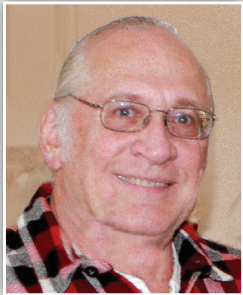




DEEP CREEK DISPATCH

Spring 2017

Newsletter of the
Property Owners' Association
of Deep Creek Lake, Inc.



The President's Message

I hope this edition of *The Dispatch* finds you all doing well and feeling fine. While we did not have one of our famous onerous Winters, we are certainly enjoying a real Spring with consistent warm temperatures arriving and remaining with us. It is sure nice to see flowers, bushes, and trees all responding to this great gift from nature this year.

One of the topics you will hear about this year is Wake Boats which, plainly stated, are designed to provide a wake which can then be used for riding with a wakeboard while tethered to the boat or surfing the wake. Either way, it is intended to be a watersport that is enjoyed if done safely and responsibly. Unfortunately, some of the captains of these boats have not always been courteous when piloting their vessels which has resulted in damage to docks, boats tied to docks, and caused some shoreline erosion as well. Your POA will do its best during this boating season to support education efforts aimed at boat owners, whether property owners or not, to school them on proper boating etiquette so they remain mindful of the damage that large wakes can cause in confined spaces on our lake. More to follow on this topic in the weeks and months ahead.

By now you should have read about or seen signage that was purchased by the POA and erected during the winter months under the supervision of your board which reminds and encourages folks to **"Clean, Drain, and Dry"** their boats prior to launching them. This is yet another effort to prevent the introduction of Aquatic Invasive Species into the lake. Boaters will find Disposal Boxes at various launch facilities around the lake where anything removed from the boat can be discarded before actual launch. Your POA purchased the materials for these boxes but they were constructed by the Department of Natural Resources (DNR). We will continue to do what we can to prevent the introduction into the lake of unwanted plants or critters.

At our June Board of Directors meeting, we will discuss the matter of the Water Allocation Permit which is the responsibility of the Maryland Department of the Environment (MDE) and provides details on the amount of water various stakeholders may receive from the lake. The current permit expires in 2019 and we know MDE will be accepting comments for the new permit until about one year from expiration of the current permit. The board needs to discuss how we should develop any com-

ments on behalf of property owners so they can be presented to MDE at the right time. More to follow on this matter as well.

Please note that in the last four pages of this edition of the *Dispatch* we have reprinted the "Maryland Department of Natural Resources DNR Spring 2017 Update Concerning Deep Creek Lake" newsletter. This is a publication that is filled with interesting information about activities that DNR is pursuing for the benefit of our lake. It was provided to members of the Policy Review Board at our April 24th meeting. We have provided portions for you to read and a link to the entire "newsletter" should you wish to see the entire piece. We appreciate this DNR initiative as it provides information tailored to our lake.

I hope you all have a great season either living at or visiting the lake this year. If you have not yet paid your 2017 POA dues, please do so. Thanks very much for your continued support.

Cheers, Bob

POA Donates to Garrett County Crime Solvers

The POA recently donated \$500 to support the Garrett County Crime Solvers Program. The program

pays cash awards to people who report suspicious activity that leads to arrests by law enforcement. Pictured below is board member George Evens presenting the check to Gar-

rett County Sheriff Rob Corley. Corley said "Without this kind of assistance, it would be very difficult to make the Crime Solvers website as successful as it is. Such generosity does not go unnoticed".



What To Do About Noisy Renters

By Lulu Gonella

A POA member recently shared with the POA his frustrations from last summer concerning groups of people renting houses near their home who consistently partied late into the night even after requests that they lower the noise levels. This is certainly not a new problem and not one that with the wave of a wand will go away. However, there are steps homeowners can take to address this issue. With guidance from the Sheriff's office, below are three steps.

The first step a homeowner can take is to simply ask the renters to be respectful of their neighbors and quiet down.

Very often friends and family on vacation bring an energy level and an amount of excitement that has the unintended impact of disturbing others. Pointing out this unintended impact is often enough to correct the situation.

The second step a homeowner can take is to call the management company responsible for the rental. The management companies are well versed on the details of

[http://library.amlegal.com/nxt/gateway.dll/Maryland/garrettc_m/garrettcounnymarylandcodeofordinances?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:garrettc_m](http://library.amlegal.com/nxt/gateway.dll/Maryland/garrettc_m/garrettcounnymarylandcodeofordinances?f=templates$fn=default.htm$3.0$vid=amlegal:garrettc_m)



the ordinances and licensing requirements relating to rentals and are highly motivated to ensure the properties they manage are in compliance so as not to put the property's rental license in jeopardy. If there is no property management company involved in the rental, then the property owner should be contacted.

The third step, should a homeowner feel they did not receive a satisfactory response from the property management company or the owner, is to call either the Sheriff's office or the State Police. The responding officer will write and maintain a report of the incident, which in the case of repeat offenders, will provide documentation of non-compliance to the ordinances and/or license requirements.

In almost all instances, these three action steps have favorable outcomes. More information about requirements for rental properties can be found below. Click on Chapter 160 – Transient Vacation Rental Units on the left side of the page 2.

