

Inside this issue:

- American Kestrels
- Volunteer Highlight
- Biodiversity: Devil Crayfish
- Land Acquisition

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Rusty Patched Bumble Bee Conservation GLC works to restore Pollinator Habitats

By Sophia Gosetti, Land Manager



GLC community members observing pollinators on a private conservation easement at a Land Trust Days event in August 2022. Photo by Sophia Gosetti.

THE FEDERALLY ENDANGERED Rusty Patched Bumble Bee has become a beacon for pollinator conservation this summer. A once-common species, the Rusty Patched Bumble Bee is now increasingly rare in its native range due to loss of habitat, disease, and other threats. When observed, the bee is seen in low numbers, possibly indicating that even when the species is present in an area, the populations are small. However, conservationists have been working to survey land across the state. Record populations in many new locations have been recorded this year, leaving the conservation community buzzing (pun intended).

Jay Watson, Wisconsin DNR conservation biologist, is one such professional. GLC conservation easement landowners have been hard at work establishing restored habitats



Attendees observed the Rusty Patched Bumble Bee workers nectar robbing on jewelweed. The species is a short-tongued bee, and by chewing a hole at the base of the floral tube, they can access the nectar they couldn't reach otherwise. Photograph by GLC volunteer Alex Mann.

for pollinators, and Jay has surveyed numerous GLC properties (owned and conservation easements) observing the Rusty Patched Bumble Bee at several sites! GLC uses this information to prioritize certain plants, habitats, and restoration projects on the land that we protect. Each of GLC's preserves has a land management plan that documents short term and long term goals for the site, such as removing autumn olive (short term) and then subsequently managing an area for Rusty Patched Bumble Bee habitat (long term).

Jay explains, "The importance of pollinator conservation work like GLC and its members are doing is critical to helping the Rusty Patched Bumble Bee and other

Rusty Patched Continued on PAGE 2

GLC Partners to help the American Kestrel

By Jennifer Born Rutten, Executive Director



Photos by Jennifer Rutten

GLC IS PROUD to announce a conservation partnership with the Eastern Wisconsin Kestrel Project through the Cedar Grove Ornithological Research Station (CGORS).

GLC Executive Director Jennifer Born Rutten and CGORS Bird Banding Director Danny Erickson reviewed a GLC Preserve and three GLC Conservation Easement properties over the summer. A priority in this review was determining if the species already exists in the area (ideally, a pair would call the area home) or that suitable habitat and food sources are available in the area, and that a pole and nest box could be erected. American Kestrels

Rusty Patched

Continued from page 1

pollinators. The Rusty Patched and other bumble bees need a diverse mix of floral resources from spring through fall with overlapping bloom times. I've observed them throughout the season: Dutchman's breeches in the spring, culver's root, bergamot, hyssop, joe pye weed, jewelweed in the summer, and native thistles, asters and goldenrods in the fall."

Rusty Patched Bumble Bees live in colonies made up of one queen with female workers and males just like many other bumble bee species. As the queens emerge in early spring from diapause (a term referring to



(*Falco sparverius*) are a widespread raptor in North America, but recent trends show a population decline. Kestrels may be experiencing different threats at regional and local scales and research is lacking for eastern Wisconsin. Kestrels use natural cavities in trees in open areas for nesting, but a shortage of suitable nesting habitat may be a contributing factor to declines of this species. This study aims to better understand kestrel population trends in Eastern Wisconsin through banding effort and nest box surveys. Understanding these relationships will enable a more complete picture of the American Kestrel's life history and provide

their hibernation), they find a new nest site and lay their eggs. Typically, nests are found 1-4 feet underground in wooded areas near the edge of grasslands and prairies (Bumble Bee Brigade). During this time, the queen is entirely responsible for foraging and caring for the colony. The colony grows over the spring and summer, foraging, pollinating, and producing more offspring. Reproductive females (future queens or gynes) and males that mate find an area to hibernate for the winter while the foundress queen (or the original queen of the colony), workers and males die at the end of the season.

information to support conservation of kestrel habitat and populations.

