



Parks, Recreation
and Historic
Preservation

FORCES

Friends of Recreation, Conservation and Environmental Stewardship

Fall 2019 Newsletter

Vol. 4 Issue 3

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The **FORCES** mission is to engage New York State college students to simultaneously improve OPRHP resources and enrich student academic, recreational, and career opportunities.

We Are Young

Tom Hughes, NRS Biologist
Central Region FORCES Program Manager

“We are young.” I think these three words fittingly describe our FORCES program. Like many of our Stewards, we are just getting started. FORCES continues to grow, as we are engaging more park staff, students and institutions across the state. Please check out our recent program highlights in Amy’s *Coordinator’s Corner* (page 3). In this issue of our newsletter, all 7 of our FORCES Regions provide summaries of their accomplishments.

We are also “young” in that we continue to look for creative ways to engage more high school students in addition to our base of FORCES collegiate Stewards. Our ‘Junior Conservation Stewards’ (high school participants) get the opportunity to work with our Park staff and their collegiate mentors—for example, see *Taconic Region Update* (page 6).

Project WHIRL, a collaboration with the Indian River Lakes Conservancy, provides high school students the opportunity to connect with their natural world through hands on and experiential learning across the Indian River Watershed and exposes students to future academic pursuits and careers in environmental science fields. As similar for our Junior Conservation Stewards, we are creating educational and professional pathways for the Project WHIRL participants to future opportunities with collegiate FORCES, NYS Parks and Project WHIRL program partners— see *Partner Highlight* (page 11).



Aquatic Resource Education Stewards with Project WHIRL monitor habitats and assess water quality in the Indian River watershed with Cornell Cooperative Extension educator and former SUNY ESF FORCES club president Samantha Hollister. Photo: Wylie Huffman, Indian River Lakes Conservancy



Former Junior Conservation Steward and Victor High School student Emma Kubinski (pictured here in 2015) now is the Lead Stewardship Technician with the Finger Lakes Environmental Field Team. Photo: OPRHP

Central Region Environmental Field Team Update

Zoe Hutchins, SCA/NYS Parks Corp Dune Steward, Mike Serviss, AHTF Project Coordinator & Tom Hughes, Natural Resource Steward Biologist

They returned! The Great Lakes Piping Plover (GL PIPL), a Federally and New York State listed endangered species, made their way back to Sandy Island Beach State Park! Arwen and Aragorn, our female and male that nested last year, returned early this spring. Arwen showed up April 23rd, with Aragorn following not far behind on May 7th. They quickly made their scrape in the sand and laid four eggs that hatched on June 15th. Sadly, one of the eggs didn't hatch but three is certainly better than none. Our chicks were named Chewie, Yoda, and Leia. This was, once again, the only nest of GL PIPL's in all of New York.



Arwen and Aragorn, at Sandy Island Beach State Park. Photo: OPRHP



Piping plover eggs in the nest. Photo: OPRHP

With the help of our Piping Plover Conservation team and FORCES stewards protecting and monitoring them – two out of three chicks survived (Chewie and Yoda) and hit the sky at the end of July. One other adult PIPL showed up, but didn't stick around long (dad is pretty protective). Our chicks from last year (Frodo, Gimli, Merry, and Pippin) have not shown back up yet, thus is the life of a critically endangered species. One of our chicks, Chewie (yellow dot), was documented in Clearwater, FL (thanks to citizen science!) on August 6th! Our project is slowing down for the season. We are still educating park patrons about this amazing species, and keeping our fingers crossed that we will see them all again come spring!

What a summer it has been on the American hart's-tongue fern crew! Ten students from SUNY College of Environmental Science and Forestry (ESF) and one student from Finger Lakes Community College logged hours on the project this summer, working at three parks (Clark Reservation, Chittenango Falls, and Sonnenberg Gardens). We began propagation of hart's-tongue ferns at Sonnenberg Gardens in June, following permitted collection of diverse spore material from 11 of the 16 populations in New York State! We also transported 100 ferns from the Fernando Lab at ESF to Sonnenberg Gardens with plans to transplant them in various (but appropriate) locations, some as far away as Alabama! Nearly an additional 100 ferns from the Fernando lab were transplanted to augment populations at Chittenango Falls and Clark Reservation, with help from members of the ESF Honor Society, Alpha Xi Sigma, at the latter location. We censused four wild hart's-tongue fern populations this summer, all of which have increased in population size since 2012. A big "thank you!" to Carlin Wakefield and the Finger Lakes FORCES crew for their assistance with one of the larger censused populations. Lastly, the fern crew managed to remove over 65,000 invasive plants this summer, the most of any fern crew to date!



American hart's-tongue fern crew at Chittenango Falls State Park. Photo: OPRHP

In addition to the projects featured above, we continue to work with our partners at SUNY ESF, US Fish & Wildlife Service, NYS DEC and the Rosamond Gifford Zoo to survey and enhance the world's only population of Chittenango ovate amber snail at Chittenango Falls State Park (see the falls pictured above).

Coordinator's Corner

Amy Kochem, FORCES Program Coordinator

The 2019 summer FORCES team consisted of 8 FORCES Stewardship Corps Members and 46 FORCES Stewards across 7 NYS Park Regions. Our dedicated team worked diligently on projects including wildlife surveying and monitoring, invasives management, environmental education, habitat restoration, trail stewardship, and water quality monitoring. We are grateful for the enthusiasm, time, and energy put into these noteworthy projects.

