

Powell Marsh State Wildlife Area (PMSWA) Charrette Alternative Management Plan



Date: June 17, 2016

Revision Date: June 30, 2016

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Background on Powell Marsh State Wildlife Area

Overview

Powell Marsh is not a true marsh, but is a large peatland complex containing several wetland types and plant communities. The primary plant communities include:

- Open water flowages with submerged and floating aquatic plants
- Unforested wetlands comprised of sedge meadows; alder and willow fens; and bogs with low shrubs, sphagnum moss and stunted spruce and tamarack
- Forested wetlands of black spruce and tamarack
- Grassy upland islands
- Upland forest of aspen, white birch, red maple, red oak and white pine

The open wetland system currently seen at Powell Marsh was maintained by wildfires for thousands of years. The last of the wildfires were in the 1930s and 1940s. These fires stimulated new vegetation growth that attracted large flocks of migrating geese. Sportsmen recognized the potential to attract geese to the area and petitioned the Wisconsin Conservation Commission to establish a goose management project. In 1955, the Powell Marsh State Wildlife Area was established to produce more geese for hunters.

Early management at Powell Marsh was one of the pioneering efforts to manipulate an extensive northern sedge leatherleaf bog for geese. Managers used prescribed fire to stimulate new growth for fall waterfowl migrations, similar to conditions that resulted from historic wildfires. A system of ditches and dikes was constructed to provide water level control, enable prescribed burning and allow limited farming.

Large, open peatland habitat is rare in northern Wisconsin. Powell Marsh is a regionally important wetland because of its large size and open character.

Today, Powell Marsh Wildlife Area provides significant, local wildlife-based recreation, particularly waterfowl hunting and birding opportunities. Management emphasizes habitat for waterfowl and species that require open wetland and grassland habitat. A combination of

prescribed fire, hand cutting, mowing and shearing is used to limit the growth of shrubs and tamarack, while increasing the abundance of grasses and sedges (WDNR, 2015).

Management

Management emphasizes habitat for game and nongame bird species that require open wetland and grassland habitat. A key management tool is water level control. Water levels are adjusted by installing and removing stop logs in the water control structures to hold back or release water. Deeper, open water provides duck brood habitat, migration habitat, viewing and educational benefits and prevents brush encroachment. Seasonal drawdowns expose mudflats and concentrate invertebrates, favorite foods for shorebirds. Drawdowns and re-flooding also promote desirable vegetation such as moist soil plants that are preferred by ducks and geese. The ditches are linear semi-permanent wetlands that provide excellent habitat for furbearers like mink and muskrat. Due to the low wet terrain, drawdowns are essential to conduct prescribed burns, or to access areas for mowing or shearing trees. The ditches also act as firebreaks during prescribed burns.

Prescribed burns are used to suppress woody vegetation, promote sedges and grasses, and keep the marsh and grasslands open. These open grasslands provide nesting habitat for a variety of waterfowl, including Mallard, Blue-winged Teal, and Black Duck. Many of the rare bird species found at PMSWA require this open habitat. Fire also stimulates fruit production; cranberry and blueberry production improves in the years after an area is burned. In areas where fire cannot be used, trees and brush are mowed and sheared.

In early spring, the shallow impoundments at PMSWA are the first regional waters to be free of ice. Thousands of migratory birds can be found feeding and resting in the open waters of the PMSWA before the surrounding lakes have open water. Migrating birds such as White Pelicans, Northern Pintail, Scaup, Redheads, Red-necked Grebes, Snowy Owls, Blue-winged Teal and Green-Winged Teal have been sited on the property during the spring thaw.

Routine maintenance work on the property includes filling in muskrat holes in dikes, adding gravel to roads or parking lots, treating for invasive plant species, mowing roadsides and dikes,

repairing and replacing old or damaged water control structures and signs and maintaining storage buildings (WDNR, 2015).

Total Phosphorus Levels

The Clean Water Act (CWA) is the primary law regulating pollution of the United States waterways. The objective of the Act is the restoration and maintenance of the chemical, physical and biological integrity of the country's water. One of the goals is to achieve water quality that is both "fishable" and "swimmable" by the mid-1980s.

Section 303(d) of the CWA, requires states to identify waters within their state where current pollution control technologies alone cannot meet the water quality standards set for that waterbody. Every two years, states are required to submit a list of these impaired waters plus any that may soon become impaired to Environmental Protection Area (EPA) for approval. The impaired waters are prioritized based on the severity of the pollution and the designated use of the waterbody (e.g., fish propagation or human recreation). States must establish the total maximum daily load(s) of the pollutant(s) in the waterbody for impaired waters on their list (USEPA, 2015).

Dead Pike Lake is designated as a Two-Story Lake, which serves as the outlet or drainage from PMSWA, and recently added to the 303(d) list of impaired waters on April 6, 2016 for exceeding 2016 WisCALM listing thresholds for the Recreation use and Fish and Aquatic Life use (WDNR, 2016).

