

SAVE OUR LAKES



JANUARY 2022 Volume 22, Issue 1

MUCK BASICS

One thing that the people in Keystone Heights are familiar with is muck. With the decades long rising and falling of the Keystone lakes, each time the waters recede, black smelly muck is exposed. When low, muck dominates the shorelines of our “clear water, white sandy bottom” lakes. Swimming (at least in light colored suits and trunks) is no longer on the list of recreational uses in these mucky waters. What is muck? Where does it come from? Simply put, muck is organic sediment that is located in amounts and places where people don’t want it. However, before removing the offending muck, those who want it removed need to understand the factors that influenced the amount and distribution of the muck in their particular waterbody. A muck removal project will be a failure if the muck quickly returns to the cleaned area.

There are different types of muck but they all have in common a large amount (typically 20% to 80% or more) of organic material. This organic material comes from plant and animal residues. Materials from outside the water body are called *allochthonous* and

those originating from within the water body are called *autochthonous*. Lake muck was recognized for its value to agriculture in early American history. Lakes and wetlands were drained to be productive farmland. Water covered lands were considered worthless. In pre-Civil War Florida, the legislative priority was to drain wetlands. This only began to change over a century and a half later.

The Keystone lakes had sandy bottoms when they were first formed as sinkholes. The sediment that filled the lakes over time was distributed mostly by wind blowing over the lakes influenced by the size, shape and orientation of each lake (its “fetch”). Wave action causes the organic particles to settle out toward the deepest parts of the lake leaving white sandy beaches. As the sediment begins to fill the lake, the lake’s wind driven wave action reaches the sediment layer, making all the water turbid.

The underwater shape of a lake will greatly influence the distribution of muck. An underwater contour map showing water depths at different locations (a bath-

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-ymetric map) will reveal much about the forces impacting the distribution of muck in a lake. The lakes (or areas of lakes) with shallow slopes tend to collect sediment across the bottom while those with steeply sloped bottoms collect their sediments in the deeper areas. The presence of bays, islands, areas protected from prevailing winds as well as fallen trees will impact the undesired increase of sediment.



The greatest internal factor for determining the distribution of muck in the Keystone area lakes is the presence of rooted submerged and emergent plants. These plants not only produce great amounts of underwater sediment but they reduce water movement and allow particles to settle and become trapped among their roots. The use of herbicides to remove them is concerning as the dead plants add to the organic matter on the bottom. Unfortunately living plants produce even more organic matter. Docks and other structures also play a role in muck accumulation by reducing water flow in the area.

No lake lasts forever. The lake basin will ultimately fill with sediment. In geological terms this may be a short or long time. Humans have been interacting with our lakes for a geologically short time. Families who have lived in the Keystone Heights area for more than a generation have seen dramatic changes in the lakes (both natural and man-made) which have occurred over a much shorter time span.

Floridians have been removing muck from aquatic basins since Florida became a state in 1845. Before the 1970s, anyone with the equipment and the money could dredge pretty much as they liked. With Florida's increasing population, the draining of wetlands and concerns over these (and similar) activities, the State and the U S Army Corps of Engineers were given the authority to issue permits for dredging activities. For those with permits in hand, the transport and disposal of the dredged muck are costly hurdles to overcome. Large scale dredging projects cost many millions of dollars and are typically undertaken by the federal and/or state governments and require much political support and many years between the first proposal and the actual start of dredging. Smaller scale muck dredging projects can be sponsored by local governmental agencies. Technologies are continuing to emerge which provide a meaningful impact for the money spent.

Do it yourself approaches for individual lakefront property owners still require a determination if a permit is required from the proper State Agency. Removal of muck by hand tools is tedious, physically taxing and not recommended for older individuals. A homeowner might be able to vacuum a small area satisfactorily or wash sediment towards deeper water with an outboard motor. However, there are no labor-free solutions. Beneficial bacteria to eat up the muck or aeration to add oxygen to a water body have more support in product testimonials than in the scientific literature. Those interested should proceed with caution to avoid disappointing or disastrous results.

This article is based on Information Circular 112 produced by:

Florida LAKEWATCH 2017

UF/IFAS School of Forest Resources and Conservation / Fisheries and Aquatic Sciences

7922 NW 71st Street

Gainesville Florida 32653-3071 Copies are available at: <http://lakewatch.ifas.ufl.edu/data/shtml>

The “Lake Doctor” will be giving us a presentation at our January SOLO Members Meeting, 1/11/22, 7PM at 1st Baptist Church

January is here and it's time for everyone to renew their SOLO Memberships for 2022! You can use this convenient form.

BLACK CREEK WATER RESOURCE PROJECT SCHEDULE

The Schedule continues to slip. In December 2020, construction was hoped to start September 2021. The current expectation is to start a year later, September 2022. As of this writing, 12/29/2021, the Project Managers at the District report they had a good meeting with the DEP on the Pilot Study a couple of weeks ago and that the DEP was "good with the District's analysis and response." The DEP's next step is to talk to the EPA. At this time we do not have word if that meeting has been scheduled. Hopefully, when the DEP and EPA sign off on the project, things will move forward again.



SJRWMD GOVERNING BOARD Mtg. 10:00 AM Tues., 01/11/2022 at the Palatka Office
***VERIFY* on website: www.sjrwmd.com/governingboard/ (Live Streaming is available)**

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SOLO WEBSITE www.saveourlakes.org

You can get information as well as communicate with us through our website: www.saveourlakes.org or our email: save-our-lakes@comcast.net. Our newsletter comes out once a month by email and US Mail (usually the first week of the month). **Please feel free to check us out!**

Save Our Lakes Organization, Inc.
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Keystone Heights, FL 32656



Logo by: *Graham E. Kestner*

Next meeting: 7PM, January 11 at the First Baptist Church. We'll have a presentation by The Lake Doctor, Look for meeting signs posted around Keystone Heights. Get your Shot/Booster!

NEWSLETTER PRINTING BY FABCO-AIR. THANK YOU, FABCO-AIR!



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