

TREE HILL NATURE CENTER

CITY OF JACKSONVILLE
DEPARTMENT OF PARKS, RECREATION AND COMMUNITY SERVICES

EXECUTIVE SUMMARY

Lead Agency	City of Jacksonville Department of Parks, Recreation and Community Services
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Common Name of Property	Tree Hill Nature Center
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Location	7152 Lone Star Road, Jacksonville, FL 32211
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Acreage Total	51 acres (of which 36 acres are State-owned)
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Acreage Breakdown	
Land Cover Classification	Acres
Mixed Hardwood Forest	19
Wetlands & Streams	20
Transitional Areas	5
Developed Areas	7
Total Acreage	51

Lease Management Agreement Number(s):	4115
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Use	Single
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Management Responsibilities	
Organization	
Lessee: City of Jacksonville	
Sublessee: Tree Hill, Inc.	

Designated Land Use	Conservation (CSV): Development potential in this land use category is limited to open space, resource and recreational uses.
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Sublease	Tree Hill, Inc. # 4115-01
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Encumbrances	NA
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Type of Acquisition(s):	-State of Florida: Environmentally Endangered Lands Program (EEL) (Original Acquisition-1975) -Florida Communities Trust (FCT): Preservation 2000 Program (Tree Hill Nature Center Addition - 1998)
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Unique Features: Natural:

Tree Hill Nature Center is an urban wilderness preserve comprising 51 acres (including the state-owned, city-owned property and Tree Hill, Inc. property) of hilltop and wetland areas, consisting of southern mixed hardwood forest, broad-leaf evergreen forest, mixed hardwood swamp and freshwater stream. The hardwoods on this property consist of oak, laurel, hickory, pine, holly and dogwood. Two fresh running streams, Red Bay Branch and Howland Creek, flow through the property and connect to Strawberry Creek then Arlington River and eventually the St. Johns River.

Other natural features have been documented by Ted Allen, Ph.D., a noted ornithologist of Jacksonville University to the Department of Natural Resources. The State of Florida used his letter as documentation for the original application for the purchase of Tree Hill property.

Dr. Allen commented: "Certain aspects of the natural ecosystem are absent, e.g. panther and wolf, but various representation of predators are in evidence (large mouth bass, frogs, snapping turtle, otter, various snakes, as well as such top carnivores as the red-tailed and red-shouldered hawk, and possibly even bobcat, according to a recent unconfirmed report). The omnivores, such as bears and foxes, have not been found recently, but the raccoon and opossum represent this group. The deer is missing from the herbivore category, although squirrels and rabbits represent this component. The producers and decomposers are in a nearly natural condition, and the abiotic components are not significantly modified."

Dr. Allen concluded his report with the following statement: "The training facility provided by this small wilderness area is perhaps its most compelling "ecological value," and the ramifications of this concept have the potential for spreading the impact of Tree Hill far beyond its geographic location."

Unique Features: Archeological/Historical:

Although there are no known archaeological or historical buildings/sites on the property, the unique project site has great potential archaeologically and has historic natural resource significance. There were findings of arrow heads and one spear head in 1942 dating back to the Tomokan Indians, before 1513, four feet below the surface (see Attachments for letter from Florida Archaeological Survey, dated October 15, 1941). Unfortunately, these items were stolen in the 1960's from the present Johnson family landowners. The contiguous Tree Hill nature preserve properties have a long history dating back to its original Spanish Land grant of November 7, 1817 and was first known as "Laurel Hammock".

Management Needs:

- Natural Resource Protection
- Resource Restoration and Enhancement
- Archaeological and Historical Resource Protection
- Expansion of Environmental Education Programs
- Coordination with External Agencies
- Maintenance, Security and Staffing

Acquisition Needs/Acreage:

None

Surplus Lands/Acreage:

None

Public Involvement:

Tree Hill Board of Directors/Duval County Public Schools, JEA



Conservation Management Plan

This management plan form is intended for Board of Trustees leases and subleases of conservation properties that are 160 acres or less. It is intended to address the requirements of Chapter 253.034, 259.032 and rule 18-2.021. Attachments to, or expansion of this form are welcome, if the space provided below is not sufficient. Please answer all of the items below and number all attachments and reference them in the appropriate location below. You are under no obligation to use this form. Any plan format is acceptable, provided it includes all of the appropriate items from the above mentioned statutes and rule. This form is available in electronic format upon request. For additional information pertaining to management plans, please visit the Division of State Lands Stewardship page on the web at <http://www.dep.state.fl.us/lands/stewardship.htm>.

A. General Information

1. Common Name of the Property: Tree Hill Nature Center

2. Lease Number: 4115

3. Acres: 36 acres of the 51-acre property are state-owned and leased by City of Jacksonville

4. Managing Agency: Tree Hill, Inc is subleasing the property from the City of Jacksonville

5. Provide an executive summary/description of this property that includes a brief description of the resources, uses and proposed uses, outstanding features etc.

See attached executive summary.

6. Attach a map showing the location and boundaries of the property including:
 - a) The location and type of structures or improvements currently on the property.
 - b) The location and type of proposed improvements. Appendix A
7. Attach a map showing the proximity of this managed area to other conservation areas within 10 miles. Appendix B
8. Please attach a legal description of the property. Appendix C
9. Provide a physical description of the land including a quantitative data description of the land which includes an inventory of forest and other natural resource, exotic and invasive plants, hydrologic features, infrastructure including recreational facilities, and other significant land, cultural or historical features.

Tree Hill Nature Center is an urban wilderness preserve comprising 51 acres (of which 36 acres are State owned) of hilltop and wetland areas, consisting of southern mixed hardwood forest, broad-leaf evergreen forest, mixed hardwood swamp and freshwater stream. The hardwoods consist of oak, laurel, hickory, pine, holly and dogwood. Red Bay Branch and Howland Creek flow through the property and a boardwalk crosses Red Bay Branch to connect the State and City owned parcels. From the hilltop one passes through transitional zones where plants from the dry and swampy areas meet. Wax myrtle, willow, bay, red maple and an abundance of ferns, mosses and liverworts characterize these transitional zones. The Park consistently attempts to control exotic plants by using chemical, biological and mechanical means. Trained staff applies herbicide on paper mulberry, small leaf spiderwort, and tuberous sword fern. Coral ardisia is removed mechanically by volunteers and staff. Air potato is also being controlled by using the potato leaf beetle, *Liloceris cheni*. A nature center, front office, parking area, outdoor animal encounter areas, and nature trails are located on the state-owned property. An amphitheater, homestead building, community garden and parking is located on the City-owned portion of the park.

10. A brief description of soil types, attaching USDA maps when available.

The state owned property contains No. 46 Ortega soil which is an A-type soil, fine sand, high permeability. The other soil type is No. 62 Rutledge which is a B/D-type soil which from 0-10 feet below land surface is mucky fine sand and 10-80 feet is loamy fine sand. Please see Appendix D for a soils map.

11. Is the property adjacent to an aquatic preserve or designated area of critical state concern? YES ___ NO X

If YES, please identify:

N/A

12. Was the property acquired by a conservation land acquisition program? If YES, please identify.

The state-owned property was purchased through the State of Florida: Environmentally Endangered Lands Program (EEL) (Original Acquisition - 1975). The City owned property was purchased with the help of the Florida Communities Trust (FCT): Preservation 2000 Program (Tree Hill Nature Center Addition - 1998).

13. Do any agency-specific statute requirements or legislative/executive directives constrain the use of the property? (These restrictions can frequently be found in the lease) YES _____ NO x _____

If YES, please identify

N/A

14. Are there any reservations or encumbrances on the property? YES _____ NO x _____

If YES, please identify:

N/A

B. Natural and Cultural Resources

15. Are there any archeological or historical sites on this property? YES _____ NO x _____
If YES,

A) How do you plan to locate, protect and preserve these resources?

Although there are no known archeological or historical buildings/sites on the property, the unique Tree Hill property has great archeological potential and historic natural resource significance. There were reports by a previous landowner of arrowheads and one spearhead being found on property in 1942 but these artifacts are now missing. The contiguous Tree Hill nature preserve properties have a long history dating back to its original Spanish Land grant of 1817 and was first known as "Laurel Hammock".

B) Please describe the actions the agency plans to take to locate and identify unknown Resources such as surveys of unknown archeological or historical sites.

If any historical resources are found on the property in the future, the City will adhere to the Management Procedures for Archeological and Historical Sites and Properties on State-owned or Controlled Properties.

16. Are there any buildings on the property that are fifty or more years old?

YES _____ NO If YES,

A) Please Identify:

NA

B) Have these buildings been evaluated by a historian or historic architect to determine their historical and/or architectural significance. If YES, please identify both the building(s) and the evaluators(s):

N/A

C) Please state whether any such buildings are listed in the Florida Master Site File, National Register of Historic Places or a local register of historic places and identify such buildings.

N/A

By law, the managing agency must consult with the Division of Historical Resources with regard to any proposed land clearing or ground disturbing activities or with regard to any proposed rehabilitation, restoration or demolition of structures 50 or more years old. Please contact the Division of Historic Resources if you would like to obtain information on archeological/historical sites.

Division of Historical Resources
Florida Department of State
R.A. Gray Building, MS-8
Tallahassee, Florida 32399
(850) 245-6312

17. Please identify natural resources on the property that are listed in the Florida Natural Areas Inventory.

FNAI reported that "no elements are associated with this managed area." See FNAI report in Appendix E.

18. Are any imperiled natural communities, unique natural features, or any State and federally listed endangered or threatened plant or animal species, on site?

YES _____ NO _____

If YES, please provide a specific description of how you plan to identify, locate, protect and preserve these species.

Listed species will be protected on this property in perpetuity by using the following procedures: 1) Public access to the natural communities is limited to the boardwalk and nature trail only. The public is not allowed to go off the trail which protects the nature communities but allowing the public to view them 2) Gopher tortoise burrow sites are currently marked so maintenance equipment can avoid these areas. Only mechanical cuts of the underbrush will be completed about once every 10 years, if needed. 3) A six-foot tall fence surrounds the properties to further protect the natural communities from adjacent neighbors. A Natural Communities Map is included as Appendix F. A species list is included as Appendix G.

If you would like further information regarding natural resources or endangered species please contact the Florida Natural Areas Inventory (FNAI).

Florida Natural Areas Inventory
1018 Thomasville Road, Suite 200-C
Tallahassee, Florida 32303
(850) 224-8207

19. Please identify the water resources including swamps, marshes or other wetlands, on the property including the water quality classification for each water body and if the water body has been designated "Outstanding Florida Waters".

Red Bay Branch and Howland Creek are located on the site. Howland Creek traverses a small portion of the property along the southwest boundary. Both of these waters are classified as Class III Waters. The site is not in a designated "Outstanding Florida Waters" Area.

20. Are any known mineral resources, such as oil, gas and phosphates, or any unique natural features, such as coral reefs, beaches, dunes, natural springs, caverns, large sinkholes, virgin timber stands, scenic vistas, and natural rivers and streams, and outstanding native landscapes containing relatively unaltered flora, fauna, and geological features on site? YES _____ NO _____

If YES, Please identify and provide locations of these resources on a map.
Appendix A

21. Are there fish or wildlife resources (both game and non-game) on the property?

YES NO If YES, please describe:

Pileated woodpecker, barred owl, gopher tortoise, red tailed fox, raccoon, armadillo, and hawks have been seen on the property. Three gopher tortoise burrow sites are monitored on City property and one burrow site on state property.

C. Use of the Property

22. Please provide a statement of the purpose for which the lands were acquired, the projected use or uses as defined in Chapter 253.034, Florida Statutes, and the statutory authority you have for such uses.

The state-owned lands "shall be managed to provide for areas of natural resource based recreation, and to ensure the survival of plant and animal species and the conservation of finite and renewable natural resources.", 253.034 (1) Tree Hill was acquired and leased to protect natural resources on the property and provide public recreation. The natural communities onsite are conserved, and only nature trails run through these areas. The amphitheater is located on the previously disturbed city-owned land without affecting the natural communities. In 2019 in partnership with the City, Tree Hill Nature Center purchased the adjacent 0.75 acre homestead property. The house was renovated for office and meeting space and additional parking and walkway was constructed.

23. Please state the desired outcome for this property, and key management activities necessary to achieve the desired outcome, including public access.

Tree Hill Inc. will continue to maintain existing recreational facilities and offer regular programs and events aimed to educate the public about our local natural environment and expose the public to this beautiful preserve. Exotic species will continue to be monitored and treated, as needed. Appendix H identifies the future development plans for the park.

24. Please state the single or multiple uses currently made of the property and if the property is single use, please provide an analysis of its potential for multiple-use.

Single Multiple use/s is/are:

The property protects unique natural resources and also provides recreation through nature trails and environmental education through the nature center and outdoor classroom areas.

25. Were multiple uses considered but not adopted? YES NO

If YES, please describe why:

N/A

26. Please provide an analysis of the potential use of private land managers to facilitate the restoration or management of these lands.

This potential is very low. Tree Hill provides numerous education programs to the public including invasive/exotic species programs. Photo handouts are used to help with exotic species identification. Tree Hill also encourages adjacent landowners to not plant invasive/exotic species and to attend education programs which will help the conservation of the natural communities on Tree Hill.

27. Please provide an analysis of the potential of the property to generate revenues to enhance the management of the property.

Tree Hill, Inc. charges admission for the public which is used to continue the events, maintenance, and environmental education programs on the property. These admission charges are \$5 for adults, \$4 for Seniors/Students/Military/Teachers, \$3 for children ages 3-17 and free for ages 2 and under. Tree Hill also has a contract with the City of Jacksonville (\$95,000). And, Tree Hill also encourages donations at their events to generate revenue. Tree Hill, Inc. is a 501.c3 not-for-profit organization. Appendix I includes additional information about programming fees.

