The Newsletter for all the Friends of Lake Apopka

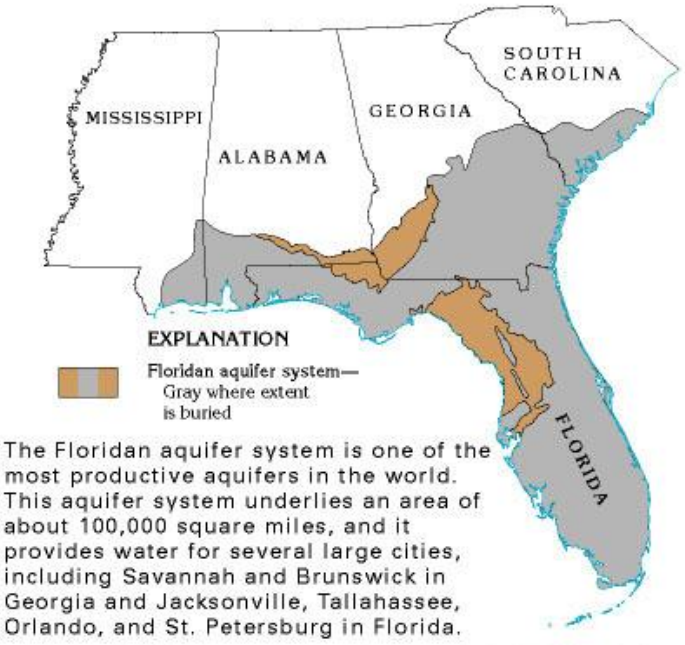
Making it CLEAR

The mission of FOLA is the restoration of Lake Apopka and surrounding wetlands

Water, Water, Everywhere?

Jim Thomas, Vice President of FOLA

Florida is facing a water crisis in the next few years as growth continues to increase at the same time water supplies are decreasing. More than 95 percent of water supplies have come from the underground Floridian Aquifer which now shows decreased capacity, with estimates of severe shortage by 2013.



The Floridan aquifer system is one of the most productive aquifers in the world. This aquifer system underlies an area of about 100,000 square miles, and it provides water for several large cities, including Savannah and Brunswick in Georgia and Jacksonville, Tallahassee, Orlando, and St. Petersburg in Florida.

Source: ***http://capp.water.usgs.gov/aquiferBasics/ext_floridan.html***

The water management districts in the state are charged with oversight of this problem, with the St. Johns River Water Management District (SJRWMD) responsible for most of east central Florida. It would seem logical that the first step should be development of water conservation measures that would significantly decrease our water use. While some efforts have been made, most are voluntary and have not been significantly successful. More than 50 percent of our water use in Florida is for irrigating landscapes so this is the best place to start. Success has been limited, with many homeowners choosing and many homeowner associations requiring turf grasses that need frequent watering as well as extensive pesticide use. The use of reclaimed water by many municipalities has helped, but this can cause groundwater and surface water problems.

One outrageous attempt to solve the problem has been a requirement for every local government to specify an alternative source of water for their needs. The simplest solution of most is to identify a surface waterbody and propose withdrawal for future use. This has resulted in numerous proposals and plans to withdraw millions of gallons per day from local lakes and rivers. This has the potential for massive damage to aquatic ecosystems throughout the state. As wetlands dependent on lakes or rivers dry up and as decreased river flow allows more salinity intrusion from the estuary at the mouth of the river, many damaging results are evident.

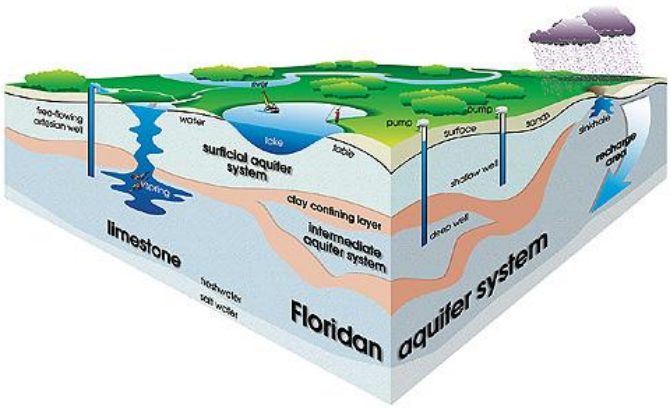
The estuary ecosystem is one of the most productive and critical to many species, including our main food fish, mollusks and crustaceans, and the salinity balance here is very important.

Ocklawaha River during drawdown of the Rodman reservoir

One proposal to prevent damage has been the determination of Minimum Flows and Levels (MFL), a scientific evaluation that should indicate exactly how much water can be removed without causing damage. Problems arise when we let demand drive the science and when the results are open for interpretation by the agency under great pressure to manage the water supply to meet increasing demands by larger and larger populations.

The point at which "significant harm" will occur should not be loosely interpreted but based entirely on scientific data. The SJRWMD has excellent scientists on staff but their work should be subject to peer review before decisions are made that determine withdrawal limits. In some cases, such as Lake Apopka, decisions governing withdrawal were proposed without even doing an MFL study!

The most serious consequences of the surface water withdrawals include the fact that no one really knows the real effects of long term use and no one has confidence that, once permitted and functional, it will be possible to enforce and control withdrawals. It is also difficult to determine just how long a resource will sustain massive withdrawals, so we may see a very expensive project do permanent damage to ecosystems and still not last very long.



Source: ***http://plants.ifas.ufl.edu/guide/aquifers.html***

Another proposal being considered as the best long-term solution is the development of desalination systems that would use seawater as a source. While this idea has the advantage of utilizing an unlimited supply of water with no seasonal constraints (as might be the case with surface water use) it also presents many problems. The process is very energy intensive and therefore expensive. The by-product is a very saline brine with high toxicity and disposal is a problem if it is discharged anywhere adjacent to natural reefs or areas of any biological production.

It becomes increasingly obvious that conservation is the first and best approach to solving the problem. The water management districts should not issue permits to any local governments until they have demonstrated that every effort has been made to impose and enforce such efforts.

A science-based MFL that has been subjected to peer review to guarantee that adequate data has been used should be prerequisite to any surface water proposal. Utilities should be encouraged to institute tiered billing systems that reward low users and penalize high volume customers. Some interventions should be considered which further limit the power of homeowner associations to impose covenants that preclude water conservation efforts.

Permit applications should include scientific evaluations of the quantities of sources proposed for withdrawal, providing a life span of the source. Permit evaluations should include reviews of treatment processes being proposed to insure no toxic by-products are discharged. All permits issued should include realistic, enforceable limits that preclude damage to natural systems.

With projected water use demand that includes at least a 20 percent increase by 2025, studies that show our aquifer will be overdrawn by 2013 and long term data that documents declines in almost all spring flows in Florida, we have to address this issues NOW, and get it done right!

Lake Apopka, July2001 at the Winter Garden boat ramp

For more information on this topic go to www.fola.org and check the links listed under Water, Water Everywhere?