

Waukewan and Winona Watershed Protective Association

P.O. Box 451, Meredith, NH 03253

Website: WWWPA.org

Email: info@wwwpa.org

An Environmental Organization Protecting the Waukewan and Winona Watershed



Photo by Linda Heminway

How Microbursts Affect Your Watershed

By Catherine Greenleaf

A microburst is a severe weather event, one that forms rapidly and strikes quickly, often without warning. While a microburst typically lasts only a few minutes, the destruction it causes can be monumental, especially to watersheds.

A suspected microburst struck Lake Winona this past August, toppling trees and causing property damage along portions of Anchorage Road, West Shore Road, and Winona Road. Lakefront homeowners spent weeks clearing out the damage and dealing with insurance companies.

WHAT IS A MICROBURST?

A microburst is a strong downdraft within a thunderstorm that can generate damaging winds at or near ground level. When rain evaporates within a cloud, a drop in temperature occurs and this can

create an accelerated vertical downburst or microburst.

According to meteorologists, a microburst is like a giant water balloon being held aloft by a leaf blower. The warm air rising holds the mass of rain and hail aloft until the entire mass drops to the ground. The incredible downdraft can create winds up to 170 miles per hour.

While microbursts have always existed, they weren't identified until the 1970s. Some strange anomalies in the weather were noted by meteorologists during that decade, especially in relation to several airline disasters. Eastern Air Lines Flight #66 crashed on approach at New York's JFK Airport in 1975, killing 113 of the 124 people on board, and it was determined the crash was caused by a newly identified phenomenon: a microburst.

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Volume 8, Issue 7: Fall 2022

Newsletter Editor : Jamie Heminway

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Mission Statement



WAUKEWAN AND WINONA
WATERSHED PROTECTIVE ASSOCIATION

The mission of the Waukewan and Winona Watershed Protective Association is to encourage and support long-range planning, responsible lake level management, and sound conservation techniques to preserve the ecology, environment and natural beauty of the Waukewan and Winona Watershed.

It serves as a voice for its members in matters of group concern with regard to the environment and seeks to assist with scientific studies, education programs, and the preparation and dissemination of educational materials.

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WWWPA 2022 Year in Review

By Sharon O'Donnell

We started off the summer season with six WWWPA volunteers who participated in the Lake Waukewan Lake Host Program and training. This program is sponsored by New Hampshire Lakes in Concord, New Hampshire and the volunteers are trained annually to look for invasive species on boats entering the boat ramp on Lake Waukewan. Lake Winona also implemented their Lake Host Program this summer with both WWWPA and Lake Winona Improvement Association member participation and great success. The WWWPA volunteers participated from the July 4th weekend through the Labor Day weekend, serving a weekly two-hour shift. We are grateful for the volunteers who gave their time so generously to support this program.

WWWPA also had representation at the New Hampshire Lakes Congress, which was held on June 3, 2022 in Meredith, NH. This leadership conference supports lake associations across the state and provides networking opportunities for their leaders and members. New Hampshire Lakes provided a featured speaker, panel discussions, and workshops throughout the day for the conference attendees to obtain current information about the water quality of our lakes statewide.

Our newsletter is published twice a year around July 1 and November 1. We invite our members to submit articles and pictures related to environmental issues that

may be impacting our watershed. We have received positive feedback regarding our featured articles and are appreciative of the people in our community who do the research. Jamie Heminway, our newsletter editor, has done an amazing job since joining our association. Our association appreciates her hard work in putting together our newsletter.

On July 16, 2022, we held our annual membership meeting to approve our budget for the year and to bring our membership up-to-date on issues regarding our website, speaker events, community projects, etc. We are grateful for the members who support our organization and hope to continue to expand our membership.

For the past year, WWWPA has been working with the state legislature to pass a bridge bill honoring David Reilly and the work he did for our watershed and the

community. The bill was signed by Governor Sununu in May, 2022 and bridge signs were installed on both sides of the Winona Road bridge in August, 2022. Our organization would like to thank all of the donors in our community who gave so generously to the bridge fund.

