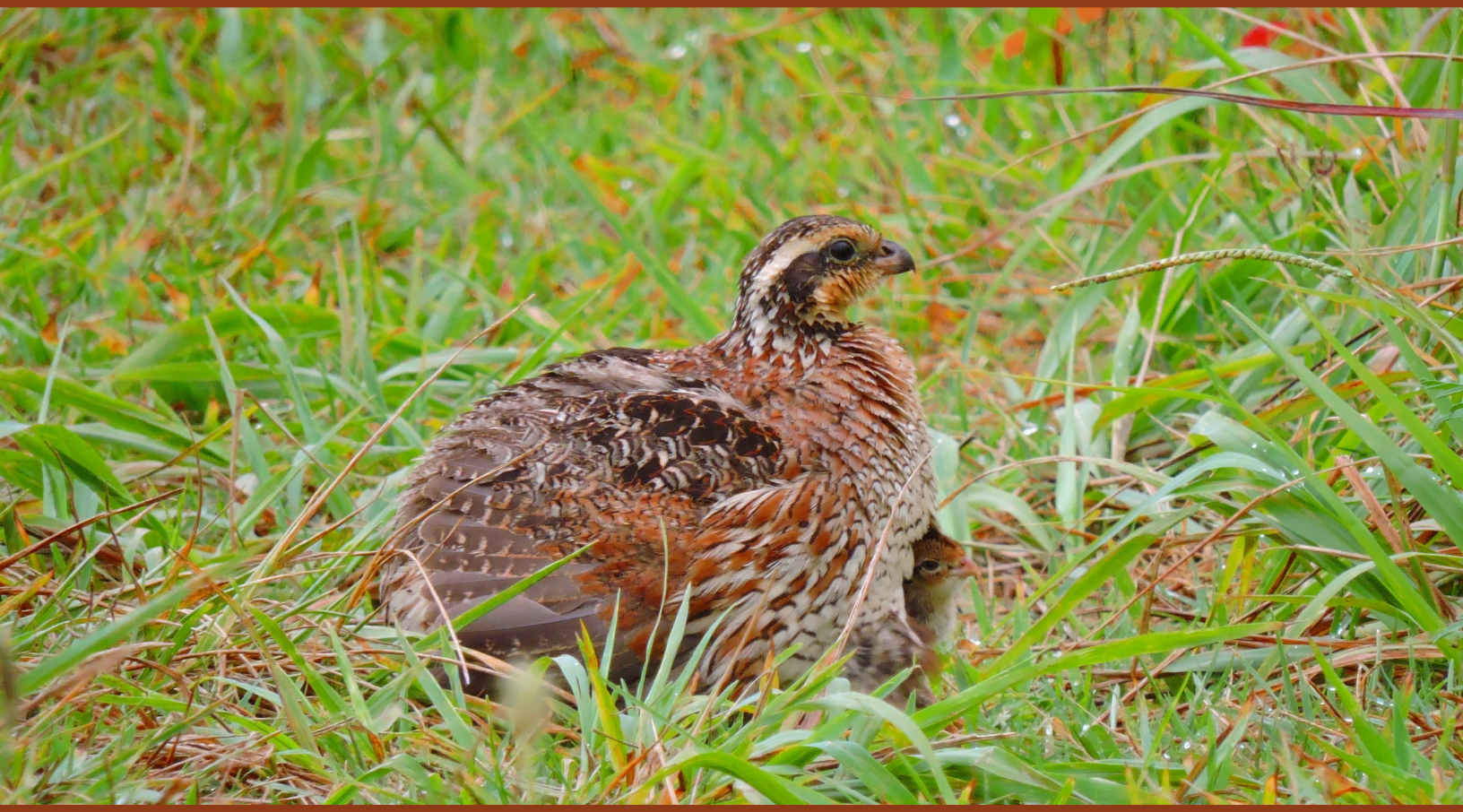
CENTER FOR ENVIERONMENT & SOCIETY AT WASHINGTON COLLEGE

CHESTER RIVER FIELD RESEARCH STATION

2015 ANNUAL NEWSLETTER



Located on Chino Farms, **about five minutes from Washington College in Chestertown, Maryland, the Chester River Field Research Station is dedicated to:**

- **Large-scale restoration of diverse wildlife habitats, especially mid-Atlantic coastal grasslands, Delmarva bays and the Chester River (all suffering from the impact of agriculture and pasturing)**
- **Designing studies and protocols for sustainable management of these habitats, especially as they interact with on-going modern farming**
- **Conducting basic and applied research on the flora and fauna that colonize these restored habitats, to learn their natural requirements for survival, growth, and reproduction**
- **Sustaining the Foreman's Branch Bird Observatory, a year-round avian research and banding station**
- **Environmental education programs for K-12, undergraduate and graduate students, and people interested in the natural sciences.**

THE CUSTOM HOUSE • 101 S. WATER STREET, CHESTERTOWN, MD • 410 810 7161

Grasslands Research

Grasslands Summary

Our 228 acre restored grasslands continues to be the crown jewel of the field station. For over 17 years we have used the site to monitor avian responses to the vegetation, experiment with how to best manage the grasses and native plants, discover and document interesting behavioral and ecological facets of grassland birds and to provide an outdoor classroom and lab for students from Washington College and also bird clubs, area visitors and naturalists.

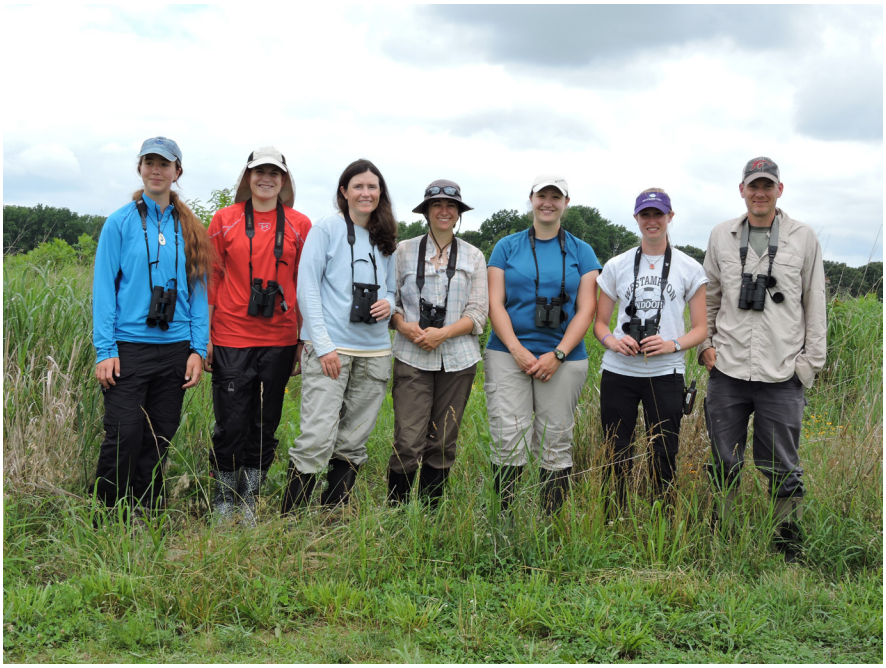
In 2015 our main research focused on our feeding studies of color banded Field Sparrows. Because of our long running banding program, we know the ages of many of the breeding birds and can use this information to determine if parent age is connected to the quality of parental care. With a team of Washington College students and in collaboration with **Dr. Jennie Carr** we searched for and monitored Field Sparrow nests. Once eggs hatched, we filmed nests to quantify parental provisioning.

