Thank you to everyone who was able to attend and help to make this year's meeting a success! It was exciting to finally host a meeting in Louisiana! We had a great turnout with nearly 100 attendees, fantastic oral and poster presentations, engaging discussions, and for the evening socials, a shrimp boil with cajun zydeco/swamp pop music and an entertaining trip to New Orleans. Thank you to the Clarion Inn staff in Covington for their hospitality and for being so accommodating during the meeting. Our keynote speaker, John Pitre, with the Natural Resource Conservation Service, kicked off this year's meeting with an overview of Louisiana's Working Lands for Wildlife Program (WLFW). He addressed conservation and habitat restoration efforts for the gopher tortoise in Louisiana, specific hurdles with large-scale conservation efforts, and success stories as a result of the WLFW program.

I would like to give a big thank you to all of the speakers who presented on a wide range of topics including gopher tortoise ecology and conservation, commensal and upland species conservation, habitat restoration, herpetofaunal surveys, and state updates on conservation efforts. There were 27 oral presentations (eleven presented by students) and nine poster presentations (six presented by students). Congratulations to students who received oral and poster presentation awards and travel awards. And congratulations to all of our award recipients for Special Projects, Distinguished Service, Lifetime Service, and Auffenberg and Franz Conservation awards. All of these awards were very much deserved! Congrats also to the winners of the J. Larry Landers Student Research and Donna J. Heinrich Environmental Education grants. Details on award recipients can be found in this issue.

Thank you to everyone who donated and bid on the items for our silent auction at the meeting. Environmental education grants are funded through the silent auction and all donations and bids are greatly appreciated. And a special thank you to all of the GTC board members, Louisiana Natural Heritage Program staff, students, and volunteers who helped with planning, organizing, and assisting with all aspects of running the meeting. It would not have been possible without the help of so many dedicated and thoughtful people. I am truly proud to be a part of such an outstanding organization and feel honored to know so many wonderful people through GTC.

The GTC Education Committee has welcomed twelve new volunteers in 2015 for a total of 23 members working on projects to promote awareness and education/outreach for the gopher tortoise, upland species and habitat conservation. The success of GTC would not be possible without the help and dedication of volunteers. We are grateful to everyone who continues to help fulfill this organization’s mission. If you would like to become more involved in GTC, please contact me at klandry@wlf.la.gov or one of the GTC officers listed on the website. We look forward to hearing from you!

I would like to thank our outgoing co-chair Jess McGuire for all of her hard work and time serving as co-chair for the past two years and also as website manager for the past several years. We welcome Jen Howze as the new website manager and assistance from the Joseph W. Jones Ecological Research Center staff. I would also like to welcome GTC's new incoming co-chair, Dick Franz, who will be hosting next year's meeting October 7th-9th, 2016, at Ravine Gardens State Park in Palatka, Florida. Save the date-details to follow on the GTC website! I wish everyone safe and wonderful holidays and I’m looking forward to another great year for GTC in 2016!
We wish to thank the Coastal Wildlife Club for helping sponsor this year’s meeting with a donation of $500. We also wish to thank the Skelton Foundation for generously donating $1,000 to be put to use for outreach and educational activities and materials.

Thanks also to Chef Michael Bogdan and wife, Trisha, for preparing the fantastic food!

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37th Annual Gopher Tortoise Council Meeting Highlights

Covington, Louisiana—what a great venue for our annual meeting! In addition to several high quality oral and poster presentations, we were treated to a fantastic shrimp boil with music and festivities!

There was fun, food, and fellowship with some great Cajun Zydeco music playing in the background!

Our compliments to the chef who kept the shrimp, taters and corn coming!
Meeting Highlights...continued

Student Awards

A highlight of every annual meeting is the presentation of student awards. This includes awards for oral and poster presentations as well as the J. Larry Landers Student Research Award.

And the winners are...

2015 GTC Student Oral Presentations

First Place: Bradley M. O’Hanlon (Marshall University), Shane M. Welch, John D. Holloway and Jayme L. Waldron- The spatial and behavioral effects of anthropogenic landscapes on eastern diamondback rattlesnakes

Second Place: Daniel Quinn (University of Georgia/Savannah River Ecology Laboratory), Kurt Buhlmann, Terry Norton, John Jensen, and Tracey Tuberville- Effects of supplemental diet treatments on health indices of head-started gopher tortoises

Third Place (tie):
Alexander D. Wright (University of Georgia/Joseph W. Jones Ecological Research Center), Jeffrey Hepinstall-Cymerman, Lora L. Smith, and Clinton T. Moore- Long-term population ecology and large-scale movement patterns of gopher tortoises (Gopherus polyphemus) in southwestern Georgia

Michelina C. Dziadzio (University of Georgia/Joseph W. Jones Ecological Research Center), Lora L. Smith, Richard B. Chandler, and Steven B. Castleberry- Effects of red imported fire ants on gopher tortoise (Gopherus polyphemus) nests and hatchlings
Meeting Highlights...continued

2015 Student Poster Presentations

First Place: Cara McElroy (University of Georgia and the Joseph W. Jones Ecological Research Center), Jeff Hepinstall-Cymerman, Lora L. Smith, and Travis Glenn- Amphibian ecology and connectivity on the Coastal Plain

Second Place: Sara E. Mitchell (Florida Atlantic University)- Investigating ground penetrating radar (GPR) potential for detection of gopher tortoise subsurface nests within South Florida sandy soils

Third Place: Mary E. Bennett (Auburn University), Robert A. Gitzen, Michael Barbour, and Helen Tripp- Where the other gophers go! Habitat analysis of the southeastern pocket gopher (Geomys pinetis) in southeast Alabama

From left to right:
Cara McElroy, Sarah Mitchell and Mary Bennett

J. Larry Landers Student Research Awards

This is a competitive grant program for undergraduate and graduate college students. This year’s winners are-

Rhett Rautsaw (University of Central Florida)
Examining corridor use and the feasibility of inland retreat by Gopher Tortoise (Gopherus polyphemus)

Jeffrey Goessling (Auburn University) Analysis of pathogen load across populations of gopher tortoises (Gopherus polyphemus)

Jeff Goessling and Rhett Rautsaw
Gopher Tortoise Council Service Awards

We are pleased to announce the presentation of several Service Awards this year...

A Special Project Award was presented to Caleb Stillwagon. Caleb’s efforts focused on a street in his neighborhood where he frequently noted impacts of vehicles on gopher tortoise mortality. Caleb would often assist tortoises in crossing the road to safety. Ultimately, Caleb recruited the assistance of the Charlotte County (Florida) Public Works Department, with a hand from county Environmental Specialist Jamie Scudera, to place four Gopher Tortoise Crossing Signs along Forsemen Blvd. last fall. Since then, no additional road mortality of tortoises has been reported. Congratulations Caleb and thanks for your thoughtful efforts to protect tortoises in your town!

The Distinguished Service Award was presented to GTC Secretary, Connie Henderson, for her many years of service in that capacity. Connie has also ensured that the GTC silent auction has run smoothly for the past few years.

Dr. Bob Herrington was also recognized with a Distinguished Service Award for his long-term service as the Chair for the J. Larry Landers Student Research Award.
Jennifer Howze and Beth Schlimm received Special Project Awards in recognition of their efforts on behalf of the GTC Upland Snake Conservation Initiative through newsletter articles, attendance at events and development of upland snake fact sheets.