On August 10, 2022, we sponsored a community lecture at the Meredith Community Center. Harry Vogel, Executive Director of the Loon Preservation Committee (LPC), was our featured speaker and gave an excellent presentation on the status of our loon population. A significant crowd was on hand to hear the presentation and ask questions. On August 18, 2022, WWWPA provided a "Members Only" tour of the LPC in Moultonborough. Mr. Vogel provided insight into how their organization handles compiling the statistics of the loon population as well as how their laboratory addresses the medical issues of the loons. The members went to lunch after the LPC tour for some social networking.

On Wednesday, September 21, 2022, we paired up with the New Hampshire Electric Co-op (NHEC) for an event at the Meredith Community Center to provide information to the public about the tree spraying being conducted by the New Hampshire Electric Co-op. The event was well-attended, with NHEC providing a panel discussion with the company who conducts the spraying. The attendees were able to ask questions and the panel provided ex-



Photo by Linda Heminway

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MICROBURSTS — Continued from page 1...

There are approximately 10 microbursts for every tornado recorded in the United States. But there are some radical differences between a microburst and a tornado. Tornadoes tend to travel in an erratic spiral pattern. The effects of a microburst start by hitting a ground zero location and then fanning out in all directions. A microburst's effects can be felt up to 2.5 miles. Beyond 2.5 miles, it is referred to as a macroburst, according to scientists.

WHAT YOU CAN DO:

While it may seem counter-intuitive, it is especially important to **replace any trees damaged or destroyed by previous storms on your property** in order to protect the watershed. Native trees are the best choice, as their root systems grow ten times deeper on average than non-natives, making them much better equipped to withstand high winds. Plant the trees in clusters so their roots bind together to fend off winds as well as cool off the atmosphere. Planting a solitary ornamental non-native tree

near a lakeshore is setting yourself up for potential damage and disappointment.

Limit the amount of impervious surfaces, like asphalt, on your property. Stormwater that pours into lakes, rivers and streams heads straight for the ocean. This contributes to the formation of massive storms. Planting native trees and shrubs limits the amount of stormwater runoff coming from your property. Retaining the rainwater on your property also re-charges the groundwater, creates transpiration on your property, and contributes to the formation of smaller, local, and less dangerous rainstorms, according to ecologists.

Prevent deforestation. A forest habitat ordinarily provides cooling temperatures due to the thousands of gallons of stormwater retained in its extensive root systems. Multiple studies are showing that deforestation is making storms more frequent and more severe with increased flash flooding. Urge your town to protect local watersheds by limiting de-



Photo by Linda Heminway

velopment in or near forested areas.

HOW TO STAY SAFE:

Be weather savvy. Remember the warning from the National Weather Service: "When thunder roars, go indoors." Keep in mind that when a microburst occurs, there is usually a thunderstorm preceding it.

One of the biggest warnings of an impending microburst is when the sky turns a sickly yellow or green. These colors occur when hailstones are refracted through sunlight, according to meteorologists. This can be a sign a microburst is about to occur and shelter should be taken immediately.

2022 in Review — Continued from page 2...

cellent and detailed information, which was very helpful to the public. WWWPA worked with NHEC to provide a venue for this public information session.

We are always open to suggestions from our membership on how to protect our watershed and how to disseminate educational information to the public. We strive to work with community agencies and organizations to develop projects where we can find common ground.



Photo by Ryan O'Donnell

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Loon Update: Waukewan, Winona, and Hawkins Pond

By Linda Heminway, with contributions from Andrea Siani

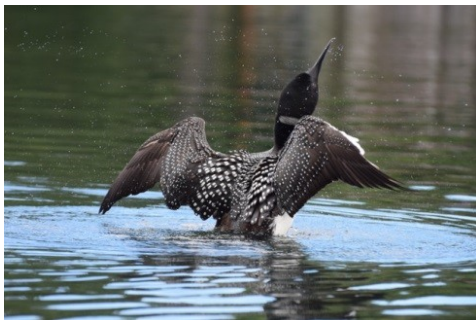


Photo by Tracey Pratt

On Lake Waukewan, both known mated loon pairs nested. One pair hatched two chicks on June 22. The second pair hatched a single chick on July 11. On July 16, when the second pair's chick was just five days old, loon disputes jeopardized the newborn's life.