Iron Flocculation

Ground water in the vicinity of Powell Marsh is low in dissolved oxygen and contains high concentrations of dissolved iron. When this ground water flows into a surface ditch or into a water body containing high levels of dissolved oxygen, the dissolved iron will solidify or "precipitate." The process of "precipitation" produces energy and iron bacteria depend on this process for survival. These iron bacteria produce rusty, oily looking plumes around their

colonies, which remain in suspension in water. This inflow of varying water levels from PMSWA affects the aesthetic quality of Dead Pike Lake and may cause variation in water level of the lake.

This precipitation process occurs in the ditches of PMSWA. In periods of low flow (or when water is held back in the impounded ponds), the primary source of water entering the ditch system is groundwater. The groundwater table is shallow (2-3 feet below the ground surface) and is naturally high in dissolved iron. Dissolved iron in the groundwater is precipitated (contact with oxygen) as it enters the ditch system. This causes an orange coloration in the water. The problem may be magnified by the formation of plumes of iron bacteria. When the water is released from the flowages or when rainfall occurs, water in the ditch system flows into Dead Pike Lake. If the ditches have been stagnant for some time, the initial flows out of the flowages produce a plume at the inlet to Dead Pike Lake.

Minimum Water Flow

In 2007, the Main Ditch (the primary ditch draining the Powell Marsh flowages) was defined as a navigable stream. On navigable streams, a minimum flow through water control structures is required. That flow has been estimated at 1.2 cfs by use of the Base Flow Index and at 0.6 cfs by use of the Area Weighted method (Lenz, 2007). Since 2007 a minimum flow of 1.2 cfs has been maintained by water discharge from the pools. Previous to this, water management primarily entailed capturing spring runoff to fill the ponds and fall drawdowns for vegetation management. Minimum flows in the ditch were not historically maintained.

Powell Marsh State Wildlife Area Charrette Alternative Management Plan

After discussing the marsh history, current management strategies, and conditions within the marsh and surrounding waters, the charrette process identified six major objectives related to overall management of the marsh. These were categorized as the following:

- **Management of Water Quality**
- **Wildlife Management**
- **Vegetation Management**
- **Recreation**
- **Education**
- **Restoration of Dead Pike Lake**

Although each of these categories are interrelated within the Powell Marsh ecosystem, each can be evaluated individually and each address specific management objectives. Therefore, three guiding principles were identified that can be ascribed to all of the objectives. These principles should serve as the basis for all management decisions regardless of category.

Powell Marsh Management Guiding Principles

- 1. Utilize the natural processes of the marsh and wetland environments to improve the quality of surface water exiting the marsh and entering Dead Pike Lake.*
- 2. Maintain the openness, wildness, educational opportunities and ecologic diversity of habitats provided by current marsh management.*
- 3. Manage the Powell Marsh area within the context of a watershed; recognizing the direct hydrologic connection to Dead Pike Lake and that overall management of the marsh directly affects Dead Pike Lake and other connecting waters.*

Within the context of these guiding principles, each management objective identified a series of recommended management strategies in an effort to obtain the desired outcomes identified below. It is recognized that these strategies may be modified or supplemented through time; however, all decisions should be made within the guidelines of these principles.

Management of Water Quality

The objective of this strategy is to improve water quality in and around the marsh (including water discharged to Dead Pike Lake) to acceptable levels through restoration efforts and structural adaptations within the marsh. A depiction of these strategies is shown in a conceptual map in Appendix A. This goal will be achieved through the following management strategies:

- Alter and/or eliminate Ditch #3 (the north/south and /or the east/west portions of this ditch system) to the extent possible to reduce or eliminate ground water infiltration into the ditch and to redirect surface water flow to the marsh/wetland areas west of the main ditch. Encourage sheet flow of surface water through as much of this area as possible, utilizing native vegetation to slow and filter water flow before exiting the marsh via existing culverts at Powell Road. This will likely require a detailed topographic survey of the current marsh infrastructure (including dikes, ditches water control structures and culvert inverts) and marsh topography.
 - The success of this approach will be measured by monitoring water quality within the marsh and at the marsh outfall. Suggested parameters include turbidity, total suspended solids, total iron, and iron floc accumulation. It is important that sufficient testing take place before the implementation of this strategy to collect background data to provide a comparison to post implementation conditions.
- Retain the ability to control water levels within the marsh, including Vista Pond, to maintain the positive features of the marsh, which include open space and a variety of habitat types.
 - The success of this approach will be measured by continuing to document and record water flows and other habitat management practices.
- Manage Powell Marsh on a watershed basis, recognizing the interrelationship that Powell Marsh has on connecting waters (including Dead Pike Lake).
 - The success of this approach will be determined by evaluating data (water level and water quality) from the entire watershed and understanding the effect of marsh management upon the data.

