

ETONIAH CREEK STATE FOREST

LAND MANAGEMENT PLAN

APRIL 2015

EXHIBITS

Exhibit O

Florida Natural Areas Inventory Managed Area Tracking Record



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June 5, 2014

Jennifer Reed
FL Dept of Agriculture & Consumer Services
Florida Forest Service
Conner Bldg., 3125 Conner Boulevard
Tallahassee, FL 32399-1650

Dear Ms. Reed,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). We have compiled the following information for your project area.

Project: Etoniah Creek State Forest
Date Received: 5/29/2014
Location: Putnam County

Based on the information available, this site appears to be located on or very near a significant region of scrub habitat, a natural community in decline that provides important habitat for several rare species within a small area. Additional consideration should be given to avoid and/or mitigate impacts to these natural resources, and to design land uses that are compatible with these resources.

FNAI Element Occurrences

A search of our maps and database indicates that we currently have several element occurrences mapped in the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

Federally Listed Species

Our data include records of federally listed species, particularly *Aphelocoma coerulescens*, *Conradina etonia*, and *Drymarchon couperi*, on or very near this site (see enclosed map and tables for details). This statement should not be interpreted as a legal determination of presence or absence of federally listed species on a property.

The FNAI Element Occurrences data layer includes rigorously documented occurrences of rare species and natural communities. For animals and plants, element occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrence labels indicate the general vicinity of the occurrence. This may be due to lack of precision of the source data, or an element that covers an extended area (such as a wide-ranging species or large natural community). Note that some element occurrences represent historically documented observations which may no longer be extant. Extirpated element occurrences will be marked with an 'X' following the occurrence label on the enclosed map.

*Several of the species and natural communities tracked by the Inventory are considered **data sensitive**. Occurrence records for these elements contain information that we consider sensitive due to collection pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence*



Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

Tracking Florida's Biodiversity

Record has been labeled "Data Sensitive." We request that you not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.

Biodiversity Matrix

In addition to element occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models. The Biodiversity Matrix Report compiles several data sources – including Element Occurrences, occurrence-based species habitat models, predictive range models, and natural community maps – to provide a broader list of documented, likely, and potential species on or near the site. These species could be taken into consideration in field surveys, land management, and land use decisions. Note that the Biodiversity Matrix Report lists species and communities by square-mile Matrix Unit, rather than by the site of interest, so the Documented list may vary from the Element Occurrence Table supplied with this report. Also, note that this list aggregates results from all matrix units that overlap the site, so the location of the elements are somewhat obscured.

FNAI occurrence-based habitat models indicate areas, which based on land cover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the rarest species tracked by the Inventory, including all federally listed species.

FNAI species predictive range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.

The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

Land Acquisition Projects

This site appears to be located within the Etoniah/Cross Florida Greenway Florida Forever BOT Project, which is part of the State of Florida's Conservation and Recreation Lands land acquisition program. A description of this project is enclosed. For more information on this Florida Forever Project, contact the Florida Department of Environmental Protection, Division of State Lands.

Florida Forever Board of Trustees (BOT) projects are proposed and acquired through the Florida Department of Environmental Protection, Division of State Lands. The state has no specific land management authority over these lands until they are purchased.

The Inventory always recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/trackinglist.cfm for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. FNAI data may not be resold for profit.

This report is made available at no charge due to funding from the Florida Department of Environmental Protection, Division of State Lands.

Thank you for your use of FNAI services. If I can be of further assistance, please contact me at (850) 224-8207 or at npasco@fnai.org.

Sincerely,

Nathan Pasco

Nathan Pasco
GIS / Data Services

Encl

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Element Occurrences

- Animals
- Plants
- Communities
- Other
- Data Sensitive
- Point indicates General Vicinity of Element

U.S. Fish & Wildlife Service
 Scrub Jay Survey 1992-96

Conservation Lands

- Federal
- State
- Local
- Private
- State Aquatic Preserves

Land Acquisition Projects

- Florida Forever
- Board of Trustees Projects

- FNAI Rare Species Habitat
- FNAI Biodiversity Matrix Square Mile Units

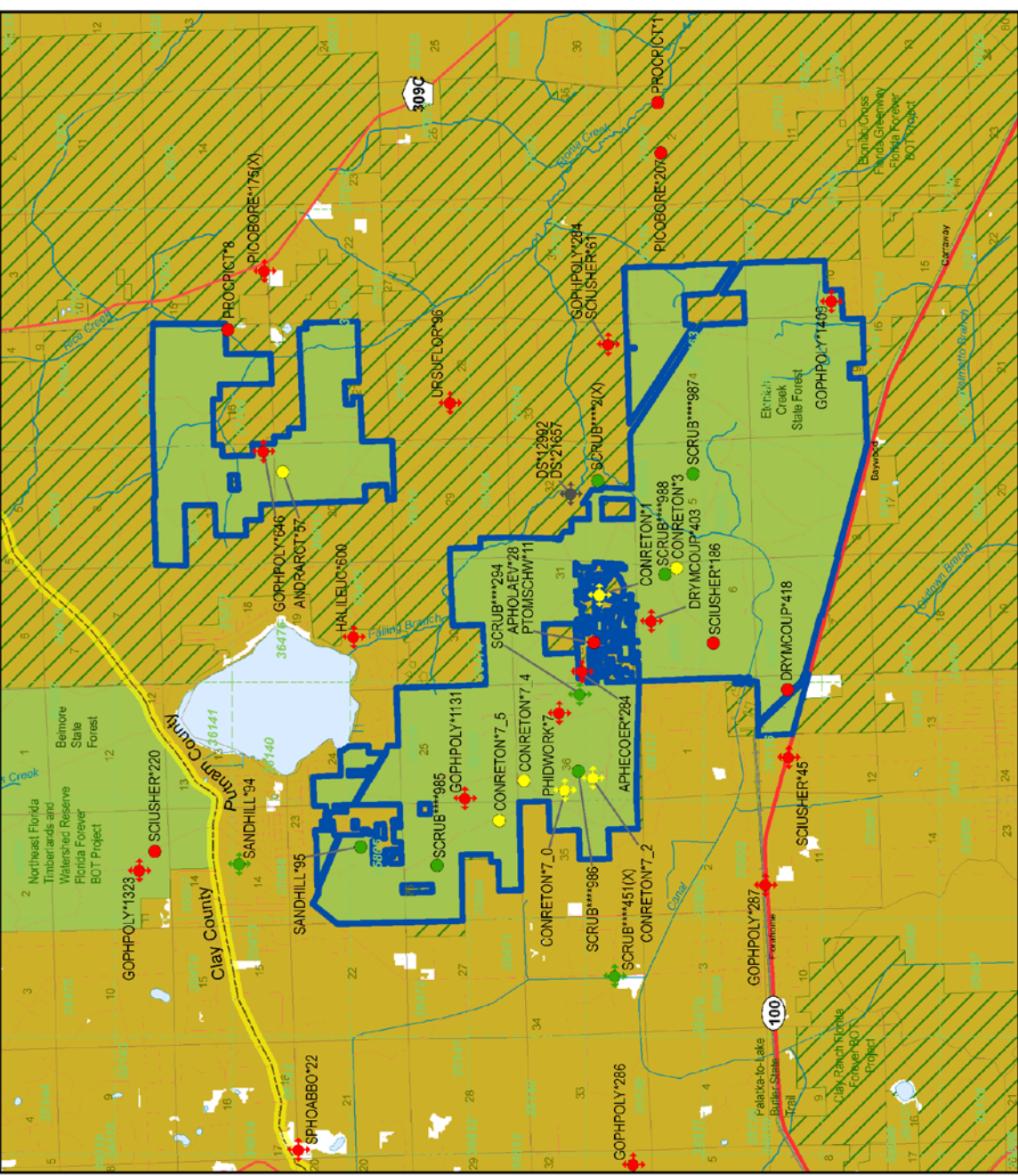
- County Boundary
- Interstate
- Turnpike
- Major Highway
- Local Road
- Railroad (Inactive railroads shown in Grey)
- Water

NOTE
 Map should not be interpreted without accompanying documents.

Etoniah Creek State Forest

Site boundaries are approximate.