"While out on a quiet early morning stand-up-paddle, I came upon a loon chick rescue mission," said Andrea Siani. "In late June, the Waukewan Jenness Cove pair of loons had two chicks successfully hatch. They were feeding and growing well, while the Snake River pair were busy sitting on their eggs over at Kitchen Island. In early July, one Kitchen Island chick hatched and in its first weeks was attacked by one of the pair of Jenness Cove chicks."

It is likely that this chick was the younger of the two-chick brood and grafted itself onto the other loon family on the lake in order to receive better care.

"Soon, the newest chick was

found abandoned by a floating dock and rescued by Janan Hayes, consulting with the Loon Center," Andrea said.

Loon Preservation Committee Senior Biologist John Cooley headed to the lake to help reunite the young chick with its parents. The chick was put with its father (confirmed to be the correct loon by his bands) and was initially accepted back. However, the female of the pair soon entered the territory caring for one of the chicks from the neighboring territory. The grafted-on chick began attacking the young chick again, and because it was several weeks older, would likely have killed it.



Photo by Andrea Siani

The chick was taken to a wildlife rehabilitator in Maine. The chick is still surviving, and LPC staff banded it on September 15. The chick was released on September 21 along with another rescued chick from Lake Winnepesaukee

onto a local pond in Maine. The chick needed time to learn to fend for itself, so it was not released to the ocean. It was released at a small pond where the rehabber could keep an eye on it for a period of time.

"Loony behaviors on Waukewan this year!" Andrea concluded.



Photo by Linda Heminway

On Winona, the single mated pair had an early hatch on June 15th. Two eggs were laid and incubated. During the week after the second hatch, one of the chicks was lost. It is not known what happened, only that it went missing approximately five days after hatch. The remaining chick has prospered, flying and self-feeding.

The Winona adult pair was banded in July of 2018. This pair has been confirmed each year since and the same pair has successfully nested since then.

On Hawkins Pond, an adult pair was present but did not attempt to nest. The pair consisted of a 2011 banded male and an unbanded female. The male was at least 14 years old this year (since he was banded as an adult). The female is unknown.

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Keeping The Skies Dark to Protect the Watershed

By Catherine Greenleaf

Artificial night lighting is having a big impact on the health of our local watersheds, and it is not a positive one.

Nocturnal light pollution, or skyglow (as it is commonly called), is the result of overly bright, poorly targeted, improperly shielded, and often unnecessary commercial, industrial and residential lighting, according to the International Dark-Sky Association (IDA). The IDA is a non-profit organization that seeks to educate people about the adverse effects of light pollution on wildlife and ecosystems. Sadly, there is a 6% worldwide increase in night sky illumination each year.

Artificial night lighting alters the natural rhythms of day and night in or near forested habitats. Birds, mammals, pollinators, and amphibians like salamanders and frogs are impacted because light disrupts food foraging, rest and sleep cycles, as well as mating and reproduction, according to scientists. For example, toads and frogs emit their croaking sound in the evening to attract mates. If a wetland is exposed to artificial light, this reduces the mating calls of amphibians, greatly reducing populations.

Excessive nighttime lighting can lead to birds missing vital migration cues. As a result, birds can end up migrating too early or too late in the season, resulting in malnutrition and starvation due to being out-of-sync with available food sources along their route and at their destination.

Many species of birds migrate at night, using the moon and stars to lead them home. Millions of these birds die every year due to the confusion caused by outdoor illumination, which can lead them to fly into urbanized areas and commercial buildings, as well as misdirect them to regions with no food sources or trees for roosting.

