



WEC SPOTLIGHT

MAY 2021

Moving on...

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About Our Cover Photo:

*The cover photo is a close-up shot of *Pristimatis cruentus*, a highly arboreal frog found in the tallest trees in Panama.*

Photo courtesy of Edmund Basham

SNRE doctoral candidate **Ed Basham** successfully defended his dissertation entitled “Vertical Stratification of Tropical Forest Biodiversity across Multiple Scales of Space and Time” and received his doctoral degree. Ed was advised by Dr. Brett Scheffers.



*Edmund Basham prepares to climb a tree in Costa Rica to catch frogs.
Photo courtesy of Edmund Basham*

Moving on, continued...

SNRE doctoral candidate **Nichole Bishop** successfully defended her dissertation entitled “A Nutritional Ecology Study of *Dermatemys mawii*, a Critically Endangered Species of Fresh-Water Turtle Endemic to Central America (*Dermatemys mawii*)” and received her doctoral degree. Nichole was co-advised by Drs. Ray Carthy and Karen Bjorndal.

WEC doctoral candidate **Ben North** successfully defended his dissertation entitled “Understanding Private Landowner Motivations and Preferences Regarding Forest Biomass Production and Implications for Market Development and Hunting as an Ecosystem Service in the Southeastern United States” and received his doctoral degree. He will begin an MBA degree program at the University of Connecticut this fall. Ben was advised by Dr. Elizabeth Pienaar.

WEC degree candidate **Alexis Cardas** (BLY BS '15) successfully completed her MS project and received her MS degree. Alexis was advised by Dr. Abby Powell.



Dr. Ray Carthy with advisee Dr. Nichole Bishop at spring 2021 graduation. Photo courtesy of Nichole Bishop



Alexis Cardas holds a Florida scrub-jay, the species her research focused on.

Photo courtesy of Alexis Cardas

Moving on, continued...



Celine Carneiro holds a grasshopper sparrow while working in the field. Photo courtesy of Celine Carneiro

SNRE degree candidate **Celine Carneiro** (WEC BS '16) successfully defended her thesis entitled "Genomic Insight into the Demographic History and Structure of the Grasshopper Sparrow (*Ammodramus Savannarum*)" and received her MS degree. Celine was advised by Dr. Jim Austin.

SNRE degree candidate **Dan Catziona** successfully defended his thesis entitled "Ecology of the Ornate Diamondback Terrapin (*Malaclemys terrapin macrospilota*) in St. Joseph Bay, FL" and received his MS degree. Dan was advised by Dr. Christina Romagosa.



The Ornate Diamondback Terrapin (*Malaclemys terrapin macrospilota*), the species of Dan Catziona's research, taken in St. Joseph Bay, FL. Photos courtesy of Dan Catziona

Moving on, continued...

SNRE degree candidate **Seth Farris** successfully defended his thesis entitled “Improving the Use of Ecological Indicators Using Hierarchical Modeling” and received his MS degree. Seth was advised by Dr. Frank Mazzotti. He will continue to work in the Mazzotti lab at the UF/IFAS Ft. Lauderdale Research and Education Center.



Seth Farris with an American alligator during a night research outing. Photo courtesy of Seth Farris

SNRE degree candidate **Philipp Maleko** successfully defended his thesis entitled “Filling Knowledge Gaps for Two Declining East Asian-Australasian Flyway Shorebirds: Nordmann's Greenshanks and Common Redshanks” and received his MS degree. Phillip was advised by Dr. Abby Powell.

WEC degree candidate **Arianna Paul** (WEC BS '18) successfully completed her MS project and received her MS degree. Arianna was advised by Dr. Christina Romagosa.

SNRE degree candidate **Jenicca Poongavanan** successfully completed her thesis entitled “A Glimpse into the Reproducibility of Scientific Papers in Movement Ecology: How Are We Doing?” and received her MS degree. Jenicca was advised by Dr. Mathieu Basille.

