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11-2017

Newsletter Fall 2017: Environmental Science & Ecology

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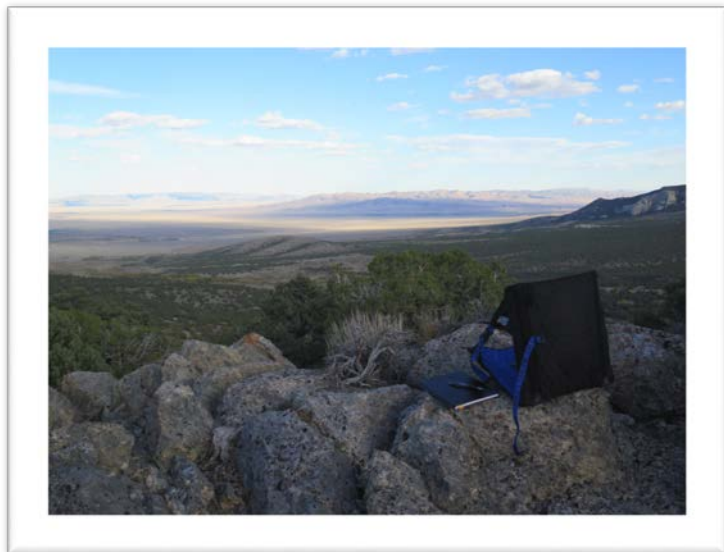
Rinchar, Jacques, "Newsletter Fall 2017: Environmental Science & Ecology" (2017). *Environmental Science & Ecology Department Newsletters*. 18.

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FALL 2017 NEWSLETTER

ENVIRONMENTAL SCIENCE & ECOLOGY



LET'S TALK...

INTERIM CHAIRPERSON, DR. JACQUES RINCHARD

Welcome to another issue of our Environmental Science & Ecology Newsletter. I hope you all had a fantastic summer, are well rested, and feeling very accomplished in whatever you had hoped to accomplish. As you are probably aware, Dr. Christopher Norment is on sabbatical this academic year, and I am now understanding that I have large shoes to fill. Note that you can follow his sabbatical journey through his blog at <http://christophernorment.weebly.com/blog>. Speaking of Dr. Norment, please join me in congratulating him on his SUNY Chancellor Award for Excellence in Scholarship and Creative Activity that he received last spring!

This new academic year brings two new Assistant Professors to our department – Dr. Courtney McDaniel and Dr. Michael Chislock. Both bring years of research experience in the field of aquatic invertebrate ecology and limnology, respectively. We are also welcoming Visiting Assistant Professor Dr. Nathan Kleist, who is teaching classes for Dr. Norment and me, as my teaching load is reduced during my Interim Chair position.

FACULTY & STAFF

Dr. Kathryn Amatangelo, Assistant Professor

Dr. Michael Chislock, Assistant Professor

Mr. Matthew Futia, Adjunct Lecturer

Ms. Andie Graham, Instructional Support Technician

Dr. Nathan Kleist, Visiting Assistant Professor

Ms. Tammy Jo Manz, Secretary

Dr. Courtney McDaniel, Assistant Professor

Dr. Christopher Norment, Professor & Chair

Ms. Norma Polizzi, Esq., Adjunct Lecturer

Dr. Jacques Rinchard, Associate Professor & Interim Chair

Dr. Douglas Wilcox, Professor of Wetland Science

Our undergraduate and graduate programs are thriving and have experienced steady enrollments over recent years. As you will see in this newsletter, our Faculty and Staff continue their high level of activity and productivity in many research areas that bring recognition to them and the Department. Our students are also making major contributions to the research and teaching missions of the Department. Finally, we are proud of our Alumni and their accomplishments and encourage many more updates to share with you in our department newsletters.



