

Deep Creek Lake

Watershed Management Plan

Water Quality Subcommittee – Meeting Minutes

Date: Wednesday, 3/20/2014
Time: 9:00 – 11:30 PM
Location: University of Maryland Extension Service Office
1916 Maryland Highway, Suite A
Mountain Lake Park, MD 21550

Members in Attendance:

Steve Green
John Forman
Willie Lantz
Steve Wilson
Ken Fisher
Pete Versteegen
Sherm Garrison
Christine Conn
Bruce Michael
Tony Prochaska
Erin McLaughlin

Agenda Items and Decisions:

Minutes from 2/20 meeting were approved
SAV goal and objectives/strategies were approved with provision to reevaluate later

Tony Prochaska, DNR, joined the meeting for a question and answer session following the Streams presentation at the last Steering Committee meeting. Below is an overview of the topics discussed:

Q: How can streams be classified as poor to fair, while lake quality is good? How can the water quality rating of these two types water bodies be so different?

A: Streams have certain stressors that the lake does not have. Acid Mine Drainage and factors specific to habitat are driving the low IBI scores. These streams tend to have poor epifaunal habitat, poor instream habitat and high embeddedness (many fine sediments in the stream beds due to low gradient streams – fine sediments are not being flushed out). Lake concerns are related to sediments and nutrients. Lake stressors are different from stream stressors and this is affecting water quality ratings.

Q: Many of the stream monitoring locations are upstream. Can these locations capture development impacts, especially since most of the development seems to be along the shoreline?

A: Majority of development is along the shoreline, but there is some development up in the watershed that could affect stream quality and would be reflected in the monitoring data.

Q: Stream report provides many associations, rather than a direct cause and effect. Is there trend data for AMD? What new ag practices are available? Gypsy moth infestation and its effect on forest health could also be a factor impacting streams.

A: Data on AMD is available from 2000 to the present. Core trend monitoring measures Cherry Creek monthly, as does MDE Bureau of Mines. In general, conditions have improved at the Cherry Creek cove monitoring location. Upstream, there are still wide fluctuations in pH. Only pH tolerant organisms can survive these very low pH values. Every low pH event wipes out the fauna. These are mortality events which drive the low IBIs.

Q: The 2004 – 2012 MBSS streamwaders data is “Not Random”. What does that mean?

A: MBSS is a randomized approach that allows extrapolation across a given watershed and the state. Streamwaders is a volunteer driven monitoring program. Volunteers choose the sites. These sites are not randomly selected and, thus, are not statistically suitable to extrapolation. Streamwaders only collect benthic samples in the Spring. MBSS also measures fish which is a more technically complex sampling protocol which requires in-field identification.

Q: What explains the distribution of the MBSS sampling locations? The locations seemed to be skewed. Do you have recommendations on areas that need to be sampled?

A: Only 3 streams that are being sampled. This is a result of randomized sampling. Higher intensity of sampling would require more staffing which the state does not have. The sampling protocol is structured to provide statistical validity at the watershed scale given available resources. Each point in the Streamwaders data set represents one sampling event which describes why the points are clustered. Streamwaders data are considered to provide a fairly accurate assessment of the watershed streams based on how these data compare to the countywide data sets.

Q: For the Marcellus Shale monitoring network, which WQ parameters are monitored?

A: Temperature, Total Dissolved Solids (TDS), conductivity. Conductivity is used to detect a contamination event.

Q: What other actions can we take to improve stream health?

A: Stream corridor assessments can identify problem areas. Synoptic surveys, which are done in the spring before the growing season, can be used to identify areas of high nutrient concentration. More monitoring approaches are needed to identify specific problem areas, to identify the restoration potential. Once projects are identified, funding can be secured to address the problems.

Q: Stream Corridor Assessments seems to be very time intensive. Where do we start on this? Who does it? How should they be prioritized? How are landowners contacted? DCL needs to collect more data using standardized methods and protocols. Also need to identify what data is needed, such as good precipitation data. Consider installing meteorological stations.

A: Agreed that it is important to collect additional information. Begin with more monitoring and assessment to identify where the problem areas are. Need the data upfront to make the management decisions.

Q: A synoptic survey is a snapshot of nutrient concentrations. How would this be done for the DCL watershed?