28. Describe the projected, current and recent past uses of the property, and any unauthorized uses, if known.

The property was once used by the Timucuan Indians and later by settlers who grew indigo and citrus before becoming a homesite in the early 1900s. In the 1970s, concerned citizen initiated an effort to preserve the land and convinced the State to purchase the property in 1975 which was subsequently leased to the City of Jacksonville and is currently managed and operated by Tree Hill, Inc. as an environmental education center. Only minor improvements are envisioned to further the mission to promote environmental stewardship to the community through hands-on educational programs and low-cost access to natural spaces.

29. Do the planned uses impact renewable and non-renewable resources on the property?

YES _____ NO x _____

If YES, please describe what specific activities will be taken to protect or enhance and conserve those resources and to compensate/mitigate the damage that is caused by the impacting use.

N/A

30. Should any parcels of land within or adjacent to the property be purchased because they are essential to management of the property? YES _____ NO x _____

If YES, please attach a map of this area. Appendix

31. Are there any portions of this property no longer needed for your use?

YES _____ NO x _____

If YES, please attach a map of this area.

32. Please describe what public uses and public access that would be consistent with the purpose for which this property was acquired.

The property was acquired for use as a public park and this property has been designed and constructed to meet this acquisition goal.

D. Management Activities

33. If more than one agency manages this property, describe the management responsibilities of each agency and how such responsibilities will be coordinated.

Tree Hill, Inc. subleases the state-owned property and leases the city-owned property from the City of Jacksonville. As part of the sublease and lease, Tree Hill, Inc. manages the property and facilitates daily operation as a public park facility. Tree Hill, Inc. coordinates with the City of Jacksonville on a regular basis on the operation of the preserve.

34. Please discuss management needs and problems on the property including conservation of soil and water resources and control and prevention of soil erosion and water and soil contamination.

Red Bay Branch is a spring-fed freshwater stream. At one time it was deep and free flowing, but development pressures from the Arlington area have caused it to silt up over the years. The water resources are littered with trash at times. Staff picks up trash daily on and near the water resources.

35. Identify adjacent land uses that will conflict with the planned use of this property, if any.

Adjacent private land uses include residential lands but does not conflict with the planned use of this property. The city-owned land and Tree Hill, Inc., land adjacent to the property is conservation and recreation land and does not conflict with the planned use of this property but enhances the use.

36. Please describe measures used to prevent/control invasive, non-native plants.

Exotic/invasive species are controlled by regular monitoring, education of adjacent land owners, and removal/treatment of the species and re-treatment as they reoccur.

37. Was there any public or local government involvement / participation in the development of this plan? YES NO If YES, please describe:

The City of Jacksonville's Parks, Recreation and Community Services Department prepared this management plan with input from staff managing the property from Tree Hill, Inc.

38. If an arthropod control plan has been established for this property, please include it as an attachment. (Attachment N/A) If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the managing agency. See Chapter 388.4111 regarding mosquito control on public lands.

Mosquito control treatment is available upon request to the City's Mosquito Control Division.

39. Management Goals – **The following 8 goals may not all be applicable to your site. Write N/A where appropriate. Also, please add as many goals, objectives, and measures as you wish.**

Core Objectives	Measure	Timeframe 2 yrs = Short Term 10 yrs = Long Term	Expenses and Manpower Budget
1 <u>Habitat restoration and improvement (Description):</u> The natural communities on the property are in relatively good condition. It is not a goal of the City to restore these natural areas, however staff will monitor the integrity of the natural communities and if significant changes occur, restoration will be coordinated to ensure the integrity is sustained.			
Prescribe burn <u>N/A</u> acres per year	<u> </u> acres burned per year	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>
Maintain <u>N/A</u> acres per year within target fire return interval.	<u> </u> acres within fire return interval target	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>
Conduct habitat/natural community improvement on <u>N/A</u> acres	<u> </u> acres with restoration underway	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>
Conduct habitat/natural community restoration activities on <u>N/A</u> acres.	<u> </u> acres restored	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>
Conduct timber harvest for the purposes of habitat restoration on <u>N/A</u> acres	<u> </u> acres harvested	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>

2	<u>Public Access and recreational opportunities (Description):</u>			
The State-owned portion of the property offers a nature center, parking area, outdoor animal encounter areas, and nature trails. An amphitheater, homestead building, community garden, nature trails and additional parking is located on the City-owned portion of the park which helps support larger events and programs. A boardwalk crosses Red Bay Branch and connects the trails on the State and City properties. The original homestead property was acquired and the house was renovated for office and meeting space.				
Maintain public access and recreational opportunities to allow for a recreational carrying capacity of <u>100+</u> visitors per day	<u>100+</u> visitor opportunities/day	Within 2 yrs <u>x</u> Within 10 yrs <u> </u>	Expense \$ <u>95,000</u> Personnel \$ <u> </u>	
Develop additional public access and recreational opportunities to allow for a carrying capacity of <u>N/A</u> visitors/day	<u> </u> visitor opportunities/day	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>	
Continue to provide <u>90/year</u> interpretive/education programs	<u>90/year</u> interpretive/education programs	Within 2 yrs <u>x</u> Within 10 yrs <u> </u>	Expense \$ <u>67,000</u> Personnel \$ <u> </u>	
Develop <u>N/A</u> new interpretive/education programs	<u> </u> interpretive/education programs	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>	
3	<u>Hydrological preservation and restoration (Description):</u>			
Maintaining hydrological flow for surface waters that cross the park. Tree Hill, Inc. staff will remove deadfalls and items blocking or that could block the streams.				
Conduct or obtain a site assessment/study to identify potential hydrology restoration needs	Assessment conducted? Y__ N <u>X</u>	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>	
Restore natural hydrologic condition and functions to <u>N/A</u> acres on site	<u> </u> acres for which hydrologic restoration is underway (planning, grant writing, earth moving, etc.)	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>	

		_____ acres for which natural hydrologic conditions and function are restored	Within 2 yrs ____ Within 10 yrs ____	Expense \$ _____ Personnel \$ _____
4	<u>Sustainable forest management (Description):</u> N/A			
	Prepare & implement a silviculture management plan including reforestation, harvesting, prescribed burning, restoration, and timber stand improvement activities and goals.	Silviculture management plan complete? Y __ N __ _____ acres treated	Within 2 yrs ____ Within 10 yrs ____	Expense \$ _____ Personnel \$ _____
	Develop and implement a process for conducting stand descriptions and forest inventory including a GIS database containing forest stands, roads & other attributes (including but not limited to: threatened & endangered species, archeological resources, exotic species locations, historical areas)	Complete GIS database and re-inventory all attributes every 3-5 years or as needed.	Within 2 yrs ____ Within 10 yrs ____	Expense \$ _____ Personnel \$ _____
		_____ acres of forest inventoried annually	Within 2 yrs ____ Within 10 yrs ____	Expense \$ _____ Personnel \$ _____
5	<u>Exotic and invasive species maintenance and control (Description):</u> Trained staff, with volunteer assistance, regularly monitors and treats invasive and exotic species using chemical and mechanical means to control paper mulberry, small leaf spiderwort, coral ardisia, tuberous sword fern, air potato and other occurrences. The center recently started using biological control for specific invasive species of plant. The potato-leaf beetle, <i>Liloceris cheni</i> , was introduced in 2017 to control air potato. Approximately 300 beetles were released at various sites on the property over a two year period which has effectively controlled air potato without any effects to native flora or fauna.			

	Annually treat <u>10</u> acres of EPPC Category I and Category II invasive exotic plant species.	<u>10</u> acres treated	Within 2 yrs <u> </u> Within 10 yrs <u>x</u>	Expense \$ <u>5000</u> Personnel \$ <u>10,000</u>
	Implement control measures on <u>N/A</u> exotic and nuisance animal species	<u> </u> nuisance and exotic species for which control measures are implemented	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>
6	<u>Capital facilities and infrastructure</u>			
	Description-			
	No capital improvements are planned for the next 10 years. Focus will be on maintenance and improvement of existing facilities and infrastructure.			
	To maintain <u>7</u> facilities, <u>0.25</u> miles of roads, and <u>2</u> miles of trails existing on site (as applicable)	<u>7</u> facilities, <u>0.25</u> miles roads, <u>2</u> miles trails maintained	Within 2 yrs <u>x</u> Within 10 yrs <u> </u>	Expense \$ <u>95,000</u> Personnel \$ <u> </u>
	To construct <u>3</u> facilities, <u> </u> miles of roads, and <u> </u> miles of trails (as applicable)	<u>3</u> facilities, <u> </u> miles roads, <u> </u> miles trails constructed	Within 2 yrs <u> </u> Within 10 yrs <u>x</u>	Expense \$ <u>100,000</u> Personnel \$ <u> </u>
	To improve or repair <u> </u> facilities, <u> </u> miles of roads, and <u> </u> miles of trails existing on site (as applicable)	<u> </u> facilities, <u> </u> miles roads, <u> </u> miles trails improved or repaired	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>
7	<u>Cultural and historical resources</u>			
	Description-			
	There are no historical sites on the property. If any historic sites are identified, the City will notify the Division of Historical Resources.			
	Ensure all known sites are recorded in the FL Division of Historical Resources Master Site file	<u>0</u> of recorded sites	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>
	Monitor <u>N/A</u> recorded sites and send updates to DHR Master Site file as needed	<u> </u> of sites monitored	Within 2 yrs <u> </u> Within 10 yrs <u> </u>	Expense \$ <u> </u> Personnel \$ <u> </u>

	Bring ___ of ___ recorded sites/cultural resources into good condition	_____ of sites in good condition	Within 2 yrs ___ Within 10 yrs ___	Expense \$ _____ Personnel \$ _____
8	Imperiled species habitat maintenance, enhancement, restoration, or population restoration.			
	Description-			
	FNAI reports no elements on the property; however, staff is aware of Gopher tortoises on the property. Identification and monitoring protocols have already been developed.			
	Develop baseline imperiled species occurrence inventory list	Baseline imperiled species occurrence inventory list complete Y ^x N___	Within 2 yrs ^x ___ Within 10 yrs ___	Expense \$ _____ Personnel \$ _____
	Develop monitoring protocols for ¹ selected imperiled species	¹ imperiled species for which monitoring protocols are developed	Within 2 yrs ^x ___ Within 10 yrs ___	Expense \$ _____ Personnel \$ _____
	Implement monitoring protocols for ¹ imperiled species	¹ species for which monitoring is ongoing	Within 2 yrs ^x ___ Within 10 yrs ___	Expense \$ _____ Personnel \$ ^{10,000} _____
	[If applicable, provide additional measurable objective(s) for new or ongoing species-specific management activities for each of the priority species such as population augmentation, translocations, nest box projects, etc.]	Examples: Project-specific quantity, _____ of nest boxes, # of individuals introduced or trans-located, etc.	Within 2 yrs ___ Within 10 yrs ___	Expense \$ _____ Personnel \$ _____

40. Costs

Activity	Yearly Estimated Cost		
	Priority Cost	Other Management Cost	Cost Effective Methods
<u>Resource Management</u>	\$95,000	City of Jacksonville contribution to Tree Hill, Inc. for operational expenses.	Utilize Tree Hill personnel
<u>Administration</u>			Utilize Tree Hill personnel
<u>Support</u>			Utilize Tree Hill personnel

<u>Capital Improvements</u>	\$100,000		Will seek donations and grants.
<u>Recreation Visitor Services</u>	\$67,000	Duval County Schools to Tree Hill	Utilize Tree Hill personnel
<u>Law Enforcement Activities</u>	\$0 due to in kind services		In kind services provided by Jacksonville Sherriff's Office

41. A finding regarding whether each planned use conforms to the appropriate policies and guidelines of the State Lands Management Plan is required. The Plan can be found at <http://www.dep.state.fl.us/lands/oes/slmp.pdf>, by writing to the State of Florida Department of Environmental Protection, Division of State Lands, Office of Environmental Services, 3900 Commonwealth Boulevard, Mail Station 140, Tallahassee, Florida 32399-3000, or by calling (850) 245-2784. Does this plan conform to the State Lands Management Plan?

