

2024 Fall/Winter Newsletter



President's Message from Bob Hoffmann

Folks,

We are fast approaching the end of yet another year. For the Deep Creek Watershed Foundation, it has been another busy one working on projects as well as building relationships with agencies and individuals which can advance our mission. We are also fast approaching December 3, 2024, or Giving Tuesday, which is a very special day for non-profits such as the Foundation. We sincerely ask that you continue to support our work by donating to help fund projects we undertake to help Preserve and Protect the Deep Creek Watershed! Without your continuing support, we could not continue our work so please think of us when you consider your end of year giving. Thanks very much!



I want to give you an idea where some of your donations were used to support implementation of the Deep Creek Watershed Management Plan.

- We made significant progress on completing the new Water Budget Model incorporating groundwater recharge by accumulating a year's worth of data through the Flow Gauge in the Youghiogheny River which CEC (engineers) are using to complete the model. We shared a presentation of the model with Department of Natural Resources,

Maryland Department of the Environment and

Brookfield Renewable Power representatives in July.

- We retained Penn-West University Foundation, under the direction of Dr. David G. Argent and Dr. William G. Kimmel, to do a bioassessment of the 29 perennial streams discharging into DCL in October 2022. The data analysis led us to determine the water quality of 11 parameters from 14 selected tributaries in July 2023. Analysis of these data led us to schedule three additional samplings in the Summer of 2024. We have shared the results of all the sampling with the Garrett County Health Department and discussed working together with them and the Department of Natural Resources in future sampling efforts as well as potentially supporting any necessary future remedial actions.
- We purchased foul weather gear and some equipment for the young men and women who are Boat Stewards at the State Park Boat Launch Ramp for DNR and inspect boats being launched for potential invasive species.
- We purchased and distributed approximately 100 Rain Barrels to those who have a residence in Garrett County as a means to better manage/store stormwater so homeowners can avoid erosion and use the water later when it is needed. A grant from the Community Trust Foundation assisted in the purchase of the Rain Barrels.
- We purchased and delivered a significant quantity of Calcium Chloride for the Maryland Department of the Environment operated Mechanical Doser on Cherry Creek that continuously neutralizes Acid Mine Drainage running into the creek from abandoned coal mines.
- In support of the 10 in 10 Project, our demonstration garden at Deep Creek Lake State Park is thriving. Julia Vache of DNR has been overseeing the maintenance of the site and has ordered more plants from Brandywine Conservancy/Penguin Court in Laughlintown, PA to be installed next spring. Carolyn Sheaffer is currently working on signage design and content, as well as plant markers. The goal is to have the signs ready by next spring.

THANKS AGAIN FOR YOUR CONTINUING SUPPORT AND WE WISH YOU ALL A **HAPPY AND HEALTHY HOLIDAY SEASON!**

[Click here to donate](#)

CHEERS,
YOUR DCWF BOARD OF DIRECTORS AND ADVISORS



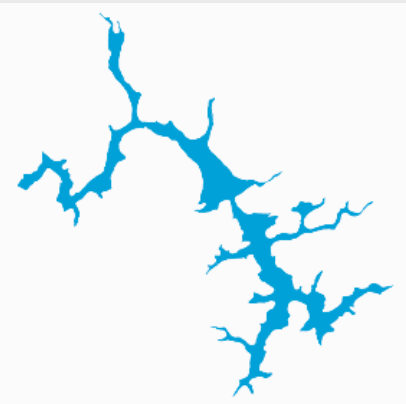
2025 is the 100th Anniversary of Deep Creek Lake. The Deep Creek Watershed Foundation is represented on the 100th Anniversary of Deep Creek Lake Committee by Sandy Bello (Vice President) and David Myerberg (Adviser). The Committee, ably chaired by Chris Nichols, with representation from several Deep Creek Lake organizations, is planning events throughout 2025 to celebrate the anniversary.

For information, please check out <https://dcl100.com/events/> and join in on the festivities. The Deep Creek Watershed Foundation is dedicated to preserving and protecting the watershed and the lake for this year and for the next 100 years. Any monies remaining after paying expenses for the events will be donated to the DCWF Foundation. We are extremely grateful for this support!

