

ALLIGATOR LAKE CULTURAL AND NATURAL HISTORY

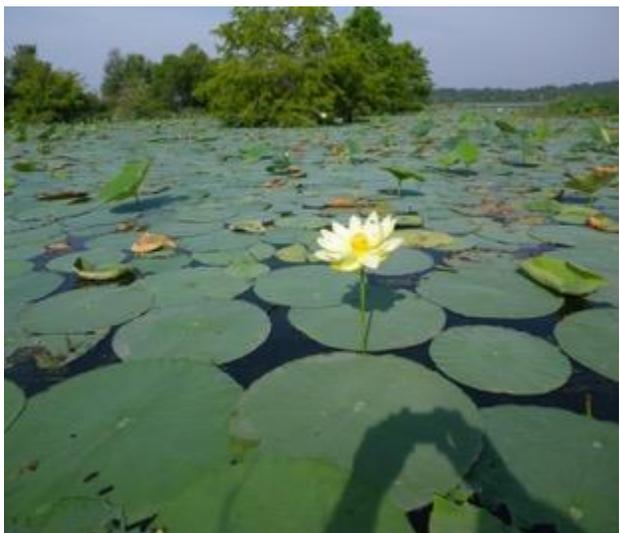


History is always concerning the ordering of events but we realize it is much much more than chronology. It is the reason for the events. It is the conditions bearing upon the lives of people, creatures and even landscapes within the events. In war, men die, women anguish, lives are forever changed. In human history on the large scale; abilities, knowledge, lifestyles, economies, governments and whole cultures change from generation or century to century. In natural history changes occur from eon to eon as oceans rise and fall; century to century as oxbows form in meandering rivers; decade to decade as floods and droughts alter water levels

of local lakes and rivers; season to season as fish spawn and migrating birds return to nest; and day to day as seeds sprout in the mud and dragon fly larvae crawl out of the substrate and up onto maidencane stems. Man makes many changes to his own history, culture(s) and many natural landscapes but the changes that alter natural history are the result of phenomenon operating and repeating themselves just as designed by our Creator. It is the particular discussion of the cycles of flooding and drought occurring here at Alligator Lake and what these cycles have always meant to man, animals and plants here at Alligator Lake that we will ponder.

**Cast thy bread upon the waters; for thou shalt find it after many days.
Eccl. 11:1**

Ancient cultural and natural history tells us that when the mighty Nile River of Egypt overflowed its banks yearly, inundating vast marshes, seeds from the Sacred Lotus floated and were then left behind by receding water. Local people then were blessed with a bounty of collectable, edible seeds to gather and grind for flour to make bread. History says that these folks would make an offering of bread cakes to their gods to insure a steady supply of bountiful seeds from repeating floods year to year. This practice was known and referenced by the author of Ecclesiastes and used as an example to be generous in giving to others and one would be blessed in return.



An experienced appreciation for cycles of flooding and drought is what makes the cultural and natural history of Alligator Lake so relevant and interesting to those who observe it in our own back yard.



Cultural history:

We know (In honesty, we assume-) that Alligator Lake has experienced sink hole activity and cycles of high water and low water for at least many centuries, possibly thousands of years. When the Egyptians built the pyramids, it might have been very high or very low- we don't know. When the French and Indians fought the American colonists and British in mid 1700s it might have been high or it might have been low- we don't know. We can picture in our minds, Indians living off the bounty of a productive healthy ecosystem. If the water was high and the marsh flooded, there would be winter waterfowl to herd at daylight into netted areas so they could be captured. If the water was low, as during a drought, bass could actually be speared from shallow pools- just like Wood Storks which travel around Florida looking for fish stranded by receding waters following spring floods. (Lake Tsala Apopka in Citrus Co. supposedly comes from Indian phrase meaning "Lake where big bass are caught." This lake also is marshlike and periodically gets very shallow, dry in many spots. Indians did not have Shimano reels, Lunker sticks and swim-tail plastic worms! -they usually caught bass in shallow pools with spears or seines or suffocation by stirring up mud.) During high water, the landscape we might see would look much like the dense marsh highlighted in introductory picture. (Yes, we see a portion of a dike not there when the Indians hunted but we will talk about that shortly.) One big difference though is that if we were Indians standing at edge of marsh, we would be fighting our way through a barely penetrable jungle of rank woody plant growth. Development was not in the vocabulary of the day. History books tell us that

when Ponce de Leon discovered Florida in 1513 there were 350,000 Native Americans living in Florida. They were not a nation but consisted of many villages; hunting, farming and bartering. Who knows-they may have been making bread from abundant American Lotus seed flour!

