# Lake Forest Creek Rapid Ecological Project Assessment Alachua County Forever

 Draft Date:
 February 3, 2003

 Matrix Score:
 7.42 of 9.44

 Size:
 5,540 acres

Number of parcels: 109 Number of owners: 79 Number of Buildings: 62

The 5,540 acre Lake Forest Creek (LFC) project is located on the west side of Newnans Lake, adjacent to the Gum Root Swamp Conservation Area (GSCA), Morningside Nature Center, Palm Point Park, and Paynes Prairie State Park. The Alachua County Forever East Side Newnans Lake project abuts the LFC project and includes the rest of the Newnans Lake perimeter, exclusive of existing conservation lands and developed areas. The Prairie Creek portion of the Lochloosa Connector is immediately south of the LFC project area. Hawthorne Road, University Avenue, NE 39<sup>th</sup> Boulevard, NE 55<sup>th</sup> Boulevard and Lake Shore Drive cross through the project area, Map 1.

The *Alachua County Ecological Inventory Project* (KBN Study) known as East Side Greenway overlaps the Alachua County Forever Lake Forest Creek Project (LFC). The purpose of the KBN Study was to identify, inventory, map, describe, and evaluate the most significant natural biological communities, both upland and wetland, that remain in private ownership in Alachua County and make recommendations for protecting these natural resources, KBN 1996. The East Side Greenways project was ranked 14<sup>th</sup> of 47 projects evaluated in the county, and categorized as above average.

The KBN Study summarized the East Side Greenway project by stating that, "This is a complex site designed to connect Paynes Prairie State Preserve, Morningside Nature Center, Gum Root Swamp, and the west shore of Newnans Lake at Sunland Park, at Palm Point, and at a third point farther south together by greenways while also including some high quality natural areas such as Palm Point Hill and several large swamps. The diversity of habitats is high and the significance for Morningside Nature Center of remaining connected to the larger areas of wildlife habitat is also high", KBN, 1996.

## **Protecting Water Resources:**

Eighty-three percent of the Lake Forest Creek project is located in the confined aquifer zone of Alachua County. This zone of relative aquifer confinement stretches from north-central Alachua County southeastward comprising most of the eastern half of the county. It is a region of higher elevations underlain by at least 10 feet of clays or clayey sands of the Hawthorn Group which form an aquiclude to the Floridan Aquifer System, Macesich, 1988. The remaining 17% of the project site falls in the perforated aquifer zone. This is an area underlain by clays of the Hawthorn Group perforated by numerous karst features that allow direct access to the aquifer, Macesich, 1988.

According to the St. Johns River Water Management District's (SJRWMD) Aquifer Recharge map for Alachua County the LFC project is divided between all possible categories of recharge to the Floridan Aquifer system. The proportion of the LFC project contributing to each category is as follows: 12" recharge/year = 13% of the LFC project area, 8"-12" recharge/year = 30% of the LFC project area, 4"-8" recharge/year = 14% of the LFC project area, 0-4" recharge/year = 40% of the LFC project area, and Discharge = 6% of the LFC project area.

According to the USGS Water resources Investigation Report 88-4057, the property falls in an area of 1-10 inches of recharge per year, Aucott, 1988.

Approximately 60% of the total acreage is wetlands, has hydric soils, or falls within the FEMA 100 or 500 year flood hazard zone.

As part of their 2003 Legislative Agenda, Alachua County will request that the entire Orange Creek Basin be included in the State's Surface Water Improvement (SWIM) Program. This area includes Paynes Prairie, Newnans Lake, Lake Lochloosa, Orange Lake, and the impaired urban streams and lakes in the City of Gainesville. At this time Newnans, Lochloosa and Orange Lakes have shown increased levels of degradation. The Chlorophyll A concentration in Newnans and Lochloosa Lakes exceeds levels reported for Lake Apopka prior to restoration. Lake Lochloosa, Paynes Prairie and Orange Lake are designated "Outstanding Florida Waters".