Our 5th Annual Trainapalooza was held at the end of May at Letchworth State Park. Over 50 Stewards and Park Staff from 5 NYS Park Regions joined together for a two-day training, making it our largest attended FORCES event yet! The days were filled with birding, plant ID, map and compass skills, aquatic ecology, and more. In the evening we enjoyed a group dinner followed by a campfire, games, and music.

The FORCES program continues to expand across NYS. This summer we welcomed Jeremy Brady, Stewardship Specialist at Letchworth State Park, to our FORCES Team. One of his responsibilities is to continue relations and enhance FORCES in the Genesee Region. There is lots of interest in that region and we're excited to establish new partnerships out there!

Keep an eye out on the FORCES website for the *Who's Who* publication that will highlight all of our 2019 FORCES Stewards. Searching for a spring internship? Be sure to contact your regional FORCES staff to inquire about spring opportunities.



5th Annual FORCES Trainapalooza held at Letchworth State Park, May 30-31, 2019. Photo: OPRHP

Affiliated Institutions

SUNY Alfred
SUNY Binghamton
SUNY Brockport
SUNY Buffalo
SUNY Cobleskill
SUNY Cortland
SUNY ESF*
SUNY Geneseo*
SUNY Morrisville
SUNY New Paltz
SUNY Oneonta*
SUNY Oswego
SUNY Purchase
Alfred University
Buffalo State College

Cazenovia College
Columbia College
Cornell University
Finger Lakes Community College
Hartwick College*
Hobart & William Smith Colleges
Houghton College
Hudson Valley Community College
Ithaca College
Le Moyne College*
Mercyhurst University
Niagara County Community College
Niagara University
Onondaga Community College
Pace University
Paul Smith's College

Rochester Institute of Technology
Sienna College
St. Bonaventure University
St. John Fisher College
Syracuse University
University of Buffalo
University of Rochester
Vassar College
Wells College*

***Denotes active FORCES clubs**

Finger Lakes Region Environmental Field Team Update

Chenga Drury, Stewardship Project Coordinator, Finger Lakes Region

In May, the Environmental Field Team (EFT) welcomed the summer FORCES Stewards at Trainapalooza, facilitating plant ID (basic and advanced), and map/compass trainings. This summer season consisted of training new staff and completing vegetation and wildlife surveys for multiple projects. Kira Broz and Charlie Ippolito completed pollinator surveys to participate in the Empire State Native Pollinator Survey through the New York Natural Heritage Program. Emma Kubinski (Lead Stewardship Technician), Stewardship Project Technicians Charlie Ippolito and Lydia Martin, and Maggie O'Brian (Stewardship Project Technician) worked on ongoing restoration projects at Ganondagan State Historic Site, including invasive species control, restoration plantings, and vegetation surveys. Elizabeth Padgett (Plant Materials Program Technician), supervised by Mike Serviss (American Hart's-Tongue Fern Project Coordinator), continued greenhouse tasks related to American hart's-tongue fern (AHTF), including plant propagation, maintenance, data collection, and interpretive educational programs for greenhouse patrons.



The Three Gorges FORCES Stewardship Corps was back in full force for the second year of the project. Jesse LaRose (Lead) and six Stewardship Corps members; Jennifer Skala, Olivia Card, Isabel Schulman, Patrick Robertson, Ava Glasser, and Anna Bornstein focused on mapping, monitoring, and removal of pale swallow-wort, as well as mapping and monitoring for Japanese knotweed, porcelainberry, Phragmites, and hemlock woolly adelgid. The team surveyed and mapped a total of 1,250 acres within the three gorge parks, Taughannock Falls, Buttermilk Falls, and Robert H. Treman State Parks, for invasive species and removed a total of 86 acres of pale swallow-wort throughout the three parks! Another big part of the crew's responsibility was to maintain and care for transplants within the 16 acres of restoration area throughout the three parks. This included fence maintenance, watering, and weeding. They worked on native phenology checks, collected, and cleaned seeds of native species for NYS Park's own Plant Materials Program (PMP) to grow out at the Sonnenberg Gardens & Mansion State Historic Site greenhouses. These native plants will be moved into Three Gorges Project restoration areas once they are large enough, keeping the genetics local.



FORCES Stewardship Corps members left to right: Isabel, Anna, Ava, Jesse, Patrick, Chenga (Project Coordinator), Olivia, and Jennifer. Photo: OPRHP



Kyle Webster and Brigitte Wierzbicki leading a plant ID workshop for seasonal staff at Letchworth State Park. Photo: OPRHP

As the summer season ended, the EFT held their Annual Growing Season Summary, where Stewards presented about their summer work, joined by Finger Lakes and Central Region environmental staff. A special thanks to everyone that attended and/or presented! We were awarded a grant through Sustain Our Great Lakes to continue and expand the Three Gorges Project for an additional two years! We look forward to the continuation and expansion of the project and stewardship in these three parks that make Ithaca so 'gorges'!

Please email the Environmental Field Team if you are interested in an internship or volunteer opportunity:
EnvironmentalFieldTeam@parks.ny.gov

Niagara Region Update

Allie Tillman, FORCES Program Specialist, Niagara Region

The summer of 2019 was full of great projects and adventures for the FORCES Stewards in the Niagara Region! We had 8 FORCES Stewards total - 3 Invasive Species Management, 2 Water Quality, and a Greenhouse, Pest Management, and Pollinator Steward.

