

THE RIVER AND FIELD CAMPUS 2019 ANNUAL NEWSLETTER



Washington College's River and Field Campus is dedicated to:

- **Mentoring our next generation** of field biologists through hands-on training and research experiences.
- **Restoring diverse wildlife habitats**, especially mid-Atlantic coastal grasslands within the agricultural landscape.
- **Designing studies and protocols** for the establishment and sustainable management of these wildlife habitats.
- **Conducting basic and applied research** on the flora and fauna that colonize these restored habitats.
- **Sustaining the Foreman's Branch Bird Observatory**, a year-round avian research and banding station.
- **Providing outreach and education** for K-12, undergraduate and graduate students, and members of society interested in the natural sciences.

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River and Field Campus

Annual Newsletter

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Grasslands Summary

The majority of our work in the grasslands includes avian research on the breeding biology of Field Sparrows, monitoring the Northern Bobwhite population on site, and working to refine best practices for habitat management.

2019 was the eighth year we have studied Field Sparrows on the site. While we didn't find any birds from that first summer in 2012, two birds that hatched in 2013 returned again to the study site this year for their seventh season in the grasslands. They hatched when this year's field crew was barely in high school!

We have now published the results from our study of parental feeding rates in Field Sparrows (see box on page 8). During summers 2014-2016 we filmed nests to document adult birds bringing food to nestlings. Results of this study showed that feeding rates of paired individuals are correlated with one another and that males provisioned offspring at a consistently faster rate than females. Parents also fed older nestlings at a higher rate than younger chicks.

Since the conclusion of the feeding rate study, we shifted our attention to Field Sparrow nest success. Our hope is to determine if there are physical or situational differences between successful and unsuccessful nests and if so, how they correlate to the amount of prior experience a pair of birds has. For this study we are noting the age of each of the parents as well as structural details on the nest, like how high off the ground it was built or what percent of it is concealed from above.

Regardless of the specific questions we are asking in a given year, the bulk of the field work on sparrows remains the same. We identified color banded birds that returned to breed on the site, color marked birds that are new to the site, mapped the territories these birds maintain over the course of the breeding



Cover photo: Indigo Bunting at a Natural Lands Project site.
This page: Field Sparrow nestling, photo by J. Carr.



season, and monitored as many Field Sparrow nests as possible. In 2019, the crew found 106 nests, identified about 80 individual birds, and banded 117 nestlings.

We continue to rely on excellent field staff comprised of Washington College undergraduate interns. This year our team included **Najeyah Al-tamimi '21**, **Jonathan Luciani '20**, and **Madelaina Ondo '20** (more details about them can be found on pages 14-15 of this newsletter). The project is directed by field ecologist **Maren Gimpel** and **Dr. Jennie Carr**, Assistant Professor of Biology with assistance from Dan Small.

The grasslands provide a great research site. As Dr. Carr noted “We have had the unique opportunity to set up a longitudinal study with known and identifiable individual Field Sparrows. This lets us ask really important and previously unanswered questions about how age and experience influence how birds interact not only with one another, but also their abiotic environment.”

Northern Bobwhite monitoring continued for the 11th year. **Natural**



Lands Project Coordinator Dan Small conducted breeding season male whistling counts as well as fall covey counts. The local bobwhite population was hit hard by the snowy winter of 2010, and it took until 2017 for it to fully rebound. 2019 results seem to indicate the population has finally leveled off to its pre-storm size and remains stable.

Returning for another season, **University of Maryland College Park graduate student Kiri Staiger** continued her research in the grasslands. She will monitor plots over a three year period to see how plants that colonize tilled soil compare to the existing plant community in the adjacent areas.

Visitors to the grasslands this past year included field trips from the Maryland Ornithological Society, the Talbot Garden Club, a group from the Sotterly Plantation in St. Mary's County, U.S. Forest Service personnel, students in the Young Environmental Stewards Conference as well as the Maryland Birds Ecology & Conservation Program (the latter two programs were residential summer programs for teens).

These experimental grasslands continue to be a source of great public interest, a sanctuary for wildlife and a living laboratory for students of all ages.



Top left: the 2019 grassland bird crew. Top right: interns observe sparrows. Bottom right: color banded Field Sparrow. All photos this page by P. Cowart-Rickman.

Foreman's Branch Bird Observatory

Foreman's Branch Summary

2019 was a great year at Foreman's Branch Bird Observatory (FBBO). It was our 22nd year of migration banding, we surpassed the 275,000th bird banded mark and hosted hundreds of visitors.

