

**NC Chapter of The Wildlife Society
Annual Meeting**

**“Conservation Through Communication:
Addressing Emerging Issues with Science”**

**Haw River State Park
Browns Summit, North Carolina
March 15-17, 2016**

2015-2016 Executive Board

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The North Carolina Chapter of The Wildlife Society was founded in 1983 and is an association of wildlife professionals from all backgrounds. Members of the Chapter come from state and federal agencies, universities, private industry, private conservation organizations, and other natural resource agencies. The membership consists of wildlife professionals and students involved in research, management, education, administration, and other disciplines. www.nctws.org

Mission Statement

The North Carolina Chapter of The Wildlife Society seeks to provide a forum for wildlife professionals and others to interact to improve wildlife conservation and management while fostering high professional standards and ethics for its members. It will strive to be an acknowledged source of current scientific information and expertise and act as a collective voice on matters relating to wildlife biology, management, education, and policy.

Annual Meeting Agenda

Tuesday, March 15th

- 1 – 4 PM Field Trip—Feral Swing Management Techniques Workshop—
at Haw River State Park [grassy area near gymnasium]
- 4:30 PM Registration (open until 5:30 PM)
- 5:00 PM Open Gym (optional; open until 6:00 PM)
- 6:00 PM Dinner
- 7:00 PM Social/Poster Session/Jam Session [Heron’s Roost/Fox’s Den]

Wednesday, March 16th

- 7:00 AM Registration (open until 8:45 AM)
- 8:00 AM Breakfast
- 8:55 AM Door Prizes
- 9:00 AM Welcome
- 9:15 AM Plenary: Red Wolf Conservation: “What We’ve Got Here is
Failure to Communicate”—Pete Benjamin, USFWS
- 9:45 AM Plenary: The Challenges and Opportunities of Conservation in
the Face of Climate Change: Using Birds to Motivate Action—
Curtis Smalling, Audubon NC
- 10:15 AM Break (registration open)
- 10:25 AM Door Prizes
- 10:30 AM Plenary: Developing Communication Strategies—Kris Smith,
NCWRC
- 11:00 AM Plenary: The Challenges and Opportunities of Wildlife
Managers in the 21st Century—Keith Wehner, USDA-APHIS-
WS
- 11:30 AM NCTWS Ken Wilson Awards—Dr. Chris Deperno, NCSU
- 12:00 PM Lunch
- 12:55 PM Door Prizes
- 1:00 PM Dan River Coal Ash Spill Natural Resources Damage
Assessment and Restoration (NRDAR)—Sara Ward, USFWS

- 1:20 PM Adapting to Climate Change: Key Vulnerabilities and Opportunities for Resilience—Dr. Adam Terando, SE Climate Science Center, USGS
- 1:40 PM What’s Buzzing With Pollinators?—Dr. Nancy Adamson, Xerces Society and NRCS
- 2:00 PM Break (registration open)
- 2:10 PM Door Prizes
- 2:15 PM Opinions From the Front Lines of Cat Colony Management Conflict—Dr. Nils Peterson, NCSU
- 2:35 PM Update on the Status of Cogongrass and other Invasive Weeds in North Carolina—Dr. Bridget Lassiter, NCDA&CS
- 2:55 PM Understanding Urban and Landscape Ecology of North Carolina’s Bats using the North American Bat Monitoring Program (NABat) Sampling Framework—Dr. Matina Kalcounis-Ruppell, UNCG
- 3:15 PM Break (registration open)
- 3:25 PM Door Prizes
- 3:30 PM Can We Successfully Blend the Desires of Deer Hunters with Resource Needs?—Dr. Jonathan Shaw, NCWRC
- 3:50 PM Chytrid, Ranavirus, and SFD, Oh My!—Jeff Hall, NCWRC
- 4:10 PM TWS 2016 Conference—John Ann Shearer, USFWS
- 4:40 PM Announcements
- 5:00 PM Open Gym (optional; open until 6:00 PM)
- 6:00 PM Dinner
- 7:00 PM Social/Auctions/Jam Session [Heron’s Roost/Fox’s Den]

Thursday, March 17th

- 8:00 AM Breakfast
- 8:55 AM Door Prizes
- 9:00 AM NCTWS Business Meeting—Award presentations, student chapter updates, and Passing of the Goat
- 10:10 AM Conserving and Restoring Wildlife Habitat on the Nantahala and Pisgah National Forests Under the 2012 Planning Rule—Sheryl Bryan, USFS
- 10:30 AM Break
- 10:40 AM Door Prizes

10:45 AM Solar and Wind Energy Development and Potential Impacts to
Wildlife—Kathy Matthews, USFWS

11:05 AM Forest Bioenergy and Wildlife Conservation in North
Carolina—Steve Grodsky, NCSU

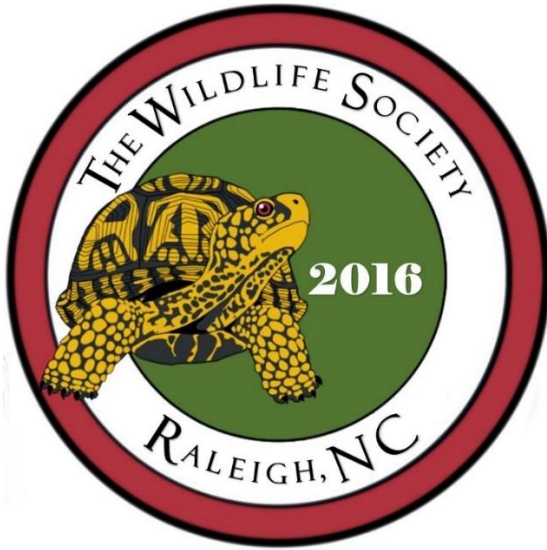
11:25 AM Lead Poisoning in Birds and Other Wildlife—Dr. Stasia
Bembenek Bailey, NCSU

11:45 AM Closing Remarks/Adjourn

12:00 PM Lunch

2016-2017 Executive Board meeting

**Don't forget to complete your ballot for the
2016-2017 Executive Board candidates!**



Join us for one of the largest gatherings of wildlife professionals and students in North America at The Wildlife Society's 23rd Annual Conference on October 15 – 19, 2016 in Raleigh, NC!

You'll have the opportunity to experience more than 500 wildlife science and management educational opportunities, engaging field trips and workshops, and more than 40 networking opportunities where you can meet peers, mentors and colleagues.

For more than 75 years, TWS has been protecting the future of wildlife and wildplaces through science-based education and by sharing best practices in wildlife management. Start making your plans now to experience TWS live in Raleigh, NC this October!

