

*Trish like a*  
**GIRL**

But there are barely any mosquitoes...



By Beckie Gaskill  
 OF THE LAKELAND TIMES

Winter: It is cold. It can be treacherous. And it is beautiful. It might be below zero some days, but "there are barely any mosquitoes!" we tell each other. It is tongue in cheek, of course, but somewhat true. As I write this column, we just received our first nice dumping of snow. Of course, on "deadline day," the last thing I want to do is spend three hours with snow clean up.

"This sucks," I said, as I started shoveling a path out to the Rat Terrier Cul de Sac. Seven inches of snow is not always conducive to a small dog wanting to go outside to do his thing. My beagle loves the snow, but she is not exactly a tall dog, either. So I usually prep an area for them to go out in the winter. I just bought some knee-high waterproof boots, so I gave those a proper test drive, pushing snow around to create the cul de sac.

Then came the real shoveling and snow blowing. Because of Chet's heart attack this year, I do not feel like shoveling is a task he should undertake, especially with this much heavy, wet snow. So I grab the shovel, a plastic coal shovel type deal, and break that within the first half hour trying to clear some of the heavier snow the city plow left at the end of the driveway (oops).

Chet took care of the snow blowing, which looked like a lot more fun than shoveling anyway. As I stood there, I realized what I was missing. I was stressed because it was deadline day to get this column and other stories in to the newspaper. I was not liking shoveling and was sure, as far as winter went, I was already "over it." But then I really looked around.

I brought my coffee outside in my thermal mug. I sat there taking a few sips and realized really now beautiful it was. There was still a light snow falling. The trees were coated with snow. I knew I had to grab my camera and at least snap a few photos.

Granted, this is nothing we have not seen in the past. We have all seen beautiful snow falls. But I feel like it is important to stop and take it in once in a while, to just marvel at the beauty of nature. It never gets old. And, I think, that never lets

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DEAN HALL/LAKELAND TIMES

## DAM EAGLE

An American bald eagle flies over the Tomahawk River below the Minocqua Dam on Monday, Dec. 19, in Minocqua.

## County cost share programs help landowners protect resources

Oneida Land and Water department brings 2024 cost share projects to committee

By Beckie Gaskill  
 OF THE LAKELAND TIMES

Many local landowners have taken advantage of the county cost share programs in both Vilas and Oneida Counties. But there are still many who have not checked into how the program can help them reach their conservation goals on their private property.

This reimbursement program includes projects such as shoreline protection, critical area stabilization, well abandonment, wetland restoration and much more. Creating buffer zones and restoration zones are something the county cost share program deals with on a regular basis.

Buffer zones are usually in the 35 feet adjacent to a lake shore. They are a "no mow" area containing wildflowers, grasses and sedges. They highlight native vegetation that requires less

maintenance and fertilizer. Buffer zones can bring all of these benefits while still offering a viewing corridor to the lake for the land owner.

The monies for the program come from the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP). The program is administered by the county land and water conservation department. Landowners can be reimbursed up to 80% of their total project cost for qualified projects, or up to the current year's maximum reimbursement amount, whichever is less. Qualified costs include things, such as the cost of purchasing and planting native trees, shrubs and plants or other practices covered under the cost share program.

There are several other practices that are covered in the program. The following are some of those practices:

- Restoration of the buffer zone with native plants, trees or shrubs.
- Permissible erosion control methods necessary to reduce runoff and protect water quality.
- Structural methods may be considered for se-

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## Study looks at PFAS in Water, sediment and fish

By Beckie Gaskill  
 OF THE LAKELAND TIMES

On day three of the Great Lakes PFAS Summit, Tracie Baker gave a presentation that looked at PFAS in water, sediment and fish in an urban- and wastewater-dominant watershed in the Great Lakes. The presentation was well-attended, with over 150 people tuning in to watch via Zoom.

The research of which she spoke took place in the Great Lakes Basin, which contains over 20% of the earth's fresh surface water and over 95% of North America's fresh sur-

face water. More specifically, she said, the study was conducted in the Lake Erie to Lake Huron corridor. This is largely centered around Detroit, which is heavily industrialized and heavily influenced by human activity. While that environment is much unlike the Northwoods, there is still much to be learned about PFAS and its presence and persistence in an ecosystem.

