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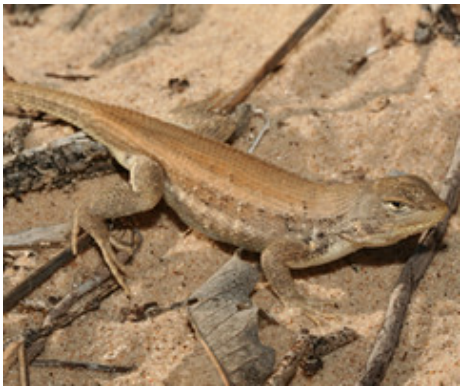
Conservation Matters

THE TEXAS LAND, WATER AND WILDLIFE CONNECTION

A publication of the Texas Water Resources Institute and the Texas A&M Institute of Renewable Natural Resources

Dunes sagebrush lizard Texas Conservation Plan approved



A voluntary species conservation plan for the dunes sagebrush lizard was approved **Feb. 17** by the U.S. Fish and Wildlife Service (FWS).

The Texas Conservation Plan (TCP) for the dunes sagebrush lizard was spearheaded by Texas Comptroller Susan Combs with the help of stakeholders representing landowners, the oil and gas industry, agriculture and state and federal agencies.

The TCP is a voluntary plan that serves as a safety net for landowners and businesses in West Texas who choose to enroll, according to the comptroller.

"This is great news for the Texas economy and all the people who put in hard work to develop this vital plan," Combs said. "I strongly oppose listing the dunes sagebrush lizard as an endangered species. What the TCP offers is a way to conserve lizard habitat while allowing vital sectors of the economy such as the oil and gas industry and agriculture to thrive in Texas."

FWS has reopened the comment period for 15 days on its 2010 proposal to add the lizard to the Federal List of Endangered and Threatened Wildlife to allow the public to review and consider the conservation measures provided in the TCP, as part of the agency's final listing determination. Written comments must be received by FWS on or before **March 12**, and more information on submitting comments is available at southwest.fws.gov.

According to the comptroller, she opposes the listing of the lizard because existing scientific data is inadequate to support the listing and she continues to ask the FWS not to list the species.

This past year, the oil and gas industry funded Texas A&M University researchers to collect data on the species. Their work identified 28 previously unknown locations for the species. The entire research report is available from the Texas A&M Institute of Renewable Natural Resources.

For more information, see the comptroller's website, the full news release from the comptroller and the full news release from FWS.

The drought persists, says state climatologist

Despite recent rains, much of Texas is still in a severe drought and the long-term outlook is mixed, according to **Dr. John Nielsen-Gammon**, Regents Professor in the Department of Atmospheric Sciences and state climatologist.

Nielsen-Gammon said recent rains have helped to alleviate conditions over parts of the state, with some areas reporting the wettest February ever. But much of Texas still needs a lot of rainfall to break a year-long drought that has been one of the worst in history, he said.

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"Both December and January were above normal for Texas rainfall, and combined, October through January were near normal," Nielsen-Gammon said.

"But despite recent rains at the end of the year, when the final numbers are in, calendar year 2011 rainfall will probably come in second to 1917 for the driest year on record.

"A few counties in the Dallas area are now drought-free, according to the U.S. Drought Monitor, but in most of the rest of the state, the recent rains have only partly improved conditions."

Many of the state's lakes and reservoirs have yet to recover, said Nielsen-Gammon.

"Most reservoirs in the Dallas area are full, and some in Northeast and East Texas have shown substantial improvement since last fall," he said. "At the same time, most major reservoirs in western and southern Texas have yet to show much improvement.

"It takes time for reservoirs to fill," he said. "The first rains simply make the top of the soil moist. The next storms will allow water to penetrate deeper into the soil and to start producing runoff as the soil cannot absorb much more water. Lakes and reservoirs are typically the last to respond to changing drought conditions."

Nielsen-Gammon said that the soil situation can be compared to what he calls the "dunked biscotti" model named after the Italian hard biscuit. "Like a dunked biscotti, the outer layer of the ground is moist and loose, while deeper layers are still dry and crunchy," he says.

Long-range forecasts are not especially rosy, he said.

"Although this La Niña year has been relatively wet, the Climate Prediction Center is still calling for below-normal rainfall through June," Nielsen-Gammon said. "At this rate, we might end up with one of those rare wet La Niña years, which would be great.

"A large portion of our rain typically falls in May, and this spring will make the difference for reservoirs in drier portions of the state. By summertime, the odds have evened out and it could easily be wet or dry. But the bad news is that the summer forecast calls for enhanced chance of above-normal temperatures, which would increase evaporation and water demands."

Read the full article at TAMU Times.

