



Friends of the Limberlost

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AUCTION PRICE GOT TOO HIGH FOR FRIENDS OF THE LIMBERLOST



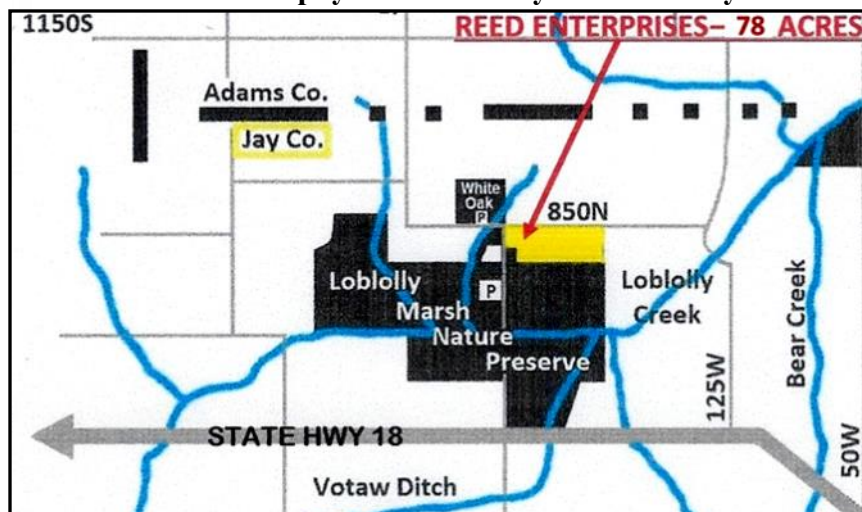
This “Public Auction” sign was posted a couple of months ago on land adjacent to the Loblolly Marsh, alerting the public about an opportunity to purchase the 78-acre Reed Enterprises property on December 11. If the Friends of the Limberlost could purchase this property it would be a significant addition to the Loblolly Marsh Nature Preserve in Jay County—see the map below.

Reed Enterprises is a name chosen by a group of hunters from Ohio, who purchased the property many years ago, primarily to hunt duck and deer. Ken Brunswick talked to one of the owners several times to see if they would sell their property to Friends of the Limberlost directly, but they decided to sell only at auction.

Last year it was the flood-prone Royer property that many of you helped the Friends of the Limberlost purchase from the Royer Family. Your response to this fundraising appeal resulted in over \$24,000 to help us add ten more acres to the Loblolly Marsh. We hoped to repeat that success with the purchase of the Reed Enterprises property, but unfortunately, this time it didn’t work out the way we wanted.

We estimated the Reed Enterprises property would sell for \$300,000 to \$1,000,000 at the auction! Whatever the auction price turned out to be, the Friends did not have that kind of cash reserve, so we would have to take out a loan to pay for this purchase. A loan would require paying annual interest payments on the balance for as long as it took to find someone or some organization to pay off our loan.

At the auction on Dec. 11, the top bidder had to pay 10% of the purchase price immediately. The Friends Finance Committee was confident we could pay the 10%, and the committee had financing for a bank loan for the remainder already pre-approved. If the Friends ended up being the top bidder, our main concern was keeping up with the annual interest payments due on the loan. These interest payments could go as high as \$25,000/year. Even with help from members and perhaps other donors, we estimated the Friends could make interest payments for only two to four years. During this time, the Friends would need to be



trying get a grant from DNR or some other entity to pay off the bank loan. The Friends Board of Directors approved this purchasing plan at their board meeting on Nov. 15, and the Friends attended the auction on Dec. 11 prepared to bid up to a maximum of \$7,700/acre—for a total of \$600,000) hoping it would sell for less.

At the auction, it took less than 30 seconds for the price to go beyond our maximum, and 30 minutes later, the land sold for \$12,400/acre, for a total of \$967,200—an excellent price for the sellers, but way beyond the price we were able to pay.



The Friends of the Limberlost Finance Committee is composed (from left to right) of Andrew Briggs, Randy Lehman, Willy DeSmet, Ken Brunswick, and David Rezit.

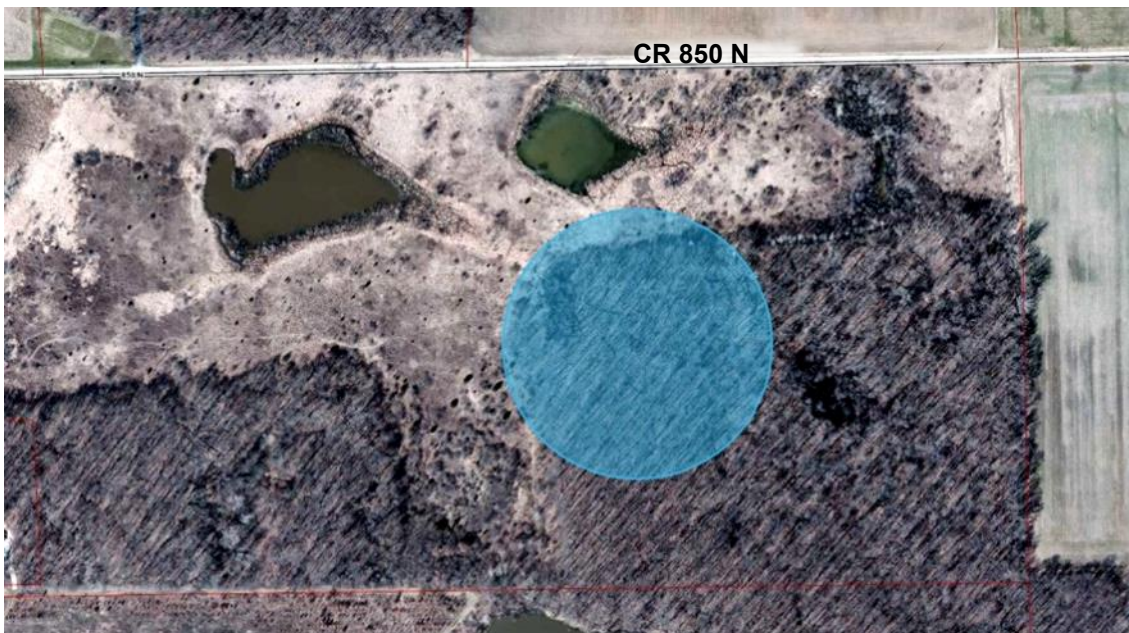
We were, of course, disappointed that our efforts failed and Reed Enterprises was sold to someone else, but perhaps all was not lost! After the auction ended, we heard that the highest bidder was a retired businessman who likes to buy land to protect it from development and improve native habitat. If this is true, we certainly want to establish a relationship with this remarkable person. We also heard that the person who didn't get the property (who had the second highest bid) was planning to cut down the valuable timber. If that is true, then even though the Friends failed to add more acreage to the Loblolly Marsh, the end result of the auction seems to be good for the land!

