



The Yellowthroat

Voice of the

Oconee Rivers Audubon Society

January 2017

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Next Meeting:
Thursday, January 5, 7:00 p.m.
Sandy Creek Nature Center in Athens

For the 7:00 p.m. presentation:

Northern Saw Whet Owls in Georgia

Charlie Muise, a local biologist, will discuss his work with Northern Saw Whet Owls in Georgia. Georgia was once believed to be too far south for persistence of the Northern Saw Whet Owl's population. However, Muise has disproved this belief. He will discuss how his work is helping researchers, scientists, and conservationists understand more about the southern range populations of Northern Saw Whet Owls.

Muise has been banding Northern Saw Whet Owls in his backyard in Georgia for years. He is currently a professional bird biologist. For ten years Muise ran the banding station at Joe Kurz WMA in Meriwether County; he continues to run a station at Panola Mountain State Park in Rockdale County. Muise also runs projects with Loggerhead Shrikes and Barn Owls, and assists at other bird banding stations.

Meetings are held...the first Thursday of the month at 7:00 p.m. To get to the Nature Center, take Highway 441, exit 12, off the north side of the perimeter, go north on 441 approximately one mile and turn left at the Sandy Creek Nature Center sign displaying this logo:



Go left at the end of this short road. The Education & Visitor Center building is a short way down the road on your right.



Photo of Snow Bunting on Point Pelee, Point Pelee National Park by Mike Conroy, Essex County, Ontario, Canada—October 22, 2016

Message from the President by *Brian Cooke*

As we approach 2017, we are tasked with the same questions as last year, "What will you do differently in the new year?" and "What are your goals for the new year?" Beginning each January, regardless of political affiliations, our mission at Oconee Rivers Audubon Society (ORAS) remains the same, "... promote the preservation and restoration of wildlife habitat through environmental activism and community education." While environmental policies may change, nonprofit organizations, like ORAS, are positioned to continue the forward momentum for a positive environmental legacy in Athens and beyond.

I encourage you to share your time by helping local organizations manage invasive species, develop climate solutions, protect valuable open space, build trails, and educate the next generation. I encourage you to help ORAS. Help us by sharing your thoughts with us. What can we do to help at the local level? Where should be our conservation priorities? We want to hear from you, our members.

Lastly, I encourage you to make time to go birding. Birding is why many of us are a part of Audubon. Watching birds helps us engage with our environment. As Stephen Jay Gould noted, "...we cannot win this battle to save species and environments without forging an emotional bond between ourselves and nature as well—for we will not fight to save what we do not love." See you in 2017!



Photo of Bald Eagle at Phinizy Swamp by Richard Hall, Augusta, Georgia—February, 2015

Bernoulli and the Bald Eagle

by Tim Homan

Early October 2011, North Carolina's Shining Rock Wilderness. By late afternoon our group had dwindled to three: Page Luttrell, Gary Crider, and me. For our last hike of the now overcast fall day, we decided to drop down off Tennesse Mountain's rocky topknot on the Art Loeb Trail, then walk the Fork Mountain Trail fast from its high-elevation end. After a little more than a mile of easy-going grade on Fork Mountain's upper slope we reached our goal: the still-grassy gap that offered views of nearby 6K peaks to both sides of the saddle. To our right, north-northeast, we could trace the long climb of Cold Mountain—Inman's mountain of book and movie fame—to just short of its summit.

Soon after we began eating our snacks, I spotted a Bald Eagle, white headed and huge, rising to the ridgeline on wings set and still—statuary flown free from pedestal and gravity's press. When I first saw the eagle it was still floating on the soft pillow of the updraft, wings flat as a milled plank, to clear the short trees at the 5,460-foot-high gap's far end. I sat in surprised silence for a few seconds, staring, then said "eagle" down the sightline of my raised right arm.

The three of us watched as the hook-billed raptor hung at the highpoint of its wind-lift, an avian kite at the end of its invisible tether. The eagle quickly lost its upward momentum over the crest of the ridge and was forced to flap its outsized wings—slow beats shallow on the downstrokes—a few times before sailing low over the rest of the gap. Once across, the eagle set its wings to full fingering reach again—up to 8 feet tip to tip—as it began the controlled glide toward Wash Hollow and its magic carpet ride up the next windward slope. The upward curving ends of its pinions provided the only additional evidence that the heavy bird of prey was slowly falling down the sky.

