



Bassett Creek Watershed Management Commission

Aquatic Plant Management/Aquatic Invasive Species Committee Agenda and Notes from Previous Meetings Tuesday May 23, 2017 ~ 8:30 – 10:30 a.m. Council Conference Room ~ Golden Valley City Hall

1. Welcome and Introductions

Attendance at meetings

Committee Member	Sept Mtg	Oct Mtg	Nov Mtg	Jan Mtg
Commissioner Black	X	X	X	
Alt. Commissioner Tobelmann	X	X	X	
Commissioner Welch	X			
Commissioner Hoschka		X		
Commissioner Carlson			X	
Tony Brough, Hennepin Co.	X		X	X
Rachael Crabb, MPRB	X	X	X	X
Rich Brasch, TRPD	X	X	X	X
Brian Vlach, TRPD	X	X	X	X
Jen Kostrzewski, Met Council	X			
Shanna Hanson, Sweeney Lake	X	X		
Kip Leonard, AMLAC		X	X	X
Dave Musliner, Parkers Lake	X		X	
Derek Asche, City of Plymouth	X	X	X	X
Tom Hoffman, City of Golden Valley	X	X	X	X
Karen Chandler, BCWMC Engineer	X	X	X	X
Meg Rattei, BCWMC Engineer	X	X	X	X
Laura Jester, BCWMC Administrator	X	X	X	X
Keegan Lund, MDNR			X	

2. **Review Objectives of BCWMC Role in APM/AIS (Answering the “WHY?”) – September meeting**

At the September 27th meeting, the committee discussed and completed the following table to indicate PRIMARY objectives for the BCWMC’s possible future role in APM/AIS. The committee discussed the fact that improving water quality and aquatic habitat, and reducing flooding were the main objectives of the Commission’s work and should be the primary objectives in dealing with APM/AIS - hence the “X” in these categories.

PRIMARY OBJECTIVE	Commission Should Be Involved	Commission Should NOT Be Involved
Activities that improve water quality	X	
Activities that improve habitat and the overall ecology of the waterbody	X	
Activities that improve recreation		Partnering only; not primary obj.
Activities that improve aesthetics		X
Activities that improve or protect human health and safety		Partnering only; not primary obj.
Protect function/capacity of Flood Control Project	X (Likely a maintenance activity by cities)	

The committee noted that “recreation” is a broad term that means different things to different people and that improving water quality, in turn improves recreation. There was consensus that effects on recreation would be taken into consideration for any Commission project or program and the Commission could partner with others on recreation-based projects. However, there was consensus that projects which have the primary objective of improved recreation would not be led by the Commission.

It was noted that improved aesthetics may be an outcome of some Commission projects but that they wouldn’t be considered an objective of a Commission project and it was noted the Commission doesn’t have the statutory authority to focus on aesthetics.

Improving or protecting human health and safety was added as a possible objective due to blue green algae blooms and dense aquatic plants tangling swimmers. Again, there was consensus that the Commission wouldn’t lead a project with a primary objective to improve or protect human health and safety, but may partner with others.

Finally, it was noted that dense vegetation may decrease the functionality of flood control structures. Since the Commission is charged with maintaining its Flood Control Project structures, this was added as a possible reason to take the lead on an APM project. (Although it was also noted that vegetation management is typically a city responsibility.)

The committee then reviewed a map and description of the different classifications of waterbodies in the watershed (to help consider the “WHERE”):

- A. Priority 1 Lakes– “MDNR Public Waters” Lakes, greater than 10 acres, with public access or adjacent to public land
- B. Priority 2 Lakes– “MDNR Public Waters” Lakes, greater than 10 acres, without public access or adjacent to public land
- C. Priority 1 Streams – “MDNR Public Waters” Watercourses
- D. MDNR Public Waters, no BCWMC priority
- E. Non-MDNR Public Waters, no BCWMC priority

The committee also reviewed the locations of different AIS already within the watershed and in nearby waterbodies (to help consider the “WHAT”):

Species already known in BCWMC:

- A. Curly-leaf Pondweed in lakes Crane, Lost, Medicine, Northwood, Parkers, Sweeney, Twin, Westwood, Wirth; and Main Stem Bassett Creek at Irving Avenue
- B. Eurasian Watermilfoil in Medicine Lake, Parkers Lake, Wirth Lake
- C. Yellow Iris in Sweeney Lake
- D. Chinese Mystery Snail in several ponds in Golden Valley
- E. Carp in Sweeney Lake, Twin Lake, Medicine Lake and likely several other lakes and streams
- F. Purple loosestrife: ubiquitous
- G. Hybrid cattails: ubiquitous

Species in nearby waterbodies: Zebra mussels, Flowering rush, Starry stonewort

3. **Recommendation to Apply for Hennepin County AIS Prevention Grant – November meeting**

At the November meeting, the committee received information on a Hennepin County grant program for AIS prevention with applications due January 20th. Commission staff and committee members agreed that even though the committee had not yet completed its work, the Commission shouldn’t pass up the opportunity to apply for grant funds.