Learn More Here About DCWF & How to Support Us!



https://youtu.be/EyuP24x_dfA



Lake Water Level Management Tool

Recently Brookfield Renewable Energy gave a presentation to the stakeholders that included a very informative sharing of the difficulties involved in managing the water levels in Deep Creek Lake.

The Deep Creek Watershed Foundation has been working since its creation to create a management tool to equitably allocate the use of the water in Deep Creek Lake to generate power. Brookfield's success in managing the resource affects all stakeholders. The management must be carried out within the framework of the Water Appropriation Permit administered by the Maryland Department of the Environment.

The company is required to submit an annual report. For those with time on their hands, you can find the reports at: https://mde.maryland.gov/programs/water/water_supply/pages/deepcreeklakeperiodicreports.aspx. The reports are complete and afford a wealth of data about the power generation operation.

Century Engineering from Baltimore completed the first Water

Budget Model for the foundation in June of 2018. Because there was no record of watershed rainfall, no record of water levels, and no record of discharge until two months after the end of the calendar year, a traditional water budget model could not be constructed. They produced a bookkeeping scheme that used the water remaining above the Lower Rule Band on a particular day and subtracted the daily required releases going forward until that water was consumed. When a rainfall event occurs, the lake level goes up and the end of the water day moves forward in time. The foundation distributed that model to the power company.

Starting in 2018, the foundation set to work to provide the necessary data to complete a traditional water budget model. We worked with the United States Geologic Survey to augment the gauges in the watershed area that were in place.

The first one was a recording water level gauge for the lake. Lake management is predicated on the water level relative to the overflow weir at the power company dam, which is assumed to be at elevation 2462. The national level grid is about 1.8 feet different, so we asked USGS to record both datums in the data set. The significant advantage of using them is that the record is kept on the Internet and available to everyone. Given the difference between the elevation measured by survey methods and the staff gauge at the dam, the staff gauge is a single point of failure for managing lake levels according to the permit. The USGS gauge has records back to August 2020.

The foundation sponsored two additional rain measurements to augment the USGS rainfall records at North Glade Run, one at Cherry Creek and the other at Hoyes Run.

The USGS flow gauge on the Youghiogheny River immediately downriver from the power plant discharge has been operating since July 2011. The flow data shows the base flow of the river and the discharges from the power plant. A second USGS gauge was installed upstream at Swallow Falls to evaluate the base flow.

In May 2022, the foundation contacted CEC, a civil and environmental engineer from Pittsburgh, Pennsylvania, to complete the traditional water budget model. The fundamental idea of the water budget model is $\text{Water In} - \text{Water Out} = \text{Change in lake level}$. With the additional rainfall measurements, the record of water levels, and the record of discharge from the plant for the water year from 1 October 2023 to 30 September 2024, CEC can ascertain the dynamics of the fundamental idea. The goal is to create a model that considers past rainfall, current lake level, and future discharge to produce power per the permit.

Consider an old, clawfoot bathtub full of sand and gravel. Below the drain, attach a recording flow gauge. Water poured into the tub will flow out at a rate and duration based on the amount of water. A record of flow vs. time for one five-gallon bucket dose, a ten-gallon dose, and enough water added to reach the top of the tub plotted on a discharge vs. time graph would calibrate the tub and its contents to predict the rate water will come out of the drain.

The Deep Creek drainage area is like the bathtub. Water runs off, evaporates, and soaks into the ground when it rains. Twelve hours after a rain, all precipitation has run off into the lake or streams. The water that soaks into the ground flows by gravity. Consider the water level in a water supply well. That level is where the groundwater surface is. Most of the water supply wells around the lake have a level higher than the lake, and groundwater flows into the lake. All the lake's water comes from direct rain, stream flow, or groundwater recharge. An analysis of precipitation records, lake levels, and lake discharges could model the recharge of the lake based on past rainfall.

To be useful to the power plant operator, CEC is creating an Operator User Interface (OUI). The OUI will consist of a computer program that operates behind the scenes to query the USGS websites to retrieve inputs on past rainfall, current water levels, and permitted requirements for discharge. The primary challenge is to model the recharge into the lake from groundwater. The engineer will use the USGS rainfall, flow and water level data collected from October 2023-September 2024 to create the water budget model recharge component.

The OUI works using the same bookkeeping technique as the original limited model. On a given day, the operator enters the date. The program returns the remaining days before the water level goes below the lower rule band. Given the advance notice of the limited water supply, The Maryland Department of the Environment and the plant operator could devise a plan to distribute the remaining available water among the stakeholders equitably.