The 2015 crew found a record-breaking 115 Field Sparrow nests and watched 162 hours of provisioning videos.

This past summer, with our talented crew, we found 115 Field Sparrow nests and recorded 65 of them which amounted to 162 hours of footage to watch!

While most of the footage shows parents coming and going to the nest, sometimes we capture unexpected things. We recorded one nest being depredated— a snake almost caught the female incubating the nest. She escaped, but the snake did consume the eggs. We also filmed two males and one female feeding the same nest, an event which has rarely been documented.

We will conduct one more season of this research before analyzing and publishing our findings.

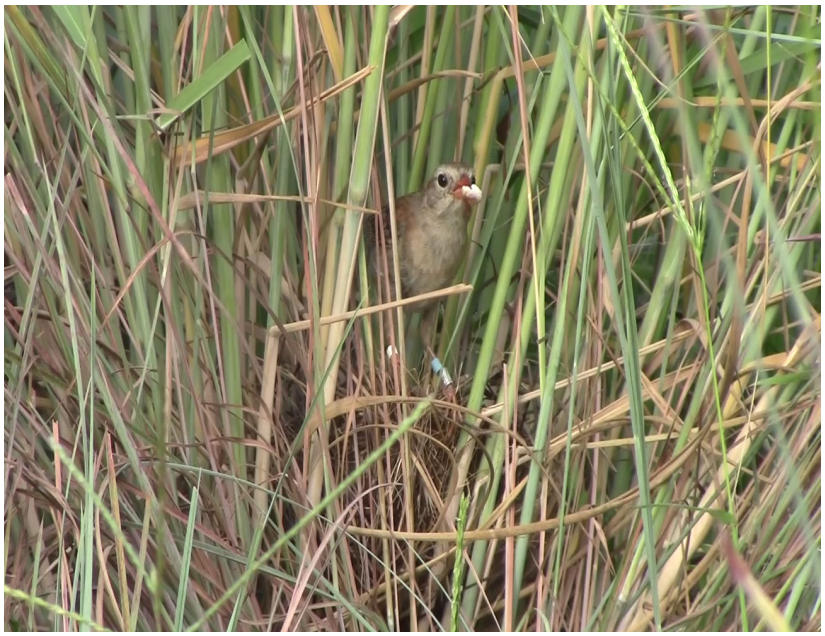


Front cover: female Northern Bobwhite hen with chick. Above: CRFRS field ecologist Maren Gimpel watches Field Sparrows. Left: the 2015 summer field crew.

Grasslands Research

Management of the grasslands remains a challenging work in progress. Each year small blocks of the habitat are manipulated through disking, burning and mowing to ensure that we keep the area in early successional vegetation. Figuring out the best way to do all of this and sharing our knowledge with the greater community has always been important to us and in some ways has led to the creation of a new program, the Natural Lands Project (see page 4 for more details).

The grasslands remain a home for one of the largest Northern Bobwhite populations in Maryland. **Field Ecologist Dan Small** conducted male calling counts during the breeding season and fall covey counts to monitor relative abundance of the population from year to year. For more information on our quail research projects see page 11.



Top: Field Sparrow removing a fecal sac from her nest.

When possible, we like to make the field station available to other researchers. University of Maryland, Baltimore County **Assistant Professor Dr. Bernie Lohr** and his students have conducted Grasshopper Sparrow research in the restored grasslands for years. In 2014 and 2015, graduate student **Sam Hulse** conducted playback experiments to test the impact of noise on breeding Grasshopper Sparrows— an important subject as development and its associated noise continues to increase.

We are still analyzing data from our many years of Grasshopper Sparrow research. Look for forthcoming publications on their breeding ecology.

Recent Publications

Small, D.M., M.E. Gimpel and J.G. Gruber. 2015. Preformative molt in Indigo Buntings north of the wintering grounds. North American Bird Bander 40(2): 67-69.

Small, D.M., P.J. Blank and B. Lohr. 2015. Habitat use and movement patterns by dependent and independent juvenile Grasshopper Sparrows during the post-fledging period. Journal of Field Ornithology 86(1): 17-26.

Gimpel, M.E., D.M. Small and J.G. Gruber. 2014. Winter site fidelity of six sparrow species in Maryland. North American Bird Bander 39(2): 45-51.

Florin, D.A., R. J. Brinkerhoff, H. Gaff, J. Jiang, R.G. Robbins, W. Eickmeyer, J. Butler, D. Nielsen, C. Wright, A. White, M.E. Gimpel & A.L. Richards. 2014. Additional U.S. collections of the Gulf Coast tick, Amblyomma maculatum (Acari: Ixodidae), from the State of Delaware, the first reported field collections of adult specimens from the State of Maryland, and data regarding this tick from surveillance of migratory songbirds in Maryland. Systematic & Applied Acarology 19(3): 257–262.

Natural Lands Project

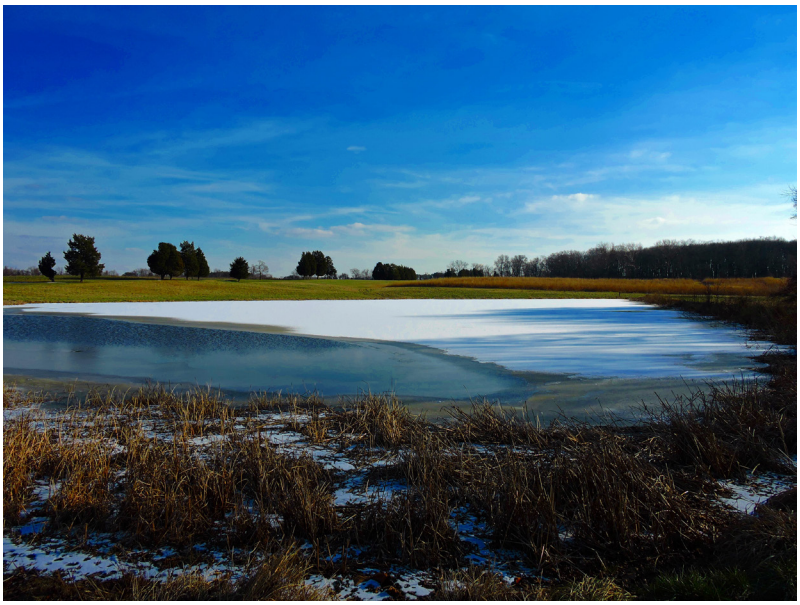
Bobwhites for the Bay

This past summer we applied for and received a major grant from the Maryland Department of Natural Resources **Chesapeake and Coastal Bays Trust Fund** for $700,000. Fully funded for three years, partner organizations including the Chester River Association, Tall Timber Research Station & Land Conservancy, Maryland Department of Natural Resources, and Washington College's Center for Environment & Society (CES), have joined forces to improve wildlife habitat and water quality in the Chester River watershed.