A total of five nest boxes are now installed on these four lands as of August 3rd. We hope within 2023 we may have Kestrels that are attracted to these nest boxes and raise a family. At that point, GLC and CGORS staff, landowners, and volunteers from the community will help monitor and band young. It's a perfect way to engage communities to collect valuable state data and to help GLC protect and preserve our land and water resources through species monitoring.



GLC partnered with Orion Energies to install a kestrel box at Charles and Winnifred Spring, West Twin River Preserve.

As Jay puts it, "the overwintering gynes are the link to continuing the cycle next season." So, not only do Rusty Patched Bumble Bees, like other bumble bee species, require nutrients like nectar and pollen from flowers throughout the colony's life cycle, but they also require suitable sites for nesting and overwintering.

The importance of pollinators like Rusty Patched Bumble Bees cannot be understated. Bumble bees carry pollen from plant to plant, fertilizing plants as they forage. Without pollinators, many plants could not reproduce.

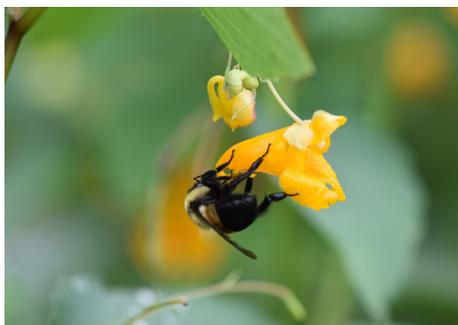
Rusty Patched Continued on PAGE 3

Rusty Patched

Continued from page 2

These plants feed other species, which serve as food for insectivores (animals that eat insects) and other carnivores. It is estimated that “fruits and seeds derived from insect pollination are a major part of the diet of approximately 25% of all birds, and of mammals ranging from red-backed voles to grizzly bears.” (Xerces Society). In this way, pollinators hold the food chain together. Additionally, native pollinators are responsible for “the reproduction of over 85% of the world’s flowering plants, including more than two-thirds of the world’s crop species. The United States alone grows more than 100 crops that either need or benefit from pollinators, and the economic value of these native pollinators is estimated at \$3 billion per year in the U.S.” (Xerces Society).

If you’re abuzz about pollinators, keep an eye out this spring for these fuzzy bumble bee friends! You can help the WI DNR learn more about bumble bees in WI by submitting your observations to the Wisconsin Bumble Bee Brigade <https://wiatri.net/inventory/BBB/>.



Photos by Jay Watson

Maddy Gustafson

Proclaimed Turtle Whisperer

MY INVOLVEMENT with GLC all started a couple of years ago with dinner at a local restaurant, where I first learned of Sheboygan’s “urban oasis,” Willow Creek Preserve. Having been relatively new to the community at the time, I was interested in exploring volunteer opportunities that involved citizen science, environmental conservation, and community engagement. From that initial conversation, I have since become involved with the Willow Creek Committee team, and Team Turtle!

As a member of the Committee team, I have the pleasure of working with a wonderful group of people who are passionate about environmental restoration and land management. The team is supportive when advocating for, and engaging in community involvement, so while my background is in engineering, they welcomed me as a citizen scientist, and helped me to reconnect with nature and discover a passion for turtles.

In addition to being involved with the Willow Creek Committee team, I have become an enthusiastic supporter of Team Turtle. Over the past year and a half, I have been volunteering my time training volunteers and staff in the how-to’s of radio telemetry, and by using radio telemetry equipment to track radioed turtles. As a self-proclaimed turtle whisperer (with telemetry equipment in hand), I have slowly become attuned to the individual personalities and preferences of each of the turtles as they traverse the Willow Creek property. One, an adventurer, and another, a homebody, are reminders for me that there are many ways to experience nature; I love to get out to hike and observe and explore, but I also enjoy the peaceful, reflective moments spent outdoors.

Along the way, I’ve come to appreciate the educational opportunities provided through GLC, the Willow Creek Committee team, and Team



Volunteer Maddy Gustafson, an enthusiastic member of Team Turtle, trains volunteers and staff in the use of radio telemetry equipment. Photo by Sophia Gosetti.

