CHESTER RIVER Field Research Station

AT CHINO FARMS

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 a major year-round avian migration research and banding station, the **Foreman's Branch Bird Observatory**
- Environmental education programs for K-12, undergraduate and graduate students, and people interested in the natural sciences.

Background

The research station was formed to address the conservation practices and issues involved with restoring wildlife habitat on fields adjacent to commercial agriculture. The experiment to restore native habitat began in 1999, with priority given to reestablishing the coastal grasslands that once dominated the mid-Atlantic seaboard.

Relatively unproductive, sandy and acidic soils—228 acres total—were placed under 15-year, renewable contracts with the Conservation Reserve Program and Conservation Reserve Enhancement Program.

Twelve replicated fields of 23+ acres were planted in eight species of native warm-season grasses and two cold-season grasses in five seed-mixture treatments. Initial ornithological research was directed toward Grasshopper Sparrows (*Ammodramus savannarum,* left), using them as biological indicators of the value of the grassland mixes installed and managed.

Merged in 2011 with the **Center for Environment & Society** at **Washington College**, the field station and the observatory continue their research while providing educational opportunities for up-and-coming biologists. Both offer demonstrations about birds and banding, and train several student interns each year.

Foreman's Branch Bird Observatory

Under the direction of Jim Gruber (above), the bird observatory has been operating at its current location since 1998.

Staff and volunteers focus on migratory banding, with a spring season that runs from March through May, and a fall season spanning August through November. They also band once a week during the winter.

"Despite not banding in the summer," says Gruber, "we probably capture most of the locally breeding birds on either end of our migration banding."

To schedule a visit, contact field ecologist Dan Small at dsmall2@washcoll.edu.

Grasslands Research & Education

Grasslands Summary

The 13th year of demographic studies involving Grasshopper Sparrows and, now, Dickcissels *(Spiza americana*), continued in the restored grasslands.

The 2011 field season started with the arrival of the first **Grasshopper Sparrow** on April 18th. That male, along with 69 other male Grasshopper Sparrows, stayed long enough to establish territories, attract a mate and try to breed. The last male detected in the grasslands was identified on September 2nd.

Grasshopper Sparrows are present in the grasslands into October, but become extremely difficult to detect as they spend most of their time on the ground finishing their annual complete molt prior to migration.

With the help of Washington College interns we were able to gather enough data points to map 70 male territories. A total of 1,662 territorial GPS waypoints were taken with an average of 23 points per male. A total of 88 males were present for some time on the grasslands, but we either did not obtain sufficient waypoints for a estimating a territory, or these additional birds did not stay long enough to establish one.

A total of 69 female Grasshopper Sparrows were detected in the grasslands this summer, from which we obtained 208 GPS location and behavioral waypoints.

A total of 75 Grasshopper Sparrow nests were found this summer within the restored grasslands, the second highest number found in 13 years of searching. In those nests, a total of 278 eggs were laid and of those, 142 fledged. Close to 60% (58.7%) of all nests fledged at least one nestling, 38.7% were depredated and the fate of 2.67% were unknown.

The 2011 breeding season showed an impressive invasion by **Dickcissels** (photo right) onto the east coast generally, and the restored grasslands were no exception. At least four males were seen by the unusually early date of May 18th.

The presence of four birds in mid-May alerted us to the impressive season we were about to have, as Dickcissels typically arrive after the first week of June.

The first female Dickcissel was seen on May 20th and already appeared to be pairbonded with an established male.

The year's breeding population totaled 24 individuals; 13 males and 11 females. Twenty-nine hatch-year birds were banded

Spotting scopes and binoculars, along with good eyes and ears, are key research tools in the grasslands.

from a record-setting 16 nests. Of those, 56.3% fledged at least one chick and 43.8% were depredated.

The reasons for the 2011 invasion are unclear, but one hypothesis is that the birds were forced further east during migration to find suitable breeding sites due to the flooding of the Mississippi River in the spring.

We continued our standardized banding scheme to allow for comparisons between years. We banded a total of 63 days during the summer, starting May 23rd and ending September 20th. A total of 986 new birds of 45 species were banded.

With the invasion of Dickcissels we banded a record high 46 individuals (17 adults and 29 hatch-years). A total of 396 new Grasshopper Sparrows were banded in 2011 (27 adult male, 31 adult female and 338 hatch-years).

One hypothesis is that Dickcissels were forced further east during migration to find suitable breeding sites due to the flooding of the Mississippi River in the spring.