The LFC project contains Lake Forest Creek and its tributaries which bring water from the urbanized areas of East Gainesville and the agricultural areas to the north into Newnans Lake. The forested wetland area around Newnans Lake is the only remaining natural filter to trap nutrients and sediments prior to discharge into the Lake. Protection of the northern tributary and restoration of the associated buffers would improve the quality of water discharged into Newnans Lake, Personal Communication Robin Hallbourg, Professional Geologist Environmental Protection Department.

Water exits Newnans Lake through Prairie Creek where it either flows into Paynes Prairie and then goes into Alachua Sink, or is channeled through Camps Canal into the River Styx and then into Orange Lake, Map 2.

# Protecting Natural Communities and Landscapes: Natural Communities

Scrub	Floodplain Swamp	Other
Sandhill	Basin Marsh	Rough Pasture
Xeric Hammock	Depression Marsh	Improved Pasture
Upland Mixed Forest	Basin Swamp	Old Field Pine
Wet Flatwoods	Shrub Swamp	Plantation
Mesic Flatwoods	Lake Shore Swamp	Low Impact
Scrubby Flatwoods	Dome Swamp	Development
Hydric Hammock	Sinkhole Lake	High Impact
Bog	Marsh Pond	Development
Baygall	Blackwater Stream	Farm Pond
Bottomland Forest		

The above list of natural communities is from the KBN study. The ecological quality of the natural communities ranges from poor to good, KBN 1996.

The ACF East Newnans Lake and the Lochloosa Forest- Levy Prairie Connector (Prairie Creek area) Projects are immediately east and south respectively of the LFC project. The preservation of the LFC project would connect Paynes Prairie State Park, Gum Root Swamp Conservation Area (GSCA) and Morningside Nature Center. Through the aforementioned areas, the LFC project would provide connections to the Lochloosa Wildlife Conservation Area, Austin Cary Flatwoods and Barr Hammock Levy Prairie ACF project.

Forty-seven percent of the LFC project is within the Florida Ecological Greenways Network (FEGN) un-named priority 6 project area. The Florida Ecological Greenways Network is a decision support model to help identify the best opportunities to protect ecological connectivity statewide. It was developed by the University of Florida for the Florida Department of Environmental Protection. GIS data on land use and significant ecological areas were integrated in a process that identified a statewide

Ecological Greenways Network containing all of the largest areas of ecological and natural resource significance and the landscape linkages necessary to link these areas together in one functional statewide network, Hoctor et al. 2002.

Approximately 6% of the LFC project falls within a Strategic Habitat Conservation Area for wading birds. Strategic Habitat Conservation Areas were developed by the Florida Fish and Wildlife Conservation Commission (FFWCC). They are private lands containing habitats critical to the continued survival of populations of inadequately protected plants and animals, Cox et al. 2000. These lands are essential to providing some of state's rarest animals, plants, and natural communities with the land base necessary to sustain populations into the future, Cox et al.1994.

Approximately 46 % of the site falls within the Florida Natural Areas Inventory (FNAI) priority four or five Habitat Conservation Priorities. FNAI's Habitat Conservation Priorities prioritize places on the landscape that would protect both the greatest number of rare species and those species with the greatest conservation need, Florida Natural Areas Inventory, June 2001.

About 7 % of the project area is delineated as Pine flatwoods, an Under-represented Natural Community. Under-represented Natural Communities are those natural community types that were inadequately represented on conservation lands in Florida. A natural community is considered to be inadequately represented on conservation lands if less than 15% of the original extent of that community is currently found on existing conservation lands. Under-represented natural communities include, seepage slope, upland hardwood forest, pine rockland, tropical hardwood hammock, sandhill, scrub, upland glades, and pine flatwoods. This data was developed by the Office of Environmental Services, Florida Department of Environmental Protection and FNAI, FNAI, December 2001.

