

SUNY College of Environmental Science and Forestry Waterfowl and Wetlands Program

Mid-season report

July 30, 2020

from

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On the web: <https://schummerlab.weebly.com/>

Facebook: <https://www.facebook.com/OurWaterfowl/>





2020 has certainly been challenging for all of us. Our teaching and research efforts at SUNY ESF have not been spared these difficulties.

In March, our Wetlands Conservation and Management for Wildlife course went online after Spring Break in response to COVID-19. In typical, quality ESF student form, they took these changes in stride, engaged appropriately and produced some of the finest final Wetland Conservation and Management projects I've ever seen. Similarly, we worked diligently to ensure our research continued with appropriate safety protocols. At this, the administration at SUNY ESF, staff among NYS DEC, and partners were exemplary in helping in these difficult times.

It appears that we have just begun to work through our current difficulties and a new normal is likely to emerge. We will adapt, move forward with optimism, and succeed. SUNY ESF just celebrated our 109th year with uncountable challenges met by faculty, administrative staff, and students during those many years. Our "ESF Family" has survived many challenges since 1911: the 1918 pandemic, two world wars and many world conflicts, multiple periods of financial constraint, political roadblocks, and many more. At the end of the day, we are "ESF Family" and we know that our work makes the world a better place. In our lab and classes, we teach Team Duck students that optimism with an understanding of the realities of the world is the only way forward. Now, more than ever, we need conservation-minded, positive students to become the leaders of tomorrow.

Our vision remains steadfast, to train the next generation of conservation professionals to sustain waterfowl, wetlands, other wetland-wildlife, and people.

Thank you to each and every one of you that make Team Duck at ESF a reality.

You are all "ESF Family".

Yours in conservation;

Michael L. Schummer, PhD



WHAT IS TEAM DUCK AT ESF?

More than just a name...

TEAM DUCK, is the idea that we are all in this together and undergraduate and graduate students support each other to ensure success. It also means that as **TEAM DUCK** students move from their academic to professional careers, the support continues.

TEAM DUCK has emerged as an ideology among university programs in waterfowl and wetlands across the country. Mississippi State University and Clemson University also carry this moniker proudly in their labs. Together, the greater **TEAM DUCK** family is helping ensure students are well-trained in waterfowl and wetlands science, conservation, and management. Increasingly, we see these young professionals making strong contributions in conservation; continuing the legacy of waterfowl conservation professionals and the hunter-conservationist ethic.

Laura Wallace, class of 2020, exemplified the **TEAM DUCK** mentality that carries beyond graduation with these amazing badges that she hand-stitched this summer for everyone she worked with during her tenure with **TEAM DUCK** at ESF. Laura currently works as a Biological Technician at Winous Point Marsh Conservancy in northwestern Ohio. She also seeks a quality graduate research assistantship placement and her story is listed below.

To all of you in the greater **TEAM DUCK** community, thank you. It has and continues to be an honor to work by your side.





OUR 2020 GRADUATES OF TEAM DUCK

We are proud of our TEAM DUCK graduates!

Jake Chronister – Jake completed his Master of Professional Studies in Fish and Wildlife Biology and Management in May 2020. He was instrumental in establishing a scaup banding station on Long Island in winter 2019, banding 1,141 scaup (925 lesser and 216 greater scaup) over four weeks. Jake submitted results of his research to the *Northeastern Naturalist*, entitled **“Scaup population estimates and spatial distributions of recoveries using banding data from the Atlantic Coast”**. Jake is currently employed as a Wetland Specialist with USDA-NRCS in Minnesota. Jake completed his degree with the *generous support of The Long Island Wildfowl Heritage Group and the Central New York Wildfowlers*.



