

# SOUTH TEXAS WILDLIFE



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at Texas A&M University-Kingsville

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## **AFLATOXIN: WHAT CAN A RANCH MANAGER DO?**

*by Scott Henke*

It was a cool, crisp spring morning in southern Texas. I was loading my pickup truck with several bags of corn that I had stored in my barn for the past few months. One bag felt lighter than the others, and then I saw why. I was spilling corn onto

Editor's Note: Dr. Scott Henke is a Research Scientist at CKWRI and Regents Professor and Department Chair of Animal, Rangeland, and Wildlife Sciences at Texas A&M University-Kingsville.

the ground as I carried the bag from the barn to my truck. Apparently, a rat had chewed a hole in the bag.

I shook my head thinking to myself it was my fault for allowing the bags to sit in the barn for months before I used them. The bottom bags of corn were still wet from a recent storm that flooded the floor of my barn. After grabbing a few extra bags of corn, I drove off to fill my quail feeders.

As I opened the first feeder, I noticed that a lot of condensation had accumulated on the inside of the metal container. I thought to

myself, "Well the South Texas heat will evaporate the condensation in no time." The feeder was only half-empty so it took only one bag to fill it to the top. I then moved on to my second feeder. This one also had condensation on the inside of the feed container, but in addition I noticed that the remaining corn was stuck together, and it was a bit moldy. I broke apart the pieces that were stuck together so the corn could pass through the spin cast; I threw the bigger chunks on the ground and then refilled the feeder. I filled this feeder with the bag that had the rodent hole chewed in it. I also saw this bag had bugs crawling on the corn. I thought, "Well, in nature quail eat bugs so this feeder would have added protein for the quail when they feed." The temperature and humidity continued to rise with each passing hour as I continued to fill feeders on the ranch. I thought to myself that it's going to be another hot and humid day in South Texas.

Does this story sound familiar? It's most likely a common scenario

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## By The Numbers

- 3 number of bat species currently listed as threatened in Texas: Rafinesque's big-eared bat, southern yellow bat, and spotted bat ([http://tpwd.texas.gov/huntwild/wild/wildlife\\_diversity/nongame/listed-species/](http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/listed-species/))
- 8–9.8 wingspan in feet of the American white pelican (Handbook of Birds of the World, Vol. 1, del Hoyo et al., Lynx Edicions)



© Timothy Fulbright

Besides quail feeders, deer feeders are another point source of potential hazard for quail and other birds if the feeders are not closely monitored for fungus production and fungal control measures are not taken.

experienced by Texas ranchers thinking they are helping quail by feeding them corn. However, the above story is beset with problems—problems that promote the production of aflatoxin.

Aflatoxin is a harmful fungal metabolite of the soil fungi *Aspergillus flavus* and *Aspergillus parasiticus*, both of which can negatively affect quail and other

small birds. Aflatoxin can cause cancer, genetic mutations, and birth defects in various animals. In birds, aflatoxin also can negatively affect metabolism resulting in weight loss, and can reduce immune system function resulting in poor general health—findings supported by research conducted at the CKWRI. Drs. Alan Fedynich, Scott Henke, and Greta Schuster have been investigating the problems of aflatoxin on birds for several years and have produced a CKWRI Management Bulletin concerning aflatoxin. The bulletin contains information about what aflatoxin is, how it is produced, and how it affects wildlife. In addition, it offers suggestions of what can be done to help reduce the risks of accidentally feeding aflatoxin. The bulletin should be available in print and on-line (<http://ckwri.tamuk.edu/>) by the end of the year.

For those who are far too curious as to the problems contained in the story of the manager filling his quail feeders, see the box below. ~

### Potential problems with aflatoxin and management recommendations for mitigation.

1. Aflatoxin can be produced even during storage—don't store grain more than 2 months.
2. Open bags are susceptible to insect infestation, which can increase aflatoxin production.
3. Grain moisture greater than 13% increases potential aflatoxin production. Store grain in a dry environment and off the ground to avoid potential flooding conditions.
4. Metal feeders are more susceptible to inside condensation buildup than plastic feeders under the same environmental conditions. The increase in moisture of grain kernels along the sides of the feeder can help to increase aflatoxin production.
5. Contaminated grain can spoil new or clean grain. Solution: Don't place 'clean' grain on top of potentially contaminated grain.
6. If you have moldy grain, burn or bury it so as to not expose wildlife to aflatoxin.
7. Hot and humid environments have greater potential for aflatoxin production. Store grain in climate-controlled locations if possible. If climate-controlled storage is not available, store in a covered, well-ventilated building away from places where water can infiltrate through openings. Consider storing on concrete or wooden (not dirt) floors using pallets to allow air to circulate below, as well as around, the bags of grain.

