



Driftwood

The newsletter of the
Turtle Flanbeau Flowage
and Trude Lake
Property Owners'
Association, Inc.

Spring / Summer 2018

Citizen Scientists to Help Monitor Spawning Sturgeon

By Zach Lawson, WDNR

With decades of lake sturgeon population research and restoration work behind us, we've learned a boatload about densities, size structure, movement, habitat use, age, growth, maturity, foraging, and even competition with other species. However, there is one last 'piece of the puzzle' when determining the status of the broader restoration effort and the sustainability of the lake sturgeon population: reproduction.



The whipping tail of this Manitowish River sturgeon is a sure sign that spawning is under way.

The first step in assessing natural reproduction is to sample individuals that are actively spawning. However, as fisheries professionals, we find ourselves rather strapped for time come spring, and so we have recruited a group of dedicated citizen scientists to help us monitor the lake sturgeon spawn on the Manitowish River. Volunteers will spend one to two

hours walking along the rapids below the Hwy 51 bridge sometime in the late morning, taking water temperatures and making some observational notes about any fish they see (looking for whipping sturgeon tails indicating that the big dance has begun!). If sturgeon are observed, volunteers will then relay the message to our office so that we can drop everything, grab some nets, and head down to sample the spawning individuals. This collaboration should be

a win-win situation.

We at the WDNR will benefit from having more eyes and ears on the river to help us more effectively and efficiently expand sampling efforts aimed at the sturgeon population, and the volunteers will get to take a walk along the Manitowish, enjoying the sights and sounds of spring! We hope to have nice documentation of spawning observations and spring phenology on the river--documentation that will bring us closer to putting in place the final piece of the sturgeon puzzle.

Folks interested in participating in 2019 can contact me directly (715-476-7847) if they would like to take a day or two to monitor the river.

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President's Letter

By Jeff Malison



Well, how was that for one long winter? But wait, has it really ended? It's April 27th as I begin writing this article, and I'm looking out my window at falling snow and an ice-covered lake that will likely not be open in time for the fishing opener only eight days away. But we all know that good things, like a beautiful spring and summer, are usually worth waiting for.

Speaking of which, in our previous two newsletters we discussed the formation of a Turtle Flambeau Flowage Stakeholders group that would regularly meet to discuss their concerns and priorities for the flowage. As winter dragged on I did not hear of any progress on this issue, but just a few days ago I received an e-mail suggesting that the first meeting might be scheduled soon. The group would include, among others, representatives from the DNR, Xcel Energy, Iron County and local governments, our Association and the Turtle Flambeau Flowage Association. In preparation for this meeting, we prepared concise priority lists for each of our "action" committees – water quality, invasive species, fish management, and water level. I'd like to share these priority lists (in no particular order) with you here.

For water quality, our priorities are:

- The comprehensive water quality monitoring at seven locations that has been conducted by volunteers of the TFFTL-POA water quality committee should be continued indefinitely.
- The reporting and interpretation of the water quality data should be done by the DNR Citizen Lake Monitoring Network (CLMN).
- If possible, regardless of which entity provides funds for water quality testing, all water testing should be conducted through CLMN.

Direct DNR funding for four of the seven sites was lost beginning in 2017, and our Association has picked up that funding. We are looking into the possibility of grants to pay for future expenses.

For invasive species, our priorities are:

- At the present time efforts should remain concentrated on surveying and removal of purple loosestrife. Continue the current purple loosestrife surveys and work day. Plan work day for mid-August which would allow plenty of time for volunteers to survey their block. Have August 1st or Loon Days as the deadline for turning in data sheets.
- Continue to support the Iron County Land and Water Conservation Departments request to XCEL to keep funding invasive species work on the TFF.
- Training sessions on invasive species identification should be offered to members every other year. This can be set up by the Land and Conservation Water Department.

We are winning the fight with purple loosestrife. We may need to increase survey coverage, particularly in shallow water areas that cannot be reached with motorboats.

For fish management, our priorities are:

- The flowage should be refilled to near full pool (1571.5') by April 20 or within one week of ice-out, as already stated in the existing TFF Master Plan. This refill practice should continue in order to facilitate a healthy walleye spawn and good egg survival and hatch.
- We suggest that a winter drawdown of a minimum of four feet be conducted and maintained for a continuous period of 90 days between Nov. 1 and March 15. Such a drawdown should occur at least once every two or three years.
- The comprehensive water quality monitoring at seven locations that has been conducted by volunteers of the TFFTL-POA water quality committee should be continued indefinitely.
- The water flow through the Manitowish River into the TFFTL should be managed to facilitate successful spawning of sturgeon. This topic is already being addressed by the Rest Lake Dam committee.

The explanation for our suggested winter drawdown is as follows. The walleye fishery is considered to be the number one priority of the fish management committee. In recent years the walleye fishery has declined, coincident with an increasing population of bluegill and bass. Also, coincident with these changes in the fish populations, increasing rooted weed growth has been observed in shallow areas of the flowage. Such rooted weeds are more beneficial for



bluegill and bass than for walleye. We suggest that the recommended drawdown will lead to a decrease in rooted weed growth along the flowage shoreline, and in this way benefit the walleye population. Any possible problems associated with such drawdowns (e.g., dissolved oxygen depletion in shallow locations) will be monitored and assessed.

For water level, our priorities are:

- Compliance with refill and overall water levels as documented in the Memorandum of Understanding.
- Goal of maintaining a minimum water level of 1,569.25

during open water season to maximize the benefit for recreational users.

- Support changes to existing management practices/operations that further protect and preserve the flowage's precious natural resources and enhance the recreational utilization/experience for all visitors.

I hope that all of you understand and agree with most of these priorities. If you have any questions feel free to contact me or any of our board members for more information. Thanks, and I hope to see many of you at our upcoming annual members meeting in June 23, 2018 at 10 a.m.

Wisconsin's Breeding Bird Atlas on the Turtle-Flambeau Flowage

By Bruce Bacon – Iron County BBA Coordinator

Birds, other than hunted species, have traditionally fallen through the cracks of natural resources management, until a species becomes threatened. There are a few bird surveys like the Christmas Bird Count that have a long history but at best can only give population trends and gross distribution. According to the US Geological Survey, "A Breeding Bird Atlas (BBA) is a population survey project designed to cover large geographic areas using a grid based system and is generally organized at the state or provincial level. Each participant in the project, referred to as an observer or 'atlaser', is assigned one or more blocks (grid cells) in which to conduct extensive area searches. They record any breeding evidence observed for each bird species; this evidence is categorized as "confirmed", "probable" or "possible". The results can be mapped and will then provide comprehensive information about the distribution of breeding birds in the region covered." These efforts rely on considerable numbers of volunteers. Wisconsin did its first BBA in 1995-2000. We are now in the middle of a second BBA, 2015-2019. When finished, this current BBA's data will give a picture of how non-game bird populations in Wisconsin have changed in numbers and distribution over the last 20 years. If any red flags are raised, management activities can target these species and locations of concern.

In Iron County we have a small group of volunteers working on counting birds in 24 "Priority Blocks" that are approximately three by three miles. The entire state was divided into such blocks and every 6th block was designated as a survey priority. Several additional blocks with unique habitat were included. So one-sixth of the state is being surveyed! Each habitat type within a survey block needs to be visited. Surveys occur in May through July. Data (bird sightings and breeding status) is entered via computer to eBird.org/atlaswi/. This website maintains a bird list specific to birding data entered by date and location.

