

THE TEXAS NATURE TRACKER

Spring 1998

Endangered Resources Program • 4200 Smith School Road • Austin, Texas

WHEN OPPORTUNITY KNOCKS: *The Origins of Texas Nature Trackers*

Way back in the dark ages before anyone heard of Internet or The X-files (about 1992 or so), an idea was born out of necessity. Congress had ordered the U.S. Fish and Wildlife Service to monitor rare species across the country to ensure that they didn't go extinct before anyone noticed. Of course, Congress didn't bother to allocate any extra money to look after the several thousand species of concern in the country, so the U.S. Fish and Wildlife Service came to Texas Parks and Wildlife and said, "Got any ideas?" We scratched our heads for awhile and finally said, "Yes! We think that there are lots of regular folks out there who would be willing to volunteer to help look after the special plants and animals in their communities." And this was the beginning of **Texas Nature Trackers**....

Of course, things didn't happen overnight. **Mary Candee**, who coordinated the program for TPW at that time, spent the first several years writing plans for the more than two hundred species of concern in the state and setting some priorities. In 1993 she first was able to field test the idea of using local volunteers when she discovered that **Glenda Overfelt's Environmental Action Club** from **Del Rio High School** had actually adopted a section of highway containing the rare plant, **Rydberg's scurfpea**. More writing and planning followed.... Then in 1995 **Mary Kennedy** of **Texas Military Institute** contacted Candee about mentoring a science teacher training program called Institutes for Teacher Development through Ecology (ITDE). Candee said, "Sure, and have I got a field project for you!" She signed up Mary Kennedy and her cadre of volunteers to monitor a population of big red sage on a highway right-of-way in Boerne.

We learned a few things from those early experiences – such as in a drought-prone region like Del Rio sometimes monitoring a small plant can be a little bit disappointing. One month it is doing great, but with no rain, it can almost disappear. We also

discovered that sometimes plants don't make it easy for volunteers. Why *does* big red sage choose to grow in the midst of a forest of poison ivy and bloom in the hottest part of the summer? So, armed with some real-life experiences and a base of good planning by Mary and other biologists at TPW and USFWS, **Ann Miller** and **Lee Ann Linam** (Wildlife Diversity Program) began to match up volunteers with projects early in 1997.

The results have been great! As of spring 1998, we now have eight rare species at 12 different sites under the care and watchful eye of local volunteers. Those species include three plants, three salamanders, one snail, and one gopher. We are working on sites owned by Texas Department of Transportation, Texas Parks and Wildlife, local cities and school districts, and the Audubon Society. Our volunteers come from elementary, middle, and high schools, as well as public and private schools. From spring 1997 through spring 1998, those 132 volunteers logged over 180 hours in volunteer service. In addition, a self-directed watch program for our state's reptile, the **Texas**



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TWISTFLOWER MONITORS LIKE TO HIKE!

Students from **Janis Lariviere's Westlake High School** class didn't mind hiking three scenic Austin nature trails in May of 1997 to search for the rare bracted twistflower (*Streptanthus bracteatus*). Rushing water, cool breezes, and beautiful wildflowers greeted them along the trails causing comments such as, "Wish we could have our science lessons out here all the time." As our first school group to monitor this beautiful plant, Westlake's group had the privilege of working at all three monitoring sites, then choosing their favorite site for next year's monitoring project.

Students started the monitoring project during the flowering season when the striking purple blossoms were at their most beautiful. Working in teams, students continued the monitoring efforts of David Zippin who had studied the plants as part of his doctoral work in the botany department of the University of Texas. Data collected by the Westlake High students showed a slight increase in population of *Streptanthus* over the 1996 level, but overall the population was still down from the levels of 1993, 1994, and 1995. Did the drought in 1996 make the difference? If we continue to monitor, will we see similar



population patterns in response to lack of rainfall? Or are there other limiting factors as well? Student monitors noted that 10% of the *Streptanthus* plants they monitored showed signs of being eaten (herbivory). Do *Streptanthus* plants that are accessible to deer populations suffer more from herbivory than other populations? Deer seem to love the taste of this plant from the mustard family!

In 1998, Ms. Lariviere's class was joined by **Peggy Meyer's Austin High School** environmental science class in monitoring *Streptanthus* populations. Ms. Meyer's class chose the Barton Creek site, while Ms. Lariviere's class chose the Bee Creek site. Both groups began in February by monitoring the rosette stage of *Streptanthus* and will continue in early May with the flowering stage. In June, some of the teachers and students will also count the number of seed pods produced by the *Streptanthus* plants at their site in order to get some idea of reproductive success. We hope to include an additional site in San Antonio at Eisenhower Park, monitored by **Mary Kennedy's Texas Military Institute** biology students. This project keeps growing and growing! (Just as we hope populations of *Streptanthus* do too!)



