

New and Noteworthy

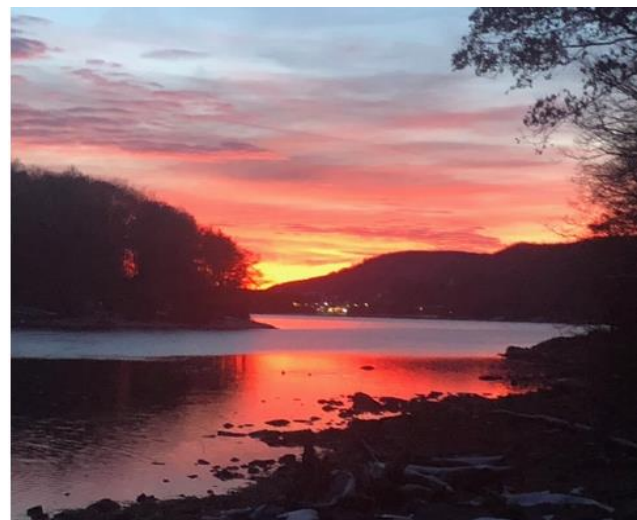
Launch Stewards Continue to Educate and Protect the Lake against Invasive Species

For the sixth year in a row, boat launch stewards continued to be one of the department’s best lines of defense against aquatic invasive species (AIS) at Deep Creek Lake. On Labor Day weekend 2019, stewards intercepted a boat that was carrying viable zebra mussels, one of the most feared aquatic invasive species in the country. Fortunately, stewards caught the boat before it launched and contacted local officials, including Maryland Natural Resource Police. Together, they were able to thwart the potential introduction. In addition to the boat launch steward program’s effectiveness, it also represents a great educational partnership with Garrett College. Each year, select students in the Natural Resource and Wildlife Technology Program (NWRT) are offered seasonal employment to serve as boat launch stewards from May to September. Students gain hands-on experience in their field and communicate the AIS educational message of “CLEAN, DRAIN and DRY” to visiting and local boaters at Deep Creek Lake. Since the program’s inception in 2014, stewards have inspected almost 20,000 boats, preventing numerous potential introductions. The below chart summarizes some of the important accomplishments of the program

Year	Number of Launch Stewards	Number of Vessels Inspected	Number of vessels with organic matter	Number of vessels carrying AIS	% of total vessels inspected carrying organic matter
2014	2	1066	23	not specified	2.2%
2015	5	2256	41	not specified	1.8%
2016	6	3824	22	9	0.5%
2017	5	3866	127	13	3.3%
2018	4	3682	115	4	3.1%

State Lakes Protection and Restoration Fund

Beginning in July 2019, the first round of State Lakes Protection and Restoration Funds became available to the 16 state-owned lakes in Maryland. Deep Creek Lake, being the largest lake in Maryland, received over \$400,000 of the \$1,000,000 that was available in fiscal year 2019. Funding at Deep Creek Lake helped pay for AIS control (specifically the hydrilla herbicide treatments). Additionally, funding will be used to create supplemental fish habitat in the lake and be available to help subsidize shoreline stabilization efforts. The latter is intended to protect the lake’s shoreline and curb sediments entering the lake. For more information about shoreline stabilization or to learn how the funds were used at Deep Creek Lake, call the Deep Creek Lake Natural Resource Management Area at 301-387-4112.



The second round of money will be available in July 2020. In preparation, a series of open houses were held in the fall 2019 and a webinar was held on December 18 to solicit public input for use of these funds. The State Lakes Protection and Restoration Fund was instituted in 2018, with 3 years of funding committed (\$1M per year) through 2021. To learn more about the fund go to <https://dnr.maryland.gov/Pages/state-lakes.aspx>

Zebra Mussel Monitoring Program

The second year of zebra mussel monitoring program took place in 2019. The program was developed by the Department of Natural Resources in response to multiple finds of zebra mussels on incoming boats attempting to launch into Deep Creek Lake. The program is a cooperative effort and funded in part by Brookfield Renewable (the owners of the dam), and the Deep Creek Watershed Foundation Inc. For the second year in a row, the visual monitoring (SCUBA surveys and zebra mussel plates) found no evidence of zebra mussels in Deep Creek Lake. Results of the 2019 water quality habitat suitability effort have not been analyzed yet, however 2018 results suggested the lake's water has an overall low risk of colonization by zebra mussels due to observed low calcium and water hardness concentrations. Results of the 2019 effort should be made available to the public by the spring 2020. To read the 2018 report, or find out about the 2019 effort click [here](#) or go to [Eyes on Deep Creek Lake](#).

