

SUMMER 2026

the Quarterly



ACRES
LANDTRUST

Protecting Land. Forever.



From the Executive Director

Dear Members,

I've always appreciated taking a long view. I'm inspired by things that take considerable and sustained effort. That's why I occasionally take 3,000-mile bicycle rides, invest in land protection and often say things like, "a mere 200 years."

This issue provides glimpses into different time periods:

- The recent past (the past couple of hundred years of history at the new acquisitions)
- The present (rebuilding wetlands and other current projects)
- The near future (a short-term 200-year ecological reflection at Wing Haven)

The land we protect now was under a shallow saltwater sea for eons, then, more recently, under about a mile of ice, then transitioned to tundra, then boreal forests, then grasslands and deciduous forests, then changed through human management, then through industrialization and deforestation, then again through conservation efforts.

The land archives of all these changes, documenting the natural history of our part of the world. When we preserve land now, we also preserve the bedrock, fossils, soils, surface rocks, bones, spores, seeds and other remnants of the near and ancient past.

People often recognize the value of preserving land for future generations; however, there is also great value in preserving the history of past generations through land preservation.

Our combined efforts now honor and protect the past, provide immense value now and will provide even greater value in the future. That's a wise investment. Thank you!

Jason Kissel

jkissel@acreslandtrust.org
260-637-2273 ext. 102

ON THE COVER

Little Gentian Lake at Wing Haven.

ACRES Land Trust owns and protects natural and working lands, inspiring people to value, appreciate and support these places for the benefit of all — today and forever. Today we protect and steward more than 8,700 acres in northeast Indiana and portions of southern Michigan and northwest Ohio. In addition to helping care for and restore our local land, your support also offers trail systems where you and others can explore thriving natural places from dawn to dusk, at no charge. Thank you!

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acreslandtrust.org



WELCOME

62 new members!



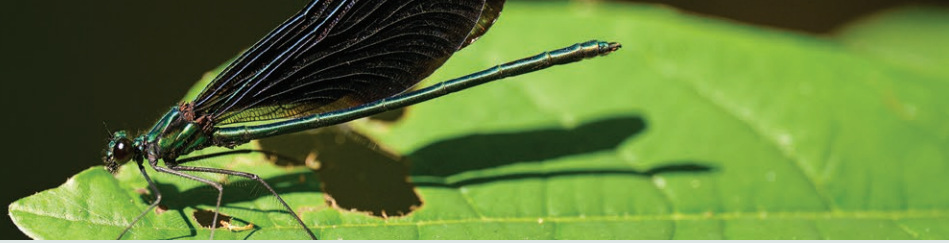


TABLE OF Contents

Summer 2026

Vol. 65 - No. 2

4	ACQUISITION Thoreau Wildlife Preserve
5	STEWARDSHIP Wetland Restoration: Why Protecting What Remains Isn't Enough
6	ACQUISITION Chung & Sage Lee Natural Area
7	200-Year Ecological Reflections: Artist Statement
8	BENEATH THE SURFACE The Remarkable Cisco of Indiana's Glacial Lakes
14	SPECIES SPOTLIGHT Freshwater Mussels
15	Remembering Charles Enea
16	SPECIES SPOTLIGHT The Dragonflies of ACRES Preserves

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Bridgett Hernandez, Editor

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photos by Jarrid Spicer

Thoreau Wildlife Preserve by Joanna Stebing

The newest ACRES preserve is already a familiar name in Defiance, Ohio. ACRES acquired the 250-acre Thoreau Wildlife Reserve in late 2025, but its restoration from overworked farmland to nature sanctuary began in 1989.

Over the years, the Diehl family and local volunteers worked to transform the land into a space the community could enjoy. They amended the soil, installed a meadow, planted trees and built a dam to create Walden Pond. The property opened to the public in 2020, offering trails and a nature center.

Thoreau Wildlife Reserve will continue welcoming visitors to enjoy its scenic tranquility as ACRES stewards in a new chapter of efforts to return the land to a more historically natural state.

Restoration efforts at Thoreau Wildlife Reserve are part of a larger project to protect and restore elements of the historic Great Black Swamp in northwest Ohio. Extensive swamps and marshes once covered this area, interspersed with mesic forests and occasional dry ridges dominated by oak and hickory trees.

The region was a hotspot of diversity, including many species restricted to wetlands and even unique to the region. Over time, the habitats supporting this diversity were lost to increasing agricultural pressures, and these species became increasingly rare.

Over the next several years, ACRES will work closely with Ducks Unlimited, the Ohio Department of Natural Resources: Division of Wildlife and other local partners to retire 87 acres of remaining agricultural fields and restore nearly 100 acres back to functional forested wetlands, flatwoods and emergent wetlands.

