Great Hollow

Nature Preserve & Ecological Research Center

2020 ANNUAL REVIEW

All photos © John Foley and taken at Great Hollow unless otherwise noted.

(Cover) hooded warbler (Above) chestnut-sided warbler (Right) red squirrel (Back cover) tree swallow

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FROM THE EXECUTIVE DIRECTOR

I know I'm not the only one who welcomed in 2021 with open arms. As it did for nearly everyone, the past year presented Great Hollow with challenges and difficulties that we had never faced, and forced us to repeatedly adapt to ever-changing, unpredictable circumstances. We overcame that adversity and will forever be a stronger organization for it. I couldn't be more proud or appreciative of our staff, who have been on hand and steadfastly dedicated to our mission throughout it all. I'm also incredibly grateful to our supporters and program participants who have stood by us with the utmost patience and understanding as we have found our way to a new normal. Throughout the pandemic we have seen an unprecedented number of visitors to the preserve and been so pleased to have our trails enjoyed by so many people at a time when other options for recreation and entertainment are so limited. Many have been discovering Great Hollow, or even the joy of hiking and the outdoors, for the very first time. If there is a silver lining to be found, that is certainly it. While we could not accomplish everything that we normally would, looking back on it, I couldn't be more satisfied with what Great Hollow achieved in a year fraught with so many obstacles and unknowns. As presented in the pages ahead, we found ways to make progress with our conservation science projects, keep education programs going even while everyone was sheltered at home, and run our summer camp with resounding success and acclaim after it was safe to gather outdoors again. We are now looking forward with an embrace of the new ways of doing things. We will build on everything we learned over the past year to further advance Great Hollow as a regional leader in environmental science, education, and conservation. And we will be there for our local communities as they were there for us. Thank you for taking the wild journey through 2020 with us, and we look forward to seeing you in the brighter days ahead.

Chad Seewagen

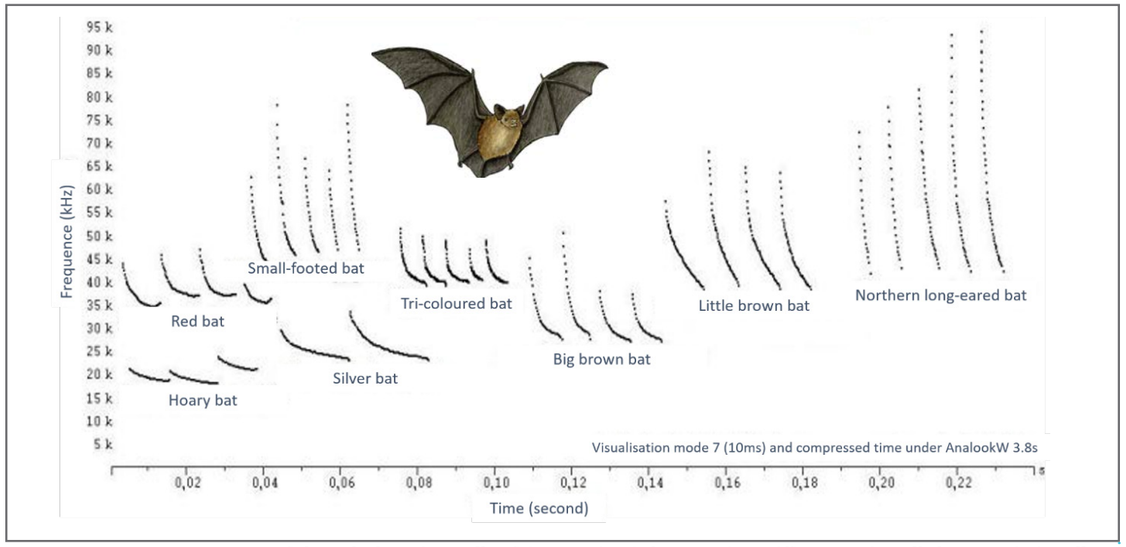
Great Hollow prides itself on advancing science that raises environmental awareness, illuminates threats to wildlife, and ultimately informs natural resources management and policy. Our staff partners with other researchers across the spectrum of academia, government, and non-governmental conservation organizations to study some of the most significant environmental problems facing our region today, including invasive species, pollution, and habitat loss. We seek to better understand the responses of biodiversity to these stressors to help protect ecological integrity and ecosystem functions in an increasingly human-dominated world.