IRNR researchers provide new insights on endangered golden-cheeked warblers

Scientists on the Research and Management System for Endangered Species (RAMSES) team have covered a lot of ground in the past several years, conducting intensive studies in counties all over Texas for two avian species that are critical to local land management decisions.

These projects are supported by the Texas A&M Institute of Renewable Natural Resources (IRNR) and aim to determine the distribution and abundance of the golden-cheeked warbler (*Setophaga chrysoparia*) and the black-capped vireo (*Vireo atricapilla*). Both species' breeding ranges are in central Texas.

The golden-cheeked warbler was designated as federally endangered in 1990 because of concerns about a small population size and loss and fragmentation of its woodland habitat. Since then, abundance estimates for the species have mainly relied on localized population studies on public lands and qualitative-based methods.

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"Since there was a lack of data for private lands, we wanted our surveys to include private landowners, which entailed doing hours and hours of additional leg-work," said **Heather Mathewson**, assistant research scientist at IRNR. "Then, from 2008–2009 we sent out field crews that surveyed warbler populations all across Texas and on those cooperative landowners' properties."

These surveys built upon work that was started on this species by the research team several years earlier. Based on that field data gathered across the breeding range, Mathewson said, the team then produced the first spatially explicit predictive model of distribution and abundance for golden-cheeked warbler. A spatially explicit model provides estimates based on features of the birds' habitat as they change across the range of the species.

"The model provides probability of occurrence of male warblers, according to the type and size of the vegetation, and it also provides a prediction of how many birds might be there, or an estimate of abundance," she said.

"So, this model is useful to landowners, conservationists, and developers because it provides a predicted estimate of the potential loss of warblers given various changes to the landscape, such as vegetation removal. It gives them the ability to evaluate the consequences of losing warbler habitat, which is important because of the costs of mitigating for loss of an endangered species' habitat."

The researchers recently had three peer-reviewed journal articles published stemming from the golden-cheeked warbler statewide project, adding to the growing body of publications on this species being generated by the team.

Although black-capped vireo is a neighboring species to the warbler, their differences presented the RAMSES group with challenges.

"Working with vireos is very different than working with warblers," Mathewson said. "Warblers almost always choose older oak-juniper woodlands, and it's been previously believed that vireos usually choose the opposite—more early successional vegetation, but we've found that black-capped vireo habitat varies greatly across the breeding range in Texas, and that makes modeling more complex."

In 2009 and 2010, RAMSES researchers conducted a statewide survey for vireos, with the goal of developing a distribution model that can estimate the probability of vireo occurrence based on landscape and vegetative characteristics, which would be the first model of its kind.

"Because of this habitat variability, we are now conducting further surveys so that we can perfect the potential model for black-capped vireo and make it most effective for land conservation decision makers," she said.

Graduate students, primarily from the Department of Wildlife and Fisheries Sciences, form a central part of the RAMSES team. Their work covers everything from factors that affect reproduction for the two species, drought and wildfire effects on the species, and the effects of oak wilt, Mathewson said.

"We are also sincerely grateful to the landowners who allowed us access during our field work, since the majority of the surveys for both species occurred on private properties," she said.

RAMSES statewide research is supported by Texas Department of Transportation, with contributions from the U.S. Department of Defense, The Nature Conservancy, U.S. Fish and Wildlife Service, and Texas Parks and Wildlife Department.

For more information and to view the RAMSES team's publications, visit irnr.tamu.edu/ramses.

Attoyac Bayou partnership March 8 meeting will continue watershed planning

The Attoyac Bayou Watershed Partnership will hold its next meeting **March 8** to continue discussions on the development of the Attoyac Bayou watershed protection plan.

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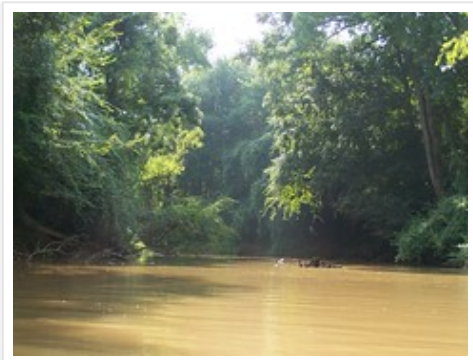

The meeting, hosted by the Texas AgriLife Extension Service and the Texas State Soil and Water Conservation Board, will be from 6–8 p.m. at the Nacogdoches County Farm Bureau Conference Facility, 2302 NW Stallings Drive in Nacogdoches. Registration begins at 5:30 p.m.

"Anyone interested in protecting and restoring water quality in the Attoyac Bayou and improving or protecting its watershed is invited to the meeting," said **Crispin Skinner**, Prairie View A&M University Cooperative Extension Program agriculture and natural resources agent for Nacogdoches County.

