

TxDOT helps with bat habitat

Use of bridges and culverts to house flying mammals studied

By **MARK BLOSCHOCK**
Design Division
and

BRIAN KEELEY

Bat Conservation International

Most of America's bats lost their original homes in ancient tree cavities as old-growth forests were cut; many others, when caves were disturbed or destroyed. They found refuge by following timber into wooden barns and buildings. In fact, many of our largest, and sometimes only, remaining populations over broad areas now rely exclusively on old structures and bridges.

America's bats are desperate for homes, so much so that in a Texas Department of Transportation (TxDOT) study of bats in bridges, bats are often found in open crevices exposed to sun and rain, only an inch below

highway traffic. Others use culverts so small that they are easily drowned or caught by predators.

Where can these bats go to survive, and what can we do to help them? These questions were pivotal to the National Bats and Bridges Study conducted over the past two years of bats in bridges and culverts. The survey, in collaboration with TxDOT, was the first of its kind in the United States. Could these structures provide alternate roosting habitat? The answer is an obvious yes for anyone who has witnessed the spectacular emergence of 1.5 million Mexican free-tailed bats (*Tadarida brasiliensis*) from Austin's Congress Avenue bridge. But why is it that some bridges provide homes for hundreds of thousands of bats while most shelter none?

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Nominations for Environmental Achievement Award due May 7

By **JIM DOBBINS**
Environmental Affairs Division

A call for nominations for the 9th annual Environmental Achievement Award was recently sent to all district engineers and district environmental coordinators.

The Environmental Achievement Award recognizes the best examples of programs and projects that fulfill transportation objectives while protecting and enhancing the environment. The award is presented to the district whose employees have contributed most significantly to Texas highways through the proactive preservation, protection and enhancement of native plants, endangered plant and animal species, natural topography, waterways and wetlands; pollution prevention and abatement efforts; and protection of cultural resources at all stages of project development.

The award recognizes those projects that go "beyond the call," not those that only fulfill the requirements of law or

court orders.

Tom Remaley, supervisor of ENV's Water Quality Resources Branch, served on the 1998 Environmental Achievement Award review panel.

"What impressed me the most about the entries was the extra effort put forth by the staff of the districts, Remaley said. "The winners clearly went beyond the requirements of law and applicable regulations, beyond simple mitigation, to come up with projects that truly went the extra mile."

Past winners of the Environmental Achievement Award have included the El Paso, Austin, Pharr, Paris, Corpus Christi and Waco districts.

Completed nominations must be received by ENV no later than 5 p.m., Friday, May 7, 1999. The award will be presented at a yet to be determined venue. If you have any questions, contact Jim Dobbins at 512-416-3006, or GroupWise JDOBBINS.

This environmental coordinator milks snakes, and that's no bull

By JIM DOBBINS

Environmental Affairs Division

NAFTA has meant a remarkable increase in cross-border trade, and no TxDOT district has been impacted by the increase in traffic more than the Laredo District. Fulfilling an important role in keeping cross-border trade moving is Laredo District's Melisa Montemayor. Montemayor is the district's environmental coordinator (and the entire environmental staff!), who makes sure that the environmental clearance process for transportation projects moves efficiently.

Montemayor, a native of Orange Grove, joined TxDOT in June 1995, not long after the Laredo District opened for business in September 1993. A 1990 graduate of the University of Texas with a bachelor's degree in biology, Montemayor is presently working on a master's degree from Texas A&M-Kingsville. She worked for Texas Parks and Wildlife Department (TPWD) for four and a half years before joining the Laredo District staff. With TPWD, she worked in the Chaparral Wildlife Management Area, near Artesia Wells. Among other duties with TPWD, she conducted a horned lizard demographic study and a rattlesnake venom study. In the latter study, Montemayor milked the venom from 60 live rattlesnakes – a boast that not many TxDOT employees can make!