DR. NORMENT'S EXCELLENT SABBATICAL ADVENTURES

Dr. Norment started his sabbatical at Great Basin National Park in Nevada, where he was Writer in Residence during September. While there, he spent time crawling through caves and banding Mexican free-tailed bats with Park Service biologists, wandering the canyons and high peaks of the Snake Range, visiting with folks in local rural communities, and (of course) writing. He enjoyed being in the country that was very different from that of western New York, with views that stretch for almost 100 miles, 5 inches of precipitation per year, and a population density of 1.1 people per square mile (versus 1,100/square mile in Monroe County!).

At the start of October, he made his way to Owens Valley in California, where he began his US Fish and Wildlife Service-sponsored research project on the ecology and distribution of the Inyo Mountains salamander, which is proposed for listing under the US Endangered Species Act. His project involves scrambling up and into remote desert canyons in search of one of only two species of desert salamanders in the world, which seems pretty amazing. He plans to remain in the Owens Valley area through November, before making his way back to Brockport for a winter of writing and enjoying gray and snowy weather.

Dr. Norment sends his best to everyone in the Department of Environmental Science & Ecology, along with hopes for a successful semester. He's been having a wonderful time out West, but believe it or not, he misses folks back in Lennon Hall.

BROCKPORT WETLANDS TEAM

The summer of 2017 was a successful one for the Brockport wetlands team, which monitored several local restoration projects under the supervision of **Dr. Douglas Wilcox**. One new project this year was the post-restoration sampling of the U.S. Fish and Wildlife Service project at Buck Pond, Long Pond, and Salmon Creek. The crew, led by Research Scientist **John Bateman**, examined how successful some of the techniques were at increasing habitat diversity. Some of the methods included channeling and potholing, creation of shrub- and emergent-covered islands, and seeding of diverse emergent mixtures. One of the highlights of this project was the success of the cattail treatment islands, which were proposed by former graduate student Brad Mudrzynski.

Graduate students **Alex Silva** and **Cassie Wolfanger** continued their post-restoration monitoring efforts at the U.S. Army Corps of Engineers restoration project at Braddock Bay. Alex's work included plant community and invasive species establishment surveys, while Cassie examined how effective the restoration was at improving water quality within the wetland. Early signs of habitat improvement include some rare and cryptic bird species observed in the restored areas, and the presence of young-of-year northern pike in the newly created potholes, which were sampled during the spring and summer by the fish crew of graduate student **Matt Futia**, and undergraduate students **Joe Knight** and **Chris Diguardi**. The cattail control treatment used was adapted from methods developed by former graduate students **Alex Czakya** and **Katie Buckler**.

Year two of the fen restoration project at Buttonwood Creek has been completed, and nearly ten acres had cattail growth cut and removed by the crew of undergraduates **Robert Tyler**, **Nate Jones**, **Zac Falconer**, and **R.J. Sciarrone**. Graduate student **Eli Polzer** continued her macrofossil identification from a peat core collected in 2016 and has identified several community shifts throughout the ~1900-year history of the fen.

ENVIRONMENTAL EVENTS FOR EVERYONE

BROCKPORT WOODS CLEAN UP DAY



Environmental Science & Ecology organized a Brockport Woods cleanup with the help of Brockport ROTC, Brockport Softball, and campus Maintenance. Under the direction of Assistant Professor **Kathryn Amatangelo** and graduate student **Kira Broz**, about forty students spent Saturday, September 23 cleaning up the woods.

The Brockport Woods is a second-growth forest on Brockport's campus with a history of research, recreation, and farming. On this service day, we focused our attention on three main dump/wreckage sites, taking out two dumpsters full of glass, concrete, plastic, and barbed wire. Much of the Brockport Woods was designated a campus Natural Area in 2015, which will protect the area from development. Future service days will include invasive species removal and native plant restoration.

29TH ANNUAL CONSERVATION FIELD DAYS EVENT AT ELLISON PARK IN ROCHESTER, N.Y.

STAFF AND GRADUATE STUDENTS PARTICIPATED IN PUBLIC OUTREACH & EDUCATION EVENT.