In April, we made the difficult decision to cancel the 2020 field research season due to the impossibility of safely bringing together interns and research assistants at the original height of the pandemic. This did not slow down our conservation science program, however. Instead, it presented a valuable opportunity to catch up on past projects that were lingering on the back burner, waiting for data to be analyzed and written up for publication. With this newfound, extra time in the office, we were able to finally put the finishing touches on our studies of wood turtle spatial behavior and the effects of light pollution on bats, both of which we began several years ago. We're pleased to report they are now undergoing peer review for publication in scientific journals.

A Day in the Life...of a Wood Turtle

Last year's Annual Review featured a story on the preliminary findings of our wood turtle radio-telemetry study and the great work being done by our student collaborator at Columbia University, Jason Hagani ("Student Spotlight," pp. 12-13). Along with Jason and our other collaborator, Dr. Suzanne Macey of the American Museum of Natural History, we have since completed more in-depth statistical analyses of the dataset that includes a whopping 31 individual wood turtles—one of the largest sample sizes for any wood turtle study of its kind. With the data, we have been able to measure home-range sizes (the amount of space an animal uses to acquire the resources it needs for reproduction and survival) and learn more about how wood turtle habitat use changes from year to year, how far wood turtles travel away from their home stream to find nesting sites, mates, and food sources, how much contact they have with roads, how often they return to the same place to hibernate each winter, and how all of these things differ between males and females. Our study is the first to describe these aspects of wood turtle ecology in the central portion of the species' geographic range. A panel of experts that was formed to develop a strategic action plan to reverse wood turtle population declines in the Northeast recently determined that local-scale knowledge of wood turtle movement patterns and home-range sizes is critical for effective management and regulatory protection of this imperiled species. Before our study, this information was lacking for Connecticut and New York. What our results show is that wood turtles in this portion of their range need an average of 13 acres of habitat to meet their resource requirements, buffers of at least 400 feet surrounding their streams need to be protected, and measures that facilitate safe passage beneath roads, such as culverts, should be implemented whenever roads are present near occupied wood turtle habitat. We expect our results to benefit and be of great interest to wildlife managers and conservation practitioners in this region who are working to protect wood turtle populations from encroaching development and ensure their habitat requirements are maintained into the future.

A wood turtle equipped with a radio transmitter and ready for release.



A sonogram of the echolocation calls of Connecticut's bat species. Differences in call characteristics allow scientists to identify the species of bats present among sound recordings. (Below) A floodlight erected in Great Hollow's wetland to study the effects of light pollution on bats.

Illuminating the Impacts of Light Pollution on Bats

Our study of the effects of light pollution on bats was the very first field research project that we did at Great Hollow after our organization's founding in 2016. Light pollution is a rapidly intensifying form of environmental degradation and a growing threat to biodiversity around the world. It can cause wide-ranging behavioral changes in wildlife that affect foraging, predator-prey interactions, communication, migration, and reproduction. Approximately 50% of the US and 90% of Europe is now polluted by artificial light at night.

Mostly from research conducted in Europe, light pollution has been shown to be detrimental to some bat

Photo: © Christian Giese

species by displacing them from illuminated areas while benefiting other species that are happy to feed on the buffet of swarming insects. By comparison, the effects of light pollution on North American species of bats have been surprisingly understudied and remain poorly understood. Most of what is known comes from decades-old observations of bats around street lights that used traditional lighting technologies that are now being widely replaced with energy-efficient, broad-spectrum technologies like LED, leaving our understanding of the contemporary effects of light pollution on North American bats even less complete. This lack of information hinders the ability of regulatory agencies to conduct science-based assessments of potential impacts to bats from proposed developments and other land-use changes that would introduce new sources of artificial lighting to an area. It is also a barrier to the development of new regulations that could be needed to protect North American bats from light further encroaching into dark landscapes as land-use change progresses across the continent.

> *Our research provides clear and concerning evidence that the little brown bat is negatively impacted by artificial light at night and may therefore experience restricted foraging habitat availability and competitive disadvantages against other bats in light-polluted environments.*

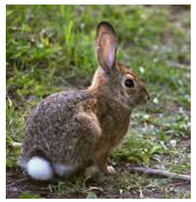
To address this knowledge gap, we conducted an experiment at Great Hollow with our first summer research intern, Nate Diamond, and a collaborator from Bat Conservation International, Dr. Amanda Adams, in which we erected an array of LED floodlights along the edge of the large wetland at the preserve's southern end. With an ultrasonic sound recorder and spectrograhic analysis software, we recorded and identified the echolocation calls of bats foraging over the wetland in natural darkness or when the lights were on over the course of 65 summer nights. We were able to analyze the effects of LED lighting on the presence/absence and foraging activity of five of the seven bat species that occur in the region, thus providing some of the first information about the sensitivity of these species to light pollution when it is introduced to a previously dark environment.