Milestones...

SNRE doctoral student **Celso Poot** passed his qualifying examination and advanced to candidacy in April. His research proposal is entitled “Movement Behavior, Space Use, and Conservation of the Central American Tapir (*Tapirus bairdii*) in a Multi-use Landscape in Belize, Central America. Celso is advised by Dr. Holly Ober. Celso is currently in the field collecting camera trap data on his study species.



Celso Poot checks a camera trap (above) in the field to detect tapirs in Belize. Photos courtesy of Celso Poot

SNRE doctoral student **Muzi Sibiya** also passed his qualifying examination and advanced to candidacy in April. His research proposal is entitled “Investigating the Effects of Shrub Encroachment and Mammalian Herbivory on Bird Diversity and Behavior in an African Savanna.” Muzi is advised by Dr. Rob Fletcher.

Publications & Papers...

Alumna **Dr. Farah Carrasco-Rueda** (SNRE PhD '18) recently published “Noteworthy records of bats (Mammalia, Chiroptera) from southeastern Peru” in the Journal of Biodiversity Data Check List:17(1):171-180. Farah is now working with Chicago’s Field Museum and was advised by Dr. Bette Loiselle.

Publications & Papers, cont'd...



A *Trachymyrmex septentrionalis* collects nest material at the Natural Area Teaching Lab. *Photo courtesy of Keara Clancy*

WEC MS student **Keara Clancy** is co-author of a journal article entitled “Myrmecology, Gender, and Geography: changing demographics of a research community over thirty years,” which won the Best Paper 2020 Award in *Myrmecological News*. Keara is advised by Dr. Christina Romagosa.

SNRE doctoral student **Kodiak Hengstebeck** (WEC MS '18) published two papers, entitled “A Trap for Capturing Large Burrow-dwelling Snakes” and “A New Method for Deploying Temperature Loggers in Gopher Tortoise Burrows” in *Herpetological Review*. He is advised by Dr. Christina Romagosa.

Alumna **Morgan Hughes** (WEC MS '19) has published the first paper entitled “Big bats binge bad bugs: Variation in crop pest consumption by common bat species” from her MS thesis in Agriculture, Ecosystems and Environment. Morgan was advised by Dr. Holly Ober.

WEC doctoral candidate **Ben North** has his paper entitled “Continued Obstacles to Wood-Based Biomass Production in the Southeastern United States” accepted for publication in *GCB Bioenergy*. Ben is advised by Dr. Elizabeth Pienaar.

WEC doctoral candidate **Mahi Puri** has her paper entitled “Food for thought – Examining farmers’ willingness to engage in conservation stewardship around a protected area in central India” accepted for publication in *Ecology and Society*. Mahi is co-advised by Dr. Bette Loiselle and Elizabeth Pienaar.

SNRE MS student **Philipp Maleko**’s species account revision of the Nordmann’s Greenshank (*Tringa guttifer*) is now published in Cornell’s *Birds of the World*:

Maleko, P. N., V. V. Pronkevich, and K. S. Maslovsky (2021). Nordmann's Greenshank (*Tringa guttifer*), version 2.0. In *Birds of the World* (S. M. Billerman, P. G. Rodewald, and B. K. Keeney, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.norgre1.02>

Philipp is advised by Dr. Abby Powell.

Presentations...



Nick Gengler in the forest in Paraguay. Photo courtesy of Nick Gengler

WEC doctoral candidate **Carrie De Jesus** and WEC MS student **Madison Harman** presented a poster on “Detection of a Tick-Borne Exotic Rickettsia in an Invasive Reptile Tick” at the UF Emerging Pathogens Institute Research Day in February. Carrie is co-advised by Drs. Sam Wisely and Gregory Glass. Madison is advised by Dr. Christina Romagosa.

