

THE EDMUND NILES HUYCK PRESERVE

Connecting people to nature through education, recreation, conservation, and research



FALL 2019

Myosotis Messenger

Remarks from Huyck Preserve Board President, Alexandra van Horne AT THE 2019 ANNUAL MEMBERSHIP MEETING

Susan Kessler has decided to step down as President after 15 years of service. We are excited that she will be staying on the Huyck Preserve board. Leading the Preserve for 15 years is a great achievement in itself, but what has been accomplished to advance our mission, focused on recreation, conservation, research and education, is even greater.

Recreation

Fifteen years ago, we had five miles of trails, some of which were closed. Today, we have 12 miles of trails that are all open 365 days of the year. We have seen a major uptick in trail visits with over 5,000 hikers a year, not to mention the 150 people running and walking our trails for the Ramble a few weeks ago.

Conservation

We added the approximately 74 acre Hennicke Marsh on Route 85. This fragile wetland fit the stewardship part of our conservation goals, and expanded the diversity of habitats that we protect. We also formally inventoried all flora and fauna at the Preserve in recent years, and have begun managing invasive species, starting this year with the removal of water chestnut from Lincoln Pond.

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We thank Laura Potter, former Membership and Outreach Coordinator, for this, her last issue of the Myosotis Messenger.

Research

We created a Senior Research Fellowship. In addition to working on his or her own research, the SRF mentors undergraduate Odum interns during the summer. We continue to provide grants to Ph.D.'s and Ph.D. candidates for research at the Preserve. Most importantly, research now informs all activities the Preserve offers from lectures, to guided hikes, to education.

Education

This leads me to the fourth area of our mission, education, and certainly where we have seen the most changes. Fifteen years ago, we only had one summer program for K-5 students. Today, we not only have summer programs, but more than 1,000 children from eight school districts come to the Preserve for education-based field trips throughout the school year. In the summer, family hours for pre-K, Nature Study, Natural History Day program for middle school and the Wildlife Ecology Research program for high school students offer education opportunities for all student ages.

These are the visible changes at the Preserve but, behind the scenes, there were foundational changes that accelerated this growth.

We were incorporated 88 years ago as a non-profit private foundation. In 2010, we changed our tax status to a non-profit public charity. This paved the way to be accredited by the Land Trust Alliance in 2018, which provides us with better access to grant funding from NYS and private foundations. The Land Trust Alliance accreditation is not only a seal of approval on how we manage our land, but also a seal of approval on sound finances, ethical conduct and responsible governance.



I think that few people who knew the Preserve 15 years ago would recognize it today, and this is thanks to Susan. As President, she did the heavy lifting, ensuring that all board members and employees stayed focused on what needed to be accomplished, and devoted thousands of hours of volunteer work to this organization and to the community for the benefit of all.

LETTER TO OUR MEMBERS From Anne Rhoads, Ph.D., Executive Director

As a biological field station celebrating our 80th field season, the Preserve has seen its share of busy summers as researchers, students, and recreationists descend on the land. Sue Beatty, Ph.D., 2019 Senior Research Fellow (SRF) (who has a 43-year history of research here) has remarked that this past summer was reminiscent of the heyday of field ecology, with the Preserve virtually humming with people here to learn, work, and play.

This year, the Preserve hosted four groups of researchers through our Huyck Research Grant program. The SUNY Cobleskill team of Carmen Greenwood, Ph.D., Roger Masse, Ph.D., and Amy Quinn, Ph.D. brought their research assistants to pursue a fourth year assessing the reintroduction potential of the endangered American burying beetle (Nicrophorus americanus) at the Preserve. Nadya Muchoney, Ph.D. candidate at the University of Nevada, Reno, added the Huyck Preserve to her project investigating diet switching in the Baltimore checkerspot butterfly (see p. 6). Meghan Barrett, Ph.D. candidate at Drexel University, returned for her second year of research at the Preserve, this time to explore Isodontia or grass-carrying wasps. As you read this, Luciana Guimarães de Andrade, Ph.D. from the Cornell Lab of Ornithology, is commencing her first season of work using eDNA to understand migratory bird populations at the Preserve. We see one of our most significant roles in science as being a place for early career researchers to get their start. Come learn more about this and other topics at our November 2nd 80th Anniversary Research Celebration (see p. 8).