Montemayor continues her interest and involvement with reptiles, serving as president of the Horned Lizard Conservation Society from 1994 through 1997, and now serves on the society's research committee. Her interest and expertise in the field of reptiles has landed her on two television shows, including "Texas Country Reporter," and she has written for or contributed to articles in magazines such as *Smithsonian*, *Texas Parks and Wildlife* and the *Herpetological Review*.

What does Montemayor like about her job?

"I like the fact that my job allows me to be involved in different aspects of the environment – archeology, historic preservation, hazardous materials and natural resources," Montemayor said. "I enjoy getting out in the field when my workload allows."



Melisa Montemayor

Like most of us, Montemayor is not enamored with every aspect of her job.

"I don't care for noise analysis, and I dislike the fact that resource agencies have so much review time to examine our environmental documents."

Montemayor finds overcoming challenges a daily part of her job.

"Our fourth international bridge project was very complicated. The study was done by a consultant, and the wide range of public opinions on the project made it a challenge to get approved. The FONSI (Finding of No Significant Impact) was approved in March 1998, and construction should begin in early 1999. This project will take a lot of the truck traffic off the downtown Laredo crossing, which routinely backs up for miles on Thursday and Friday nights, and improve air quality, so I think that the project was worth the effort."

The community involvement aspects of the U.S. 83-U.S. 59 interchange project also presented a serious challenge.

"The original intersection of U.S. 83 and U.S. 59 was very dangerous, and has been the site of numerous accidents over the years. The interchange that is designed to replace it required the acquisition of several blocks of houses. Everyone wanted to know if their house was in the proposed right of way. Emotions understandably ran high at the public meetings. It was a potentially volatile situation."

What interesting projects has Montemayor worked on?

"I found the U.S. 83 widening project in Webb County fascinating because of the prehistoric archeological site located in the right of way next to San Idefonso Creek. A beautiful, decorated oyster shell pendant that was crafted by Indians about 2,500 years ago was uncovered. The site has been featured on two of the local television stations' newscasts. I also found the U.S. 277 project in Val Verde County

See **MONTEMAYOR**, Page 4



Separation of

Church and Sound

Things for a traffic noise analyst to consider when selecting a church as a noise receiver

By **MIKE SHEARER**

Environmental Affairs Division

The selection of representative noise receiver locations is one of the first and most important tasks in the performance of a traffic noise analysis. As indicated in the Texas Department of Transportation's (TxDOT) "Guidelines for Analysis and Abatement of Highway Traffic Noise" (Noise Guidelines), all of the following three criteria must be considered in the selection process:

Outdoor land use activity areas that:

1. are frequently used by humans
 - if no outdoor areas can be identified, interior locations may be used

AND

2. might be impacted by traffic noise
 - normally depends on distance from the highway centerline

AND

3. may benefit from feasible and reasonable noise abatement
 - typically excludes commercial/business sites since noise abatement, such as a noise barrier, could have a detrimental impact on business activities by restricting views and access by potential customers.

The remainder of this article emphasizes the first criterion specifically as it applies to churches and similar types of land use activity areas. For the purposes of this article, these areas will be referred to, collectively, as "churches."

The first thing to consider is the selection of a specific **location** that represents the "activity area" that is "frequently used" by "humans." Typically, frequent human activity on church property takes place inside a building (sanctuary, family center, rectory, etc.); therefore, an interior location should be selected for analysis. The parking lot or other outdoor areas should **not** be selected if "human activity" in these areas is limited primarily to a brief transition to an interior activity area (see diagram).

NOTE: the Noise Abatement Criterion for an interior location is 52 dBA (Category E).