We observed substantial aversion to the lighting by the big brown bat and endangered little brown bat, while finding neutral or mixed evidence for effects on the three other species. This caused a significant shift in the composition of the bat community in the presence of light, thereby disrupting natural competitive balance among species. The species that exhibited the strongest aversion to the lighting, the little brown bat, is also the one of greatest conservation concern due to a recent population crash of 90% caused by the outbreak of a disease known as White-nose Syndrome. Only 15 years ago, the little brown bat was one of the most abundant mammals in the Northeast; now, it is exceedingly rare and listed as endangered in many states. We detected little brown bats over the wetland 65% of the time under natural conditions, but only 14% of the time and in much lower abundance when the lights were on. Our research provides clear and concerning evidence that the little brown bat is negatively impacted by artificial light at night and may therefore experience restricted foraging habitat availability and competitive disadvantages against other bats in light-polluted environments.

We were honored to see our study featured as the cover story of the April 2020 newsletter of the American Wildlife Conservation Foundation, which generously provided a grant in support of the research. Our results demonstrate that only a small degree of lighting is a significant form of habitat degradation for some North American bats – one that will continue to spread in concert with human population growth and development across the continent, and increasingly challenge light-averse species to find dark habitats in which to live. This raises concerns about the impact that the abundance of artificial lighting in our towns, around our homes, and along our roads is having on bats, which provide ecologically and economically valuable services as insect predators. You can help bats by simply avoiding the use of any unnecessary outdoor lighting at your home at night. They will return the favor by keeping insect populations down on your property!

GREAT HOLLOW IN THE SCIENTIFIC COMMUNITY

Every year Great Hollow engages with other institutions in the conservation and research community to disseminate our work, share our expertise, and pool resources towards common goals. Here's a snapshot of some of 2020's more notable happenings.



JANUARY

Great Hollow's executive director Dr. Chad Seewagen and preserve steward John Foley participate in the annual meeting of the New England Cottontail Technical Committee, a consortium of federal and state agencies, universities, and conservation organizations dedicated to the recovery of the Northeast's only native rabbit species. Great Hollow has a regionally significant population of New England cottontails on its preserve.

MARCH

Great Hollow's executive director Dr. Chad Seewagen joins the faculty of Columbia University's Department of Ecology, Evolution, and Environmental Biology as an adjunct lecturer and teaches Ornithology during the fall semester.

APRIL

Great Hollow's research on the impacts of light pollution on bats is featured on the cover of the American Wildlife Conservation Foundation Newsletter.

MAY

Great Hollow's study of the effects of invasive Japanese barberry on songbird habitat quality is published in the journal Conservation Physiology. This represents Great Hollow's 8th peer-reviewed scientific publication in the five years since our founding.

JULY

Great Hollow receives a grant from the USDA's Natural Resources Conservation Service to prepare a forest management plan for our preserve.

SEPTEMBER

Great Hollow's executive director Dr. Chad Seewagen is invited by the University of Massachusetts' Department of Environmental Conservation to lecture on his research on the threats of mercury pollution to migratory birds.

NOVEMBER

Great Hollow's research with Western Connecticut State University and Old Dominion University on the role of birds in spreading the newly-introduced Asian long-horned tick is presented at the annual conference of the Entomological Society of America.

Great Hollow Wildlife

A walk in Great Hollow's woods will do anyone some good, especially when you keep your eyes and ears open to the sights and sounds of nature's residents. No matter what trail you chose, you'll be entering the habitat of a wide array of birds, mammals, reptiles, amphibians, and invertebrates. Great Hollow's habitat diversity, size, and connection to thousands of acres of additional protected land allow it to support a rich community of wildlife that cannot be found in the more developed, fragmented landscapes of the region. Here are a few special critters we photographed this year that you might also be lucky enough to glimpse on a hike through the preserve.

Fritillary Butterfly

Stop by our pollinator garden during the summer to find these beautiful butterflies.

Scarlet Tanager

These flashy birds have a distinctive "chirp-burr" call and can be spotted all over Great Hollow.

Hooded Warbler

This spring and fall visitor can be spotted in the dense understory along the Red and Green Trails.

Blackburnian Warbler

Fond of conifers, look for this striking migratory bird in the hemlocks along the Orange Trail.

Spotted Salamander

This colorful amphibian breeds in our vernal pools and the swamp along the Purple Trail.

Bobcat

Although they are secretive and elusive, these wild cats are commonly spotted at GH.