The concept of the Natural Lands Project had been floating around CES and CRFRS for some time. The extensive habitat restoration, creation and management at the field station has created ideal conditions for quail to thrive. Our habitat management work and intensive radio-tracking studies, done in partnership with **Tall Timbers Research Station**, gives us keen insight to the habitat requirements of quail. Stemming from these experiences we felt the time was right to use our knowledge to encourage other farms to make changes to address the larger goal of reversing declining quail populations in the region.

We knew from hosting quail summits over the past three years that there was strong interest from area landowners in helping Northern Bobwhite populations rebound.

The **Chester River Association**'s extensive volunteer force, the Chester Testers, annually documents the health of the Chester River and its tributaries. The dominant source of non-point pollution contributing to the declining health of the Chester River is runoff of excess nutrients and sediments from farming practices, the largest land use in our region. Two of the most cost effective and efficient best management practices within the agricultural landscape of the Eastern Shore that can help reduce runoff from non-point source pollution is installing grass buffers around the periphery of farm fields and creating wetlands in areas that naturally collect water on a farm field. According to a 2010 study, grass buffers of greater than 100 feet in width have proven to prevent 85% of the fertilizers and sediment from entering the streams, creeks and rivers.



It was only a couple of generations ago that people growing up on the Eastern Shore could hear the familiar sound of a quail calling during the summer months. Most hunters had bird dogs that sprang into action during the fall pointing coveys for their owners. With populations so low, quail hunting has all but ceased in Maryland. Because of this long standing connection to quail, people want to see and more often than not, just want to hear the emphatic "**BOB-white**" again.

Luckily, the same best management practices that are good for water quality are also good for quail. Native warm season grasses such as Little Bluestem, Big Bluestem, Broomsedge and Coastal Panicum are fantastic at absorbing excess nutrients and stopping sediment runoff. They are also the preferred grasses of quail for both nesting and raising young. Combine these grasses with islands of shrubs or hedgerows and suddenly the

Above: A newly installed wetland replaces marginal cropland that was often too wet to produce crops.

Natural Lands Project

agricultural landscape is a place in which quail can thrive again. Wetlands within the agricultural landscape act like sponges absorbing nutrients flowing off the farm fields, but they also provide much needed habitat for wetland plants, wildlife and migrating waterfowl.

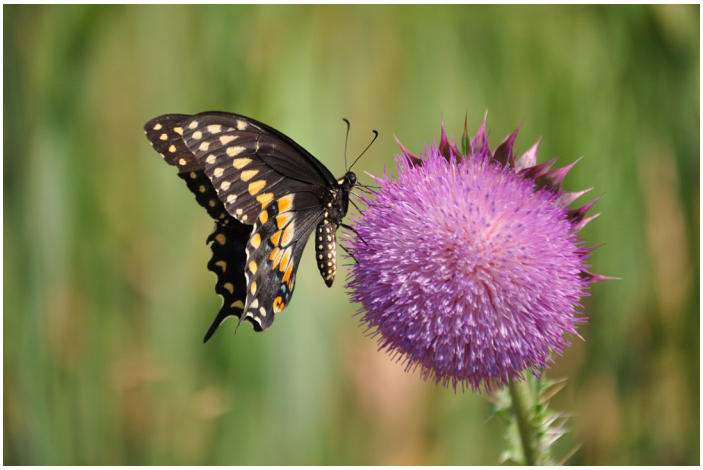
Quail are an umbrella species, meaning if we create enough habitat for quail to thrive, many other species that utilize the same habitat will also benefit. Most of the species that require grassland and early successional habitat are also experiencing significant population declines simply due to lack of habitat.

Perhaps one of the most well-known and charismatic insects is the **Monarch Butterfly**. Monarchs are experiencing continental-wide population declines, mainly due to loss of habitat and agricultural pesticides. Monarchs and hundreds of other native pollinators will benefit from the addition of nectar producing wildflowers to the native grass mixes we plant. In addition, many of these insects also pollinate food crops, which means habitat adjacent to grass buffers can improve yields for farmers.

The Natural Lands Project strives to create a balance between natural land and production land on working farms to improve wildlife habitat and water quality. We believe that the goals of a healthy and clean Chesapeake Bay, improved wildlife habitat and for-profit production farming can coexist.

Our goal in the first three years of the Natural Lands Project is to create 300 acres of native warm season grass fields and buffers and to install 25 acres of wetlands throughout Kent and Queen Anne's counties. These two best management practices will help prevent 2,184 lbs of nitrogen, 154 lbs of phosphorus, and 103,805 tons of sediment from entering our local waters per year for as long as the habitat stays in place. We will also be establishing avian monitoring protocols on each farm we work with to document bird use of the newly installed habitat during the breeding season. Planting will begin in spring of 2016, with the installation of approximately 180 acres of native warm season grasses and the creation of five wetlands.

Our team is making farm visits, meeting with landowners and making recommendations for habitat improvements. We are interested in meeting with any landowners who want to find the balance on their property between wildlife, water quality and production farming. For more information about the project please visit www.washcoll.edu/nlp or contact Dan Small at dsmall2@washcoll.edu.



Above: A male Northern Bobwhite.
Left: Black Swallowtail butterfly on a thistle flower.

Foreman's Branch Bird Observatory

Foreman's Branch Summary

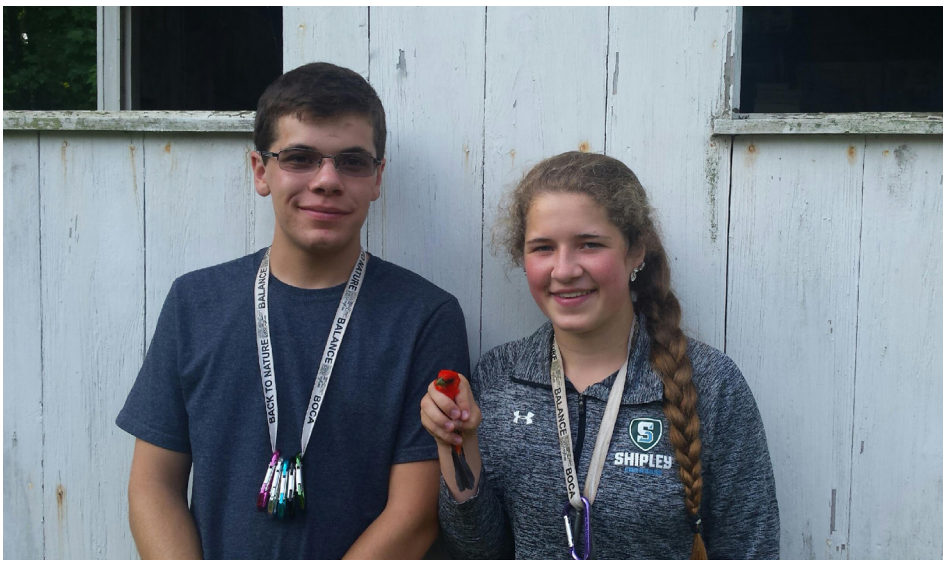
2015 was the 18th year the station has been in operation. The data we are accumulating under banding director **Jim Gruber** continue to be a great resource that provides us and our collaborators a wealth of information about both migrant and resident birds in the area. Overall bird numbers for the year were unremarkable, with most species captured near their long-term average numbers, but as always, there were highlights.