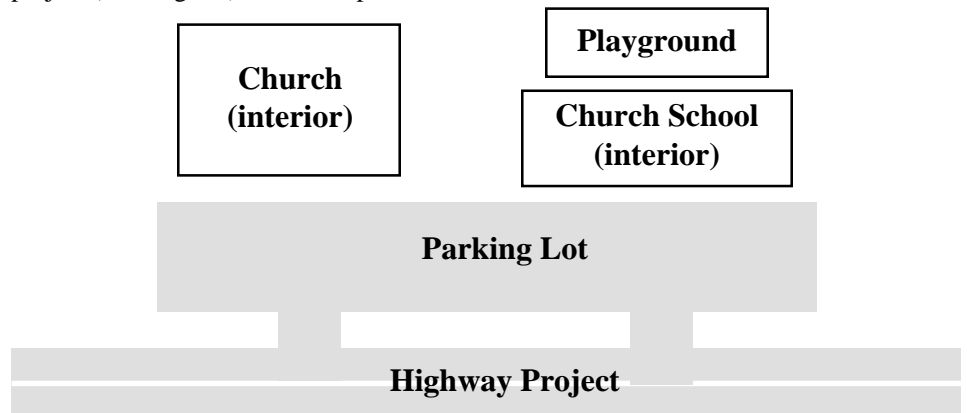
The same considerations would also apply to any school associated with the church. An interior location should be selected for analysis unless there is a "frequently used" outdoor activity area, such as a playground, located between the school and the highway project. However, if a playground is located on the opposite side of the school from the highway project (see diagram), do not skip over the

school to select the playground. Rather, select the interior of the school.

The next thing to consider is the **time** that the church is "frequently used" by "humans." Typically, a church is "frequently used" only on weekends and/or in the evenings unless there is a full-time school associated with the church. If the church and any associated activity areas are only used on the weekends or in the evenings, the associated noise levels should be adjusted, based on off-peak traffic data, before determining if an impact will occur.

NOTE: do not include a lengthy explanation of this process in the environmental documentation. Simply document the resultant noise levels.

It is difficult to make any statements about traffic noise analyses that will apply in all cases. This article only addresses the "typical" circumstances involved in the selection of a church as a noise receiver. For additional guidance, refer to TxDOT's Noise Guidelines or contact Mike Shearer, ENV's noise expert, at (512) 416-2622.



Trees from ROW find new homes around Victoria

By PEARLIE BUSHONG
Yoakum District

With new construction planned along Loop 463 in Victoria, trees in the right of way were destined for bulldozers and chain saws.

Upon learning of the trees' fate, Beverly Arnold, president of the Victoria Botanical Gardens, asked permission from TxDOT to transplant the trees to other areas in Victoria.

With consent from Victoria assistant area engineer Ben Galvan, Arnold's first step in saving the trees was to inventory the number and types of trees to be moved. Her second step was finding ways to fund the removal and transplanting of the trees, some of which are pretty large.

"It is very expensive to move the trees," Arnold said, "but we have saved all of the oaks and crepe myrtles thanks to sponsorships and private donations."

"We stopped moving the trees during the drought this past summer. The trees were suffering enough without going through the trauma of being transplanted," Arnold explained.

She planned to start relocating trees again in December.

So far, forty-four crepe myrtles have been planted in the median on Miori Lane.

Ten trees have been planted at Will Rogers Park, four at city hall, four at the Botanical Gardens, and two at private residences.

Thirty-two are planned for relocation to

Citizen's Hospital and their new rehabilitation center. Others are planned for the kindergarten area at the Botanical Garden and Ted B. Reed Park on Salem Road.

Arnold, who is a master gardener, organized an effort at beautification of Victoria in 1988 that won the city the Governor's Achievement Award from Keep Texas Beautiful.

"Some of the trees we are moving were planted during the 1988 beautification efforts," Arnold said. "I couldn't just stand by and see these trees destroyed. I think moving the trees to new locations makes more sense than chaining myself to them."

Arnold also writes a gardening column for *The Victoria Advocate*.

Montemayor: Ask about her cattle

(Continued from Page 2)

quite interesting. There, a road-widening project had been stopped by U.S. Fish and Wildlife because of Black-capped vireo (a federally protected bird) habitat found in the right of way. The project has resumed since TxDOT agreed to purchase and preserve additional Black-capped vireo habitat as mitigation."

