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Storm water, Runoff and Flow

Any of you who have tried to drive to the Cumberland Post Office are well aware that something is going on with the streets of Cumberland. With some good cooperation between the City of Cumberland and the Beaver Dam Lake Management District we've been able to work towards some goals and save some money. For several years now the lake district and the city have been looking at storm water drains, especially on Library Lake. Several years ago we received a DNR grant to purchase an easement on a parcel of land northwest of the Grove Street bridge to construct a storm water treatment wetland. Because of the timing with the under street utility work this summer we will be able to have the storm water from the northwest corner of the city routed towards that future treatment site, removing a source of pollutants from Library Lake. The treatment site will greatly reduce pollutants and sediment before discharging water into Beaver Dam Lake.

We are happy that the City of Cumberland has formed a Storm Water Committee, and is looking at all the storm sewer outlets. Of course we know that Cumberland is The Island City, and thus all of the storm water flows directly or indirectly into our lake. With cooperation between City and District we have been able to win competitive grants; the most recent one being for design work on a storm water treatment wetland as well as study of all the outfalls.

Another volunteer study we are running right now relates not to city outfalls but rather to rural water flows. Our last formal water quality study occurred during the summer of 2007, and you may remember that was a drought year. With low or no flow, it was hard to make a good analysis. We are now doing these analyses. The District thanks Tom Schroeder for his work on collecting samples and flow rates. We're looking primarily at the East Basin, and what many of you may know as the "Cumberland Dump Ditch". The original watershed of Beaver Dam Lake is quite small, and the dump ditch, dug in the 1930s more than doubles the

size of the watershed. It brings the lake some stability in water levels but also may be bringing in nutrients we don't need - that's what we're looking at. We also need to thank Tyler Gruetzmacher, Barron County Soil and Water Conservationist for the superb effort he is making in helping us understand our system, as well as in actual operation of the dam.

At the individual level, we all can do our part to keep runoff clean. Keep lawn clippings out of streets, and be cautious with fertilizer. Natural shorelines are very effective at filtering rainfall, and if you have the opportunity to construct a rain garden consider doing so. All water runs downhill to our beloved lake!

Dave Evenson, President BDLMD

Managing Aquatic Plants in Beaver Dam Lake

**By
John Ostrem and John Thon
(Volunteer Committee)**

Managing aquatic plants is one of the major tasks of the Lake Management District according to President Dave Evenson. Our task is to promote the "good" native plants while controlling the troublesome invasive species such as Eurasian Watermilfoil and Curleyleaf Pond Weed. We have an excellent partnership with the Wisconsin DNR and our efforts have been very successful.

Annual Plant Management Process

Each Wisconsin Lake Management District is required to develop a detailed five-year plan for treatment of invasive aquatic plant species prior to obtaining the necessary permits and approvals. Our plan was five years old, therefore at the 2011 Lake District Annual Meeting; President Evenson asked for volunteers and appointed a committee to manage the year long process.

First on the agenda was a community survey by residents of the Lake District. A total of 1,150 surveys were mailed with an excellent return rate of 16.4 percent. Citizens reported using the lake for motor boating, enjoying the view, fishing, swimming, and most (60 %) feel their activity is negatively affected by weeds. Over 90% of the residents supported fish stocking efforts and nearly 100% of the residents support the boat monitoring program. A huge majority of residents

support the approved use of herbicides to maintain navigation channels and most citizens feel the number of invasive plants has increased in recent years.

Goals for the Aquatic Plant Management Plan

Committee members reviewed the previous goals for Beaver Dam Lake as well as goals from seven other Lake Management Districts in Northwest Wisconsin. Several of the previous goals were modified and a new goal on education of the public was added to the list. Each of the goals for the Aquatic Plant Management Plan has objectives, strategies and measurements. The plan is developed around the following six goals:

- 1) Reduce Eurasian Watermilfoil and Curleyleaf pondweed levels to five percent of the littoral zone while not harming native plants.
- 2) Maintain navigation channels that are not impaired by native plants and invasive plant growth.
- 3) Prevent transfer of invasive plant and animal species both to and from Beaver Dam Lake.
- 4) Improve the fishery resource through proper management of aquatic plants.
- 5) Improve water quality and aquatic plant community through management of storm water and riparian shoreline areas.
- 6) Provide stewardship educational materials to help area residents manage riparian land and water areas and educate the public about progress on goals and strategies of the Beaver Dam Lake Management District.

Plan Development

Beaver Dam Lake is divided into eight segments for management and these each present different challenges in the amount of plant growth and options for treatment. Each year BARR Engineering Company supervises a scientific survey to monitor treatment success and develops a plan for the next season. BARR Engineering designed the 2012 plan based on the six goals and worked with the Volunteer Committee and Lake District Commissioners on forty-eight different strategies to accomplish the six goals. Special attention will be given to growth of Curleyleaf Pondweed in Rabbit Bay and Norwegian Bay areas. The Lake District is also undertaking a water quality and water flow analysis of the 10,500 acre watershed feeding the Norwegian Bay portions of the lake. Water from these areas enters the lake through a diversion channel established in the

1930's. Depending on the water analysis there may be opportunities to improve and regulate the flows into Beaver Dam Lake. Each of these strategies can be viewed on the Lake District Web Site at www.beaverdamlake.org In April the District Commissioners sent the plan to the Department of Natural Resources for approval.