Origins...continued

Horned Lizard Watch, involved 61 volunteers and approximately 180 additional hours of service in 1997. You can find out more about each of these projects by reading the rest of *The Texas Nature Tracker*.

Texas Nature Trackers will grow slowly because we must plan each project carefully with biologists and site managers before

volunteers can be recruited and trained on-site. But we are sure of one thing – **it will continue to grow!** We have more sites and species planned for 1998-99, and are working on materials for a self-directed **Amphibian Watch**. Already we're confident that at least eight species (and the Texas Horned Lizard) are better off because our local volunteers really care! We trust it's a win-win arrangement – so far I'd say our volunteers are having a lot of fun...and learning something new as well!





SALAMANDER SURVEYS:

This Science Project Is All Wet!

Students from **Tom Anderson’s Churchill High School** environmental science class, **Kevin Keene** and **Chris Zaragosa**, have one of the COOLEST monitoring projects – to snorkel and count Comal Springs salamanders (*Eurycea neotenes*) in Landa Lake. In 1997, they snorkeled at three sites in Landa Lake to document a total of 10 salamanders during the 60 total minutes of monitoring time. For the first time, this project documented populations of salamanders in densities similar to the densities normally found *only* in spring runs. **Congratulations Kevin and Chris!** Kevin and Chris also monitored water levels in the Comal river system. Their data will be a part of a computer model simulating aquatic habitat under different flow conditions. This year Churchill High School students have continued to monitor water levels and plan to snorkel for salamanders when the weather warms up.

Bracken Christian School Science Club students are also monitoring aquatic salamanders (*Eurycea neotenes*), but they get to work in the beautiful **Honey Creek State**

Natural Area where they have discovered populations that were not known before! An article and picture of the group appeared in a recent issue of *The Boerne Gazette*. Their teacher, **Mrs. Linda Walker** was quoted as saying, *“Giving the kids an opportunity to work hands-on with real scientists gives them wonderful insight that a classroom cannot provide. With programs like these, we are able to explore the world of science in nature’s classroom.”*

To begin the project, students were divided into two groups so that each student would get that important “hands-on” participation in the monitoring project. Then Texas Parks and Wildlife scientist, Lee Ann Linam, taught Mrs. Walker and her students how to set up a scientific count of the salamanders in and around springs that feed into Honey Creek. During timed intervals the students turned over rocks and leaves in search of

the elusive salamanders. While half of the students monitored for salamanders, the other half went to another area of the creek to learn biomonitoring techniques from aquatic biologist Cindy Contreras of TPW. As students got their feet wet and



began to discover both salamanders and interesting “bugs” in the water, enthusiasm for the project mounted and students declared that Honey Creek’s water was very clean.

On April 23rd, the veteran monitors were back in Honey Creek again. Lee Ann Linam and Ann Miller met students at Honey Creek at 12:00 and spent the afternoon investigating springs, salamanders, and all kinds of aquatic life. Fine work (if you can call wading in a beautiful stream *work*) on the part of the eleven students resulted in the discovery of approximately 1 salamander very 53 minutes of monitoring time. Included in this data were two salamander larvae! Lee Ann hopes that future monitoring efforts at Honey Creek will result in finding new populations of salamanders at other springs that feed into Honey Creek.



The most recent addition to the salamander monitoring team is the science club from **Deer Park Middle School** in Round Rock, sponsored by seventh grade science teacher **Susan von Rosenberg**. This group is monitoring for the Jollyville Plateau salamander (*Eurycea sp.1*). They spent most of the day at the Travis Audubon Sanctuary where they first got to hike the trails with birding expert, John Kelly. Timing for the field trip could not have been more perfect. Golden-cheeked warblers rewarded them with their “buzz-buzz” territorial call. Mrs. Von Rosenberg, “Mrs.Von”



Salamander Surveys...continued

(who was straggling behind a little) really got excited when she witnessed a male golden-cheeked warbler swoop from a tree very close to her.