The Wisconsin Society for Ornithology is leading the BBA effort. If you are interested you can get started at wsobirds.org/atlas. There are two ebird portals for Wisconsin. The year-round "<https://eBird.org/home>" can be used for all your bird sightings (worldwide) while the "<https://eBird.org/atlaswi/>" would only be used for sightings in which at least one species is showing some degree of breeding activity, usually May through July. Anyone can add to the local data by entering bird sightings into eBird/atlas. A drop-down table of choices aids in entering data.

Helping with the BBA on the TFF can be fun. Learning new bird species will make watching them more enjoyable. Volunteers who do not wish to survey an entire priority block can add information, documenting evidence of breeding, nesting, or chick rearing of a species for any location, even outside of designated priority blocks.

The TFF has two priority blocks, Turtle Flambeau Flowage CE and Wilson Lake CW. Non-priority blocks include Turtle Flambeau Flowage CW, TFF NW, TFF NE, TFF SW and Wilson Lake NW. The precise boundaries of these blocks can be seen on the BBA website.

If you have any questions you can call Bruce Bacon at 715-476-0016. Folks with minimal computer savvy can hit the keyboard and go to the ebird sites listed above to learn how to get involved.



New Walleye Regs?

By Zach Lawson, WDNR

“Tough walleye bite recently?” “Walleye fishing used to be better out on the TFF?” I’ve been hearing these types of comments more frequently the last year or two. That’s likely because there are fewer adult walleyes out there and there is more food for them to eat (making it less likely that they will take an offering).

That said, recent fisheries survey work has highlighted a few key areas where we should be able to help steer the walleye population in the right direction. Specifically, reducing harvest of juvenile walleyes (i.e. 9-12” fish) will be imperative for having population growth, especially with less consistent recruitment in recent years (although still good relative to most other walleye fisheries). Additionally, reducing harvest on female walleyes, even just a little bit, can pay huge dividends in population stability in the long run (most people will be surprised to hear that about 50% of the walleyes over 15” on the TFF are females).

These two concerns were a major focus of our efforts to create a ‘custom regulation’ for the TFF walleye fishery. This spring, we proposed a new walleye regulation: 12” minimum length, but only 1 fish > 15”; 3 fish/day bag limit) for the TFF and connected waters (If advanced at every step of the process, the rule change would be implemented in 2020).

For the last year, I’ve scoured our biological datasets and incorporated input from those who have participated in public meetings or contacted me directly to come up with the best possible regulation for the scenario that we are currently confronting on the TFF. This proposal will be reviewed internally by a series of DNR committees and teams, and will hopefully find its way onto the Conservation Congress spring hearings in 2019 (where we will get statewide public input on the proposal).

In the meantime, I will be discussing this proposed regulation at the POA meeting, June 23, and will hold more public meetings this summer/fall (stay tuned). Of course, I would love to hear everyone’s thoughts on the proposal, so feel free to give me a call to discuss further (just please don’t all call at once!). Zach Lawson, 608-215-1681

Annual Meeting To Be Held at Great Northern in Mercer

We will be holding our annual membership meeting on June 23, 10:00 a.m. to noon in the Great Room at the Great Northern Hotel, 5070 US-51, Mercer, WI. Hopefully we will see many of you there. Please enter through the hotel (not restaurant) entrance. The Wolf’s Den at the Great Northern offers a wide lunch menu that will be available after our meeting. A tentative agenda for the meeting is as follows:

- Elections for president, vice-president, and three directors. Randy Schubert has agreed to run for President, and Jeff Malison for vice-president. Three current directors have agreed to run for re-election – Diane O’Krongly, Jean Burns, and Jim Kohl.
- President’s update on recent activities include:
 - Turtle Flambeau flowage Stakeholders meeting
 - Search for volunteers:
 1. chair of membership committee;
 2. set up and run an association Facebook page;
 3. establish a cloud-based system for the storage of association records
 - Update on the web site and blast e-mails
 - Proposed ATV trail through the TFSWA
- Water level committee update – Jim Moore
- Fish management update – Jim Kohl
- Water quality committee update – Mike/Beth Myers
- Invasive species update – Randy Payne
- Announcement by Mike Hittle on his book on the history of the TFF. Books will be for sale and Mike will be available to sign books
- Presentation by Randy Payne on the UW-Extension Lakes Annual conference
- Presentation by Zach Lawson on proposed change in walleye regulations for the TFF



The Cliff and the Spawning Bed

By Chad McGrath

Here's a riddle for you. What's constructed of 30 medium sized trees, a bunch of unrooted dogwood cuttings, and about 50 potted plants? Well, hopefully it's an erosion control scheme that works.

A flowage project started in the spring of 2017 moved forward in the early spring of this year. It's a cooperative effort between Iron County Land and Water Conservation Department and the local DNR fisheries section. Zach Lawson, TFF's local fish expert, made famous in the last Driftwood issue for the picture of a giant muskie he held, had noticed that prime walleye spawning habitat toward the north end of

Horseshoe was getting covered with silt from the badly eroding shoreline nearby. He talked with Heather Palmquist, County Conservationist and they hatched a plan to attack the erosion and attempt stabilizing the shoreline.

They targeted about 320 feet of the most grievously eroded shore, where naked dirt cliffs rose up to 25 feet above the waterline. Then they divided up the area into 30 and 40-foot linear segments. Each segment received a slightly different control treatment, so the relative success of each treatment could be compared, and any future work would be informed by such comparisons.

The bones for the treatments are trees cut from private property nearby. In all about 30 medium popple and red

maple were sacrificed, laboriously skidded to the site over the snow using a snow machine and homemade sled (see picture). The logs were then arranged like pick-up-sticks on the face of the high banks (see picture). Some were held in place on the steep 75-degree slope using "live stakes": unrooted cuttings from locally sourced red dogwood and willow. The idea is these will not only hold the logs in place but will root into the bank providing even more erosion control. Cables attached to the logs and Duckbill Anchors pounded into the soil further anchored the timbers. Later this spring, prairie cordgrass will be installed in some of the treatments, and several different native shrub types in others, including meadow rose, sweetfern, and dwarf bush



dirvilla.



The site will be monitored for several years to assess each treatment's success in holding back the bank. With time it is hoped that newly eroded silt will cease covering the historically active spawning beds and that wave and current action will uncover some previously blanketed beds.

A lot of credit is due the folks who worked on this project. The collaboration between Heather Palmquist and Zach Lawson brought together Zach Wilson, Jenna Kosnicki and Jason Folstad, who lent their energy and time, plus Terry Daulton and Jeff Wilson, who also lent the use of their snow machine and donated the timber that was used.



Growing Apple and Other Fruit Trees in the North

By Chad McGrath

This spring marks my 30th anniversary as a nurseryman and somewhere around 40 years since I planted my first apple tree. People are often surprised, even disbelieving, that apple and other fruit trees survive and produce fruit here around the Flowage. And when I mention that there are pear varieties that work here, the disbelief grows. There's a pear tree in my yard that I planted about 15 years ago that's 25 feet tall and bears bushels of fruit every summer. The types of hardy pear varieties are limited, but the one that bears so well for me is Ure. Summercrisp, Early Gold, Golden Spice, Parker, and Patten are some others that will grow here.

There really are only two factors that determine success or failure in growing fruit trees here, or anywhere: planting site and variety.