Putnam County



Map produced by NDP
 6/5/2014

FNAI ELEMENT OCCURRENCE REPORT on or near
Etoniah Creek State Forest



Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
ANDRARC1*57	<i>Andropogon arctatus</i>	Pine-woods Bluestem	G3	S3	N	LT	2004-04-22	2004-04-22: One clump of <i>Andropogon arctatus</i> observed in wet flatwoods with heavy disturbance from woody encroachment and road. Associated species include <i>Pinus taeda</i> , <i>Gordonia lasianthus</i> , <i>Myrica centera</i> , <i>Ilex glabra</i> , <i>Hypericum fasciculatum</i> , <i>Saracenia</i>	2004-04-22: one clump in leaf in wet area (F04FNA11FLUS).
APHECOER*284	<i>Aphelocoma coerulescens</i>	Florida Scrub-Jay	G2	S2	LT	FT	2004-07-27	1981 OAK SCRUB AND SAND PINE SCRUB	2004-07-27: 2004-07-27: birds called up in three locations. lat 29 752 long -81 839 1991 (pair), 29 754 long -81 8446 (pair), and 29 749 long -81 839 (single) (PNDPED01FLUS). 1991 SCRUB JAYS OBSERVED (M91K0K01FLUS). 1981-02-02: 2 SCRUB JAYS (U81COX01FLU)
APHOLAE*28	<i>Aphodius laevigatus</i>	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1996-02-24 - 1996-03-02	1996-03-02: No information given (U06SKE01FLUS).	1996-03-02: A total of 123 specimens were collected from 1992-12-22 to 1996-03-02, most likely at light or in matt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
CONRETON*1	<i>Conradina etonia</i>	Etonia Rosemary	G1	S1	LE	LE	2007-11-26	1991-03-06: chiefly along disturbed sandy roadside in recently subdivided (but largely undeveloped) site in a sand pine (<i>Pinus clausa</i>) scrub with <i>Quercus chapmani</i> , <i>Q. geminata</i> , <i>Q. myrtifolia</i> , <i>Persea humilis</i> , <i>Garberia heterophylla</i> , among ot	Throughout the course of this monitoring new plants were found with additional survey effort, therefore annual counts reflecting population expansion and survey effort, not real population increases. See source shapefile for exact counts at exact points
CONRETON*3	<i>Conradina etonia</i>	Etonia Rosemary	G1	S1	LE	LE	2004-11-00	1998-03-13: narrow patch of dense scrub along an draw with sandhill on all sides, <i>Lyonia ferruginea</i> is as abundant as the oaks, <i>Quercus myrtifolia</i> and <i>Q. geminata</i> , scattered young sand pines (F98JOH02FLUS)	2007-11-26: 2 plants. No seedlings in burned area. Plants flowering but not fruiting (U08JEN03FLUS). 2006-10-30: 5 plants; 3 seedlings in burned area. Plants not flowering nor fruiting (U08JEN03FLUS). 2005-10-17: 2 plants. Burned
CONRETON*7_0	<i>Conradina etonia</i>	Etonia Rosemary	G1	S1	LE	LE	2007-11-26	This is a parent EO. Refer to individual sub-EOs for detailed information.	This is a parent EO for 3 sub-EOs (sub-EO #'s 2, 4 and 5). Refer to individual sub-EOs for detailed information.

06/03/2014

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FNAI ELEMENT OCCURRENCE REPORT on or near
Etoniah Creek State Forest



Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
CONRETON*7_2	<i>Conradina etonia</i>	Etonia Rosemary	G1	S1	LE	LE	2004-04-22	1998-03-12: low open sand pine scrub with <i>Quercus geminata</i> , <i>Q. myrtifolia</i> , and <i>Lyonia ferruginea</i> in understory. Sabel <i>etonia</i> was associated with <i>C. etonia</i> (U98JOH02FLUS)	2007-11-26: 852 total plants. For detailed number of plants per source feature see source observation tab (U08JEN03FLUS). 2006-10-30: 701 total plants. For detailed number of plants per source feature see source observation tab (U08JEN03F
CONRETON*7_4	<i>Conradina etonia</i>	Etonia Rosemary	G1	S1	LE	LE	2007-11-26	2003-11-00: on roadside shoulder in scrub habitat (U04DOF01FLUS)	2007-11-26: 0 plants east side, 8 plants west side of road. Plants flowering but not fruiting (U08JEN03FLUS). 2006-10-30: 0 plants on east side, 8 plants on west side of road. Plants not flowering or fruiting (U08JEN03FLUS). 2005-10-1
CONRETON*7_5	<i>Conradina etonia</i>	Etonia Rosemary	G1	S1	LE	LE	2007-11-26	2003-11-00: Plants growing along trail in scrub habitat (U04DOF01FLUS)	2007-11-26: No census. Plants flowering but not fruiting (U08JEN03FLUS). 2006-10-30: 378 plants. Few flowers-very dry conditions. Plants flowering but not fruiting (U08JEN01FLUS). 2005-10-17: 414 plants. Many seedlings. Plants
DRYMOUP*403	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S3	LT	FT	2011-04-07	Mosaic of sandhill, scrub, pine plantation, scrubby flatwoods and baygall managed as part of Etoniah Creek State Forest.	2011-04-07: Kindell, Hipes, and NeSmith observed a medium sized adult at the mouth of a tortoise burrow just off Holloway Rd and an indigo snake shed skin in the pine straw raking area and also in an open, recently thinned and burned sandhill (F11FNA05FL
DRYMOUP*418	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S3	LT	FT	1992-08-08	SAND PINE SCRUB TRANSITIONAL TO FLATWOODS. SCRUB DOMINATED BY SAND LIVE OAK, STAGGERBUSH. SCATTERED YOUNG (8-10 YRS.) SAND PINE. 600 ACRES OF SAID HABITAT.	DOR CA. 4.5 FT. LONG.
DS*1292	Data Sensitive Element		G3	S3?	N	N	2004		Data Sensitive
DS*21657	Data Sensitive Element		G3	S2	N	N	2004		Data Sensitive

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FNAI ELEMENT OCCURRENCE REPORT on or near
Etoniah Creek State Forest



Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
GOPHPOLY*1131	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	2011-06	2004-04-28: Landscape of mostly sandhill with small inclusions of mesic flatwoods, scrub, and xeric hammock. Disturbances include fire suppression and woody encroachment. Associated species include <i>Pinus clausa</i> , <i>Quercus geminata</i> , <i>Quercus laevis</i> , <i>Serenoa</i>	2011-06: FNAI staff observed a total of 178 active, 80 inactive, and 172 abandoned tortoise burrows in 664 acres (18%) of transects within 3,858 acres of potential gopher tortoise habitat in the western tract (except for very southeastern corner) of Eton
GOPHPOLY*1323	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	2010-10	2011: extensive portion cleared with the stated goal of sandhill restoration (F11FNA05FLUS). 2006-03-28: former sandhill with heavy disturbance from sand pine and slash pine plantations (F06FNA11FLUS). 2005-12-07: Sandhill with disturbances from forest	2010-10: D. Hipes observed a total of 40 active, 11 inactive, and 35 abandoned tortoise burrows in 108 acres (20%) of transects within 549 acres of potential gopher tortoise habitat in the southern tract of Belmore SF (F11FNA05FLUS). 2006-03-2
GOPHPOLY*1409	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	2011-04-01	2011-04-01: Sandhill (F11FNA05FLUS)	2011-06: D. Hipes observed a total of 4 active, 0 inactive, and 2 abandoned tortoise burrows in 7 acres (21%) of transects within 34 acres of potential gopher tortoise habitat in the southeastern corner of Etoniah SF (F11FNA05FLUS). 2004-04-20
GOPHPOLY*284	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	1987-PRE	SANDHILL IN RELATIVELY GOOD CONDITION (LONGLEAF PINE, WIREGRASS)	1987-pre: Species occurrence noted here in Diemer's unpublished map set (U86DIE01FLUS)
GOPHPOLY*287	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	1987-Pre	No general description given	1987-Pre: Tortoise seen crossing road (U86DIE01FLUS)
GOPHPOLY*846	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	2011-03-28	2004-04-22: Central part - landscape of sandhill with some exotics present (<i>Paspalum notatum</i> , <i>Eremochloa ophuroides</i>); western part - landscape consists of mostly sandhill with mesic flatwoods, disturbances include fire suppression, woody encroachment, a	2011-03-28: D. Hipes observed a total of 49 active, 2 inactive, and 3 abandoned tortoise burrows in 29 acres (22%) of transects within 130 acres of potential gopher tortoise habitat in the northeastern tract of Etoniah SF (F11FNA05FLUS). 2004-04-22: 6 ac

FNAI ELEMENT OCCURRENCE REPORT on or near
Etoniah Creek State Forest



Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
HALLLEUC*800	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N	2003	No general description given	Nest: Active - 2000-2003, 1998, 1995, 1990; Inactive - 1999; Unknown status or not assessed - 1996-1997; Gone - 1991; No data - 1992-1994 (U92GFC01FLUS, U03FWC01FLUS)
PHIDWORK*7	<i>Phidippus workmani</i>	Workman's Jumping Spider	G2G3	S2S3	N	N	1994-04-08	1994-04-08: turkey oak/wiregrass ecosystem (B04EDW01FLUS)	1994-04-08: G B Edward and colleagues collected 1 immature. It was reared to a female (B04EDW01FLUS); (specimen was deposited in FSCA).
PICOBORE*175	<i>Picoides borealis</i>	Red-cockaded Woodpecker	G3	S2	LE	FE	ZZ	PINE.	ca. 1978: ACTIVE COLONY.
PICOBORE*207	<i>Picoides borealis</i>	Red-cockaded Woodpecker	G3	S2	LE	FE	1991-03-06	SANDHILL, LONGLEAF PINE.	1 POSSIBLY ACTIVE TREE OBSERVED. COULDN'T TELL IF RESIN WAS FRESH-DRJ. GATEWOOD OBSERVED TREE IN DEC. 1990.
PROCPIC*8	<i>Procambarus pectus</i>	Black Creek Crayfish	G2	S2	N	SSC	2010-02-24	Rice Creek is tributary to Etoniah Creek, which empties into the St. Johns River. The region is mostly rural and supports a mosaic of native forests, managed forests (plantations), farms, and small towns. The two 2010 collection sites are just outside o	2010-02-24: R. Franz and P. Moler collected specimen(s) at two sites in upper Rice Creek drainage (coordinates in U11MOL03FLUS; these may have been generated from mapping first in Google Earth rather than directly from gps unit). PNDMOL01FLUS, PNDFRA01FL
PTOMSCHW*11	<i>Ptomaphagus schwarzi</i>	Schwarz' Pocket Gopher Ptomaphagus Beetle	G3	S3	N	N	1996-02-24 - 1996-03-02	1996-03-02: No information given (U06SKE01FLUS)	1996-03-02: Sixteen specimens were collected from 1993-01-08 to 1996-03-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01PEC01FLUS).
SANDHILL*94	Sandhill		G3	S2	N	N	2004	No general description given	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991) (U05FNA02FLUS). Partially gridded Sandhill with a few homes.
SANDHILL*96	Sandhill		G3	S2	N	N	2004-04-20	No general description given	EO on site.

