



July is Lake Appreciation Month!

Deep Creek Lake  
Appreciation and  
Restoration Gathering

7/1/17

# Maryland Code: Principles for DCL Management

- “the protection of the lake as a natural resource,
- the preservation of its ecological balance,
- and furtherance of its highest use as a recreational resource”

In addition, protection of lake as economic engine for region.





Figure 1.2 – Coves with Potential Sediment Management

# Sediment impacts attainment

- Impairs the natural resource, its sustainability and ultimately its existence.
- Creates ecological imbalance.
- Diminishes recreational resource – boating, swimming and fishing.
- Threatens role of lake as economic engine.



# Sediment removal

- DCL has never been dredged.
- Dredging is an internationally recognized best management practice for lakes reservoirs and ponds.
- Each day of delay, more sediment and pollutants accumulate and cost of dredging increases.

# Lake Needwood Dredging Project



THE MARYLAND-NATIONAL CAPITAL  
PARK AND PLANNING  
COMMISSION

Orange informational card on a stand.





Algal blooms are a result of sediment and pollutant deposition-- Green Glade





# *Green Glade, late fall*



# State Lakes Protection and Restoration Fund

- Initiated by Senator Edwards and Delegate Beitzel, assisted by Friends of DCL lobbyist, Eric Gally.
- Supporters: Commissioners, Chamber, Board of Realtors, DCL POA, FoDCL, A CLEAR, Sierra Club, League of Conservation Voters and The Nature Conservancy as well as dozens of DCL HOA, and many property owners.

# Panel before Senate





# Fueled by flowers, chocolate and love of DCL





Thanks to General Assembly  
and Governor Hogan !!