Invasive Species Management Stewards Matt McDonald, Kevin Brown, and Ryan Anello worked on all sorts of projects throughout the summer, including many partnership projects. A few highlights of their work are pale swallow-wort removal and Japanese knotweed cutting at Woodlawn Beach State Park, European frog's-bit removal at Buckhorn Island State Park, and surveying along the Niagara River and the West River Parkway for numerous invasives. The hard work these students put in this summer was vital to the never-ending invasive control efforts on park properties.

Water Quality Stewards Mark McKenna and Jenna Hoffman, were responsible for the daily testing at multiple site locations at Woodlawn Beach State Park. They took samples from Lake Erie and Rush Creek, completed field sheets regarding turbidity, environmental factors, recent weather events etc. and then delivered the samples to the testing lab. Their work was essential to maintaining public health safety and standards.



Ryan, Matt, Mark, & Kevin learning about ash tree surveying and Niagara River restoration efforts from Dave Spiering, Niagara Restoration Project Manager. Photo: OPRHP



Chris completing a tick drag survey at Wilson-Tuscarora State Park. Photo: OPRHP

Chris Freer returned for another season with FORCES as our Pest Management Steward. He traveled around to many different parks, collecting tick drag survey data that will be used for public health risk assessments and signage needs. One very cool aspect of Chris's project was that any ticks he found were sent to SUNY Upstate Medical University for free testing where they could tell which exact diseases the tick may have been carrying. Thankfully, every tick we sent tested negative for all possibilities!

Our Pollinator Steward, Tom DeVantier, had a very precise, detail-oriented project. He spent his time with us surveying at our parks that have designated pollinator gardens or "no-mow" zones. He worked directly with the Empire State Native Pollinator Survey and the iNaturalist App to document his findings and submit them. The goal of this project was to determine the status of a wide range of native insect pollinators in non-agricultural habitats. Tom also worked with the Orleans/Niagara BOCES Conservation class on replanting/maintaining the pollinator gardens at Beaver Island State Park.

Overall, this was a very successful season for the Niagara Region. We worked in countless aspects of conservation, in 10 different parks, on dozens of projects, with over 5 NYS Parks partners! I cannot wait to see what is next for the quickly expanding FORCES program within our region.

"This internship helped me mature as a scientist, understanding what is important in data collection, including best practices when working in the field."

Nick John, Rochester Institute of Technology

Taconic Region Update

Rebecca Policello, Natural Resource Specialist, Taconic Region



Kim, Rebecca, Jordan, and Junior Conservation Stewards Remi, Aubrey, Narain, and Emmeline after a day of data collection. Photo: OPRHP

This summer Rockefeller State Park Preserve Staff were joined by a rotating group of Junior Conservation Stewards (High School) and FORCES Stewards! Our Junior Conservation Stewards Aubrey Weinstein, Remi Wachtel, Emmeline Berridge, and Narain Chepuru were all there to kick off our field season with early summer plantings, invasive control, and printing labels for new road signs. In June, our three FORCES Stewards, Jordan Claman, Lauren Tannenbaum, and Camille Butterfield, joined us!

Jordan was primarily focused on Stewardship and helped coordinate rotating groups of volunteers. He started as a volunteer intern last summer, so we were very excited for him to return! In the beginning of the summer, Jordan and the high school crew collected data on our “Ten-Tallest” plots to track forest regeneration. Jordan also invented a new method for Japanese Angelica control that involved whacking the growth off using cut Angelica stems. It made invasive control feel like we were bushwhacking through a jungle! It was also a great method to use with volunteers because we didn’t have to worry about tools getting

damaged or lost. The patches where we whacked Angelica have seen little regrowth and are expected to die during the stress of winter. We will be using Jordan’s method for years to come and hopefully start planting trees in the spring of 2020!

Lauren primarily focused on invasive removal with Jordan, but on rainy days she researched the history of Rockwood Hall - a historic estate that once stood on the western edge of the preserve. Lauren put together a clear timeline with tidbits of interesting information along the way. Lauren also organized materials for Girl Scouts Love State Parks Day and taught other stewards ecology field games like ‘Oh Deer’ from Project WILD and ‘Macroinvertebrate Mayhem’ from Project WET for the event. Even though Lauren came in with little field experience, she was able to jump right in as a valuable member of our team.



Camille installing wall text for an upcoming gallery exhibit. Photo: OPRHP

Camille worked both with the Stewardship crew and in the Gallery. She helped install our summer exhibit, “Reflections”, which involved typing up each label and installing them on the wall, manually adjusting spotlights to “bring out the soul” of each painting, serving as a point person for artists, and also running a community arts program where she taught Park patrons the different elements of a landscape drawing. Camille also created a self-guided Tree-ID booklet and a brochure that pulled together Lauren’s history research on Rockwood Hall. Somehow, she managed to do all of this while also contributing to invasive removals!



Kim, Jordan, and Lauren working to whack down Angelica resprouts. Photo: OPRHP

FORCES Staff Highlight:

Andy Damon, Stewardship Specialist, Saratoga/Capital Region



I'm the Stewardship Specialist out of the Saratoga/Capital Region, and I have been working with FORCES students in that region since the fall of 2018. As everyone is already aware, FORCES is a great opportunity to build your resume and gain field experience. However, I am fortunate enough to be on the side of helping coordinate and work with the stewards.