Planting Site: All plants have preferred sites. Plant a lily pad in your back yard and it won't survive a season. Lily pads grow in water. Try to grow blue grass in a hemlock woods, you'll fail. Blue grass needs sunlight. Plant a willow in a sand dune, even if you water it faithfully, it will languish and die. Dune sand has few nutrients available for the willow.

Proper soil moisture, sunlight and fertility are the critical ingredients in any planting, and hence are the biological considerations in site selection. Other, nonbiological considerations involve functional and aesthetic issues such as blocking sight lines, messy fruit drop on a sidewalk, bee swarms around a back door. Of the three biological considerations, moisture is the most critical. Without adequate moisture during the first weeks after planting, plants struggle and can die. Too much moisture and they will develop symptoms, like drooping, turgor-less leaves, which may convince you that more water's the answer. It isn't. The plant's roots are so wet they are unable to pump water upward. And they will start to rot.

All our northern fruit trees require well drained soil. They will not survive in soil that is always wet or where there is standing water for more than a few days, spring snowmelt or after a hard, exceptional rain, excepted. Sandy, rocky soil is generally fine. Clay can present drainage problems, but if water drains out of the planting hole within a day or so, clay is generally ok. Most of the soils on the south



side of the Flowage are sandy, some on the north side are wetter and less well drained, but still ok. The dryer, more well drained your soil, the more and longer in a plant's establishment you will need to water it. An apple or pear or plum or even cherry is juicy! That's one of the reasons we love them. The trees need extra water in some years for best production, even after they've been established. And when planting any tree or shrub or perennial, they will need supplemental watering for at least a few weeks after planting, and then for the first couple of years during dry spells.

Fruit trees need sunlight, the more the better. Apple, plum and pear trees are vigorous and can survive more shade than cherries. But when a fruit tree gets less than about 6 hours of direct summer sun, lack of light begins altering optimal development and fruit production. Trees tend to elongate: get taller and spindlier like a tomato seedling in the shade. They are also more susceptible to various diseases due to less vigor. Lack of sunlight promotes damp conditions, perfect for mildews and rots, which can affect leaves, wood, and roots. Trees growing in too much shade will not produce as much fruit as those in sunnier locations. Why? It's all about energy. It takes energy to produce any growth. Producing fruit is even more energy demanding. So, short of sunlight, which is the raw energy that powers photosynthesis and sugar production, not much sugary fruit gets created.

Most of my fruit trees (and my vegetables) grow in a forest opening that's about an acre in size. The ones on the east side of the opening get little to no direct sun until around 11am. But then there's sun until early evening. Trees on the west side get morning sun but less direct afternoon sun. And overall, the area is bright. Direct sun is important, but so is general brightness.

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The Driftwood Book Review

By Terry Daulton

I recently read “*Man and the Natural World: A Case Study on Literary Themes*” on the website diyMFA. The article, by fantasy writer Sara Letourneau, talked about the recently popular book by Yann Martel, “*The Life of Pi*.” If you have read the story or seen the recent film version you will know that Pi, the protagonist, is shipwrecked and fights for survival in a plot where the ocean looms large as a character, along with a man eating tiger. This article got me thinking about other fiction I have loved in which nature plays a dominant role, such as the ocean and fish in Hemingway’s “*Old Man and the Sea*,” or the vast and often heartless prairie storms pioneers battled in Willa Cather’s, “*My Antonia*.”

I was pondering these thoughts while reading Mike Hittle’s recently published history, “*An Accidental Jewel, Wisconsin’s Turtle-Flambeau Flowage*.” Usually a reader of fiction, I was pleasantly surprised to find myself turning pages of *Accidental Jewel* with an intensity I usually reserve for a new potboiler or favorite classic. Of course, Hittle’s subject is something near and dear to me, and I expect to many readers of this newsletter: the Turtle-Flambeau. That said, it went beyond my expectations. Mike wields the narrative with style, drawing out the human intrigues and stories, with the ever-present character of the Flambeau and Turtle Rivers and the subsequent flowage carrying and deepening the plot from chapter to chapter.

As in my favorite Michener novels, Hittle paints his backdrop for the story in its geologic roots. He tracks our ridges, rocks and soils back through time to the glaciers, ancient ocean beds and long lost mountaintops. We can more clearly see that Precambrian world before plants, animals and humans dominated the landscape. He then nudges us forward to consider the history of early Native Americans and the subsequent exploitation of forests and other resources as the United States was founded and settled. We imagine ourselves paddling those pristine free-flowing rivers, and then watch in awe as the mighty log drives scroll across our imaginations.

He then turns to the main event, the complex political and physical forces that came together to create the Flambeau Dam and the resulting impacts of that event. Perhaps my favorite section detailed the machinations of power brokers, politicians and industry scions during the early 1900’s, and I could see parallels to many current natural resources debates such as water as a public trust, the values and uses of water, and the ever present balancing act between use and abuse of resources.

Later chapters tell the story of recovery, from those who settled the first bleak and flooded lands to the heyday of the resort era with its quirky northwoods characters and unlikely tales of adventure. He also includes controversial topics such as Native American Treaty Rights and walleye harvest.

He ends on a hopeful note with the ultimate preservation of the flowage as a “crown jewel” of Wisconsin and a source of inspiration and beauty. He states, “*No ‘natural’ setting, once society encounters it, can remain entirely pristine, or wholly apart from the humanly constructed world around it...as society itself grows in complexity, so too does the relationship between the natural and civilized world.*” The following quote “*...human intervention, in an effort to tame the wild, inadvertently brought into existence this beautiful scenic area,*” will ring true for many current flowage enthusiasts.

In her diyMFA website, discussion on nature in literature, LeTourneau suggested that for a successful narrative, nature must be central to the plot, carry with it dangers and survival, beauty and wonder, and include central questions about human impacts on nature. If this is a measure of success in a nature-driven plot, *Accidental Jewel* gets two thumbs up. For my part, and knowing the author and his bent for a humorous turn of phrase, I would just say, “*It’s a dam good read!*”

TFF TL POA Water Level Report April 30, 2018

By Jim Moore

As I look upon the ice-covered Turtle-Flambeau Flowage this afternoon, Monday, April 30th, my thoughts quickly turn to the fishing opener in five days and hope for a major status change in water conditions.

Getting back to reality, pursuant to the Memorandum of Understanding (MOU), Xcel Energy will attempt to refill the Flowage to a minimum level of 1571.5’ at the later of April 20th or seven days after ice out. The current water level is at approximately 1,570’ or within 1.5’ of the targeted level as set forth in the MOU.

Xcel Energy representatives have indicated that the water table for this region is again very high this year. The current high river flow fill rate, coupled with the minimum allowed discharge rate, should ensure that the mandated refill level is achieved. By the time you read this you’ll know for sure if the mandated water level goal is reached.



Giving Back and Moving Forward: Profiles of Two Association Volunteers

By Mike Hittle

Attentive readers of the last issue of Driftwood will have noted that it contained a number of references to the activities of association volunteers. That was as the editors intended, for volunteers are crucial to the success of the TFF&TLPOA. More broadly, however, volunteering lies at the heart of the vast web of citizen-initiated and citizen-run organizations that supplement and complement the work of government throughout the country. Indeed, the ability to come together freely to act on behalf of our various interests is a privilege we should honor and protect. With both the local and big pictures in mind, we thought it appropriate to profile two members of the association, Tom Mowbray and Diane O’Krongly, who have exemplified the best of the volunteer ethic.