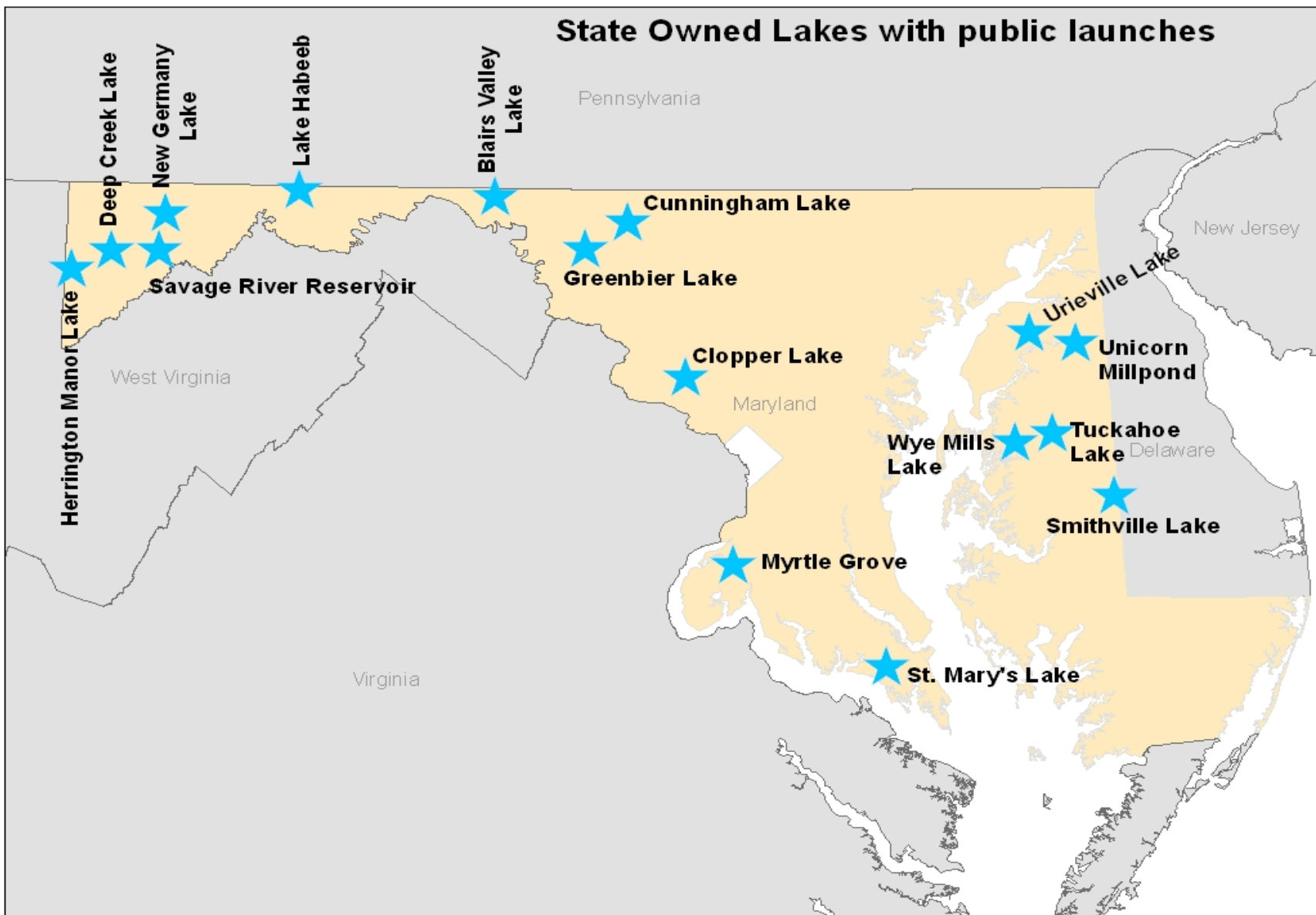


# State Lakes Protection and Restoration Fund, 10/01/17

- Purpose of Fund: “to protect and restore state-owned lakes.”
- Administration: DNR.
  - The Department will develop, in coordination with local governments, organizations and citizens a certain annual work plan.
  - The Department shall develop a working budget for Funds received.
- Fiscal mechanism, no funding allocated.



# State Owned Lakes with public launches



- 1) There is no allocation of funds
- 2) Deep Creek Lake recognized as top priority. Dredging recognized as top priority for DCL.
- 3) DCL only lake with both sediment study and plan being developed.
- 4) Deep Creek Lake is only state lake abutted by property owners.

# Garrett County - MES contract

To provide dredging evaluation services.

An alternative analysis to find most cost effective, economically and publically acceptable location.

Two components of contract:

- 1) Dredging feasibility. Project Team selects preferred alternative
- 2) Grant application for pilot project



# Feasibility Study Criteria

- ❑ Waterway Improvement Fund Grant criteria;
- ❑ Other – environmental, economic, lake levels, recreation;
- ❑ Other Community support, placement, cove depths, dredging engineering logistics, permitting and mitigation.

# WIF Grant Application

due 8/15/17

## Process:

- Review in Fall and DNR Priority List
- Vote in General Assembly 2018
- Funds released 10/18.
- Dredging winter 2018/19 or 2019/20.