For more information, and to stay updated on the conference, go to <http://www.twsconference.org/>

Special Plenary Session

Moderator: Jeff Marcus, TNC

Red Wolf Conservation: “What We’ve Got Here is Failure to Communicate”

PETE BENJAMIN, Field Supervisor, Raleigh Ecological Service Field Office, US Fish and Wildlife Service, 551F Pylon Drive, Raleigh NC 27606,
Pete_benjamin@fws.gov

Communication challenges exist in many facets of wildlife conservation. These include challenges associated with informing and educating the public regarding the benefits of specific conservation initiatives; listening to public concerns and adapting conservation practices accordingly; communicating the science behind conservation activities including articulating scientific uncertainty; communicating the evolving nature of many conservation challenges and our corresponding changes in conservation practices over time; and communication within our organization and amongst our conservation partners in delivering programs.

Mr. Benjamin will discuss the current state of red wolf conservation efforts in eastern North Carolina as a case study and cautionary tale in the importance of effective communication in conservation and the problems that arise when communication breaks down.

Bio: Pete Benjamin is the Supervisor of the U.S. Fish and Wildlife Service Field Office in Raleigh North Carolina. The Office has a staff of 24 biologists and other specialists who deliver Fish and Wildlife Service programs throughout central and eastern North Carolina, focusing on migratory bird, fish, and endangered species conservation including the red wolf recovery program. Mr. Benjamin has worked for the Fish and Wildlife Service for 24 years and has been the Field Supervisor in Raleigh since 2004. Prior to working for the Service he worked for the U.S. Forest Service in Southeastern Alaska and for the Indiana Department of Natural Resources. He holds a Bachelor’s degree in environmental biology from Ohio University and a Master’s degree in Ecology from Indiana State University.

The Challenges and Opportunities of Conservation in the Face of Climate Change: Using Birds to Motivate Action

CURTIS SMALLING, Director of Land Bird Conservation, Audubon North Carolina, 667 George Moretz Lane, Boone, NC 28607, csmalling@audubon.org

In 2014, the National Audubon Society released its “Birds and Climate Change Report” and has since undertaken a concerted effort to integrate climate science and communicating about those threats, challenges, and opportunities into its work. As a national “proof of concept state”, Audubon North Carolina has been involved in message testing, outreach and training efforts, and other communications based approaches to science, policy, and activism around this topic.

This plenary will provide an overview of the Birds and Climate Change report, as well as results of the last year’s communication’s testing and messaging, products produced, and plans for future efforts for communications and conservation.

Bio: Curtis is a 1985 magna cum laude graduate of Appalachian State University with a Bachelor of Arts in Biology and in 1996 received a Master of Arts in Appalachian Studies. He has been with Audubon since 2001. His current position with Audubon is that of Director of Land Bird Conservation. He is involved in identifying areas of concern, making conservation and management recommendations for bird populations, and working with various stakeholders for bird conservation in this hemisphere. Areas of interest include full life cycle conservation science, energy development, private lands habitat enhancement, and regional conservation planning. He is a member of several working groups including the International Wood Thrush Conservation Alliance, the Cerulean Warbler Technical Working Group, and the International Golden-winged Warbler working group including working on this species and others on their wintering grounds in Nicaragua. He also serves on the Technical Committee of the Appalachian Mountains Joint Venture. He is a contributing author or editor for several books and publications. He resides in Boone, NC with his wife of 33 years, Mary, and has three children and a granddaughter.

Developing Communication Strategies

KRISTOPHER SMITH, Wildlife Education Division Chief, NC Wildlife Resources Commission, 1712 Mail Service Center, Raleigh, NC 27699-1700, kris.smith@ncwildlife.org

The N.C. Wildlife Resources Commission's mission is to conserve the state's wildlife resources and their habitats and provide programs and opportunities that allow hunters, anglers, boaters and other outdoor enthusiasts to enjoy wildlife-associated recreation. It is imperative that we communicate our mission to constituents and the general public and provide awareness to conservation methods and changes.

This plenary looks at the process Wildlife Commission staff underwent as it developed communication strategies that met the public's perceived desire for information. It also presents an overview of case studies that demonstrate how the agency may have fallen short or overshot that level of desired communication.

Bio: Kristopher grew up in Syracuse, NY and spent his summers at a camp on Raquette Lake in the Adirondacks, hiking, waterskiing, and fishing. He earned his bachelor degree in Biology from SUNY Cortland, and his Masters in Environmental Management from Duke University. He began his career in natural resources conservation at the Exploris Museum, where he worked as the Global Experience Coordinator, teaching global environmental education programs. In 2004, Kristopher turned his passion for fishing and educating children into a career, accepting the position of Director of the N.C. Wildlife Resources Commission's John E. Pechmann Fishing Education Center in Fayetteville. When he started as center director, the facility was a concept only on paper. Kristopher spent his first three years as director, coordinating the construction of the 4,800-square-foot center. He designed and developed the aquatic educational exhibits for the center's lobby and he created aquatic-related programs that increased the center's visitation from 4,200 kids in 2004, the year the center opened, to more than 8,400 in 2012. Kristopher is currently the Chief of the Wildlife Education Division and oversees the marketing, publications, communications and education sections. He is involved in developing communication strategies for the agency, overseeing the agency's award-winning magazine, Wildlife in North Carolina, and providing programming focus for four education centers, shooting sports, Hunter Education and Outreach Education.

The Challenges and Opportunities of Wildlife Managers in the 21st Century

KEITH WEHNER, State Director, USDA Wildlife Services, North Carolina Program, 6213 E Angus Drive, Raleigh, NC 27617,
keith.p.wehner@aphis.usda.gov

As the United States human population grows increasingly more urbanized, how does this societal transition impact wildlife management? As the general public gets more information through social media outlets, how does this impact wildlife management? As global climates change and wildlife responds, how do wildlife managers respond?

This session will discuss these topics and provide an overview of where wildlife management is likely headed in the 21st century and how this impacts our profession.

Bio: Keith graduated from Michigan Technological University in 1996 with a BS in Ecology. He moved to Oregon and worked seasonally with the OR Department of Fish and Wildlife, Bureau of Land Management, US Forest Service, and Washington State University. He moved to Tennessee in 2000, where he began his career with USDA Wildlife Services (WS). As a Wildlife Specialist and Biologist he worked to resolve wildlife damage management issues throughout east Tennessee and implement the Oral Rabies Vaccination (ORV) Program for Tennessee and Kentucky. In 2006, he became the National Rabies Management Field Coordinator with regional responsibilities in 19 states to facilitate and implement ORV programs from Maine to Florida. He moved to Nashville in 2010 as the Assistant State Director for the Tennessee/Kentucky Program, where he created and implemented an aviation program providing new wildlife damage management tools to the WS Program. In 2015 he moved to North Carolina to become the State Director of the Wildlife Services State Program. In this capacity, he oversees over 40 personnel working to resolve wildlife disease issues and wildlife damage management associated with beaver, feral swine, migratory birds and wildlife conflicts at airports.