Bald Eagle

These majestic birds occasionally visit our wetland and the wider sections of Quaker Brook.

Red Squirrel

Keep an eye on our hemlock trees for this smaller relative of the common gray squirrel.

River Otter

The large wetland at our south end is home to these wiley fish- and frog-eating mammals.

Black Bear

Many bears make GH part of their home, but are fearful of and avoid people.

Photos: © John Foley

SCIENTIFIC PUBLICATIONS

In 2020 we were proud to publish our eighth peer-reviewed journal article since Great Hollow's founding only five short years ago. It was our second publication regarding the ecological impacts of Japanese barberry – one of the most widespread and vilified, but least understood, invasive shrubs in the Northeast. Invasive plants often spell trouble for birds and other wildlife whose habitats are overtaken by them. They can negatively alter food abundance and quality, nest site availability, and other critical resources. However, Great Hollow's research published this year in the journal Conservation Physiology shows that the relationships between exotic plants and native birds are not always that simple and not always negative. Along with our collaborator, Dr. Susan Smith Pagano of the Rochester Institute of Technology, we found that Japanese barberry does not reduce habitat quality for a forest-breeding migratory songbird, the ovenbird (pictured right), in a way that affects either its food abundance or physiological condition. "While our findings may be somewhat of a surprise to some, we think they highlight the importance of investigating and understanding species-specific effects of non-native plants on wildlife rather than basing management decisions on broad generalizations and assumptions, which can have unintended consequences," says Dr. Chad Seewagen, Great Hollow's executive director and the article's lead author.

Great Hollow's executive director Chad Seewagen and research intern, Hannah Miller, taking measurements and a blood sample from an ovenbird.

Japanese barberry was first brought to the U.S. in 1875 and by the 1960s had already spread throughout most of the Northeast. Yet, more than half a century later, scientists still know almost nothing about the effects of Japanese barberry on wildlife. For the past three years, Great Hollow has been working to change that through a series of studies across multiple types of wildlife. The first phase of our research, published in 2019, showed that the diversity of invertebrates is significantly diminished in barberry-invaded areas of a forest but their overall biomass is not affected. This could mean that food availability for insectivores (insect-eaters), like many forest songbirds, is not limited by Japanese barberry invasions.

To begin answering this question of how insectivores are faring in barberry-infested habitat, we measured five indicators of health in male ovenbirds that specifically provide information about the birds' energetic condition, diet quality, infection status, and chronic stress level, all from a small sample of blood. We found that Japanese barberry density had no effect on any of these markers of the birds' physiological condition. There was also no trend in ovenbird age or body size that would indicate that the areas of the forest where barberry is sparse or absent are in greater demand and therefore acquired by the largest, most dominant and experienced males in the population. Altogether, there was nothing among the multiple factors we examined to indicate that Japanese barberry reduces habitat quality for breeding male ovenbirds.

We believe that white-tailed deer might be playing an important role in the effects of Japanese barberry on the ecology of the forests it invades. "One possibility is that Japanese barberry provides some beneficial services as a surrogate for heavily browsed native plants in places where deer are overabundant, like in our study site," says Dr. Seewagen. Because Japanese barberry is unpalatable to deer, it often provides a shrub layer and structural heterogeneity in forests where these important features would otherwise be largely lacking due to the browsing pressure on native shrubs and regenerating trees. Further, dense and thorny shrubs like Japanese barberry can act as a barrier to deer and thereby protect coexisting native plants from browsing. Despite having lower invertebrate diversity, it is possible that the greater overall density of shrubs in barberry-invaded areas of the forest allows those areas to support a comparable amount of invertebrate prey for birds as do uninvaded areas of the forest that have a thin and open understory caused by excessive deer herbivory.

An ovenbird ready for release following banding, blood sampling, and measurement.

We caution that our study was limited to one site and only one of the many bird species that inhabit barberry-invaded forests of eastern North America. There are also many other aspects of breeding habitat quality that we did not examine, such as nesting success. "Our study merely scratches the surface, so there is much more work to be done on additional bird species and factors such as pairing success, nestling quality, nest success, and post-fledging survival to develop a deeper understanding of how this widespread invasive plant is affecting habitat quality for birds," said, Dr. Smith Pagano. "This would allow for more science-based decision-making by land managers who are confronted with barberry invasions. Removing barberry on a large scale is extremely challenging, so the effects of this plant on birds and other wildlife should be better understood before allocating limited time and conservation resources to its control." You can read the full journal article on the Publications page of Great Hollow's website.

