

2018 Summer Drawdown of Sheboygan Marsh (Frequently Asked Questions)

Why is a drawdown being conducted and why is it important?

Like most ecosystems, wetlands are dynamic and need constant change to thrive. The *Broughton Sheboygan Marsh Strategic Management Plan 2013* outlines and directs the use of drawdowns as a management tool for Sheboygan Marsh. On a controlled and managed wetland restoration, such as Sheboygan Marsh, drawdowns mimic natural drought cycles which occur on natural wetland ecosystems. The benefits of using a drawdown in this managed wetland are:

- Rejuvenates a marsh by replicating the effects of drought cycles that naturally occur in wetlands.
- Helps to anchor and stabilize cattail mats, and allows the establishment of less aggressive, more beneficial aquatic plants.
- Increases the number of different species of plants and animals in the marsh (diversity).
- An increase in aquatic plants helps to reduce suspended sediments, which helps to improve water clarity and quality.
- Increases water column depth by exposing and compacting submergent vegetation and bottom sediments and by allowing the oxidation of those organic materials.
- Improves wildlife habitat for several years for waterfowl, shorebirds, muskrats and other wetland wildlife.
- Increases related recreational uses (waterfowl hunting, fishing, and wildlife viewing) for 1-to-5 years following the drawdown.
- Reduces tax dollars required to remove floating cattail mats that block the dam, bypass, and boat launch.

Current ecological signs that Sheboygan Marsh is in need of a complete summer drawdown are:

- There are more and more free-floating cattail mats in the marsh.
- There is less and less submergent vegetation (bottom sediment is bare in many areas).
- Emergent aquatic plant diversity is decreasing.
- There is more and more loose organic sediment present on the bottom.
- Water turbidity increases during active wave periods.
- Annual costs of cattail mat removal are increasing and totaled roughly \$40,000 in 2017 alone.

Are other marshes managed by using drawdowns?

Many other marshes are managed using drawdowns. Drawdowns are the one management tool that replicate drought conditions, which natural wetlands (occasionally) experience because their water levels are not controlled. In restored marshes (like Sheboygan Marsh) where a dam and water control structure are used to manage water levels, it is important to duplicate the effects of a drought to rejuvenate the marsh. Without the altering of water levels in managed wetlands from time-to-time, the wetland ecosystem will slowly die by becoming less and less diverse in the amount of plants and animals it supports. Examples of other area marshes that are managed using drawdowns are: Mullet Creek, Navarino, and Grand River.

Who manages the drawdown and who approved the effort?

The marsh is managed jointly by the County and DNR.

What other alternatives have been considered to manage the marsh?

While there will always be a need for conducting drawdowns, spraying, mowing, and prescribed burning have been used or are being considered to modify certain areas of vegetation.

Is there a permitting process required to conduct a drawdown?

Yes, a DNR *Permit for Temporary Lowering of Impoundment Water Levels* (Wis. State Statutes 31.02), plus a check for endangered and threatened species are required.

When will the drawdown start and how long will it last?

The 2018 drawdown was expected to start in early spring. However, after 50 years of service the dam bypass gate control structure failed in mid-May and was stuck in the down position until crews were finally able to remove it in early July. The Sheboygan Marsh is now being drawn down as there is no longer a gate to control the water flow.

An engineering firm was recently chosen to begin the design and permitting work for a new control structure. The objective is to have the engineering and permitting completed so a new structure can be installed soon after the new year. It is typically the goal to start filling the Marsh back up in late September by closing the bypass gate. Unfortunately, this year, this will likely not happen due to the bypass gate failure though we are exploring options for a temporary solution.

Why does the water fluctuate so rapidly during a rain event?

The Sheboygan Marsh system is unique in that the entire 133 square-mile watershed feeds directly to a single point; the marsh dam. The 65-foot wide dam and 5-foot diameter bypass tube cannot handle the amount of water that is the result of larger rain events. Also, the natural spillway for the dam has been eliminated in the past, so there is no longer anywhere for water to go around the dam if needed. Therefore wide fluctuations in water levels occur in the marsh, which tend to have adverse effects on marsh plants and wildlife. Funding is being pursued to complete an engineering and feasibility study to explore modifying the dam and bypass tube to be able to handle more water during rain events.

Why can't the I-beam be re-installed on top of the dam again?

The short answer is that it is illegal. From the time the I-beam was installed around 1953 to the time it was removed in 1984, the dam was operating at a water level 6-inches higher than allowed. The dam was constructed to duplicate the same level that the natural dam was at before it was removed to drain the marsh from 1912 to 1921. Although placing the I-beam is thought to improve the marsh by making it deeper, it actually causes more problems with cattail mats and flooding of areas that weren't flooded by the natural dam (including private property). Also, the extra load this places on the dam has never been evaluated. Considering the dam's age, dire consequences might occur by the re-installation of the 6-inch I-beam. Also, raising the water level does not equate to a healthier marsh. The marsh is managed as a marsh, not a fishery or lake.

Won't a complete drawdown ruin fishing at Sheboygan Marsh?

Historically, drawdowns have had a negative impact on the fishery at the marsh. Fish tend to migrate away from the marsh (upstream or downstream) as water levels drop. Some fish do get trapped and die during the initial drawdown. However, the long-term benefits to the marsh greatly outweigh the short-term impacts. A drawdown allows for sediment compaction, which increases the depth of the water column. A drawdown also increases the number of different species of aquatic plants (diversity). With increased diversity of aquatic plants, we see increased productivity in the marsh, which greatly benefits the fishery 3- to 5-years afterwards.

Will the County/DNR restock Sheboygan Marsh after the drawdown?

Yes. In the past, stocking of northern pike and pan-fish has occurred at the marsh. After the drawdown, the plan is to restock panfish.

What are the effects of a drawdown on the forestry resources of the marsh?

The fluctuating water levels that have occurred in the marsh throughout the years affect the trees there in many ways. As a general rule, changes in soil moisture conditions cause some stress on all vegetation. When plants are stressed one-way or the other (i.e., too wet or too dry), the right conditions may occur for other "stressors" (i.e. disease, parasites) to take hold. Lowering of the water level during a drawdown is the same affect that occurs during a natural drought cycle. Natural ecosystems (like the marsh) go through several ups and downs throughout their lifecycle and have the ability to temper such extreme natural events. The tamarack die-off seen in the marsh occurred at the same time in other areas of southern Wisconsin during the late-1990s and early-2000s. Photos taken during the 2002 drawdown show evidence that the die-off occurred sometime before that drawdown. That die-off was probably caused by a combination of stress from soil moisture extremes and parasite infestations (i.e., Larch casebearer, Larch beetle).

For further information, please contact:

- Aaron Brault, Sheboygan Co. Planning & Conservation Director – (920) 459-3060
plancon@sheboygancounty.com

Document originally prepared by former WDNR Wildlife Biologist, Dan Weidert