Jen Howze (left) pictured with future herpetologist and GTC board member Calvin McGuire. Beth Schlimm-not pictured

Lora Smith (left) receiving the GTC Lifetime Service Award

Dr. Lora Smith received the Lifetime Service Award for her long-term service to the Council and continued excellence in gopher tortoise research and conservation. Lora has served in many roles on behalf of GTC including co-chair, treasurer, newsletter editor, awards committee and nominating committee as well as facilitating student involvement in GTC.

Calvin and Deb Burr prepare to announce the winner of the Auffenberg-Franz Conservation Award...
Gopher Tortoise Council Service Awards continued

One of GTC’s most prestigious awards is the **Auffenberg and Franz Conservation Award**. It is presented to individuals with lifetime accomplishments and organizations with long-term efforts in conserving gopher tortoises and upland ecosystems. We are pleased to announce that this year’s award went to the **Joseph W. Jones Ecological Research Center**. Pictured below are past, present (and perhaps future) Jones Center staff and students. Congratulations!

Front row (left to right)-Michelina Dziadzio and Lora Smith. Back row (left to right)-Dave Steen, Brad O-Hanlon, Alex Wright, Cara McElroy, Jen Howze, Jess McGuire, Will McGuire, Calvin McGuire and Keri Landry

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**Donna J. Heinrich Environmental Education Grant Awards**

The GTC Environmental Education Grant was established to support educators and organizations committed to developing educational projects about the gopher tortoise and the fascinating world in which it lives. The grant honors Donna June Heinrich, an environmental educator, whose life was dedicated to conserving wildlife and their associated habitats.

We are pleased to announce this year’s winners of the Heinrich Environmental Education Grant:

**Zoo Miami** with a proposal to create a visitor engagement cart to be manned by Teen Conservation Scientists (high school volunteers) to interact with zoo visitors concerning gopher tortoises and upland conservation.

**Chinsegut Nature Center** for purchase of burrow scope with DVR capability to reach school age children through their nature programs.

**Congratulations to all of our award winners!**
The Tortoise Burrow

STATE REPORTS

South Carolina

Will Dillman

There has been a variety of staffing changes over the past year for those South Carolina Department of Natural Resources (SCDNR) employees working with the gopher tortoise. James Fowler joined SCDNR and will manage Tillman Sand Ridge Heritage Preserve (TSRHP). Michael Small (Aiken Gopher Tortoise Heritage Preserve) has accepted a different position within the agency. SCDNR will hire a new preserve manager for the Aiken Gopher Tortoise Heritage Preserve (AGTHP).

Work to establish an Minimum Viable Population at AGTHP utilizing waif tortoises continues. To date, 238 individual tortoises have been reintroduced to the landscape (172 adults and juveniles and 66 hatchlings/yearlings). An individual male tortoise from Florida by way of Rhode Island was acquired just prior to the GTC annual meeting and will be added to the population. We have observed reproduction in this population both inside and outside of the soft-release pen walls but we would like to investigate hatching success, recruitment, and population genetics for this preserve. We are hopeful that funding for this investigation will be secured this year. In preparation for the project, we conducted nest surveys and collected seven nests and 32 eggs for incubation and genetic testing. The thirty successfully hatched tortoises will be released at AGTHP in juvenile pens. Savannah River Ecology Laboratory staff provided two papers from work conducted at AGTHP entitled: 1) Gopher Tortoise Dispersal and Home Range Establishment following Penning: Implications for Translocations and 2) Use of Waifs as a Means to Restore Population Viability of Gopher Tortoises at the AGTHP, South Carolina. Additional habitat restoration continues on the AGTHP. Approximately 800 acres were burned in 2015 to maintain the loblolly pine and wire grass ecosystem. Three clusters of nesting inserts (12 total) for red cockaded woodpeckers were added to the preserve.

The uplands of TSRHP were burned during the growing season in 2015 and informal survey efforts immediately following the burn revealed reasonable burrow densities and multiple age and size classes on the property. This year’s burn appears to have helped reduce hardwood sprouting beginning to appear on the preserve.

SCDNR will conduct Line Transect Distance Sampling (LTDS) at several sites, both public and private, in the coming year as access dictates. Plans to begin LTDS at the TSRHP are in place and surveys will begin in late October and finish in November. The remaining surveys will take place January-March 2016.

Georgia

Jen Howze

Thank you to John Jensen and Matt Elliott (Georgia Dept. of Natural Resources), Lora Smith (Jones Ecological Research Center), Brian Nuse (University of Georgia) and Mitch Lockhart (Valdosta State University) for their contributions to this report.

Gopher Tortoise Population Augmentation:

Tortoises displaced due to the proliferation of solar farms in sandhill habitats on private lands have been used to augment depleted populations on protected state lands. Acclimation enclosures were constructed on Silver Lake Wildlife Management Area (WMA), Chattahoochee Fall Line WMA, and Fall Line Sandhills WMA. One hundred and twenty seven displaced tortoises were translocated to these WMAs and will remain in the enclosures for at least nine months prior to liberation.
Georgia state report continued

At Yuchi WMA, Georgia Dept. of Natural Resources (GADNR) has been augmenting the population with adult tortoises displaced by development elsewhere and with juvenile tortoises hatched and head-started from eggs collected at stable populations. One hundred and forty three juvenile tortoises, thirty with attached radio-transmitters, were released in 2015. Daniel Quinn (M.S. Student, University of Georgia-UGA), who presented at this year’s GTC meeting, is tracking the free-ranging juveniles to evaluate growth, habitat use, home range and survivorship. Fourteen nests at stable donor sites have been located and secured for egg collection and captive rearing in support of a spring 2016 release.

**Line Transect Distance Sampling (LTDS) Training:**
Jones Center staff held a training workshop for staff from Camp Shelby and The Nature Conservancy.

**Tortoise Surveys:**
GADNR has completed LTDS tortoise surveys on 10 sites for this year. Highlights included greater than 1,500 tortoises on both the Trail Ridge sites (Charlton County) and a Brooks County property, greater than 1,000 tortoises at Townsend WMA, and 444 tortoises at Sansavilla WMA (Wayne County).

Tall Timbers was contracted to conduct LTDS tortoise surveys on eight sites managed for quail in southwest Georgia.

Valdosta State University (VSU) students surveyed Reed Bingham State Park to search for 180 six to seven-year-old juvenile tortoises implanted with PIT tags as hatchlings. Unfortunately, in approximately 50 hours of searching, no marked juveniles were located.

**Indigo Snake Monitoring:**
The Orianne Society has continued occupancy monitoring of eastern indigo snakes to determine population trends. The study is focused on the Altamaha River Basin, considered a population stronghold for eastern indigos in Georgia. Staff surveyed twenty sandhill sites on public and private lands in the basin and detected indigos at 34% of the sites. The degree of detections in 2015 did not differ significantly from that in the previous four years, suggesting that the population remains stable in the study area.