After a picnic lunch, the serious monitoring began. Lee Ann showed students three salamanders she had brought from the San Marcos Fish Hatchery so that they would know what they would be looking for. Then students chose partners and hiked to the stream segment that was the monitoring area. Each pair of students had a 50-foot stream segment to monitor and each student had ten minutes to continuously pick up rocks or search

through leaf litter to look for salamanders. After the time was up, several students had seen salamanders! **Good work Deer Park students!**

Students also noted the presence of some large tadpoles and insect larvae in the stream, and after getting all data tabulated, they jumped in downstream to investigate further. Using aquatic macroinvertebrate guides from the “Kills and Spills” team of Texas Parks and Wildlife, hand lenses, and a sharp eye, students found numerous damselfly larvae and tadpoles, a few caddisfly larvae, and some fresh water clams. This proved what they already suspected – the stream’s water was very healthy for salamanders!

WHERE IN THE WORLD IS THE HORSESHOE LIPTOOTH SNAIL?

With a name like that, you probably wouldn’t have any idea! Actually, trying to find and count these guys is like hunting for Easter eggs, except they aren’t quite so large and colorful. Horseshoe liptooth snails are only 3/8 to 1/2 inch in diameter and are beige to brown in color. They blend in perfectly with the dirt and leaf litter that they like to live in. So monitoring these guys takes some careful looking. This particular land snail with its special horseshoe-shaped ridge on the shell opening, lives *only* on the wooded hillsides of Landa Park in New Braunfels.

Students from **Tom Anderson’s** Environmental Science Class at **Churchill High School** spent several minutes looking at samples of the horseshoe liptooth snail and comparing them to other snails that also occur on the same slopes before beginning the monitoring program. Then, along with biologist Lee Ann Linam and project assistant Ann Miller, they set up transects and quadrats to count the snails. Shouts of “I found one!” made it really seem like an Easter egg hunt! This was the first time volunteers had monitored the horseshoe liptooth snail. The success of the project has encouraged us to find more volunteers in the future and to look for other locations in the park where the snail might be found.



BIG RED SAGE - BLAME IT ON THE FLOODS OF 1997

Texas plants and wildlife have adapted well to our constantly changing weather in Texas, but sometimes extreme wind, rain, or temperatures can do serious damage. And if a species is rare, these natural hazards can cause an even greater threat. Mary Kennedy and her volunteers witnessed this on July 31st of 1997. In 1996, **Mary Kennedy**, a biology teacher from **Texas Military Institute**, began recruiting volunteers to assist TPW botanist Jackie Poole in monitoring the big red sage (*Salvia penstemonoides*) on a highway right-of-way near Boerne. Data show that in 1997, populations were at an all time low for the monitored years 1991-1997. Upon close examination of the three subpopulations within the monitored area, volunteers saw that in one of the subpopulations, many large, decaying big red sage plants were lying flat among the heavy grass. Apparently heavy rains had caused the nearby creek to overflow and destroy the well-established plants.

Big red sage is very impressive when it blooms. A member of the salvia family, it can have flowering stems up to three feet in height! Not only did volunteers count actual numbers of stemmed plants and numbers of plants in the rosette stage, but they also counted fruits and flowers on every tenth plant. Data Mary Kennedy and her volunteers gather will be used to determine the viability of this particular population of big red sage.

Since these plants are perennials, an important question remains for this year. Will the big red sage plants involved in the flood last year make a quick comeback? Or will that flooding event cause years of decline in this big red sage population? What other factors might effect this population of big red sage in the future? Texas Parks and Wildlife biologists hope that Mary Kennedy’s students and volunteers continue to help us answer those questions.



CITIZEN VOLUNTEERS SHED LIGHT ON STATUS OF TEXAS HORNED LIZARD



Texans' most beloved reptile, the Texas Horned Lizard, is thriving in the western half of the state, but may be struggling in the eastern half, say the results of a citizen inventory effort conducted in 1997. The first annual report of the Texas Horned Lizard Watch, a volunteer monitoring effort coordinated by Texas Parks and Wildlife, also reports that the likelihood of encountering a "horny toad" is significantly less where red imported fire ants are present.

The results of the first year of the watch program confirm many people's personal experiences, as well as the results of a survey conducted by the Horned Lizard Conservation Society in 1992. The horny toad has essentially disappeared from the eastern third of Texas. In addition, many respondents reported that the horned lizard was increasingly rare in Central Texas and the Lower Rio Grande Valley. Only in West Texas, the Panhandle, and the western portion of South Texas do populations seem to

be somewhat stable. Results also showed that areas that had fire ants were less likely to have Texas Horned Lizards.

"This is exciting data," said Lee Ann Linam, coordinator for the watch program. "We started Texas Horned Lizard Watch believing that Texans cared about the horned lizard and that they were capable of collecting data that would help us to better understand its status. That belief is already paying off." Many causes have been proposed for the disappearance of the horny toad, including collection for the pet trade, changes in land use, fire ant invasion, and environmental contaminants. According to Linam, "This is the first set of data I know of that statistically supports a correlation between presence of fire ants and absence of Texas Horned Lizards. It does not prove that fire ants have caused the decline in horned lizard populations, but what we learn from this and future years can help us target conservation efforts more effectively."