YES NO

42. Please provide the following contact information below:

Name:	Brian Burket
Managing Agency:	City of Jacksonville
Address:	214 N. Hogan Street, 4th Floor Jacksonville, FL 32202
Phone:	904-255-7935
Email Address:	BBurket@coj.net

Date Management Plan Prepared: June 23, 2021

Please send this completed form and attachments to:

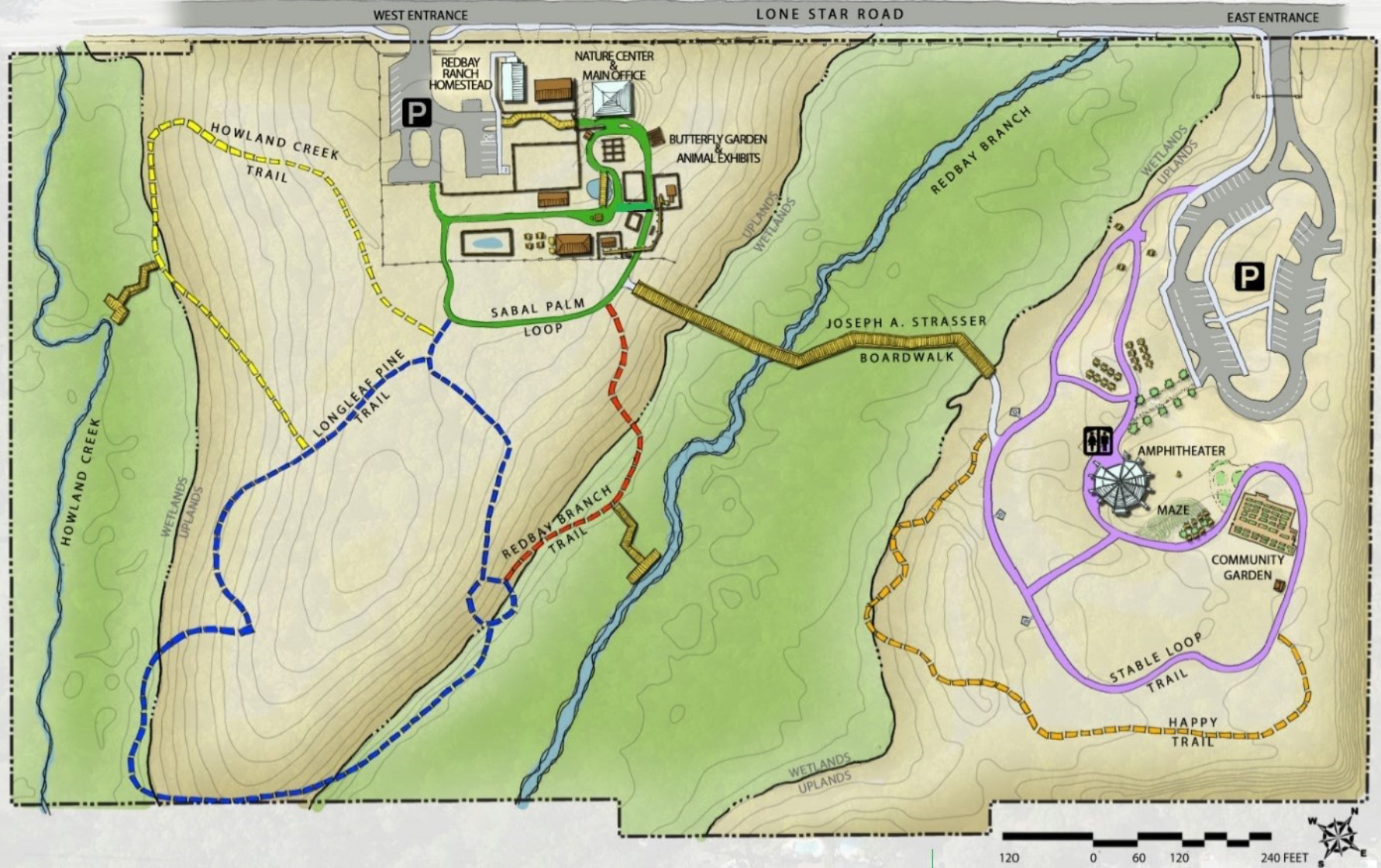
james.parker@dep.state.fl.us, Or
to: Division of State Lands
D.E.P. M.S. 140
3900 Commonwealth Blvd.
Tallahassee Fl. 32399-3000
850-245-3045

List of Appendices

- Appendix A.....Base Map
- Appendix B.....Vicinity Map
- Appendix C.....Ownership Map & Legal Description
- Appendix D.....Soils Map
- Appendix E.....FNAI Report
- Appendix F.....Natural Communities Map
- Appendix G.....Species List
- Appendix H.....Conceptual Development Plans
- Appendix I.....Environmental Education Programming Information

Appendix A – Base Map

Tree Hill Nature Center



Trails close at 4pm.

Welcome to Tree Hill Nature Center

7152 Lone Star Rd. Jax, FL 32211 (904) 724 4646 info@treehill.org www.treehill.org

Park

- * Stay on the trails. Wandering off the trails disturbs habitat and increases your chance of discovering poison ivy or yellow jacket nests.
- * Do not pick plants or disturb animals. It is unlawful to remove any plant or animal from the preserve.
- * No smoking or alcohol.
- * No pets.
- * No bikes.
- * Do not litter. Trash cans are located near the main pyramid building and at the amphitheater.
- * Trails close at 4:00pm.

More Info

We offer several programs to fit your needs. Birthday parties, scout groups, clubs and more. If we can be of further assistance, see the front desk or email educator@treehill.org.

Enjoyed your time, then purchase a membership to come back all year long. Your admission fee will be applied to a membership if purchased before you leave.

Note: Number and type of admissions applied can be no more than the number and type of admissions allowed on the membership purchased.

Open: Monday- Saturday

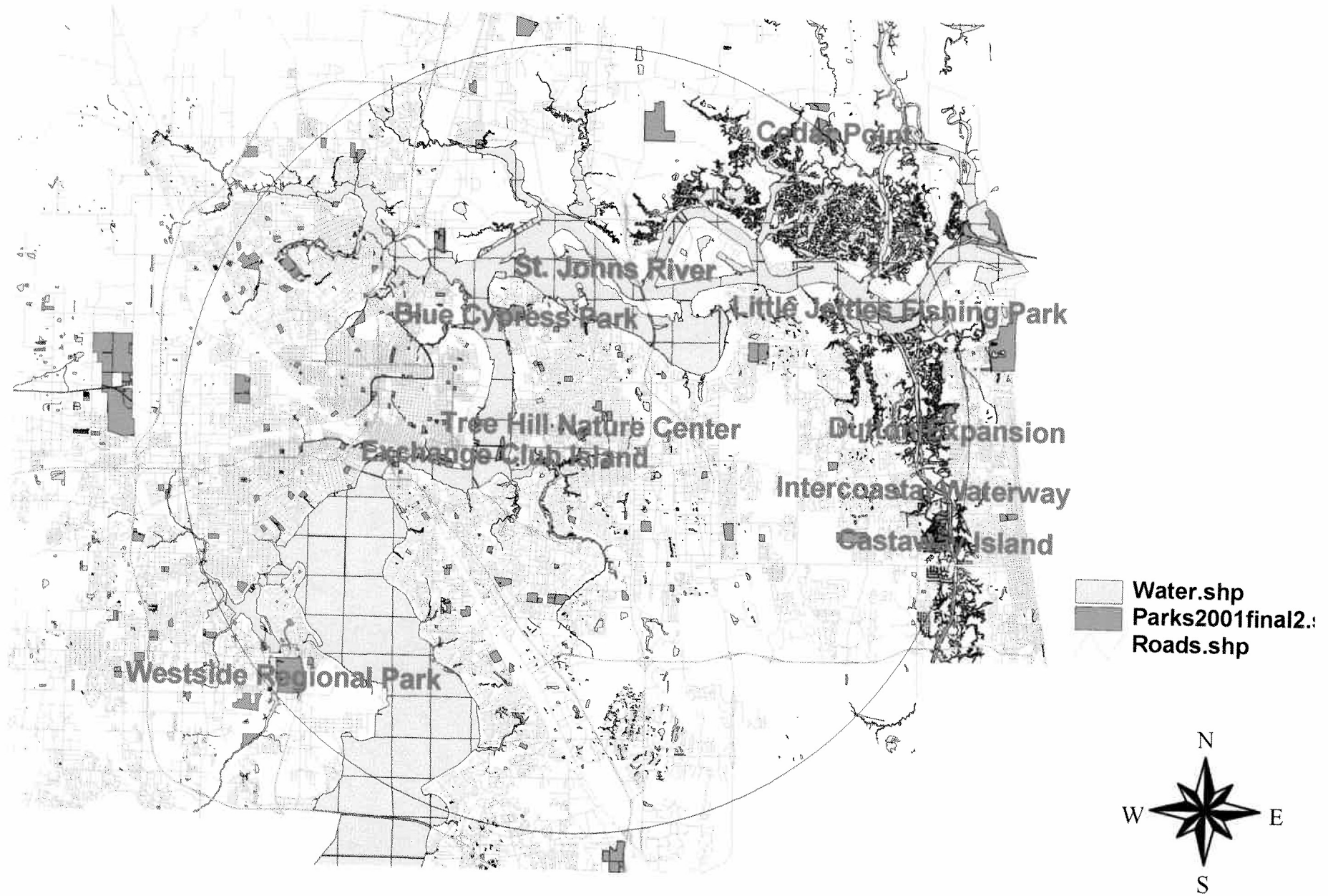
8am-4:30pm

Closed Major Holidays!

Mission: Tree Hill Nature Center promotes environmental stewardship to the community through hands-on educational programs and low-cost access to natural areas.

Appendix B – Vicinity Map

Significant land and water resources within a 10 mile radius of Tree Hill Nature Center

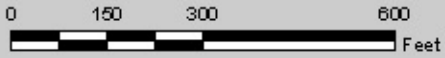


Appendix C – Ownership Map & Legal Description

Tree Hill Nature Center

7152 Lone Star Rd, Jacksonville 32211

- Tree Hill, Inc.
- State Property
- City Property



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

LEASE AGREEMENT

Lease Number 4115

THIS LEASE AGREEMENT, made and entered into, this 18th day of February 1997, between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA hereinafter referred to as "LESSOR", and CITY OF JACKSONVILLE, hereinafter referred to as "LESSEE."

LESSOR, for and in consideration of mutual covenants and agreements hereinafter contained, does hereby lease to said LESSEE the lands described in Paragraph 2 below, together with the improvements thereon, and subject to the following terms and conditions:

1. DELEGATIONS OF AUTHORITY: LESSOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, Department of Environmental Protection.
2. DESCRIPTION OF PREMISES: The property subject to this lease, is situated in the County of Duval, State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter referred to as the "leased premises".
3. TERM: The term of this lease shall be for a period of 50 years commencing on February 18, 1997, and ending on February 17, 2047, unless sooner terminated pursuant to the provisions of this lease.
4. PURPOSE: The LESSEE shall manage the leased premises only for the establishment and operation of Tree Hill Park, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by Paragraph 8 of this lease.
5. QUIET ENJOYMENT AND RIGHT OF USE: LESSEE shall have the right of ingress and egress to, from and upon the leased premises

for all purposes necessary to the full quiet enjoyment by said LESSEE of the rights conveyed herein.

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

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

8. MANAGEMENT PLAN: LESSEE shall prepare and submit a Management Plan for the leased premises, in accordance with Chapters 18-2 and 18-4, Florida Administrative Code, within twelve months of the effective date of this lease. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands. The leased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the leased premises without the prior written approval of LESSOR until the Management Plan is approved. LESSEE shall provide LESSOR with an opportunity to participate in all phases of preparing and developing the Management Plan for the leased premises. The Management Plan shall be submitted to LESSOR in draft form for review and comments within ten months of the effective date of this lease. LESSEE shall give LESSOR reasonable notice of the application for and receipt of any state, federal or local permits as well as any public hearings or meetings relating to the development or use of the leased premises. LESSEE shall not proceed with development of said leased premises including, but not limited to, funding, permit application, design or building contracts, until the Management Plan required herein has been submitted and approved. Any financial commitments made by LESSEE which are not in compliance with the terms of this lease shall be done at LESSEE'S' own risk. The Management Plan shall emphasize the original management concept as approved by LESSOR on the

effective date of this lease which established the primary public purpose for which the leased premises are to be managed. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR at least every five years. LESSEE shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under this lease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

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

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

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

12. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures, improvements, and signs shall be constructed at the expense of LESSEE in accordance with plans prepared by professional designers and shall require the prior written approval of LESSOR as to purpose, location and design. Further, no trees, other than non-native species, shall be removed or major land alterations done without the prior written approval of LESSOR. Removable equipment and removable improvements placed on the leased premises by LESSEE which do not become a permanent part of the leased premises will remain the property of LESSEE and may be removed by LESSEE upon termination of this lease.

13. INSURANCE REQUIREMENTS. LESSEE shall procure and maintain adequate insurance coverage of the types listed below. Such insurance shall name LESSEE, LESSOR and the State of Florida as co-insureds. LESSEE shall submit written evidence of having procured all insurance coverages required herein prior to the effective date of this lease and shall submit annually thereafter written evidence of maintaining such insurance coverage to the Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station 130, Tallahassee, Florida 32399-3000. LESSOR recognizes that LESSEE has an ongoing self-insurance program for Public Liability, Automobile Liability and Workers' Compensation in compliance with and subject to the limitations of Section 768.28, *Florida Statutes*. Any certificate of self-insurance shall be issued or approved by the Insurance Commissioner, State of Florida. The certificate of self-insurance shall provide for liability coverage. If at any time during the term of this lease LESSEE is no longer self-insured, LESSEE shall procure and maintain liability policies in the following amounts and shall submit evidence of such to LESSOR at the above address:

a. Property Insurance. LESSEE shall procure and maintain adequate fire and extended risk insurance coverage for any improvements or structures located on the leased premises in amounts not less than the full insurable replacement value of such improvements immediately upon erecting any structures as allowed by paragraph 4 of this lease. Immediate notification in writing of the erection or removal of structures or other improvements on or from the leased premises and any changes affecting the value of the improvements shall be submitted to LESSOR at the above address.

b. Liability Insurance. Liability insurance coverage shall be in amounts not less than \$100,000 per occurrence and \$200,000 per accident for personal injury, death and property damage on the leased premises.

LESSEE shall be financially responsible for any loss due to failure to obtain adequate insurance coverage, and LESSEE's failure to maintain such coverage in the amounts set forth shall constitute a breach of this lease.

14. LIABILITY: Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party and the officers, employees and agents

thereof. Nothing herein shall be construed as an indemnity or a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims.

15. PAYMENT OF TAXES AND ASSESSMENTS: LESSEE shall assume full responsibility for and shall pay all liabilities that accrue to the leased premises or to the improvements thereon, including any and all ad valorem taxes and drainage and special assessments or taxes of every kind and all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against the leased premises.

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

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

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

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

20. MINERAL RIGHTS: This lease does not cover petroleum or petroleum products or minerals and does not give the right to LESSEE to drill for or develop the same, and LESSOR specifically

reserves the right to lease the leased premises for purpose of exploring and recovering oil and minerals by whatever means appropriate; provided, however, that LESSEE named herein shall be fully compensated for any and all damages that might result to the leasehold interest of said LESSEE by reason of such exploration and recovery operations.