Andie Graham, Instructional Support and graduate students **Kira Broz**, **Alex Silva**, **Tiffany Clay**, **Cassie Wolfanger**, and **Kevin Berend** participated in the 29th Annual Conservation Field Days at Ellison Park in Rochester. More than 1,378 elementary students from 16 different school within Monroe County were in attendance. The goal of this event is to teach students about important environmental issues while having fun in one of the most beautiful parks in the area. This is the third consecutive year that the Department of Environmental Science & Ecology has participated.

ECOSYSTEM FIELD STUDIES 2017-2018 WINTER BREAK FIELD COURSE ANNOUNCEMENT-CARIBBEAN ECOSYSTEM FIELD STUDIES.

Along the safe and beautiful Riviera Maya Coast of Mexico, take your education beyond the classroom this winter-break with an exciting and diverse group of undergrads!

[Learn more and apply at EcoFS.org](http://EcoFS.org)

Undergraduate, **Eleanor Moore** participated last summer to the Caribbean class...

"The course was incredible, and you learn a lot about field methods in just a few weeks. You also get the opportunity to swim in cenotes, explore several dive sites with robust & healthy coral reefs, and spend nearly every day in the ocean. It can be daunting to travel somewhere on your own, but it's one of the best things I've done for myself – it builds confidence, and you will definitely make friends quickly!"

CONTACT US!

You are always welcome to email **Tammy Jo Manz**, Environmental Science & Ecology Secretary at tmanz@brockport.edu if you would like to submit interesting news about your accomplishments, such as awards, research, projects, or field work.

If you have a photo please include that as well.



INTRODUCING NEW FACULTY

ASSISTANT PROFESSOR, DR. MICHAEL CHISLOCK

Michael Chislock is originally from central Pennsylvania (Huntingdon, PA) and also lived in Auburn, AL. He is an avid fly-and float-fisherman and enjoys exploring new streams and rivers while chasing steelhead. Michael is excited to be a new resident of the village of Spencerport and looks forward to exploring the area with his two dogs.

Michael graduated from Clarion University (northwestern PA) in 2008 with a B.S. in Ecology and a minor in chemistry. As an undergraduate, Michael spent 4 years as a research intern at the Pymatuning Laboratory of Ecology studying phenotypic plasticity, inducible defenses, and eutrophication in the Lake Erie region. Michael earned his Ph.D. from Auburn University (Auburn, AL) in fisheries, aquaculture, and aquatic sciences where his research merged eco-evolutionary interactions with limnology and aquaculture to manage cyanobacterial blooms and associated toxins using ecological principles. Prior to starting at Brockport, Michael focused on amphibian communities, disease ecology, and ecotoxicology as a postdoctoral fellow at Purdue University (West Lafayette, IN). As a new faculty member at the College at Brockport, Michael looks forward to investigating a broad range of questions related to environmental science, ecology, and conservation of aquatic systems with undergraduate and graduate students.



VISITING ASSISTANT PROFESSOR, DR. NATHAN KLEIST

Nathan was born in northwestern WI, where he completed his bachelor's degree at UW-Stout. As a first-generation college student, his life was profoundly changed by the mentorship and excellence in education provided by a small regional university. After undergrad, he hightailed it for the Rocky Mountains and has spent the past ten years working as a teacher, researcher, and conservationist throughout Colorado and New Mexico. This past December, he successfully defended his dissertation research and received a PhD in Ecology from the University of Colorado-Boulder.

Nathan's dissertation work was based on an original long-term, large-scale study of avian habitat use in piñon-juniper forest leased to the private oil companies by the New Mexico BLM. This landscape is spatially complex and affected by human impacts like industrial noise pollution, forest fragmentation, and roadways. He leveraged the heterogeneity of this habitat and included these data in models with life history, individual physiology, and fitness measures to create a highly integrated study of the effects of anthropogenic noise on wild birds. Although he worked with birds for his dissertation, he prides himself on being a well-rounded naturalist and educator and will be teaching Mammalogy, Animal Behavior, and Ornithology as a visiting Assistant Professor here at SUNY Brockport.