Invited Speakers

Dan River Coal Ash Spill Natural Resources Damage Assessment and Restoration (NRDAR)

SARA WARD, Ecologist, US Fish and Wildlife Service, Raleigh Ecological Services Field Office, PO Box 33726, Raleigh, NC 27636-3726, Sara_Ward@fws.gov

On February 2, 2014, security officials at the Duke Energy Dan River Steam Station (Facility) located in Eden, North Carolina, noticed liquefied coal ash leaking from a buried storm sewer into the Dan River. According to EPA approximately 39,000 tons of ash and 27 million gallons of ash pond water were released. These releases may have affected reaches of the Dan River in North Carolina and Virginia over many miles downstream and natural resources for which Federal and State agencies may assert trusteeship. With the goal of restoring fish and wildlife resources affected by the Dan River coal ash spill, the U.S. Fish and Wildlife Service, North Carolina Department of Environmental Quality, and Virginia Department of Environmental Quality, collectively the natural resource trustees (Trustees) signed a cooperative agreement with Duke Energy to conduct a natural resource damage assessment and restoration (NRDAR) process. The Trustees were an integral part of the response and clean-up phases of the Dan River coal ash spill helping the U.S. Environmental Protection Agency evaluate and reduce risks to human health and the environment. The Trustees have an additional obligation on the public's behalf to work with Duke Energy to determine and then fix injuries to natural resources.

As part of the cooperative NRDAR, the trustees assess the impacts of the coal ash pond release on natural resources, focusing on injuries to habitat, surface water and sediment, aquatic species, migratory birds, and human uses of those resources. The primary goal of NRDAR is to restore natural resources and the services they provide. To meet this goal, the trustees recover funds to implement and/or oversee restoration projects. The presentation will focus on the status of the cooperative NRDAR, including restoration scoping, assessment of injuries to natural resources and the services they provide to the public, and next steps.

Adapting to Climate Change: Key Vulnerabilities and Opportunities for Resilience

DR. ADAM TERANDO, Research Ecologist, US Geological Survey, Southeast Climate Science Center, NCSU Campus, David Clark Labs 127J, Box 7617, Raleigh, NC 27695, aterando@usgs.gov

Human-caused climate change in North Carolina is likely to have significant impacts on wildlife. In particular species and systems that are geographically constrained by elevation or coastal proximity are likely to experience significant and rapid (in evolutionary terms) environmental changes that, when combined with existing human actions and changes to the landscape, will increase vulnerability and threaten persistence. In this talk, I will describe the most likely climate changes, others that are possible but are more uncertain, and the most likely impacts on wildlife in North Carolina. I will focus on three major impacts: temperature increases in the mountains, sea level rise near the coast, and ecological drought due to increased precipitation variability and salt-water intrusion. Finally, I will discuss the possibility for certain systems in the state to act as “climate-resilient” ecosystems that may be resistant to the worst effects of climate change.

Bio: Dr. Adam Terando is a Research Ecologist with the US Geological Survey at the Southeast Climate Science Center (located at North Carolina State University). His current research focuses on the impacts of climate and land use change on ecosystems and the complex human-environment relationships that drive these processes. This includes developing methods to quantify the information value of climate models for use in adaptive management problems; understanding and predicting climatically-induced changes to extreme wildfires in the Southeast US; simulating urban growth and land use pattern changes in the Southeast; and developing ultra high-resolution climate projections for the U.S. Caribbean to support the creation of robust conservation corridors.

What's Buzzing with Pollinators?

DR. NANCY ADAMSON, Pollinator Conservation Specialist – Eastern Region, The Xerces Society for Invertebrate Conservation & USDA NRCS East National Technology Support Center, 2901 East Gate City Blvd., Ste. 2100, Greensboro, NC 27401, nancy@xerces.org, nancy.adamson@gnb.usda.gov

Highlights of current pollinator conservation issues. Nancy will focus on native bee habitat needs and NRCS Farm Bill programs that support pollinator conservation while also benefitting other wildlife (floral diversity, nesting sites, and protection from pesticides).

Bio: Nancy is a partner biologist with the Xerces Society and the USDA NRCS East National Technology Support Center (ENTSC). She supports pollinator conservation through habitat protection and restoration on farm lands. She joined the ENTSC after earning her doctoral degree in entomology with research on bees important for crop pollination. She ran the horticulture and Master Gardener programs for Frederick County, Maryland's Cooperative Extension, conducted botanical surveys for the New Jersey Natural Heritage Program, facilitated educational programming and ran the native plant nursery at Adkins Arboretum, and taught at Echo Hill Outdoor School. A former Peace Corps volunteer in Tunisia, she also worked as an intern with the Nicaragua-U.S. Friendship Office and with Cultural Survival in Petén, Guatemala. To learn more about pollinator conservation through planting habitat, minimizing pesticide use, and sharing awareness of the importance of native bees, visit www.xerces.org.

Opinions From the Front Lines of Cat Colony Management Conflict

DR. NILS PETERSON, Assistant Professor, North Carolina State University, Fisheries, Wildlife, and Conservation Biology Program, Turner House 3, Box 8008, Raleigh, NC 27695, nils_peterson@ncsu.edu

Outdoor cats represent a global threat to terrestrial vertebrate conservation, but management has been rife with conflict due to differences in views of the problem and appropriate responses to it. To evaluate these differences we conducted a survey of opinions about outdoor cats and their management with two contrasting stakeholder groups, cat colony caretakers (CCCs) and bird conservation professionals (BCPs) across the United States. Group opinions were polarized, for both normative statements (CCCs supported treating feral cats as protected wildlife and using trap neuter and release [TNR] and BCPs supported treating feral cats as pests and using euthanasia) and empirical statements. Opinions also were related to gender, age, and education, with females and older respondents being less likely than their counterparts to support treating feral cats as pests, and females being less likely than males to support euthanasia. Most CCCs held false beliefs about the impacts of feral cats on wildlife and the impacts of TNR (e.g., 9% believed feral cats harmed bird populations, 70% believed TNR eliminates cat colonies, and 18% disagreed with the statement that feral cats filled the role of native predators). Only 6% of CCCs believed feral cats carried diseases. To the extent the beliefs held by CCCs are rooted in lack of knowledge and mistrust, rather than denial of directly observable phenomenon, the conservation community can manage these conflicts more productively by bringing CCCs into the process of defining data collection methods, defining study/management locations, and identifying common goals related to caring for animals.