Turtle, whether it is sharing pictures of turtles, sharing newfound facts about turtles with friends and family, telling curious coworkers how to handle turtles.. I digress. The data gathered by Team Turtle is one of the many pieces of information gathered by the Willow Creek Committee team that allows GLC to make informed decisions about the future of the Willow Creek Property. Additionally, the time I’ve spent with GLC has allowed me to support wildlife monitoring activities not only at Willow Creek, but at other GLC properties as well. I have fond memories of pollinator walks at Bella Terra, amphibian trapping sessions at Willow Creek, crayfish sightings at Willow Creek Preserve and Hunner Preserve, to name a few.

I thoroughly enjoy my time with GLC, both as a volunteer and as a casual observer, and look forward to the adventures yet to come. Life with GLC is “turtle-y” awesome!

Biodiversity Blog

The Devil of Willow Creek

By Gary S. Casper, Biologist

BIODIVERSITY is the variety of life on Earth. The air you breathe, the water you drink and the food you eat all rely upon biodiversity. The variety of life on Earth is mind-boggling, with likely up to 100 million species. Yet biodiversity is in crisis, with as many as 1 million species at risk of extinction. The Glacial Lakes Conservancy Biodiversity Blog will celebrate our biodiversity, showcasing real data from our preserves to inform our membership about the diversity of life we are helping to preserve. Love life!

BIODIVERSITY BLOG 3: THE DEVIL OF WILLOW CREEK

It was a sunny afternoon at the Willow Creek Preserve, when we found the first evidence of the Devil. Chimneys of stacked mudballs rose above the pond shoreline, each centered over a circular hole in the mud descending to unknown depths. I knew what lurked below – rolling mudballs and bringing them up to stack around the hole – burrowing crayfish! These “mudbugs” dig down to the water table, where they have a safe retreat, and then come out at night to feed and be fed upon.

These were big holes, though, some over an inch in diameter, many at some distance from the water. This led me to suspect a primary burrowing crayfish was present. Crayfish fall into three categories based on their burrowing behavior. Tertiary burrowers dig single vertical shafts, only a foot or so deep, usually with the entrance submerged in lakes or streams, with no chimney. Secondary burrowers dig deeper burrows, up to two feet deep, sometimes with a few branches and secondary entrances. These are often at shorelines and have short chimneys. Tertiary and secondary burrowers inhabit the permanent waters of lakes and streams.

Primary burrowers dig deep, complex, multi-branching burrows,

up to nine feet deep, with chimneys up to a foot tall. They are the most endangered group of crayfish in North America, primarily due to habitat loss. They inhabit temporary wetlands, wet meadows, and floodplains. These habitats often only have standing water for brief periods each year. Hence their deep burrows provide access to water during droughts, and safe winter retreats, for many other animals such as frogs, salamanders,



Devil Crayfish in defensive posture. Note the large pincers!
(photo by G.S. Casper).

snakes, and insects. The endangered Hine’s Emerald Dragonfly uses these burrows in Wisconsin for breeding. Primary burrowers are called “Keystone Species” because they provide critical habitat for other species.

We had to find out who was in these burrows! Volunteers Madeline Gustafson, Peter Pittner, Sophie Gosetti, and Sarah Baughman began trapping surveys in early spring when the crayfish leave their burrows to mate in the pond. It wasn’t long before we caught some – and indeed they were Devil Crayfish (*Lacunicambarus aff. diogenes*), Wisconsin’s largest species.

Identifying the species created a new record in Sheboygan County. Sheboygan now fills the gap between Ozaukee and Door Counties, known for having Devil Crayfish distribution. Devils are distinguished by having very large chelae (the front pincers), which they raise up and wave when



Volunteer Maddy Gustafson with the first Devil Crayfish captured at the Willow Creek Preserve
(photo by G.S. Casper)

