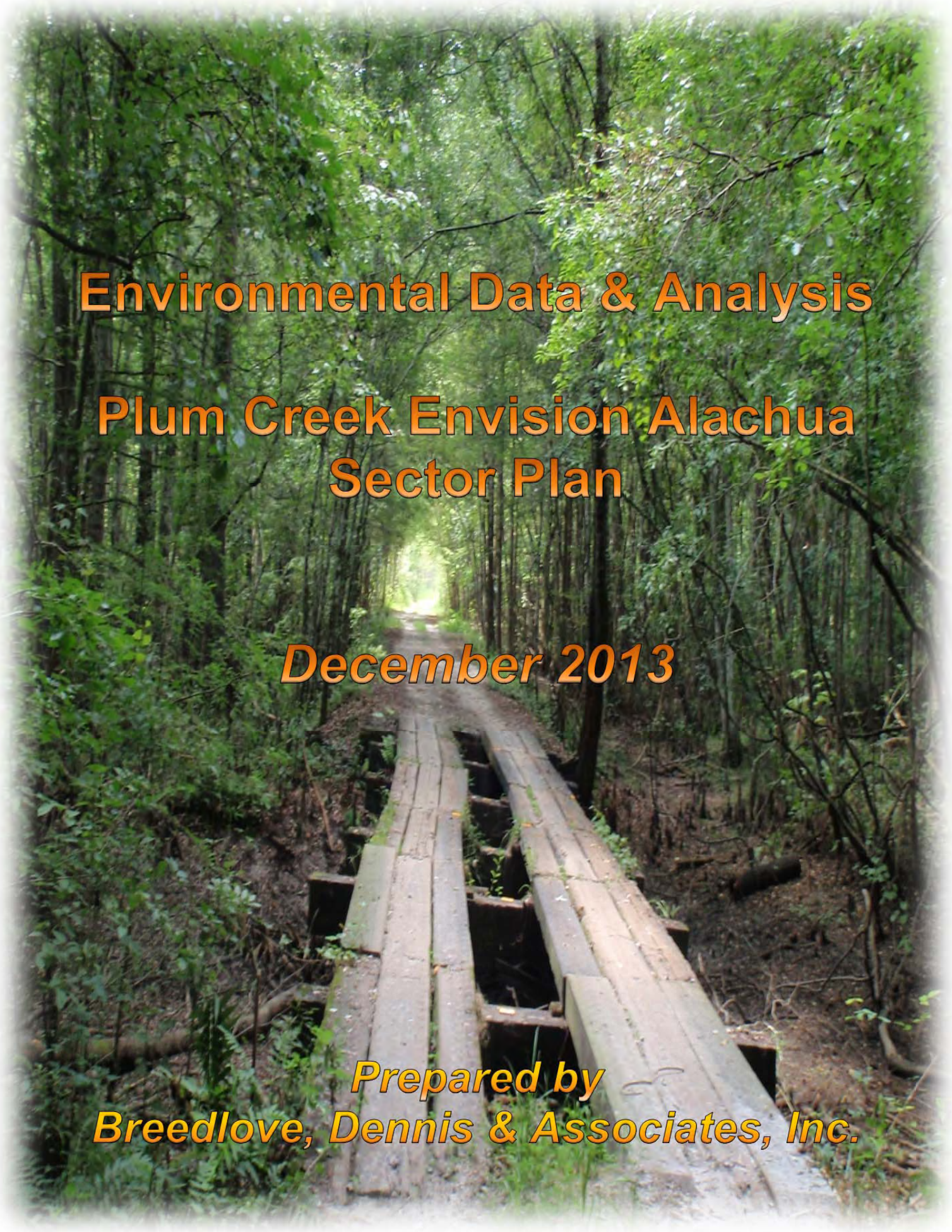
Environmental Data & Analysis
Plum Creek Envision Alachua Sector Plan
December 2013
Prepared by
Breedlove, Dennis & Associates, Inc.

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1.0 SECTOR PLAN REQUIREMENTS: F.S. § 163.3245

Pursuant to Florida Statutes (F.S.) § 163.3245, a sector plan must include the adoption of a long-term master plan (LTMP) with the following components addressing natural resource issues:

1. F.S. 163.3245(3)(a)(1) *"a framework map that, at a minimum, generally depicts areas of urban, agricultural, rural and conservation land use"*;
2. F.S. 163.3245(3)(a)(5) *"a general identification of regionally significant natural resources within the planning area based on the best available data and policies setting forth the procedures for protection or conservation of specific resources consistent with the overall conservation and development strategy for the planning area"*; and
3. F.S. 163.3245(3)(a)(6) *"general principles and guidelines addressing…the protection and, as appropriate, restoration and management of lands identified for permanent preservation through recordation of conservation easements…which shall be phased or staged in coordination with detailed specific area plans to reflect phased or staged development with the planning area…[and] general principles and guidelines addressing [the protection of] wildlife and natural areas."*

2.0 PLUM CREEK ENVIRONMENTAL PLAN

2.1 Environmental Plan for the Long-Term Master Plan Framework Map

F.S. 163.3245(3)(a)(1) requires *"a framework map that, at a minimum, generally depicts areas of urban, agricultural, rural and conservation land use."* Consistent with this requirement, the proposed LTMP Environmental Plan is presented in Figure 2.1-1. This LTMP Environmental Plan depicts the lands within Alachua County for which Plum Creek has proposed long-term protection through the LTMP and subsequent plan implementation pursuant to Section 163.3245, F.S. These natural resource lands will comprise the primary green infrastructure around the actual development on the Property.

The Plum Creek Envision Alachua Sector Plan represents a rare chance to design for ecological sustainability at a regional scale, thereby reducing landscape fragmentation, conserving ecosystem integrity, and providing a framework around which to design a compact urban footprint and incorporate infrastructure efficiently. This approach is consistent with the Alachua County Environmental Protection Department's mission "To protect the natural and historic resources of Alachua County and reduce environmental impacts of land development through environmental planning…."

2.1.1 Vision for the Environmental Plan

The overarching environmental vision for the Plum Creek LTMP on its 60,135-acre land holding in Alachua County, Florida has evolved from recognition of the long-standing silvicultural nature and use of the lands for timber production, and identification of lands appropriate for additional conservation uses. The vision for the LTMP Environmental Plan considers the broader regional landscape setting within which the lands occur; identification of key environmental linkages in the regional landscape; identification of lands appropriate to accommodate future needs of Alachua County for jobs creation

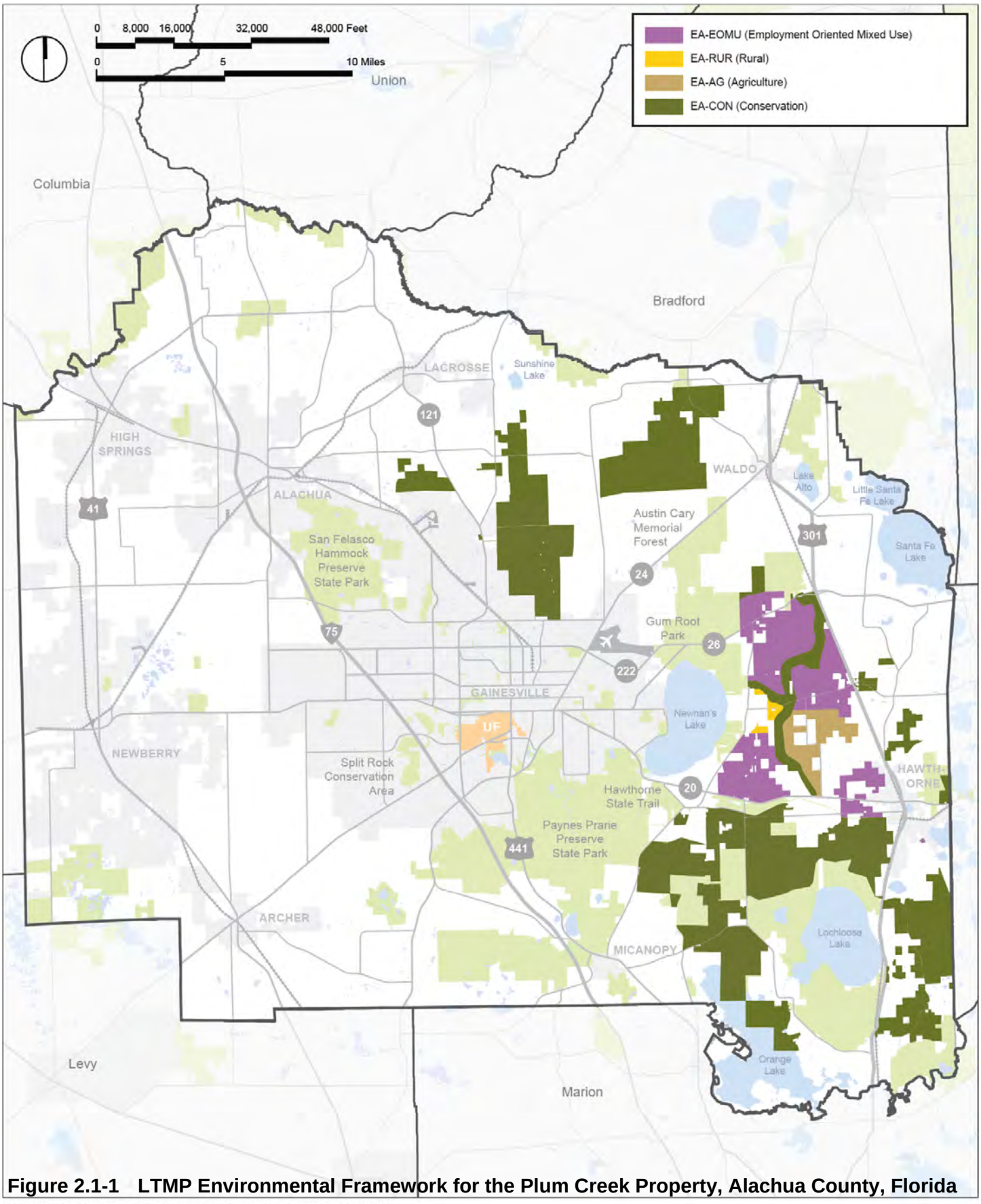


Figure 2.1-1 LTMP Environmental Framework for the Plum Creek Property, Alachua County, Florida

Data Sources: Alachua County GIS, Plum Creek | Updated: 11-2013

centers and expanding population; identification of lands targeted for agricultural uses; and identification of significant environmental resources within lands targeted for urban uses for resource protection and management. All of these elements were identified and studied through the comprehensive *Envision Alachua* experience, which brought together the land owner, concerned citizens, policy makers, governmental regulators, environmental groups, and scientists.

2.2 Building the Long-Term Master Plan Environmental Plan

2.2.1 Using Envision Alachua Planning Process as the Foundation

The LTMP Environmental Plan is based on the results of a community-based planning process which engaged local experts, community groups, and agencies to help guide a vision for future growth and conservation in Alachua County.

Through this collaborative process, the best available data on the historical background of the lands; details of the current existing conditions and land uses; regional environmental and wildlife linkages; and key environmental features such as Lochloosa Creek were identified and brought together into a comprehensive GIS database.

With this technical database upon which to plan, and the informed analysis through the *Envision Alachua* process, appropriate lands for conservation, agricultural, and future urban land uses were identified. Additional key elements of the environmental vision of the LTMP include the recognition of the imperative to seamlessly address the juxtaposition of the various land uses to achieve an overall enhanced and sustainable quality of life for the citizens of Alachua County and the region while protecting the integrity of each component use. It is also recognized that educational opportunities, both formal and of a continuing nature, are another key element of the environmental vision of the LTMP. Nature is an

amenity and will be treated as such, providing environmental protection of key natural resources and wildlife; and recreational and educational opportunities for enjoyment and incorporation into daily life.

The *Envision Alachua* Community Task Force identified compact development as preferential to rural ranchette sprawl in order to preserve open space, maintain the largest contiguous wetland areas practicable, and minimize water and energy use. Compact development and open space preservation can help protect water quality by reducing the amount of paved surfaces and by allowing natural lands to filter runoff before reaching wetlands and surface waters. Additionally, compact communities optimize pedestrian, bicycle, and public transit which can reduce air pollution by reducing automobile mileage and traffic. Therefore, the numerous public benefits of compact development may necessitate the federal, state, and local permitting of wetland impacts required during implementation of the LTMP over the next 50 years.

Pursuant to the Federal Clean Water Act Section 404(b)(1) Guidelines Alternatives Requirements for consideration of alternatives as required by 40 Code of Federal Regulations 230.10(a) an alternatives analysis was conducted by the multi-agency *Envision Alachua* public scoping process. Section 404(b)(1) Guidelines provide that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences". The location of the employment-oriented mixed use, agricultural, rural, and conservation land use categories depicted in the framwork map were carefully selected as the preferred alternative for optimal suitability while providing minimal impact to the surrounding green infrastructure.

The following vision, goal, and principles were developed based on feedback received through the *Envision Alachua* planning process activities, including Task Force meetings, Technical Advisory Group meetings, and Community Workshops:

Environmental Vision: Support the development of communities that have a balanced and compatible mix of land uses and environmentally sustainable development practices while conserving lands to protect ecosystems, wildlife corridors, and working landscapes.

Environmental Conservation Goal: Protect and retain lands for conservation, habitat protection, and wildlife connectivity.

Planning Principles:

- Develop an ecologically-based plan for Plum Creek lands to connect people to nature
- Support local and state conservation activities that enhance wildlife connectivity
- Retain lands strategically to maximize conservation and recreation opportunities
- Protect habitat for sensitive species, wetlands, and wildlife corridors
- Ensure long-term watershed protection
- Use cluster development techniques and buffers to separate conservation and residential areas
- Help complete the “emerald necklace” around Gainesville
- Develop projects that demonstrate the compatibility of conservation and economic development
- Use a science-based approach to define sensitive areas, habitat, water resources, and other environmental factors

- Use conservation easements to protect ecologically significant portions of proposed project areas

2.3 Attaining the Vision of the Long-Term Master Plan Environmental Plan

Key to attaining this vision is careful planning and development, recognizing that the human-use areas will be embedded within selected portions of the natural environment, the conservation of which is crucial to the character and quality of life of the County. The LTMP Environmental Plan was designed using science-based environmental planning principles to create a green infrastructure for planning transportation corridors and other human uses. Plum Creek has helped build upon the *Envision Alachua* concepts, expanded conservation areas throughout the Property to ultimately create a robust and comprehensive LTMP Environmental Plan that protects the long-term viability of key ecosystems, sustains resident wildlife populations, and protects water supplies for the future. The LTMP Environmental Plan is based squarely on the foundations of sustainability, conservation, wise and efficient planning of human uses and recognition of the integral role that agriculture plays in the economy, and cultural heritage of the region. The following is a description of the key components of the LTMP Environmental Plan.

2.3.1 Lochloosa Creek

Lochloosa Creek flows into Lake Lochloosa and is the largest tributary to the lake. From Lake Lochloosa water primarily flows into Orange Creek to the Ocklawaha River. The portion of Lochloosa Creek south of the Property extending from County Road 20A to Lochloosa Lake was designated an Outstanding Florida Water on December 15, 1987.

The portion of Lochloosa Creek within the Property is bordered by floodplain swamp and has been identified within the Florida Ecological Greenways Network Priority 3 project area known as "Ocala NF-Lochloosa-Paynes Prairie-Newnans Lake". Lochloosa Creek, which generally is oriented north-south through the Property east of Newnans Lake, is perhaps the most significant environmental feature of the Property that is not under conservation easement. The wetlands of Lochloosa Creek have the highest priority ranking in the Critical Lands and Water Identification Project (CLIP) version 2.0 statewide wetlands data layer, and a buffer along the creek received a Priority 2 ranking for protection of surface waters by CLIP.

Approximately 2,600 acres of land extending north-south over 9.4 miles of the Property is proposed for conservation, including a 2,000-foot wide buffer and western branch connecting this area to the Newnans Lake Conservation Area. This will provide an additional element of protection to this regionally significant ecological corridor. By protecting the creek and key uplands and wetlands that border this important resource, the LTMP Environmental Plan connects to and augments existing public lands and helps to protect the long-term health and integrity of this system.

2.3.2 Large Wetland Systems

The LTMP Environmental Plan will also protect large wetland strands and major tributary systems. Protecting large, forested wetland strands provides core habitat that supports numerous native game and non-game species. These large systems have fewer "edge effects" from adjacent development and provide greater resilience due to their size. Large wetland systems buffer creeks on the Property and provide vital connections to off-site ecological areas including numerous public conservation lands.

2.3.3 Landscape Linkages

The LTMP Environmental Plan recognizes the importance of planning for regional-scale spatial and temporal patterns when preserving local natural resources.

The following describes the relationship of the Property to lands in public ownership:

- Balu Forest – the portion of the Property immediately north of County Road (CR) 222 is bordered to the east by this parcel which is owned and managed by Alachua County
- Little Orange Creek Nature Park – the eastern half of the Property in the northeast quadrant of the intersection of SR 20 and US 301 is owned and managed by the City of Hawthorne
- Lochloosa Wildlife Conservation Area – Much of the Lochloosa Conservation Easement are contiguous with this parcel of public land owned and managed by SJRWMD
- Longleaf Flatwoods Reserve – Much of the Lochloosa Conservation Easement surrounds and is contiguous with this parcel of public land owned and managed by SJRWMD
- Newnans Lake Conservation Area – portions of the Property north and south of SR 222 and east of CR 234 are contiguous with this parcel of public land in three places
- Orange Creek Restoration Area – the southeastern-most portion of the Property in the southeast corner of Alachua County is contiguous with this parcel of public land owned and managed by SJRWMD
- Paynes Prairie Preserve State Park – the western-most portion of the Property south of SR 20 is contiguous along it western boundary with this state park which is owned by the State of Florida and managed by the Florida Department of Environmental Protection, Division and Recreation and Parks
- Phifer Flatwoods – this parcel of public land is immediately south of SR 20 and it is contiguous with the Property north and south of SR 20

- Santa Fe River-AP&E – the portion of the Property north of SR 24 and west of US 301 is bordered to the north by this parcel owned and managed by Alachua County

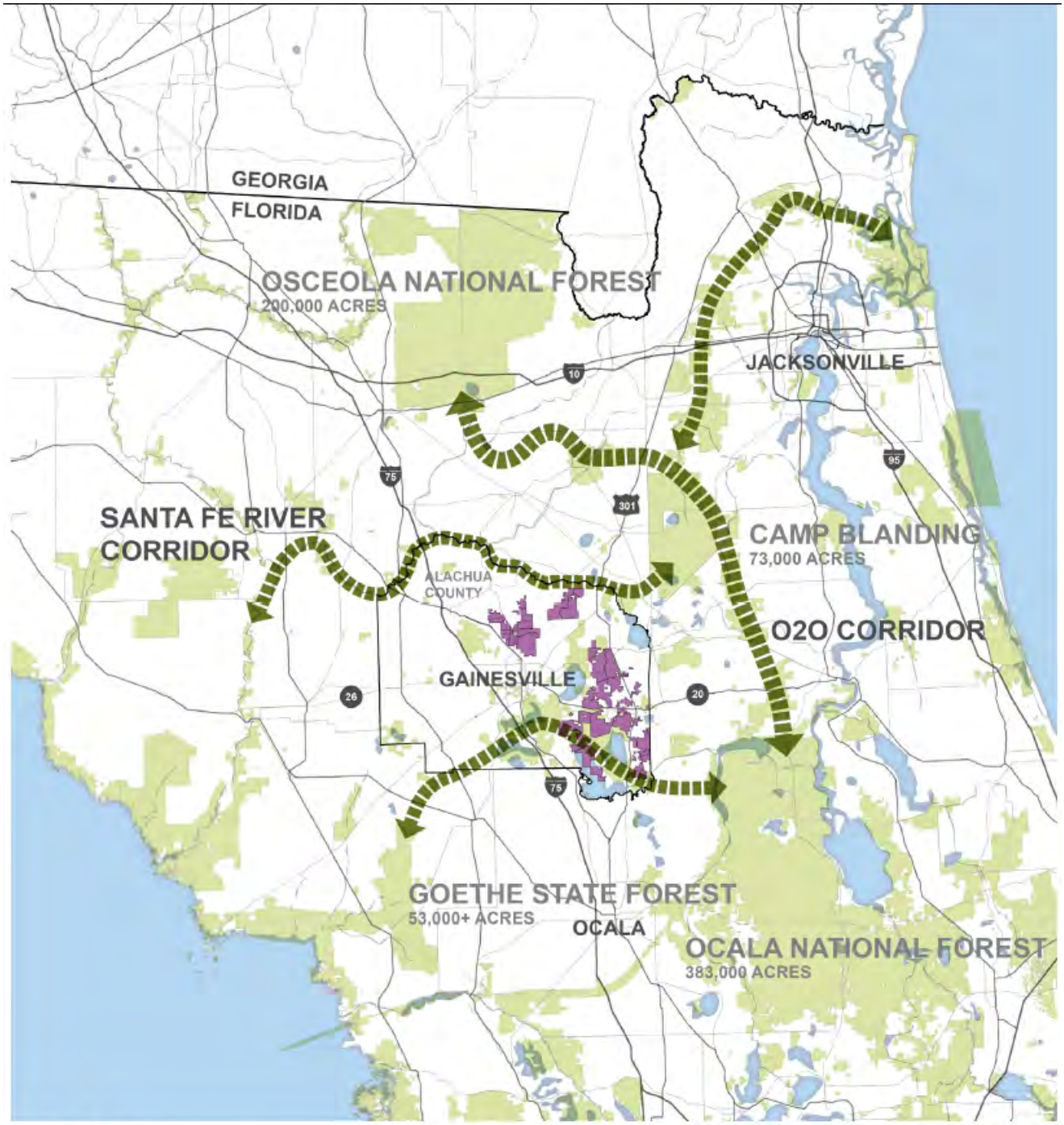
Landscape linkages contribute to the maintenance of wildlife populations and their viability by providing habitat and serving as conduits for dispersal and gene flow among populations, thus ensuring the long-term persistence of resident species. The LTMP Environmental Plan will protect vital landscape linkages within the Property and connections to regionally-significant ecological areas within Alachua County (Figure 2.3.3-1) and Northern Florida (Figure 2.3.3-2). The LTMP Environmental Plan will also protect large areas including Lochloosa Creek, and the other large-buffered wetlands and tributaries that connect to other priority areas offsite. The LTMP Environmental Plan will protect these large, interconnected wetland and stream systems to accommodate the movement of wildlife populations and help to ensure the long-term persistence of resident wildlife within the "Emerald Necklace" and North Central Florida region.