### **Protecting Plant and Animal Species:**

Common Name	Endemic/ Large Home-Range	Fed/State Status	FCREPA/FNAI Designation	Observed
Amphibians	O		G	
Eastern Tiger Salamander	-/-	-/-	SU/S3	SM
Flatwoods Salamander	-/-	T/-	R/S2S3	SM
Gopher Frog	-/-	-/SSC	T/S3	SM,K
Striped Newt	-/-	-/-	R/S2S3	SM
Reptiles				
American Alligator	-/-	T/SSC	-/S4	SM,K
Eastern Diamondback Rat	ttlesnake -/-	-/-	-/S3	SM
Eastern Indigo Snake	-/-	T/T	SSC/S3	SM,K
Florida Pine Snake	-/-	-/SSC	SU/S3	SM,K,N
Gopher Tortoise	-/-	-/SSC	T/S3	F,N,K
Peninsula Mole Skink	-/-	-/-	-/-	SM
Short-tailed Snake	X/-	-/T	T/S3	SM,N
Spotted Turtle	-/-	-/-	R/S3?	SM,N
Birds				
Black-Crowned Night He	ron -/-	-/-	SSC/S3	SM
Black Rail	-/-	-/-	R/S3	SM
Cooper's Hawk	-/-	-/-	SSC/S3	SM
Florida Sandhill Crane	X/L	-/T	T/S3	F
Great Egret	-/-	-/-	SSC/S4	SM
Hairy Woodpecker	-/-	-/-	SSC/S3	SM
Least Bittern	-/-	-/-	SSC/S4	SM
Limpkin	-/-	-/SSC	SSC/S3	F,K
Little Blue Heron	-/-	-/SSC	SSC/S4	SM
Osprey	-/-	-/-	T/S3S4	SM,N

Mottled Duck	-/-	-/-	-/-	F
Snowy Egret	-/-	-/SSC	SSC/S3	SM
Southern Bald Eagle	-/L	T/T	T/S3	F,N,K
Swallow-tailed Kite	-/L	-/-	T/S2	F
Tricolored Heron	-/-	-/SSC	SSC/S4	SM
Wild Turkey	-/L			F
Wood Stork	-/-	E/E	E/S2	SM
Mammals				
Bobcat	-/L	-/-	-/-	F
Florida Black Bear	X/L	-/T	T/S2	F
Northern Yellow Bat	-/-	-/-	SU/-	SM
River Otter	-/-	-/-	-/-	SM
Round-tailed Muskrat	X/-	-/-	SSC/S3	SM
Sherman's Fox Squirrel	X/-	-/SSC	T/S3	K,N
Invertebrates				
Free Mouth Hydrobe	-/-	-/-	- /S1	N

X= Endemic, L=species with large home ranges according to the Closing the Gaps in Florida's Wildlife Habitat System, S= observed by Alachua Co. EPD staff and/or an LCB subcommittee member, SM= documented on the Species Models maps created by the Florida Fish and Wildlife Conservation Commission, F= Focal species used for the most detailed analyses in the Closing the Gaps in Florida's Wildlife Habitat Conservation System, Florida Game and Fresh Water Fish Commission, 1994, N= Florida Natural Areas Inventory Element Occurrence, K=documented in the Alachua County Ecological Inventory Project.

Royal fern, cinnamon fern and greenfly orchid are listed plants that are quite common on the project site, KBN 1996. Catesby's lily, yellow-fringed orchid and rosebud orchid are found in Morningside Nature Center, and could occur in similar habitat types found on the project site if they were managed with fire, KBN 1996.

There are many exotics present on the site including paper mulberry, Chinese tallow, camphor tree, mimosa, air potato, chinaberry, and elephant ear, KBN 1996.

The Florida Fish and Wildlife Conservation Commission data shows six bald eagle nests on the project site and seven others within a mile and a half. The cluster of bald eagle nests around Orange, Newnans and Lochloosa Lakes has been apparent for the last twenty years, and is one of the densest populations in the state of Florida, personal communication Steve Nesbitt, FWCC.