In April, SNRE doctoral candidate **Nick Gengler** presented a poster on a chapter of his dissertation research at the International Association of Landscape Ecologists (IALE)-North America 2021 Annual Meeting. The poster was entitled "Differences in Scale of Effect Between Metrics of Habitat Configuration and Composition: a Meta-Analysis of Studies of Habitat Fragmentation." Nick is co-advised by Drs. Lyn Branch and Miguel Acevedo.

WEC doctoral candidate **Mahi Puri** was awarded the Murray F. Buell Award for outstanding student oral paper presented at the 2020 Ecological Society of America Annual Meeting. Her research presentation was titled "The Balancing Act: Maintaining leopard-wild prey equilibrium could offer economic benefits to people in a shared forest landscape of central India." Mahi is co-advised by Drs. Bette Loiselle and Elizabeth Pienaar.

WEC MS students **Ryan Buron** and **Natalie Pegg** presented micro-talks at the Nature of Cities Virtual Conference in late February, see <https://tnoc-festival.com/wp/> . Ryan’s talk was entitled “Birds in the ‘Burbs: How migratory birds utilize trees and forest fragments in suburbs.” Natalie’s talk was entitled “Habitat Use and Distribution of Forest Birds in Residential Areas.” Both are advised by Dr. Mark Hostetler.



Photo courtesy of Mahi Puri

Presentations, continued...

WEC alumnus **Austin Smith** (WEC MS '18) published "A quantitative assessment of site-level factors in influencing Chukar (*Alectoris chukar*) introduction outcomes" in the journal Peer J: Peer J DOI 10.7717/peerj.11280. He was co-advised by Drs. Mike Mouton and Wendell Cropper.

Awards & Scholarships...

SNRE MS student **Philipp Maleko** received a Research and Equipment Grant (\$2,000) from Wader Quest, a British shorebird conservation organization, which will allow him to purchase a Vortex spotting scope, Vortex tripod, and Vortex binoculars. Phil also won a Tracking Device Competition at the First East Asian-Australasian Flyway Shorebird Science Meeting, which provided 10 Druid tech GPS tags and a Druid Hub (\$12,000 value).



The Department awarded annual awards and scholarships to its graduate students this spring. In total, WEC has awarded \$20,000 in departmental graduate scholarship support to its students this year. The Outstanding WEC Graduate Student Award went to **Dr. Vratika Chaudhary** (WEC PhD '20), who was advised by Dr. Madan Oli. The Outstanding WEC Graduate Student Research Award went to doctoral candidate **Mahi Puri**, who is co-advised by Drs. Bette Loiselle and Elizabeth Pienaar. The Outstanding WEC Graduate Student Teaching Awards went to SNRE doctoral student **Brandon Merriell**, who is advised by Dr. Madan Oli, and to WEC doctoral student **Alex Potash**, who is advised by Dr. Bob McCleery. WEC MS student **Keara Clancy** received the Outstanding Graduate Service to WEC Award. Keara is advised by Dr. Christina Romagosa. **Dr. Vanessa Hull** received the WEC Graduate Faculty of the Year Award and **Dr. Nia Morales** received the WEC Undergraduate Faculty of the Year Award.



Nia Morales won WEC Undergraduate Faculty of the Year Award. Photo courtesy of Nia Morales



Dr. Vanessa Hull won WEC Undergraduate Faculty of the Year Award. Photo courtesy of Vanessa Hull

Awards & Scholarships, cont'd...

This year's African Safari Scholarship (\$5,000), which supports graduate student research on North American or African wildlife, was awarded to WEC doctoral candidate **Ben North**, advised by Dr. Elizabeth Pienaar, and to SNRE doctoral student **Kodiak Hengstebeck**, advised by Dr. Christina Romagosa.

This year's Ron Magill Conservation Scholarship (\$5,000), which supports graduate student research on vertebrate animals in Central/South America, was awarded to SNRE doctoral student **Natalia Teryda**, who is advised by Dr. Ray Carthy.