It's a unique experience because I've been on the side of trying to gain field experience, build my resume, and hopefully land a job outside of college. I understand and empathize with this time of a college students life where you're trying to find out what you like, or don't like, and what you want to hopefully do once you're out of college. The passion and drive that I've seen in many of the FORCES Stewards I have worked with is what excites me for the future.

My route was similar as many. I went to college at SUNY Plattsburgh, after starting a couple years at a community college. I had to find a balance between working to pay for my basic needs, and dealing with the college workloads, and sports and clubs. For me, classes never came easy, but it was the field portions that kept that pursuit and drive to succeed. In college, I also found time to volunteer with the clubs I was involved with. One of the accomplishments was removing styrofoam from the dining hall at my local community college, with a club size of 4 people.

On breaks, I would volunteer with local zoos, the DEC, or wherever I could get experience to hopefully help my career goals. After a couple of summer jobs in college doing vegetation surveys on Fort Drum, I graduated and spent two 10 month terms with the SCA. From there, I worked with Soil and Water for a seasonal position. I then worked with Excelsior Conservation Corps for a couple of years, before getting an opportunity with NYS Parks in June of 2018. Currently I'm a Stewardship Specialist for the Saratoga/Capital region where I work on a plethora of environmental projects in the region.

For those who have made it this far, congratulations. Your work that you are doing is very important, regardless if some days aren't as fulfilling as others. I certainly know that your work is appreciated, and it might not be completed without your efforts. My advice to anyone trying to pursue a career in this field is to stay driven. I've had small gaps in between jobs where I worked any job that would pay, but I always kept a good work ethic and was determined to continue to advance myself in my career. Focus on the big picture of your goals, and don't worry about the individual days that you fall short.

"I learned many skills related to working in the environmental field including how to use a GPS to map invasive species, how to identify several common invasive species, and how to monitor birds using NestWatch. Working on so many collaborations this summer has helped me establish a good network. I've met many intelligent, friendly staff, researchers, and professors whom I can connect with in the future for advice or for volunteer opportunities."

Elizabeth Balzani, SUNY Binghamton

Faculty Highlight: Susan Cushman

Director of Introductory Biology Laboratories & Research Scientist,
Hobart and William Smith Colleges & Finger Lakes Institute



Susan holding a rainbow trout. Photo: Hobart and William Smith Colleges.

I started fishing with my dad when I was a young girl, but I never would have predicted that I'd have a career as an aquatic biologist studying fish! My interest in streams and fisheries began in graduate school when I took a stream ecology course and then a stream monitoring summer course. It was there that I realized how amazing and important stream ecosystems were, and how much our actions on land impacted the quality of the water as well as what lived there.

My research and experience in stream biomonitoring stems from my doctoral research on the effects of urbanization on stream fish and habitat. However, my focus in the Finger Lakes region has focused on learning more about 1) characterizing small stream fish assemblages, 2) habitat restoration, 3) biomagnification of mercury in stream food webs, and more recently 4) invasive species.

This past summer, my student research team and I conducted biomonitoring surveys of benthic macroinvertebrates, fish, and stream habitat in the three gorges State Parks around Ithaca – Taughannock, Robert H Treman, and Buttermilk Falls. Our interest in these stream ecosystems is related to the health of the eastern hemlock (*Tsuga canadensis*) stands that line the streambanks and cover the hillsides. These majestic, slow-growing trees are under attack by the hemlock woolly adelgid (HWA; *Adelges tsugae*), a non-native invasive insect that feeds on the plant tissues, blocking off movement of nutrients to the needles and causes the tree to eventually die. Luckily, the NYS Parks' Three Gorges Project was awarded grant monies to treat areas of dense hemlock stands with a pesticide to control HWA. We worked closely with NYS Parks staff to identify stream reaches to use as monitoring sites and plan to survey the health of the aquatic stream communities in these parks over 5 years to assess the effects of HWA control.



FORCES Steward Mary Luellen working with Susan and her students to collect fish. Photo: OPRHP



Hemlock woolly adelgid on eastern hemlocks.
Photo: Hobart and William Smith Colleges.

Since hemlocks grow along stream banks, they provide a number of "services" to the channel and surrounding habitat. The tree canopy provides riparian cover and shade to the stream which keeps water temperatures low and provides protective fish habitat. Their root systems prevent erosion of stream banks and they soak up excess nutrients that could otherwise enter the water directly. They are also beautiful and provide natural habitat for wildlife along the stream corridor. These are among many of the reasons we need to protect the eastern hemlock. Hopefully, the pesticide application will kill the HWA and prevent the loss of hemlocks in these parks. Because if the hemlocks go, the stream habitat, water quality and therefore the stream

communities -invertebrates, fish, frogs, salamanders, etc.-will all be impacted too. We found some amazing fish in these streams too, including rainbow and brown trout, mottled sculpin, darters, just to name a few.

I look forward to returning next year to sample these beautiful streams again and work with the NYS Park staff.

Steward Spotlight: Iriel Edwards

Invasive Species Management Steward, Finger Lakes Region



Iriel participating in the COAS (Chittenango Ovate Amber Snail) surveys at Chittenango Falls State Park. Photo: OPRHP

This summer I had the pleasure of working with both the Finger Lakes conservation crew and a graduate student from ESF working with FORCES to do research in New York's State Parks. Both experiences exposed me to the management practices of maintaining the natural lands of the Finger Lakes Region and the field and lab methods used to inform those practices.

