



# The Yellowthroat

Voice of the

Oconee Rivers Audubon Society

June/July 2017

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## Next Meeting: Thursday, June 1, 6:00 p.m. Annual Potluck Picnic at Memorial Park

Our Potluck Picnic begins at 6:00 p.m. at Memorial Park in picnic shelter number 1. Bring a covered dish and enjoy an evening of socializing. The Election of Officers for the upcoming year will also take place.

Following is the list of nominees:

- Catie Welch, President
- Sam Merker, Vice-President
- Eugenia Thompson, Secretary
- Alison Huff, Treasurer

To reach Memorial Park, go south on South Milledge Avenue, pass Lumpkin Street, and turn right on Gran Ellen Drive. Memorial Park will be on your left. The shelters are immediately to your left, down the hill. Drive slowly and be sure to bring binoculars to check out the birds in the area.

Please note that this is our last general meeting until Thursday, September 7. Topic and speaker to be announced. Save that date and watch for *The Yellowthroat* in August. Also, to read the newsletter online, please use this link: (<http://oconeeriversaudubon.org/newsletters>)



Photo of Bobolink by Richard Hall, Sandy Creek Nature Center, Athens—May, 2016

## Message from the President *by Brian Cooke*

Each fall and spring, Oconee Rivers Audubon Society (ORAS) is grateful to have donated funds to support educators, scientists, and other community members in their quests to protect birds.

This spring, ORAS Conservation Grants were awarded to the following Athens-based projects:

- Melody Mosby at Athens Montessori School will use funds to work with students to restore and manage the woodland nature reserve on the school campus.
- Catherine Huff at Athens Montessori School will use funds to work with students to create and manage a garden with pollinator habitat on the school campus.
- Will Lewis, a PhD candidate at the Warnell School of Forestry & Natural Resources, was awarded funds to study songbird post-fledgling stage at Coweeta Hydrologic Laboratory. He will use Veery as his model species for the research.
- Zoe Cooper and the Warnell Bird Banding Cooperative were awarded funds to purchase bird banding equipment necessary to engage more UGA students and Athens locals in bird banding.

We look forward to fall when we'll hear more details about the many successes of these grant award winners. Thanks to all donors who make these grants possible!

Interested in applying to the ORAS Conservation Grant in the fall? Visit <http://oconeeriversaudubon.org/grant> for details.

## Sightings Reported at May Meeting

**Bobolink** (7), Sandy Creek Park entrance, Athens, Richard Hall, 5/4/17



**Photo Heather Abernathy with Worm-eating Warbler, Coweeta Longterm Ecological Research (LTER) site, North Carolina—June 2016**



**Photo of Heather Abernathy with Black-throated Blue Warbler, Coweeta LTER, North Carolina—June, 2016**

## **Examining Large and Fine Scale Drivers of Insectivorous Songbirds Abundance and Occupancy in the Southern Appalachian Mountains** *by Heather Abernathy*

Beyond direct effects, climate can have indirect effects on the distribution and abundance of insectivorous birds through its effects on vegetation structure, foliar quality, and prey production.

With my master's project, I examined how spatial variation in long-term precipitation patterns and site productivity potential directly and indirectly predicted foliar quality, caterpillar biomass, and abundance of eleven songbird species in the southern Appalachian Mountains.

We found that mean annual precipitation and site productivity potential were significant local predictors of bird abundance; however, only four of 11 species showed a positive relationship between mean annual precipitation and abundance, as we had predicted. Consistent with our predictions, mean annual precipitation was positively correlated with higher foliar quality; however, foliar quality was not a significant predictor of caterpillar biomass.

We also did not observe any significant direct relationship between mean annual precipitation or site productivity potential and caterpillar biomass. Our results suggested that, among all 11 songbird species, variation in abundance was best explained by elevation, which was highly positively correlated with mean annual precipitation. Within my study, which is comprised of a watershed basin, the precipitation gradient is not variable enough. Thus, I chose to examine a wider precipitation gradient for one insectivorous songbird, the Black-throated Blue Warbler (BTBW).