FNAI ELEMENT OCCURRENCE REPORT on or near
Etoniah Creek State Forest



Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
SCUISHER*186	<i>Sciurus niger shermani</i>	Sherman's Fox Squirrel	G5T3	S3	N	SSC	2004-04-28	2004-04-28: Individual observed in recently restored (hydroaxed and burned) sandhill. Habitat characterized by <i>Quercus laevis</i> , <i>Pinus clausa</i> , <i>Veccinium staminium</i> , <i>Rhus copallina</i> , <i>Asimina incana</i> , <i>Aristida stricta</i> , <i>Schizadachnium scoparium</i> , <i>Andropogon virgin</i>	2004-04-28: 1 individual observed commuting (F04FNA11FLUS)
SCUISHER*45	<i>Sciurus niger shermani</i>	Sherman's Fox Squirrel	G5T3	S3	N	SSC	1982-06	"TURKEY OAKS AND SAND OAKS, OPEN PINE SCRUB"	DOR SPECIMEN (NOT CATALOGUED, UF/FSM) COLL. JUNE 1982 BY DAN CORDIER.
SCUISHER*61	<i>Sciurus niger shermani</i>	Sherman's Fox Squirrel	G5T3	S3	N	SSC	1991	SANDHILL WITH MATURE LONGLEAF AND REGENERATING PINE, WIREGRASS GROUND COVER.	No EO data given
SCRUB***2	Scrub		G2	S2	N	N	1981-01-27	SCRUB W/ PATCHES OF VERY MATURE SAND PINE. ONE RECENTLY DEAD TREE WOULDVE BEEN CHAMPION. W SECTION HAS BEEN SUBDIVIDED & ROADS BUILT.	SAND PINE & TURKEY OAK (TO 40') > ROSEMARY (4-5'), SCRUB PALMETTO, SAND LIVE OAK, CHAPMAN'S OAK, MYRTLE OAK (?), FETTERBUSH, REDBAY, TOUGH BUMELIA, NOLINA (?)
SCRUB***234	Scrub		G2	S2	N	N	2004	OAK SCRUB AND SAND PINE SCRUB. RECENTLY SUBDIVIDED (BUT LARGELY UNDEVELOPED). SOIL SHEETS 12 & 20 IN PUTNAM COUNTY SOIL SURVEY AND MAPPED AS PAOLA (SPODIC QUARTZIPSAMMENTS) AND TAVARES (TYPIC QUARTZIPSAMMENTS) PAOLA SOILS IN PUTNAM COUNTY ARE TYPICALLY	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-03-06) (U05FNA02FLUS). FAIRLY DENSE SAND PINE (PINUS CLAUUSA) FOREST OVERSTORY WITH DENSE UNDERSTORY - SHRUB LAYER OF EVERGREEN SCLEROPHYLLOUS OAKS.
SCRUB***451	Scrub		G2	S2	N	N	1950-PRE	SAND PINE SCRUB.	OVERSTORY OF SAND PINE, UNDERSTORY OF SHRUBS INCLUDING SAND LIVE OAK, MYRTLE OAK, LAUREL OAK, ROSEMARY, DEARBERRY, RUSTY LYONIA, GARBERIA, SCRUB HOLLY.

FNAI ELEMENT OCCURRENCE REPORT on or near
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Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
SCRUB***365	Scrub		G2	S2	N	N	1998-03-13	DENSE TALL OAK SCRUB WITH SCATTERED SAND PINES ON WESTERN SLOPE BETWEEN SANDHILL AND BAYHEAD	DENSE SCRUB OAKS WITH WIDELY SCATTERED SAND PINES. 10-12-FT LYONIA FERRUGINEA, PLUS QUERCUS GEMINATA, Q. MYRTIFOLIA, Q. CHAPMANII. STAND OF DEAD 3-FT TALL LYONIALUCIDA ON LOWER BORDER OF STAND. LESS COMMON SPECIES INCLUDE OSMANTHUS AMERICANUS, CERATIFOL.
SCRUB***366	Scrub		G2	S2	N	N	1998-04-23	TALL OPEN OAK SCRUB WITH LOW SHRUB UNDERSTORY AND SCATTERED SAND PINES	TALL SCRUB OF SMALL TREE SIZE OAKS AND SCATTERED SAND PINES WITH OPENINGS. QUERCUS GEMINATA, Q. MYRTIFOLIA, Q. CHAPMANII WITH PERSEA HUMILIS, ILEX OPACA VAR ARENICOLA, AND OSMANTHUS AMERICANUS WITH SABAL ETONIA AND VACCINIUMS IN UNDERSTORY. GARBERIA HETE.
SCRUB***367	Scrub		G2	S2	N	N	1998-04-23	DENSE LONG-UNBURNED OAK SCRUB WITH CARPET OF GRAY PUFF LICHENS ON GROUND LAYER.	DENSE OAK (Q. GEMINATA, Q. MYRTIFOLIA) LYONIA FERRUGINEA SCRUB, WITH SHRUBS 4-5 FEET TALL. OSMANTHUS AMERICANUS OCCASIONAL AND SCATTERED SAND PINES 20 FT TALL WITH SOME DEAD PINES PRESENT. GROUND LAYER HAS CARPET OF CLADINAEVANSII LICHEN. ECOTONE TO FLA.
SCRUB***368	Scrub		G2	S2	N	N	2004	DENSE OAK SCRUB WITH ABUNDANT LYONIA FERRUGINEA AND SCATTERED SAND PINES	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1998-04-23) (U05FNA02FLUS). NARROW ELONGATED PATCH OF DENSE OAK SCRUB WITH SCATTERED YOUNG SAND PINES BORDERED BY WET AREA TO N AND SANDHILL TO SOUTH. DOM
SFH0A8B0*22	<i>Sphodros abbofi</i>	Blue Purse-web Spider	G4G5	S4	N	N	1998-04-11	1998-04-11: webs found at the bases of trees (U98MOL02FLUS). 1962: Description was not given (A80GER01FLUS)	1998-04-11: Species was collected on site by P.E. Moler and G. Clark (U98MOL02FLUS). 1962: Gertsch and Platnick (1980) recorded species as present here, based on a 1962 collection. More precise and updated record is needed (A80GER01FLUS).



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Map Label	Scientific Name	Common Name	Global State Federal State Observation				Date	Description	EO Comments
			Rank	Rank	Status	Listing			
URSUFLO96	<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T2	S2	N	ST*	2012	Large area of sand pine and oak scrub, mesic flatwoods, sandhill, depression marshes and hardwood swamps, pine plantation, regular harvesting of sand pine (U05SIM01FLUS)	2012: Estimated population of 729-1056 (U05SIM01FLUS). This EO represents the Primary and Secondary Bear Ranges for the Ocala population. Primary is the FWC-designated core area that represents breeding range and contains documented evidence of reproduc