The impressive raptor quickly slipped out of sight. Flying over the gap at nearly eye level to us, the Bald Eagle was the first of its species any of us had ever identified in the Southern Appalachians. The sighting was pure serendipity: right-place happenstance, right-time luck. If the eagle continued winging its way southwest with the northeast wind, it would slide over the West Fork Pigeon River well above the stream's whitewater cascades. Then our national symbol in feather and flesh would be borne skyward to another notch in the high end of Fork Ridge nearly 3 miles away, its ascent an effortless rising against gravity.

Up near the center of the gap, the wind was neither unusually strong nor gusting where we sat in the wide grassy area. But far below, the wind squeezed tight against the northeast-facing flank of the ridge, forcing the air to flow like a reverse waterfall, slanting upslope with increased speed and power. The physics of this flow can be explained in terms of pressure. When wind becomes compressed against a mountainside, the increased pressure drives the air upward at an increasing rate as it rises. This is part of the Bernoulli principle.

The Fork Mountain Bald Eagle, who knew where the updrafts would lift its weight aloft, knew this principle: an ancient nonverbal knowing that comes with encoded instructions, that doesn't worry about what-ifs, that doesn't indulge in hindsight except at the evolutionary level of natural selection. That eagle knew air-flow physics deep in its hollow bones, enough to know how and when to use the Bernoulli principle to great advantage, enough to read the air's invisible terrain like a map.

The eagle knew to wait for the wind it wanted, the green light to go. Knew how to drift into that wind and sweep up a sidehill without flapping its feathered wings once. Knew to cross ridgecrests in gaps, then utilize the easily gained elevation to coast down to the next concavity before catching another escalator up to and over the top of the next fold. An eagle may not know that it knows air-flow physics, but it knows nevertheless. The Swiss mathematician put words to why. The eagle, innate common sense to when, wide-winged majesty to how.

A few years later Page and I began seeing Bald Eagles regularly during canoe trips to upstate South Carolina's Lake Jocassee. But the Fork Mountain eagle remains the only one we have seen from a mile-up highcountry trail, or from any Highland Dixie trail. The sighting of that magnificent raptor in that Mountain South setting remains a rare gift of wildness and grace.

Note:

Daniel Bernoulli (1700-1782) was a pioneer in the study of hydrodynamics. The principles of his principle also apply to the dynamics of air flow.

Rivercane Plantings *by Richard Hall*

On Saturday December 10th, 11 hardy volunteers gathered at the State Botanical Garden of Georgia (SBG) in sub-freezing temperatures to prepare an area in the lower powerline cut for rivercane plantings. This project is phase one of a collaborative effort between the SBG, Oconee Rivers Audubon Society (ORAS) and rivercane expert Thomas Peters, to restore native cane and other bird-friendly plantings to the floodplain of the Middle Oconee, in honor of long-time ORAS member Bill O'Grady.

Fueled with coffee, the team was soon hard at work breaking up the soil and removing large roots from the planting area. Suddenly, it didn't seem too cold at all! The volunteer crew made light work of site preparation and decided to make a big dent in the neighboring thicket of invasive Chinese privet. The morning's workload was lightened by a few feathered friends that chirped encouragement from the existing mature stands of cane, including ORAS' totem bird, the Common Yellowthroat (a scarce overwinterer in Athens) and a diminutive Winter Wren.

After many months of planning with the SBG to identify sites and get the fundraiser underway, it was incredibly gratifying and moving to see Karla O'Grady and her daughter Lauren plant the first rivercane plug in an area that will host a thriving canebrake within a few years. We planted about 40 plants, which are all easily visible from the wooden bridge at the start of the White Trail where the powerline meets the river. We celebrated a successful morning's planting with delicious pizzas and a well-earned beer at Peppino's. We expect to organize another workday in January 2017, so watch this space!