Our efforts continued to focus on migration banding. We banded a total of 230 days including 10 in winter, 82 in spring, 25 in summer and 113 in fall. Our grand total for the year was 15,533 birds banded of 125 species.

During spring migration (March – May) we banded 3,572 birds of 100 species. Both of these figures are just slightly below our long term averages. Our fall season ran August – November and during that time we banded 10,419 birds of 117 species. The number of birds banded is very close to average, but the number of species is below the average of 120. Our capture rate in fall was also below average for the 5th year in a row.

Joining FBBO Director Jim Gruber and Field Ecologist Maren Gimpel, were seasonal banders **Kim Geissler**



in the spring, and **Ben Nickley** and **Michael Gamble** in the fall. Each of them arrived with extensive banding experience from across the U.S. and we were lucky that they spent part of their year with us.

We trained several Washington College students to assist with our operations. Our spring interns were **Julia Portmann '19** and **Carlee Berkenkemper '22** and former intern **Kayla Lauer '19** returned to volunteer for the season. In the fall we welcomed back **Nina Black '20** who volunteered many hours in 2018 and **Madelaina Ondo '20** who worked on the grassland bird project in summer 2019 as well. More details on these women can be found on pages 14-15 of this newsletter.

Public outreach is a major part of our mission at FBBO. In 2019 we gave 84 banding demonstrations to 485 people! Our visitors included Washington College lab sections for biology and environmental science and studies courses in addition to a wide variety of outside groups such as Girl Scouts, members of the Anne Arundel Bird Club, staff and volunteers from a Calvert County bird banding station, second graders from The Kent School, attendees of the annual **Maryland Ornithological Society Conference**, and many more.

There was quite a long list of species that we banded in record high numbers in 2019 (18 species, in fact). The species with the biggest increase was Song Sparrow, whose old record from 2014 was 1,499 and whose total in 2019 was 1,898! Another species with a big increase was Swamp Sparrow- we banded 659 this year,



breaking the former record of 552. These are both migratory species, but some resident species like Carolina Wrens and Northern Cardinals also had record breaking years.

It wasn't all good news, however, we had some new record lows as well. Species including American Goldfinch, Cedar Waxwings and Red-winged Blackbirds were at their lowest numbers in our 22 years of operation. As we say often, bird banding requires taking the long view. Only after years of data can we learn if these highs and lows are anomalies, serious causes for concern, or rewarding recovery stories.

Our collaborations with outside researchers included collecting ticks from birds for **Dr. Holly Gaff** of **Old Dominion University**. She's investigating if birds are helping disperse ticks. We also placed autonomous acoustic recorders around the banding area for PhD student **Lauren Schrickler** of **University of Pittsburgh**, who is comparing recordings to banding data to see if dawn chorus recordings accurately reflect bird presence. Additionally,

Left: FBBO fall bander Michael Gamble measures the wing of a Belted Kingfisher. Above: Jim Gruber shows students a Yellow-bellied Sapsucker. Opposite page: male Orchard Oriole.

Foreman's Branch Bird Observatory

we shared some data on Blackpoll Warblers with a colleague working on a large study of their migration, and we offered a banding refresher to several graduate students and young professionals working with birds. Our most exciting collaboration was joining the Motus Network (see page 8 of this newsletter).

Lastly, we are grateful to the small army of volunteers who help keep things running smoothly at the banding station. This year 28 people donated 1,831 hours of time. In addition to those previously mentioned, we'd like to thank Kevin Bennett, Erin Betancourt, Jennie Carr, Janet Christensen-Lewis, Rachel Field '11, Jeannine Fleagle, Mike Hudson '18, Daniel Irons, Jonathan Irons, Alexandra Munters, Larisa Okshevsy, Sammi Ocher, Anne O'Connor, Brennan O'Connor, Nancy Raginski, Hanson Robbins, Danielle Simmons, Nathan Simmons, Everett Smith, Gabby Solomon, CareyJo Titus, Laura Young and Trish Young-Gruber.

Returns of Note

Each year we recapture thousands of birds we have previously banded. A bird that is handled for the first time after banding in a new season is called a "return." In 2019, FBBO tallied 1,526 returns. Among the returns were 61 species, more or less equally distributed between residents, breeders, and wintering birds.

We had only one through-migrant return this year, a Spotted Sandpiper banded August 18, 2018 was recaptured August 19, 2019. This bird was probably migrating south at the time of each capture.

Eastern Screech-Owl #1045-79486 was banded on November 28, 2015

and has been recaptured each year since. At the time of its last capture on November 15, 2019, it was 4 years and 5 months old.