So, we'll keep you posted.

BALD EAGLE NEST

There is a Bald eagle nest on the Reed Enterprises property, and it is protected by 2 federal laws (i.e., the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act) and their nesting season is much longer than most bird species (it typically occurs from early December to late August). Here are how they are protected by each law:

- **Migratory Bird Treaty Act:** Bald eagles are a native migratory bird species, which means that their "active nests" are protected by state (i.e. IN Code § 14-22-6-2; IN Code § 14-22-6-2) and federal law (i.e. the Migratory Bird Treaty Act). An "active nest" is defined here as a nest that has eggs or chicks. Therefore, if a nest of a native bird species is encountered and it has eggs or chicks in it, then it is recommended to wait to cut down trees until the nest fledges young or fails by natural causes.
- **Bald and Golden Eagle Protection Act:** Any activities that cause large disturbances that are "close" to an active bald eagle nest are not permitted. The recommended buffer for these activities is 660 feet, about the size of 2 football fields, meaning that activities like construction and tree cutting with loud chainsaws within 660 ft. of the nest are not allowed. Again, these activities are prohibited only when the nest is active, meaning again that the nest has eggs or chicks. If the nest is inactive, then activities may proceed around the nest. Also, bald eagle nests (the nest structures with or without eggs or chicks) are protected. If the tree hosting an inactive bald eagle nest must be removed, a federal permit is required to destroy the nest thus allowing the tree to be removed. However, a state permit is not required to remove an inactive bald eagle nest.



This aerial photo of the Reed Enterprises property shows a circle. A pair of eagles has nested in the center of this circle for many years. The circle indicates the area covered by the Federal Bald & Golden Eagle Protection Act. This act states that any activities that cause large disturbances that are "close" to an active bald eagle nest are not permitted, and it recommends a 660 ft. diameter buffer.

CHRISTMAS BIRD COUNT (the CBC) is January 1, 2022

We participate in the National Audubon Society's annual CBC. According to their website, the CBC is... "The nation's longest-running community science bird project." You don't have to be a birding expert to participate, but inexperienced birders are paired with more experienced birders to help with the count's accuracy.

"A Christmas Bird Count has been taking place in Adams County for the past 50 years", says Terri Gorney Lehman, who became the CBC compiler for the Adams County CBC in 2014. In 2015, following the National Audubon Society protocol, Terri established a 15-mile diameter circle to define the area surveyed by count volunteers. It's known as the SANJO circle. The SA is for Southern Adams County. NJ is for Northern Jay County, and O is for Ouabache State Park in Wells County. Together SANJO roughly defines our survey area.

Within the SANJO circle, Terri assigns groups of birders to follow specified routes through this designated 15-mile diameter circle, counting and identifying every bird they see or hear that day. It's not just a species tally. As many birds as possible get counted, indicating the total number and species of birds in the circle that day.

In every CBC organized by Terri since 2014, she has been able to get help from 3 different Audubon groups: the Mississinewa Audubon Club (from Marion), the Robert Cooper Audubon Society (from Muncie), and the Stockbridge Audubon Society (from Ft. Wayne). Members from these Audubon groups, and many volunteers from Adams county, including many feeder counters, all participate in this CBC on New Years Day.



American Kestrel near the Loblolly Marsh in November

SANJO



TO JOIN US, CHECK IN WITH THE CBC COMPILER, TERRI GORNEY LEHMAN.

CALL OR TEXT TERRI BEFORE JANUARY 1, AT 260-413-5671 OR EMAIL HER AT:
bandtgorney@aol.com

**NEWCOMERS WELCOME!
IF THIS IS YOUR FIRST TIME PARTICIPATING IN THE SANJO CBC, PLEASE REACH OUT TO TERRI BEFORE JANUARY 1**

CBC PARTICIPANTS WILL MEET AT THE LIMBERLOST VISITOR CENTER AT 8:00 AM OR GO DIRECTLY TO THEIR ASSIGNED TERRITORIES.