Bio: Nils Peterson is an Associate Professor of Fisheries, Wildlife, and Conservation Biology at North Carolina State University. His research focuses on unravelling the drivers of environmental behavior, using environmental education, conservation development, environmental conflict, and environmental policy making as natural experiments to test hypotheses. Much of this research is summarized in his recent books *The Housing Bomb* and *Urban Wildlife Conservation: Theory and Practice*. Nils received his B.S. and M.S. degrees from Texas A&M University, and his Ph.D. from Michigan State University. Additional information about his research, teaching, and service activities is on his web page: <http://www4.ncsu.edu/~mnpeters/index.htm>.

Update on the Status of Cogongrass (*Imperata cylindrica*) and other Invasive Weeds in North Carolina

DR. BRIDGET R. LASSITER, Weed Specialist, North Carolina Department of Agriculture & Consumer Services, Plant Industry Division, 1060 Mail Service Center, Raleigh, North Carolina 27699, Bridget.Lassiter@ncagr.gov

Cogongrass (*Imperata cylindrica*) is a perennial grass that is naturalized in the SE US. It is invasive, and changes the fire structure of pine forests, reduces wildlife habitat, decreases seedling growth and establishment, and outcompetes other native plants. Cogongrass has several key identifying characteristics, including a cylindrical seed head, prominent white midribs on the leaves, and rhizomes that are sharp and white. Three locations of Cogongrass have been identified in North Carolina in the past 5 years, and all have been successfully eradicated. A fourth, new infestation, was reported in Scotland County in December 2015. The site is ½ acre in size, and well established. Eradication efforts in 2016 will be completed through a cooperation between the NC Forest Service and the NC Department of Agriculture.

Other invasive weed species that are actively being eradicated by the NCDA include Crested Floating Heart (*Nymphoides cristata*), Giant Hogweed (*Heracleum mantegazzianum*), Itchgrass (*Rottboellia cochinchinensis*), Mile a Minute Vine (*Persicaria perfoliata*), Small Broomrape (*Orobanche minor*), Purple Loosestrife (*Lythrum salicaria*), Tropical Soda Apple (*Solanum viarum*), Tropical Spiderwort (*Commelina benghalensis*), Yellow Floating Heart (*Nymphoides peltata*) and Witchweed (*Striga asiatica*). An update of the distribution and control programs for each of these invasive weeds will be presented.

Bio: Bridget Lassiter is the weed specialist for the North Carolina Department of Agriculture, where she implements control programs for federal and state noxious weeds affecting the agricultural industry. She is also the director of the Witchweed Eradication Program in North Carolina. Bridget is a native of Oregon, where she received her bachelors in Crop and Soil Science. She graduated with Masters and Doctorate degrees from NC State in Crop Science. She lives on a 3rd generation family farm in Johnston county with her husband and two kids.

Understanding Urban and Landscape Ecology of North Carolina's Bats using the North American Bat Monitoring Program (NABat) Sampling Framework

DR. MATINA KALCOUNIS-RUPPELL, Professor and Director of Graduate Studies, Department of Biology, University of North Carolina at Greensboro, Greensboro, NC 27402, mckalcou@uncg.edu

The North American Bat Monitoring Program (NABat) is a continental-wide long-term survey effort to promote effective bat conservation. NABat uses a master sample approach with a grid-based frame calculated by the generalized random-tessellation stratified (GRTS) survey design algorithm. A spatially balanced and randomized ordering is assigned to each basic sample unit (a 10km x 10km grid) allowing subsamples of grids to be selected based on GRTS order, ensuring both randomization and spatial balance. The primary monitoring methods for NABat includes acoustic surveys (both mobile driving transects and stationary overnight points) and roost/hibernaculum surveys.

In partnership with biologists in South Carolina we piloted the Carolinas Regional Acoustic Bat Monitoring project as part of the NABat implementation in the United States. We extensively sampled the state of North Carolina in 2015 and are gearing up for 2016 sampling. In June and July of 2015, we used AnaBat SD2 acoustic detectors to conduct mobile transect acoustic survey and/or stationary point acoustic surveys in 37, 10km x 10km, NABat grids throughout the mountain, piedmont and coastal plain regions. Preliminary analyses reveal species distributions consistent with regional variation. For example, common species such as eastern red (*Lasiurus borealis*), evening (*Nycticeius humeralis*), and big brown (*Eptesicus fuscus*) bats were detected throughout in each region in North Carolina. In contrast, the southeastern Myotis (*Myotis austroriparius*) was primarily recorded at grids in the coastal plain whereas the gray bat (*M. grisescens*) was only recorded in the mountain region.

Within the NABat sampling framework we have developed two projects investigating the effect of urbanization on bat communities at a broad spatial scale. First, we are testing the hypothesis that urbanization will cause differences in bat community structure, foraging rate, and nightly activity patterns only when the size of a city reaches a certain level, or a threshold. We compared 6 urban – nonurban stationary site pairs in NABat grids covering 6 different cities in North Carolina. Preliminary results suggest that a threshold

exists. For example, only in grids near large cities did we find a significant difference in nightly bat emergence time, with earlier emergence times in urban sites compared to nonurban sites. Second, we are constructing landscape scale models to investigate the relationship between the bat community and urban land cover composition/configuration variables. This work is ongoing and preliminary results show that red bats negatively responded to land cover evenness within whereas big brown bats positively responded to urban land cover fragmentation.

Thus, the NABat sampling framework allows for regular and consistent monitoring of bat biodiversity in the state of North Carolina while at the same time, offers an exciting scale and framework within which to address important ecological and conservation questions. The work presented herein is done in collaboration with Dr. Han Li (UNC-Greensboro, Biology) and Ms. Katherine Caldwell (NCWRC).

Bio: Matina Kalcounis-Rueppell is a Professor of Biology at the University of North Carolina at Greensboro. She teaches courses in Animal Behavior and Vertebrate Zoology. Her research program centers on the ecology and behavior of North American forest-dwelling bats and mice. She has done field research for over 25 years and uses remote sensing methods to, among other things, record ultrasound produced by mice and bats to understand how human activities influence individual behaviors, population dynamics, and community structure. She regularly speaks to the public about the biology and conservation of bats and mice that live, both literally and figuratively, in their back yard. She received BS and MS degrees in Biology from the University of Regina, a PhD in Zoology from the University of Western Ontario, and post-doctoral training at the Museum of Vertebrate Zoology at the University of California at Berkeley.
Web: <http://www.mckalcounisrueppell.org/>
Field blog: <http://www.batandmouselab.blogspot.com/>

Notes:

Can we Successfully Blend the Desires of Deer Hunters with Resource Needs?