2.3.4 Silvicultural Lands

Plum Creek plans to continue their sustainable forestry practices, incorporating the perpetual growing and harvesting of trees with the protection of wildlife, plants, soil, and water quality for future generations. Plum Creek's silvicultural operations are recognized as a model for responsible and sustainable environmental management, certified under the Sustainable Forestry Initiative. Silvicultural conservation lands are a valuable component of the LTMP Environmental Plan, because they provide additional areas of upland wildlife habitat within the large mosaic of wetlands proposed for preservation and buffering important ecological resources from areas planned for development. As part of the LTMP Environmental Plan, lands identified for continued silviculture will also enhance aesthetic values as undeveloped parts

Figure 2.3.3-1 Local Landscape Linkages to the LTMP Environmental Plan

Data Source: Alachua County GIS Services,



Data Source: University of Florida GeoPlan Center

Figure 2.3.3-2 Regional Landscape Linkages to the LTMP Environmental Plan

of the landscape provide additional green infrastructure. The LTMP Environmental Plan reflects Plum Creek's commitment to remaining a viable silvicultural operation into the future.

3.0 GENERAL IDENTIFICATION OF ENVIRONMENTAL RESOURCES

F.S. 163.3245(3)(a)(5) requires "a general identification of regionally significant natural resources within the planning area based on the best available data…" The Sector Plan application also serves as a proposed amendment to the Alachua County Comprehensive Plan. Pursuant to the Alachua County Comprehensive Plan 2011-2030 Conservation Open Space Policy 3.4.1, "All applications for land use change, zoning change and development approval shall be required to submit an inventory of natural resource information." Consistent with both of these requirements, the following description of the ecological setting of the Plum Creek Envision Alachua Sector Plan Property (Property) is provided, including physiography, geology, topography, soils, vegetative communities, wildlife, and regionally significant natural resources. The completed Alachua County Environmental Resources Assessment Checklist is included as Appendix A.

3.1 Ecological Setting

The Property consists of approximately 60,135 acres located primarily within the Orange Creek Basin of the Ocklawaha River watershed, with a small portion of the northern Property located within the Santa Fe River watershed (Figure 3.1-1). The Property is located within the Eastern Florida Flatwoods ecological region of the Southern Coastal Plain (Figure 3.1-2). This ecoregion is a warm, heterogeneous area of low relief and wet soils consisting of flat plains, coastal lagoons, marshes, and swampy lowlands along the Gulf and Atlantic coasts. Historically this region was covered by a variety of forest communities that included trees of longleaf pine (*Pinus palustris*), slash pine (*Pinus elliottii*), pond pine (*Pinus serotina*), sweetgum (*Liquidambar styraciflua*), southern magnolia (*Magnolia grandiflora*), laurel oak (*Quercus laurifolia*) with forested wetlands of blackgum (*Nyssa sylvatica* var. *sylvatica*) and cypress (*Taxodium*

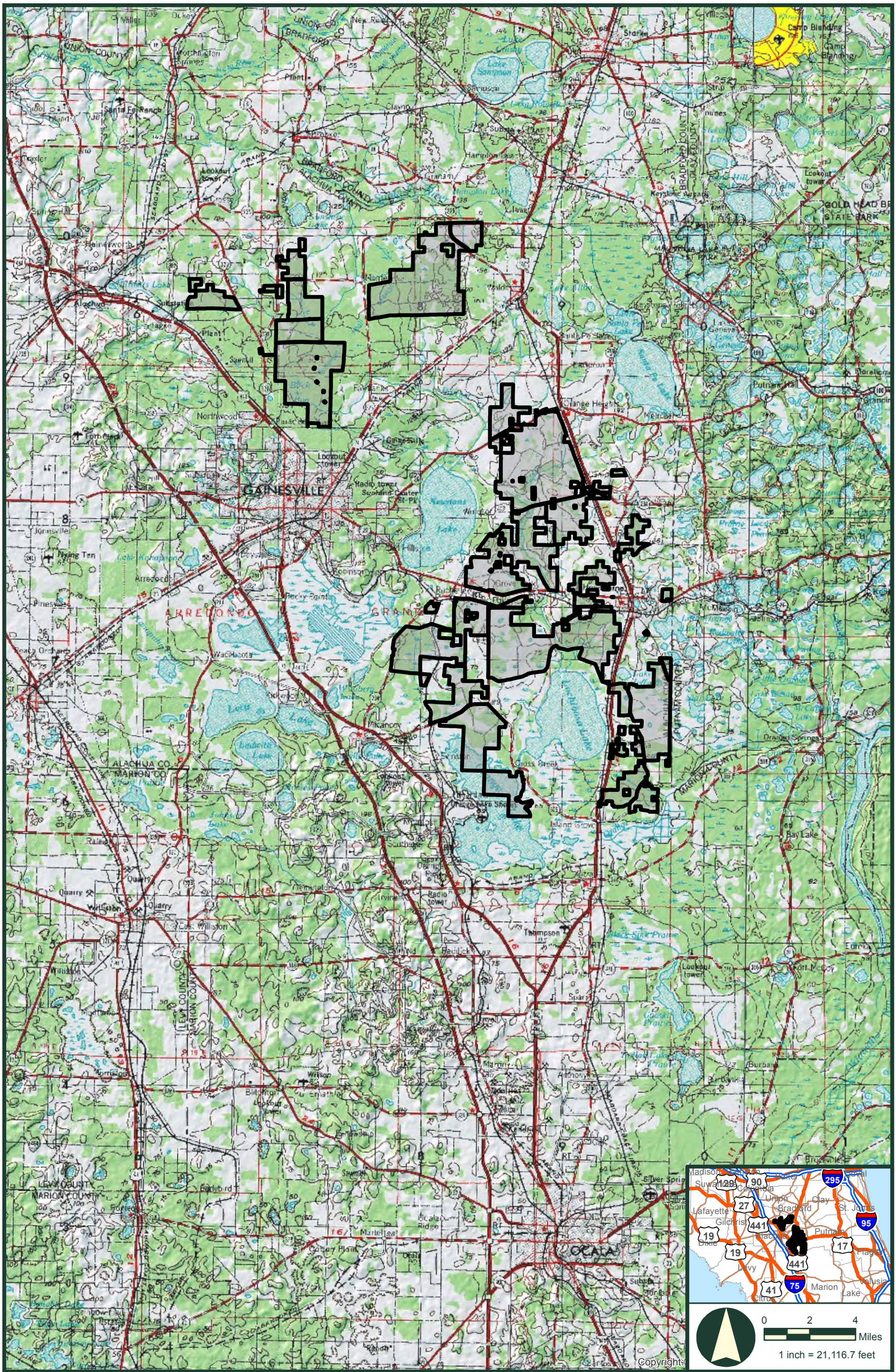


FIGURE 3.1-1.
LOCATION OF PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA.

Source: Parcels provided to ATG by RSK on 20111220.

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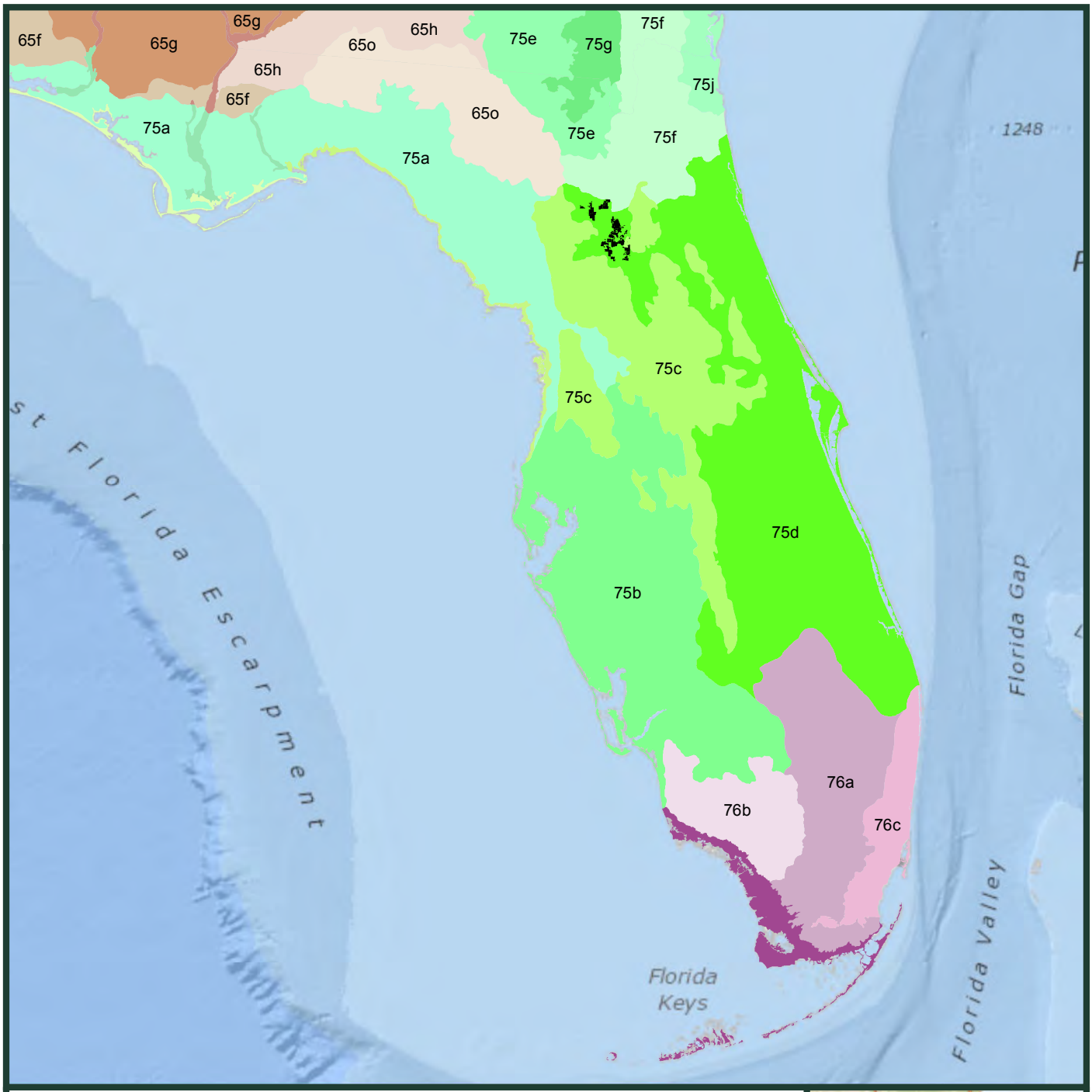
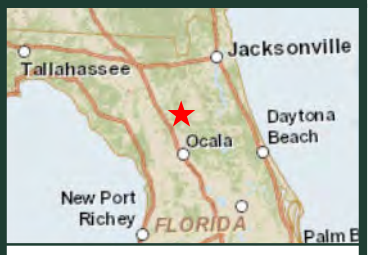


- Plum Creek Property
- 65f Southern Pine Plains and Hills
- 65g Dougherty Plain
- 65h Tifton Upland
- 65o Tallahasee Hills/Valdosta Limesink
- 65p Southeastern Floodplains and Low Terraces
- 75a Gulf Coast Flatwoods
- 75b Southwestern Florida Flatwoods
- 75c Central Florida Ridges and Uplands
- 75d Eastern Florida Flatwoods
- 75e Okefenokee Plains
- 75f Sea Island Flatwoods
- 75g Okefenokee Swamp
- 75h Bacon Terraces
- 75i Floodplains and Low Terraces
- 75j Sea Islands/Coastal Marsh
- 75k Gulf Barrier Islands and Coastal Marshes
- 75l Big Bend Coastal Marsh
- 76a Everglades
- 76b Big Cypress
- 76c Miami Ridge/Atlantic Coastal Strip
- 76d Southern Coast and Islands

Source: Property boundary provided by Plum Creek. Ecoregion boundaries downloaded from USEPA.



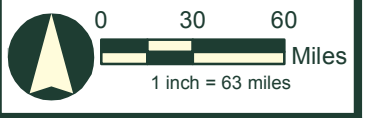


FIGURE 3.1-2
LEVEL IV ECOREGIONS AND THE PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA

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sp.). Current land cover in this region is primarily slash pine and loblolly pine (*Pinus taeda*) with oak-gum-cypress forest in low lying areas, row and field crops, pasture land for beef cattle and horses, and urban.

3.2 Physiography

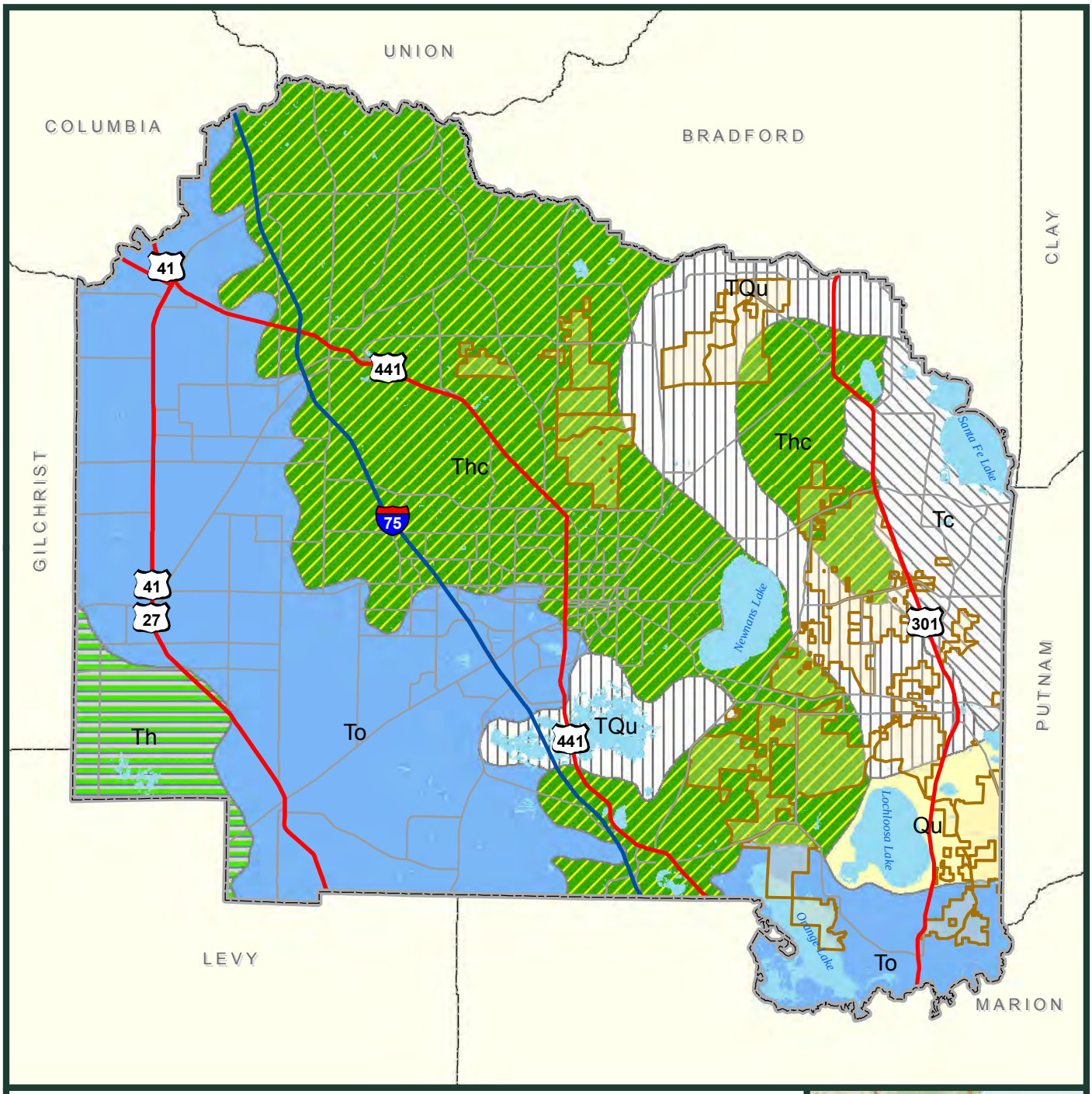
The term physiography refers to the characterization of an area in terms of geologic origin, topography, and natural features. Brooks (1981) devised a hierarchical classification system that divides the state into broad regional physiographic districts, which are subdivided into provinces, which are further subdivided into subprovinces. The Property is within three major physiographic districts mapped by Brooks (1981). The portion of the Property northwest of State Road (SR) 24 is within the High Flatwoods subprovince of the Okefenokee Upland province, Sea Island District. This area is characterized as undissected upland terraces and separating ridges with sluggish to poorly organized surface water drainage systems and vegetation dominated by flatwoods, swamps, and marsh types. The portion of the Property east of Newnans Lake, west of US Highway 301 (US 301), and north and northwest of Lochloosa Lake are within the Newnans Lake Basin subprovince of the Northern Peninsula Slopes province, Ocala Uplift district. This area is characterized as a broad basin with very gentle slopes within a district where early Tertiary limestones are at or near the surface in most places. Smaller areas of the Property southwest of Lochloosa Lake along a line between Orange Lake and Paynes Prairie are within the Alachua Prairies subprovince of the Northern Peninsula Plains province, Ocala Uplift district. This area is a karst plain dominated by lakes and prairie marshes. The portion of the Property east of US 301 and north of SR 20 is within the Perched Lakes and Prairies province of the Central Lake physiographic district. This area is characterized by flatwoods and river swamp vegetation in low areas and sandhill vegetation occurring on low hills in a region underlain by the uplifted limestone of the Floridan Aquifer. Approximately 3,500 acres of the Property east of US 301 and south of SR 20 are within the St. Johns Offset province of the

Central Lake district. This is an ancient portion of the St. Johns River Valley with limestone near the surface. Flatwoods occur on the Pleistocene terraces of this area, and a river swamp forest occurs on the floodplain.