- Alter and/or eliminate the east portion of the ditch exiting Little Trout Lake. The control structure on this ditch located on the shore of the Little Trout Lake is no longer functional and this ditch has historically collected iron floc when water sits stagnant. In addition, water samples obtained from this ditch have contained the highest concentrations of Phosphorous recorded within the marsh. Certain portions of this ditch has not been used for marsh management for many years except for an emergency fire break and the neighboring cranberry grower does not utilize this ditch.
 - The success of this management approach will be determined by measuring Phosphorous levels within the marsh both pre and post mitigation.
- Abandon the dike between the south and east main flowages. Since this dyke is no longer used for management of the marsh, maintenance of this structure is no longer needed. This dyke will be allowed to deteriorate and will no longer be maintained.
 - The success of this management approach will be determined by recognizing the cost savings achieved by eliminating the maintenance of this structure.
- Alter and/or eliminate the ditch that flows into Pete’s Creek. This ditch has historically accumulated significant concentrations of iron floc that drains into Pete’s Creek, which in turn flows into Dead Pike Lake. It is recommended that a decision on the timing of this ditch elimination/alteration be based on the success of previously noted ditch elimination/alteration projects.
 - The success of this approach will be measured by monitoring water quality within the marsh and at the mouth of Pete’s Creek. Suggested parameters include turbidity, total suspended solids and iron floc accumulation. It is important that sufficient testing take place before the implementation of this strategy to collect background data to provide a comparison to post implementation conditions.
- Facilitate routine communication between Marsh Managers and Marsh Stakeholders (i.e. WDNR, Chippewa Tribe, Cranberry Growers, Dead Pike Lake Association, and Local Birding Groups). WDNR should involve Hydrologists, Hydrogeologists and Watershed Management expertise in addition to Wildlife Management Professionals.
 - The success of this approach will be measured by holding routine meetings and publishing meeting agendas and minutes.

- Prioritize future maintenance and upgrades to the marsh based on cost benefit analysis.
 - The success of this approach will be measured by publishing the results of cost benefit analysis for future marsh capital projects.

Wildlife Management

The objective of this strategy is to maximize and support habitat for a wide variety of plant and animal species, including those that are rare and endangered. This goal will be achieved through the following management strategies:

- Continue to support hunting on the marsh property and the maintenance of a wildlife refuge.
 - The success of this approach will be measured by tracking hunter days and success rates within the marsh property.
- Modify the refuge boundary to increase recreational usage of the marsh year round.
 - The success of this approach will be measured by tracking recreational usage throughout the year.
- Maintain the diversity of existing wildlife habitats.
 - The success of this approach will be measured by tracking both game and non-game wildlife populations.
- Support a variety of wildlife habitats.
 - The success of this approach will be measured by tracking both game and non-game wildlife populations.
- Continue managing habitats for rare and endangered species.
 - The success of this approach will be measured by tracking populations of rare and endangered plant and animal species.

Vegetation Management

The objective of this strategy is to maintain a healthy and diverse marsh/wetland ecosystem with the flourishing vegetative components necessary for long term viability and sustainability. This goal will be achieved through the following management strategies:

- Continued management for a diversity of native species in support of a wide variety of plant communities including wild rice.
 - The success of this approach will be measured by tracking populations of aquatic and terrestrial plant species (including rare and endangered species) within the marsh property.
- Continued management (removal) of invasive species.
 - The success of this approach will be measured by tracking populations of invasive plant species within the marsh property.
- Evaluate specific plant species to determine their effectiveness in promoting nutrient uptake and filtration of surface water. These plants may be specifically managed to improve water quality within the marsh, particularly as it relates to the removal of suspended solids and total phosphorus.
 - The success of this approach will be measured by monitoring water quality within the marsh and at the marsh outfall.

Recreation

The objective of this strategy is to anticipate and respond to a broad range of recreational trends by providing a multi-use area that serves a wide array of users (hiking, birding, hunting, trapping, etc.). This goal will be achieved through the following management strategies:

- Maintain public access including current parking areas and walking paths. Public access should be limited to non-motorized forms of transportation and paths should be improved as needed. Access should maintain the openness and wildness that currently exist at the marsh.

- The success of this approach will be measured by monitoring satisfaction within specific user groups.
- Do not create designated bike trails.
 - The success of this approach will be measured by continuing to monitor for bikers and by enforcing current biking regulations within the marsh.
- Establish a hiking trail on the north end of the marsh. This trail will follow several historic roadways north of Vista Pond.
 - The success of this approach will be measured by monitoring and documenting development of the new trail.
- Create reasonable ADA access at Vista Overlook and at other selected locations for multiple recreational uses (i.e. walking, birding, waterfowl hunting).
 - The success of this approach will be measured by monitoring and documenting development of ADA accessible access points.
- Install ADA accessible birding platforms, benches and duck blind(s).
 - The success of this approach will be measured by monitoring and documenting development of ADA accessible access points.
- Consider the establishment of board walks to provide limited access into the marsh.
 - The success of this approach will be measured by monitoring visitor use trends. The establishment of these features should be dependent those trends.

Education

The objective of this strategy is to maximize opportunities for outdoor education, including environmental interpretation and natural history. This goal will be achieved through the following management strategies:

- Provide signage at public access entry points. Signage should be rustic to retain the historic look of the property.
 - The success of this approach will be measured by collecting feedback from visitors.
- Provide information on what to look for in the marsh (birds, other wildlife, vegetation, management features, etc.).

- The success of this approach will be measured by collecting feedback from visitors.
- Provide information of the location of new or existing publications relating to the management and history of the marsh.
 - The success of this approach will be measured by collecting feedback from visitors.