This particular site, Baker said, is of special importance, as it hosts the only international wildlife refuge in North America. It is an important habitat to over 500 native fish,

wildlife, plant and freshwater mussel species. The corridor also contains four of 31 of the Great Lakes Areas of concern as designated by the U.S. Environmental Protection Agency (EPA).

The project was slated for five years, and researchers performed several years of surface water and sediment testing, looking for contaminants of emerging concern (CECs). These are a diverse group of compounds including pharmaceuticals, personal care and household

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# The North American Model of Wildlife Conservation presented to the NRB

By Beckie Gaskill

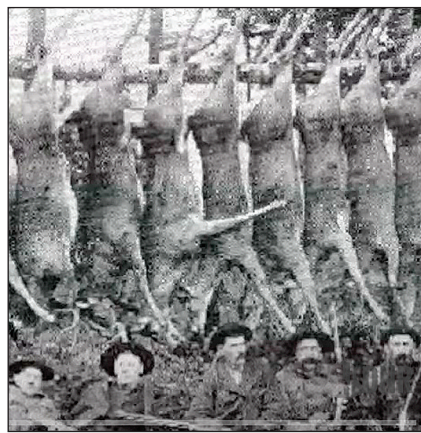
OF THE LAKE LAND TIMES

At this month's Natural Resources Board (NRB) meeting, the board heard an informational item from John Organ, formerly of the U.S.G.S. Cooperative Fish and Wildlife Research Units, on The North American Model of Wildlife Conservation, which is often used as a benchmark in other countries.

He focused on the origins and purpose of the model. Legal and policy initiatives here made wildlife conservation in America unique. The seven components, tenants or principles in the model, he said, are not all unique to North America, but their collective association is. The purpose of the model was not meant to outline every conservation strategy and approach, but to highlight those legal and policy underpinnings that, together, make North American conservation unique unto itself.

There were certain underlying concepts that lead the model, Organ said. They were as follows:

- Wildlife has value when it is alive.
- Uncontrolled use leading to de-



CONTRIBUTED PHOTOGRAPH

Market hunting placed value on dead wildlife. It was done away with and its elimination was one of the seven tenants of The North American Model of Wildlife Conservation.

cline and extinction are unacceptable.

- Wildlife is a public resource; governments must conserve it for the benefit of current and future generations.

- Wildlife can be perpetuated with sustainable use.

Sustainable use is a concept recognized globally. Three things need to fall into play to be fully accepted. First, the use needs to

serve a practical purpose. Second, the species or population that is the subject of sustainable use must not be threatened or endangered, and third the method of take must be considered acceptable.

Organ also looked at the seven tenants of wildlife conservation in North America. While they did not represent the entire suite of conservation approaches on the continent. They are, rather, a representation of those with broad underlying legal and policy foundations. Taken all together, they are what sets wildlife conservation apart in North America than in other places.

## Wildlife as Public Trust Resources

This is the first tenant, he said, and is the keystone. The Public Trust Doctrine came from a U.S. supreme court ruling from 1842. The concept of wildlife belonging to all dates back to Ancient Greek Natural Law, Organ said.

In English Common Law, the King was said to be at trustee. He owned the property (wildlife) of someone else and was responsible for its safe keeping. There have

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the lake  
where you live

Just have  
to wonder ...

I'm sitting on a cooler on frozen Birch Lake, working a jig down 17 feet, waiting for the light tap on the line or a slight motion of the rod to signal the bite of a bluegill.

At a time like this, why am I thinking about loons? It's not because I envy the warm climate they now enjoy after their migration south. It's because of the metal my jig is made from.

For a number of years we've been told, as anglers, that fishing with lead tackle poses a risk to loons. A jig or split shot we lose while fishing can later be swallowed by a loon as it seeks pebbles to help its gizzard grind food. Lead, of course, is highly toxic, and one piece of lead tackle inside a loon's digestive system is a death sentence.

The jigs I use for ice fishing are made of tungsten. I choose them because tungsten has a much higher specific gravity than lead (19.2 versus 11.3). That means they sink faster, getting down to where the fish are better than lead jigs of the same size.