What drives people to volunteer? Tom Mowbray strikes a note that has much in common with the motivations of so many others: volunteering is an “opportunity to give back to things that I care about passionately.” Prior to his retirement, the demands of the workplace left him little opportunity to volunteer. But his job as an executive vice president for a chain of farm stores helped him build a wealth of experience in accounting, finance, computing, human resources, and research and planning. Now that he is free of the daily demands of work, he can bring one or more of these talents to matters “where you see a need,” or “to things that are out of control but important to people.”

Tom has been no stranger to such activities as crib building and fighting against invasives, but as the years have gone by, he has come to focus his volunteer efforts more and more on administrative matters such as bookkeeping and the deep study of problems that need precise analysis. His ongoing stint as treasurer of the association is perhaps his most visible activity—think of those reports to the annual membership meetings—but he also led the politically demanding initiative to secure uniform ordinances for jet skis on the flowage and has been an informed contributor to negotiations with the WDNR and Xcel over flowage water levels. Moreover, the board of directors of the TFF&TLPOA can always count on Tom, who understands that good decisions depend on good data, to have done his homework, and then some, on issues great and small. Beyond these numerous and valuable contributions to the flowage association, Tom assists some area first responder groups with paper work and tax filing.

Only recently has Tom publically acknowledged that his deeply held commitment to the TFF led him to endow a dedicated fund with the Natural Resources Foundation, the annual proceeds of which go to approved physical



Tom Mowbray

enhancements and educational activities related to the Turtle- Flambeau Scenic Waters Area. This generous act of personal philanthropy—which has opened the door for others to join him in supporting the flowage—reflects yet another dimension of Tom’s volunteering ethic.

Volunteering is not without some downside risks. In Tom’s case, he has encountered some problems with a changing WDNR—not at the local level-but in Madison. His discomfort stems from organizational and personnel changes, limitations placed on what WDNR professionals can and cannot do, and political interference in resource management. The absence of a full-time flowage property manager would be one case in point, as would the long time-frame involved in changing WDNR regulations. Perhaps most important, he finds the prospect of the WDNR authorizing ATV routes within the scenic waters area to be particularly threatening to the spirit of the state’s purchase of the flowage and to the letter of the master plan that governs its administration.

Those issues aside, Tom has no regrets about the extent and direction of his volunteering efforts. Volunteering, he says, exposes one to “different sets of ideas, different ways of looking at things,” and that leads in turn to the beneficial examination of one’s own thoughts. Moreover, volunteering has brought him into contact with people he respects and who share similar goals—a nice bonus from working in volunteer organizations. Finally, Tom points out that the ultimate reward of volunteering is strictly internal: “the satisfaction of doing things for the betterment of others.”

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Diane O’Krongly attributes her motivation to volunteer to two sources. First, she grew up in a family that “always did things;” and she still remembers her parents’ no-nonsense admonition—“if somebody doesn’t do something, nothing gets done.” Second, Diane has her own take on the notion of giving back. Just by living in this world, whether something as direct as walking on a woodland path or as indirect as purchasing the essentials of life, we damage or destroy some portion of the world’s resources. “Giving back,” to Diane, means restoring, however imperfectly, that which our very lives have diminished.



Diane O’Krongly

Diane never has had to think long and hard about the proper object of her volunteer work: namely, the outdoors. Where her passion for the natural world comes from she cannot pin down. Her father, for example, was not an outdoorsman in the classic sense of the word. But Diane recalls that her childhood memories are filled with moments when she and her dog roamed open fields. That pattern persisted through numerous moves during her life: “wherever I was, I was in the woods.” It comes as no surprise that she ended up teaching science—and respect for nature—in secondary schools.

Diane’s teaching has not been limited to the classroom. Serving as a volunteer she has involved her students in the work of Trout Unlimited, engaged them in a study of purple martins under the guidance of Zach Wilson, helped them set up trail cameras in school forests and contribute photos to the WDNR SNAPSHOT program. In addition to the benefits her students have derived from these experiences, these volunteer efforts have also brought, as a happy by-product, resources and money to the school for the purpose of science education. For Diane, the most satisfying of her school-related volunteer projects were the construction of loon nesting platforms and the gains her students made in identifying plants and invertebrates.

Diane also volunteers with the Iron County Outdoor Recreation Enthusiasts (ICORE). She took part in clearing the Lipp Lake trail that leads through an impressive pine stand, and she plans to work this summer on the scheduled improvement of the trail to Corrigan’s Lookout in northern Iron County.

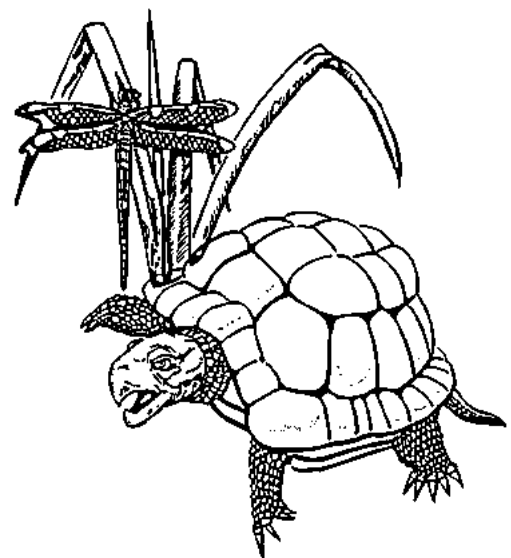
Association members no doubt associate Diane closely with the campaign to combat purple loosestrife. She

has not only taken a lead role in coordinating anti-loosestrife volunteers, she has also been in the field marking plants, pulling them up by the roots, and distributing home-grown loosestrife-hostile beetles for distribution in areas of high infestation. Diane’s verdict on the loosestrife battle? Mixed success. She feels the association (aided, of course, by the WDNR) has managed to blunt—though not eradicate—this invasion. Had we not taken action, however, she believes the game would be over. Diane has also been a regular water quality monitor.

Like most volunteers, Diane O’Krongly would welcome additional helpers on the many tasks that need attention. She feels that many people stay on the sidelines

because they think that if a problem can’t be entirely solved by their own efforts, then there is no reason to get involved. Her counsel is succinct: “don’t get overwhelmed; be content with doing little things.”

Among the satisfactions of volunteering, Diane lists getting out and meeting new people, working alongside like-minded folks, and enjoying parties and picnics that sometimes follow a day or a season of volunteering. But the most rewarding thing of all is that volunteering “gets some results.” That’s not a trivial return on some hours invested in the woods or on the waters.





freshwater solutions.llc
innovative swimmer's itch strategies

Greetings Lake Association Representative,

Dr. Patrick Hanington (University of Alberta) and Freshwater Solutions, LLC are embarking on a large, cross-continent research initiative focused on parasites (schistosomes) that cause swimmer's itch. As you may know, these larval flatworms exit their aquatic snail intermediate host each morning during the warmer summer months in search of a bird or mammal definitive host. Recreational bathers serve as accidental hosts when their bare skin is exposed to the free-living larvae, which penetrate the epidermis and die. Some people react to this foreign substance with symptoms of raised, reddened, and itchy papules, often called "swimmer's itch".

Dr. Patrick Hanington, Canada's leader in swimmer's itch research, has been collaborating since 2015 with Ron Reimink, owner of Freshwater Solutions, a leader in innovative swimmer's itch research and control in Michigan. They are beginning collaboration in 2018 with researchers at the University of New Mexico (where the largest curated collection of swimmer's itch-causing parasites is located) on multiple lakes in Michigan and plan to expand their efforts across the United States and Canada in 2019.