A: There are 67 tributaries flowing into DCL. The number that is targeted for the synoptic survey is driven by funding availability. Other factors should also be considered for selection, such as the flow contributions to the lake. The survey should be conducted before the growing season so that data aren't affected by biological uptake. The synoptic survey will provide a snapshot of nutrient and TDS concentrations in the streams. The amount of nutrients/sediments delivered to the lake (Loads) require flow data. We could potentially use flow estimates provided by the StreamStat data resource.

Q: There are some high sedimentation rates in some of the streams. Some of these streams are draining agricultural land. We should evaluate the sediment study and consider that coves are likely areas of high nutrient input as well.

A: Sediments and phosphorus (P) inputs are associated since P is typically attached to sediments. An additional source of nitrogen (N) contribution is through ground water and springs. These discharges occur as a band of springs along the lake shoreline. In the winter this is visually apparent as these areas don't freeze as quickly. This is often seen at the toe of the slope all around the shoreline.

Q: Should ground water inputs should be evaluated?

Q: At the steering committee meeting, there was a statement that riparian buffers are beneficial except when they are breached. How effective are riparian buffers for water quality?

A: The MBSS program evaluates buffer breaks which reduce the ability of the buffer to be effective. The stream corridor assessment would also identify those areas. An intact buffer is extremely important for intercepting stormwater, removing nutrients, sediments, and other pollutants. The buffer shades and cools streams and provides organic matter for stream productivity which is important for aquatic biodiversity. The recommended buffer width depends on your goals: water quality, biodiversity.

Q: Is temperature monitoring data available?

A: only very limited data are available and it is not comprehensive. Temperature monitoring requires continuous monitoring through data loggers.

Q: It appears that stream biodiversity is being evaluated from the middle of the food chain. Are there other methods or approaches to assess biological communities at the primary production level – such as plants and algae? Is there any work being done at the plant/invertebrate/microbiological level?

A: The standard stream monitoring protocols include just benthic macro invertebrate and fish communities. Some benthic macro invertebrates do sit low on the food chain. SAV and algae are not generally monitored in streams. The benthic communities include those that feed off of primary producers and would then reflect if a healthy primary production community were present. There are some instances that these groups are monitored. Rock snot, a dinoflagellate is monitored since it smothers the bottom of streams, but this would not be a good measure of WQ because it can be found frequently in high quality waters. The concerns with rock snot is transport. MDE did evaluate Chlorophyll A, which is a measure of nutrient enrichment and found that the levels were very low. Golden algae monitored through Marcellus shale monitoring program since it is a good indicator of contamination that might occur through contamination events associated with hydrofracking.

Review of proposed Water Quality Goal

Objective 1 (monitoring): put on hold until 4/17 discussion that will include presentation of Stream Corridor Assessment.

Objective 2 (water quality workgroup): Revised, with the following comments/concerns expressed

- The water quality workgroup is perceived as not working well with the PRB. This should be an element of the governance approach.
- Yearly Water Quality meetings should coincide with a yearly status meeting of the Watershed Management Plan. We recommend a Deep Creek Lake day which would be a day-long conference and could potentially substitute for the State of the Lake presentation. This could be an opportunity to engage newcomers, residents, visitors, etc.
- Narrative elements: Indicate that there are questions about cove and near shore water quality. This should go hand in hand with areas that seem to have problems. Monitoring could provide more information and could be a short-term monitoring objective. This needs to be a topic for workgroup.

Objective 3 (Forestry): Revised, with the following comments/concerns expressed:

- Encourage the integration of biodiversity and water quality protection objectives with forest stewardship management plans
- Recognize the disincentive to plant trees. MDE regulates hardened shoreline protection which would prevent the trees from falling into the lake. Shoreline stabilization projects also requires a \$1,500 permit fee.
- Should the state provide a tax incentive for shoreline tree planting? This can be wrapped into an objective on shoreline erosion.

- There is a prevailing thought that vegetated shoreline is hard to maintain because of the fluctuating lake levels. This is specific to shoreline wetland vegetation.

Next meetings

The Water Quality subcommittee needs to have goals ready by May 2.

Members agreed to have an additional meeting on 4/9 to focus on the sedimentation and erosion goal.

The regularly scheduled 4/17 meeting will be used to wrap up the water quality goal.