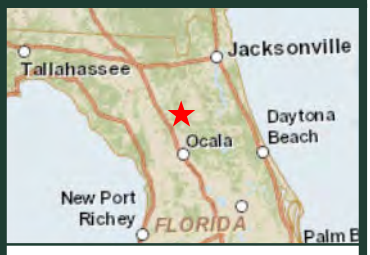
3.3 Geology

A description of the geology of the Property is a characterization of the origins and types of parent materials lying beneath the soil. According to Scott (2001a) most of the Plum Creek parcels occur on sites underlain by limestone of the Coosawhatchee Formation or are in areas of undifferentiated Tertiary-Quaternary sediments (Figure 3.3-1). However, small portions of the southern portion of the Property are underlain by the Ocala Limestone or are in areas of undifferentiated Quaternary sediments deposited within the last 1.8 million years. Scott (2001b) describes these geologic features as follows:

> Coosawhatchee Formation (Thc): The Coosawhatchee Formation is exposed or lies beneath a thin overburden on the eastern flank of the Ocala Platform and formed in the Miocene (24 million to 5 million years ago). Within the outcrop region, the Formation is poorly to moderately consolidated and consists of variably clayey and phosphatic sands or is slightly sandy with silty clay. Few or no fossils are present. Permeability is generally low, and thus the Coosawhatchee Formation forms part of the intermediate confining unit for the aquifer system.
>
> Undifferentiated Quaternary Sediments (Qu): These sediments were deposited in the Quaternary period (1.8 million years ago to present). Much of Florida's surface is covered by a varying thickness of undifferentiated sediments consisting of siliciclastics,



- Plum Creek Property
- Qu - Undifferentiated Sediments
- TQu - Undifferentiated Sediments
- Tc - Cypresshead Formation
- Th - Hawthorn Group
- Thc - Coosawhatchee Formation
- To - Ocala Limestone
- Water



0 2.5 5 Miles

1 inch = 5.8 miles

Source: Property boundary provided by Plum Creek. Geology data obtained from FDEP. Alachua County boundary downloaded from Alachua County. Roads downloaded from FDOT. County boundaries downloaded from FGDL.

FIGURE 3.3-1
STRATIGRAPHIC GEOLOGY WITHIN THE PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA

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organics, and freshwater carbonates. These sediments are mapped as distinct units when they exceed 20 feet in thickness. Areas mapped as Qu are distinct from areas mapped as Qal (alluvial and floodplain deposits), Qbd (sediments of beach ridges and dunes), and Qtr (sediments of Trail Ridge). Undifferentiated Quaternary sediments are clean to clayey, silty, unfossiliferous, variably organic-bearing sands, and poorly to moderately consolidated. Organics occur as plant debris, roots, disseminated organic matrix, and beds of peat.

Undifferentiated Tertiary/Quaternary Sediments (TQu): These sediments are siliciclastics that are separated from undifferentiated Quaternary sediments solely on the basis of elevation. Sediments above 100 feet MSL are generally older than Pleisocene (1.8 million years to 11,000 years ago). This unit may include fluvial and aeolian deposits. These sediments are unconsolidated to poorly consolidated, fine to coarse grained, clean to clayey, unfossiliferous sands, sandy clays, and clays. Organic debris and disseminated organics are present in these sediments, which are part of the surficial aquifer system.

Ocala Limestone (To): The Ocala Limestone consists of nearly pure limestones and occasional dolostones that formed in the upper Eocene (38 million years ago). Fossils present in the Ocala Limestone include abundant large and smaller foraminifers, echinoids, bryozoans, and mollusks. The permeable, highly transmissive carbonates of the Ocala Limestone form an important part of the Floridan Aquifer System.

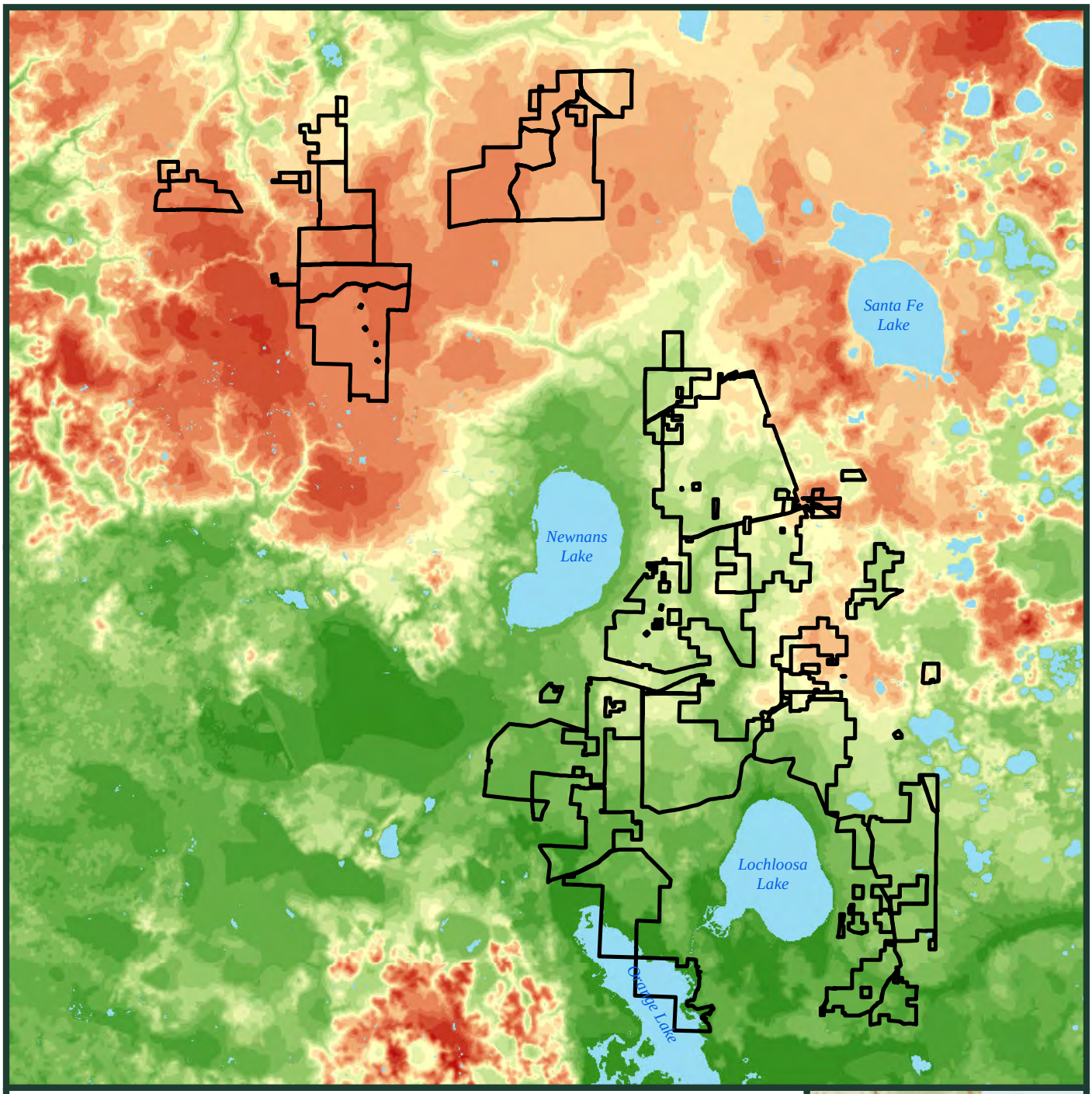
3.4 Topography

Topography within the Property was determined from a statewide digital elevation model (DEM) constructed from a mosaic of four Laser Rangefinder- and contour-based DEM models and published by the GeoPlan Center, University of Florida (Figure 3.4-1). The statewide DEM has contour intervals of one foot and a resolution of five meter grid cells. Elevations within the Property range from 42 to 181 feet above mean sea level. The lowest elevations are along the shoreline of Orange Lake. The highest elevations occur along the south boundary of the westernmost portion of the Property.

3.5 Soils

Soils on the Property are depicted in Figure 3.5-1. The Soil Survey Geographic database created by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) for Alachua County, Florida, identifies 49 soil map units representing seven soil orders as occurring within the Property. The majority of the property is comprised of Spodosols (48%) and Ultisols (44%) with dominant soil map units including Pomona sand (14), Newnan sand (21), Monteocha loamy sand (19), and Sparr fine sand (50).

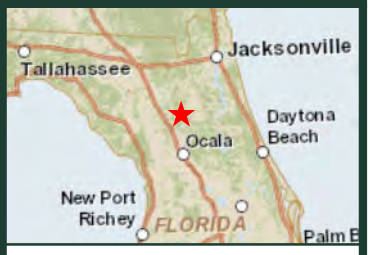
Soils are classified by the NRCS into four Hydrologic Soils Groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D) according to the rate of water infiltration or runoff potential from long-duration storms (NRCS, 1993). Group A soils have a high infiltration rate (low runoff potential) when thoroughly wet; consisting primarily of deep, well to excessively drained sands or gravelly sands. Approximately 30% of the Property is comprised of Group A soils. Group D soils have a very low infiltration rate (high runoff potential) when thoroughly wet; consisting primarily of clays, soils with a permanent high water table, soils with a restrictive layer at or near the surface, and/or shallow soils over nearly impervious material. Certain soils are placed in group D based solely on the presence of a water



Plum Creek
Water

Topography (ft)

40 - 50
50 - 60
60 - 70
70 - 80
80 - 90
90 - 100
100 - 110
110 - 120
120 - 130
130 - 140
140 - 150
150 - 160
160 - 170
170 - 180
180 - 190
190 - 200
200 - 210



0 2 4 Miles

1 inch = 4 miles

Source: Property boundary provided by Plum Creek. Florida Digital Elevation Model (DEM) derived from LIDAR imagery downloaded from FGDL.

FIGURE 3.4-1
TOPOGRAPHY WITHIN THE PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA

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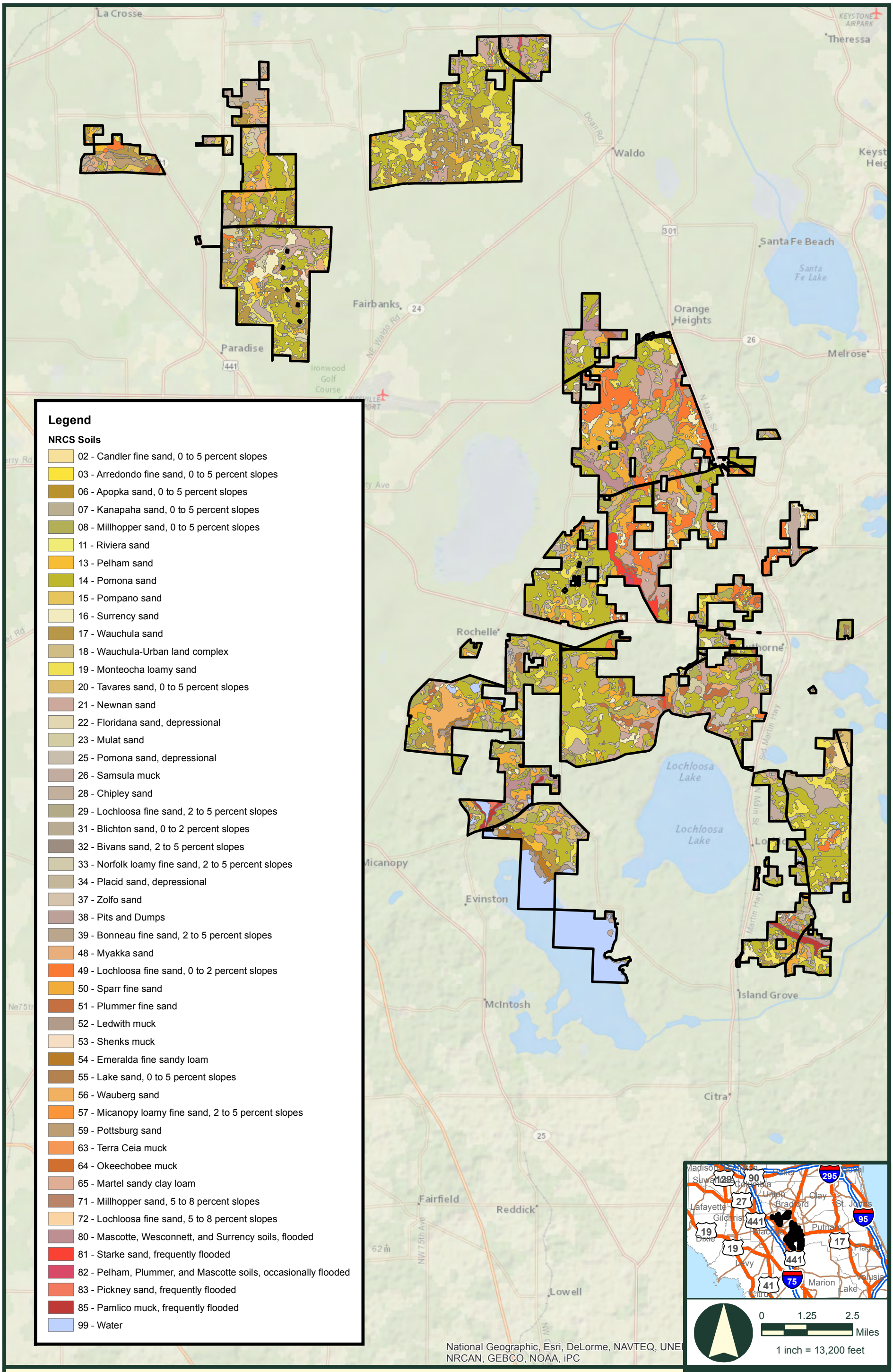

FIGURE 3.5-1.
NATURAL RESOURCE CONSERVATION SERVICE SOILS MAP OF PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA.

Source: Parcels provided to ATG by RSK on 20111220. Soils from USDA, NRCS, SSURGO database for Alachua, County, FL, V. 2.2, pub. 2006/10/25.

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table within 24 inches of the surface even though the saturated hydraulic conductivity may be favorable for water transmission. When a soil is assigned to a dual hydrologic group the first letter applies to the drained condition and the second to the undrained condition. If these soils can, or have been adequately drained, they are assigned to dual hydrologic soil groups. The majority of the Property (58%) is classified as A/D soils.

Soils within portions of Alachua County have been identified as containing high concentrations of geologic phosphorus due to the presence of the Hawthorne Group. Ramnarine (2003) researched the distribution of phosphatic soil within Alachua County, determining the majority of east Alachua County had a low probability of containing phosphatic soil. Further research by FDEP (2008), Cohen et al (2008), Long (2009), and Di et al. (2012) have looked at the contribution of geologic phosphorus to the nutrient loading of Newnans, Lochloosa, and Orange Lakes, located within close proximity to the Property.

3.6 Vegetative Communities

Land use and vegetative associations identified throughout the Property were classified using the Florida Land Use, Cover and Forms Classification System (FLUCFCS; Florida Department of Transportation, January 1999) data included in the St. Johns River Water Management District's (SJRWMD) Geographic Information System (GIS) database (Table 3.6-1, Figure 3.6-1).

FLUCFCS data indicates the Property is comprised of a diverse mixture of upland and wetland community types, including silvicultural lands, upland forest, wetlands, surface waters, and various types of human infrastructure. While the dominant land use on the Property is silviculture (~68%), there are also many other vegetative communities which combine to create a diverse and abundant mosaic of uplands,

Table 3.6-1 Vegetative Communities for the Plum Creek Property, based on the Florida Land Use Cover & Forms Classification System.

FLUCFCS Code	Vegetative Community	Percent Coverage (%)
1100	Residential, low density	0.03
2110	Improved pastures	0.07
2120	Unimproved pastures	0.14
2130	Woodland pastures	0.01
3100	Herbaceous upland nonforested	0.03
3200	Shrub and brushland	0.06
3300	Mixed upland nonforested	0.01
4100	Upland coniferous forests	0.12
4110	Pine flatwoods	0.50
4200	Upland hardwood forests	0.02
4340	Upland mixed coniferous/hardwood	0.86
4360	Upland scrub, pine and hardwoods	0.05
4380	Mixed hardwoods	0.06
4410	Pine plantation	42.19
W441	Wet pine plantation	0.03
4430	Forest regeneration	25.56
5100	Streams and waterways	0.01
5200	Lakes	1.87
5250	Marshy Lakes	0.02
5340	Reservoirs < 10 acres	0.01
6110	Bay swamps	0.42
6130	Gum swamps	0.02
6170	Mixed wetland hardwoods	6.17
6200	Wetland coniferous forests	0.07
6210	Cypress	2.98
6211	Timbered cypress	1.10
6250	Hydric pine flatwoods	2.62
6300	Wetland forested mixed	4.62
6410	Freshwater marshes	2.39
6430	Wet prairies	4.05
6440	Emergent aquatic vegetation	0.65
6460	Mixed scrub-shrub wetland	3.24
7410	Rural land in transition	0.01
8320	Electrical Transmission Lines	0.01
	Grand Total	**100.00**

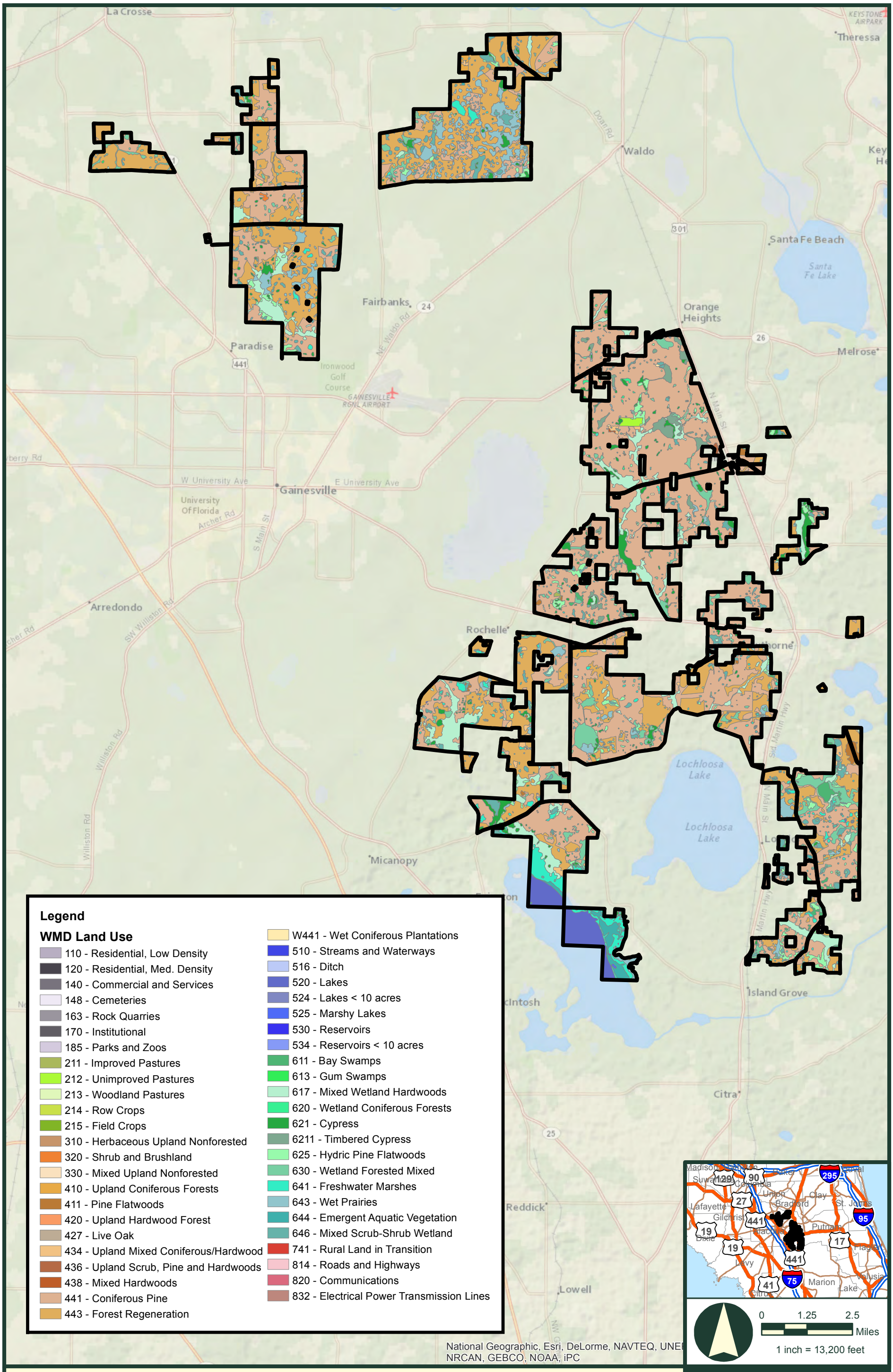

FIGURE 3.6-1.
FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM MAP
OF PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA.

