

Fall 2018

# Newsletter Fall 2018: Environmental Science & Ecology

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November 2018



ENVIRONMENTAL SCIENCE & ECOLOGY DEPARTMENT

# Fall 2018 Newsletter

## Message from the Chair—Dr. Chris Norment

It has been two months since I returned from my sabbatical, with its more relaxed pace, and a research project focused on the ecology of the Inyo Mountains salamander bookended by two stints as a writer-in-residence. Since reimmersion in academic life, I have been struck by several things. First, I have been forcefully reminded of how BUSY everyone is—students, faculty, and staff. The corridors, classrooms, offices, and labs of Lennon Hall always seem to be humming. My second realization has to do with how much good work went on during the past year: excellent classes; a slew of independent studies, Summer Undergraduate Research Program fellowships, and graduate thesis projects; new and continuing externally-funded research projects (which employ our graduate and undergraduate students); and a collection of new research publications. Also, there are many unfamiliar faces in the hallways (at least to me), while other familiar ones have moved on—into graduate programs and jobs, sometimes far from Brockport.

My final realization is in some ways more personal—that we all are, at least in a public sense, partly superfluous. Even if we are good at what we do, in most cases “things” will continue on their way in our absence. A vibrant educational program will remain strong, even as it evolves, while individuals come and go. Requirements, projects, and disciplinary strengths may change. What’s most important to continuity is a culture that emphasizes quality, humanity, vision, and dedication—traits that characterize the Department of Environmental Science and Ecology. This realization—that we are in some ways expendable—is an antidote to hubris and a source of great encouragement to me.

This is not to say that we (as individuals, a department, a college, a community, a nation) do not face great challenges, which could impact us in negative ways. It’s just that there also are many good reasons for hope and confidence—not the least of which are found on the first floor of Lennon Hall (and in the natural and occasionally not-so-

natural places where students, staff, and faculty in our department spend so much of their time).



A few final words. First, a very warm welcome to the newest faculty member in the department, Dr. Rachel Schultz, a wetland scientist who comes to us from The University of Wisconsin-Stevens Point. We are very happy to have her at Brockport! Second, Dr. Jim Haynes has rejoined our department, after serving for two years as Interim Provost at Brockport. Both Dr. Jim Haynes and Dr. Doug Wilcox have transitioned into half-time, “phased retirement” positions. Finally, a personal note of thanks to Dr. Jacques Rinchar, who served so capably as chairperson in my absence.

## Inside our faculty and staff...

**Norma Polizzi, Esq.**—Adjunct Lecturer has returned to school to obtain an LL.M. (Master of Law) in Environmental Law at the University of Buffalo School of Law. It is a one year post-graduate program.

She is studying climate change and will travel to Poland in December to attend the International Conference on Climate Change in Katowice.

**Dr. Douglas Wilcox** visited Jamestown Community College (JCC) in October where he presented a seminar featuring the Environmental Science & Ecology program. JCC has a strong two-year A.S. program in environmental science, with dedicated faculty and excellent new facilities. Hopefully, this recruiting venture will bring some of their students to Brockport for a B.S. degree.

*Department Faculty & Staff: Dr. Kathryn Amatangelo, Dr. Michael Chislock, Ms. Andie Graham, Dr. James Haynes, Ms. Tammy Jo Manz, Dr. Courtney McDaniel, Dr. Chris Norment, Norma Polizzi, Esq., Dr. Jacques Rinchar, Dr. Rachel Schultz and Dr. Doug Wilcox*

## Welcome new faculty

**Dr. Rachel Schultz** has jumped into the Environmental Science and Ecology Department with both feet. She is teaching Wetland Ecology and Restoration Ecology this fall with great zeal – exploring regional wetlands and delving into local restoration projects with her students. Dr. Schultz is also excited to start up her research program with a new graduate student, **Courtney Scoles**. Courtney will be working on monitoring vegetation following the restoration of Braddock Bay in addition to her thesis research. Work study student **Rob Sickler** has been processing results of a study exploring the floristic quality and marshbird occupancy of restored wetlands in southeastern Wisconsin. This upcoming spring, Dr. Schultz will be teaching two new

courses in the environmental science curriculum: Invasion Ecology and Ecological Data Analysis in R. She is also involved with planning a Women in Wetlands session for the upcoming meeting of the Society of Wetland Scientists and a wetland session for the

International Association for Great Lakes Research meeting.