Florida Natural Areas Inventory
Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Documented					
<i>Andropogon arctatus</i>	Pine-woods Bluestem	G3	S3	N	LT
<i>Aphodius laevigatus</i>	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N
<i>Conradina etonia</i>	Etonia Rosemary	G1	S1	LE	LE
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S3	LT	FT
<i>Gopherus polyphemus</i>	Gopher Tortoise		S3	C	ST
<i>Procambarus pictus</i>	Black Creek Crayfish	G2	S2	N	SSC
<i>Ptomaphagus schwarzi</i>	Schwarz' Pocket Gopher Ptomaphagus Be	G3	S3	N	N
Sandhill			S2	N	N
<i>Sciurus niger shermani</i>	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Scrub		G2	S2	N	N
Likely					
<i>Aphelocoma coerulescens</i>	Florida Scrub-Jay	G2	S2	LT	FT
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N
Mesic flatwoods		G4	S4	N	N
<i>Phidippus workmani</i>	Workman's Jumping Spider	G2G3	S2S3	N	N
Sandhill upland lake		G3	S2	N	N
<i>Sphodros abboti</i>	Blue Purse-web Spider	G4G5	S4	N	N
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T2	S2	N	ST*
Potential					
<i>Agrimonia incisa</i>	Incised Groove-bur	G3	S2	N	LE
<i>Arnoglossum diversifolium</i>	Variable-leaved Indian-plantain	G2	S2	N	LT
<i>Asplenium heteroresiliens</i>	Wagner's Spleenwort	GNA	S1	N	N
<i>Asplenium x curtissii</i>	Curtiss' Spleenwort		S1	N	N
<i>Balduina atropurpurea</i>	Purple Honeycomb-head	G2	S1	N	LE
<i>Brickellia cordifolia</i>	Flyr's Brickell-bush	G2G3	S2	N	LE
<i>Calopogon multiflorus</i>	Many-flowered Grass-pink		S2S3	N	LE
<i>Calydorea coelestina</i>	Bartram's Ixia		S2S3	N	LE
<i>Carex chapmanii</i>	Chapman's Sedge	G3	S3	N	LT
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S2	N	N
<i>Ctenium floridanum</i>	Florida Toothache Grass	G2	S2	N	LE
<i>Digitaria gracillima</i>	Longleaf Fingergrass	G1	S1	N	N
<i>Grus canadensis pratensis</i>	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
<i>Gymnopogon chapmanianus</i>	Chapman's Skeletongrass	G3	S3	N	N
<i>Hartwrightia floridana</i>	Hartwrightia	G2	S2	N	LT
<i>Heterodon simus</i>	Southern Hognose Snake		S2	N	N
<i>Linum westii</i>	West's Flax	G1	S1	N	LE
<i>Lithobates capito</i>	Carolina Gopher Frog	G3	S3	N	SSC
<i>Litsea aestivalis</i>	Pondspice	G3?	S2	N	LE
<i>Matelea floridana</i>	Florida Spiny-pod	G2	S2	N	LE
Mesic hammock		G3	S3?	N	N
<i>Monotropsis reynoldsiae</i>	Pygmy Pipes	G1Q	S1	N	LE
<i>Mustela frenata peninsulae</i>	Florida Long-tailed Weasel	G5T3	S3	N	N
<i>Myotis austroriparius</i>	Southeastern Bat	G3G4	S3	N	N
<i>Nemastylis floridana</i>	Celestial Lily	G2	S2	N	LE
<i>Neofiber alleni</i>	Round-tailed Muskrat	G3	S3	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2S3	C	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Picoides borealis</i>	Red-cockaded Woodpecker		S2	LE	FE

Definitions: Documented - Rare species and natural communities documented on or near this site.
 Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
 Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
 Potential - This site lies within the known or predicted range of the species listed.



Florida Natural Areas Inventory
Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
<i>Pituophis melanoleucus mugitus</i>	Florida Pine Snake	G4T3	S3	N	SSC
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	SSC
<i>Pteroglossaspis ecristata</i>	Giant Orchid	G2G3	S2	N	LT
<i>Pycnanthemum floridanum</i>	Florida Mountain-mint	G3	S3	N	LT
<i>Rhododendron chapmanii</i>	Chapman's Rhododendron	G1	S1	LE	LE
<i>Rhynchospora thomei</i>	Thorne's Beaksedge	G3	S1S2	N	N
<i>Rudbeckia nitida</i>	St. John's Blackeyed Susan		S2	N	LE
<i>Salix floridana</i>	Florida Willow	G2	S2	N	LE
Seepage stream		G3	S2	N	N
<i>Sideroxylon alachuense</i>	Silver Buckthorn	G1	S1	N	LE

Definitions: Documented - Rare species and natural communities documented on or near this site.
 Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
 Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
 Potential - This site lies within the known or predicted range of the species listed.

Elements and Element Occurrences

An **element** is any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature.

An **element occurrence (EO)** is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location.

Element Ranking and Legal Status

Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element Occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

- G1** = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- G2** = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3** = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- G4** = Apparently secure globally (may be rare in parts of range).
- G5** = Demonstrably secure globally.
- GH** = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
- GX** = Believed to be extinct throughout range.
- GXC** = Extirpated from the wild but still known from captivity or cultivation.
- G#?** = Tentative rank (e.g., G2?).
- G#G#** = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
- G#T#** = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
- G#Q** = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
- G#T#Q** = Same as above, but validity as subspecies or variety is questioned.
- GU** = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
- GNA** = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- GNR** = Element not yet ranked (temporary).
- GNRTNR** = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

- S1** = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2** = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3** = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- S4** = Apparently secure in Florida (may be rare in parts of range).
- S5** = Demonstrably secure in Florida.
- SH** = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
- SX** = Believed to be extirpated throughout Florida.
- SU** = Unrankable; due to a lack of information no rank or range can be assigned.
- SNA** = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- SNR** = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
LE = Endangered: species in danger of extinction throughout all or a significant portion of its range.
LE, LT = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
LE, PDL = Species currently listed endangered but has been proposed for delisting.
LE, PT = Species currently listed endangered but has been proposed for listing as threatened.
LE, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
LT = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
F(XN) = Federal listed as an experimental population in Florida
FT(S/A) = Federal Threatened due to similarity of appearance
ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future. (ST* for *Ursus americanus floridanus* (Florida black bear) indicates that this status does not apply in Baker and Columbia counties and in the Apalachicola National Forest. ST* for *Neovison vison* pop.1 (Southern mink, South Florida population) indicates that this status applies to the Everglades population only.)
SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* indicates that a species has SSC status only in selected portions of its range in Florida. SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)
N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: <http://www.doacs.state.fl.us/pi/>.

LE = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
LT = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
N = Not currently listed, nor currently being considered for listing.

Element Occurrence Ranking

FNAI ranks of quality of the element occurrence in terms of its viability (EORANK). Viability is estimated using a combination of factors that contribute to continued survival of the element at the location. Among these are the size of the EO, general condition of the EO at the site, and the conditions of the landscape surrounding the EO (e.g. an immediate threat to an EO by local development pressure could lower an EO rank).

A = Excellent estimated viability
A? = Possibly excellent estimated viability
AB = Excellent or good estimated viability
AC = Excellent, good, or fair estimated viability
B = Good estimated viability
B? = Possibly good estimated viability
BC = Good or fair estimated viability
BD = Good, fair, or poor estimated viability
C = Fair estimated viability
C? = Possibly fair estimated viability
CD = Fair or poor estimated viability
D = Poor estimated viability
D? = Possibly poor estimated viability
E = Verified extant (viability not assessed)
F = Failed to find
H = Historical
NR = Not ranked, a placeholder when an EO is not (yet) ranked.
U = Unrankable
X = Extirpated

*For additional detail on the above ranks see: <http://www.natureserve.org/explorer/eorankguide.htm>

FNAI also uses the following EO ranks:

H? = Possibly historical
F? = Possibly failed to find
X? = Possibly extirpated

The following offers further explanation of the H and X ranks as they are used by FNAI:

The rank of H is used when there is a lack of recent field information verifying the continued existence of an EO, such as (a) when an EO is based only on historical collections data; or (b) when an EO was ranked A, B, C, D, or E at one time and is later, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area. This definition of the H rank is dependent on an interpretation of what constitutes "recent" field information. Generally, if there is no known survey of an EO within the last 20 to 40 years, it should be assigned an H rank. While these time frames represent suggested maximum limits, the actual time period for historical EOs may vary according to the biology of the element and the specific landscape context of each occurrence (including anthropogenic alteration of the environment). Thus, an H rank may be assigned to an EO before the maximum time frames have lapsed. Occurrences that have not been surveyed for periods exceeding these time frames should not be ranked A, B, C, or D. The higher maximum limit for plants and communities (i.e., ranging from 20 to 40 years) is based upon the assumption that occurrences of these elements generally have the potential to persist at a given location for longer periods of time. This greater potential is a reflection of plant biology and community dynamics. However, landscape factors must also be considered. Thus, areas with more anthropogenic impacts on the environment (e.g., development) will be at the lower end of the range, and less-impacted areas will be at the higher end.

The rank of X is assigned to EOs for which there is documented destruction of habitat or environment, or persuasive evidence of eradication based on adequate survey (i.e., thorough or repeated survey efforts by one or more experienced observers at times and under conditions appropriate for the Element at that location).

Exhibit P

Florida Fish and Wildlife Conservation Commission Response



**Florida Fish
and Wildlife
Conservation
Commission**

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Chairman
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32399-1600
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(800) 955-8771 (T)
(800) 955-8770 (V)

MyFWC.com/Research

June 6, 2014

Ms. Jennifer Reed
Land Planning Coordinator
Department of Agriculture and Consumers Services
Florida Forest Service
3125 Conner Boulevard
Tallahassee, FL 32399-1650

Dear Ms. Reed:

This letter is in response to your request for listed species occurrence records and critical habitats for your project (Etoniah Creek State Forest) located in Putnam County, Florida. Records from The Florida Fish and Wildlife Conservation Commission's database indicate that listed species occurrence data are located within project area. Enclosed are 8.5 x 11 maps showing listed species locations, black bear range, SHCA for Cooper's hawk, black bear, short-tailed hawk, striped newt and the Florida mouse, Prioritized SHCA's, species richness, priority wetlands for listed species, and land cover for the project site and surrounding area.

This letter and attachments should not be considered as a review or an assessment of the impact upon threatened or endangered species of the project site. It provides FWC's most current data regarding the location of listed species and their associated habitats.

Our SHCA recommendations are intended to be used as a guide. Land development and ownership in Florida is ever-changing and priority areas identified as SHCA might already have been significantly altered due to development or acquired into public ownership. Onsite surveys, literature reviews, and coordination with FWC biologists remain essential steps in documenting the presence or absence of rare and imperiled species and habitats within the project area.