Source: Parcels provided to ATG by RSK on 20111220. Vegetative delineation based on SJRWMD Land Use and Land Cover, 2004 and selective groundtruthing by BDA, Dec. 2011.

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wetlands, and water. The majority of the Property is characterized as uplands (~70%), with the remaining consisting of wetland (~28%) and surface water (~2%) cover types. Upland forested communities, excluding silvicultural lands, cover ~2% of the Property and consist of pine flatwoods, upland hardwood forests, upland coniferous forests, upland mixed coniferous and hardwood forest, upland scrub, pine and hardwoods, and mixed hardwoods. Additional upland land uses on the Property include residential areas (0.03%), pastures (0.22%), herbaceous upland nonforested (0.03%), shrub and brushland (0.06%), mixed upland nonforested (0.01%), rural land in transition (0.01%), and electrical power transmission lines (0.01%).

Forested freshwater wetlands cover ~18% of the Property and are characterized by areas of cypress swamp, bay swamp, mixed wetland hardwoods, timbered cypress, gum swamps, wetland coniferous forests, hydric pine flatwoods, and mixed forested wetlands. Herbaceous freshwater wetlands comprise ~7% of the Property including marshes, wet prairies, and emergent aquatic vegetation. In addition, approximately 3% of the Property is characterized as mixed scrub-shrub wetland. Surface waters comprise ~2% of the Property and consist of ditches, streams and waterways, lakes and ponds, and reservoirs.

3.7 Significant Wetlands and Surface Waters

Approximately 38% (22,865 acres) of the Property subject to this Sector Plan is presently preserved under existing conservation easements (Table 3.7-1, Figure 3.7-1). This includes the Murphree Wellfield Conservation Easement (6,228 acres) and Lochloosa Conservation Easement (16,637 acres) included in the “Emerald Necklace”, an Alachua County land conservation initiative to establish a network of greenways managed to support the protection, enhancement, and restoration of functional and connected natural systems while providing unique opportunities for resource-based recreation. Incorporated into the

Table 3.7-1 Existing Conservation Easements on Plum Creek Property, Alachua County, Florida

Instrument No.	Date Recorded	Acres	Grantor/Grantee	General Location	Restrictions/Prohibited Uses	Affirmative and Reserved Rights/Allowed Uses
Murphree Wellfield Conservation Easement						
1651188	12-15-1999	±7,102	Nekoosa Packaging Corporation in favor of SJRWMD, SRWMD, and City of Gainesville	Vicinity of Buck Bay, east of State Hwy 121 in north-central Alachua County	Use of the Property that will cause or result in a sustained degradation of the present environmental and water resource value of the Property	Use, occupy, manage, and regulate the Property in keeping with the policies declared in Chapter 373, Florida Statutes and enforce compliance with this Easement
					Water well locations will be subject to a Public Utilities Easement of not less than 30 ft in width over and across the Property to the well site; all activities associated with water wells are subject to the relevant government regulations	Locate, construct and maintain production wells, monitoring wells, exploratory wells, pumps, water conveyance pipelines, electrical distribution lines and electrical transmission lines as required for the proposed City water wells
					Dredging, construction of new ponds, dikes, or canals; any manipulation of natural water courses; any activities or uses detrimental to water quantity or quality	Maintenance, repair and replacement of existing improvements, ditches, canals, roads, and structures which service silvicultural operations
					Commercial, agricultural or industrial activity (including any right of passage in conjunction with such activities)	Development, construction and maintenance of building facilities, infrastructure or utilities to implement and carry out Grantee's rights and policies in regard to the Property as described in this Easement
					Development of the Property to accommodate or facilitate the construction of temporary or permanent residences, buildings, facilities, utilities, or infrastructure	Placement of ownership notification signage
					Construction of temporary or permanent residences, building, facilities, utilities or infrastructure (to include mobile homes, advertising signs, billboards and other advertising materials; as well as docks, bridges, piers or other structures)	Construct temporary logging roads as reasonably required for silvicultural and related management operations permitted under this Easement
					Building of new permanent roads or widening of existing roads (except as necessary for ingress/egress and construction, operation and maintenance of water wells)	Maintenance of existing roads shall be limited to: (a) Removal of dead vegetation; (b) Necessary pruning or removal of hazardous trees and plants; (c) Application of permeable materials necessary to correct or impede erosion; (d) Grading; (e) Replacement of culverts, water control structures and bridges; and (f) Maintenance of roadside ditches
					Filling, excavating, dredging, mining or drilling; removal of substrates, minerals or other materials; changes to topography of the land (except for those normal silvicultural activities performed in compliance with Best Management Practices (BMPs)	
					Dumping or placing of soil, trash, solid or liquid waste, or unsightly, offensive or hazardous materials, wastes or substances, toxic wastes or substances, pollutants or contaminants	
					Subdividing or conveyance of the Property that would result in creation of tracts less than 1,000 acres without written consent of Grantee(water well sites are the exception)	
					Planting of nuisance exotic or non-native plants as listed by the Exotic Pest Plant Council	Manage and control any occurrence of nuisance exotic or non-native plants to the degree practicable
					Application of pesticides, herbicides, and fertilizers within 500 ft of any production well (both on the Property and on adjoining City property)	Application of pesticides, herbicides and fertilizers in accordance with BMPs or label instructions; monitoring wells and instruments may be installed to monitor the quality of the surface and ground water
					Intentional destruction or damage to any sites of archaeological, cultural or historic significance unless authorized or approved by the appropriate regulating agency	Afford protection to threatened or endangered species and species of special concern in accordance with federal and/or state regulations

Table 3.7-1 Continued

Instrument No.	Date Recorded	Acres	Grantor/Grantee	General Location	Restrictions/Prohibited Uses	Affirmative and Reserved Rights/Allowed Uses
					Any use of the Property and any activity thereon which is or may become inconsistent with the conservation of the Property predominately in its present condition and the protection of environmental systems	Sell, rent or mortgage the Property (subject to 1,000-acre minimum parcel size, excepting well sites)
					No more than 15% of the aggregate acres may be clear cut within any calendar year; if Property is subdivided, no more than 15% of the aggregate acres within each subdivided parcel may be clear cut within any calendar year	Conduct commercial forestry operations (silvicultural) in accordance with the Silvicultural BMPs Manual (1993 edition or later), the "Forestry Plan" prepared for the Property, and the conditions and restrictions of this Easement; Grantor will provide Grantee with a report and update to the Forestry Plan on an annual basis
					Oldest and youngest stands of planted trees must be separated by at least 10 years	
					Upland harvesting clear cuts shall be limited to areas no larger than 200 acres; 3 years of regrowth is required prior to harvesting adjacent timber unless: (a) No more than 10% of the perimeters of both harvest areas are immediately adjacent; and (b) Buffer strips of at least 500 ft are preserved between adjacent harvest areas	
					Windrowing, bedding or harrowing in site preparation and replanting operations outside of the existing Upland pine plantations or said adjacent isolated or fringe areas	Isolated or fringe areas of upland vegetation smaller than 20 acres that are immediately adjacent to designated Upland pine plantations may be added to or included within the harvesting and management operations
					Wetland harvesting clear cuts shall be limited to areas of 50 acres or less; 5 years of regrowth are required prior to harvesting adjacent timber unless: (a) The perimeter of such harvest areas are not adjacent; and (b) Buffer strips of at least 500 ft are preserved between the perimeters of the harvest areas	
					Harvesting in wetlands that lie in a primary Special Management Zone (SMZ)	Wetlands of Buck Bay that do not qualify as SMZ may be subject to one harvest of the area; thereafter, such area shall be considered a primary SMZ
					Commencement and maintenance of new pine plantations in wetlands	Remove damaged timber in the event of a natural disaster, fire, disease, insect infestation or the like to protect remaining timber
					±1,777 acres of land known as the "2 Year Travel Time Zone" are subject to the terms and conditions of a Cooperative Agreement between Commodity Credit Corporation and the City of Gainesville for the Farmland Protection Program	Control and restrict public access for hunting, fishing, and other recreational purposes; continue lease-hunting privileges as expressly subject to this Easement
First Amendment to Murphree Wellfield Conservation Easement						
1784465	9-26-2001	±7,102	NPC Timber, Inc. in favor of SJRWMD, SRWMD and City of Gainesville	Vicinity of Buck Bay, east of State Hwy 121 in north-central Alachua County	Same as Original CE except: Modified and amended property legal description to separate SJRWMD and SRWMD tracts	

Table 3.7-1 Continued

Instrument No.	Date Recorded	Acres	Grantor/Grantee	General Location	Restrictions/Prohibited Uses	Affirmative and Reserved Rights/Allowed Uses
Public Utilities Easement						
1929242	4-23-2003	±9.373	Plum Creek Timberlands, LP in favor of City of Gainesville (Gainesville Regional Utilities)	Approximately 30-ft wide access easement interior to the Murphree Wellfield CE	Subject to the terms and conditions of the Murphree Wellfield CE	Construct, locate, operate, inspect, patrol, alter, improve, repair, rebuild, relocate, and remove said facilities
					Utilize or permit utilization of Easement in any way which will interfere with the safe operation and maintenance of the said facilities	Ingress and egress at all times
						Upgrade the quantity and type of facilities
						Clear the Easement area and keep it clear of trees, limbs, undergrowth and other obstructions which endanger or interfere with the safe and efficient installation, operation or maintenance of said facilities
						Trim and cut and keep trimmed and cut any trees and undergrowth on Grantor's land adjacent to but outside of Easement area which endanger or interfere with the safe and efficient installation, operation or maintenance of said facilities
						Use of the Easement area for purposes which are not inconsistent with the granted Easement privileges
Lochloosa Conservation Easement						
1373813	12-29-1995	±16,610	Nekoosa Packaging Corporation in favor of SJRWMD	Vicinity of Lochloosa Lake, south of SR 20 in southeast Alachua County	Use of the Property that will cause or result in a sustained degradation of the present environmental quality of the Property	Use, occupy, manage, and regulate the Property in keeping with the policies declared in Chapter 373, Florida Statutes and enforce compliance with this Easement
					Commercial, agricultural or industrial activity (including any right of passage in conjunction with such activities)	Maintenance, repair, and replacement of improvements and structures servicing the existing silvicultural operation
					Continue any existing cattle leases through that date which is 3 years from the date of this Easement; on or before such date cattle leases shall be terminated and thereafter Grantor will not enter into or renew any cattle or livestock leases for the Property	
					Development of the Property to accommodate or facilitate the construction of temporary or permanent residences, building, facilities, infrastructure or utilities	Development, construction and maintenance of building facilities, infrastructure or utilities to implement and carry out Grantee's rights and policies in regard to the Property as described in this Easement
					Construction of temporary or permanent residences, building, facilities, utilities or infrastructure (to include mobile homes, advertising signs, billboards and other advertising materials; as well as docks, bridges, piers or other structures)	Placement of ownership notification signage, signage used in conjunction with the Wildlife Management Area, and signage in conjunction with the public access plan
					Building of new permanent roads or widening of existing roads	Construct temporary logging roads as reasonably required for silvicultural and related management operations permitted under this Easement
					Dredging, construction of new ponds, dikes, or canals; any manipulation of natural water courses; any activities or uses detrimental to water quantity or quality	Maintenance of roads shall be limited to: (a) Removal of dead vegetation; (b) Necessary pruning or removal of hazardous trees and plants; (c) Application of permeable materials necessary to correct or impede erosion; (d) Grading; (e) Replacement of culverts, water control structures and bridges; and (f) Maintenance of roadside ditches
					Filling, excavating, dredging, mining or drilling; removal of substrates, minerals or other materials; dumping of ashes, trash, garbage or other foreign material; changes to topography of the land	

Table 3.7-1 Continued

Instrument No.	Date Recorded	Acres	Grantor/Grantee	General Location	Restrictions/Prohibited Uses	Affirmative and Reserved Rights/Allowed Uses
					Continued borrow pit operation in or relocation to a Conservation Area as defined in this Easement	Continue removal of soil and rock material from existing operational borrow pits for purpose of existing road maintenance; relocation or substantial enlargements of such borrow pits will require prior written approval of Grantee
					Subdivision or conveyance of the Property that would result in creation of tracts less than 2,000 acres in size without written consent of Grantee	Sell, rent or mortgage the Property (subject to 2,000-acre minimum parcel size)
					Upland harvesting clear cuts shall be limited to areas no larger than 200 acres; 3 years of regrowth are required prior to harvesting adjacent timber unless: (a) No more than 10% of the perimeters of both harvest areas are immediately adjacent (b) Buffer strips of at least 500 ft are preserved between adjacent harvest areas	Conduct commercial forestry operations (silvicultural) in accordance with the Silvicultural BMPs Manual (1993 edition or later), the "Forestry Plan" prepared for the Property, and the conditions and restrictions of this Easement; Grantor will provide Grantee with a report and update to the Forestry Plan on an annual basis
					Windrowing, bedding or harrowing in site preparation and replanting operations outside of the existing Upland pine plantations or said adjacent isolated or fringe areas	Isolated or fringe areas of upland vegetation smaller than 20 acres that are immediately adjacent to designated Upland pine plantations may be added to or included within the harvesting and management operations
					Wetland harvesting clear cuts shall be limited to areas of 50 acres or less; 5 years of regrowth are required prior to harvesting adjacent timber unless: (a) The perimeter of such harvest areas are not adjacent; and (b) Buffer strips of at least 500 ft are preserved between the perimeters of the harvest areas	Within a Conservation Area, forest areas designated as "Stand Three" may be subject to a one-time clear cut harvest followed by timely regeneration of the area according to BMPs
					Harvesting in Wetlands that lie in a primary or secondary Special Management Zone (SMZ)	Selective harvesting from below is permitted within Conservation Area Uplands; following harvest, remaining stand shall be approximately 50 ft^2 of basal area and the leave trees shall be chosen from the population of the dominant and co-dominant
					Commencement and maintenance of new pine plantations in Wetlands	Fifth row thinning of timber stands within Conservation Area Uplands which have received no prior harvesting
					No more than 2,000 aggregate acres may be clear cut within any calendar year	Salvage harvesting following a natural disaster is permitted in both Conservation Area Uplands and Wetlands according to agreed plan
					Any use of the Property and any activity thereon which is or may become inconsistent with the conservation of the Property predominately in its present condition and the protection of environmental systems	Prescribed burning of Conservation Area Uplands according to BMPs
						Control and restrict public access for hunting, fishing, and other recreational purposes through use of designated access points as provided in the "Public Access Plan"
						Public hunting on the Property for a period of 20 years subsequent to the date of this Easement shall be managed by a wildlife management plan or wildlife management agreement with the State of Florida; Grantor is entitled to any revenue generated by such public hunting; at such time as public hunting privileges expire, Grantor may lease hunting privileges at its own discretion

Table 3.7-1 Continued

Instrument No.	Date Recorded	Acres	Grantor/Grantee	General Location	Restrictions/Prohibited Uses	Affirmative and Reserved Rights/Allowed Uses
First Amendment to Lochloosa Conservation Easement						
1635194	9-20-1999	±16,610	Nekoosa Packaging Corporation in favor of SJRWMD	Vicinity of Lochloosa Lake, south of SR 20 in southeast Alachua County	Same as original CE except: (a) Clarified boundaries of the Uplands and Conservation Areas; (b) Substitution of legal description for the Conservation Easement Property (Exhibit A); (c) Addition of Conservation Area parcel legal descriptions (Exhibit B) and amended drawings delineating the Conservation Area boundaries (Exhibit D); amended drawings shall supersede Exhibit B of original Easement; (d) Addition of Land Cover Map (Exhibit E) delineating the boundaries of the Uplands	
Second Amendment to Lochloosa Conservation Easement						
2449438	8-18-2008	±16,610	Plum Creek Timberlands, LP in favor of SJRWMD	Vicinity of Lochloosa Lake, south of SR 20 in southeast Alachua County	Same as original CE and first amendment except: (a) Exclusion of ±40.58-ac parcel from the Conservation Easement Property (Exhibit B) (b) Replace Section II.6. of Easement in its entirety and substitute with 1,750-ac minimum parcel size restriction of Property to be sold, rented, or mortgaged	Same as original CE and first amendment except: (a) Inclusion of ±40.58-ac parcel to the Conservation Easement Property (Exhibit A) (b) Addition of new paragraph III.4 to Section III of Easement: Engage in activities (including prescribed burning, herbicide use, and mechanical treatments) intended to improve or maintain native wildlife habitat (including gopher tortoise restocking) provided such activities are properly permitted by the appropriate authority and subject to Grantee approval (c) Addition of new paragraph III.5. to Section III of Easement: Engage in activities (including modifications to topography) designed to create, enhance or restore the quantity or quality of wetlands or waters on the Property, provided such activities are properly permitted by the appropriate authority or otherwise approved by the Grantee
Conservation Easement for Habitat Management						
2485826	2-23-2009	±680.70	Plum Creek Timberlands, LP in favor of FWC	Interior to Lochloosa CE, south of CR 346 and west of CR 325	Subject to the SJRWMD Conservation Easement (aka Lochloosa CE), including all Prohibited Uses and restrictions to Reserved Rights	Implement the habitat management plan for gopher tortoise restocking site ("Plan") as incorporated by reference; management objectives include: (a) Maintain preferred habitat for the gopher tortoise on preferred soils (b) Sustainable production of timber (c) Continuation of dispersed recreation
					Any activity or use of the Property in violation of the "Plan"	Preserve and protect the habitat management values of the Property through implementation of habitat management activities such as harvesting, burning, herbicide use, mechanical treatments and reforestation, as well as monitoring of habitat conditions and tortoise density surveys
					Right of access by the general public to any portion of the Property is not conveyed by this Easement	Grantee may enter Property to engage in activities consistent with this Easement (to include compliance monitoring and enforcement)
						Grantor may engage in all uses of the Property that are not expressly prohibited herein and are not inconsistent with the purpose of this Easement
					Initial stocking of gopher tortoises (regardless of number) will invoke habitat management obligations on a minimum of 200 acres; thereafter, obligations will initiate on an acre-by-acre basis as tortoises are stocked	Obligations to perform habitat management will commence with actual stocking of gopher tortoises; Grantor may quit accepting tortoises at its sole discretion, but habitat management obligations will be carried out in perpetuity