Public Access Points to Lake Lands

A POA member recently asked several questions concerning public access points at the lake. To ensure we provided accurate information back to the member, we consulted with DNR. We thought this information might be interesting to other members too so here it is.

1) Where are the public access points to state lands?

The public can access the lake shore at 3 different state managed lake access locations:

- 1) by the 219 bridge just off Lake Shore Drive
- 2) the 2 locations along State Park Rd (by the bridge and ¼ mile up the road at the fishing pull off) in Cherry Creek Cove
- 3) along the shoreline within the State Park

2) Are these locations currently marked as public access points?

All of the locations (with the exception of the smaller fishing pull off in Cherry Creek Cove) have a large Maryland Park Service sign posted. The signs don't specifically state "lake access" but they state "Deep Creek Lake Natural Resources Management Area" and discuss "hiking and fishing is permitted on shore."

3) Could these locations be used by the public for lake access at this point?

Yes, those locations are open to the public for use. There is a small fee to enter at the state park.

4) Is identifying these points purely a state (DNR) responsibility or is there any Garrett County responsibility for marking these sites?

It is solely a DNR responsibility to mark these locations. The DCL NRMA will ensure that the other location on State Park Rd (fishing pull off ¼ mile up from the bridge over Cherry Creek) will be marked within the next year.

There are other parcels of land around the lake that are owned by the State of Maryland. Many of these locations are covered by conservation easements and are ecologically sensitive areas. These areas do not have direct public access, so to lawfully access these locations, written permission from the private property owner at the point of entry would be necessary. These state owned parcels in addition to the public access points will be mapped over the next year.

Many thanks to Julie Bortz from DNR for providing us with this information.



POA Donates Aquatic Invasive Species (AIS) Road Signs

By Bob Sutton

In an effort to help further the AIS educational effort at Deep Creek Lake (DCL), the Property Owners Association (POA) of DCL spearheaded an effort to design and install AIS related road signs on roads leading to DCL. The POA consulted with the Maryland Department of Natural Resources (DNR) regarding the location and design of the signs, and coordinated with County officials and other local agencies to identify suitable roadside locations. In all, the POA donated \$3,800 for these signs and signposts while Sky Valley Association donated the

equipment and labor to install the signs on various state and local roads. Signs were also given to DNR to be installed at the launch ramp area of the State Park by DNR employees. These signs are meant to serve as a reminder to people bringing boats/trailers from other bodies of water to be certain to properly CLEAN, DRAIN and DRY vessels prior to launching into Deep Creek Lake in order to prevent introduction of AIS into our lake!

For more information and to watch a 2 minute video on vessel cleaning click here:

<http://dnr2.maryland.gov/publiclands/Pages/western/deep-creeknrma.aspx>



–Charity Spotlight–

Clean Up Your House, Build Tax Deductions

By Chris Nichols

Clean-up on your tax deductions during your spring cleaning this year. As you open your places for the summer, or change over from the winter, you've doubtlessly come across an item or two that you haven't used in a while and have probably shuffled around to keep out of the way. Also around this time of year, you may have gotten an unpleasant surprise from Uncle Sam once you finished your tax returns. Well, two local organizations want to help you with both problems by taking those unused items off your hands and helping you get the maximum tax deduction for your donation.

Both the Deep Creek Lake Lions Club (DCLLC) and Volunteer Fire Department (DCLVFD) are seeking your donations for their fundraising efforts this year. The Lions Club is always accepting donations of boats and other

recreational gear to be auctioned off at their annual sale, this year on May 20th. They are also seeking items like gift baskets, sports memorabilia and art for the auction at the Deep Creek's Talent Show on June 10th. Proceeds from the DCLLC's fundraisers support their Blind Skier and Camper Programs and maintenance of the community park on Bumble Bee Rd.

To donate to the Lions Club, contact Chris at (301) 616-7881 or dimesy23@gmail.com

The Fire Department is also seeking donations of large items like tools, furniture and any other saleable goods (no clothes) for their benefit auction on June 24th. The DCLVFD has served the lake area's fire and rescue needs for over 50 years on an all-volunteer basis. Contact them at 301 746-8270 or 301 746-8691 to donate. Both organizations will work with you to ensure all paperwork is completed properly and that you receive the maximum tax deduction for your donation. You get some more room in your closet or garage, and a local organization gets funds for their programs—everybody cleans up!



Boat Safety For Towing Rafts, Skiers, and Boarders

By Ed King

2016 was a very bad year with several boating accidents on Deep Creek Lake involving the boat propeller and tow rope. It is too late for the victims of those accidents; however, the following practices can hopefully prevent future accidents. I personally boat and water ski with about ten families who own our boats and have been teaching children and friends to ski for well over forty years. We are extremely safety conscious about the dangers of the propeller and also an improperly extended tow rope. Following are several guidelines that we follow religiously.

NOTE: I use the word swimmer for the person in the water, and skier for the person being towed regardless if they are a rafter, skier, boarder or wake surfer.