Our fish and wildlife location data represents only those occurrences recorded by FWC staff and other affiliated researchers. It is important to understand that our database does not necessarily contain records of all listed species that may occur in a given area. Also, data on certain species, such as gopher tortoises, are not entered into our database on a site-specific basis.

Therefore, one should not assume that an absence of occurrences in our database indicates that species of significance do not occur in the area.

The Florida Natural Areas Inventory (FNAI) maintains a separate database of listed plant and wildlife species, please contact FNAI directly for specific information on the location of element occurrences within the project area.

Ms. Jennifer Reed
Page 2
June 6, 2014

Because FNAI is funded to provide information to public agencies only, you may be required to pay a fee for this information. County-wide listed species information can be located at their website (<http://www.fnai.org>).

Please credit the Florida Fish and Wildlife Conservation Commission in any publication or presentation of these data. If you have any questions or further requests, please contact me at (850) 488-0588 or gisrequests@myfwc.com.

Sincerely,

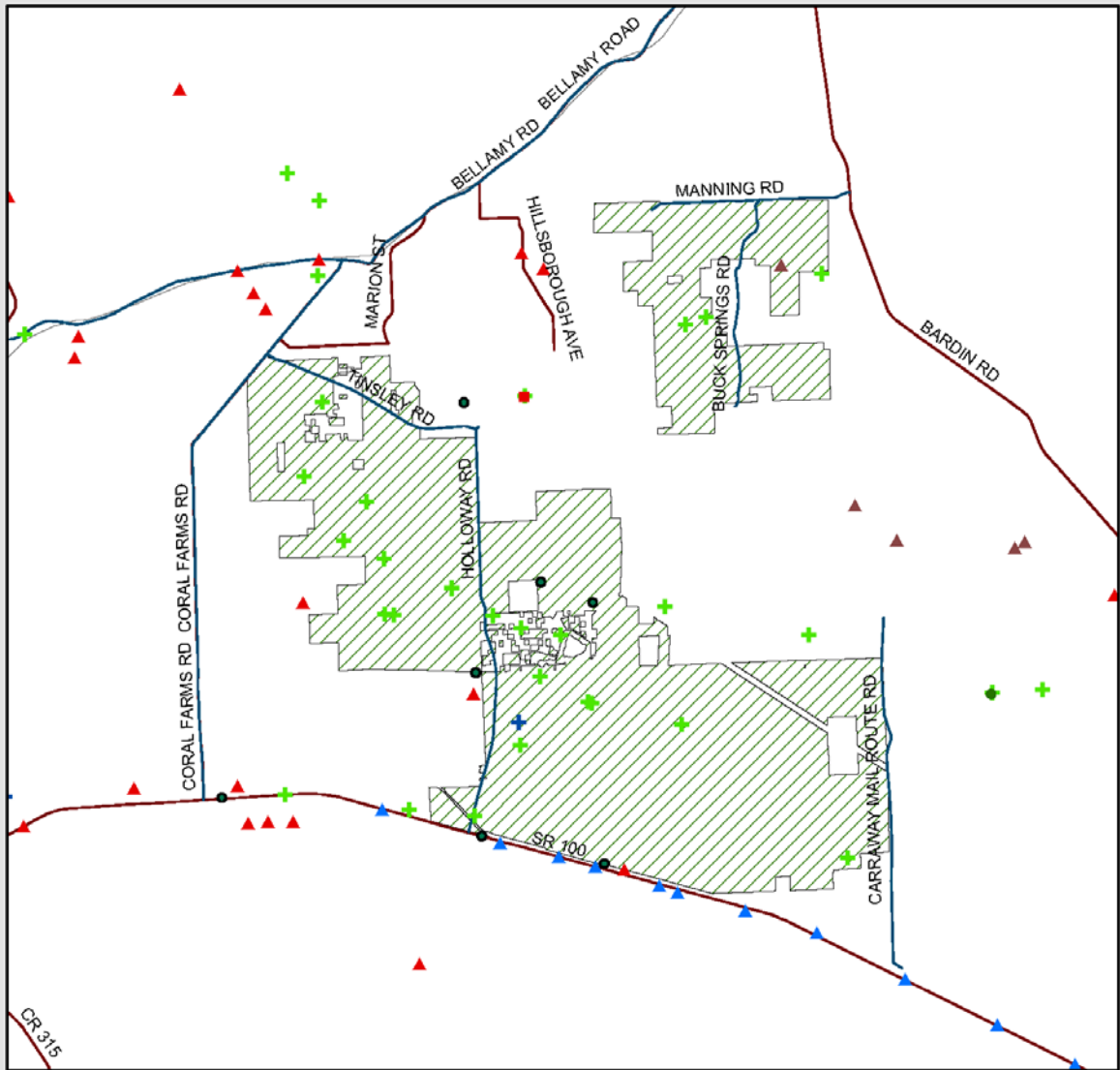
A handwritten signature in blue ink that reads "Jan Stearns".

Jan Stearns
Staff Assistant

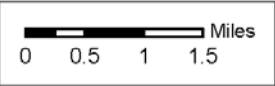
js
2014_6003
Enclosures

Species Locations

Etoniah Creek State Forest



- | | |
|---------------------------|-----------------------------------|
| ● Indigo Snake | ▲ Black Bear Telemetry |
| ● Red Cockaded Woodpecker | ✚ Florida Natural Inventory Areas |
| ■ Eagle Nests | ✚ Wildlife Observations |
| ▲ Bear Calls | □ County Boundary |
| ▲ Bear Mortality | ▨ Project Site |



Black Bear Range

Etoniah Creek State Forest



Bear Range 2008

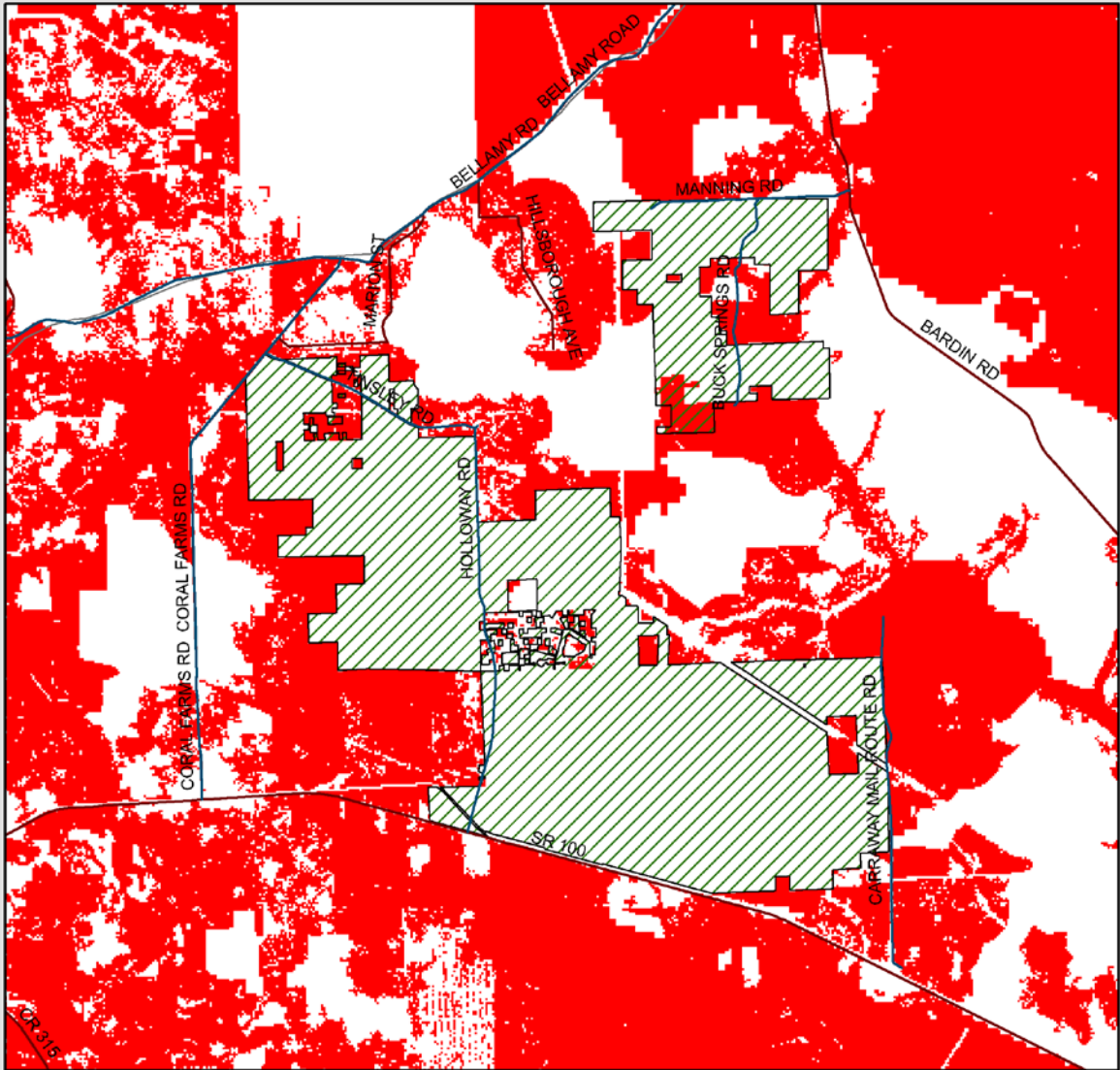
Primary	County Boundary
Secondary	Project Site