If you are interested in researching a wetland-related topic (or want to go botanizing), please contact Dr. Schultz via email [rschultz@brockport.edu](mailto:rschultz@brockport.edu) or by phone 585-395-5747.



*Dr. Rachel Schultz and her Wetland Ecology and Management students at Braddock Bay Wildlife Management Area on Lake Ontario.*

## This summer, graduate student **Tammy Bleier** launched a grassroots organization known as the Plastic Lakes Project, an initiative of the Plastic Ocean Project, to study, educate about, and combat plastic pollution in the Great Lakes.

PLP holds monthly cleanups throughout the summer and fall at different parks and beaches in the Rochester area. So far, 955 pounds of debris (that's more than 12,000 pieces) have been diverted from Lake Ontario! Over 100 volunteers have been involved in the cleanups, including many students from SUNY Brockport. Volunteers use datasheets to track the types of debris

collected; over 80% is plastic. Collecting data has allowed PLP to collaborate with other organizations to install cigarette butt receptacles at Ontario Beach Park (coming October 2018!), as cigarette butts are the most common item collected. PLP also encourages consumers to reduce their plastic footprint by refusing single-use plastic for more sustainable alternatives. Research on microplastics in the Great Lakes is being conducted in the Chislock lab at SUNY Brockport and the Rochman lab at University of Toronto.

October 6 was the final cleanup of 2018. The cleanup took place from 10am-12pm at Ontario Beach Park, followed by a year-end celebration from 12pm-2pm!

To learn more about Plastic Lakes Project and register for the October cleanup, visit [www.plasticlakesproject.org](http://www.plasticlakesproject.org).



*(Photo above: Graduate student Tammy Bleier sampling for microplastics)*



*Volunteers from the August cleanup at Durand Eastman Park, Rochester, N.Y*

Lake Ontario water levels subsided from last year's record highs to make it easier for **Dr. Douglas Wilcox's** wetland ecology research crew to have a busy summer 2018. Led by crew chief **John Bateman**, this marked the eighth season of sampling under the U.S. Environmental Protection Agency (USEPA) Great Lakes Coastal Wetland Monitoring Program. Graduate student **Tiffany Clay** led the bird and amphibian monitoring team, along with undergraduate **Jess DeToy**, and sampled over 30 sites from Niagara Falls, New York to Kingston, Ontario. Graduate student **Scott Ward** and undergraduate **Wyatt Jackson** sampled wetland vegetation; graduate students **Paige Buchholz** and **Cassie Wolfanger** and undergraduate **Emily Anderson** sampled aquatic invertebrates and water quality, and undergraduates **Joe Knight** and **Payton Hanssen** sampled wetland fish communities. Despite boat motors breaking down, long searches for boat launches, and hot days in the sun, the crew was successful in monitoring coastal wetlands from Rochester, New York to Belleville, Ontario on the north shore of Lake Ontario.

Graduate student **Alex Silva** and undergraduate **Robert Sickler** continued post-restoration data collection on the U.S. Army Corps of Engineers (USACE) restoration project at Braddock Bay, near Rochester, New York. High water levels in 2017 delayed completion of barrier beach and emergent wetland construction, but contractors finished the project in 2018. Alex and Robert surveyed wetland plant community response to restoration efforts. Throughout the successful sampling season, they worked around difficult access to constructed channels and potholes in the marsh due to dense vegetation, sediment buildup, and even a beaver dam. To help the New York State Department of Environmental Conservation (NYSDEC) and USACE evaluate wetland ecosystem response to the restoration project, Dr. Douglas Wilcox received \$300,000 for four more years of post-restoration data collection funded through a new Memorandum of Understanding with the NYSDEC.

Graduate student **Jeremy Brady** and undergraduate **Kyle Ward** continued post-restoration data collection on wetland vegetation communities following restoration efforts by the U.S. Fish and Wildlife Service at Buck Pond, Long Pond, and Salmon Creek in the Braddock Bay Wildlife Management Area (WMA). They worked hard surveying plant community response to various restoration activities at the sites. Graduate student **Michelle Gianvecchio** conducted bird and amphibian surveys as part of post-restoration monitoring for these projects, and found a rare, state endangered Henslow's Sparrow (*Centronyx henslowii*) adjacent to one of the sites.