21. RIGHT OF AUDIT: LESSEE shall make available to LESSOR all financial and other records relating to this lease, and LESSOR shall have the right to either audit such records at any reasonable time or require the submittal of an annual independent audit by a Certified Public Accountant during the term of this lease. This right shall be continuous until this lease expires or is terminated. This lease may be terminated by LESSOR should LESSEE fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this lease, pursuant to the provisions of Chapter 119, Florida Statutes.

22. CONDITION OF PREMISES: LESSOR assumes no liability or obligation to LESSEE with reference to the condition of the leased premises. The leased premises herein are leased by LESSOR to LESSEE in an "as is" condition, with LESSOR assuming no responsibility for the care, repair, maintenance or improvement of the leased premises for the benefit of LESSEE.

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

24. NOTICE: All notices given under this lease shall be in writing and shall be served by certified mail including, but not limited to, notice of any violation served pursuant to 253.04, Florida Statutes, to the last address of the party to whom notice is to be given, as designated by such party in writing. LESSOR and LESSEE hereby designate their address as follows:

LESSOR: Department of Environmental Protection
Division of State Lands
Bureau of Land Management Services, M. S. 130
3900 Commonwealth Boulevard,
Tallahassee, Florida 32399

LESSEE: Director
Department of Parks,
Recreation and Entertainment
851 North Market Street
Jacksonville, FL 32202

25. BREACH OF COVENANTS, TERMS, OR CONDITIONS: Should LESSEE breach any of the covenants, terms, or conditions of this lease, LESSOR shall give written notice to LESSEE to remedy such breach within sixty days of such notice. In the event LESSEE fails to remedy the breach to the satisfaction of LESSOR within sixty days of receipt of written notice, LESSOR may either terminate this lease and recover from LESSEE all damages LESSOR may incur by reason of the breach including, but not limited to, the cost of recovering the leased premises and attorneys' fees or maintain this lease in full force and effect and exercise all rights and remedies herein conferred upon LESSOR.
26. DAMAGE TO THE PREMISES: (A) LESSEE shall not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises or adjacent properties, any act which may result in damage or depreciation of value to the leased premises or adjacent properties, or any part thereof. (B) Lessee shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants or pollution, including, but not limited to, hazardous or toxic substances, chemicals or other agents on, into, or from the leased premises or any adjacent lands or waters in any manner not permitted by law. For the purposes of this lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United States Congress or the EPA or defined by any other federal, state

or local statute, law, ordinance, code, rule, regulation, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant. "Pollutants" and "pollution" shall mean those products or substances defined in Florida Statutes, Chapters 376 and 403, Florida Statutes, and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE's failure to comply with this paragraph, LESSEE shall, at its sole cost and expense, promptly commence and diligently pursue any legally required closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the leased premises, and (2) all off-site ground and surface waters and lands affected by LESSEE's such failure to comply, as may be necessary to bring the leased premises and affected off-site waters and lands into full compliance with all applicable federal, state or local statutes, laws, ordinances, codes, rules, regulations, orders, and decrees, and to restore the damaged property to the condition existing immediately prior to the occurrence which caused the damage. LESSEE's obligations set forth in this paragraph shall survive the termination or expiration of this lease. This paragraph shall not be construed as a limitation upon LESSEE's obligations regarding indemnification and payment of costs and fees as set forth in Paragraph 14 of this lease, nor upon any other obligations or responsibilities of LESSEE as set forth herein. Nothing herein shall relieve LESSEE of any responsibility or liability prescribed by law for fines, penalties and damages levied by governmental agencies, and the cost of cleaning up any contamination caused directly or indirectly by LESSEE's activities or facilities. Upon discovery of a release of a hazardous substance or pollutant, or any other violation of local, state, or federal law, ordinance, code, rule, regulation, order or decree relating to the generation, storage, production,

placement, treatment, release, or discharge of any contaminant, LESSEE shall report such violation to all applicable governmental agencies having jurisdiction, and to LESSOR, all within the reporting periods of the applicable governmental agencies.

27. SURRENDER OF PREMISES: Upon termination or expiration of this lease, LESSEE shall surrender the leased premises to LESSOR. In the event no further use of the leased premises or any part thereof is needed, LESSEE shall give written notification to LESSOR and the Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, Mail Station 130, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399, at least six months prior to the release of any or all of the leased premises. Notification shall include a legal description, this lease number, and an explanation of the release. The release shall only be valid if approved by LESSOR through the execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon termination or expiration of this lease, all improvements, including both physical structures and modifications to the leased premises shall become the property of LESSOR, unless LESSOR gives written notice to LESSEE to remove any or all such improvements at the expense of LESSEE. The decision to retain any improvements upon termination or expiration of this lease shall be at LESSOR'S sole discretion. Prior to surrender of all or any part of the leased premises a representative of the Division of State Lands shall perform an on-site inspection and the keys to any building on the leased premises shall be turned over to the Division. If the improvements, do not meet all conditions as set forth in Paragraphs 19 and 34 herein, LESSEE shall pay all costs necessary to meet the prescribed conditions.

28. BEST MANAGEMENT PRACTICES: LESSEE shall implement applicable Best Management Practices for all activities conducted under this lease in compliance with paragraph 18-2.004(1)(d), Florida Administrative Code, which have been selected, developed,

or approved by LESSOR or other land managing agencies for the protection and enhancement of the leased premises.

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

30. PARTIAL INVALIDITY: If any term, covenant, condition or provision of this lease shall be ruled by a court of competent jurisdiction, to be invalid, void, or unenforceable, the remainder shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

31. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Chapters 18-2 and 18-4, Florida Administrative Code, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the leased premises.

32. SOVEREIGNTY SUBMERGED LANDS: This Lease does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

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

34. MAINTENANCE OF IMPROVEMENTS: LESSEE shall maintain the real property contained within the leased premises and any improvements located thereon, in a state of good condition, working order and repair including, but not limited to, keeping the leased premises free of trash or litter, maintaining all planned improvements as set forth in the approved Management Plan, meeting all building and safety codes in the location situated and maintaining any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be on the effective date of this lease.

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

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

37. ADMINISTRATIVE FEE: LESSEE shall pay LESSOR an annual administrative fee of \$300. The initial annual administrative fee shall be payable within thirty days from the date of execution of this lease agreement and shall be prorated based on the number of months or fraction thereof remaining in the fiscal year of execution. For purposes of this lease agreement, the fiscal year shall be the period extending from July 1 to June 30. Each annual payment thereafter shall be due and payable on July 1 of each subsequent year.

38. SPECIAL CONDITIONS: None

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

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

By: Daniel T. Crabb (SEAL)
CHIEF, BUREAU OF LAND MANAGEMENT SERVICES, DIVISION OF STATE LANDS, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

"LESSOR"

Jenna Bridges
Witness
Jenna Bridges
Print/Type Witness Name
Libby K. Hill
Witness
Dike R. Hill
Print/Type Witness Name

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 18th day of February, 1997, by Daniel T. Crabb, as Chief, Bureau of Land Management Services, Division of State Lands, Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

(SEAL)

Patricia Toloday
Notary Public, State of Florida

Print/Type Notary Name
Commission Number
Commission Expires
OFFICIAL NOTARY SEAL
PATRICIA TOLODAY
COMMISSION NUMBER
CC545665
MY COMMISSION EXPIRES
APR. 18, 2000

Approved as to Form and Legality

By: Sally H. Herin
DEP Attorney

CITY OF JACKSONVILLE

Linaie C. Williams
Witness

Linaie C. Williams
Print/Type Witness Name

J. Prinozi
Witness

Jean Prinozi
Print/Type Witness Name

By: [Signature] (SEAL)

John Delaney
Print/Type Name

Its: MAYOR

"LESSEE"

STATE OF FLORIDA
COUNTY OF DUVAL

The foregoing instrument was acknowledged before me this
26th day of November 1996, by John Delaney, as
Mayor, City of Jacksonville. He/she is
personally known to me.

[Signature]
Notary Public, State of Florida

(SEAL)

Print/Type Notary Name

Commission Number:

Commission Expires:



Linda Schneider
MY COMMISSION # CC565341 EXPIRES
June 23, 2000
BONDED THRU TROY FAIR INSURANCE, INC.

[Signature]
FORM APPROVED
ASSISTANT COUNSEL

In compliance with the Charter of the City
of Jacksonville, I do certify that there is an
unexpended, unencumbered and unimbonded
balance in the appropriation sufficient to cover
the foregoing Agreement and that provision has
been made for the payment of the monies
provided therein to be paid.

[Signature]
Director of Administration and Finance
7162-18 724

EXHIBIT "A"

The following described land, situate, lying and being in the County of Duval, State of Florida, to-wit:

All that part of Farm 25, Alderman Realty Company Farms, according to the plat recorded in plat book 5, page 99, current public records of Duval County, Florida, described as follows:

Begin at the most northerly corner of Farm 25 and run thence in a southeasterly direction along the northeasterly line of Farm 25 390 feet to a point; run thence in a southwesterly direction parallel to the northwesterly line of Farm 25 500 feet to a point; run thence in a northwesterly direction, parallel to the northeasterly line of Farm 25 390 feet to a point in the northwesterly line of Farm 25, said point also being in the southerly right-of-way line of Blackard Road; run thence in a northeasterly direction 500 feet to the point of beginning.

A part of Farms 19 and 26 and a part of the 50 foot road adjoining said Farms, all as shown on Plat of Alderman Realty Company's Farms as recorded in Plat Book 5 page 99 of the current public records of Duval County, Florida, being more particularly described as commencing at a point on the Northwesterly boundary of said Farm 26, said point being 250 feet Northeasterly of the most Westerly corner of said Farm 26; thence North $54^{\circ}53'$ East along the Northwesterly line of said Farm 26, 241.65 feet; thence North $34^{\circ}42'30''$ West, 13.23 feet to the Southeasterly right-of-way line of Lone Star Road as presently established; thence North $55^{\circ}17'30''$ East along said right-of-way line 502.30 feet to a fence corner for the point of beginning; thence South $35^{\circ}08'20''$ East, 215.55 feet; thence South $55^{\circ}17'30''$ West, 154.0 feet to the Easterly boundary of the lands described in O.R. Vol. 3881 Page 345 of the public records of said County; thence South $35^{\circ}08'20''$ East along said boundary, 55.0 feet to the Southeasterly corner of said lands and to an intersection with the boundary of certain lands described in O.R. Vol. 3881 Page 347; thence along the boundary of said lands, North $55^{\circ}17'30''$ East, 242 feet; thence continue along the boundary of said lands described in O.R. Vol. 3881 Page 347, North $35^{\circ}08'20''$ West, 270.55 feet to the Southeasterly right-of-way line of said Lone Star Road; thence South $55^{\circ}17'30''$ West, along said right-of-way line, 88.0 feet to the point of beginning. Containing 0.74 acres more or less.

That certain tract or parcel of land being a portion of Farms 19 and 26 and a part of the 50 foot roadway lying between said Farms according to plat of Alderman Realty Company's Farms as recorded in Plat Book 5, Page 99 of the current public records of Duval County, Florida, being more particularly described as commencing at the intersection of the Northeasterly boundary of said Farm 19 with the Southeasterly right-of-way line of Lone Star Road as it is now established; thence South $55^{\circ}17'30''$ West along the Southeasterly right-of-way line of said Lone Star Road, 217.05 feet to a point for the point of beginning; thence South $5^{\circ}07'$ East, 696.91 feet; thence South $44^{\circ}28'50''$ East, 404.94 feet to the Southeasterly boundary of said Farm 19; thence South $54^{\circ}53'$ West along the Southeasterly boundary of said Farms 19 and 26, 631.71 feet to an intersection with the Easterly boundary of the lands described in Official Records Volume 497, Page 435 of said public records; thence North $4^{\circ}19'30''$ west along said boundary, 657.3 feet; thence continue along said boundary, North $7^{\circ}32'50''$ East, 373.05 feet; thence continue along said boundary, North $19^{\circ}49'40''$ East, 286.86 feet to the Southeasterly right-of-way line of said Lone Star Road; thence North $55^{\circ}17'30''$ East along said right-of-way line, 90.16 feet to the point of beginning. Containing 8 acres more or less.

PARCEL I

That certain tract or parcel of land, being a part of Farms 19 and 26, and a part of the 50 foot roads adjoining said Farms, all as shown on plat of Alderman Realty Company's Farms as recorded in Plat Book 5, page 99, of the current public records of Duval County, Florida, being more particularly described as beginning at a point on the Northwest corner of said Farm 26, said point being 250 feet Northwest along the Northwest line of said Farm 26, 241.65 feet; thence North 34 degrees 42 minutes 30 seconds West, 13.23 feet to a point in the Southeast right-of-way of the Lone Star Road (as established by the County Engineer's Office); thence North 55 degrees 17 minutes 30 seconds East along said Southeast right-of-way line, 268.3 feet; thence South 35 degrees 08 minutes 20 seconds East, 270.55 feet; thence North 35 degrees 08 minutes 20 seconds West, 270.55 feet to a point in said Southeast right-of-way line of Lone Star Road; thence North 55 degrees 17 minutes 30 seconds East along said Southeast right-of-way line, 660.29 feet; thence South 19 degrees 49 minutes 40 seconds West, 286.86 feet; thence South 7 degrees 32 minutes 50 seconds West, 373.05 feet; thence South 4 degrees 19 minutes 30 seconds East, 657.3 feet to a point in the Southeast line of said Farm 26; thence South 54 degrees 53 minutes West along said Southeast line of Farm 26, 668.29 feet to a point, said point being 250 feet Northeast from the most Southerly corner of said Farm 26; thence North 35 degrees 08 minutes 20 seconds West, 1000 feet to the point of beginning.