Once restored, these 250 acres within the Buckskin Creek-Tiffin River Watershed will slow runoff, filtering sediment and reducing nutrient pollution before it reaches the Tiffin and Maumee Rivers. The poorly drained silt-clay soils at this property are common on lake plain flats, making farming difficult. What was once a hindrance to successful crop production will now be perfect for planned restoration efforts.

On a recent visit to the property, the ACRES stewardship crew watched a barred owl swoop across a snowy field, and a brightly pelted fox trot through frozen grass mounds at the edge of Walden Pond. The wildlife sightings were a reminder of how much life the land supports.

Thoreau Wildlife Reserve provides a chance to witness the impact that caring for a large property can have on local plant and animal populations 50, 200 and 1,000 years into the future. As ACRES celebrates the Year of Water, it is fitting that we also begin a project directly focused on restoring water resources at a new property!

With this acquisition, ACRES now protects seven properties and 438 acres across northwest Ohio. Trails at Thoreau Wildlife Reserve are open to the public from dawn to dusk, with parking at 10485 Haller Road, Defiance, Ohio 43512.



Wetland Restoration:

Why Protecting What Remains Isn't Enough

Most of Indiana's historic wetlands vanished before anyone considered their value. Today, with nearly 90% of those wetlands lost, protecting what remains is only part of the work ahead. We need to actively create "new" wetlands in areas where they would have occurred naturally prior to tiling and ditching.

Some historic wetland systems might not have even appeared to function as wetlands to those passing through by railcar in the mid-1800s, and if these systems still existed today, we likely wouldn't see them as wetlands either.

Wet prairies are diverse, open wetland communities dominated by sedges, grasses and forbs. These prairies once covered large portions of our service area and were among the first areas targeted for conversion to agriculture. After being drained, their rich soils proved some of the most productive in the state. All the while, these systems had been working behind the scenes to clean water and, in many places, recharge aquifers. Most of the wetlands we still have today are those that weren't easily drained. Instead, it was often decided to send additional water to them from nearby areas. This is why these places are easily identified by the amount of standing water they hold year-round. Historically, many were high-quality bogs and fens, but now they function more as buttonbush swamps. Still valuable habitat, but certainly not the same.

Another wetland type that once occurred in our region was the forested wetland and flatwoods systems. These, too, are quite scarce today, though they persisted a bit longer than the wet prairies. Towering swamp white, bur and pin oaks, with their sprawling root systems, would certainly have slowed conversion. The abundant mosquito populations these

forests supported likely gave early settlers further reason to move on. Some of these systems within the ACRES service area existed within the footprint of the Great Black Swamp. Clearing these areas became much simpler once an extensive network of ditches and canals was dug, and once cleared and drained, these, too, were converted to farmland.

Restoring both of these wetland systems begins, first and foremost, with restoring a site's natural hydrology. Often, this can be accomplished in part by dismantling drain tiles and filling in existing drainage ditches. An added complication throughout the service area is the number of legal, or county-maintained, drains. These legal drains often serve dozens (or even hundreds) of other private landowners, and unless you're at the very top of the drain's watershed, it's extremely unlikely you'd be able to restore your portion of the ditch to a more natural state or fully restore hydrology to what it once was.

When working within the confines of a single property, we usually have to get creative. Sometimes this means diverting water from existing ditches and building berms and swales to retain it in new areas. That will be the case at the recently acquired and soon-to-be-restored Thoreau Wildlife Reserve. Restoration plans are still in the works, though the vision is to return a large portion of the property to the forested wetland that once covered much of the county until the mid-1800s. ACRES prioritizes protecting the remaining high-quality remnant communities within our service area, and we also recognize that, alone, that is not enough. To ensure that our water quality and biodiversity endure, we must continue to actively restore wetlands to the landscape.





photo by Jarrid Spicer

Chung & Sage Lee Natural Area by Bridgett Hernandez



When Chung and Sage Lee bought 71 wooded acres outside of Columbia City in 1988, they dreamed of someday retiring to the rural retreat. They couldn't imagine a better place to spend their golden years.

From above, the property reveals a dense canopy of mature trees, broken only by a spring-fed pond. Beneath the treetops, ravines create dips and rises in the woodland floor.

Over four decades, the place became woven into the Lees' family life. They have fond memories of walking back to the creek with their son and daughter when they were

children. They spotted birds, turtles, deer and red foxes. They enjoyed spending time outdoors, cross-country skiing and fishing the pond.

Sage's father moved to the property when he was in his 70s and lived there until his late 90s. It was a special place to him, and he enjoyed looking after it.

“My father said it was the best 24 years of his life.” — Sage Lee

The Lees' vision for retirement changed when the house was destroyed in an act of arson. The loss was devastating—but it also forced a difficult realization: maintaining the land would only grow harder with time. They decided not to rebuild. Instead, they chose to secure the land's future by donating it to ACRES. In 2026, it became the Chung & Sage Lee Natural Area.