Numbers of the other six common nesting birds in the grasslands were relatively close to the long term banding average. One exception was Indigo Buntings *(Passerina cyanea)* which were at about half the long term average (only 17 new individuals were banded compared to the 13-year average of 42).

Overall returns (a bird banded in a previous year) were down this year, with the lowest total in seven years. Twenty-eight adult male and 23 adult female Grasshopper Sparrows returned from previous years, an astounding 38 second-year birds (birds that were banded in 2010 as nestlings or hatch-years) returned to the grasslands. Thus, the return rate for adult male Grasshopper sparrows was 50.9%, for females 42.6% and for hatch-year and "local" birds (those banded in the nest) 13.5%. Only two Dickcissels from previous years returned to the grasslands in 2011.

Doug Gill

Doug Gill has been an inspiration to hundreds of students in the classroom and in the field. If you have connected with him through research on the Grasslands or his longitudinal study of Pink Lady's Slippers, you know one of the most passionate scientists and personalities.

After 38 years of teaching biology at the University of Maryland, Doug "retired" from official academic life in 2011 to allow more time to travel the world looking for rare birds. Now Professor Emeritus, he maintains an office and lab at College Park where he may still be found analyzing data and engaging students in scientific and philosophical discussions.

Doug is a fount of knowledge about the natural world and all things avian, and his curiosity and enthusiasm for field work are infectious. As scientific director of the Chester River Field Research Center for 12 years, Doug helped Harry Sears to launch the Grasslands' restoration studies and he designed the ongoing avian and vegetation research programs. When Doug retired from the University, he stepped down as director and took on the role of scientific advisor.

If you are interested in meeting up with Doug in the field, try catching him before he jets off to explore another remote island with tropical birds.

Research & Education

Longevity Record Breakers

Two species in the grasslands became new North American longevity record holders in 2011.

A female Indigo Bunting (1821-14555) banded on 15 May 2003 as a second-year was last captured on 19 July 2011, making it nine years and one month old. This surpasses the old longevity record by ten months.

In addition to this old female Indigo Bunting, a male Indigo Bunting (1881-21759) banded on 20 July 2004 as an after second year was recaptured on 9 June 2011, making it nine years old and the second oldest Indigo Bunting in North America.

The only female Dickcissel (1931-09173, MMPX) to return to the grasslands this year was originally banded 3 August 2005 as a nestling and was last seen on 19 July 2011. This makes her six years and one month old. This new longevity record surpasses the old record by 13 months.

In addition to the table (see below) of old birds recaptured at Foreman's Branch Bird Observatory, two birds established North American longevity records.

On 24 May 2011 we captured an Eastern Wood-pewee (2260-51982)

Field ecologist Maren Gimpel takes vegetation measurements in the grasslands.

Recapture Table

A small sample of older birds, arranged youngest to oldest, that were banded at Foreman's Branch and returned to the bird observatory in 2011. HY = hatch year, SY = second year, U = unknown sex, M = male, F = female.

Species	Original Data	Recapture	Years Old
Hermit Thrush	HY-U banded 11-05-06	10-24-11	5 yrs. 4 mos.
Indigo Bunting	SY-M banded 05-11-05	08-24-11	6 yrs. 2 mos.
Gray Catbird	HY-U banded 09-18-05	09-29-11	6 yrs. 3 mos.
American Goldfinch	SY-M banded 05-05-05	11-01-11	6 yrs. 5 mos.
Indigo Bunting	HY-M banded 08-29-04	08-25-11	7 yrs. 2 mos.
Indigo Bunting	HY-M banded 08-04-04	08-18-11	7yrs. 2 mos.
Song Sparrow	HY-U banded 11-10-04	11-28-11	7yrs. 5 mos.
White-throated Sparrow	HY-U banded 10-27-04	11-14-11	7 yrs. 5 mos.
Northern Cardinal	HY-F banded 10-31-03	11-21-11	8 yrs. 5 mos.
Gray Catbird	HY-U banded 08-07-02	10-04-11	9 yrs. 4 mos.

which was originally banded as an after hatch-year on 18 May 2003. At the time of recapture the bird was eight years and 10 months old breaking its own age record by eight months.

On 12 April 2011 we re-captured a Swamp Sparrow (1831-29433) which was originally banded as a hatch year on 22 October 2003. At the time of recapture this bird was seven years and 10 months old. The second oldest North American record is five years, 11 months.

