

Leesville Lake Water Quality Newsletter



Tri-County Lakes Administrative Commission

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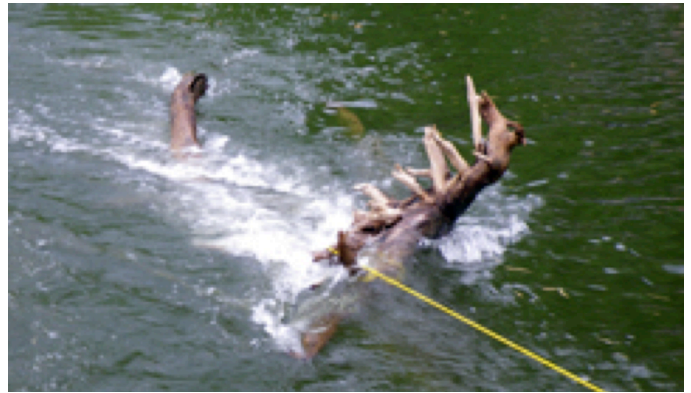
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The Tri-County Lakes Administrative Commission represents the environmental and regulatory concerns of the four counties, Bedford, Campbell, Franklin, and Pittsylvania, surrounding Leeseville Lake and Smith Mountain Lake. TLAC seeks to bring a greater sense of cohesion among the four counties and present a unified work plan to address concerns. Those living in the areas around the two lakes can directly contact TLAC with any technical issues or concerns of vegetation and debris. TLAC also works with the Leesville Lake Association and the Smith Mountain Lake Association in the best interest of those in the community. The commission works to implement effective Buffer Zones, or barriers that protect the edges of streams and rivers, to increase the water quality of the lake. We have seen in the past that Leeseville Lake has a high amount of troublesome debris present. Volunteers are brought together for the annual Leeseville Lake Beautification Day and TLAC receives constant inquiries about debris.

The Environmental Committee of TLAC works to ensure all water quality issues are taken into consideration and properly dealt with. For instance, in 2013 TLAC introduced 6,000 grass carp to counteract a presence of invasive aquatic vegetation that was discovered in Smith Mountain Lake. Their Environmental Committee deals with concerns such as when non-native Hydrilla vegetation was found in the lake. Additionally, TLAC provides a number of different services to encourage the wellbeing of those around the lake and the enjoyment of the lake itself. A Vessel Pump Out Program just recently came to a close at the end of September for the 2017 summer season that allowed boaters to call and schedule pump outs by two sanitation trucks.



Grass Carp – Image taken from Noble Research Institute



Cleanup of the troublesome debris – image from <http://sml.us.com>

The commission offers information concerning the proper manner and time (every three to five years) to pump out septic systems as well. Citizens can report any issues they notice with navigation of the lake, such as with mile markers, to TLAC to be taken care of.

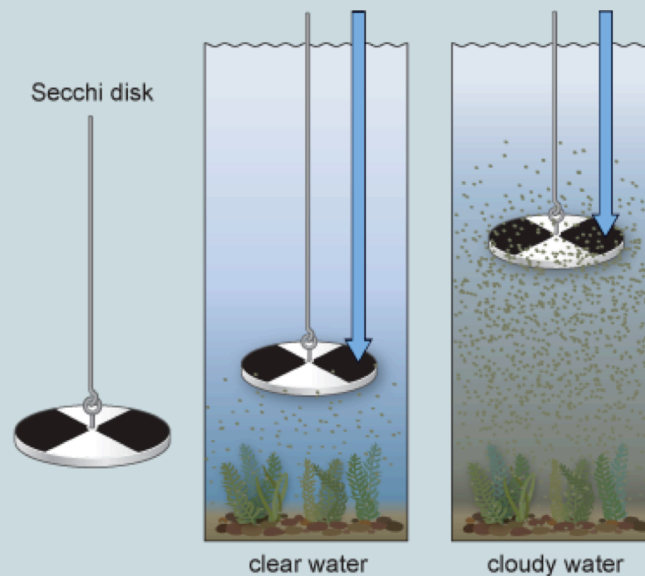


Lots of debris being gathered up! – image from <http://sml.us.com>

Parameter of the Month:

Secchi Depth

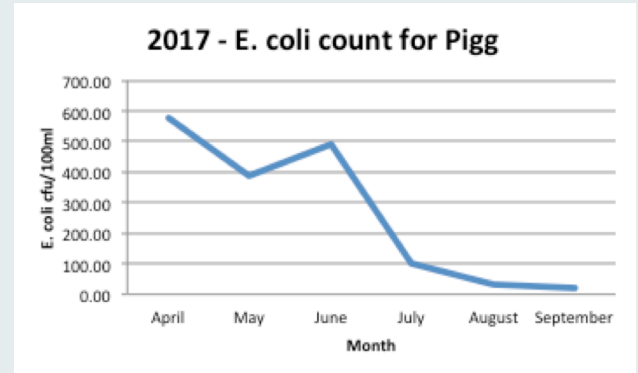
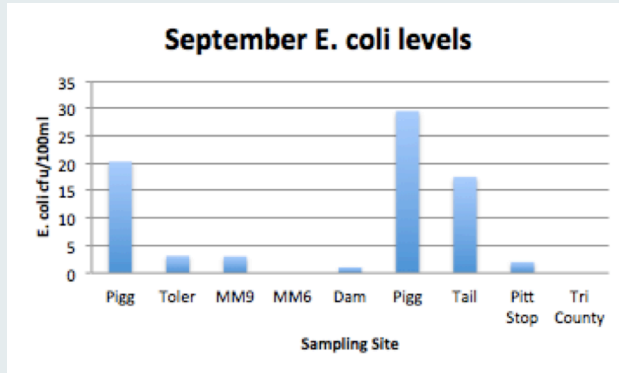
Secchi disks are black and white disks a foot in diameter that are used to measure how clear the water is. As you lower the Secchi disk, it becomes harder and harder to see as there is an increasing amount of sediment floating about. Once you can no longer see the Secchi disk, you measure how far