It's not too late to contribute to the O'Grady Habitat Restoration Program. For more info on the project and how to donate, go to the following link on the ORAS website: <http://oconeeriversaudubon.org/node/370>



Photo of rivercane volunteers, State Botanical Garden, by Richard Hall, Athens, Clarke County, December 10, 2016



Photo of rivercane volunteers, State Botanical Garden, by Richard Hall, Clarke County, December 10, 2016

Beech Haven: A Hidden Sanctuary in the Heart of Athens

summary of December meeting by Carole Ludwig

Thanks to Nat Kuykendall, Vice Chair of the Oconee Rivers Greenway Commission, for his talk about Beech Haven, the new addition to the Athens-Clarke County Greenway Network. He displayed a number of maps as he discussed the areas already protected that are, or will be, connected by the Greenway.

Beech Haven was preserved as a natural area by Charles A. Rowland II and his wife Effie beginning in 1910. They used it as their country retreat. Originally 250 acres, the current owners—direct descendants of Charles and Effie—sold 110 acres to the Greenway Commission. Kuykendall showed on the maps where the Beech Haven area is bordered on one side by the Middle Oconee River. This acquisition will be added to other important Greenway Commission properties such as the Tallassee Forest, Rock and Shoals, Ben Burton Park, the State Botanical Garden of Georgia and Sandy Creek Nature Center.

The Rowlands' interests in gardening, religion and other cultures led them to build and landscape the area to reflect those interests. Weekly bible conferences were once held at Beech Haven. Kuykendall showed slides of a stone bridge, called an "Asian Moon Bridge", a pagoda lantern, several ponds and a clay tennis court, all enhanced by planted gardens and fountains. A two story "summer house" was constructed from stones and timber harvested on site. These structures contribute to the property being named an area of National Importance by author Paul Ducerve.

Kuykendall noted that the Greenway Commission plans to develop Beech Haven as a new community asset where the public can explore and learn.

Plant and Pollinators: Yuccas and Yucca Moths—A Story of Mutual Dependency

by Dale Hoyt

Visit a group of Curly-leaf Yucca (*Yucca filamentosa*) plants on a warm spring night, and you will find small gray moths (*Tegeticula yuccasella*), about 1/2 inch long, flying among the dangling white flowers. The male and female will mate on a petal of a yucca flowers.

Follow a female yucca moth as she enters a blossom, and you will see her gathering pollen from the stamens which she rolls into a ball using her highly modified mouthparts.

Then the moth flies away with her pollen ball tucked under her chin to another blossom. There she examines the ovary, sensing by smell if the flower has already been visited by another moth.

If the ovary is undisturbed, the moth lays a few eggs in the ovarian wall and then climbs up to the top of the pistil. There she uses her specialized mouthparts to tamp part of the pollen ball into a recess. She moves on to repeat this process with another flower.

The cavity in the pistil is the place where the pollen will germinate and ultimately fertilize the plants egg cells (ovules) in the ovary down below. Once fertilized the ovules start developing into seeds, which are food for the yucca moth's caterpillars. If the moth has done her work properly there will be more than are needed by her caterpillars. The uneaten seeds remain available to start new yucca plants.

After the caterpillars mature they leave the ovary, fall to the ground, and form cocoons in the leaf litter at the base of the plant. There they overwinter, and the new moths emerge the following spring. If the timing is correct, they will appear at the same time that the yucca blooms. Without the moth the yucca could not produce seeds, and without the seeds the moth would perish.

The relationship between the moth and the yucca is not always harmonious. Sometimes other moths will lay their eggs in already occupied ovaries. The yucca is somehow able to sense when too many caterpillars are present and will abort that flower. There are also other species of moths that feed on yucca seeds but cannot pollinate the yucca. These freeloader moths lay their eggs in the yucca ovaries that other species have pollinated. Without the pollinating species, these cheaters would become extinct.

There are approximately 30 kinds of yucca in the United States, mostly found in semi-desert regions. There is a corresponding diversity of yucca moths. About 2 dozen species have been discovered, each servicing a different species of yucca, but some yucca support as many as 6 different species, including the cheaters.



Photo of *Tegeticula yuccasella* on *Yucca filamentosa*, Smith-Jones Property by Alan Cressler, Van Buren County, Tennessee

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