New transportation funding under TEA-21 is expected to keep Laredo District staff quite busy for the foreseeable future.

"I believe I will see more projects come across my desk as a result of the new funds," Montemayor said. "Laredo is growing a lot and needs additional road capacity to keep up."

Jeff Casbeer, an area supervisor in ENV's Project Management Section, has worked with Montemayor extensively over the past few years.

"Melisa is very knowledgeable about projects and keeps up with the status of each of the district's projects," Casbeer said. "Her knowledge and expertise have helped to speed up the time it takes to clear her projects."

Montemayor and her husband, Adrian, reside in Laredo with their one-year-old daughter, Ari Adrian, who manages to keep both parents busy.

"We raise polled (dehorned) Herefords and enjoy showing them in livestock competitions. The biggest show we hit each

year is the San Antonio Livestock Exposition. Between the cattle and our daughter, that takes care of our free time!"

"Not long after the birth of Melisa's daughter, I was at a meeting that she attended," Casbeer said. "Several people at the meeting asked to see a picture of her new baby. Melisa was unable to produce a picture of the baby, but she did have a picture of her with one of her bulls!"

Bulls, rattlesnakes, lizards, miles of stalled traffic, a daughter – just another day for Laredo District environmental coordinator Melisa Montemayor.



Melisa Montemayor and husband, Adrian, (together at far right) show off one of their prize-winning Hereford bulls.

Bats: TxDOT puts out welcome mat

(Continued from Page 1)

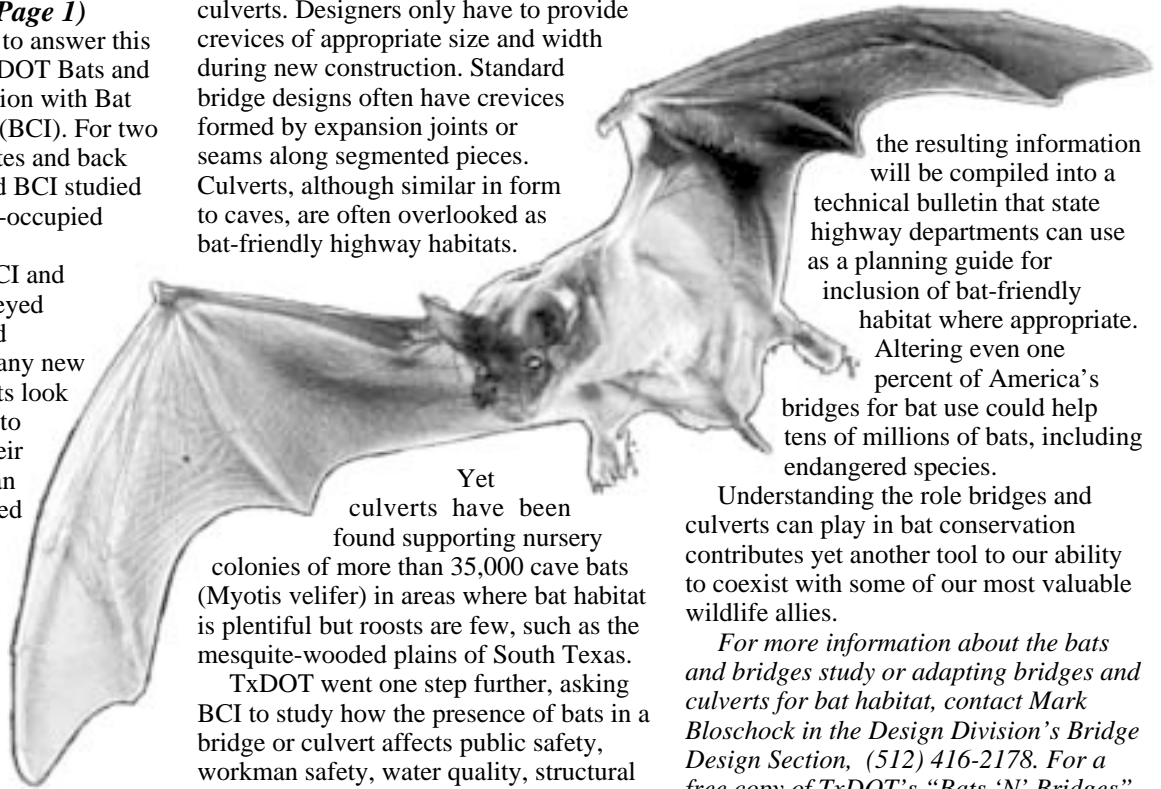
In 1994, TxDOT set out to answer this question by funding the TxDOT Bats and Bridges Study in collaboration with Bat Conservation International (BCI). For two years, traveling the interstates and back roads of Texas, TxDOT and BCI studied the whys and wheres of bat-occupied bridges and culverts.