The plan to deal with the water shortage will make it less of a problem for the various interests in the water in Deep Creek Lake if MDE and the power company put it in place before the need for it!

CEC has a year record and is preparing the OUI now.



A HISTORY OF LAKE WINTER WATER LEVELS

I came to spend summers at the lake in 1964 when three Boy Scouts and I camped at Crow Point to sail a boat the three scouts had built. We taught sailing and swimming at the Deep Creek Yacht Club on Turkey Neck. In 1967, I bought a property at Penn Point. In 1970, I came to Garrett County to work for Sandy Douglass, building Flying Scot sailboats in Oakland. After selling my interest in the company in 1974, I spent the rest of my life working on and around the lake doing civil engineering and land surveying.

In the 1960s, after starting the summer in June with full lake water levels, there was more shoreline exposure by the end of July than at the end of September this year of, 2024. Many of the houses now in the shallow coves had a small stream of running water in front of them that was neither boatable nor swimmable. There was a movement to keep the water levels higher until the end of September to afford the sale and development of these heretofore unmarketable properties.

In the early days, the lake was owned and operated by the Pennsylvania Electric Company, the successor of the Youghiogheny Hydro Electric Company, both headquartered in Johnstown, Pennsylvania. The motivation for the construction of the dam and the hydro-electric facility in the 1920s was the Johnstown steel mills' need for power. Originally, the power only went to Johnstown via a dedicated transmission line from Hoyes Run.

The Federal Energy Regulatory Commission regulated the power company until the regulation was subrogated to the Maryland Department of the Environment. The power company uses public water to make private money. One of the primary concerns of the power company is to manage power generation against letting water flow over the spillway at the dam. The overflow weir has only operated three times in the dam's history.

As part of the change, upper and lower rule bands were added to the regulations by agreement. Before this agreement, the power company would drop the lake down fifteen feet or more instead of seven feet over the year, as is the current practice.

There is a picture on the second floor of the Transportation Museum facing the B&O Museum across Liberty Street. The image was taken from the Turkey Neck Yacht Club before 1960. The boats are Snipes, the shoreline, and a northerly view of the

far shore. A careful examination will show an island to the left of the entrance of Bull's Arm Cove and in front of what is now Blakeslee. Today, this island is underwater. The exposed shoreline in the picture at Turkey Neck, which seems extreme today, would be expected at the end of July then.

An analysis of the dynamics of power generation and other releases from the lake has previously been limited by the lack of accessible water level records, rainfall records, and background flows in the Youghiogheny River. The United States Geological Survey has partnered over the last few years with the Property Owners Association, Garrett County Government, and the Deep Creek Watershed Foundation to afford continuous lake level data, rainfall at North Glade Run, Cherry Creek, and Hoyes Run, Youghiogheny River flow data from Swallow Falls and Hoyes Run.

The Maryland Department of The Environment has issued the power plant operator a Water Appropriation Permit regulating water use. The permit dictates the water levels in the lake with an upper and lower rule band intended to confine lake levels over the year. The permit requires many mandated releases. There is no consideration for how the water comes into the lake. The process might be compared to a budget that only lists regular monthly expenses like mortgage, car, utility, food, etc., with no listing for income or plans to allocate what water is available equitably. There is no provision for equitable allocation of the public water in the current permit.

Given the new data resources, a management plan is possible based on the concept that water in – water out = change in water level. This summer water levels are typical for a dry summer. 2008 and 2010 were also dry summers. A water budget model is based on historical rainfall and understanding groundwater recharge, water levels, and required releases. A water budget model relies not on weather prediction but on water flow through the system.