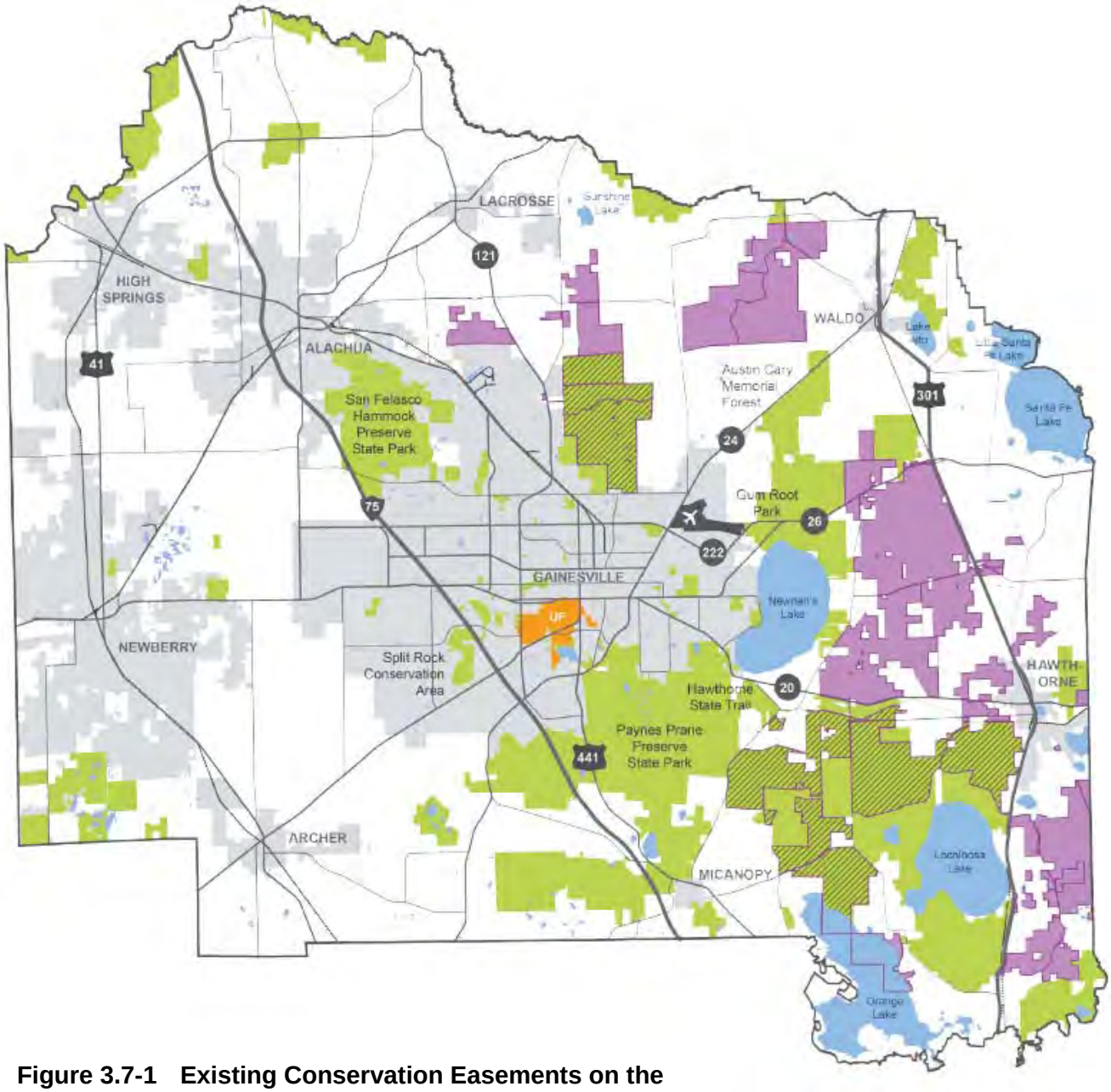


Figure 3.7-1 Existing Conservation Easements on the Plum Creek Property, Alachua County, Florida

Data Source: Alachua County GIS, Plum Creek

PLUM CREEK EASP PROPERTY
PLUM CREEK EXISTING CONSERVATION EASEMENT
ALACHUA COUNTY EXISTING CONSERVATION
MUNICIPALITIES & URBAN CLUSTER

0 8,000 16,000 32,000 48,000 feet
0 5 10 miles

Lochloosa Conservation Easement is the Grove Park Wildlife Management Area containing public trails that may be accessed year-round for hiking, biking, wildlife viewing, and horseback riding.

Additionally, much of the Property is contiguous with parcels of land in public ownership or under conservation easements including Balu Forest and Phifer Flatwoods (owned and managed by the County), and the Newnans Lake Conservation Area and Lochloosa Wildlife Conservation Area (owned and managed by the SJRWMD).

Orange Lake, Lochloosa Creek, Rocky Creek, Little Monteocha Creek, and tributaries of Hatchet Creek border or are located on the Property. Plum Creek is committed to the protection of these water resources and their ecological linkages within the regional landscape. Therefore, Plum Creek is proposing to protect an additional 39% (23,216 acres) of the Property including many large interconnected wetland strands and large tributaries flowing through the Property. Plum Creek is committed to the conservation of these key ecosystems, their functionality, and their role in protecting larger regionally significant lake and river systems.

3.8 100-Year Floodplain

The Digital Flood Insurance Rate Map (DFIRM) (June 2013) for the state of Florida was downloaded from the Florida Geographic Data Library web site hosted by the University of Florida GeoPlan Center. This database contains information about flood hazard areas within many Florida counties, including Alachua County. These zones are used by the Federal Emergency Management Agency to designate Special Flood Hazard Areas for insurance rating purposes, and they are depicted on Flood Insurance Rate Maps. The DFIRM database shows that more than half (32,162 acres) of the Property is located within the 100-year floodplain, including the majority of the northeast portion of the Property proposed for

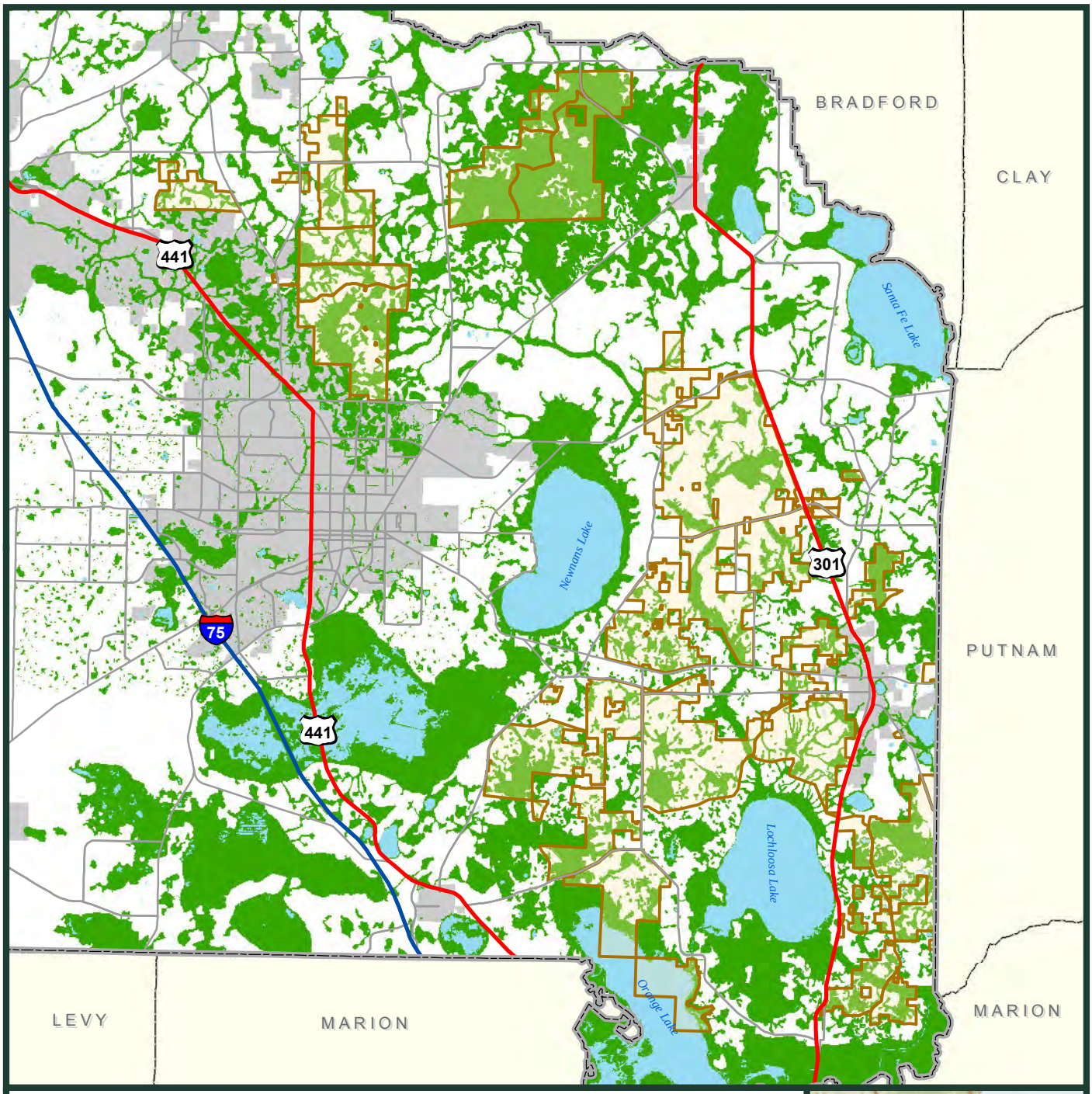
conservation (Figure 3.8-1). Areas within the 100-year floodplain generally include surface waters, streams, wetlands, and adjacent upland.

3.9 Strategic Ecosystems

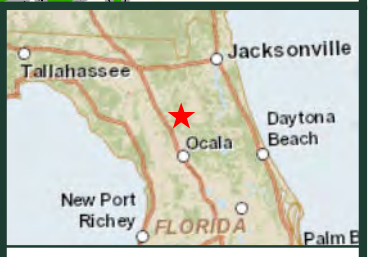
The Property includes several areas mapped as strategic ecosystems according to the Alachua County Ecological Inventory studies of 1987 and 1996 (Figure 3.9-1). These include portions of the Austin Cary Flatwoods, Buck Bay Flatwoods, East Lochloosa Forest, Northeast Flatwoods, Hague Flatwoods, Little Orange Creek, Lochloosa Forest West, Lochloosa Forest Additions, Lochloosa Creek, Lochloosa Creek Flatwoods, Lochloosa Slough, and Moran's Prairie. The ecosystems were ranked according to six ecological, hydrological, and management parameters to determine their relative importance. Amongst those strategic ecosystems mapped within the Property, Lochloosa Forest West received the highest ranking while the remainder of the strategic ecosystems on the Property received average to low rankings. The Lochloosa Forest West ecosystem located within the Property is proposed for conservation as are the East Lochloosa Forest, Lochloosa Slough, Lochloosa Forest Additions, Little Orange Creek, Moran's Prairie, Northeast Flatwoods, Buck Bay Flatwoods ecosystems located within the Property. Additionally, portions of the Hague Flatwoods, Austin Carrie Flatwoods, and Lochloosa Creek Flatwoods located within the Property are also proposed for protection.

3.10 Significant Geologic Feature

There is one steep-sloped sinkhole within the Property located approximately five miles southwest of the intersection of US 301 and SR 26. Two intermittent streams flow into the sinkhole as identified by Jones Edmunds & Associates, Inc. (2011). This sinkhole provides a unique natural feature which will be protected for additional recreational enjoyment during the Detailed Specific Area Plan process.



Plum Creek Property
100-Year Floodplains
Municipalities
Water



0 2 4 Miles
1 inch = 4 miles

Source: Property boundary provided by Plum Creek. Alachua County boundary downloaded from Alachua County. Roads downloaded from FDOT. FEMA floodplain data(dfirm_fldhaz_jun13) and county boundaries downloaded from FGDL.

FIGURE 3.8-1
100-YEAR FLOODPLAINS WITHIN THE PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA

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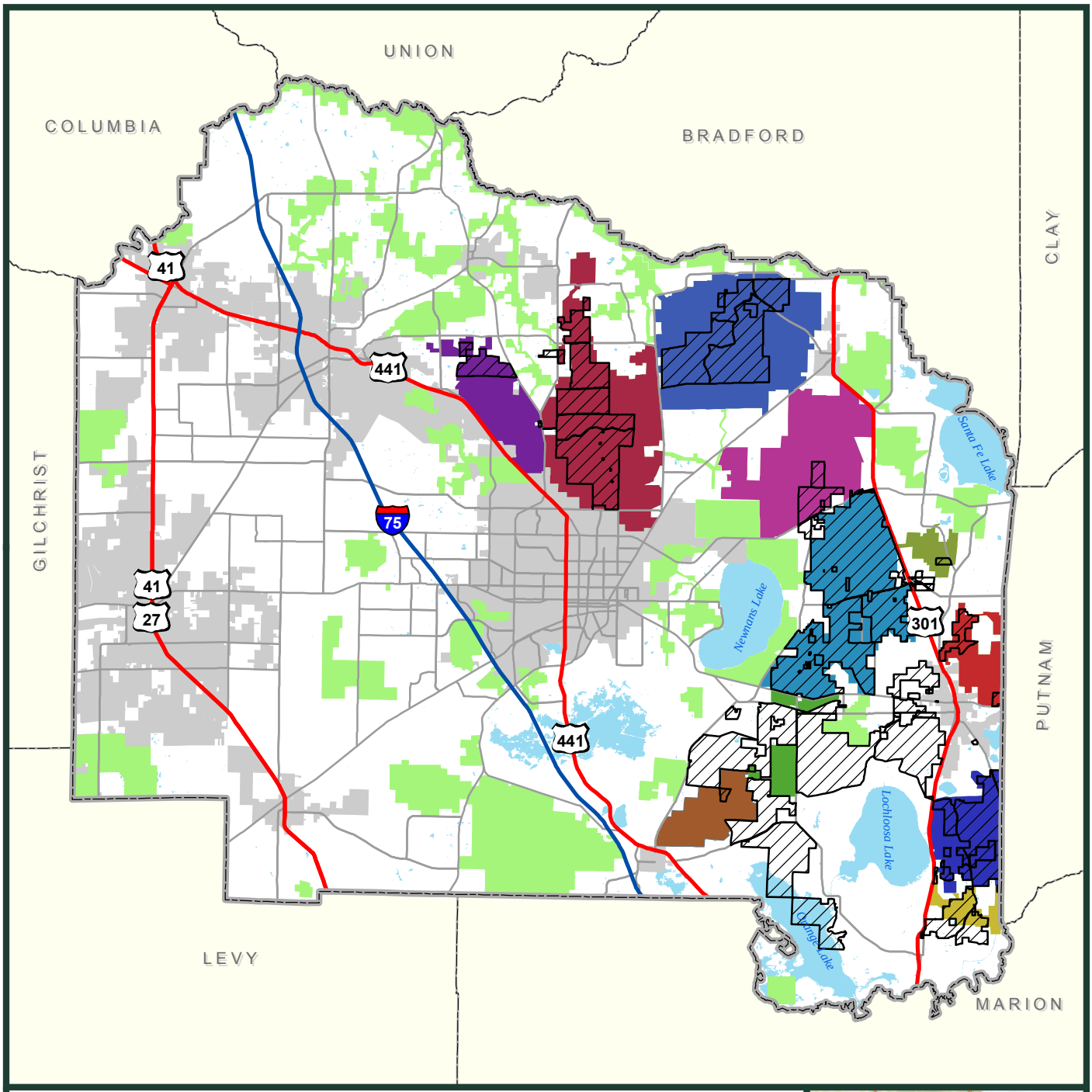
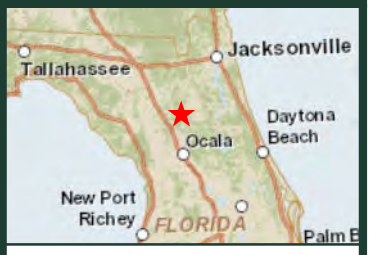


Plum Creek Property
Other Strategic Ecosystems
Municipalities
Water
Austin Cary Flatwoods
Lochloosa Forest Additions
Lochloosa Creek Flatwoods
Lochloosa Forest West
East Lochloosa Forest
Lochloosa Slough
Buck Bay Flatwoods
Northeast Flatwoods
Hague Flatwoods
Little Orange Creek
Moran's Prairie



0 2.5 5 Miles
1 inch = 5.8 miles

Source: Property boundary provided by Plum Creek. Strategic ecosystems, Alachua County boundary, and municipalities boundaries downloaded from Alachua County. Roads downloaded from FDOT. County boundaries downloaded from FGDL.

FIGURE 3.9-1
STRATEGIC ECOSYSTEMS MAPPED WITHIN THE PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA

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3.11 High Aquifer Recharge Areas

The majority of the Property is located within east Alachua County where the Floridan aquifer system has been determined to have a low vulnerability according to the *Alachua County Aquifer Vulnerability Assessment* (FGS, 2005) and the Alachua County Floridan Aquifer High Recharge Area Map (2008) (Figure 3.11-1). A small area of the Property located north and northwest of the Murphree Wellfield Conservation Easement is within a stream-to-sink surface water basin where the Floridan aquifer system has been determined to be vulnerable. Plum Creek is committed to the protection of Alachua County's water resources and is proposing to conserve this portion of the Property.

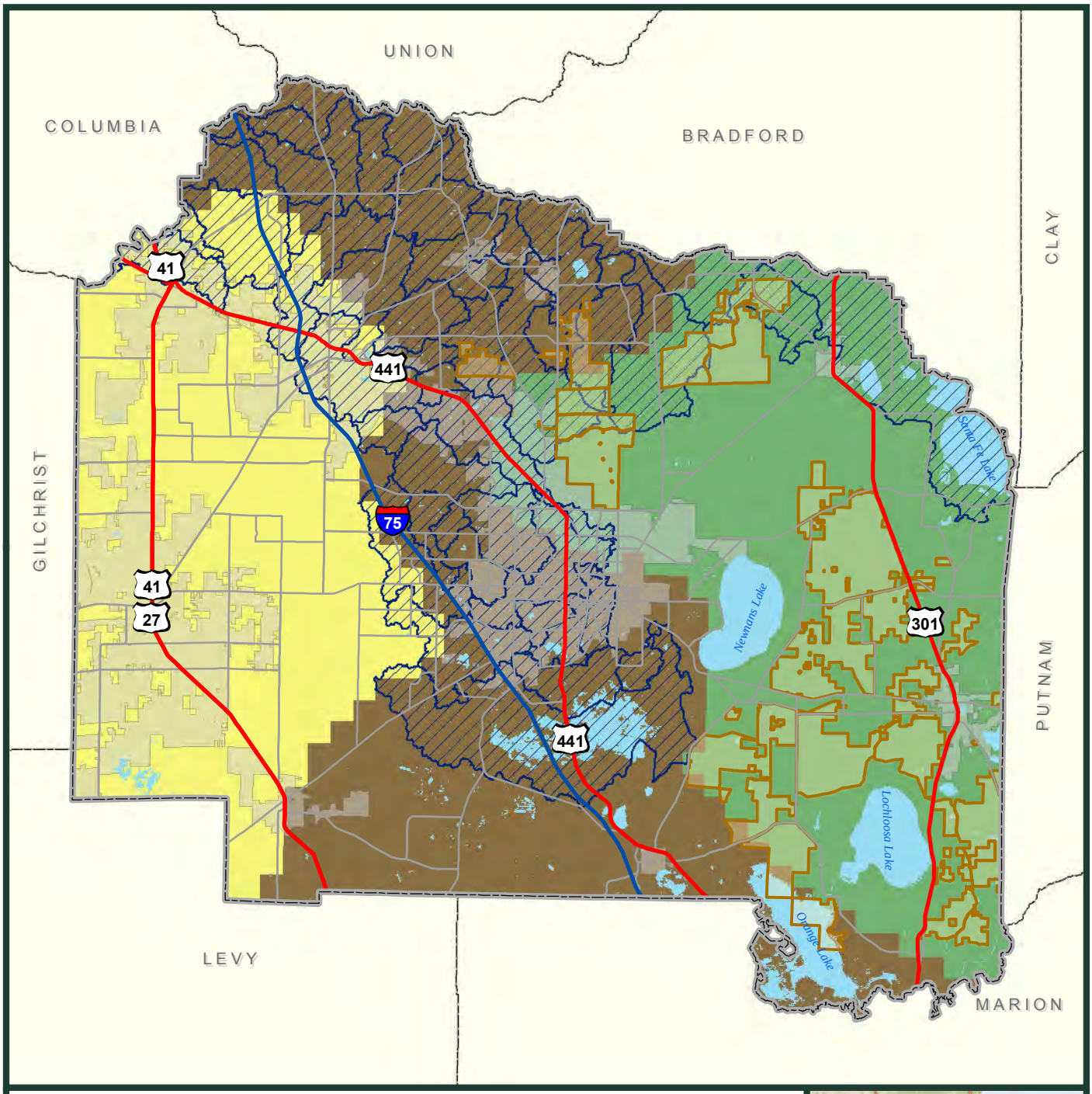
3.12 Wellfield Protection Areas and Proposed Wells

The Murphree Wellfield Conservation Easment is included within the northwest portion of the Property. This area includes portions of the primary, secondary, and tertiary Wellfield Protection Areas and includes the proposed location for four future wells (Figure 3.12-1). This area is critical to the public drinking water supply for the Gainesville area and will continue to be protected indefinitely.