**Andie Graham** led the fen restoration project at Buttonwood Creek in the Braddock Bay WMA, where the crew completed the third year of invasive cattail treatment. Current undergraduate **Cory Wolfe**, and former undergraduates **Nate Jones** and **R.J. Sciarrone**, spent the summer cutting invasive cattail for subsequent herbicide treatment by a contractor. The crew noted that native fen species, such as sundew (*Drosera rotundifolia*) and cottongrass (*Eriophorum virginicum*), were doing very well in the treated areas, and even found a plot with 60% cover of sundew.

We will miss **John Bateman**, research scientist and crew chief for the wetland research projects, as he leaves for a job at Finger Lakes Community College (FLCC) as a tenure-track instructor of environmental science. We thank John for countless hours put into teaching and working with students on grants and in the classroom and are thankful that he will continue to work on a few of the research grants while at FLCC.

(Above photo of former graduate student **Greg Lawrence**, who began work as a research scientist this fall and will lead the wetland team in subsequent years, after working on many of the projects in the past at SUNY Brockport and for the NYSDEC.)



## Wild Wings fundraiser—great success!

The Global Environmental Issues Class under the direction of Dr. Courtney McDaniel gathered to help support Wild Wings on March 26 and April 3, with a table focusing on the organization at the Seymour Union.

In addition to money raised (\$293), they also collected supplies that Wild Wings needed (such as paper towels, trash bags, hydrogen peroxide, etc.)

Wild Wings is a not-for-profit educational organization that houses and cares for permanently injured birds of prey which are unable to survive on their own in the wild.

Visit: [www.wildwingsinc.com/giving-and-support](http://www.wildwingsinc.com/giving-and-support) to see a full list of supplies needed.



# All About Alumni



A photo of Eli using a griphoist high line to build a rock staircase in Leominster, MA.

**Eli Steinberg**—Graduated in 2017 with a concentration in aquatic and terrestrial ecology. Since graduation, he has wrapped up a 10 month position as an Environmental Educator and Conservation Steward with the SCA Massachusetts Corps.

*“It was a lot of fun, as I got to teach children grades K-6 and expose them to what made me fall in love with the natural world. Afterwards, we all got extensive training on trail maintenance and worked on conservation projects throughout the commonwealth. It was truly life-changing and made me fall in love with the corps lifestyle so much that I am currently doing another corps-based project out of Flagstaff, AZ through American Conservation Experience.”* -

**Michelle Edwards**— BS ‘2016—Aquatic Ecology Concentration.

*“Although I have had some interesting experiences since leaving Brockport, I have mainly been in temporary positions in an attempt to make myself a better candidate for grad school. Currently, I am a seasonal fisheries technician for the Vermont Cooperative Fish and Wildlife Research Unit (a partnership between the University of Vermont and USGS) assisting a Ph.D. student with her research on Lake Sturgeon in Lake Champlain.”*

*“I am also the project manager for a greater good collaborative citizen science project by an NGO called the Ocean Research Project and the Smithsonian Environmental Research Center that is attempting to fill gaps in acoustic telemetry data by working with the live-aboard sailing community.”*

Future Alumni Gathering to be held on either  
Saturday, April 27 or Saturday, May 4, 2019  
Hope to see all of you there!  
More information upcoming...



**Benjamin Sleeper**—B.S. Environmental Science, Earth Science focus, Class of 2012  
Fish Farmer - Paragould Arkansas

*“Greetings from Paragould Arkansas. A year ago now I pulled up my roots in St. Louis, got married, and decided to join my father-in-law raising channel catfish and baitfish. We raise Channel Catfish, Golden Shiners, Fathead Minnows, and Bluegill. Raising catfish and minnows aligns well with my background and undergraduate education at Brockport. Detailed observation skills and timely decision making are necessary in the aquaculture business.” (below photo of catfish feeding)*



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**Adventures in post-academia:  
Holly Jackson's (BS, 2017)  
report from "the real world"**

(Concentration in Terrestrial and Aquatic Ecology)

*"I am currently living on Rota, Commonwealth of the Northern Marianas Islands. I'm working on the Mariana Crow Recovery Project, a critically endangered endemic species that only exists on this island, with a population of about 170 individuals. I am helping with a captive rear and release program doing husbandry and conditioning the birds for the wild. After the release I will be doing radio telemetry tracking in the field and color band resighting to monitor the progress of our release cohort."*

(Right Photo—H. Jackson wearing a crow mask)



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**Brian Richardson** is a 2017 Brockport alumni. He graduated with a B.S. Degree in Environmental Science, with a concentration in Terrestrial Ecology and Biology.