PARCEL II

That certain tract or parcel of land, being a part of Farm 26 and a part of the 50 foot road adjoining said farm, all as shown on plat of Alderman Realty Company's Farms as recorded in Plat Book 5, page 99, of the current public records of Duval County, Florida, being more particularly described as follows:
For a point of reference begin at the Northwest corner of said Farm 26, thence run North 54 degrees 53 minutes East along the Northwest boundary of said Farm 26, 491.65 feet; thence North 34 degrees 42 minutes 30 seconds West, 13.23 feet to a point in the Southeast right-of-way of the Lone Star Road (as established by the County Engineer's Office); thence North 55 degrees 17 minutes 30 seconds East along said Southeast right of way line, 268.3 feet to the point of beginning of the tract of land being described herein.
From said point of beginning run South 35 degrees 08 minutes 20 seconds East, 270.55 feet; thence North 55 degrees 17 minutes 30 seconds East, 80 feet; thence North 35 degrees 08 minutes 20 seconds West, 270.55 feet to a point in said Southeast right-of-way line of Lone Star Road; thence South 55 degrees 17 minutes 30 seconds West along said Southeast right-of-way line, 80 feet to the point of beginning.

Appendix D – Soils Map

England-Thimby & Miller, Inc.
 ENGINEERS • PLANNERS • DESIGNERS • LANDSCAPE ARCHITECTS • SURVEYORS
 1000 W. WASHINGTON ST. SUITE 200 JACKSONVILLE, FL 32202
 TEL: 904.241.1111 FAX: 904.241.1112
 M: 904.241.1113 E: info@etm.com www.etm.com


THE PRESERVATION PROJECT JACKSONVILLE

Treehill - Soils Map

Legend

- 46 - Ortega
- 62 - Rutledge
- 69 - Urban Land
- 72 - Urban Land

0 175 350 700 Feet
 1 inch = 350 feet




Appendix E – FNAI Report



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

Brian Burket
City of Jacksonville
214 N. Hogan Street, 4th Floor, Room 473
Jacksonville, FL 32202

May 18, 2021

Dear Mr. Burket,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). At your request we have produced the following report for your project area.

The purpose of this Standard Data Report is to provide objective scientific information on natural resources located in the vicinity of a site of interest, in order to inform those involved in project planning and evaluation. This Report makes no determination of the suitability of a proposed project for this location, or the potential impacts of the project on natural resources in the area.

Project: Tree Hill Nature Center
Date Received: 5/11/2021
Location: Duval County

Element Occurrences

A search of our maps and database indicates that we currently have no element occurrences mapped in the vicinity of the study area (see enclosed). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

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

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

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



Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

Tracking Florida's Biodiversity

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

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

CLIP

The enclosed map shows natural resource conservation priorities based on the Critical Lands and Waters Identification Project. CLIP is based on many of the same natural resource data developed for the Florida Forever Conservation Needs Assessment, but provides an overall picture of conservation priorities across different resource categories, including biodiversity, landscapes, surface waters, and aggregated CLIP priorities (that combine the individual resource categories). CLIP is also based primarily on remote sensed data and is not intended to be the definitive authority on natural resources on a site.

For more information on CLIP, visit <http://www.fnai.org/clip.cfm> .

Managed Areas

Portions of the site appear to be located within the Tree Hill Nature Center, managed by the Tree Hill, Inc.

The Managed Areas data layer shows public and privately managed conservation lands throughout the state. Federal, state, local, and privately managed conservation lands are included.

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

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

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

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. **The maps contain sensitive environmental information, please do not distribute or publish without prior consent from FNAI.** FNAI data may not be resold for profit.

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

Sincerely,

Kerri Brinegar

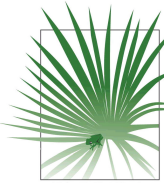
Kerri Brinegar
GIS / Data Services

Encl

Tree Hill Nature Center

Site boundaries are approximate.

Duval County

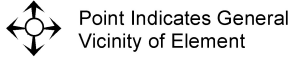


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FLORIDA Natural Areas INVENTORY

Element Occurrences

- Animals
- Plants
- Communities
- Other
- Data Sensitive



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

Conservation Lands

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



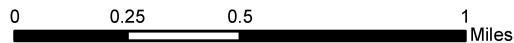
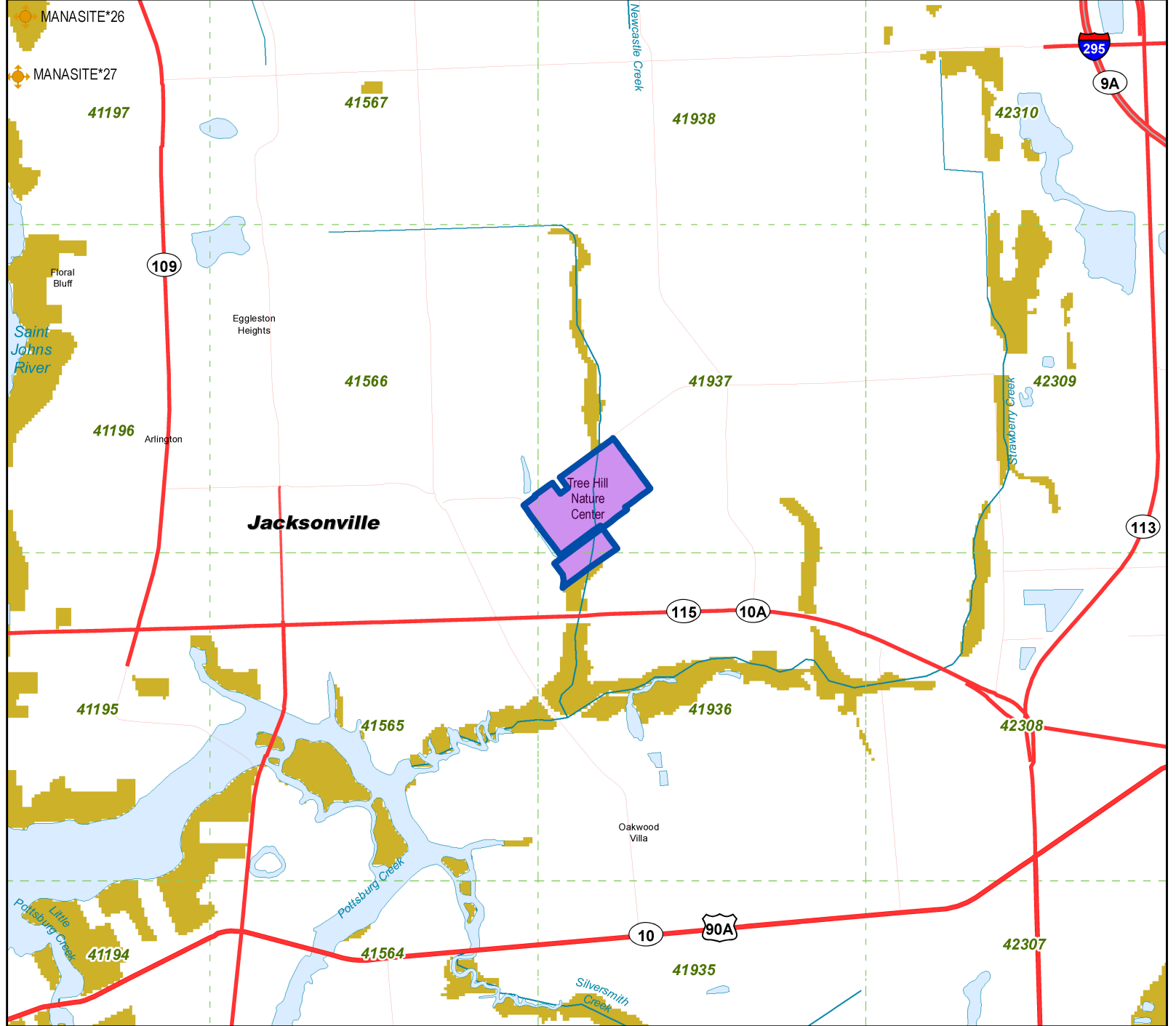
Land Acquisition Projects

- Florida Forever
- Board of Trustees Projects

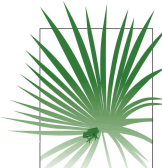
- FNAI Rare Species Habitat
- FNAI Biodiversity Matrix Square Mile Units
- County Boundary
- Roads
- Water

NOTE

This map contains environmentally sensitive information. Please do not distribute or publish without prior consent from FNAI. Map should not be interpreted without accompanying documents.



Map produced by KAB
5/18/2021



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CLIP v4.0 Resource Priorities

Biodiversity Resource Category

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Landscape Resource Category

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Surface Water Resource Category

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Aggregated CLIP Priorities

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Site Boundary

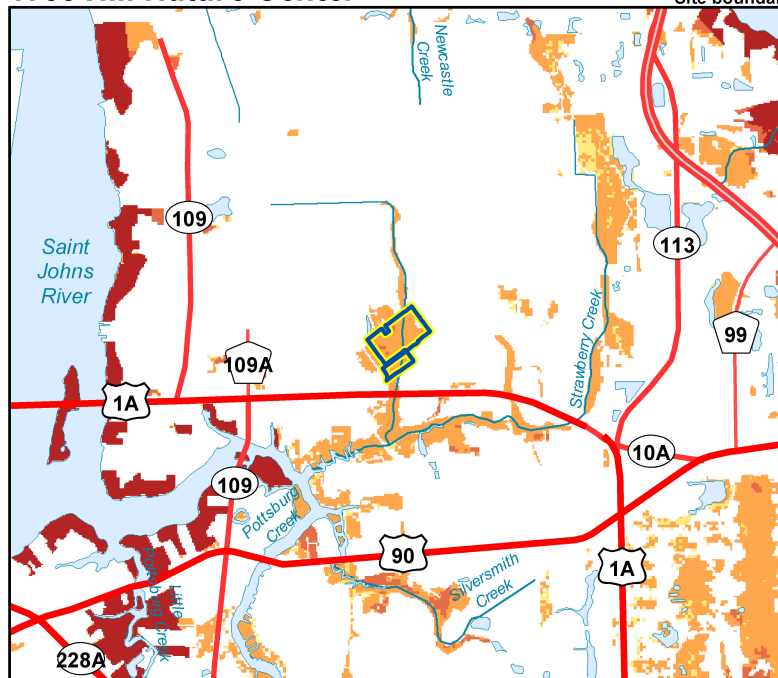
Map should not be interpreted without accompanying documents.

Critical Lands and Waters Identification Project (CLIP) is a cooperative effort between the FSU Florida Natural Areas Inventory, UF Center for Landscape Conservation Planning, and FL Fish & Wildlife Conservation Commission, with additional funding from FL Dept of Environmental Protection and US Fish & Wildlife Service.

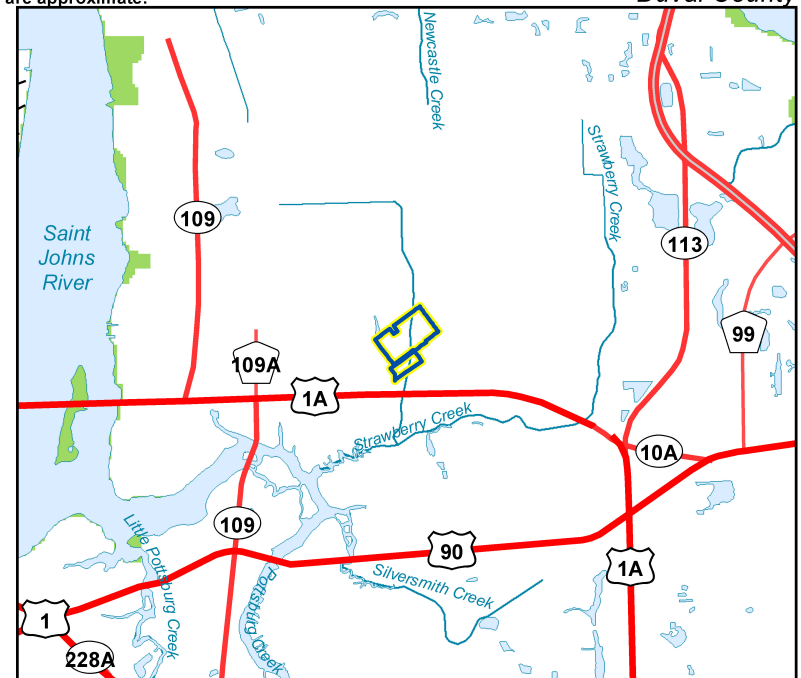
Tree Hill Nature Center

Site boundaries are approximate.