Tungsten happens to be non-toxic. It's also rather expensive. Tiny tungsten jigs cost roughly \$2.50 to \$3.50 each, several times more than lead jigs. And yet, in my favorite tackle store, there's wall display several feet wide and nearly floor to ceiling with nothing but tungsten jigs; few self-respecting ice anglers use any other kind.

I bring this up because a knock against non-toxic jigs for open-water fishing is that they're too expensive. But the non-toxic tin-bismuth jigs I buy for that purpose cost only two to three times as much as lead. So my question is: Why is price an issue for open-water fishing, but not for fishing through the ice?

Some would argue that the issue isn't really price — it's performance. It's true that the non-toxic alloys are less dense than lead, and so it takes a larger jig-head or split shot to achieve the same weight. Does that really need to be a concern? I don't think so, if we weigh it against the possibility of losing a lead jig or sinker and killing a loon as a result.

Consider that Carrol Henderson, a board member of the National Loon Center in Crosslake, Minnesota, calls the loss of lead tackle by anglers each year a "cumulative contamination" of lake bottoms that puts loons at increasing risk.

Despite the efforts of loon advocates, and "Get the Lead Out" programs sponsored by departments of natural resources, non-toxic tackle for open water has been slow to catch on. Many tackle stores don't carry it because there isn't enough demand.

What it comes down to is that if anglers won't use it, manufacturers won't make it, and tackle dealers won't sell it. So if as anglers we love loons as much as we claim to, we need to commit to non-toxic items, and force the marketplace to respond.

The price premium we pay for non-toxic items like jigs and split shot is a pittance when compared to everything we spend in a season's worth of angling. It's a price we need to start paying. At least that's what I'm thinking as I dangle my \$3.69 non-toxic ice jig just above the bottom of Birch Lake.

Ted Rulseh is a writer, author and lake advocate who lives on Birch Lake in Oneida County. His new book, "Ripple Effects," has been released by UW Press. You can learn about it by visiting my website at <https://thelakeguy.net>.



Ted Rulseh  
COLUMNIST

## Study

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products, pesticides and PFAS.

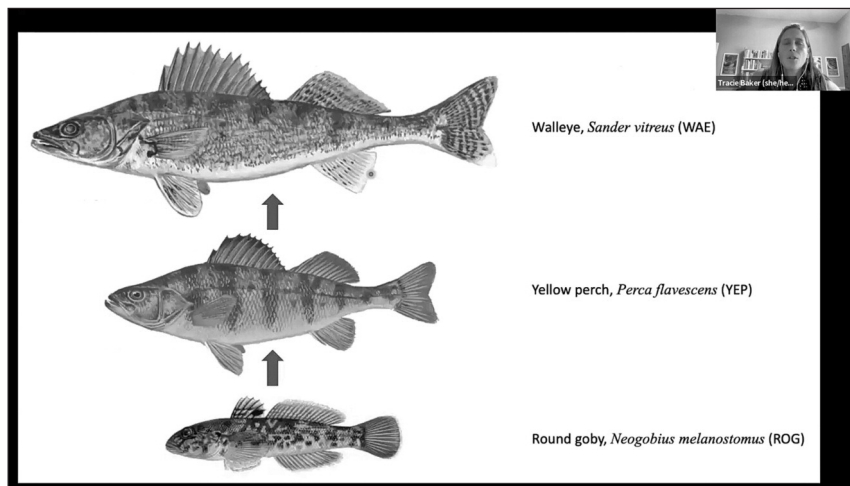
In 2017 and 2018, research teams looked to determine where PFOS was located in that ecosystem. To do this, teams collected surface water and sediment samples throughout the corridor, with site selection based on proximity to waste water management facilities, drinking water facilities and areas important to recreation and wildlife habitat. The water was analyzed for over 150 compounds, as were the sediment samples.

A total of 50 CECs were detected throughout all sites. The cumulative concentration of compounds detected across sampling events significantly increased at the downstream sites of the Lake Huron to Erie corridor. The downstream corridor, she said, is dominated by wastewater effluent.

The number of contaminants was also higher downstream. In the downstream sites, there were 25 and 19 different contaminants. This means contaminant mixtures were also becoming increasingly complex in those downstream locations. For PFAS specifically, 12 compounds were found in surface water or sediment across the sampling sites. PFAS and PFOS were found in both sediment and surface water, although their use was phased out of production in the early 2000s. Baker said this demonstrates the persistence of these compounds in the environment.