During our spring migration season, spanning March through May, we banded 3,878 birds of 94 species. This is an average number of birds captured at our station and slightly below normal diversity. Our fall season runs from August through November and during that time we banded 8,543 birds of 116 species. This is well below our nine year average of 10,881 and slightly below normal diversity.

Our summer season of June and July netted 571 new birds banded at the station and an additional 198 birds (mostly nestlings) banded from the bird boxes **Maren Gimpel** monitors at the Field Station (see page 16 for more on the nest boxes). The grand total of birds banded in 2015 was 13,362 and also includes some winter banding and the birds banded as part of our grassland studies.

Each year we capture some birds that are already banded. In 2015 we captured 1,390 returns (birds banded in a prior season) and 2,296 repeats (birds banded during the current season). The total number of species banded for the year was 125 as well as two additional races, one hybrid and one intergrade.

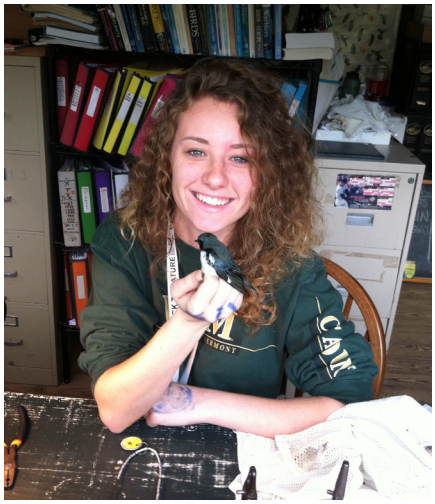
We trained and worked with a number of new volunteers and banders this year. Two Washington College students interned for the spring migration season, **Erika Koontz '17** and **Mike Hudson '18** (see pages 14-15 for more about them).



The summer season serendipitously provided us two new volunteers. **Vincent Fumo** was a high school student looking for a place to volunteer as part of his high school graduation requirements. He came with his family to visit the station, after which not only Vincent, but his younger sister **Carlee Fumo** chose to volunteer. The siblings spent nearly every weekend of the summer at the banding station. Vincent said, "The best part of banding is the thrill of not knowing what is in the net and rounding a corner to find a species you didn't expect." Carlee added, "It was so exciting when I got to hold a bird for the first time. My favorite part of banding is untangling the birds from the nets because each is like a little puzzle."

Above: One of the record-breaking Blue Jays banded in 2015.
Left: Summer volunteers Vincent and Carlee Fumo.

Foreman's Branch Bird Observatory



Despite all our years in operation, we still manage to capture some species in record numbers each year. In 2015 we broke records for eight species: Osprey, Red-bellied Woodpecker, Blue Jay, Blue-winged Warbler, Ovenbird, Common Yellowthroat, Blue-gray Gnatcatcher and Veery. Most of these records were only broken by a few individuals, but Red-bellied Woodpecker, Blue Jay and Blue-winged Warbler were captured in numbers greater than 2 degrees of standard deviation above their average, which is a significant increase.

In staffing news, we were delighted to welcome back **Amanda Spears**, who has a long history with FBBO. She first visited the station in 2009 with a local bird club and later, as a high school senior in the fall of 2011, she banded with us four mornings a week in a work study position. Then, in summer 2012, she ran the banding station to monitor our breeding bird populations. Amanda is now a graduate of the University of Vermont, where she majored in wildlife biology. We are excited to have her back with us as a full time bander.

Above: Amanda Spears with a Black-throated Blue Warbler.
Left: Male Red-bellied Woodpecker.

Top Ten Table — 2015 Spring and Fall Migrations

The 10 most commonly banded species at Foreman's Branch Bird Observatory during migration periods.

Spring 2015

Species	Total
American Goldfinch	757(2)
Red-winged Blackbird	541 (1)
White-throated Sparrow	320 (5)
Gray Catbird	251 (3)
Common Yellowthroat	248 (4)
Song Sparrow	139 (8)
Brown-headed Cowbird	116 (7)
Blue Jay	91
Northern Cardinal	81
Chipping Sparrow	77

Fall 2015

Species	Total
Song Sparrow	1,179 (1)
White-throated Sparrow	1,161 (2)
Common Yellowthroat	697 (4)
Ruby-crowned Kinglet	523 (3)
Gray Catbird	437 (7)
Swamp Sparrow	338 (9)
Slate-colored Junco	295 (5)
Indigo Bunting	277 (6)
Field Sparrow	247(8)
American Goldfinch	244 (10)

*Numbers in parentheses indicate last year's rank within the table

Foreman's Branch Bird Observatory

Foreign Recaptures in 2015

FBBO netted only two foreign recaptures in 2015 and each one is like finding a needle in a hay stack. Foreign recaps are birds that are banded by other banders away from our location. Three times this spring we netted American Goldfinch #2720-97431- on March 16, April 1 and again on April 6. This bird was banded by Michael Newhouse, a naturalist at the **New Jersey Meadowlands** in Bergen County, New Jersey on Sept 9, 2014 as hatch year (HY) female. The New Jersey Meadowlands is about 148 miles northeast of FBBO.

The second foreign recapture of the year was a second year (SY) female Northern Saw-whet Owl. On November 3 and again on November 7, we captured owl #1104-02034 which hatched in summer of 2014. This bird was banded by Larry Clarfeld of the North Branch Nature Center in **Montpelier, Vermont** on October 24, 2015. Amazingly, just before it reached us, this bird was captured on October 30 by another saw-whet station operating 19 miles south of us at Tuckahoe State Park in Ridgley, Maryland. Montpelier, Vermont is about 400 miles northeast of FBBO.

We netted Common Yellowthroat #2640-77737 on September 19, 2013, but have only just learned about its origins. It was banded as an adult female on May 13, 2013 by Laurie Fortin at the Sharon Audubon Center in **Sharon, Connecticut** which is about 225 miles northeast of FBBO.

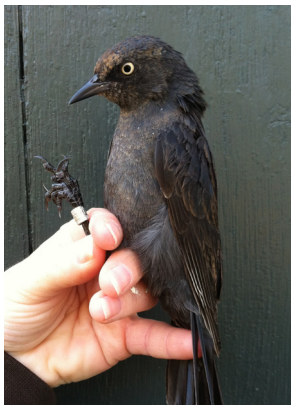
Above: Northern Saw-whet Owl originally banded in Vermont.