Restoration of Dead Pike Lake

The objective of this strategy is to provide adequate clean water to Dead Pike Lake. This goal will be achieved through the following management strategies:

- Evaluate the removal of accumulated iron floc and phosphorus levels from Dead Pike Lake.
 - The success of this approach will be measured by monitoring water quality within Dead Pile Lake for turbidity, phosphorus, total iron and iron floc and comparing the results to data obtained from similar lakes in Northern Wisconsin with comparable inputs.
- Install a spillway on the outlet from Dead Pike Lake into Lost Creek. This structure will maintain more stable water levels on Dead Pike Lake, particularly as outflows from Powell Marsh fluctuate during alteration of the ditch systems.
 - The success of this approach will be measured by monitoring water levels on Dead Pike Lake.

Work Cited

Lenz, Bernard. 2007. Dam Failure Analysis. Main Flowage Control Structure – Powell Marsh State Wildlife Area, Vilas County, Wisconsin. Short Elliot Hendrickson Inc. Rice Lake, WI.

USEPA. Impaired Waters and TMDLs, Program Overviews TMDLs. 2015.

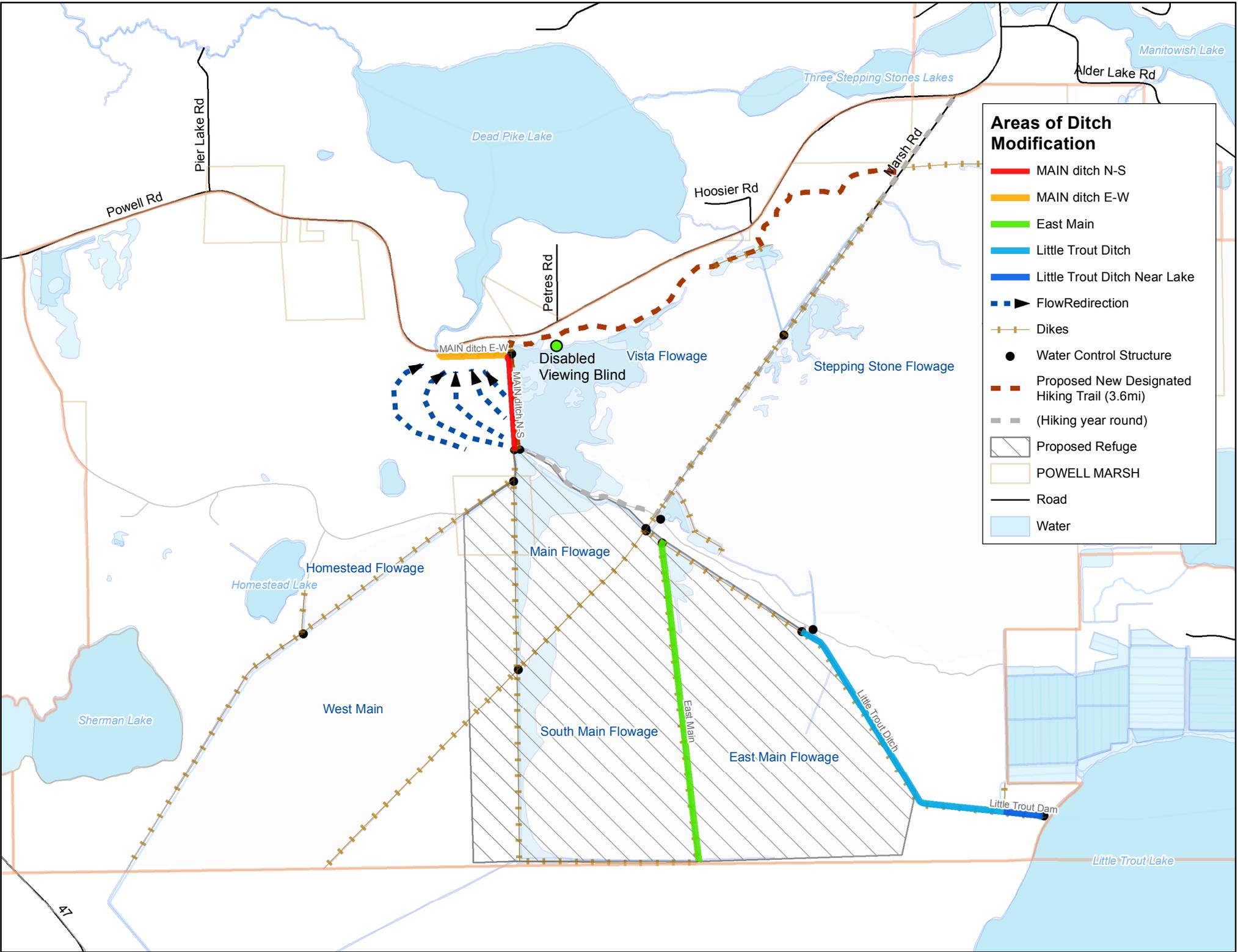
<https://www.epa.gov/tmdl/impaired-waters-and-tmdls-statute-and-regulations>

WDNR. Impaired Waters. 2016. <http://dnr.wi.gov/water/impairedDetail.aspx?key=15067>

WDNR. Regional and Property Analysis Powell Marsh State Wildlife Area. Pub LF 074. Revised Dec. 2015.