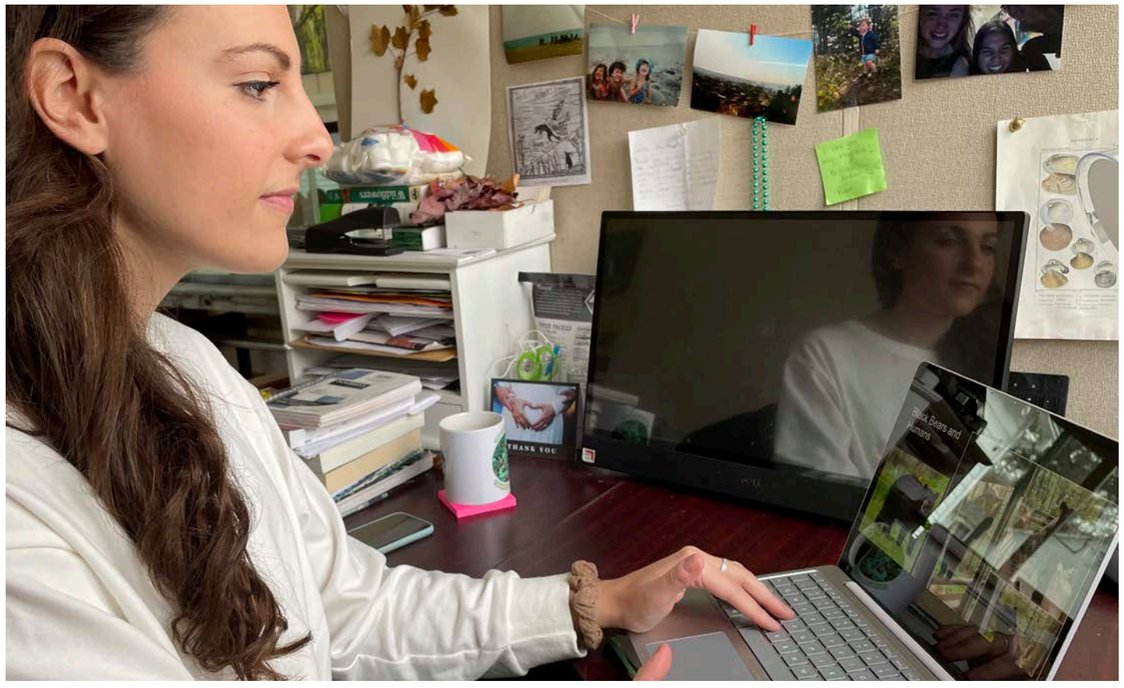
In the next phase of this research, we will be investigating how the changes in invertebrate species composition caused by Japanese barberry in turn affect the diet composition of insectivores like ovenbirds. Using carbon and nitrogen isotope signatures of each bird's blood and each species of invertebrate collected from its habitat, we can construct the composition of the bird's diet and compare that between birds in barberry-invaded and barberry-free areas of forest. We will be working on this through the coming year.

REMOTE LEARNING

The pandemic posed an especially difficult set of challenges to Great Hollow's normal way of providing environmental education to our community. We adapted and responded with a series of remote programs and events that were pleasingly met with overwhelming success. From March through June, while everyone was homebound and increasingly desperate for connections to the outside world, we ran a series of virtual environmental science classes for families. We reached well over 100 attendees, ranging from Pre-K and middle school students to teachers and armchair naturalists. In these bi-weekly, 40-minute Zoom programs, we took participants on a fun and educational ride through a wide variety of topics, including wildlife conservation, watershed science, climate change, and animal migration. We were touched by the feedback that poured in and knew this was something we had to continue providing to our community.

To facilitate at-home learning, classes were designed to be as interactive, informative, and fun as possible, often including activities and games that encouraged participants to do some nature exploration of their own. In our inaugural class, "Backyard Bioblitz!", students were tasked with mapping out the natural world around their own homes. They conducted backyard bird counts, sketched plants, and identified various wildlife before sharing their discoveries with their virtual classmates. Other programs covered commonly misunderstood topics such as climate change. Utilizing the latest methods in climate change education, that program was organized to maximize comprehension and invite thoughtful discussion among a wide age range, including very young learners. One parent reached out to say "Thank you for the climate change lesson yesterday. It provided a good foundation for important conversations at home." Despite all of the challenges, we were happy to deliver these unique nature-learning experiences directly to our community. Many months later, we continue to be pleased with its results and lasting impressions. "My son still talks about things he learned from you... at breakfast this morning he actually brought up the color-changing octopus from one of the virtual classes you did." Mission accomplished!