Band #914-51225 was placed on a female Pileated Woodpecker on May 28, 2016. We have recaptured this individual most years since then and on August 24, 2019 when we last captured her, she was 6 years and 2 months old.

Migratory birds often show strong site fidelity, returning to the same places they have spent prior seasons. So it's no surprise that we capture many birds year after year. One example is Field Sparrow #2590-41395 that was 10 years and 11 months old on May 22, 2019, when we last captured it. This set a new North American longevity record for the species.

Orchard Oriole #2541-07101 was 11 years old at the time of its last capture



on June 15, 2019, and tied the North American longevity record for the species. And while not breaking any records, Indigo Bunting #2391-96176 was 11 years and 2 months old when we last captured it on August 13, 2019.

Top Ten Table – 2019 Spring and Fall Migration

Spring 2019			Fall 2019		
Species	Total	Last Year's Rank	Species	Total	Last Year's Rank
1. Common Yellowthroat	407	1	1. Song Sparrow	1,826	2
2. White-throated Sparrow	390	5	2. White-throated Sparrow	1,484	1
3. American Goldfinch	386	4	3. Common Yellowthroat	740	5
4. Gray Catbird	320	3	4. Swamp Sparrow	541	-
5. Red-winged Blackbird	258	2	5. Gray Catbird	532	6
6. Swamp Sparrow	114	6	6. Ruby-crowned Kinglet	492	4
7. Common Grackle	107	-	7. Indigo Bunting	395	8
8. Brown-headed Cowbird	87	9	8. Slate-colored Junco	268	9
9. Indigo Bunting	84	8	9. Hermit Thrush	267	-
10. Northern Cardinal	76	7	10. Field Sparrow	257	-

Foreman's Branch Bird Observatory



Male Red-winged Blackbird #1352-12494.

Foreign Recaptures in 2019

In 2019, FBBO captured 4 birds that had been banded elsewhere. These “foreign recaps” are among the most exciting events at a banding station. On March 3rd, we captured an adult male Red-winged Blackbird with the federal band #1352-12494 and color bands. The color bands indicate that this bird was part of a study on behavioral observations, meaning researchers wanted to know which bird was which without capturing it repeatedly to check its number. It was banded May 6, 2018 at the **Queens University Biological Station in Elgin, Ontario, Canada**, under the permit of Dr. Frances Bonier. On May 7, 2019 American Goldfinch #2781-24185 found its way into our nets. This bird was banded only 5 months earlier on 12/23/18 by Patricia Melville about 50 miles west of us in Bristol, MD. We captured Common Yellowthroat #2750-60014 on September 10th. This bird was banded at the **Wing Island Banding Station** in Brewster, MA, 354 miles northeast of FBBO on June 25, 2015 as an after

FBBO Recoveries

When a bird we've banded is encountered elsewhere, we say that bird was recovered. These selected recoveries are of note due to the distance from FBBO or the circumstance in which they were encountered.

Species and Banding Date	Recovery Details
Blue Jay October 4, 2012	Killed hitting a window, Philadelphia, PA, December 27, 2019 (69 miles northeast of FBBO)
American Goldfinch March, 3, 2017	Killed by a cat, Lowell, OH on December 18, 2018 (298 miles west of FBBO)
Brown-headed Cowbird April 7, 2018	Caught due to injury in Shipshewana, IN (534 miles northwest of FBBO) on December 14, 2019
Northern Saw-whet Owl November 23, 2018	Captured and released alive at Tadoussac Bird Observatory, Tadoussac, Quebec on October 4, 2019 (700 miles northeast of FBBO)
Ruby-throated Hummingbird May 23, 2019	Captured and released alive in Gulf Shores AL, September 26, 2019 (918 miles southwest of FBBO)
Osprey June 23, 2018	Shot in Sahagun, Cordoba Colombia on November 8, 2018 (2091 miles south of FBBO)

second year bird (meaning it hatched in 2013 or earlier). That banding date indicates that it was likely breeding at the Massachusetts site and was migrating south for the winter when we captured it in September. At the time we captured it at FBBO the bird was at least 6 years old. The last foreign recapture of the year was a Swamp Sparrow we captured on October 25th. #2811-07668 had been banded only 5 days earlier in **Cape May, NJ** 60 miles southeast of FBBO. Cape May is the closest major banding station to FBBO and this was the 7th bird we have captured that was banded there.



Ruby-throated Hummingbird in Gulf Shores, AL, photo by F. Chalk.