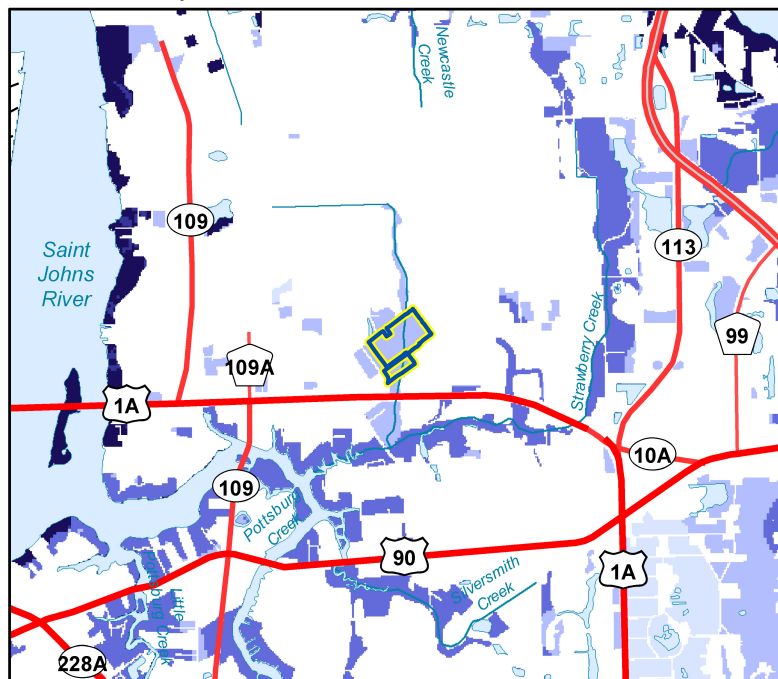
Duval County



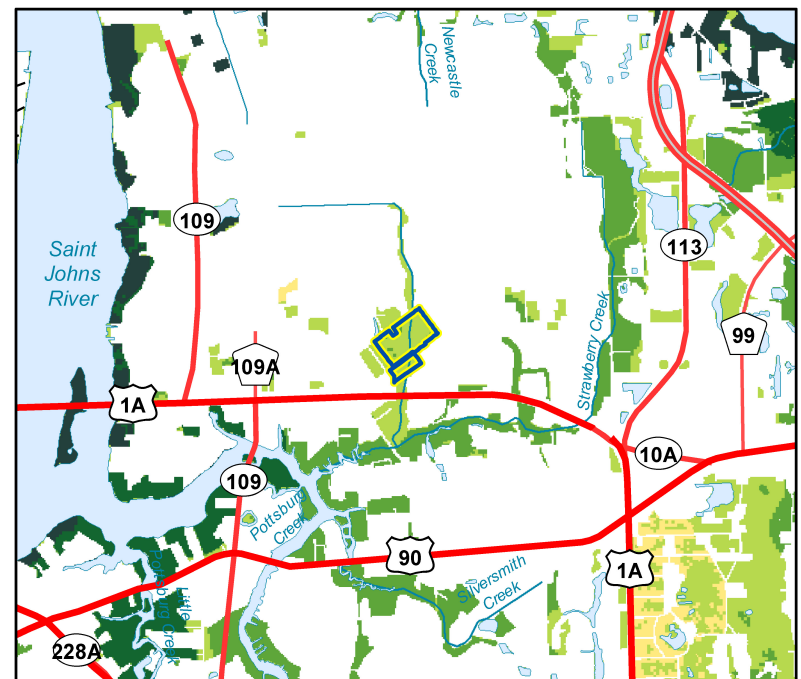
CLIP Biodiversity Resource Priorities



CLIP Landscape Resource Priorities



CLIP Surface Water Resource Priorities



CLIP Aggregated Resource Priorities





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FLORIDA
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Florida Natural Areas Inventory

Managed Area Element Summary Tree Hill Nature Center



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
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no elements are associated with this managed area

Note: Summary includes all documented and likely species occurrence records currently in the FNAI database.

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

FNAI GLOBAL ELEMENT RANK

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

FNAI STATE ELEMENT RANK

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

FEDERAL LEGAL STATUS

Note: Summary includes all documented and likely species occurrence records currently in the FNAI database.

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

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

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

STATE LEGAL STATUS

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

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

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

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

LE = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant



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Natural Areas
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Florida Natural Areas Inventory

Managed Area Element Summary

Tree Hill Nature Center



to the U.S. Endangered Species Act.

LT = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.

N = Not currently listed, nor currently being considered for listing.



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Florida Natural Areas Inventory

Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Matrix Unit ID: 41566					
Likely					
<i>Mycteria americana</i>	Wood Stork	G4	S2	T	FT
Potential					
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S2	N	T
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Calydorea coelestina</i>	Bartram's ixia	G2G3	S2S3	N	E
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
<i>Nemastylis floridana</i>	celestial lily	G2	S2	N	E
<i>Neovison vison lutensis</i>	Atlantic Salt Marsh Mink	G5T3	S3	N	N
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	T
<i>Salix floridana</i>	Florida willow	G2	S2	N	E
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E
Matrix Unit ID: 41936					
Likely					
<i>Mycteria americana</i>	Wood Stork	G4	S2	T	FT
Potential					
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S2	N	T
<i>Asclepias viridula</i>	southern milkweed	G2	S2	N	T
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Calydorea coelestina</i>	Bartram's ixia	G2G3	S2S3	N	E
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
<i>Litsea aestivalis</i>	pondspice	G3?	S2	N	E
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
<i>Nemastylis floridana</i>	celestial lily	G2	S2	N	E
<i>Neovison vison lutensis</i>	Atlantic Salt Marsh Mink	G5T3	S3	N	N
<i>Pteroglossaspis ecristata</i>	giant orchid	G2G3	S2	N	T
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	T
<i>Rhynchospora thornei</i>	Thorne's beaksedge	G3	S1S2	N	N
<i>Rudbeckia nitida</i>	St. John's blackeyed susan	G3	S2	N	E
<i>Salix floridana</i>	Florida willow	G2	S2	N	E
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E
Matrix Unit ID: 41937					
Likely					
<i>Mycteria americana</i>	Wood Stork	G4	S2	T	FT

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



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Florida Natural Areas Inventory

Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Potential					
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S2	N	T
<i>Asclepias viridula</i>	southern milkweed	G2	S2	N	T
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Balduina atropurpurea</i>	purple honeycomb-head	G2	S1	N	E
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Calydorea coelestina</i>	Bartram's ixia	G2G3	S2S3	N	E
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
<i>Nemastylis floridana</i>	celestial lily	G2	S2	N	E
<i>Neovison vison lutensis</i>	Atlantic Salt Marsh Mink	G5T3	S3	N	N
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	T
<i>Salix floridana</i>	Florida willow	G2	S2	N	E
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E

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

Elements and Element Occurrences

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

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

Element Ranking and Legal Status

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

FNAI GLOBAL ELEMENT RANK

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

FNAI STATE ELEMENT RANK

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

FEDERAL LEGAL STATUS

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

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

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.

E = Endangered: species in danger of extinction throughout all or a significant portion of its range.

E, T = Species currently listed endangered in a portion of its range but only listed as threatened in other areas

E, PDL = Species currently listed endangered but has been proposed for delisting.

E, PT = Species currently listed endangered but has been proposed for listing as threatened.

E, XN = Species currently listed endangered but tracked population is a non-essential experimental population.

T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

PE = Species proposed for listing as endangered

PS = Partial status: some but not all of the species' infraspecific taxa have federal

PT = Species proposed for listing as threatened

SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

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

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

C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service

FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service

FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service

FXN = Federal listed as an experimental population in Florida

FT(S/A) = Federal Threatened due to similarity of appearance

ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)

N = Not currently listed, nor currently being considered for listing.

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

E = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.

T = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.

N = Not currently listed, nor currently being considered for listing.

Element Occurrence Ranking

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

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

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

FNAI also uses the following EO ranks:

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

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

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



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

Appendix F – Natural Communities Map



Treehill - Natural Communities Map

Legend

-  Southern Mixed Hardwood Forest
-  Mixed Hardwood Swamp
-  Fresh Water Stream
-  Previously Disturbed Area



0 175 350 700 Feet

1 inch = 350 feet

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THE PRESERVATION PROJECT
JACKSONVILLE

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Appendix G – Species List

Species master list- Tree Hill Nature Center, 2021

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Trees					
Live Oak	<i>Quercus virginanus</i>	Common	Entire preserve		No
Water oak	<i>Quercus nigra</i>	Common	Lowlands		No
Laurel oak	<i>Quercus laurilifolia</i>	Common	Entire preserve		No
Sand live oak	<i>Quercus geminata</i>	Common	FCT property		No
Pignut hickory	<i>Carya glabra</i>	Common	Entire preserve		No
Red Maple	<i>Acer rubrum</i>	Common	Entire preserve		No
Red bay	<i>Persea borbonia</i>	Common	Lowlands		No
Loblolly bay	<i>Gordonia lasianthus</i>	Common	Lowland		No
Swamp bay	<i>Persea palustris</i>	Common	Entire preserve		No
Sweet bay magnolia	<i>Magnolia virginiana</i>	Common	Entire preserve		No
Southern magnolia	<i>Magnolia grandiflora</i>	Common	Entire preserve		No
American hornbeean	<i>Caprinus caroliniana</i>	Uncommon	FCT property		No
Eastern hophornbeam	<i>Ostrya virginiana</i>	Uncommon	FCT Property		No
Camphor	<i>Cinnamomum camphora</i>	Common	Entire preserve		Yes
Loblolly pine	<i>Pinus taeda</i>	Common	Lowlands		No
Longleaf pine	<i>Pinus palustris</i>	Common	Entire preserve		No
Southern red cedar	<i>Juniperus virginiana</i>	Common	Entire preserve		No
American holly	<i>Ilex opaca</i>	Common	Entire preserve		No
Dahoon holly	<i>Ilex cassine</i>	Common	Entire preserve		No
Tulip poplar	<i>Liriodendron tulipifera</i>	Common	Entire preserve		No
Slash pine	<i>Pinus elliotii</i>	Common	Entire preserve		No
Sycamore	<i>Platanus occidentalis</i>	Planted	FCT Property		No
Chinaberry	<i>Melia azedarach</i>	Common	Entire preserve		Yes
Golden rain tree	<i>Koelreuteria paniculata</i>	Common	Entire preserve		Yes
Paper mulberry	<i>Broussonetia papyifera</i>	Common	Entire preserve	extremely invasive	Yes
Black tupelo	<i>Nyssa sylvatica</i>	Common	Entire preserve		No
Bald cypress	<i>Taxodium distichum</i>	Common	Entire preserve		No
Water tupelo	<i>Nyssa aquatica</i>	Common	Entire preserve		No
White mulberry	<i>Morus alba</i>	Uncommon	FCT Property		Yes
Shrubs					
Deerberry	<i>Vaccinium stamineum</i>	Common	Entire preserve		No
Sparkleberry	<i>Vaccinium orboreum</i>	Common	Entire preserve	often called farkleberry	No
Southern Wax myrtle	<i>Morella cerifera</i>	Common	Wetlands		No
Highbush blueberry	<i>Vaccinium corymbosum</i>	Common	Entire preserve		No
Saw palmetto	<i>Serenoa repens</i>	Common	Entire preserve		No

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Winged sumac	<i>Rhus copallinum</i>	Common	Entire preserve		No
Flag pawpaw	<i>Simina obovata</i>	Uncommon	Entire preserve		No
Yaupon hooly	<i>Ilex vomitoria</i>	Common	Entire preserve		No
Fetterbush	<i>Lyonia lucida</i>	Common	Entire preserve		No
Florida hobblebush	<i>Agarista populifolia</i>	Common	Entire preserve		No
Devil's walking stick	<i>Aralia spinosa</i>	Common	Entire preserve		No
Swamp dogwood	<i>Cornus obliqua</i>	Common	Entire preserve		No
Swamp cyrilla	<i>Cyrilla racemiflora</i>	Common	Entire preserve		No
Rusty lyonia	<i>Lyonia ferruginea</i>	Common	Entire preserve		No
Wild azalea	<i>Rhododendron canescens</i>	Common	Entire preserve		No
Allegheny chinquapin	<i>Castanea pumilla</i>	Common	Entire preserve		No
Witch hazel	<i>Hamamelis virginiana</i>	Common	Entire preserve		No
Red Buckeye	<i>Aesculus pavia</i>	Planted	Entire preserve		No
Floirda anise	<i>Illicium floridanum</i>	Planted	Entire preserve		No
Mimosa tree	<i>Albizia julibrissin</i>	Common	Entire preserve		Yes
Eastern redbud	<i>Cercis canadensis</i>	Common	Entire preserve		No
Southern wax myrtle	<i>Morella cerifera</i>	Common	Entire preserve		No
Coral ardisia	<i>Ardisia crenata</i>	Common	Entire preserve	highly invasive	Yes
Nandina	<i>Nandina domstica</i>	Uncommon	Entire preserve		Yes
Elderberry	<i>Sambucus sp.</i>	Common	Entire preserve		No
Buttonbush	<i>Cephalanthus occidentalis</i>	Common	Entire preserve		No
American beautyberry	<i>Callicarpa americana</i>	Common	Entire preserve		No
White mulberry	<i>Morus alba</i>	Common	Entire preserve		No
Red mulberry	<i>Morus rubra</i>	Common	FCT Property		No
Banana	<i>Musa sp.</i>	Uncommon	FCT property		Yes
Vines					
Muscadine grapevine	<i>Vitis rotundifola</i>	Common	Entire preserve		No
Cartbriar	<i>Smilax sp.</i>	Common	Entire preserve		No
Poison ivy	<i>Toxicodendron radicans</i>	Common	Entire preserve		No
Air potato	<i>Dioscorea bulbifera</i>	Common	Entire preserve	biologically controlled	Yes
Virginia creeper	<i>Pathenocissus quinquefolia</i>	Common	Entire preserve		No
Carolina Jasmine	<i>Gelsemium sempervirens</i>	Common	Entire preserve		No
Grasses					
Argentine bahia	<i>Paspalum notatum sp.</i>	Common	Entire preserve		Yes
Pensicola bahia	<i>Paspalum notatum sp.</i>	Common	Entire preserve		Yes
Openflower witchgrass	<i>Dichantherium laxiflorum</i>	common	Entire preserve		No