WEC MS student **Madison Harman** received this year's Florida Wildlife Federation Scholarship of \$2,000 to support her research on Florida wildlife. Madison is advised by Dr. Christina Romagosa.

WEC MS student **Laura Nicholson** received this year's Florida Chapter of The Wildlife Society's Courtney A. Tye Memorial Scholarship of \$2,000. Laura is advised by Dr. Holly Ober.

WEC undergraduate student **Mackenzie Su** received the Florida Chapter's Greater Everglades Undergraduate Student Memorial Scholarship of \$1,500.

SNRE PhD student **Natalie Claunch**, who is advised by Dr. Christina Romagosa, received a National Science Foundation Postdoctoral Research Fellowship in Biology for *Integrative Research Investigating the Rules of Life Governing Interactions Between Genomes, Environment and Phenotypes*. The fellowship begins in March 2022 and will span two years. Natalie will be moving to the Biology Department to work with Dr. Ana Longo and Dr. Rob Guralnick.



Laura Nicholson (above) holds a Florida bonneted bat, her species of study. Photo courtesy of Laura Nicholson



Madison Harman (right) holds an invasive iguana.

Photo courtesy of Madison Harman

Other Departmental News...

Dr. Brett Scheffers has been named an Alfred P. Sloan Research Fellow in Earth System Science, a recognition given to the best early career scientists reviewed by their peers as rising stars. Scheffers recognition is the first bestowed to a UF professor in seven years.

SNRE doctoral candidate **Emily Khazan** has accepted a summer internship with the USFWS Directorate Fellows Program. She will work with the agency to complete and update assessments of species occurring outside of the US under the Endangered Species Act. This includes pulling together traditional and non-traditional data sources (like unpublished grad student data....!) to assess the status of candidate species. Emily is co-advised by Drs. Jaret Daniels and Bette Loiselle.

Undergraduate Update...



Mackenzie Su received the Outstanding WEC Undergraduate Research Award and the Florida Chapter of The Wildlife Society's Greater Everglades Undergraduate Student Memorial Scholarship of \$1,500. Photo Courtesy of Mackenzie Su

The Department has announced its annual spring undergraduate awards and scholarships. The WEC Outstanding Academic Performance Awards went to **Dominic Mayo, Nate Owenby, and Hanna Hodges**. The Outstanding Service to WEC Award went to **Sierra Scauzillo**. Outstanding WEC Undergraduate Research Awards were given to **Shannon Summers** and **Mackenzie Su**. The WEC Outstanding Professional Promise Awards went to **Nicole Abruzzo, Brittany Evans, Kassidy King** and **Ashlyn Posey**. **Kiley Kneynsberg** received the WEC Working Student Scholarship (\$1,000). **Lexie Scott** and **Tristen Ladika** each received a \$1,000 Nancy C. K. Looney Memorial Scholarship. Receiving \$1,000 Monica Stokely Memorial Scholarships each are **Nicholas Belanger, Hailey Carrillo, Chandler Garcia, Maya Gonzalez, Matt King, Alison Pager, and Mackenzie Su**. **Chloe Arbogast** and **Hannah Henry** each received a \$1,000 Florida Wildlife Federation Scholarship. In addition, **Mackenzie Su** was the recipient of this year's Florida Chapter of The Wildlife Society's Greater Everglades Undergraduate Student Memorial Scholarship of \$1,500. In total, the Department has awarded \$23,000 in departmental scholarship support to its undergraduate majors this year.

Undergraduate Update, cont'd...