"The meeting will focus on continuing discussions on developing the watershed protection plan," said **Lucas Gregory**, Texas Water Resources Institute project manager. "Specifically, this meeting will include a presentation comparing stream flow to monitored water-quality data, an overview of potential management practices to consider including in the plan, the presentation of initial SELECT model outputs, and the distribution of several draft chapters of the watershed protection plan."

Gregory said model inputs were the primary topic of discussion at the **Dec. 8** meeting.

"The decisions made at that meeting were fed directly into this model, and the draft outputs that will be presented are a direct reflection of the input provided by partnership members," he said.

Anthony Castilaw of Catislaw Environmental Services, Attoyac Bayou watershed coordinator, said the content of this meeting will build off of previous meetings and get the partnership one step closer to the goal of developing an effective watershed protection plan for the Attoyac Bayou.

"The information presented here was developed using local watershed information and provides useful guidance for further fleshing out the watershed protection plan," Skinner added. "The thing stakeholders need to remember is that this plan will only be as good as the information that goes into its development. Continued local participation in this process is critical."

Several chapters of the Attoyac Bayou Watershed Protection Plan, including the "Watershed Management Approach," "Watershed History," "Watershed Characteristics" and "Watershed Source Survey," will be distributed at this meeting.

"We want partnership members to review them at their leisure and have time to provide comments to project personnel so they can be addressed in a timely fashion," Skinner said. "As always, watershed stakeholders are strongly urged to attend all partnership meetings and become directly involved in this process. These meetings provide a direct opportunity to participate in developing the watershed protection plan and ensure that it meets local needs."

Funding for the development and support of the Attoyac Bayou Watershed Protection Plan is through a Clean Water Act grant provided by the Texas State Soil and Water Conservation Board and U.S. Environmental Protection Agency.

For more information, see attoyac.tamu.edu, or contact Gregory at lfgregory@ag.tamu.edu or 979.845.7869.

Corpus Christi drought symposium on March 6

Recovering from the historic drought of 2011 will be the focus of the Drought Management Symposium for Range and Pastures, set for **March 6** at the Texas AgriLife Research and Extension Center, 10345 State Highway 44, Corpus Christi.

"Despite recent rainfall, our subsoils remain moisture-starved as we still need 15 to 20 inches to restore the rainfall we didn't get last year," said **Jeffrey Stapper**, a Texas AgriLife Extension Service agent in Nueces County.

Morning topics will include forage management and grazing systems, designing an early drought warning system, the economic impact of stocking strategies and different forage production systems, meeting animal nutrient needs with forage ma

rangeland response and toxic weed identification.

Afternoon topics include a Farm Service Agency update and support programs, insect pest control in drought, rainwater harvesting for livestock and wildlife, risk management with pasture insurance, weed and brush control options, and a weather outlook for the spring.

Continuing education units will be offered for pesticide applicators and certified crop advisors, Stapper said. Registration is $20 and includes lunch. Register by contacting the AgriLife Extension office in Nueces County at 361.767.5223 before **March 2**. The symposium is sponsored by Texas AgriLife Research and AgriLife Extension.

Read the full article on AgriLife TODAY.

Harlingen Irrigation District's conservation projects receive global recognition

A group of water conservation initiatives developed and promoted by the Harlingen Irrigation District (HID) of Cameron County was recognized as one of nine global "good practice" projects included in a special report presented to the World Economic Forum in Davos, Switzerland, in January.

A Catalogue of Good Practices in Water Use Efficiency highlights agricultural, municipal and industrial water efficiency and conservation projects that can be replicated elsewhere. The catalogue was prepared by the Stockholm International Water Institute, and it defines a "good practice" project as one that "demonstrably improves the efficiency or productivity of water use (through water savings and/or yield increase)."

The district, which manages 52,000 acre-feet of water for irrigation use in agricultural operations in the Lower Rio Grande Valley, was recognized for its innovation and technological advances in the area of irrigation flow control and water usage measurement.

"This project has proved that proper management, regardless of the method of irrigation, actually can produce increased yields with less water," said HID General Manager Wayne Halbert. "Our results can be replicated across Texas and the entire world."

In 2004, HID was awarded a 10-year grant under the Agricultural Water Conservation Demonstration Initiative Program of the Texas Water Development Board to promote water conservation while maintaining or increasing profitability on farms. HID's efforts focused on developing a water distribution network control and management system and promoting on-farm irrigation techniques in a large-scale demonstration of cost-effective technologies. HID's SCADA system (Supervisory Control and Data Acquisition) allows it to monitor and control processes distributed among various remote sites, facilitating communications between those sites and the central facility and providing the necessary data to control processes.