- First and foremost, everyone needs to take the DNR boating safety course. Regardless of one's age, it's great for the family; so take it along with your younger family members or friends. The course is available on-line and much more thorough than the quickie course given at the rental marinas. When the boating season begins practice what you have learned.

Maryland: www.boat-ed.com/maryland

US Coast Guard: www.uscgboating.org

- The person behind the wheel is responsible for the safety of those in the boat and in the water. Anyone not qualified should not be permitted to operate the boat. The driver has a huge responsibility keeping track of all activity. The passengers can help by remaining quiet during the time the driver is communicating with the swimmer. This is quite often a festive time waiting for the swimmer to get up and going, but it is also a very serious time and passengers should remain quiet until the swimmer is up, before celebrating.
- If the swimmer is near the boat, the engine should be SHUT OFF. This is very important when picking up a dropped-off skier and at the time a skier is entering the water from the boat. This also applies to anyone in the water near the boat. Even if the boat is anchored.
- The swimmer needs to yell "CLEAR" before the engine is started. At least a 15 foot safety distance is recommended. Again, passengers must be quiet so the driver can hear.
- The tow rope should be clear of knots, out of the boat, and fully extended to the swimmer. The driver should gently idle the boat forward to take up any slack in the rope. GENTLY IDLE THE BOAT FORWARD
- If the swimmer is in the water and the boat is bringing the rope back around to pick up the swimmer, the swimmer upon seeing the rope needs to lift the rope over their head and shoulders and let it play out thru their hands until the handle arrives. This prevents a very nasty rope burn or more serious harm to the swimmer should the boat suddenly lunge forward.
- The driver needs to idle the boat very gently until the rope is fully out and in the swimmer's hands. This takes concentration and practice by only touching the boat in gear at idle, possibly several times so as not to jerk the swimmer too soon.

- The next command is from the swimmer. When ready and in a loud voice the swimmer needs to say "HIT IT" or "PULL" or other similar command. (Passengers quiet.)
- All tow boats need to have a mirror so the driver can see the swimmer, to make sure the boat is in line with the rope and that it's all clear ahead to begin. If large waves or wakes are approaching it is best to wait until they pass before pulling. The driver should NEVER stand up and turn around facing the skier and take their eyes off what is ahead.
- Repeat No. 2: The driver is responsible. The driver must know where every passenger and swimmer is, observe that the rope is safely out, that the swimmer is comfortable, and that passengers remain quiet during this process.
- If all goes well the swimmer is now the skier, up-and-running and it's time for jubilation and photos from the passengers. Be safe and have lots of safe fun and happy memories.

Legislative Update

By Gary Shafer

As reported in an eBlast on April 11:

The Maryland General Assembly has passed two bills that are of interest to Garrett County and Deep Creek Lake. The first of these is the State Lakes Protection and Restoration Fund bill. A summary of this bill follows.

"Establishing the State Lakes Protection and Restoration Fund as a special, nonlapsing fund; specifying the purpose of the Fund is to protect and restore State-owned lakes; requiring the Department of Natural Resources to develop a specified budget; requiring any interest earning of the Fund be credited to the Fund; requiring the Department, in coordination with local governments, organizations, and citizens, to develop an annual work plan that prioritizes and details projects that will receive funding from the Fund."

Note that this bill does NOT provide any funding.

The second bill deals with payment to counties where the State owns more than 65,000 acres of land which the counties cannot tax. We have been in touch with Paul Edwards, Chair of the Board of Garrett County Commissioners, to get some details. Following is his reply...

"The bill that passed says that any county that has 65,000 acres of state owned land (basically Garrett and Allegany Counties) will receive payment [for land that presently is not taxed]. It will be based on the assessed value of the land with our tax rate applied (basically they [the land] will be taxed). We [Garrett County] have close to 90,000 acres of state owned land now (not counting Deep Creek Lake), so it will be assessed and "taxed". This will result in close to 1 million [dollars] a year in additional money to the county and will be paid on a quarterly basis. The good thing about this is hopefully the assessments will go up every year or close to every year, so the amount should increase correspondingly."

Payments will be received beginning in FY 2019.

This bill is the result of the efforts of Senator George Edwards and Delegate Wendell Beitzel. Thanks to all who wrote letters of support for either or both of these bills.

Is the Deep Creek Lake Dam Safe?

Continuing with the theme of this edition of the *Dispatch* of sharing information the POA has gathered as a result of inquiries of POA members, the following is a reply from MDE's Hal Van Aller, Chief MDE Dam Safety Division, responding to an inquiry from resident Lindsley Williams about the safety of the dam at DCL.

The POA would like to thank Hal for his comprehensive and thoughtful response to Mr. Williams.

"The Maryland Department of the Environment, Dam Safety Division (the Department), is responding to your inquiry regarding the Deep Creek Lake Dam in Garrett County. Mr. Kevin Null, Garrett County Administrator forwarded the questions that you raised following the recent incident at Oroville Dam in California to the Department for evaluation. Brookfield Power has been a very responsible dam owner and is on elevated alert following the Oroville Dam incident.