3.13 Listed Species Potential Occurrence

State and federal databases were reviewed to determine the likelihood of occurrence for protected and wildlife and species that occur or are likely to occur within the Property and within Alachua County. Statewide GIS databases of known locations and potential habitat models for rare and imperiled species were researched. Upland and wetland communities were also evaluated during field studies to determine the occurrence or likelihood of occurrence for protected wildlife and plant species within the Property.

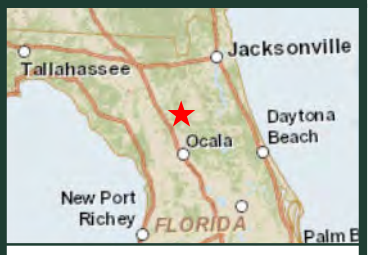
Species of wildlife and plants protected under provisions of the Endangered Species Act (ESA) of 1973, 16 United States Code 1531-1544, December 28, 1973, as amended 1976 – 1982, 1984, and 1988 ESA



Plum Creek Property
Municipalities
Water
Stream-to-Sink Basins

Floridan Aquifer High Recharge Area

Low Vulnerability
Vulnerable
High Vulnerability



0 2.5 5 Miles

1 inch = 5.8 miles

Source: Property boundary provided by Plum Creek. Floridan Aquifer High Recharge Area and Stream-to-Sink Basins data layers digitized by Breedlove, Dennis & Associates, Inc., from a map published by the Alachua County Environmental Protection Department. Alachua County and municipalities boundaries downloaded from Alachua County. Roads downloaded from FDOT. County boundaries downloaded from FGDL.

FIGURE 3.11-1
LOCATION OF PLUM CREEK PROPERTY WITHIN ALACHUA COUNTY
FLORIDAN AQUIFER HIGH RECHARGE AREA

BDA BREEDLOVE, DENNIS & ASSOCIATES, INC.
Environmental Consultants
330 W. Canton Ave., Winter Park, FL 32789 • 407-677-1882

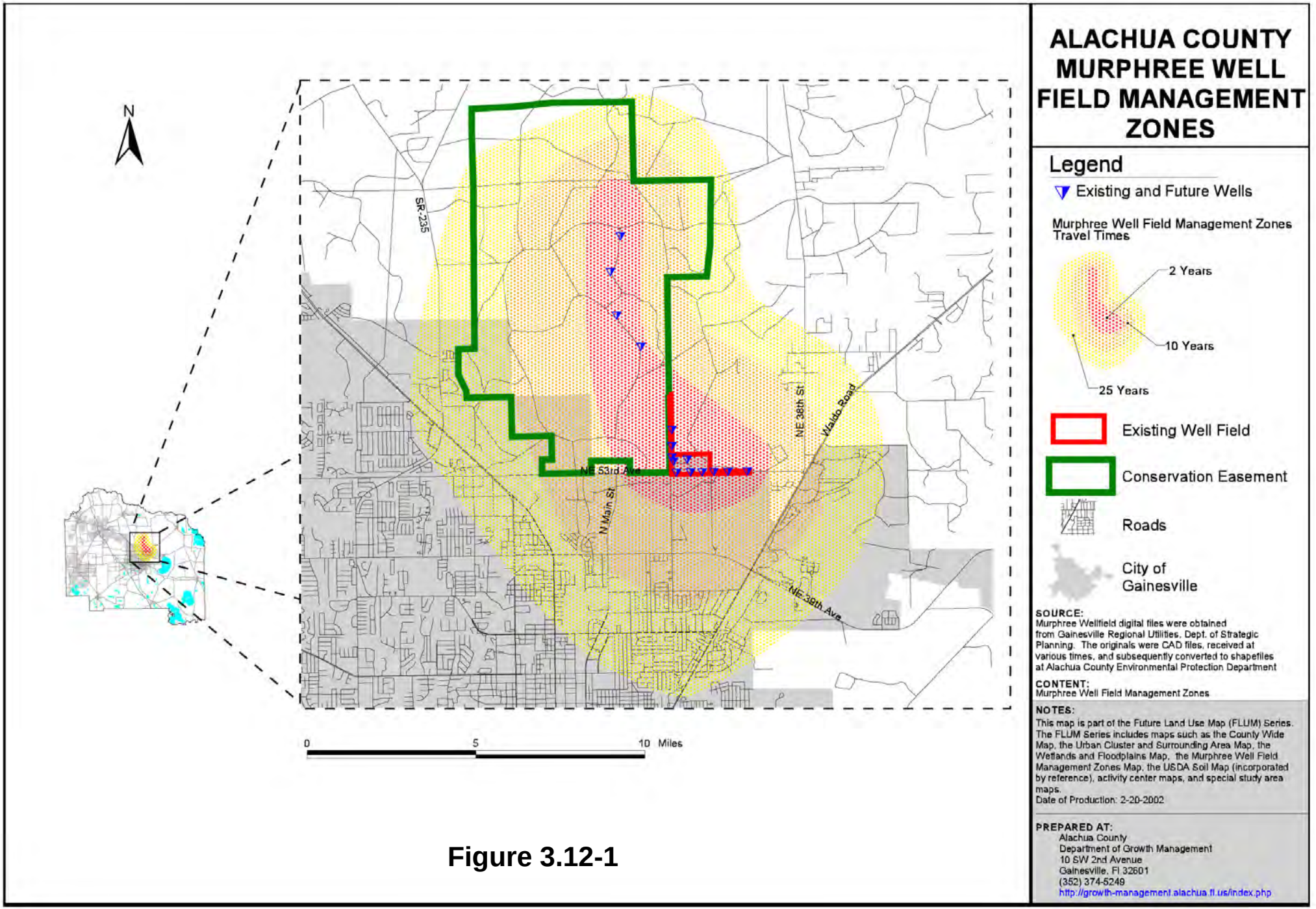

ALACHUA COUNTY
MURPHREE WELL
FIELD MANAGEMENT
ZONES
Legend
Existing and Future Wells
Murphree Well Field Management Zones
Travel Times
2 Years
10 Years
25 Years
Existing Well Field
Conservation Easement
Roads
City of
Gainesville
SOURCE:
Murphree Wellfield digital files were obtained from Gainesville Regional Utilities, Dept. of Strategic Planning. The originals were CAD files, received at various times, and subsequently converted to shapefiles at Alachua County Environmental Protection Department
CONTENT:
Murphree Well Field Management Zones
NOTES:
This map is part of the Future Land Use Map (FLUM) Series. The FLUM Series includes maps such as the County Wide Map, the Urban Cluster and Surrounding Area Map, the Wetlands and Floodplains Map, the Murphree Well Field Management Zones Map, the USDA Soil Map (incorporated by reference), activity center maps, and special study area maps.
Date of Production: 2-20-2002
PREPARED AT:
Alachua County
Department of Growth Management
10 SW 2nd Avenue
Gainesville, Fl 32601
(352) 374-5249
http://growth-management.alachua.fl.us/index.php
N
SR-235
NE 53rd Ave
N Main St
NE 38th St
Waldo Road
NE 39th Ave
0
5
10 Miles

Figure 3.12-1

and Florida rule (68A-27.0001- 27.007, Florida Administrative Code [F.A.C.]) known to occur within the County are represented in Table 3.13-1. The likelihood of occurrence, listed within this table, is based on a comparison of known general habitat requirements by these species with the habitats found on or near the Property, the quantity, quality, and adjacency of these habitats, as well as any observations of these species during preliminary field investigations. The likelihood of occurrence for protected species was rated as observed (i.e., species presence documented), high, moderate, low, unlikely, or not applicable based on knowledge of a species' habitat preference and site conditions. A likelihood of occurrence given as "unlikely" indicates that no, or very limited, suitable habitat for this species exists on the Property, but the Property is within the documented range of the species; "not applicable" indicates that the habitat for this species does not exist on or adjacent to the Property and/or the Property is not within the documented range of the species.

3.14 Protected Wildlife Species

3.14.1 Amphibians and Reptiles

3.14.1.1 Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is listed as Threatened (T) by the Florida Fish and Wildlife Conservation Commission (FWC) but is not listed as a threatened or endangered species by the U.S. Fish and Wildlife Service (USFWS). However, USFWS determined in a 12-month finding published on July 27, 2011, that listing of the gopher tortoise as a threatened species in the eastern portion of its range is warranted under the ESA. Gopher tortoises were added to the candidate species list with the publication of the 12-month finding, but the USFWS has taken no further action. Gopher tortoises occur in a variety of natural and disturbed habitats characterized by well-drained loose soils in which to burrow, low-growing herbaceous vegetation used for food, and open sunlit areas for nesting (Diemer 1992, Mushinsky et al. 2006). Gopher

Table 3.13-1 Protected Plants and Animals with Potential for Occurrence on Plum Creek Property, Alachua County, Florida.

Species	Habitat of Occurrence	Likelihood of Occurrence	Designated Status[1]	
			USFWS[2]	FWC[34]
INVERTEBRATES				
Palamonetes cummingi Squirrel Chimney cave shrimp	Flooded sinkhole.	Not Applicable	FT	—
FISH				
Micropterus notius Suwannee bass	Rivers.	Not Applicable	—	SSC
AMPHIBIANS				
Ambystoma cingulatum flatwoods salamander	Pine flatwoods, cypress swamp.	Low	FT	—
Lithobates capito gopher frog	Xeric oak scrub, sand pine scrub, sandhill, upland hardwoods, pine flatwoods, freshwater marsh.	Moderate	—	SSC
REPTILES				
Alligator mississippiensis American alligator	Freshwater marsh, cypress swamp, mixed hardwood swamp, shrub swamp, bottomland hardwoods, lakes, ponds, rivers, streams.	High	FT(S/A)	—

Table 3.13-1 Continued.

Species	Habitat of Occurrence	Likelihood of Occurrence	Designated Status[1]	
			USFWS[2]	FWC[34]
Drymarchon corais couperi eastern indigo snake	Xeric oak scrub, sand pine scrub, sandhill, pine flatwoods, pine rocklands, tropical hardwood hammock, hydric hammock, wet prairie, mangrove swamp.	Moderate to High	FT	—
Gopherus polyphemus gopher tortoise	Sandhill, sand pine scrub, xeric oak scrub, coastal strand, xeric hammock, dry prairie, pine flatwoods, mixed hardwood–pine forests, ruderal.	High (observed)	—	ST
Macroclemys temminckii alligator snapping turtle	Rivers.	Not Applicable	—	SSC
Pituophis melanoleucus mugitus Florida pine snake	Xeric oak scrub, sand pine scrub, sandhill, scrubby pine flatwoods, old fields on former sandhill and scrub sites.	High	—	SSC
Pseudemys concinna suwanniensis Suwannee cooter	Rivers, large streams, spring runs, and associated backwaters and impoundments.	Unlikely	—	SSC
Stilosoma extenuatum short-tailed snake	Sandhill, xeric hammock, sand pine scrub, xeric oak scrub.	Unlikely	—	ST
BIRDS				
Aramus guarauna limpkin	Freshwater marsh, mixed hardwood swamp, rivers, streams, spring runs, lake margins, ruderal.	Low	—	SSC

Table 3.13-1 Continued.

Species	Habitat of Occurrence	Likelihood of Occurrence	Designated Status[1]	
			USFWS[2]	FWC[34]
Athene cunicularia burrowing owl	Sandhill, dry prairie, pastures, ruderal.	Unlikely	—	SSC
Egretta caerulea little blue heron	Freshwater marsh, various types of forested wetlands, lakes, streams, salt marsh, mangrove swamp, tidal mud flats.	High	—	SSC
Egretta thula snowy egret	Freshwater marsh, various types of forested wetlands, streams, lakes, salt marsh, mangrove swamp, tidal mud flats, impoundments, ditches.	High	—	SSC
Egretta tricolor tricolored heron	Salt marsh, mangrove swamp, tidal mud flats, tidal creeks, tidal ditches, freshwater marsh, various types of forested wetlands, lakes and ponds.	High	—	SSC
Eudocimus albus white ibis	Freshwater marsh, various types of forested wetlands, salt marsh, mangrove swamp, tidal mud flats, ruderal.	High	—	SSC
Falco sparverius paulus southeastern American kestrel	Sandhill, pine flatwoods, dry prairie, pasture, old field.	Low	—	ST
Grus canadensis pratensis Florida sandhill crane	Dry prairie, freshwater marsh, pasture.	Low	—	ST
Mycteria americana wood stork	Freshwater marsh, various types of forested wetlands, ponds, salt marsh, mangrove swamp, tidal mud flats, lagoons, flooded pastures.	Low	FE	—

Table 3.13-1 Continued.

Species	Habitat of Occurrence	Likelihood of Occurrence	Designated Status[1]	
			USFWS[2]	FWC[34]
Picoides borealis red-cockaded woodpecker	Sandhill, pine flatwoods.	Unlikely	FE	—
MAMMALS				
Podomys floridanus Florida mouse	Xeric oak scrub, sand pine scrub, sandhill.	Low	—	SSC
Sciurus niger shermani Sherman's fox squirrel	Sandhill, pine flatwoods, pastures.	High (observed)	—	SSC
Ursus americanus floridanus Florida black bear	Upland hardwood hammock, mixed hardwood-pine forest, pine flatwoods, cabbage palm-live oak hammock, cypress swamp, bay swamp, shrub swamp, hydric hammock, bottomland hardwoods.	Moderate	—	ST

[1] FE = Federally-designated Endangered; FT = Federally-designated Threatened; FT(S/A) = Federally-designated Threatened Due to Similarity of Appearance; ST = State-designated Threatened; SSC = State Species of Special Concern.
[2] U.S. Fish and Wildlife Service.
[3] Florida Fish and Wildlife Conservation Commission.
[4] These state classifications are pending reclassification in accordance with revisions to Rules 68A-27.003, 68A-27.005, 68A-27.0012 and 68A-27.0021, Florida Administrative Code, for managing imperiled species as adopted by the Florida Fish and Wildlife Conservation Commission on September 1, 2010, effective November 15, 2010.

tortoises typically inhabit sites with soils that support sandhill, scrub, and pine flatwoods habitats (Enge et al. 2006), and sandhill and mesic flatwoods soils cover approximately 23,508 acres (39%) of the site.

Reported annual average home range sizes vary from 1.2 to 4.7 acres for males and from 0.2 to 1.6 acres for females (Enge et al. 2006). Cox et al. (1987) indicate that patches of habitat must be at least 25-50 acres in size to support a minimally viable population of gopher tortoises, but Eubanks et al. (2002) found that 47-101 acres were needed to support populations of this size. Mushinsky et al. (2006) considered 250 acres to be the minimum area necessary to maintain a population of tortoises, and a buffer zone surrounding the 250-acre parcel would provide additional security. FWC habitat models (Cox et al. 1994, McCoy et al. 2002, Endries et al. 2009) indicate the Property contains potentially suitable gopher tortoise habitat. Most of the areas mapped as potentially suitable gopher tortoise habitat are within the Lochloosa Conservation Easement. Plum Creek currently operates an FWC gopher tortoise recipient site within a portion of the Lochloosa Conservation Easement. FWC Gopher Tortoise Permitting Guidelines provide that sites that are Acceptable as recipient sites for the long-term relocation of gopher tortoises should be >40 acres in size and have a minimum annual depth to water table of >18 inches. The Property contains approximately 17,101 acres of appropriate soil types, most of which support pine plantations of various ages that meet the criterion for Acceptable relocation sites. This information and field observations indicate that gopher tortoises have a high likelihood of occurring on the Property.

3.14.1.2 Eastern Indigo Snake (*Drymarchon couperi*)

The eastern indigo snake is listed as T by USFWS. The primary reasons for this listing status are over-collection and habitat loss (Moler 1992). Eastern indigo snakes are found in a variety of habitats throughout Florida, including pine (*Pinus* spp.) flatwoods, scrubby flatwoods, sandhill, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-

altered habitats (USFWS 2008). Eastern indigo snakes often winter in the burrows of gopher tortoises in northern portions of the range, but they also may take shelter in hollowed root channels, hollow logs, stump holes, trash piles, or the burrows of rodents, armadillos (*Dasypus novemcinctus*), or land crabs (*Cardisoma guanhumi*) in wetter habitats (USFWS 2008, USFWS 2011). Eastern indigo snakes are capable of moving considerable distances in a short period of time as demonstrated by records of movements of 2.2 miles in 42 days and 2.4 miles in 176 days (USFWS 2008). One individual was observed to have moved 13.8 miles over a two-year period in a mark-recapture study in southeastern Georgia (Stevenson and Hyslop 2010). Reported home range sizes of eastern indigo snakes in peninsular Florida range from four to 818 acres (USFWS 2011), and mean home range size reported from one Florida study was 292 acres (Dodd and Barichivich 2007). Radio-telemetry studies of indigo snakes in Georgia have revealed home ranges sizes of 87.5 to 8,885 acres for females and 350 to 3,825 acres for males (Hyslop 2007). Indigo snakes apparently need a mosaic of habitats to complete their life cycle, often feeding along wetland edges (Moler 1992). Population viability modeling suggests that indigo snake populations are susceptible to habitat fragmentation resulting from construction of roads and intensive human developments in occupied habitats, and that large areas protected from roads and human developments are needed to maintain viable snake populations (Breininger et al. 2004). USFWS (2011) requires surveys to determine the presence of indigo snakes on sites in north and central Florida when impacts are projected for more than 25 acres of xeric habitat or for more than 25 active and inactive gopher tortoise burrows. Occurrence databases available from the FWC and Florida Natural Areas Inventory (FNAI) contain two records of eastern indigo snakes approximately 1.0 mile north of Orange Lake within the Lochloosa Conservation Easement. There are additional scattered records to the west and east of the Property. Older FWC habitat models (Cox et al. 1994) indicate that most areas of all parcels were mapped as potentially suitable indigo snake habitat. However, more recent FWC models (Endries and Enge, unpublished data) indicate a more scattered distribution in the landscape surrounding the Plum

Creek tracts, with most areas mapped as habitat potentially suitable for indigo snakes occurring within the Lochloosa Conservation Easement. Indigo snakes have a moderate to high potential to occur onsite based on previous occurrence records and the large area and mix of vegetation types present.

3.14.1.3 Florida Pine Snake (*Pituophis melanoleucus mugitus*)

The Florida pine snake is listed as a Species of Special Concern (SSC) by the FWC but is not listed as a threatened or endangered species by the USFWS. The Property is within the range of the Florida pine snake as mapped by Franz (1992). Florida pine snakes occur in open xeric habitats, including longleaf pine – turkey oak (*Quercus laevis*) sandhills, sand pine (*Pinus clausa*) scrub, scrubby pine flatwoods, and old fields on former sandhill sites (Franz 1992). Florida pine snakes are extremely fossorial, seeking out the tunnel systems of pocket gophers (*Geomys pinetis*), and, to a lesser extent, gopher tortoise burrows. Two radio-tracked females exhibited home ranges of 27.5 and 30 acres, and three males used areas two to eight times larger in size (Franz 1992). Available occurrence databases contain no records of Florida pine snakes on or near the site. FWC habitat models (Cox et al. 1994, Endries et al. 2008) indicate areas of potentially suitable habitat occur on the northwest and eastern portion of the Property, as well as within the Lochloosa Conservation Easement. The Property also contains approximately 1,254 acres of soil types that typically support the xeric habitats preferred by this species, of which most areas are east of US 301 or within the Lochloosa Conservation Easement. Florida pine snakes have a high likelihood of occurring on the Property based on the presence of xeric vegetation and soil types preferred by this species.