Many studies are showing that light at night also adversely affects the growth of trees and plants, affecting the ways in which they absorb water and undergo photosynthesis. Night light also disrupts the growth of spring buds and interferes with normal flowering times. The wrong flowering time can have monumental impacts on the insects that rely upon



Photo by Sharon O'Donnell

these blossoms for nectar and pollen and severely reduce populations of insects. This, in turn, leads to starvation of birds, since insects are a bird's primary protein source.

Excessive night lighting can also lure trees out of dormancy far too early, leading to premature death, since dormancy is what allows a tree to withstand the harshness of cold winters. This has a direct impact on the health and longevity of forests in the watershed.

A moth's delicate life cycle is also impacted when subjected to light at night. Moths, arguably the most valuable pollinator in any watershed, engage in transverse orientation, meaning they constantly fly at an angle relative to a distant light source, usually the moon. Artificial light causes these nocturnal insects to completely stop their feeding activity and instead spend their time in confusion, flying into the artificial light in order to correct their internal navigation system, leading to starvation and death. The light can also cause them to revert to inactive roosting behavior ordinarily reserved for the daytime, leading to delayed or non-existent egg laying, resulting in diminished populations.

Moths are very efficient pollinators. With their extra-long tongues and hairy bodies, they can carry a lot of pollen, and their work is vital to both fruit and vegetable crops, not to mention trees and native perennial plants. In fact, some studies are showing they are generalists when it comes to pollinating

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Water Quality Testing and What It Means For Us

by Linda Heminway



Photo by Sharon O'Donnell

The New Hampshire's Department of Environmental Safety (DES) has run a program called the Volunteer Lake Assessment Program (VLAP) since 1985. This program provides our state, lake associations, and residents with important information about our water health. Without the help of dedicated volunteers, there wouldn't be enough manpower to sample water throughout the state. We volunteers also communicate testing results to lake residents at our lake association meetings and online.

Times have changed since the program's founding, and over the years, improved equipment, new testing capability and increased computerization have made the assessment of our lakes pretty

high-tech. Two or three times each summer, volunteers go out in boats to sample various places in our lakes using sterilized equipment and bottles provided by the DES. We use an important piece of equipment called a Kemmerer bottle for deep water sampling. These bottles are propped open, and a "sender" (weight) is sent down to a certain depth where the bottle will close, taking samples from various depths. Another valuable tool is called a Secchi disk, which is lowered on a calibrated line to assess visibility. Volunteers not only collect samples but report on wildlife, weather conditions, and other factors. Every other year, a biologist will come to our respective lakes and go out with us to do sampling. We are trained and re-trained, as it might be easy to develop a bad habit.

We assess water quality in various spots, especially tributaries. Sometimes a certain area where water flows into our lakes impacts their water health. In some cases, E. coli and phosphorous come in from a septic system uphill, or even from animal waste. We watch these levels carefully, also checking where water flows out.

At lake association meetings, VLAP volunteers give water quality reports. We also publish information on our websites about things we all can do to help our water stay clean and safe for us as well as wildlife.

As for our watershed's testing results, some of the news is good and some is bad. We see some areas worsening, some improv-

ing, and some holding stable. You can access the state VLAP reporting system at www.des.nh.gov/water/rivers-and-lakes/volunteer-assessment-programs to see your lake as well as other bodies of water. Up to date information is at your fingertips.

When we provide lake residents with information about water quality and what impacts it, we help them recognize their actions are impactful, good and bad. One time while fellow volunteer Pam Hunt and I were getting samples from a stream, a resident approached us to see what we were doing. We had a chat about how various things were impacting our water quality. We came back a few days later with printed material for this person to read and offered no judgment, just information. Ultimately, this person upgraded their septic system when they recognized that their closeness to the stream might be hurting the lake. When people understand and learn, that is the objective.

