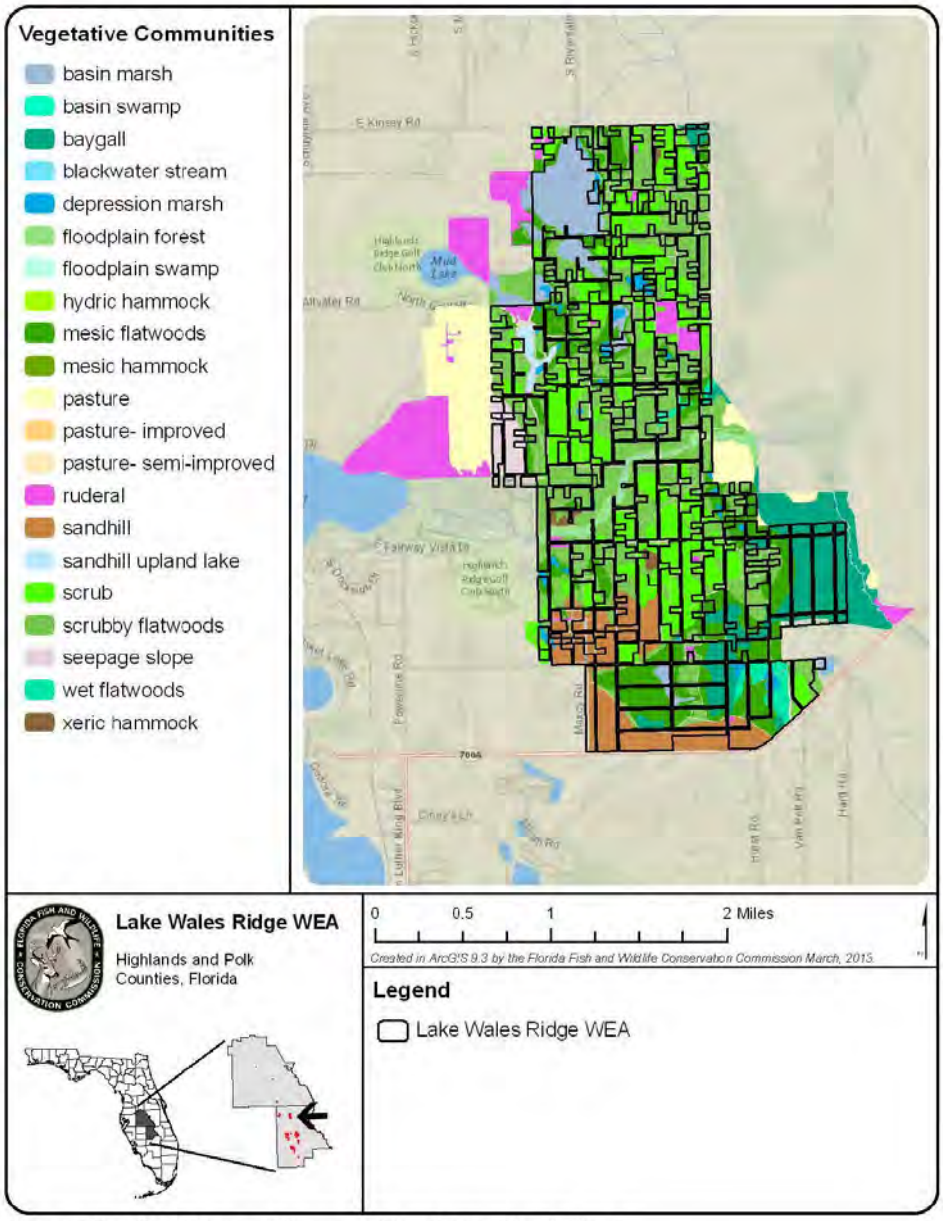

Figure 28. FNAI Natural Communities-Carter Creek Tract

65

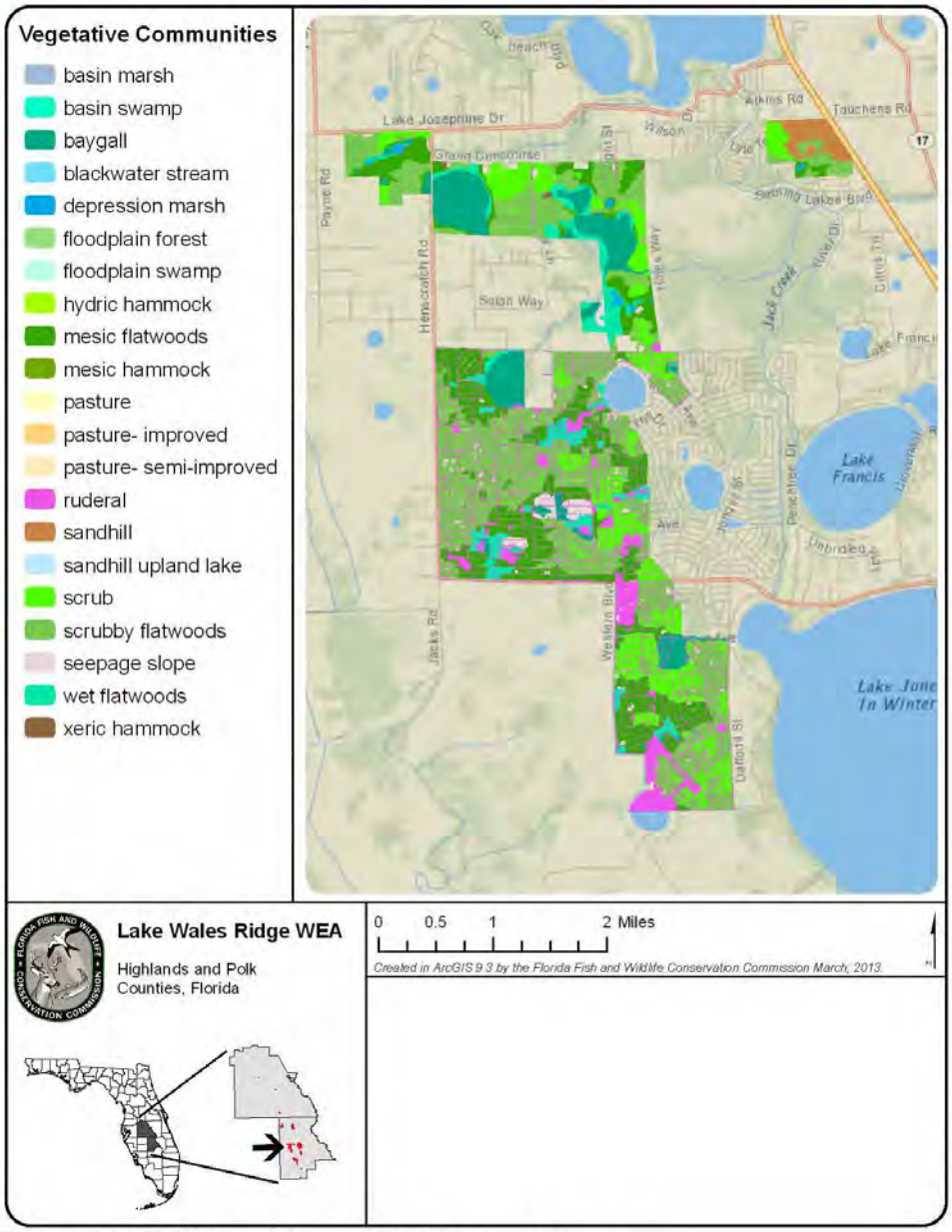

Figure 29. FNAI Natural Communities-Henscratch Tracts

66

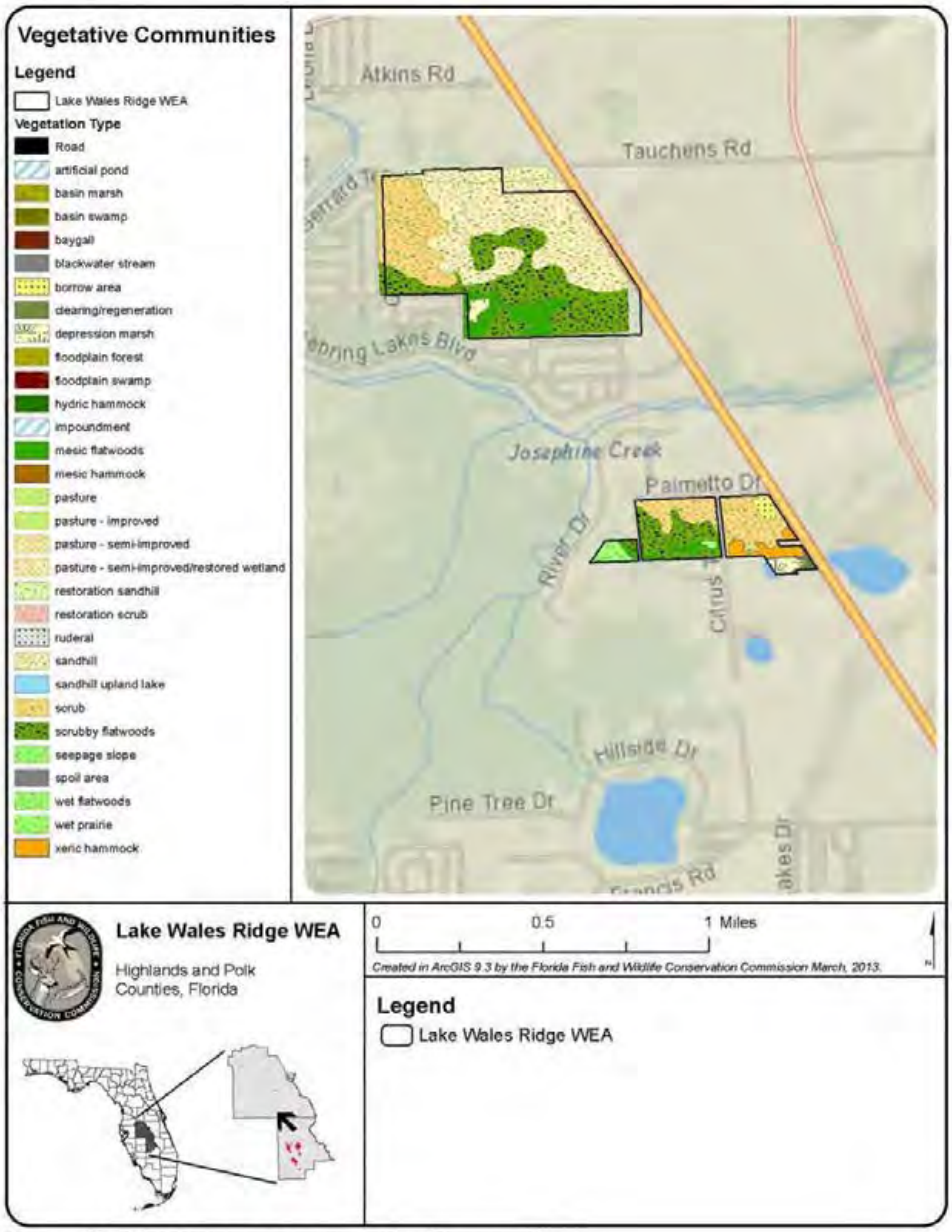

Figure 30. FNAI Natural Communities-Messana Tract

67