An abbreviated history of the next couple of centuries would tell us that these original Indians disappeared and Indians from the Carolinas and Georgia were displaced into Florida. By the early 1800s north Florida was being farmed for cotton and the entire population was over ½ slaves- African and Native American. Chief Tustenoggee, a Seminole chief who fought the government, lived in a village on shore of Alligator Lake in early 1800s. Florida became territory of U.S. in 1822; Columbia Co. was officially established in 1832 and Florida became a state in 1845.



Meanwhile, cycles of drought and flooding were repeating themselves at Alligator Lake.

Early records report local residents attempting land clearing and farming during dry periods and duck hunting and fishing during wet periods. Early in 1900s there were attempts to farm frogs, fence cattle and farm. Frogs attract predators or escape ponds, and cattle and corn drown when water gets high. Successive wet seasons return the lake bottom to dense, marshy habitat.

Fast forward to late 1940s.

The Hill family purchased the fertile lake bottom, which was not state property due to deeding via Spanish Land grant, and began farming.



Map 1

The area looked as in the above map (Map 1) from 1949. The green NS line is today Country Club Road and the red arrows show Price Creek draining into the solid hardwood swamp floodplain of Alligator Lake. The Hill property was undoubtedly dry when purchased but inevitably flooded, precluding profitable agriculture. During a prolonged drought in the early 1960s, Mr. Hill successfully built a perimeter dike, a deep central drainage canal and associated fill dike and numerous lateral drainage ditches. He dug a drainage well to divert water to aquifer and diked Price Creek to divert incoming water around his farmland. Other low/wet areas west of country Club Road were also ditched and diked to keep dry for vehicle access and cattle operations “in the woods.”



One can see these features/alterations on above photo (Map 2). The south lake bottom/marsh had also been previously diked by the Frasier family with similar objectives. The straight lines in both diked marshes are lateral drainage ditches collecting water to keep ground between farmable. There was a pump station in south marsh located near culvert/water level control symbol, utilized to pump water from drainage canal over the dike into south lake basin to the west. Mr. Hill utilized a similar strategy at his property to the north, installing a pump at east end of drainage canal and pumping water east out of basin into a creek which flowed around (east and north) of his diked area into the north lake. One can actually see the course of this channel/creek on above map. These activities and this strategy were not original to Mr. Hill and Columbia County. The famous

truck farming culture around Lake Apopka, known as “The Zellwood Farms” was successfully accomplished on a gigantic scale and farmed for decades. Eventually this land was purchased and restored by St. Johns Water Management District (WMD). (...But THAT is another story....)

One can also see remnants of a failed dike within the lake on west shore, opposite the Hill dike. This was an attempt by our community to isolate the active sinkhole and preclude periodic natural dewatering of the lake. It too was accomplished in early 1960s, a period of drought statewide when sinkhole isolation and lake-level stabilization was attempted in many areas of Florida. Notable are the failed attempt to isolate sinkhole in 12,000 acre Orange Lake and “successful” sinkhole isolation on Lakes Iamonia and Miccosukee in Tallahassee. Politicians and managers (and fishermen) were uninformed of natural history/ecological benefits of natural, periodic flooding and drying.

Public Acquisition of Alligator Lake Marshes

The Hill family continued farming the property through the 70s and 80s, not without a few dike failures, siltation issues, court battles with Suwannee River WMD over legality of dike and some public dissatisfaction with these activities. Basically the courts sided with Mr. Hill that it was his land (Spanish Land Grant complexities) and were not swayed by WMDs contestation that associated wetlands were necessary for a healthy lake. Meanwhile on the regional scale, Lake City was growing and associated impacts to the lake were occurring; primarily nutrification from receiving of treated sewage effluent from mid 60s to mid 80s, and siltation (as well as oils, grease etc.) from steadily increasing street runoff storm water inputs. In the late 80s treated effluent was rerouted to constructed spray fields. In 1988 the State initiated the Surface Water Improvement and Management (SWIM) Program and the WMD listed Alligator Lake as a high priority water body to be improved by any and all strategies, primarily storm water treatment. Attempts to negotiate the purchase of the Hill property to be used as a wetland to route and treat storm water were proposed but no agreements could be reached. Public interest and support never waned and was spearheaded by County Commissioner James Montgomery and SRWMD ecologist Rob Mattson. An excellent series of Lake City Reporter articles was written by Margaret Wuest in 1993, including numerous interviews with long time

residents; and in 1994, a P-2000 Community Trust Fund grant application was submitted. In 1997 The Hill property, the south marsh, then owned by the Rogers family and uplands and wetlands in between- totaling 900 acres, were purchased for \$1.6 M. Yeay! One could say “the rest is history,” but there has been a lot of fascinating activities affecting natural history that took place since.