As a crew, most of our work was centered in Taughannock Falls State Park, but one of my favorite parts of volunteering this summer was getting to travel to a variety of different natural areas that I had never visited before. As an out-of-state student, it was amazing to have such increased access to so many of the state's best natural treasures, while also having the opportunity to directly interact with the organisms and landmarks that make the area so unique. The projects we assisted with were just as diverse, including red-backed salamander and Chittenango ovate amber snail surveys, nest box monitoring, invasive species mapping with GIS, and deer browsing assessments. The amount of ground we covered and number of research partnerships we were able to exercise as a group gave me a completely different sense of place and appreciation for an area that has been so integral to my development as a student.

In addition to doing fieldwork, I had the pleasure of working with Mariano Arias, a graduate student from ESF and friend of FORCES, on a study investigating the relationship between the land use history of parks and how the past affects a natural interaction called myrmecochory. Myrmecochory is a mutualistic relationship in which certain plants, like bloodroot, trillium, and hepatica, depend on ants to disperse their seeds in exchange for a part of the seed that ants use as a food source. The study hoped to explain why ants are not distributing these seeds across certain borders where virgin forests meet forests with a past of fire disturbance or agricultural use. As an entomology major, it was exciting to be placed by FORCES in a research position that was so specific to my academic interests, and the skills I learned with Mariano this summer gave me a jump start in my studies this semester.

From the myrmecochory study, I was able to develop my own project using the insects Mariano had already ready collected. With his guidance, I began to investigate if predatory ground beetles may affect these dispersal events and how differences in beetle communities between forests can be used as ecological indicators of a forest's past. This is a project that we are continuing to explore through the fall, and I hope to one day see the implications of this knowledge play out in how we restore and tell the story of new parcels of state-owned land.

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Finger Lakes Region Update

Carlin Wakefield, FORCES Program Specialist, Finger Lakes Region

It was another action-packed summer in the Finger Lakes Region with 8 FORCES Stewards contributing to a wide array of projects. FORCES Conservation and Invasive Species Management Stewards included Mary Luellen, Rob Swiss, Nick John, Liz Balzani, and Iriel Edwards. Stewards Will Caston and Angela McEnerney were paid interns working for SUNY Cortland researcher Dr. Andrea Dávalos on her pale swallow-wort project; joining FORCES provided better NYS Parks context, access, and support for their work at Taughannock Falls, Buttermilk Falls, and Long Point State Parks. Bird Steward Matt Janson worked largely independently on eBird surveys at six parks throughout the region.



Left to Right: FORCES Program Specialist, Carlin, and Stewards Iriel, Liz, Nick, and Mary on the Gorge Trail at Watkins Glen State Park. Photo: OPRHP

FORCES Conservation Stewards worked on a variety of different projects this growing season such as our native nest box project where stewards documented breeding activity and/or successful fledging of eastern bluebirds at 29 boxes throughout Taughannock Falls, Allan H. Treman, and Robert H. Treman State Parks. Data collected by Stewards was shared through Cornell Lab of Ornithology's online citizen science protocol, NestWatch. The group took part in monitoring cover board arrays for eastern red-backed salamanders at Taughannock Falls and Jennings Pond at Buttermilk Falls State Park, as well as took part in pollinator surveys for Empire State Native Pollinator Survey (ESNPS) with members of the Environmental Field Team at Taughannock Falls, Robert H. Treman, and Watkins Glen State Parks.

Invasive Species Management Stewards focused on projects mapping and removing a variety of invasive plants throughout the region and beyond, including a day on the water removing water chestnut at Fair Haven Beach State Park. The group participated in collaborations with our partners at Cornell Botanic Gardens where they worked on pale swallow-wort and Japanese stiltgrass removals. Stewards worked continuously with Dr. Dávalos, they monitored plots for her pale swallow-wort study, as well as helped set up monitoring plots for the collaborative study looking at the implementation of pale swallow-wort biocontrol at Green Lakes, Clark Reservation, and Long Point State Parks. Finally, Stewards helped Dr. Dávalos survey for invasive Asian jumping worms as part of her Taughannock Falls State Park mapping project.



Nick measures snout-to-vent length of a wiggly eastern red-backed salamander at Jennings Pond in Buttermilk Falls State Park. Photo: OPRHP

Other notable collaborations of the summer included working with Mike Ashdown from Cornell on AVID (Assessing the Vegetative Impact of Deer) to monitor enclosed and open plots for growth at Buttermilk and Taughannock Falls State Parks, as well as benthic macroinvertebrate and electrofishing surveys with Susan Cushman from Hobart and William Smith Colleges in streams adjacent to eastern hemlock forest at Taughannock Falls, Robert H. Treman, and Buttermilk Falls State Parks. Stewards enjoyed field tripping up to Central Region and working with FORCES own Mike Serviss and other staff on a population census of American harts-tongue fern at Clark Reservation State Park, as well as assisting Cody Gilbertson and crew to survey for Chittenango ovate amber snails at Chittenango Falls State Park. Stewards also participated in National Invasive Species Awareness Week (NISAW) hosted by the Finger Lakes Partnership for Regional Invasive Species Management (FL-PRISM) where FORCES hosted two successful tabling events and an invasive species carnival with games and prizes for patrons. Thanks to all for a full summer packed with hard work, stewardship, networking, and fun!