Nicole Abruzzo (above) will continue her education journey at UF at the university's College of Veterinary Medicine this fall. Photo courtesy of Nicole Abruzzo

Spring '21 degree recipients **Nicole Abruzzo** (WEC BS '21) has been accepted into the UF College of Veterinary Medicine for this fall, **Dominic Mayo** (WEC BS '21) will begin a doctoral program in Anthropology at the University of Michigan under the advisement of Dr. Stacy Rosenbaum, where he plans to research mountain gorilla ecology and physiology in Rwanda, and **Eric Trotman** (WEC BS '21) will begin a doctoral degree program with the UF Dept. of Zoology under the advisement of Dr. Nick Keiser. **Ashlyn Posey** (WEC BS '21) has accepted a summer internship with the UF/IFAS Nature Coast Biological Station, **Mackenzie Su** (WEC BS '21) will intern with FWC at their Three Lakes Wildlife Management Area, performing bird surveys/monitoring and prescribed burns. **Shannon Summers** (WEC BS '21) has accepted a position with a disease ecology lab at San Francisco State University, conducting field work which will involve small mammal trapping, tick drags, and lizard surveys. **Kassidy King** (WEC BS '21) will intern at the UF/IFAS Nature Coast Biological Station, working on sea-driven loss of cabbage palms in coastal forests under Dr. Carrie Reinhardt Adams. **Sierra Scauzillo** will conclude her University Scholars research on salamander color and pattern in the lab of Dr. Brett Scheffers.

Undergraduate Update, cont'd...

Continuing WEC undergraduates have been busy lining up summer internships. **Chloe Arbogast** will intern with the UF/IFAS Nature Coast Biological Station, promoting public outreach for wildlife conservation by editing social media videos and podcasts. Chloe was also selected as an Alachua Audubon Society Intern earlier this spring, and learned mist netting and bird banding techniques for research. **Cole Baker** has accepted a summer internship with the Emerald Coast Wildlife Refuge in Navarre. **Amanda Bishop** will intern at FWC's Ocala Outdoor Camp for children, educating them about human-wildlife interactions. **John Boyle** has accepted an Ambassador Care Internship with the Elmwood Park Zoo in Pennsylvania, where he will care for animals, educate visitors, and promote conservation of wildlife. **Hannah Henry** will intern as the assistant director of FWC's Ocala Conservation Center. **Catherine Martijn** will intern in Curacao at a wildlife veterinary sanctuary. **Alexandra Theophelis** will intern as an environmental educator at the Florida Sheriff's Caruth Youth Summer Camp in Yankeetown. **Zoey Zacharias** is working in the UF Invertebrates Lab under Dr. John Slapcinsky as a collections assistant, and was recently elected president of the UF Billiards Club. This summer, Zoey plans to study abroad in Cuba and hopes to intern with USGS working on nonindigenous aquatic species.



Zoey Zacharias (above) was a collections assistant in the UF Invertebrates Lab in Fall 2020.

Photo courtesy of Zoey Zacharias

Undergraduate Update, cont'd...

A group of WEC and SNRE undergraduate students, including **Isla Hession, Tristen Ladika, Kaleigh Conroy, Chloe Arbogast, Savannah Cantrell, Charisse Sproha, and Conner Milton**, all volunteered and contributed substantially to SNRE doctoral candidate Nick Gengler's research on assessing the differences in scale of effect between metrics of habitat configuration and composition. Volunteers conducted extensive literature reviews to compile detailed movement information on 129 species of mammals.

First-year WEC undergraduate **Catalina Corral** has been accepted into the 2021-22 cohort of the University Scholars program. Dr. Sam Wisely will serve as her USP advisor. WEC undergraduates in the 2020-21 University Scholars cohort include **Elise Williams, Julianne Gibson, and Sierra Scauzillo**.

Three WEC undergraduate majors have joined the 2021 Doris Duke Conservation Scholars Program cohort, including **Maya Encinosa, Maiya Lester, and Sebastian Summo**. Students will be advised by Dr. Christina Romagosa.



Maya Encinosa (left), Maiya Lester (center), and Sebastian Summo (right) are the new WEC undergraduates to join the Doris Duke Conservation Scholars Program. Photos courtesy of Maya Encinosa, Maiya Lester, and Sebastian Summo

Alumni News...