This figure (courtesy of OpenLearn) illustrates that the more cloudy the water, the less visible the secchi disk becomes

down it was lowered. Secchi disks are primarily used in freshwater areas such as our Leeseville Lake! Because the disk is lowered until sediment blocks the view, the measurement and the level of turbidity are strongly related. The higher the turbidity, or the more sediment present in the water, the less distance you can lower the disk before it fades out of view. Secchi depth will be pretty limited after rainfall events that wash in sediments and cloud the water. The Pigg river sampling site has the lowest Secchi average depth of 0.48 meters whereas the other main sampling sites have averages near 1 meter or higher. This is due to the high influx of sediment from the Pigg watershed. The lower the Secchi average, the more sediment filled the water is. In comparison to other years, the amount of sediment coming in from the Pigg River would appear to have increased because the yearly average is lower.

Monthly Water Quality Report



Sampling done in September showed the Pigg River to have a single sample E. coli count of 29.5 cfu/100ml. The single sample maximum count is 235cfu/100ml, so the levels found are well within the boundaries. This is the lowest that E. coli has been all year at the Pigg River for the samples done by Lynchburg College. In fact, this is the lowest count in September since 2012. It remains to be seen whether or not E. coli count will remain on the decline, but we are hoping for the best! The removal of the Pigg River dam did warrant some concern as a release of sediment might bring in higher levels of E. coli. Typically, the more sediment in the water, the higher the E. coli and vice versa. A reminder that if the water seems murky or it has just rained, it'd be best to not swim in that area due to raised nutrient and bacteria levels! Rainfall is usually the primary factor in E. coli levels, but pastures also pose a problem. In the summer months, E. coli levels rise partly because livestock spend a greater percentage of their time in the river. Part of the reason E. coli levels at the Pigg are higher than other areas is because the river runs past more land for livestock in total and there are multiple water ways flowing into the Pigg river, contributing to the higher count. Additionally, the watershed area for the Pigg river is larger than any of the others flowing into Leeseville Lake. Single-sample levels are more controlled by runoff, but an average of the entire month would be more controlled by wildlife and livestock. We can see the steady decline of E. coli this year, so this far it's looking good!

Water Quality Research Members

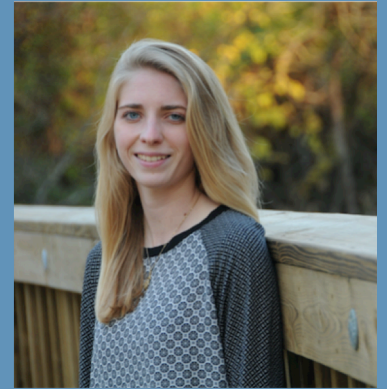


Dr. Thomas Shahady has been conducting water quality research at Leesville Lake since 2006. He is an Environmental Science professor at

Lynchburg College, and teaches a variety of freshwater ecology courses. He received his BS in Biology at Guilford College, MSP.H. in Environmental Biology at UNC School of Public Health, and PhD in Zoology at North Carolina State University. He has had experience with the EPA and North Carolina Departments of Environmental and Natural Resources. His research interests are in aquatic ecology, lake management, and environmental compliance.

Email: shahady_t@lynchburg.edu

Wrenn Cleary is a new member to the Water Quality Project. She is a sophomore at Lynchburg College, majoring in Environmental Science.



She will be the Water Quality Intern for Dr. Shahady during the 2017-2018 academic year. She will be managing the water quality newsletter for the year, hoping to bring some basic understanding of what the research purpose is, and discussing the monthly findings. Please feel free to email her with any questions, concerns, or suggestions!

Email: cleary_w@lynchburg.edu



Anthony Capuco, aka Tony, has lived at Leesville Lake for 3 years. After receiving his BA in Biology from Hobart College, he went forward to pursue a PhD in Mammalian Physiology from Cornell University. He then had a 30-year career as a research scientist with the USDA- Agricultural Research Service as a lactation and cell biologist. He has been a member of the water quality committee for 3 years. Tony likes spending time woodworking, swimming, golfing, and time with family and friends.

Dave Waterman is a new member to both Leesville Lake, moving here a little over a year ago, and the water quality project. Before joining the Leesville Lake community Dave received his BS in Economics at Northeastern University, which led to his career working for an electric company called National Grid. He recently began engaging in the water quality project volunteering with the TLAC Environmental Committee. During his off time he is a voracious reader, enjoys swimming and boating, and daily walks and hikes.



Mike Gooden is a new member of the Leesville Lake Water Quality Committee. Before settling into the cabin his wife, Margy, and himself built in 2010, he received his Bachelor's degree in Chemistry of the University of Maryland at Baltimore County. He then worked at the National Institute of Standards and Technology from July 2007 to June 2016, acting as a liaison between the technical staff and the contracting office to generate contacts that met mission requirements. During his time off he enjoys hiking, running, kayaking, photography, reading, and helping others.