Partner Highlight: James “Wylie” Huffman, III

Executive Director, Indian River Lakes Conservancy

In the summer of 2019, the Indian River Lakes Conservancy (IRLC) in partnership with FORCES, initiated Protectors of Water and Habitat on the Indian River Lakes (Project WHIRL). Project WHIRL connects high school students to both the natural environment and local communities in the spirit of improving student knowledge and community awareness while implementing and leading remediation efforts in the name of environmental stewardship.

The program’s focus is on environmental stewardship of the Indian River and the 18 lakes within its watershed, which occupy an extraordinary landscape of rocky, wooded uplands and teeming wetlands, lakes, and streams. The river’s origin is located in the town of Diana, about 30 miles east of Watertown and the river snakes a northerly course through Fort Drum Military Reservation and eventually flows into Black Lake before dumping into the Oswegatchie River a few miles south of Ogdensburg.

Project WHIRL’s inaugural year included seven high school students (mentees) who learned about the natural environment in the watershed from environmental professionals and college students (mentors) studying in an environmental science field. The 2019 Project WHIRL cohort spent 48 hours over the course of six weeks working in the tracks of Aquatic Resources Education and Invasive Species Management. In 2020, a third track, Watershed Management will be added, consisting of 96 hours of instruction and will meet New York State Science and Learning Standards for a high school biology credit through Indian River High School. Eventually through a growing partnership with Paul Smith’s College, the Watershed Management track may include the opportunity for a college credit.

Project WHIRL alumni will have a distinct advantage in pursuing academic and professional careers in the environmental science field over their peers who do not participate in the program.

Project WHIRL mentee graduates get to network throughout the course by meeting and working in the field with environmental science academics and professionals. Project WHIRL partners and mentors will continue to provide guidance, direction and make networking connections for mentees as they advance their academic and professional careers. Project WHIRL partners and mentors will provide mentees with internship and job announcements and provide professional references and letters of recommendation. And lastly, Project WHIRL cadre will recruit the best mentees to become Project WHIRL mentors and additionally FORCES Stewards, should they go on to study at participating FORCES institutions.

One highlight from the 2019 Project WHIRL alumni cohort demonstrates the impact the program is having on the community. Indian River High School sophomore, Liam Loveland, is now volunteering as a Teen Mentor for Jefferson County Cornell Cooperative Extension’s 4-H Environmental Science Club. Liam’s knowledge and skills gained through Project WHIRL’s Aquatic Resource Education track are being used to teach elementary aged children how to assess water quality by conducting stream surveys and how to conduct invasive species documentation using Environmental DNA (E-DNA) test kits.



Liam Loveland (pictured holding a northern pike) and Gaby Ames collected fish from Mud Lake in Redwood, NY with staff from Region 6 NYS DEC as part of their Aquatic Resource Education track. Photo: OPRHP

Project WHIRL achieved outstanding success in the first year thanks to the partnership and collaborative efforts from additional partners including Central New York Chapter of the Izaak Walton League of America, Indian River High School, Paul Smith’s College, and St. Lawrence and Eastern Lake Ontario Partnership for Regional Invasive Species Management (SLELO PRISM). Project WHIRL looks forward to the inclusion of additional partners as the program continues to expand.

Genesee Region Update

Jeremy Brady, Stewardship Specialist, Genesee Region

Conservation Stewards Christina Morrow and Alec Ritter, stayed busy this season with multiple projects at Letchworth State Park. At the start of their internship, they shared with me the desire to incorporate this environmental conservation experience into their future career plans. The main responsibilities for these two Geneseo students included assisting in slender false brome management, monitoring and mapping invasive species, constructing a wildlife fence, and preparing pollinator gardens at the north end of the park.



A successful native flora planting near the northern entrance of Letchworth State Park. Photo: OPRHP

The first project is a collaboration with our partners at WNY PRISM who conducted an experimental study on the early detection invasive species slender false brome. Christina and Alec participated by manually removing the grass with weed-whackers through-out the summer. Although a hard and tedious task, they stayed positive and aided in this important research.

Next, they travelled throughout the park to map and monitor invasive species. Through their effort, they detected another population of slender false brome which I will manage in future years. Lastly, they helped complete a wildlife fence at a road crossing near the visitor center. Car incidents impact wildlife populations at the park so a wildlife fence is necessary to direct critters away from the road to a safe pathway build beneath the crossing. No previous fence building experience did not stop these two from putting up a great barrier that protects vulnerable animals. In addition to these projects, our interns planted native flora at multiple pollinator gardens at the park.

At the end of the summer, Alec showed an eagerness to apply his experience with a career in sustainable entrepreneurship and was excited to have worked with FORCES. While Christina became even more motivated to conserve the natural world, not only at Letchworth, but beyond as she is the current SUNY Geneseo FORCES Club President.

"I learned many things that I did not expect to....even being exposed to the different office dynamics, and the effort and hierarchy of more behind-the-scenes work like budgeting, maintenance, grounds, the front desk, and how that overlaps with someone's role as a conservationist in a park was interesting."