Edward Farley – Ed completed his Master of Science in Fish and Wildlife Biology and Management in May 2020. Ed conducted an extensive ecological assessment of wetland management in the Montezuma Wetlands Complex of central NY as part of a long-term study by Team Duck and is the process of submitting his thesis work to the journal *Wetlands*, **“Influence of water level management on vegetation and bird use of restored wetlands in the Montezuma Wetlands Complex”**. Ed is employed by Ducks Unlimited in Syracuse, NY and recently was promoted to NY Biologist following graduation. Ed completed his degree with the *generous support of Ducks Unlimited Inc., Birds Canada, Eddie and Jo Allison Smith Foundation, Friends of Montezuma Wetlands Complex, and Eaton Birding Society. The USFWS and NYSDEC provided logistical support.*





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Aidan Flores – Aidan completed his Master of Science in Fish and Wildlife Biology and Management in May 2020. Aidan pioneered novel research on Long Island to understand if corn crops benefit waterfowl during winter in this region that has seen substantial wetland loss and difficulties in restoring these important habitats. He is currently in the process of developing two manuscripts from this thesis entitled, **“Effects of corn availability on diets, body condition and stress in American black ducks and mallards on Long Island, New York.”** Aidan’s research was generously supported by *The Long Island Wildfowl Heritage Group, the Central New York Wildfowlers, and Robins Island and Moore Charitable Foundations.*



Scott Kostka – Scott completed his Bachelors of Science w/ Honors in Environmental Biology in May 2020. Scott studied, **“Monarch Butterfly Response to Management Techniques in Restored Wetlands in the Montezuma Wetlands Complex”**. Our lab is currently collecting a second year of data on this project to prepare it for publication and to continue to inform wetland managers of technique for sustaining the diversity of animals that use wetland in the Montezuma Wetlands Complex. This project was *generously supported by Cargill Inc. by way of Ducks Unlimited, Inc.*

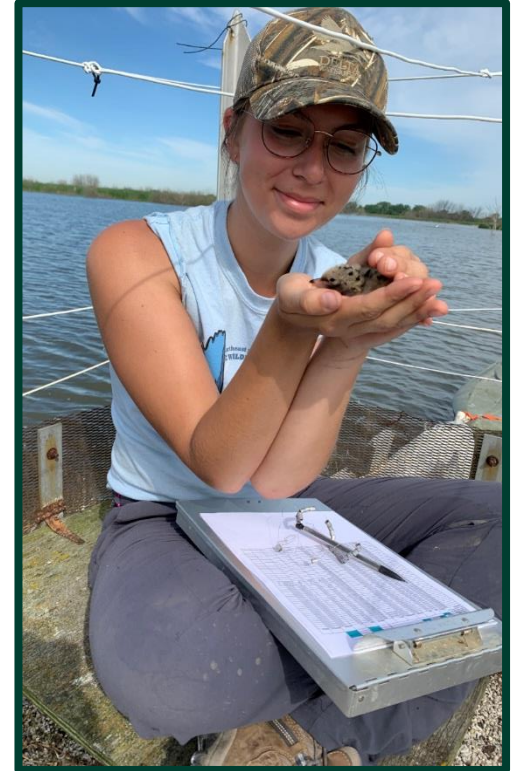




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Laura Wallace – Laura recently completed her Bachelors degree at ESF in May 2020 and is currently employed w/ Winous Point Marsh Conservancy where she is assisting with king rail and tern research among other tasks such as duck banding. Laura was an integral part of Team Duck, working on several projects including Ed Farley's research and our stable isotope and genetics project with eastern mallards. ***She was honored with the prestigious Guy Baldassarre Award upon graduation for her keen interest in Ornithology.*** Laura also participated in the Delta Waterfowl University Hunting Program in Fall of 2019. Laura currently seeks opportunities to matriculate in a quality waterfowl and wetlands graduate program to continue her studies.



Riley Stedman – Riley received her BS in Fish and Wildlife Biology and Management in May 2020. During her tenure at ESF she was an integral component of our lab, processing many vegetation and biological samples otherwise. Riley also participated in the Delta Waterfowl University Hunting Program in Fall of 2019. ***Riley graduated as the top Wildlife Science study at ESF for the class of 2020.*** Riley currently works for a consulting firm in western NY aimed at addressing potential impacts of wind farms on wildlife. Riley currently seeks broad opportunities to matriculate in a quality fish and wildlife graduate program to continue her studies.