Great Hollow's education coordinator Maggie Cozens instructing a virtual program on black bears.



Thank you for the climate change lesson yesterday. It provided a good foundation for important conversations at home.

Your classes are so wonderful! You do such a great job packing so much learning into 40 minutes.

We have been very pleased with all the virtual programming you've done. Great Hollow was a wonderful resource before, but even more so now!

Thank you, this is such a great opportunity during this crazy time.

ECO-DISCOVERY CAMP

There was so much uncertainty throughout the spring about whether we would be able to run Eco-Discovery Camp, our nature-based day camp that is the flagship of our environmental education division. After much consternation, and consultation with the Connecticut Office of Early Childhood Development and the New Fairfield Health Department, we decided that with proper precautions in place, we would attempt to go forward with the fourth annual season of our popular camp.

To comply with COVID guidelines and recommendations, we made several alterations to our typical camp structure: we cut the number of campers and staff in half, shortened camp to half-days, eliminated on-site lunch, and instituted strict sanitation procedures. Even with the camp day looking a little different, we were still able to provide an immersive and personalized nature experience to over 60 children this summer, many of whom were coming off months of remote learning and social isolation. We were happy to offer families a safe place for their children to enjoy outdoor social activities, whether it was through hiking, creek-stomping, or experiential environmental education. One parent expressed her gratitude for the program when she said:

> *What a treasure this camp was for [my son] during such a challenging period of time! His experience at camp was a perfect balance of guided instruction in environmental science and independent exploration of the preserve. By the end of the two week-long sessions, my son was confident enough to lead me and my husband to wade in the creek that he had spent so much time exploring during camp. He came away from the camp experience even more interested in nature and excited to share that knowledge with others.*

Instilling that confidence an appreciation of the natural world is the number one goal of all of our environmental education programming. We strive to encourage those qualities in young people and are thrilled to hear when we are successfully doing so through the summer camp experiences we provide. Our weekly camp themes this summer covered a wide range of environmental science and outdoor education topics, with a specific focus on

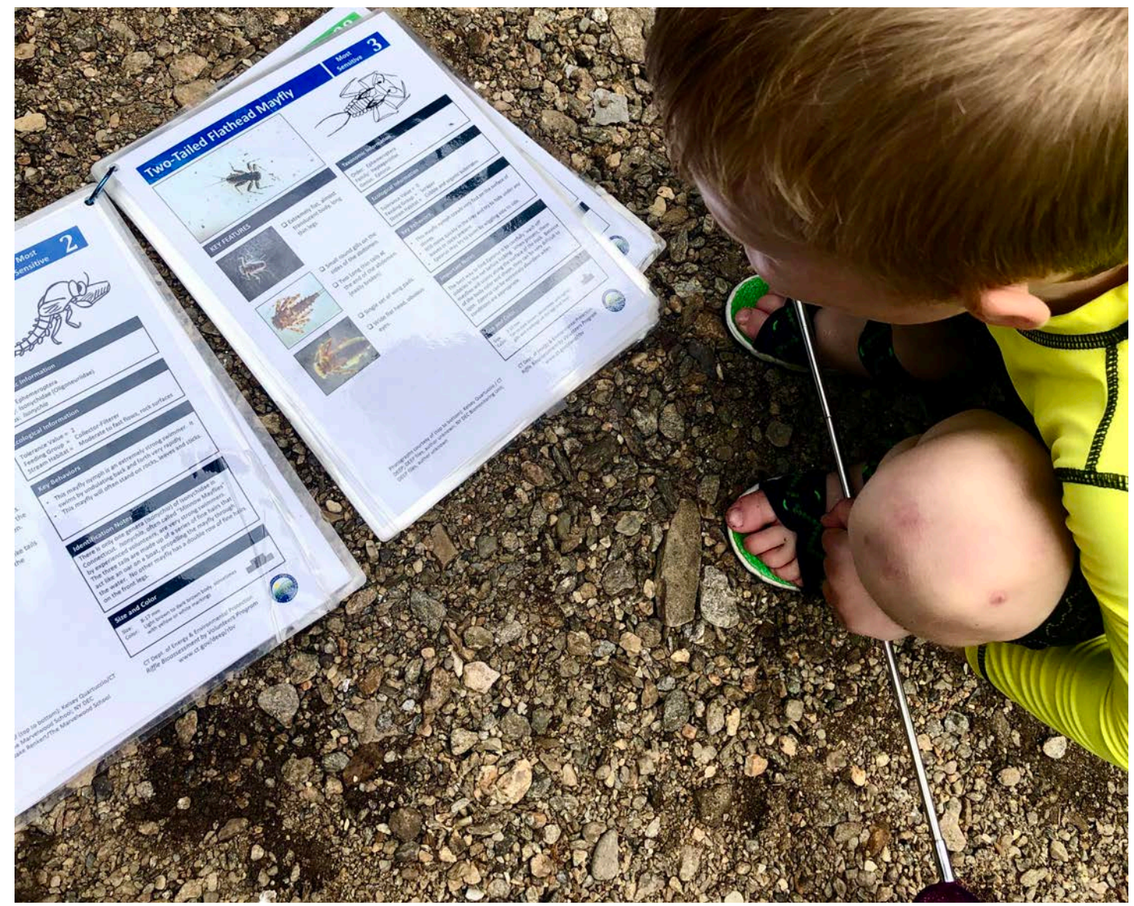
field research methods and scientific inquiry. Campers had the unique experience of creating their own STEM research projects, which were a big hit. During our "Fearless Field Expeditions" week, for example, campers set up motion-triggered wildlife cameras, conducted tree surveys, modeled watershed pollution, and collected water quality samples in our aquatic ecosystems. In the "Full STEAM