~Christina Morrow, SUNY Geneseo

**For more information about
2019 FORCES Stewards, see the
Who's Who publication coming soon
to our website!**

FORCES Friends of Recreation, Conservation and Environmental Stewardship		 Parks, Recreation and Historic Preservation FORCES mission is to engage New York State college students to simultaneously improve OPRHP resources and enrich student academic, recreational, and career opportunities.
2019 FORCES STEWARDS: THE FORCE BEHIND FORCES		
 Sydney Alberico Finger Lakes Trail Steward	Sydney majors in Environmental Studies at SUNY ESF. She is from Holland Patent, NY and enjoys hiking, camping, road tripping, swimming, and adventuring with her dog Mylot! While she interned with the Finger Lakes Trails Crew, her goal was to learn new skills involving trail maintenance and restoration.	
 Angelica Arocho Native Wildflower Steward	Originally from Monroe, NY, Angelica attends Pace University where she studies Environmental Science. Her interests include plant cultivation, sculpting, crocheting, and map making. Her goal is to graduate and get involved with forest restoration and to pursue a career in the environmental field.	

Featured Project: Empire State Native Pollinator Survey

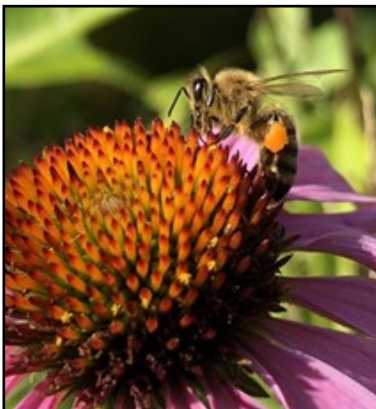
Thomas DeVantier, FORCES Pollinator Steward, Niagara Region

Native insects are essential in playing the role of pollinating a broad variety of flowering plants. However, in recent years some native pollinator species have dramatically decreased in population. The goal of the Empire State Native Pollinator Survey was designed to determine the conservation of a wide range of native insect pollinators in non-agricultural habitats. The target species and at-risk pollinator species for this survey are in the bees, flies, beetles, and butterflies/moths orders.

Over the months of working outside in the Niagara Region parks, I have noticed that having a keen eye to spot these target species was great. This quality enabled me to see and think more critically when searching for insects closer to the ground than just looking at the top of flowers. A majority of the time spent was by time searching separate sections of different parks. This past summer, I've focused more than 42 hours just at Reservoir State Park surveying for these target species. It was very interesting when looking back at my results from the survey to find out that a larger diverse amount of pollinators/insects were found along the western edge of the park, and an increased amount of various flower species. (Right of I-90 road) When compared to the southern area of the park (by Witmer Rd), it showed a less diverse quantity of pollinator species and decreased flower species available.

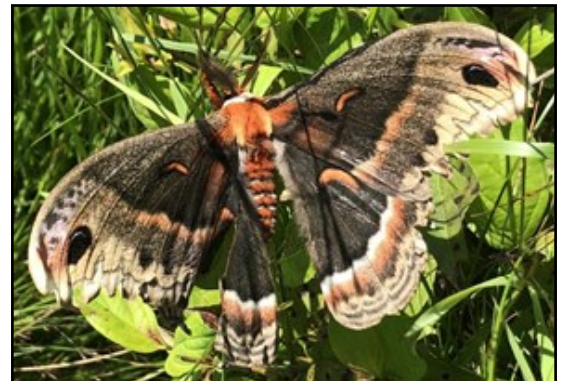


Monarch butterfly (*Danaus plexippus*). Photo: OPRHP



Western honey bee (*Apis mellifera*). Photo: OPRHP

I've uploaded many photos to the iNaturalist app this past summer and I plan on continuing to upload more. My favorite part of this project was being able to gain knowledge about all the different insects, and knowing that I am making a difference by surveying and collecting data, that I know will be extremely helpful when categorizing the different populations of pollinators in the Niagara Region.



Cecropia moth (*Hyalophora cecropia*). Photo: OPRHP

Attention FORCES Alumni

We want to hear your stories and learn what you are up to now up to.

Please send us an update!

Contact: Amy.Kochem@parks.ny.gov

Saratoga Capital Region Update

Andy Damon, Stewardship Specialist, Saratoga/Capital Region

This summer we had 5 FORCES Stewards in the Saratoga Capital Region. Avian Survey Stewards Zoe Gliosco and Tom Kelafant were finishing up cerulean warbler surveys at Schodack Island State Park. Cerulean warblers are a migratory songbird that have seen a decline in population due to loss of habitat. Schodack Island State Park is one of their known breeding grounds in New York. They collected a lot of invaluable data to update us on cerulean warbler activity, as well as other migratory and residential birds at the park. The last recorded data was from 2012, so this was very critical in keeping us updated on this species.

Continuing with data collection for species of concern in the region, Karner blue butterfly Steward, Emily Dupuis was a great resource for assisting with our federally endangered Karner blue butterfly habitat improvements and surveys. The Karner blue butterfly's habitat is severely limited to fragmented sections in eight states, including New York, as well as habitat in Ontario, Canada. Due to its restrictions to the wild blue lupine plant as the sole food source for its larvae stage, which only grows in pine barrens, the efforts to protect this species is critical. Emily found the first Karner at this site in the last few years. A female Karner blue was also seen laying eggs this summer at the site, which is very exciting news in the recovery plan.