HID supports the SCADA system with several other initiatives:

- A Flow Meter Calibration and Demonstration Facility, the first in Texas according to HID, that can simulate various options for irrigation systems, allowing for more informed decisions about irrigation techniques and water conservation.
- Collection of on-farm flow measurement data through automatic meters installed throughout the District's 250-mile irrigation system.
- A demonstration of web-based information system that reports weather, real time flows, and a user accounting system.
- Design of low-cost automatic gates for irrigation canals and low-cost remote telemetry units to measure water levels and soil moisture.

HID surveys conducted in 2009 and 2010 showed that these innovative irrigation system controls and data streams achieved water savings of nearly 35 percent.

AW Blair Engineering, the Texas AgriLife Extension Service, and Texas A&M University Kingsville provide consulting the various projects. Additional funding has been provided by U.S. Bureau of Reclamation and the North American

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Bank and by the District, its consulting partners, Delta Lake Irrigation District, Netafim, and USDA-EQIP.

For more information see the Catalogue of Good Practices in Water Use Efficiency, where HID is featured starting on page 11, or read the full HID news release.

Learn how to raise trophy bass at management seminar March 23–24 in Athens

As many landowners have learned, you just don't stock a pond or lake with largemouth bass and automatically get trophy-size fish, according to a Texas AgriLife Extension Service expert.

Growing big fish takes top management, which can be learned at "Bass Tech: The Technology to Manage for Success," a statewide symposium set **March 23–24** at the Texas Freshwater Fisheries Center Conservation Center Building, 5550 Farm-to-Market Road 2495, Athens, said **Dr. Billy Higginbotham**, AgriLife Extension wildlife and fisheries specialist.

"Many of the small- to medium-size lakes and ponds have caught water," he said. "There are many ponds that are still below their normal pool levels, but certainly, throughout much of the state ponds have recovered to a great degree."

There are more than a million private impoundments in the state, many of which could be used for increased recreation through bass fishing with better management, Higginbotham said.

Session presentations and tours will include Basic Pond Ecology, Water Quality, Pond Fertilization, Do-It-Yourself Fish Population Assessment and Corrective Stockings, Better Bass Fishing Through Genetics, Trophy Bass Management, Identifying and Controlling Nuisance Wildlife, Aquatic Weed Identification and Control, Feeding, Seining and Electrofishing Demonstration, and Aging Largemouth Bass Using Otoliths.

"An otolith is a bony structure that lays down annual rings so it can be used to determine the age of a fish," Higginbotham said. "The workshop will demonstrate how to remove and use otoliths to determine the age of a fish. This age determination is useful in estimating growth rates and reproductive success by year."

Registration for the training is $70 by **March 16** and $100 thereafter. Participants may register online at agriliferegister.tamu.edu or by calling 979.845.2604. A catered lunch and break refreshments will be included in the registration fee. In addition, each registrant will receive a CD of the proceedings, speaker notes and a copy of Higginbotham's "Wildlife and Fish Management Calendar."

For more information, contact Higginbotham at 903.834.6191 or b-higginbotham@tamu.edu, or **Dr. Michael Masser**, AgriLife Extension fisheries specialist, College Station, at 979-845-7370 or m-masser@tamu.edu.

Read the full article at AgriLife TODAY.

New Publications/Papers and Training Courses

Bacterial Source Tracking: An introduction for laboratories and public agencies to the foremost tool for identifying sources of fecal pollution**, G. Di Giovanni, L. Lee, B. VanDelist**, Texas Water Resources Institute, EM-110, 2012

According to the 2010 Texas Integrated Report, there are 303 bacterially impaired waterbodies in Texas. Nonpoint sources (NPS) of pollution greatly affect water quality. Identifying and assessing sources of fecal pollution is a key component in effective implementing a NPS pollution management program. Proper evaluation of these sources is needed to properly asse

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Stormwater Management: Rain Gardens, **Fouad Jaber, Dotty Woodson, Christina LaChance, Charriss York**, Texas AgriLife Extension Service, B-6247, 2012

This publication discusses the design, construction and maintenance of rain gardens as a stormwater best management practice.

Feral Hogs Negatively Affect Native Plant Communities, **Jared Timmons, Blake Alldredge, William E. Rogers, James Cathey**, Texas AgriLife Extension Service, SP-467, 2012

This publication presents methods and findings of research conducted in the Big Thicket National Preserve to determine the effects of feral hogs on native plant communities. It includes management recommendations to reduce the impact of feral hogs on these communities.

Water Education through Service Learning, **Derrick Bruton**, Texas AgriLife Extension Service, SP-469, 2012

This publication explains how creating and participating in a service project can help youths learn to identify and address local water conservation issues. Benefits of such a project include not only protecting and enhancing water resources, but also helping young people broaden their level of caring beyond themselves.

TWRI and IRNR Training Courses

Introduction to ArcGIS 10	March 27–28
SWAT for Beginners	May 21–22
Advanced Data Processing for ArcSWAT	May 23
SWAT for Advanced Users	May 24–25

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