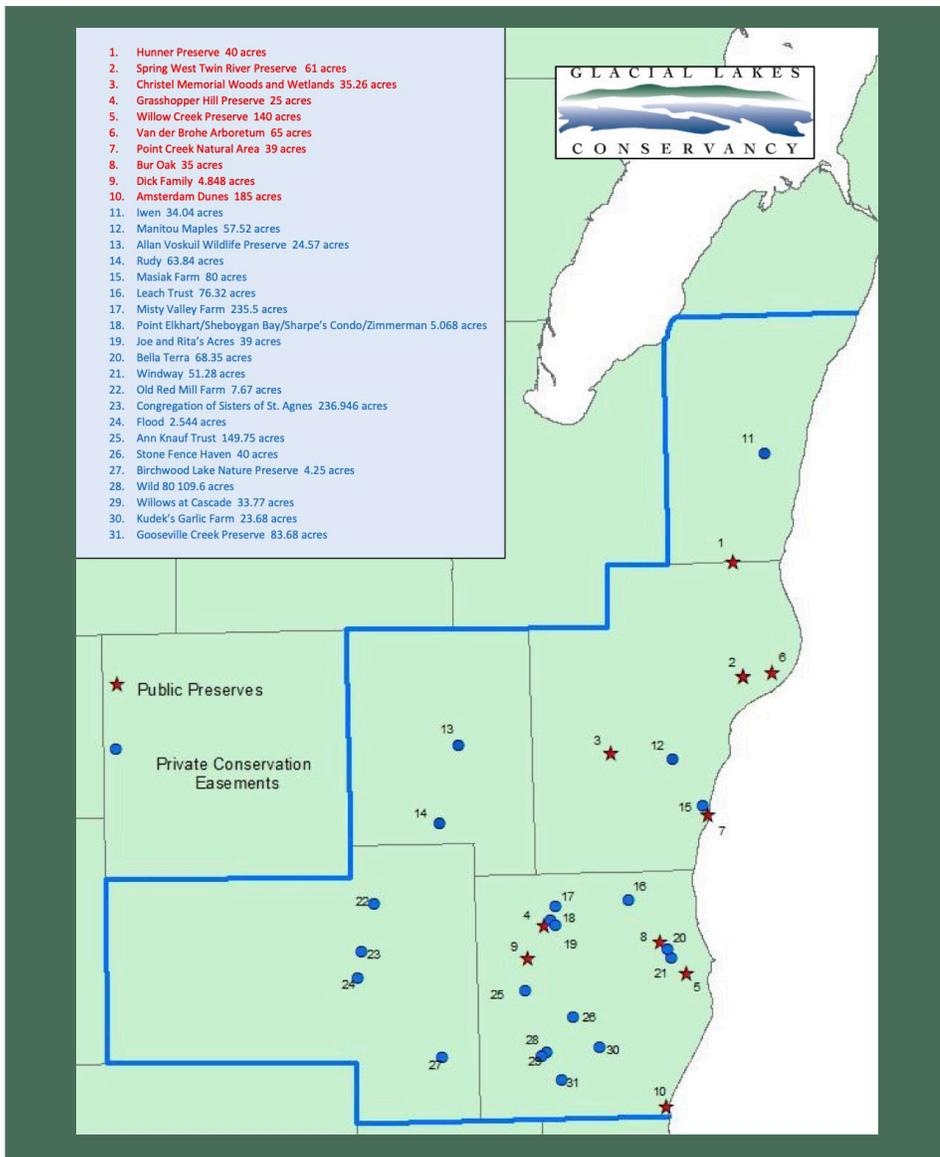


Crayfish chimney made of excavated mudballs (photo by G.S. Casper).

threatened. They emerge from their burrows at night, especially during rains, to feed upon small animals and detritus. At the Willow Creek Preserve they are concentrated at the Research Pond, which nearly dries up in late summer, with lesser numbers scattered throughout the Preserve at other temporary wetland habitats. Their burrows are used by reptiles and amphibians that are rare at the Preserve. In Willow Creek we also found the native Virile Crayfish (*Orconectes virilis*) – a tertiary burrower restricted to the creek, but none of the invasive Rusty Crayfish (*Orconectes rusticus*).