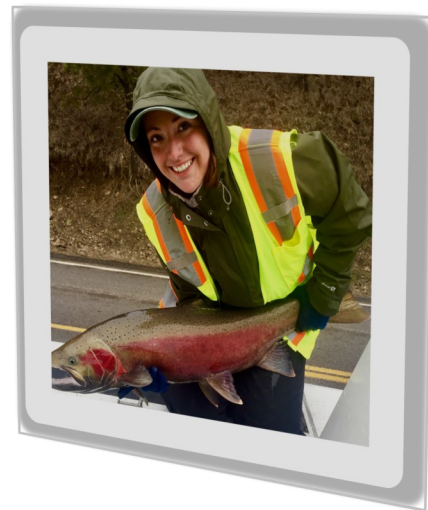
*"I am currently a construction supervisor at Applied Ecological Services, an environmental restoration and consulting company. One of the best things that I love about my job is that I get to make a difference in our world each and everyday. We help to restore degraded habitat by treating and removing invasive species that threaten native biodiversity. We also plant native species, and aid in preventing erosion control just to name a few more things."*

**Jeremy Kraus**— *"I am currently working at a USGS Great Lakes Science Center based out of Cortland, NY (Tunison)."*

"We are working on native species restoration projects in Lake Ontario. I am specifically researching homing ability of cisco to amino acid solutions in order to understand if we can attract adults back to "natal" embayments along Lake Ontario. Another big study we have going on is in collaboration with other Federal and State agencies and Cornell University, tracking fish with acoustic telemetry in Keuka Lake. We hope to learn more about cisco habits and ultimately their fate by using Keuka as 'mesocosm' of Lake Ontario."

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**Sage Hallenbeck**— "After graduating undergrad in May 2015, I did a semester of graduate classes and decided that going into the workforce was a better option for me than pursuing a M.S. This led me to getting a job in May of 2016 for Idaho Department of Fish and Game working as a 5-month seasonal fisheries bioaide for Clearwater Fish Hatchery. I packed up and moved all of my belongings out West, as I had an inkling I would fall in love with the area and the lifestyle. I started my bioaide job trapping adult Chinook salmon at a remote site 3 hours away from the hatchery and had a once in a lifetime experience. A position opened up at the same hatchery as a year-round benefited Fisheries Technician and my supervisor offered me the job 3 months into my seasonal employment. I took the offer and started my new position at the hatchery in November 2016. I was a fish tech up until August of 2018, when I was promoted to a permanent employee with IDFG as a fish culturist. I now live on station at Clearwater Fish Hatchery and am in charge of rearing 1 million Steelhead trout from egg to smolt for release into the South Fork of the Clearwater River. The Clearwater Fish Hatchery raises about 1 million steelhead, and 2.4 million Chinook salmon to their release in the spring. We are the biggest state-run hatchery in Idaho. I am so glad I moved to Idaho (we don't just grow potatoes here!) and I encourage anyone who is looking to move westward and have a career in the outdoors to look at jobs out here. My experiences at Brockport have given me valuable insight and I would not be in such a successful position in my field without the wonderful professors and peers who guided me to this path and pushed me to go the extra mile."





# All Around Alumni

**KEVIN BEREND**—B.S. May 2014, Combined Terrestrial/Aquatic, M.S. March 2018 Environmental Scientist, Tetra Tech, Buffalo, NY.

*"I work as an ecological support technician for consulting services on energy projects in NY and PA. I conduct field surveys of threatened and endangered species, invasive species, wetland delineations, and assist with documentation and reporting to clients and state/federal agencies."*

**LEIA HAYWARD**—B.S. May 2018 (Concentration in Terrestrial Ecology)

Leia recently accepted a bear tech position in Yellowstone.

**JULIA VIGIL**—B.S. May 2018

Julia received a summer internship with the Illinois Natural History Survey.