FBBO Recoveries

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

Species	Banding Data	Recovery Details
Magnolia Warbler	September 16, 2013	•Hit a window in Marshfield, Massachusetts (**342** miles northeast of FBBO) on May 14, 2015
Red-tailed Hawk	November 12, 2012	•Found dead in Shelburne, Vermont (**383** miles northeast of FBBO) on April 4, 2015
Eastern Towhee	October 11, 2015	•Found dead in Murrells Inlet, South Carolina (**427** miles southwest of FBBO) on November 16, 2015
Purple Finch	November 18, 2010	•Killed by cat in Hartwell, Georgia (**515** miles southwest of FBBO) on April 8, 2015
Gray Catbird	May 11, 2014	•Hit a window in Ocala, Florida (**778** miles south west of FBBO) on May 7, 2015
Purple Finch	November 3, 2014	•Found dead on Cape Breton, Canada (**900** miles northeast of FBBO) on July 11, 2015

Standout Captures

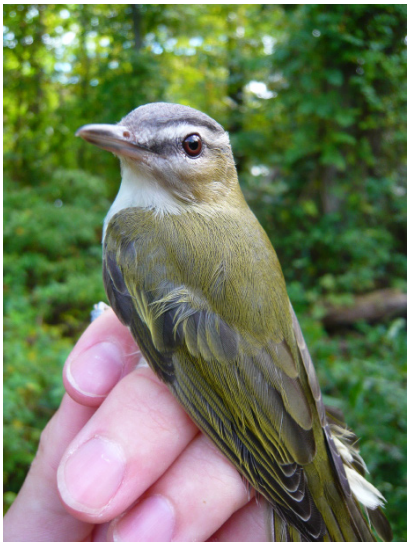


On April 4th we banded only the second **Rusty Blackbird** in our station's history. We banded our first Rusty Blackbird in November of 2010. Although Rusty Blackbirds winter in our area in small numbers, they are mostly encountered during migration. These birds breed in the wooded swamps of New England and Canada. In April this bird would have likely been on its way north, back to its breeding grounds.

We banded the station's 11th **Marsh Wren** on September 30th. One individual was banded in 2014, but prior to that, we hadn't banded one since 2009. Marsh Wrens are uncommon migrants and rare breeders in our area.

On August 22nd, we banded an adult female **Summer Tanager.** It was only the 11th individual we've banded in 18 years. More interestingly, 16 days later this bird was found dead 250 miles south of FBBO in Louisburg, North Carolina.

Two of the birds we captured established new longevity records for their species this year. Because many birds show site fidelity to their breeding grounds, returning year after year, we have a good chance of capturing them repeatedly. On May 14th we captured **Red-eyed Vireo** #1911-76053 which was originally banded on August 7, 2005 as a second year female. We recaptured her again in 2006, 2007, 2012 and then again this year. At the time of her last capture she was ten years and eleven months old and was the oldest known Red-eyed Vireo in North America.



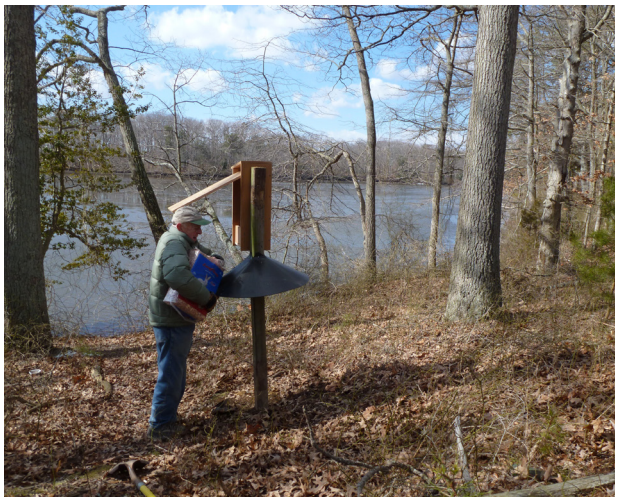
We are lucky to have a colony of Barn Swallows nesting under a bridge at Foreman's Branch. **Barn Swallow** #2360-51266 was originally banded on May 3, 2006 as an after hatch year male. We captured him again in 2010 and 2012 before his most recent capture on June 6, 2015. At that time he was ten years old and the oldest known Barn Swallow in North America.

To arrange a visit to FBBO please contact Maren Gimpel **Mgimpel2@washcoll.edu**

Clockwise from top right: Rusty Blackbird, Summer Tanager, Barn Swallow, Red-eyed Vireo and Marsh Wren.

Volunteers & Citizen Science

Lucky Ducks



Several years ago, **Erney Maher** came to a banding demonstration at the Foreman's Branch Bird Observatory. While at the farm he noticed some dilapidated Wood Duck boxes and he volunteered to spruce them up, and also to monitor them, as he had done at other locations over the years. Erney donated new boxes with predator guards and worked with CRFRS staffer Dan Small to install them. Erney now checks six Wood Duck boxes each season here on the farm. Four boxes hosted ducks in 2015 and Erney counted 53 eggs; of those, 50 hatched. Erney got started monitoring nest boxes because he wanted a useful way to volunteer. For Erney, monitoring the boxes provides some great moments. "It is especially rewarding to find a duckling left behind in a box and unite it with the brood in the pond." A retired pediatrician, Erney moved with his wife Margaret to Heron Point five years ago, where he checks nine duck boxes and five bluebird boxes. Erney is a member of and a Chester Tester for the Chester River Association. He's also busy with the Heron Point Environmental Committee, comprised of residents working to make the community as environmentally friendly as possible. Chestertown is fortunate to have gained such an engaged citizen and we at the field station are lucky ducks too.

Christmas Bird Count

One of the most alluring things about a Christmas Bird Count is that you never know what participants will find. The Chesterville Circle held its 10th count on December 27, 2015 and once again, some prized birds were located. Twenty-one folks in 11 teams covered more than 550 miles and put in about 100 hours of effort tallying all the birds they could within our circle. Out of season birds included a House Wren and a Great Egret. Unusual finds were a hybrid goose (a cross between a Greater White-fronted Goose and a Canada Goose) and a Loggerhead Shrike. The undisputed star of the show, however, was a **Vermilion Flycatcher** found by Jim & Trish Gruber and Amanda Spears at Quail Run Nursery in Millington. This species is usually found in the desert southwest and this individual was only the 4th recorded in the state of Maryland. The nursery owner, Rob Ditmar, was gracious in allowing access to well over 100 birders who came from as far away as Pennsylvania and western Maryland to see the flycatcher.

For more information on Christmas Bird Counts both locally and nationally please see www.audubon.org or contact Maren Gimpel at mgimpel2@washcoll.edu.

Top: Erney Maher puts fresh wood chips in a Wood Duck box.
Left: Vermilion Flycatcher in Kent County.

Mid-Atlantic Northern Bobwhite Restocking Project

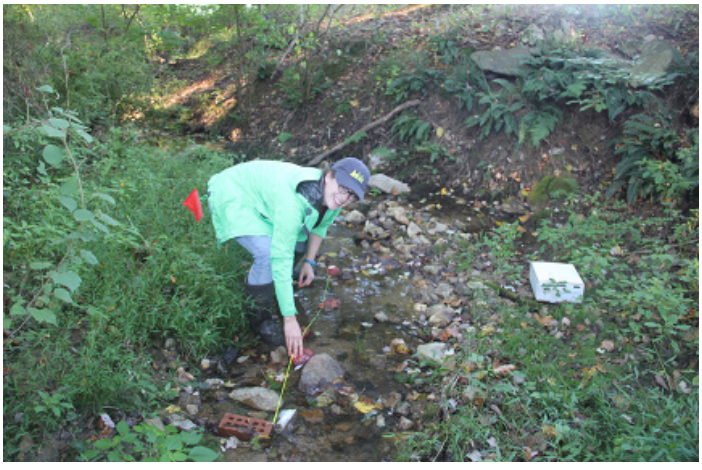
The Chester River Field Research Station in collaboration with **Tall Timbers Research Station** completed the second field season studying the efficacy of re-establishing Northern Bobwhites in the mid-Atlantic using two restocking methods. In the first, wild adult quail were translocated to Maryland from northern Florida. This is the best method to establish breeding populations of quail in areas with few to no birds, however, it is costly and robust donor populations are hard to find. The second method we're testing is **parent-reared imprinting**, where wild quail eggs (easier and less expensive to obtain than adult birds) are hatched in an incubator and then fostered by parents that adopt the chicks. The new family group is placed in an outdoor pen with native vegetation, helping to smooth the transition when the chicks are released into the wild between six and nine weeks of age.