ASSISTANT PROFESSOR, DR. COURTNEY MCDANIEL

Dr. Courtney McDaniel is originally from Georgia and grew up spending much of her free time outdoors. Her desire for the small college, liberal arts experience took her to Centre College in Kentucky for her undergraduate studies. It was there that she took her first aquatic ecology class and fell in love with the amazing, hidden diversity found just under the water's surface. She continued her education at Auburn University in Alabama under the direction of Dr. George Folkerts, expanding her research interests into wetlands and, in particular, wetland plants and insects.

CONTINUATION - ASSISTANT PROFESSOR, DR. COURTNEY MC DANIEL

Dr. McDaniel completed her Master's degree and spent three years working in conservation and land management at Callaway Gardens (GA) and the U.S. Army base at Fort Gordon (GA). Applying ecological research to on-the-ground issues gave her a new perspective on ways in which academic research can be used to improve the natural environment, as well as ways in which land-management practices can inform research.

She returned to school (yet again) to obtain her Ph.D. at the University of Georgia in the Department of Entomology under the direction of Dr. Darold Batzer. Dr. McDaniel focused her dissertation research on human impacts of large-scale dams on insect communities in rivers and floodplains. In addition to her interest in pursuing research on human impacts in aquatic environments, she quickly realized that she greatly missed another aspect of the academic environment while in the "real world" – teaching. At UGA, she had the opportunity to teach a variety of laboratory courses, including Principles of Biology, Aquatic Entomology, and Medical Entomology.

The combination of teaching and research at SUNY Brockport is ideal based on Dr. McDaniel's interests. She is looking forward to teaching Ecology, Global Environmental Issues, and Stream Ecology this year, as well as introducing students to the fascinating world of aquatic invertebrate research in western New York (and beyond).

ENVIRONMENTAL LAW PROFESSOR ATTENDS CLIMATE REALITY TRAINING

Adjunct professor, environmental attorney, **Norma A. Polizzi**, participated with 1400 other environmental activists from all over the world in Vice President Al Gore's Climate Reality Training in Pittsburgh from October 10 to 17.

The purpose of the training was to provide critical change information and to inspire the trainees to communicate this critical issue to the public, propose solutions, and engage with deniers.

Al Gore gave a two-hour presentation on the first day describing the climate crisis and its solutions. In addition to the Vice President, scientists and professors from Melbourne, Penn State, University of Michigan, Rutgers, and Carnegie Institute for Science spoke and participated in question-and-answer sessions with participants.

Each of the participants, including Professor Polizzi, will be conducting informational meetings at the college and in the community at large to ensure that the public has valid scientific information and that the reality of climate change is communicated to the world at large.

If you are interested in learning more about this amazing event, please contact her at npolizzi@frontiernet.net.

WELCOME ALUMNI, RICHARD W. SMITH AND STELLA C. WOODWARD

Richard Smith and Stella Woodward have received new appointments as Research Scholars with the Department of Environmental Science & Ecology and the Department of Earth Sciences at SUNY Brockport. Rick and Stella are both SUNY Brockport alumni and have run their own aquatic sciences research business, Global Aquatic LLC, for the last three years. At Brockport, they plan to collaborate with faculty on research projects, develop analytical capabilities, and provide research opportunities for students.



Rick and Stella are currently working on proposals to the National Science Foundation (NSF) to obtain funding for large projects supporting undergraduate research, collaborating with faculty on some existing projects, and setting up lab B-33 for the characterization of organic material in soils and sediments. Their analyses will focus on plant-derived compounds, including hydrocarbons and lignin, which can trace the evolution of terrestrially-derived organic matter as it cycles through soils, surface water, and eventually to aquatic sediments. Let them know if you have a project in mind that can utilize their research interests! You can contact Rick at rwsmith@brockport.edu and Stella at swoodward@brockport.edu.