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William Chamberlain – I had the honor as faculty advisor to guide Will during his 3 years as President of the Ducks Unlimited Collegiate Chapter at SUNY ESF. Early in our years, the ESF Collegiate Chapter of Ducks Unlimited soared to the top of the list in the NE US for fund-raising for DU and when Will took the helm, he kept it going without competition. A testament to his passion as a hunter-conservationist, Will tirelessly led the DU Club at ESF to new heights. Will was not only passionate toward waterfowl (and compassionate as we can see him gently holding a hen wood duck during banding operations at Montezuma National Wildlife Refuge), but he also was a key figure on the Woodsmen Team at ESF.

Will reached out beyond his Natural Resources degree to take our Ecology & Management of Waterfowl and Wetlands Conservation and Management for Wildlife courses; at these he succeeded, mostly, in my opinion, because of his passion for waterfowl and wetlands, as a hunter.

The Ducks Unlimited Chapter at ESF provides opportunity for students to broaden their understanding of conservation. With the greatest of intentions, but no funding or support, conservation can fail, but with quality science, funding, and planning...
...we can succeed together.

Thank you to Will Chamberlain, and all of our 2020 graduates of TEAM DUCK.

Without you it would have not been possible.

Thank you to all of our 2020 ESF graduates for your skills and dreams.



Wetlands Conservation and Management for Wildlife – Spring 2020

The intent of this course is to ensure students completing degrees in Wildlife Science, Conservation Biology, and related majors have the opportunity to learn the applied skills necessary to properly conserve and manage wetlands for wildlife; a skill very much needed by our federal, state, and non-profit partners. Due to

COVID-19, we moved this course to an online-only mode following Spring Break in March 2020. Students remained engaged and produced quality work. At the conclusion of the course, they were challenged with developing real-life management plans for Otter Slough Waterfowl Conservation Area in Missouri which included a complete understanding of plants and animals of the area and how to apply the North American Wetlands Conservation Act and the North American Waterfowl Management Plan to meet the needs of waterfowl, wetlands, other wetland-life and people.

Answer 4:



Figure 2. An estimated outline infrastructure implemented if Parcel B was purchased and acquired by Otter Slough Conservation Area. The numerical value underneath each pond name is the acreage of the impoundment.

	Berm length (ft)	Berm length (yds)	cu yd berm	cu yd slope	Total (cu yd)	\$4.25/ cu yd
Berm 1	21266	7089	42532	31899	74431	\$316,332
Berm 2	2657	886	5314	3985.5	9299.5	\$39,523
Berm 3	3720	1240	7440	5580	13020	\$55,335
Berm 4	3658	1219	7316	5487	12803	\$54,413
Berm 5	3793	1264	7586	5689.5	13275.5	\$56,421
					Total Cost	\$522,023



CURRENT PROJECTS

Eastern Mallard Population Dynamics – This project is part of a multi-part series of studies to determine why the eastern mallard population has declined by nearly 50% since 1998. Our multi-part study, currently includes, 1) origins of hatch-year mallards harvested in the Atlantic Flyway to determine where most mallards are produced, 2) assessing landscape characteristics leading to increasing, decreasing, or stable numbers of breeding mallard pairs, 3) origins and genetics of mallards captured during preseason banding in eastern North America, and 4) genomic consequences of gene flow between domestic & wild mallards.

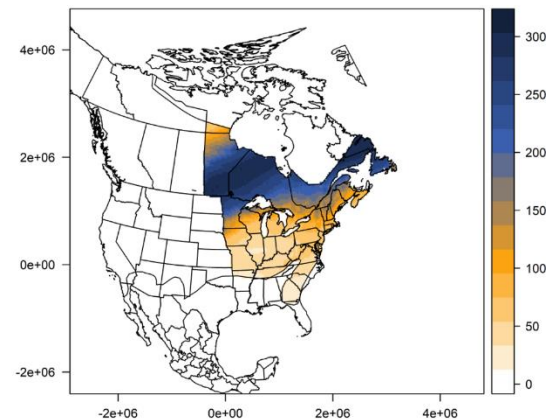
For more information on these projects please see the videos at <https://fundly.com/rescue-the-eastern-mallard> and thank you to those that donated to this grassroots effort.