About 21% of the site is within Regional Biodiversity Hotspots. The purpose of the Regional Biodiversity Hot Spots maps, developed by FFWCC, is to "convey more detailed information on the known locations of as many components of biological diversity as possible, regardless of whether or not they fall within proposed Strategic Habitat Conservation Areas, to help meet the need for conservation information at regional and local levels", Cox et al. 1994.

### **Achieving Social and Human Values:**

Approximately 34% of the LFC area falls within a Priority 1 or 2 Natural Resource-based Recreation Area, Knight, et al. 2000, and 47% is within a priority 6 Ecological Greenway. The Natural Resource-based Recreation map was developed by FNAI in collaboration with DEP, FFWCC and DOF. The recreation potential of a site depends on available road access, presence of a water body or beach, proximity to urban areas, and size of the site. "These criteria were applied to Potential Natural Areas delineated by FNAI using aerial photography and revised using the 1995 Water Management District land cover data. Sites were ranked by recreation potential." Knight, et al. 2000.

The LFC Project is part of the Emerald Necklace Land Conservation Initiative – "a publicly accessible, connected, and protected network of trails, greenways, open space, and waterfronts surrounding the Gainesville urban area".

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Alachua County received \$100,000 in Federal funds to assist with the implementation of the Emerald Necklace Initiative. These funds are slated for the development of the Lake Pithlachocco – Historic Overlook Project, an interpretive feature showcasing the largest cache of dugout canoes found in North America, and the Native Americans that lived in the area. This feature, located on the shore of Newnans Lake, will be a recreational and educational destination.

The LFC project would link the GSCA, Morningside Nature Center, Palm Point and Paynes Prairie State Park. It is easily accessible and close to the urban area. The property provides very good opportunities for compatible resource based recreation.

The LFC project falls within the Plan East Gainesville Project Area. The January 2003, DRAFT Plan East Gainesville-Final Report seeks a "comprehensive economic revitalization plan that achieves a balance of environmental preservation with land development and improved transportation mobility", Renaissance Planning Group, January 2003, page 2. The Report summarizes the Land Conservation Plan by the following paragraph, "Complementing the land use plan is a Land Conservation Element that establishes priorities for the preservation and protection of natural lands and enhancement of the area's unique natural resources. The land conservation plan has two primary objectives: 1) preserve and protect natural resources for the enjoyment of future generations, and 2) improve the visibility and access to those resources through amenities that enhance the appreciation and perception of the Eastside, and provide for improved connectivity between neighborhoods and commercial or economic centers. This is accomplished through the creation of a greenway network that restores waterways to improve water quality and provides for multi-use trails that connect community facilities and neighborhoods", Renaissance Planning Group, January 2003, page 45. Both the Newnans Lake and Lake Forest Creek Greenways are within the LFC project area. "Newnan's Lake Greenway and Lake Forest Creek Greenway are considered to be priorities in the plan. These greenways should function as wildlife corridors, habitat linkages, passive recreational destination opportunities and support water quality improvement", Renaissance Planning Group, January 2003, page 45. See Attachment A for a description of Newnan's Lake and Lake Forest Creek Greenway.

# **Management:**

"Some of the lands on the greenway site [East Side Greenway, KBN Site] are in good condition. The swamp and some of the hammock areas are doing fine with no management. However, even here, the need for control of invasive exotics will eventually require some management effort if the natural values are to be maintained. The sandhill and flatwoods areas need to be managed with fire to provide the habitat values needed by such animals as fox squirrels and gopher tortoise, and to maintain the native plant community. There are hundreds of species of native wildflowers that occur in the fire dependent habitats when they burn regularly, but which are eliminated completely if no fires occur for many decades", KBN 1996.