New Jersey and North Carolina are also participating in this multi-state effort. In all states, a subset of all released birds are equipped with radio-collars allowing researchers to track the quail to determine survivorship, movement patterns and habitat use throughout the year. Eventually, data gathered across the three states will be pooled, analyzed, disseminated to the public and published in scientific journals.

Aquatic Invertebrates

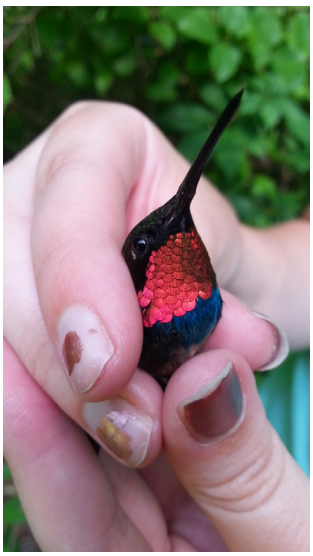
Most farmers in our region plant corn that has been genetically modified to include genes from the bacterium *Bacillus thuriengensis* (Bt) which defends the crop from insect pests— caterpillers that eat any part of the corn plant will die within hours. But what happens after the harvest, when corn debris inevitably blows out of fields and often ends up in adjacent streams?

Associate Professor of Entomology Dr. William Lamp and students Lauren Leffer and Claire Hirt from the University of Maryland, College Park, are investigating these questions, especially what, if any, impact the corn debris has on aquatic invertebrates. Because the Bt proteins can remain viable in the corn leaves for up to six months and stream-dwelling insects rapidly colonize and feed on plant material, there are potential adverse effects for aquatic invertebrates. The team is studying two streams at the field station as well as other streams in the state, sampling the invertebrate communities and quantifying the degradation rates of corn debris to measure any detrimental effects of Bt corn on unintended targets in our waterways.



Top: Newly hatched Northern Bobwhite chicks.
Right: Aquatic invertebrate sampling in streams adjacent to agricultural fields.

Hummingbird Research



Hummingbirds have the highest metabolic rates of all of vertebrates and need a near-constant supply of high-calorie food to keep their bodies fueled. So what happens if these small birds have to share a food source with a potentially threatening competitor? Are wasps perceived as a threat and do they interfere with the hummingbird's ability to obtain the energy that they need? **Dr. Jennie Carr, Assistant Professor of Biology** designed a study to address these questions. With the assistance of **Julianne Golinski '17**, John Toll Science Fellow, she captured, banded and color-marked Ruby-throated Hummingbirds during the summer of 2015. The unique color marks allowed the birds to be identified as they fed at their choice of two types of sugar water feeders. Some feeders had a flat artificial flower that did not interfere with the bird's ability to see wasps near the feeder, while others had cone-shaped artificial flowers that reduced the bird's ability to see. This allowed Julie and Dr. Carr to examine how birds balance the ability to detect wasps at the feeder and consume sugar water. It appears as though hummingbirds do perceive wasps as a threat and tend to avoid or delay eating at feeders where wasps are present. They also tended to spend more time probing in-and-out and hovering near feeders with bees, instead of feeding without interruption. Dr. Carr hopes that a complete analysis of the data will shed light on how perceived threats like bees may interfere with hummingbirds' abilities to gain and conserve the energy they need.

Senior Capstone Experience

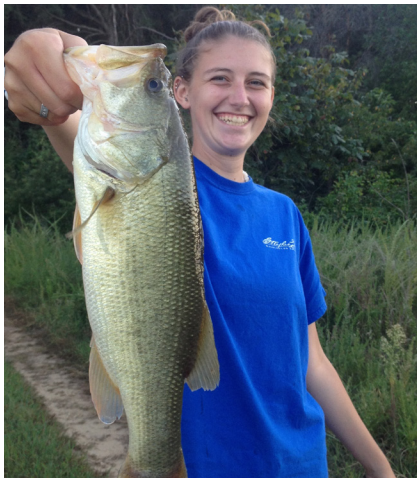
Two students completed Washington College-required senior capstone experiences at the field station in 2015. Inspired by her internship at Foreman's Branch Bird Observatory, **Maddie Zins '15**, with the help of Dr. David Brinker of Maryland Department of Natural Resources (and founder of Project Owlnet) compared Northern Saw-whet Owl banding data from stations across Maryland to see if lunar cycles had an effect on migration volume. The results weren't definitive, but different methodology on a site-by-site basis, lack of data collection during inclement weather and cloud cover weren't taken into account and could explain the results.

Jeff Phipps '15 compared nitrous oxide (N_2O) fluxes from agricultural fields to those of native warm season grasses and wildflower plantings. No statistical significance was noted between the flux from either test area. Random hot spots of N_2O flux were measured and were most likely due to background synthetic nitrogen from previous fertilizations, animal waste from wildlife and irregular melting of ice layers beneath the soils during data sampling.

Top: Color marked hummingbird (with blue coloring below the gorget). Above right: Northern Saw-whet Owl. Opposite top: Amanda Ault '18 with the fish she caught with the Chesapeake Semester. Opposite bottom: Maren Gimpel gives a banding demonstration to students at FBBO.

Academic Engagement

During the past year, hundreds of students took advantage of all that the field station has to offer. From agricultural fields, to wet woods to the grasslands and bird observatory, here are some of the ways that faculty and students spent some time with us and out of the classroom.



In February, **W. Alton Jones Associate Professor of Chemistry Dr. Leslie Sherman** brought her Environmental Chemistry class to the restored grasslands and an adjacent agricultural field. 18 students tested organic matter in the soil and compared the results between the two different land uses.

Dr. Rebecca Fox, Assistant Professor of Environmental Studies and Science brought the 12 students taking Sustainability and the Environment to CRFRS in March to see examples of agricultural Best Management Practices like grass waterways and cover crops.

In early April, students in **Assistant Professor of Biology Dr. Jennie Carr's** Global Warming and Biodiversity class visited FBBO.

Twice in late April, **Dr. Robin Van Meter, Assistant Professor of Environmental Science and Biology** brought out the 16 students in Conservation & Wildlife Techniques class to conduct mark and recapture studies.

Just before the start of the fall semester, the ten students in the **Chesapeake Semester** spent several nights at Chino Farms camping, foraging, fishing and getting to know each other.

For two weeks in September, **Nathan Nazdrowicz and Nancy Weibell**, instructors of Ecology, brought three lab sections to the farm twice. The 48 students conducted experiments on both seed dispersal and arthropod diversity.