Trail Steward Bryan Dandaraw, was working with our regional trail crew and with a local fish survey. He was a huge help, both with his physical attributes and ability to problem solve through the projects. The trail crew members really loved the days when he worked with them. He helped build a few retaining walls. One at Saratoga where they moved boulders exceeding a couple hundred pounds to help protect an area of the trail being cut out by the stream, and pedestrians walking down to that area. Another large retaining wall was built in a section of trail along the Indian Ladder Trail at Thacher State Park. He also was involved with electroshocking fish surveys in the Hudson River with the Department of Environmental Conservation outside of Peebles Island State Park.

Finally, we thank Tim Nolan for his efforts in helping come out and keep our trails clean at Saratoga Spa State Park. Saratoga Performing Arts Center is shared grounds with Saratoga Spa State Park, and brings in a lot of visitors those days. Therefore efforts are always appreciated after those concerts, and throughout the summer, to help our park remain clean.



Before and after photos of the retaining wall at Saratoga Spa State Park. Photo: OPRHP

"This experience will benefit my future in a few ways. First off, meeting people in my field for future job opportunities. I had the opportunity to meet and work with Andy Damon, Scott Wells who is an aquatic biologist for DEC, and many others. I also had the opportunity to work in the field everyday which gives me a better understanding of what I want to do after college."

Bryan Dandaraw, SUNY ESF

Allegany Region Update

Tom Le Blanc, Park Naturalist, Allegany Region

This summer the Allegany Region welcomed our FORCES Environmental Education Steward, Evan McCabe to Allegany State Park. Evan is a senior at St. Bonaventure University in the environmental studies degree. He focused his summer doing educational programs to school groups and patrons visiting the park. He showed a strong interest in nature photography and the park took this opportunity to have him teach nature photography classes and run a weekly "photo of the week" contest. Campers submitted photos after camping and Evan posted them on a bulletin board for everyone to see.



West Valley Elementary School 4th Grade using Agents of Discovery mobile app to learn about trees in Allegany State Park. Photo: OPRHP



Evan photographing the spring box along the Bear Springs Trail. Photo: OPRHP

For his summer project, Evan came up with a mission for the Agents of Discovery mobile game app that gave students an opportunity to learn about trees here in Allegany State Park. Agents of Discovery is an educational mobile gaming platform that uses augmented reality to get youth active. Evan used trees in the picnic area and turned learning into a fun and safe learning environment.

SAVE-THE-DATE: 4/19/2020 6th Annual FORCES Leadership Summit



Parks, Recreation
and Historic
Preservation

FORCES

Friends of Recreation, Conservation
and Environmental Stewardship

A day of networking, discussions, food, and fun!
Open to FORCES Stewards, FORCES Club
Officers, future FORCES Club Officers, and
FORCES Ambassadors. Location: SUNY Oneonta

The Force Behind FORCES Picture Page



Hobart and William Smith Colleges students at Buttermilk Falls State Park setting up block nets prior to electrofishing. Photo: Hobart and William Smith Colleges



Conservation & Invasive Species Management Stewards Nick John and Liz Balzani working on the pale swallow-wort biocontrol study at Green Lakes State Park. Photo: OPRHP



Allie Tillman plays Jenga with a patron during the FORCES sponsored Concert in the Park at Taughannock Falls State Park. Photo: OPRHP



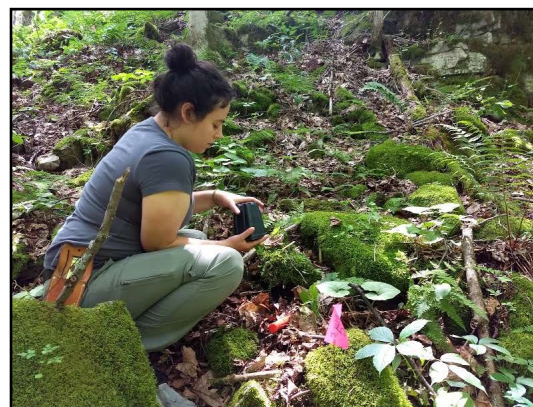
Mike Serviss and the American hart's-tongue fern crew at Sonnenberg Gardens & Mansion State Historic Park. Photo: OPRHP



FORCES Stewards enjoying a campfire at Trainapalooza at Letchworth State Park. Photo: OPRHP



Conservation Stewards Iriel Edwards and Liz Balzani monitor bluebird nest boxes at Taughannock Falls State Park. Photo: OPRHP



American Hart's-Tongue Fern Steward Hannah Whalen at Clark Reservation State Park. Photo: OPRHP



New York State
Office of Parks, Recreation and Historic Preservation
Central Region
6105 East Seneca Turnpike
Jamesville, NY 13078
(315) 492-1756

FORCES Newsletter
Fall Edition 2019

FORCES Team

Tom Hughes

Natural Resource Stewardship Biologist
FORCES Program Manager, Central Region

Josh Teeter

Environmental Educator
FORCES Program Manager, Finger Lakes Region

Amy Kochem

FORCES Program Coordinator
Central and Finger Lakes Regions

Carlin Wakefield

FORCES Program Specialist, Finger Lakes Region

Chenga Drury

FORCES Program Specialist, Finger Lakes Region

Alexandra Tillman

FORCES Program Specialist, Niagara Region

Andy Damon

Stewardship Specialist, Saratoga/Capital Region

Rebecca Policello

Natural Resource Specialist, Taconic Region

Jeremy Brady

Stewardship Specialist, Genesee Region

Adele Wellman

Environmental Educator, Allegany Region

Tom LeBlanc

Naturalist, Allegany Region



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