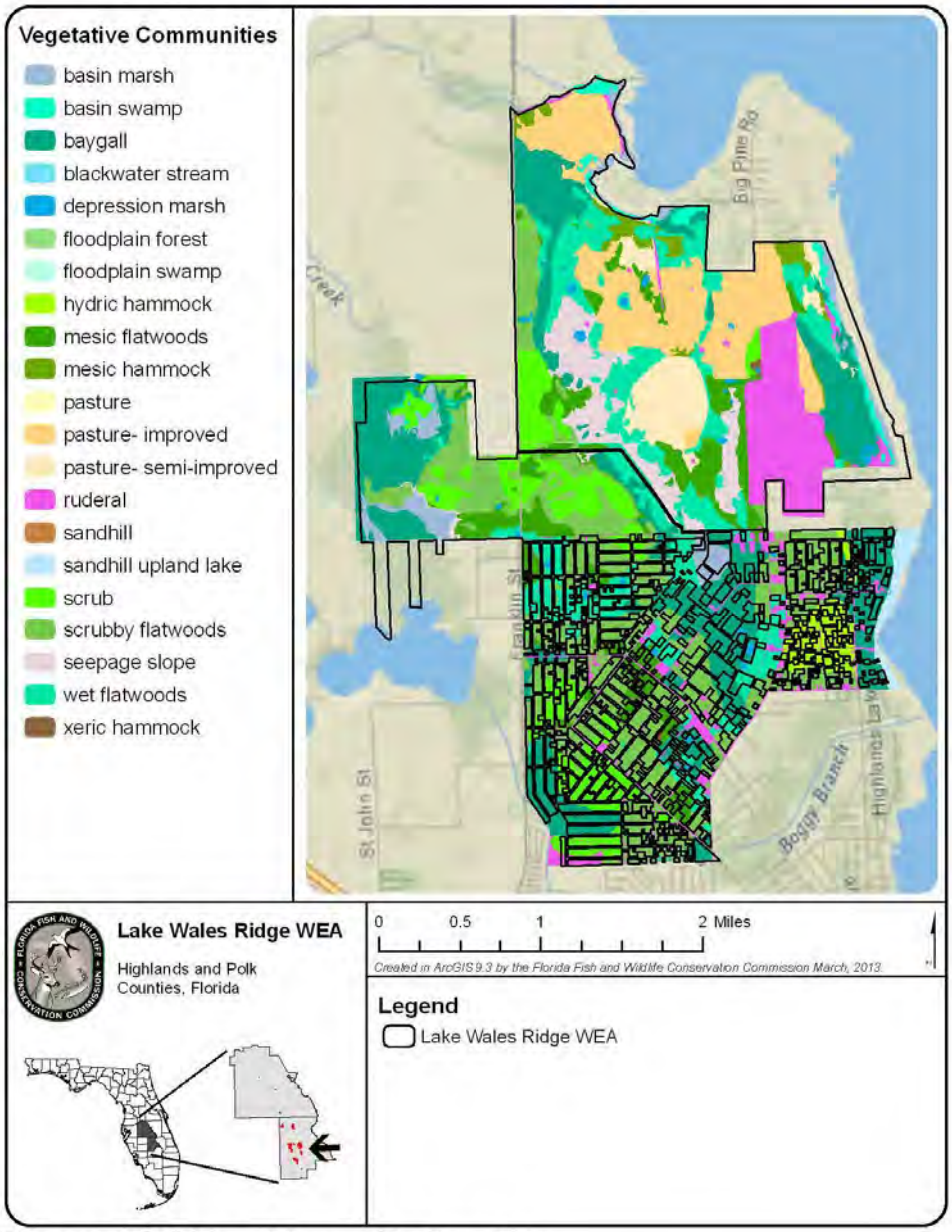

Figure 31. FNAI Natural Communities-Royce Unit

68

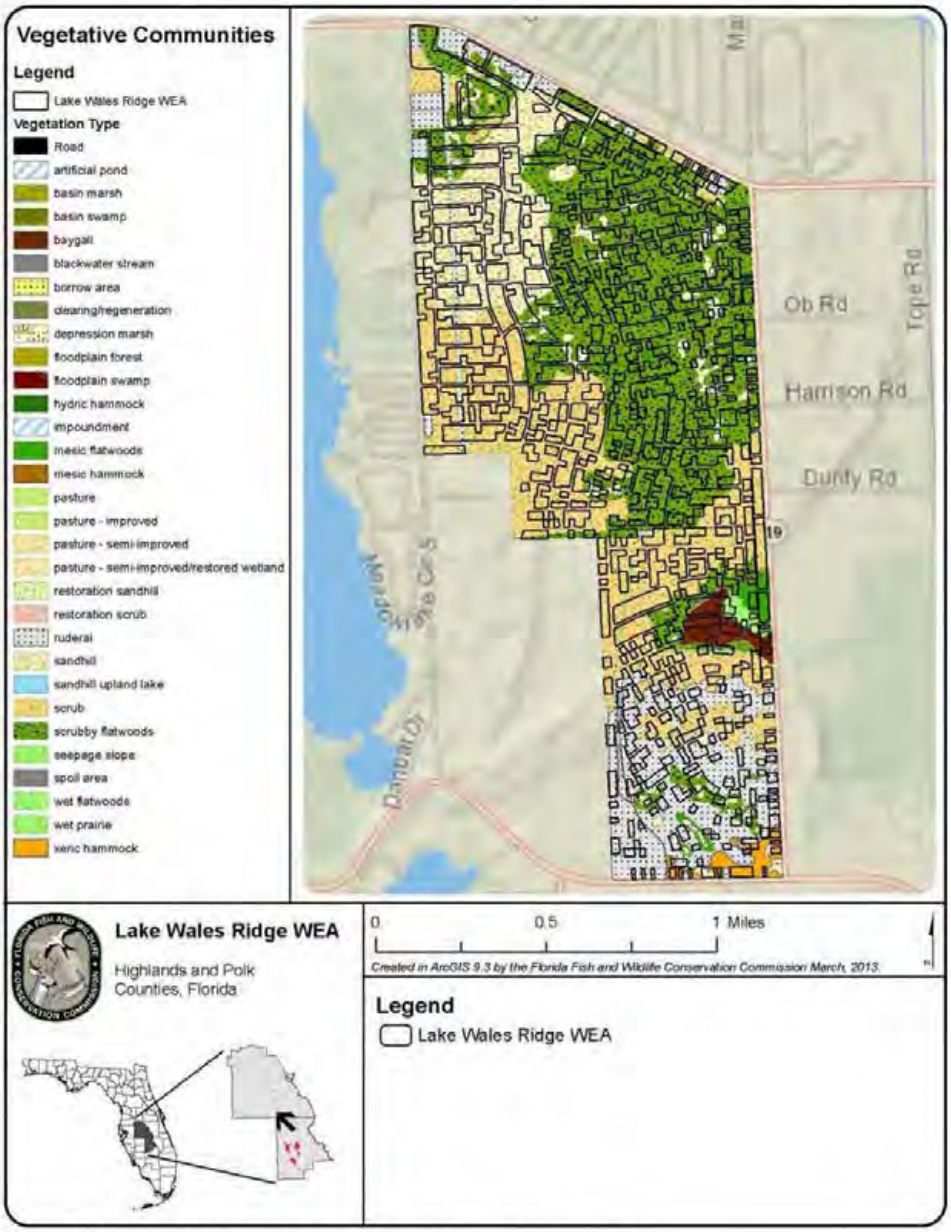

Figure 32. FNAI Natural Communities-Holmes Avenue Tract

69

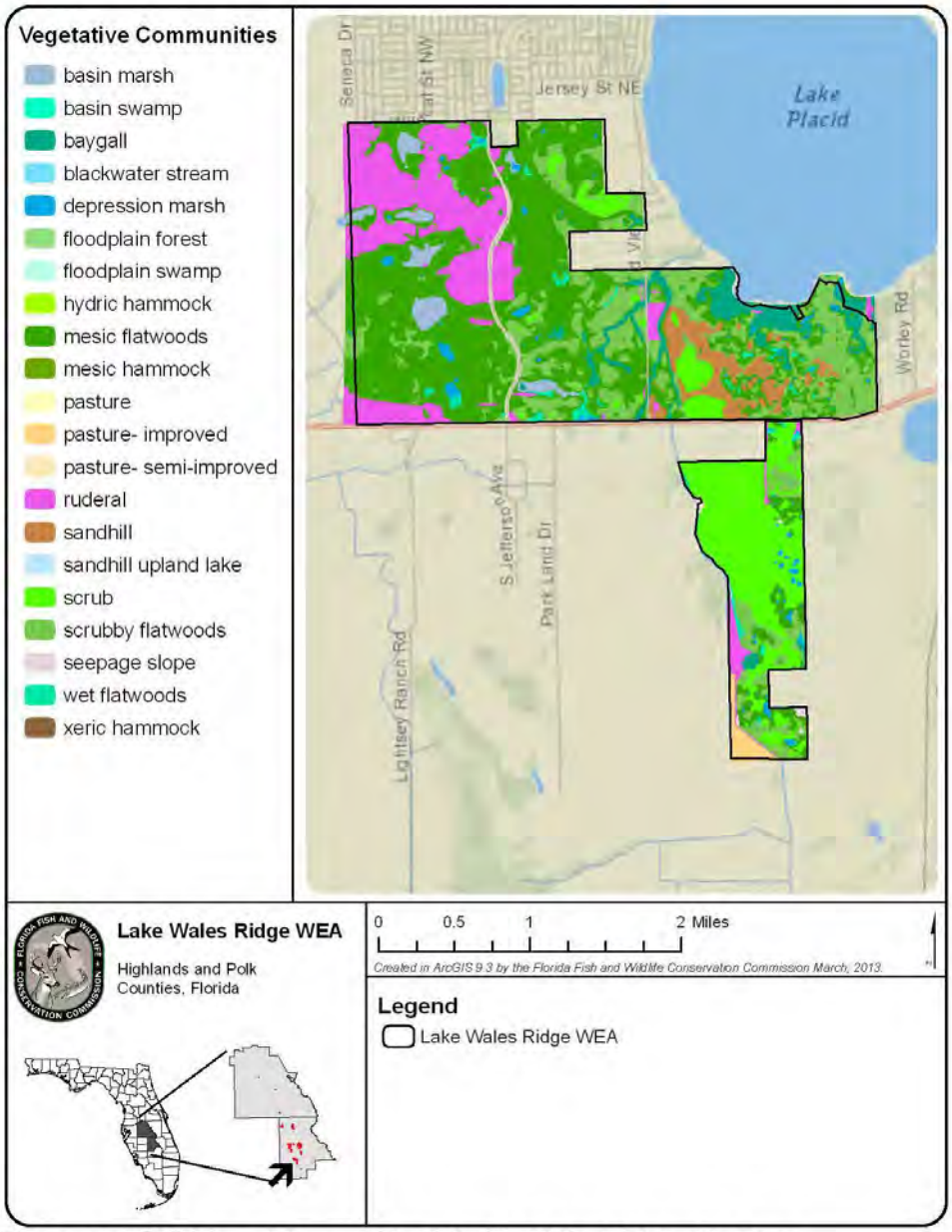

Figure 33. FNAI Natural Communities-Lake Placid Scrub/McJunkin Tracts

70