Foreman's Branch Bird Observatory

Standout Captures

The first highlight of our banding year came early in the spring season. On March 24, 2019, we banded a second year **Northern Shrike** (meaning it hatched in summer 2018). Shrikes are fascinating birds that hunt prey ranging from small rodents (mice and shrews) to large insects (grasshoppers and dragonflies) and even other birds. They cache their prey by impaling it on sharp branches or man-made objects like barbed-wire fences, and return later to eat it. Northern Shrikes are rare wintering birds in Maryland and this bird was probably migrating north to its breeding grounds in northern Canada when we captured it. It is the 4th Northern Shrike ever banded at FBBO.

The most outstanding capture of the year was a **Yellow-throated Warbler** netted on August 2, 2019. While Yellow-throated Warblers breed in Maryland, the closest population is about 20 miles away from FBBO at



Left: Northern Shrike.

Right: Yellow-throated Warbler, photo by N. Raginski.

the Chesapeake Bay Environmental Center, and this species is rare away from known breeding areas- staff have only seen it a handful of times around the River and Field Campus in the past 20 years. The hatch year male (meaning it was just weeks old) was probably wandering as part of its post-breeding dispersal, when young birds

venture out varying distances from the area where they hatched, before starting their fall migration. This was the first time we've banded a Yellow-throated Warbler, and brings the total number of species banded at FBBO up to 175.

Volunteer Spotlight

Back in the fall of 2014, one of the YMOS (youth division-Maryland Ornithological Society) leaders asked staff at the Foreman's Branch Bird Observatory if two local brothers could come learn about bird banding. After Daniel and **Jonathan Irons** came to visit, it was clear they were serious about training to become bird banders. Did we mention that Jonathan was 10 at the time? He arrived better prepared than most volunteers since he could already identify all the birds we captured. We started with the basics- how to record data, what all our jargon meant and moved on to safely extracting birds from mist nets. Eventually we worked up to the rest of the banding process including using molt limits to determine the age of a bird. Now, with all these skills, Jonathan has become a really valuable member of the team and we are grateful that he has given us so much of his time. In 2019 alone he volunteered 223 hours! He's been an active member of the YMOS for 8 years and has been on World Series of Birding teams for 6 years. When he's not involved in something bird-related, Jonathan is a wood carver, shows goats in the 4-H Fair, and likes fishing for stripers and playing soccer. Thank you, Jonathan, for your years of dedication to FBBO and your passion for birds.



Jonathan Irons with White-throated Sparrow, photo by P. Irons.

River and Field Campus

Motus Wildlife Tracking System

One of the fastest growing research networks in the avian world is the Motus Wildlife Tracking System. Latin for “movement,” Motus uses automated radio telemetry to study the movement of small animals- from dragonflies to bats and in our case, birds. In the past, researchers usually tracked birds on foot, carrying a big antenna. When the animal was out of range, the trail went cold. Now, the Motus network of hundreds of receiver stations can detect any tagged animal that flies by.

Many readers will know that collisions with buildings and/or windows are a major threat to birds. **Luke DeGroot, Avian Research Coordinator at Powdermill Nature Reserve** is researching the fates of birds that have hit buildings. Birds that have been rescued and are healthy enough to be released back into the wild are tagged with radio transmitters by the rehabilitators who cared for them. Staff at the Foreman's Branch Bird Observatory tags birds of the same species that are captured as part of normal banding operations and are assumed not to have hit buildings. Focal species of the study include American Woodcock, Gray Catbird and White-throated Sparrow. The hope is that both cohorts of birds will be picked up by the Motus network, revealing if rehabilitated birds migrated or moved differently.

The River and Field Campus also now hosts two receiver stations which will not only contribute to this study on building strikes, but will also collect data on any organism that passes within range of them. Since they were installed in March of 2019, they have detected three Red Knots and one Swainson's Thrush.



Recent Publications

Small, D. M. and C. R. Long. 2019. Near Catastrophe to Recovery: A Northern Bobwhite (*Colinus virginianus*) Success Story in Maryland. *Maryland Birdlife* 68: 23-37.

Carr, J. Gimpel, M. E. and D. M. Small. 2019. Patterns of Provisioning in Known-Aged *Spizella pusilla* (Field Sparrow): A Multi-Year Study. *Northeastern Naturalist* 26: 484-498.

Brinkerhoff, R.J., L. Dang, H.M. Streby, and M.E. Gimpel. 2018. Life history characteristics of birds influence patterns of tick parasitism. *Infection Ecology & Epidemiology*, 9:1, 1547096.

Danner, J. E., D. M. Small, T. B. Ryder, B. Lohr, B. S. Masters, D. E. Gill, and R. C. Fleisher. 2018. Temporal patterns of extra-pair paternity in a population of Grasshopper Sparrows (*Ammodramus savannarum*) in Maryland. *Wilson Journal of Ornithology* 130(1): 40-51.