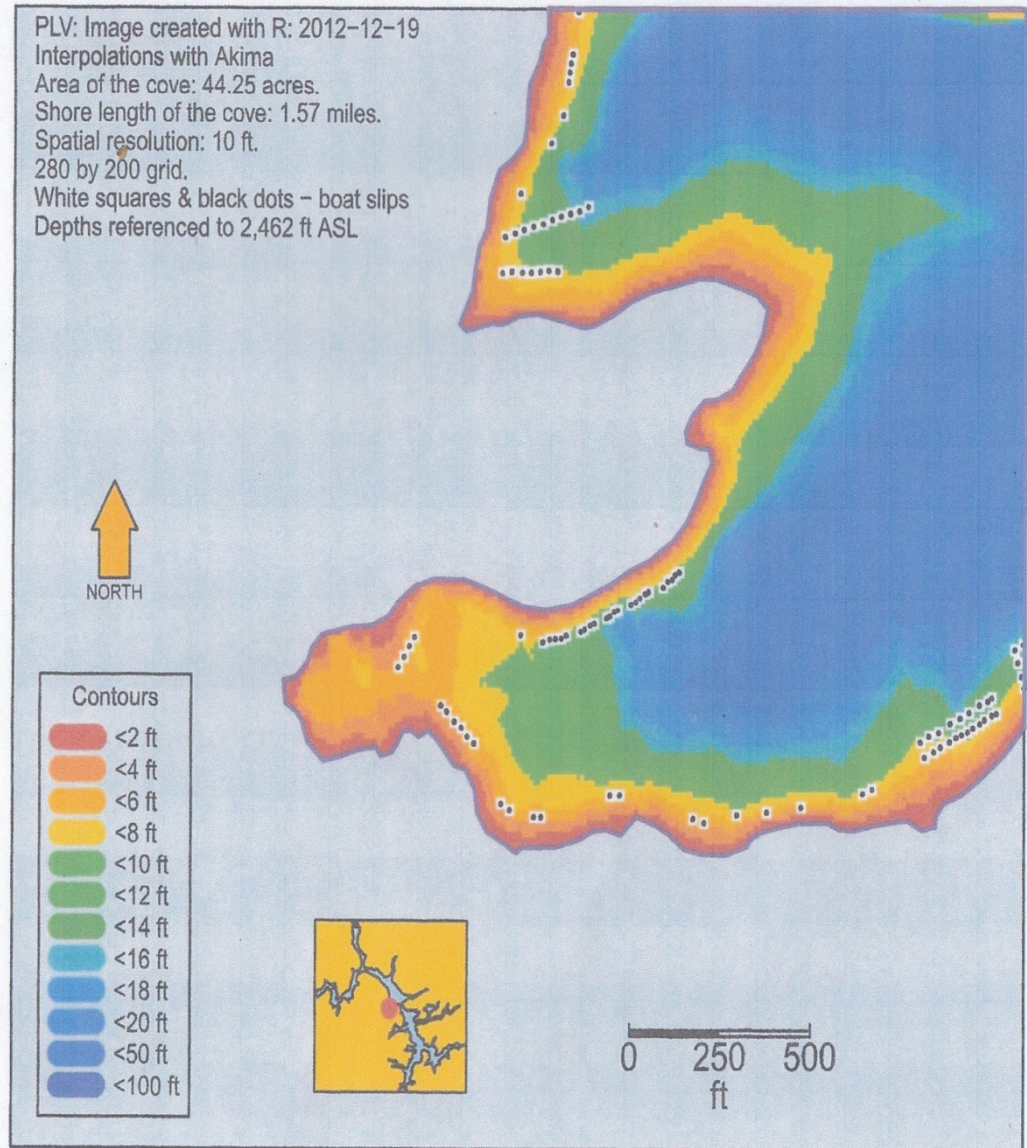
# MES Selection

“large amount of boating that occurs in the cove (number of docks and boating slips) and engineering logistics.”

Arrowhead was rated 10<sup>th</sup> by DNR study.

Atypical DCL cove - commercial and rental properties, no Wake Zone, tributary WQ good, hydraulic forces push main stem erosion into cove,

## A Bathymetric Map of Arrowhead





# Initial thoughts from Webinar

- WIF criteria bias selection-- most like Chesapeake Bay; WIF grant manual needs to be revised to reflect new area-- dredging of state lakes.
- Boating activity measurement is not just number of docks and boat slips. No data available for 10 coves.
- Analysis of costs-benefits lacking. Acknowledge \$1 -\$2 million is estimate.



- Bathymetric mapping required for all 10 cove, per contract, but only planned for Arrowhead.
- “Community support” (criteria) and involvement absent.
- Work based on “literature” review, no new analysis or cove-by-cove assessment of sources of sediment, best methods or retention mechanisms.