ACTIVE ALUMNI!

TYLER SABO, BS '16



(Pictured to the left) At Johnson Controls, I am a Systems Technician in their Building Efficiency Division. I load building automation and efficiency software into HVAC control networks for commercial construction projects. I then commission and troubleshoot the entirety of the network. I work alongside engineers that develop building efficiency systems all over the country (even the Empire State Building!) that save millions of dollars and huge amounts of energy. My current position is a very good fit for me because it caters to my interests in science/tech, sustainability, and good old-fashioned hard work. There is a lot of engineering that goes into what I do (more accurately, what my co-workers do, and what I aim to do in a few years). An example would be designing a heat-exchanger system that recycles exhausted BTUs in a building to preheat outside air coming into their HVAC system to reduce energy consumption. It's not an industry I expected to be part of, but so far, it is treating me

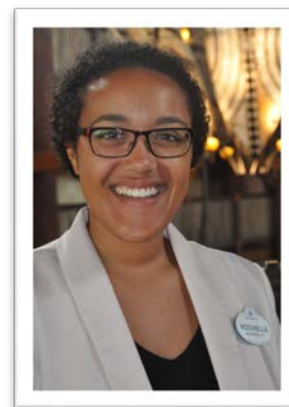
well. It goes to show that environmental science education can take you in so many directions. At ALS, I was an analyst in the Wet Chemistry department. I performed quantitative analyses on water and soil samples. I specialized in analyzing for ammonia via Ion Chromatography, but I also tested for phenols, TKN, BOD, alkalinity, and total phosphorus using various EPA-approved methods.

TANNER SQUIRES, BS '15

Has accepted a full-time supervising position at Macauley Salmon Hatchery (Douglas Island Pink and Chum) in Juneau, AK.

ROCHELLE STRASSNER, BS '15

(Pictured to the right) After graduating from Brockport, I participated in an internship through the Walt Disney World Corporation as an Education Presenter at Disney's Animal Kingdom. In this position, I facilitated educational programs that connected park guests to animals, conservation, culture, and the natural world through engaging, family-focused activities. Following that, I was selected for another internship as a Conservation Education Operations Intern Coordinator at the Disney's Animal Kingdom Lodge. In this position, I supported a front-line team of African cultural representatives who facilitate activities with resort guests to educate them about conservation and African culture. From this most recent internship opportunity, I was lucky enough to be offered a full-time position as an Education Coordinator at Disney's Animal Kingdom Lodge, which I accepted!



KRISTINE CARLSON, BS '12

Just started at the NYSDEC in June in the Division of Environmental Permits.

"My personal advice to those currently trying to get into the Department is: take the PCO when it is offered and prep as much as possible-getting a high score is important! Sign up for DEC job announcements and apply to those jobs that you qualify for. Respond to the canvass letter if you get one, but if not, you can still send in a traditional application per the job announcement. Truly consider any canvass letters, interviews, or job offers you may receive. Sometimes when we have our careers all planned out, we miss unexpected opportunities!"

LAKE ONTARIO COASTAL WETLAND MONITORING AND RECORD HIGH WATER LEVELS – SUMMER 2017.

SUBMITTED BY: GRADUATE ASSISTANT, SCOTT WARD

Lake Ontario was bright in the spotlights of the media this year, perhaps more than any years prior due to yard-flooding waves, unprecedented beach erosion, and property damage in the millions. With an unusually wet winter and additional factors, by mid-June, Lake Ontario out-flow reached a rate of 10,400 cubic meters per second from The St. Lawrence Seaway (which is incredible to imagine). Residents and politicians were both stirring up the debate, bringing into question the validity of the science behind Plan 2014. For me, I just simply wanted to sample wetland plants all summer. So, it was, that another year of sampling for the Coastal Wetland Monitoring Program began, with its fair share of challenges for the water-quality, fish, bird, and plant crew. This included road and boat-launch closings, water depths too high for fish and water quality sampling, and wading through waist high waters across cattail transects. While the problems associated with the water levels seemed endless for ecologists and humans alike, one thing I couldn't help but notice (big surprise) was how the plants responded.