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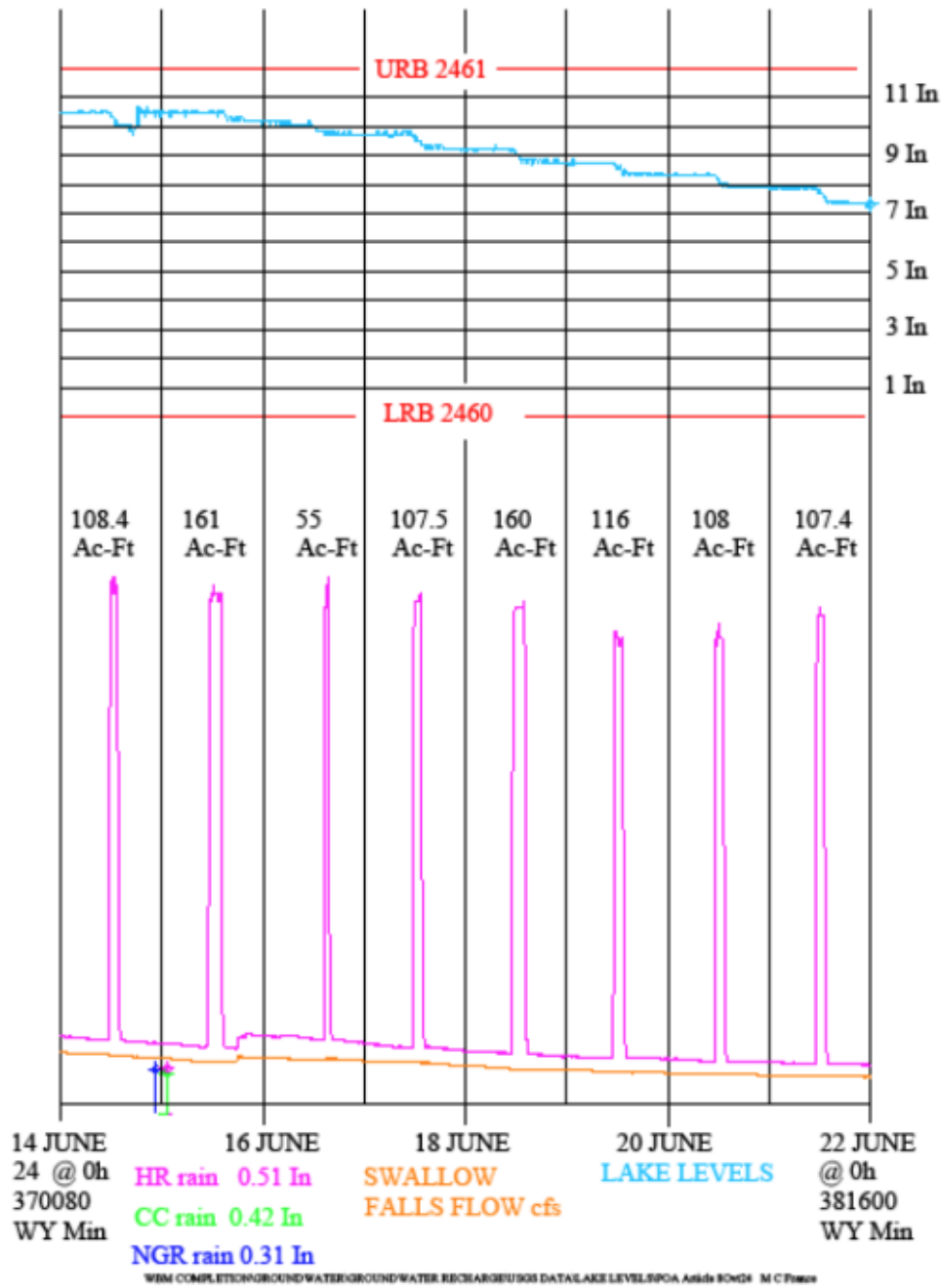
In the old days, the power company drew the water down a lot in August because of the power loads in their market. They kept the lake water levels low in winter in anticipation of the significant runoff from the snow melt. In the winter of 1976, there was five feet of snow on the ground. Even then, the lake filled by the end of May each year. In the history of the lake, there is no instance when the lake failed to reach the full pool by the end of May.

The attached analysis for the period 14-22 June 2024 shows the river flow at Swallow Falls and Hoyes Run. The Hoyes Run gauge is about a hundred yards downstream of the power plant. It shows the rainfall and flow. Cherry Creek and North Glade Run measure flow and rainfall. The variations in amounts of rain among the gauges are typical. The lake levels in blue at the top between the rule bands show the water levels' reactions to the rain and discharges. From these data, the groundwater contribution to the lake recharge based on historical rainfall is predictable.