Many lakes in our area have had dangerous cyanobacteria blooms that prevent people and pets from being able to swim. While we are not 100% sure of the cause, experts suspect high levels of phosphorous. Property owners can help lower phosphorous levels. If you suspect cyanobacteria on your lake, VLAP volunteers are equipped with sample bottles and resources. Please also refer to <https://www.des.nh.gov/water/healthy-swimming/harmful-algal-blooms> for photos as well as in-

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WATER QUALITY—Continued from page 6...

structions. Lawn and agricultural fertilizers and septic tank overflows can trigger these unhealthy blooms.

What can one person do about it? I've learned there is a lot that one can do. If you care enough, you make the time.

So, what can you do to help?

1. **Be mindful about what you put down your drain.** Even the best septic system will ultimately leach into our lakes. Maintain that system impeccably: pump it more often than recommended and replace older septic systems. Septic system maintenance is probably the best thing any lake resident can do.

2. **Choose personal toiletry items like shampoo and soap, cleaning products, laundry products, and even sunscreen carefully,** as they are very important to our lakes and wildlife.

3. When you do yard work, **don't sweep leaves and**

grass clippings into the lake, as doing this ultimately adds to the water phosphorous levels.

4. Upgrade your property: **watch for areas of storm water runoff** and implement recommended ways to prevent this.

If you ever want to do more to improve our lakes' water quality, you would always be welcome to come along when volunteer residents go out on your lake to sample. We love when new people get involved. Even someone like me, who is not a scientist, can learn a great deal. The staff at the DES is always there to address questions and can clarify reports that someone might find overwhelming. For me, being part of our lake's water quality committee has increased friendships with other people on our lake who I wouldn't have known if it were not for our mutual interest in making sure our lake stays clean. It has been very rewarding.

If you have any questions, just ask VLAP volunteers like me and we will be happy to help. If we don't have an answer, we'll get one for you!

DARK SKIES—Continued from page 6...

and are better at their jobs than honey bees, who have a tendency to pollinate only select plants or species. Overall, reduced populations of moths leads to large-scale reductions in native plants, shrubs and trees.

HOW TO HELP:

Remove any unneeded lighting, especially spotlights and floodlights. If you must use some form of lighting, use only motion-activated lights and aim the light straight down toward the ground. Another option is to light the path to your home with low-glare solar lamps.

There is little data to support the idea that outdoor lighting prevents crime. In fact, studies show criminals are extremely

savvy when it comes to figuring out which lights are left on to make it look like you are home.

Providing an enclosure for outdoor bulbs greatly reduces their attraction to moths. Again, aim the bulbs straight downward.

When buying lighting, **look for the IDA seal of approval.** Search [IDA's database](#) for products that minimize glare.

Advocate for a lighting ordinance in your town and push for motion-sensitive street lighting.

Talk to family, friends and neighbors about reducing light pollution.

Get involved in protecting the night sky by contacting the International Dark-Sky Association at darksky.org.