Studies 1 and 2 are ongoing and led by MS student, Sam Kucia. Preliminary estimates suggest that the majority of mallard reproduction is coming from Canada despite that it estimated that only 1/3rd of the eastern population of mallards breeds here (the other 2/3rds are estimated to breed in the US).

All samples

Relative productivity of hatch-year mallards in the Atlantic Flyway, 2018 – 2019

$n = 655$ samples



Study 3 was initiated in 2019 and will be continued by MS student Kayla Harvey through 2021. Evidence suggests that movement of mallards may be occurring during the preseason banding period that occurs in the NE US from July to September. Our aim is to understand the potential for these movements during preseason mallard banding to bias vital rates important for population modeling. We also will be able to determine where wild mallards are being produced using the combination of isotope (feathers) and blood sampling (genetics). These data are also critical to understand areas of greatest conservation need to sustain reproduction in the eastern mallard population.



Eastern Mallard Population Dynamics (continued)

Study 4 In collaboration with Dr. Philip Lavretsky of the University of Texas El Paso and Dr. Brian Davis of Mississippi State University and in partnership with Forbes Biological Station and the Smithsonian Institute we recently received a substantial National Science Foundation grant to understand the implication of introduced domestic mallards into the wild population of mallards. MS student Sussanah Halligan will lead our ESF study of genomic consequences of gene flow between domestic & wild mallards.



Direct financial support for our series of Eastern Mallard Population Dynamics studies comes from Delta Waterfowl Foundation, Ducks Unlimited, Inc., Birds Canada, Long Island Wildfowl Heritage Group, National Science Foundation, Waterfowl Research Foundation, Moore Charitable Foundation, SUNY ESF, and the many contributors to our Rescue the Eastern Mallard Crowd-funder. In-kind support is provided by state agencies in Maine, New Hampshire, Vermont, New Hampshire, Massachusetts, Connecticut, New York, Pennsylvania, Delaware, New Jersey, Minnesota, and Wisconsin; and Western University (Ontario, Canada).



Ecological Separation of Black Ducks and Mallards in the Adirondack Mountains of New York

The American black duck population decreased by 50% since the 1950s and is a focal species of the U.S. Fish and Wildlife Service. Mallards have since replaced black ducks across much of their



range in eastern North America. Black ducks and mallards are sympatric during breeding season in the Adirondack Mountains of NY (ADKs), but also appear to segregate their habitat use between beaver-modified wetlands and human influenced areas, respectively. This segregation may favor mallards because wetland productivity is often greater in human influenced lakes relative to beaver-modified wetlands. Although studies of competitive exclusion between these ducks provide varying results, two species can't occupy the same niche indefinitely. Adam Macy is completing his Master's degree in Fish and Wildlife Biology and Management at SUNY ESF and will test for differences in



occupancy between black ducks and mallards in beaver-modified wetlands and human influenced lakes. Multi-species occupancy modeling is useful in generating estimates of occupancy for rare species (e.g., black

ducks) that co-occur with more common species (e.g., mallards). Adam adapted a multi-species occupancy model in a Bayesian statistical framework that uses a time to detection function for detection probability. He will apply this analysis method to waterfowl surveys of beaver-modified wetlands and lakes in the ADKs. Adam just completed his final field season in the ADKs and will be completing his MS thesis this Fall semester at ESF. This project is generously supported through Pittman-Robertson Federal Aid in Wildlife Restoration Funds through NYSDEC.