## CKWRI NEWS

### CKWRI Receives the B&C Conservation and Stewardship Award

The CKWRI was awarded the prestigious *Conservation and Stewardship Award* by the Boone and Crockett Club at the 81st North American Wildlife and Natural Resources Conference held in Pitts-



Pictured L to R: Steve Williams—President of the Wildlife Management Institute, Dr. Fred Bryant, Tio Kleberg, Morrie Stevens—President of the Boone and Crockett Club, and Dr. David Hewitt with the *Conservation and Stewardship Award* from the Boone and Crockett Club.

burg, PA. This award is presented annually to the organization that best exemplifies core values of the Boone and Crockett Club and its founder, Theodore Roosevelt: Conservation: acts of guarding, protecting, developing, and using natural resources wisely and sustainability, and Stewardship: planning for and managing natural resources responsibly.

With this award the Boone and Crockett Club celebrates the past, present, and future of the CKWRI as representing the highest standard of excellence in combined applied conservation research, management, and stewardship.

### Dr. Ballard Recognized for Wetland Conservation

We are pleased to announce that **Dr. Bart Ballard** was awarded the Ducks Unlimited 2016 *Wetland Conservation Achievement Award* in the Research/Technical category during the 81st North American



Dr. Bart Ballard was the recipient of the 2016 Wetland Conservation Achievement Award from Ducks Unlimited.

Wildlife and Natural Resources Conference held in Pittsburgh, PA. Bart holds the *C. Berdon and Rolanette Lawrence Endowed Chair in Waterfowl Research* at the CKWRI. Congratulations to Bart for his passion and hard work toward waterfowl conservation in Texas.

**Hermès of Paris Visit**

Naturally, one would think that the pairing between a wildlife



Dr. Fred Bryant (L) presenting a Legend of the beautiful Caesar Kleberg scarf to Robert Chavez, President of the U.S. branch of Hermès of Paris (photo taken at the Hermès U.S. Office in New York).

research institute and a French manufacturer known the world over for their luxury goods would be an unlikely combination. But, bringing the CKWRI and Hermès of Paris together by **Janell Kleberg** proved to be a huge success. Kermit Oliver, the only American artist to be contracted by Hermès, developed an art piece for a scarf that shows 112

native plants and animals of South Texas. The only scarf ever produced of its kind, it became the fastest selling scarf in Hermès’ history, and the Caesar Kleberg scarf is now sold out. CKWRI personnel created a Legend of the scarf, which identified all 112 species. Only a few were printed, signed, and framed, and were presented to those who were instrumental in developing the scarf. As a result of the scarf’s success, \$90,000 was donated by Hermès to support waterfowl research at the CKWRI.

**Two of Our Own Honored at Harvey Weil Awards Dinner**

CKWRI Advisory Board Member **C. Berdon Lawrence** and CKWRI Research Scientist, Professor, and *Alfred C. Glassell, Jr. Endowed Professor for Quail Research* **Dr. Fidel Hernández** were honored during the Rotary Club of Corpus Christi’s Harvey Weil Sportsman Conservationist Award Dinner held April 9th at the Welder Wildlife Refuge. Mr. Lawrence was named *Conservationist of the Year*. “The Harvey Weil Sportsman Conservationist of the Year honorees exemplify the tradition of the sportsman giving back to the lands and



Cochairs of the Harvey Weil Steering Committee **Mo Morehead (L)** and **Richard Leshin (R)** presenting **C. Berdon Lawrence** with the *Conservationist of the Year Award*.



Cochairs of the Harvey Weil Steering Committee **Mo Morehead (L)** and **Richard Leshin (R)** presenting **Dr. Fidel Hernández** with the *Professional Conservationist of the Year Award*.

waters in measures far beyond the pleasures taken” (<http://www.rotarycc.com/harvey-weil/honorees/>). Fidel was named the *Professional Conservationist of the Year*. “The Professional Conservationist of the Year Award was created to recognize the distinction between individuals who bring passion and conviction to their personal conservation efforts and those who have made this endeavor their life’s work.” Both are to be commended for their outstanding work in wildlife conservation.