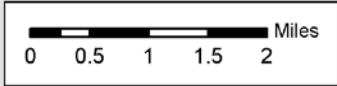
2014_6003

Strategic Habitat Conservation Areas

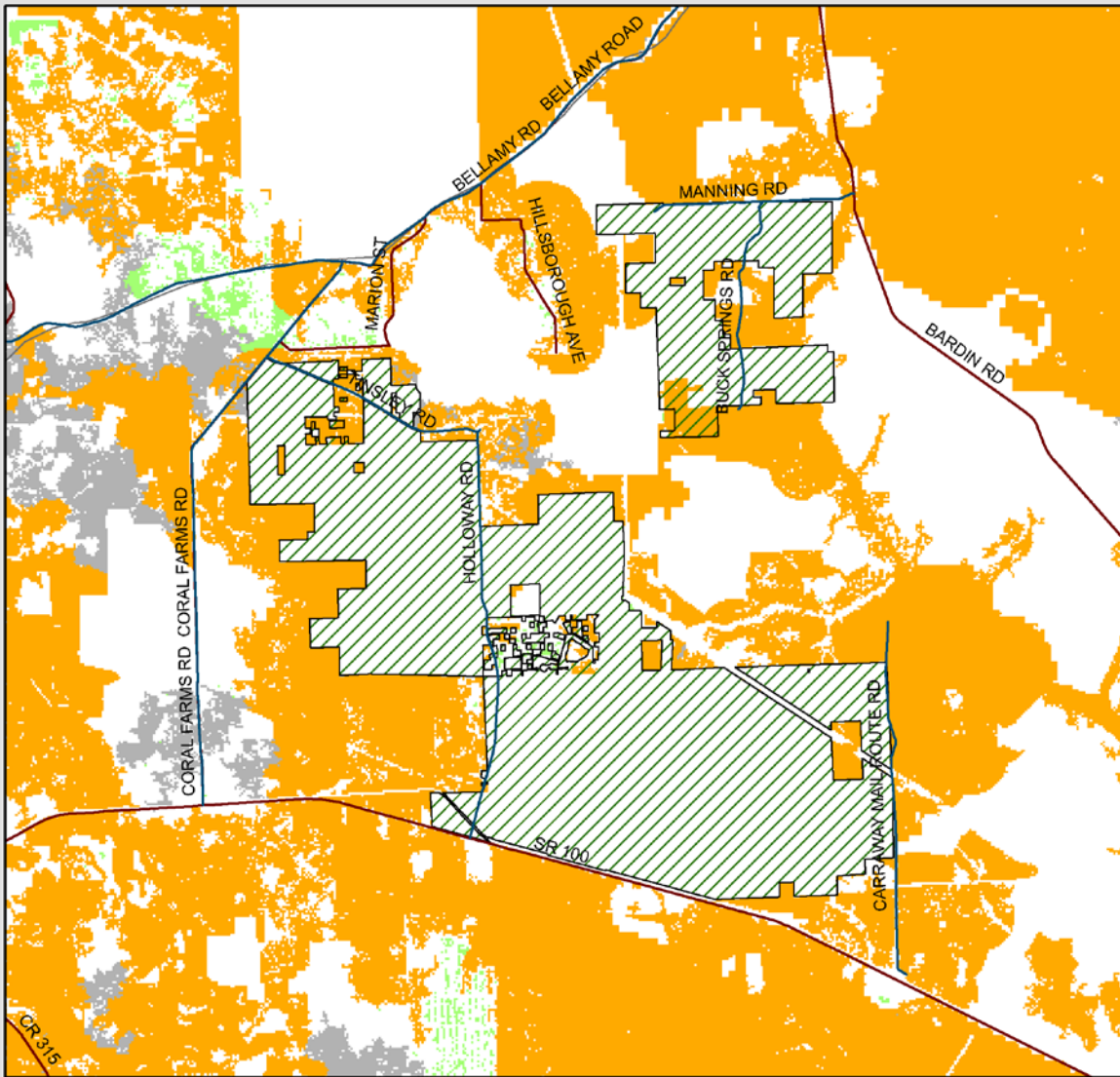
Etoniah Creek State Forest



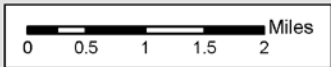
-  Strategic Habitat Conservation Areas
-  County Boundary
-  Project Site



Prioritized SHCA's Etoniah Creek State Forest



Prioritized SHCA's	County Boundary
Priority 1	Project Site
Priority 2	
Priority 3	
Priority 4	
Priority 5	

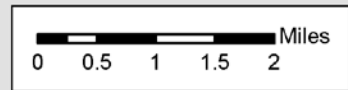
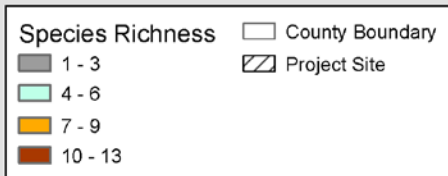
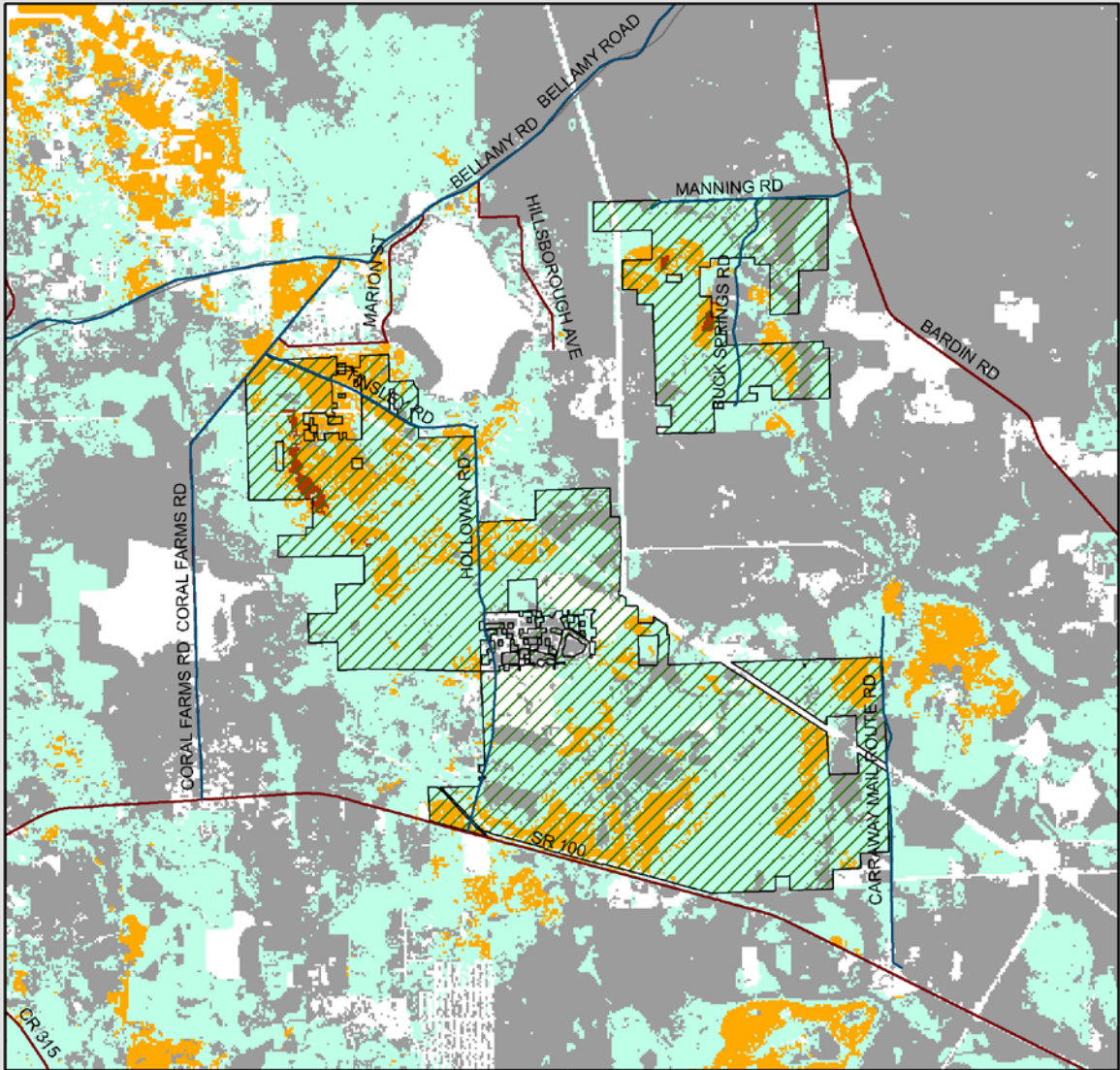


The prioritized SHCA map identifies 5 classes of SHCA based upon Heritage ranking criteria developed by The Nature Conservancy, the Natural Heritage Program Network, and the Florida Natural Areas Inventory. There are 2 possible ranks used to prioritize a species' SHCA: 1) the global rank based on a species worldwide status, and 2) the state rank based upon the species status in Florida. The state and global ranks are based upon many factors such as known occurrence locations, estimated abundance, range, amount of habitat currently protected, perceived levels of threats towards the species, and ecological fragility.