Our goal is to establish the largest database of reported swimmer's itch cases in North America and we are contacting thousands of lake association representatives like you across the continent with an invitation to join this initiative. New data collected will allow us to identify and zero in on areas of the continent that are particularly troubled by this common malady. Those areas will become the focus of our research efforts in 2019 and beyond.

We need your help! Please join us as we learn more about these parasites and how to control them by doing the following:

1. **Forward** this notice to lake associations, natural resource commissions, watershed councils, etc. in your state and regional area.
2. **Post** the *Reporting Instruction Card* (attached in several formats) on your lake association website. Feel free to copy, post, and distribute unlimited numbers of the card. A smartphone can conveniently read the code, which immediately opens up our reporting URL for ease of use.
3. **Include** this notice (or a summary) in your next lake association newsletter.
4. **Encourage** riparians in your area to report any and all cases of swimmer's itch to our website beginning in 2018.

If your lake association decides to participate, we can provide you with season-end statistics specific to your lake as well as more general, cross-continent data. Please visit our informational websites to learn more and keep up-to-date on our progress. Also, please let us know if you are able to join this effort so we may keep you informed. Thank you!

Dr. Patrick Hanington, University of Alberta
(www.swimmersitch.ca)

Ron Reimink, Freshwater Solutions, LLC
(www.freshwatersol.com)

Freshwater Solutions LLC (((6906 48th Ave. (((Hudsonville, MI 49426 (((freshwatersol.com



Land Conservation Notes

By Zach Wilson

Hello from the Iron County Land and Water Conservation Department. Happy Spring! Well, I wish I could say it feels like spring outside. As I sit here writing this article I'm looking out at a recent new spring arrival, an American robin. The problem is that we just experienced a mid-April blizzard with snow falls totaling 18 -20 inches, and the poor bird just seems out of place. Mixed amongst the red polls, pine siskins, and black-capped chickadees, the robin looks very unhappy. Is it the robin that's out of place or the April blizzard? Regardless, with this late spring and over three feet of ice still on the lakes, I can't imagine that we are going to see open water on the flowage for at least another three weeks.

As for us humans trying to cope with the idea of spring, this likely means that our water quality monitoring program and invasive species work will be later than normal as well. With a well-trained team of volunteers, we are once again collecting water quality data at seven deep water basins around the flowage and Trude Lake. Thanks to a partnership between DNR, Iron County Land and Water Department and the property owners' association we are continuing to collect data despite some funding setbacks. I often get the question from volunteers, "*Why we are collecting data on our lakes when all we see is the same results year after year?*" Well, these are the years where it pays to have baseline data to compare these abnormal weather conditions to years when the ice goes out mid-April. Plus, I do think it is important to get a yearly checkup on the health of our lakes and streams. I, for one, enjoy learning about ice-out dates, water clarity readings, phosphorus, chlorophyll, and dissolved oxygen amounts. With seven months of ice cover, which can reduce oxygen levels, we could see some changes in plant growth and possibly even some fish kills. Plant growth and the spread of invasive species may also be affected by these late ice-out conditions. Remembering last summer's cool water temperatures, slow aquatic plant growth, and the late bloom of many of our terrestrial plants, I'm predicting that this year's purple loosestrife control work day will likely be pushed into mid to late August. The late start to the aquatic season will also likely mean slow aquatic plant growth in our lake as well.

The Land and Water Conservation Department is gearing up for another great "Conservation on Tap Lecture Series". This year's dates and topics are: June 12th (Exploring Early Conservation Traditions with historian, Jim Bokern); July 10th (Mc Dermott Lake Fish Research Project -removal of bluegills, crappie, rock bass, and bass to promote walleye recruitment-WDNR and UW fish research team; and August 7th, (Northern Temperate Lakes Long Term Ecological Research Project), UW Trout Lake's- Noah Lottig.

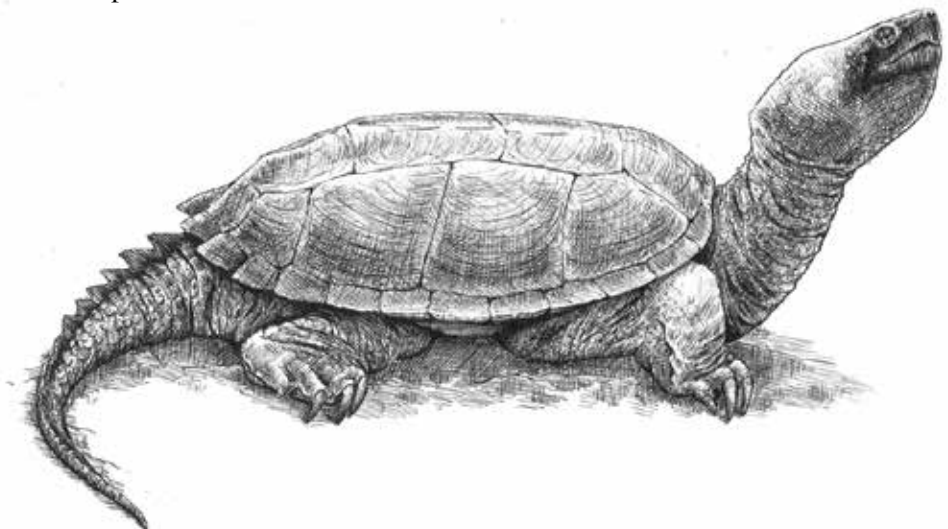
If you have any questions about water quality, invasive species, or if you want consultation on protecting your shoreline from erosion, feel free to give us a call.

Zach Wilson

Iron County Land and Water Conservation Specialist.

715-561-2234

zach@ironcountywi.org



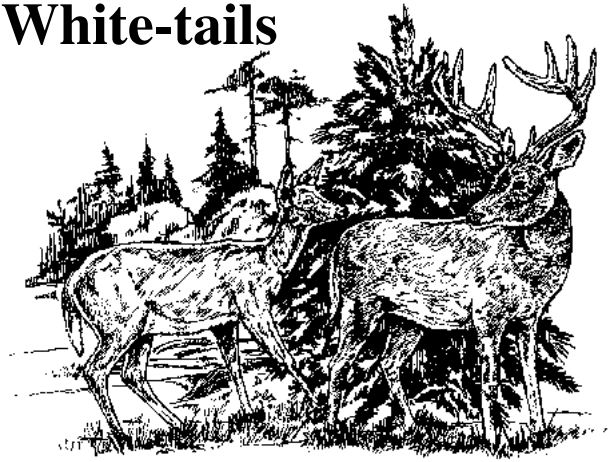
White Winters and White-tails

By Jenna Kosnicki

Northern Wisconsin would not be the same without the majesty of the winter season. Northwoods winters- especially Iron County winters- give us greater opportunities for cross-country and downhill skiing, snowboarding, snowshoeing, snowmobiling, ice fishing, the list goes on. But what about our wildlife? As humans surviving the Iron County winter, we can take cover in a shelter. Wildlife doesn't have that luxury. During cold, snowy winter days, I can't help but think about deer that endure the harsh conditions. How do they survive plunging temperatures, blustery winds, and incessant snowfall?

Preparation is the first step in surviving any winter. To prepare for the colder temperatures, deer build up fat reserves and regrow hair. Fat reserves increase body mass for lower heat dissipation, add insulation, and act as an energy reserve for when food becomes scarce or movement becomes difficult. By shedding their summer coat, deer make room for a thicker, water repellent winter coat. The hollow hair absorbs more sunlight and retains additional body heat as well.