**Gopher Frog Restoration:**
Because of widespread upland and wetland habitat alteration throughout their range, gopher frogs are now limited to fewer than 10 sites in Georgia. Throughout the Fall Line Sandhills region of the Southeast, biologists reported scant breeding by gopher frogs during the 2015 season. Portions from two egg masses were collected and raised (by UGA and Atlanta Botanical Garden) and resulted in the release of 773 metamorphs at a reintroduction site at Williams Bluff Preserve. During one of the releases, UGA researchers encountered two unmarked metamorphs in the uplands surrounding the release pond suggesting that at least some natural recruitment occurred at the site.

**Striped Newt:**
All known extant breeding populations were monitored and had confirmed newts except for Okefenokee National Wildlife Refuge.

Wildlife agencies in both Georgia and Florida have partnered together on a study looking at the genetic variability within populations to determine the degree of inbreeding depression and genetic bottlenecking and to screen for chytrid.

**Research:**
Michelina Dziadzio (M.S. Student, UGA), who presented at this year’s GTC meeting, successfully defended her thesis entitled “Effects of predation of gopher tortoise nest and hatchling survival” in July.
Georgia state report continued

Jeffrey Hepinstall-Cymerman (Associate Professor, UGA), Clint Moore (USGS Assistant Unit Leader, Georgia Cooperative Fish and Wildlife Unit), Bryan Nuse (Post-doctoral scientist, UGA), Nahid Jafaríasbagh (Post-doctoral scientist, UGA), Rachel Bormann (Ph.D. Student, UGA), and Alex Wright (M.S. Student, UGA) presented at this year’s GTC meeting. Their work addresses gopher tortoise habitat mapping and population modeling across the range of gopher tortoises in Georgia. The overall goal of the research is to develop an adaptive landscape planning and decision framework to be implemented by GADNR to make better state-wide land management decisions for the conservation of gopher tortoises. The project includes components focused upon gopher tortoise habitat requirements (Rachel Bormann), demographic modeling (Bryan Nuse) and optimal reserve design (Nahid Jafaríasbagh), as well as field work to improve understanding of tortoise demography and movement at decadal time scales (Alex Wright).

Brittany Mixon (M.S. Student, VSU) is completing her work on radio frequency identification (RFID) use in gopher tortoises at Moody Air Force Base. This project was initiated in 2005 and is on-going.

2015 Gopher Tortoise Publications (Georgia):

Dziadzio, M. C. 2015. Effects of predation on gopher tortoise (Gopherus polyphemus) nest and hatchling survival. Thesis, University of Georgia, Athens, GA, USA.


Alabama

Ericha Nix

Eric Soehren and Steven Johnson also contributed to this report.

Alabama Dept. of Conservation and Natural Resources (ADCNR)-Division of Wildlife and Freshwater Fisheries

Alabama is the only state in the range of the gopher tortoise to have both federally listed and non-listed populations, with Mobile, Washington, and Choctaw counties comprising the listed portion of the range. The Division of Wildlife and Freshwater Fisheries (DWFF) continues to work on tortoise conservation issues in Alabama and across the tortoise range.

The DWFF continues to be a partner in the Gopher Tortoise Candidate Conservation Agreement (GT CCA), a voluntary partnership with the U.S. Department of Defense, state agencies, and non-governmental agencies in the unlisted portion of the range. The DWFF hosted the 7th Annual GT CCA meeting in June in Spanish Fort, Alabama. Over fifty participants from roughly twenty organizations collaborated on gopher tortoise updates and issues. Currently, internal discussions are taking place within the Alabama Forestry Commission in regard to becoming a new GT CCA signatory to further conservation efforts in Alabama. The DWFF would also like to recognize the American Forestry Foundation and the Alabama Wildlife Federation for their meeting sponsorships that allowed for a no cost registration fee for meeting participants.
The DWFF hosted, along with the U.S. Fish and Wildlife Service (USFWS), a Soil Suitability Mapping meeting at the Auburn University (AU) Solon Dixon Forestry Research Center in Andalusia in April. Participants from state agencies, AU, USFWS, U.S. Forest Service, and the Natural Resource Conservation Service came together to discuss a potential range-wide gopher tortoise soil classification system and visited several sites in both south Alabama and south Georgia that included a variety of soil types.

As part of DWFF’s education and outreach efforts, new educational resources are currently being developed along with other partners and include a landowner’s guide/brochure to manage tortoise habitat, a display to be used at landowner events and wildlife programs, a gopher tortoise webpage and YouTube videos to communicate DWFF gopher tortoise conservation efforts and the importance of prescribed fire as related to habitat management. The Sustainable Forestry Initiative (SFI), DWFF, and others submitted a grant to highlight the longleaf pine ecosystem with the gopher tortoise as the focal species. Award notifications will be in January 2016.

In September, the DWFF added 5,725 acres of new lands to the Geneva Wildlife Management Area. Currently, 9,325 acres of land in the tortoise’s range are now protected as part of the Geneva WMA.

The DWFF is continuing to work towards determining a more accurate gopher tortoise population estimate and distribution in Alabama. Baseline 2015 population surveys on public lands have been completed at Conecuh National Forest: Suitable area = 1,091 ha, Transects = 64 km, Burrows = 80 scoped (21 GT observed), % burrows occupied = 26.3%, Estimated density = 0.15 GT/ha, Estimated pop. size = 163 GT. Geneva State Forest: Suitable area = 2172 ha, Transects = 42 km, Burrows = 104 scoped (22 GT observed), % burrows occupied = 21.3%, Estimated density = 0.27 GT/ha, Estimated pop. size = 589. Perdido WMA: Suitable area = 3300 ha, Transects = 46 km, Burrows = 76 scoped (25 GT observed), % burrows occupied = 32.9%, Estimated density = 0.13 GT/ha, Estimated pop. size = 434.

Ongoing survey work close to completion includes: Solon Dixon Forestry Education Center (AU): Suitable area = 1,479 ha, Transects = 11.5 km to-date, Burrows = 83 scoped (27 GT observed to-date), % burrows occupied = 32.5% to-date. Stimpson Wildlife Sanctuary: Suitable area = 1,214 ha, Transects on-going. Wehle Nature Center: Suitable area = 457 ha, survey on-going. Upper Wildlife Sanctuary: Suitable area = 269 ha, complete survey planned.

DWFF relocated seven tortoises from a development site and built an enclosure. The tortoises will be released after twelve months. A waif was collected from a pet store where an individual had dropped it off in a cardboard box—it was probably someone’s pet as the tortoise had painted toe nails. This tortoise has found a home and is now part of an Alabama educational program.

**Project-Related Research**

**Gopher Tortoise Health:** Upper respiratory tract disease (URTD) surveys have been completed across seven populations in the state. Preliminary findings show that all populations of tortoises sampled have been exposed to pathogens responsible for this disease and that symptomatic tortoises are present at low frequencies in all populations. Additionally, on-campus experiments have been completed at Auburn University investigating interactions between the environment and physiological responses of gopher tortoises. Data from these experiments are currently being analyzed for publication and for the completion of Jeff Goessling’s dissertation research.

