



**The Appleton Wetland;
Its Decline, Cause and Recommended Action**

**Appendix M: MRWMP SAC Meeting #7,
Nov. 28, 2012**

Report prepared by

**Appleton Wetland Research Group
of the
Mississippi Valley Field Naturalists**

Research Group Members:

**Cliff Bennett, Chair
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August 11, 2014

Agenda
Mississippi River Water Management Plan
Standing Advisory Committee
Meeting #7

Wednesday, November 28, 2012
Dufferin Square Boardroom
105 Dufferin St, Perth

12h00 Lunch Provided
 o Complete travel expenses form (Members of SAC)

12h30 Call to Order – Review & Accept Agenda (Chair)
 o Working Lunch to Provide for Enough Time

Standing Agenda Items

12h40 Review of Discussions from Previous Meeting (Chair)

12h45 Summary of Operations for the Year & Expected Future Operations - Discussion of Public Issues, Questions or Concerns, including Compliance

- Operators (MVC & Waterpower Producers)
 - o Questions Received from Members Prior to Meeting:
 - The effects low water has had on the Hydro Electric plants on the river system, if any
 - Other impacts such as the need to put stop logs in earlier to gain water levels in the lake/river system and the potential for shore line/dock damage due to ice
- SAC Members
- MNR

Appleton Wetland: Report Back from Steering Committee

13h30 Presentation: Operations of Enerdu Generating Station (Ron Campbell, Enerdu)

13h45 Presentation: Assessment of Water Level Control on the Mississippi River – Appleton Wetland (Paul Lehman, P. Eng., MVCA)

14h00 Steering Committee Conclusions (Co-Chair, Steering Committee)

Appleton Wetland: New Information

14h15 Presentation: Mississippi Valley Field Naturalists (Cliff Bennett & Al Seaman)
Presentation: Mississippi Riverwatchers (Mike O'Malley)

14h30 BREAK

Appleton Wetland: Summary & Next Steps

14h45 Presentation: Appleton Wetland: Ecology & Potential Impacts (Shaun Thompson, MNR)

15h30 SAC Conclusions (Chair)

15h45 Process & Conclusions (MNR)

Other Points of Discussion

16h00 Other Points of Discussion (MNR)

- Question: Are there any new waterpower proposals for the watershed?
- Question: What is effect of transformation & modernization on the Mississippi WMP?

16h30 Meeting Adjourned

Draft Minutes
Meeting #7 – Perth, ON
Wednesday, November 28th, 2012

Attendees –

Len Dickinson – OFAH (Chair)
Caroline V. Ferguson – Crotch Lake Association
Ed Carew - Mississippi Lake Association
Ron Campbell – Enerdu
Perry Lintell – Thoburn Mill Condo Association
Jim McCready – Town of Carleton Place
Ken Grant – Big Gull Lake East End Cottages Association
Al Seaman – MVFN Mississippi River Watchers
Jim Fraser – MNR
Sarah Nugent – MNR
Doug Ryan – MNR
Mike O’Malley – Past Chair P.A.C.
Jeffrey Bretzlaff – Appleton Facility Operator
Scott Newton – Mississippi River Power Corp.
Ken Packard – TransAlta
Shaun Thompson – MNR
Brian Young – Mississippi River Watchers (Almonte)
Pat Vetter – Mississippi River Watchers (Almonte)
Al Potvin – Mississippi River Watchers
Cathy Blake – Mississippi River Watchers (Almonte)
Paul Lehman – MVCA
Cliff Bennett – Mississippi Valley Field Naturalists

Regrets

Gayda Errett

12:30pm – Meeting called to order by Len Dickinson

Previous meetings minutes moved and accepted as well as the current agenda.

MVC Operators

Gord, MVC – Summary of Operations for the Year

- Dry summer and fall and from August 5th to December 31st there were 6 low water statements made by MVC.
- Winter – low precipitation and therefore put logs in at dams early. The operation objectives are to meet targets for filling the upper lakes. We were aware of the potential for ice damage but thought that it would be necessary to be able to meet summer levels. Due to this, we were able to meet average May 24 levels. By May 28th, 2011 all of the logs were in the respective dams.