The research program at the Preserve was further enhanced this year by the return of the Odum Internship Program led by SRF Beatty. The enthusiasm and energy that Sue and these undergraduate students brought was inspiring, and their own projects have added to the wealth of knowledge collected over our history (read more on p. 5).

As is our tradition, we enjoyed coming together with the community to hear more about these research projects at our Thursday Night Lecture and Potluck. Most of us call this a favorite event of the summer. Even after a long day of work or play, it's lovely to enjoy good food and company on the shores of Lincoln Pond and to expand our knowledge of the natural world by learning from on-the-ground researchers.

One of those speakers was Lindsay Charlop who has been at the Preserve this summer leading our first season of intensive invasive species management. She and the crew worked tirelessly to help us reach the initial goals of our new invasive species management and monitoring plan. This plan is a critical step toward protecting the native flora and fauna of the Preserve, allowing us to more completely fulfill our conservation mission (see p. 9).

Our summer would not be complete without a busy education program, and this one was perhaps busier than ever before. We played, explored, debated, crafted, and studied with K-12 students connecting with them over a shared curiosity and interest in nature. I was fortunate to teach alongside education assistant, Michaela Fisher, and volunteers Susan Cunningham and Jaime Winans-Solis. Learn more about the incredible research of our high school Wildlife Ecology Research students at their poster session at the November 2nd research celebration.

We hope you took full advantage of time at the Preserve this summer, whether on the trails, swimming or boating at the lake, enjoying our Pizza Beach Parties, or attending another public event. Thank you to everyone who attended our Annual Benefit Gala and helped make it another successful fundraiser and celebration. We get a lot done throughout the year, but we couldn't do it without you and your support.



At our 2018 Science Symposium and Environmental Monitoring Workshop, improved weather data was identified as a critical need for researchers studying at the Preserve. This summer, we installed a new state-of-the art weather station in partnership with the Department of Geography and Planning at SUNY Albany, along with matching funding from three board members and a generous community member.



SPRING AND SUMMER 2019



Left: Executive Director Anne Rhoads, Ph.D. (right) receives funding to expand the Lincoln Pond trail boardwalk from the Albany County Legislature.



Above and left: Community members enjoying a lovely evening at the Annual Benefit Gala and silent auction





Above: Participants of the Rensselaerville

Library and Huyck Preserve's Annual Rensselaerville Ramble crossing the finish line

Right: Volunteers removing invasive water chestnut from Lake Myosotis



Right: Wildlife Ecology Research Day Program students presenting their final projects to the public





Left: Local artist, Nora Logan, gravestone rubbing during Wheeler Watson Cemetery Work Day



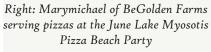
Above: Education assistant, Michaela Fisher, with Nature Study students



Above: Cornell Cooperative Extension teaching composting at Nature Study Below: Roger Masse, Ph.D., SUNY Cobleskill, leading a wildlife survey with Wildlife Ecology Research students







Below: Patrick and Marymichael's BeGolden Farm's pizza truck at the lake







A Summer of Research and Exploration

By Susan Beatty, Ph.D., Senior Research Fellow

Summer at the Huyck Preserve buzzes with the energy of eager students, excited researchers, and yes, bugs. We love it all! This summer we were fortunate to attract four outstanding college students for our Odum Internship Program. As the Senior Research Fellow, I was excited to mentor these students in their quest to create their own original research projects.



Odum intern Hannah Stouter presents her final project to the public

Hannah Stouter, current junior at Vassar College, conducted a study of the distribution and intensity of beech bark disease on the Huyck Preserve. She found that 82 percent of adult American beech trees (Fagus grandifolia) were diseased, and all but one of the previously healthy sites in 2017 now have diseased trees. For the future, she suggests looking at the regeneration of sprouts and seedlings to determine if there is new growth coming from healthy trees.

John Gonzalez, current sophomore at the University of Michigan, was interested in "long-term" change in Lincoln Pond. Based on a comparison with a 1944 study, he created a new depth map for the pond, showing it to be the same depth as it was in 1944. The average July surface water temperature is two degrees Celsius warmer than 75 years ago, consistent

with predicted and documented changes in climate in this region. Forty-five percent of the phytoplankton genera found today are indicators of good quality aquatic habitat compared to 36 percent in 1944.