**Gopher Tortoise Habitat Model:** A master’s thesis is underway looking at broad-scale habitat connectivity in Alabama and adjacent states and finer-scale habitat connectivity at Perdido WMA, Geneva WMA, and Barbour WMA with population viability modeling at Geneva WMA. Goals include quantifying how the connectivity of tortoise habitat varies across a large portion of the range (including comparison between the federally listed and non-
Alabama state report continued

listed portions of the range) and examining how habitat management alternatives may affect future habitat connectivity and population viability at selected sites within Alabama. Soil suitability maps have been developed for Alabama and adjacent states for use in the broad-scale habitat connectivity analysis; final results from this analysis are expected by the end of the year. Helen Tripp, School of Forestry and Wildlife, Auburn University (Major Professor: Robert Gitzen).

Gopher Tortoise Habitat Structure/Quality: Rebecca Pudner, Department of Biological Sciences, Auburn University (Major Professor: Sharon Hermann): A master’s thesis is underway looking at gopher tortoise habitat quality.

Southeastern Pocket Gopher Project: Mary Bennett, School of Forestry and Wildlife Management, Auburn University (Major Professor: Robert Gitzen): A master’s thesis is underway looking at southeastern pocket gopher resource selection.

Gopher Frog Project: Jim Godwin: this study is ongoing. It is believed that the Mississippi gopher frog occurs in Mobile County; however, it has not been documented to date.

Eastern Indigo Snake Reintroduction Project: This project is half way completed with a target of 300 individual animals to be released on the Conecuh National Forest. Currently a secondary release site is being established to help determine if the eastern indigo snake is a new predator altering the community of prey organisms.

ADCNR State Lands Division
The focus on the Wehle Tract in 2015 was to trap a subset of tortoises and outfit them with radio transmitters to monitor their movements long-term. Findings will enable better understanding of site retention and movements following translocation. Eight tortoises were captured and six individuals (four males and two females) were outfitted with radio transmitters (ATS model #2220) and have been tracked at least twice a week since release. Marine epoxy putty was used to affix transmitters on the carapace. Those outfitted with transmitters include three individuals translocated in 2006, one individual translocated in 2008, and two individuals translocated in 2009.

During the initial stages of this multi-year monitoring effort, an active burrow was found on private property bordering the west side of the Wehle Tract by tracking an individual, and several new (previously unknown) burrow locations have been observed on the Wehle Tract. Another highlight was the incidental capture of a hatchling Gopher Tortoise on 9/23/2015 in the north snake box trap indicating at least one clutch hatched on Wehle in 2015. This is the third year that new recruitment has been confirmed since translocations began in 2006.

Two prescribed burns were conducted on the Wehle Tract including an early growing-season burn on the south parcel on 3/25/2015 (281 acres) and a late growing-season burn on the north parcel on 8/25/2015 (282 acres). Fires are performed on a two-year rotation.

Conecuh National Forest (CNF)
CNF burned 23,150 acres in Fiscal Year 2015. The indigo snake repatriation project released nine snakes and continues to monitor herpetofauna with drift nets nine months of the year. Jeff Goessling is continuing his research on gopher tortoise health assessment on CNF with animals initially identified by Dr. Craig Guyer of Auburn University.
The gopher tortoise (Gopherus polyphemus) is a State-designated Threatened species in Florida. Gopher tortoises are a keystone species, as their burrows provide refuge for over 350 species. In order to conserve the species and its habitat, the Florida Fish and Wildlife Conservation Commission (FWC) published its first Gopher Tortoise Management Plan (GTMP) in 2007. The GTMP was revised in 2012 and is intended to guide the continued conservation of the gopher tortoise in Florida through 2022. The plan places an emphasis on landowner incentives, habitat management, and maintaining the gopher tortoise as a keystone species through commensal species conservation. FWC continues to coordinate with the stakeholder Gopher Tortoise Technical Assistance Group (GTTAG) on gopher tortoise conservation issues. The continued participation of stakeholders is vital to the long-term conservation of the species.

**Research**

In 2014, a *Follow-up Demographic Survey of a Florida Gopher Tortoise Population* (Berish, J.E., E. H. Leone) was published in Southeastern Naturalist (Volume 13, Issue 4). Numerous research studies are currently underway in Florida specifically addressing data gaps identified in the GTMP. Working with the University of Central Florida, a study will be implemented in Spring 2016 looking at temporary exclusion of gopher tortoises from utility right-of-way projects. Furthermore, a study comparing site fidelity of translocated gopher tortoises in habitat where a variety of treatments are applied will be initiated on the Apalachicola National Forest.

**Education and Outreach**

Ongoing efforts to engage Florida residents in gopher tortoise conservation continue to be a priority. The Gopher Tortoise Conservation Program (GTCP) offers three types of volunteer opportunities for Florida residents to help protect and conserve the gopher tortoise including mortality data collection, waif gopher tortoise transportation, and silt fence installation. Addressing causes, and most importantly potential solutions, of tortoise road mortality is one of the conservation actions of the GTMP. However, little to no data exists for road mortality of gopher tortoises in Florida. Therefore, the mortality data collection program asks volunteers to help fill this data gap by collecting data on dead gopher tortoises and reporting it to FWC by entering data using the online web data form. The web form includes photos of other turtles that are commonly mistaken for the gopher tortoise. The web data form is also formatted for mobile devices and features a “find my location” so that the latitude/longitude is automatically populated. This data is helpful in determining potential “hotspots” of gopher tortoise mortality throughout the state so that FWC can begin to explore ways to minimize the loss of gopher tortoises. Student interns have created a Geographic Information System (GIS) database of mortality data points collected thus far. The waif tortoise transportation program, or “Tortoise Taxi”, is still being developed and a permit that will authorize volunteers to transport tortoises is in progress. Once issued, volunteers will be used to help transport waif, rehabilitated, sick or injured gopher tortoises to the appropriate location, based on their status, and with FWC coordination. A new volunteer program is currently being explored and once implemented, will aid in the humane relocation of gopher tortoises from participating incidental take permit (ITP) donor sites. Volunteers will be trained as “burrow assistants” to assist with capture and relocation of tortoises in order to minimize the opportunity cost associated with relocation efforts; this will act as an incentive for more ITP holders to participate in humane relocation. The volunteer program has also utilized student interns from Florida State University who have contributed approximately 368 hours over the past year.

New outreach materials were created and distributed during this reporting period. These materials include a Florida Guide of Gopher Tortoise Friendly Plants, a fact sheet entitled *Gopher Tortoises in Urban Areas*, and replication of the Gopher Tortoise “Treasure Chest” for the FWC Southwest region. Current interns are working on developing a fact sheet on Best Management Practices for Agriculture and Silviculture, a gopher tortoise short-course for our law enforcement division, and a gopher tortoise education course for Florida State Attorneys’ offices. Nearly 4,900 copies of *A Guide to Living with Gopher Tortoises* were distributed to local governments, schools, nature centers, and Florida residents. Nearly 2,000 *Safe Roads* placards have been distributed and are available at Florida Visitor Centers, state parks, highway rest stops and local parks. All publications are also available to download at MyFWC.com/GopherTortoise and at each of FWC’s Regional Offices.