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Mosses					
Carpet moss	<i>Hypnum sp.</i>	Common	Entire preserve		No
Club moss	<i>Lycopodiopsida sp.</i>	Common	Entire preserve		No
Aquatic plants					
Lizards tail	<i>Saururus cernuus</i>	Common	Entire preserve		No
Spatterdock	<i>Nuphar lutea</i>	Common	Entire preserve		No
water lettuce	<i>Pistia stratiotes</i>	Common	Entire preserve		No
Taro	<i>Colocasia esculenta</i>	Common	Entire preserve		Yes
Tape grass	<i>Vallisneria spiralis</i>	Common	Entire preserve		No
Arrowroot	<i>Maranta arundinacea</i>	Common	Entire preserve		No
Groundnut	<i>Arachis hypogaeae</i>	Common	Entire preserve		No
Water hyacinth	<i>Eichhornia crassipes</i>	Uncommon	Wetlands		Yes
Butterfly plants					
Pentas	<i>Pentas lanceolata</i>	Common	Entire preserve		Yes
Lantana	<i>Lantana camara</i>	Common	Entire preserve		Yes
Pipevine	<i>Aristolochia sp.</i>	Common	Entire preserve		No
Firespike	<i>Odontonema cuspidatum</i>	Common	Entire preserve		No
Mexicane firebush	<i>Hamelia patens</i>	Common	Entire preserve		No
Plumbago	<i>Plumbago auriculata</i>	Common	Entire preserve		No
Yarrow	<i>Achillea milifolium</i>	Common	Entire preserve		Yes
Black and Blue Salvia	<i>Alvia guaranitica</i>	Common	Entire preserve		No
Blue Salvia	<i>Alvia azurea</i>	Common	Entire preserve		No
Sweet almond bush	<i>Prunus grandulosa</i>	Common	Entire preserve		Yes
Jusiticia	<i>Justicia magnifica</i>	Common	Entire preserve		No
Tropical milkweed	<i>Aescelpias curassivica</i>	Common	Entire preserve		Yes
Ferns					
Cinnamon fern	<i>Osmundastrum cinnamomeum</i>	Common	Wetlands		No
Royal fern	<i>Osmunda regalis</i>	Common	Wetlands/lowlands		No
Netted chain fern	<i>Woodwardia areolata</i>	Common	Wetlands		No
Tuberous sword fern	<i>Nephrolepis cordifolia</i>	Common	Entire preserve	invasive- controlled yearly	Yes
Boston fern	<i>Nephrolepis exaltata</i>	Common	Entire preserve		No
Resurrection fern	<i>Pleopeltis polypodioides</i>	Common	Entire preserve		No

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Other					
Lyreleaf sage	<i>Salvia lyrata</i>	Common	Entire preserve		No
Prickly sowthistle	<i>Soncher asper</i>	Common	Entire preserve		No
Ohio spiderwart	<i>Soncher asper</i>	Common	Entire preserve		No
Carolina geranium	<i>Geranium carolinianum</i>	Common	Entire preserve		No
Southern dewberry	<i>Rubus trivialis</i>	Common	Entire preserve		No
Virginia willow- ti ti vine	<i>Itea virginica</i>	Common	Entire preserve		No
Butterfly needles	<i>Biden alba</i>	Common	Entire preserve		No
Mexican petunia	<i>Ruellia brittoniana</i>	Common	State land only		Yes
Wild poinsetia	<i>Euphorbia cyathophora</i>	Common	Entire preserve		No
Chinese wisteria	<i>Wisteria sinensis</i>	Uncommon	FCT Property		Yes
Spanish moss	<i>Tillandsia usneoides</i>	Common	Entire property		No
Cardinal Wild pine bromeliad	<i>Tillandsia fasciculata</i>	Common	Entire property		No
Lichen					
Christmas Lichen	<i>Crytothecia rubrocincta</i>	Common	Entire preserve		No
Deer lichen	<i>Cladonia rangiferina</i>	Common	Entire preserve		No
Fungi					
Stinkhorn fungi	<i>Phallus sp.</i>	Common	Entire preserve		No
Lion's mane	<i>Hericium erinaceus</i>	Common	Entire preserve		No
Bracket fungi	<i>Polypore sp.</i>	Common	Entire preserve		No
Turkey tail	<i>Trametes versicolor</i>	Common	Entire preserve		No

Species master list- Tree Hill Nature Center, 2021

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Mammals					
Red fox	<i>Vulpes vulpes</i>	Common	Entire preserve	seasonal	No
Gray fox	<i>Urocyon cinereoargenteus</i>	Common	Entire preserve	seasonal	No
Raccoon	<i>Procyon lotor</i>	Common	Entire preserve	high population	No
Gray squirrel	<i>Sciurus carolinensis</i>	Common	Entire preserve		No
Southern flying squirrel	<i>Glaucomys volans</i>	Common	Entire preserve	strictly night sightings	No
Otter	<i>Lutrinae canadensis</i>	Common	Entire preserve	sightings in Red Bay Branch Creek	No
Virginia opossum	<i>Didelphidae virginiana</i>	Common	Entire preserve		No
Bobcat	<i>Lynx rufus</i>	Uncommon	Entire preserve	unconfirmed sighting	No
Coyote	<i>Canis latrans</i>	Common	Entire preserve	unconfirmed sighting	No
Southeastern pocket gopher	<i>Geomys pinetis</i>	Common	Entire preserve	burrows rarely evident	No
Star nosed mole	<i>Condylura cristata</i>	Common	Entire preserve		No
Marsh rabbit	<i>Sylvilagus palustris</i>	Uncommon	Entire preserve		No
Woodland vole	<i>Microtus pinetorum</i>	Uncommon	Entire preserve		No
Little brown bat	<i>Myotis lucifugus</i>	Common	FCT Property		No
Big brown bat	<i>Eptesicus fuscus</i>	Common	FCT Property		No
Seminole bat	<i>Lasiurus seminolus</i>	Common	FCT Property		No
Woodpeckers					
Pileated woodpecker	<i>Dryocopus pileatus</i>	Common	Entire preserve		No
Red- headed woodpecker	<i>Melanerpes erythrocephalus</i>	Common	Entire preserve	seen only in spring, but non migratory	No
Red- bellied woodpecker	<i>Melanerpes carolinus</i>	Common	Entire preserve		No
Downy woodpecker	<i>Picoides pubescens</i>	Common	Entire preserve		No
Yellow bellied sapsucker	<i>Sphyrapicus varius</i>	Common	Entire preserve		No
Northern flicker	<i>Colaptes auratus</i>	Common in spring	Entire preserve		No
Hairy woodpecker	<i>Leuconotopicus villosus</i>	Rare	Entire preserve	only observed once	No
Raptors					
Red shouldered hawk	<i>Buteo lineatus</i>	Common	Entire preserve		No
Red- tailed hawk	<i>Buteo jamaicensis</i>	Common	Entire preserve		No
Cooper's hawk	<i>Accipiter cooperii</i>	Common	Entire preserve		No
Sharp- shinned hawk	<i>Accipiter striatus</i>	Common	Entire preserve		No
Marsh hawk	<i>Circus cyaneus</i>	Common	Entire preserve	spring sightings	No
Barred owl	<i>Strix varia</i>	Common	Entire preserve		No
Eastern Screech owl	<i>Megascops asio</i>	Rare	Entire preserve		No
Great Horned owl	<i>Bubo virginianus</i>	Uncommon	Entire preserve	only identified by call- no sightings	No
Bald eagle	<i>Haliaeetus leucocephalus</i>	Common	Entire preserve	seen flying over preserve	No
Osprey	<i>Pandion haliaetus</i>	Common	Entire preserve		No

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Peregrine falcon	<i>Falco peregrinus</i>	Rare	Entire preserve	migrating individuals	No
Swallow- tailed kite	<i>Elanoides forficatus</i>	Common	Entire preserve	spring sightings	No
Mississippi kite	<i>Ictinia mississippiensis</i>	Rare	Entire preserve		No
Prairie warbler	<i>Setophaga discolor</i>	Common	Entire preserve		No
Black-throated blue warbler	<i>Setophaga caerulescens</i>	Common	Entire preserve		No
Common yellowthroat	<i>Geothlypis trichas</i>	Common	Entire preserve		No
Hooded warbler	<i>Setophaga citrina</i>	Common	Entire preserve		No
Ovenbird	<i>Seiurus aurocapilla</i>	Uncommon	Entire preserve		No
Yellow rumped warbler	<i>Setophaga coronata</i>	Common	Entire preserve		No
Indigo Bunting	<i>Passerina cyanea</i>	Uncommon	Entire preserve	two sightings on property	No
Painted bunting	<i>Passerina ciris</i>	Common	Entire preserve	one sighting	No
Northern parula	<i>Setophaga americana</i>	Common	Entire preserve		No
Ruby- crowned kinglet	<i>Regulus calendula</i>	Common	Entire preserve		No
Eastern phoebe	<i>Sayornis phoebe</i>	Common	Entire preserve		No
Great- crested flycatcher	<i>Myiarchus crinitus</i>	Common	Entire preserve		No
Scarlet tanager	<i>Piranga olivacea</i>	Common	Entire preserve		No
Summer tanager	<i>Piranga rubra</i>	Common	Entire preserve		No
Northern mockingbird	<i>Mimus polyglottos</i>	Common	Entire preserve		No
Carolina wren	<i>Thryothorus ludovicianus</i>	Common	Entire preserve		No
House wren	<i>Troglodytes aedon</i>	Common	Entire preserve		No
Northern cardinal	<i>Cardinalis cardinalis</i>	Common	Entire preserve		No
Brown thrasher	<i>Toxostoma rufum</i>	Common	Entire preserve		No
Wood thrush	<i>Hylocichla mustelina</i>	Common	Entire preserve		No
Swainson's thrush	<i>Catharus ustulatus</i>	Common	Entire preserve		No
White- billed cuckoo	<i>Coccyzus americanus</i>	Rare	Entire preserve		No
American crow	<i>Corvus brachyrhynchos</i>	Common	Entire preserve		No
Black vulture	<i>Coragyps atratus</i>	Common	Entire preserve		No
Turkey Vulture	<i>Cathartes aura</i>	Common	Entire preserve		No
American redstart	<i>Setophaga ruticilla</i>	Common	Entire preserve	spring migration	No
Eastern towhee	<i>Pipilo erythrophthalmus</i>	Rare	Entire preserve		No
Snowy egret	<i>Egretta thula</i>	Common	Entire preserve		No
Great egret	<i>Ardea alba</i>	Common	Lowlands		No
Great blue heron	<i>Ardea herodias</i>	Common	Lowlands		No
Wood stork	<i>Mycteria americana</i>	Uncommon	Entire preserve		No
Wood duck	<i>Aix sponsa</i>	Common	Lowlands		No
American Woodcock	<i>Scolopax minor</i>	Rare	Lowlands	only one sighting	No
House finch	<i>Haemorhous mexicanus</i>	Common	Entire preserve		No

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Prothonotary warbler	<i>Protonotaria citrea</i>	Rare	Entire preserve		No
European starling	<i>Sturnus vulgaris</i>	Common	Entire preserve		Yes
Tree Swallow	<i>Tachycineta bicolor</i>	Uncommon	Entire preserve		No
Chuck -will's -widow	<i>Anrostomus carolinensis</i>	Uncommon	Entire preserve		No
Kentucky warbler	<i>Geothlypis formosa</i>	Uncommon	Entire preserve	migration sightings	No
Worm eating warbler	<i>Helmihteros vermivorum</i>	Uncommon	Entire preserve		No
Brown thrasher	<i>Toxostoma rufum</i>	Common	Entire preserve		No
Insects					
Eyed click beetle	<i>Alaus oculus</i>	Common	Entire preserve		No
Assassin bug	<i>Zelus longipes</i> Linnaeus	Common	Entire preserve	piercing mouth parts	No
Wheel bug	<i>Arilus cristatus</i>	Common	Entire preserve		No
Toe biter	<i>Belostomatidae</i>	Common	Uplands	in parking lot on hard surfaces	No
Dragon hunter	<i>Hagenius brevistylus</i>	Uncommon	Entire preserve	hunts other dragonflies	No
Blue darner	<i>Aeshna multicolor</i>	Common	Entire preserve		No
Green darner	<i>Anax junius</i>	Common	Entire preserve		No
Black saddle bags skimmer	<i>Tramea lacerata</i>	Common	Entire preserve	dragonfly	No
Praying mantis	<i>Mantodea</i> sp.	Common	Entire preserve		No
Lady bug	<i>Coccinellidae</i> sp.	Common	Entire preserve		No
Patent leather beetle	<i>Odontotaenius disjunctus</i>	Common	Entire preserve		No
Southern yellow jacket	<i>Vespula squamosa</i>	Common	Entire preserve		No
Carpenter bee	<i>Ceretina cockerelli</i>	Common	Entire preserve		No
European honey bee	<i>Apis mellifera</i>	Common	Entire preserve		No
Paper wasp	<i>Polistes dominula</i>	Common	Entire preserve		No
Bald faced hornet	<i>Dolichovespula maculata</i>	Common	Entire preserve		No
Cuckoo wasp	<i>Chrysis</i> sp.	Common	FCT Property	parasitic to other bees and wasps	No
Palamedes swallowtail	<i>Pilio palamedes</i>	Common	Entire preserve		No
Black swallowtail	<i>Papilio polyxenes</i>	Common	Entire preserve		No
Polydamus swallowtail	<i>Battus polydamus</i>	Common	Entire preserve		No
Pipevine swallowtail	<i>Battus philenor</i>	Common	Entire preserve		No
Giant swallowtail	<i>Papilio cresphontes</i>	Common	Entire preserve		No
Monarch	<i>Danaus plexippus</i>	Common	Entire preserve		No
Queen	<i>Danaus gilippus</i>	Uncommon	Entire preserve		No
Painted lady	<i>Vanessa cardui</i>	Common	Entire preserve		No
Buckeye	<i>Aesculus glabra</i>	Common	Entire preserve		No
Long-tailed skipper	<i>Urbanus proteus</i>	Common	Entire preserve		No
Tiger swallowtail	<i>Papilio glaucus</i>	Uncommon	Entire preserve	dark phase observed once	No
Cloudless sulphur	<i>Colius philodice</i>	Common	Entire preserve		No
Dogface sulphur	<i>Zerene cesonia</i>	Common	Entire preserve		No