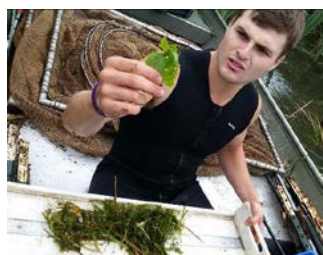
The shrub zones seemed most impacted by shoreline flooding, in which major swathes of invasive honeysuckle were flooded out on the shoreline margins. The emergent species seemed almost unchanged by water-level fluctuations. Just last year, these same plants were nearly exposed in some areas, and this year were entirely inundated.

*Left: Scott Ward holding a plucked stem of pickerelweed (*Pontederia cordata*), with the actual leaves just barely visible above the water surface despite having to emerge past almost 1.5 meters of water. (Picture taken by Megan Casler in South Colwell Pond).*



Wild rice (*Zizania palustris*), water willow (*Justicia americana*), and swamp loosestrife (*Decodon verticillatus*) were a few other species that we observed still thriving in up to two meters of water in some cases. All in all, the plant crew was able to sample almost every site on this year's list of to-do's. The fish and water quality crews did not experience the same luck, but that didn't stop the crew from appreciating the taxa that call Lake Ontario home. Below are a few pictures of what we saw along the way, and despite the issues, I think the crew had a lot of fun this year wetland-hopping. This year's crew included **Megan Casler, Scott Ward, Matt Futia, Chris DiGuardi, Jimmy Ireland, Joe Knight, Tiffany King, and James Ianni**. Many thanks to Brad Mudrzyński for years of work on the project and John Bateman for smoothly transitioning into new project leader.

*Lower Left: Magnificent bryozoan (*Pectinatella magnifica*), a colonial organism composed of tiny filter-feeding aquatic invertebrates (seen in South Colwell Pond). Matt Futia, fish-catcher by day, looks in puzzlement at a leaf that mistakenly made it into a fyke net.*



*Lower Right: An algae-encrusted Musk turtle (*Sternotherus odoratus*) from Canada was lucky enough to make it into one of the fish nets, Right: Chris DiGuardi smiles for the camera with an American bullfrog (*Lithobates catesbeianus*) just seconds before kissing it.*



ENVIRONMENTAL SCIENCE STUDENT AND FACULTY HIGHLIGHTS



Graduate student, **Kevin Berend** enjoyed his summer field work studying the effects of snow and temperature on the phenology, species composition, and traits of alpine snowbank plants on Mt. Washington, NH.

Graduate Student, **Tiffany Clay** presented her thesis research "Influence of the timing of mowing wetland berms on pollinator plants used by monarch butterflies," at the New York Waterfowl and Wetlands Network Student Symposium, at the Montezuma Audubon Center, Savannah, NY on Friday, Sept. 8, 2017.

Alpena FWCO and USGS Team Up at Larval Fish ID Workshop - Adjunct, **Matt Futia** attended a larval fish ID workshop at the Lower Great Lakes Fish and Wildlife Conservation Office in Basom, N.Y. The workshop covered a wide range of fish early life history topics focused on sampling and the identification of eggs and larvae. Participants learned about a variety of larval fish sampling techniques, and there was a discussion about the pros and cons of using various gear types in different habitats.

Undergraduate student, **Christopher Maier** enjoyed a summer internship with the NYSDEC. He experienced Freshwater Mussel Surveys along with other fisheries projects.