Utilizing staff and student interns, the GTCP hosted and/or participated in 25 outreach events during the year including: seven local government workshops, two Law Enforcement training events, and 16 other outreach events including the Wakulla Wildlife Festival, St. Marks Stone Crab, and Wakulla Wings and Wheels festival, Riversink Elementary School, the Creating the Next Generation that Cares, The FWC Outdoor Experience and multiple 4-H events.
The FWC has continued to work with stakeholders to discuss and explore possible solutions to challenges encountered with gopher tortoise permitting and conservation issues. Constant discussion on implementing improvements to the guidelines occurs with help from the stakeholders. Through the recipient site permit program (a voluntary program in which landowners may offer lands with suitable habitat to receive gopher tortoises from development sites), approximately 18,218 acres of gopher tortoise habitat have been protected through permanent conservation easements. Under these permits, private landowners can accept gopher tortoises relocated from development sites and assess a monetary charge to the developer for accepting the tortoises. In exchange, the recipient site landowners agree to manage and protect the habitat for gopher tortoises in perpetuity. Currently, 42 recipient sites with an available capacity of 40,042 tortoises are permitted. During this reporting period, 2,886 tortoises were relocated by FWC-issued permits.

**Population Restoration and Monitoring**

The FWC entered into a memorandum of agreement (MOA) and formed a partnership with Nokuse Plantation, the St. Joe Company, St. Joe Foundation, and the Humane Society of the United States to promote humane relocation of gopher tortoises from previously permitted incidental take sites. Last year, FWC approved Avalon Plantation (owned by Ted Turner) in Jefferson County, Florida, to receive up to 1,300 gopher tortoises on well-managed, protected habitat from previously permitted ITP sites. This year a site visit was conducted in review of an additional 60-acre recipient site on Avalon Plantation. To date, Avalon has released more than 150 tortoises on-site into the temporary enclosures. In March the FWC initiated discussions with the U.S. Fish and Wildlife Service (USFWS) and Eglin Air Force Base on using waif and tortoises from ITP sites to restock the gopher tortoise population at the installation.

To better understand gopher tortoise population distribution and trends, Line Transect Distance Sampling (LTDS) was adopted by range-wide partners and is currently being implemented on state-owned conservation lands in Florida. Under a three-year contract (funded in part by a federal grant) with The Joseph W. Jones Ecological Research Center, 25 select public conservation lands in Florida are being surveyed using this standardized technique and forty Florida Dept. of Environmental Protection, Florida Forest Service, and FWC staff have been trained. Population size and density estimates for 19 conservation lands have been completed and six are currently in progress. Little Talbot Island State Park (SP) had the highest population density (4.4 tortoises/ha, 95% CI= 3.8-5.0), Withlacoochee State Forest Citrus Tract had the largest population size of the sites surveyed thus far (N= 7,179 tortoises, 95% CI= 4789-10,761). Burrow occupancy ranged from 29% at Cayo Costa State Park to 69% at Little Talbot Island State Park. Burrow size class histograms indicate a predominance of adult burrows (>23 cm in width) in most populations. However, 45% of occupied burrows at Goldhead Branch SP were ≤ 23 cm in width and small juvenile tortoises (<12 cm burrow width) were present at Bell Ridge Wildlife and Environmental Area (WEA), Cayo Costa SP, Ft. White WEA, Goldhead Branch SP, Guana River WMA, Ichetucknee Springs SP, Little Talbot Island SP, Moody Branch WEA, O’Leno-River Rise SP, and Watermelon Pond WEA. Joe Budd WMA, Hilochee WMA and Perry Oldenberg WEA appeared to have very low numbers of juvenile tortoises (0, 0 and 3.8% of occupied burrows, respectively, were ≤23 cm in width). Completion of the surveys for all of the 25 identified lands is expected in the upcoming months. Gopher tortoise interns have also helped input older burrow survey data into a GIS database in order to identify potentially viable and supporting populations throughout Florida.

**Disease**

A Procedure for Investigation of Large-Scale Gopher Tortoise Mortality Events was developed by an intern with the GTCP in collaboration with the Fish and Wildlife Research Institute, the Southeast Cooperative Wildlife Disease Study, Georgia Department of Natural Resources, and other experts. The procedure is an internal guide and “contingency plan” for carcass recovery and pathological investigation of sick and dead tortoises. The procedure applies to mortality events where more than three percent of adult tortoises are observed dead annually (Landers 1980) in a relatively restricted geographical area for a given time period.

The FWC recently encountered a large-scale mortality event at Lake Louisa State Park located in Clermont. Methods outlined in the Procedure for Investigation of Large-Scale Gopher Tortoise Mortality Events were followed and FWC staff provided disinfection and sanitation protocols for those persons conducting the investigation. A survey of shells resulted in 91 shells in an approximately 15 hectare area of the park. Location data was recorded for all shells, and the stage of shell...
disarticulation was determined using the stages identified by C. Kenneth Dodd (1995). Two days of trapping efforts produced only three blood samples with one seropositive result. One dead juvenile tortoise was retrieved from a burrow in another area of the park, and a dead adult tortoise was found when scoping burrows, but that carcass was not recovered or tested. A follow-up survey and trapping effort are planned for Spring 2016. For additional information, please see abstract submitted for the 2015 Annual GTC Meeting.

Waif tortoises

The FWC continues with efforts to identify solutions for placing waif tortoises. Waif tortoises are gopher tortoises that have been removed from the wild (either unauthorized or due to injury) and for which their origin cannot be determined. One solution includes identifying willing landowners to care for waifs on their property and thereby designating the land as a “waif tortoise recipient site”. One waif site in Lake County was established over the past year where a total of ten tortoises (out of 13 possible) have found permanent homes. FWC is currently working with public and private landowners to establish additional waif sites in Manatee, Duval, Miami-Dade, Broward, Bay and Sarasota counties. FWC is working with wildlife rehabbers to place waifs currently undergoing rehabilitation at designated waif recipient sites, or releasing them back to the wild if location information is known. FWC staff recently worked with South Carolina Department of Natural Resources (SCDNR) to amend the Memorandum of Agreement (MOA), extending the expiration date by three years, and increasing the number of gopher tortoises transferable to Aiken Gopher Tortoise Heritage Preserve by an additional 100 tortoises (for a total of 200 tortoises by the end of the three year period).

Incentives

The FWC continues to work closely with public and non-profit organizations, as well as private landowners, to identify and provide incentives for gopher tortoise conservation on private lands. Staff regularly participates in workshops that promote conservation opportunities and habitat management. The FWC is also working with the Department of Defense (DoD), the USFWS, and other states to develop a Gopher Tortoise Crediting System for military installations. The crediting system establishes the framework for evaluating and determining credit for DoD conservation actions, and will be sent out for public comment soon. The intent of this crediting system is to provide military installations with predictability for gopher tortoise management in the case that the species becomes federally listed. Using this crediting system, the DoD can work with state wildlife agency partners to acquire gopher tortoise habitat where best opportunities exist to perform conservation activities, and utilize those activities to offset the effects to gopher tortoises caused by current and future military installations. The GTCP’s permit-based incentives were also modified in February 2015, with approved revisions to the Permitting Guidelines, to encourage the increased use of native habitat and reduced use of improved pasture on gopher tortoise recipient sites.