# Maryland Department of Natural Resources

## Water Quality Monitoring Efforts at Deep Creek Lake 2017

Presented By

**Julie Bortz**

**Natural Resource Biologist-MDNR**

**[Julie.bortz@maryland.gov](mailto:Julie.bortz@maryland.gov)**

Phone: 301-387-4112

# Water Quality Monitoring Goals and Objectives



## 1. Collect **BASELINE DATA** for the purposes of detecting changes in the functioning or stability of Deep Creek Lake for management purposes

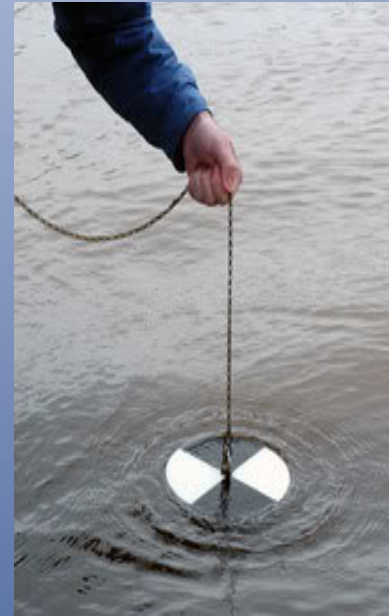
- ✓ Baseline (In lake) Water Quality Data since 2009 (largely mainstem and deeper water → shallow coves and nearshore environment)
- ✓ Define the “nearshore environment” and characterize those areas; better understand how the nearshore environment compares to the deeper water mainstem

Additions in 2017 include the use of Continuous Monitoring meters and adding additional SAV sampling directly related to water quality monitoring sites

## 2. Determine how water quality in the tributaries affects water quality in the lake with regard to sediments, nutrients, and water volume

- ✓ Completed 1 year tributary study (October 2015-December 2016)
- ✓ Continue to monitor Cherry Creek, North Glade and Arrowhead tributaries, collecting water velocity, discharge and WQ information

Additions in 2016/17 include adding one additional USGS full gage station at North Glade Run and a stage only USGS gage at Arrowhead Run