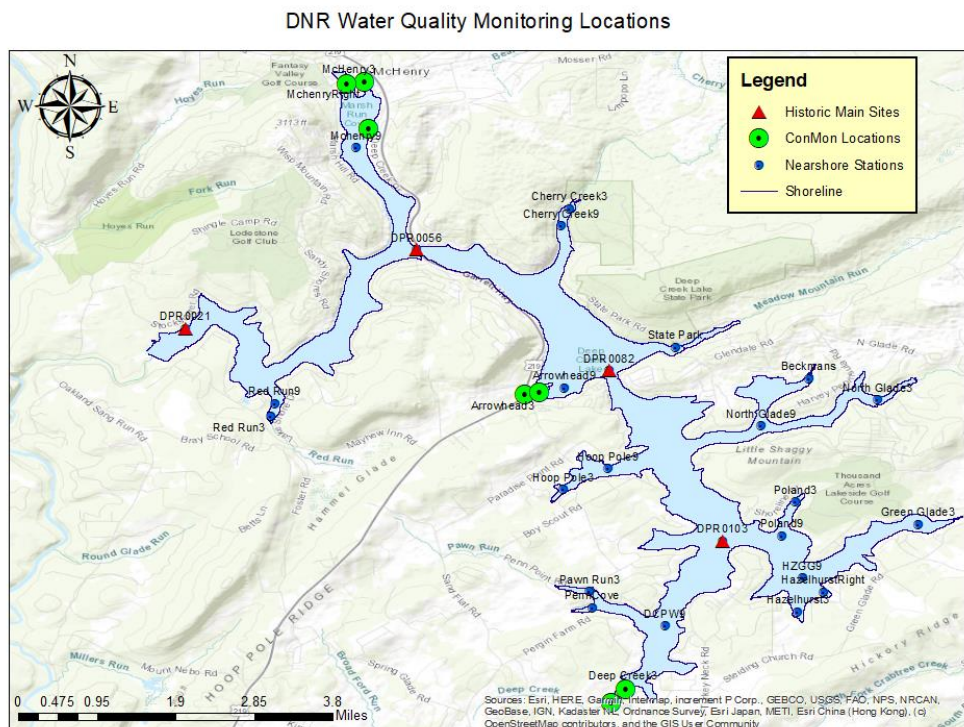


Pictured above: Zebra mussels found in a quarry in Carroll County, MD

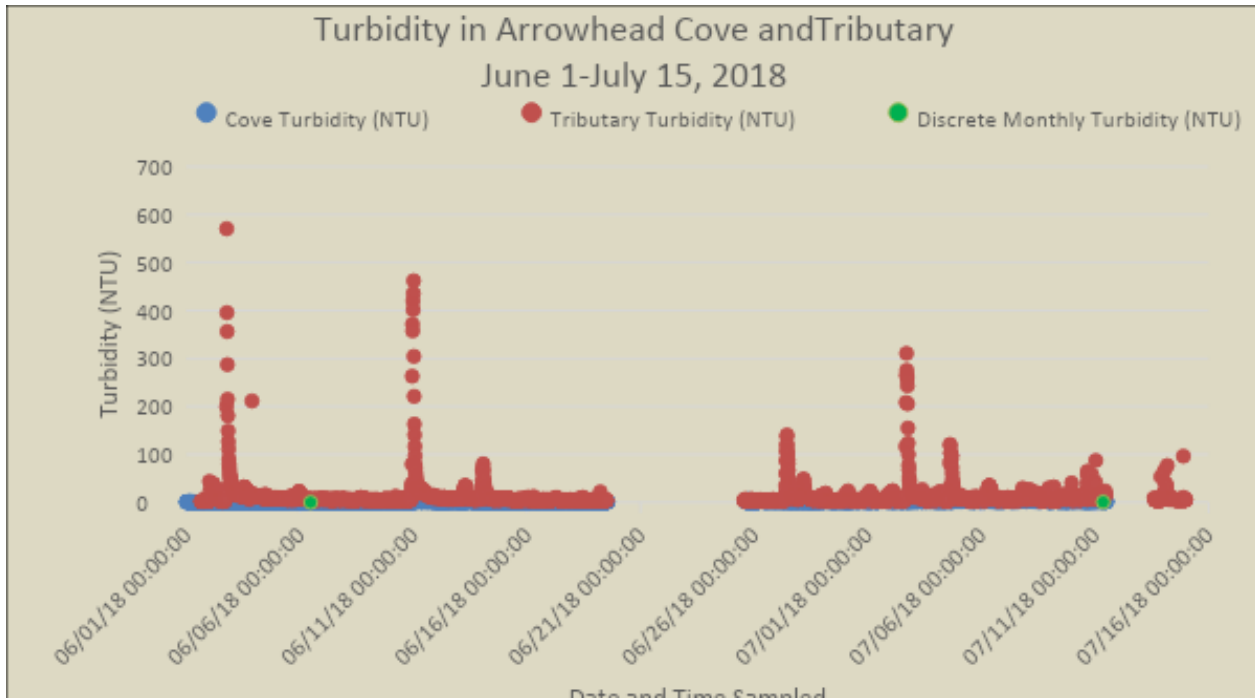
Ongoing projects

Lake Water Quality Monitoring

Lake-wide water quality sampling occurred from April - October 2019. The monitoring occurs in both the deeper water mainstem sites as well as the shallower, nearshore coves. Monthly water samples are collected in addition to data collected at sites using water quality meters. The combined data allows scientists and managers to form a baseline assessment of water quality conditions from which any future changes can be assessed. Preliminary assessments of the data (based on 2009-2016 historic mainstem sites) have detected small changes in secchi depth (a measure of water clarity) suggesting the deeper portions of the lake might be experiencing slightly less water clarity over time. This type of change is not unusual in a water body over time and is often a function of on-going activities such as development in the watershed. To learn more about water quality or read the full water quality report go to the department's [Eyes on Deep Creek Lake website](#). For more information about what you can do on your property to help minimize your impact on our waterways and the lake, please go to <https://extension.umd.edu/garrett-county/water-wise>.



This past year (2019) was the third year of continuous water quality monitoring. This type of monitoring is used throughout the country and world to monitor water quality. The effort here at Deep Creek Lake, allows scientists to deploy multi-parameter water quality meters that record data autonomously every 15 minutes. Meters are usually deployed in pairs in a specific cove, with one meter placed in the tributary to capture input from the watershed and the other meter in the cove to capture changes in the lake itself. When possible, meters are deployed for a season, providing scientists