I compared models that use either elevation or precipitation, in addition to other habitat variables, to determine if mean annual precipitation or elevation drives this species abundance. Models that included percent habitat type (land cover), mean annual precipitation, productivity potential, and slope-aspect predicted between 18,000 and 45,000 fewer acres than models using percent habitat type (land cover) and elevation.

Further, the configuration and connectivity of BTBW trailing edge population distributions is likely more fragmented and isolated than is currently represented by widely accessible species distribution models (SDMs) for this species that do not include mean annual precipitation. SDMs for trailing-edge populations in the southern Appalachians should reconsider habitat requirements for such populations; this reconsideration will reduce over-predictions, enhance targeted management, and decreases the likelihood of unnecessary conflict between other land uses and habitat protection for priority management species.

## Controlling Invasive, Non-native Plants

*summary of the May meeting by Liz Conroy*

Thanks to Gary Crider, invasive plant specialist, who talked about non-native plant infestations and the damage they do to local habitats. He explained how invasive, non-native plants disrupt ecological functions and reduce biodiversity. They are adaptable, easily established, and lack natural competition. By spreading rapidly, they out-compete native plants for water, sun, nutrients, and space.

Native insects, birds, and other wildlife are harmed as well! Loss of habitat and food sources top the list. "Because those plants did not evolve here, most non-native plants are unpalatable to our native insects," he said. Butterflies and moths cannot use these plants as host plants because they did not evolve with them. These insects don't lay their eggs on the non-natives so there aren't as many caterpillars in areas dominated by exotic plants. Fewer caterpillars mean fewer young birds in what becomes a food desert for wildlife.

Georgia Exotic Pest Plant Council ([www.gaeppc.org/list/](http://www.gaeppc.org/list/)) offers a multi-tiered list of non-native, invasive plants. Crider's own "top ten" list includes: Japanese Stiltgrass, Chinese Wisteria, Chinese Privet, English Ivy, Bush Honeysuckle, Autumn Olive, Thorny Olive, Nandina, Mahonia, Callery (Bradford) Pear.

He also added four invasive plants likely to become future problems in Georgia: Japanese Knotweed, Oriental Bittersweet, Japanese Climbing Fern, and Beefsteak Plant.

Crider recommended that we learn to identify the plants in all seasons and carefully evaluate different methods of removal and control. The choice of method may be determined by time of year. Winter is a good time to treat invasive plants when most desirable natives are dormant.

Hand-pulling can be effective on tree seedlings and other plants such as English Ivy and Japanese Stiltgrass. However, hand-pulling and digging of woody plants often leave root fragments which re-sprout. Cutting woody plants can stimulate vigorous new growth, making the problem worse. Prescribed grazing is largely ineffective for controlling woody plants. The animals will also eat desirable native plants. Woody plants can be efficiently killed via the "cut and paint" method in which the cut stump is immediately treated with a small amount of concentrated herbicide such as glyphosate, the active ingredient in Roundup®.

Crider discussed the vast amount of misinformation about Roundup® found on the internet. This makes it difficult to get real facts from a casual search, he cautioned. On a comparative scale, glyphosate is of very low toxicity to mammals and most other animals—less toxic than caffeine or table salt, for example. Notably, it is not active in the soil and breaks down completely in a short time. Its possible carcinogenicity would be a concern only at very high levels of exposure, which are not likely to occur with normal use.

## Reflections on My ORAS Internship

*by Brandon Coogler*

As the semester, my undergraduate career, and my ORAS internship come to a close, I'd like to thank Brian Cooke and Dr. Richard Hall for giving me this opportunity and helping me with tasks along the way. Also, thanks to the entire ORAS for accepting me as a new birder into your community. It has been an amazing experience, and I hope to be around Athens so I can continue to be involved.

As I reflect back, I think about my favorite moments of my internship and everything that was involved in making it happen. My favorite time was helping to put together the Great Backyard Bird Count event. It took hard work by a team of people to put this together, months ahead of time.