- In 2012 all of the logs were in all of the dams by July 15th. This was due to the low water conditions in April and May. Water levels in the MVC region were consistent with those across the province.
- A level 1 low water condition was declared on June 1st, 2012 (based on the 3 month average summer rainfall).
- Level 2 low water conditions were declared on July 15th and tributaries were considered to be in level 3 conditions but were not declared. Swamps in the area had dried up but if there was any rainfall, it was too hot and it did not affect any of the surface water levels.
- Prep for 2013 will include taking a look at the protocols for drawdowns. Some drawdown rates will be kept the same however, not all of the logs were taken out of the upper lakes.
- Currently conditions are fairly close to normal and drawdown is still occurring at Mazinaw Lake but it is not expected to drop significantly.
- Overall, there are more logs in the dams than normal.
- Dalhousie Lake was normal most of the season due to flow from upper lakes.
- All other lake throughout the area were very low.
- Prognosis: if there is not sufficient rainfall or precipitation over the winter, then water levels will be too low. Keeping water levels higher could cause a greater risk for shoreline damage due to ice but we are deciding to take that risk.
- **Questions**
 - Sarah: would a typical winter with the typical average snowfall allow for a recharge of the system?
 - Gord: We will need an above average winter in terms of precipitation but in the spring it should recharge, just not flood as per usual.
 - Paul: The groundwater will recharge before the surface water will.
 - Len: What about December 31st levels?
 - Gord: We are planning to remove 15-20cm more flow than would be expected for December 31st. This is due to more logs being in the dams, which will hold the same levels, but significantly less flow.

Scott, MRPC – Summary of Operations for the Year

- We are hoping to recover from revenue loss over the year. From June 15- November 15, revenue has been 20% of 2010 production and 60% of 2011 production.
- The budget was 1/3 of the budget of previous years. Flows earlier on in the spring were ok.
- There was a large drop of revenue due to the low water levels in June.
- We are hoping to have one unit running within a month.
- **Questions**
 - Galetta is at 60% production of any average year, but has to stay in compliance and because of that are having issues with staying in compliance. This is causing an operating issue for the station.
 - Enerdu is down 40 days of operation this year.
 - Will the dams in the area be able to hold if there is an extreme rain event?
Gord: Yes, there is no rainfall event that we can't handle.

- Nancy (OPG): By the end of September we were at 82% of normal. This was due to the early landing of spring. June was 40% of the average expected and were therefore able to fill up Crotch Lake, but were not able to provide surplus water. We are needing a lot of water to make up for the dry conditions.
- Gord (MVC): 100% of flow into Appleton came out of Crotch Lake. This was because the tributaries were very dry.
- Caroline: The lower part of Crotch Lake was ok.
- Chair: There have not been any reports of non-compliance from January 2011 to now.

Presentation: Operations of Enerdu Generating Station – Ron Campbell

- Flashboards are in place in mid May until 40cm. The flashboards then fail and are usually removed in December; this is consistent with the watershed management plan.
- Operations: There is small storage capacity, but I am not anticipating any change. There have not been any changes in operations in the past decades. There is a normal level of water in the Mississippi based on the flashboards.

Presentation: Assessment of Water Level Control on the Mississippi River – Appleton Wetland – Paul Lehman

- Question posed: do flashboards affect the wetland?
- There is no historical data for this area of the Mississippi so there is no way to tell.
- There are two distinct relationships in water, water level and flow rate. To calculate this, you would use the weir equation. There is an indication of this relationship at the Almonte bridge.
- Is there any control from Enerdu to the bridge or the wetland?
- Hydrologic model and updating levels for Appleton.
- Difference in flow rates when water levels increase.
 - When flashboards are in, there is a greater difference.
 - Upstream of the generating station flow rates are shown on the slide in the presentation.
 - 80% of flow from 1976-2005 is below the 50% percentile.
 - Flow from 2006-2010 in the fall are higher.