The Committee recommended that the Commission apply for grant funds to perform an AIS pathways analysis, inventory, vulnerability assessment, and prevention or management plan development for at least three priority lakes. Commission staff were directed to take the recommendation to the Commission at their December meeting.

4. **Presentation by Keegan Lund, Metro DNR AIS Specialist – November meeting**

Keegan presented information on the latest studies, observations, and monitoring results regarding control of curly-leaf pondweed (CLP). His presentation is available online at:

http://www.bassettcreekwmo.org/application/files/2214/8106/4830/CLP_management_DNR_Dec_2016.pdf. Some of the key points of the presentation include:

- CLP has been well established in MN lakes for over 100 years.
- In some lakes, CLP is not a problem while in others it is a nuisance, particularly when it dies off in early July, sending phosphorus into the water and often creating algae blooms.
- There is a continuum of issues with CLP – lake groups should define the problem.
- Lake groups should look at history of lake and define CLP management goals.
- There are several tools to control CLP including water level drawdowns (successful in short term 3-8 years); mechanical control; herbicide; hand removal (not often used with CLP control); diver suction removal (for rapid response when trying to eradicate young infestations)

- Spot treatments seem most effective for long term management for most lake groups.
- Whole-lake treatments are costly and require professional monitoring and DNR assistance.
- Whole-lake treatments typically require Lake Vegetation Management Plan.
- Whole-lake treatments can increase native plants, reduce CLP reproductive turions, and significantly reduce CLP lakewide, but it usually comes back eventually.
- Whole-lake treatments rarely cause an improvement in lake water quality due to other sources of phosphorus.
- Can consider combining whole-lake treatment with other phosphorus reducing practices such as carp management, alum treatments, etc.

Meg Rattei (Barr Engineering) reported that a CLP control project in the Anderson Lake chain was successful in improving native plants and improving water quality such that the lakes now meet water quality standards. She reported that a combination of water level drawdown and alum treatments in areas of high sediment-phosphorus levels were used. It was acknowledged that you can never stop managing the lake system.

There was discussion about how herbicides can have long-term negative impacts on some native plants like bulrushes and lily pads so whole-lake treatments must be properly planned and managed.

5. Discussion on Effects of Curly-leaf Pondweed Treatments in Medicine Lake – November meeting

Brian Vlach with Three Rivers Park District (TRPD) provided information about the whole-lake CLP treatment that was part of a collaborative pilot project conducted in 2004 – 2006. The treatment followed a Vegetation Management Plan that was developed for the lake. The effects on water quality, native plants, and the possibility of long-term control were studied in subsequent years.

Brian’s graphs on CLP treatments, water quality, and native plants, along with a narrative describing the project and results are available here:

http://www.bassettcreekwmo.org/application/files/2014/8106/5264/Medicine_Lake_CLP_Statistics.pdf.

Some key points are presented below.

- 300 acres of CLP were treated with herbicide for three consecutive years 2004 – 2006 in hopes of reducing CLP and its turions in lake sediment.
- In subsequent years only spot treatments of CLP were performed on the areas of nuisance growth ranging from 15 to 80 acres in 2008 – 2016.
- Native plant communities were not negatively impacted by the CLP treatments but did not appear to be enhanced by CLP treatments.
- Water quality (total phosphorus, chlorophyll-a, and secchi depth) did not appear to change 2004 – 2016.
- CLP as an (internal) source of phosphorus in the lake was estimated to contribute about 12% (1,050 pounds) of the overall phosphorus load on the lake. Other sources include phosphorus from the watershed flowing into the lake (external sources), and phosphorus released from sediments within the lake (internal sources).

Rich Brasch (TRPD) and Brian Vlach agreed that although it’s a low proportion of the overall phosphorus load to the lake, CLP control is an important part of the process to improve water quality in the lake. Rich noted it is a component of the total maximum daily load (TMDL) and that TRPD is not in favor of stopping CLP treatments in Medicine Lake. They noted that if CLP treatments stopped,

the area of CLP would likely explode back to 300 acres and that continuing to control CLP sets the lake up for a successful alum treatment in the future.