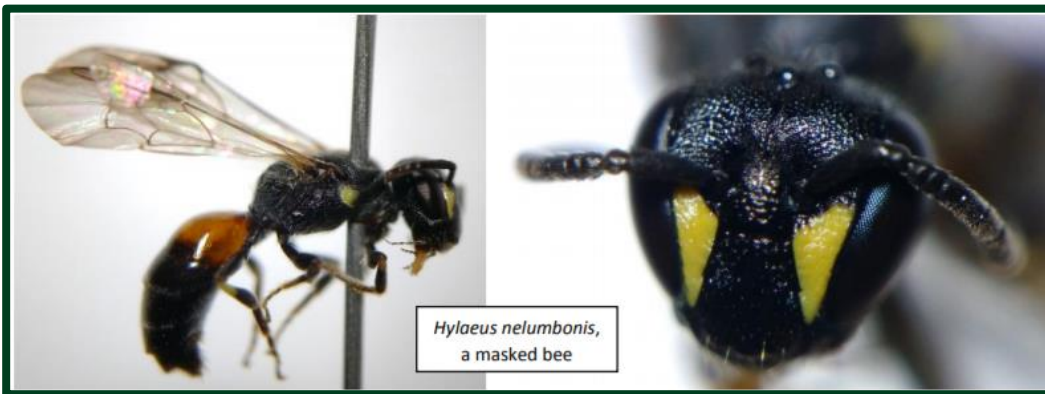


Response of Wild Bee Diversity to Management of Restored Wetlands

As part of our ongoing ecological assessment of wetland restoration and management techniques in the Montezuma Wetlands Complex, we initiated an important study in 2019 focused on native bees. It has been estimated that over 87% of flowering plants depend on animal pollination, including 70% of the world's most important crop species, which



accounts for more than a third of global food production. The economic value of pollination has been estimated at \$215 billion annually, and the majority of these services in temperate regions are performed by bees. Molly Jacobson is completing her MS degree in Conservation Biology studying native bee assemblages and their plant-pollinator associations among wetland management treatments in the Montezuma Wetlands Complex and Seneca Meadows Wetlands Preserve of central New York. Wetlands tend to provide late-summer blooms like pickerelweed, swamp smartweed, beggarsticks, and Joe-pye weed, which bees use when many upland plants have already gone to seed. The objectives include 1) determining presence and frequency of entomophilous plants (plants pollinated by insects) as resources for bees between wetlands with differing management treatments, 2) conducting surveys to describe bee assemblage diversity in the



Hylaeus nelumbonis,
a masked bee

Complex, while collecting additional data on flower visitation, and 3) determining if these bee assemblages vary between treatments of passive, partial, and full water drawdown. In 2019 and 2020, Molly conducted bee surveys at

over three dozen wetlands in central New York, centered at the Northern Montezuma Wildlife Management Area, Montezuma National Wildlife Refuge, and Seneca Meadows Wetlands Preserve.

Watch for Molly's article on pollinators in the August edition of the NY Conservationist!

This project is *generously supported by Cargill Inc. via Ducks Unlimited Inc., Seneca Meadows Wetland Preserve, Friends of the Montezuma Wetlands Complex, Eaton Birding Society, Sigma Xi, Maurice M. & Annette B. Alexander Wetland Research Fund, and Friends of the Montezuma Wetlands Complex.*

Montezuma Wetlands Complex Strategic Plan for Habitat Protection

Matt Wagner is a Master of Professional Studies candidate with a Waterfowl and Wetlands emphasis who is working with conservation partners throughout the Montezuma Wetlands Complex (hereon Montezuma) to develop a comprehensive strategic plan for habitat protection. Montezuma is a diverse mosaic of wildlife habitat types held in federal, state, non-profit, working lands, and private hunt club ownership.

Matt's charge is to work with the diversity of partners in the Montezuma region to develop a stakeholder plan for restoration and protection of what many consider the most important wetland resources in the Atlantic Flyway. Current partners involved in wetlands protection, restoration, and management in the region include the US Fish and Wildlife Service, New York Dept. of Environmental Conservation, Ducks Unlimited, The Nature Conservancy, Finger Lakes Land Trust, Montezuma Audubon Center, and Land Trust Alliance.