Appendix A

Conceptual Map of PMSWA Charrette Alternative Management Plan



Areas of Ditch Modification

- MAIN ditch N-S
- MAIN ditch E-W
- East Main
- Little Trout Ditch
- Little Trout Ditch Near Lake
- ▲- FlowRedirection
- + - Dikes
- Water Control Structure
- - - Proposed New Designated Hiking Trail (3.6mi)
- - - (Hiking year round)
- Proposed Refuge
- POWELL MARSH
- Road
- Water

Appendix B
Public Comments Received
PMSWA Charrette Alternative Management Plan

Public Comment

The goal the charrette was to bring various stakeholders together to discuss and develop alternative management options for PMSWA. There is a wide consensus that there are issues that exist at PMSWA regarding management and its impact within the watershed (i.e. Dead Pike Lake). Following the charrette there was an opportunity for the public to provide comments regarding the “Powell Marsh State Wildlife Area Charrette Alternative Management Plan”. Comments were incorporated that reflected the outcomes of the charrette. All feedback is important to this process and essential for continuing to move forward. All comments are listed below.

Powell Marsh Clarifications

Wed, May 25, 2016 at 3:26 PM

Hello Kimberly.

I attended the Monday evening public meeting for Powell Marsh. Your UW-Oshkosh Team did a very good job of trying to present information. It was unfortunate that some in the audience did not follow the rules and made presentations and statements. Other folks had prepared statements to make but followed the rules and did not interrupt. So, those in the audience got some of the story but not the whole story. If there were notes being taken then the notes would reflect only those who chose to interrupt. The notes should be amended to include clarifications on statements made on Monday evening.

Here is a sampling of clarifications, concerns, and issues.

The question was asked: "Is the marsh a properly functioning marsh?" The answer is complex. The total Powell Marsh is almost 20,000 acres with multiple land owners. The answer is yes if the objective is diverse wildlife and wildlife habitat on the state portion. The answer is yes if you ask the cranberry growers on their land ownership. The answer is yes if you ask the Lac du Flambeau tribe on their land ownership.

It was not clear who the tribal elder was and who she represented. I do not believe she represented any of the Wisconsin Tribes as an official tribal representative. She did speak of the Little Bear Flowage on State Forest Land west of Powell Marsh. I am very familiar with this flowage and I surveyed the wild rice crop on this flowage during the 1990s and ending when I retired in 2010. The flowage does produce good crops of wild rice. The water that enters Little Bear Flowage comes from the Sugar Bush Lakes with a major tributary from the Lac du Flambeau portion of Powell Marsh and a minor tributary from state forest land west of the managed portion of Powell Marsh Wildlife Area. We need to clarify what is the concern at Little Bear Flowage. The most knowledgeable person is Peter David at the GLIFWC office in Odanah. Peter has the most updated information on the wild rice at Little Bear Flowage.

Someone stated that the management of Powell Marsh as originally envisioned was a total failure. Powell Marsh became a state wildlife area because the people of Manitowish Waters petitioned the state Conservation Commission to establish a state wildlife area. Human management of the marsh could not duplicate what the extensive summer-long wildfires accomplished during the drought of the 1930s. The fires literally burned down the peat soils, deposited nutrients (ash), and allowed the establishment of extensive, open sedge meadows. Migrating geese found these extensive sedge meadows attractive. Two things happened by the mid-1980s. One: natural succession converted most of the marsh back to leatherleaf bog with invading spruce/tamarack forest that grew faster than management could cut and burn. Two: across the Mississippi Flyway ducks and geese changed their migration patterns with fewer and fewer birds using north central and northeastern Wisconsin. Horicon became the magnet.

Someone stated that the Powell Marsh iron flock discharge caused the decline in the Dead Pike Lake walleye fishery. Is this really true? Across the northern region walleyes have been in a natural down cycle in many lakes

with bass dramatically increasing. What do the fish biologists say about Dead Pike Lake?

Someone stated that Powell Marsh should no longer be classified as a state wildlife area but be reclassified as some other kind of management area. State property classifications are set in state statute and the different classifications come with different management and funding sources. We really need to clarify what are all the implications of changing the status of Powell Marsh.

Someone called tag alder "buckbrush" and referred to it as an invasive. It is a native shrub and not invasive.

Someone called the aerial photo of the managed vs. unmanaged portion of Powell Marsh a misrepresentation of the true condition. The photo was representative and there are many more aerial photos available. Refer to Google Maps to see the management effects on the vegetation.

It should be noted that iron flock is a natural condition and occurs as a minor precipitate along small portions of the shoreline on all the lakes that surround the marsh (including Dead Pike Lake).

We need to clarify the rainbow smelt vs. cisco situation on Dead Pike Lake. What is the real story here?

We need to access the DNR database on secchi disk readings for Dead Pike Lake to verify what those readings were over many years.

We need to clarify what exactly the "impaired waters" list is and why it was applied to Dead Pike Lake.

Horicon Marsh was mentioned several times as a good example to base Powell Marsh management. It should be noted that Horicon Marsh is indeed a true southern Wisconsin "marsh" while Powell Marsh is a northern Wisconsin "peatland". Horicon has two large dams and miles of dikes. Other more northern state wildlife areas to look at include Mead in Marathon County and Crex Meadows in Burnett County. Both these wildlife areas have extensive dam and dike systems and are "properly functioning" wetlands with tremendous wildlife habitat values.