The decision reflects a lifetime of service. Both physicians, Chung built his career as a gastroenterologist and Sage as a pathologist. While technically retired, they continue teaching first and second-year medical residents, passing on their knowledge to the next generation of doctors.

Donating their land was another way to “pay it forward” and give back to the community that has supported their family since they immigrated from Taiwan in the late 1970s.

“Indiana is just like every other place: Cities expand and there's less and less natural land,” Sage said. She and Chung hope the property will remain as natural as possible. Once land is developed, it is rarely restored to its original state, she said.

Even with advances in technology, Sage said, nature remains irreplaceable. “Artificial intelligence can't recreate something like the monarch butterfly's migration. It takes four generations to make one trip. It's incredible.”

The Lees have known about ACRES for about 20 years, but their involvement deepened after the COVID-19 pandemic, when they began visiting more preserves and attending events such as the invasive plant workshop and the maple syrup breakfast.

Over time, their confidence in the land trust grew. Chung said they appreciate that ACRES has remained grounded, with a small staff supported by a strong network of volunteers. Unlike some organizations that grow in size but lose their sense of purpose, ACRES, he said, has stayed true to its mission to protect local land.

Knowing the land will be cared for long into the future brings the Lees peace of mind. “I'm so glad that it's in good hands now,” Sage said.

In the end, what began as a plan for retirement became something bigger. Thanks to their gift, they've secured the land's future—one that will continue without them, but because of them.

200-Year Ecological Reflections: Artist Statement

By Rebecca Gazarik

“When I visited Wing Haven, I knew immediately I wanted to make a statement about the water. I spent time during the year sitting on the little dock overlooking the kettle lake. I used all my senses to gather inspiration; I heard migrating waterfowl passing through, I felt the gentle swaying of the dock as the wind blew the water in small ripples, and I ate my packed lunch surrounded by mosquitoes on a particularly humid day after a rainstorm.



On one of my summer visits, I took notice of small damselflies that seemed to have chosen lily pads as their personal territories. I enjoyed watching them dance and dart around. This drew my attention to the lily pads themselves, which were growing in various sizes, shapes and colors. I always thought lily pads were a simple shade of green, but here at Wing Haven, I saw hues of pink and purple, too.

This was the inspiration for the final piece, which features a slightly abstract scene of the American Water Lily showcasing its vibrant colors. The painting was created using gouache on a dark-coated clay board. This is my signature style of painting, which creates vibrant, rich colors. While I usually paint landscapes, this piece was done with intention of shape and color interactions and reflects a two-dimensional scene. I logged about 27 hours of painting, with an additional five hours of scanning, framing and creating a digital version that could be used as an iron-on patch for promotion. There was an unexpected issue of flaking while painting, which I tried to resolve, but was not able to completely solve. However, there is beauty in imperfections, and I believe this adds character to the painting. I sincerely hope this artwork inspires you to go outside and find wonders in nature.”

You can find Rebecca's painting on pages 11-12.



Beneath the Surface:

The Remarkable Cisco of Indiana's Glacial Lakes

Photos and article by Matthew D. Linn, Fisheries Research Biologist & Regional Supervisor

Hidden beneath the clear, deep waters of a handful of northern Indiana lakes lives one of the state's most fascinating native fish: the state-endangered cisco (*Coregonus artedii*). These slender, silver fish once swam in more than 40 lakes across northern Indiana. Today, they survive in only a few natural lakes, making every remaining population especially meaningful.





Cisco depend on water that stays cold and oxygen-rich throughout the summer, conditions that have become increasingly rare. Because of this, their presence is widely recognized as a sign of a healthy lake.

Two lakes where cisco still thrive are Crooked Lake, which spans the border of Whitley and Noble counties, and Failing Lake, also known as Gentian Lake, in Steuben County. Fisheries biologists with the Indiana Department of Natural Resources (DNR) have repeatedly documented cisco in both lakes. These two lakes are fortunate to have stretches of protected shoreline, including DNR Nature Preserves and ACRES Land Trust properties. Natural shorelines help maintain water quality by limiting erosion and nutrient runoff, which in turn helps maintain the deep-water refuge cisco rely on.

Cisco themselves are modest in size but remarkable in its adaptations. Most adults measure between 7 and 16 inches long, though a few can grow larger. Their slim bodies and reflective silver scales make them efficient swimmers in the cold, low-light depths where they spend most of their time. Cisco feed primarily on zooplankton, microscopic drifting creatures in the water column, which means they play an important role in balancing ecosystem foodwebs. Their diet also places them at the center of the food web, connecting the smallest lake life to larger piscivorous fish.

Each fall, as temperatures drop and the first thin layers of ice may begin to form, cisco move from the deep into the shallows to spawn. This brief seasonal shift is one of the few chances fisheries biologists have to see them near

the surface. For the rest of the year, cisco remain in the coldest parts of the lake, where few other species inhabit. Their entire lives depend on the presence of a cold, oxygen-rich layer of water. When summers are unusually warm or nutrient inputs cause oxygen levels to drop, this narrow band of suitable water can shrink rapidly. Many Indiana lakes that once supported cisco have gradually lost their populations. Today, only seven Indiana lakes still have confirmed cisco populations.