Small, D. M. 2017. Winter site fidelity and over-wintering site persistence of a Northern Shrike, *Lanius borealis*, in Maryland. *Maryland Birdlife* 66(2): 9-19.

Gimpel, M. E. and J. M. Carr. 2017. First known case of a passerine presumably returning a dead chick to the nest. *Maryland Birdlife* 66(2): 29-35.

Eastern Shore Food Lab



The River and Field Campus is now home to an outdoor learning space established by the **Eastern Shore Food Lab** (ESFL) for the study and production of wild foods, primitive technology, and ecological landscape design guided by permaculture principles.

In 2019 ESFL interns created a trail and campsite on the 15-acre site to mark the beginning of an outpost where students will explore the relationship between people, food, and wildlife.

Amid forest and the Chester River shoreline, the interns cleared greenbrier and multiflora rose, mapped rainwater gullies and wind corridors, excavated artifacts from long-ago farm use, built a composting area and woodshed, and established a fire ring.

In late spring, beekeeping students established an apiary. The honey bee colonies are surrounded by a grove of sapling beach plums, hazelnuts, and high value trees for humans and wildlife forage, including English walnuts, black locust, basswood, ironwood, persimmon, sassafras, and northern pecan.

Under the leadership of ESFL intern **Lanning Tyrrel '22** and permaculturist **Shane Brill '03 M'11**, students continue to visit the site and improve access throughout the space, deepening their relationship with the environment in support of a food secure future.

Alumni Spotlight

Back in the summer of 2012, **Jeff Sullivan '14** had just finished his sophomore year at Washington College. He had already declared his environmental studies major and knew he wanted to work with wildlife or environmental management in some way. He was excited to spend those summer months as an intern with us, mapping Field Sparrow territories in the River and Field Campus experimental grasslands. It was the first year we monitored the species, and he was starting from scratch. But, by the end of the summer, when his work was done, there was a map documenting which birds were paired together and what parts of the grasslands they used. He said that seeing this final map was the most memorable part of his internship. "It was so cool to be able to see all of the data I had collected assembled right there in front of me, and to see how it had changed from the little bit of information we had at the beginning of the summer."

After graduating from Washington College, Jeff went on to get a M.S. at Auburn University, where his thesis was "Movement of female white-tailed deer relative to conception and localized risk." He now works as a researcher for Natural Systems Analyst, a United States Geological Survey contractor. His duties include analyzing telemetry data to map avian influenza outbreaks, capturing and sampling wild waterfowl, monitoring waterbirds on Poplar Island with an emphasis on Common and Least Terns and, exploring the use of new technologies such as drones and thermal cameras for monitoring purposes.

Looking back on it, Jeff says "My internship that summer was a launching point for my career in the environmental field. As my first field job it gave me the confirmation that this was indeed the sort of work that I enjoyed, and provided me with the necessary experience to be a successful applicant for future internships, graduate school positions, and employment opportunities. The internships WC makes available to students during their undergraduate careers have been a huge difference maker for me, and I hope current students recognize the unique experiences they have available to them."



Opposite page top: Motus antenna on top of RAFC grain elevator; Opposite page bottom: radio transmitter on a White-throated Sparrow; This page top left: Students enjoy a fire at the ESFL campsite, photo by P. Cowart-Rickman; This page bottom: Jeff Sullivan with a sedated deer, photo by J. Sullivan.

Natural Lands Project



Natural Lands Project

2019 marked the fifth year since the initiation of the Natural Lands Project (NLP). We have been working hard to engage with landowners and farmers across the upper shore of Maryland and our outreach efforts are paying off, not only in implementation of habitat projects, but also in good conversations that help raise awareness and interest in the plight of the Northern Bobwhite. We continue to work with a diverse group of partners whose common goal is to help wildlife and improve water quality within the Chesapeake Bay watershed. We are proud to be working with ShoreRivers, Partner's for Fish and Wildlife, Ducks Unlimited, Tall Timber Research Station, and Maryland State Parks.

While many breeding grassland birds and pollinators have been documented using the new plantings, we received some especially great news about one property this summer. We planted 35 acres of meadows on a farm near

Betterton in 2015 and this year several Northern Bobwhite were seen and heard on the property. This is the major objective of NLP and we are thrilled that adding habitat back to the landscape has demonstrated that quail can find it. Our work on the River and Field Campus has shown this, but it is great confirmation that it works elsewhere on the shore where not much is known about quail population numbers.