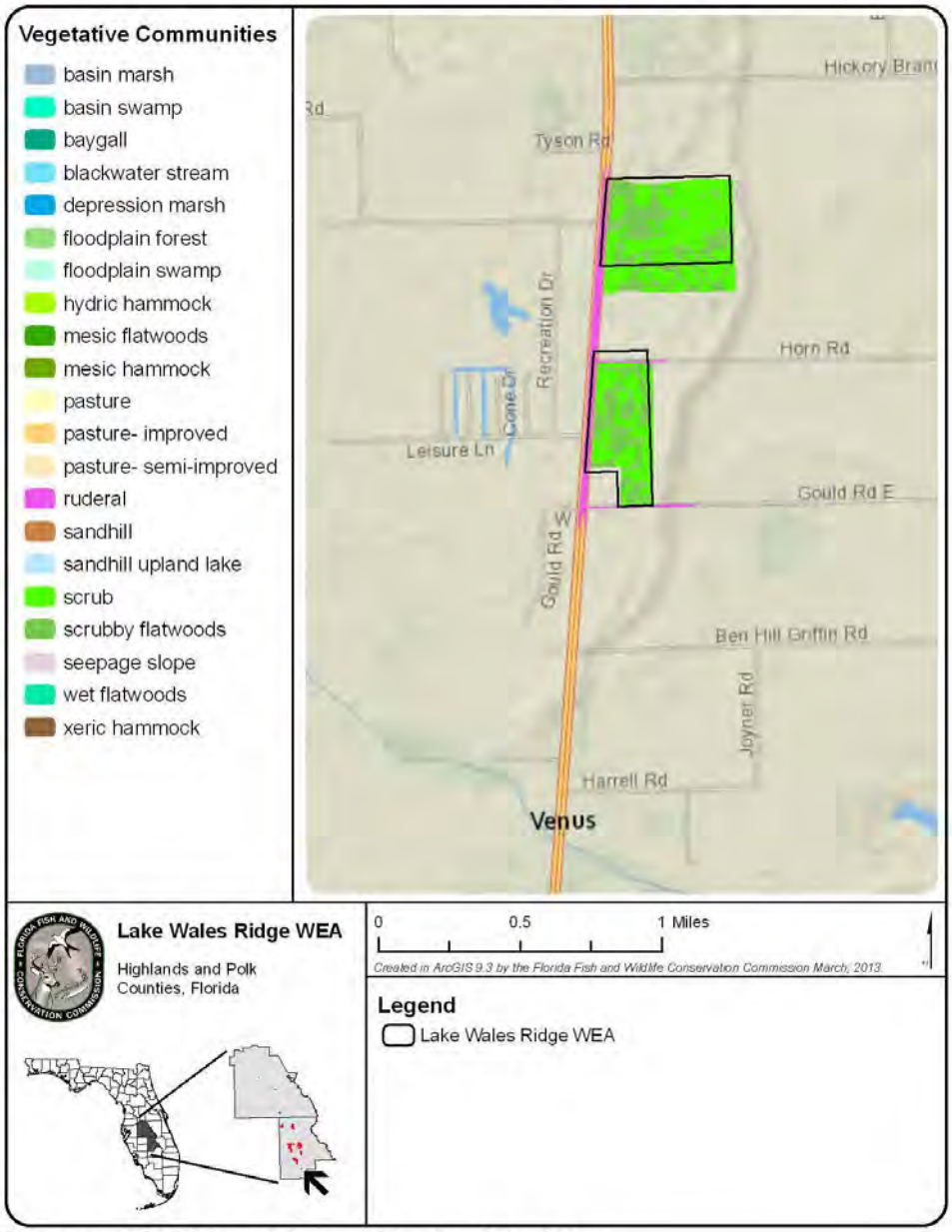

Figure 34. FNAI Natural Communities-Gould Road Tract

71

Figure 35. FWC Wildlife Observations and FNAI Element Occurrences-Lake Blue Tract

72

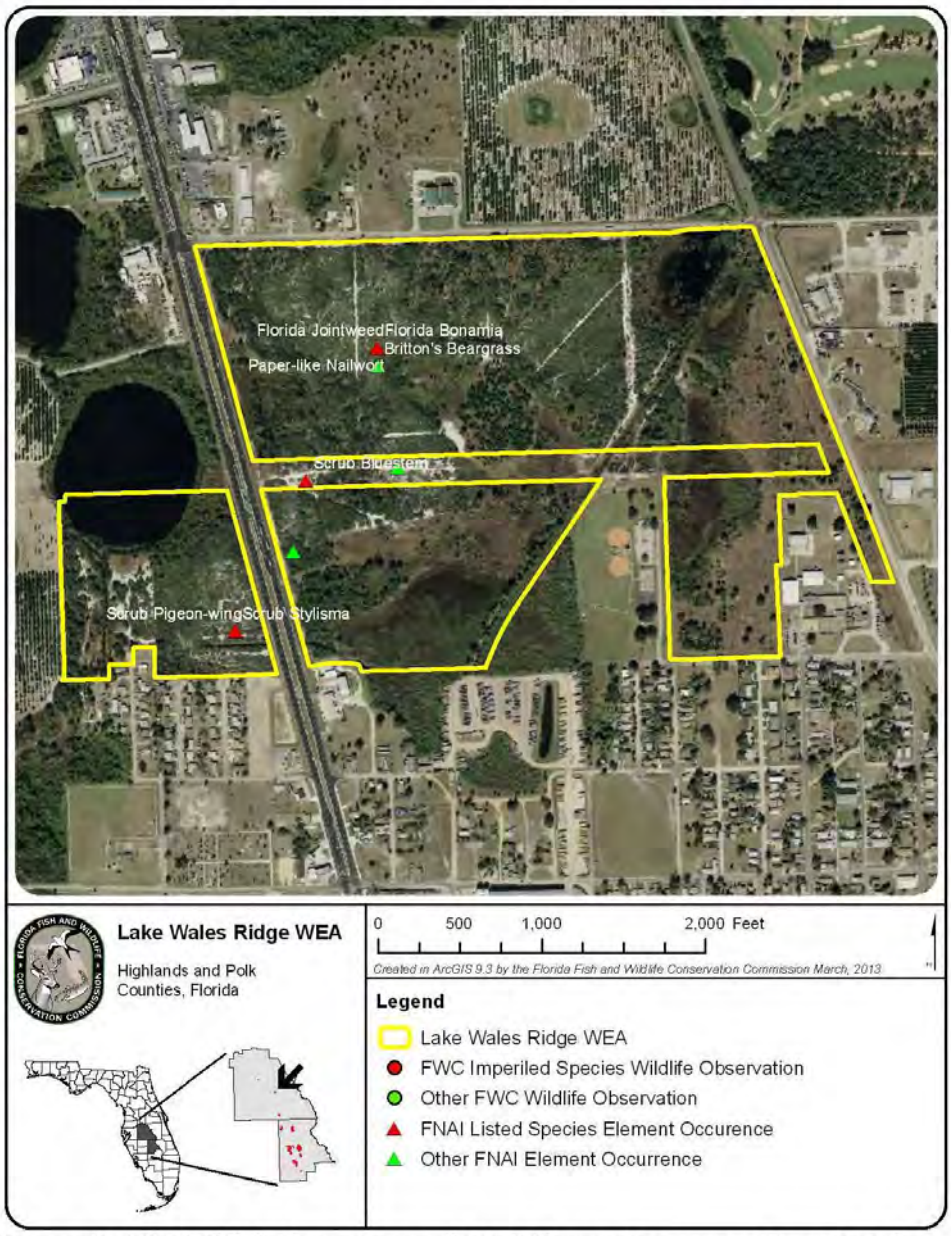

Figure 36. FWC Wildlife Observations and FNAI Element Occurrences-Mountain Lake Cut Off Tract

