



Rose-breasted grosbeak-USFWS



Eastern box turtle-Jodie Owen



Slimy salamander-Jonathan Mays

# Incorporating Climate Change Into North Carolina's Wildlife Action Plan

## Introductory Workshop 2010

September 1, 2010 - September 2, 2010  
Raleigh Convention Center



Climate Change in North Carolina



Piedmont stream-NCWRC



Dwarf wedgemussel -NCWRC

# Convention Center Floorplan



# The N.C. Wildlife Action Plan and the Power of Partnerships

In 2005 the N.C. Wildlife Action Plan was introduced. This Plan outlined a broad strategy designed to conserve North Carolina's diverse and globally significant fauna and habitats. The N.C. Wildlife Action Plan is the document that guides the research and conservation actions of the N.C. Wildlife Resources Commission's Wildlife Diversity Programs. However, no single entity can conserve the State's wildlife resources on its own. It takes a statewide team effort working cooperatively from a common strategy and with common goals to implement the N.C. Wildlife Action Plan.



Northern flying squirrels-Jonathan Mays

Statewide projects have been initiated that address the needs and actions identified in the Plan:

- Land Trusts use the Plan to guide land protection efforts so that important habitats can be conserved.
- Universities use the Plan to guide research efforts on priority species.
- State and federal agencies use the Plan to steer conservation efforts.

However, much more is needed. To be effective, statewide initiatives need multiple partners working collaboratively. Partnerships with a host of individuals and organizations can dramatically alter the scope of participation from anything experienced prior to the advent of the N.C. Wildlife Action Plan.

There is much to be done and new challenges to face. Whether you view climate change as the most serious threat to wildlife or just another perturbation in a long list of many, it must be accounted for in how we manage and conserve wildlife going forward. Various models predict many changes to North Carolina in the coming decades. Sea levels are predicted to rise and temperature fluctuations are expected to become more extreme, and storms more intense.

For effective management in the face of climate change, we must plan now on confronting this challenge. Your organization's participation in revising the N.C. Wildlife Action Plan is critical. In recognition of this collaborative effort, this workshop builds on the momentum from the Interagency Leadership Team's Climate Change Adaptation Workshop: Ask the Climate Question, held in March 2010. Only by building strong partnerships among all entities working to protect wildlife in North Carolina can we be truly successful.



## Celebrate the 10th Anniversary of the State Wildlife Grants Program

Please join in celebrating the State Wildlife Grant Program's accomplishments and help continue efforts to achieve dedicated funding as we work to conserve wildlife for future generations. For the past 10 years, this grant program has provided a stable federal funding source for state fish and wildlife agencies in excess of \$573 million. This funding has been critical to the recovery and conservation of many species in greatest need of conservation. Success has been made possible through the work of a broad national bipartisan wildlife conservation coalition, Teaming with Wildlife, which has strongly supported State Wildlife Grants. Teaming with Wildlife includes more than 160 organizations in North Carolina.

# Agenda



## Day I - Wednesday, September 1, 2010

12 p.m. Registration and Exhibits Hallway Level North  
Stakeholders Networking

Workshop Moderators - Shannon Deaton, N.C. Wildlife Resources Commission  
Perry Sumner, N.C. Wildlife Resources Commission

1 p.m. Opening Session Meeting Room 305AB  
Welcome - Mallory Martin, Chief Deputy Director, N.C. Wildlife Resources Commission  
Tim Gestwicki, Executive Director, North Carolina Wildlife Federation

Keynote Speaker - *The Future Ain't What It Used to Be*  
Dr. Bruce Stein, Associate Director, Wildlife Conservation and Global Warming,  
National Wildlife Federation

2:15 p.m. Unprecedented Opportunities to Conserve Fish and Wildlife Threatened by Climate Change:  
A National Perspective - Austin Kane, Policy Specialist, National Wildlife Federation

2:45 p.m. Break

3 p.m. Understanding the Impacts of Climate Change on Wildlife and Habitats in North Carolina -  
Dr. Amielle DeWan, Director of Conservation Planning, Defenders of Wildlife

4 p.m. Break

4:15 p.m. N.C. Wildlife Action Plan Implementation and Revision -  
Chris McGrath, Wildlife Diversity Program Coordinator, N.C. Wildlife Resources Commission