Finally, we have to clarify what would happen to the plant and animal diversity of the state-managed portion of Powell Marsh if the area was restored to the natural condition. The diversity and abundance of plants and animals would drop by more than 90%. The area would return to a black spruce forest on the deep peat portions and a tamarack forest on the shallow peat portions with small areas of northern sedge meadow on the wettest portions. All that makes Powell Marsh Wildlife Area a regionally important wildlife habitat would be lost. All across Wisconsin birds of large grasslands and large open wetlands have declined dramatically over the last 50 years. The people of Wisconsin through the DNR have been trying to conserve these open country birds. A state-wide analysis of areas critical for the conservation of large open grassland/wetland birds was done in 1997 (See the DNR Technical Bulletin by David Sample and Mike Mossman). For the nine counties in northeastern Wisconsin, Powell Marsh is one of only eight sites considered important and it is the largest of the eight. So, the total Powell Marsh including the Lac du Flambeau portion has a very important role to play in the conservation of open country and wetland birds in Wisconsin. The original "failure" of attracting migrating geese became the "success" of attracting declining and rare species as well as extensive seasonal use by migrating waterfowl and shorebirds. The people of Manitowish Waters and Wisconsin continue to benefit from the plant and animal diversity of Powell Marsh.

June 2, 2016

Kimberly M. Busse
Laboratory Manager
Environmental Research and Innovation Center
University of Oshkosh

Re: Powell Marsh Management Charrette

Dear Kim:

I wanted to offer a couple of comments regarding the draft for the management plan of Powell Marsh. There are two points of clarification or interpretation based on my perspective of the plan developed at the charrette:

- 1) Regarding "Recreation": The objective for "Recreation" in this draft lists biking which was also shown in the original list of objectives. The subsequent discussions during the planning session resulted in "No designated bike trails" and "non-motorized vehicle access only". While it was acknowledged that some people may bike some portions of the marsh, it was not an activity that was being encouraged and is, in fact, prohibited in certain areas by virtue of the prohibition of motorized vehicles. Given the lack of encouragement of biking on the property, I would suggest removing the word "biking" from the list of objectives on the plan. The primary objectives were hiking, birdwatching, hunting, trapping. Listing biking as an "objective" may infer this activity as being encouraged, which I believe was not the consensus of the planning group.
- 2) Regarding "Education": It was determined that informational/educational signs should only be at the main entry points in order to maintain the natural environment of the marsh. The third strategy states "Wildlife education signs in the marsh". I believe the intent of that line was to have signs **about** wildlife in the marsh. It was one of my suggestions to have signage about some of the birds and animals in the marsh. I believe the wording of that line should be adjusted so that the interpretation remains consistent with the desire to keep signs **at the entry point only**, rather than having signs "in the marsh".

I would appreciate feedback on these two proposed adjustments. I realize there may be other change requests as well. Hopefully my proposed adjustments, as well as any others, continue to remain consistent with the concepts previously discussed and agreed to during the management planning sessions.

Sincerely,

Draft Charrette Alternative Management Plan for PMSWA

Mon, Jun 20, 2016 at 9:01 AM

Hi Kim,

Under wildlife management, it mentions that a refuge will be maintained. The map indicates the proposed change in the refuge boundary creating year round access to a loop a which includes the main dike and the dike that runs parallel to the Stepping Stone Flowage. That is all correct, but nowhere in the text of the draft does it mention the proposed boundary change of the refuge. The proposed boundary change offers increased recreational use of the marsh. It may be worthwhile to mention the proposed change of the refuge boundary in the text of the draft under either wildlife management or recreational use.

Thanks for creating such a user friendly document!

Draft Comments

Fri, Jun 24, 2016 at 2:01 PM

Dear Kim: Our response, as you will see, represents both positive and negatives comments. Our largest negative reaction was to the initial "Background" statements identifying the marsh, its history and its remarkable success. It is a blatantly biased description. One could read it and question why there was a need for a Charrette at all. What was the problem? I think a reference to the 16 year history of the DPLA's attempt to remedy a major water pollution issue should be included as background. You have the Barr study recommending full restoration which could be quoted as a point of reference to which the department ultimately needed to respond. We also point up questionable assertions which, if used, need to be substantiated with empirical data. I would think that you would demand that. We are also suggesting a summary overview from your scientific specialties, giving some projections about influence, success and recovery. This document will serve as a template for the department's response and needs to be as scenically grounded as possible. It needs to be much more than the mere conclusions arrived at by a group of lay people from different stakeholder perspectives. meeting for a week of intensive discussion. It needs scientific underpinning, especially if it is expected to be approved by the Natural Resources Board.

3 attachments

 **Narrative Comment, ntitle 1.odt**
27K

 **Narrative Comment II.odt**
28K

 **Critique of a draft.odt**
26K

Paragraph Two - To our knowledge there is no historical record of the Wisconsin Conservation Commission being “*petitioned*” to establish a goose management project on the marsh. This implies a degree of public input which is unwarranted. The fact is that there was no Environmental Assessment or Environmental Impact Statement called for, an indication that public input was most likely minimal at best.

