Support for SB 396

The Board of Friends of Deep Creek Lake, a watershed organization based in Garrett County, is writing to support the State Lakes Protection and Restoration Fund, introduced by Senator Edwards and crossed filed in the House by Delegate Beitzel.

**Why is this Fund necessary? In order to protection and restore Maryland-owned lakes from impacts of lake aging, a new funding source is necessary to support best lake- management practices to address the challenges which threaten these valuable natural and recreational resources**

**Statement of Problem: Lakes age and must be restored or they will be lost.**  All lakes in the state of Maryland are man-made impoundments, formed by dams which create reservoirs, lakes and ponds. The cleansing natural flushing action of free flowing streams and tidal waters found in the Bay is not present in lakes. The dams impede natural flow, trapping sediment and attached nutrients and pollutants which are the catalysts for lake aging process leading to decline of water quality and conditions, loss of recreational uses, loss of benefits to local economies and eventually loss of the water body.

This process is called “lake aging” and the catalyst is sediment and pollutant accumulation. As this deposition builds, turbidity increases blocking sunlight to aquatic plants and animals and release of phosphorous impairs water quality. Water temperatures in deposition areas create ideal environment for growth of submerged aquatic species and invasive species and algal blooms. These in turn produce anoxic conditions harming fisheries and aquatic habitat.

Without intervention centered on removal of sediment and pollutants and installation of mitigation mechanisms, reservoirs, lakes and ponds will eventually return to wetlands and tributaries.

**State of Maryland owned lakes shows manifestation of aging process**. The fact that lakes age should not be a surprise to the responsible state agencies in Maryland. There is a science of lake management, limnology, and vast experience around the world in lake management, protection and restoration upon which we can draw to sustain these waterbodies.

**State of Deep Creek Lake- aging manifestation**. We know most about lake aging at 93 year old Deep Creek Lake. As the state’s largest lake, there is more data and research available on this waterbody than the others in Maryland.

Maryland Department of Natural Resources contracted with the lake owner, PennElec to manage this waterbody in 1980. DNR continued as lead agency when the State of Maryland purchased the lake in 2000. At that time manifestation of lake aging were becoming apparent, as seen in the 2001 DCL Land Use, Recreation, Management Plan which acknowledges impairs due to both sediment accumulation as well as infestation of submerged aquatic vegetation which negatively impacted boating uses. We believe DNR was also aware of the presence of at least one aquatic invasive species, Eurasian Watermilfoil, by that time.

In 2010, DNR Secretary Griffin agreed to undertake a sediment study of the lake. By 2012, Maryland Geological Survey identified 10 coves which needed sediment management. ( See Map ) Invasive Species, Eurasian Watermilfoil and then Hydrilla have been identified into the lake in the past 5 years, and we are facing a real threat of Zebra Mussel introduction. All 10 sediment impaired coves have at least one aquatic invasive species. MDE has found lake waters impaired by mercury, conducted a TMDL on eutrophication and phosphorous and has made the following listings: 2012 for suspended sediment, 2014 for water temperatures in the largest tributary Cherry Creek and 2016 for urban runoff and storm water and chlorides. **(http://mde.maryland.gov/programs/Water/TMDL/Integrated303dReports/Pages/2016IR.aspx)**

There is no water quality or fisheries data of the 10 sediment impaired coves. UMD/ Center for Environmental Sciences in their integration and assessment of all DCL data in 2010 could not conduct a lake Report Card due to inadequate data, especially in the near shore zone, coves and transition zone between tributaries and lake coves. (<http://ian.umces.edu/press/reports/publication/304/deep_creek_lake_baseline_assessment_report_2011-03-18/>

 Other State Lakes. In 2015, in response to passage of the State Lakes Invasive Species Act, DNR compiled a list of state-owned lakes. ( See Map). The department is now in the process of surveying conditions of these lakes. From Maryland Department of Environment we find that of the 16 lakes, 9 have had TMDL studies, in response to identification of concerns about compliance with the federal Clean Water Act. If the 4 small lakes managed by DNR Fisheries are moved from the list, 9 of 12 or 75% of the larger lakes show impairment. ( See Table One.)

This Table does not show the MDE listings—areas which have been identified to be problems but for which no action has been taken nor project in the next 2 years. At DCL the listings are: in 2012 suspended sediment; in 2014 elevated water temperatures in Cherry Creek, the largest tributary feeding the lake; and in 2016 for urban runoff/ storm water and concern for chlorides in the water body.

Information on other lakes is not available to us.

