



The TORTOISE BURROW

Newsletter of the
Gopher Tortoise Council
www.gophertortoisecouncil.org

Volume 23, Nos. 1 and 2
Spring/Summer 2003

ALABAMA FLORIDA GEORGIA LOUISIANA MISSISSIPPI SOUTH CAROLINA



BOYD BLIHVDE

Notes from a Co-chair

2003 is moving by very quickly! It seems like yesterday when Sharon Hermann organized the 24th annual Gopher Tortoise Council meeting in Thomasville, Georgia. Now that the summer has its grips on the Southeast, I am preparing for the 25th annual meeting, which will be held October 3-5 at Wekiwa Springs State Park in Apopka, Florida. The registration form for the meeting is enclosed, and a downloadable form can be found on the website (www.gophertortoisecouncil.org).

We have a lot in store for this year's meeting participants. Friday the 3rd of October will be a special conference on the amphibians of ephemeral wetlands. Saturday the 4th will start the regular session of the annual meeting and will include speakers from various specialties in the fields of conservation biology, ecology, wildlife management, and more. Sunday will be a day for field trips and a special workshop on techniques for diagnosing health problems in tortoises.

I would also like to take this opportunity to ask for donations for the silent auction, which is held during the annual meeting. Please be thinking about wildlife/nature related items that you would be willing to donate to the cause. All the proceeds from this year's auction will go to the gopher tortoise slide program that Laura Wewerka has been working on so hard.

Tortoise conservation problems may be an unexpected reality to many of our new members, but many Gopher Tortoise Council members have been spending a great deal of time and effort on various tortoise-related conservation issues. While the Council is actively involved in

tortoise conservation in six states, Florida continues to be a special concern for this organization. With thousands of people moving to the state each year, Florida tortoise populations are being surrounded by development on "protected" land and destroyed on private land, the Gopher Tortoise Council must continue to diligently work with regulatory agencies, developers, educators, and the public to minimize or avoid impacts to ecologically sensitive uplands.

Despite the gloomy situation in Florida, the GTC board members remain dedicated, and I would like to thank all of them. Thanks also to all the concerned members and the general public who call or write to us about the myriad of tortoise conservation issues.

Colleen Heise, who was our Mississippi State Representative as well as Secretary and Membership Secretary, recently moved out of "gopher country" and resigned her position. Bill Knox has assumed both Secretary positions, and Deborah Epperson has taken the Mississippi rep position. Thank you, Colleen, for your years of service to the Council.

I believe that all the educational initiatives that the GTC has set in motion will pay off in the future and as a result more officials and politicians will make wiser development choices in the future. The work we have done to coordinate the annual meetings and the effort Laura Wewerka, George Heinrich, Lora Smith, Joan Berish and many others have made to complete the gopher tortoise slide program will benefit generations to come.

Due to circumstances beyond our control, this Tortoise Burrow is a combined Spring-Summer issue. --Editor

Annual Meeting Announcement and Registration Form



Special Session on Amphibians of Southeastern Ephemeral Wetlands
and

The 25th Annual Meeting of the Gopher Tortoise Council Wekiwa Springs State Park, Apopka, FL 3-5 October, 2003

Friday: Special Topic- Amphibians of Southeastern Ephemeral Wetlands, Dinner Social
Saturday: GTC Paper Presentations, Silent Auction, GTC Business Meeting, Dinner Social
Sunday: Workshop: Gopher Tortoise Field Health Assessment Techniques AND Optional Field Trips

Lodging: Attendees must make their own housing arrangements, and are encouraged to make reservations as soon as possible. All motels listed below are within approximately 5 miles of the Wekiwa Springs State Park entrance. There are numerous other motels in the Altamonte Springs area. See following page for a list of motels and camping areas.

Meals: There are many restaurants near the park, more information will be provided at registration.

Airports: Orlando International Airport and Sanford-Orlando Airport are both 30 minutes from the park.

Name: _____
Affiliation: _____
Address: _____
Phone: (_____) _____; Email: _____

Pre-registration costs (Must be received by Sept. 15 if attending socials!)

Enclosed

Friday Special Session and Dinner Social	Begins 8:00 am	\$15	_____
Saturday GTC Meeting	Begins 8:50 am	\$15 members	_____
		\$20 non-members	_____
Saturday Dinner Social	6:00 pm	\$15	_____ circle one: BBQ Veg
Sunday Tortoise Techniques Workshop	9:00-11:00 am	\$ 5	_____
Sunday Field Trip	11:00 am - ?? (circle one):	Merritt Island NWR	Ocala National Forest

GTC Membership dues (due each fall) _____ circle one: New Renewing
\$10 student, \$15 individual, \$25 contributor, \$50 corporate/society, \$100 sustaining, \$250 life (one-time payment)

TOTAL AMOUNT ENCLOSED \$ _____

Credit Card Information

Name on the card: _____

Credit Card Number: _____ Expiration: _____

Circle type of card: Visa Master Card Discover American Express

Photocopy this page or print from www.gophertortoisecouncil.org and mail with check (made payable to Gopher Tortoise Council) to: Boyd Blihovde, Wekiwa Springs State Park, 1800 Wekiwa Circle, Apopka, FL

OR IF PAYING BY CREDIT CARD: Fax to (407) 884-2039. Attention: Boyd Blihovde.

The GTC is a nonprofit and tax exempt organization under IRS Code Section 501(c)(3). ID #59-2010727.