When temperatures plummet, Iron County deer "yard up." This means that deer congregate in coniferous areas that provide cover and less snow accumulation. Because more deer are using the area, a trail system is created and deer using these trails save energy traveling to and from the deer yard. Deer yards are beneficial for deer to conserve energy and avoid predators.



However, deer yards may also be harmful during prolonged winters. If deer are pushed into yards early and forced to stay there late into the season due to snow accumulation, deer may eat themselves out of a home. Deer with inadequate supplies of fat may die of starvation or exhaustion during this period. However, if deep snow doesn't accumulate until late December or January, the winter may not be as lethal.

So how do we quantify winter severity? Since 1986, the Wisconsin Department of Natural Resources (DNR) has collected data to classify the winters into four different categories based on points collected through the Winter Severity Index (WSI). A WSI point is recorded for each of the following: 1) if the temperature is at or below zero degrees Fahrenheit 2) if snow accumulation is at or exceeds 18 inches. So, on a day where the lowest temperature is below zero and the snow depth is 18 inches, two points would be recorded. The four categories include mild (<50 points), moderate (50-79 points), severe (80-99 points) and very severe (>100 points).

Iron County collects WSI data at four different locations; Saxon, Upson, Gile and Mercer. This year's numbers were: Gile, 125, Mercer 118, Upson 110 and Saxon 50. These numbers suggest it was a difficult winter for our deer except those that "migrated" to the Saxon area. But the numbers don't tell the whole story. Cold weather, not snowfall accounted for 20 points in December at all four locations. As mentioned above, it's possible that early cold, which allows deer to continue extensive browsing, isn't as harmful as deep, early snow. In my early observations so far this spring, I have yet to see any evidence (dead or starving deer) of winter die-off.

Given the difficult winter we humans experienced this year, let's hope the herd dodged that bullet.



The Duck That Spent the Winter at the Waterfall

By Diane O’Krongly

Each year after Lake of the Falls County Park closes for the season I consider the park my park. From October until a couple of weeks prior to the fishing opener, my dogs and I have the park pretty much to ourselves, except for the occasional tourist viewing the falls, or snowmobilers crossing the bridge. Early this winter I noticed a drake mallard was hanging out near the waterfall. Whenever my daily walk, run, or snowshoe took me to the park, I would look for him. But he would hide from me and the dogs, behind a rock or under the tangle of trees to one side of the falls. He was always there, even as the ice closed in on the him. During the very cold spells late in January and February the open water available to the him got really small, maybe an area 30 feet in diameter. I couldn’t detect any visible injuries that prevented him from flying south to escape the impending ice.

I researched what mallard ducks eat and found that they eat aquatic vegetation, insects, worms, and grain crops like wheat and corn. From the snowmobile bridge I could see bright green patches of aquatic plants and suspected that under the fallen trees and rocks he was able to find insects and worms all winter. The water near the fallen tree is shallow and the duck was most likely able dip his head below the surface to dabble for insects and worms. I never saw any indication that someone was feeding him.

In March, as the days got longer, I was able to observe the duck more. He appeared very healthy: his plumage perfect, especially his iridescent green head. Another day I noticed his bright orange legs as he stood on a small rock surrounded by water near the base of the falls.

Over the winter I became obsessed with the fact that this duck has spent the entire winter at the falls. I told Bruce Bacon, a retired DNR wildlife biologist, about the duck. He said he stopped at the park but didn’t see it. I think he doubted that the duck was unable to leave. I called in to a

Wisconsin Public Radio show on birds and told them about the duck, but they were not too surprised by my duck’s presence amidst the ice. I didn’t think it was anyone’s responsibility to save the duck, I just wanted to share the experience of seeing a duck, on an almost frozen pond, throughout the winter.

In late March when winter appeared to be nearing its end, a new threat appeared. Canada geese started invading the duck’s patch of open water. Worse yet, eagles soared over his head, eyeing him up for dinner. I worried that this duck, who had made it through the entire winter, would be snatched up and taken for an involuntary flight to the nearest white pine branch.

When the ice started to breakup on the river around April 12th I saw three ducks swimming together. When the ducks saw me approach the top of the bridge over the falls, two of them flew away leaving the third alone. I thought the one that stayed might have been my duck. I felt guilty for scaring away the lonely duck’s companions. The next time I went to the falls more of the ice was gone, and I figured that the duck was free of the area around the falls.

I guess I will never know what became of this brave little fellow. With open water, he could have flown or swum off to other parts of the river or flowage. He could have become a tasty meal for an eagle or other predator. While I will have to live with that uncertainty, I prefer to imagine him dabbling along the shore enjoying the spring’s warmer waters, gorging on new sources of food, and maybe even meeting a lady friend. Whatever fate he met, he certainly gave me a lesson in the tenacity and resilience of nature. So hats off to the duck who spent the winter by the waterfall, added inspiration to my walks, and made me appreciate the comforts we humans have during the dark cold months of northwoods winters.



Photo courtesy of USFWS



Growing Fruit Trees

Continued from Page 6

Our last ingredient for success is fertility. The only way to tell without a doubt about your soil's fertility is to have it tested. It's a simple process. You collect the sample, bag it and take it to the U.W. Extension or send it to another laboratory that does soil testing. A basic test tells you about the Big Three nutrients: Nitrogen, Phosphorus, and Potassium, plus pH., a measure of acidity. The soil's pH is critical to its fertility. Northern soils, especially sand, are often acidic, with a low pH. When the soil is too acid, many plants can't collect the nutrients necessary for healthy growth even if the nutrients are present. But if the site is growing grass or trees or even weeds now, it's likely that a fruit tree will grow too.

Variety or Cultivar: Selecting the right variety for your USDA plant hardiness zone is the other critical factor in growing a fruit tree successfully. USDA zones indicate the historically coldest winter temperatures. Zone 1 is the coldest and encompasses the Arctic, where -60 possible. Our zone here around the flowage is either 3 (-40 to -30) or 4 (-30 to -20), so we need to pick an apple tree that will survive and fruit in zones 1, 2, 3 or 4. There are well over 7,000 different varieties of apple, most of which don't have a prayer of making it through an Iron County winter.

Following is a list of apple varieties that will survive the cold here. The list comes from my experience and from the experience of orchardists I have talked to who grow apples in Antigo and Phelps. Those with an asterisk are officially zone 3 apples, which means they should survive -35 and perhaps -40. If you live where you have seen the thermometer hit such temperatures, stick with one of these or another, unlisted apple that is rated for zone 3 or 2.

The list: Liberty, Fireside, Haralson*, Hazen, McIntosh, Cortland, Macoun, Zestar, Sweet 16, SnowSweet, Goodland*, State Fair*, Wodarz*, Norland*, Frostbite*, KinderKrisp and Honeycrisp.

You will need to plant two different varieties, so they receive cross-pollination. This is true of most types of fruit trees. So, if you find the right site as described above, assure adequate moisture, sunlight and fertility and plant a hardy variety, you can be picking apples off your own tree within 3 to 5 years.

And most of all...Have Fun!

Here are some internet links that you might find interesting.