73

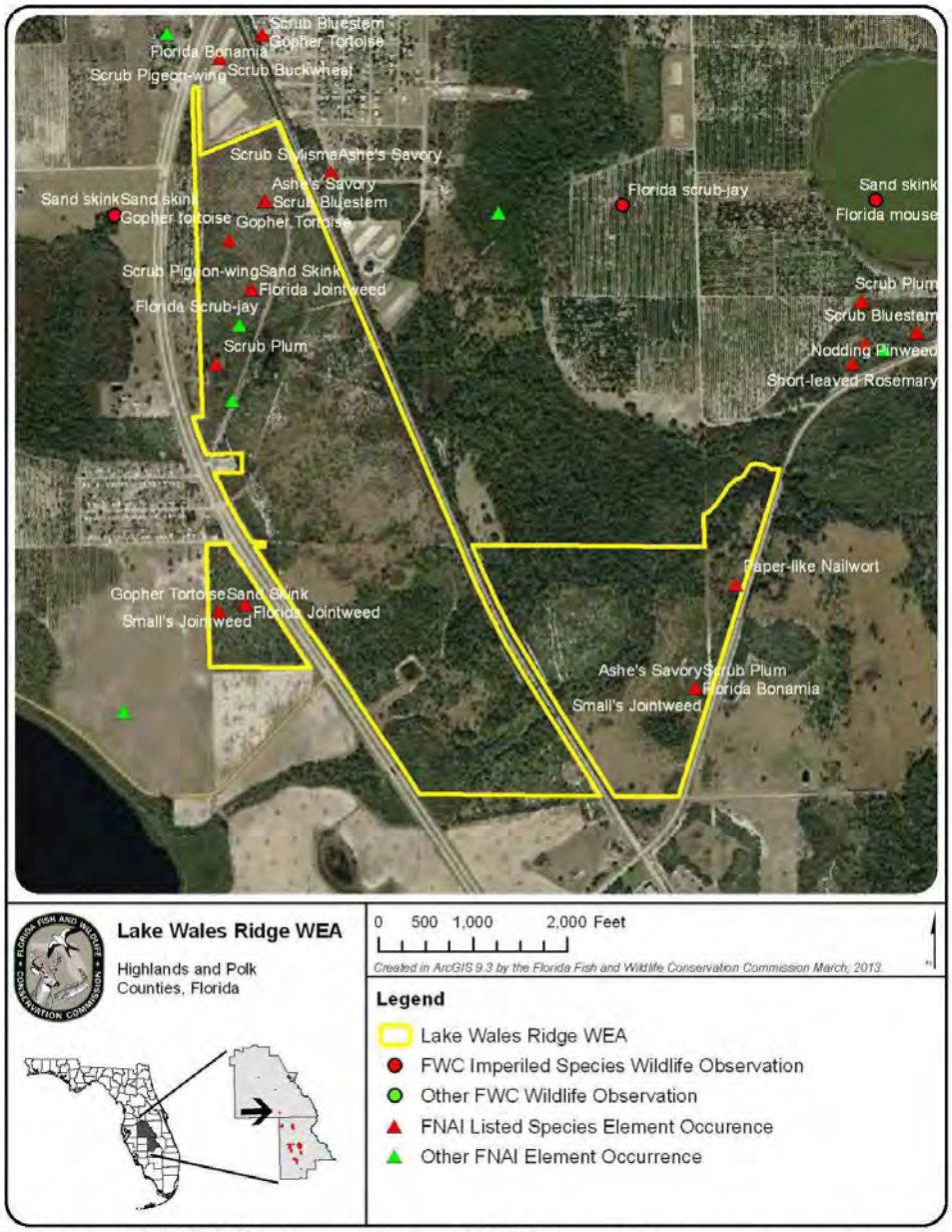

Figure 37. FWC Wildlife Observations and FNAI Element Occurrences-Sunray Tract

74

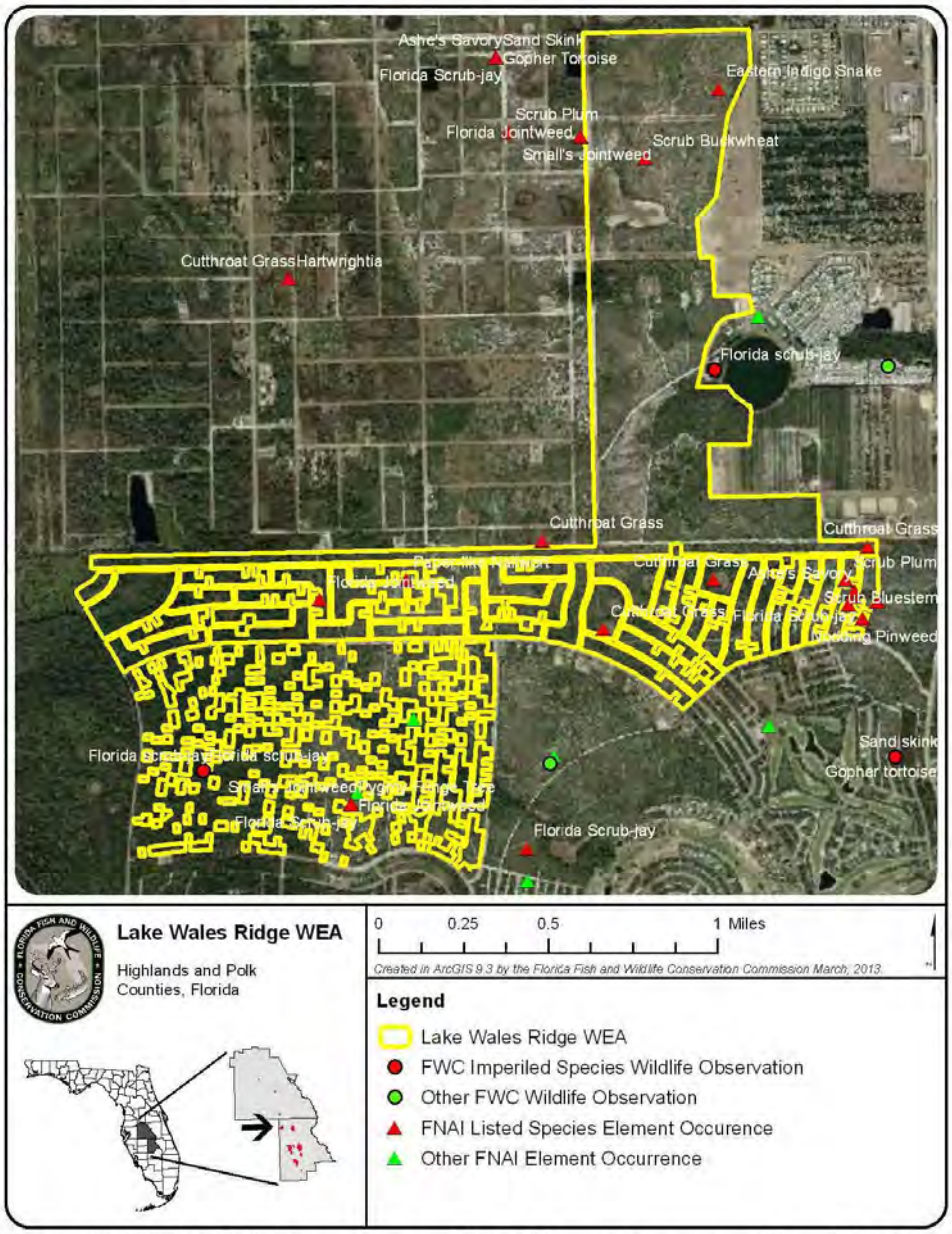

Figure 38. FWC Wildlife Observations and FNAI Element Occurrences-Silver Lakes/Sun-n-Lakes Tracts