Some Lodging Options for the Fall Meeting *Make your reservations soon.*

Apopka motels (not a lot to do nearby):

Howard Johnson Express 1317 S Orange Blossom (SR 441), Apopka, FL, 32703 1-407-886-1010
Days Inn 228 W Main Street, Apopka, FL 32703 1-407-880-3800

Altamonte Springs motels (lots to do nearby):

Travelodge Hotel 450 Douglas Avenue, Altamonte Springs, FL 32712 1-407-862-7111
Marriott Spring Hill Suites 205 West Highway 436, Altamonte Springs, FL 32714 1-800-MARRIOTT
Marriott Residence Inn 270 Douglas Ave, Altamonte Springs, FL 32712 1-800-MARRIOTT

Camping:

Wekiwa Springs State Park. www.reserveamerica.com or 1-800-326-3521 between 8 am and 8 pm.

Public Information and Education Committee Report

LAURA WEWERKA

The committee is currently focusing most of its time on "The Gopher Tortoise: A Species in Decline" audio-visual presentation and supplemental resource notebook that was offered gratis to environmental educators throughout the range of the gopher tortoise. We set a deadline of March 30th for interested educators to fill out a request form and had a tremendous response. Of the 291 organizations and individuals contacted, 136 requests were returned.

Educational programs of respondents from every state within the tortoises' range (and a few outside the range) will be enhanced by receiving this program.

Over the summer we will continue to edit the program and supplemental resource notebook, raising additional funds and reproducing the program. This project has been a collaborative effort between many volunteers. Lora Smith helped to develop the entire program and turned it into a very professional product. Mike Allen, Mark Bailey, Joan Berish, Amalia Fernand, Florida Forestry Association, Florida Natural Areas Inventory, Dr. Whit Gibbons, the Gopher Tortoise Conservation Initiative, George Heinrich, Colleen Heise, John Jensen, Dr. Henry Mushinsky, Inez Maxit, Kelly Schmidt, the Tortoise Reserve, Inc., Tracey Tuberville, University of Florida Extension Service: Institute of Food and Agricultural Sciences, and Dr. Lori Wendland have all provided photographs, expertise and peer review for this educational program.

The Florida Fish and Wildlife Conservation Commission

and United States Department of Agriculture, Southern Region donated educational materials for each resource notebook that will save on copying costs as well as provide excellent materials for educators.

The project will cost a little over \$6,400. The silent auction at last year's GTC annual meeting raised \$1,611. Currently we have received two grants: \$750 from the League of Environmental Educators in Florida and \$1,000 from Georgia Department of Natural Resource's Watchable Wildlife Program. The Florida Turtle Conservation Trust, the Florida Fish and Wildlife Conservation Commission, and the Friends of Oscar Scherer Park, Inc. have each contributed \$250. We have received donations of \$50 each from Fern Allies Inc., Nadine Foley and Dave Samek. We greatly appreciate all of the financial support, but still need to raise approximately \$2,000. If you or an organization you are affiliated with would like to donate towards this ambitious project, please contact me at laura.w@mind-spring.com. All donations are tax deductible and will be recognized on our website and in future newsletters. Additionally, donations of \$250 or more will also be recognized on the front cover of the resource notebook. If you have connections with either a printing company or office supply store that would be willing to help us with this project that could potentially save us enough money to complete the project. I think if we all work together this project will be completed by the next annual meeting!

The Tortoise Burrow is normally published quarterly (March, June, September, December). Deadlines for submission of announcements and articles are the 15th of the preceding month. Send materials to the editor: Mark Bailey, 2040 Old Federal Road, Shorter, AL 36075, telephone (334) 727-2040, fax (334) 727-1005, m Bailey@conservationsoutheast.com. Decisions concerning publication of submitted material rest with the editor and co-chairs. Please send address changes to membership secretary Bill Knox, P.O. Box 2265, Cross City, FL 32628, phone 352-498-2481 or e-mail wknox@svic.net.

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Reports from the 2002 Visiting Southeast Asian Turtle Researcher Project

lightly edited by Colleen Heise

Firoz Ahmed, India

Although it sounds unusual, two foreigners in a U.S. military facility, Nara and I spent four weeks at Camp Shelby, a National Guard training facility. Camp Shelby is part of the Desoto National Forest and houses a fine tract of longleaf pine forest, which the gopher tortoise inhabits. At this facility the military facilitates and sponsors research on this federally threatened species through The Nature Conservancy of Mississippi. The Gopher Tortoise Council sponsored this part of the Asian Scholarship Program as the Visiting Southeast Asian Turtle Researcher Program (VSATRP). This was a wonderful opportunity for me to learn natural history of a tortoise and more importantly the techniques used for studying tortoises.

Trapping the Tortoises

On August 14, the first day inside Camp Shelby, Deborah Epperson and Colleen Heise, both biologists in the program, took us to the field to check the live traps set to catch the tortoises. We were lucky to catch a tortoise in the first trap we checked. That day we trapped five tortoises and brought them to the field station.

The next morning we worked on the tortoises captured on the previous day, measuring them and then bleeding them one by one to collect blood samples for further study. Later, a radio transmitter was glued to the carapace of each tortoise. They were released into their burrows the next day.

Tracking the Tortoises

About 40 tortoises were fitted with radio transmitters. Tara and Brian, both field technicians with the program, have been tracking the tortoises for the past many months. On many occasions both Nara and I were out in the field tracking

them. Very often it was difficult to find the particular burrow as we got 'bouncing signals' from the woods or had other technical problems with the equipment.