Following leads from BCI and others, the study team surveyed numerous known roosts and subsequently discovered many new ones that taught us what bats look for when deciding whether to make a bridge or culvert their home. BCI visited more than 5,000 structures and recorded data on 1,160 of them in 39 study sites throughout Texas. Although only 0.01 of one percent of all highway structures surveyed offered ideal, protected homes for day-roosting bats, we found that as many as 11 to 12 million bats use Texas bridges and culverts as daytime shelter and millions more use them for night roosts. The study documented 11 of the 33 Texas bat species inhabiting bridges or culverts, but we suspect that up to 22 species actually use them. Their uses are many: migratory stopover sites, hibernation sites, day roosts for nursery and bachelor colonies, and most often, night roosts. The study indicates that bats could be encouraged to begin day roosting in many more bridges and culverts if simply offered safe and suitable conditions.

It soon became obvious that many existing bridges could be dramatically improved for bats through simple modification. To this end, TxDOT and BCI developed the Texas Bat-Abode, as well as a culvert bat-box and concrete bat panels. Many Bat-Abodes and concrete panels had bats in them within a month, but not all units were successful. Site location seemed to be the most important factor, and units placed in bridges with signs of previous night roosting were most likely to succeed.

The studies led to the conclusion that, at little or no extra cost to taxpayers, it's possible for transportation departments to include bat-friendly habitat in bridges and

culverts. Designers only have to provide crevices of appropriate size and width during new construction. Standard bridge designs often have crevices formed by expansion joints or seams along segmented pieces. Culverts, although similar in form to caves, are often overlooked as bat-friendly highway habitats.



Yet culverts have been found supporting nursery colonies of more than 35,000 cave bats (*Myotis velifer*) in areas where bat habitat is plentiful but roosts are few, such as the mesquite-wooded plains of South Texas.

TxDOT went one step further, asking BCI to study how the presence of bats in a bridge or culvert affects public safety, workman safety, water quality, structural integrity, and the welfare of the bats. In all cases, when properly managed, bats allowed to remain undisturbed did not put the public or workmen at risk. Further, water quality was not affected, and structural integrity was not altered, even in an old concrete structure known to have been occupied for 70 years. The colony of about 1.5 million bats roosting in Austin's Congress Avenue bridge offers an excellent demonstration. Water quality beneath the bridge has been unaffected, and since installation of English and Spanish educational signs warning people not to handle grounded bats, not a single health-related incident has occurred in this heavily populated and visited area. Initially perceived as a threat to Austin citizens, the Congress Avenue bridge colony has now become one of the city's most popular tourist attractions.

As with any good study, more questions were created than there was time or resources to answer. These will be addressed when a larger, two-year study is launched at the national level. All states contacted have been cooperative, and we currently have funding partnerships with the Federal Highway Administration and eight state transportation or wildlife conservation departments. In a few years,

the resulting information will be compiled into a technical bulletin that state highway departments can use as a planning guide for inclusion of bat-friendly habitat where appropriate. Altering even one percent of America's bridges for bat use could help tens of millions of bats, including endangered species.