From the flow gauge information at Swallow Falls and Hoyes Run, the amount of water used to generate power can be measured. The area under the magenta spike above the baseflow is mathematically related to the discharge, and the discharge numbers are on the graph. Gallons, cubic feet, and cubic yards are the usual units of volume. In water resource circles, the unit of volume is the acre-foot; that is, an area of one acre, 43,560 square feet, one foot deep.

History supports the conclusion that lowering the water levels to near the lower rule band from December to February has been part of the lake's history until the last twenty-five years. We used to have a nice shingle beach with no vegetation or mud around the docks. With the water level low in winter, erosion will wash the sediment downslope to deeper water away from the dock area. Freezing temperatures will inhibit the proliferation of the vegetation around the dock area, and lower winter lake levels will facilitate repairs to the shoreline.

Morgan C. France



2024 Rain Barrel Project



Excitement, appreciation, and overall joy are words that help describe the sentiment of those people that were able to participate in the 2024 Free Rain Barrel and Education workshop that was sponsored by the Deep Creek Watershed Foundation. Thanks to support from University of Maryland Extension one hundred free 55 gallon rain barrels were distributed

to folks that learned how to properly install and maintain these systems to help capture rainwater and repurpose it or release it slowly after the rain event ends. The drought in Garrett County also helped many people understand what a wonderful resource water is and the importance of proper management. Rain barrels are just one management technique to help ensure that rain water is managed properly in the landscape. If you are interested in joining the more than 25 people that are already on the waitlist for the 2025 rain barrel program, feel free to email abachtel@umd.edu and you will then be notified when the next program is being planned.

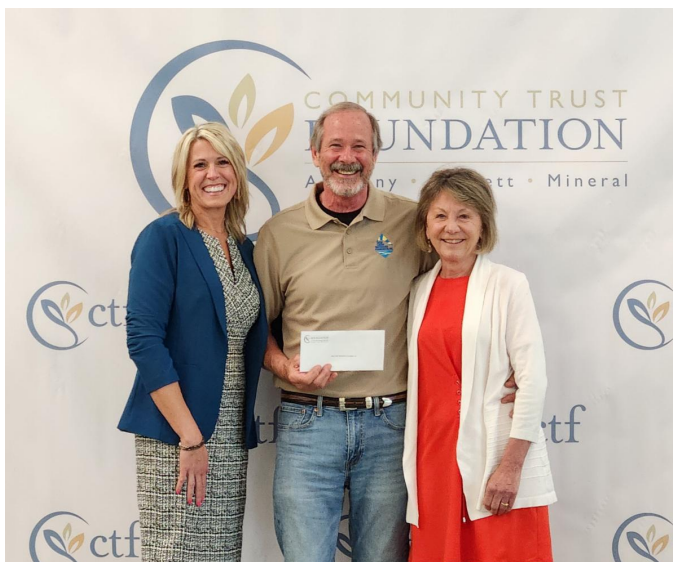
Special thank you to Deep Creek Watershed Foundation advisor Steve Green for providing a place to help with loading, unloading, and storing the rain barrels! We also want to recognize the Community Trust Foundation for their generous donation that helped us purchase the Rain Barrels!





**DCWF Receives Grant
from the Community Trust
Foundation**

**Leah Shaffer (CTF), Doug
Mohler (DCWF), Marion
Leonard (CTF)**





Deep Creek Watershed Foundation

Presented

Synergy in the Barn



A Magical Night in the Barn

What a wonderful evening we shared! Thanks to your generous support, *Synergy in the Barn* was another successful event for the Deep Creek Watershed Foundation.

We are deeply grateful to our community for always standing behind us. Your dedication makes everything we do possible. A special thank you to our incredible vendors for providing such a beautiful venue and warm hospitality at the Red Barn Inn. Our amazing caterers—Ace's Run, Firewater Kitchen & Bar, and Brenda's Pizzeria—provided a delicious variety of food that everyone enjoyed.



The entertainment for the evening, the Synergy Twins, truly made the night unforgettable with their fantastic performance. The Garrett County Arts Council and local artists made our auction extra special this year, and their contributions, alongside those of our auction donors and sponsors, helped elevate the event.

Finally, we cannot forget our hardworking volunteers. Without your efforts behind the scenes, this event wouldn't have been possible.

Thank you once again for your continued support. Together, we are making a positive impact on our watershed and our community!

Thank you



FOR ANOTHER SUCCESSFUL EVENT

Thank You To all our Sponsors & our Supporters!