Fear of the "rattlers" (we were always armored with snake guard, though we never met with one) and scorching heat and humid air made the fieldwork tough for me.

"Burrow scoping" (using a fiberscope with fiber-optic tubing extended into the burrow, which produces an image of the burrow interior) was a neat technique to see a tortoise in a burrow. We did that on a few occasions. Once a tortoise, a few feet inside the burrow, was annoyed with the burrow scope and charged the scope and virtually came out of the burrow.

We trapped a few tortoises for a second time before the end of the four-week program. This time the purpose was to "powder track" the tortoises to study their movement and association with other tortoises nearby. A small, perforated bag of colorful fluorescent powder is tied to the back of the tortoise, and the tortoise is released. Once it starts moving into and out of the burrow, it drags the bag and the powder from the bag falls on the ground.

During the night we went out with UV lamps, as the fluorescent powder becomes visible under UV light. We marked the track of the tortoise with flags and then used GPS/GIS mapping. It was a wonderful experience with the tortoise, using an ordinary technique with extraordinary outcome.

Additional Activity in Mississippi

Colleen Heise, biologist at Camp Shelby (our adviser there), arranged many other things for us during the four weeks in addition to the ecology and conservation of gopher tortoise project.

One evening we were in Desoto National Forest, where biologist Diane Tyrone, works with federally endangered red-cockaded woodpeckers. We were equipped with a peeping scope to

observe activity in the nest hole as well trapping and ringing tools. In the afternoon, as they returned to their nest hole we attempted to identify the previously ringed birds. Then in the dark we trapped them from the hole to check their tags.

We also discovered a flying squirrel, a competitor of the bird for the same resource, in one of the tree cavities. It was removed from the nest and translocated to another forest.

Sea Turtle Program

We visited Fort Morgan on the Alabama coast of the Gulf of Mexico. It is in the Bon Secour National Wildlife Refuge and nearby beach where the sea turtles nest. Under a program of the U.S. Fish and Wildlife Service, volunteers take part in the conservation of the green turtle. We volunteered for two days to learn more about the program as well as study techniques.

It was a community-based conservation program where local people patrol, identify, protect, and monitor the nesting activity of marine turtles (especially loggerhead turtles). Once located, nests are protected and fenced. When the hatchlings emerge, volunteers (mainly residents) spend night and day for a number of days helping and guiding the hatchlings towards the water as they are usually attracted by the lights from the condos and streets along the beach. I was surprised by the dedication and interest of the local people in protecting the turtles, an example that will be in my mind forever.

Our visit to the Mississippi Natural History Museum and snorkeling in the Lower Creek in Marion County Forest Reserve was another addition to the list of wonderful experiences in Mississippi. Tom Mann, with the Mississippi Natural Heritage Program, made us aware of the conservation issues associated with the gopher frog, which lives in gopher tortoise burrows. We visited a breeding pool of the gopher frog,

which is another federally endangered species, a victim of development and agriculture. Lisa, the botanist with the Camp Shelby office and her husband Mike took us fishing on their property. Thanks to Colleen for arranging for me to give a talk at the University of Southern Mississippi, Hattiesburg, and for giving me the opportunity to share conservation issues in northeast India with a U.S. audience.

Last word

The opportunity I got through the VSATRP to learn conservation and management techniques for tortoises was wonderful. This is a very useful program in which the GTC helps Asian turtle biologists learn techniques and so that they can start conservation programs in their home countries. What I learned during the four-week program is invaluable to me and I am optimistic

and positive as well to offer my service towards the conservation, research and management of tortoises in my country. I look forward to unreserved support from all sections of people for conservation of turtles and tortoises in India.

Sovannara Heng, Cambodia

I first spent 10 weeks at the Wetlands Institute in Stone Harbor New Jersey studying about Diamondback terrapins supported by the New York Turtle and Tortoise Society through an Asian scholarship. I am the second person from Cambodia to be sponsored by an Asian scholarship. The first time was Mr. Long Kheng who is already back in Cambodia and worked with turtle conservation under Ministry of Environment in the year 2001. Back in Cambodia there are few people working with turtle conservation and there is a poverty of technique study and research. Also the turtle and tortoises have declined due to local people and demand from international markets like Vietnam, Thailand, and China. So we need to work together to save turtles and tortoises. After finishing the course in New Jersey I had the opportunity to attend a month more training with gopher tortoises sponsored by the Gopher Tortoise Council at Camp Shelby.

In early August 2002 I had the opportunity to go Camp Shelby to study some techniques and work with gopher tortoises. During that time I tried working on gopher tortoise techniques such as radio tracking, blood sampling, trapping, powder tracking, marking, and recapture. All of the techniques are important to my country because I will be able to apply these techniques to my work in Cambodia.

At Camp Shelby I received a lot of key biology conservation training like rearing eggs through incubation at the university. This is a good way for conservation that Cambodia has never seen. I was so surprised to see so many people loving turtles different than in my country where turtles are only for eating. I hope I will bring all this new information and techniques to train and show Cambodian people about conservation here. I think there is a change in attitude coming to loving turtles like American people in the near future.

I also enjoyed attending other seminars because it is important for me get ideas, information, and other techniques from many turtle experts. It was especially nice for me to go to the American

Museum of Natural History and look at many turtle and tortoise collections from the world.