Understanding the role bridges and culverts can play in bat conservation contributes yet another tool to our ability to coexist with some of our most valuable wildlife allies.

For more information about the bats and bridges study or adapting bridges and culverts for bat habitat, contact Mark Bloschock in the Design Division's Bridge Design Section, (512) 416-2178. For a free copy of TxDOT's "Bats 'N' Bridges" brochure, contact ENV's Jim Dobbins at (512-416-3006), or by GroupWise e-mail to JDOBBINS.

JUST THE FACTS

Bat preferences as determined by the Texas Bats and Bridges Project:

- Central Texas bridges made of concrete that have vertical crevices three-quarters to one inch wide and at least 12 inches deep, and that are more than 10 feet above ground and covered at the top, have a 94 percent chance of being occupied by bats as day roosts.
- Many bat species prefer crevices that are warmer than ambient temperatures and positioned high on the bridge. Spaces as narrow as half an inch are often used, especially by the smallest species.

Ask the expert

Why do archeologists dig so many trenches?

(Editor's note: This is the first in what we hope will become a series of "Ask the Expert" columns. TxDOT personnel can send questions to ENVision via intra-office mail, c/o Richard Goldsmith, ENV/RA 118/3rd floor, or via GroupWise to RGOLDSML.)

By **NANCY KENMOTSU**
Environmental Affairs Div.

For years, district staff have watched (and helped) ENV archeologists dig small round holes, called shovel tests, up and down the right of way. Now we often have trenches dug with a backhoe or gradall. So why, you ask, are archeologists now requesting trenches? Great question, and one that more than one district has asked. After all, trenching requires use of both district equipment and personnel, something not readily available in these times of reduced staff.

The answer is that the work

must demonstrate to the regulatory agency – the Texas Historical Commission (THC) – and to the public, that TxDOT has truly made a reasonable and good faith effort to identify sites that may be impacted by the proposed project – whether the project is a small bridge replacement or a new loop.

In some places, shovel tests are still a good way to demonstrate that TxDOT has made that effort. But along streams or, other settings with deep soil, trenches are often the most efficient, cost-effective way to demonstrate TxDOT's case.

Most archeological sites are buried, often deeper than arm's length and lower than the depth a shovel can reach in a small test hole, but not deeper than the proposed impacts.

Even when a site is found using a shovel test, the knowledge of what it is – how deep, what it contains, etc. – is confined to those narrow windows you just sweated to dig. It is akin to saying, "Gee, I found a needle in the haystack, but what does it mean, who put it there, and when?"

To answer those questions, archeologists have to go back a second time to get a better look. Often they dig trenches to get that better look. Digging trenches the first time will avoid the second look.

Trenches also have the advantage of quickly determining whether an archeological deposit is present. With the heavy letting schedule, time is precious. The difference in making a letting deadline can hinge on trenching.

Finally, in project areas with deep soils where archeologists conducted surveys but found no sites, TxDOT makes a far more convincing case to regulating agencies and the public if that effort included trenches. Trenches act as "windows" that increase the confidence level of archeologists' recommendations to TxDOT, FHWA, and the THC. The bottom line: trenches have improved our look at buried sites, can determine more quickly whether sites are present, and improve TxDOT's ability to convince regulators of its recommendations. ENV archeologists hope districts will bear with us; we will keep asking for gradalls and backhoes.

Contractor helps with project surveys

By **LAIN ELLIS**
Environmental Affairs Div.

A record year for construction funds also created a record year for projects that need archeological field inspections.

Though the ENV archeology staff is spread thin, field inspections have kept up with the letting schedule. But, with half a year left, it will be a challenge. For example, the fiscal '99 schedule for the Paris District alone lists 45 projects that warrant field inspections of some kind. That's about one project every week. Thus, the Paris District alone has work amounting to a full-time job for a productive archeologist even without "other duties as assigned."