data showing daily and seasonal fluctuations in water quality. Since the effort started in 2017, three coves have been monitored (see green dots on prior map). Arrowhead Cove was monitored in 2018; in 2019, meters were placed in McHenry Cove as well as Deep Creek Cove for the duration of the sampling season. This type of data is exceptionally valuable to managers as they monitor to help understand the impacts of natural events such as storms in addition to human events such as boat wakes on water quality. An example of the value of the data is shown below from the 2018 data collected in Arrowhead Cove.



The green data point is the monthly lake-wide water quality monitoring that has been on-going since 2009. The other data (red and blue dots) are from the continuous monitoring meters and shows all the events that have happened in between those two monthly sampling events that have impacted turbidity (a measure of water clarity and largely sediments in the water). As you can see, these meters give a more complete picture of water quality in an area and help create an ‘ecological fingerprint’ for these areas from which any future changes in water quality can be assessed.

Hydrilla Treatment and Monitoring

The sixth year of herbicide treatment to treat the invasive aquatic plant, *Hydrilla verticillata*, was completed in 2019 and continues to be successful at controlling hydrilla. The continued success of the treatment has allowed managers to begin to remove certain areas of the lake from treatment. In 2019, scientists were able to remove Deep Creek Cove and Chadderton Cove from the treatment due to no findings of hydrilla since 2013. In 2020, managers hope to remove an additional 3 sites from the treatment, bringing the number of treated sites down to 10 from 14. Once a site has been removed from treatment, monitoring at that location becomes of paramount concern to ensure that no hydrilla remains in that area and