Finally I would like to thank the Gopher Tortoise Council that gave me a great time and supported me to come here. I learned a lot and they provided me with experience about turtle research and working with conservation. I need to learn more and more about tortoises and to help my country to save turtle and tortoises. I wish all people in the world would save turtle and tortoises together. Please help and support this program to train turtle people around the world especially from Southeast Asia where they are meeting problems with wildlife.

George Heinrich



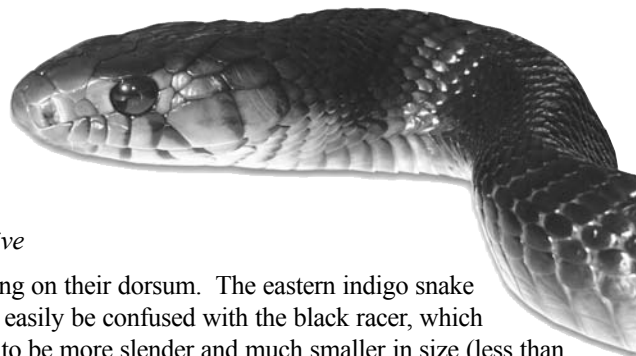
Thanks Colleen!

Colleen Heise (shown here with Jichao Wang of China) lightly edited Firoz's and Nara's articles on these pages, and did an outstanding job as GTC Secretary and Membership Secretary as well as Mississippi State Representative. We miss her and wish her well in North Carolina.

Upland Snake Species Profile:

Eastern Indigo Snake

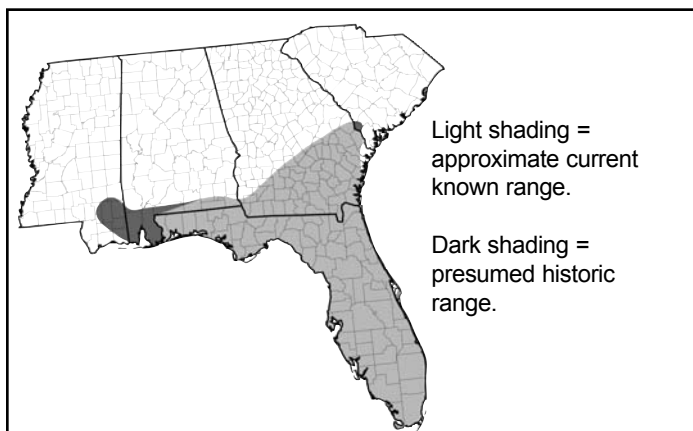
Drymarchon corais couperi



David Scott

TRACEY TUBERVILLE Chair, GTC Upland Snake Conservation Initiative

Range: Southeastern Coastal Plain of Florida and southern Georgia and (historically) in southern portions of Alabama, Mississippi, and South Carolina.



Conservation Status: Listed by U.S. Fish and Wildlife Service as Threatened in 1978. Recovery plan developed in 1982.

The Natural Heritage Program global rank is G4T3 (subspecies is "vulnerable" to extinction or elimination). The state ranks for each state in which the species occurs are listed below.

State	State Rank	State Legal Protection
AL	S1 critically imperiled	Protected
FL	S3 vulnerable	Threatened
GA	S3 vulnerable	Threatened
MS	S1 critically imperiled	?
SC	S? status unknown	Endangered

Although experimental reintroductions of eastern indigo snakes have been conducted throughout their historical range, naturally-occurring populations persist primarily in the Coastal Plain of Florida and southern Georgia. The species is considered extinct or rare in Alabama, Mississippi, and South Carolina.

Indigo snakes have been heavily impacted by past over-collecting and gassing of tortoise burrows. Habitat loss and degradation, road mortality associated with habitat fragmentation, and intentional killing by humans continue to threaten remaining populations.

Description: The eastern indigo snake is the longest snake in North America, reaching a maximum size of 2.6m (8.5ft). The eastern indigo snake has a single anal plate and smooth, shiny blue-black scales, although the scales of large males may show weak, partial keeling at mid-body. Most individuals have red or cream-colored patches around their chin, throat and/or cheeks. Young are similar in appearance to adults but may have some light

flecking on their dorsum. The eastern indigo snake could easily be confused with the black racer, which tends to be more slender and much smaller in size (less than 1.2m or 3.9ft) and has a divided plate, white chin patch, and dull scales.

Natural History:

This strictly diurnal snake is an active forager and its diet includes a wide variety of vertebrates. The eastern indigo snake commonly ingests snakes, including venomous snakes and other indigos.

The species' habitat preference appears to vary with season and perhaps with latitude, favoring dry xeric habitats in winter and more mesic habitats in summer. Seasonal movements between these habitat types occur during fall and spring. In areas where the eastern indigo snakes occur sympatrically with gopher tortoises, they rely heavily on tortoise burrows (both active and abandoned) for denning and nesting sites.

Eastern indigo snakes have very large home ranges (>100 hectares or 250 acres). Although eastern indigo snakes remain active throughout much of the winter, their home ranges in winter are smaller. Breeding occurs November-April. Females lay a clutch of 5 to 12 eggs sometime between March and July. Eggs hatch 90-120 days later. Males are territorial and male-male combat is known to occur.

Relevant Articles:

Diemer, J.E., and D.W. Speake. 1983. The distribution of the eastern indigo snake, *Drymarchon corais couperi*, in Georgia. 1983. *Journal of Herpetology* 17:256-264.

Landers, J.L., and D.W. Speake. 1980. Management needs of sandhill reptiles in southern Georgia. *Proc. Ann. Conf. S.E. Assoc. Fish and Wildl. Agencies* 34:515-529.