Matt and partners have worked through 2 of 3 objectives of the project and are currently using a novel GIS mapping tool to identify key parcels for land protection in the Montezuma area. Outreach efforts to landowners are ongoing and Matt is developing a description of this process for the journal Case Studies in the Environment.

Waterfowl and wetlands are important environmentally, ecologically, economically, and culturally in the Montezuma and Finger Lakes region of New York. Specifically, waterfowl hunting and birding are important economically and culturally in the region. As such, protecting and restoring wetlands at Montezuma will sustain these important roles and regional economic drivers.



Scaup Banding on Long Island

We again banded greater and lesser scaup on Long Island in winter 2020. Trapping conditions were much more difficult than 2019, with far fewer scaup using Great South Bay in 2020. Still, Master of Professional Studies student Brittanie Fleming, and her technician, Cole Tiemann, did an amazing job of capturing and banding nearly 500 birds last winter. Scaup are generally under represented in banding. Our aim is to contribute to continental banding operations of scaup so they can be included in Lincoln-



estimates, a method to estimate the continental populations of species of waterfowl that aims to compliment and not replace current survey methods. Band returns from our 2019 banding suggest that many of the scaup wintering on Long Island may be derived from an eastern (primarily Quebec) breeding population. Support is provided by the Long Island Wildfowl Heritage Group.



Brittanie Fleming



Cole Tiemann



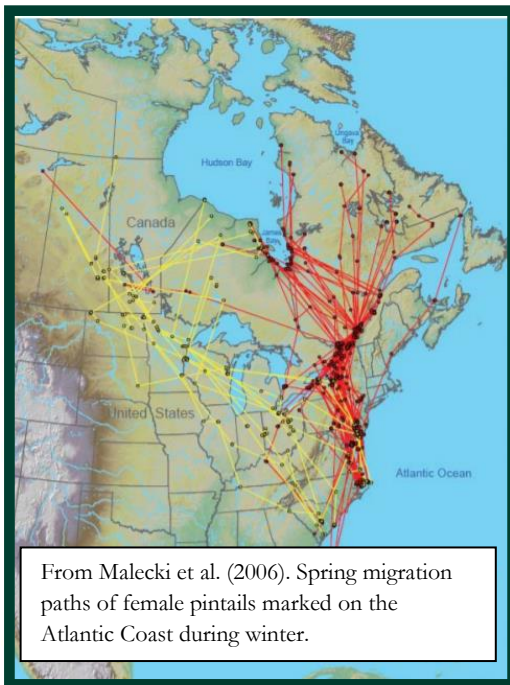
Long Island Wildfowl Heritage Group, Ltd.



Origins of Northern Pintails Harvested in the Atlantic and Mississippi Flyways

Northern Pintails harvested in eastern North America come from 3 main breeding populations in the prairies, Alaska, and the east. In the east, pintails primarily breed around Hudson and James bays and northern Quebec. Apparent increases in the number of pintails observed in the east have people suspecting that the eastern pintail population may be increasing relative to pintail breeding populations elsewhere.

Further, prior research by Dr. Rich Malecki and collaborators detected that pintails marked with satellite telemetry units on Atlantic Coast wintering areas primarily used an eastern migration corridor during spring. Specifically, it revealed that 80% of these females ($n = 55$) used an eastern migration corridor and all but 2 settled in the southern James Bay lowlands of Ontario or locales farther east. Of note, only 1 of the pintails using the eastern migration corridor during spring did not come through New York. This is further corroborated by counts of ~35,000 pintails during peak migration in the Montezuma Wetlands Complex of central New York alone (F.