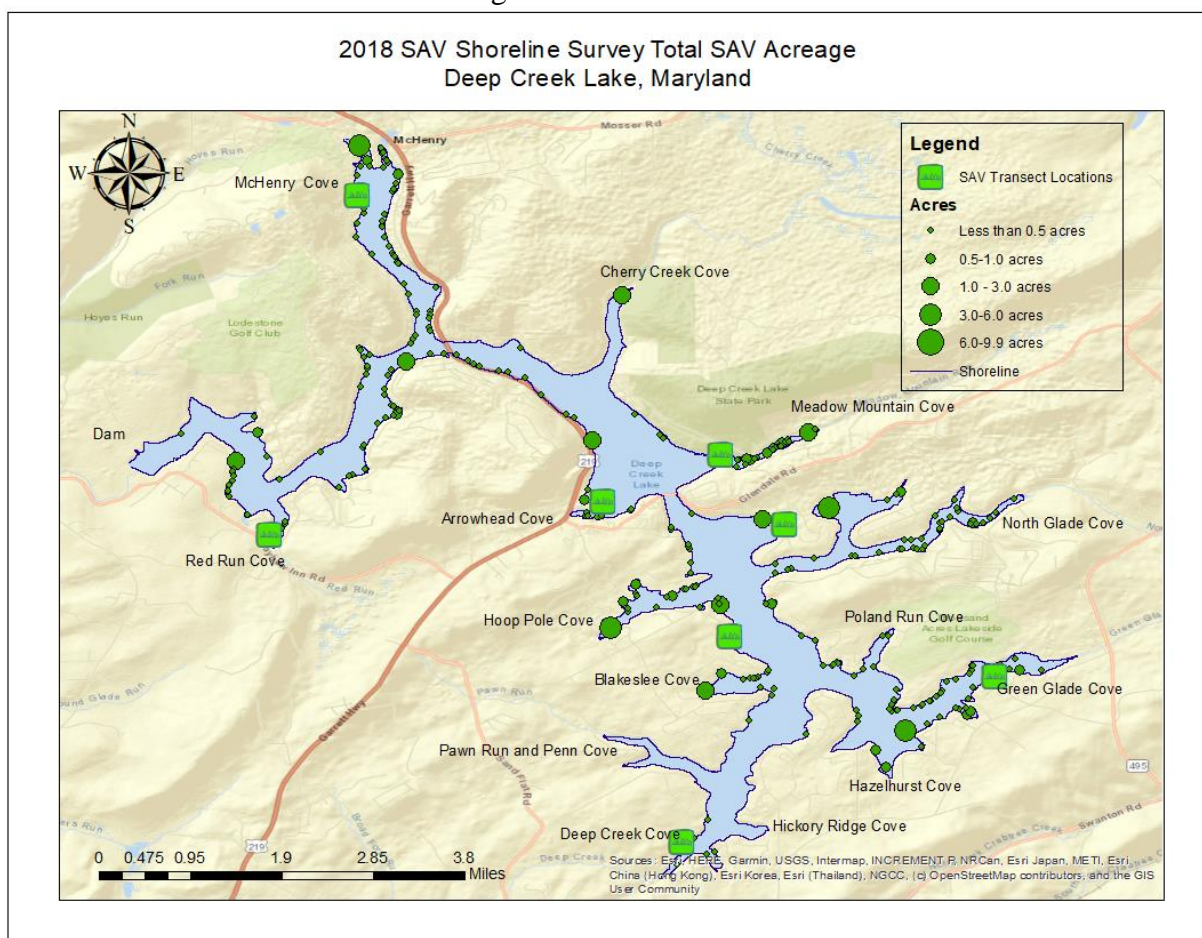


Circled above: Hydrilla “tubers” or overwintering structures

only native vegetation recolonize that location. From the inception of the treatment program in 2014, it was estimated that control and eradication of hydrilla deep creek take up to 8-10 years. This is largely due to the biology of the plant which has an overwintering structure called a “tuber” allowing the population of hydrilla to emerge year after year until the tuber bank is finally depleted and all remaining hydrilla is killed. For more information about the herbicide treatment please go to the [DCL NRMA website](#).

Additional monitoring and on-going efforts

Submerged aquatic vegetation (SAV) monitoring continued in 2019. This is a long-term monitoring program that takes place in late August and early September, during the peak of the SAV growing season, and provides baseline SAV data capable of detecting changes in the plant community over time. Shoreline survey data from the 2018 survey is shown below; with green dots showing presence and relative bed size of underwater vegetation.



These annual surveys map vegetation of management concern as well as survey the shorelines for any new aquatic invasive species. Past annual reports can be found on [Eyes on Deep Creek Lake](#).

Tributary monitoring continues at three of the main tributaries feeding Deep Creek Lake: Cherry Creek, North Glade Run and Arrowhead Run. U.S. Geological Survey (USGS) monitors each of the locations for flow, while department staff assess the quality of water. This monitoring determines the quantity of water entering DCL and assesses the quality of that water based on the amount of sediments and nutrients entering the lake from these streams. This data helps managers to understand how specific locations in the watershed affect the quality of receiving waters and may help identify sub-watersheds in need of additional study. Gage data is available in real time on the [USGS website](#).

Upcoming DCL Public Meetings: Deep Creek Lake Policy and Review Board Meeting - April 27 Meeting time is at 6 p.m. at Garrett College (Room 111).

Contact Information: For more information concerning the Department of Natural Resources monitoring activities at Deep Creek Lake, contact Julie Bortz at Julie.bortz@maryland.gov.