The presence of cisco in a lake tells a story about both the lake's past and its present. It means the lake has maintained its cold-water habitat despite land-use changes. It suggests the shoreline has remained mostly undeveloped and that the surrounding watershed has limited nutrient runoff. It indicates that the lake's deep basins are still able to stay cool throughout the summer months. When cisco persists, it is because of a remarkable combination of depth, water clarity and low nutrient levels. Their presence is a sign that the lake is healthy not only for cisco but also for myriad other native species that inhabit the lake.

These lakes are among the last strongholds of the cold-water ecosystems that once existed throughout northern Indiana. Protecting these lakes requires attention to the land around them, maintaining natural shorelines, reducing erosion, limiting fertilizer use and supporting conservation-minded land management throughout the watershed. Even small decisions made by lakeside residents can help preserve the delicate conditions that cisco need to survive.



American Water Lily at Wing Haven by Rebecca Gazarik

R

SUMMER HIKES & EVENTS

RSVP for events by visiting [acreslandtrust.org/events](https://www.acreslandtrust.org/events) or calling 260-637-2273. **M** Member Events

PREMIERE EVENT

Summer Waterside Concert

FRIDAY, SEPT. 18 6-8 pm

Lucerne Park Amphitheater at Pike Lake in Warsaw
Kosciusko County

Celebrate our year of water with an evening of music! ACRES has partnered with the City of Warsaw and The Lilly Center for Lakes and Streams for a free lakeside concert! Settle in for an evening of music with the Todd Harold Band as you overlook Pike Lake, one of Warsaw's natural lakes carved by glaciers. Bring your own lawn chairs and drinks.

Family Storytime Hike

1ST & 3RD MONDAYS IN JUNE-AUG. 10-10:30 am

ACRES Land Trust Office Allen County

Listen to a nature-themed tale along the trails! Start with a welcome song and stay after for an optional exploration hike. This series is geared towards ages 3-6 but all welcome! Hosted by Christina Dearth.

Dragonfly Hike

WEDNESDAY, JUNE 3 6-7:30 pm

Vandolah Nature Preserve Allen County

Watch for dragonflies as they hunt for an evening meal along the trails! ACRES Outreach Manager (and dragonfly enthusiast) Reena Ramos will help spot these fast-flying insects. Space is limited. *RSVP by June 1.*



Book Discussion **M**

SATURDAY, JUNE 27 2-3:30 pm

ACRES Land Trust Office Allen County

Join fellow members for a summer book discussion of "A Girl of the Limberlost" by Gene Stratton-Porter. This classic follows a young woman who finds wonder, purpose and independence in the natural world. Come ready to share your thoughts! Hosted by volunteers Jeri Kornegay and Joe Conrad. Space is limited. *RSVP by June 25.*

Moth Night **M**

FRIDAY, JULY 10 11pm - 1:30 am

Wing Haven Steuben County

Spend a laid back evening spotting nocturnal moths along the trails. ACRES Conservation Manager Joanna Stebing and Land Steward Carman Draves will help identify any flying visitors that might show up. This event is open-house style, stop in for as long as you're able! Space is limited. *RSVP by July 8.*



Thoreau Wildlife Reserve Opening Celebration

SATURDAY, JULY 11 10-11:30 am

Thoreau Wildlife Reserve Defiance County

Thoreau Wildlife Reserve has been a labor of love for decades, transformed from overworked farmland into a thriving nature sanctuary by the Diehl family and local volunteers. ACRES is proud to steward its next chapter: restoring nearly 100 acres of forested wetlands, flatwoods and emergent wetlands. Join us to celebrate this special place and the land donors who made its protection possible! Space is limited. *RSVP by July 9.*



New Member Open House

SATURDAY, JULY 18 1-2:30 pm

ACRES Land Trust Office Allen County

Are you new to ACRES? This open-house-style event allows you to meet other members and discover how your support helps protect local land. Come when you can, leave when you must. Refreshments provided.



Preserve maps available online at acreslandtrust.org/preserves

Family Play Day

📅 THURSDAY, JULY 30 ⌚ 3–5 pm

📍 Red Barn at the Tom & Jane Dustin Nature Preserve
Allen County

Gather with fellow families for an afternoon of water-themed activities: water critter crafts, a scavenger-hunt hike above the creek, make-your-own trail mix and more. Stop by anytime to enjoy the fun! Hosted by Christina Dearth.