In 2020, several sites were added to the study. Even greater numbers of PFAS were detected in this portion of the study. Seventeen compounds were higher in number in both surface water and sediment. Surface water contained virtually the same number of long-chain and short-chain PFAS compounds, but the sediment samples had a much higher long-chain presence than short-chain.

"This has clear implications for bioaccumulation in bottom dwelling organisms and biomagnification in aquatic food webs, and thus the health of both wildlife and people," Baker said. This led her to create a One Health study based on PFAS concentrations and also



CONTRIBUTED IMAGE

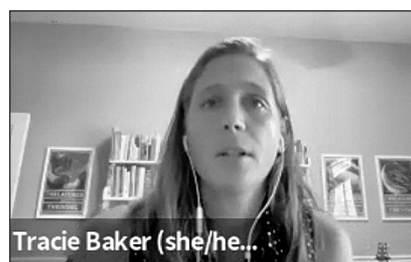
Research has shown bioaccumulation and biomagnification of PFAS substances such as PFOS in game fish like walleye at higher levels of the food chain.

how they might move up a food chain.

The food chain she considered in her study included the round goby, yellow perch and walleyes. The round goby's diet, she said, consisted of mostly fresh water mussels, snails and aquatic insects as adults. Yellow perch are at the next trophic level, she said, or the second step in the food chain. Their diet consists of juvenile fish such as round goby, fish eggs and crayfish. Walleye were sampled at the top predator. Their diet consists of yellow perch and other similar-sized fish.

Gill nets were set and left open for 24 hours. This was to catch walleye and yellow perch. Additionally, yellow perch were captured by electroshocking. To catch round gobies, minnow traps associated with each gill net were placed. Fish were brought to shore and kept in optimal conditions until they could be sampled. Toxicology and health testing for fish, Baker said, is accomplished through lethal methods in normal conditions. Her focus, though, was to come up with a non-lethal way to test fish. Her team took blood and tissue samples with a special testing set up that provided continuous fresh water flowing across the gills of the fish. The fish were allowed to recover in tanks on shore or in a net pen until they could be released. They did humanely euthanize round gobies, however, which are an invasive species.

Forty compounds were analyzed in the fish. There were eight com-



CONTRIBUTED PHOTO

At this year's Great Lakes PFAS Summit, Tracie Baker detailed her research on PFOS in surface water, sediment and fish.

pounds located in muscle tissue. PFOS was detected in muscle in each location. Downstream fish had significantly higher muscle concentrations than upstream fish. The number of compounds found in muscle samples was higher upstream, however. PFOS was detected in higher concentrations than other compounds. This is likely attributed to the ability of PFOS to bind to albumen, Baker said, which is a protein found in the blood.

In the serum pools taken, yellow perch showed no significant differences in PFOS from upstream to downstream. However, in walleye, the downstream serum pool had significantly higher PFOS amounts than their upstream counterparts. The research, she said, pointed to the ubiquitous nature of PFOS in the corridor, whether it was upstream or downstream.

PFOS was detected in 100% of

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## Study

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samples in both muscle and serum in all species. However, those concentrations were higher at the top of the food chain. In walleyes, PFOS was present at a rate of 18 ng/g and 294 ng/g in serum on average. In yellow perch those numbers were 8.5 ng/g and 153 ng/g, respectively. PFOS was not collected from serum samples of round goby, but was present at 4.6 ng/g in mus-

cle. Her research, she said, showed that there was value in sampling serum for PFOS as an indicator of PFOS concentrations in muscle.

Baker spoke about the biomagnification factor, which calculates how much higher the concentration of PFOS may be as it moved up the food chain. PFOS, she said, was biomagnifying in the corridor in her study. Downstream walleye, she said, also fulfilled criteria for bioaccumulation. This indicates larger game fish have a propensity to accumulate

PFOS in muscle tissue than smaller fish, which has implications for human exposure to higher levels of PFOS through game fish consumption. Long chain PFAS compounds, such as PFOS have a greater ability to bioaccumulate and biomagnify.