To help ENV meet its commitment to another consecutive year in which archeological surveys do not cause a missed letting, we have

awarded and implemented a one-year, \$150,000 indefinite delivery order contract to Prewitt and Associates, Inc. (PAI), an Austin firm that has performed archeological services for many years. If TxDOT chooses to do so, the contract can be extended a year for an additional \$150,000.

The contract covers the Atlanta, Paris, Dallas, Fort Worth and Waco Districts, and provides for three types of field inspections: impact evaluations, standard surveys, and surveys with a geoarcheological component.

Impact evaluations look at existing conditions, such as previous impacts and topography. If a project area is obviously disturbed enough at depths to be impacted by construction, or if its topographic setting is inappropriate, a survey is usually not needed because

even if a site is there, it won't meet integrity criteria needed to warrant archeological research.

Surveys are more detailed field inspections that involve an impact evaluation and an effort to determine whether archeological sites are present.

Geoarcheological surveys involve a geologically trained specialist who evaluates sites for intactness under conditions where evidence of disturbance or inappropriate topography may be less obvious.

The contract was awarded by competitive bid based on bidder qualifications and price for each type of field inspection. Work orders initiate and specify the type of inspection needed and provide the contractor with information about the project.

The contract sets deadlines to start and complete work. The contract also specifies that

acceptance of reports by the Texas Historical Commission, the agency that regulates TxDOT on archeological issues, is the benchmark for successful performance.

So far, PAI has met or beat delivery deadlines and is highly cooperative in working with TxDOT to accommodate fast-track projects. The THC has accepted all of PAI's reports to date.

ENV developed this contract as a prototype for similar contracts covering other districts and other standard services. The contract appears to be a sound mechanism for acquiring outside services. Nonetheless, ENV is reviewing the contract award and management process to identify strengths and weaknesses of the award process, the contract itself, and the best ways to use it to fulfill division and district goals.

PPA and PM sections reorganized

ENV said goodbye to seven staff members, promoted two if its own, aided a staffer after a terrible housefire and reorganized two sections in the last quarter of 1998.

The **Pollution Prevention and Abatement (PPA) Section's Air and Noise Branch** staff was moved to the **Project Management Section (PM)** as of late last year. PPA was renamed the **Hazardous Materials Management Section (HMM)** to reflect its new focus on hazardous materials issues. HMM consists of the Operations and Maintenance Branch and the Project Development Branch.

HMM's Project Development Branch is supervised by **Jim Barta**, who came to ENV Jan. 4 from the Texas Railroad Commission's Remediation Section, Oil and Gas Division. Barta has 23 years in the environmental engineering field. He has environmental engineering consulting as well as state regulatory agency

experience.

David Dunlap, director of the **Natural Resources Management Section (NRM)**, promoted two members of his staff to fill two branch manager positions.

Ken Holmes will supervise the **Biological Resources Management Branch**. Holmes started in December 1995 as one of ENV's project managers. However, he quickly returned to his roots as a biologist, transferring to the Biological Resources Management Branch in April 1996. Prior to coming to TxDOT, Ken worked as a wildlife biologist and renewable resources advisor for the Bureau of Land Management (BLM) in New Mexico.

Tom Remaley, P.E., will supervise the **Water Resources Management Branch**. Remaley came to ENV as a water resources specialist after several years at the Texas Natural Resource Conservation Commission (TNRCC). His most recent experience at TNRCC

was as manager of the Standards and Assessment Section, experience that will serve him and TxDOT well in his new position.

Archeologist **Barbara Hickman's** home burned Nov. 18, destroying about two-thirds of the house and many irreplaceable family items such as photos. Three of Hickman's five cats also died in the fire and another cat was seriously injured. Hickman's co-workers in the **Cultural Resources Management Section (CRM)** have helped her sift through the remains to recover what could be saved.

"This is one of those things you can't get by without help because it's so overwhelming," Hickman said. She will live in an apartment until March while her house is rebuilt.