3.14.1.4 Short-tailed Snake (*Stilosoma extenuatum*)

The short-tailed snake is listed as a threatened species by the FWC but is not listed as a threatened or endangered species by the USFWS. Approximately one-third of the parcels are within the range of the

short-tailed snake as mapped by Campbell and Moler (1992). Short-tailed snakes are restricted primarily to longleaf pine – turkey oak sandhills, but they may occasionally be found in upland hammocks and sand pine scrub communities, especially when these communities are adjacent to longleaf pines and turkey oaks. Campbell and Moler (1992) report that short-tailed snakes select Norfolk, Blanton, and St. Lucie soils over a variety of other types for burrowing. Short-tailed snakes are secretive burrowers seldom seen above ground except in April and October. Harvest of longleaf pine and subsequent timber management or conversion of native sandhill habitats to stands of turkey oak appears to severely affect this species (Campbell and Moler 1992). Occurrence databases contain no records of short-tailed snakes on the Property, but there are several records of short-tailed snakes approximately 0.5-2.0 miles west of the Newnans Lake with dates of 1934, 1957, and 1992. The only areas of the site mapped as potential short-tailed snake habitat by the FWC are on the Murphree Wellfield and Lochloosa Conservation Easements and a small area in the northeast corner of the portion of the Property south of SR 20 and east of US 301 (Cox and Kautz 2000, Endries et al. 2008). It is unlikely that short-tailed snakes occur on portions of the Property not under conservation easement due to the disturbed nature of the areas with the potential to support the species.

3.14.1.5 American Alligator (*Alligator mississippiensis*)

The American alligator is listed as T due to similarity of appearance (to other crocodilians) by the USFWS. American alligators are found throughout Florida in permanent water bodies of freshwater including marshes, swamps, lakes, reservoirs, and rivers. There is a high likelihood of occurrence of alligators on the Property.

3.14.1.6 Gopher Frog (*Rana capito*)

The gopher frog is listed as a SSC by the FWC but is not listed as a threatened or endangered species by the USFWS. The Property is within the range of the gopher frog as mapped by Godley (1992). The distribution of gopher frogs seems to be restricted to that of gopher tortoises (Godley 1992). Gopher frogs typically occur in native, xeric, upland habitats, particularly longleaf pine – turkey oak sandhills which often support the densest populations of gopher tortoises. However, gopher frogs are also known from pine flatwoods, sand pine scrub, xeric hammocks, and the early successional stages of these communities. Preferred breeding habitats include seasonally flooded, grassy ponds and cypress heads that lack fish populations (Godley 1992). Gopher frogs will disperse up to 1.0 mile from breeding ponds to occupy gopher tortoise burrows, but they may also occupy a variety of other retreats including the burrows of rodents and crayfish, stump holes, and other crevices (Godley 1992). There is one database record of gopher frogs from 1992 within the Lochloosa Conservation Easement. FWC habitat models (Cox et al. 1994, Endries et al. 2008) indicate that the primary areas of the site mapped as potentially suitable habitat for gopher frogs are on lands within the Lochloosa Conservation Easement. There is a moderate likelihood that gopher frogs occur on the Property based the presence of flatwoods habitats, small areas of xeric soil types, and the confirmed presence of gopher tortoises.

3.14.1.7 Flatwoods Salamander (*Ambystoma cingulatum*)

The flatwoods salamander is listed as threatened by the USFWS. The Property is at the western edge of the range of the flatwoods salamander as mapped by Ashton (1992). The flatwoods salamander inhabits fire-maintained, open-canopied longleaf pine and slash pine savannas and flatwoods on the southeastern coastal plain (Ashton 1992, Means et al. 1996, Palis 1997). Breeding sites include pine flatwoods depressions such as pond-cypress- or blackgum-dominated swamps, graminoid-dominated depressions, roadside ditches, and borrow pits that are generally devoid of large predatory fishes. Adults migrate to

breeding sites between October and December and lay eggs on various substrates prior to wetlands filling with water in response to winter rains (Palis 1997). Breeding ponds range in size from 0.05-23.5 acres and generally are <1.6 feet deep (Palis 1996). Post-larval flatwoods salamanders are fossorial, often occupying crayfish (*Procambarus* spp.) burrows, and inhabit mesic pine-wiregrass flatwoods and savannas with little to no midstory and an open overstory in the uplands surrounding breeding ponds. Movements of 1.1 miles have been recorded away from breeding ponds and into surrounding pine flatwoods (Ashton 1992), and movements of 985-1,640 feet away from breeding ponds have also been reported (Means et al. 1996). Home range sizes of 0.37 acre have been reported (Ashton 1992), and approximately 2,500 acres of terrestrial habitat surrounding a breeding site is probably needed to sustain a breeding population (Palis 1997). Available databases contain three records of flatwoods salamanders occurring on the Property, one of which is on the Murphree Wellfield Conservation Easement (1947) and the other two are north (1974) and south (pre-1980) of SR 26 near Newnans Lake Conservation Area. Most of the areas of the site that were mapped as potentially suitable flatwoods salamander habitat by the FWC (Endries et al. 2009) are on lands of the Lochloosa Conservation Easement and the Murphree Wellfield Conservation Easement. Although flatwoods salamanders have been documented on the site, these records are old and it is likely that this species no longer is present based on the absence of recent documented occurrences, FWC models that indicate that very little of the site contains habitats that are potentially suitable for this species, and because intensive silvicultural operations have likely eliminated preferred habitats for flatwoods salamanders.

3.14.1.8 Striped Newt (*Notophthalmus perstriatus*)

The striped newt is not listed as a threatened or endangered species or as a SSC by either the FWC or USFWS. However, the USFWS determined in a 12-month finding published on June 7, 2011, that listing of the striped newt as endangered or threatened is warranted under the U.S. ESA of 1973, as amended

(USFWS 2011). Striped newts were added to the candidate species list with the publication of the 12-month finding, but for the time being, the USFWS is precluded from taking further action due to limited resources. The Property is within the range of the striped newt as mapped by Christman and Means (1992). The preferred habitat of striped newts is longleaf pine – turkey oak sandhills with an intact ground cover containing wiregrass (*Aristida stricta*), but this species is also found in scrub and scrubby flatwoods habitats (Christman and Means 1992, USFWS 2011). Striped newts have long life spans (approximately 12-15 years) and a complex life history. They breed exclusively in small (typically less than 12.4 acres), isolated, ephemeral ponds that lack predaceous fish and are interspersed in and surrounded by xeric upland habitats (USFWS 2011). Maidencane (*Panicum hemitomon*) has been found at ephemeral ponds where striped newts have been found and seems to be a good indicator of previous extent of flooding in ponds (LaClaire and Franz 1990, LaClaire 1995). This species occupies terrestrial habitats at considerable distances from breeding ponds. Striped newts have been observed to have moved up to 2,330 feet from ponds into surrounding uplands (Dodd and Cade 1998), and Dodd (1996) found that only 28 percent of amphibians were captured >1,300 feet from wetlands. Johnson (2003) recommended a protected area extending 3,280 feet from breeding sites as upland "core habitat" surrounding breeding ponds. Striped newts form metapopulations that persist in isolated fragments of longleaf pine-wiregrass ecosystems, with ponds functioning as focal points for local breeding populations (Johnson 2001, Johnson 2005). Maintaining connectivity between uplands and breeding ponds of diverse hydroperiods is essential for striped newts to recolonize local breeding ponds and maintain metapopulation viability (Johnson 2005, Dodd and Johnson 2007).

Available databases contain three records of striped newts on the Lochloosa Conservation Easement, one of which was undated and the other two with dates of 1973 and 1985. FWC habitat models (Endries et al. 2009) mapped a very small area of the Lochloosa Conservation Easement and a small area of the

southeastern-most portion of the Property as potentially suitable habitat for striped newts. The Property contains approximately 1,254 acres of soil types that typically support the sandhill habitats preferred by this species. Striped newts may occur on the Property in areas where sandhill soils are present, but the likelihood of their occurrence appears to be low because intensive silvicultural operations have likely eliminated preferred habitats for this species.

3.14.2 Birds

3.14.2.1 Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is protected by the USFWS under provisions of the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act. Recovery goals have been achieved for this species; therefore, the bald eagle is no longer listed or protected as a "Threatened" species under the ESA. The USFWS has implemented National Bald Eagle Management Guidelines (National Guidelines) to assist private landowners and others plan land-use activities in proximity to active bald eagle nests. The National Guidelines include measures intended to minimize the likelihood of causing "disturbance" to nesting bald eagles, as defined under the BGEPA. The FWC also removed the bald eagle from classification and protection as a "Threatened" species under Florida Rule and implemented a Florida Bald Eagle Management Plan (Florida Plan). The Florida Plan includes Florida Bald Eagle Management Guidelines (Florida Guidelines) and permit provisions. We recommend taking the National Guidelines and Florida Guidelines into account during preparation of the LTMP and coordinating with both the USFWS and FWC for guidance prior to undertaking any development activity that may result in "disturbance" of nesting bald eagles. The FWC Bald Eagle Nest Database was reviewed to determine the locations of all nests that occur on or in close proximity to the Property. The FWC database contains records of nine bald eagle nests on the Property. Five of the nests are located within the Lochloosa

Conservation Easement, one is located north of SR 20, and three are located east of US 301 and south of SR 20. The status of these nests through the 2012 nesting season is as follows:

- AL037 – Last known active 2011, last surveyed 2011
- AL005 – Last known active 2011, last surveyed 2011
- AL099 – Last known active 2011, last surveyed 2011
- AL053 – Last known active 1995, last surveyed 2011
- AL058 – Last known active 1995, last surveyed 2011
- AL088 – Last known active 2011, last surveyed 2011
- AL073 – Last known active 2006, last surveyed 2011
- AL090 – Last known active 2011, last surveyed 2011
- AL052 – Last known active 2003, last surveyed 2011

3.14.2.2 Wood Stork (*Mycteria americana*)

The wood stork is listed as Endangered (E) by the USFWS. There are no records of a wood stork rookery on the Property based on data available from USFWS for the 2001-2012 nesting seasons. However, available databases contain a record of one wood stork rookery that has occurred within 18.6 miles of the site in recent years. This was the River Styx rookery (number 605011) approximately 6.2 miles southwest of the site in Alachua County. This rookery was last active in 1995 when 250 nesting pairs were recorded. Approximately 75% of the Property, including those areas south of SR 222, is within the Core Foraging Area of the River Styx wood stork rookery.

Wood storks typically return to the same rookery sites each year to nest (Ogden 1996). Wood storks will travel up to 18.6 miles from south Florida rookeries to forage in wetlands and return food to incubating adults and nestlings during the nesting season (Cox et al. 1994). Wetlands within 13 miles of known

rookeries are considered by the USFWS to comprise Core Foraging Areas for nesting wood storks in this area. It appears that wetlands on the Property have the potential to contribute to the breeding success of a known wood stork rookery because portions of the site are within the Core Foraging Area. However, consultation with the USFWS is not likely to be required for potential effects on wood storks or their habitats because the only nesting colony within 13 miles of the site has been inactive for more than ten years. Wood storks, nevertheless, have the potential to forage in wetlands on the site outside of the breeding season if hydrologic conditions are suitable.

3.14.2.3 Wading Bird Rookeries (1999)

The FWC wading bird rookery database from the 1999 statewide survey contains no records of rookeries used by other protected species of wading birds on the Property. However, the FWC database also contains records of 24 wading bird rookeries within 9.3 miles, the maximum distance most listed species of wading birds will fly to forage in wetlands and return food to incubating adults and nestlings (Cox et al. 1994). Wetlands within 9.3 miles of the rookeries of listed species of wading birds are considered important to wading bird nesting success. These off-site rookeries contained nests of snowy egrets (*Egretta thula*), little blue herons (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), and white ibis (*Eudocimus albus*), all of which are listed as SSC by FWC. The wetlands on the Property appear to have the potential to contribute to the nesting success of listed species of wading birds due to the presence of at least one known rookery within normal foraging distances of the site. In addition, listed species of wading birds may be expected to forage in on-site wetlands during other times of the year if hydrologic conditions are suitable.

3.14.2.4 Limpkin (*Aramus guarauna*)

The limpkin is listed as a SSC by the FWC but is not listed as a threatened or endangered species by the USFWS. The Property is within the range of limpkins as mapped by Bryan (1996). Limpkins are found along the wide and well-vegetated shallows of rivers and streams statewide; around lakes in peninsular Florida; and in marshes, broad swales, strand swamps, sloughs, and impoundments in south Florida. The range of the limpkin is almost identical with that of the Florida apple snail (*Pomacea paludosa*), the primary food item in the diet of limpkins (Bryan 1996). Nests are constructed in a wide variety of situations, including slowly-sinking aquatic vegetation, among tall marsh grasses, between the knees of bald cypress (*Taxodium distichum*), in vine-covered shrubs, in the tops of cabbage palms (*Sabal palmetto*), and on high cypress branches. During the nesting season, riparian habitats are divided into abutting exclusive territories arranged linearly along rivers and lake edges (Bryan 1996). Territories average 1.93 acres in size during high population years and 9.39 acres in more normal years (Bryan 1996). There are no occurrence records of limpkins on or near the Property. However, three Breeding Bird Atlas (BBA) blocks (Kale et al. 1992) with confirmed nesting records of limpkins overlap portions of the Lochloosa Conservation Easement, and another BBA block with confirmed nesting overlaps a small area of the Property north of SR 20. The only areas of the Property mapped as having habitat potentially suitable for limpkins by the FWC were on the Lochloosa Conservation Easement and on the area east of US 301 and north and south of SR 20 (Cox et al. 1994, Endries et al. 2009). There is a low likelihood that limpkins occur on the Property outside of the Lochloosa Conservation Easement.

3.14.2.5 Red-cockaded Woodpecker (*Picoides borealis*)

The red-cockaded woodpecker is listed as E by the USFWS. The Property is within the range of the species as mapped by Wood (2001), and most areas east of the Murphree Wellfield Conservation Easement are within the USFWS consultation area for red-cockaded woodpeckers. Nesting habitat for

this species consists of open old-growth pine forests >60-80 years old (USFWS 2003). Stands of pines >50 years of age comprise preferred foraging habitat, and red-cockaded woodpeckers usually forage within 0.5 mile of cavity trees (USFWS 2003). Average home range size of red-cockaded woodpeckers in central Florida has been reported as 319 acres (DeLotelle et al. 1995). Female red-cockaded woodpeckers usually disperse no further than two miles to establish territories of their own in areas where populations are dense, but in areas where populations are sparsely distributed females may disperse up to 15 miles (USFWS 2003). FWC databases contain no records of red-cockaded woodpecker groups on the Property. The nearest records of red-cockaded cavity trees are on the Austin Cary Memorial Forest approximately two miles northwest of the Property north of SR 222, but it is unlikely these cavity trees are still active based on data recently updated by the FNAI (Knight et al. 2011). FWC habitat models indicate that less than approximately 5% of the site was mapped as small scattered patches of potentially suitable habitat for this species (Endries et al. 2009). The Property has been cleared of old-growth timber and is managed for short-rotation pine production, and, therefore, habitat conditions on the site are unsuitable for red-cockaded woodpeckers. The Property is beyond normal foraging and dispersal distances from known red-cockaded woodpecker cavity trees. It is unlikely that red-cockaded woodpeckers utilize the Property based on the lack of suitable habitat conditions and low likelihood that active red-cockaded woodpecker cavity trees are near the Property.

3.14.2.6 Burrowing Owl (*Athene cunicularia*)

The burrowing owl is listed as SSC by the FWC but is not listed as a threatened or endangered species by the USFWS. Although burrowing owls occur in Alachua County, only those parcels that are part of the Lochloosa Conservation Easement and approximately 1,900 acres in the southwest corner of the Property immediately north of SR 20 are within the range of the burrowing owl as depicted by Wood (2001). Burrowing owls typically occur in open, well-drained treeless areas where herbaceous groundcover is low

and sparse. Historically, burrowing owls occurred primarily in the dry prairies of central Florida, but land clearing and wetlands drainage have greatly expanded the range and habitats used by burrowing owls (Millsap 1996). Currently, burrowing owls are found in a variety of open well-drained habitats including improved pastures, golf courses, school campuses, athletic fields, airports, cemeteries, and industrial/residential complexes (Wood 2001). Burrowing owls construct burrows in well-drained soils, but will also adopt abandoned gopher tortoise burrows or will nest in polyvinyl chloride pipes, culverts, and under the eaves of buildings (Wood 2001). Available databases, including occurrence records and the Florida BBA (Kale et al. 1992), contain no records of burrowing owls on the Property. The nearest records of burrowing owls are in BBA blocks located approximately 16.8 miles west of the Murphree Wellfield Conservation Easement and 6.9 miles south of Orange Lake. FWC models (Cox et al. 1994, Endries et al. 2008) indicate the site was not mapped as potentially suitable habitat for this species. It is unlikely that Florida burrowing owls occur on the Property based on the lack of evidence of nesting burrowing owls on the Property or in the surrounding landscape, and the location of most of the site outside of the known range of the species.

3.14.2.7 Southeastern American Kestrel (*Falco sparverius paulus*)

The southeastern American kestrel is listed as T by the FWC but is not listed as a threatened or endangered species by the USFWS. Two subspecies of American kestrels occur in Florida, the eastern American kestrel (*Falco sparverius sparverius*) and the southeastern American kestrel. The eastern kestrel winters in Florida, arriving in September and leaving in the early spring months of March-April (Stys 1993). Southeastern and eastern kestrels co-occur in Florida during the winter, during which time they are virtually indistinguishable in the field. Surveys intended to determine the presence of resident kestrels should be conducted between April and August, and surveys for nesting kestrels ideally would be conducted in April or May (Stys 1993, Wood 2001). Southeastern kestrels are secondary cavity nesters,

typically using cavities excavated by other species in trees or snags. Occasionally southeastern kestrels will nest in human structures such as utility poles (Wood 2001). Kestrels feed in open areas, such as croplands, pasture, and open pine woods that are adjacent to nest sites. Home ranges around nest sites range 125-800 acres (Stys 1993, Wood 2001). Available occurrence databases contain no records of southeastern kestrels on the site, but there are several records of kestrels on public lands within five miles of the Property to the east and west. FWC habitat models (Cox et al. 1994, Endries et al. 2009) indicate that potentially suitable habitat for southeastern American kestrel generally does not exist on the Property. A Florida BBA (Kale et al. 1992) block with records of nesting kestrels overlaps a portion of the Lochloosa Conservation Easement, and other blocks with confirmed nesting are very near to the Murphree Wellfield Conservation Easement and the portion of the Property east of US 301 and north of SR 20. There is a low likelihood that southeastern American kestrels are present on the Property based on the apparent presence of open clearcut areas adjacent to forested wetlands that may contain snags for nesting and several records of breeding kestrels in areas around the site.

3.14.2.8 Florida Sandhill Crane (*Grus canadensis pratensis*)

The Florida sandhill crane is a resident, breeding, non-migratory subspecies of sandhill cranes that is listed as threatened by the FWC but is not listed as a threatened or endangered species by the USFWS. The greater sandhill crane (*Grus canadensis tabida*) also occurs in Florida as a wintering migrant, arriving in Florida during October and November and beginning spring migration to northern breeding grounds in late February (Stys 1997). Florida sandhill cranes nest in shallow, emergent palustrine wetlands, particularly those dominated by pickerelweed (*Pontederia cordata*) and maidencane. They feed in a variety of open, upland habitats, mostly prairies but also human-manipulated habitats such as sod farms, ranchlands, pastures, golf courses, airports, and suburban subdivisions (Nesbitt 1996, Wood 2001). Home ranges of individual pairs overlap with those of adjacent pairs and average approximately 1,100

acres. Core nesting territories within home ranges vary from approximately 300 acres to 625 acres and are aggressively defended from other cranes (Wood 2001). There are no nest records on the Property. However, portions of the Lochloosa Conservation Easement are within a BBA (Kale et al. 1992) block in which Florida sandhill cranes have been observed nesting, and BBA blocks with records of nesting sandhill cranes overlap most areas of Paynes Prairie immediately west of the Lochloosa Conservation Easement. FWC habitat models (Cox et al. 1994, Endries et al. 2009) mapped small areas of the Lochloosa Conservation Easement as potentially suitable habitat for Florida sandhill cranes. There is a low likelihood that Florida sandhill cranes nest on the Property due to the absence of large areas of herbaceous wetlands, although it is likely that sandhill cranes would forage onsite outside of the nesting season based on the presence of small areas that are in improved pasture or vegetated by herbaceous wetlands.