The Deep Creek Lake dam is classified as a high hazard structure. Brookfield operates the dam and power plant under a dam safety operation and maintenance permit issued by the Department. The permit calls for annual inspections of the dam and evaluation of the instruments in the dam. Inspections of the penstock are made every 5 to 10 years.

The dam has an approved emergency action plan (EAP). The EAP document is updated every year and functional exercises are conducted about every 5 years. Due to security concerns, EAPs are not published or made available to the public. However, copies are provided to appropriate state and local emergency management agencies.

The dam itself is an earth and rockfill embankment about 85 feet high and 1300 feet long. It was constructed in 1925 by hydraulic earth fill methods, where soil was sluiced into rockfill dumped at the upstream and downstream ends from railroad trestles. A vertical concrete wall was simultaneously constructed in the center of the dam to reduce seepage. Cement grout was injected into the foundation in the mid-1950's and early 1960's to reduce seepage. A sand and gravel berm was installed at the downstream toe of the dam in 1990 to provide additional seepage control. Over the years many instruments have been installed in and around the dam to measure seepage, water pressures, settlement, and earth movement.

The Department believes that the "dam" to which you refer in your inquiry is actually the overflow spillway structure, which is a 720 foot long concrete weir that is capable of safely passing runoff from the Probable Maximum Precipitation (PMP), which is an estimated 34 inches of rain in one day with more than 3 feet of freeboard. Records show that the spillway has overtopped on three occasions (in 1949, 1967, and 1990). There is no evidence that damage to the spillway or main dam occurred during these events.

The earth and rock channel downstream of the overflow spillway will carry high flows safely around the dam that will eventually travel about 1200 feet through a wooded area and outfall to the Youghiogheny River. The spillway flows would join the stream about 1000 feet northwest of Mayhew Inn Road. A very small percentage of the spillway flow would be expected to impact the original Deep Run stream channel near Mayhew Inn Road and the County's treatment plant.

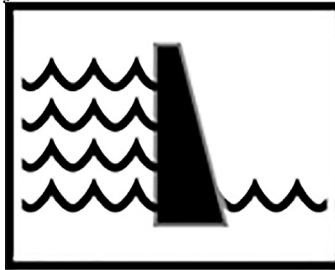
In 2012 the Department requested that Brookfield complete a detailed "potential failure mode analysis" (PFMA) of the dam.

An additional review of the results of the PFMA was completed in 2016 by an independent consulting engineer, which included evaluation of the spillway. The dam was determined to be safe under design loads, including earthquake.

The Department was informed of the new sewer prior to its installation. Brookfield advises that it worked closely with Garrett County to ensure a path that would have minimal impact to the dam or its operation. The sewer is located in the bottom of Deep Creek Lake, just upstream of the dam, and continues along Mayhew Inn Road. If the dam were to fail the resulting flood flows would overtop Mayhew Inn Road and cause some flooding to the existing wastewater plant near Mayhew Inn Road.

Brookfield has advised that it is not aware of any planned nearby fracking operations, but would work with state the local officials to assess any possible impacts to dam safety should any be proposed. In the past the Federal government has established minimum fracking distances to avoid seismic impacts to its dams. Brookfield may similarly declare a safe fracking distance from the dam."

Subsequent to the writing of this message, the State of Maryland has prohibited fracking, hence, the last paragraph is no longer a concern.



Marcellus Shale Update

By John Quilty

As many of you know, the "fracking" process for recovery of natural gas from deep shale formations has now been banned in Maryland. The bill imposing this legislative ban was signed by Governor Hogan shortly before the 10 April close of the 2017 Maryland General Assembly session.

This legislative outcome—a surprise to many given Senate actions in previous years and perceived Governor Hogan support for "fracking"—followed several years of debate and a vigorous campaign this year by various citizen and environmental/health groups. In his St. Patrick's Day announcement that he would support a ban, the Governor expressed the sentiment that risks to the environment and public health would be too great. Maryland now joins only two other states, Vermont and New York, in banning fracking. Note that the "ban debate" is currently active in other states.

The state level ban obviously obviates the need for the prohibition in the Deep Creek Watershed (through zoning) that has been strongly advocated by your POA Board. Further, the County's Marcellus Shale Gas Advisory Group (MSGAG) has been disbanded—with thanks from Commissioner Edwards for the service of its members.

It seems clear that the ban serves the interests and quells the concerns of what we perceive to be the large majority of POA members (e.g., potential impact on property values, industrialization). However, there are of course other interests among other stakeholders within the County and, more specifically, concern about the loss of economic opportunity. Looking forward, it appears that there will be a variety of initiatives to try to strengthen the local economy, including but going beyond tourism (e.g., environmentally-friendly light industry). There are positive signs that local citizen groups, once focused on opposing fracking, are turning their attention to this topic.

Speaking for your Board, we think and hope we have served you well during this long and often divisive debate.

Western Conveyance Project— New Sewer and Water Lines

The following is a Q & A around the Western Conveyance Project which was actively being implemented over the past year. Thank you to Pat Hudnall, Administration and Environmental Chief, Garrett County Department of Public Works Utilities Division, for his thorough answers to our questions.

1. What is the Western Conveyance project and what does it accomplish? Who initiated it? Who is managing it? What key stakeholders were involved in the project? How is it funded?