4:45 p.m. Closing Remarks - Shannon Deaton and Perry Sumner, N.C. Wildlife Resources Commission

5-7 p.m. Social along with Poster Session  
State Wildlife Grants 10-Year Anniversary - Naomi Edelson, National Wildlife Federation

# Agenda

## Day 2 - Thursday, September 2, 2010

- 8 a.m. Registration and Exhibits  
Continental Breakfast and Stakeholders Networking **Hallway Level North**
- Workshop Moderators - Shannon Deaton, N.C. Wildlife Resources Commission  
Perry Sumner, N.C. Wildlife Resources Commission
- 9 a.m. Ecosystem Response to Climate Change: Assessment of Effects and Adaptation Strategies - Linda Pearsall, Director, Office of Conservation, Planning, and Community Affairs, N.C. Department of Environment and Natural Resources
- 10 a.m. Introduction to Break-out Sessions & Conservation Registry Demonstration  
Identify Your Agency's Top Two Initiatives Related to Climate Change - Vicki Bott, UNC Charlotte Urban Institute and Renaissance Computing Institute at UNC Charlotte  
Conservation Registry Demonstration - Scott Anderson, Lead Geographic Information System Biologist, N.C. Wildlife Resources Commission
- 10:45 a.m. Break/Mobilization to Break-out Rooms **Meeting Rooms 201-206, 305-306**
- 11 a.m. Break-out Session #1:
- Share Your Agency's Efforts
  - List Key Climate Change Impacts on Wildlife Resources
  - Discuss Participation/Process
- 12:30 p.m. Networking Lunch in Break-out Groups: Cooperative Projects, Conservation Registry
- 1:15 p.m. Break-out Session #2: Discuss Format and Content for Climate Change Integration
- Break/Return to Main Meeting Room **Meeting Room 305AB**
- 2:30 p.m. Reports from Breakout Sessions
- 3 p.m. Closing Remarks - Shannon Deaton and Perry Sumner, N.C. Wildlife Resources Commission
- 3:30 p.m. Adjourn



Juvenile brown pelicans-Sue Cameron

## Speaker Biographies



Cypress swamp-Jodie Owen

### **Scott Anderson - N.C. Wildlife Resources Commission**

Scott Anderson has been the Lead Geographic Information System Biologist with the Division of Wildlife Management since 2006 and with the Commission since 2004. He received his master's degree in Wildlife Science from Oregon State University and he holds bachelor's degrees in Biology and Environmental Science from the University of Delaware. His area of expertise is a combination of biological research and technical knowledge of GIS. Anderson provides GIS support throughout the Division of Wildlife Management, developing cartographic products and performing spatial analyses relating to game and non-game species management and conservation.

### **Vicki Bott - UNC Charlotte Urban Institute**

Vicki Bott, the Associate Director for Public Policy Research, has been with the Institute since 1997. Among her current responsibilities is Community Engagement for the Renaissance Computing Institute at UNC Charlotte (RENCI). She was a RENCI co-presenter at the ILT Climate Change Adaptation conference in March. Her areas of expertise include community visioning and community planning, urban growth and regional planning, environmental and open space planning and land conservation. She received a master's degree in Geography with a Community Planning emphasis from UNC Charlotte and completed her undergraduate work at Harvard University.

### **Shannon Deaton - N.C. Wildlife Resources Commission**

Shannon Deaton has been a Program Manager of the Division of Inland Fisheries' Habitat Conservation Program since 2002. She has been with the Commission since 1998. She received a master's degree in Natural Resources and a bachelor's degree in Biological and Agricultural Engineering from N.C. State University. In 2004, she earned a Professional Engineer's license in North Carolina. She has been active in linking habitat conservation with the Commission's management, outreach, enforcement and enhancement programs, which assist in the development, implementation and integration of the N.C. Wildlife Action Plan. Deaton, along with Perry Sumner, co-chairs the Commission's climate change committee.

### **Dr. Amielle DeWan - Defenders of Wildlife**

Dr. Amielle DeWan oversees Defenders of Wildlife Conservation Planning Program, which provides capacity and technical support to state agencies and land trusts to protect wildlife and biodiversity. She holds a Ph.D. from Cornell University, where she studied the impact of land-use change and fragmentation on wildlife in the Hudson River Valley corridor. She completed her master's degree in Conservation Biology from the State University of New York at Albany and has a bachelor's degree in Biology from the SUNY Binghamton. She is responsible for managing the Defenders' work on State Wildlife Action Plans, with particular emphasis on developing planning tools for climate change adaptation.