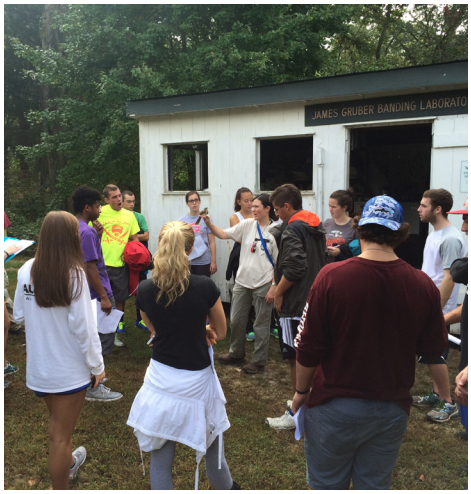
Dr. Carr brought the 16 students of her class on Diversity and Adaptation to FBBO twice in September. Dr. Carr also brought the 16 students of her Ornithology class to FBBO where they identified the birds we captured and observed the similarities and differences between species.

It's not just science students who come to the field station. In late September **CES STEM Educator & Program Manager Jemima Clark** worked with the Washington College Department of Education to develop science lessons for education majors intending to become teachers. **Assistant Professor of Education Holly Brewster** and **Elementary Education Field Experience Coordinator L. Michelle Johnson** and 6 students visited FBBO. They learned how to gather data and its uses in real-world applications. Understanding how to conduct research allowss teachers to better explain it to students.

Department of Art and Art History Lecturer, Karla Stinger-Stein and the 5 students in her Photography Intensive class spent several hours at the restored grasslands to photograph fall prescribed burns.

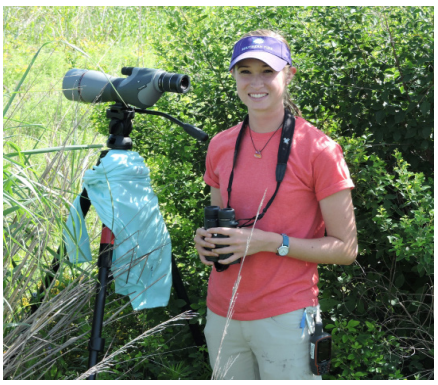
In October, Drs. Van Meter and Fox brought sections of Introduction to Environmental Studies to FBBO. The combined 48 students learned about the scientific uses of bird banding.

263 students visited the station in 2015. Since Washington College's enrollment is 1450, we interacted with about 18% of the student body this past year!

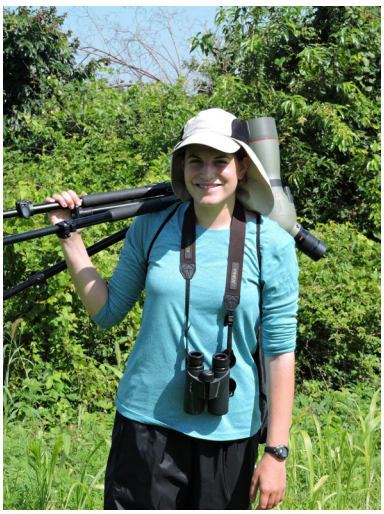


Washington College Interns

Student Internships

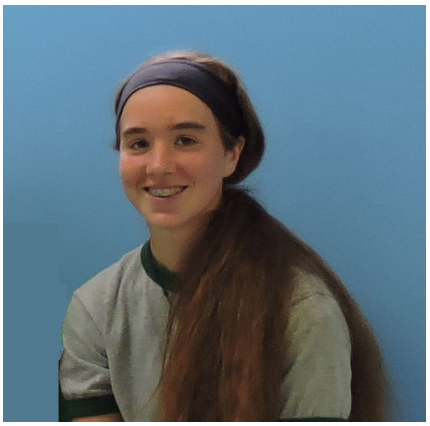


Madeline Poethke '16 of Burlington Township, NJ, spent her summer on our Field Sparrow crew. The John Toll Science Fellow and Biology major was drawn to the position because it allowed her to conduct observational field research studying birds in their own habitats. She also appreciated the opportunity to do work with practical conservation implications. The determined competitor in her was revealed when asked about her favorite part of the summer: "I loved the satisfaction of finding a nest. There's something so gratifying about knowing about where a nest is, staking it out, and then finding it." Madeline was an excellent nest finder and a great part of the team.



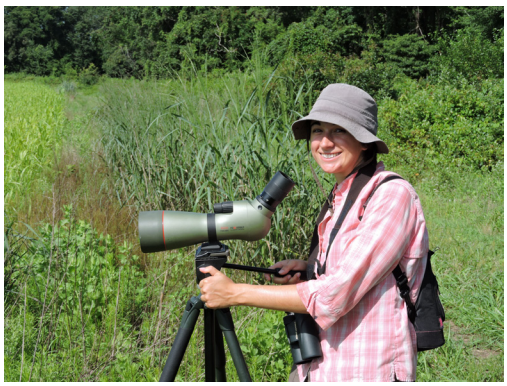
Another member of the summer breeding bird crew was Biology major **Cordelia Faas '18**. She mapped male Field Sparrow territories and searched for their nests throughout our restored grasslands despite struggling with a knee injury for most of the season. The Paoli, PA native was excited to see what field work really entailed and was pleased to discover she liked it. Cordelia enjoyed seeing the Field Sparrow breeding cycle from beginning to end. "My favorite part of the internship was watching the chicks grow up. It was extremely rewarding to find a nest, watch the videos of the chicks, and then later see them hopping around the field."

Returning for another season at the banding station was Biology major **Mike Hudson '18** from Baltimore, MD. Last year he came as a volunteer, this year he had a paid position both for spring and fall migration seasons. It was great to see Mike's knowledge and skills grow. Mike noted that "no two seasons are alike" and that having now been at FBBO in both fall and spring allowed him to familiarize himself with species and plumages that differed between the seasons. During the fall, he was especially excited to help with our Northern Saw-whet Owl banding. "Seeing saw-whet banding is what originally sparked my interest in bird banding years ago, and so getting to help with it almost every night of the owl season was an incredibly rewarding opportunity for me."

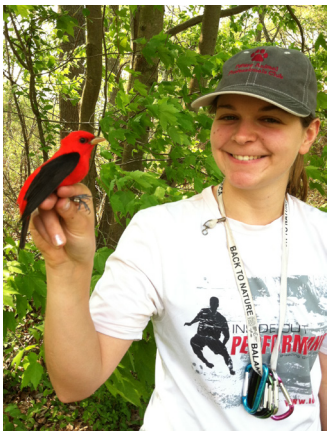


Joining us for a third year at the Field Station was **Kailani Clark (Gunston Day School) '16**. In past years she volunteered at FBBO learning about bird banding. In summer 2015, she volunteered weekly in the restored grasslands working on the Field Sparrow provisioning study. "Though the ticks, no-see-ums and sweatiness sometimes ran me down, they were more than made up for by the privilege of watching the summer sun break over the horizon and gild the tall grasses, seeing northern bobwhites and their young speed-waddle down the dirt road ahead of us, and thrashing through mullen and thick greenery searching for a field sparrow nest before finally finding it, complete with delicate eggs or squalling chicks just about to fledge."