**Grad Students win Awards at State and Regional Conferences**

The Texas Society of Mammalogists held its annual meeting February 12–13th in Junction, TX. There, doctoral student **John Leonard** won the “Best Overall Presentation” and received a \$500 award. The presentation was entitled “Diversity of Major Histocompatibility Complex alleles within Texas ocelot populations” and was coauthored by **Drs. Mike Tewes and Randy DeYoung** (CKWRI), **Dr. Jan Janecka** (Texas A&M University), **Dr. Arturo Caso** (Secretaria de Medio Ambient y

**Did You Know?**

The aplomado falcon has been on the federal endangered species list since 1986.

Texas diamondback terrapins spend the day in water or basking in sunlight, but at night they bury themselves in mud. (Texas Diamondback Terrapin; Texas Parks and Wildlife Coastal Wetlands leaflet)

Visit our web page at <http://www.ckwri.tamuk.edu>

Recursos Naturales), and **Drs. Tyler Campbell and Alfonso Ortega-Sanchez, Jr.** (East Foundation).

The Southeast Deer Study Group held its meeting February 15–17th in Charlotte, NC. Of the 16 poster presentations, master’s student **Lindsey Phillips** presented 2, and she won 1st and 2nd place in the competition. The 1st place presentation was “Effects of white-tailed deer and supplemental feeder densities on canopy volume and mast production” and was coauthored by **Drs. Timothy Fulbright, David Hewitt, Charles DeYoung, and David Wester** (CKWRI), **Lindsay Roberts** (CKWRI grad student), **Kim Echols** (Director, Comanche-Faith Deer Research Program), and **Don Draeger** (Comanche Ranch), and the other was “Effects of white-tailed deer and supplemental feeder densities on woody shrub canopy” and was coauthored by **Drs. Timothy Fulbright, David Hewitt, Charles DeYoung, David Wester,**

**Advisory Board**

The Advisory Board of the Caesar Kleberg Wildlife Research Institute provides leadership in all aspects of our work. We are indebted to them for their commitment to CKWRI and its mission.

|  |   |   |
|--|---|---|
| Chad Auler<br>Gus T. Canales<br>T. Dan Friedkin<br>Henry R. Hamman<br>(Chairman)<br>George C. “Tim” Hixon<br>Karen Hunke | A. C. Jones, IV<br>David Winfield Killam<br>Chris C. Kleberg<br>Tio Kleberg<br>C. Berdon Lawrence<br>Kenneth E. Leonard<br>James A. McAllen<br>Ellen B. Randall | Barry Coates Roberts<br>Stuart W. Stedman<br>Buddy Temple<br>(deceased)<br>Ben F. Vaughan, III<br>Bryan Wagner<br>Charles A. Williams |
|--|---|---|

**Lindsay Roberts, Kim Echols, and Don Draeger.**

Our master’s student, **Stephanie Shea**, received the *David A. Becker Memorial Award* and \$300 for the best overall student presentation at the Southwestern Association of Parasitologists meeting held April 14–16th at the University of Oklahoma Biological Station located on Lake Texoma. Her presentation was entitled “Helminths of northern bobwhites from South Texas” and was coauthored by CKWRI scientists **Drs. Alan Fedynich, Lenny**



**Stephanie Shea (L)** receiving a check as part of the *David A. Becker Memorial Award* for best overall student presentation by outgoing president of the Southwestern Association of Parasitologists **Dr. Megan Wise de Valdez.**

**Brennan, and David Wester.** Congratulations to all our hard working researchers for representing the CKWRI. ~

**What Do They Eat?**

Ground skinks feed on “tiny insects, spiders, and other invertebrates.”  
 (<http://srelherp.uga.edu/lizards/scilat.htm>)

The diet of Merriam’s kangaroo rats consists almost entirely of seeds from plants such as “mesquite, creosote bush, purslane, ocotillo, and grama grass,” but also includes some green vegetation and insects.  
 (The Mammals of Texas - Online Edition, W.B. Davis and D.J. Schmidly, Texas Tech University)

**Consider giving a tax-deductible donation to CKWRI**



Caesar Kleberg Wildlife Research Institute  
 700 University Boulevard  
 MSC 218  
 Kingsville, Texas 78363-8202

Editor: Alan Fedynich, Ph.D.

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