Ahead" week, campers engineered their own renewable energy windmills, designed rockets, and built boats out of recyclable materials. One parent reached out to us with his children's positive experiences with camp that week:

> *I wanted to let you know what a fantastic time [my sons] had at summer camp. Each day they came home incredibly enthused with what they learned and eager to share. They were particularly proud of the shelter they built and loved STEAM week. It's a fantastic program and I cannot thank Maggie enough for the incredible work she did.*

We were particularly moved by the profound appreciation expressed by working parents who were desperate for something fun, active, and educational for their child to do while they had to go to work.

This was the second summer of our Counselors-in-Training (CIT) program, which provides leadership training for rising 9th-12th graders interested in spending time outdoors and working with children while satisfying their high school community service requirements. Functioning as junior counselors, the CITs were hugely supportive and instrumental in the camp's success this summer, given our reduction in staff as a COVID mitigation measure. The CIT program continues to be wonderfully successful and we look forward to working with another dedicated group next summer!



COMMUNITY ENGAGEMENT

Great Hollow's community events provide a wide range of unique learning experiences and adventures for both children and adults throughout the year. It was with great disappointment that the pandemic forced us to cancel all of our spring events as well as the large annual events that have become community favorites, including World Turtle Day, HollowFest, and Jazz Night on the Patio. But with the right amount of steadfastness, creativity, and health measures, we knew we could still offer events that would allow people to safely come to Great Hollow to receive the same great experience as always. We focused on organizing small events that were conducive to social distancing and could be held largely outdoors. And boy, was the response overwhelming! Nearly all events filled up to capacity almost immediately after hitting the schedule, confirming just how strong the desire is to safely come together with others to explore and learn about the natural world while so many other aspects of our daily lives remain upended.

Despite all of the challenges and limitations posed by the pandemic, we were pleased to still be able to hold 20 in-person events in 2020 on top of the 18 virtual programs that kept us going earlier in the year. They covered everything from winter wilderness survival, astronomy, and fall harvest to the ecology of caves, owls, and invasive plants, and field apps for citizen scientists. Guided hikes led by our naturalist, John Foley, were as well-attended as ever, sometimes requiring more than one a day to meet the level of demand. Whether it was a nighttime hike under a full moon, a trek to the highest points of Great Hollow to take in the fall foliage, or a winter tree identification walk, the turnout and enthusiasm were always tremendous. We had a great summer evening of live music from Devin Daversa, as folks laid out blankets and set up chairs under the stars, amply spaced out on our large event lawn. We also responded this year to the growing popularity of crafting by offering several new craft workshops for adults. Designed and led by our super crafty education coordinator Maggie Cozens, these "DIY & Wine" events as we call them provided adults with relaxing evenings of wine and good conversation while they learned how to channel their inner creativity to make living art, baskets, natural soaps, holiday wreaths, and more. Great Hollow's largest art event each year, the Juried Painting & Photography Show, could not be held in person but was held online with tremendous success. Artists contributed more than 100 works of art depicting scenes of nature in and around Great Hollow, and the show's website was visited more than 1,200 times. This was our largest show to date, all thanks to the hard work and determination of Great Hollow volunteer and show coordinator, Linda Hubbard, who wasn't going to let a pandemic get in the way. We thank Linda and other show organizers John O'Donnell, Carolyn Cohen, Jeff Ginsburg, Justin Goodhart, Jane Haslem, Kathy L'Hommedieu, Mary Jane Magoon, Masumi O'Donnell, Susan Rostenberg, and Neil Zobler for their perseverance. We are also grateful to all of the local businesses that sponsored the show by generously donating prizes for the winning artists (see Acknowledgements, p. 21). Congratulations to first-place photographer Dennis Larkin for his photograph of an indigo bunting and first-place painter Annie McAward for her oil painting of a cottontail rabbit. We look forward to seeing everyone who participated in our community events in 2020 back for much more fun, in person, in the year ahead.