Derek Asche (City of Plymouth) noted that projects installed in Plymouth over the last several years to reduce external phosphorus loading to the lake have resulted in an estimated 1,500 fewer pounds of phosphorus entering the lake. He indicated, however, that this amount still wasn't enough to register a significant difference in lake water quality.

[There was some discussion about the likely negative impact of wake boats and other boating on water quality, shoreline erosion, and sediment resuspension.]

The committee agreed that CLP control is one strategy to reduce phosphorus in the lake. They noted a distinction, however, between CLP spot treatments on lakes with an overall water quality management plan (like a TMDL) and CLP spot treatments on lakes without a plan. (This is noted in the table below.)

There was further discussion about the appropriate role for the Commission on CLP spot treatments. Some committee members were in support of the Commission taking the lead in the entire process because it was a multi-jurisdictional issue. Tasks could include applying for herbicide application permit and grants, coordinating with the DNR, contracting with a company to apply herbicide, contracting with a company to determine where to apply, etc. Other committee members believed that since other entities have been taking the lead on CLP control (at least in Medicine Lake), that the Commission should only cooperate with these entities. For now, the committee left the role in the "cooperate" column noting that with financial contributions from other stakeholders, the Commission could direct efforts but wouldn't necessarily do all the legwork for the permits, grant applications, contractors, etc.

There was further discussion about when and how the Commission should be involved with spot treatments of CLP. Some key points include:

- Just because a lake has CLP doesn't mean that it needs to be treated. Treatment may not always be warranted.
- There may be a threshold of the amount of CLP that would trigger the Commission's involvement.
- Any entity treating CLP needs to rely on studies and TMDLs (where possible).
- The Commission could assume one role now and revise policy and change course if the implementation of the policy is not working well or is too expensive, or if another entity steps up to plate.
- The Commission should think about the long-term plan for the lake with regards to water quality – how long would CLP spot treatments be needed?
- As an example of a watershed role: The Rice Creek Watershed District plans, monitors, facilitates and cooperates on CLP treatments where a lake association exists. It takes more of the lead role where a lake association doesn't exist.

6. **Continue to Discuss Possible Commission Roles per Activity (Answering the "HOW?") – All meetings**

At the September, October, November, and January meetings the committee discussed and worked to complete Table 2 to indicate how the Commission **should** be involved with various activities.

7. Recommendation on Curly-leaf Pondweed Treatment in Medicine Lake – January meeting

At the January meeting, the committee reviewed the following information: Surveys on Medicine Lake completed by the City of Plymouth last fall estimate that there is likely to be 30 – 60 acres of nuisance CLP this summer. Herbicide treatment of 45 acres is estimated at \$25,000. Three Rivers Park District (TRPD) indicated they could provide 17% of the funds needed for the herbicide treatment (which coincides with their ownership of 17% of the shoreline of the lake), and that TRPD staff could perform the necessary plant surveys to determine the amount and location of treatments (typically a \$5,000 expense).

The committee recommended that the Commission partner with the City of Plymouth and Three Rivers Park District to perform herbicide treatments of curly-leaf pondweed (CLP) in Medicine Lake in 2017 and that the Commission contribute up to \$20,750 from its APM/AIS Budget for the treatment, with the additional \$4,250 and plant surveys being contributed by TRPD.

The committee made this recommendation based on the fact that an approved total maximum daily load study identifies curly-leaf pondweed control as a phosphorus-reducing activity, and that the Commission has funding partners. The committee did not recommend that the Commission treat curly-leaf pondweed in lakes without an approved management plan or without funding partners.

At their February 16, 2017 meeting the Commission approved the committee's recommendation. The Commission entered an agreement with TRPD to formalize the partnership and funding arrangement. The Commission secured a DNR permit for the herbicide application and contracted with PLM Lake and Land Management to perform the treatment. The treatment occurred on April 28th.

8. Prioritize Commission Activities – May meeting

The committee should review the activities it recommends for Commission involvement and should prioritize the work considering 1) impact vs. effort of each activity, 2) where activities should be performed (on which waterbodies), and 3) when the Commission should perform the activities. Table 1 includes a list of the BCWMC waterbodies, their impairments, and existing AIS.

Starting with activities that are recommended for the Commission to take a lead role, the committee can use the new columns in Table 2 to assign a "high, medium, or low" priority level to each activity, and list where and when the activity should take place.

The committee could also make recommendations for work to be accomplished yet this year with the remaining APM/AIS funds of \$19,000.

9. Consider Finalizing Work and Making Recommendation to the Commission – May meeting

If the committee it has completed its prioritization and discussions, it could consider these results to be its recommendation on how the Commission proceeds on these issues in the future. Or, the committee could consider developing more detailed plans and/or policies for the Commission's consideration at a future committee meeting.