75

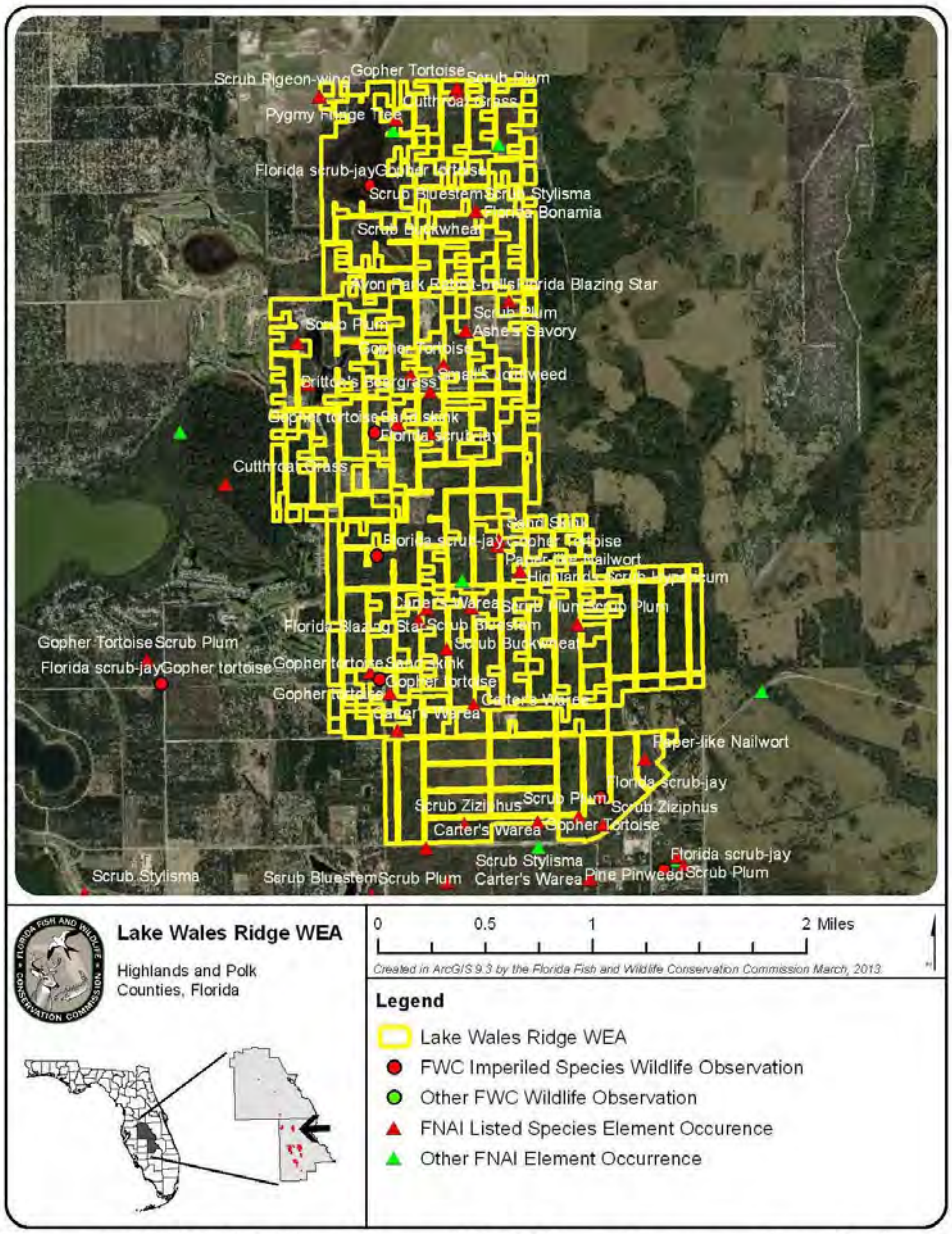

Figure 39. FWC Wildlife Observations and FNAI Element Occurrences-Carter Creek Tract

76

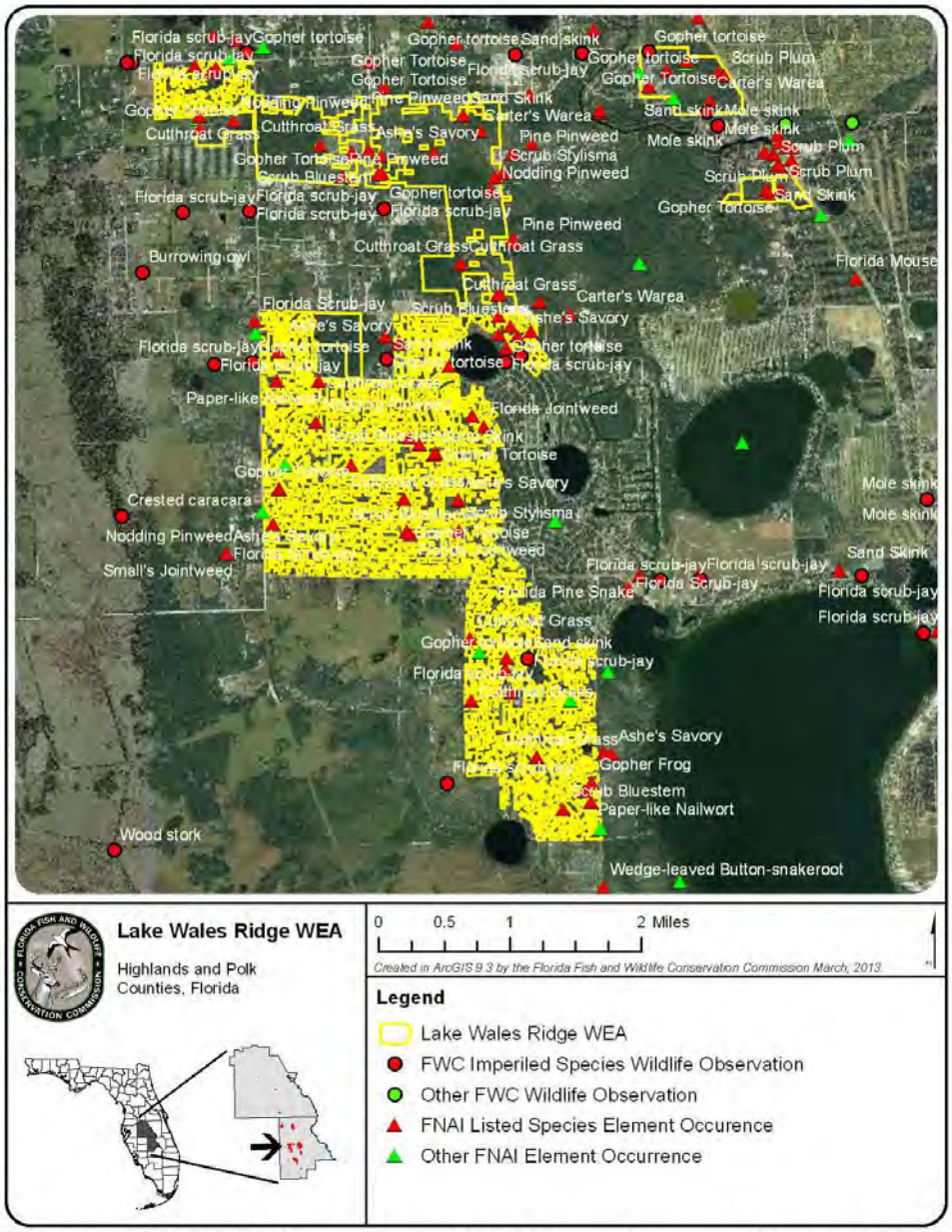

Figure 41. FWC Wildlife Observations and FNAI Element Occurrences-Henscratch Tracts