(Above) 2020 Great Hollow Art Show Winners (painting) Annie McAward and (photo) Dennis Larkin
(Below) An evening of socially distanced live music on the lawn

SCOUT SHOUT OUT

We continue to be amazed by the dedication and high-quality work of scouts who complete service projects at Great Hollow. We were once again the recipient of some amazing projects this past year. For his Life Project, Daniel Seller of Scout Troop 137 of New Fairfield installed a beautiful stone entrance path to our pollinator garden and for his Eagle Project, Logan Kocot of Scout Troop 9 of Danbury installed a small pond in the pollinator garden, complete with a solar-powered fountain to give our butterflies, bees, and other pollinators an additional helping hand. Logan also weeded the garden, spread fresh mulch, and expanded the area of milkweed for monarch butterflies. If that weren't already enough, the pollinator garden saw further improvement from Zachary Hubert of Troop 137 of New Fairfield, who built for his Star Project a beautiful wooden bench on which visitors can sit and watch all of the pollinators in action. The garden was looking better than ever during the 2020 growing season and will be in full bloom again in the spring. Be sure to take a stroll through it the next time you visit Great Hollow to see the amazing handiwork of these scouts and learn all about the importance of pollinators.

We also thank Sam Riggs of Troop 137 of New Fairfield who, for his Life Project, built raised beds along the south side of the Merritt House and planted them with various pollinator-friendly native plants to provide even

more habitat for pollinators in need. For his Eagle Project (aptly named!), Jack Meyer of Troop 137 designed and constructed a life-sized interpretive sign next to our birds of prey exhibit to give visitors the sense of the huge range of sizes across different raptor species and the massive wing span of the bald eagle. Stop by the next time you're at Great Hollow to see how you size up against some of Connecticut's largest and smallest birds of prey. For their Troop 137 Eagle Projects, PJ Seller constructed a split rail fence to beautify and better frame the end of our entryway, and Matthew Gilshteyn built a fun obstacle course for children along the Red Trail. Last but not least, Griffen Syme of Troop 9 of Danbury built for his Eagle Project a series of much-needed boardwalks along the often-flooded section of our Yellow Trail, so hikers can keep their feet dry at all times. Great work by all!

ACKNOWLEDGEMENTS

We offer our sincerest gratitude to the donors, members, local businesses, volunteers, and program participants whose support in 2020 furthered our efforts to advance environmental science, education, and conservation. Thank you for being a part of our community and helping making Great Hollow everything that it is.

Generous donations to Great Hollow were made by Natasha Daniels-Pearson, Friends of the Great Swamp, the Goldring Family Foundation, Khris Hall, the Ada Howe Kent Foundation, Jeff Kilberg, Victoria Landry, Barbara and Eberhard Lobeck, the McIntosh/Toobin Charitable Foundation, Sharon Nakazato, and Kenneth Smalley. In-kind contributions of goods or services were generously provided by Visual Impact, H Prata Design House, Barn Gallery and Frame Shop, Bank Street Theater, Sherman IGA, American Pie Company, Biscotti's Ristorante, The Cue, Fairwood Wine and Liquors, Halas Farm Market, Haviland Hollow Wine, One Stop Cleaners, Painted Lemon Restaurant, Portofino Restaurant, Sacred Grounds Coffee, Scott's Putnam Lake Wines, One Stop Cleaners, Litchfield Hills Plumbing, and Matt Reichard. Volunteers who generously offered their time to Great Hollow this past year include George Buck, Shane Consentino, Justin Goodhart, Claudia Henry, Linda Hubbard, Chris Keenan, Elizabeth Kiritharan, John Lindner, John and Masumi O'Donnel, Ronald Reid, Patrick Reilly, and Tyler Whitcomb. We also extend our thanks to Dr. David Gropper for graciously serving as Great Hollow's camp physician.

2020 MEMBERS

Merritt Club

Gary Goldring
Henry and Sabine Renard
Amy McIntosh
and Jeffrey Toobin

Quaker Brook Club

Donald and Cindy Tanenbaum

Sponsor

Justin Mondshine

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