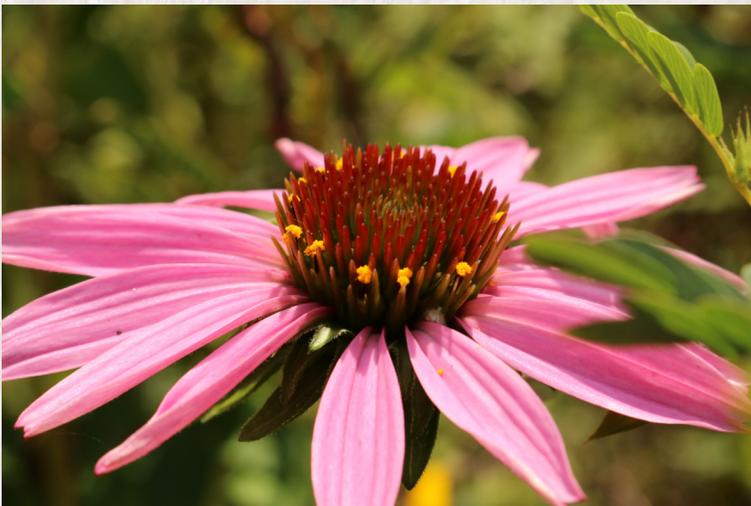
Project Highlights (2015-2019):

- 540 acres of meadows on private land
- 225 acres of meadows on public land
- 50 acres of wetlands
- 13 articles published about NLP
- 48 project sites

Natural Lands Project



All photos by Dan Small and taken at various Natural Lands Project properties.



If you are interested in learning more about the Natural Lands Project please visit:

www.washcoll.edu/nlp

or contact Dan Small:

dsmall2@washcoll.edu.

Faculty Spotlight: Dr. Robin Van Meter Associate Professor of Environmental Science & Studies, and Biology

What are your research interests? My broad research interest is looking at the effects of pollution on amphibian populations. Since I started at Washington College, I've continued a collaborative research agenda with former colleagues at the U.S. Environmental Protection Agency to collect data on pesticide bioaccumulation and associated non-lethal effects in terrestrial phase amphibians. More recently, I've started a landscape-scale project with marbled salamanders. We're swabbing the skin of salamanders in agricultural, forested and suburban/urban habitats with the goal of developing a non-lethal method that will provide a snapshot of biological health in anthropogenically altered landscapes.

How does the River and Field Campus (RAFC) support those projects? RAFC has played an important role in the development of the marbled salamander project. I've had students studying the marbled salamander population at RAFC over the past 6 or 7 years. Salamanders live and breed in many of RAFC's forested habitat patches, which are quite close to active agricultural fields. This provides a really unique opportunity to explore the relationships between human-dominated landscapes and amphibian health.

Has RAFC provided you with additional teaching opportunities? It has been instrumental to my teaching at WC and there are many lab activities that I've added to my courses with RAFC in mind. I established a series of 10m x 10m field plots with cover boards for sampling salamanders. Each spring and fall, I take students out to sample for salamanders under the cover boards and in the surrounding forests. Another activity is for sampling ticks. Students pull a large sheet of canvas, called a tick drag, throughout various habitats. Ticks cling to the canvas so we can easily capture and identify them. We pair the tick drag data with tick data collected from birds at Foreman's Branch Bird Observatory. Then students consider how ticks are serving as disease vector in our area and how we might best manage our landscapes to minimize disease transmission.

What does it mean for WC students & faculty to have access to a place like RAFC so close to campus? We are very fortunate. Many of the courses that have been developed in Environmental Science & Studies and Biology depend on access to RAFC where we can best engage our students in hands-on field experiences. In many instances, through teaching and research opportunities at RAFC our students are getting graduate-level experiences in the sciences.



Do you have an example of a student's meaningful experience in the field? There are so many! One of my favorite labs is in my Wetlands Ecology course when we sample vernal pools for the presence of amphibians. Many students have never seen or touched amphibian eggs, and so when we find leopard frog and wood frog egg masses in the field they are so excited! At first some students are hesitant to touch them, but when they get the courage to pick an egg mass up it is amazing to see the smile that spreads across their faces. By seeing and holding these tiny developing frog embryos, it's easier for students to understand how human activity can have such a large impact on one of our most important ecological indicators.

Academic Engagement

Academic use of the River and Field Campus continues to increase. Here are some of the faculty and students who took advantage of this "living laboratory." **Dr. Rebecca Fox, Assistant Professor of Environmental Science and Studies** brought students enrolled in ENV 312 Watershed Biogeochemistry out to collect stream and groundwater measurements. Her ENV 311 Field Methods in Environmental Science class examined ground water wells and visited Foreman's Branch Bird Observatory to discuss scientific design and limitations of using bird banding in avian research.