SEE THE NEXT PAGE FOR MORE INFORMATION ON THE SANJO CBC & WAYS YOU CAN PARTICIPATE :

- Count birds at your feeder.
- Contact Terri if you want to join one of the CBC groups on Jan. 1
- If you already have skills as a birder, contact Terri to be assigned an area to survey on the SANJO Circle



All SANJO CBC birders get together for a free Chili Lunch at Noon on January 1, 2022 at Limberlost State Historic Site to share survey numbers and sightings

**CBC PARTICIPANTS WILL MEET AT THE LIMBERLOST VISITOR CENTER AT 8:00 AM
OR GO DIRECTLY TO THEIR ASSIGNED TERRITORIES. NEWCOMERS WELCOME!**

THERE'S PLENTY OF GOOD TERRITORY: The circle includes the Loblolly Marsh, Limberlost Swamp Nature Preserve, most of Bluffton and Ouabache State Park, ACRES Munro Nature Preserve, the Wabash River in Adams and Wells Counties, Limberlost Creek, Loblolly Creek, Music of the Wild Nature Preserve, the Limberlost Bird Sanctuary, Limberlost County Park, Fields Memorial Park, Rainbow Bend & Rainbow Bottom, Rainbow Lake, Lake of the Woods, the old stone quarry and gravel pit, many Amish farms, and all the towns and rural areas you see inside the SANJO circle.

BE SURE TO CHECK IN WITH THE CBC COMPILER, TERRI GORNEY LEHMAN. IF THIS IS YOUR FIRST TIME PARTICIPATING IN THE SANJO CBC, CALL TERRI BEFORE JANUARY 1, AT 260-413-5671 OR EMAIL HER AT: bandtgorney@aol.com

COUNT THE BIRDS AT YOUR FEEDER ON JAN 1

All birders, amateur or experienced are welcome to participate in the SANJO CBC, even if you only count birds at your feeder or just at your home or neighborhood...but remember this:

YOU MUST BE COUNTING BIRDS INSIDE THE CIRCLE

When you are finished for the day, you can email your list to Terri, or slow-mail your list to: Terri Gorney, 9024 Hickory Glen Trail, Ft. Wayne, IN 46825. Remember that your bird feeders must be in the SANJO circle.

Share the results of your survey at the Limberlost Visitor Center in Geneva at Noon on Jan 1, where a chili lunch will be served and your survey results can be hand delivered to Terri, the CDC compiler.



**ALL SANJO CBC PARTICIPANTS PLEASE JOIN US
FOR A CHILLI LUNCH AT NOON, JANUARY 1 at the
Limberlost Visitor Center**

We have a SANJO CBC tradition of enjoying a Noontime chili lunch with other snack items provided compliments of the three Audubon groups participating in the SANJO CBC count. It's a great way to relax, share your results, your birding experiences, your observations, and a way to make new friends.



HERE'S ANOTHER WAY YOU CAN HELP THE NATIONAL AUDUBON SOCIETY



The Great Backyard Bird Count (GBBC) is free, fun, and it's easy to participate. Your observations generate data that the Audubon Society uses to study trends in bird populations.

This event engages bird watchers of all ages in counting birds to create a real-time snapshot of bird populations. You count birds for as little as 15 minutes (or as long as you wish) on one or more days of the four-day event and report your sightings online at birdcount.org. Anyone can take part in the Great Backyard Bird Count, from beginning bird watchers to experts, and you can participate from your backyard, or anywhere in the world. Participation requires internet access in order to report your checklist.

Each checklist submitted during the GBBC helps researchers at the Cornell Lab of Ornithology and the National Audubon Society learn more about how birds are doing, and how to protect them and the environment we share. Last year, more than 160,000 participants submitted their bird observations online, creating the largest instantaneous snapshot of global bird populations ever recorded.

The 25th annual GBBC will be held Friday, February 18, through Monday, February 21, 2022. Visit the official website at birdcount.org for more information.

Wherein we learn how Gene Stratton-Porter might have celebrated Christmas with many of the songs we still use in celebrations today

by Jeanne Akins
Limerlost Cabin tour guide

Gene Stratton-Porter reminisces in the book, Let Us Highly Resolve's chapter Making Christmas Last a Year about some of the activities and preparations from the Christmas holidays through her years. In her book, Laddie, a book she claims is 75% autobiographical, she writes about her family's preparations for Christmas when she was a child growing up on an Indiana farm.



The folks in the mid to late 1800s accomplished the holiday preparation and tasks differently, but the dedication of time and money in planning were very much the same. Baking and cooking enough food for large family gatherings and unexpected guests took weeks of planning and preparation. The delicious smell of spices, breads, pies, and cookies baking filled homes with wondrous aromas in Gene's day, the same as in today's homes.



Fresh cut pine trees and garland were used to decorate homes for the Christmas holiday then. Stockings were hung, and presents were wrapped and hidden until Christmas. A hundred years later, echoes of the same anticipation and excitement can still be heard in the voices and seen on children's faces waiting for Christmas Day.

There are things Gene's generation did not have that we do. No radios when Gene was growing up. No televisions. Or cell phones. Or game apps. But one thing that we can easily recognize if we were to step back in time would be the Christmas songs. Yes, the very same Christmas songs we hear today. Look at the following list of Christmas songs from over one hundred years ago:

Silent Night (circa 1818-1863)
Joy to the World (circa 1839)
Hark! The Herald Angels Sing (circa 1840)
It Came Upon a Midnight Clear (circa 1846-1850)
O Holy Night (circa 1847-1855)
Good King Wenceslas (circa 1853)
Angels We Have Heard on High (circa 1855)
We Three Kings of Orient Are (circa 1857)
Jingle Bells (circa 1850-1859)
Up On the Housetop (circa 1860)
What Child Is This (circa 1865 – 1871)
O Little Town of Bethlehem (circa 1868)
Jolly Old St. Nicholas (late 1880's)

Are you surprised at how many of the songs are our generations' shared experience?