77

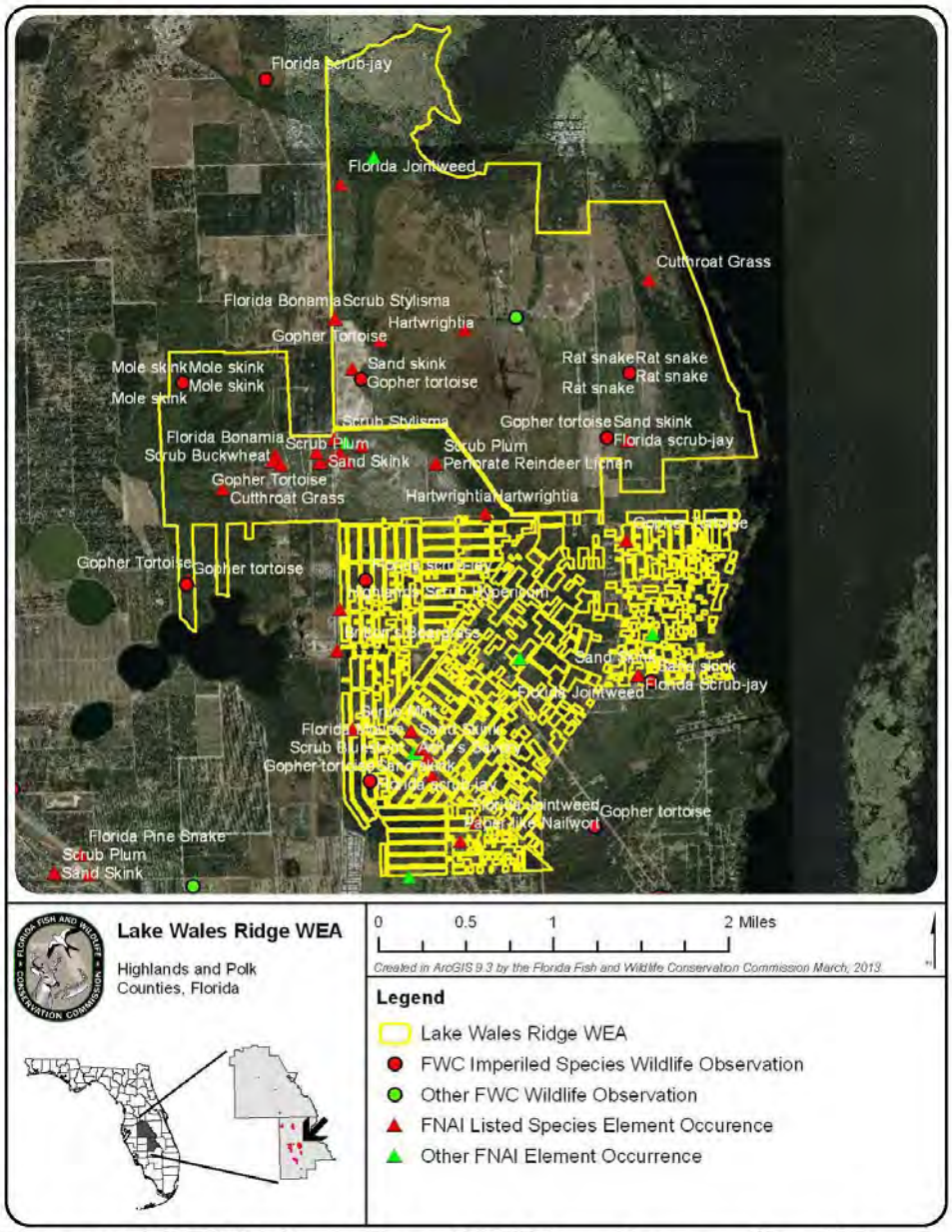

Figure 42. FWC Wildlife Observations and FNAI Element Occurrences-Royce Unit

78

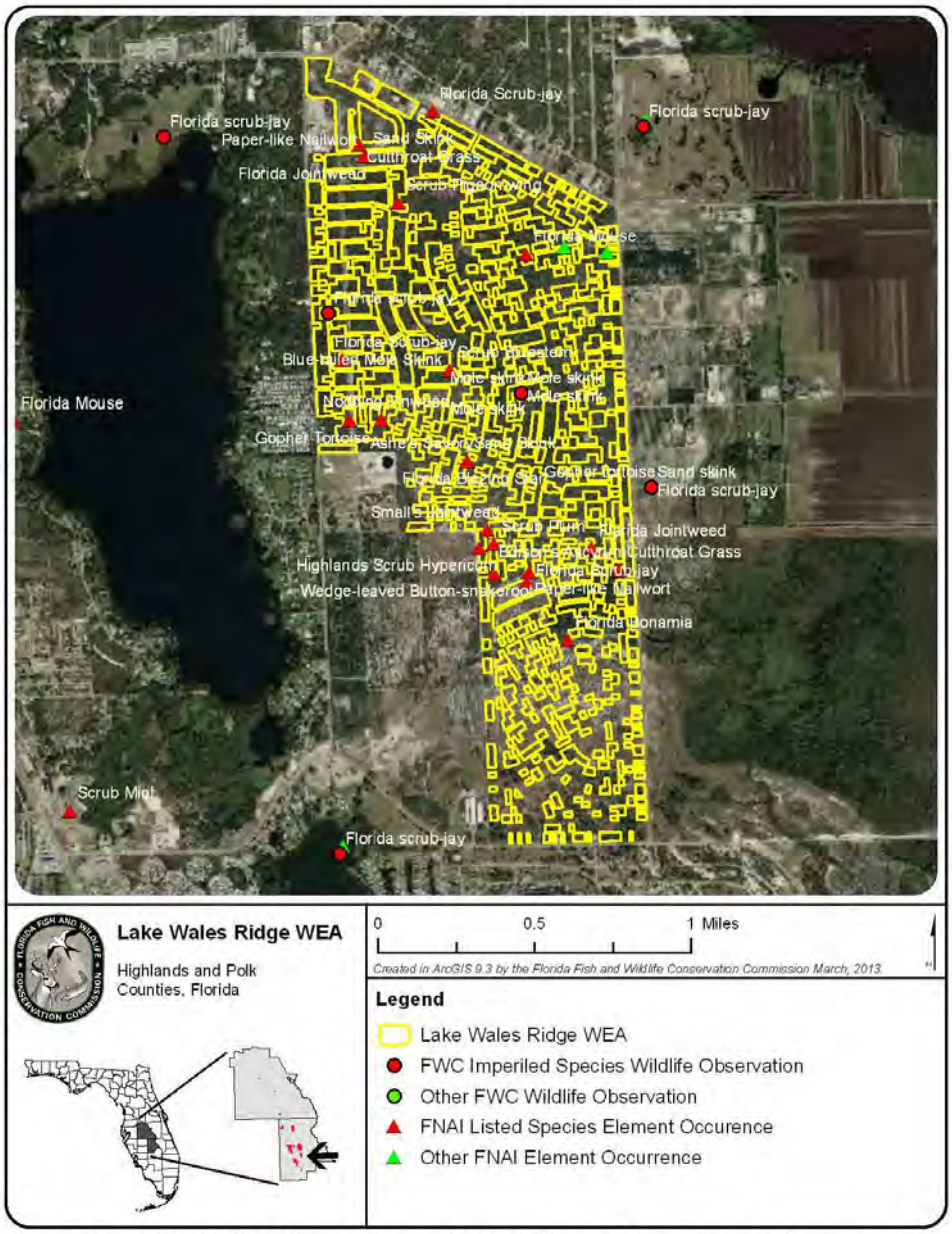

Figure 43. FWC Wildlife Observations and FNAI Element Occurrences-Holmes Avenue Tract

79

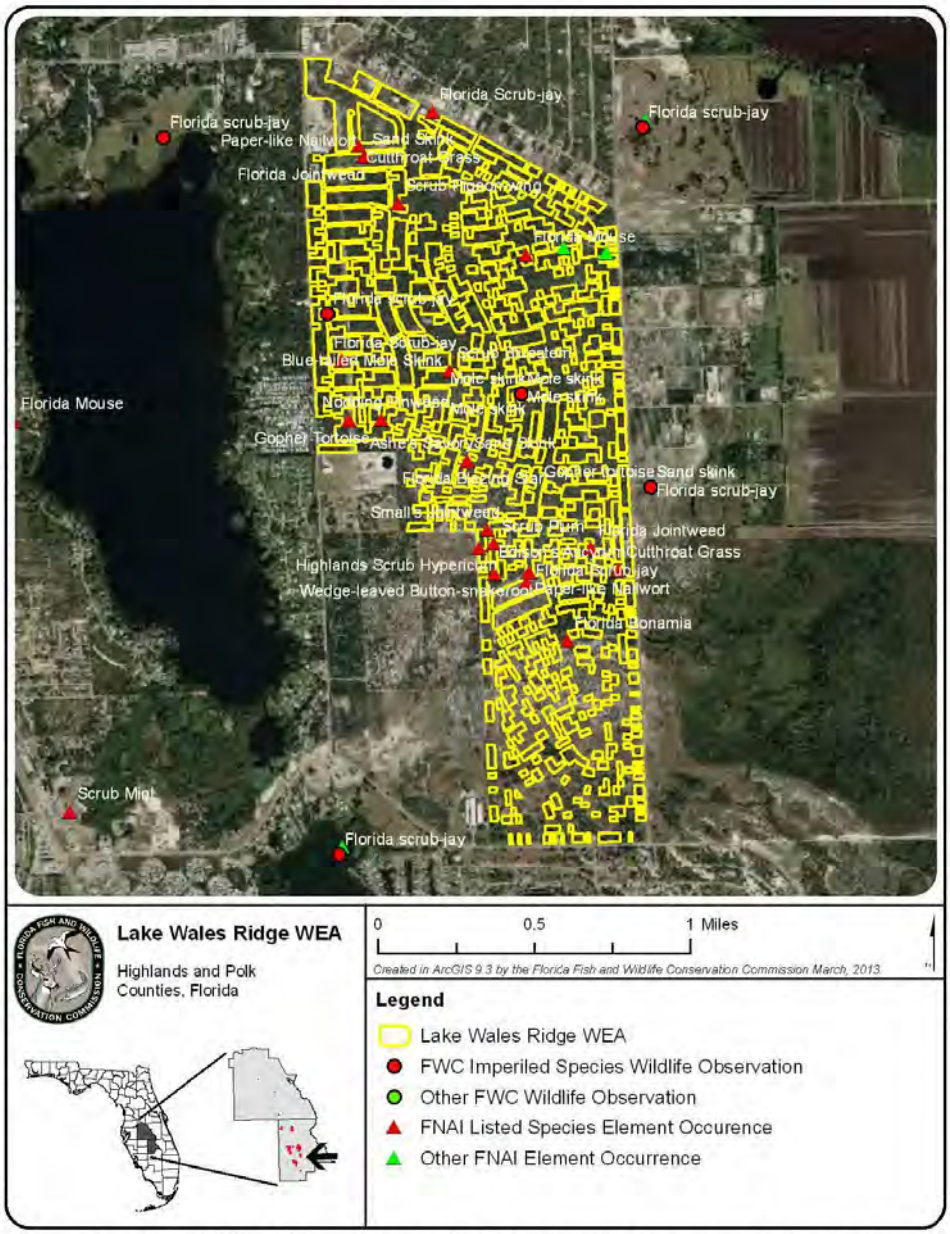

Figure 44. FWC Wildlife Observations and FNAI Element Occurrences-Lake Placid Scrub/McJunkin Tracts

80

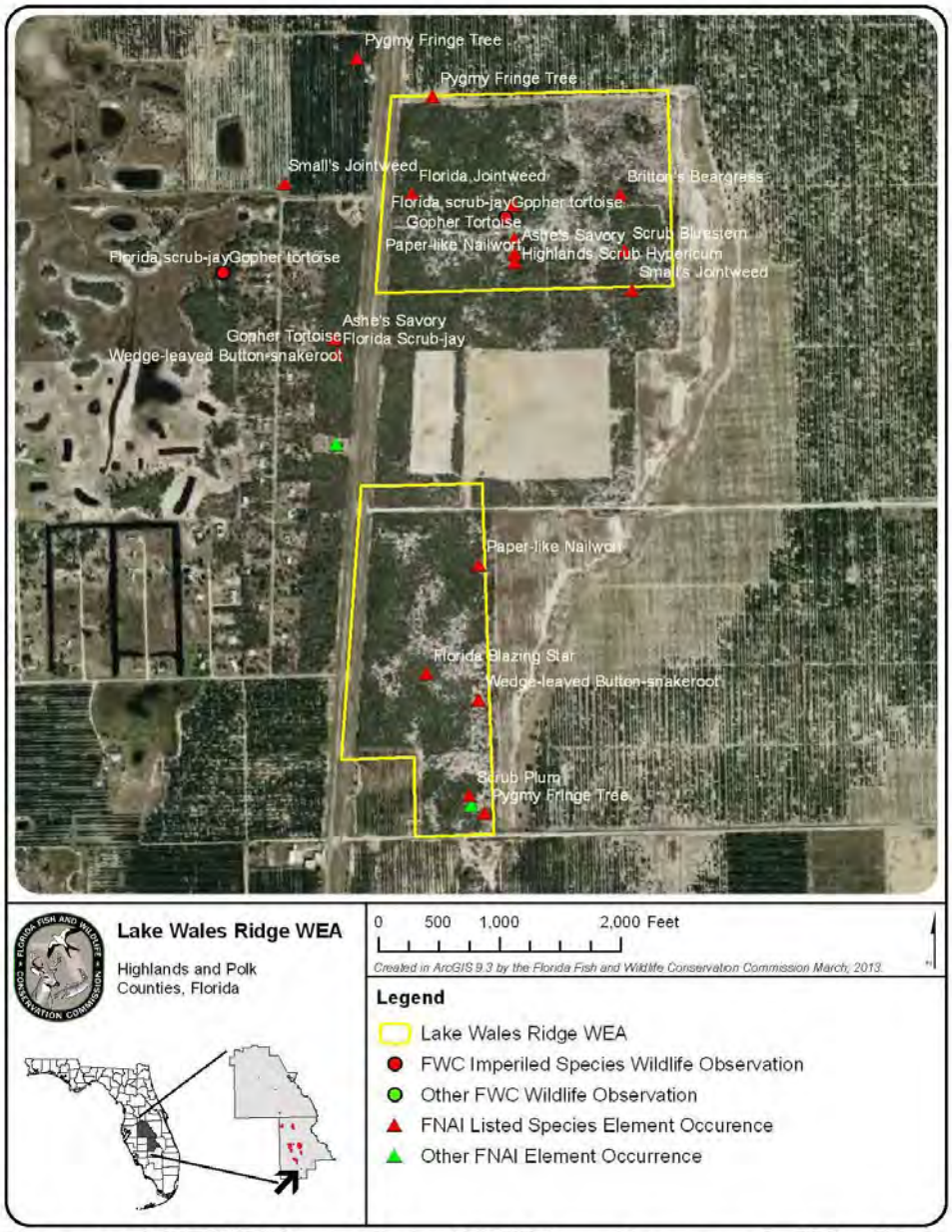

Figure 45. FWC Wildlife Observations and FNAI Element Occurrences-Gould Road Tract