This Northern Bobwhite female appears healthy during the data collection and banding process.

Radio Tracking

A new project, radio-tracking hatch-year Grasshopper Sparrows, was initiated in July 2011.

The three major objectives of this study were to: assess post-fledging survivorship, understand post-fledgling movement patterns, and analyze micro-habitat use of these individuals as they moved around the grasslands and potentially outside the study area.

Radio tracking is the most effective method for studying hatch-year Grasshopper Sparrows as they are extremely inconspicuous and spend most of their time on the ground out of sight of predators (and researchers!).

The birds were tracked twice a day, once in the morning and once in the afternoon, for the life of the transmitters (2-4 weeks). A second round of tracking is planned for the 2012 breeding season.

Northern Bobwhites

Northern Bobwhites have long been a species of interest at Chino Farms, with various monitoring schemes put in place over the years to keep track of the population. The farm used to be a stronghold for the birds in Northern Queen Anne's County. One of our goals is to restore the quail population on the property and encourage regional landowners to do the same.

A renewed focus on Bobwhite restoration is taking hold through the **Eastern Shore Quail Recovery Project**. This initiative brings together local property owners and the combined efforts of Maryland DNR, Washington College, and Tall Timbers Research Station and Land Conservancy.

Dr. Theron Terhune, education and outreach coordinator at Tall Timbers, and Dr. Harry Sears held the first Quail Summit at the College in September 2011. A second program is slated for April 2012.

Under the leadership of upland game biologist Bob Long, Maryland DNR continues to conduct spring male whistling counts and fall covey counts at the site. However, a long-anticipated radio telemetry project was put on hold after the severe winter storms of February 2010 decimated the local quail population.

Interested in making a gift to restore Mr. Bobwhite's habitat? You may earmark gifts through the College's Center for Environment & Society. Contact JoAnn Fairchild Wood at 410-778-7295 or jfairchild2@washcoll.edu for giving protocol. Thank you kindly!

Foreman's Branch Bird Observatory

Intern Amanda Spears, above, holds a Canada Warbler.

Mist nets are used to gently catch birds for research purposes. During the migration seasons, nets go up before sunrise and come down late in the morning. Field ecologists check the nets every 20-30 minutes to gather data on a bird's species, age, sex, weight and wing length among other indicators of avian health. Every bird is released within minutes of its capture.

Foreman's Branch Summary

The 2011 banding seasons combined for another productive year at Foreman's Branch Bird Observatory. This was the 14th year that we monitored the seasonal movements of birds migrating through Maryland's Eastern Shore.

A total of 16,318 new birds were banded in 2011, which was the third best season since we started banding in 1997. This total includes summer, winter, and nest box banding.

During spring migration we banded 3,636 individuals and in fall we banded 11,256 individuals. We recaptured 4,549 birds, of which 1,983 were returns (birds banded in a previous season) and the rest were repeats (an individual handled more than once within a season).

One hundred and twenty-eight species, three races, one intergrade and one hybrid were banded, compared to the long-term average of 125 species. Nets were open 156 days and 77,795 net hours were recorded.

Throughout the year the bird observatory held 54 banding demonstrations for 287 different visitors. Six middle school and college classes visited the banding station during the year.

Many species were captured in higher numbers than their long-term average. An abbreviated list of notable birds that broke previous record high counts includes (number in parentheses is the previous high):

Cooper's Hawk 7 (3), Traill's Flycatcher 154 (111), Tennessee Warbler 22 (11), Black-throated Blue Warbler 111 (85), American Redstart 200 (137) and Blue Grosbeak 387 (204). Four species of thrush also broke previous highs lead by Hermit Thrush 305 (219), Swainson's Thrush 62 (42), Bicknell's Thrush 5 (3) and Gray-cheeked Thrush 41 (40).

Foreman's Branch Bird Observatory

Tim Sears records data, with a Red-breasted Nuthatch in foreground.

Foreign Recaptures in 2011

Foreign "recaps" are birds that have been banded elsewhere and then re-captured at Foreman's Branch Bird Observatory. They are arguably one of the principle functions of, and some of the most interesting events at, bird banding stations.

In 2011 we handled two foreign recaps. An **American Goldfinch** was banded by Bill Hilton on 19 March 2011 in York, South Carolina, at Hilton Pond Center for Piedmont Natural History. We captured it just over a month later on 22 May 2011. This is not the first bird we captured from that site. In 2010 we caught another goldfinch banded at Hilton Pond.