DR. JONATHAN SHAW, Deer Biologist, North Carolina Wildlife Resources Commission, 628 Huffmantown Road, Richlands, NC 28574,
jonathan.shaw@ncwildlife.org

The North Carolina Wildlife Resources Commission (NCWRC) adopted its goal for deer hunting and management along with biological objectives for a “well-managed” herd in November of 2010. Over a 3-year period (2011-2013) NCWRC Biologists and Technicians intensified harvest data collections in an effort to fill known data gaps and improve data quality. These robust data were used in a county-based cluster analysis to establish five Biological Deer Management Units (BDMU), and to evaluate the current deer season framework with respect to the stated biological objectives. The results indicate the current deer season framework is not the best biological fit for the herd, and multiple biological objectives are not being met across most of the state. The condition of the herd can be improved by varying degrees across the state by reducing young buck harvest, harvesting bucks later in the season, and harvesting does earlier in the season. However, managing deer often means hunters have to make tradeoffs. Tradeoffs to improve herd condition may include reduced deer numbers, reduced harvest opportunity (days, bag limit), changes in traditions (opening/closing day) or increased regulatory complexity. Hunter satisfaction and overall social acceptance is a vital component of effective management, and the ability to influence biological parameters through harvest is directly linked to hunter support. The NCWRC is currently engaging with deer hunters through public forums and a scientific survey to determine if hunter desires align with biological objectives, and what tradeoffs they are willing to make to improve the condition of the herd.

Bio: Jon Shaw received his B.S. in Wildlife Sciences from NC State University (NCSU) in 2000 and his Ph.D. from NCSU in 2005, with his dissertation research focused on white-tailed deer. Jon worked as a District Wildlife Biologist (Districts 6 & 2) for almost 10 years, and currently works as the Deer Biologist with the North Carolina Wildlife Resources Commission.

Chytrid, Ranavirus, and SFD, Oh My!

JEFF HALL, Partners in Amphibian & Reptile Conservation Biologist, North Carolina Wildlife Resources Commission, 405 Lancelot Drive, Greenville, NC 27858, jeff.hall@ncwildlife.org

Snakes, frogs, turtles, and salamanders all face new threats on the landscape of conservation. We will discuss the discovery and identification of several newer pathogens of reptiles and amphibians, including Bsal (salamander chytrid fungus), Ranavirus, and Snake Fungal Disease. Preliminary surveillance efforts for these pathogens will also be described.

Bio: Hired in 2007 by the North Carolina Wildlife Resources Commission, Jeff Hall is the Partners in Amphibian and Reptile Conservation (PARC) Biologist. As PARC Biologist, Jeff works with landowners to promote habitat management that benefits reptiles and amphibians, as well as other wildlife species. He coordinates the North Carolina chapter of PARC helping to bring public and private partners together to further conservation efforts for reptiles and amphibians. Jeff also participates in field work on a variety of projects including rare amphibian monitoring and habitat restoration, upland snake conservation, and Project Bog Turtle. In addition, Hall manages the Calling Amphibian Survey Program (CASP) which is designed to monitor long-term trends of frog and toad populations across the state. Jeff, his wife Shannon, and two boys live in Greenville, NC.

2016 Annual TWS Conference

JOHN ANN SHEARER, Fish and Wildlife Biologist, US Fish and Wildlife Service, Ecological Services, PO Box 33726, Raleigh, NC 27636-3726, JohnAnn_Shearer@fws.gov

For the first time, the NC Chapter will host the Annual TWS Conference which will be in Raleigh October 15-19, 2016. Over 1500 wildlife professionals and students will gather for plenary sessions, seminars, research presentations, and networking events. Four fabulous field trips will highlight research at the Duke Lemur Center, behind the scenes at the NC Museum of Natural Science, wildlife and management at Hemlock Bluffs Nature Preserve, and the longleaf pine ecosystem at the Moss Foundation in Southern Pines. Plenary sessions will include themes on partnerships, invasive species, and working lands. Exhibitors will showcase everything from wildlife equipment to art. Students will have the opportunity to interact with professionals, have their resume reviewed, and compete in the famous quiz bowl. It's a conference you won't want to miss! Chapter members can support the conference by volunteering to work at the conference, seeking sponsorship support, attending, and inviting others to attend.

Bio: John Ann Shearer has served as the state coordinator for the US Fish and Wildlife Service's Partners for Fish and Wildlife Program in North Carolina since 1999. Prior to this position she worked over a 9 year period in refuge management at Wheeler Refuge in Alabama, Upper Souris Refuge in North Dakota, and Mattamuskeet Refuge in North Carolina. She has an undergraduate degree in Biology from the University of North Carolina at Chapel Hill and a master's degree in Wildlife Management from West Virginia University. John Ann currently spends most of her restoration and management work focused on longleaf pine, migratory birds, and prescribed fire. Away from work, she enjoys spending time with her husband and two daughters, worshipping, housekeeping, socializing, exercising, traveling, and gardening.

Conserving and Restoring Wildlife Habitat on the Nantahala and Pisgah National Forests Under the 2012 Planning Rule

SHERYL BRYAN, Fisheries and Wildlife Biologist, US Forest Service, 160A Zillicoa Street, Asheville, NC 28787, sbryan@fs.fed.us

Ecological- and restoration-based forest management plans are not new in North Carolina—we have completed two in the last ten years. One for the Croatan National Forest that focuses (primarily, but not exclusively) on longleaf pine ecosystem and red-cockaded woodpecker recovery, and one for the Uwharrie National Forest that focuses again on longleaf pine restoration but also on wildlife habitats associated with oak-hickory forests. The National Forests in North Carolina have always been trendsetters in the realms of ecological conservation and restoration, and that stands to be no different under the new 2012 Planning Rule. Through intensive collaboration and the use of current science and technology, the Forest Service is developing a framework for the restoration and perpetuation of diverse wildlife habitat in western North Carolina into the future. The Nantahala and Pisgah National Forests planning efforts are one of only a handful of Forest Service units across the country currently developing or revising land management plans under the 2012 Planning Rule, so once again we are out ahead of the pack with little agency experience to fall back on. I am excited to share our ideas, many of which we could not move forward on without the investment and passion of our partners and collaborators.

Bio: B.S. Biology from Virginia Commonwealth University, M.S. Fisheries Science from Virginia Tech. 26 years with the Forest Service, mostly in NC as a Fisheries Biologist, but took on wildlife program duties 7 years ago. I came to the Forest Service and North Carolina to work with brook trout in 1989, but have fallen head over heels in love with critters living on the land...

Solar and Wind Energy Development and Potential Impacts to Wildlife

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In North Carolina, dozens of solar farms have been constructed or are currently planned. The first wind farm is under construction in eastern North Carolina, and several more wind farms are in various stages of development. I will discuss general issues with siting, construction, and operation of solar and wind facilities, and potential impacts to wildlife and habitat in the piedmont and coastal plain of North Carolina.