Alumna **Rebekah Jenkins** (WEC BS '17) is now the Naturalist and Program Coordinator for Pasco County Parks, Recreation, and Natural Resources. She is also the recruiter for their Summer Nature Day Camp at the Jay B. Starkey Wilderness Park in Pasco County.

Alumna **Lindsay Lewis** (WEC BS '17) is working as an in-water swim guide in Crystal River for the Explorida Adventure Center, educating guests on the spring's ecosystem and the importance of the Florida manatee.

Alumna **Monica Rendon** (RCN BS '19) now works with the Florida State Parks Service in ecosystem restoration at the Paynes Creek Historic State Park, the Highland Hammock State Park, and the Lake June State Park, all located in Bowling Green or Sebring. She reports wildlife sightings of gopher tortoises, burrows, woodpeckers, scrub jays, and bobcats, among other species.

Alumna **Grace Valladares** (WEC BS '19) is a child welfare case manager with the Partnership for Strong Families in Gainesville. Grace is also pursuing her Masters of Social Work to become a Licensed Clinical Social Worker and plans to work as a mental health therapist.

The Department received word that **Dr. Peter Crawshaw, Jr.** (FRC MS '87; WEC/FRC PhD '95) passed away in late April at the age of 69. He was advised by Dr. Mel Sunquist during his doctoral program.

Here are some remembrances from those who knew him well:

Bette Loiselle, (Professor, WEC):

"We are all deeply saddened by the recent passing of Dr. Peter G. Crawshaw. Peter received his MS and PhD from UF in 1995 under the direction of Dr. Mel Sunquist. He had a remarkable career and was recognized as a leading carnivore and conservation scientist. He worked for several decades in the Brazilian protected area systems, first for IBDF (Brazilian Institute for Forestry Development), then IBAMA, and until his retirement in 2012 at the Chico Mendes Institute for Conservation and Biodiversity (ICMBio). In 1994, he founded the National Center for Mammalian Research and Conservation (CENAP) at ICMBio. Peter was widely viewed as a pioneer in the study of jaguars in the wild using radio-telemetry and later camera traps to study the Neotropics' most charismatic felines. He used science-based approaches to inform conservation, and inspired many through his work and passion."



Dr. Peter Crawshaw Jr. Photo credit: Rogerio Cunha

Alumni News, continued...

Mel Sunquist (Professor Emeritus, WEC):

“We lost a Brazilian legend to COVID on 24 April 2021. The passing of Dr. Peter Crawshaw Jr. is a tragic loss to those of us who had the fortune to work with him. Peter taught me that students who go on in life to have the most influence in the conservation world come in surprising and unexpected packages. They are much more than just academic qualifications. Peter was a classic example: after his time at UF he went on to be-



A trail camera photo of a jaguar, the research species of Dr. Peter Crawshaw Jr. Photo credit: John Blake

come one of the most influential conservation biologists in South America, and much of his success had to do with his gregarious, outgoing personality, and his pure natural passion for wildlife.

Peter’s storytelling was legendary. He could regale you for hours about the antics of his Rhodesian Ridgeback, or tell gripping stories about tracking jaguars with George Schaller. His wealth of life experiences gave him a much more entertaining repertoire than most people. Not many grad students can talk about being attacked by a half-sedated jaguar, getting kidnapped in Bolivia, or breaking their pelvis in an ultralight crash.

Peter has left the world an enormous legacy – in the incredible number of students, biologists, and conservationists he has inspired and trained. He truly was a national treasure.”

Correction...

Correction to the February 2021 WEC Spotlight: SNRE doctoral candidate Emily Khazan is the sole author of “Field-based Thermal Physiology Assay: Cold Shock Recovery Under Ambient Conditions” which was published in the Journal of Visualized Experiments. (doi: 10.3791/62218)

FEATURE STORY...