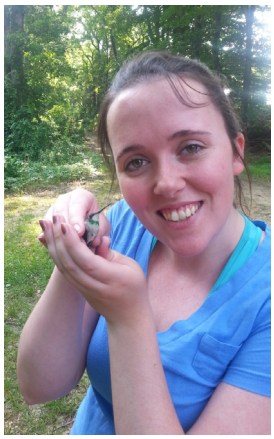
Washington College Interns



Also on the summer Field Sparrow team was Ellicott City, MD native, **Sarah Giordano '15**. Sarah majored in Environmental Studies at Washington College and she cited the opportunity to get hands-on experience with wildlife as the main draw to the job. "I think my favorite part of the season had to be when we noticed a strange feeding behavior in the video feed of one of the field sparrow nests. Three sparrows (two males and one female) were feeding the chicks instead of the usual two sparrows (one male and one female). I was excited by this discovery (as small as it might have been) and the opportunity to learn the possible reasons for such an abnormality. The drive to learn more, whether it is about wildlife or how to more efficiently work through video feed, will serve you well wherever you go."



Environmental Studies major **Erika Koontz '17** had her eye on a banding internship at FBBO from the start of her Washington College career. The fall of her freshman year she came by on weekends to see what the research entailed and was excited to learn she could get paid to do what she had been willing to do as a volunteer. During the spring migration season the Glenelg, MD native appreciated that this was a true hands-on internship: "I enjoyed the ability to learn at my own pace and then be completely trusted to remove birds, especially uncommon ones, from nets and band them. A male Scarlet Tanager was in one of the nets one morning, and I remember being so excited to take it from the nets on my own." One of her favorite experiences was the morning we caught a Cooper's Hawk just as she was leaving for class. She was late for philosophy, but it was totally worth it.



John Toll Science Fellow **Julie Golinski '17** spent her summer studying Ruby-throated Hummingbird feeding behavior with Dr. Jennie Carr (more on this project can be found on page 11). The Biology major from Centreville, MD really enjoyed getting outside and working around others who were equally enthusiastic about it. Julie said the study also helped her finally make connections to many of the topics she had been learning in the classroom. According to Julie, perhaps most importantly, the summer "prepared me for a future in research and graduate school where I can build on the skills I have learned."

The Center for Environment & Society is dedicated to providing excellent, challenging, and inspiring experiential internship opportunities. For more information on our internships or to apply please visit our website: www.washcoll.edu/centers/ces or call our office (410) 810-7161.

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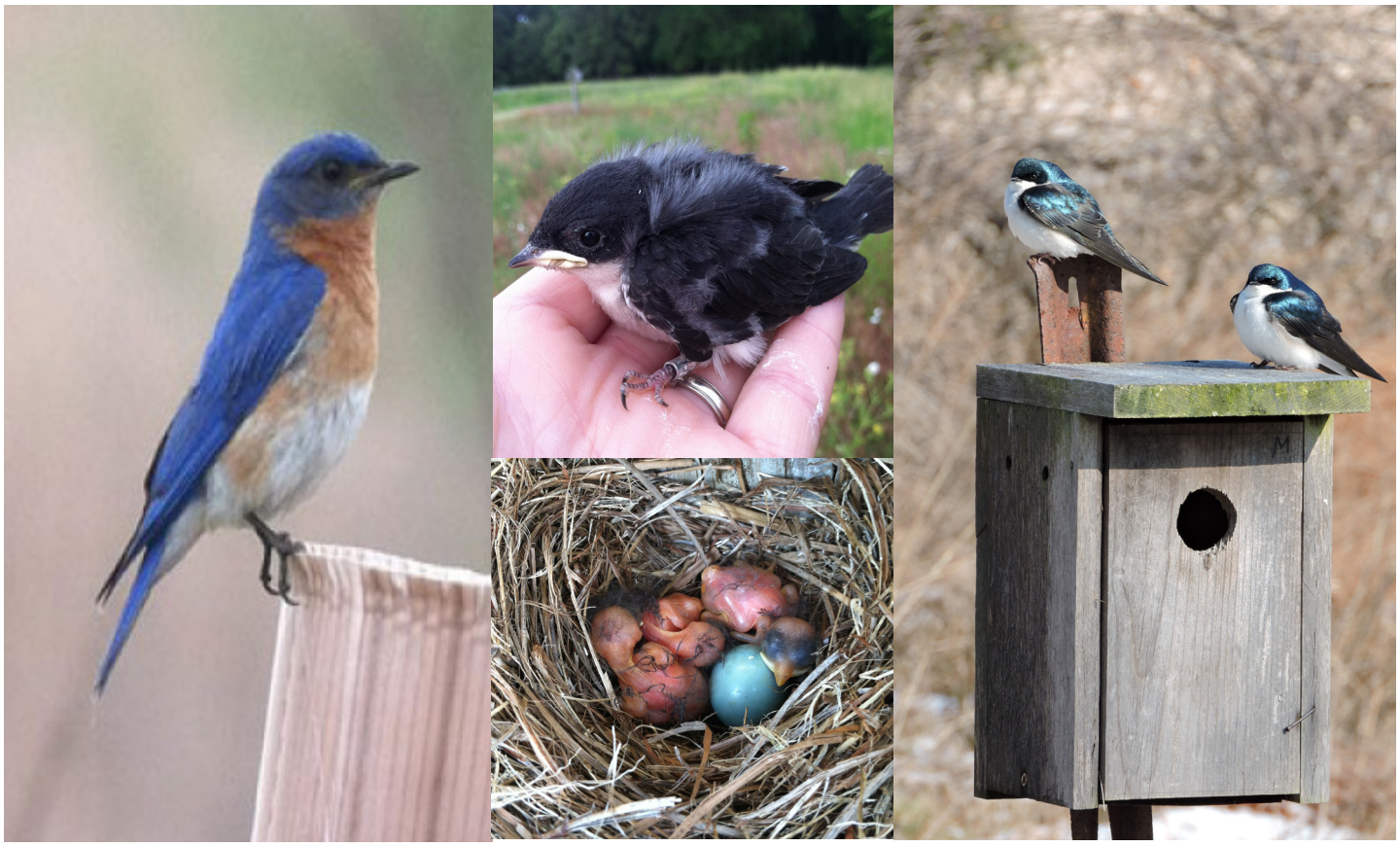
CRFRS 2015 Newsletter



There are more than 100 nest boxes at the Chester River Field Research Station and staff have been monitoring them since 2000. Eight species of birds have nested in them, but most are used by just two— Eastern Bluebirds and Tree Swallows. Since we began monitoring the boxes we've recorded 2,371 bluebird eggs laid and 1,222 fledged and 2,197 Tree Swallow eggs were laid and 1,212 chicks have fledged. Both of these species require cavities in which to nest and they can be out-competed by non-native species such as European Starlings and House Sparrows. Putting up a bird house is an easy and inexpensive way to support birds in your yard, where you work, or at your child's school. Visit **www.nestwatch.org** for box designs and placement tips as well as help in identifying nests and eggs. Become a **citizen scientist** by observing what species use it and documenting their breeding success. Submitting your data to NestWatch makes it available to researchers.

The Center for Environment & Society at Washington College supports interdisciplinary research and education, exemplary stewardship of natural and cultural resources, and the integration of ecological and social values. By managing precious resources over the long term, we can preserve the natural world and opportunities to study it, for generations to come. One of our most important goals is to provide research opportunities for students. The Center awards 10-12 competitive internships each year, with many students choosing to work at the Chester River Field Research Station at Chino Farms.

Funds are needed to support a variety of programs and research projects. Gifts may be earmarked for the Center, the Field Research Station, or the Bird Observatory. Please contact Jenifer Emley at jemley2@washcoll.edu or 410-810-7161. Thank you.

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