Conclusion

- Existing flashboards impact water levels by 20 to 30cm at flow rates below 60cms.
- **Questions**
- Ron: Taking the flashboards out is not a good idea because of the fact that they have been in place for so long.

Steering Committee Conclusions

- Sarah: January 2011 Appleton information sent to the Steering Committee.
- Nancy: The flashboards have been in place for over 100 years and therefore arguments about what is natural can't directly correlate to their impact. We will be monitoring to draw conclusions because we can't really conclude too much at this time. Another point to consider is the fact that the textile facility may have

influenced that area as well. There are too many other factors affecting this area for it solely be blamed on the flashboards.

Presentation: Mississippi River Watchers – Mike O'Malley

- Mississippi River Waters are directed on a mandate to maximize use for people and wildlife such as flood control and low flow augmentation.
- There is a new legislation for our plan. It has three basic principles – write it, run it and fix it.
- See section 10.1, page 120 and you can see that the plan is in conjunction with operation plans.
- Reach 18 – Appleton to Almonte. There are a lot of things to consider such as Provincially Significant Wetlands (PSW), Areas of Natural and Scientific Interest (ANSI), flood states, drought states and boat launches.
- The summer of 2004, the docks in Appleton never changed until the new flashboards were put in Almonte.
- As of June 2011, the compliance range was absolute. Now there is a compliance structure that is new and appears to hinder the natural cycle of the wetland.
- There are four reasons to re-open the water management plan for review to remove ambiguity.
- **Questions**
- Gord: Speaking to the debate about the flashboards – many dams have and still use flashboards. Any dam that used them in the past would then have to be seen to be as natural water levels with flashboards in. Speaking to the debate about Enerdu compliance levels – because flashboards do affect upstream levels, the flashboards are a part of the process.
- Mike: The part that was missed in the compliance points is the natural cycles of the watercourse and wetland.

Presentation: Mississippi Valley Field Naturalists – Cliff Bennett

- The nature of soft maple swamps is that they are subject to seasonal flooding. Soft maples are flood tolerant but they will die if they are flooded for two or more years.
- The typical growing season is mid April through to October. This starts in the flood areas and then gets the lower water levels later on. They are considered to be flood tolerant during 40% of the growing season. An example of a wetland doing extremely well is the Innisville wetland. The reason that this wetland is doing so well is because the feet get dried out during part of the year.
- At the Appleton wetland, 60-70% of the trees are dying. The higher elevation in the middle is healthy because it is drier there. There is water all summer covering up all the roots and this is causing lots of dead trees.
- Potential Causes:
 - Disease or sickness or insects – MNR forestry did not see any insects or signs of disease.
 - Increases in water flow – other swamps with the same forestry make up are still healthy.

- Higher flashboards – new ones were installed in 2004 and the wetland was healthy prior to 2004. This then causes water levels to be maintained at a higher level.
- Conclusions: There is a recommendation that there be an amendment to the Water Management Plan in Section 10.1, page 120.
- Questions
 - Gord: The flashboards have been in there for so long, but what are the different heights in 2004 compared to today?
 - Cliff: I would say approximately 50cm taller today.
 - Al: I am a frequent traveller of the Mississippi and there was a prominent island above the Almonte fairgrounds that since 2004, the island has almost disappeared. Also, there was a rock ledge that used to be dry and now water is high and the trees are dying. I have looked at the weir in Almonte and the flashboards are now higher than prior to 2004.
 - Len: Is there no physical record of change?
 - Ron: The flashboards have been there and the height and materials are the same as prior to 2004.
 - Jim: The flashboards must be higher based on all of the different observations.
 - Ron: No one would have used 6” flashboards (as previously mentioned), the only difference now is that the materials used are better and they are constructed in a better manner.
 - Scott: Almonte energy has always had boards on the higher falls – there is no mention of height.
 - Gord: The height variance from prior to 2004 and now would only be an inch or two.
 - Cliff: There was something significant that occurred and I want to see something done to help the wetland area recover.
 - Jim: What else may be a cause to the die-off?
 - Brian: Wetland evolved under the high water – low water regime and therefore only grows with high and low water levels. Prior to 2004 water levels were able to cycle through. There is a balance that can be reached and therefore reopening the water management plan is a must.
 - Ron: There is no guarantee that the die-off is from flooding from the flashboards. Let's not forget about the textile mill and the chemicals that were spilled into the waterway. It may not necessarily be from a flooding situation.
 - Cliff: We (MVFN) have sent two letters to and from a task force to meet and find an answer to the die-off.