I remember all of the communication among ORAS members and Sandy Creek Nature Center staff to make sure everything was ready to go. The weekend was a rainy one, with few visitors for the Great Backyard Bird Count, but we all made the best of it.

This was my favorite moment because it reminded me how much hard work it takes to accomplish our goals, but when we finally reach them the feeling is priceless. It also reminded me that you can't always reach goals by yourself, and that sometimes it's okay to ask for help along the way.

Even though the results may not turn out as you expected, there is often a silver lining in the end. This event made me realize these things, and I'm glad to have had the experience. As I leave this position, thanks to all of those who made an impact on me during my time with ORAS.

## *The Home Place: Memoirs of a Colored Man's Love Affair with Nature*

*by J. Drew Lanham and reviewed by Liz Conroy*

Author J. Drew Lanham weaves together his experiences growing up on a farm in South Carolina with his love for family, nature and the land. It's a wonderful summer read.

He describes how his family worked as hard on the farm as they did in school. His parents were dedicated schoolteachers and had their children tend to their studies as well as mend fences and chop wood. His grandmother, Mamatha, was equally dedicated to praising God, picking plants for healing purposes, and talking to ghosts.

Lanham understood the importance of killing animals for food but was miserable after killing a bird with a BB gun. "I left that Christmas behind with my feelings for feathered creatures—and life—forever changed." Learn how he became a professor at Clemson University, a birder, naturalist, and hunter-conservationist through perseverance.

*The Home Place* Minnesota: Milkweed Editions, 2016

## Deceitful “Flowers”

by Dale Hoyt

In an ideal world, flowers would offer nectar and pollen to their visitors and the visitors, in turn, would take some, but not all, of both. But all is not rosy in the world of pollination. Some flowers don't offer nectar, and some bees bypass the pollen by biting holes in flowers.

One of the most deceitful of these cheaters is a parasite—not just a parasite of a plant, but also a parasite of the plant-pollinator relationship. It's not even a plant—it's a rust fungus (*Puccinia monoica*). It parasitizes a plant in the mustard family, Drummond's rockcress (*Boechea stricta*), which is widely distributed throughout the mountainous regions of North America.

The rockcress reproduces mostly by self-fertilization so its flowers are visited infrequently by insects. This presents a problem for the rust fungus. In order to reproduce sexually, it needs to get its fungal spores to another infected plant. But since its host is not often visited by bees or flies, what can it do?

The rust's solution is remarkable. It takes over its host's developmental machinery and causes it to sprout bright yellow, leafy shoots, the same color as the buttercups that grow nearby. To further entice insect visitors these yellow leaf-like structures produce a scent and a lot of sugar. And, of course, they are covered with the rust fungus spores.

The bees flock to the pseudo-flowers and spend more time lapping up the sugar than they do on the buttercups. While feeding on the yellow leaves they pick up fungal spores on their bodies and carry them to the next pseudoflower that they visit. There the spores develop and, if the fungus on the new plant is genetically different, fungal fusion takes place. It's the fungal equivalent of cross-pollination.

With such an attraction to insects you might think that real flowers, like buttercups, would suffer from a lack of pollinators. You would be wrong. More bumblebees visit mixed stands of buttercups and pseudoflowers than visit pure stands of either type.

This is not the only case in which a fungus fools an insect into carrying its spores by appearing to be something like a flower. When blueberries are infected with the mummy berry fungus the infected berries reflect ultraviolet light, making them appear like flowers to insects. Flies that visit the mummy berry carry away its spores.

In nature the deceitful sometimes win, or, at least, get by.



**Photo of Rockcress pseudoflower induced by a rust fungus; copyright by Lesfreck at English Wikipedia**

## Oconee Rivers Audubon Society

**President** Brian Cooke  
President@oconeeriversaudubon.org

**Vice-President** Katy Manley  
vp@oconeeriversaudubon.org

**Treasurer** Alison Huff  
treasurer@oconeeriversaudubon.org

**Secretary** Mary Case  
secretary@oconeeriversaudubon.org

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