Habitat management

Over the past year, $63,709 in funding assistance was provided to assist gopher tortoise habitat management activities that benefited more than 676 acres under local government ownership. Some habitat management and improvement activities conducted through the Habitat Management Assistance Funding Program include fire line preparation, prescribed burns, disking, roller chopping, selective tree removal, and chemical treatment of invasive plant species. GTCP staff has also coordinated with FWC’s Landowner Assistance Program (LAP) and partner agencies to provide support and technical assistance to private landowners for managing gopher tortoise habitat. The FWC also continues to support existing prescribed fire strike teams to enhance the number of gopher tortoise habitat acres burned, or otherwise treated. In August, the GTCP approved matching funds to a State Wildlife Grants (SWG) Program grant for Wildland Restoration International for the 2015-2016 fiscal year.

Law enforcement

To enhance the protection and conservation of gopher tortoises and gopher tortoise habitat statewide, program staff conducts training for FWC Law Enforcement officer recruits. Over the past year, two training events have taken place, and a third event is scheduled for October 2015. This additional training will help FWC officers address wildlife complaints related to gopher tortoises in an effective and consistent manner statewide. One of our gopher tortoise interns is currently developing a law enforcement “short-course” to assist law enforcement officers in the field with a quick gopher tortoise reference guide for rule
Florida state report continued

violations. The same intern is also creating a reference guide to assist the State Attorney's offices around the State of Florida, with the prosecution of gopher tortoise violations. Also the team has completed revisions and distributed the Law Enforcement Training Manual around the state. This year, FWC law enforcement has made numerous arrests of individuals who have illegally "taken" gopher tortoises for human consumption, animal abuse, and burrow impacts as a precursor to development activities.

Commensals

In order to maintain the gopher tortoise’s function as a keystone species, the FWC is currently working to develop effective relocation strategies and guidelines for commensal species. A gopher frog translocation study was initiated last year with a plan to radio-track 15-20 resident gopher frogs at Jennings State Forest and then to translocate 15-20 frogs from Camp Blanding a year later and compare movements and survival between resident and translocated frogs. However, due to the lack of frogs large enough for transmitters (transmitters were implanted in six frogs), the study was put on hold. The study will be continued in October of this year in Ocala National Forest by the FWC Fish and Wildlife Research Institute (FWRI). Surveys were also conducted over the past year to assess the distribution and habitat of invertebrate commensal species.

The FWC is currently working to finalize Scientific Collecting Permit guidelines for eastern indigo snakes; this permit can be obtained by entities for purposes of scientific, educational, captive propagation associated with reintroduction, and other conservation purposes.

Mississippi

Tom Mann

Status Overview

Beginning with a touch of the surreal, who suspected there might be a connection with the BP disaster and tortoises? Mississippi (MS) has been awarded $2,000,000,000 by the BP Restore Act for environmental restoration and economic recovery. Movers and shakers in George County have proposed creation of a reservoir on a tributary of the Pascagoula River to offer potential for drawdown of water to augment stream flow in river at low flow periods. Of course when not being tapped for emergency supplementation of the Pascagoula, the lake will serve local recreation interests. Clearly there is no connection of flow volume in the Pascagoula to the BP event. And the tortoise connection? Tortoises within the area to be flooded by the proposed reservoir would have to be relocated.

Tortoises were listed as federally threatened west of the Mobile River in 1987. The Gopher Tortoise Recovery Plan (1990) specifies that as a condition for NOT listing the tortoise as endangered, burrow densities on deep sands within the Desoto National Forest (DNF) would have to reach a density of five burrows per ha and maintain this density for 30 years. The 2014 survey of such soils on the Desoto (Joe McGlincy, The Wildlife Company, Final Report to the U.S. Forest Service, Contract # AG-447U-C-14-0032) found a density of 0.82 burrows per ha. This report also noted that most burns at tortoise sites on the DNF are in the cool season and thus have limited impact on developing hardwood midstory; growing season burns were recommended. Clearly, tortoises are not approaching recovery by the specified standards and may in fact warrant endangered status.

Jim Lee (The Nature Conservancy (TNC) tortoise biologist at Camp Shelby) has documented the ongoing precipitous decline of the tortoise population at Camp Shelby since Ed Wester's 2005 survey. The decline is due to a number of factors including habitat degradation, fire ant predation on hatching and hatchling tortoises, predation by other animals, isolation (inadequate mating frequency/number of different mates), possibly reproductive senescence, and possibly calcium insufficiency. This pattern may occur elsewhere in MS as well.

To determine recovery priorities and to identify data gaps, a group of biologists met at the Jackson Field Office of the U.S. Fish and Wildlife Service (USFWS) on November 13, 2015. Participants included Dr. Jeanne Jones (Mississippi State University-MSU), Nicole Hodges (MSU), Keri Landry (Louisiana Dept. of Wildlife & Fisheries), Jim Lee (TNC at Camp Shelby); Sheena Feist (MS Museum of Natural Science, geneticist), Daniel Gaillard (post-doctoral researcher at Peking University, genomic diversity and evolution lab); Kathy Shelton (MS Museum of Natural Science, Mississippi Dept. of Wildlife, Fisheries and Parks-MDWFP); Tom Mann (MS state rep for the Gopher Tortoise Council), Matt Hinderliter (USFWS, tortoise recovery lead); David Felder (USFWS); Lisa Yager (Desoto National Forest), and Liz Barber (facilitator). Initial conclusions are that genetic impoverishment is
Mississippi state report continued

probably not an issue of immediate importance; however, the possible connection between plastral “yellow spot”, shell
fontanelles, and calcium availability on different habitat types (sandhill, savannah) and management regimes needs more
urgent study. The group also agreed that proper management of utility line corridors (transmission lines, oil and gas pipelines) in
zones of deep sand is very important given the general deterioration of forested habitat in flanking areas on both public and
private lands. There is also a need to identify sandhill translocation sites for animals identified as truly isolated in an effort to
assemble functional, growing populations.

I am renewing my request for input from other states within the tortoise range to determine if other biologists are observing
adult tortoise shells with plastral/carapacial fontanelles, and if so, at what frequency. The mid-plastral fontanelle is visible as a
yellow spot and is a soft, relatively easily depressed zone. Also, we would appreciate information on hatching rates seen
elsewhere (in situ and in labs) and frequency of cracked eggshells in freshly deposited clutches. Please contact me at
tom.mann@mmns.state.ms.us. We would also appreciate any information available on a possible relationship between calcium
insufficiency/unavailability and burning regimes.

Tortoise Research
Head-starting Project at Camp Shelby—Jim Lee (TNC, Camp Shelby Tortoise Biologist), Camp Shelby Field Office (CSFO), Camp
Shelby Joint Forces Training Center (CSJFTC)

This is a continuation of the project begun at Camp Shelby by Matt Hinderliter in an attempt to rear juvenile tortoises to a size
at which they would be less vulnerable to mortality from various sources since Camp Shelby, like most sites in MS, has a long-
term recruitment deficit. In 2015, forty tortoise nests were located at 18 different sites on the CSJFTC in Perry and Forrest
counties, MS. Eggs (N=188) were transported to the lab for incubation (168 eggs incubated-twenty eggs were already
cracked/broken when discovered). Thirty clutches, containing 126 eggs, were incubated at 31°C, and the remaining 10
clutches, containing 42 eggs, were incubated at 28°C. These incubation temperatures are believed to have an increased
likelihood of producing females or males, respectively (Demuth 2001). Clutch size averaged 4.7 (±1.7; range: 1-9) and overall
hatching success was 64% (108 of 168 eggs)-similar to that previously reported for lab incubated eggs in southern MS (e.g.
59%; Noel et al. 2012). Eggs incubated at a higher temperature had a higher hatching success (66%) than eggs incubated at
a lower temperature (60%). One tortoise (incubated at the lower temperature) died ten days post hatching of unknown
causes. This individual had a misshapen carapace and a visible hematoma was noted postmortem on the left dorsolateral
side. The remaining individuals (N=107) were placed into an indoor head-start facility where they will be raised at a constant
temperature over the course of the next two years (following the methods of Holbrook et al. In Press), prior to release.