## Speaker Biographies

### Naomi Edelson - National Wildlife Federation

Since 2008, Naomi Edelson has been with the Federation as Senior Manager of State Wildlife Programs. She is a wildlife biologist with a Master of Science from the University of Florida, where she studied wading birds and the wetlands they use. She also holds a Bachelor of Science degree from the University of Massachusetts at Amherst. At the Federation, she assists state wildlife agencies with incorporating climate change into their action plans and federal agencies and others on integrating climate change into their management plans. Formerly, she was the Teaming with Wildlife Director at the Association of Fish and Wildlife Agencies, where she initiated and directed all aspects of Teaming with Wildlife.



Sandhills wetland-Jeff Hall

### Tim Gestwicki - North Carolina Wildlife Federation

Tim Gestwicki is Executive Director of the North Carolina Wildlife Federation. He is a graduate of the University of North Carolina at Chapel Hill and has 20 years of experience in the professional conservation field with the Wildlife Federation in managing conservation programs, projects and policy efforts. Gestwicki is a certified master forester, master composter and habitat steward. He serves on the EarthShare N.C. Board of Directors, Mecklenburg County Stewardship Advisory Council, and the Conservation Political Action Committee of the Conservation Council of North Carolina.

### Austin Kane - National Wildlife Federation

Austin Kane is a Policy Specialist for the National Wildlife Federation. She received a master's degree in Environmental Management from Duke University's Nicholas School of the Environment and Earth Sciences, and a Bachelor of Arts in Biology from the University of Virginia. Her work focuses primarily on safeguarding wildlife from climate change. She works with affiliates, fish and wildlife agencies, and other partners in Virginia, North Carolina, and throughout the region, to integrate climate change into their states' Wildlife Action Plans. She also heads her office's efforts to engage in regional clean energy issues, such as offshore wind energy development. As an Assistant Planner for the Hawaii Division of Aquatic Resources, she helped develop and write Hawaii's Wildlife Action Plan.

### Mallory Martin - N.C. Wildlife Resources Commission

Mallory Martin is Chief Deputy Director of the N.C. Wildlife Resources Commission. Martin holds degrees from N.C. State University and Virginia Tech. He is certified as a Fisheries Scientist by the American Fisheries Society and as a Public Manager by the National Certified Public Manager Consortium. His primary responsibilities include oversight of the Wildlife Management, Inland Fisheries, Law Enforcement, Conservation Education and Engineering Services divisions. For more than two decades, he was a fisheries biologist and program supervisor for the Commission in western North Carolina.

## Speaker Biographies



Hammocks Beach-NCWRC

### **Chris McGrath - N.C. Wildlife Resources Commission**

Chris McGrath, Coordinator for the Wildlife Diversity Program in the Division of Wildlife Management, has been working in the program since 1990. He has a master's degree in Natural Resource Ecology from Duke University and a bachelor's degree in Biology/Anthropology from Skidmore College in New York. Since 2005, he has been the Wildlife Diversity Program Coordinator, where he coordinates staff and projects statewide in implementing the Wildlife Action Plan. In the past 20 years, he has also served as Mountain Wildlife Diversity Supervisor and Project Leader for the Commission.

### **Linda Pearsall - N.C. Department of Environment and Natural Resources**

Linda Pearsall has focused her work on land and water conservation throughout her 30-year career, including working with The Nature Conservancy and the Natural Heritage Network in West Virginia, Tennessee, Hawaii and North Carolina. Pearsall is a graduate of West Virginia and Ohio State universities with bachelor's and master's degrees in Botany and Ecology. As Director of the Office of Conservation, Planning, and Community Affairs, Pearsall has led the development of the statewide Conservation Planning Tool as a first step toward integrating land and water conservation priorities of North Carolina.