DATA FROM THE 1997 TEXAS HORNED LIZARD SURVEYS

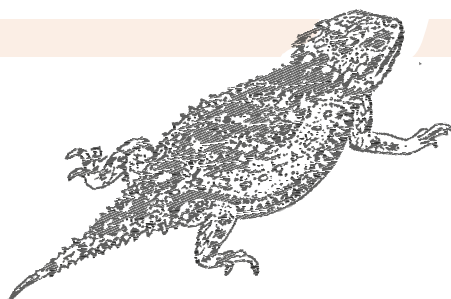
- A total of 394 individuals representing 154 counties scattered all across Texas requested information about Texas Horned Lizard Watch in 1997.
- A total of 61 people or teams of individuals returned their data sheets.
- Results were reported for 98 different routes in 39 different counties.
- Texas Horned Lizards were seen on 49 (exactly 50%) of the routes.

Successes of the 1997 Texas Horned Lizard Surveys

Texans showed that they are keenly interested in the status of their beloved state reptile (about one-half the respondents took the time to provide written narratives or anecdotes about their experiences with horned lizards).

The simple presence/absence information from one year's survey provided an interesting insight into geographic patterns of Texas Horned Lizard population stability.

One year of data has already shown a correlation between one habitat factor (the imported red fire ant) and the presence of horned lizards.



Future years should build on our understanding of this and other habitat factors. The ultimate goal for many Texans is to see the horny toad return to their own backyard (both literally and figuratively). Successful restoration will require that we understand the factors that have led to its decline. Through participation in this program, Texans are themselves playing a part in giving us the best chance possible to make sure that the horny toad is a part of our children's future.



TERRIFIC TUNNELERS DON'T STUMP STUDENTS

Those maritime pocket gophers didn't stand a chance against **Mrs. Anissa Cates'** sixth and seventh grade science class of **Kaffie Middle School** in Corpus Christi. In order to estimate the population of maritime pocket gophers (a genetically distinct subspecies that occurs only in Nueces and Kleberg counties), these students had to study pocket gopher mounds. The elusive gophers didn't show their heads while the students were around, but students could estimate their numbers by counting fresh mounds. The trick was to determine which mounds were old (and couldn't be used in the count) and which mounds were fresh. TPW biologists Lee Elliott, Chris Conner, and Lee Ann Linam were on hand at Corpus Christi



State Fish Hatchery to help students differentiate between an old mound (dirt is lighter in color) and a fresh mound (dirt is darker and more granular). But student teams were the ones who came up with some inventive ways to mark and keep track of the fresh mounds they had counted.

Way to go Kaffie M.S. students!

Students spent an entire morning counting mounds and enjoying a tour of the state fish hatchery. We look forward to working with them again next year.

We also hope to add another maritime pocket gopher monitoring site next year at the Corpus Christi Naval Air Station. We are still looking for a few dedicated teachers and students who would like to adopt this project! Interested teachers can contact Ann Miller or Lee Ann Linam (1-800-792-1112 Ext. 7011) for more information.

THE TINY SCURFPEA HAS LOTS OF FRIENDS

Students from **Mrs. Monea Fortunato's** fourth grade class at **Calderon Elementary School** in Del Rio jumped right in to help us keep track of Rydberg's scurfpea. When Lee Ann Linam and Ann Miller arrived to help the class set up a monitoring program, the class had already marked all the plants they could find in the natural area near their school. TPW biologist, Sylvestre Sorola of Del Rio, had helped them locate the population of Rydberg's scurfpea, but they carefully marked each plant and located another small group of plants on their own! Mrs. Fortunato's class will watch these plants to see when they flower, how many flowers each plant produces, how many seeds each plant produces, and what insects might pollinate the plants. They also wanted to keep weather data along with journal entries and sketches of the plants to help us understand the life history of Rydberg's scurfpea. At this time little is known about this rare member of the peanut family and how it is able to survive the often harsh, dry conditions of Val Verde County. Mrs. Fortunato's class led **Mrs. Gloria Culpepper's** kindergarten class on a tour of their Rydberg's scurfpea populations and told them about their monitoring plans. The entire school will be following developments in this project and helping Mrs. Fortunato's class develop a very impressive nature trail and outdoor classroom. We look forward to seeing those plans develop!