Restoration Activities and Natural History of Alligator Lake

The Park was not opened to the public until 2002; 5 years were required to restore and develop. Altered ecosystems may never be exactly the same as before man’s activities and that was not the goal of park development and restoration. So what all went on and why for 5 years?

The drainage well, dug as a strategy to keep land dry and farmable by putting rainfall/runoff into ground water/aquifer was plugged and capped. Rather than remove the dikes and restore historic topography, the decision was made to breach the dikes in 2 locations to allow water circulation and fish passage. Boatable water level control structures (weirs in which boards can be inserted) were constructed in the north dike; one breach was constructed and one culvert was installed in south lake dike. Original dike construction necessitated digging dirt from lake and piling high to create dikes. This digging left a deeper “borrow canal” adjacent to all the dikes as well as central drainage canal and dike. Leaving dikes intact allows us to hike and view wildlife; leaving borrow canals provides fish access to deep(er) water refugia during low water periods. This is both natural and critical.



Because marsh management was made possible via structures, Ducks Unlimited was a funding partner. So that's what was done in the lake. What else took place? Remember Map 1, showing the flow of water from Price Creek into wooded swamps between north and south lakes? Map 2 indicates "flow diversion structures" in Price Creek. Several large culverts were installed in a dike originally built to shunt water to south and west away from both farming operations. These culverts put water back into swamp draining into the wet land between the lakes. Today this is a really neat wet woods to watch for wildlife along the trail- such as Wood Ducks, Winter Wrens and Woodcock.



Two other sets of culverts were installed under Country Club Road (following purchase of creek bottom to east by SRWMD and naturalizing the creek channel) in order to shunt water into the wet meadow near Willow Pond and another smaller drainage creek.



These alterations/restorations restore the wetland watershed of Alligator Lake and marshland between the lakes, keeping more water within the basin. This “extra water” is actually better viewed as a more natural hydroperiod for the entire lake basin. Now, except during extended low water periods, which do naturally happen, the marsh is very lush with submerged and emergent plant species. Amazingly this natural community of bladderwort, fanwort, coontail, naiad and other native submersed species; sedges, rushes, cattails, lotus, pickerelweed, arrowhead, numerous wetland grass species, and other herbaceous emergents; as well as woody plants such as cypress, willow, maple and buttonbush was “self-restored” via native seed source in the hydric soils. Amazing what nature can do when we give it a chance to flourish as created.