81

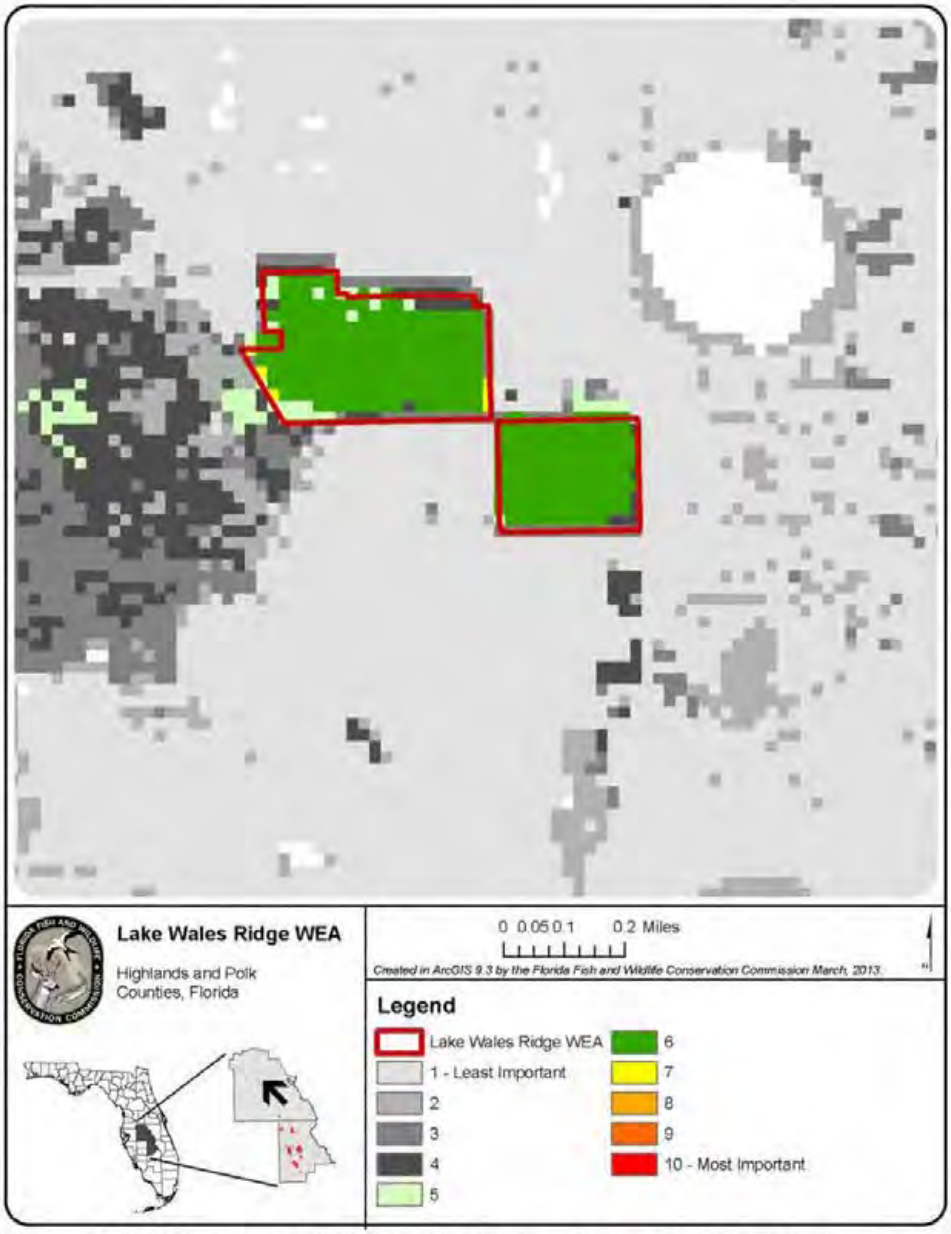

Figure 46. FWC Integrated Wildlife Habitat Ranking System 2009-Lake Blue Tract

82

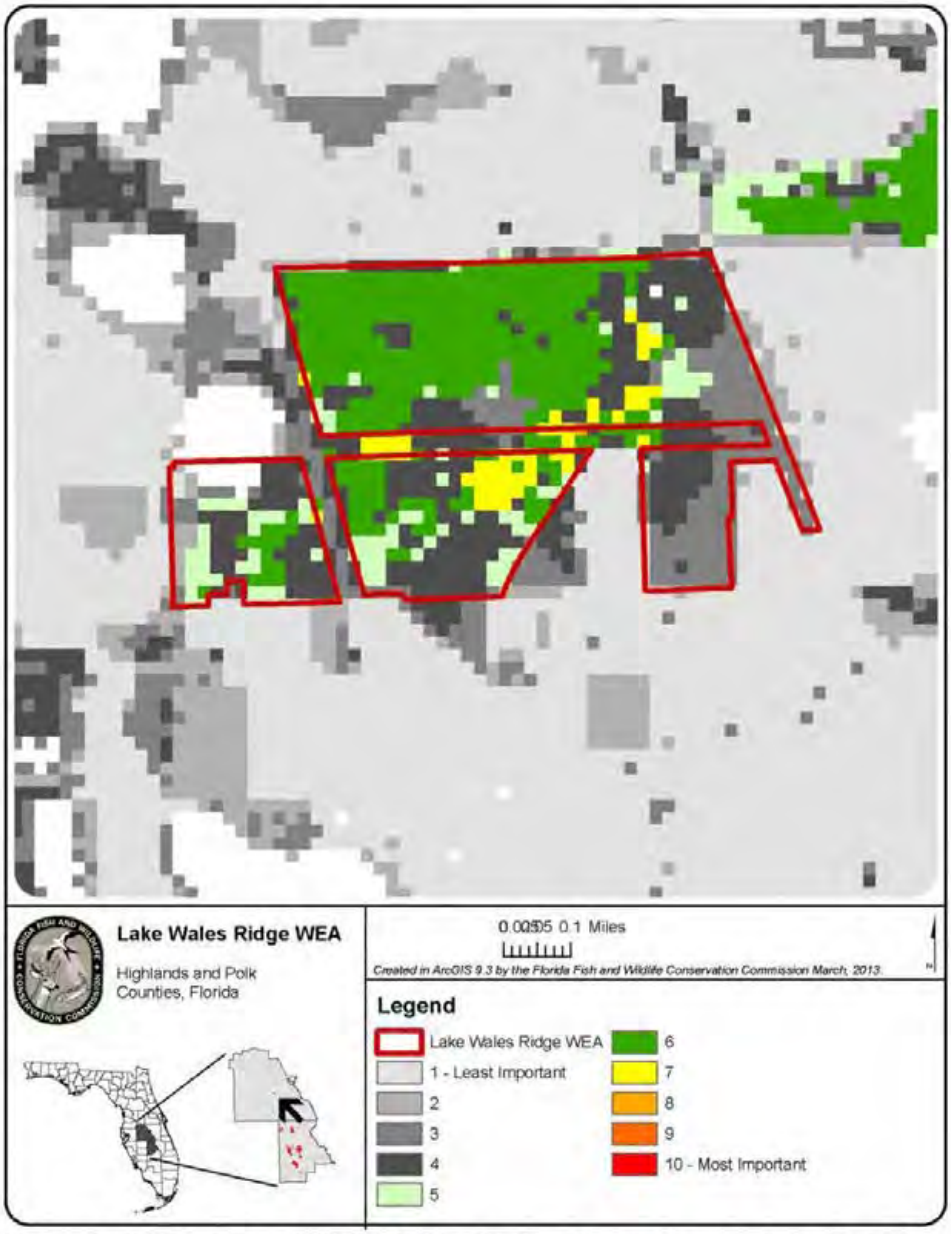

Figure 47. FWC Integrated Wildlife Habitat Ranking System-Mountain Lake Cut Off

83

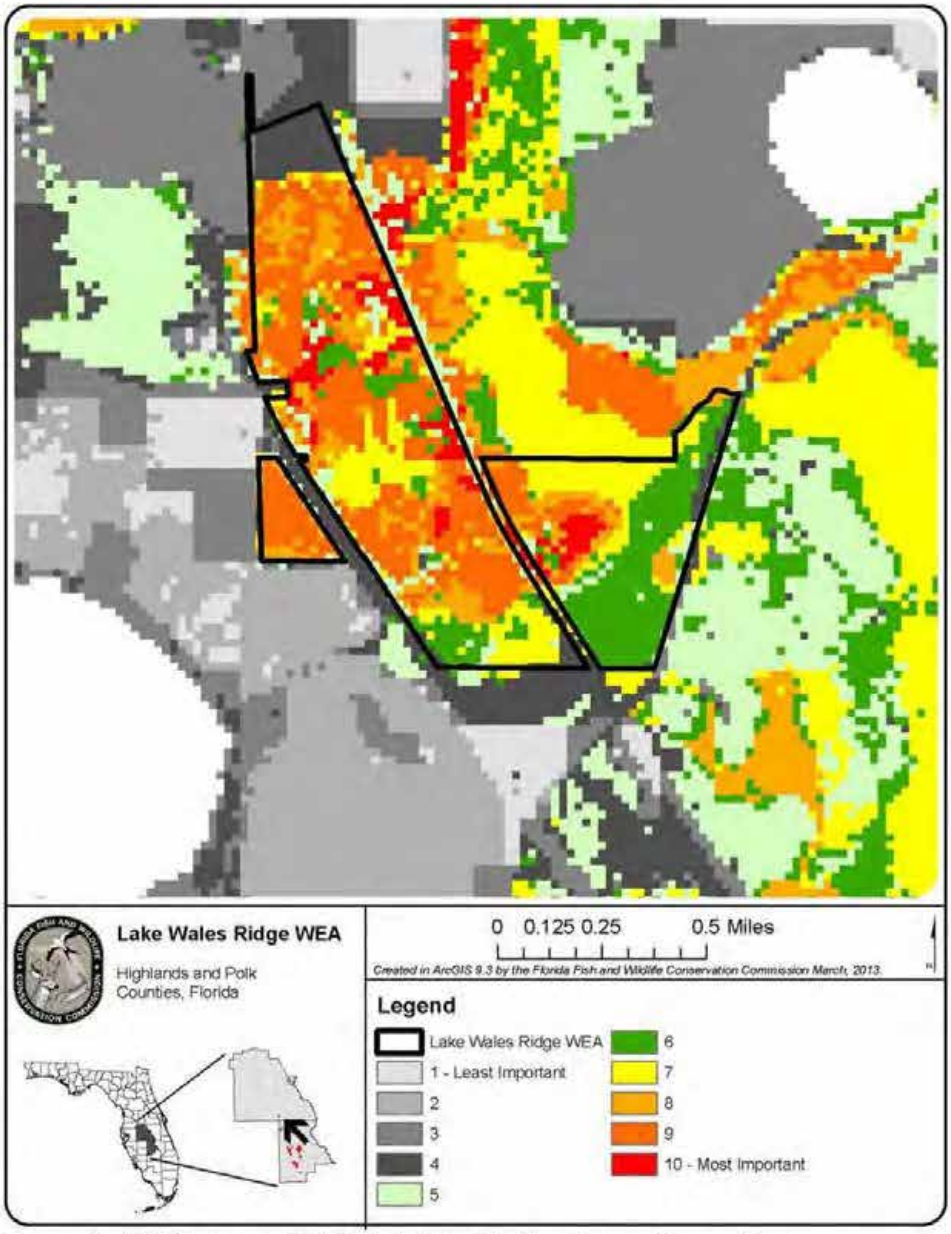

Figure 48. FWC Integrated Wildlife Habitat Ranking System-Sunray Tract