Because Gene Stratton-Porter played the piano and violin, it is reasonable to believe that she and the Porter family played and sang these Christmas songs during the holiday season. She refers to "Up on the Housetop" in Laddie, which shows she was personally familiar with it from her childhood.

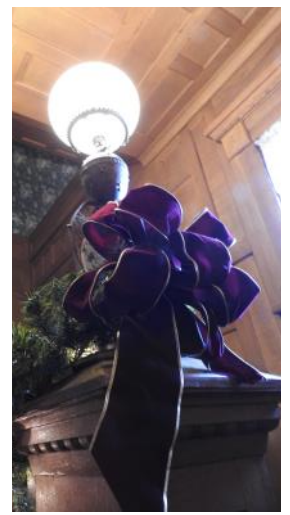
Nowadays, the constant barrage of Christmas music over the airwaves may be the bane of the Christmas Season for some; however, knowing that long ago these same songs brought comfort and joy to past generations of our own family members may help us feel a little less "Grinch-like" and a little more "Jolly" when we hear them. Christmas songs are not only part of 2021's Sounds of the Season, they are part of our history, too. Best wishes for Happy Holidays from the Limerlost Historic Site staff!

LIMBERLOST CABIN IS DECORATED FOR THE HOLIDAY SEASON

The pictures below give a preview of what you can see when you tour the Limberlost Cabin in December. If it's been awhile since you've stopped and taken a look at the Limberlost, it is certainly worth your time to take another look. So many time period pieces have been added in the past couple of years, and there is much more detail in the interpretation of the historical objects; for instance, there is now a camera display featuring a camera like one Gene Stratton-Porter would have used. The staff members at Limberlost, who do all the guided tours, are well informed and give excellent, educational, and engaging tours. They love doing what they do, and it shows.

LIMBERLOST OPEN HOURS: 10 AM—5 PM, WEDNESDAY THRU SUNDAY, LAST TOUR BEGINS AT 4 PM

ISM MEMBERS GET FREE GUIDED TOURS. NON-MEMBERS PAY: \$7 ADULT, \$6 SENIOR, \$3 CHILDREN AGE 3—17



The marcescence of winter By Fred Wooley

In the years I was at Pokagon State Park, the drive into work every day was always a delight. I thought it must be extra magical for park visitors, some maybe coming just once a year, making that mile drive from the highway, rounding the curve, and seeing the old gatehouse.

It was wonderful all year, each season with its special nuances. I think most special for me was winter, and the most special time of day was dawn, with light just coming into surrounding forests. The most special kind of dawn in the heart of winter were those dark days with fog or a steady snow. It was then, that I'd look deeper off roadsides into the woodlands for the ghosts of the growing season past - the young beech trees.

I am enamored with young beech trees in winter. When all surrounding trees have dropped their leaves, young beech trees keep theirs. Beech leaves are twice longer than wide, pointed with thick parallel veins, and in winter, a silvery-tan color. They are nearly translucent and seemingly glow in dark surroundings. Older trees drop their leaves, young beeches keep them until spring when buds tucked into leaf axils swell and push off the old leaf.



This phenomenon is not unique to beech trees. Many oaks, too, will hold leaves through winter and into spring. Beech and oaks are members of the same family, *Fagaceae*. It's a unique family, sort of in the middle of the tree world, between the primitive conifers with some leaves that actually stay green and function all winter, and truly deciduous trees that sport a bright pigment pallet before discarding all leaves to the forest floor come winter.

Of course, the phenomenon has a name. Botanists refer to this retention of dead leaves through winter as *marcescence*. Beyond the name the science behind it is still in theory stages and there are several that explain the strategies for young trees to hold onto leaves that no longer photosynthesize and produce food.



Beech and oak sometimes grow on dry or infertile sites and compete for water and nutrients. By hanging on longer, dead leaves delay decomposition and drop, decay, and deliver their nutrients and provide moisture holding mulch later, when most needed.



Another suggestion is that suspended leaves knock down and trap snow, thus providing added moisture near tree bases during the growing season. Think snow fence without the T-posts and bright orange plastic netting. It's a snow fence of light tan beech and dark brown oak.

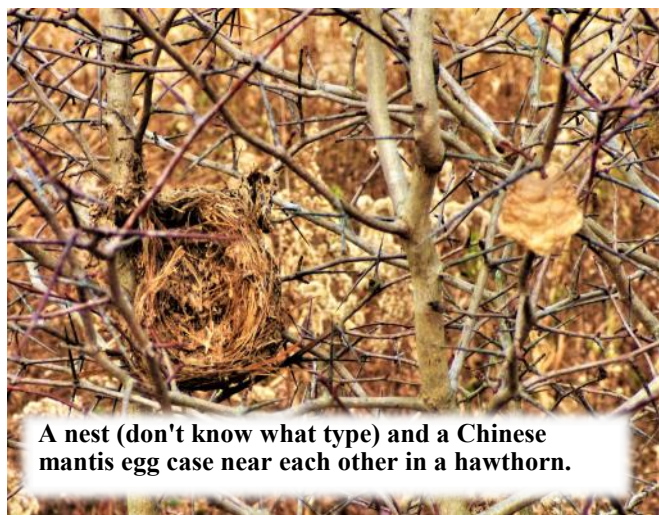
Clinging leaves may also serve as protectors. Each leaf stem forms an axil at the limb, behind which last year's bud, becoming next year's limbs, leaves, flowers, and fruit, reside and await spring. Come spring, the bud swells, shucks the protective leaf, and a new growth cycle begins. This theory makes the most sense to me. Buds vary in protective coverings, or scales, and the thin bud scales of some species would certainly benefit from a little added protection against winter's rigor.