**MATT PENBERTHY**— B.S. in Environmental Science (Concentrated in Terrestrial Ecology; minored in International Studies and Environmental Studies), 2018

*"I am currently based in Washington, D.C. for an internship with the European Parliament Liaison Office in Washington, EPLO for short. I help to foster the US-EU transatlantic relationship specifically on environmental issues, covering mainly global warming/climate change topics, ocean policies, and energy security. My responsibilities include attending think tank events, senate/house hearings, etc. and writing briefs on these events. I also analyze policies and perform general research on the topics mentioned. Essentially, my responsibility is to inform the EU Parliament Members (under the oversight of my advisor) about what is going on in the US regarding the topics mentioned, to help them make better, more informed decisions on environmental issues."*

**JEREMY PIKE**—B.S. April 2017 (Concentration in Aquatic Ecology)

Currently working as a Fish Biologist for the Nez Perce Tribe/U.S. Fish and Wildlife Service at DNFH.

**ARIEL LEAHY**—B.S. May 2017 (Concentration in Aquatic Ecology)

*"I wanted to let you all know that I was just accepted to West Chester University! I am beyond elated right now and just wanted to thank you for everything you have done for me these past five years in helping me become the student I am and for being a crucial factor in getting me to this point. I'll be sure to keep you up to date on my studies."*

*"Below is a cool aerial drone photo from 2017 that shows Dworshak Complex. Dworshak Dam is in the background of the photo, with DNFH in the foreground on the right. DNFH is the largest steelhead trout hatchery in the world (2.3 million smolts/year)! We*



*also raise Chinook (1.65 million) and Coho (500k) salmon. The hatchery sits at the confluence of the North Fork and mainstem Clearwater Rivers in beautiful Orofino, ID."*

**Dr. Michael Chislock's** Limnology Lab completed their first summer of research at Brockport.

New graduate students **Tammy Bleier** and **Paige Buchholz** have begun collecting pilot data for their Master's theses. Tammy founded Plastic Lakes Project (PLP) during summer 2018 to raise awareness of plastic pollution in the Rochester community and Great Lakes region.

Rising sophomore **Lillian Denecke** successfully completed her first limnocorral experiment at the campus pond facility and will be busy analyzing samples and enumerating plankton this fall/winter!

Senior **Dan Beers** is continuing his monitoring efforts on the Genesee River, which have demonstrated the importance of land use in small tributaries to water quality and dynamics in the Genesee.

Both Lillian and Dan presented the results of their summer research at SUNY-Fredonia's annual research symposium, in addition to the fall SURP symposium at Brockport. Tammy and Michael successfully completed 2018 monitoring efforts of water quality associated with construction of the barrier beach and restoration efforts at Braddock Bay. Paige and Michael finished their monthly monitoring of internal phosphorus loading and plankton community composition in Conesus and Silver Lakes. They will both be busy quantifying cyanobacterial biomass via phycocyanin analysis and microscopy during the fall/winter.

**CHISLOCKS LAB**



### Coursework in Limnology, Water Quality, and Aquatic Toxicology at Brockport:

Undergraduate and graduate students are gaining experience in the field and in the lab while studying lakes, plankton communities (including invasive species such as the spiny waterflea, *Bythotrephes*), and factors associated with harmful algal blooms in the Finger Lakes and Lake Ontario region. Students have collected and analyzed water samples from Silver Lake, Lake Ontario, Conesus Lake, and the Erie Canal.



### Undergraduate Research in Limnology at Brockport

**Lillian Denecke** (bottom left) and **Dan Beers** (bottom right photo), both Summer Undergraduate Research Program (SURP) students, completed research projects in 2018. The entire lab participated in building a small dock for field experiments at the campus pond facility.

Lillian's experiment examined the consequences of herbivore evolution for harmful algal blooms (HABs). Dan's field survey with Dr. Courtney McDaniel and Michael Chislock examined linkages between land use practices, water quality, and lotic macroinvertebrates (including emerging adult insects!) on the Genesee River. Both students presented posters at SUNY-Fredonia's Undergraduate Summer Research Symposium on August 21, 2018.





**Dr. Courtney McDaniel**

The Aquatic Invertebrate Ecology lab has been busy this year! The Great Lakes Coastal Wetland Program wrapped up another successful field season this past summer, collecting 96 invertebrate samples from Lake Ontario coastal wetlands. Three students (**Joe Knight**, an undergraduate researcher; **Payton Hanssen**, a recent graduate; and **Alex Silva**, a graduate researcher) are currently in the process of organizing and identifying the thousands (!) of invertebrates collected. The goal of this project is to monitor long-term trends in coastal wetland habitats throughout the Great Lakes region.