Next time you see a little chimney made of mudballs, know that a Devil may lurk within, coming out at night to feed, and tirelessly building refuges for

GLC's Land Acquisitions Committee



Map of GLC's protected lands as of 2022

AS A NONPROFIT LAND TRUST, GLC's mission is to permanently preserve and protect land and water resources for future generations. This can be achieved in one of two ways- through purchasing and owning land, or through agreements with private landowners, known as conservation easements. To help facilitate and identify goals to work towards, GLC is fortunate to have a Land Acquisitions Committee of dedicated expert volunteers. This group identifies priority areas to protect, such as watersheds, the Kettle Moraine, the Niagara Escarpment, and other unique ecological features, as well as evaluates prospective properties, reads over draft conservation easements, and more. We really could not protect the 2,000+ acres of land that we do without this committee! GLC is thrilled to have closed on a conservation easement in 2022 and are looking forward to working with our ten prospects in the upcoming year on protecting their land throughout Sheboygan, Manitowoc, Kewaunee, Calumet, and Fond du Lac counties.

If you would like to preserve and protect your own land or know someone who is hoping to do so, please contact me at sophia@glaciallakes.org.

Staff and Board News

Staff: GLC is thrilled to announce Isabel Mueller, our new Willow Creek Preserve Project Manager! She is enjoying diving into everything Willow Creek! Sophie Gosetti has stepped into the Land Manager role and is loving learning more about the lands GLC has helped preserve!

Committees: GLC is seeking additional individuals who are passionate about conservation and nature to join our outreach, education, land management, land acquisition, and fundraiser committees.

Board: GLC is excited to welcome Sister Susan Seeby to our Board of Directors! She is a member of the Congregation of Sisters of St. Agnes and helped complete their recent conservation easement.

Thanks to outgoing Board member Ryan Zinkel for his years of service. Ryan will continue a relationship with GLC as our attorney to assist with new conservation easements and other legal matters. Thanks and farewell to other outgoing Board members Scott Larson and Logan Wood.

The Board's annual retreat will be in January and will include work on a strategic plan for the next three years.

The Board Development Committee is studying current skills on the Board and is seeking additional individuals who are passionate about conservation and nature.

For information, please contact Jennifer at jennifer@glaciallakes.org
Jennifer Rutten, Executive Director



Landowners who have conservation easements on their lands are hard at work to protect eastern Wisconsin's wildlife. Photograph by Jay Watson

GLACIAL LAKES



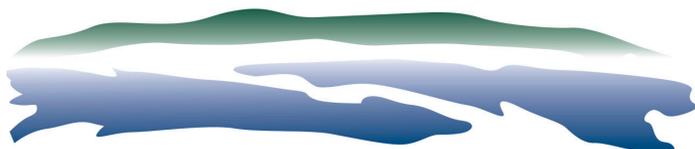
CONSERVANCY

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Glacial Lakes Conservancy is a private, nonprofit land trust that provides enduring solutions for land conservation in Wisconsin's Lake Michigan Basin and serves Sheboygan, Manitowoc, Calumet, Kewaunee, and Fond du Lac Counties. Contributions to further our efforts are appreciated.

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GLACIAL LAKES



CONSERVANCY

Upcoming GLC Events:

WINTER SOLSTICE CELEBRATION

Wednesday, December 21st from 1pm until sunset

Glacial Lakes Conservancy will be celebrating the Winter Solstice at Congregation of Sisters of St. Agnes, our newest conservation easement property.

Take a break from the holiday madness and hike with GLC volunteer Naturalist David Kuckuk and learn about the solstice and the natural wonders of the Niagara Escarpment on this beautiful property. More information can be found on GLC's website at www.glaciallakes.org. Registration is required for this FREE event. Hope to see you there!

Message From the President

As the year draws to a close, it is a time to reflect on the many good things that have happened with GLC. We grew our protected land with the addition of a conservation easement with the Congregation of Sisters of St. Agnes on the Niagara Escarpment in Fond du Lac. We engaged our community with multiple events for Land Trust Days. Our staff and volunteers worked on our five preserves to restore and protect the land.

I am proud of what we do in our corner of the world to make it better: acre by acre, tree by tree, turtle by turtle and bee by bee!

I invite you to help us continue our work by contributing to the Year End Appeal.

Thank you for being a part of our GLC community.

Cynthia Northup, Board President

Special thanks to those who helped with the content and editing of this issue of **Landscapes**:

Dr. Gary Casper	Jennifer Born Rutten
Sophia Gosetti	Martha Schott
Maddy Gustafson	Jay Watson
Cynthia Northup	