Fish consumption advisories are issued at the state level, she said, but PFAS advisories are issued at the federal level. This can cause a great deal of differences from state to state where PFOS in fish is concerned. Walleye in Michigan, she

said fell in the 8 meals per month advisory level. However, the downstream walleye would fall under the one meal per month category in a state such as Maine. That is how varied these advisories are, she said.

### The future

Looking forward, Baker said, an increase in sample size would be needed to develop a reliable conversion factor between serum and muscle PFAS concentrations for wild fish biomonitoring. She said there was also a

need to investigate other CECs in serum and muscle of fish at varying trophic levels.

Next, she said, would be the need to determine wild fish population-level effects of exposure to persistent, complex CEC mixtures. Once these things were completed, developing an AI-based model to determine human health risk and safe consumption guidelines that could be more standardized.

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## Gaskill

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us truly get old, either.

Aside from the beauty of the trees and whatnot provided by Mother Nature herself, I took a good look at my yard and my dormant flower beds. At the end of one of my flower beds is the remains of an arbor vitae tree we had to cut down when we moved in. The plan is to remove the rest of it in the spring, as we were unable to pull the stump out this fall. I drilled a few holes in the remaining parts of the stump, hoping to provide a nice wintering place for some bees or some other little critter like that who might need a place to live for the winter. As I took a photo, I hoped there were some little critters in there and that they were toasty warm, getting ready to emerge again next year.

It reminded me of the importance of leaving that kind of thing for winter. Leaving stems and small places for insects and even small animals and birds to stay out of the elements is important. Providing for birds is more than just bird feeders, of course. And thinking about bees and other pollinators is not just an activity for the summer months.

The hydrangea I inherited when I bought this house is another great place for birds and other animals to hang out in the winter. Now that it is covered with snow, it looks almost like a little igloo. I see rabbit tracks coming and going from there, so I am sure they will utilize that for cover all winter long.

Not only does it help wildlife when we leave these kinds of things, but it also provides some visual interest in the winter. A stark white, flat landscape, no matter how beautiful it seems in the beginning, will definitely find me losing interest long before the crocuses and others start popping their little, green heads through the snow.

I left my bergamot and a few other native plants standing for the winter, but did cut back some of the others. Last fall, I met a lady in town who was offering up many of her native plants, for just a donation to the women's shelter. She told me both she and her husband were getting older and it was time for them to start thinking about how long they would be able to care for the hundreds (yes, literally hundreds) of native plants they had on their



BECKIE GASKILL/LAKELAND TIMES

An evergreen covered in ice and snow makes for a Christmas card feel in the neighborhood.



BECKIE GASKILL/LAKELAND TIMES

This trailing nightshade is a bit of a bully and had taken over the entire flower bed when we bought this house. I cut it back handily, but saved a bit for the birds, who will eat the berries later in winter if things get tough.

property. So she decided to give way as many as other gardeners might take. My front flower bed on one side is full of those native plants, now.

I did keep one trailing nightshade plant on each side. They are pretty aggressive and will totally take over a garden, as was the case when I moved here. But at the same time, it does

keep its berries all winter long, and that leaves something for the birds when conditions get harsh. I read somewhere that the plant is actually toxic to many animals, but birds will munch on the berries when things get tough.

Again, with the heavy snow hanging on the plant, I am sure it provides some good cover from the wind.



BECKIE GASKILL/LAKELAND TIMES

Trees coated in ice are beautiful to see, as long as they stay upright.



BECKIE GASKILL/LAKELAND TIMES

This hydrangea in my backyard looks like a great place to hide, if you are a bunny.



BECKIE GASKILL/LAKELAND TIMES

We left this arbor vitae stump, to be taken out next year and replaced with a native shrub. I drilled holes in the stump pieces, hoping to find homes for native bees and other insects.

Just as I write this, a group of sparrows just flitted through those gardens. American tree sparrows and house sparrows are abundant in this part of town, but it still cool to see the little birds hanging out and flitting around.

I guess the point of all this is — a person can find beauty where they look for it. Also, though winter may seem stark, cold and dead,

there is a lot going on for those who seek to find it. Most people who read this column, I believe, are likely a lot like me with an inquisitive mind and eyes that see the fun, and the wondrous things, if they just stop and take time to take it all in.

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