### **Dr. Bruce Stein - National Wildlife Federation**

As the Associate Director, Wildlife Conservation and Global Warming with the Federation, Dr. Stein co-leads the Federation's work on safeguarding wildlife and their habitats in the face of a changing climate. A botanist by training, Dr. Stein received his bachelor's degree from the University of California, Santa Cruz, and his Ph.D. from Washington University, St. Louis and the Missouri Botanical Garden. Dr. Stein previously was Vice President and Chief Scientist for NatureServe, a non-profit organization he helped establish in 2000 that is well-known for its national databases on rare and endangered species and ecological systems. While at NatureServe, he was the founding Editor-in-Chief of LandScope America, an online conservation mapping tool developed collaboratively with the National Geographic Society. Prior to NatureServe, Dr. Stein was a senior scientist with The Nature Conservancy, where, for more than a decade, he advised the organization on land protection priorities across the western hemisphere.

### **Perry Sumner - N.C. Wildlife Resources Commission**

Perry Sumner has been the Program Manager for the Division of Wildlife Management's Wildlife Diversity and Surveys & Research programs since 2007 and with the Commission since 1983. He received a Bachelor of Science degree from N.C. State University in Wildlife Biology and Master of Science degree in Wildlife Ecology from Mississippi State University. He worked on various wildlife research projects prior to coming to the Commission. In the past 27-plus years, Sumner has served as a Research Technician, District Wildlife Biologist in two districts, Furbearer Biologist and Research & Surveys Program Coordinator. He became a Certified Wildlife Biologist in 1987. He, along with Shannon Deaton, co-chairs the Commission's climate change committee.

# Acknowledgements

“Incorporating Climate Change Into North Carolina’s Wildlife Action Plan” Workshop 2010 is a cooperative effort among the following:

## North Carolina Wildlife Federation and National Wildlife Federation

The federations are organizing and hosting this workshop to provide a forum for the N.C. Wildlife Resources Commission and its partners to strategically address climate change impacts on wildlife and their habitats and to incorporate the results into the N.C. Wildlife Action Plan. Additionally, the federations are promoting and advertising the workshops.

## Defenders of Wildlife

Defenders of Wildlife has prepared a climate change adaptation scoping document specific to North Carolina. Topics in this report include: climate change models and projections applicable to North Carolina, potential impacts on priority habitats and species, a review of synergistic threats, and approaches to vulnerability assessment and adaptation planning. Information provided by workshop participants will be used to update an addendum to identify partners who can engage in the planning and implementation phases. Defender’s also provided financial assistance for stakeholder registration.

## N.C. Wildlife Resources Commission

The N.C. Wildlife Resources Commission organized a stakeholder survey (completed in late 2009) and convened a stakeholder steering committee that provided input on workshop planning and capturing stakeholder interests. The Commission is also working with the facilitator, compiling a stakeholder list for notifications, hosting a workshop website, and assisting with workshop logistics.

## N.C. Wildlife Action Plan Workshop Steering Committee

The N.C. Wildlife Action Plan Workshop Steering Committee provided input for workshop planning and development. Steering Committee members are: Linda Pearsall, N.C. Department of Environment and Natural Resources; Ken Bridle, Nongame Wildlife Advisory Committee; Sam Pearsall, Environmental Defense Fund; Todd Wooten, Nicholas Institute for Environmental Policy; Pete Benjamin, U.S. Fish and Wildlife Service; and Lisa Creasman, Conservation Trust of North Carolina.

## Other Partners

**Progress Energy** provided financial assistance to ensure partners’ attendance.

**Renaissance Computing Institute (RENCI)** is a state-sponsored network of inter-disciplinary applied research centers at East Carolina University, N.C. State University, the University of North Carolina at Chapel Hill, the University of North Carolina at Charlotte, the University of North Carolina at Asheville and Duke University. RENCI at UNC Charlotte is a collaboration among the UNC Charlotte Urban Institute, the Center for Applied Geographic Information Sciences, the Charlotte Visualization Center, and the IDEAS Center (Innovation, Design, Environment and Sustainability.)