U.S. Fish and Wildlife Service. 1982. Eastern indigo snake recovery plan. U.S. Fish and Wildlife Service. Atlanta, GA.

For more information, contact:



GOPHER TORTOISE COUNCIL
www.gophertortoisecouncil.org

Reaching a length of 8.5 feet, the eastern indigo snake is the largest snake in the United States. Because of habitat loss, indirect impacts from rattlesnake roundups, past collection for the pet trade, and human persecution, it is also one of the rarest snakes in the country. This species was listed as "threatened" by the U.S. Fish and Wildlife Service in 1978, yet a lack of information regarding the natural history and protected status of this snake has precluded successful conservation and recovery. Although the species historically occurred in Alabama, only Georgia and Florida are known to harbor extant natural populations and thus wildlife agencies in these two states are responsible for their conservation, protection, and management.

Georgia Department of Natural Resources (GDNR) and The University of Georgia's (UGA) Warnell School of Forest Resources, along with important partners Ft. Stewart, Wildlife Conservation Society, and Savannah-Ogeechee Canal Museum, have begun a much-needed study on micro- and macrohabitat use, home range, thermal ecology, movement, and site fidelity of this species, while also developing techniques for survey and inventory during spring and summer months. Natalie Hyslop, a PhD student at UGA, is currently tracking 20 indigo snakes fitted with radio transmitters to learn more about the above-mentioned aspects of this reptile's ecology (see upper right photo). Next year, even more snakes will be added to the study. Surveys for the eastern indigo snake on lands proposed for activities potentially incompatible to this species are seasonally limited because of a gap in our understanding of where the snakes go during the warmer months. We know that during fall and winter, indigo snakes congregate on sandhills, typically those containing many gopher tortoise burrows. But when spring arrives, indigos seem to disappear from these areas, often only to be seen again the following fall and winter.

As a result, recommended surveys for this species are restricted to just a few potential months of the year. Obviously, if possible, we need to know how to find them during other months if we are to better protect them, and this is a major objective of Natalie's study.

Georgians may have noticed a write-up about indigo snakes in the hunting regulations booklet (developed and funded by GDNR and US Fish and Wildlife Service), and perhaps have seen the many indigo snake signs (developed and funded by GDNR, GTC, USFWS, and Partners in Amphibian and Reptile Conservation) erected at WMAs, natural areas, state parks, and wildlife refuges within their range. Both of these information efforts were undertaken because of a lack of public awareness for the protected status of this species.



Royce Hayes

Several known recent incidents (probably many unreported ones, too) of indigo snakes shot by hunters on public lands and a photo of three proud children displaying an indigo snake they killed featured on the cover of the Alma Times newspaper (see photo below) were clear indications that state and federal wildlife agencies need to do much more to prevent human persecution of indigo snakes. We hope the regulations booklet announcement, the signage, and a recently released brochure (written by Rebecca Smith and sponsored by UGA, PARC, USFWS, and GDNR) will help in this pursuit.

Together with our partners, GDNR is working hard to ensure the continued survival of this magnificent reptile in Georgia.



That's a big snake!

Lindsey Cauldwell, Danielle Hutchenson and Bret Johnson killed this enormous eight foot black snake in their yard on Friday. They live near Guysie.

Alma (GA) Times

Frequently Asked Questions

The questions on these two pages are excerpted from a new "FAQ" addition to the GTC website. Special thanks to Joan Berish, Roger Birkhead, and George Heinrich.

What can be done for gopher tortoises on land slated for development?

State and federal wildlife agencies have grappled with the best way to offset the adverse effects of development on tortoise populations. The seemingly simple solution is not to allow development in high, dry habitats in the Southeast, but that option is not realistic, especially in rapidly growing states like Florida. The Florida Fish and Wildlife Commission does not control development, nor even wildlife habitat itself: It regulates and conserves wildlife species. Therefore, options are limited to the following: A) mitigation banking, which preserves habitat and resident tortoise populations elsewhere (i.e., generally away from the development site, acknowledging the sad, frustrating loss of tortoises on the development site); B) work around or relocate tortoises on-site to avoid harm (limited opportunities, depending on size and configuration of the development); C) or relocate tortoises off-site (not a good option due to lack of secure recipient sites, transmission of potentially devastating diseases, and disruption of resident tortoise populations). Florida currently has 8 mitigation parks that protect thousands of acres of tortoise habitat and tortoises from future development; these parks were established with funds gleaned from mitigation banking. The developers that choose this mitigation option pay into a fund (managed by the Trust for Public Lands) to preserve an amount of habitat elsewhere, usually equal to about 15-25% (reality, again) of the occupied tortoise habitat on the development site. Of course, those of us who care about tortoises desperately wish that more could be done. But the regulatory agencies' hands are often tied by politics and land rights issues. And no one should be complacent about the loss of the tortoises left on the developments; from a tortoise con-

servation standpoint, mitigation banking and its upsetting incidental take permit are indeed the 'best of the bad solutions' at this time.

How can you help gopher tortoises? You should consider contributions to land acquisition organizations like The Nature Conservancy. Join the Gopher Tortoise Council and help us conserve tortoises by educating the public and working with agencies to manage tortoise habitat (e.g., thru prescribed fire which opens up the forest canopy and encourages tortoise forage plants). Petition your local, county, and state politicians to assure that habitat is set aside for wildlife (and, when compatible, our recreation and enjoyment!). Push for 'green spaces' in and around developments (there is still time to save upland habitats before they're gone!). Educate your friends and neighbors about this keystone species and the many other fascinating animals and plants found in these southeastern "deserts."