Katherine Lee, current sophomore at Fordham University, studied the aquatic macro-invertebrates in Ten-Mile Creek upstream and downstream of Lincoln Pond. The same taxonomic groups were found in both stream reaches, with a slight increase in midge larvae upstream and beetle larvae downstream. Chemical factors were the same. Water speed was slower upstream, possibly indicating less oxygenation, which may account for a greater dominance of midges that do well in lower oxygen environments.

Sebastian Gatton, current senior at Skidmore College, pursued an interest in the role of dead wood on forest soil and microclimate. He found that areas with greater amounts of dead wood had more leaf biomass, lower soil temperatures, higher moisture in the organic layer, and drier mineral soil below. Future research should explore the plant, animal, and invertebrate use of these microsites.

This summer was my 43rd year of data collection at the Huyck Preserve. I began my research here as a graduate student at Cornell University. After many years as a professor at universities in the west, I now enjoy living



From left to right: Dr. Susan Beatty with Odum interns, Hannah Stouter, John Gonzalez, Katherine Lee, and Sebastian Gatton

full-time in Rensselaerville where I can walk to my field sites from my doorstep! For the first time in 40 years, I was able to census the forest understory plant species over the full growing season from spring to fall. Compared to 1978-79, this year the spring and summer plant species started growing earlier, and summer species are declining earlier into fall. What does this mean? With the warmer yearly average temperatures and warmer low winter temperatures that come with climate change, the forest understory plant growing season has shifted earlier in the calendar year, but it is no longer than it was in 1978-79. This has implications for tree regeneration, nutrient cycling, and vulnerability to invasive species.

Summer is an invigorating time at the Huyck Preserve with all the education, research and public outreach programs going on. Come join the fun next year!

Huyck Preserve and Biological Research Station

Becoming a caterpillar detective: How to locate and appreciate larval butterflies in the wild

By Nadya Muchoney, Huyck Research Grantee, Ph.D. Candidate, University of Nevada, Reno

This summer, I visited the Huyck Preserve in order to search for local populations of a beloved eastern butterfly species: the Baltimore checkerspot (*Euphydryas phaeton*). Baltimore checkerspots are one of several native North American caterpillar species that have recently incorporated a common introduced weed, narrowleaf plantain (*Plantago lanceolata*),

into their diets. I have been researching the ecological consequences of this dietary expansion in wild populations throughout New England, focusing on the impact of this novel host plant on *E. phaeton's* interactions with a viral pathogen, *Junonia coenia* densovirus (JcDNV). Our findings indicate that Baltimore checkerspot populations feeding on narrowleaf plantain exhibit higher JcDNV prevalence, and more intense infections, when compared to populations using a native host plant. By documenting how JcDNV prevalence varies across *E. phaeton* populations, host plants, and years, we aim to gain insight into the role of host plants in mediating interactions between herbivorous insects and the natural enemies that threaten them in the wild. As interactions between Baltimore checkerspots and JcDNV have never been studied in New York, I aimed to determine whether these brilliantly-hued caterpillars (and their formidable viral pathogen) could be found at the Huyck Preserve. If so, would they be feeding on native or non-native host plants?

Although many people enjoy observing butterflies in the wild, finding (and appreciating) their larval forms can be a slightly more daunting endeavor. As caterpillars are flightless and oftentimes less conspicuous than their adult forms, locating the immature form of your favorite butterfly species may require some investigative work. Here are four tips for becoming a caterpillar detective and witnessing these important herbivores in the wild:

1. Understand their life cycle

Certain butterfly species, including the Baltimore checkerspot, are univoltine, meaning that they produce only one generation of offspring per year. Caterpillars of these species, therefore, can only be found feeding on plants at specific times of year. Becoming knowledgeable about the seasonal timing of butterfly life cycles (phenology) can provide crucial details about when it is possible to spot their immature forms.