Development in close proximity to the project site will make prescribed fire and invasive plant control challenging.

# **Economic & Acquisition:**

There are 109 parcels and 79 ownerships in the 5,540 acre Lake Forest Creek Project. The Alachua County Property Appraiser (ACPA) shows 62 buildings on their parcel data. The State of Florida is the largest land owner in the project area with 2,782 acres or 50% of the total project acreage. Approximately 1,200 acres of the LFC project is in Newnans Lake, approximately 327 acres of this is in State ownership. Taken together approximately 3,660 acres of the 5,540 acre site, or 66%, is either in State ownership or in Newnans Lake. The ACPA's 2002 Just Value or land value for the entire project is \$8,011,500 or \$1,446/ acre. The ACPA's total value (Just, Miscellaneous and Building) for the project area is \$24,157,000 or \$4,360/ acre. These figures are for comparative purposes between nominated

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properties, and are not necessarily an accurate reflection of the true cost of the property if acquired by the Alachua County Forever Program.

The keystone parcels in the LFC project are the state owned tracts (Suniland Training Center, prison and Tacachale), Franklin Crates, Daemer, Robertson III Trustee, Tanton and Adkinson, Map 3.

State of Florida 2,782 acres (~327 acres are within Newnans Lake) Franklin Crates 495 acres (~398 acres are within Newnans Lake)

Daemer 57 acres Robertson III 285 acres

Tanton 10 acres (Paynes Prairie Optimum Boundary) Adkinson 15 acres (Paynes Prairie Optimum Boundary)

Staff recommends working with the State to preserve the forested areas and wetlands, and enhance the riparian buffer around the stream corridor. This would help improve the quality of water discharged into Newnans Lake and preserve the connection between GSCA and Morning Side Park.

Ninety percent of the LFC project is in unincorporated Alachua County, and the remaining 10% is in the City of Gainesville. Ninety-one percent of the project area is zoned agriculture; the remaining 9% is split between residential, business and Public Service. The Future Land Use shows only 5% of the project area in agriculture, the remaining acreage is roughly 50% Institutional/Public Facilities, 38% Residential, 2% Industrial, 3% Commercial, less than 1% Preservation, less than 1% RECR. The project falls in the City of Gainesville's Urban Reserve and Urban Services Area. The density of houses adjacent to the project boundary, the radical change between the existing zoning and the Future Land Use, and the Draft Plan East Gainesville Final Report, indicate that this area will be under significant development pressure in the near future.

### Other:

There are 21 archeological sites within the LFC project area as listed on the Florida Master Site File by the Division of Historical Resources. This includes the "Lake Pithlachocco Canoe Site" where a large number of log boats dating from 1250-1600 AD were found when the water level in Newnans Lake dropped.

### **Literature Citations**

Aucott, W. 1988. Water Resources Investigation Report 88-4057. USGS.

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Florida Natural Areas Inventory. December 2001. Florida Forever Conservation Needs Assessment Version 1.1 Supplement to the technical Report June 2001. Tallahassee, Florida.

Hoctor, T.S., J. Teisinger, M.G. Carr., P.C, Zwick. 2002. Identification of Critical Linkages Within the Florida Ecological Greenways Network. Final Report. Office of Greenways and Trails, Florida Department of Environmental Protection. Tallahassee, FL.

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KBN, A Golder Associates Company. 1996. Alachua County Ecological Inventory Project. Prepared for Alachua County Department of Growth Management, Gainesville, Florida.

Macesich, M. 1988. Geologic Interpretation of the Aquifer Pollution Potential in Alachua County, Florida, Open File Report – 21. Florida Geologic Survey, Tallahassee, Florida.

Renaissance Planning Group. January 2003. Draft Plan East Gainesville, Final Report. Prepared for the Metropolitan Transportation Planning Organization, Gainesville, Florida.