[Information regarding tortoise mitigation in states other than Florida will soon be added to the website.]

I found a gopher tortoise on the road and brought it home with me; what should I do?

Because the gopher tortoise is protected throughout its range, it is technically illegal to remove individuals from the wild. That said, we certainly understand and appreciate the urge to assist this slow-moving creature, especially in the midst of development. With the exception of tortoises found in truly urban settings (e.g., downtown Tampa), we suggest leaving tortoises where you find them. If they are crossing a highway, move them across the road in the direction that they were heading; please consider your safety and the safety of other drivers before you assist the tortoise. If you have already brought the tortoise home, consider returning it to where you found it

unless it was found in a city with NO wild habitat anywhere nearby. In that case, you should remove the tortoise from harm's way and immediately contact the local office of your state wildlife agency. Please make note of the exact location where you found the tortoise so that a wildlife biologist can evaluate where to place the individual. Tortoises are keenly aware of their "neighborhood" and will want to return to it. You should NOT keep the animal as a 'pet'. If you want to keep turtles and tortoises in captivity, there are species available through the pet trade. Gopher tortoises are declining in the wild; therefore, it's important that individuals are not removed permanently. Unfortunately, many well-intentioned folks remove tortoises from the wild and turn them into rehabilitation centers or wildlife agencies without providing locality data. Many of these tortoises cannot be returned to the wild due to concerns about disease transmission.

How can gopher tortoises be considered rare or threatened, when I see them all the time? I mean, why would you protect such a common animal?

Depending on where you live within the gopher tortoise's range in the southeastern United States, gopher tortoises may indeed be rare (south Florida) to fairly common (parts of south Georgia and northern Florida). However, one reason why they may be seen along roadsides, fencerows, right-of-ways, and other such linear sites is that they gravitate to open, sunlit, grassy corridors, especially when their natural habitat is degraded or destroyed. These open habitats provide easy burrowing, good forage, and sunny nesting sites. The often relatively high burrow densities along roadways can give the impression that tortoises are common in that area, when, in fact, you would see very few bur-

rows if you walked into the surrounding closed canopy woods. And although you may see these tortoises frequently, it's important to understand that gopher tortoises are long-lived (estimated 40-60 years), produce few eggs per year (average 5-7, most of which are eaten by predators), and grow very slowly. Bottom line: this is not an animal that reproduces like deer, quail, or turkey! The individuals you see concentrated in some areas may be there only because there is no remaining suitable habitat. These high, dry lands are most desired for human dwellings; thus, tortoise habitat is rapidly being bulldozed for housing developments.

How can I help gopher tortoises that reside on my property?

Whether you reside on a 2-acre ranchette or 200 acres of tortoise habitat, the goals are the same: to create an open, grassy (like a savanna) habitat with scattered trees for shade. Gopher tortoises need relatively deep, sandy, soils in which to burrow, open sunlit sites for nesting, and abundant herbaceous (non-woody) food plants. To achieve these desired conditions, you can conduct prescribed burns (be sure to consult with your state forestry office to get necessary information and permits). In natural sandhill habitat, we recommend burning every 3-5 years, using spring-summer burns whenever possible. However, winter burning is certainly better than no burning. In palmetto flatwoods habitat, more frequent burns may be necessary. If you can't burn to rejuvenate your tortoise habitat, you should at least regularly mow the ground cover, clear out woody shrubs, and thin your trees. Especially on smaller suburban sites, you can supplement tortoise forage by planting broad-leaf grasses, legumes (bean family plants), and encouraging other low growing native plants.

If your land is primarily in silviculture (pine tree farming), you can still maintain gopher tortoise populations

by prescribed burning and tree thinning. A very densely planted tree farm will minimize the amount of sunlight that reaches the forest floor, thus reducing the grassy ground cover. The results, simply stated, are: no groceries, no gophers!

How can I keep my dog(s) from injuring or killing the gopher tortoises on my property?

Gopher tortoises can indeed bring out the predatory instincts in our beloved canine companions; for example, some veterinarians refer to these slow-moving reptiles as "walking nylabones"! You need to acknowledge that this is a natural instinct; your response to this behavior will vary, depending on the breed and disposition of your pet. Certainly, one way to prevent dogs and tortoises from interacting is to fence the dogs away from areas with tortoise burrows. This works in many suburban situations, but it's understandable that folks with 5-20+ acres may want to let their dog(s) roam within a larger fenced or unfenced part of the property. You can start with a simple reprimand when the dog lunges towards a gopher tortoise; that may deter some dogs. However, aversive conditioning may be necessary for more tenacious individuals. Your local wildlife agency can likely lend you the shell of a non-protected turtle species. You can try a little hot sauce or other distasteful substance on the shell; the rationale here is that when the dog licks the shell with this unsavory taste, he or she will begin to associate the bad experience with turtles/tortoises. In extreme cases, a professional dog trainer can assist you with other aversive conditioning techniques, such as mild shock collars that are used to teach dogs not to attack venomous snakes.

I have tortoises on my property and am concerned about the possibility of horses injuring themselves in the burrows. What can I do?