Rydberg's scurfpea also has some friends at **Del Rio High School**. **Mrs. Glenda Overfelt** and her **Environmental Action Club** will be monitoring another small population on a section of a highway right-of-way that they had already adopted for periodic clean-ups. Because of a lack of rain this spring in the Del Rio area, monitoring was delayed and results were not available for this newsletter. But we look forward to printing their monitoring results here next year!



We want an Outdoor Classroom!





AMPHIBIAN MONITORING WORKSHOP SETS THE STAGE

On January 23rd and 24th, Bastrop State Park and Texas Parks and Wildlife (TPW) hosted a ground-breaking meeting to discuss strategies for involving Texans in an important effort to monitor our amphibian populations. Scientists from around the world have expressed concern about declining amphibian populations and about the presence of amphibians with deformities. The meeting began with presentations that helped bring attendees up-to-date concerning those issues. Ron Heyer, of the Smithsonian Institute and Chairman of the Board of Directors of the Declining Amphibian Populations Task Force (DAPTF) described the work of the task force, while Mike Lannoo, coordinator of (DAPT), talked about current issues affecting amphibians in the United States. Mike Stredl, of the Arizona Game and Fish Department, presented information about the work of the Southwest Group of the DAPTF. Steve Shively, of the Louisiana Department of Wildlife and Fisheries, described amphibian monitoring efforts in Louisiana.

Bringing the discussion specifically to Texas, Jim Dixon of Texas A&M talked about trends in east Texas amphibian populations in relation to timber harvesting. Robert Hansen and Beth Davis, both with the City of Austin, described the long-term monitoring of the Barton Springs Salamander and Jollyville Plateau Salamander respectively. The workshop coordinator, Andy Price, of the Endangered Resources Program of TPW, discussed the long-term status and population trends of the endangered Houston Toad. Ann Mesrobian with the Bastrop County Environmental Network talked about her group's monitoring effort of the Houston Toad in Bastrop County. Matt Wagner, Nongame Program Leader for TPW, discussed baseline inventories his group had conducted for nongame wildlife on wildlife management areas. The meeting closed with time for the audience to question the presenters and discuss important issues

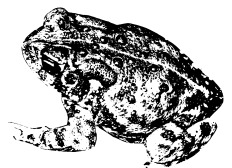
brought up in the presentations. The evening field trip to Houston Toad breeding ponds in Bastrop State Park and further discussion of Houston Toad issues proved to be one of the meeting's highlights.

Saturday morning attendees watched an introduction to the amphibians of Texas via computer and Internet connection *complete with audible calls*. Attendees were shown how to access that web site and download the photos and audible calls themselves. The meeting then divided into various interest groups. About a dozen teachers interested in starting monitoring projects with their students, formed one group to discuss ways to develop an amphibian monitoring program. Lee Ann Linam and Ann Miller, both of the Endangered Resources Program of TPW, plan to develop monitoring materials for teachers before school begins in the fall of 1998.

Be sure to check out their website:
www.zo.utexas.edu/research/txherps/call

Other follow-up goals resulting from the meeting:

- *publish a proceeding of the meeting*
- *produce a tape of Texas frog and toad calls*
- *start North American Amphibian Monitoring Program in East Texas*
- *host another meeting next year*



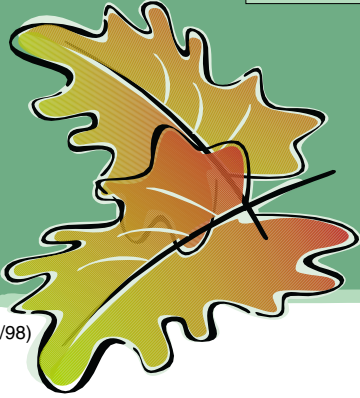
“ It’s great to get outdoors and do a project that is part of a real cause. ”

Adam Reed, Westlake High School



Spring 1998

TEXAS PARKS AND WILDLIFE



THE TEXAS NATURE TRACKER



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WHAT IS TEXAS NATURE TRACKERS?

Texas Nature Trackers (or TNT) is a program of the Endangered Resources Program of Texas Parks and Wildlife that seeks to link citizens with populations of rare species in their area. TPW biologists provide training and/or materials, while TNT volunteers agree to collect data for TPW on an ongoing basis. The goal of TNT is to foster local stewardship and conservation to ensure that species do not become threatened. Participation is strictly voluntary and surveys are conducted only on public property or on the property of willing landowners. TNT is supported by a grant from the U.S. Fish and Wildlife Service.

For more information about Texas Nature Trackers contact the Endangered Resources Program at 1-800-792-1112 ext. 7011.

Texas Parks and Wildlife
Endangered Resources Program
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