Mr. Hilton notes "We're not sure what the odds are of banding two American Goldfinches at the same Carolina Piedmont site and then having them show up more than 400 miles away at the same research station in Maryland, but they're probably pretty slim."

The second recap was a **Yellow-shafted Flicker** that was banded in Dunnville, Ontario, on 16 September 2008. We captured it twice at Foreman's Branch in 2011, first on the 5th of April and again on the 11th of October after it returned from Canada. It was very exciting the first time we captured this bird back in 2008. It was even more surprising when this bird continued to return to Foreman's Branch for the winter each successive year! The original site, Rock Point Bird Banding Station, never saw him again, but he's come to us each winter since – another great example of winter site fidelity in birds.

Top Ten Table — 2011 Spring and Fall Migrations

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

Spring 2011

Species	Total
American Goldfinch	562
Red-winged Blackbird	335
White-throated Sparrow	323
Gray Catbird	312
Common Yellowthroat	243
Brown-headed Cowbird	133
Song Sparrow	104
Indigo Bunting	100
House Finch	98
Swamp Sparrow & Myrtle Warbler	79

Fall 2011

Species	Total
White-throated Sparrow	1552
Song Sparrow	982
Indigo Bunting	909
Gray Catbird	537
Slate-colored Junco	503
Common Yellowthroat	484
Ruby-crowned Kinglet	413
Chipping Sparrow	353
Blue Grosbeak	336
Swamp Sparrow	304

Foreman's Branch Bird Observatory

Standout Captures

There were three very exciting captures in 2011. On 17 August we banded a "**Lawrence's Warbler**" (pictured top left). This is a hybrid of a Blue-winged Warbler (BWWA) mated with a Golden-winged Warbler (GWWA). The two species overlap in their breeding ranges and are known to interbreed. The offspring of such a pairing result in two phenotypes ("Brewster's Warbler" and "Lawrence's Warbler"). The less common of these is the "Lawrence's Warbler" and it usually results from second-generation backcrosses between a "Brewster's Warbler" and a GWWA, "Brewster's Warbler" and a BWWA, or from two "Brewster's Warbler". This was only the second "Lawrence's Warbler" ever banded at Foreman's Branch Bird Observatory!

We captured an **Ash-throated Flycatcher** on 9 November and on 30 November we banded a second (shown bottom left). These two birds were the first ones banded in Maryland, and among the first half dozen banded in the Atlantic Flyway. Notably, these birds were also the *only* two Ash-throated Flycatchers reported for Maryland during the fall migration.

Ash-throated Flycatchers are common breeders west of the Rockies and annual vagrants to the east coast. The birds were more abundant in the east this year. Some speculate this could be due at least in part to the record-setting droughts in Texas and the southern Great Plains.

To schedule a visit to the Bird Observatory or to arrange a tour of the grasslands at Chester River Field Research Station, please contact Dan Small at dsmall2@washcoll.edu or call 410-810-7161.

To support ongoing research or contribute to building a new banding station at Foreman's Branch Bird Observatory, please contact director Jim Gruber or field ecologist Maren Gimpel at mgimpel2@washcoll.edu. Or call JoAnn Wood at 410-778-7295. Thank you very much!

Grasshopper Sparrow Research

Grasshopper Sparrows

Grasshopper Sparrows have been described in many ways. Phillips (1978) found them "an exceedingly handsome bird in the hand," whereas Forbush (1929) called them a "queer, somber-colored, big headed, short tailed, unobtrusive little bird." You can examine the photo below and make up your own mind.

These birds have a wide distribution across the United States, though many populations have been experiencing declines since the early part of this century due mainly to the loss of breeding habitat.

In the east the birds prefer short grasslands with patchy open ground with few bushes and little shrub cover. On Maryland's Eastern Shore, Grasshopper Sparrows often nest between rows of soy beans, wheat, and corn. The density of nesting and territorial birds is much lower in agriculture fields than in restored grasslands like those at the Chester River Field Research Station.

A male Grasshopper Sparrow in mid song. Grasshopper Sparrows are one of the few sparrow species that produce two distinctive classes of song—a short insect-like "buzz" song and a more musical "warble" song.

Depending on the breeding latitude, Grasshopper Sparrows can have up to three nesting attempts per season. The female alone builds, incubates, and broods the nest. The male helps feed the nestlings and fledglings while maintaining his territory. These nests can be extremely difficult to find, nestled beneath warm season clump grasses and in nooks and crannies of root systems and older vegetation.