The 57 hatchlings placed into the head-start facility last year have grown rapidly over the past twelve months; average
percent growth rate = 55%, 48%, and 196% for carapace length, plastron length, and mass, respectively. Some of the larger
one-year-old head-start tortoises are nearly the size of wild four-year-old tortoises found on Camp Shelby (see figure below:
two 2015 hatchlings on the right, one 1-yr old head-start tortoise second from left; one 4-yr old wild tortoise on the left).
Several related studies are continuing with contributions from Jeanne C. Jones and Nicole Hodges (MSU, Dept. of Wildlife and Fisheries) and Matt Hinderliter (USFWS). Studies include investigation of metabolic bone disease in gopher tortoises in a head-start enclosure at CSJFTC and a study of forage quality on different soils and under different management regimes (dormant season burning, growing season burning, mowing) at six study sites on public forest lands in south MS and on St. Catherine’s Island, Georgia. The metabolic bone disease component of this research examines the potential interplay among physiological, pathogenic, genetic, and habitat quality variables on potentiation of this disease.

Nicole Hodges presented her dissertation results at the Louisiana GTC meeting this year.

Hatchling viability concerns at Camp Shelby:
1. 26 juvenile gopher tortoises that died during the Camp Shelby head-start program (2008-2010) showed no evidence of metabolic bone disease although specimens were too autolyzed to determine cause of death;
2. 34 soil samples collected from Camp Shelby were examined for trace metals (aluminum, arsenic, cadmium, copper, iron, lead, and zinc) and all samples were within normal limits.
3. Twenty of the 34 soil samples were tested for explosive residues and all twenty samples were within normal limits.

Range quality:
1. The pH is acidic and soil nutrient levels are at levels expected to be found in sandy soil.
2. Regardless of habitat management, forage calcium levels were greatest in cacti followed by forbs and legumes.
3. Greatest amount of non-woody biomass occurred at the Wiggins Airport right-of-way, a cactus-rich sandhill managed with growing season mowing.
4. Greatest percent cover of herbaceous plants (forbs, native and non-native grasses, legumes, and sedges) occurred in areas with growing season burns and moderately suitable soil (T44 on Camp Shelby).
5. At the midstory level, greater percent cover of woody plants (shrubs and trees) occurred in areas with no burn, on both highly and moderately suitable soil, and at a dormant season burn site with moderately suitable soil (sites at Mars Hill).

Tortoise Habitat Management

DeSoto Ranger District (DRD) - Ed Moody (DRD Biologist)
11,362 acres-growing season burns; 29,923 acres-dormant season burns
1,390 acres thinned; 690 acres restored to longleaf
1,050 acres Threatened and Endangered species habitat improvement/hazardous fuels reduction with herbicide (hack and squirt foliar spray); 400 acres cogongrass treatment
2,080 acres surveyed for gopher tortoises

Chickasawhay Ranger District - Andy Barwick
7,256 acres-growing season burns; 7,174 acres-dormant season burns
925 acres thinned; 155 acres longleaf regeneration
40 acres cogongrass eradication

Camp Shelby—Melinda Lyman, Coordinator, Nature Conservancy Office at Camp Shelby
1,419 patches of cogongrass covering 88 acres were treated.

Natural Resources Conservation Service (NRCS)-Glynda Clardy, State Wildlife Biologist, Jackson, MS.
The NRCS administers programs offering assistance to landowners interested in restoration/proper management of longleaf pine habitat including areas occupied by tortoises or potentially inhabitable by tortoises:

For FY 2015: Environmental Quality Incentive Program:
Longleaf Pine Initiative 53 contracts 6,508 acres
Working Lands for Wildlife Initiative 28 contracts 3,839 acres
A multi-state Competitive State Wildlife Grant for pine sandhill restoration concluded this year and included gopher tortoise surveys to establish a baseline on Marion County Wildlife Management Area (WMA). Of the 250 acres surveyed, more than 80 potentially occupied burrows were identified. More than 1,800 acres of pine grasslands were improved on various state-owned WMAs through prescribed burning, herbicide applications, and invasive species control. The partners have applied for funding to continue this project.

The private lands staff is also wrapping up a grant from the National Fish and Wildlife Foundation to plant longleaf pine within a select focal area within the gopher tortoise range. In 2015 the Longleaf Stewardship Grant provided cost-share to private landowners for 768 acres of reforestation to longleaf pine.

The Fire on the Forty partnership with the Foundation for Mississippi Wildlife, Fisheries and Parks and the USFWS is entering its fourth year. Landowners in selected counties are reimbursed for up to 50% of costs for implementing and performing prescribed burns. Within focal counties that also support tortoises, Fire on the Forty funded more than 9,000 acres of prescribed burning on private lands. Due to wet conditions through much of the spring only about 2,000 acres were burned but landowners still have one more year to fulfill their agreement. Landowners must submit an application to be considered for this cost-share program. Applications are competitively ranked based on potential habitat benefits; priority sites will be selected for funding by the MDWFP. To download an application visit www.mdwfp.com/longleaf. For more information regarding the Longleaf Pine Restoration Program, contact Tamara Campbell at tamarac@mdwfp.state.ms.us or call 601-432-2199.

Chickasawhay Tortoise Mitigation Bank—John McGuire, Westervelt

Three gopher tortoises were relocated this year to the Chickasawhay Mitigation Bank from the Traditions development in Harrison County. This was done under the Army Corps of Engineers master permit for the entire development; the biological opinion was written over ten years ago. Additional natural recruitment of tortoises was observed and the black pine snake presence on the site was updated.

Tortoise Recovery Activities—U.S. Fish and Wildlife Service (David Felder; Matt Hinderliter)

USFWS and state biologists are attempting to identify minimum viable tortoise populations (MVPs).

Relocations, Waifs

Six adult and four hatchling tortoises materialized as waifs this year. Three of the waifs originated at surprising venues (Missouri, north Mississippi, and the South Mississippi Correctional Institution in Leakesville). One tortoise will serve as an outreach and education animal, one is likely non-releasable, and one was relocated to property near Leakesville. Jim Lee (TNC) relocated three animals (two adults and one juvenile, all with previously suspect URTD results) to TNC’s Mike’s Pond Gopher Frog property. The four hatchlings will be released next spring.

Dr. Karen Rushing and Missy Dubisson are again thanked for long-term services in rehabilitative care of several waif tortoises and for temporary care and phlebotomy services (blood samples for URTD testing) for other waifs. Kathy Shelton (MDWFP) is thanked for husbandry and phlebotomy services for various waif tortoises in 2015.
Louisiana

Louisiana Department of Wildlife and Fisheries (LDWF) has completed surveys in Tangipahoa, Washington, and St. Tammany parishes near concentrated tortoise areas on public and private lands including Sandy Hollow Wildlife Management Area (state-owned WMA), Ben's Creek (Weyerhaeuser property), Lee Memorial State Forest (Louisiana State University-LSU), and three utility rights-of-way. Surveys will continue on public and private lands on areas with suitable habitat not previously surveyed.