10. Adjourn

Table 1. BCWMC Waterbodies

Waterbody	BCWMC Classification¹	AIS Present	Impairment/TMDL completion date and reference	Local Partners
Medicine Lake	Priority 1 deep lake	CLP, Eurasian watermilfoil, carp	Nutrients 2011: https://www.pca.state.mn.us/water/tmdl/medicine-lake-excessive-nutrients-tmdl-project	TRPD, AMLAC
Parkers Lake	Priority 1 deep lake	CLP, Eurasian watermilfoil	Chloride 2016 ²	
Sweeney Lake	Priority 1 deep lake	CLP, yellow iris, carp	Nutrients 2011 https://www.pca.state.mn.us/water/tmdl/sweeney-lake-total-phosphorus-tmdl-project Chloride 2016 ²	Homeowners Assoc.
Twin Lake	Priority 1 deep lake	CLP, carp	None	
Wirth Lake	Priority 1 deep lake	CLP, Eurasian watermilfoil	Nutrients 2010 (since delisted) https://www.pca.state.mn.us/water/tmdl/wirth-lake-excess-nutrients-tmdl-project Chloride 2016 ²	MPRB
Northwood Lake	Priority 1 shallow lake	CLP	Nutrients – no TMDL	Friends of Northwood
Westwood Lake	Priority 1 shallow lake	CLP		Westwood Nature Center
Cavanaugh (Sunset) Pond	Priority 2 shallow lake			
Crane Lake	Priority 2 shallow lake	CLP		
Lost Lake	Priority 2 shallow lake	CLP		
Main Stem Bassett Creek	Priority stream	CLP	Chloride 2016 ² + Bacteria 2014 ³	
North Branch Bassett Creek	Priority stream		Bacteria 2014 ³	
Plymouth Cr.	Priority stream		Chloride 2016 ² + Bacteria 2014 ³	
Sweeney Br. Bassett Cr.	Priority stream			

CLP = Curly-leaf Pondweed

¹ Priority 1 Lakes– “MDNR Public Waters” Lakes, greater than 10 acres, with public access or adjacent to public land

Priority 2 Lakes – “MDNR Public Waters” Lakes, greater than 10 acres, without public access or adjacent to public land

Priority 1 Streams – “MDNR Public Waters” Watercourses

²Twin Cities Metro Area Chloride TMDL: <https://www.pca.state.mn.us/sites/default/files/wq-iw11-06e.pdf>

³ Upper Mississippi Bacteria TMDL: <https://www.pca.state.mn.us/water/tmdl/upper-mississippi-river-bacteria-tmdl-project>

Table 2. Prioritizing the Commission's Role

	Activity	Current Activity by Others	Commission Roles (determined Sept 2016 – Jan 2017)				MAY 2017 MEETING	
			Take Lead	Cooperate w/ Others	Only Provide Funds	No Role	Priority Level	Where & When
Early Detection	Early detection training (including volunteer recruitment)	MDNR and Hennepin Co. training programs		X – BCWMC could help recruit volunteers for training				
	Early detection monitoring	TRPD does ED monitoring on Medicine Lk. for zebra mussels (could use help in expanding program) MPRB does ED monitoring on Wirth Lake Henn. Co. has grant \$ to expand ED monitoring. BCWMC surveys aq. plants every 3 yrs. TRPD performs aq. plant surveys on Medicine Lk.	X – BCWMC could perform ED monitoring w/ Co. grant funds – including zebra mussel detection and expanded aq. plant surveys	X – BCWMC could cooperate with TRPD and Lake Assoc. to expand ED monitoring				
Rapid Response	Develop rapid response plan of action	Hennepin Co. has grant funding for developing rapid response plan. MPRB has Zebra Mussel Action Plan (Wirth Lk)	X – BCWMC should develop rapid response plan of action					

	Activity	Current Activity by Others	Commission Roles (determined Sept 2016 – Jan 2017)				MAY 2017 MEETING	
			Take Lead	Cooperate w/ Others	Only Provide Funds	No Role	Priority Level	Where & When
	Rapidly responding to new infestation	MDNR works with locals to implement rapid response.	X – BCWMC could take lead to hire contractors, provide technical expertise, and lead effort with funding & partners	X – Will take cooperation from others to implement plan of action, if needed				
Studies	Pathways analysis/vulnerability assessment	Henn Co. analyzed AIS risk from pet stores & nurseries Henn Co. has grant funding for developing pathways analysis	X – With grants, BCWMC could perform all three activities much like a watershed-wide TMDL for water quality. It was noted that additional water quality data may be needed to help predict suitability for invasion by particular species.	X – Partnering with others would be important component of these activities including gathering data collected by others, and/or using templates of existing prevention plans or management plans.				
	Inventory (species, current management activities)	(See early detection monitoring) TRPD, MPRB, BCWMC perform aq. plant surveys						
	Plan development (prevention plan or management plan)	MPRB has Zebra Mussel Action Plan (applies to Wirth Lk)						