In the restored grasslands at Chino Farms, the main predators of nestlings are snakes, foxes, skunks and, in one documented case involving infra-red triggered cameras, a white-tailed deer.

Grasshopper Sparrows are one of the few sparrow species that produce two distinctive classes of song—a short insect-like "buzz" song and a more musical "warble" song. The specific functions of these two song types in Grasshopper Sparrows is still under active investigation.

Birdsong Studies

Over the summer, **Dr. Bernard Lohr** of the University of Maryland Baltimore County (UMBC) and his students made high quality audio recordings of most singing male Grasshopper Sparrows in the grasslands at Chino Farms.

They used color-band codes and GPS mapping information to identify specific males. These recordings were followed by detailed digital measurements of song characteristics in the laboratory during the fall of 2011.

Students performed a statistical analysis on several song measures previously shown to be preferred by female songbirds in other species including: song length, number of notes, note consistency, and trill performance (frequency bandwidth versus trill rate).

Long term goals include following the returning offspring of territorial males in the population to look at potential heritable characteristics in song.

Grasshopper Sparrow Research

In 2011 Dr. Jill Soha, visiting biologist at Duke University, and Dr.Angelika Nelson, curator of the Borror Laboratory of Bioacoustics at Ohio State University, conducted playback experiments in the grasslands using songs of both local and non-local male Grasshopper Sparrows. They investigated whether territorial males on the grasslands show different stereotyped behavioral responses to songs from the local population than to songs from more distant populations.

Song Patterns

Research shows that Grasshopper Sparrows sing two distinct types of song (see Figure 1 below), but only a single song of each type.

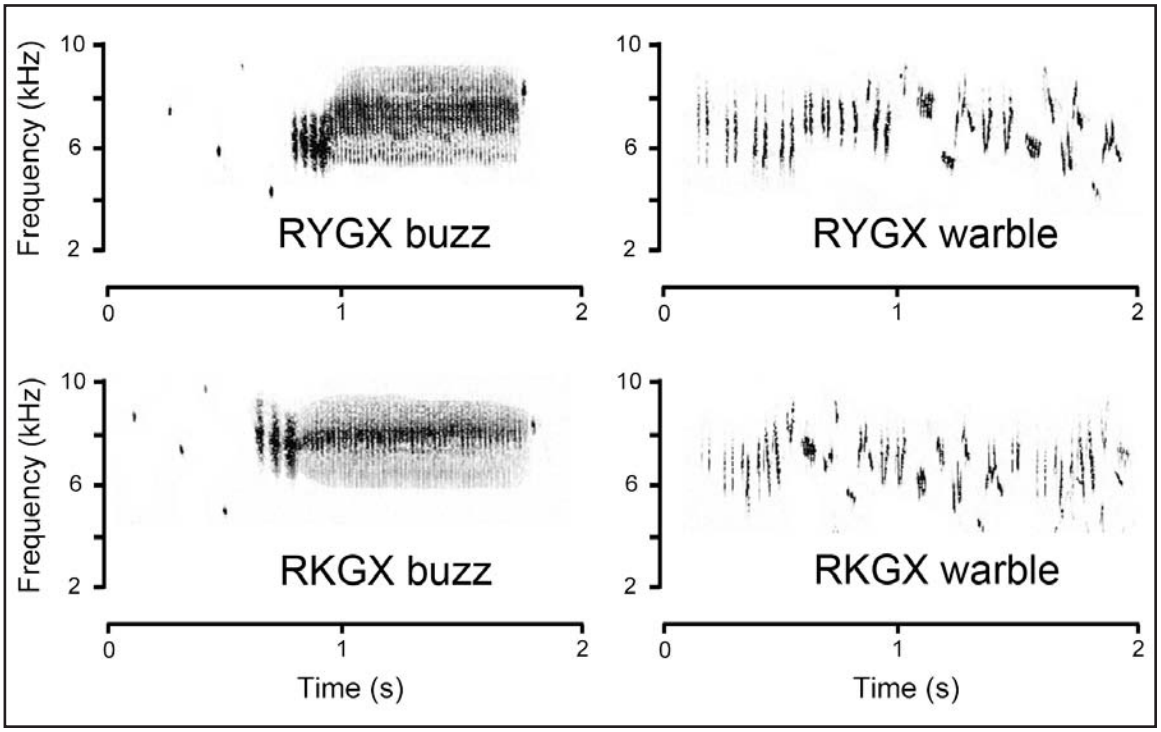
The territorial song, known as "buzz song," is the principal advertisement that males use for territory defense and mate attraction. Males produce buzz song immediately upon arrival on the breeding grounds after spring migration, and throughout the summer until early-mid August. Every territorial male sings this song type.