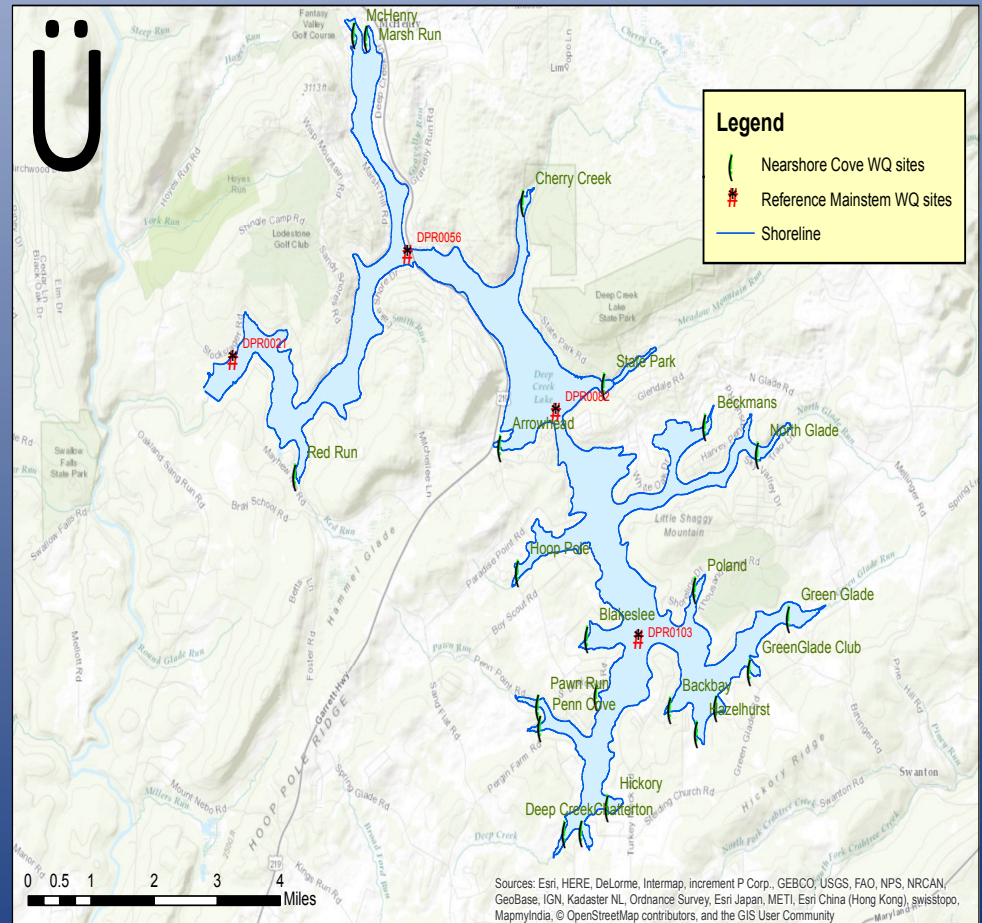


# Lake Water Quality Monitoring MARYLAND 2017



- **50+ sites** we will be sampling for various water quality parameters (Year round, weather permitting)
- Includes **22 coves** of Deep Creek Lake
  - Rotating **Continuous Monitoring meters** at each of 10 coves for 2 weeks during the summer months; tributaries in spring/fall
  - Continuously measures water quality parameters every 15 minutes
  - Provides temporally intensive data during extreme natural or anthropogenic events

2017 Nearshore WQ Monitoring Locations  
Deep Creek Lake, Maryland






Parameters measured: Dissolved oxygen, temperature, conductivity, pH, salinity, turbidity, chlorophyll, depth