Creek Stomp XVIII M

📅 SATURDAY, AUG. 8 ⌚ 10 am

📍 Hathaway Preserve at Ross Run *Wabash County*

This spectacular creek is off-limits the rest of the year, so here's your chance to see it up close and personal! Make your way through the cliffs and waterfalls of the Ross Run gorge while searching for fossils and fish. Hosted by preserve steward Kirk Swaidner and the Kissel family. Space is limited. *RSVP by August 6.*



Invasive Plant Workshops

Join the stewardship team for an in-depth look at identifying the many non-native invasive plant species present in our region. Learn about the methods used to eradicate these invasive plants and how you can manage your own property.

📅 TUESDAY, AUG. 11 ⌚ 5:30–7 pm

📍 ACRES Land Trust Office *Allen County*

Hosted by ACRES Regional Stewardship Manager Jenna Bair. Space is limited. *RSVP by August 7.*

📅 THURSDAY, AUG. 27 ⌚ 5:30–7 pm

📍 Asherwood *Wabash County*

Hosted by ACRES Regional Stewardship Manager Gavin King. Space is limited. *RSVP by August 25.*



Field Flower Hike

📅 SATURDAY, AUG. 15 ⌚ 10–11:30 am

📍 Pehkokia Woods *Allen County*

Enjoy the last of the summer blooms! Take a stroll through the fields to learn to identify some of these native flowers and grasses that thrive in the sun. Hosted by Preserve Steward John Laatsch. Space is limited. *RSVP by August 13.*

Mackel Open House M

📅 SATURDAY, AUG. 22 ⌚ 3–7 pm

📍 Mackel Nature Preserve *Allen County* (Address available with RSVP)

Explore the historic Mackel residence, located right along Cedar Creek. Take a short hike through the woods and learn how this preserve is protected forever. Limited spots are available for a tour of the historic residence. Bring a camp chair to chat around the fire pit; hot dogs and s'mores provided. Hosted by Mackel caretakers Isaac and Kelsey Saxton. Space is limited. *RSVP by August 20.*

This preserve is closed to the public.

The Mackel Family Nature Preserve Celebration M

📅 SATURDAY, AUG. 22 ⌚ 3:30–4 pm

📍 Mackel Nature Preserve *Allen County* (Address available with RSVP)

This newly protected, forested land, adjacent to the Mackel Nature Preserve, adds 19 acres to the Cedar Creek Corridor. Celebrate this special place and the land donors who made its protection possible! Space is limited. *RSVP by August 20.*

📅 SAVE THE DATE

Confluence: A Year of Water Weekend

📅 FRIDAY, AUG. 28 – SUNDAY, AUG. 30

📍 Asherwood, *Wabash County*

Spend a weekend with fellow water-lovers at Asherwood, where creeks, wetlands and woods come together. Hear stories from people who know water well, gather around the fire after dark, and explore the places water has shaped. There will be hikes, field excursions, hands-on workshops and good company. Camp on-site Friday and Saturday nights, or visit for the day.

Watch our emails and social channels for more details in the coming months!

SPECIES SPOTLIGHT

Freshwater Mussels

The filter feeders of Kosciusko County's lakes

By Hannah Godfrey, Lilly Center marketing assistant
Co-authored by Dr. Nate Bosch, Creighton Brothers endowed director

Did you know that the Tippecanoe River is currently home to one of the most diverse populations of freshwater mussels in the U.S., including six endangered species?

Historically, Indiana was home to 80 native freshwater mussel species. Today, nearly half of these native species are no longer in Indiana, federally endangered or extinct.

The History of Mussels

These often-overlooked creatures have a rich and unique history that spans the globe. In the late 1800s, one man's plan to manufacture buttons from mussel shells became a million-dollar industry. Within 10 years, 60 button factories sprung up on the banks of the Mississippi River in Iowa.

The industry peaked in 1916 with 20,000 well-paid employees and a total production of 40 million buttons. Despite the impressive economic boost in local communities, the growth could not last forever. Inevitably, years of intense, unregulated harvesting devastated freshwater mussel populations. The U.S. Bureau of Fisheries got involved in 1907 to protect the profitable industry, but efforts to grow more mussels were unsuccessful.

By 1960, Japan's cultured pearl industry was at its height. The United States exported freshwater mussels to Japan. The shells were ground and surgically inserted into an oyster as the pearl nuclei. Extensive harvesting and use of these creatures have left their populations in a difficult position.

The Life of a Freshwater Mussel

Mussels live humble yet complex lives embedded in the sediment of lakes and streams, and they can live up to 70 years! Decaying organic matter, microscopic plants and animals and bacteria make up the diet of a mussel. Mussels ingest all of these tiny materials through a process called filter feeding. On average, a single mussel can filter and clean 20-40 gallons of water daily!



Reproduction is one of the most fascinating aspects of their lives. Female mussels store eggs in their gills so that when males release their free-floating sperm into the water, a female mussel filters them into her gills and uses them to fertilize her eggs. Fertilization creates microscopic larvae called glochidia.