The function of the secondary song class, known as "warble song," remains unclear. Sung only by males that are paired and during later portions of each breeding cycle (often the time of egg hatching), warble song is less commonly produced than buzz song.

To understand how grasshopper sparrows pattern these two song types over a breeding cycle and across the season, **Dr. Bernard Lohr** (UMBC) and visiting biologists from Duke and Ohio State placed long-term automated recording units (ARUs) in the center of 20 male territories.

Data from eight of these ARUs were analyzed by university students in the laboratory during the fall 2011 semester to examine song transition patterns, and to quantify both the amount of song produced by individual males as well as the relationship of song type to specific behavioral events in the breeding cycle (egg laying, hatching, fledging, etc.).

Both the buzz and warble songs of males were clearly distinguishable from those of neighboring males on all recordings, facilitating student identification of focal males.



Sound spectrograms of buzz and warble songs of two male Grasshopper Sparros (color band codes RYGX and RKGX) from the Chester River Field Research Station population in eastern Maryland. Spectrograms were generated using the SIGNAL / RTSD sound analysis and synthesis software. Songs are unique to a specific male and can be differentiated visually on spectrograms.

Washington College / Chino Farms Partnership

Left: Evan Miles explains how new and on-going research projects may be conducted alongside for-profit farming operations at Chino Farms.

Below: Jim and Trish Gruber give bird banding demonstrations.

Open House at Chino Farms

To announce the merger between the Chester River Field Research Station and Washington College's Center for Environment & Society, Chino Farms hosted an open house for 35 friends in May 2011.

With its plots of bluestem, switchgrass, Indian grass and deertongue (among others), the Field Research Station offers a glimpse of habitat that once dominated the Mid-Atlantic Coastal Plains. Here, scientists are undertaking a restoration project supporting endangered grassland species in which migratory birds are major study indicators.

At the center of this experiment is **Henry Sears**, a surgical oncologist whose family has owned **Chino Farms** since World War II. Dr. Sears provides farm access to researchers and students interested in habitat restoration, soil chemistry and land conservation measures to halt the decline of Maryland's disappearing bird population.

Evan Miles welcomed the group and talked about best management practices on the farm; **Doug Gill** touched on the challenges of creating and maintaining diverse wildlife habitat, especially in the grasslands; **Jim Gruber** gave a banding demonstration at Foreman's Branch Bird Observatory; **John Seidel** thanked Dr. Sears for the "unparalleled field opportunities" the alliance presents to students/faculty at Washington College, and to scientists and educators from other schools and agencies.

Seidel added that the **Center for Environment & Society** will be the portal to the resources and rich habitat at Chino Farms. "Dr. Sears has a vision," he said, of expanding research into other areas including forest habitat, wetlands and seasonal wetlands, and farmland. "And we're here to help make that happen."

Washington College Interns & Faculty

Student Internships

Under the supervision of **Dr. Aaron R. Krochmal**, Washington College intern **Brendyn Meisinger '13** initiated a long-range project to inventory reptiles and amphibians in the Rochester Woods section of Chino Farms. The study aims to assess the quality and health of the woods by documenting and quantifying the status of herpetofaunal populations.

During the summer of 2012, the two men will return to use radio telemetry to investigate the terrestrial movements and landscape ecology of freshwater turtles that inhabit the Delmarva Bays of the Rochester Woods area. The results of this work will help inform wildlife conservation and land management decisions.

Brendyn, who learned about Chino Farms during a **Chesapeake Semester** field day, is majoring in environmental studies with a minor in biology. He wanted to gain experience for a future job as an environmental scientist, so he also interned at Foreman's Branch Bird Observatory last spring. "I did it for my career and for my love of nature, but I don't love getting up at four in the morning unless I'm hunting," he says.

"My favorite part of the job was when we caught a Belted Kingfisher. I loved that bird—his feathers were so blue." Although the Kingfisher bit him, and the little hooks on his bill shredded his finger, Brendyn says it was still his favorite bird.