Depending on the breed and temperament of your horses, (i.e., are they easily spooked and/or prone to frequent gallops around the pasture?), you have several alternatives. Tortoises and equines can co-exist harmoniously, especially when a few precautionary measures are taken. To help acclimate your horses to the presence of burrows and to prevent potential leg injuries, we suggest indicating burrow locations by placing logs or pole-tripods over (but not blocking) burrow openings. In select cases where high-strung breeds like Arabs or thoroughbreds are densely stocked in relatively small acreages, you may wish to contact the local office of your state wildlife agency regarding a permit to relocate the tortoises outside the corral or pasture. This will be useful only if the pasture fence prevents tortoises from returning; low barriers may have to be strategically placed. Fortunately, tortoises generally prefer fencerows rather than manicured yards or improved pastures.

How do you tell a male from a female gopher tortoise?

Determining gender accurately is difficult or impossible for tortoises smaller than about 8 inches in carapace (top shell) length. Depending on latitude, habitat quality, gender, and other factors, tortoises mature at about 8-9 inches in carapace length. Adult males can be differentiated from adult females primarily by their concave plastrons (i.e., their bottom shells have a depression towards the back end). Females have relatively flat plastrons. On average, females are also larger than males (but, of course, this is relative, depending on age, growth rates, etc.). Males also tend to have longer gulars; these projections from their plastrons extend under their chins and are used during combat between males. However, gulars can become worn or broken and are not, therefore, the best characteristic for determining gender.

Recent Publications, Current Research, and Announcements

Recent Publications

Brown, D. R., I.M. Schumacher, G.S. McLaughlin, L.D. Wendland, M.B. Bown, P.A. Klein, and E.R. Jacobson (2002). "Application of diagnostic tests for mycoplasmal infections of desert and gopher tortoises, with management recommendations." *Chelonian Conservation and Biology* 4(2): 497-507.

Eubanks, J. O., J.W. Hollister, C. Guyer, and W.K. Michener (2002). "Reserve area requirements for gopher tortoises (*Gopherus polyphemus*)." *Chelonian Conservation and Biology* 4(2): 464-471.

Rostal, D. C., and D.N. Jones, Jr. (2002). "Population biology of the gopher tortoise (*Gopherus polyphemus*) in southeast Georgia." *Chelonian Conservation and Biology* 4(2): 479-487.

Seigel, R. A., R.B. Smith, and N. A. Seigel (2003). "Swine flu or 1918 pandemic? Upper respiratory tract disease and the sudden mortality of gopher tortoises (*Gopherus polyphemus*) on a protected habitat in Florida." *Journal of Herpetology* 37(1): 137-144.

Data Wanted: Gopher Frog in Southern Florida

In cooperation with the U.S. Fish and Wildlife Service, I am compiling information about the occurrence of the gopher frog, *Rana capito*, in southern Florida, defined as the region south of an east-west line passing through Orlando. Data will be used to assess the status of the species and its habitat in the southern portion of its range, where it is subject to multiple threats. If you have site-specific information that you are willing to share for conservation purposes, please contact Dale Jackson at the Florida Natural Areas Inventory for a data-reporting form (specify hard copy or e-mail attachment). Alternatively, you may provide data in any format that is convenient, including via telephone or e-mail. A detailed map would be most helpful. Your assistance is greatly appreciated and will be acknowledged.

Should you wish to know more about the Inventory or the gopher frog, please visit www.FNAI.org. A color photograph and species summary of the frog (and 150 other taxa) are included within the "Field Guide to the Rare Animals of Florida" that is posted at the site (higher quality hard copies of this excellent field guide, suitable for field use and libraries, are available from FNAI for \$30; a companion plant volume sells for \$35).

Dr. Dale Jackson, Florida Natural Areas Inventory
1018 Thomasville Road, Ste 200-C
Tallahassee, FL 32303
850-224-8207 djackson@fnai.org

Conecuh National Forest Seismic Survey

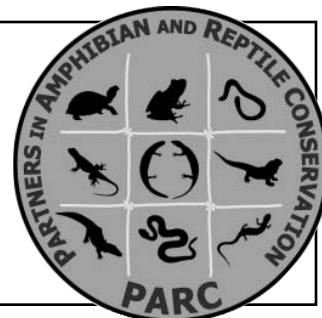
Ventex Oil & Gas Inc. (Dallas, Texas), is proposing to conduct a 3D seismic exploration project covering approximately 5 square miles of the Conecuh National Forest, in Covington County, Alabama. In support of their Special Use Permit application, Ventex contracted Covington Associates Corporation (CAC) of Pass Christian, Mississippi to conduct a biological survey of the proposed project area. The biological survey included searching for listed species, sensitive habitats, and noxious species.

CAC visited nearly 1200 staked points. Relocation recommendations were made to MapSnapper, the seismic design contractor. Recommendations were made if a point was too close to a sensitive feature (i.e. gopher burrow or wetland). In addition, the access routes in which the drill buggies would use to get to the points were surveyed. CAC documented 70 tortoise burrows, 19 sensitive plant locations, and several noxious weed locations.

"It is a win-win situation for all parties involved" according to Patrick Chubb, CAC Project Manager: "The Forest Service gains much needed resource data, Ventex gets their application processed quicker because of an Avoidance Plan of Operation, and of course, the gopher tortoise wins... because someone is looking out for him."

Partners in Amphibian and Reptile Conservation (PARC) Meeting

The annual Southeast PARC meeting will be held the Monday following the Gopher Tortoise Council Meeting. The meeting will convene on October 6th, 2003, at Wekiwa Springs State Park. For information, contact Mark H. Hughes, Ph.D., International Paper, 719 Southlands Rd., Bainbridge, GA 31717. Phone: (229)-246-3642 x 320 E-mail: Mark.Hughes@ipaper.com



Member E-mail Addresses Requested

To facilitate sharing of announcements, the GTC is compiling a list of members' e-mail addresses. This list will *not* be shared with other organizations. Members who registered for the 2002 annual meeting in Thomasville have already been added to the list. If you did not attend that meeting and would like your e-mail address included, send it to: Sharon Hermann (shermann@juno.com).