Continuous Improvement Strategy

A new feature of the BDLMD Aquatic Plant Management Plan is to provide the DNR with annual updates of scientific information, treatment success, additional goals and other information requests from citizens. Previous plans were given a five-year lifespan requiring a complete redraft by the District. This new plan proposes an annual updating process that will not allow it to become obsolete and hopefully, the Department of Natural Resources will support the annual update process.

Citizen Input

President Evenson thanks all the volunteers that worked on the citizen survey, goal setting, and plan development process. "Our plan meets the needs of our lake and matches the goals developed through the citizen survey with the summer treatment strategies. We are all concerned about the increase of invasive weeds and the potential of Asian Carp, Zebra Mussels and other invasive species into the upper Mid West and Great Lakes Basin areas. The challenge of keeping our lake free from invasive species will require constant attention from citizens and our Lake District Commissioners. We always invite comments and look forward to hearing any concerns about the lake."

Lake Quality Testing Results for 2011

Beaver Dam Lake - NE Of Eagle Pt At Deepest Section 2011 Results **oligotrophic**

Beaver Dam Lake - NE Of Eagle Pt At Deepest Section was sampled 4 different days during the 2011 season. Parameters sampled included:

- water clarity
- temperature
- dissolved oxygen
- total phosphorus
- chlorophyll

The average summer (July-Aug) secchi disk reading for Beaver Dam Lake - NE Of Eagle Pt was 19 feet. The average for the Northwest Georegion was 7.9 feet. Typically the summer (July-Aug) water was reported as CLEAR and BLUE.

Chemistry data was collected on Beaver Dam Lake NE Of Eagle Pt. The average summer Chlorophyll was 1.6 µg/l (compared to a Northwest Georegion summer average of 18.5 µg/l).

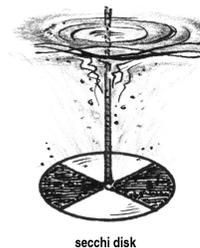
The summer Total Phosphorus average was 6 µg/l. Lakes that have more than 20 µg/l and impoundments that have more than 30 µg/l of total phosphorus may experience noticeable algae blooms.

The overall Trophic State Index (based on chlorophyll) for Beaver Dam Lake - NE Of Eagle Pt was 38.

For anyone who is interested in the results of current or past water quality testing, they are available on the DNR webpage. You may access the results at: <http://dnr.wi.gov/lakes/CLMN/> then click Barron County and then any lake or individual bay you may be interested in looking at the data.

Every lake in the State that does testing is on the site, so it's very interesting to compare Beaver Dam Lake to others. Our lake is among the best in Barron County.

The DNR web site itself is very interesting. There is a wealth of information there. Try it sometime.



Annual Meeting of the Beaver Dam Lake Management District
Saturday, July 7th”, 2012 at 9:30AM
Middle School Commons
(Doors open at 9:00AM for Poster Displays)

Pursuant to Sec. 33.30 (1) of the Wisconsin Statutes and the by-laws of the Beaver Dam Lake Management District, the annual meeting and budget hearing will be held at the Cumberland Middle School Commons Area at 9:30A.M. on Saturday July 7th, 2012. Displays and Maps for weed control will be available for viewing at 9:00AM.

Proposed Budget

<u>Revenues</u>		<u>Expenses</u>	
Tax Rev.(Est mil rate0.92)	\$209937	Mailings,Notices,Mtgs	\$3000
Unfunded stormwater grant	\$27913	Stormwater/Outflow Grant Matches	\$65000
		Milfoil/CLP Control with Plant Surveys	\$141250
		Aquatic Plant Mgmt Plan-ongoing	\$5000
		Insurance	\$3800
		Boat Landing Monitors	\$2800
		Fireworks	\$1000
		Water Safety	\$1000
		Water Flow Monitors	\$5000
		Walleye Stocking	\$10000
Subtotal	\$237850	Subtotal:	\$237850

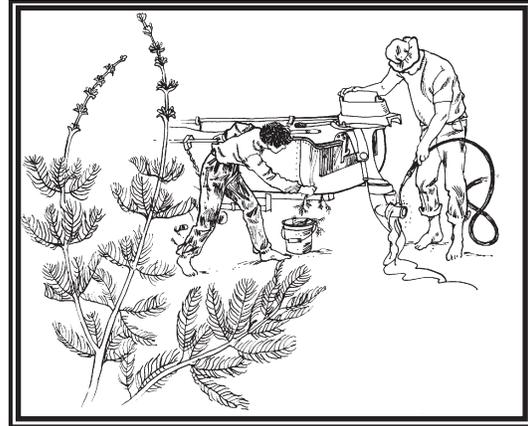
Annual Meeting Agenda, July 7, 2012

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| 1. Welcome and Introductions | Dave Evenson |
| 2. Approval of 2011 Annual Meeting Minutes | Nancy Bentz |
| 3. Treasurer’s Report | Dr Alan Carlson |
| 4. Election of Commissioners (Nancy Bentz & Tom Schroeder) | Paul Flottum |
| 5. Aquatic Plant Management Plan Report | John Ostrem, Dave Evenson |
| 6. Review of District Activities | Dave Evenson, Jay Michaels, EOR |
| 7. Budget for 2011-12, Questions and answers, Approval | Dr Alan Carlson |
| 8. Other items as needed | |
| 9. Adjourn | |

Upcoming Events:

July 7th, 2012 9:30 AM

Annual Meeting and Budget Hearing of
Beaver Dam Lake Management District
See agenda inside.



Help Prevent The Spread Of Aquatic Invasives.
Clean It Off! It's the Law!!!

Or Current Resident

Beaver Dam Lake
Management District
P.O. Box 232
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