Paragraph Three – To call the radical alteration of a 4,000 acre watershed a “*pioneering effort*” to manipulate a leatherleaf bog for geese, would imply that similar attempts have subsequently been made. Our contacts with Ducks Unlimited and Delta Waterfowl indicate that such is not the case. In both instances in fact, the effort was met with disbelief. It would be more accurate to identify it as a “failed effort” to create a goose refuge.

A “*system of ditches and dikes*” would more accurately be described by giving the details that they were 14 miles in length and lowered the ground water level of the entire wetland by two feet (USGS 2002) Credit should be given for the extensiveness of this project and include its subsequent effects as well.

“*Limited farming*” is in no way descriptive of the extensive efforts to grow crops that were undertaken by the Commission. Read our material in your Drop Box on the Powell Marsh Master File which includes copies of direct inter-departmental communications. We are talking about literally tons of lime and fertilizer, along with specialized mechanical gear for tilling the soil down to a depth of 2 feet. Crop cultivation was the primary goal, not water level manipulation. We scoured the Master File for days in preparation for writing the Marsh's history for our Lake Management Plan. There was not a single reference to “water control”. It was exclusively about agriculture. The ditches primary purpose was **drainage**. Broaden your understanding by reading our historical record, all verified by exact quotes.

Paragraph 4 – The word “significant” in the first sentence is uncalled for. To use it without substantiating empirical data is unprofessional. Again check your Drop Box for the Notable Quotes submission. The first one on the top of page two is from the previous Marsh Manager, Linda Winn who states that there is **no** documented evidence of wildlife utilization on the marsh because of budget cuts and lack of staff. That was in 2006. You'll remember that I asked Michele Woodford the same question during our impromptu meeting following the site visit and her answer was identical. “*There is no data because of budget cuts and lack of staff.*” Don't imply something you can't back up empirically.

You conclude (page 3) with crediting the department for your previous information. (WDNR, 2015) Given the specificity of some sections, like plant communities, etc., I suspect that a good portion of it is verbatim. If so, it should be in quotation marks and likewise credited. You'd be well advised to write your own content after reviewing several sources, rather than parroting the department's material.

Narrative Comment II

PAGE 3

Paragraph One – The “mudflats” production is troubling. It needs a location identifier. Vista and Stepping Stone are never subject to draw down leaving only the Main Flowage as a possibility. That cannot occur, at least since 2007, because it is the source for the 1.2 cfs needed for a minimum flow guarantee. This needs more specificity. In what season does it occur?

Paragraph Three - “*Thousands of migratory birds can be found feeding and resting in the open waters of the PMSWA before surrounding lakes have open water.*” Believe me, if this were true the papers would be full of this information and the department would have a trove of photos depicting the events. This isn't like the Sandhill Crane on the Platte River in Nebraska or Snow Geese at Squaw Creek in Missouri. If this were a major staging area for the spring migration, it would be highly publicized. It isn't. Show us the evidence. Where's the visuals? Don't be a lackey for the department's propaganda. We were expecting an independent review. Ask the department why they stopped banding waterfowl late last century. There were not enough birds to warrant it.

PAGE 4

Paragraph Three - DPL serves as an outlet or drainage *from* PMSWA, not *to* PMSWA. Also sentence structure here is not good. (*was* recently added to the 303(d) list?) (*Recreational?*)

Paragraph Four - I don't understand how iron floc production and its discharge could cause a variation in water levels on DPL. It'd be nice to reference the claim of iron toxicity as referenced by Barr Engineering within the Lake Management Plan. Also the aesthetic feature of the “plume” is but one aspect of the problem. The main concern is the cumulative affect of the depositions (totaling tons according to the Barr study) and its concentration on the lake's shoreline. This is a major feature of the Charrette and certainly demands far more coverage than you are giving it. With the marsh flushing itself out *totally* this spring due to the high precipitation, we are experiencing excessive iron within our water as evidenced by Seechi Disc readings registering some of the lowest clarity levels ever recorded. (4 feet). This section minimizes the problem or maybe reflects your lack of understanding of the issue.

PAGE 5

Paragraph One – Same comment as above.

Paragraph Two - “cfs” is always lower case. (Line 3) Water management consisted of filling the flowages in the spring and holding that water through the fall hunting season. (DNR publications) Any draw downs were conducted in the spring so that vegetation could grow and then those areas were flooded in the fall for waterfowl. Lenz conducted the Dam Failure Analysis under the directive to determine if Powell Road would wash out from a failure of the Main Dike - this after the dike was reinforced given that concern some two years earlier. The real intent was to assess the total water volume and determine how much they could *afford* to release as a minimal cfs, a determination necessitated by the department's application of the concept at he Rest Lake Dam during the Manitowish Chain controversy.

PAGE 7

Paragraph 2, line 6: “Existing culvert *at* Powell Road” (not *below*) Sub paragraph line 3: “Iron floc accumulation” should really be “Iron concentration” as iron will be in dissolved state at that point.