Dr. Leslie Sherman, W. Alton Jones Associate Professor of Chemistry and her students in three lab sections of CHE 210 Environmental Chemistry compared soils of agricultural fields and grasslands.

Heather Harvey, Associate Professor of Art and **Dr. Anne Marteel-Parrish, Professor of Chemistry** once again co-taught CHE 294 Greener Art Through Greener Chemistry. Their class collected clay from the banks of the Chester River to be used in various art projects.

A large group of students enjoyed an April night of star gazing with **Dr. Charlie Kehm, McLain Associate Professor of Physics and Environmental Science & Studies** as part of PHY 105 Astronomy in conjunction with a lecture from **Professor of Physics and Astronomy at the University of Redlands, Tyler Nordgren**.

Dr. Jillian Bible, Assistant Professor of Environmental Science and Studies brought students in ENV 141 Atmosphere, Ocean and Environment to Foreman's Branch to examine stream flow rates and sedimentation. She also taught a section of ENV 101 Introduction to Environmental Studies along with Dr. Fox and Lecturer Madeline Bilinski. These students visited FBBO and on a separate occasion took part in a lab examining tree biomass.

The fall semester got off to a busy start in August with multiple per-orientation groups using the property for things as varied as learning about Harriet Tubman to attending a bird banding demonstration. The **Chesapeake Semester** students camped at RAFC on two separate occasions. In addition to getting a feel for the outdoors and cooking over fires, they foraged for edible plants in multiple habitats and practiced observing their surroundings.

Dr. Jennie Carr, Assistant Professor of Biology brought students taking Diversity & Adaptation BIO 100 to FBBO where they appreciated morphological differences between bird species. Dr. Carr also taught BIO 294 Ornithology and that class visited FBBO twice to compare species composition as fall migration progressed.

The lab sections of BIO 206 Ecology also made multiple visits to RAFC. Led by **Lecturers Marisa Atkins '15, Madeline Bilinski '16, and Amy Pfarr '19**, their lab exercises included seed dispersal, mark and recapture of turtles and forest tree species diversity.

In total, the River and Field Campus hosted 734 student visits in 2019, a remarkable number considering the student body is 1300.



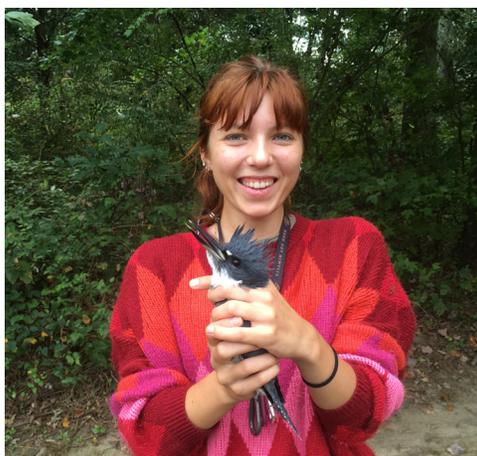
Clockwise from top right: Students look for aquatic macroinvertebrates, photo by P. Cowart-Rickman; Sunset as observed by astronomy students, photo by C. Kehm; Exploring forests, photo by M. Atkins; Alexis Johnston with frog eggs, photo by K. Buck; Dr. Van Meter and Rose Adelizzi '19, photo by J. Baker.

Washington College Student Interns



Najeyah Al-tamimi '21, from Boydes, MD was part of our summer grassland bird team. She spent ten weeks identifying color banded Field Sparrows and searching for their nests. Majoring in environmental science, Najeyah was drawn to the project as a way to explore a potential career path while getting to watch the sun rise. “I loved learning about what it takes to do field work while being surrounded by so many sounds of a diversity of birds.” Najeyah recommends the experience to other WC students, with a caveat “be prepared for heat, bugs, and ticks, but it will be worth it when you get closer to finding a Field sparrow nest.”

Baltimore, MD native **Carlee Berkenkemper '22** was one of the spring banding interns at the Foreman’s Branch Bird Observatory. After Carlee visited FBBO with her Introduction to Environmental Studies class, she knew she wanted to be an intern. Carlee learned to identify are birds, how to extract birds from mist nets, and the uses of the data collected during banding In fall 2019 she traveled to Belize with the Chesapeake Semester and proudly identified birds she knew from Maryland “While it was exciting to see grackles in both places, they are decidedly not my favorite bird... the Pileated woodpecker we captured at FBBO that spring was probably my favorite.”