Female mussels use a special technique to spread their larvae. She becomes a skilled fisherman by creating a lure from two special flaps on her mantle. Using her lure, she disguises herself as a small prey fish to attract the interest of larger fish. When a fish attacks the lure, she quickly releases her larvae so that they attach to the gills and hitch a ride.

Although mussel larvae are parasitic, they do not harm their host. Glochidia are about the size of a grain of sand and stay in the gills, collecting for weeks or months. When they finally detach, they float down to the sediment where they begin the rest of their sedentary lives.

The Importance of Native Mussels

Native mussels are essential to aquatic ecosystems. Without native filter feeders, our freshwater lakes and streams would be overrun with bacteria and decaying matter. Mussels are essential in aquatic ecosystems and the food chain. Native mussels also provide stability in the sediment of a body of water. Not only do they play a vital role as filter feeders to reduce pollution in our waters, but they also serve as prey for other animals. Even after death, mussels help ecosystems as their shells provide habitat for other organisms.

The invasive zebra mussels are not native and are known for out-competing and incapacitating native species. Zebra mussels also contribute to the extinction and endangerment of many mussel species. Zebra mussels can be transported from lake to lake as adults attached to watercraft or as microscopic free-swimming larvae contained in water within live wells or boat motors.

Remembering Charles Enea

By Evan Hill



Early this year, ACRES lost an amazing volunteer. Charles Enea dedicated 15 years of exemplary service to the organization. When I first met Charles, he was still going by the nickname “Chuck.” I don’t recall when the switch occurred, but over the last 10 or so years, it has just been Charles. He often spoke about his airplane and was always quick to point to the sky to tell me the exact make and model of the aircraft producing the low humming sound that drifted through the clouds.

If you have enjoyed and noted the well-maintained trails within the Tom and Jane Dustin or Vandolah Nature Preserves within the last decade, that was because of Charles. His background in engineering and design certainly came in handy when drawing up potential design options for the recent Dustin campus improvements that took place here a few years ago. Charles also holds the

record for attending the most consecutive stewardship committee meetings. Over his 15-year stint, Charles never missed a meeting. His gardening prowess and generosity have also resulted in countless jars of salsa and canned tomatoes being processed by ACRES staff over the years.

When not volunteering for ACRES, Charles could have been found helping out the folks at Salomon Farm Park or the Allen County Purdue Master Gardeners, or working outside around the house. As a lifelong learner, it was also not uncommon for Charles to have picked up a class at Purdue Fort Wayne. He often updated me on what he was learning and always thinking of ways he could use his newfound knowledge to benefit the organization.

I am glad to have known Charles and feel lucky to steward long-term relationships with such amazing people. Rest easy, Charles, and know that we will keep looking for the source of that sputter on your lawnmower.



Current Conservation Efforts

Although native freshwater mussels face many threats, conservation efforts are on the rise! With more information available than ever, emerging projects focus on addressing habitat destruction, harmful invasive species and exposure to toxic chemicals that harm native mussels.

How can you help protect our native filter feeders?

- Follow the DNR laws and recommendations concerning mussels.
- Clean and rinse boats before entering a different body of water to stop the spread of zebra mussels.
- Avoid or reduce any chemical pollution you may be contributing (fertilizers, pesticides, soaps, cleaning products on outdoor surfaces, etc.)
- Staying up-to-date and informed on your lake is the best way to protect it! Visit lakes.grace.edu/category/research/ and learn more about Kosciusko County’s lakes and streams.



The Lilly Center for Lakes & Streams at Grace College conducts research, provides resources, engages and educates residents and collaborates with local organizations to make the lakes and streams of Kosciusko County clean, healthy, safe and beautiful. To date, the Lilly Center has conducted scientific research on over 30 streams and 45 lakes. The Lilly Center is driven to create a legacy of stewardship by equipping community members, visitors and future generations with understanding and to enjoy the county’s natural beauty. For more information, visit lakes.grace.edu.



the dragonflies

of ACRES Preserves

photos by Mark and Matt Weldon

Flying predators can be frightening. If you lived during the Carboniferous era, you may have faced giant flying bugs. Today, insects like mosquitoes face much smaller, though still formidable, sky hunters. One stands out, reaching speeds up to 35 miles per hour and maneuvering left, right, up, down, forward and backward. This remarkable agility and strength help the dragonfly truly live up to its name.

Dragonflies are neither dragons nor flies. They are predatory flying insects taking up half the taxonomic order *Odonata*. Their cousins, the dainty damselflies, fill the other half. Characterized by large compound eyes, dragonflies have some of the best vision in the bug world, seeing “faster” than humans and in 360 degrees. To compare, imagine seeing everything around you in slow motion. Hunting in the air is easier when everything else moves sluggishly. Unlike many insects with long antennae for sight and chemical cues, dragonflies have two short, aerodynamic antennae. These do not interfere with their airborne buffet and support their reliance on sight for navigation.