It also stands to reason that dry leaves provide protection from hungry browsers, such as squirrels, deer, and moose up north. They must navigate old dead leaves to bite through and reach tender twigs and buds.

Our home of mostly old fields is gradually being restored to open, short-grass prairie and wildflower meadows. This environment and the surrounding woodlands and wetland fen is not quite the environment for beech trees. It is for oaks though, and we have selected and planted a few species for many reasons, their winter marcescence being one! We have a scarlet oak I started as a twig whip in the early 2000s. It is now a beautiful 25-foot tree, holding those deep scarlet red leaves into November and now brown leaves into February.

Other scattered oaks offer winter leaves and wonderful looks all through winter. You likely have your views of marcescent leaves on neighborhood trees. Watch for them too on drives along woodland roadsides. Pick a winter early morning, a foggy morning, a snowy morning... you won't be disappointed.

Fred Wooley is a naturalist, writer, and land preservation/restoration enthusiast. He lives on part of an old farm overlooking an extensive fen in northern Steuben County. He can be reached at fwooley@frontier.com.



A nest (don't know what type) and a Chinese mantis egg case near each other in a hawthorn.

Wintertime—When Nature Pulls the Green Curtain Back by Curt Burnette

When most folks envision a walk out in nature, it includes the green leaves and flowers of spring and summer, or maybe the beauty of autumn colors. Rarely does someone envision the bleakness of late fall, winter, or early spring. But for those who wish to truly experience all that nature has to offer, a walk after the leaves have fallen can be rewarding and even exciting.

Leaves of trees and heavy growth of flowers and other plants hide some of what nature has to offer. These hidden treasures can be seen when leaves have fallen and flowers and plants have died back. This is the time of year to discover what is hard to see otherwise.

When I am out and about in this “dull” time, I watch for a variety of things. Some of the most prominent would be bird nests, especially the larger ones like hawks and eagles. There are many smaller nests to look for too such as robins, sparrows, cardinals, goldfinches, and catbirds, just to name a few. Even woodpecker holes are easier to spot.

Then there are insect-related discoveries like hornet and wasp nests, cocoons, and mantis egg cases. Something to look for on plant stems, branches, twigs, and dead leaves that are caused by insects would be galls. These are growths and swellings that look odd or out-of-place on the plant such as the bushy growths at the top of a goldenrod stem or a round swelling on the stem itself.

So, don't always be a couch potato this time of year. Bundle up and go out to discover what nature has revealed to us when she pulls back the green curtain!

LOBLOLLY BOARDWALK REPLACED—OUT WITH THE OLD & IN WITH THE NEW

by Randy Lehman

According to Taylor Lehman, DNR-Nature Preserve's Regional Ecologist for East-Central Indiana, it was time to replace the old boardwalk at the Loblolly—a prominent feature at the marsh, just a short walk from the Loblolly parking lot, and enjoyed by almost everyone who visits the marsh.

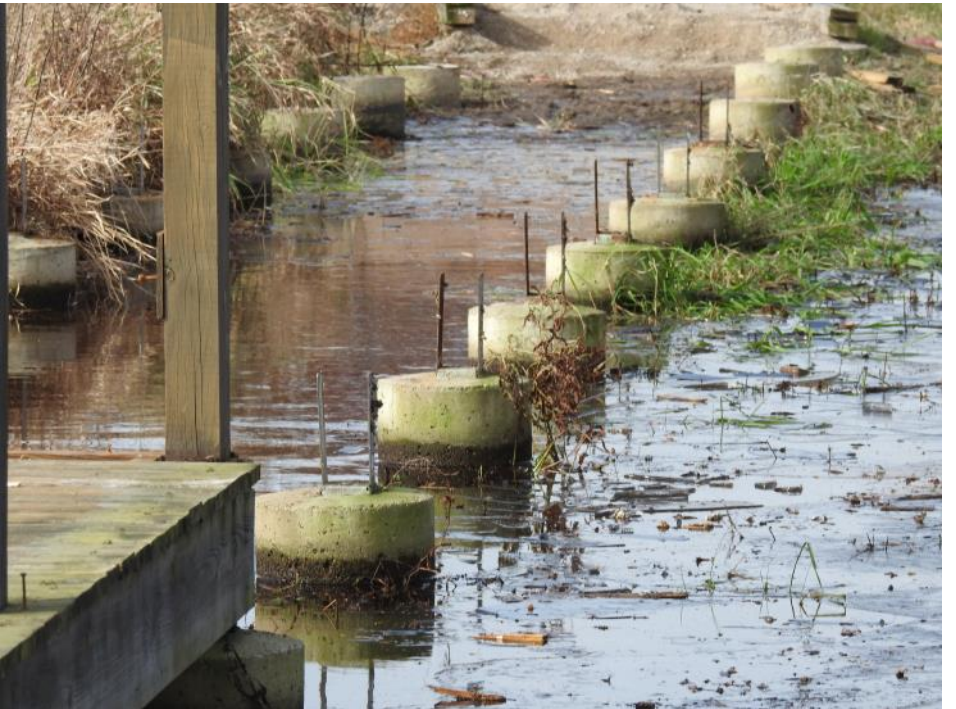
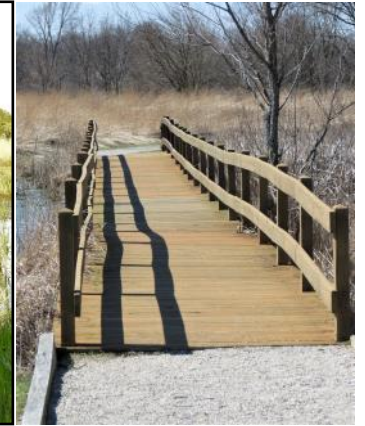
The old bridge, pictured in the top photos, was built by Ken Brunswick and Al Schott back in 2004, but like any wooden structure totally exposed to the elements, time can take its toll. I know Ken is disappointed that the bridge he and Al worked so hard to complete 17 years ago didn't last longer. At least the DNR had the money needed to replace the old bridge.