"We need the tonic of wildness...At the same time that we are earnest to explore and learn all things, we require that all things be mysterious and unexplorable, that land and sea be indefinitely wild, unsurveyed and unfathomed by us because unfathomable, we can never have enough of nature."
— Henry David Thoreau



Research publications

Hoover, G.M., **Chislock, M.F.**, Tornabene, B.J., Guffey, S.C., Choi, Y.J., De Perre, C., Hoverman, J.T., Lee, L.S., and Sepulveda, M.S. 2017. Uptake and depuration of four per/polyfluoroalkyl substances (PFASS) in northern leopard frog (*Rana pipiens*) tadpoles. *Environmental Science and Technology Letters*: 4(10), 399-403.

Drew JA, **Amatangelo KL** (2017) Community assembly of coral reef fishes along the Melanesian biodiversity gradient. *PLoS ONE*12(10): e0186123. <https://doi.org/10.1371/journal.pone.0186123>

Wilcox, D. A. 2017. History and role of the journal *Wetlands* in developing the field of wetland science. *Wetland Science and Practice* 34:72-75.

Uzarski, D.G., V.J. Brady, M.J. Cooper, **D.A. Wilcox**, D.A. Albert, R.P. Axler, P. Bostwick, T.N. Brown, J.H. Ciborowski, N.P. Danz, J.P. Gathman, T.M. Gehring, G.P. Grabas, A. Garwood, R.W. Howe, L.B. Johnson, G.A. Lamberti, A.H. Moerke, B. A. Murry, G.J. Niemi, **C.J. Normant**, C.R. Ruetz, A.D. Steinman, D.C. Tozer, R. Wheeler, T.K. O'Donnell, and J.P. Schneider. 2017. Standardized measures of coastal wetland condition: implementation at a Laurentian Great Lakes basin-wide scale. *Wetlands* 37:15-32.

Happel, A., **Patridge, R.**, Walsh, M. and **Rinchar, J.**, 2017. Assessing diet compositions of Lake Ontario predators using fatty acid profiles of prey fishes. *Journal of Great Lakes Research*, 43, 838-845.

Happel, A., Czesny, S., **Rinchar, J.** and Hanson, D.S., 2017. Data pre-treatment and choice of resemblance metric affect how fatty acid profiles depict know dietary origins. *Ecological Research*, 32, 757-767.

Lichti, D.A., **Rinchar, J.** and Kimmel, D.G., 2017. Changes in zooplankton community structure and fatty acid profiles at the freshwater/saltwater interface of the Chowan River, NC. *Peer. J*, 5, e3667.

Futia, M. and **Rinchar, J.**, 2017. Status of Thiamine Deficiency Complex in Lake Ontario salmonines. 147th Annual Meeting of the American Fisheries Society, Tampa (Florida, USA), August 20-24, 2017.