2014_6003

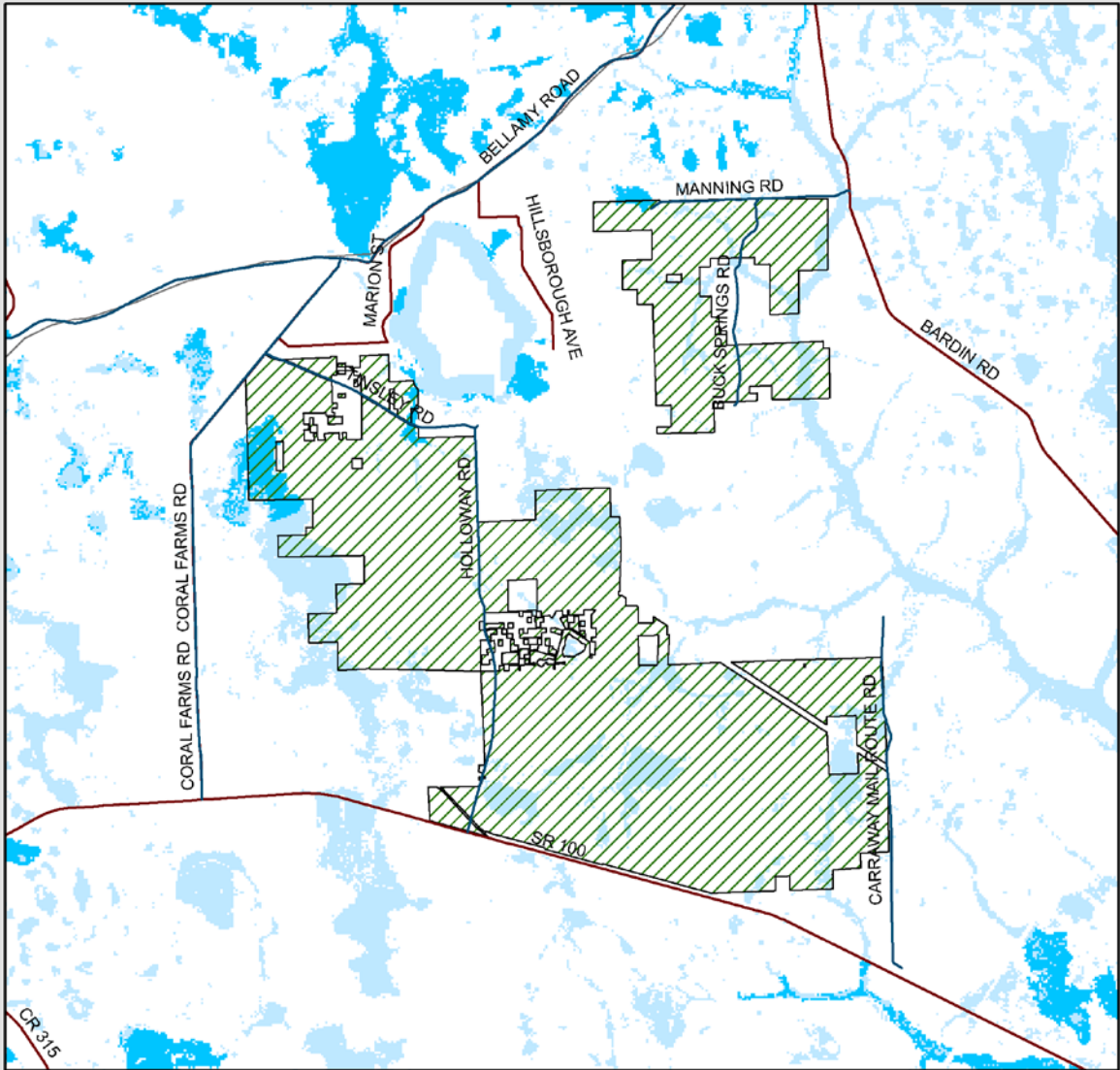
Species Richness

Etoniah Creek State Forest

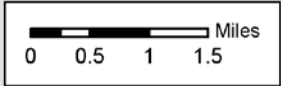


Priority Wetlands

Etoniah Creek State Forest



Priority Wetlands	County Boundary
1-3 Species, Wetlands habitat	Project Site
4-6 Species, Wetlands habitat	
7-9 Species, Wetlands habitat	
10-11 Species, Wetlands habitat	



Florida Land Cover - 2003

Etoniah Creek State Forest

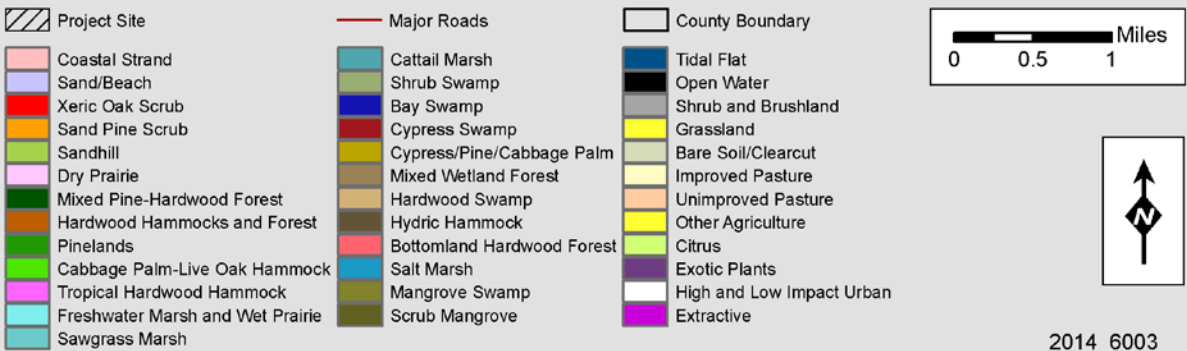
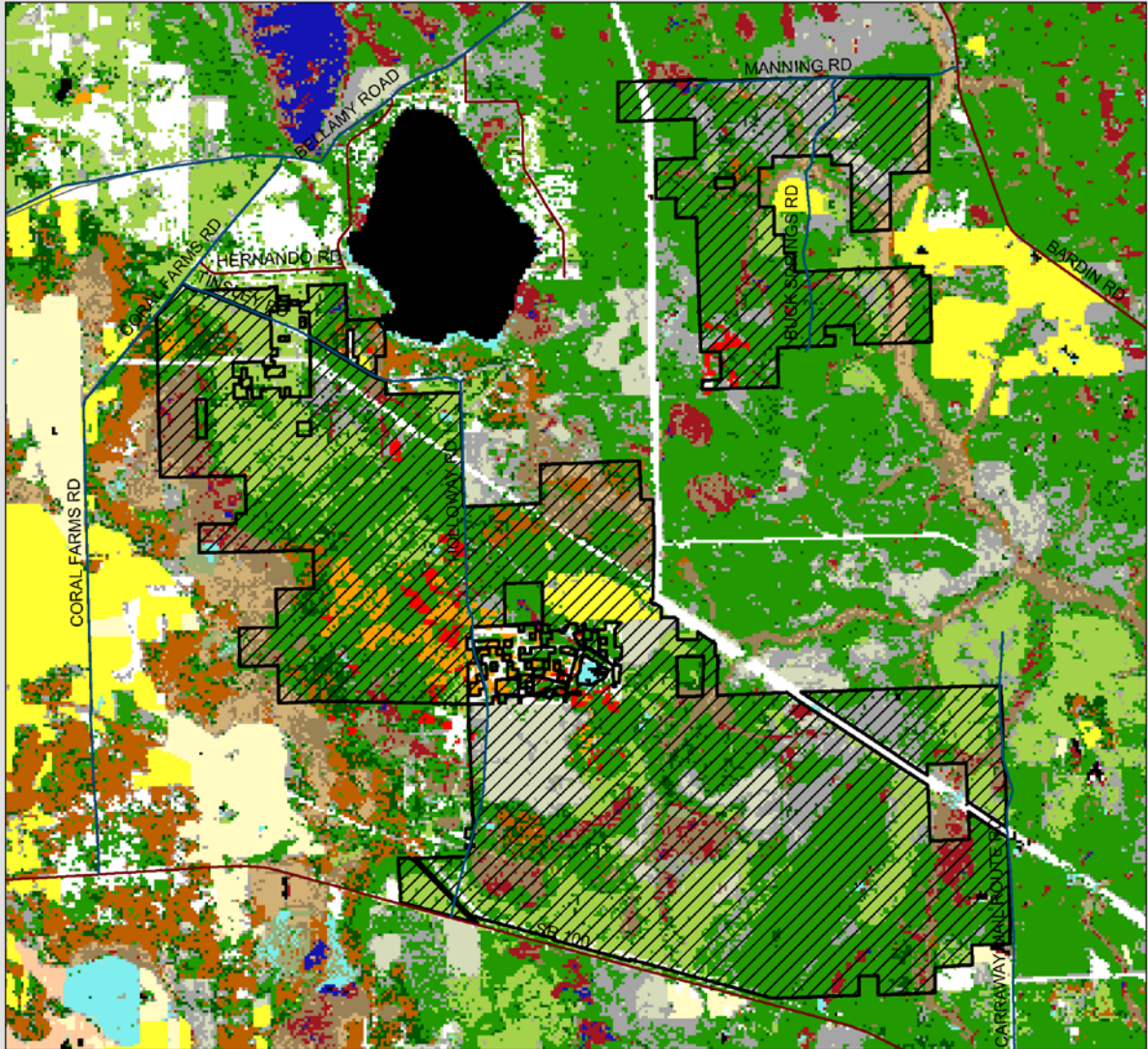