Kim Jenkins, a biologist with **NRM**, left Dec. 1 to move to Phoenix, Ariz., and take a new job with Entranco, a consulting firm. Jenkins came to Austin from El Paso, where she grew up, 17 years ago to attend the University of Texas. She was with ENV for about four years. Jenkins said she took the job in Phoenix for a change of scenery and to be closer to her family, scattered across New Mexico and Arizona.

Amy Arnold, a contract historian with the Texas Historical Commission working within ENV, left Dec. 11 to move back to her native Michigan where she will join that state's Historical Preservation Office. Arnold worked on TxDOT's historical bridge survey while she was here. In Lansing she will work with local communities on their historical districts and on the issue of lighthouses.

Vicki Grieve, also a THC contract historian, left ENV Dec. 18 after only four months to take a job in Washington, D.C., with the Parks and Historical Association, a non-profit group that raises money for National Parks Service facilities in the District of Columbia-Virginia-Maryland area. Grieve will write interpretive materials about parks located in those areas. The move puts her closer to her native Philadelphia and her family, she says.

Patricia Hardy, a project manager in **PM**, left ENV Jan. 15 after about four months. Hardy took a job with Turner Collie & Braden, Inc., an environmental consulting firm, in that company's Houston office. Hardy grew up in Houston.

Scott Christopherson, in **HMM**, left ENV Dec. 31 after two and a half years with the division. He will move to the Texas Parks and Wildlife Department where he will apply his civil engineering degree to the parks system's infrastructure issues.

Leandra Martinez, ENV's human resource specialist since June, began a new job Jan. 18 with the Maintenance Division. The move meant a promotion for Martinez.

Jan S. Woolverton, a 22-year veteran of TxDOT replaces Martinez as of Feb. 8. Woolverton has more than 17 years experience in human resources and payroll. She comes to ENV from the Vehicle Titles and Registration Division.



Jamandre's Jumbly Word Jambalaya

by Orlando Villa Jamandre Jr.

Unscramble the five jumbled words (one letter to each circle or square) to form five ordinary words and arrange the circled letters to form the puzzle answer.



Where to learn more about Texas' endangered tooth cave spider...

Print your answers in the circles below.

“○○ ○○○ ○○○ ○○○○”

Answers on back page.

MISTIL

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FIELDWIL

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**Environmental Affairs Division
125 East 11th Street
Austin, Texas 78701-2483**

Address correction requested



Jumbly Word Jambalaya Answers

Where to learn more about Texas' endangered tooth cave spider...**"AT ITS WEB SITE"**

LIMITS PLATEAU HABITAT PROTECTS WILDLIFE

The tooth cave spider, *Neoleptoneta myopica*, is a small (1.6mm), pale colored, long-legged spider with reduced eyes. Listed as an endangered species in 1988, the tooth cave spider inhabits caves of the Jollyville Plateau in Travis County, Texas. Reasons for decline include habitat alteration due to development, limited distribution, and disturbance by humans, pesticides, and fire ants. For more information about the tooth cave spider, visit the Texas Parks and Wildlife web site at <http://www.tpwd.state.tx.us/nature/endang/toothcsp.htm>

Special thanks to Kim Jenkins for assistance with this puzzle – Good Luck and Best Wishes in Arizona!



Waco District Photo

TxDOT Environment Affairs Division and Waco District staff (right) plant a tree at the Waco District's Belton Area Office, Jan. 21 to recognize the Area Office for winning the 1998 TxDOT Environmental Achievement Award. From the left are: Environmental Affairs Director Dianna Noble, Bell County Area Office Inspection Supervisor Ricky Hairston, Belton Area Engineer Jim Cowan, Waco District Engineer Richard Skopik.

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We welcome ideas for stories and standing features. Submit those to the above address, attention Richard

Goldsmith, phone 512-416-2743 or via GroupWise to RGOLDSMI.

Is ENVision going to the right person in your organization? Please contact us to correct an address or to suggest additions to the mailing list.



RECYCLED PAPER
SOY-BASED INK



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