2. Locate their host plants

Butterfly caterpillars often exhibit specialized dietary preferences, only consuming a specific suite of plant species or families. When searching for a caterpillar species, an essential step is to identify their host plants, as larvae can often be found on, or nearby, these food sources. At the Huyck Preserve, I observed the primary native host plant of the Baltimore checkerspot, white turtlehead (*Chelone glabra*), growing abundantly, which allowed me to focus my search efforts.

Sleuth for signs of feeding

Caterpillars often leave behind telltale clues about where they have been living. At the Huyck Preserve, I found evidence of caterpillar feeding, or herbivory, by searching for white turtlehead leaves that had been damaged or partially consumed. I also observed dark pellets of caterpillar excrement, called "frass," on host plants. With a bit of searching on nearby vegetation (including the undersides of leaves), caterpillars could often be found feeding or resting nearby.

4. Observe, but do not disturb

When observing a caterpillar in the wild, it is best to leave it undisturbed within its natural habitat, where it can continue to fulfill its specific dietary and developmental needs. Instead of removing the caterpillar from its environment, consider documenting it with photographs and engaging with an online platform (such as iNaturalist) in order to identify the species and share your discovery with the world!

Using these approaches, I located Baltimore checkerspot caterpillars feeding on their native host plant, white turtlehead, at Huyck Preserve. Although their introduced host plant, narrowleaf plantain, is also present at the Preserve, I did not find evidence of *E. phaeton* herbivory on this species. These observations indicate that Baltimore checkerspots at Huyck are still relying on native host plants to support their development, and analysis of leaf surface rinses will reveal whether these plants are harboring the focal pathogen, JcDNV. These findings will contribute to a multiyear dataset of virus prevalence across *E. phaeton* populations, providing novel insight into the consequences of dietary expansion for this fascinating herbivore species.

6

WINTER READING LIST

Scientists from some of the Preserve's 2019 events recommend their favorite reads for the coldest season.

You will also find a bonus list of selections from our Board of Directors!

SPEAKER SELECTIONS

Seeing Nature: Deliberate Encounters with the Visible World by Paul Krafel

"This book is a series of true stories or parables that offer tools for understanding relationships in the natural world."-Luciana Guimarães de Andrade, Ph.D., Huyck Research Grantee, Cornell Lab of Ornithology

Sprout Lands: Tending the Endless Gift of Trees by William Bryant Logan

"[Sprout Lands] transformed my understanding of both human history and forest history."
-George Robinson, Ph.D., Emeritus Professor of Biological Sciences, SUNY Albany



BOARD OF DIRECTORS SELECTIONS

The Common Pot: The Recovery of Native Space in the Northeast (Indigenous Americas) by Lisa Brooks
"The Common Pot gives a new understanding of the landscapes and relationships of the indigenous Northeast."
-Charles Burgess

The Overstory: A Novel by Richard Powers

"Pulitzer Prize novel about symbiosis of humans and trees"-George Frangos, Ph.D.

Ecology of a Cracker Childhood by Janisse Ray

"Unforgettable. As loving about her junkyard childhood as about the Georgia pine flat woods" -William Bryant Logan

The Moth Snowstorm: Nature and Joy by Michael McCarthy

"A moment of awe from childhood that is alarmingly less possible today—the phenomenon when moths 'would pack a car's headlights like snowflakes in a blizzard'—informs environmental journalist Michael McCarthy's hybrid memoir. Part reportage, part personal history, part call to action, *The Moth Snowstorm: Nature and Joy* (2015) explores nature as an emotional and spiritual resource capable of bringing not only joy, but wonder, even love."

-Lynn Love

The Hidden Life of Trees: What They Feel, How They Communicate - Discoveries from a Secret World by Peter Wohlleben

"This book will bring new meaning to any walk in the forest."-Alexandra van Horne

Upcoming Programs and Events

For detailed descriptions of programs and events, or to RSVP, please visit our website: www.huyckpreserve.org/upcoming-events-and-programs. Huyck Preserve news and event information are also available though our e-newsletter. Sign-up today by emailing info@huyckpreserve.org.

All programs and events take place at the Eldridge Research Center, 284 Pond Hill Road, Rensselaerville, NY, unless otherwise noted.