The Western Conveyance Project is an extension of the Deep Creek Lake Sewer Collection System and the McHenry Water Distribution System, both of which are managed by Garrett County Department of Public Works – Utilities Division (GCDPW-U). GCDPW-U has carried the concept through design, bidding and now into construction as the managing entity, and will assume all responsibility for the water and sewer mains as parts of the respective sewer and water systems, once commissioned.

Stakeholders for the project include:

GCDPW-U

CLSI (Design Engineer)

MDE (construction permit, waterways permit, planning approval)

MDNR (Fisheries and Lake Management)

USDA (loan funding for sewer portion of the project)

Property Owners (public hearing April 6, 2004)

GCDPW-U received USDA funding in the form of low interest loans for the sewer section of the Western Conveyance Project. The water section of the project was bonded by Garrett County. Both debt services will be paid from

monies collected via the Ad Valorem Taxes on the Deep Creek Lake Sewer Collection System and the McHenry Water Distribution System, respectively.

2. What steps have been taken to ensure the safety and protection of the lake and surrounding watershed? What technology was employed and where has that technology been used in other projects/places and would you name them?

The sewer portion of the project was extended across Deep Creek Lake and connected to the Deep Creek Lake Wastewater Treatment Plant (DCLWWTP) and is 16" diameter pressure sewer. The sewer portion of the project will include a new 2,000 gpm pump station located at 1038 Marsh Hill Rd and will convey the wastewater from McHenry to the DCLWWTP.

The water portion is 8" water main that will provide water from the McHenry Water System for potable use along with fire hydrants for fire protection.

The Western Conveyance Project includes the extension of public sewer and water along the western boundary of Deep Creek Lake from the end of Marsh Hill Rd to Stockslager Rd near the Deep Creek Dam.

The technical aspects of Western Conveyance Project, including pipe material, installation methods, redundancy and spill prevention measures were reviewed and approved by MDE through both the construction and/or waterway permitting process. Those features include additional volume in the wet well, diesel powered backup generator, independent diesel powered backup pumping system and telemetry in relation to the new pump station, and are in-



Lake Crossing 1



Lake Crossing 2

tended to reduce the potential of system failures that would result in backups and/or spills.

The installation of the sewer lake crossing was also reviewed and approved as part of the overall project review by MDE. For this installation, we used the float and sink method for marine crossings, as described in Chapter 10 of the Plastics Pipe Institute® Handbook of Polyethylene Pipe (<http://www.performancepipe.com/en-us/Documents/PPI%20Handbook.pdf>). Below are several photos of the lake crossing that illustrate the process of installation. The photos labeled Lake Crossing 1-3 show the sewer line first in place, “floated” on the lake and in position to be “sunk”, then the line being “sunk” with the help of divers and a boat on the lake for positioning, and finally, the entirety of the line “sunk”. The photo labeled Lake Crossing Anchors illustrates the contractor attaching the concrete ballast anchors that will hold the sewer line in place on the lake bottom. In total, there were 188 concrete ballasts installed, each weighing ~500 pounds.

3. What is the timeline for the completion of the project?

The project was broken into 4 different contracts, as follows:

- Contract I: Water and Sewer installation from enlacres Lane to the DCLWWTP.
Awarded – 10/5/2015
Notice to Proceed – 12/15/2015
Substantial Completion – 1/25/2017
Project Closeout – Estimated 5/1/2017
- Contract II: Water and Sewer installation from the end of Marsh Hill Rd to Penelacres Lane.
Awarded – 10/5/2015
Notice to Proceed – 5/2/2016
Substantial Completion – 12/14/2016
Project Closeout – Estimated 5/1/2017
- Contract III: Sewer installation from 1038 Marsh Hill Rd.

(pump station) to the end of Marsh Hill Rd.

Awarded – 10/5/2015

Notice to Proceed – 11/2/2015

Substantial Completion – 5/17/2016

Project Closeout – 7/28/2016

Pump Station: Bids received - 3/9/2017

Award – Estimated 3/24/2017

Notice to Proceed – Estimated 4/1/2017

Project Closeout – Estimated 8/1/2017

4. What visible signs of the project will property owners see now and at completion?

Visible signs of construction activities will be present during and immediately after construction in the form of equipment and men working and/or disturbed or recently reclaimed soil where the water and/or sewer lines were installed. Once complete a meter vault lid will remain visible from the surface for each improved property. Access points to mainline valves and appurtenances will also be visible along the water and sewer main installations. Obviously, the new pump station structure and appurtenances will be visible after construction.

As we move into the spring, the contractors will be resuming restoration work necessary on both Contracts I and II, which will include some paving on Stockslager Rd and Sandy Beach Ln in the Sandy Beach Development. This restoration work should not last more than about one month once started, after which the projects will be closed out. Work on the Pump Station Contract will likely generate some intermittent traffic delays on Marsh Hill Rd during work efforts that are either near the road or involve equipment delivery. Otherwise, that work should not affect traffic.