Welcome New Members...

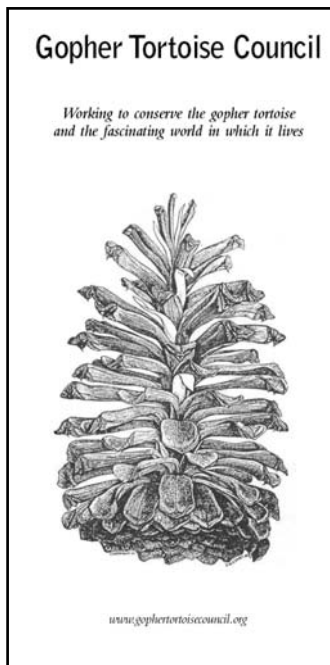
Gene Beck, Melanie Bisesto, Ruthie Clemente, Rebecca M. Clifton, Jack M. Hall, Laura Hoffman, Seth Hopkins, Marilyn Howe, Charles E. Howell, Linda A. Jennings, Pat Kennedy, Jim Kraus, Erica Lee, Katrina Locke, Lawrence Mills, Tyler Mullett, Jerome Murphy, Siobhan O'Donnell, Maureen Parent, Michael Ray, David Samek, Susan and Klaus Sorensen, Betty Talburt, Helen Van de Walker, Hugh M. Westbury, Jr.

...And Thank You Life Members

Norma Adamczyk, Paul C. Anderson, Kevin Baesler, Karen B. Burgin, M. C. Davis, Rebecca Eagan, Frank Cross Foundation, Corrie Grado, M.B.S. Gray, Craig Guyer, Jill Kusba, DVM, Eugene I. Majerowicz, Tom Mann, Ken Sharpe, Karen Skimming, Lawanna & Demetrios Tsoulos, Harold & Susanne Wahlquist, Ed Wester, H.B. Whidden, Debbie & Steve Young

New GTC Brochures Available

The all-new GTC organizational brochure has been completed. Copies can be obtained from GTC Secretary Bill Knox.



Thanks to George Heinrich for his work on this brochure.

Directory of Gopher Tortoise Council Officers, Committee Chairs, and State Representatives

Co-chairs

Sharon Hermann: (334) 844-3933, shermann@juno.com

Boyd Blihovde: (407) 884-2006, boyd.blihovde@dep.state.fl.us

Secretary

Bill Knox: (352) 498-2481, wknox@svic.net

Treasurer

Matt Dinkins: (904) 645-9900, sandmatt1@hotmail.com

Membership Secretary

Bill Knox: (352) 498-2481, wknox@svic.net

Merchandise/Publication Sales

Bill Knox: (352) 498-2481, wknox@svic.net

Newsletter Editor/Website Manager

Mark Bailey: (334) 727-2040, mbailey@conservationsoutheast.com

GTC Representative to PARC

George Heinrich: (727) 865-6255, highpine3@aol.com

Standing Committee Chairs

Nominating Committee

Joan Berish: (352) 955-2230, berishj@fwc.state.fl.us

Public Information & Education Committee

Laura Wewerka: (941) 275-3435, laura.w@mindspring.com

Upland Snake Conservation Initiative

Tracey Tuberville: (803) 725-2472, tuberville@srel.edu

Research Advisory Committee

Bob Herrington: (912) 931-2331, bherring@canes.gsw.edu

State Representatives

Alabama

Ed Wester: (334) 745-3025, edwester@mindspring.com

Florida

Joan Berish: (352) 955-2230, berishj@fwc.state.fl.us

Georgia

William Birkhead: (706) 569-3016 or (706) 628-5196, birkhead_bill@colstate.edu

Louisiana

Inés E. Maxit: (225-765-2820), maxit_ie@wlf.state.la.us

Mississippi

Deborah Epperson: (601) 558-2797 or -2931, depperson@tnc.org

South Carolina

Tracey Tuberville: (803) 725-2472, tuberville@srel.edu

Annual Meeting Reminder

Mark Your Calendar: 25th Annual Gopher Tortoise Council Meeting

October 3-5, 2003

Wekiwa Springs State Park, Apopka, Florida

Registration details inside and on the website: www.gophertortoisecouncil.org

J. Larry Landers Student Research Award

Annually, the Gopher Tortoise Council awards the J. Larry Landers Student Research Award to the best student proposal submitted to the Council. Proposals can address undergraduate or graduate research concerning the biology of gopher tortoise or any other relevant aspect of southeastern upland habitat conservation. The amount of the award is variable, but has averaged \$1000.00 over the last few years.

The proposal should be limited to four pages and should include a description of the project, a concise budget, and a brief resume of the student. Proposals should be submitted to Bob Herrington, Chair of GTC Research Advisory Committee, Georgia Southwestern State University, Department of Biology, Americus, GA, 31709, by August 31, 2003.



The Gopher Tortoise Council is a nonprofit and tax-exempt organization under IRS Code Section 501(c)(3). ID #59-2010727

GOPHER TORTOISE COUNCIL
c/o Florida Museum of Natural History
University of Florida
P. O. Box 117800
Gainesville, FL 32611-7800