The lab also has a new graduate student, **Madelynn Edwards**, who comes to us from SUNY Oswego. Madelynn has experience in both terrestrial and aquatic entomology. Her research at SUNY Brockport will focus on agricultural impacts on stream invertebrate communities in western New York. She plans on utilizing growth of filamentous bacteria on these invertebrates to determine nutrient loading in stream habitats. Welcome, Madelynn!!

And last, but not least, we also have a new undergraduate student working with us – **Jordan Brown**. Jordan is a first-year Environmental Science and Ecology student who is interested in a variety of topics, from entomology to mycology. She is currently working on field samples collected this past summer from a wetland complex along the St. Lawrence River that is managed for waterfowl and fish spawning habitat. The ultimate goal of this project is to determine if the invertebrate community provides a sufficient food base for waterfowl and fish in the managed wetlands. Welcome, Jordan!!



*(Above photo) Dr. McDaniel collecting invertebrates from Wilson Hill Wildlife Management Area (St. Lawrence River watershed).*



*(Right photo) Madelynn sampling for invertebrates in Northrup Creek wetland*



Graduate student **Jeremy Brady** and undergraduate student **Ben Hoy** spent this summer collecting data at Rush Oak Openings, an oak savanna. This globally threatened ecosystem is maintained by fire and contains a variety of native grasses and fire-tolerant forbs. Since oak savanna plant communities depend on frequent fires, they can change following fire suppression. Ben and Jeremy measured the effect of litter accumulation on abiotic and biotic variables in experimental plots. While collecting community data they found a small population of the state threatened plant Culver's root (*Veronicastrum virginicum*) on site. Both Ben and Jeremy work with **Dr. Amatangelo** in the plant ecology lab.

Graduate student, **Michelle Gianvecchio**, and undergraduate student, **Zac Falconer**, presented independent research at the NYS Ornithological Association (NYSOA) meeting held in Rochester, N.Y. (October 2018)

**Dan Beers, Matt Beers, Lillian Denecke, Jenna Malagisi, and Josh Noonan** presented their research at the 45th Annual Fall Scientific Paper Session of the Rochester Academy of Science held at SUNY Geneseo. (November 2018)



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**THE RESEARCH FOUNDATION**

*Dr. James Haynes received \$153,406 from the Niagara County Soil and Water Conservation District to conduct a Beneficial Use Impairment study on American Mink in the Eighteen Mile Creek Area of Concern.*

**Dr. Haynes'** study will establish mink presence or absence along the shoreline of Eighteen Mile Creek; analyze habitat quality for mink; determine concentrations of polychlorinated biphenyls, dioxins/furans and mercury in the tissues of mink and their prey; and use a bioaccumulation model to determine whether mink health is at risk if they consume prey from the study area. He will be assisted by graduate students **Paige Buchholz** and **Madeline Edwards**, and undergraduates. The award will be administered by The Research Foundation for SUNY at The College at Brockport.

*Dr. Doug Wilcox, received funding from NYS Department of Environmental Conservation to conduct post-restoration studies for Adaptive Management in Braddock Bay.*

**Dr. Wilcox's** NYS Department of Environmental Conservation funding is to study the recent restoration of Braddock Bay to assess if reconstruction altering the physical and hydrologic conditions improved the quantity and quality of fish and wildlife habitat as was intended. Dr. Wilcox's study extends the post-reconstruction monitoring from 2 to 6 years, providing a better overall assessment of structural and functional ecosystem responses within Braddock Bay. Dr. Wilcox will be working with other professionals, graduate students, and undergraduate students on this study. The award will be administered by The Research Foundation for SUNY at The College at Brockport.

*Andie Graham navigating the channel at the Buttonwood Creek fen.*



*Joe Knight & Payton Hanssen with a northern pike (Esox Lucius)*

# Field work at its best...



*Top Left Photo: Invasive tubenose goby (*Proterorhinus semilunaris*) from Waupoos Creek, ON*

*Top Right Photo: Setting fyke nets for fish sampling at Canadian sites (**Payton Hanssen & Paige Buchholz**)*

*Bottom Left Photo: **Cassie Wolfanger** with a common snapping turtle (*Chelydra serpentina*)*

*Bottom Right Photo: Drone photo of fish sampling at Braddock Bay*



Dr. Rachel Schultz with graduate students Courtney Scoles and Alex Silva, checking out the barrier beach restoration at Braddock Bay Wildlife Management Area.