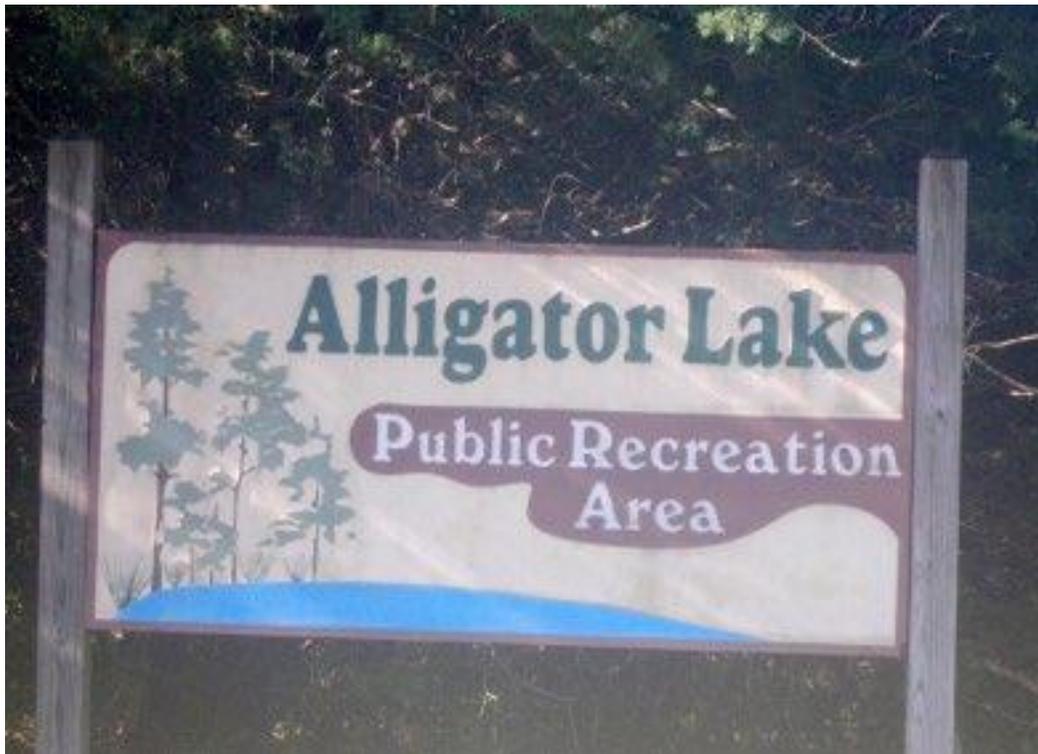




One consequence of long-term water level stabilization exacerbated by increasing nutrient input fueling excessive plant growth is buildup of thick, unconsolidated organic substrate (commonly referred to as “muck”). This layer of unconsolidated decomposing algae and vegetation results in poor spawning conditions for bass, sunfish and crappie (which typically scrape a nest in sandy bottom) and stagnant, low or zero oxygen needed by herptiles and invertebrates- fish food organisms. During low water period in mid 1990s, many acres were “scraped” as part of FWC Aquatic Habitat Restoration and Enhancement Project. This strategy has been applied to numerous other, similarly impacted water bodies in Florida, and more acres are scheduled in the future, (At this writing, 2015, north Florida is in a long term wet cycle and this project is not ongoing.) But we should always remember how important periodic droughts, even severe drying, are to flourishing natural wetlands.



Just as ecosystems do not exist as vacuums- everything is interacting and affecting all the other parts continuously- neither does Alligator Lake exist only as an ecosystem. The human dimension expressed as outstanding recreational opportunities within the park, and observable as picnickers, boaters, wildlife viewers, hikers, bikers (and more....), is not a random consequence of public ownership. Columbia County administration and park personnel demonstrated (and continue to demonstrate) outstanding vision and wherewithal to make the park the great place it is today.



Just as we said regarding restoration; development took 5 years- from 1997 to 2002. Many improvements and activities leading up to the park being what it is today have been endeavored.

The central drainage canal provides navigable water access to deeper end of marsh even during low water periods and is a optimal location for a canoe/kayak/fishing boat access. (Did you know that a plan to mark a canoe trail was crafted but abandoned when planners realized: a) it was not necessary and b) it would have been unnatural and unsightly?!)



The water control structures and breaches in the dike were spanned with sturdy bridges accommodating mowing tractors and maintenance vehicles. There are a total of 12 miles of trails mowed, including dikes and those in the woods- many miles for relaxing and nature appreciation. Did you know that the use of battery powered golf carts is allowable with a handicapped sticker? This is great way for elderly and physically challenged friends to enjoy the outdoors and view wildlife.



Structures existing at purchase, including a residence, an equipment barn and storage sheds were removed. A Florida Recreation and Development Grant for \$300,000 was awarded (due to diligence by Columbia County financial coordinator/grant writer- We all thank you!). This grant provided parking area

paving, signage, multi-purpose open-air screened pavilion, several picnic shelters, modern restrooms, and immensely popular playground area.



A separate grant allowed constructions of boardwalk into cypress swamp along Montgomery dike trail; hopefully it will be completed to connect with south dike in the future. FWC constructed a dug/lined/stocked fishing pond near pavilion, used for fishing events and environmental education.

Other grant opportunities contemplated have included a wildlife viewing tower, designed for handicapped access.



We should all feel blessed to have Alligator Lake Park to **APPRECIATE**.... be grateful for, be thankful for, be glad about, be pleased about, value, welcome, understand, realize, be aware of, recognize the value of , grasp, and be conscious of. Appreciation with the view enhanced through a thesaurus is kind of like looking at a sparrow or a warbler through a spotting scope. Sounds like a fun idea! Let us all take many opportunities to appreciate our blessings.