Hostetler Lab Shows How City Forests and Residential Areas Can Benefit Birds

By Katrina Rossos

Often ignored, cities contain many small forest fragments and residential areas that offer tree canopy cover and a variety of native plants, which are both ideal environments for an array of species.

“It’s evolved over the past 20 years, but probably my major focus has been that cities matter in terms of regional biodiversity,” said Mark Hostetler, professor within the Department of Wildlife Ecology and Conservation and a UF/IFAS Extension Specialist.

Hostetler’s research focuses on how cities can be planned and managed to maintain species richness. His work informs city planners and residential developers about how to optimize neighborhood design and educates the public on how to properly landscape to provide habitat for birds and other wildlife. This includes “re-wilding” portions of a yard and paying close attention to identifying and removing invasive plants so they do not spread to nearby natural areas.



A female summer tanager. Photo courtesy of Natalie Pegg

A city’s natural expanses must be protected to certify long-term conservation of many different species – particularly birds. Jan-Michael Archer (SNRE MS ’16), a former student of Hostetler, conducted a systematic review of birds that use fragmented forest and neighborhoods in cities throughout North America. The study uncovered that more than 250 species exploit these habitats. Since then, Hostetler has conducted a number of workshops and public lectures to get the word out that even one big tree or small patch of forest is extremely beneficial to birds in urban areas.

Hostetler’s current lab members, WEC MS students Ryan Buron and Natalie Pegg, are investigating how migrating and resident birds depend upon urban forest fragments and tree-rich neighborhoods within city limits – and they’re using Gainesville as the backdrop.

FEATURE STORY...

NATALIE PEGG

Natalie Pegg joined the Hostetler lab in Fall 2020. Her master's research is about the distribution and habitat use of forest birds in residential areas. Pegg is focusing on non-migratory pileated woodpeckers as well as summer tanagers and northern parulas, which migrate along the Atlantic flyway.

Existing literature out of the northeastern United States cites these species as "interior forest specialists", which are birds that require expanses of mature forest during breeding season to reproduce successfully. However, summer tanagers, pileated woodpeckers, and northern parulas have all been spotted within residential neighborhoods in Gainesville during breeding season. Therefore, the observational evidence of these species in neighborhoods during spring suggests that their breeding requirements might vary regionally. So, Pegg is analyzing the distribution of these species in Gainesville to determine the vegetation characteristics of yards and neighborhoods that attract these birds during breeding season.

"This research is important because if these birds are behaving differently in the southeastern United States than they are in other parts of their ranges, conservation strategies would also have to be different," Pegg explained. "By understanding what is attractive to the birds in these suburban areas, city planners, land managers, and private landowners could be given strategies on how to help protect native bird habitat."

Pegg is surveying for the birds by walking at various locations within neighborhoods for a specific amount of time and recording the position of species observed. Then, she will assess the habitat type where the birds are seen by rating it based on the amount of vegetation within five meters of the bird. This classification will help Pegg gauge the species' fine-scale habitat selection.

The foliage will then be analyzed on a broader scale to understand species distribution within the study locations. She will estimate tree canopy cover (where northern parulas and summer tanagers hunt for insects), dead trees (where pileated woodpeckers create large cavities for



Photo courtesy of Natalie Pegg



Photo courtesy of Natalie Pegg



Male summer tanager. Photo courtesy of Natalie Pegg

FEATURE STORY...

nesting), and Spanish moss hanging off branches (which northern parulas use to make nests). This exploration will determine whether or not the birds are choosing more forested yards with increased vertical structure or if they use all types of yards.

“I hope to determine if these birds are consistently in heavily treed residential areas, but more importantly, what is catching their interest within these neighborhoods that makes them keep returning there,” said Pegg.

Accounting for these variables will determine why these species breed in southern neighborhoods with lots of trees. Pinpointing the requisite habitat needs for a favorable mating period for these species will inform private landowners, land users, and city planners on how to conserve these features.