Once the Pump Station is complete and commissioned, the sewer portion of the Western Conveyance Project will be operational and ready for connections. We plan to have the water portion of the project ready for connections by May 1, 2017. Letters will be sent to property owners once each of these milestones are met with connection information.



Lake Crossing 3



Lake Crossing 4

Maryland Department of Natural Resources

Spring 2017 Update concerning Deep Creek Lake

The following is an update on some of the primary projects undertaken by Maryland Department of Natural Resources during 2016 at Deep Creek Lake:

Lake Water Quality Monitoring

Water quality monitoring was done in the lake mainstem and shallow water coves of the lake from April through October 2016. This represents the 8th year of baseline water quality monitoring conducted by the Department at Deep Creek Lake. The goal of this monitoring effort is two part

- 1) To create baseline data for the lake from which future changes in lake water quality can be detected and
- 2) Characterize the water quality in the lake (both spatially and temporally) for the purpose of maintaining the ecological integrity of the lake.

The 2009-2016 baseline water quality monitoring efforts demonstrated that while there are locally important events, like dry periods, or short term ‘heat waves’, water quality in the deeper portions of the lake are largely representative of the respective regions of the lake however less is known about how those sites compare to the shallower, protected coves of the lake.

Beginning in July 2016, the Department began an effort to move monitoring sites from the more ‘mainstem’ deeper sites to the shallower portions of the lake with the hopes of better understanding how those shallower, nearshore environments compare to the deeper areas of the lake and impact the lake water quality. Four deep water, historic sites were maintained and are planned to continue so that future sampling efforts can be compared to historic sites. An additional 35 sites were sampled from July-October 2016 to gain insight as to how those sites compare to the deeper sites and determine the appropriate water depth for assessing the ‘nearshore environment.’ The ‘nearshore environment’ is the area where underwater plants typically grow, juvenile fish are most common, and the area where you find the most biological productivity and land/water interactions. This is the area where the majority of the lake’s energy and biomass production occurs. Seven additional sites (selected for their importance to submerged aquatic vegetation or SAV and the respective hydrilla treatment) are slated to be added to the 39 nearshore/reference mainstem water quality monitoring sites, for a total of 46 sites in 2017 (see attached map). This will provide the water quality data necessary to make proper management decisions in the future. Pending the results of the 2016-2017 nearshore water quality monitoring effort and analysis, it is anticipated that the number of sites may be pared down to ensure sampling efficiency. The number of parameters sampled at each site will increase to include a more concentrated effort to understand the nutrient and sediment related water quality dynamics at these sites over time.

As funding permits, the Department plans to use monitoring technology similar to what is used in the Chesapeake Bay, that allows for water quality data to be taken at selected sites every 15 minutes via a submerged meter. This will provide insight as to how water quality in the nearshore environment changes with seasonal or episodic human and/or natural events like droughts, increased boat traffic in the summer months, wind/wave driven erosion and resuspension to name a few.



Pictured above: Natural Resource Biologist prepares an automated water quality meter for deployment into Deep Creek Lake

SAV Monitoring

In 2016, the Department completed the seventh year of SAV related monitoring data. This includes two primary efforts: the annual SAV underwater transect survey (done at a total of 8 sites around the lake), and the annual SAV shoreline survey whereby the entire 65 mile shoreline of the lake is surveyed and mapped for SAV species composition, relative density and distribution. Both efforts are aimed at providing baseline SAV data capable of detecting changes in the plant community over time. SAV beds are critical habitat for lake biota such as fish and invertebrates and help provide needed oxygen to the water column, absorb excess nutrients and filter out suspended sediments. Species composition, density and depth of water in which plants inhabit are valuable biological indicators of overall lake health and water quality. Changes over time in species composition, density or depth can signal changes in water quality and help scientists target areas of the lake where additional monitoring would be beneficial. While the 2016 SAV report won't be available until late spring 2017, scientists observed a resurgence of *Elodea* (common waterweed) which was once more common throughout the lake but had diminished in abundance and density in recent years. The resurgence of *Elodea* is considered a positive shift in the SAV community for the lake as it is a plant that generally indicates good water quality and provides for a healthy and diverse SAV community. Other increases were seen in *Vallisneria americana* (wild celery) which is great habitat for both juvenile and larger fish as well as provides a good food source for waterfowl.



Above left: native plant Wild Celery (*Vallisneria americana*);
Above right: native plant Common waterweed (*Elodea* spp.)