Nina Black '20, of Chestertown, MD, volunteered with FBBO for most of August 2018 before spending her junior year abroad in The Netherlands. When the biology major got back in the fall of 2019 we welcomed her back as an official intern. Nina mastered getting birds out of mist nets during her previous stint with us and moved on to learning to age and sex birds. She realized that it “takes practice, and you really need to see a lot of different birds to start recognizing patterns.” Nina’s favorite FBBO bird was an Eastern Whip-poor-will. She recommends the internship to students since it really helps you figure out if field work and being outside in the early morning is something you are willing to do for the sake of learning about birds. "Personally, I think it is definitely worth it, and I would do this internship a million times if I could!"

Jonathan Luciani '20 is majoring in both biology and economics and was part of our summer grassland bird crew in 2019. He learned about it while enrolled in Dr. Jennie Carr’s ornithology class and was drawn to the project in part because it was so different from anything he had done before. The West Chester, PA native documented Field Sparrow territories and searched for their nests. Jonathan's favorite part of the internship was “the freedom that was given to undergraduate researchers to approach problems.” He also appreciated that the faculty and staff at RAFC were there to both pursue their research but also to be an asset for undergraduates to develop skills and further their academic career.”



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Environmental science major **Kayla Lauer '19** volunteered with FBBO during the spring migration banding season. It was the 4th season she has spent in either the RAFC grasslands or at FBBO. As a returning crew member, the Baltimore native already knew the routines of the banding station, so she was an asset from day one, and she had the skills needed to be a big help to us, especially on busy days. Kayla said she kept coming back because the time at FBBO didn't feel like a job or something she was volunteering for, rather it was something she truly enjoyed doing. Those early mornings just became part of her weekly routine. It's a different kind of student who wants to get up before sunrise twice a week in the spring semester of their senior year. Thanks to Kayla for all her hours of help!

As soon as she first heard about FBBO, **Madelaina Ondo '20** knew she wanted to get involved. The environmental science major was part of our summer grassland bird team where she enjoyed the hunt (or in some cases wild goose chase) for Field Sparrow nests. In the fall, she was an intern at FBBO where she learned more about the importance of wildlife population monitoring. Living on a farm in nearby Centreville, MD, Madelaina was used to outdoor work and adverse field conditions- she especially appreciated summer sunrises when the mornings were still cool. Madelaina enjoyed the opportunity to “be hands-on with wildlife and expand my knowledge of birds.” She would definitely recommend the internships to other WC students “I learned so much about my own interests through working with experienced scientists and bird banders.”



Julia Portmann '19 wanted to be an intern at FBBO from the moment she heard about it as a freshman, but it took until her senior year for it to fit into her schedule. Julia majored in both biology and environmental science, so she had lots of lab sections filling her time. She took ornithology with Dr. Carr the previous year and enjoyed putting all that she had learned there to use at FBBO, but was excited to learn even more about birds. Julia learned to extract birds from mist nets, and participated in many conversations about the uses and purposes of bird banding. One of the things Julia liked best about the internship was that no two days were alike- the species composition of the birds was always changing. The Palatine, IL native points out that getting to spend several hours outdoors on spring mornings was also a plus.

The Center for Environment & Society is dedicated to providing excellent, challenging and inspiring experiential internship opportunities.

For more information on our student internships, or to make a gift, please visit our website:

ces.washcoll.edu or call our office (410) 810-8405.

River and Field Campus 2019 Newsletter



River and Field Campus staff Maren Gimpel and Dan Small led the inaugural **Maryland Birds- Ecology and Conservation** summer bird program for teens in June. The group got a taste of college life by living in dorms and eating in the dining hall, but the rest of the time it was birds, birds, birds! The group took field trips to the marshes, beaches, and the coast of the Delaware Bay, the mature forests

of Susquehanna State Park and the grasslands of the River and Field Campus. Guest speakers included Jim Brighton of the Maryland Biodiversity Project, Dr. Jennie Carr of the Biology Department at Washington College, and Susan Guiteras, Bombay Hook National Wildlife Refuge wildlife biologist. Lectures included not just science and biology, but also conversations about the career paths

that speakers followed. Participants enjoyed meeting other like-minded teens and a visit to Foreman's Branch Bird Observatory on the last morning was a highlight for all. The 2020 session will run July 14-17. For more information or to enroll, please see <https://www.washcoll.edu/centers/ces/summer-bird-program/> or contact Maren Gimpel at mgimpel2@washcoll.edu



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Gifts may be earmarked for the River and Field Campus, or the Bird Observatory. Please contact Jamie Frees Miller at jfrees2@washcoll.edu or 410-810-8405. Thank you.

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