Bio: Kathy Matthews is a biologist, and the Renewable Energy Coordinator for the Raleigh Field Office of the U.S. Fish and Wildlife Service. She has been with the Service for 4 years. Prior to working with the Service, Kathy worked for EPA Region 4 for 14 years, reviewing development and highway projects in North Carolina.

Forest Bioenergy and Wildlife Conservation in North Carolina

STEVEN M. GRODSKY, CHRISTOPHER E. MOORMAN, JESSICA A. HOMYACK, and T. BENTLY WIGLEY

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Renewable energy development in North Carolina (NC) has increased in response to sociopolitical interests in alternative energy production, economics, and policy. With its vast timberland area and readily accessible shipping ports, NC supports an expanding forest bioenergy industry. Forest bioenergy production in NC primarily includes generation of domestic power and exportation of wood pellets to Europe. Harvest residues gleaned from intensively managed forests via woody biomass harvest comprise a large portion of the feedstock for forest bioenergy production in NC. Concurrently, the downed wood retained following timber harvests serves important ecological functions, such as providing food and cover for many wildlife species. As such, intensive harvest of woody biomass could reduce downed wood and negatively affect early-successional wildlife. Our research team implemented an operational-scale, manipulative experiment to evaluate effects of varying intensities of woody biomass harvest on wildlife, including birds and invertebrates, in regenerating stands following clearcutting. In our presentation, we provide an overview of bird and invertebrate response to woody biomass harvest treatments in intensively managed loblolly pine (*Pinus taeda*) forests in NC. We also discuss implications of our findings for ecological communities in intensively managed forests and the future of forest bioenergy in NC.

Bio: Steve Grodsky is a PhD candidate in the Fisheries, Wildlife, and Conservation Biology Program at North Carolina State University. His research centers on the interface between renewable energy development and wildlife conservation. Currently, he serves as the Southeastern Section Representative, Communication Committee chair, and the editor of the *NC Wildlifer* for NCTWS.

Lead Poisoning in Birds and Other Wildlife

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Despite increased awareness and regulation aimed at protecting waterfowl and raptors in the United States and Canada, lead poisoning remains an important cause of death and illness in many species of wildlife. All animals can potentially be poisoned by lead, but clinical effects are most commonly noted in waterbirds, avian scavengers, and upland game birds. There are many ways by which wildlife can be exposed to lead; the most significant modes of exposure are primary exposure through ingestion of spent lead shot and bullets, related fragments, and sinkers, or secondary exposure through consumption of prey or carrion containing lead shot, bullets or fragments. Waterbirds and upland game birds predominantly suffer intoxication through primary exposure, while avian scavengers, including the critically endangered California condor (*Gymnogyps californianus*), primarily suffer lead poisoning due to secondary exposure.

Lead poisoning or intoxication is caused by the absorption of hazardous amounts of lead into body tissues. Clinical signs of lead exposure and mechanisms of toxicity are similar across species, yet they are variable and depend on amount of lead ingested, time over which exposure occurred, rate of absorption of lead, and species. The onset of clinical signs also varies widely, but usually ranges from days to weeks from lead ingestion. Birds may be weak and reluctant or unable to fly. A loss of the ability to walk or stand, anorexia, emaciation, and bile (green)-stained feces are also seen with lead poisoning. A post-mortem exam of an affected bird may reveal an impacted esophagus or proventriculus, severe breast-muscle wasting, prominent gallbladder, presence of lead pellets in gizzard and proventriculus, and pale, white streaks on the heart.

A presumptive diagnosis of lead poisoning can be made using clinical signs and/or post-mortem exam findings. Helpful diagnostics include radiographs and bloodwork (complete blood count and delta-ALAD enzyme level). If lead poisoning is suspected in dead animals, a whole animal, or liver and/or kidney wrapped separately in aluminum foil and frozen, can be submitted to a diagnostic laboratory for further analysis. Definitive diagnosis of

lead poisoning is determined by assessing lead levels in fresh or frozen liver, kidney or bone from dead animals or whole blood from live animals. There are non-lethal methods than can be used for screening wildlife for lead exposure, including measuring protoporphyrin IX, a precursor to hemoglobin, in a blood sample and fecal lead levels.

Prevention of lead poisoning requires a multi-faceted approach, each with different and variable success. One long-term solution is to reduce the amount of lead entering the environment by using non-toxic ammunition and fishing weights instead of the lead-containing counterparts. Inhibiting the use of problem areas during a die-off event can prevent additional animals from becoming poisoned. Pick-up and disposal of dead and sick animals prevents secondary exposure of lead. Supplemental grit may distract birds from using lead pellets as grit, and tilling fields where hunting with lead shot has occurred may decrease amount of lead available to some birds.

Bio: Dr. Bembenek Bailey is a PhD candidate in Fisheries, Wildlife, and Conservation Biology with the College of Natural Resources and the College of Veterinary Medicine at North Carolina State University under the mentorship of Dr. Michael Stoskopf. She received a BA in Biology from Dartmouth College in 1996, a MPS in Fish & Wildlife Biology and Management from SUNY College of Environmental Science and Forestry in 1999, and a DVM from Kansas State University in 2003. After practicing clinical emergency veterinary medicine and small and exotic animal medicine, she returned to her passions of research, wildlife biology and management, and teaching in 2013. Her current research focuses on using NMR-based metabolomics to assess physiological effects of contaminant exposure in wildlife.

Notes:

Posters

Juvenile Songbird Survival, Habitat Selection, and Movement in the Southeastern United States: A Bachman's Sparrow Case Study

ALEXANDER C. FISH¹, Christopher E. Moorman¹, Christopher S. DePerno¹, and Jessica M. Schillaci²

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Many species of songbirds have exhibited long-term population declines, yet the specific vital rates driving the declines are largely unknown. Most demographic research has focused primarily on adult survival and nest survival, while ignoring juvenile survival. Juvenile survival is as important as nest success for population growth, and recent advances in micro-radio-transmitter (<0.5 g) technologies allow for description of survival, habitat selection, and movement of juvenile songbirds. Bachman's sparrows are a species of concern across their range and have exhibited long-term population declines of 3% per year, making them an ideal study species. Therefore, we attached radio transmitters to juvenile Bachman's sparrows immediately after leaving the nest to monitor survival, movement, and habitat selection during the post-fledgling period. Preliminary results indicated that juvenile survival is lower than for many other songbird species, but similar to other grassland birds. Juvenile movement was constrained to within the adult territory, and juveniles selected areas with greater vertical density of woody shrubs and greater cover of forbs and ferns. Our results highlight the importance of managing for patches with a mix of woody shrubs and herbaceous vegetation, which may influence juvenile survival. These habitat features must be available on small spatial scales within the territory.