Morlock, NYSDEC, *unpublished data*). [View a video of this event by clicking here](#). On opening week of waterfowl season, harvest of pintail in the Montezuma Wetlands Complex and elsewhere in NY is comprised largely of juveniles, although this percentage does fluctuate annually, presumably because of differences in annual production (M. Schummer, ESF, *personal observation*). However, where these ducks are produced and breed is difficult to determine using traditional banding because few pintails are banded in their eastern breeding region. Pintails breeding in eastern North America may contribute substantially to harvest in the Atlantic Flyway and may have different productivity than those in the mid-continent and Alaska. Stable isotope analysis of feathers grown on breeding grounds provides a unique opportunity to sample pintails in abundance to determine summer origin and regional productivity.

We are collaborating with Western University (Ontario, Canada), Birds Canada, and Winous Point Marsh Conservancy with assistance from the USFWS Harvest Information Program – Parts Collection Survey and Canadian Wildlife Service to sample feathers of pintails harvested in the Mississippi and Atlantic Flyways. ***This project is financially supported by Western University, Birds Canada, Winous Point Marsh Conservancy, and the Waterfowl Research Foundation.***

Closing comments: In these difficult times, we succeed together

It goes without saying that the graduate student program and resulting research we deliver from ESF informs conservation strategies for wetlands and wetland-wildlife, as well as harvest policies for waterfowl. In this process our vision remains steadfast to train the next generation of waterfowl and wetlands professionals.

These are education processes that must continue during these difficult times. In fact, they are likely more important than ever as people spend more time engaged outdoors because of the need for social distancing.

Waterfowl in the Atlantic Flyway are abundant and resilient; in one of the most populated locales in the world, these animals continue to be abundant, largely because of a storied history of wildlife professionals of the highest quality that were educated at our wildlife universities and then ultimately filled important seats on the Atlantic Flyway Technical Section and Council and positions with the US Fish and Wildlife Service.

In an age of increasing human impacts on wildlife habitats and human-wildlife interactions, it is our charge nowadays to balance the need to sustain wildlife populations and diversity with the need for people to build a positive relationship with their outdoor environment. We also aim to lift ourselves outside of the political process to ensure the best science is available for conservation of wildlife.

My day-to-day in the Fall semester at ESF will include modified classes to ensure our students and faculty are safe during this ongoing COVID pandemic, but it also will continue to include time in the marsh harvesting ducks and geese, putting the finishing touches on the farm so it is prepped for winter and so the soil is ready for spring 2021 planting, and enjoying the changing of the seasons.

To our sponsors, collaborators, partners, colleagues, friends, and students. Please continue to fuel your passion for conservation with all of us; although we may be physically apart, we succeed together.

Yours in conservation,



Michael L. Schummer, PhD



THANK YOU to our 2020 partners and sponsors (January – July):

Waterfowl Research Foundation
Long Island Wildfowl Heritage Group
Community Foundation of Central New York
New York State Department of Environmental
Conservation
US Fish and Wildlife Service
Atlantic Flyway Technical Section and Council
Delta Waterfowl Foundation
Ducks Unlimited, Inc.
Ducks Unlimited, Canada
Birds Canada
Moore Charitable Foundation
Robins Island Foundation
Barclay Damon
Suffolk County Parks
Maine Department of Inland Fisheries and
Wildlife
Massachusetts Department of Fish and Game
New Hampshire Fish and Game Department
Connecticut Department of Energy and the
Environmental Protection
Pennsylvania Game Commission
Delaware Division of Fish and Wildlife
New Jersey Division of Fish and Wildlife
University of Texas - El Paso
University of Wisconsin – Stevens Point
Wisconsin Department of Natural Resources
Minnesota Department of Natural Resources
Michigan Department of Natural Resources
Smithsonian Institute
Forbes Biological Station

Mississippi State University
University of Idaho
Sigma Xi
Friends of the Montezuma Wetlands Complex
Seneca Meadows, Inc.
Onondaga County Parks
Honeywell, Inc.
Cargill, Inc.
Parsons Corp.
Western University
Central New York Wildfowlers
Eaton Birding Club
Winous Point Marsh Conservancy
SUNY Oswego
Land Trust Alliance
The Nature Conservancy
Cayuga Lake Watershed Network