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Giant sulphur	<i>Phoebis sennae</i>	Common	Entire preserve		No
Zebra longwing	<i>Heliconius charithonia</i>	Common	Entire preserve		No
Gulf fritillary	<i>Agraulis vanillae</i>	Common	Entire preserve		No
Io moth	<i>Automeris io</i>	Common	Entire preserve		No
Polyphemus moth	<i>Antheraea polyphemus</i>	Common	Entire preserve		No
Luna moth	<i>Actias luna</i>	Common	Entire preserve		No
Cecropia moth	<i>Hyalophora cecropia</i>	Common	Entire preserve		No
Royal moth	<i>Citheronia regalis</i>	Common	Entire preserve		No
Black witch	<i>Ascalapha odorata</i>	Common	Entire preserve		No
Gypsy moth	<i>Lymantria dispar dispar</i>	Common	Entire preserve		No
Oleander moth	<i>Syntomeida epilais</i>	Common	Entire preserve		No
Razberry crazy ant	<i>Nylanderia fulva</i>	Common	Entire preserve	considerable cost yearly to control	yes
Trap jaw ant	<i>Odontomachus sp.</i>	Common	Entire preserve		No
Florida Carpenter ant	<i>Camponotus floridanus</i>	Common	Entire preserve		No
Pavement ants	<i>Tetramorium caespitum</i>	Common	Entire preserve		No
Imported fire ant	<i>Solenopsis invicta</i>	Common	Entire preserve	powerful sting- controlled with insect	Yes
Buck moth	<i>Hemileuca maia</i>	Uncommon	Entire preserve		No
Little blue butterfly	<i>Cupido minimus</i>	Uncommon	Entire preserve		No
Centipede	<i>Chilopoda sp.</i>	Common	Entire preserve		No
Millipede	<i>Diplopoda sp.</i>	Common	Entire preserve		No
Leaf-footed bug	<i>Leptoglossus phyloppus</i>	Common	Entire preserve		No
Bird grasshopper	<i>Schistocerca americana</i>	Common	Entire preserve		No
Black-wing damselfly	<i>Calopteryx maculata</i>	Common	Lowlands		No
Eastern lubber grasshopper	<i>Romalea guttata</i>	Common	Entire Preserve		No
Cicada killer	<i>Sphecius speciosus</i>	Common	Entire preserve		No
Dirt dauber	<i>Sceliphron caementarium</i>	Common	Entire preserve		No
Crane fly	<i>Tipulidae sp.</i>	Common	Entire preserve		No
Robber fly	<i>Asilidae sp.</i>	Common	Entire preserve		No
Ground beetle	<i>Caribidae sp.</i>	Common	Entire Preserve		No
Reptiles/amphibeans					
Three toed amphiuma	<i>Amphiuma tridactylum</i>	Rare	Howland creek		No
Gopher tortoise	<i>Gopherus polyphemus</i>	Common	FCT Property		No
Five- lined skink	<i>Plestiodon fasciatus</i>	Common	Entire preserve		No
Broad-headed skink	<i>Plestiodon laticeps</i>	Common	Entire preserve		No
Ground skink	<i>Scincella lateralis</i>	Common	Entire preserve		No
Green anole	<i>Anolis carolinensis</i>	Common	Entire preserve		No
Brown anole	<i>Anolis sagrei</i>	Common	Entire preserve		No
Green tree frog	<i>Hyla cinerea</i>	Common	Entire preserve		No

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Green frog	<i>Rana clamitans</i>	Common	Entire preserve		No
Squirrel tree frog	<i>Hyla squirella</i>	Common	Entire preserve		No
Spring peeper	<i>Pseudacris crucifer</i>	Common	Entire preserve		No
Cricket frog	<i>Acris crepitans</i>	Common	Entire preserve		No
American toad	<i>Anaxyrus americanus</i>	Common	Entire preserve		No
Southern leopard frog	<i>Lithobates sphenoccephalus</i>	Common	Entire preserve		No
Bullfrog	<i>Lithobates catesbeianus</i>	Common	Entire preserve		No
Yellow rat snake	<i>Pantherophis alleghaniensis</i>	Common	Entire preserve		No
Black racer	<i>Coluber constrictor</i>	Common	Entire preserve		No
Brown water snake	<i>Nerodia taxispilota</i>	Common	Entire preserve		No
Banded water snake	<i>Nerodia fasciata</i>	Common	Entire preserve		No
Eastern garter snake	<i>Thamnophis sirtalis sirtalis</i>	Common	Entire preserve	mildly venomous, not medically signi	No
Florida water snake	<i>Nerodia fasciata pictiventris</i>	Common	Entire preserve		No
Pine woods snake	<i>Rhadinaea flavilata</i>	Common	Entire preserve		No
Ringneck snake	<i>Diadophis punctatus</i>	Common	Entire preserve		No
Rough green tree snake	<i>Opheodrys aestivus</i>	Common	Entire preserve		No
Crowned snake	<i>Tantilla coronata</i>	Common	Entire preserve		No
Eastern glass lizard	<i>Ophisaurus ventralis</i>	Common	Entire preserve		No
Common snapping turtle	<i>Chelydra serpentina</i>	Common	Entire preserve		No
Florida softshell turtle	<i>Apalone ferox</i>	Common	Entire preserve		No
Stinkpot	<i>Sternotherus odoratus</i>	Common	Entire preserve		No
Loggerhead musk	<i>Sternotherus minor</i>	Common	Entire preserve		No
River cooter	<i>Pseudemys concinna</i>	Common	Entire preserve		No
Yellow bellied turtle	<i>Trachemys scripta scripta</i>	Common	Entire preserve		No
Spiny Soft-shell turtle	<i>Apalone spinifera</i>	Common	Wetlands		No
Bronze frog	<i>Lithobates clamitans</i>	Common	Wetlands		No
Fish					
Gambusia	<i>Gambusia affinis</i>	Common	Red Bay Branch/HowlandCreek		No
Bluegill	<i>Lepomis macrochirus</i>	Common	Red Bay Branch/HowlandCreek		No
Guppy	<i>Poecilia reticulata</i>	Common	Red Bay Branch/HowlandCreek		Yes
Largemouth bass	<i>Micropterus salmoides</i>	Common	Red Bay Branch/HowlandCreek		No
Red -breasted bream	<i>Lepomis auritus</i>	Common	Red Bay Branch/HowlandCreek		No
Wild shiner	<i>Notemigonus crysoleucas</i>	Common	Red Bay Branch/HowlandCreek		No

Common name	Scientific name	Occurrence	Location	Comment	Invasive
Arachnids					
Southern black widow	<i>Latrodectus mactans</i>	Common	Entire preserve		No
Northern black widow	<i>Latrodectus variolus</i>	Common	Entire preserve		No
Brown widow	<i>Latrodectus geometricus</i>	Common	Entire preserve		No
Orchard spider	<i>Leucauge venusta</i>	Common	Entire preserve		No
Crab- like spiny orb weaver	<i>Gasteracantha cacriformis</i>	Common	Entire preserve		No
Tropical orb -weaver	<i>Eriophora ravilla</i>	Common	Entire preserve		No
Spotted orb- weaver	<i>Neoscona crucifera</i>	Common	Entire preserve		No
Huntsman	<i>Heteropoda ventoria</i>	Common	Entire preserve		No
Royal jumping spider	<i>Phidippus regius</i>	Common	Entire preserve		No
Golden silk orb weaver	<i>Trichonephila clavipes</i>	Common	Entire preserve		No
Arrow-shaped Microthema	<i>Micrathena sagittata</i>	Common	Entire preserve		No
Black and yellow argiope	<i>Argiope aurantia</i>	Common	Entire preserve		No
Water strider	<i>Aquarius remigis</i>	Common	Entire preserve		No
Chigger (Redbug)	<i>Trombiculidae sp.</i>	Common	Entire preserve		No
Harvestman (daddy long legs)	<i>Opiliones sp.</i>	Common	Entire preserve		No
Dog Tick	<i>Dermacentor variabilis</i>	Common	Entire preserve		No
Southern crevice spider	<i>Kukulcania hibernalis</i>	Common	Buildings	in structures	No
Wolf spider	<i>Lycosidae sp.</i>	Common	Entire preserve		No
Barn spider	<i>Araneus cavitucus</i>	Uncommon	Uplands		No
Bivalves					
Snails					
Rosy wolf snail	<i>Euglandina rosea</i>	Common	Entire preserve		No
Gray lancetooth	<i>Haplotrema concavum</i>	Common	Entire preserve		No

Appendix H – Conceptual Development Plans

Tree Hill Inc.

Capital projects

Schedule- Next ten years

Observation Platform-

Description:

A thirty- foot tall platform attached to the Joseph A. Strasser boardwalk. The structure will allow access to the hardwood swamp canopy and facilitate research opportunities for species located in the canopy layer of the forest. Visitors to the center will also have access to the structure. Tree Hill educators will use the platform during tours of the preserve. Overall the structure will increase conservation opportunities.

Timeline:

Once the project is funded construction is estimated to take several months to complete.

Budget:

Estimated budget is \$50,000- \$75,000.

Yearly maintenance costs:

Estimated at \$500

Dr. Ted Allen Memorial Garden-

Description:

A memorial garden to honor Dr. Ted Allen, founding Tree Hill Board Member. Without his effort the center would not exist. The ¼ acre site will include benches, tables, education stations and balance beam structures. The space is intended to allow visitors to passively enjoy nature as well as allow children to play in nature. The garden will also have granite monument acknowledging Dr. Allen.

Timeline:

The space is partially completed with several benches, native plants and fencing surrounding the area.

Budget:

Estimated final budget is \$10,000- \$12,000.

Yearly maintenance costs:

Estimate at \$500.

Tree Hill Inc.

Butterfly House

Description:

A wooden and screen structure will house native butterfly plants and butterflies for visitors to observe. The structure will not be climate controlled and butterflies inside will be seasonal during spring and summer. Location will be next to the JEA water efficiency garden on the City owned portion of the preserve.

Timeline:

FY22

Budget:

Estimated budget is \$5,000.

Yearly maintenance costs:

Estimate yearly cost to stock butterflies and plants is \$4,000-\$5,000.

Appendix I – Environmental Education Programming Information



At Tree Hill-

Animal Encounter

All Grades

\$7 per person (15-35 participants)

\$6 per person (36 + participants)

- 45 minutes- interactive live animal presentation

Animal Encounter/Trail Combo

All Grades

\$12 per person (15-35 participants)

\$11 per student (36 + participants)

- 45 minutes animal encounter plus guided Trail Tour

Guided Trail Tour

All Grades

\$9 per person (15-35 participants)

\$8 per person (36 + participants)

- 45 minute- learn about forest layers, animals and habitats

All teachers are free. Parents and siblings pay –Program price

At Your School - *Tree Hill To-Go*

Animal Encounter

All Grades

1st Session \$500 per presentation (UP to 100 Participants Max)

2nd Session (same location) \$4.00 per student with max. of a kids 100

- 45 minute live animal program

FREE Conservation Programs - Partnership with JEA

JEA customers only

- Energy or Water Detective

45 minutes

Grades K - 5

- "Reduce" Theater Program

**Highlighted shows are in negotiations

- "You Can't Beat That" Game Show

Contact: Greta Combs at 904-724-4646 x204 or educator@treehill.org

About Tree Hill

- 50-acre nature preserve
- Nature Trails
- Live Animals
- Natural History Museum
- Butterfly gardens
- Environmental Science Programs for schools, scouts, camps and more!



Come check out one of our residents



Hands on Animal Encounter



Joseph A. Strasser Boardwalk

Animal Encounters

At Tree Hill Nature Center



Get up close with native animals!

Join us for an unforgettable 45-minute show featuring
live animals, skulls and furs.

\$7 per person (15-35 people)
\$6 per person (36+ people)
Off-site programs available.
Minimum one week notice
Required on all programs.

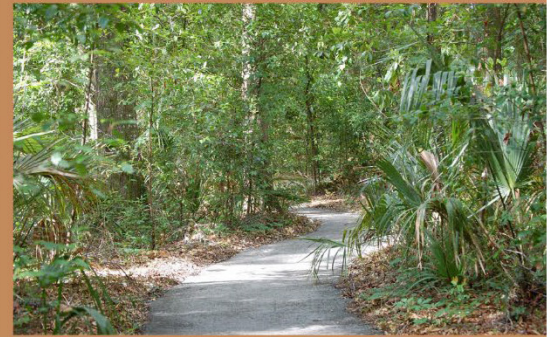
To schedule a program:

Contact Greta Combs
Education Manager
educator@treehill.org



Combination Program

At Tree Hill Nature Center



Animal Encounter and Trail Tour

Join us for an unforgettable learning experience featuring a 45-minute, hands-on show live animals, props and displays followed by a 45-minute, guided walk in the woods.

\$12 per person (15-35 people)

\$11 per person (36+ people)

Prices include all-day access to trails, picnic area and museum.

Minimum one week notice on all programs.

To schedule a program:

Contact Greta Combs
Education Manager
educator@treehill.org



Birthday Parties

At Tree Hill Nature Center



Celebrate in a unique, fun, and relaxed environment!

Party Includes:

Picnic space reserved for 2 hours
Hands-on animal experience
Goat Feeding
Full access to museum, trails, and gardens

Pricing:

Less than 15 people a flat rate of \$75 will be charged
15 or more people a rate of \$5 per person will be charged



Contact us today to schedule a birthday you'll never forget!
(904) 724-4646, ext. 204
educator@treehill.org
\$50 deposit due on booking.