In the 2016 Integrate Report released by MDE, the agency has made a commitment to revise Lake TMDLs recognizing that there is now “better science and improved methodologies available”. (<http://mde.maryland.gov/programs/Water/TMDL/Integrated303dReports/Documents/Integrated_Report_Section_PDFs/IR_2016/prioritiz_IR_Pubmeet_hdt.pdf>, [age 16)

**Funding of protection and restoration of State owned lakes. There is no state fund which is dedicated to providing public funds for these lakes.**

 **Deep Creek Lake the exception. This is the only lake with abutting property owners. In this case, it can be said the public lake is operated primarily with fees from private individuals. DCL Fund ( ( K00308) The following figures are used to provide sense of financial flow; exact figures are not available.**

**Land use permits annual revenue $875,000**

**Minus PILOT to County General Fund $218,750**

**Minus “overhead” to DNR at 13% $113,750**

**NET for lake management $444,500**

**Over the 16 years of State ownership, private property owners have paid** $14,100,000,  **the county has received** 3,520,000 for their General Fund **and $7,112,000 been available for all aspects of lake management.**

**The State benefits on the purchase of the lake. The total purchase price was $17.6 million. However, the state turned around and offered a portion of the land they purchased to the abutting private property owners. Estimate the state received about $5.5 million in this sale, reducing cost of lake to $ 12.1 million. The lands purchased went on to the County tax role, providing an increase in tax revenues.**

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| We know most about lake aging at 93 year old Deep Creek Lake. As the state’s largest lake, there is more data and research available on this waterbody than the others in Maryland. Maryland Department of Natural Resources contracted with the lake owner, PennElec to manage this waterbody in 1980. DNR continued as lead agency when the State of Maryland purchased the lake in 2000. At that time manifestation of lake aging were becoming apparent, as seen in the 2001 DCL Land Use, Recreation, Management Plan which acknowledges impairs due to both sediment accumulation as well as infestation of submerged aquatic vegetation which negatively impacted boating uses. We believe DNR was also aware of the presence of at least one aquatic invasive species, Eurasian Watermilfoil, by that time. In 2010, DNR Secretary Griffin agreed to undertake a sediment study of the lake and by 2012, Maryland Geological Survey identified 10 coves which needed sediment management. Invasive Species, Eurasian Watermilfoil and then Hydrilla have been identified into the lake in the past 5 years, and we are facing a real threat of Zebra Mussel introduction. All 10 sediment impaired coves have at least one aquatic invasive species. MDE has found lake waters impaired by mercury, conducted a TMDL on eutrophication and phosphorous and has made the following listings: 2012 for suspended sediment, 2014 for water temperatures in the largest tributary Cherry Creek and 2016 for urban runoff and storm water and chlorides.There is no water quality or fisheries data of the 10 sediment impaired coves. UMD/ Center for Environmental Sciences in their integration and assessment of all DCL data in 2010 could not conduct a lake Report Card due to inadequate data, especially in the near shore zone, coves and transition zone between tributaries and lake coves.  |  |
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Timing of need for intervention for lake protection and restoration varies. In Maryland have been listed as impared by MDE -- Clopper Lake was years old when MDE listed it as impaired waterway; Urieville was listed . Lake Needwood in Montgomery County underwent dredging at years of age; Lakes at Columbia have been dredged and Lake Liganore in final stages of dredging plan.

Of the 16 lakes, if remove the Fisheries, 9 out of 12 have TMDL—and it is uncertain what actions have taken place to address.

DCL, largest state owned lake. DCL which is 92 years old this year has only recently manifest aging. In 2000 when the State of Maryland purchased DCL, the DCL Land Use, Recreation, Management Plan acknowledged impairs due to both sediment accumulation as well as infestation of submerged aquatic vegetation which negatively impacted boating uses. By 2011, Maryland Geological Survey identified 10 coves which needed sediment management. Invasive Species, Eurasiafon Watermilfoil and then Hydrilla have been identified into the lake in the past 5 years, with a threat of Zebra Mussel introduction. We have no water quality data of impairment because neither DNR nor MDE sample in the near zone and coves and transition zone between tributaries and coves, as recommended by UMD/ Center for Environmental Sciences in their integration and assessment of all DCL data in 2010.

Past President of the North American Lake Management Society participated in the Deep Creek Lake 90th birthday forum held by Friends of DCL in 2015. At that forum he observed the urgent need for action to create a management entity, development of in-lake management plan and allocation of sustaining funding for lake programs and needed restoration projects. ( Attached.)

Limnology is the science of lake aging and management. The core of this work is focus on the lake, not the And according to North American Lake Management Society and its assessment of Deep Creek Lake, there is urgent need for creation of an in-lake management entity, a plan and sustaining funding for lake monitoring, programs and restoration projects. Effective and cost-saving best management practices must focus on the problems in the lake, not a watershed approach as is adopted for tributary and Bay restoration efforts. ( See the written testimony from Dick Osgood, Past President, NALMS.) lake management practices and research the focus must be on the lake, not the whole watershed, as in streams and bay.