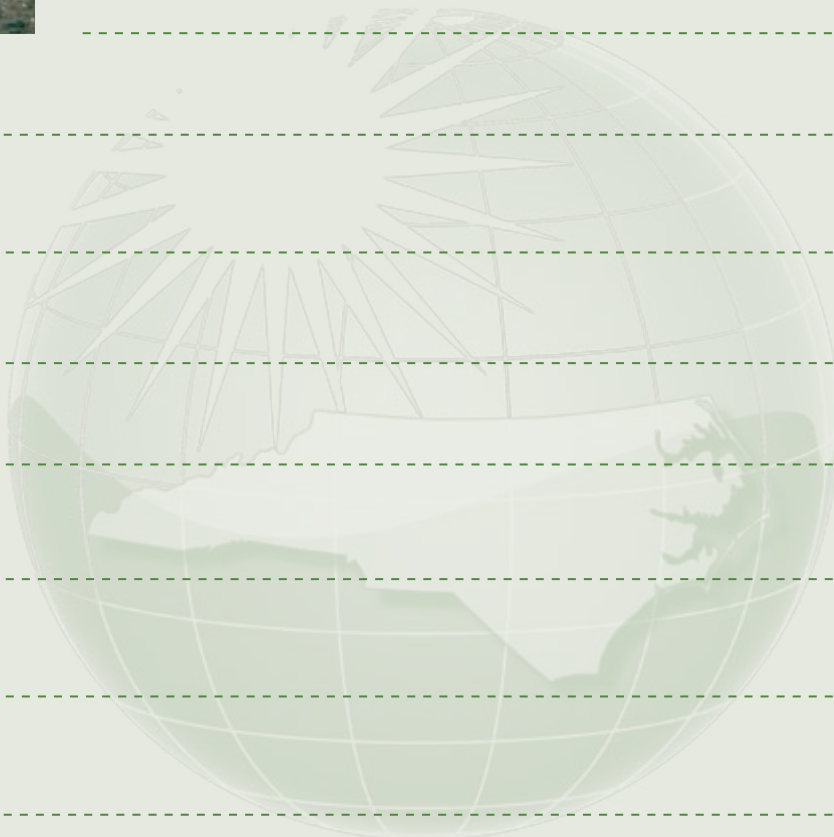


Southern hognose snake-Jeff Hall

# Notes



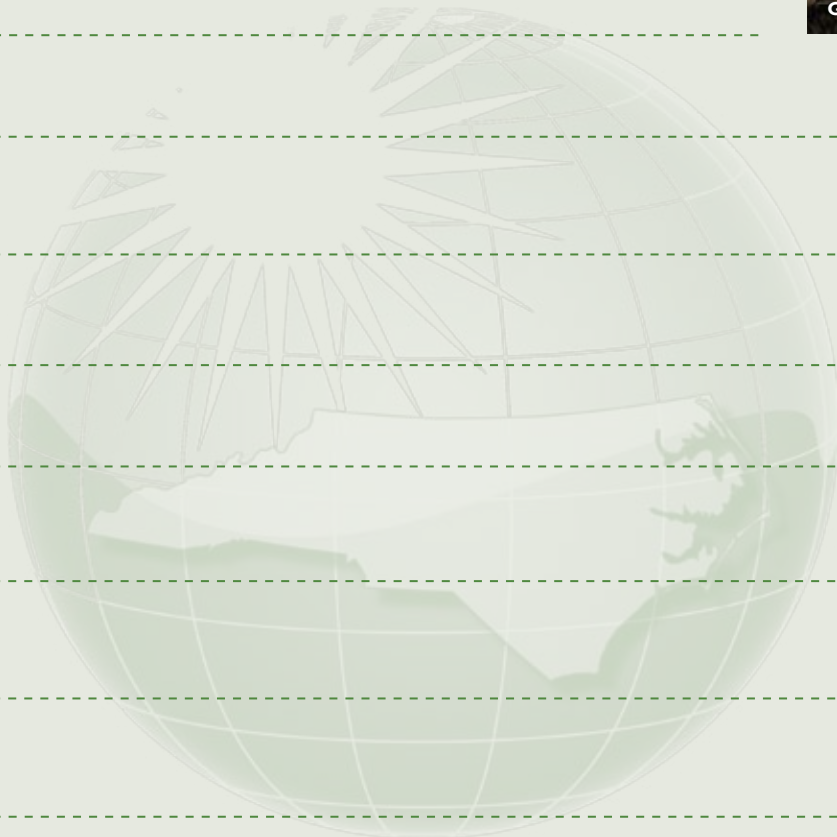
Diamondback terrapin-NCWRC



# Notes



Great blue heron - USFWS





Singletary Lake - NCWRC

**The “Incorporating Climate Change into North Carolina’s Wildlife Action Plan”  
Introductory Workshop 2010 is hosted by:**



[nwf.org](http://nwf.org)



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