One of the benefits of an upgrade is this time the entire structure can be made to last longer, it can be made to support more weight, and it can be made wider so that Nature Preserves can drive equipment over it.

According to Ken, the 2004 bridge was a "hurry up" thing. Larry Waylen, DNR engineering, designed it, and he helped Ken and Al get started. So, in the fall of 2004, when the wetland was the driest, Ken and Al installed the Sona-Tubes, filled them with cement, which formed the concrete columns that you can see in the picture to the right. All of the wooden parts of the old bridge had to be removed, but the concrete columns were still in good shape and were reused to support the new bridge.

The bridge gives everyone the opportunity to see frogs, birds, turtles, dragonflies, and snakes, up close. We've also noticed that the setting of the boardwalk is often used by photographers taking photos of high school graduates or newly engaged couples.

We thank Limberlost Construction from Geneva for building a great bridge that will be enjoyed for years to come by all visitors to the marsh.



The Yellow-rumped Warbler (*Dendroica coronata*) by Terri Gorney Lehman

The Yellow-rumped Warbler is a bird that you can see in the winter at Limberlost. According to bird expert Don Gorney, "it is the only warbler that can be seen reliably in the winter in Indiana."

This fall, Randy Lehman and I saw two flocks of Yellow-rumped Warblers around Limberlost. Randy was able to take some great photos of them when they were busy feeding. They are fun birds to watch as they flit around.

These pictures three pictures appear to show an immature Yellow-rumped, sex unknown.



black, white, and yellow. They are approximately 5 ½" long. Old field guides will refer to them as a Myrtle warbler which is the eastern form. The western form is called Audubon's warbler. Their call is a weak trill. Their call note is a loud *tcchep*!

It is not uncommon to have them listed on the SANJO (Southern Adams Northern Jay Ouabache) Christmas Bird Count on January 1. It is a highlight to see this cheerful little warbler or to hear their loud call of "*tcchep*" on a dreary winter day.

For more information about the yellow rumped warbler check out this website:

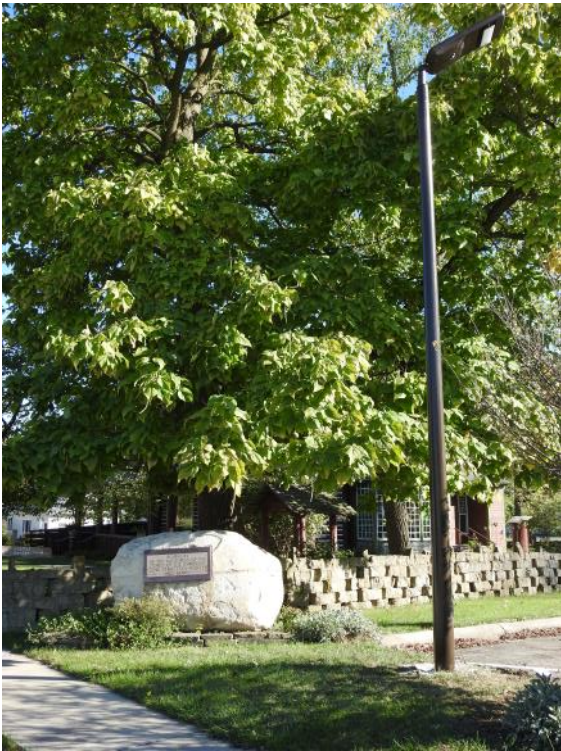
<https://www.allaboutbirds.org/guide/Yellow-rumped-Warbler>

The Yellow-rumped Warbler winters in good numbers further north than any other warbler. It is because they are hardy and adaptable to live on berries when insects are scarce.

According to Don, they nest in Canada and usually leave this area in the spring. They spend their summers in northern forests. Yellow-rumped Warblers' nests are 4 feet to 50 feet above the ground and usually on a horizontal branch of a conifer, but they also nest in deciduous trees.

The Peterson Field Guide states, "it is perhaps our most abundant and wide-spread warbler" especially in fall, winter, and early spring in northeastern Indiana. They are named for their most notable field mark, which is a yellow rump. They are strikingly beautiful with shades of gray,





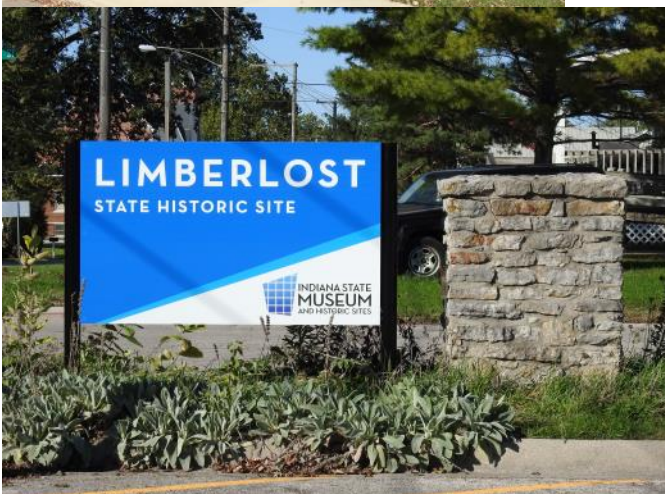
LIMBERLOST STATE HISTORIC SITE GETS MUCH NEEDED LIGHTS

Anyone who has ever attended an evening event or a nighttime meeting at Limberlost knows that when the sun goes down, it can cause problems, especially in the site's parking lot. Walking around in the darkness at Limberlost is a safety issue for visitors and staff. A flashlight can help you find your way around the site and back to your car, but who wants to carry a flashlight around? For years Limberlost site managers have put in requests to update the lighting at the site, but for one reason or another nothing happened.