Presentation: Appleton Wetland: Ecology and Potential Impacts – Shaun Thompson

- I agree with what Cliff has presented to us as a die-back of the soft maples. Soft maples form a great number of species in wetlands across eastern Ontario; they will grow on mounds or in wetter areas. They do however, need a period where air is available to the roots. After looking at aerial photos from 1983, they appear to show that the swamp was doing quite well. The pictures also show a very well-aged community.

- There is clearly some visible die-back and it is definitely not from the ice storm. It appears that it has been progressing over time. From viewing aerial photos, it appears that there have been some shifts in the species community there, but this shift is typical. From the historic photos that were viewed, I did not detect any changes with the health of the wetland until the die-back became visible. I also looked at the channels that are running through the wetland and over the years there appears to be no change to the breadth or the depth of the channels.
- I do agree that it is plausible that the reason for the dieback is due to a higher sustained water level. Soft maples have a tolerance to high water but still need to have the roots drying out in the growing season.
- In regards to the textile mill blow out, I am unsure that heavy metals would cause such a dieback.
- Mike: The causeway is the way to prevent the chemicals from the mill to enter into the Appleton wetland.

SAC Conclusions (Chair)

- Len: Is there a problem here?
- Jim: The water management plan should have been opened up to be adjusted when there was a change in ownership.
- Sarah: In order to try to change something, we don't open up the planning process, but instead we make an amendment request. The planning process doesn't open up broadly, but MNR reviews the request based on recommendations by the SAC and then the process begins. There are three types of requests that can be made: administrative, minor and major and the process to amend different ones varies – normally requires the same process as the original plan.
- Len: Cliff would have to make a specific motion to declare an amendment.
- Cliff: I just want some people with formal science merit to study, act and remediate the Appleton wetland.
- Sarah: So are we requesting an amendment to the plan?
- Shaun: I just want to make a statement that the wetland is not dying. The soft maples are dying, and because of this the ecology may shift, causing different species to form new communities. The wetland won't go away, the communities will just change.
- Ken: We just want the science behind what is happening.
- Gord: The SAC can make a request to MNR or the steering committee to be later passed on. In terms of packaging information to the MNR how to you go about this?
- Sarah: A package needs to go to MNR to be considered a request for an amendment – make sure you send more information than is necessary, better too much than too little.
- Cliff: How do we guarantee that we will get this done? I just want to make sure something happens before all these trees die.
- Jim: How do you know that this isn't just natural evolution?
- Cliff: Other swamps would have died the same.

- Ken: The committee should advise a motion.

Motion

- The advisory committee recommends to the steering committee and MNR that the review process be opened now for consideration of new information to the present operating regime of Enerdu pertaining to the Appleton wetland.
- Motion is proposed by Cliff Bennett and second by Ken Grant.
- Motion is carried.

Other Points of Discussion

- Question: Are there any new waterpower proposals?
 - Sarah: No, but there is some discussion around CP, but it is only discussion. Heron Mills are also continuing their environmental assessment.
- Question: What is the effect of transformation and modernization on the Mississippi water management plan?
 - Jim: We don't know what the effect will be, but we will likely take longer to go through process. We are trying to streamline different sections.
 - Sarah: Check the MNR website on transformation updates.

Next date of discussion is May 22nd, 2013.