Exhibit Q

Fire History

Etoniah Creek State Forest Rx Burn acres by FY

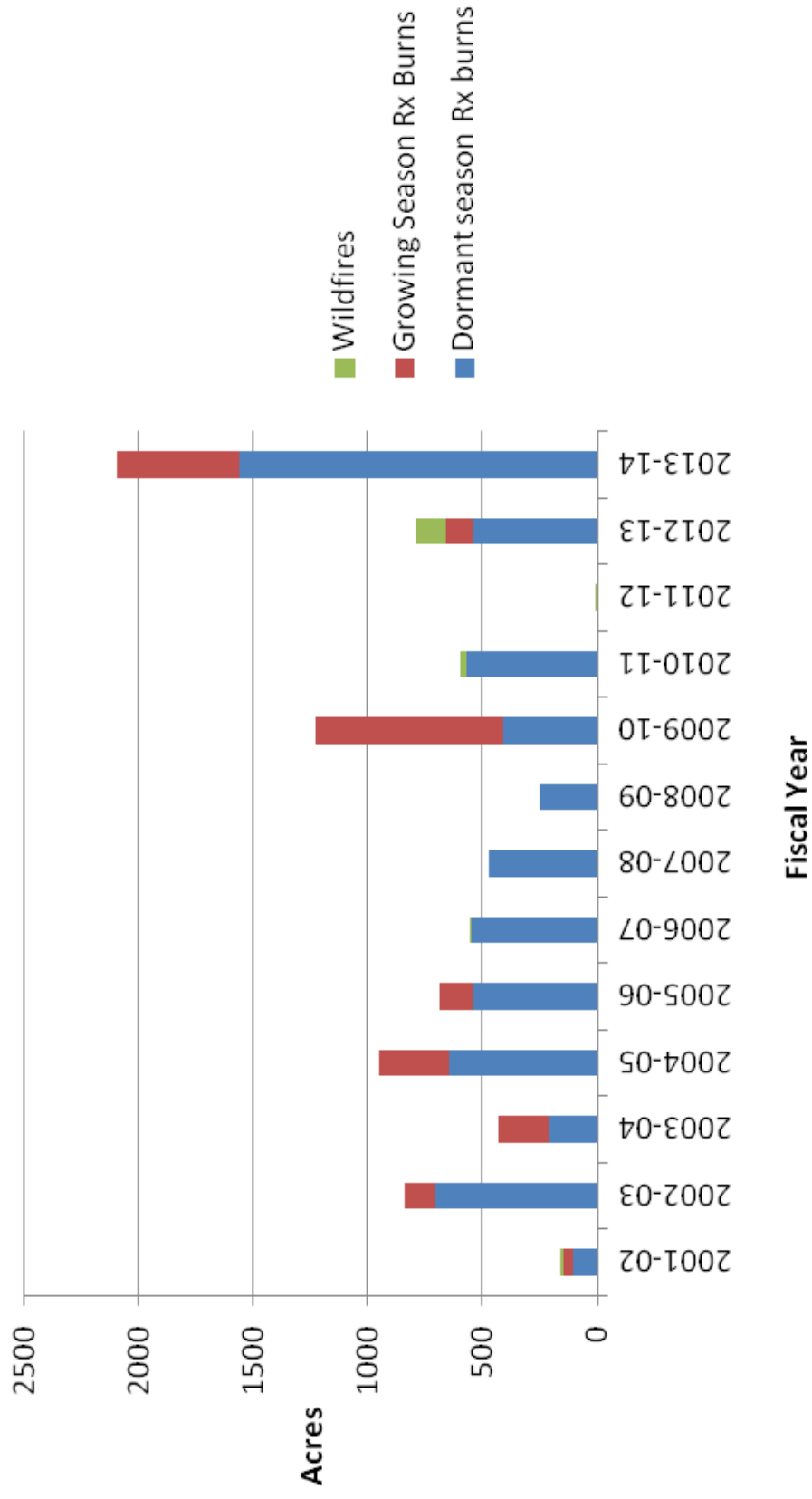


Exhibit R

Invasive Species



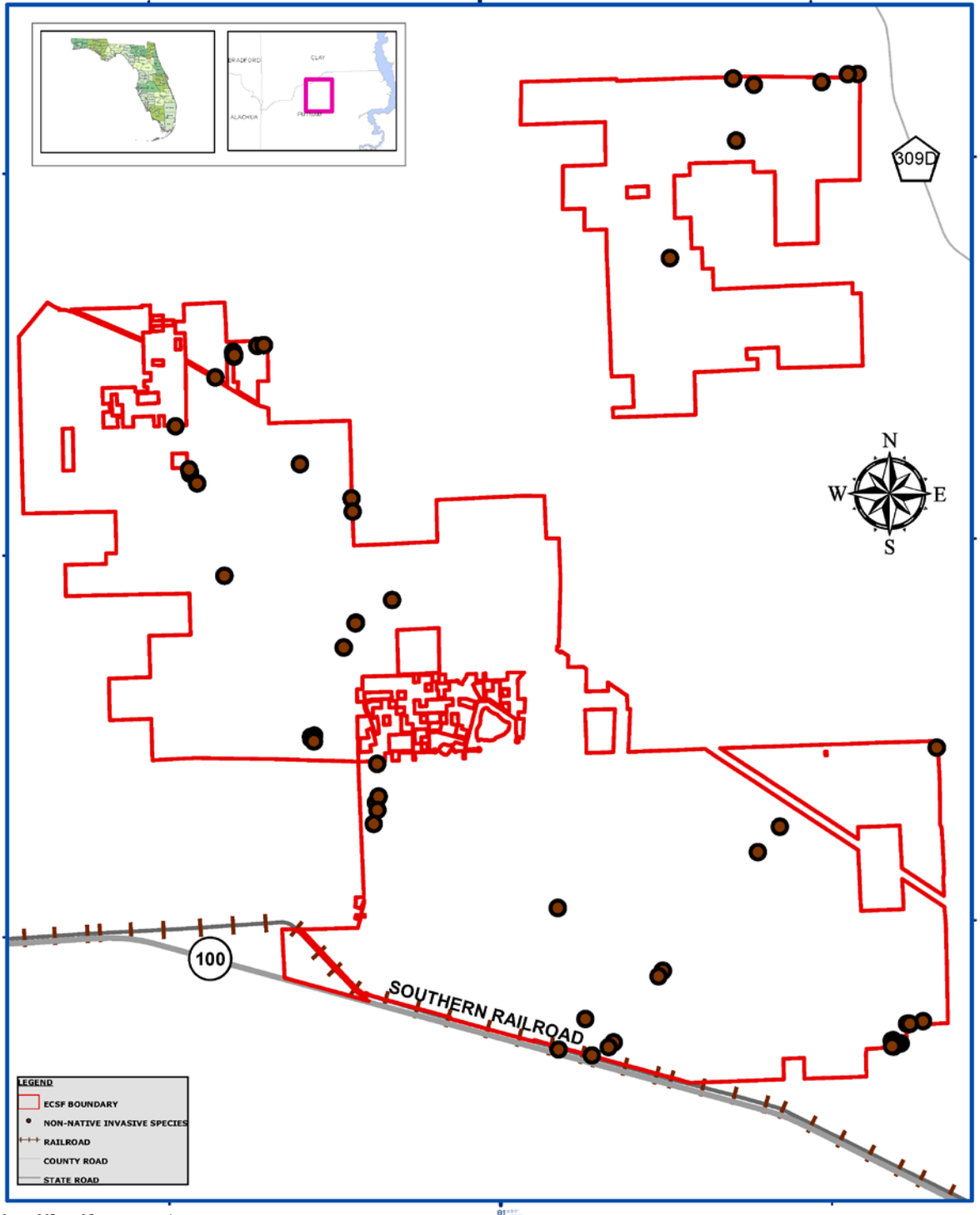
Florida Forest Service

Etoniah Creek State Forest

Location of Non-Native Invasive Species

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
This map was prepared by the Florida Forest Service (FFS) using data provided by the Florida Department of Transportation (FDOT) and the Florida Department of Environmental Protection (FDEP). The FFS is not responsible for any errors or omissions in this map. The FFS is not responsible for any damage or injury resulting from the use of this map. The FFS is not responsible for any loss of data or information resulting from the use of this map.



0 0.25 0.5 1 Miles

Map Month/Year: August 2014

0 500 1,000 2,000 3,000 Yards