	Activity	Current Activity by Others	Commission Roles (determined Sept 2016 – Jan 2017)				MAY 2017 MEETING	
			Take Lead	Cooperate w/ Others	Only Provide Funds	No Role	Priority Level	Where & When
Prevention	Boat launch/access management (inspections, washing stations, compost bins, closures)	TRPD performs inspections at Medicine Lk. launches MPRB closed Wirth Lk. launch		X –Additional funding likely needed soon (County/State funding may decrease or phase out); private accesses and lakeshore owners are missing link (inc. buying used docks from infested waters); lake associations are best partner. Decided BCWMC role would be case-by-case basis to be informed by pathways analysis. Also agreed it makes sense that launch owners should be ultimately responsible for inspections.				
	Education (signage, articles, literature, etc.)	TRPD, lake associations, MPRB – each provide some AIS education	X – BCWMC could tailor existing content to be lake specific and/or hold annual “state of the lake” event to provide more active engagement. Agreed pathways study could help refine education needs and identify jurisdictions and roles.	X – Would be inherently cooperative activity due to much existing educational content and variety of educational outlets.				

	Activity	Current Activity by Others	Commission Roles (determined Sept 2016 – Jan 2017)				MAY 2017 MEETING	
			Take Lead	Cooperate w/ Others	Only Provide Funds	No Role	Priority Level	Where & When
	Advocating for/assist with policy changes (Legislative, ordinances, rules)	MPRB policy: all contractors, partners, staff must have AIS identification training		X – Policy advocacy should be across multiple watersheds. BCWMC could help draft ordinances for cities, identifying need through pathways study				
Management	Monitoring current infestations	TRPD, BCWMC, MPRB through regular aq. plant surveys	X – Lack of fish surveys is a gap. BCWMC could survey fish in same years as water monitoring. Fish community data good for AIS and WQ analysis, TMDLs, etc. Need to determine goal of fish survey – presence vs. absence, characterizing whole fish population, and/or determining ecological threshold for fish impacts on WQ	X – Need to gather observations of others (residents, field workers)				

Activity	Current Activity by Others	Commission Roles (determined Sept 2016 – Jan 2017)				MAY 2017 MEETING	
		Take Lead	Cooperate w/ Others	Only Provide Funds	No Role	Priority Level	Where & When
Spot treatments (herbicide) if State approved water quality management plan/TMDL/lake veg mgmt. plan warrants treatment for water quality and/or ecological improvements	TRPD, MPRB use spot treatments at access points, fishing piers, and beaches. (Plymouth previously treated CLP in Medicine Lake)	X – with financial contributions from other stakeholders. Commission directs efforts but doesn't necessarily do all the legwork for the permits, grant apps, contractors – uses cooperation from others for legwork (similar to CIP process) Commission Engineer recommends increasing herbicide dosing so it's lethal throughout lake in order to better decimate CLP; may be able to skip treatments in some years and/or see wholesale decline of CLP throughout lake					
Spot treatments (herbicide) without water quality mgmt. plan/TMDL/lake veg mgmt. plan			X				
Whole lake treatments (including engaging MDNR on current treatment policies)	TRPD = whole lake treatment for CLP, Medicine Lk (2004-2006)	?	?	?	?		
Carp harvesting	TRPD performed carp surveys and analyzed extent of problem (outside BCWMC); then watershed took lead in carp mgmt		X - Need significant study to determine location and effects of carp. Since they cross jurisdictions, carp mgmt. is good watershed role. Can use secondary indicators for likely carp presence such as				

	Activity	Current Activity by Others	Commission Roles (determined Sept 2016 – Jan 2017)				MAY 2017 MEETING	
			Take Lead	Cooperate w/ Others	Only Provide Funds	No Role	Priority Level	Where & When
				lack of vegetation, shallow w/ much algae				
	Fish barriers	MPRB (outside BCWMC)		X				
	Water level management or drawdown	TRPD used lake drawdown for CLP control (outside BCWMC)		X – Can only work in limited locations. Large endeavor with multiple partners				
	Biological treatment	Used by multiple entities for purple loosestrife	?	?	?	?		