So we appreciate the recent focus on this lighting issue by management at the Indiana State Museum (ISM-SHS) to resolve this long-standing issue. The new solar lights do a good job lighting up the entire parking lot, and they also improve the appearance of the site at night to anyone. You definitely notice this site improvement when you drive along US Hwy. 27, which borders the entire west side of Limberlost State Historic Site.

The lights are attractive and functional, making parking your car or finding your car at night so much easier and safer. The installation of solar lights moves the site from the 1940s, when it was first established, to the 21st Century. The addition of modern conveniences can sometimes clash with the time-period focus of any historic site, but in this case the lights don't appear to have any downside on the ambiance of the 1890s Limberlost Cabin and carriage house. Installation of the lights was done quickly and professionally. The entire project took less than one day, and the current administrators of the Indiana State museum, and the company that installed the lighting deserve a big round of applause for finally taking care of this problem.

In keeping with their marketing plan to keep all advertising of the museum and the state historic sites under one format, ISM-SHS recently "wrapped" the old Limberlost SHS parking lot sign and the electronic sign with the ISM-SHS blue & white colors and the their logo. The resulting signs really stand out and are more visible to drivers and anyone else traveling along US Hwy. 27.



NASA, Nature, and More!

By Adrienne Provenzano

While NASA (the National Aeronautics and Space Administration) is perhaps best known for missions to outer space, like the Apollo Moon missions and the International Space Station, there's a lot that NASA does to study Earth! Earlier this year, I had a chance to share information on NASA resources at an online conference for interpretive naturalists. There are so many resources available! I thought that Friends of the Limberlost might be interested in checking out some of them as well!

The main website for NASA is www.nasa.gov. There you can find links for information about past, present, and future missions, including educational materials. One resource that may be of interest focuses on the Landsat satellite program. Earlier this year, Landsat 9 was launched and has begun gathering information about Earth. This collaboration between NASA and the USGS (U.S. Geological Survey) provides useful data for farmers and others! You can find info at landsat.gsfc.nasa.gov

According to the mission website, "Since 1972, Landsat data have provided a unique resource for those who work in agriculture, geology, forestry, regional planning, education, mapping and global-change research." Landsat data is also used for "supporting emergency response and disaster relief to save lives." The program holds a "critical role of repeat global observations for monitoring, understanding, and managing Earth's natural resources."



In addition to satellite imagery, astronauts have been taking photos of Earth since the earliest days of the space program. You can find images of particular locations – including Indiana –that were taken day and night! Check out the Gateway to Astronaut Photography of Earth at <https://eol.jsc.nasa.gov> for free access to millions of photos!

Another resource to consider is NASA's Earth Observatory, <https://earthobservatory.nasa.gov>. There are more than twenty NASA satellites currently gathering all sorts of data about Earth – clouds, ice, soil, rain, snow, and more! This site also has curriculum materials, like "EO Kids." These colorful newsletters about current events – like wildfires – include hands-on activities. Geared towards learners age 9 – 14, the materials can be adapted for younger students and enjoyed by lifelong learners of any age! One issue of the newsletter that may be of special interest to Friends of the Limberlost is called "The Shape of Farming: Water for Crops".

Indiana has many connections to NASA. Astronauts have been born and raised in the state and Hoosiers and non-Hoosiers studying aerospace engineering and related fields at Indiana colleges and universities have made important contributions to NASA missions. Large and small companies in the state have assisted the work of NASA in various ways and students throughout Indiana benefit from NASA's educational resources available at schools, libraries, and museums! You, too, can enjoy exploring NASA, nature, and more!

Adrienne Provenzano is an Advanced Indiana Master Naturalist, NAI Certified Interpretive Guide, and volunteer NASA JPL-CalTech Solar System Ambassador.

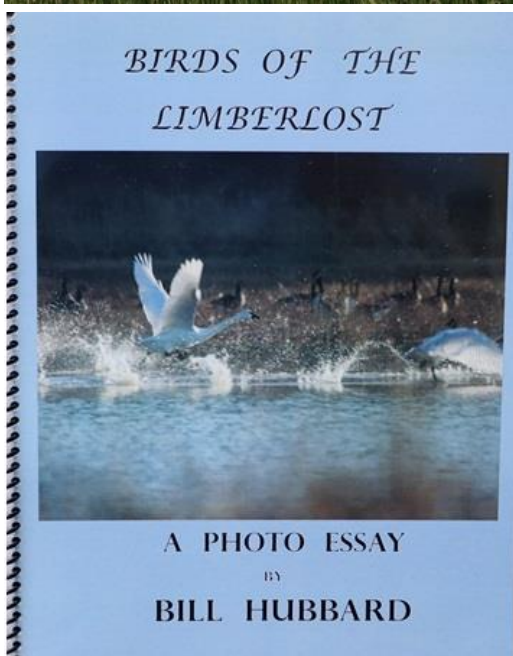
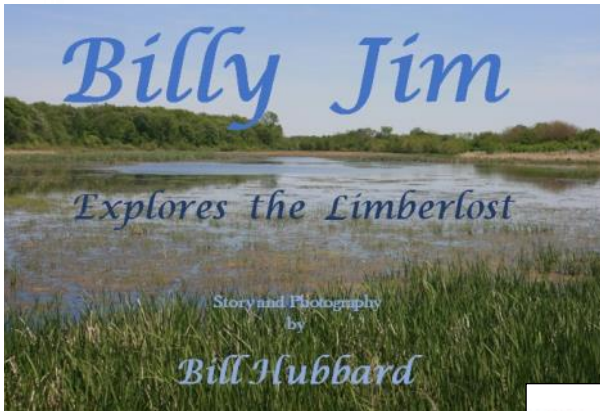
LIMBERLOST MEN RECEIVE RECOGNITION