Photo courtesy of Ryan Buron

RYAN BURON

Ryan Buron, who is slated to graduate this summer, joined the Hostetler Lab in 2019. His master’s research focuses on migrating and wintering birds and how they use urban forest fragments versus nearby residential areas that contain pockets of tall woodland to see if different species prefer foraging in one environment over the other. He is also determining the site characteristics, in terms of tree canopy cover and vertical height structure, to explain habitat use. Buron identified five study areas within Gainesville that incorporated forest fragments of at least 20 acres and compared them against adjacent neighborhoods.

“As urban areas are rapidly increasing, there is a need to study small-scale habitat preferences within the urban matrix,” said Buron. “My goal is to identify important habitat characteristics for species using urban habitats during migration and winter seasons.”

Rather than keying in on certain bird species, he is assessing how all migrating and overwintering birds exploit these habitats. In this regard, Buron can identify which species use urban forest fragments, residential areas, or both.

Buron hypothesizes that vegetation disparities between forest fragments and residential neighborhoods drive habitat preference. Neighborhoods contain less vegetation under the tree canopy because of homes and more manicured landscapes. Various bird species forage and nest from different parts of a forest’s vertical structure, which includes the canopy, middle (mid-story and under-story), and ground.

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For instance, a canopy-affiliated species is the northern parula and a ground-affiliated species is the ovenbird. Buron anticipates species that primarily utilize the canopy will occupy neighborhoods with tall trees and urban forest fragments equally, and birds that primarily utilize the ground and understory will be most often found within urban forest fragments.

Migratory habitat are the stopover sites where birds settle and rest during their spring and fall journeys. The interior forest specialists who require large expanses of breeding habitat do not need vast migratory habitat for stopover. Even small sections of tree cover is enough space to replenish their energy to continue their long migration between their breeding and wintering grounds.

“This study hopes to show that conserving these small fragments and residential areas with tree canopy can be important during this migration period,” said Buron.

Stopover for traveling birds is brief and migrating birds follow staggered timelines. Therefore, to ensure he saw as many species as possible as they passed through Gainesville in waves, Buron conducted 10-minute, 50-meter point count surveys in the urban forest and neighborhoods for four hours after dawn on every clear-skied day in the fall and spring. He stood in one location and tallied all the migrating bird species he observed within a 50-meter radius in all directions over 10 minutes. Buron accounted for habitat preference by noting vegetation disparities, such as canopy cover, vertical height structure, or amounts of undergrowth.

Overall, Buron identified 44 different migratory species during his field work. He modeled the birds against habitat preference for each species and created a comprehensive model that contained all migrating species. The data substantiated his hypothesis that some ground and mid-story foraging birds favor urban forest fragments. Also, many migrants utilized both the residential areas and the forest fragments. This evidence shows that preserving urban forest and trees within neighborhoods improve stopover habitat for a diversity of migrants.



Photo courtesy of Ryan Buron

FEATURE STORY...

Armed with this information, Buron strives to apprise city planners and residential developers on how to create bird-friendly spaces. Developers that clear-cut forests and replace trees with lawn or sidewalks are doing these birds a disservice.

“We hope that this study will help inform urban planners and designers about the importance of conserving small fragments and residential vegetation,” Buron said. “It takes time and money to implement these habitat features into urban habitats, but we hope to show the benefit of these things. I mean, who doesn’t want to see migrating birds passing through your neighborhood?”



Pileated woodpecker. Photo courtesy of Natalie Pegg

About this Issue...

This issue of the WEC Spotlight was edited and produced by Katrina Rossos and Claire Williams. The next issue will be released in August 2021. Please send submissions for the August issue by July 15, 2021 to ccwillia@ufl.edu.

Want to promote your new research, field work, internship, or alumni news on WEC's social media platforms?

Please send submissions to krossos@ufl.edu.

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Camera trap image of tapir. Photo courtesy of Celso Poot