Margaret Rohde '12, an environmental studies major and biology minor, was very excited about the opportunities her internship at Chino Farms provided. "Using a GPS, banding and radio tracking birds gave me valuable skills which will help me obtain the kind of job I would love to have one day," she says. "I always loved birds and observing them," she adds, "so I figured I would be happy working with them." Though it's hard to pick, she says her favorite part of the job was probably banding because "it was awesome to handle the birds and see them so closely." After graduation, Margaret would like to get an internship doing similar field work, and she hopes to land a job with U.S Fish and Wildlife Service.

Clockwise: Washington College interns Margaret Rohde '12, Erica Raudenbush '12 and Brendyn Meisinger '13.

Washington College Interns & Faculty

Rachel Field '11 interned in the grasslands in 2009 and 2010, and at the bird observatory in the spring of 2011. By the fall of 2011, she was a full-time research fellow. Although she majored in environmental studies, Rachel credits her minors in Philosophy and Religion, and English, for adding depth to her field studies.

Rachel was able to design her own experiments over the summers and participate in the Grasshopper Sparrow study. She gained experience with observing bird behavior, nest searching, and target banding. "I learned how to safely extract passerines from mist nets and how to use molt limits to age songbirds," she says. "And the skills I learned during my research fellowship allowed me to become a part of a nationally-competitive crew on a long-standing field project through the Smithsonian."

As a biology major, **Erica Raudenbush '12** had completed a lot of work in the lab but needed experience in the field. She wasn't familiar with birds at the beginning of the summer, but by the end she could identify many by sight and sound. Her favorite part of the research was determining a specific bird's territory and mates, and comparing them with data collected the last few years. "Movement and mating patterns fascinate me, and that's something I would like to continue researching after graduation," she says.

Erica hopes to find similar field work in a different part of the country so she can work with a variety of species. Her long-term goals include graduate school with a research focus on animal behavior, relationships and memory. "I decided to pursue my doctorate in part because of this field internship at Chino Farms," she says. "I learned a lot in a short period of time and would like one day to be able to share that knowledge with others."

Top: Research fellow Rachel Field '11 holds a Sharp-shinned Hawk. Above: Danny Poet from the Caroline bird club took this photo of a Rose-breasted Grosbeak.

Faculty Focus

In October 2011, **Dr. Aaron Lampman's** environmental anthropology class came to the farm to explore contemporary land-use issues. Dr. Sears guided 16 students through different farming methods, forestry projects, bird banding, reptile and plant projects, grassland restoration, the potential for grazing, and the impacts of climate/soil/weather on research projects along the Chester River. The tour sparked keen interest in interning at Chino, and continuing discussion about "best-use" practices and innovate approaches to farming.

Dr. Nathan Nazdrowicz brought four sections of the BIO 206 ecology class to Chino in October to investigate spatial dispersion of plants in a fallow field. The 64 students set up plots and collected nearest neighbor distances for oak trees and milkweed. With statistical analysis, they related their results to the reproductive biology of the two plant species. Oaks, which reproduce primarily with seeds, were found to have a random distribution in the field; milkweed, which can reproduce through vegetative propagation, showed a clumped distribution.

Summer Programs for Youth and Adults

Birds & Habitat Workshop

Maryland Birds and Bird Habitats is a week-long residential camp for teachers, outdoor educators, and middle/high school students offered by the youth component of the **Maryland Ornithological Society**, the Center for Environment and Society at Washington College, and the Chester River Field Research Station.

The workshop emphasizes the relationship between birds, their habitats, and the "working landscapes" that are characteristic of Maryland, from farms and forests to rural and developed communities. The program allows mentors and teens to work together to enhance bird identification skills for both education and scientific study, to teach selected ecological principles using birds as a paradigm, and to promote birding as a rewarding and satisfying life-long outdoor activity.

George Radcliffe, a retired middle school science teacher, and Dr. **Wayne Bell**, CES Senior Associate and former Director, organize and co-teach this innovative program. In 2011, the summer camp took place June 19-24 and was comprised of five educators and eight students from four counties. The highlight of the week was a visit to the grassland restoration project at Chino Farms. Here field ecologists **Dan Small** and **Maren Gimpel** demonstrated bird banding and explained how the loss of our grasslands removes habitat important to species such as Northern Bobwhite and Grasshopper Sparrow that are in serious decline across their entire breeding ranges.

Information on the 2012 **Maryland Birds and Bird Habitats** workshop, as well as other activities open to young birders and educators, can be found at http://www.ymos.org.