<https://extension.illinois.edu/apples/facts.cfm>

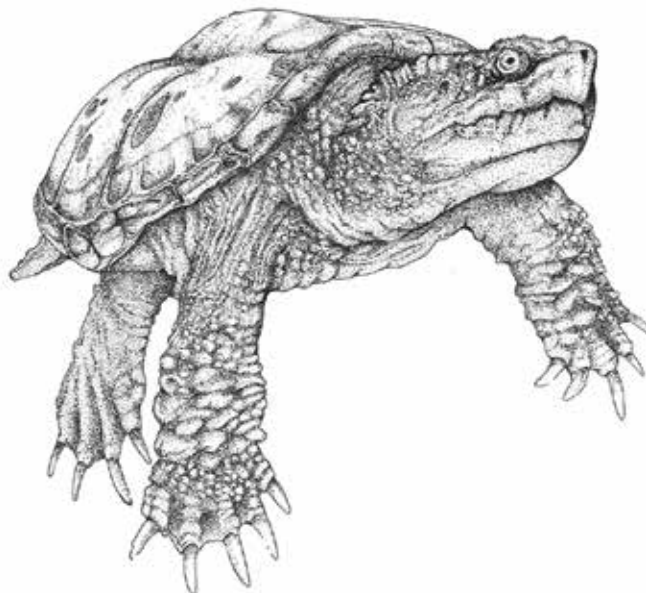
A cornucopia of apple trivia

[https://www.orangeippin.com/apples Varieties.](https://www.orangeippin.com/apples_Varieties)

<http://www.bbc.com/news/magazine-13775135>

Apple propagation basics and British apple breeding history.

https://www.researchgate.net/publication/268349418_Making_Sense_of_New_Apple_Varieties_Trademarks_and_Clubs_Current_Status *More than you ever wanted to know about marketing and trademarking apple varieties.*



Paddling the Loony Way

By Kit Bogenschneider

LADIES, do you love to paddle your kayak or canoe? Would you like to explore area lakes and rivers? You are invited to join a paddle group on Wednesday mornings. Bring your own boat, paddle, life jacket, water bottle, sunscreen and hat with a brim. Dress for the weather. We will meet at the boat landings at 8:00 a.m., except as noted.

When I bought my first kayak in 2005, the dealer in Minocqua told me about the Lady Yakkers. I was intrigued; but as I was still employed full time, I couldn't participate with them and I paddled solo for 5 years on the flowage. I loved paddling with the otters, nearly colliding with a porcupine who dove in just as I rounded a corner, being startled by the splashes of hundreds of bullfrog tadpoles as they dove for deep water cover, and greeting a bear who was out for an early morning swim. In the evenings the water often goes completely still. One such night, the moon's reflection was just a circle until a tiny puff of air turned it into a path of ripples heading right for me. As the whisper of air passed by my cheek, I felt like the moon had blown me a kiss. How I wanted to share this magic with other people!



When I retired in 2011, I was ready with a group name, the "Loony Paddlers," suggested by colleague Rita Wellman, and a weekly schedule for May through mid-September. We paddle rivers, including Class I and II rapids, and lake chains. After seven summers, my email group has grown to over 80, although our weekly turnout is in the teens. Some of those 80 I have yet to meet, but if they are only taking notes on places to go, that's fine by me. My goal is to get as many people as possible out on the water to see another view of northern Wisconsin, completely different than the view from the road.

To that end, I started a mixed social paddle in 2014, open to everyone. We meet every Monday in June, July, and August at a different lake landing and paddle from 5:30 to about 7 p.m., then have supper together, either at a nearby restaurant or a potluck at someone's house. We go as far north as the Gile, east to Harris Lake and south to the Manitowish chain, and of course the various landings on the TF Flowage. Aren't we fortunate to live in an area with so many lakes that we don't have to repeat for three years? I especially like to bring the group to the flowage so they will get familiar with it and gain the confidence to explore it on their own.

Back in 2011, when the paddling season came to an end, the women didn't want to give up their weekly outdoor activity, so we started planning hikes, then snowshoe treks. The hikers started sending me suggestions and collecting information from area chambers. The first year the activities stopped in January when we had exhausted our list but this year we had a different hike every week through the end of March and still had a few on our list. These hikes are open to everyone who enjoys the company of others while exploring the woods. We usually meet at the trail head Wednesdays at 9:00 a.m. and hike two to three miles, occasionally more.

If you are interested in participating in any of these groups, call me at 715-476-3446 and leave a message, or email me at bogie.kit@gmail.com.

A new biking group is spinning off (pun intended) from the Loony Paddlers, calling themselves the Loony Pedalers. Organized by Jean Raschke and Sandy Mansfield, they meet on Tuesday mornings. Participants provide their own bikes, helmets, water bottles, possibly gloves. They welcome new members and suggestions of favorite biking routes. Anyone interested can reach them at loonypedalers@gmail.com.



TFF-TL POA

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Jim Moore/Diane O’Krongly

— Mission Statement —

The purpose of the Association is to maintain, protect and enhance the quality of the lake and its surroundings for the collective interest of members and the general public.

Published Twice Annually

If you would like to contact the Association electronically, please visit our website www.tfftl.org and search under “CONTACT US”



Herptiles of the Turtle-Flambeau Flowage

by MJ Slone/Chad McGrath

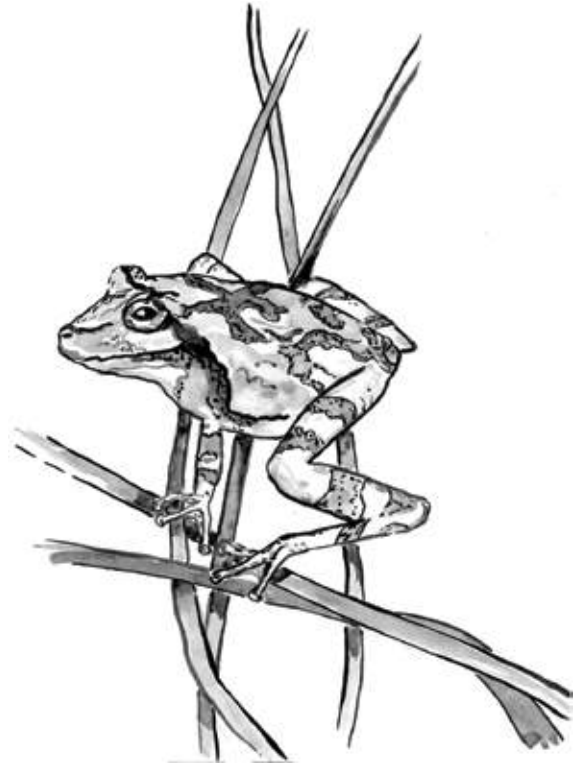
Wisconsin is home to 55 native herptiles: amphibians (frogs & salamanders) and reptiles (snakes, lizards and turtles). They are grouped together because they are considered “cold blooded,” though that common term is not entirely accurate. More properly, they are ectothermic, meaning they must derive heat from outside sources, commonly the sun. The Turtle-Flambeau is home to five of Wisconsin’s seven salamander species, nine of its 12 frog species, five of its 21 snake species, four of its 11 turtle species and none of the state’s four lizard species. The reason we have relatively few here around the flowage is these creatures’ endothermic nature. It gets too cold here for too long for many herptiles to overwinter. Alaska has only eight native herptiles, one reptile and seven amphibians. In Wisconsin all native herptiles have some level of legal protection. State regulations related to them can be found at: <https://dnr.wi.gov/files/PDF/pubs/er/ER0102.pdf>

The chart that follows lists each of the herptiles that are thought to inhabit the Turtle-Flambeau Flowage area, then provides some interesting information about each. Go on outside, root around in the forest for a while and see if you can uncover a salamander. Or listen at twilight to the choir of frogs that peeps and chugs and blurps through the night. Have fun.