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Deep Creek Watershed Foundation (DCWF) earns a Four-Star Rating from Charity Navigator

DCWF is proud to announce that its strong financial health and ongoing accountability and transparency has earned a Four-Star Rating from Charity Navigator. This rating designates DCWF as an official “Give with Confidence” charity, indicating that our organization is using its

Charity 
Navigator



✦ FOUR-STAR ✦

donations effectively based on Charity Navigator's criteria. Charity Navigator is America's largest and most-utilized independent charity evaluator. Since 2001, the organization has been an unbiased and trusted source of information for more than 11 million donors annually.

Charity Navigator analyzes nonprofit performance based on four key indicators, referred to as beacons. Currently, nonprofits can earn scores for the Impact & Results, Accountability & Finance, Culture & Community, and Leadership & Adaptability beacons.

“We are delighted to provide DCWF with third-party accreditation that validates their operational excellence,” said Michael Thatcher, President and CEO of Charity Navigator. “The Four-Star Rating is the highest possible rating an organization can achieve. We are eager to see the good work that DCWF is able to accomplish in the years ahead.”

“Our Four-Star Charity Navigator rating is further validation that our supporters can trust our commitment to good governance and financial health,” said Bob Hoffmann, DCWF President. We are a 100% volunteer organization. “We hope that it will introduce our work to new supporters who can help us advance our mission to support, promote and advance scientific study, environmental protection and educational programs relating to the Deep Creek Watershed.”

DCWF's Charity Navigator rating and other information about charitable giving are available free of charge on [DCWF charitynavigator.org](http://DCWF.charitynavigator.org).

To learn more about DCWF and make a donation, visit our DCWF website.



The Deep Creek Watershed Foundation works every month, year-round, and your tax deductible gift can too. For as little as \$10 a month, when you become a Sustained Donor

as many have done, you can help us keep the lake and the watershed as pristine as it is now.

Our Sustained Donors program allows monthly contribution as an alternative to giving once a year.

[You can learn more about Sustained Giving on our website. Click here.](#)

You will see monthly levels of \$10, \$25, \$50, \$100 and \$250.

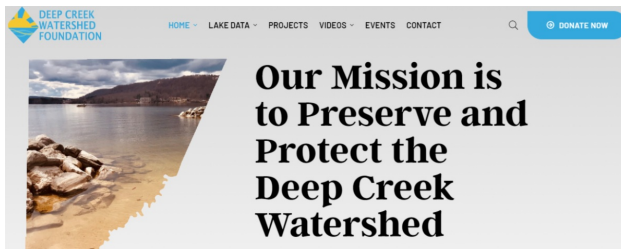
Follow and "Like" us on Facebook

Our Facebook page features our marvelous videos and other important projects and events in which we are involved.

You can also donate through our page.

[Click here to Follow us on Facebook!](#)

Learn About our Projects on the DCWF Website



Our Board members have been talking with HOAs in the watershed and other groups about the work of the Foundation, and asking about projects that the Foundation might consider funding. If you have a group that wants us to visit and present our information, and have us hear your suggestions for watershed projects we might fund in the future, please let us know by contacting [Morgan France](#).

Our Funding & How We Choose Our Projects

Each of our projects is chosen in accord with the recommendations of the Deep Creek Watershed Plan. The Plan can be found at www.garrettcountry.org/watershed/dcwmp.

Each project is closely examined by the people who make up our Board of Directors, and they make the selection of each project for funding. Each member of our Board of Directors, and each of our advisors, is a volunteer who has a strong connection to the Deep Creek Watershed. Their varied backgrounds and expertise make the Board of Directors and the advisors a highly effective organization for funding projects in the Deep Creek Watershed. The Board members and advisors are all profiled in our website, www.deepcreekwatershedfoundation.org.

Our investments in these and future projects are possible because of the generous, tax deductible gifts we get from those of you around Deep Creek Lake, throughout the Deep Creek Watershed and beyond.

Your contribution to the Foundation now at www.deepcreekwatershedfoundation.org will be a great investment in the terrific private-public water quality monitoring effort and the other projects funded by the Foundation.

Please consider a tax deductible contribution to support these important activities.

[Click here to donate online](#) OR

Mail check to: DCWF - P. O. Box 376 - Oakland MD 21550



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