Friends of the Limberlost are happy to announce that Bill Hubbard (on the left) was awarded the Clyde Hibbs Conservation Education award and Randy Lehman (on the right) received the Phyllis Yuhas Wildlife Habitat Preservation award from the Robert Cooper Audubon Society at Ball State University on December 8.

Randy was recognized for his efforts while serving as the site manager at Limberlost State Historic Site (1999-2016) for promoting the restoration of the Limberlost Swamp and for expanding nature related programs at the site, the Limberlost wetlands, and in the local school systems. He often presented outreach programs on birds, moths, and butterflies. His efforts helped to bring more attention to Indiana author, Gene Stratton-Porter, who made the Limberlost famous years ago through her novels and nature studies.

While serving as the site manager, Randy was instrumental in raising funds for the construction of the Limberlost Visitor Center that now houses the site offices, a gift shop, a meeting room and the office of the Regional Ecologist for Indiana DNR's Division of Nature Preserves.

Since his retirement in 2016, Randy has been the President of South Adams Trails which is building a hiking/biking trail connecting Berne and Geneva, IN, and they recently completed a 3.2 million dollar pedestrian bridge project crossing the Wabash River with two restored 1890s railroad bridges. He is also the President of the Adams County Parks and Recreation Department which has expanded its park and hiking trail system in southern Adams County.



Bill Hubbard received his award for his excellence in educating the area's school children, youth, and adults about conservation issues and practices. Bill was recognized for his outstanding work as a biology teacher at Adams Central High School (1972-2004) and his work as a naturalist at Limberlost State Historic site (2007-2020). Bill was instrumental in expanding the site's school outreach programs. His portrayal of Limber Jim, the person for whom the Limberlost Swamp is named, was a regular persona at site events and at Limberlost

outreach programs. While working as a Limberlost naturalist, Bill authored three books (shown above) that featured different aspects of Limberlost natural history: *Billy Jim Explores the Limberlost*; *Birds of the Limberlost*; and *The Amazing Adventures of H. TU OH, A Journey Through The Limberlost*. All three books feature pictures he took of the birds and scenery of the restored Limberlost Swamp wetlands.

**FRIENDS OF THE LIMBERLOST
NEW MEMBERSHIP & MEMBERSHIP RENEWAL FORM**

Friends of the Limberlost is a 501(c)3 not-for-profit corporation. We support Limberlost State Historic Site, which is owned and operated by the Indiana State Museum. We also support the IDNR—Division of Nature Preserves which manages the restoration of wetlands in the Limberlost Swamp Conservation Area. Your membership dues and extra donations are vital to the many projects honoring the memory and legacy of Indiana author, naturalist, and nature photographer, Gene Stratton-Porter.

You decide how your annual dues will be spent. You choose one of the following:

- Choose the Limberlost Historic Site Friends who support projects and help pay expenses associated with the improvement or the betterment of Limberlost State Historic Site
- Choose Limberlost Swamp Remembered, a committee of the Friends of the Limberlost, which is primarily focused on Limberlost Swamp restoration projects
- Or you can support both missions of the Friends of the Limberlost

As a member you receive our quarterly newsletter. You get one free tour of the Limberlost Cabin, a 10% discount on Limberlost Gift Shop purchases, and you get a 15% discount if you purchase a membership in the Indiana State Museum and Historic Sites. As a member of the Friends of the Limberlost you help us preserve the legacy of Gene Stratton-Porter and help us restore the environment by bringing back the Limberlost Swamp.

If you have any questions about your membership, please call or text Randy Lehman, membership chairperson, at 260-849-0308 or email randyplehman@comcast.net

Please make checks payable to: FRIENDS OF THE LIMBERLOST. Mail both your check and completed membership form to: PO BOX 571, GENEVA IN 46740

STEP ONE

Select which mission of the Friends Group you want to support by checking a box to the right

☐ Limberlost Historic Site Friends—dues and any additional donations you make supports Limberlost State Historic Site and associated events, projects, and programs

☐ Limberlost Swamp Remembered Friends—dues and any additional donation you make supports Limberlost wetland restorations projects managed by the Indiana Division of Nature Preserves

☐ Combination Limberlost Historic Site and Swamp Remembered Friends—dues and any additional donation are equally shared by both groups

STEP TWO

Choose the type of Membership you want by checking a box below

☐ Older Adults—\$10

☐ Business—\$50 (Please enter the name of a contact-person below)

☐ Other Individuals—\$20

☐ Family—\$35

☐ Lifetime—\$1,000

NAME _____

MAILING ADDRESS _____

EMAIL ADDRESS _____

☐ Check the box if you want your newsletter mailed to you via the US Postal Service. We'd like to EMAIL the newsletter to you because it saves us money and time, and the e-newsletter is in color and has more pages. However, we are happy to mail you a "paper copy" of the newsletter, if that is what you prefer—just check the box. If you check the box and give us an email address, we will send you both versions of the newsletter.

AMOUNT ENCLOSED (additional donation appreciated!): \$ _____

ANY COMMENTS?