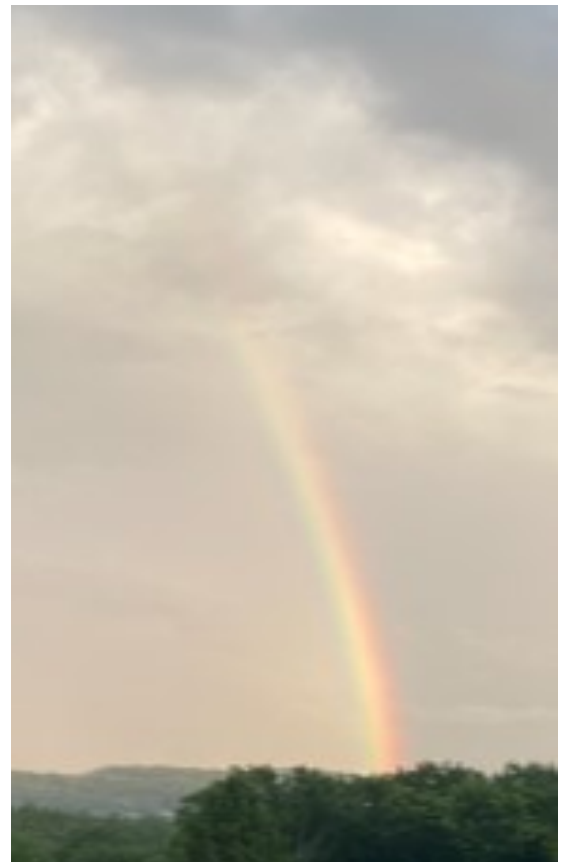


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Renovated Snake River Bridge Update

Text and bridge photo by Sharon O'Donnell

The Snake River bridge re-opened on Thursday, October 13, 2022. The renovations began on May 31, 2022. The new bridge basically follows the previous footprint, with narrow curves that will slow traffic down for local fishermen and neighborhood walkers using the bridge. This provides additional safety for the citizens of New Hampton and Center Harbor.

The private construction company and the New Hampshire Department of Transportation worked diligently through the summer to renovate the bridge and maintain as much of the historic character as possible.

Herbicide Information Session

By Deb Finch

On September 21, 2022, the WWWPA co-hosted a public information session with the NH Electric Co-op (NHEC) regarding the selective use of herbicides in powerline rights-of-way. A panel discussion was led by Seth Wheeler, NHEC Communications Director. The four panelists included NHEC Arborists and representatives of Vegetation Control Service (VCS), NHEC's licensed contractor that applies approved herbicides under the supervision of NHEC Arborists. Wheeler also introduced new NHEC President and CEO, Alyssa Clemens Roberts. The panel provided information on the rules and guidelines regarding herbicide treatments and their impact on local ecology. Questions were taken during and following the presentation.

The panelists explained in detail the restrictions, procedures, and materials being used for spraying. They acknowledged the need for

strict controls and informed the audience of their procedures for determining where to spray and the different types of application methods used depending on the vegetation being sprayed. Hardwoods are the primary vegetation they look to suppress, as they can grow eight to ten feet or more a year and cause problems in the power lines. The arborists noted that evergreens do not grow at the same pace and are not sprayed. NHEC currently trims under the power lines every ten years, with a goal of lowering this to every eight years in the future. The panel members also explained that federal regulations require them to stay 250 feet away from bodies of water and wetlands, and they will often determine that it is not efficient to spray an area based on land conditions and homeowner requests.

A detailed description of the safety measures and regulations involved in spraying was clearly explained. The spraying is done by certified arborists and VCS employees who have undergone

additional certifications and education on the use and application of herbicides. Their respect and desire to protect the environment was evident in the information presented and response to audience questions.

Discussion took place regarding notification of homeowners, and the panelists explained they reach out to every homeowner on affected property, who are able to opt out of the spraying program. If no one is at home, they leave a door hanger with information on where to call. Panel members indicated they would rather talk with a homeowner in person, as it allows them to identify potential hidden wells and wet areas on the homeowner's property, which are not always easy to locate.

Attendees indicated they were pleased with the presentation and felt questions and concerns had been addressed in a clear and informative manner. NHEC expressed a willingness to talk with anyone who has concerns and would like to learn more about the program.

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Japanese Knotweed... Can Anything Be Done?

By Deb Finch

Japanese knotweed continues to be a growing problem in the New Hampshire Lakes Region and in many states in the US. Knotweed is a highly invasive plant that shades and crowds out native plant species. It is also not a habitat or food source for native animals. Getting rid of it can be difficult and tedious, requiring numerous cutting/covering/spraying activities. Knotweed control/eradication is particularly challenging around water sources, especially with the use of sprays.