A Comparison of Field Methods for Estimating Canada Goose Abundance

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Since the early 1980's, the Atlantic Flyway resident population of Canada geese (*Branta canadensis*) has increased. Resident Canada geese are a valuable resource that provides opportunities for hunting and wildlife viewing, but when present in large numbers and concentrated, geese create conflicts with property owners and farmers and pose a risk of zoonotic disease transmission. The abundance of resident geese is unknown in North Carolina, and an efficient method to precisely estimate goose abundance is needed to help direct adaptive management of the increasing goose population. Our objective was to compare precision and efficiency between two common methods to estimate goose abundance in North Carolina. The first method (i.e., band return estimation) used hunter band returns, and the second (i.e., plot survey) used surveys of 1-km² plots randomly located across potential Canada goose habitat. To quantify efficiency, we recorded all expenses and time dedicated to goose banding and plot surveys. In June 2014, we banded 2,396 geese at 44 sites across North Carolina. During the 2014-2015 hunting season, we received 187 returned bands and calculated (using the Lincoln-Peterson formula) an estimate of 153,168 (95% CI= 130,165 – 176,171) individuals. In April 2015, we surveyed 300 1-km² plots across North Carolina. We observed 449 geese, and calculated (by multiplying mean geese observed by total plots) an estimate of 155,655 (95% CI= 102,572 – 208,738) individuals. The plot survey method required fewer person-hours and was less expensive. Our study provides the first resident goose abundance estimates for North Carolina, and results will direct future monitoring efforts across the region.

The Effects of a Cull as a Localized Management Tool on White-tailed Deer Density Across Brookhaven National Laboratory

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As the human impact of the land has increased so has interest in how this impact has affected wildlife. There has been an increasing amount of research looking at wildlife use in suburban environments. The information gained from this research is important not only in understanding how different species have adapted to human impacts, but it can also be important to wildlife managers. White-tailed deer densities have been increasing especially in suburban areas that lack pressure from hunters and other predators. In many areas they have become a nuisance species. As a response the use of culls is instituted or considered as a way to manage populations. I looked at how effective this method is as a localized management tool at Brookhaven National laboratory. A deer cull took place in February 2015 and I compared survey data from Summer 2014 to data collected this field season (Fall 2015). Not only was there a drop in average density across the laboratory site, the maps produced in ArcGIS® showed that the density of deer use had shifted farther from the center of the lab area. Initial density estimates produced in ArcGIS® were low in comparison to previous estimates. But using R to estimate counts for areas of the lab not surveyed based on vegetation type and acreage, deer density for the Summer 2014 was estimated to be 90 deer/sq. mi. and 69 deer/sq. mi. which was comparable to the initial estimates. Further research still needs to be done to see how effective this localized management tool is in the long term.

Northern Bobwhite Nest-site Selection and Nest Survival in an Agricultural Landscape

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State and federal agencies offer programs to help landowners manage habitat for northern bobwhite (*Colinus virginianus*). Nest site selection and survival are critical parameters that influence fecundity and population increase. Identifying characteristics of successful nest sites will help provide effective recommendations for enhancing bobwhite habitat. Our objective was to describe characteristics of nest sites selected by bobwhites within agricultural landscapes and investigate how those descriptors influenced nest survival. We radio-collared wild northern bobwhites ($n = 241$) on 3 commercial hog farms with varying degrees of bobwhite habitat restoration in southeastern North Carolina. Study sites consisted of a 1,740-ha farm with 28% of property managed for early successional vegetation using field borders and non-linear fallow areas, a 170-ha farm with 2% of property in early successional field borders, and a 480-ha farm with no previous early successional management efforts. We monitored nests ($n = 71$) from 15 May to 30 September, 2014 and 2015. When compared to random sites near nests, bobwhite selected nest sites with more cover of native warm season grass ($\beta = 0.816$, $SE = 0.259$) and perennial forbs ($\beta = 0.890$, $SE = 0.231$). We determined predictors of nest survival (i.e., percent cover of vegetation types, mean height of specific vegetation types, distance to edge of nest patch, distance to mature forest edge, and nest patch shape index) using the nest survival model in Program MARK. Nest survival was positively related to perennial forb cover ($\beta = 0.425$, $SE = 0.203$). When managing for nesting cover within agricultural landscapes, an emphasis should be placed on establishing patches of native warm-season grasses and perennial forbs with less importance placed on the shape of vegetation patch.

Use of LiDAR to Evaluate Alternative Thresholds of Foraging Habitat Quality for an Endangered Woodpecker

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Quantifying species' performance as a function of specific habitat resources provides guidance for the development of optimal recovery standards for endangered species. Knowledge of the shape and magnitude of threshold responses is key to their application in conservation practices, but limited in part due to difficulties in measuring forest structure over large extents. Advances in remote sensing and GPS technology offer new tools that facilitate collection of fine-grained spatial data across large extents for evaluation of threshold responses to forest structure by focal wildlife species. We used high-resolution LiDAR-derived estimates of USFWS recovery plan habitat attributes and long-term monitoring data to evaluate thresholds of foraging habitat quality for recovery of the federally endangered red-cockaded woodpecker (*Picoides borealis*; RCW) on the Savannah River Site, SC. We used fixed-kernel density methods to estimate space-use for 32 foraging RCW groups surveyed minimally over a 4-hour period twice per month between March 2013 and 2015. We used piecewise regression and information criterion to characterize threshold responses in use of specific LiDAR-derived attributes. Finally, we used resource utilization functions to test whether use of foraging habitat satisfying attribute thresholds from the USFWS recovery plan exceeded availability. The most parsimonious piecewise regressions identified thresholds in use at lower and upper values for densities of pines >35.6 cm dbh (20 trees/ha, 65 trees/ha), BA of pines 25.4-35.6 cm dbh (6 m²/ha, 10 m²/ha), hardwood canopy cover (6%, 31%), and BA of hardwoods 7.6-22.9 cm dbh (0.4 m²/ha, 4.92 m²/ha); thresholds were identified at three values for density of pines 7.6-22.9 cm dbh (23, 138, and 161 trees/ha). However, the only USFWS threshold value that was selected was >2.3 m²/ha for BA of pines >25.4 cm dbh. Based on our results, acreage of foraging habitat satisfying USFWS range-wide thresholds for BA of pines >25.4 cm dbh is an appropriate target for RCW conservation, but other recovery plan values were not important predictors of selection. Despite evidence for thresholds in resource use by foraging RCWs, generalizing individual responses to structural conditions appeared to ignore important variation in local habitat conditions that may drive selection patterns.