Through the Multi-state Sandhills/Upland Pine Restoration grant, successful herbicide treatment was conducted on 549 acres surrounding gopher tortoise concentrations at Ben's Creek during the fall of 2014 and prescribed burning was conducted during May 2015 on 628 acres of private property in St. Tammany parish which currently has tortoises. Phase 3 of this grant was awarded in 2015 and LDWF plans to conduct prescribed burning in 2016 on approximately 1,500 acres of private properties surrounding Sandy Hollow WMA in Tangipahoa Parish. Prescribed burning is also planned for a privately-owned longleaf pine restoration tract in St. Tammany Parish that is currently registered as a Natural Area under the Louisiana Natural Heritage Program's Natural Areas Registry. LDWF will continue to work with private landowners interested in prescribed burning within the gopher tortoise range in Louisiana through other funding sources. LDWF is also partnering with North Carolina State University- Prescribed Fire Extension, Natural Resource Conservation Service, The Nature Conservancy, National Wild Turkey Federation, Louisiana Department of Agriculture and Forestry, and LSU Agriculture Center staff to provide a prescribed burning workshop for private landowners within the gopher tortoise range in March 2016.

LDWF has constructed the third release pen for waif tortoises on Sandy Hollow WMA and received five waif tortoises during the past year. Health assessments and sample collection for Upper Respiratory Tract Disease (URTD) testing were performed by the LSU School of Veterinary Medicine Wildlife Hospital. Four tortoises tested negative and were released at Sandy Hollow in 2015. One tortoise tested positive and was placed in a permanent home at Tickfaw State Park and will be used for educational purposes. An additional waif tortoise was received recently and will be released in 2016 on Sandy Hollow WMA pending favorable test results.

Several education and outreach events promoting gopher tortoise awareness and conservation took place during the past year including festivals, Cub Scout groups, various school groups, and a field tour for college students. LDWF participated in the National Fish and Wildlife Foundation's Applied Scholar's Program and served as a mentor to an LSU School of Renewable Natural Resources undergraduate student providing education and field assistance opportunities for the gopher tortoise conservation program. LDWF is also partnering with the Louisiana Master Naturalist Program to assist with teaching a public education workshop in March 2016 on Louisiana's threatened and endangered species including gopher tortoise and habitat conservation efforts.

Recent Publication

Black Pinesnake Added to Threatened and Endangered Species List (Timber management activities exempted and decision on critical habitat delayed to 2016)

(Excerpt from US FWS news release on October 5, 2015-submitted by Jen Howze)

The black pinesnake, which can grow to six feet in length and is now only found in parts of Mississippi and Alabama, will be protected as a threatened species under the Endangered Species Act (ESA). At the same time the U.S. Fish and Wildlife Service also announced today a series of exemptions for certain activities that can benefit the species’ recovery, help keep working lands working, reduce regulatory burden and ensure landowners know what is expected. A threatened designation means a species is at risk of becoming endangered within the foreseeable future. The snake’s threatened status allows the Service to include exemptions permitted under Section 4(d) of the ESA allowing certain management activities to continue to occur with protection from the loss, injury or harassment of black pinesnakes in this case. “We crafted the exemptions to provide landowners flexibility to manage for their objectives while still affording conservation benefits to the black pinesnake,” said Cindy Dohner, the Service’s Southeast Regional Director. “The Service wants landowners to continue managing their land for forestry and keep working lands working. We realize how important active management is for the health of a forest, and our decision today will allow for active management and continued healthy ecosystems to help us recover the black pinesnake together.” The Service revised the exemptions based on the valuable input from state conservation agencies, the forest products industry, and others that was received during two public comment periods totaling 120 days. The revisions include removing specific management guidelines and scaling back the criteria needed to meet the exemptions to include most normal timber management actions. Herbicide treatments, prescribed burning, thinning, and longleaf pine restoration are examples of normal forestry activities that also benefit the black pinesnake. These activities could continue to take place if the conservation measures in the rule are followed. However, actions that would harm the snake, like ones causing substantial subsurface disturbance, will not be exempted from take as these activities are not advisable for the conservation of the species. These exemptions are voluntary. If landowners prefer to not use the exemptions, they may consult with the Service on their forestry management practices if there is a potential to impact the snake. “Our decision to list the black pinesnake was based on the best scientific information available and supported by species experts from outside our agency,” said Stephen Ricks, field supervisor for the Service’s Ecological Services Field Office in Mississippi. “And, because the black pinesnake is found in the same geographic areas as other listed species like the population of threatened gopher tortoises west of the Tombigbee Waterway, endangered dusky gopher frog, and endangered red-cockaded woodpecker, some protections are already in place.” “Most landowners, and the forest products industry, will see little to no change from this listing in how they currently manage their forests,” Ricks added. Black pinesnakes are found in the pine forests of southern Mississippi and Alabama. The Service is delaying its decision to designate critical habitat for the black pinesnake. On March 11, 2015, the Service identified eight areas, encompassing approximately 338,100 acres, in Mississippi and Alabama as proposed critical habitat for the black pinesnake. The Service is continuing to consider which of these areas are essential to the snake’s conservation and expects to offer an additional public comment period on the critical habitat proposal in 2016. This snake’s decline is primarily attributed to the loss and degradation of the longleaf pine ecosystem because of habitat fragmentation, fire suppression, conversion of natural pine forests to densely stocked pine plantations, and agricultural and urban development. Other threats to the snake’s survival include road mortality and killing by humans. The species is closely aligned with the distribution of the longleaf pine ecosystem that once covered roughly 90 million acres across much of the southeastern United States. During the 20th century it declined, reaching a low in the 1990s of around three million acres. However, an extensive partnership of conservation agencies, non-profits, businesses, and industry has been taking steps to reverse that decline. Conservation actions taken to restore the longleaf pine ecosystem will also provide benefits for the many wildlife species that live there – listed and non-listed alike. The black pinesnake final listing becomes effective on November 5, 2015 which is 30 days after its publication in the Federal Register on October 6, 2015. The Service published a proposed rule to list the black pinesnake as threatened on October 7, 2014. The black pinesnake was added to the Service’s list of candidates for federal protection in 1999. The complete final rule can be obtained by visiting the Federal eRulemaking Portal: http://www.regulations.gov at Docket Number FWS–R4–ES–2014–0046.
Upland Snake Conservation Initiative continued

**2015 Upland Snake Publications**


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**Upland Snake Conservation Initiative continued**

**2016 GTC Annual Meeting to be held October 6-9, 2016, at Ravine Gardens State Park in Palatka, Florida!**

Paper Sessions to be held Friday and Saturday, Business Meeting on Thursday evening. Includes a walking tour of Water Works Environmental Education Center and Sunday field trip to Dunn’s Creek State Park.

**Save the Date!**

See you there!
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**The Tortoise Burrow**

http://www.gophertortoisecouncil.org

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