According to the NH Department of Agriculture's article [Preventing the Spread of Japanese knotweed](#), this plant can grow eight inches per day and its rhizomes (roots) can reach ten feet deep and extend horizontally underground for more than 40 feet. This makes it very difficult to remove. It can also take root and spread using very small fragments only a half-inch in size. Therefore, cutting and disposing of knotweed must be carefully done to ensure you are not creating a problem elsewhere. For example, cutting it and dragging it to another piece of your property is almost guaranteeing the plant's spread. The [Meredith Conservation Commission](#) offers good information on tracking knotweed locations and how to eliminate knotweed on your property.

Photo by Tracey Pratt



Photo by Deb Finch

A good way to remove small stands of knotweed is to begin weekly cutting in the spring ensuring that all parts and fragments of the plant are disposed of in tightly tied black plastic bags. Set these bags out in the sun for a week prior to disposal. Weekly cutting weakens the plant over time, however cutting alone will not kill the rhizomes.

If no water source is nearby, spray after knotweed is in bloom, as this is a preferred option for large stands. The plants expend a great deal of energy to bloom. Spraying the flowering plants with appropriate weedkiller weakens the plant, resulting in less robust growth the following season when shoots begin to appear. Take precautions regarding the product used and manner of spraying, particularly around water sources. The Dept. of Agriculture should be contacted for proper method of control around water. Whatever method of control is used for small or large stands of knotweed, covering cut plants tightly with black plastic, so that air and light cannot penetrate, will smother new shoots and reduce re-growth. Expect to do this for a period of 2-3 years to ensure destroying the root system. It pays to be vigilant and re-inspect the treated area frequently.

Special thanks to Janan Hays and Jim Gregoire for their assistance with this information.

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The Origins of the Snake River "Beaver Deceiver"

By Donald Thibeault

SNAKE RIVER beavers have long been a concern of Lake Winona residents. In years past, when trapping was conducted, as many as eighteen beavers were reported to be removed in a single summer.

During the 1980s and 1990s, there seemed to be fewer beavers living in Snake River. However, the beaver dam that spans the entire width of the river remained in place. This dam was especially disruptive at times when the region experienced high rain events. The presence of the dam severely restricted the outflow of these rains, and the watershed often filled the lake to flood stag-

Photo by Ryan O'Donnell



es which would last for weeks.

Residents of Winona regularly breached the dam in an effort to allow the water to drain into Waukewan. The beavers always rebuilt the breach in a matter of a day or two.

Through some Internet research, I discovered an engineer named Skip Lisle who was dealing with beaver situations like ours without trapping the beavers. He introduced me to the "[Beaver Deceiver](#)." This cage-like device that he invented allows water to flow through beaver dams, thus fooling the beavers from believing anything is thwarting their efforts to hold back water. Because the chamber is below the surface of the water at a significant distance upstream, and the pipe is lined, the beavers are not aware of the

flow.

Although he was unable to help us directly, he offered to help me to get the materials and plans to build and install his beaver deceiver. With the support of the Lake Winona Improvement Association (LWIA), I traveled to Massachusetts to meet with him and to secure the materials we needed. In addition to the heavy gauge steel mesh used to construct the underwater chamber that collects the water, two lengths of 15-inch lined corrugated pipe and cinder blocks were all that was needed.

I constructed the chamber in my driveway. Several Lake Winona residents helped to transport the materials to the powerline over the river. With the cage and pipe afloat, we moved them to the dam. We breached the dam, inserted the pipe, then repaired the dam. The second length of pipe was attached to the first and to the cage and weighed down to settle at the bottom of the riverbed.

It has been a successful endeavor. The beaver deceiver keeps the flow of the river going constantly. And if there are beavers living there, they seem to be content. I have revisited the dam a couple of times, and the installation seems to be in good condition.

Who are the members of our board?

Sharon O'Donnell, Chair
Lake Waukewan

Linda Heminway, Secretary
Lake Winona

Deb Finch, Director
Lake Waukewan

Jeff Moody, Director
Lake Waukewan

Bea Thibault, Vice Chair
Lake Winona

Lew Sayers, Treasurer
Lake Waukewan

Peter Tallman, Director
Lake Waukewan

Catherine Greenleaf, Director
Lake Winona