Influence of Vegetation Type and Prescribed Fire on *Peromyscus* Abundance in a Longleaf Pine Ecosystem

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Prescribed fire can temporarily alter food and cover resources for ground-dwelling wildlife, potentially leading to changes in animal abundance. Small mammals are an important ecosystem component in many terrestrial communities and depend on the ground-level vegetation most commonly affected by prescribed fire. In this complex system of food and cover availability where easier access to food might compromise cover and vice versa it is imperative to study the local adaptive management strategies to maintain habitat through prescribed fire influencing small mammalian species abundance. We evaluated the effect of time since burn and vegetation type on *Peromyscus* abundance in a longleaf pine (*Pinus palustris*) ecosystem. We trapped in five vegetation types and captured 208 *Peromyscus* spp. We did not detect differences in *Peromyscus* abundance among 1-, 2-, and 3-years post burn upland pine vegetation types, but abundance was greater in the lowland hardwood vegetation type than in open areas (i.e. military drop zones). Our finding supports low *Peromyscus* spp. abundance in a heavily managed longleaf pine ecosystem by fairly intensive fire regime. The lack of effect of time since burn could be due to the short fire return interval at our study site, which limited the time for post-burn shifts in vegetation composition and structure. Therefore, we suggest future research in the longleaf pine ecosystem incorporate not only a wider time frame to assess short- and long-term impacts of fire on small mammal populations as well as factors like type of fire and season of fire should also be considered.

Age Structure and Reproduction of North American River Otters in North Carolina

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The North American River Otter (*Lontra canadensis*) is native to all regions (Coastal, Piedmont, and Mountains) of North Carolina, but was extirpated from the Piedmont and Mountain regions by the end of the 19th century. While otters in the Piedmont recovered naturally, efforts were taken to reintroduce otters to the Mountains in the early to mid-1990s. By 2010, trapping seasons were open to all regions with no special restrictions. In 2009, we started collecting carcasses of harvested river otters from licensed trappers across all regions of North Carolina. We necropsied the collected otters and preserved samples for multiple tests. We used cementum annuli analysis to determine age from the lower canine tooth. We analyzed female reproductive tracts, specifically presence/absence and counts of corpora lutea for an estimation of reproductive rates. Between November 2009 and February 2015, we collected 732 otters including 392 from the Coastal Plain, 47 from the Mountains, and 293 from the Piedmont regions. Harvested otters averaged 2 $\frac{3}{4}$ years old with 75% of our sample less than 3 $\frac{3}{4}$ years. The maximum age was 12 $\frac{3}{4}$ years. Males comprised 63% of the harvest. Approximately 85% of females displayed active corpora lutea, which indicates reproductive activity. This included 60% of specimens <1 year old. These parameters suggest that North Carolina has a healthy and robust otter population throughout the state.

Nest-site Selection and Nest Survival of Bachman's Sparrows in Contrasting Longleaf Pine Ecosystems

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Longleaf pine communities of the southeastern US and the taxa that inhabit the system have experienced some of the highest rates of habitat loss and fragmentation of any ecosystem in North America. Bachman's sparrow (*Peucaea aestivalis*) is closely associated with the longleaf pine ecosystem, and is listed as a species of conservation concern across its range. Understanding Bachman's sparrow breeding biology is crucial to mitigating population declines and directing restoration and management of remnant longleaf pine forest, but factors such as nest-site selection and nest survival have received little attention due to difficulty in locating the species' nests. To address this knowledge gap, we located 132 Bachman's sparrow nests in the Coastal Plain and Sandhills physiographic regions of North Carolina during 2014-2015, and modeled nest-site selection and nest survival as a function of vegetation characteristics, temporal factors, and landscape-level habitat. There were distinct differences in nest-site selection between regions, with Bachman's sparrows in the Coastal Plain selecting greater woody vegetation density and lower grass density at nest sites than at reference locations. Conversely, sparrows selected nest sites with intermediate levels of grass density in the Sandhills, where shrubs occurred less commonly. Daily nest survival rates were similar between regions and were within the range of previously reported estimates for this species. We detected no predictors of nest survival in the Sandhills, but nest survival declined later in the nesting season in the Coastal Plain. Our results indicate that nest survival may not be the main driver for population declines at the northern edge of the species' range. Until the mechanisms influencing reproductive success (i.e., attracting a mate, nest success, and fledgling survival) are better understood, habitat-based management approaches to increase breeding productivity may be ineffective.

Business Meeting Agenda

Thursday, March 17, 2016, 9:00 am

Haw River State Park, Browns Summit, NC 27214

Welcome and Opening Comments – Kelly Douglass

Secretary's Report – Sue Cameron

Review and approval of minutes from the December 9, 2015 Executive Board meeting; minutes are available at

<http://nctws.org/wordpress/members>

Treasurer's Report and 2016-2017 Budget – Colleen Olfenbuttel

Report is available at <http://nctws.org/wordpress/members>

Committee Reports – Kelly Douglass

Reports are available at <http://nctws.org/wordpress/members>

Student Chapter Updates

NC State University – Amber Bledsoe

Haywood Community College – Dylan Cranfill

Western Carolina University – Ben Lovedahl

2016 NCTWS Award Presentations – Chris Deperno

NCTWS Chapter Award

Wildlife Conservation Award

Student Poster Award

Nominations and Elections – Kelly Douglass

Present new officers and "Passing of the Goat"

Words from the New President – Jeff Marcus, acting President

Awards

NCTWS CHAPTER AWARD

This award is presented to a chapter member for individual effort and contributions to wildlife conservation through The Wildlife Society. Service to the Society and Chapter is strongly considered, along with professional achievement. The award includes a certificate or plaque and a copy of the commendation read during the awards ceremony. Presentation to the recipient is typically made at the annual meeting of the Chapter.

WILDLIFE CONSERVATION AWARD

This award is presented to individuals or groups within North Carolina who deserve recognition for achievement in wildlife conservation, education, research or related endeavors. There is no requirement for Society or Chapter membership. The recognition is for accomplishments widely recognized and publicized. The award includes a certificate or plaque and a copy of the commendation read at the awards ceremony. The award is presented to the recipient or organization at a time and location that is meaningful to the recipient and to the Chapter in terms of future interaction with others who work for the betterment of wildlife conservation.

STUDENT AWARD

The Ken Wilson Memorial Award is presented annually to a student or students, nominated by the wildlife faculty of the various schools within the State having wildlife programs (NC State University, Haywood Community College, and Western Carolina University) and selected by the Awards Committee. Awards are presented for academics, contributions to research, work projects that contribute to State wildlife conservation efforts, involvement with the student chapter of The Wildlife Society, and other accomplishments that the Chapter deems worthy of recognition. Recipients receive a cash award, a plaque, a copy of the Sand County Almanac, and a copy of the commendation signed by the Chapter President.