Websites for more information: Herps of WI page: <https://dnr.wi.gov/topic/WildlifeHabitat/Herps.asp>

Rare Reptile and Amphibian pages: <https://dnr.wi.gov/topic/endangeredresources/Animals.asp?mode=list&Grp=21>

<https://dnr.wi.gov/topic/endangeredresources/Animals.asp?mode=list&Grp=49>



Spring Peeper
Illustration by Terry Daulton

MJ and I want to thank Richard Staffen for his help with this article.



Spotted Salamander



American Toad
Illustration by Terry Daulton

Name/Status	Habitat	Notes
Blue-spotted salamander (<i>Ambystoma laterale</i>) common	Forest generalist, require fishless, ephemeral ponds for breeding. egg-laying (early spring), and larval stage before metamorphosing into terrestrial adults	Adults spend much of their time under ground beneath leaf litter, logs & rocks near their breeding ponds
Eastern red-backed salamander (<i>Plethodon cinereus</i>) common	Found in moist forests, often under down logs or debris	Nests in late summer/early fall in downed, rotting logs
Four-toed salamander (<i>Hemidactylum scutatum</i>) special concern	Found in hardwood forests and mixed hardwood - conifer forests. Unique habitat requirement - needs sphagnum moss in wetlands/ponds overhanging water where eggs are laid. Once eggs hatch, larvae drop into water to develop to adults	May be more common than thought, but need specialized surveys (sphagnum moss) and breed later than other ephemeral pond salamanders
Mudpuppy (<i>Necturus maculosus</i>) common	Only strictly aquatic salamander in the state. Lives in lakes and rivers with large flat-bottomed rocks where it takes shelter and deposits eggs	Species with Information Needs; often caught by fisherman. Looks a bit scary on the end of your line but it's completely harmless
Spotted salamander (<i>Ambystoma maculatum</i>) common	Closed-canopy forest w/ well developed ground-layer. Requires fishless, ephemeral ponds for breeding in early spring. egg-laying, and larval stage before metamorphosing into terrestrial adults	Their habits are similar to the Blue spotted salamander.
Common gartersnake (<i>Thamnophis sirtalis</i>) common	Found in nearly every habitat in the state, but prefer open forests or forest edges near wetlands	Wisconsin's most abundant snake
Common watersnake (<i>Nerodia sipedon</i>) common	Semi-aquatic snake that feeds on small fishes, crayfish, and amphibians; usually doesn't stray too far from water & prefers clean rivers	A non-venomous snake often mistaken for a cottonmouth a.k.a. water moccasin & is subsequently killed. Cottonmouths are venomous and do not occur anywhere near Wisconsin
Foxsnake (<i>Pantherophis vulpinus</i>) common	Live in a variety of open habitats (marshes, sedge meadows, prairies, old fields). Good at controlling rodent populations, especially in and around dwellings	Not documented in Iron Co, but almost surely found here and around Turtle - Flambeau Flowage
Northern Ring-necked snake (<i>Diadophis punctatus</i>) uncommon	Moist deciduous forests; usually found under cover	Species with Information Needs; secretive, difficult to locate
Red-bellied snake (<i>Storeria occipitomaculata</i>) common	Very small snake, does not get larger than ~10 inches. Habitat generalist, found in forests, adjacent grasslands, and wetlands	Very common snake, often found under cover
Painted turtle (<i>Chrysemys picta</i>) common	Strictly aquatic - found in most waterbodies in the state; nest on land often found nesting on or along soft roads, the most abundant turtle in the state	Often seen basking on logs or vegetation at water's edge. Forages and overwinters in rivers, lakes, ponds
Snapping turtle (<i>Chelydra serpentina</i>) common	Strictly aquatic - found in most waterbodies in the state; nest on land often found nesting on or along soft roads	Forages and overwinters in rivers, lakes, ponds
Spiny Softshell Turtle (<i>Apalone spinifer</i>) common	Largely aquatic and don't stray far from large rivers, lakes, and reservoirs	Not documented in Iron Co, but almost surely found there and around Turtle - Flambeau Flowage
Wood turtle (<i>Glyptemys insculpta</i>) Threatened	Semi-aquatic; prefer moderate to fast-flowing water, spends lot of summer months foraging on land for worms, fruits/berries, carrion	Likely found along rivers coming in and out of flowage, overwinter in rivers, nest w/in ~200ft of river
American bullfrog (<i>Lithobates catesbeianus</i>) Uncommon, Special concern but can be locally common	Highly aquatic, require permanent waterbodies w/ undisturbed shorelines and abundant emergent and submergent aquatic vegetation, eat anything they can see	Largest WI frog, tadpoles don't metamorphose until at least 2nd year. Call sounds to some like a slow light saber "nee deep" or a fog horn
American toad (<i>Anaxyrus americanus</i>) common	Wide variety of habitats; grasslands, wetlands, forests	Very terrestrial species, often found away from water. Call is a long uninterrupted trill lasting up to 30 seconds Each male has a slightly different pitch
Boreal chorus frog (<i>Pseudacris maculata</i>) common	Found in various wet habitats including open, shrubby, or forested wetlands. Breeds early in spring similar to spring peeper. Breeds in various wetlands of all sizes & qualities, including ditches	Very difficult to locate visually, more easily detected by call which resembles the sound produced when running your fingernail over a fine tooth comb: a long extended "preep"
Gray treefrog (<i>Hyla versicolor</i>) common	Forest and large woodlot dwellers. Breed in semi-permanent to permanent wetlands	Very good climbers because of large toe pads. Their call is a musical trill sometimes mistaken for a bird call. Will call beyond the breeding period
Green frog (<i>Lithobates clamitans</i>) common	Highly aquatic, requires permanent waterbodies such as deep marshes, large ponds and lakes. Heavy shoreline development can significantly reduce populations	Tadpoles overwinter in water. Calls resemble the strumming of a loose banjo string: "c'tung"
Mink frog (<i>Lithobates septentrionalis</i>) Special Concern	Require specialized habitats of floating vegetation (bog mats or emergent aquatic vegetation) in lakes and rivers. Only found in northern Wisconsin	May call day or night. DNR starting new survey targeting this species throughout the north. Sometimes mistaken for green frogs. Smells like mink. Call is akin to distant hammering or knocking or hail. A blurred deep "cut-cut-cut-cut-cut"
Northern leopard frog (<i>Lithobates pipiens</i>) Common but declining	Breed in a variety of wetlands, can be found a long ways from water	Sensitive to environmental change. Call sounds like a long snore followed by clucking grunts & lasts over 3 seconds or like rubbing your finger over a balloon
Spring peeper (<i>Pseudacris crucifer</i>) common	Very small frog, breeds in fishless wetlands of various size/quality. One of the first to call/breed in spring. Live in moist forests or woodlots near wetlands	The Wisconsin Frog & Toad Survey shows this species to be declining slightly although still widespread & common. Their call is a shrill and repetitious "peep" or a high piping whistle. A large chorus sounds like sleigh bells
Wood frog (<i>Lithobates sylvaticus</i>) common	Forest generalist, require fishless, ephemeral ponds for breeding. egg-laying (early spring), and larval stage before metamorphosing into terrestrial adults	Usually first frog to call in spring, first to breed and lay eggs. Eggs placed in one large clump in (fishless) ephemeral ponds. The shortest breeding season of any WI frogs. The call is somewhat like the quack of a lazy duck with little carrying power