Birding Event: October Big Day

with Philippa Dunne, Local Birder
Saturday, October 19 | 9-11 AM
Please meet at the Visitors' Center,
5052 Delaware Turnpike, Rensselaerville, NY

Spotlight on Research:

Migrant Waterbird Survey

with Luciana Guimarães de Andrade, Ph.D. and Matt Medler Sunday, October 27 | 9-11:30 AM

Hemlock Woolly Adelgid Monitoring Blitz

with Charlotte Malmborg, NYS Hemlock Initiative Friday, November 15 | 10 AM

Crafts & Cocoa Saturday, December 14 | 1 PM

Winter Tracking Event

with Dave Muska, Ondatra Adventures Saturday, January II | 10 AM-1 PM

Winter Festival and Artisan Market Saturday, February 1 | 11-3 PM

Owl Prowl

with Kelly Martin, Wildlife Rehabilitator Saturday, March 14 | 5-7 PM

November Event Celebrates 80 Years of Research at the Huyck Preserve

Come celebrate the 80th anniversary of Preserve's Biological Research Station on November 2, 2019, at the Carey Institute for Global Good in Rensselaerville, New York. The Preserve, with its support of field biology beginning in 1939, is part of an international network of field stations where scientists conduct research to advance our understanding of the natural world.

Natural Resources Defense Council Senior Scientist and Deputy Director Kim Knowlton, Dr.P.H. who specializes in helping people understand the public-health impacts of climate change, will present the keynote address "Looking Ahead to 2099: Welcoming the Future."

Preserve Board member and longtime researcher Susan Beatty, Ph.D. will lead a panel discussion that focuses on the role the Preserve and other field stations have played in building a pipeline of scientists; the importance of long-term ecological research; and why it's essential to communicate scientific findings to the public.

Panelists will include the Preserve's former assistant director Tom Alworth (1990s), now the Deputy Commissioner of the New York State Office of Parks, Recreation and Historic Preservation; current Preserve researcher Meghan Barrett, a Ph.D. candidate at Drexel University; former Preserve researcher Joan Herbers, Ph.D., a dean and professor emerita at Ohio State University; and former Preserve researcher



The "father of modern ecology", Eugene Odum, preparing fish scale mounts

Owen Sholes, Ph.D., who is a retired professor at Assumption College. The panel also includes two Scientific Advisory Committee members: longtime Preserve researcher and former board member George Robinson, Ph.D., a professor emeritus at the State University of New York at Albany; and Kerry Woods, Ph.D., a professor at Bennington College and director of research at the Ives Lake Field Station.

For the full agenda and to register for the event, go to www.huyckpreserve.org/research-celebration or call 518-797-3440. The celebration begins at 8:30 a.m., includes lunch, and ends at 4:30 p.m.

Huyck Preserve's "Most Unwanted" Invasive Species from Summer 2019

In 2019, Huyck Preserve staff created a plan to monitor and manage invasive species, starting with known troublesome species in the region that are also emerging at the Preserve. Here are 12 we have tackled so far with Invasive Species Steward, Lindsay Charlop, leading the crew:



Yellow Archangel Lamiastrum galeobdolon



Bishop's Goutweed aka Snow on the Mountain Aegopodium podagraria



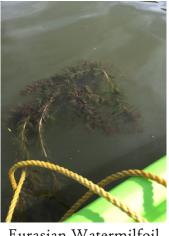
February Daphne Daphne mezereum



Burning Bush aka Winged Euonymus Euonymus alatus



Water Chestnut Trapa natans



Eurasian Watermilfoil Myriophyllum spicatum



Curly-Leaf Pondweed Potamogeton crispus



False Spirea Sorbaria sorbifolia



European Privet Ligustrum vulgare L.



Autumn Olive Elaeanus umbellata



Common Barberry Berberis vulgaris



Pale Swallow-wort Cynanchum rossicum

For detailed information on each species, including management strategies, please visit our newsletter resource page at www.huyckpreserve.org/newsletter-resources.

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HUYCK PRESERVE

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HUYCK PRESERVE AND BIOLOGICAL RESEARCH STATION

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IN THIS EDITION:

A Summer of Research and Exploration: Odum Internship page 5

Becoming a Caterpillar Detective page 6

Winter Reading List page 7

Most Unwanted Invasive Species page 9

ABOUT THE COVER:

Image taken by Kara Zuaro, Brooklyn DoubleWide, before an early spring hike