For information on summer programs, with a focus on birds and habitats, Geographic Information Systems (GIS), or marine exploration and discovery aboard the College's research vessel *Callinectes*, contact JoAnn at 410-778-7295, jfairchild2@washcoll.edu or visit the web site http://ces.washcoll.edu.

Left: Dan Small engages students involved in the Maryland Ornithological Society. Above: A youth summer camp at Washington College underscores the relationship between birds, their habitats, and the "working landscapes" that are characteristic of Maryland.

Volunteers and Citizen Science

Thank You Bill Snyder!

Volunteers commit a lot of time and energy to the banding operation and we're grateful for their support. **Bill Snyder** has been around the longest. A Chestertown area resident, Bill has been banding with Jim Gruber for 15 years. He was pivotal in helping Jim run the banding operation in the early years, long before Foreman's Branch Bird Observatory was formed at its current location.

Bill takes the lead on banding nestling Ospreys on the farm (he may be the only one brave enough to climb up to the platforms). This is a popular event each summer and many people come out for a chance to see these large fish-eating raptors up close. Bill and Jim have banded 83 young Ospreys since they started in 1998. Remarkably, two of these individuals have been recovered, but unfortunately, both were shot on their wintering grounds. The first, in 2002, was killed on the island of Trinidad and the second further south in Ecuador in 2008.

Like the Osprey, Bill enjoys fishing. And he is a fantastic waterfowl decoy carver whose work has been showcased in the Chestertown Wildlife Exhibition! Other long-standing volunteers that help out at the observatory and make the banding days more enjoyable are **Hanson Robbins**, **Victoria Cadby**, **Anne O'Connor**, **Brennan O'Connor**, and **Amanda Spears**. Thank you one and all.

Blue-winged Teal inhabit shallow ponds and wetlands across much of North America. Some head all the way to South America for the winter.

Christmas Bird Count

Field ecologists Maren Gimpel and Dan Small led the 6th Chesterville Christmas Bird Count on January 1st. Christmas Bird Counts (CBCs) are sponsored by the **National Audubon Society**, but they are run locally. This winter was the 112th year Audubon has held the counts, which take place annually across the western hemisphere. Over 2,000 counts were scheduled during the count window from December 14th to January 5th.

The **Chesterville CBC** was founded by and is run by the Chester River Field Research Station. It is one of 24 events held in Maryland and one of 8 held on the Eastern Shore. The Chesterville count is centered in Chesterville, Kent County, but includes portions of Cecil and Queen Anne's counties as well. The count area is mostly made up of private farms, but also includes part of two state management areas, the Chester River and the Sassafras River. Fourteen participants scoured the entire area identifying and counting every bird seen and heard during the day and covered more than 450 miles in the 15 mile diameter count circle. Observers began in the pre-dawn hours listening for owls and wrapped up after sunset. Counting was also conducted by feeder watchers, who report the birds seen in their yards that day.

The group tallied 98 species and one hybrid as well as 4 additional species seen during the count week. Highlights included a Red-necked Grebe, 6 Blue-winged Teal, 6 Eastern Phoebes, 130 Wood Ducks and one Northern Shrike which was been wintering on the Chester River Field Research Station's restored grasslands for five winters in a row. The total number of birds counted was 68,100.

The 2012 Chesterville count will be held on December 23rd. For more information on Christmas Bird Counts both locally and nationally, please see www.audubon.org or contact Maren Gimpel at (410) 778-7295 or mgimpel2@washcoll.edu.

Volunteers and Citizen Science

Amphibians & Reptiles

For the second year in a row, Chester River Field Research Station recorded all the snakes, lizards, turtles, frogs, toads, and salamanders they saw on Chino Farms as part of the **Maryland Amphibian and Reptile Atlas** (MARA).

Across the state and through 2014, volunteers will document the current distribution of Maryland's amphibian and reptile species. The cumulative data will establish a baseline for future efforts to determine changes in the distribution of amphibians and reptiles in Maryland. It will also be used to promote conservation and protection of Maryland's 90+ species of amphibians and reptiles.

"Though our sightings were anecdotal, we were still able to note 16 species including four snakes, two lizards, two turtles and eight frogs and toads," says field ecologist Dan Small. To help out or to find out more please visit: http://marylandnature.org/mara/. Observers are almost all volunteers.

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*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 JoAnn Fairchild Wood at jfairchild2@washcoll.edu or 410--778-7295. Thank you.

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