A strong thorax, or middle section, supports two sets of powerful wings. These wings are held horizontally in both flight and rest. Usually transparent, wings can be tinted or display colored markings. The last segment, the abdomen, ranges from thick and sturdy to thin and delicate. Dragonflies sport many colors and patterns; cherry red, powder blue, iridescent black and neon green are striking in flight.

When picturing a dragonfly, you may also imagine water. This is no coincidence! Water is vital for their life cycle. You'll find them near water sources around the world—from the Great Lakes' shores to forest pools the size of pancakes. They even inhabit unexpected places like salt marshes, home of the seaside dragonlets.

In the icy Arctic sea, azure darners patrol. The flame skimmers reside in hot springs. Desert whitetails prevail in oasis pools.

A winged insect's life cycle is usually broken up into four distinct stages: egg, larva, pupa and adult. But dragonflies are *hemimetabolous*, which means they undergo incomplete metamorphosis and have only three stages: egg, nymph (or naiad if underwater) and adult. Incomplete metamorphosis skips the pupal stage, so they don't form a chrysalis like butterflies do. The nymph, or naiad, is the immature aquatic stage of the dragonfly.

Most of a dragonfly's life is spent as a naiad. For some species, this stage lasts months; for others, years. Like their adult counterparts, aquatic naiads are predators.



With their extendable, hinged jaws, they eat anything they can catch, including small fish and tadpoles. Naiads complete their final molt into adulthood outside the water, usually on waterside plants. This process lasts several hours and leaves them exposed to predators, such as birds. Leaving a 2 to 3-foot stripe of unmowed vegetation along water edges, such as ponds and lakes, helps naiads find a safe place to molt.

Adult dragonflies live a much shorter life, lasting only one to eight weeks. Their main goal is to find a mate and seek out the local smorgasbord. Some, like the green darner, embark on a larger quest: a multi-generational migration from the northern US into the south, similar to monarch butterflies. After mating, eggs are laid in waterside plant material or directly in water, depending on the species. Some eggs hatch after a few weeks. Some remain dormant through the winter and hatch the following spring, like those of the blue-faced meadowhawk.

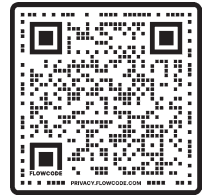
Because their lives are tied to water, some dragonfly species indicate good water quality and diverse aquatic habitats. Water with lots of silt and chemicals is hard for gill-breathing naiads to survive in. Without naiads and adult dragonflies as apex predators, the ecosystem

loses balance. Insects like mosquitoes and gnats surge. Meanwhile, birds, frogs, fish and bats lose their dragonfly food source.

Dragonflies need specific habitats to grow and reproduce. Loss of natural areas is debilitating, pushing many species into threatened or endangered status. Supporting conservation efforts and increasing native habitat in your yard can help our dragonfly friends.

After learning about these agile flying machines, you may be interested in seeing them firsthand. Nearly 100 different dragonfly species can be found in Indiana, and two passionate brothers, Mark and Matt Weldon, have dedicated themselves to documenting dragonflies across northeast Indiana. The brothers collect data on ACRES preserves, observing and photographing rare, threatened and endangered species. With their efforts, several species are highlighted here, which you can observe on ACRES' trails with patience.

Want to learn more about the Weldons and their discoveries? Visit: acreslandtrust.org/science-snapshot-citizen-science.



Gray Petaltail (*Tachopteryx thoreyi*)

Description: This large, gray and black dragonfly reaches up to 3 inches long and has a thick abdomen. Their uncommon habitat makes them rare. These forest dragonflies spend part of their life cycle in a very specific wetland called a seep. Seeps are spots where groundwater naturally rises to the surface, keeping soil wet. They're found in fewer than 10 counties in Indiana. The Weldon brothers spotted the first in Wabash County.

Where to see: You'll find this very specific seep habitat along Kissing Falls, the main waterfall, at Kokiwanee. It's a good reminder to protect this area by not climbing under or in the falls! The gray petaltail loves to bask; watch for them sunning on trees along the waterfall trail.

When to see: Mid-May until mid-July



Arrowhead Spiketail (*Cordulegaster obliqua*)

Description: This yellow/green and black dragonfly can be up to 3 inches long. Its thin abdomen has a distinct arrow pattern, which gives it its name. Arrowhead spiketails live in small, shallow streamlets. These streamlets can dry up, creating pools perfect for little naiads. Their rare and unique habitat makes arrowhead spiketails uncommon. The Weldon brothers were the first to document them in Allen County. Their presence is a sign that Cedar Creek is becoming healthier.

Where to see: The Cedar Creek Corridor is a great place to spot arrowhead spiketails zipping around. A large swath of land leaves room for plenty of good-quality streamlets to flow into Cedar Creek. Visit Vandolah Nature Preserve, Heinzerling Family Five Points Nature Preserve, the Tom and Jane Dustin Nature Preserve and Bicentennial Woods to do some watching near the water.