Hydrilla Treatment and Monitoring

2016 was the third consecutive year of Hydrilla treatment using the herbicide Flouridone (trade name SONAR). 13 zones around the lake were treated 4 separate times throughout the summer months (June-September) with the herbicide. Three of those 13 sites were found to have Hydrilla growing however after two rounds of treatment, no Hydrilla plants were found remaining after the mid-July monitoring. Due to the biology of the plant and its ability to produce a reproductive structure called a “tuber” that can remain viable in the sediments for several years, it is necessary to continue to treat an infected area with the herbicide throughout the full growing season of the plant (usually June-September) and often for multiple years even after Hydrilla is thought to be eradicated at the site. During the first year of treatment (2014), there were 8 sites treated, in 2015 an additional 4 sites were found the previous year and added to the treatment, for a total of 12 sites treated in 2015. One additional small bed of Hydrilla was discovered in September 2015 and added to the treatment plan for 2016 for a total of 13 sites treated. Of these 13 sites treated, only 3 sites (see attached map) were still found to have Hydrilla growing from June-July before ultimately dying off from the treatment in mid-July 2016. Results of the 2016 treatment and monitoring are very encouraging that if no new beds of Hydrilla are found in the lake, the current population will continue to be weakened and hopefully eventually eradicated from the lake. Hydrilla has been called the “world’s worst weed” for its ability to rapidly grow and spread throughout freshwater environments, out-competing native plants for space and resources and making the water column unusable for recreational use and reduce habitat quality. Hydrilla is one of many Aquatic Invasive Species (AIS) that threatens the ecology of the lake and highlights the need for boat owners to exercise good stewardship practices and properly clean and disinfect their boats, trailers, and any gear that comes in contact with infected waters.



Above: Hydrilla verticillata showing effects of herbicide treatment

Other Efforts

Tributary Monitoring: Beginning in October 2015 and continuing largely through December 2016, the Department began a tributary monitoring program whereby 7 of the major tributaries or streams entering the lake were monitored under base and storm flow events in an effort to determine the amount of and quality of water coming from each tributary. This was a yearlong effort funded in part through the Waterways Improvement Funds with the goal of determining which tributaries and resultant watershed were contributing the most amount of water, sediments and nutrients to the lake. Funding only allowed for one year of monitoring but that will at a minimum provide a benchmark for which future monitoring efforts can be compared. Results are anticipated to be available in 2017.

Sediment Erosion/Deposition Monitoring: Beginning in October 2015, 10 sites throughout the lake were identified to be long-term “lake level” monitoring sites. The sites were selected to have varying degrees of erosion from low, medium, to high. The goal of this effort is to determine how the elevation of these sites change over time. This will help managers better understand how much erosion and/or sedimentation is occurring at the monitored sites and thus in the different regions of the lake. Level surveyors are used to determine the set elevation of fixed sites parallel to the shore and then perpendicular to the shoreline. It is anticipated this monitoring will continue for several years at possibly 3-5 year intervals to assess changes over time and thereby highlight areas of the lake that need additional monitoring or management efforts.



Above: Natural Resource Biologist measuring water velocity and depth along a cross-section of a lake tributary as part of the tributary monitoring effort

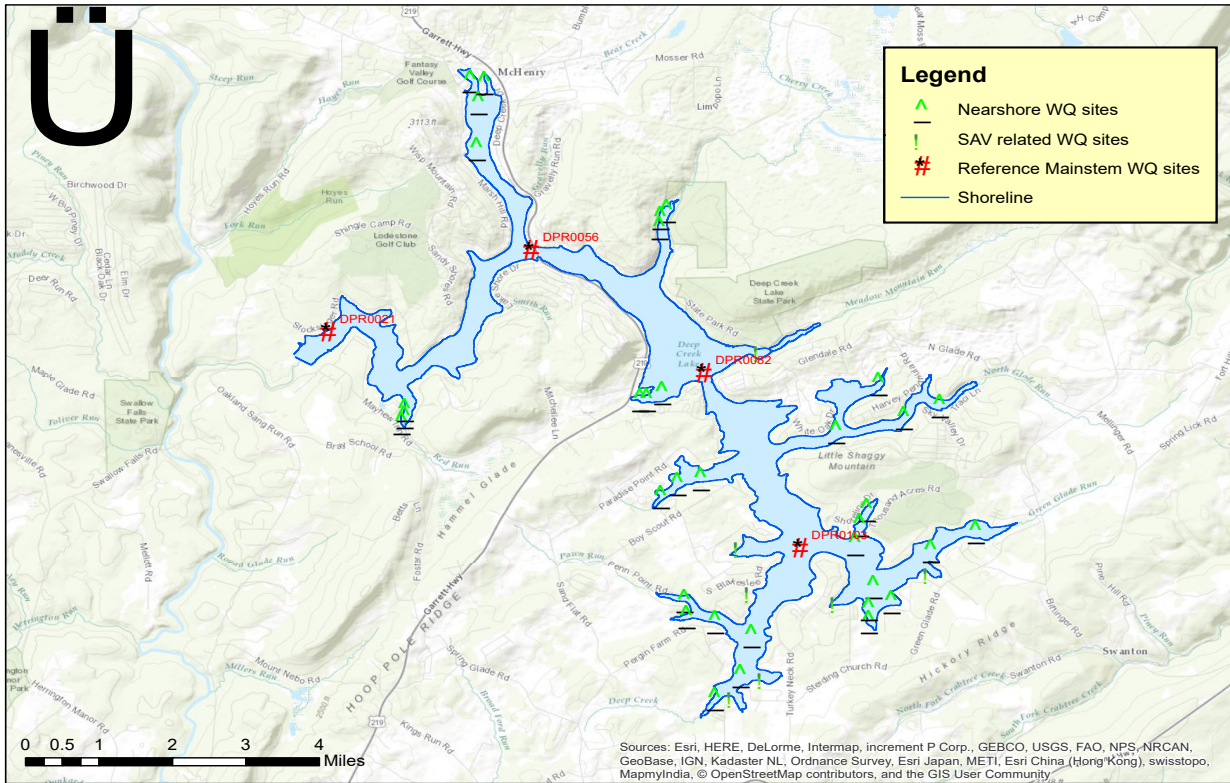
Mark your calendars: Upcoming DCL Public Meetings:

Policy Review Board (PRB) Meetings - July 17th , October 30th 2017

Contact Information: For more information concerning the Department of Natural Resources related monitoring activities contact Julie Bortz, the Maryland Department of Natural Resources representative to the Deep Creek Lake Watershed Management Plan Administrative Council at 301-387-3552 or via email at Julie.bortz@maryland.gov.

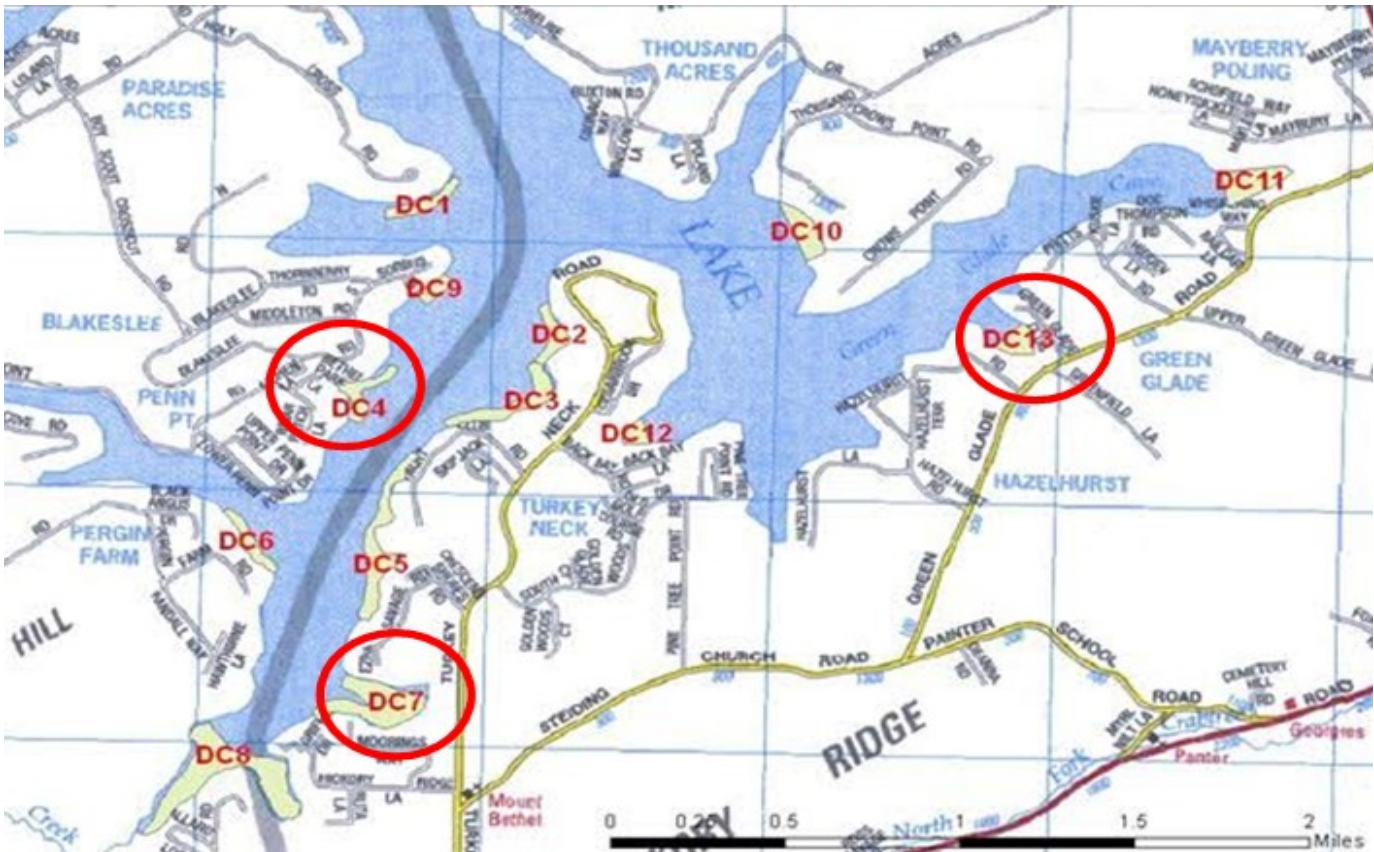
***You may find additional information about the monitoring programs mentioned here, along with background information and study findings on the soon to be updated webpage at <http://dnr.maryland.gov/ccs/Pages/DCL-Watershed-Management-Plan.aspx> ***

2017 Nearshore WQ Monitoring Locations Deep Creek Lake, Maryland



Hydrilla Treatment Locations:

Of the 13 Hydrilla treatment locations in 2016, only 3 sites circled in RED were found to still



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