PAGE 8

Bullet Point #4, Second sentence: **THIS IS ONE OF THE BEST STATEMENTS IN YOUR PLAN!** Yes, watershed management expertise, along with hydrologists and hydro-geologists to supplement the current monopoly of wildlife representation. Great directive!

Bullet Point #5: Add “*maintenance*” along with “*upgrades*” for cost benefit analysis.

PAGE 10

Bullet Point #2: **EXCELLENT ADDITION!** You might want to mention the material we offered for attention on the last day – the floating mats of vegetation and their critical placement.

Recreation Remember we had talked about lack of access to water for waterfowl hunters due to blockage by gates. Also hunters are encouraged to shoot off from dikes which is illegal (from any “man-made” structure – WI. Regulations)

PAGE 12

Bullet Point #1, sub-point, 3rd line: “*comparing the results to data obtained from similar lakes in Northern Wisconsin.*” The “similarity” needs to be defined as lakes receiving direct input from a highly altered watershed and the comparable lakes need to be the sole recipients of the water, a single repository without further drainage to flush out the contamination. The lakes should also be of similar size and depth.

Critique of a Draft

(Request for Proposals, WDNR, September 8, 2015)

“*At minimum*, submission must provide information on personnel providing the following expertise: 1) Hydrology 2) Wetland Ecology 3) Environmental Engineering and 4) limnology.

Oshkosh Proposal: (Sept. 30, 2015 - **4.3.2 Identify personnel assigned to the project team.**) “*Miller Engineers and Scientist's* staff will provide technical support for gathering background information, analyzing data and facilitating the Charrette. Miller staff will be primarily responsible for providing technical expertise in the areas of hydrology, wetland ecology, environmental engineering and limnology.”

The role of the Miller team is as follows: Mr. Pittner will act as the cooperate (sic) project lead and in collaboration with other team members will coalesce our technical findings and will be present as part of the Powell Marsh State Wildlife Area Charrette process. Mr. Miller will lend expertise in the areas of environmental engineering while Mr. Middemis-Clark will focus his efforts on hydraulics and hydrology. Ms. Majerus will provide expertise in the areas of wetland ecology and limnology. Ms. Thiel will assist in gathering background data and project communication. (Pages 19-20)

Where were these people during Phase One of the Charrette when we pleaded for contact to assist in the fulfillment of their requirement of “gathering background information and analyzing data”. Furthermore, this “expertise” was never available throughout the course of the Charrette nor did it ever contribute a single creative offering during the entire Charrette process. The ecological and hydrological implications of the Proposed Alternate Plan are devoid of any scientific evaluation whatsoever, as is the iron/phosphorus contamination issue. The obvious absence of these obligations for scientific oversight as contracted for by UW Oshkosh, represents, in our opinion, a lack of contract fulfillment.

Now that the proposal is completed, it would be an appropriate time to accompany the draft with statements from these scientific experts addressing the impact of the changes upon the resource's hydrology and the overall ecology of the wetland system. Specific estimates of the filtration potential of the limited area of aquatic vegetation (One square mile?) and the projected time span for the return of native plant life. Some directives regarding the rehabilitation of the 300 acre Dead Pike Lake would also be valuable as a guide for the department. After being totally absent from Phase One of the Charrette, their appearance now within the the final Implementation Phase would be welcomed.

Draft Charrette Alternative Management Plan for PMSWA

Wed, Jun 22, 2016 at 8:04 AM

Hi Kim,

I took a quick look at your draft charrette alternative mgt plan for the Powell.

I noticed that the top bullet on page 8 is slightly confusing, hopefully only to me. From a management perspective, we call two separate water control structures Little Trout...the "Little Trout WCS" on the west side of the blue on the map, and "Little Trout Dam" that is literally on the shore of Little Trout Lake. The Ditch itself is pretty long. The WCS on the lakeshore (Little Trout Dam) is not functional. The Little Trout WCS (where samples were taken) is very functional and we do utilize water from that portion of the watershed to a certain extent. I believe that we discussed that alteration of the ditch may not include the entire ditch depending on engineering, hydrologic flow analysis and monitoring.

My recommendation is to simply add a quick clarification as to which WCS is not functional. Highlighted yellow portion is what I think needs to be changed, blue is at your discretion.

Alter and/or eliminate the east portion of the ditch exiting Little Trout Lake. The control structure on this ditch located on the shore of Little Trout Lake is no longer functional and this ditch has historically collected iron floc when water sits stagnant. In addition, water samples obtained from this ditch have contained the highest concentrations of Phosphorous recorded within the marsh. Certain portions of tThis ditch has not been used for marsh management for many years and the neighboring cranberry grower does not utilize this ditch.

I have since learned that the ditch was originally installed for fire control (during the drought associated with the big wildfire in the 40's-50's DNR asked permission to create the ditch to move water out onto the property to suppress the wildfires. So potentially the last sentence in that paragraph could be changed to "this ditch has not been used for marsh management for many years except as an emergency fire break". I'd also like to pursue more research about this area having a stream-like shape to it before it was ditched as mentioned by the Vice President of DPL.

I also remember that one of the comments from Friday was that we had the map drawn wrong (not highlighting the portion east of the original blue ditch area.) I have attached a revised map that colors that section too.

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

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