84

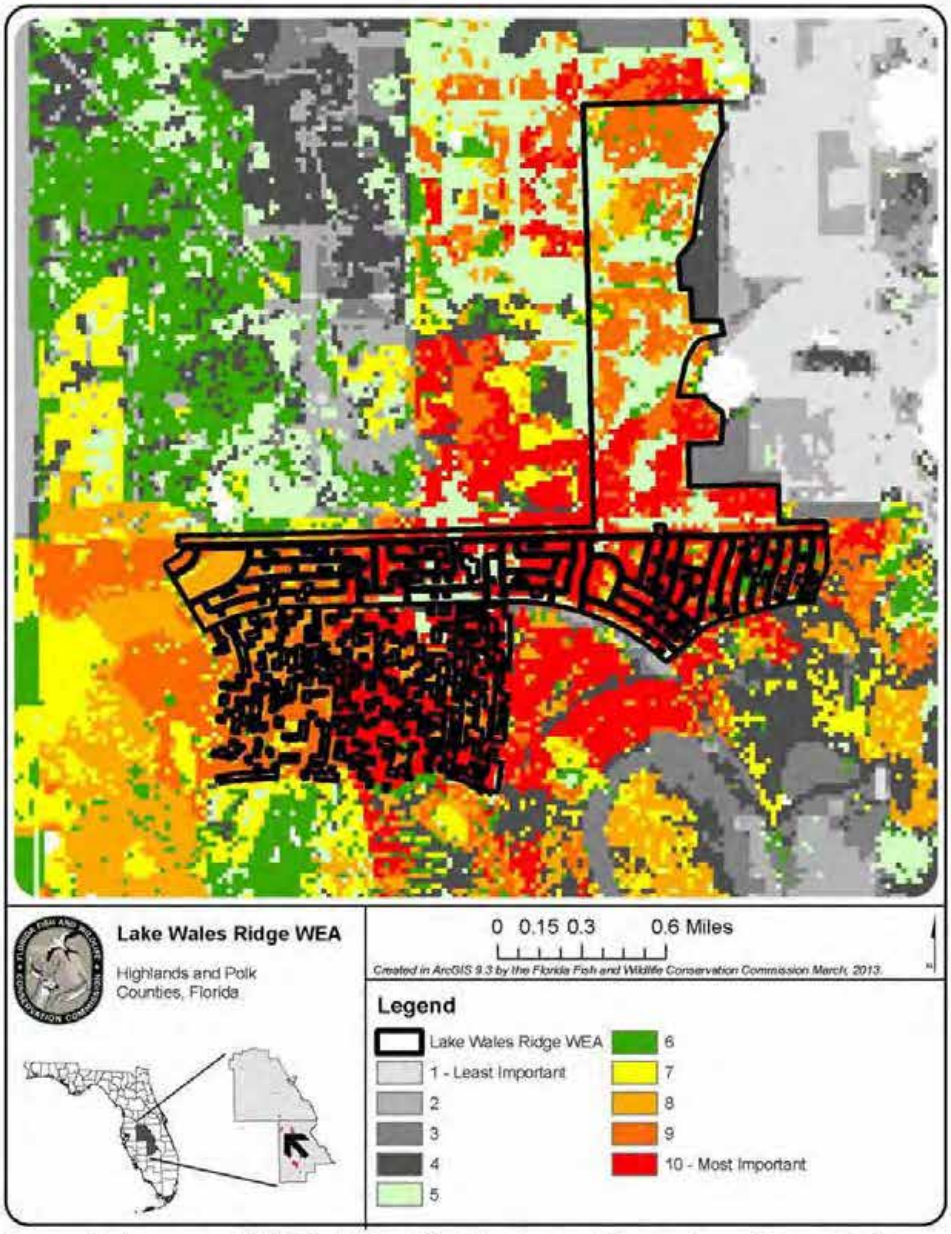

Figure 49. Integrated Wildlife Habitat Ranking System-Silver Lake and Sun-n- Lakes

85

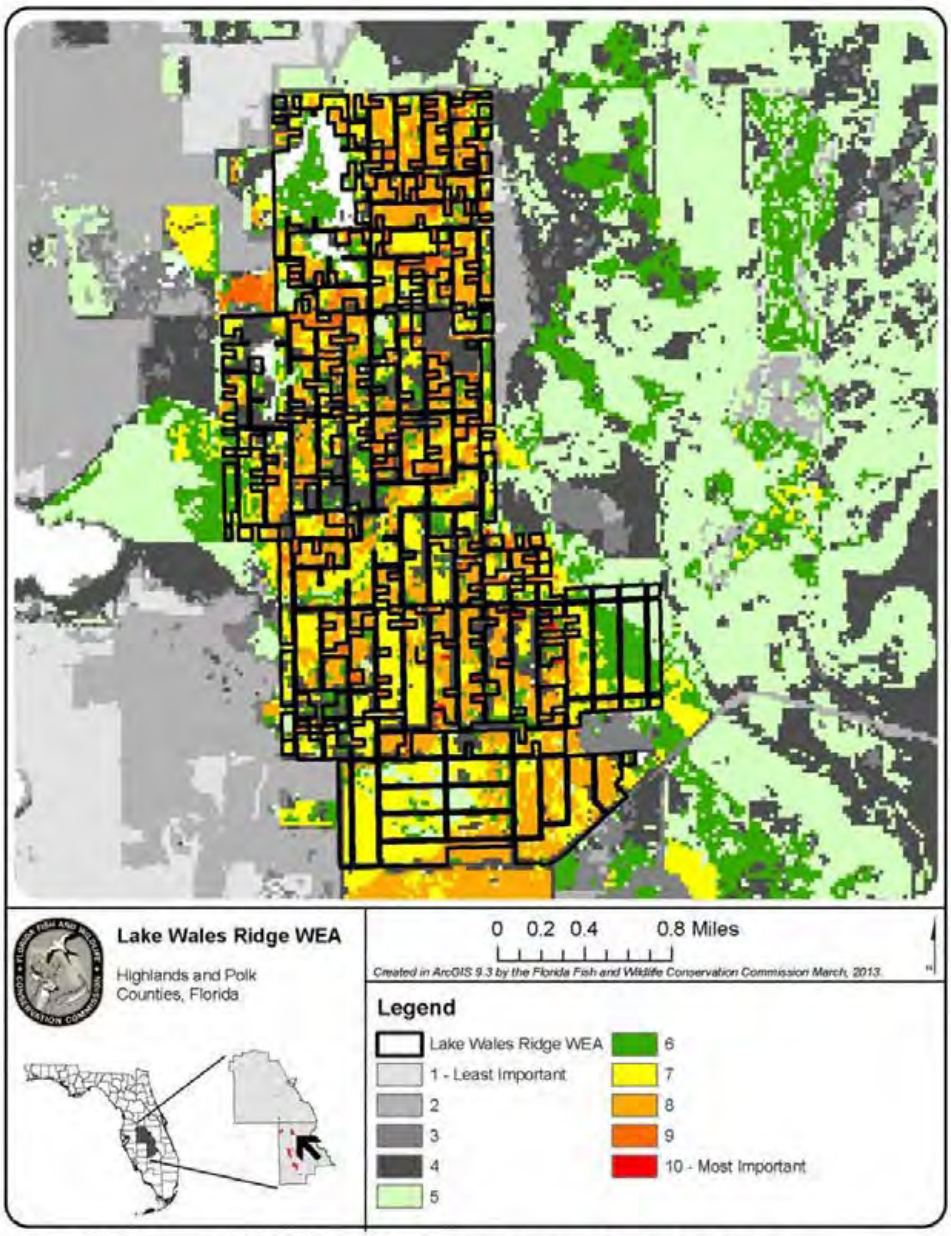

Figure 50. Integrated Wildlife Habitat Ranking System-Carter Creek Tract

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