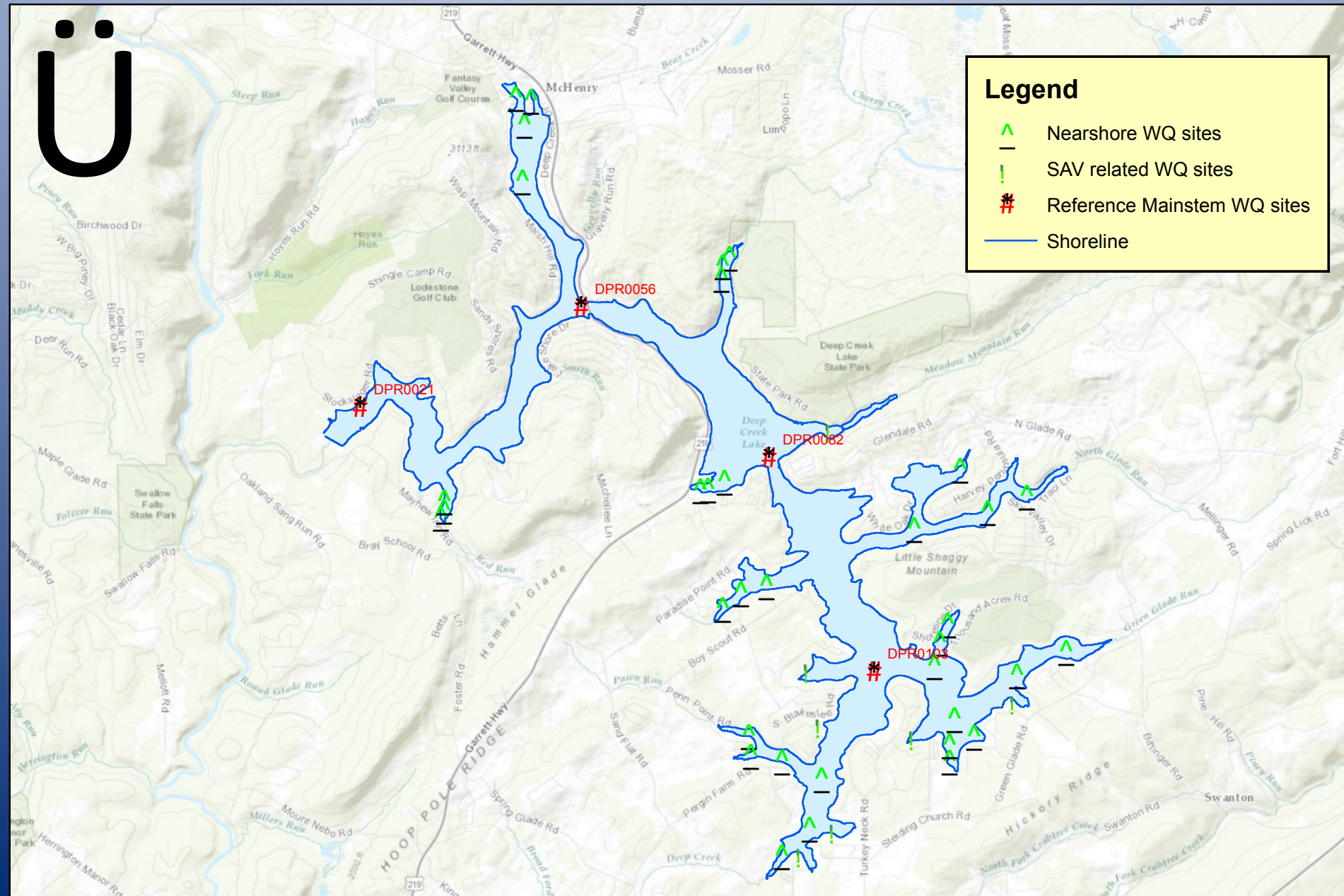


# 2017 Nearshore WQ Monitoring Locations Deep Creek Lake, Maryland



**Legend**

-  Nearshore WQ sites
-  SAV related WQ sites
-  Reference Mainstem WQ sites
-  Shoreline



0 0.5 1 2 3 4



# 2017 Tributary/Stream Water Quality Monitoring

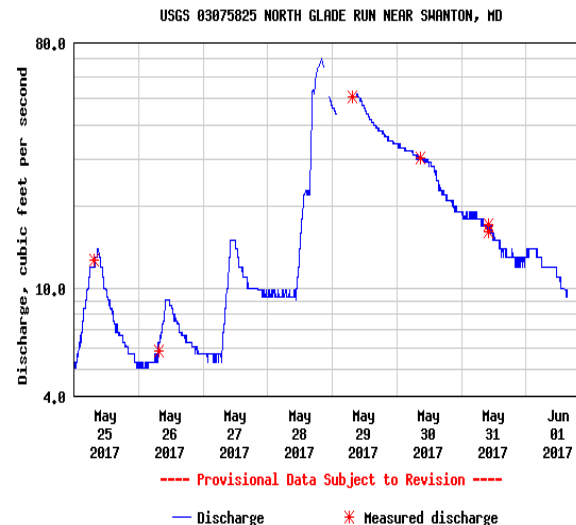


- **3 primary tributaries** feeding into the lake have US Geological Survey (USGS) stations that monitor water level and flow
  - Data available REAL TIME online
    - Cherry Creek <https://waterdata.usgs.gov/usa/nwis/uv?03075905>
    - North Glade [https://waterdata.usgs.gov/nwis/uv?site\\_no=03075825](https://waterdata.usgs.gov/nwis/uv?site_no=03075825)
    - Arrowhead [https://waterdata.usgs.gov/nwis/uv?site\\_no=03075850](https://waterdata.usgs.gov/nwis/uv?site_no=03075850)
  - Whole water samples and water quality measurements during base and storm flow events



## Discharge, cubic feet per second

Most recent instantaneous value: 9.8 06-01-2017 15:15 EST







# Deep Creek Lake Primary Tributaries

Google Earth



# Questions?

**Julie Bortz**

**[Julie.bortz@maryland.gov](mailto:Julie.bortz@maryland.gov)**

**Phone 301-387-4112**



# Our Challenge: Funding for the State Fund

- Need state funding to dredge remaining 9 coves.
- Decision about WIF grant application open to political persuasion.
- Options: put into the Governor's Capital Budget or secure in Capital Bill in General Assembly. More WIF monies unlikely option.



# To get funding

- Grassroots effort by lake property owners and businesses. Focus: Governor Hogan, other policy makers
- Coordinated effort by lake entities which supported the Fund bill.
- Hard work and donations to underwrite effort.

# *The End*

Thanks for coming. If you have questions please email us at [contact@friendsofdcl.org](mailto:contact@friendsofdcl.org)

We will be keeping you informed and don't forget to call the Governor today!