When to see: End of May to early June

Join us for a casual dragonfly hike at Vandolah Nature Preserve this June! More info on page 12.



Spangled Skimmer (*Libellula cyanea*)

Description: Males are beautiful, pastel blue. Females are brown with striking yellow lines down their abdomens. Both are about 2 inches long and have a small black and white spot at the top of their wings. This dragonfly is common in sunny, vegetated areas with slow-moving water, like ditches, ponds, pools and slow-moving streams.

Where to see: The Weldon brothers tracked spangled skimmer down at Vandolah Nature Preserve. Make sure to pause on the trail section near the small pond. Keep an eye out in preserves with open, vegetated “slow water” spots, like the ponds at Greenhust Commons or Kauffman Nature Sanctuary.

When to see: June to early August



Ashy Clubtail (*Phanogomphus lividus*)

Description: This common dragonfly is about 2 inches long with a slender black and brown abdomen. Two pale lateral stripes on the thorax (shoulders) make identification easier. They breed in sunny, slow-flowing forest creeks and rivers. Rocks, logs and low plants are great perches. Naiads overwinter before their final molt next spring.

Where to see: The Weldon brothers note there is a plethora of ashy clubtails in the Cedar Creek Corridor. Visit preserves where you can watch water-side, like Vandolah Nature Preserve, Heinzerling Family Five Points Nature Preserve, Bicentennial Woods and the James P. Covell Nature Preserve.

When to see: May to June

Ongoing Events

HIKES & BITES

📅 4TH FRIDAY OF THE MONTH

🕒 10am

Explore the trails during this casual hiking series led by ACRES volunteers. Afterward, join the group for a local lunch spot. More information on the website.

Boots & Brews—Come Join Us!

📅 3RD SATURDAY OF THE MONTH

Boots & Brews is an ACRES Land Trust hiking group for nature-loving young adults in their 20s and 30s. Come solo or bring a friend; hike and stay for a brew or two afterwards! See acreslandtrust.org/series/boots-brews.



PARTNERSHIP EVENTS

Grief Hikes with Stillwater Hospice

📅 3RD FRIDAY OF THE MONTH

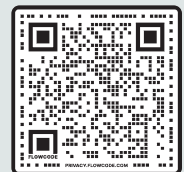
🕒 10 am

Stillwater Hospice is partnering with ACRES for guided Grief Hikes. Join a group hike to process grief in nature.

260-435-3261

GriefCenter@stillwater-hospice.org

Scan the QR code or go to stillwater-hospice.org/complementary-grief-programs.





Farewell, Jenna!

Please join us in wishing ACRES' Administrative Director, Jenna Justice, a fond farewell.

Jenna first joined the ACRES team as a college intern in 2012. A decade later, she returned to lead our daily operations. Working quietly behind the scenes, she made sure staff and volunteers had what they needed to do their best, managing finances, human resources and technology with dedication and care.

Jenna's kindness and generosity made a real difference to the team. Living nearby, she was known to dash home to make a deli sandwich (complete with potato chips inside!) for a hungry coworker. She championed ACRES' mission wholeheartedly, with a perspective shaped by both her role as a parent and her identity as a Native American Hoosier, reflecting a deep care for the land and its future stewards. She even sometimes stepped out of her regular role to lead bird-crafting programs, engaging dozens of children and helping inspire the next generation of conservationists.

We will truly miss Jenna's fun-loving spirit in the office, but we hope to see her at future ACRES events as a guest. Thank you, Jenna, for everything you've done for ACRES. We wish you all the best!



Welcome back!

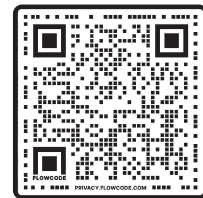
Please join us in welcoming Natasha Manor back to the ACRES team as our new Administrative Manager. Many of you will remember Natasha from her previous role as Office Manager, and since then, she has continued to support ACRES as a dedicated volunteer, leading book discussions, assisting with native landscaping and serving on the archiving team. We're thrilled to have Natasha back on staff, where she will help run the day-to-day operations of the organization.

We're so glad to have you back, Natasha!

wish list

Your generous donations of these supplies help keep our overhead costs down to focus on our mission. Thank you!

acreslandtrust.org/wishlist





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Moth Moon

by Florence Ripley Mastin

*Moth Moon, a-flutter in the lilac tree,
With pollen of the white stars on thy wings,
Oh! would I shared thy flight, thy fantasy,
The aimless beauty of thy brightenings!
A worker, wed to Purpose and Things,
Earth-worn I turn from Day's sufficiency.
One lethéd hour that duty never brings,
Oh! one dim hour to drift, Moth Moon, with thee!*