ENVIRONMENTAL SCIENCE STUDENT AND FACULTY HIGHLIGHTS

Oral Presentations

- Rinchar, J., Happel, A., Maier, C., Farese, N., Czesny, S., 2017. Fatty acids differentiate between consumed diets despite variation within prey species' profiles. 147th Annual Meeting of the American Fisheries Society, Tampa (Florida, USA), August 20-24, 2017.*
- Leonhardt, B., Hook, T.O., Happel, A., Czesny, S., Turschak, B., Bootsma, H.A., Rinchar, J., Kornis, M.S., and Bronte, C., 2017. Prey species- and size-specific consumption by Lake Michigan piscivores. 147th Annual Meeting of the American Fisheries Society, Tampa (Florida, USA), August 20-24, 2017.*
- Lichtj, D., Rinchar, J., and Kimmel, D., 2017. Are all rivers created equal? Determining how food web dynamics affect fish nursery habitat. 147th Annual Meeting of the American Fisheries Society, Tampa (Florida, USA), August 20-24, 2017.*
- Futia, M. and Rinchar, J., 2017. Status of thiamine in lake trout and prey fish from Lakes Ontario. 28th Annual Meeting of the Lower Lakes Lake Trout Workshop, Basom (New York, USA), June 6-7, 2017.*
- Jonas, J.L., Bronte, C.R., Czesny, S., Happel, A., Kornis, M.S., Rinchar, J. and Schaick, S., 2017. The ever changing prey of lake trout in Lake Michigan. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Happel, A., Czesny, S., Rinchar, J., Bronte, C.R. and Kornis, M.S., 2017. Diet compositions of five salmonid species in Lake Michigan from 2015. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Riley, S.C., Evans, A.N., Rinchar, J., Zajicek, J.L., Richter, C.A., Krueger, C.C., Tillitt, D.E. and Heppell, S.A., 2017. Comparison of two trophic biomarkers to describe the diets of Great Lakes planktivorous fishes. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Happel, A., Czesny, S. and Rinchar, J., 2017. Consumption of forage fish alters fatty acids of brown trout eggs. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Irvin, K., Happel, A., Czesny, S. and Rinchar, J., 2017. Use of fatty acid signatures to explore the river continuum concept. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Heppell, S.A., Evans, A.N., Zajicek, J.L., Riley, S.C., Richter, C.A., Rinchar, J., Krueger, C.C. and Tillitt, D.E., 2017. Thiaminase activity of planktivorous fish in the Great Lakes is unrelated to their diet. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Evans, A.N., Zajicek, J.L., Riley, S.C., Richter, C.A., Rinchar, J., Krueger, C.C., Tillitt, D.E. and Heppell, S.A., 2017. Thiaminase activity of Great Lakes zooplankton is not related to zooplankton community composition. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Kozel, C.L., Rinchar, J., Evans, A.N. and Marsden, J.E., 2017. Early feeding in lake trout fry as mechanisms to ameliorate thiamine deficiency. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Tillitt, D.E., Smith, S., Nicks, D.K., Riley, S.C., Rinchar, J., Honeyfield, D.C. and Evans, A.N., 2017. Thiamine concentrations in lake trout eggs from the Great Lakes: current and past trends. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Futia, M. and Rinchar, J., 2017. Comparison between diet and thiamine deficiency complex in wild Lake Ontario salmonines. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Rinchar, J., Stratton, L., Farese, N., Fogle, B., Kraus, J. and Futia, M.H., 2017. Prevalence of thiamine deficiency in lake trout eggs from Cayuga Lake. 60th Annual Conference on Great Lakes Research, Detroit (Michigan, USA), May 15-19, 2017.*
- Wilcox, D.A. 2017. Managing Lake Ontario water levels: what happened in 2017? District 6, United States Power Squadrons, Oswego, NY. (INVITED)*
- Wilcox, D.A. 2017. Water-level fluctuations: driving force behind Great Lakes coastal wetlands and shoreline processes. Oak Orchard On-the-Lake Association, Oak Orchard, NY. (INVITED)*

ENVIRONMENTAL SCIENCE STUDENT AND FACULTY HIGHLIGHTS

Oral Presentations

Johnston, J., S. Morrison, E. Argyilan, T. Thompson, K. Lepper, S. Baedke, and **D.A. Wilcox**, 2017. Most of the modern-day coastal zone in the upper Great Lakes was established many millennia ago in the Nipissing phase. Geological Association of Canada and Mineralogical Association of Canada, Kingston, ON, Canada.

Mudrzynski, B.M., **A. Graham**, **E. Polzer**, and **D.A. Wilcox**. 2017. Cattail control and restoration of a rare fen community in Lake Ontario. New York State Wetlands Forum and Society of Wetland Scientists, North Atlantic Chapter, Suffern, NY.

Uzarski, D., V. Brady, M. Cooper, **D. Wilcox**, and A. Bozimowski, 2017. Leveraging landscape-level monitoring and assessment program for developing resilient shorelines throughout the Laurentian Great Lakes. Society of Wetland Scientists, San Juan, PR. **(INVITED)**

Wilcox, D.A. 2017. Conceptual overview of wetland performance indicator. Validating and Improving the Lake Ontario Wetland Area Model: Experts Workshop. Great Lakes Adaptive Management Program, Burlington, ON, Canada. **(INVITED)**

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