3.14.3 Mammals

3.14.3.1 Florida Black Bear (*Ursus americanus floridanus*)

The Florida black bear is a wide-ranging omnivore that is not listed as a threatened or endangered species by the FWC or USFWS. However, the black bear is protected under the Florida Black Bear Conservation Rule (68A-4.009, F.A.C.). This rule provides that it is unlawful to injure or kill bears, and it states that FWC will work with landowners and regulatory agencies to guide future land use to be in line with FWC's Florida Black Bear Management Plan. Florida black bears are dependent on forest vegetation, but are not limited to specific forest types (Eason 2003). Forested wetlands provide optimal habitat, but any forested areas of large size with diverse foods and dispersed cover can support bears. Home range sizes vary but average approximately 9,200 acres for females and 39,700 acres for males (Eason 2003). Male Florida black bears have been reported moving distances of 13.67 – 87.0 miles and females have been reported moving 8.7 - 47.9 miles (Maehr et al.1988, Wooding and Hardiskey 1988, Wooding et al. 1992,

Maehr 1997). Individuals tend to be solitary, except for females with young and groups at abundant food sites, but Florida black bears tolerate considerable range overlap (Eason 2003). Reserves ranging in size from 494,200 – 998,400 acres have been recommended as necessary to support viable populations of black bears (Cox et al. 1994, Kautz and Cox 2001). Although black bears historically ranged throughout Florida, the current range generally consists of the natural and semi-natural landscapes surrounding large parcels of public land throughout the state. Black bear habitat has been mapped as Primary Range and Secondary Range (Simek et al. 2005). Primary Range was defined as areas with evidence of females and reproduction, and factors such as habitat, general bear use, and roadkill records were used to refine range boundaries. Secondary Range was defined as areas outside of Primary Range where general bear use has been documented by nuisance calls, sightings, and roadkill records, but evidence of females or reproduction has not been confirmed.

FWC databases show there are no Florida black bear telemetry records on the Property. However, there are records of several roadkilled bears on paved road that pass through or adjacent to the site: (1) 1979 record of a juvenile male on US 301 approximately 1.0 mile south of SR 26; (2) 1997 record of an adult male on SR 26 approximately 0.95 mile west of US 301; (3) 1997 record of a juvenile female; (4) a 2000 record of an adult male on CR 325 approximately 2.9 miles south of SR 20; (5) 1997 record of a juvenile female; (6) 2000 record of a juvenile male; (7) 2003 record of an adult female, all on US 301 within 2.5-4.1 miles south of SR 20; and (8) 2003 record of an adult male of CR 234 approximately 0.4 mile south of SR 26. There are also three records of nuisance bears between 1993 and 1996 in the town of Hawthorne near the intersection of US 301 and SR 20, and several records of other nuisance bears east of US 301 and north and south of SR 20. Most of the Property east of US 301 is in the Secondary Range of the Ocala black bear population as mapped by the FWC (Simek et al. 2005). FWC habitat models (Endries et al. 2009) indicate that most of the Property and the surrounding landscape were mapped as potentially

suitable bear habitat. Although the Property is in an area that has habitat conditions similar to areas of the state where bears are known to occur, it is likely that only those parcels east of US 301 that are within the Secondary Range of the Ocala bear population provide habitat that supports a sustainable bear population. There is limited evidence that bears use other areas of the Property at the present time. However, the possibility exists that Florida black bears could occasionally move through the Property as they venture beyond the Secondary Range of the Ocala population.

3.14.3.2 Sherman's Fox Squirrel (*Sciurus niger shermani*)

Sherman's fox squirrel is listed as a SSC by the FWC but is not listed as a threatened or endangered species by the USFWS. The Property is within the range of Sherman's fox squirrels as mapped by Kantola (1992) and Wood (2001). Optimal fox squirrel habitat has been characterized as mature, fire-maintained longleaf pine – turkey oak sandhills and flatwoods by Kantola (1992). Preferred habitat has also been described as mature and open pine and pine-hardwood associations by Edwards and Guynn (2003). Sherman's fox squirrels are diurnal, solitary animals whose home ranges may overlap, but separate core home range areas are maintained (Kantola 1992). Male and female home ranges average 196 acres and 82 acres, respectively (Wooding 1997). Available databases contain no occurrence records from the site. FWC habitat models (Cox et al. 1994, Endries et al. 2009) indicate that most areas of the Lochloosa Conservation Easement contain habitats suitable for Sherman's fox squirrels, but less than 5% of other areas of the Property were mapped as small and isolated patches of potentially suitable habitat for Sherman's fox squirrels. Sherman's fox squirrels were observed on the Property during preliminary field reconnaissance efforts.

3.14.3.3 Florida Mouse (*Podomys floridanus*)

The Florida mouse is listed as SSC by the FWC but is not listed as a threatened or endangered species by the USFWS. The Property is within the range of Florida mice as mapped by Layne (1992). The Florida mouse is narrowly restricted to fire-maintained, xeric, upland vegetation occurring on deep, well-drained sandy soils (Layne 1992). Sand pine scrub is the primary habitat occupied by Florida mice, and longleaf pine – turkey oak sandhills comprise secondary habitats. The Florida mouse is a burrow-dwelling species, often using the burrows of gopher tortoises (Layne 1992), but Brown (1997) suggests that Florida mice also may use burrows made by the ubiquitous nine-banded armadillo (*Dasypus novemcintus*). Population densities are highest in early successional stages of scrub and sandhill vegetation following a fire, and they decline as the habitat becomes denser and shadier. Population densities have been reported ranging from 0.65-11.33 per acre, and mean population densities range from 2.02-3.80 per acre (Layne 1992). Cox et al. (1994) used population viability modeling to develop a general recommendation that populations comprising 200 individuals would have a 90% chance of persistence for 200 years. Assuming that this recommendation applies to Florida mice, data on population density suggests that preserve sizes would have to be in the range of 50-300 acres to protect viable populations. Occurrence databases contain no records of Florida mice on the Property, and FWC habitat models (Cox and Kautz 2000, Endries et al. 2009) indicate the site was not mapped as potentially suitable habitat. Although the site contains approximately 1,254 acres of soils that typically support sandhill vegetation, there is a low likelihood that Florida mice occur on the Property based on the absence of occurrence records and the management of the site for intensive silviculture.

3.15 Listed Plants

The FNAI Element Occurrence database for Alachua County dated October 15, 2012, and the University of Florida GeoPlan Center Species Observation database dated August 2013 were reviewed. These

databases contained no records of state or federally listed plants on the Plum Creek Property in Alachua County. The FNAI tracking list web site, last updated in September 2013, was searched to identify listed species of plants known to occur in Alachua County. That database search revealed that no federally listed species of plants are known to occur in Alachua County. However, 15 species of plants listed by the Florida Department of Agriculture and Consumer Services (FDACS) as endangered and 4 plants listed as threatened are known to occur in Alachua County. The potential exists that some of these species could occur on the Plum Creek Property. State regulations pertaining to endangered, threatened, and commercially exploited plants are contained in Chapter 5B-40 F.A.C., Preservation of Native Flora of Florida. Chapter 5B-40 contains no restrictions on private landowners regarding the disposition of State-listed endangered or threatened plants that occur on their properties. The rule provides that persons who willfully harvest, collect, pick, injure, destroy, transport for sale, sell, or offer to sell plants listed as threatened or endangered must obtain written permission from the landowner, and if endangered, must apply for a permit from FDACS to engage in these activities.

3.16 Wildlife Habitat and Biodiversity Models

3.16.1 Florida Natural Areas Inventory Potential Habitats (October 2001, May 2007)

The FNAI database of habitats potentially used by rare and imperiled species of plants and animals shows that portions of the Plum Creek Property were mapped as potentially suitable habitat for some species:

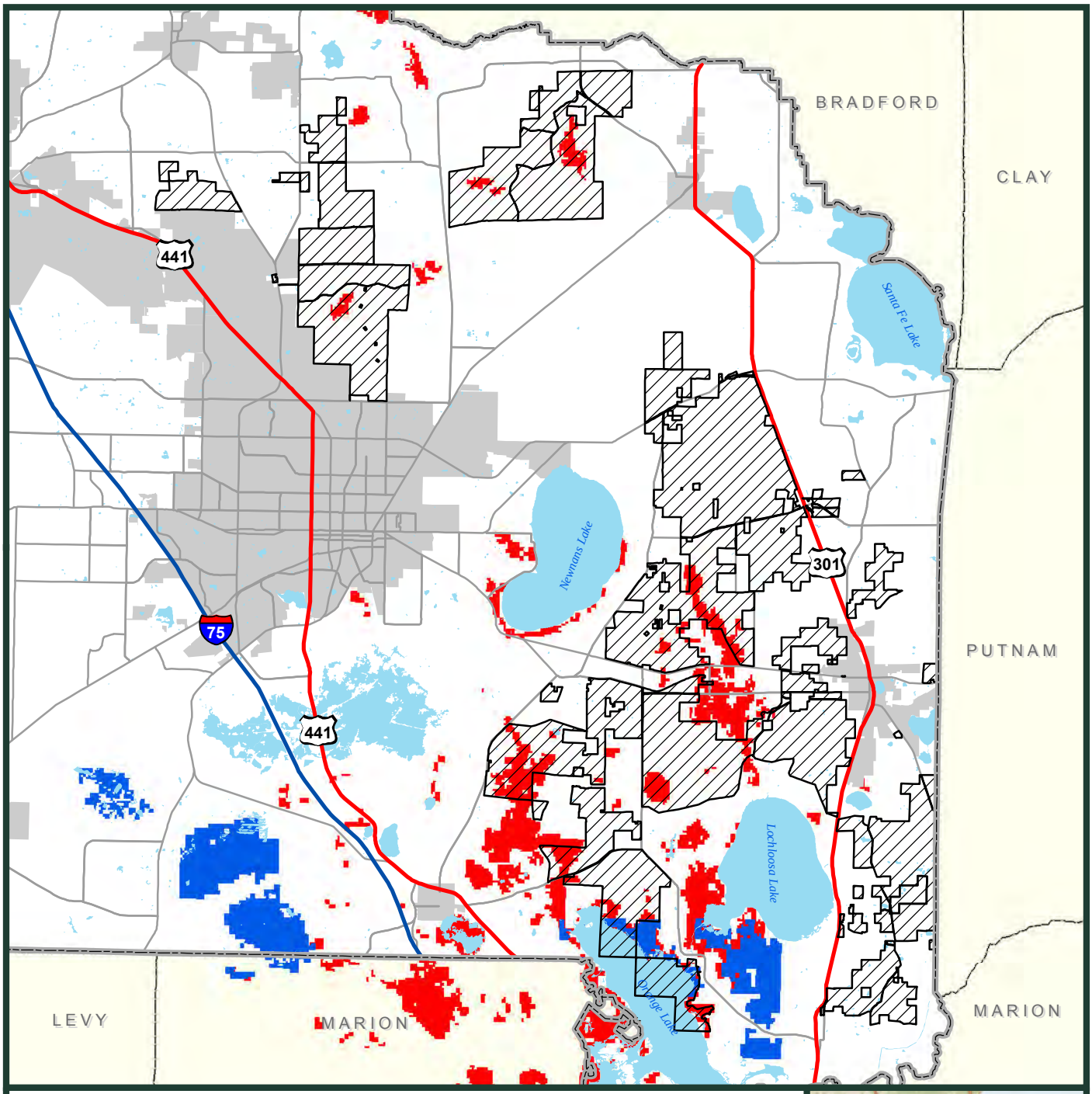
- The western portion of the Plum Creek Property west of SR 121 and north of US 441 and a portion of the Lochloosa Conservation Easement were mapped as potentially suitable habitat for the eastern indigo snake.
- The southeastern quadrant of the Property within the Murphree Wellfield Conservation Easement and the northern third of the Property east of Newnans Lake were mapped as potentially suitable habitat for the flatwoods salamander.

- Portions of the Property near Newnans, Lochloosa, and Orange Lakes and Paynes Prairie were mapped as potentially suitable habitat for the bald eagle.

3.16.2 Strategic Habitat Conservation Areas (1994, 2009)

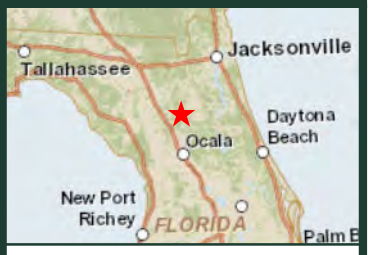
The FWC Closing the Gaps database (Cox et al. 1994) indicates that the larger wetlands systems on the Property were mapped as a Strategic Habitat Conservation Area (SHCA) for listed species of wading birds, and small areas of herbaceous wetlands along the shoreline of Orange Lake within the Lochloosa Conservation Easement were mapped as an SHCA for Florida sandhill cranes (Figure 3.16.2-1). However, in the 2009 update report on FWC recommendations for SHCAs, Endries et al. (2009) concluded that SHCAs were no longer needed for wading birds and Florida sandhill cranes because population viability modeling revealed that these species have a low probability of decline over the next 100 years. The majority of the areas mapped as SHCA in 1994, within the Property, were located either within the existing conservation easements on the Property or areas proposed for conservation within the LTMP.

Endries et al. (2009) mapped approximately half of the Property as an SHCA for the American swallow-tailed kite (*Elanoides forficatus*), and small areas of the Property east of Newnans Lake were mapped as an SHCA for Cooper's hawk (*Accipiter cooperii*). Neither of these raptors are listed as endangered, threatened, or species of special concern by either the USFWS or FWC. A very small area of the Property south of SR 20 and east of US 301 was mapped as an SHCA for the striped newt, a species that is a candidate for listing as threatened by the USFWS but is not listed by the FWC.



Plum Creek Property
Florida Sandhill Crane SHCA (1994)
Wading Bird SHCA (1994)
Municipalities
Water

Source: Property boundary provided by Plum Creek. Alachua County boundary downloaded from Alachua County. Roads downloaded from FDOT. County boundaries downloaded from FGDL. Strategic Habitat Conservation Area grid files obtained from FWC.



0 2 4
Miles
1 inch = 4 miles

FIGURE 3.16.2-1
STRATEGIC HABITAT CONSERVATION AREAS WITHIN THE PLUM CREEK PROPERTY, ALACHUA COUNTY, FLORIDA

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3.16.3 Biodiversity Hot Spots (1994)

The FWC Closing the Gaps database (Cox et al. 1994) indicates that approximately 75% of the area within the Property was mapped as a hot spot for 3-7+ species of wildlife that are indicators of Florida's biodiversity.

3.16.4 Integrated Wildlife Habitat Ranking System (2003, 2009)

The Integrated Wildlife Habitat Ranking System database was created by the FWC in 2003 to score the Florida landscape 1 to 10 for wildlife and biodiversity, 10 being areas of highest value, and the most recent update to the database was completed in 2009 (Endries et al. 2003, Endries et al. 2009). The database was created at the request of the Florida Department of Transportation as a means of rapidly determining whether planned road projects were likely to have adverse impacts on listed species of wildlife. The ranking was based on 10 variables that are indicators of importance to wildlife and biodiversity. Generally speaking, scores higher than 6 indicate that further review for impacts to wildlife may be warranted. The Property within the Murphree Wellfield Conservation Easement has scores that range from one to seven, indicating that some areas have moderate importance for conservation of Florida's biodiversity on a statewide scale. The parcels north of SR 24 and west of US 301 have scores ranging primarily from one to four, indicating relatively low value to biodiversity conservation. The western half of the Property east of Newnans Lake and north of SR 20 has scores of five to six, indicating a moderate value in terms of biodiversity conservation, but the eastern areas of these parcels have scores mostly in the range of two to four, indicating low conservation value. The Property south of SR 20, primarily within the Lochloosa Conservation Easement, has scores generally in the range of seven to nine, indicating that this area is the most important portion of the Property for conservation of Florida's biodiversity.

4.0 CONTINUING THE TRADITION OF ENVIRONMENTAL STEWARDSHIP

The LTMP Environmental Plan represents an opportunity to conserve a large part of the region's "green infrastructure" while responsibly planning for impending regional growth. The LTMP Environmental Plan proposes to protect important natural resources on the Property consistent with environmental protection plans prepared through regional public processes including the *Envision Alachua* planning initiative. The green infrastructure proposed for protection is composed of some of the region's most significant natural resources and will establish the fundamental framework within which to plan future human uses. This environmental framework will guide smart planning and development, ensuring the achievement of long-term conservation and sustainability goals.

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APPENDIX A

ALACHUA COUNTY ENVIRONMENTAL RESOURCES ASSESSMENT CHECKLIST

Alachua County, Board of County Commissioners
Department of Growth Management
10 SW 2nd Ave., Gainesville, Fl 32601
Tel. 352.374.5249, Fax. 352.338.3224
http://growth-management.alachua.fl.us

Submit to:
Development Services Division

ENVIRONMENTAL RESOURCES ASSESSMENT CHECKLIST

Pursuant to Alachua County Comprehensive Plan 2002, as amended, Conservation Open Space Element Policy 3.4.1, applications for land use change, zoning change, and development approval shall be required to submit an inventory of natural resource information. The inventory shall include site specific identification, analysis and mapping of each resource present on or adjacent to the site. The identification and analysis shall indicate information sources consulted.

Natural Resources Checklist:

Check "Yes" for each resource or resource characteristic identified and discuss and provide supporting material.
Check "N/A" for each resource or resource characteristic not present or otherwise relevant to the application.

Yes	☑	N/A	☐	Surface Waters (ponds, lakes, streams, springs, etc.)
Yes	☑	N/A	☐	Wetlands
Yes	☑	N/A	☐	Surface Water or Wetland Buffers
Yes	☑	N/A	☐	Floodplains (100-year)
Yes	☐	N/A	☑	Special Area Study Resource Protection Areas (Cross Creek, Idylwild/Serenola, etc)
Yes	☑	N/A	☐	Strategic Ecosystems (within or adjacent to mapped areas)
Yes	☑	N/A	☐	Significant Habitat (biologically diverse natural areas)
Yes	☑	N/A	☐	Listed Species/Listed Species Habitats (FNAI S1, S2, & S3; State or Federally E, T, SSC)
Yes	☑	N/A	☐	Recreation/Conservation/Preservation Lands
Yes	☑	N/A	☐	Significant Geological Features (caves, springs, sinkholes, etc.)
Yes	☑	N/A	☐	High Aquifer Recharge Areas
Yes	☑	N/A	☐	Wellfield Protection Areas
Yes	☐	N/A	☑	Wells
Yes	☑	N/A	☐	Soils
Yes	☐	N/A	☑	Mineral Resource Areas
Yes	☑	N/A	☐	Topography/Steep Slopes
Yes	☐	N/A	☐	Historical and Paleontological Resources *{Provided under separate cover by Southeastern Archaeological Research, Inc.}*
Yes	☐	N/A	☑	Hazardous Materials Storage Facilities
Yes	☐	N/A	☑	Contamination (soil, surface water, ground water)

SIGNED:_____ PROJECT #_____ DATE:_____

For assistance please visit the Alachua County Environmental Protection Department (ACEPD) website at http://www.alachuacounty.us/government/depts/epd/natural/devchecklist.aspx or contact ACEPD at (352) 264-6800.
(version 5/20/05)