	Lake Forest Creek Draft date: Februrar	y 14	, 2003		
CATEGORY	Criterion	WEIGHTING	Enter Criteria Value Based on Site Inspection	Average Criteria Score	Average Criteria Score Multiplied by Relative Importanc
	A. Whether the property has geologic/hydrologic conditions that would easily enable contamination of vulnerable aquifers that have value as drinking water sources;		2		
(I-1) PROTECTION OF WATER RESOURCES	B. Whether the property serves an important groundwater recharge function;		3		
	C. Whether the property contains or has direct connections to lakes, creeks, rivers, springs, sinkholes, or wetlands for which conservation of the property will protect or improve surface water quality;		3		
	D. Whether the property serves an important flood management function.		4		
	A. Whether the property contains a diversity of natural communities;		5		
	B. Whether the natural communities present on the property are rare;		3		
	C. Whether there is ecological quality in the communities present on the property,		3		
(I-2) PROTECTION	D. Whether the property is functionally connected to other natural communities;				
OF NATURAL COMMUNITIES AND	E. Whether the property is adjacent to properties that are in public ownership or have other environmental protections such as conservation easements;		5		
LANDSCAPES	F. Whether the property is large enough to contribute substantially to conservation efforts;				
	G. Whether the property contains important, Florida-specific geologic features such as caves or springs,		5 2		
H	H. Whether the property or relatively free from internal fragmentation from roads, power lines, and other features that create barriers and edge effects.		2		
,	A. Whether the property serves as documented or potential habitat for rare, threatened, or endangered species or species of special concern;		5		
	B. Whether the property serves as documented or potential habitat for species with large home ranges;		5		
(I-3) PROTECTION OF PLANT AND	C. Whether the property contains plants or animals that are endemic or near-endemic to Florida or Alachua County,		4		
ANIMAL SPECIES	D. Whether the property serves as a special wildlife migration or aggregation site for activities such as breeding,				
	roosting, colonial nesting, or over-wintering		4		
	E. Whether the property offers high vegetation quality and species diversity,		4		
	F. Whether the property has low incidence of non-native invasive species.		3		
(I-4) SOCIAL AND	A. Whether the property offers opportunities for compatible resource-based recreation, if appropriate;		5		
HUMAN VALUES	B. Whether the property contributes to urban green space, provides a municipal defining greenbelt, provides scenic vistas, or has other value from an urban and regional planning perspective.		5		
	AVERAGE FOR ENVIRONMENTAL AND HUMAN VALUES			3.90	
	RELATIVE IMPORTANCE OF THIS CRITERIA SET IN THE OVERALL SCORE	1.3333			5.20
(II-1) MANAGEMENT ISSUES	A. Whether it will be practical to manage the property to protect its environmental, social and other values (examples include controlled burning, exotics removal, maintaining hydro-period, and so on),		3		
1330123	B. Whether this management can be completed in a cost-effective manner.		4		
	A. Whether there is potential for purchasing the property with matching funds from municipal, state, federal, or private contributions;		5		
	B. Whether the overall resource values justifies the potential cost of acquisition;		4		
AND ACQUISITION ISSUES  C. Whet develops owner in D. Who	C. Whether there is imminent threat of losing the environmental, social or other values of the property through development and/or lack of sufficient legislative protections (this requires analysis of current land use, zoning,				
	owner intent, location and		4		
	D. `Whether there is an opportunity to protect the environmental, social or other values of the property through an economically attractive less-than-fee mechanism such as a conservation easement.		0		
	AVERAGE FOR ACQUISITION AND MANAGEMENT VALUES		•	3.33	
	RELATIVE IMPORTANCE OF THIS CRITERIA SET IN THE OVERALL SCORE	0.6667		0.00	2.22
		0.0007			6.66

# Lake Forest Creek-Map 1 Murphee Welfield Gum Root Swamp Gum Root Swamp Conservation Lands Lakes Roads Alachua County Paynes Prairie State Preserve Lochloosa Wildife Conservation Area

1:150,000



