



NEWSLETTER

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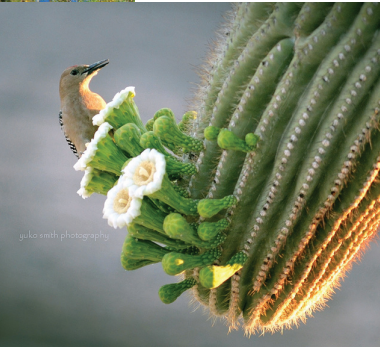
Saguaro – The Largest Cactus in the United States

Written by Jean Luney, Master Naturalist Trainee

At the June monthly meeting of the Rolling Plains Chapter, Jack Murphy made a presentation on Cacti & Succulents. It was so interesting that it made me want to rush right out and buy a cactus. Jack mentioned that the largest cactus in the U. S. is the Saguaro cactus. The Saguaro is exclusive to the Senora Desert, which is located in Arizona. In fact, the Saguaro Cactus Flower is the State flower of Arizona.



Most Saguaro cacti develop branches or arms, as they mature. These arms grow upward and there can be as many as 25. However, some never grow arms. Saguaros are covered with protective spines, as are most cacti, and flower in the late spring, while producing red fruit in the summer. With good weather conditions this cactus can live 150—200 years and can grow between 40-60 feet tall. If fully hydrated, a Saguaro can weigh between



Above: Saguaro Cactus
Above right: Elf Owl **Right:** Gila woodpecker and Saguaro flowers

3,200-4,000 pounds. However, they are very slow growing plants and a ten year old plant may only be 1.5 inches tall.

During my stay in Tucson, Arizona, I made a visit to Saguaro National Park. The cacti there begin to produce flowers at 35 years of age. The blooming season is from late May-June. Being there in October, I missed this beautiful display. However, the cacti themselves are very formidable and impressive. I did get to see some of the many birds that are hosted by the Saguaro. The gilded flicker and the Gila woodpecker excavate nest

LOCALS

JULY 2: Rolling Plains Chapter monthly meeting is at River Bend Nature Center. **Location:** 2200 3rd Street, Wichita Falls, Texas. **Time:** 7:00 p.m. **Program:** Lynn Seman will talk about her Seymour Fossil Trip.

JULY 12-13: Stars Over the Wichitas **Location:** Wichita Mountains Wildlife Refuge near Lawton. Begins 30 minutes after sunset (meet at Boulder Gate). A viewing of bodies in the night sky. Must be a least 8 years old. **For reservations:** (580) 429-2151. **Cost:** \$5.00 per person.

JULY 20: North American Butterfly Association Butterfly Count **Location:** Meet at Lake Arrowhead State Park by the butterfly garden at the park headquarters at 6:00



Above: LASP park interpreter Fernando Barrera with chapter members Jane, Penny and Lynn as they learn about butterflies.

a.m. As the day gets hot quickly, we will take advantage of

the cool morning and try to beat the heat. There is a \$3 fee to participate and this goes directly to NABA to offset the cost of the nationwide counts.

cavities inside the cactus. When these nests are abandoned, elf owls, screech owls, purple martins and finches may move in. Harris and red-tailed hawks build stick nests, among the arms of the Saguaro. Ravens and great horned owls may take over an abandoned hawk nest.

During the blooming season of the Saguaro cactus, the flowers are visited by nectar feeding bats, birds and insects. In the summer, when the fruit grows, this provides food for many of the Senora Desert animals. Each fruit contains 2,000 tiny black seeds, which when eaten by a wren or a coyote, are distributed throughout the desert. A Saguaro cactus can produce 40 million seeds during its lifetime. Only a few will survive to become seedlings and fewer still will become adults. Drought, prolonged freezing and animal eating contribute to a low survival rate.

The Saguaro cactus is not an endangered species and is not subject to blights. In fact, it is a long-lived plant mostly affected only by climate change. However, urban development is a major factor in the loss of habitat and has caused a great reduction in the number of Saguaro cacti. Therefore, the greatest danger to this cactus giant, as with so many other things, is man.

Texas Master Naturalist 15th Anniversary T-shirt Design Contest Deadline is July 30, 2013

The year, 2013, is our Statewide Texas Master Naturalist Program's 15th Anniversary! To celebrate and commemorate this important milestone, we're looking to you to help us develop a limited-edition 15th Anniversary t-shirt for the program through this contest. We know there are some talented Texas Master Naturalists out there to help design that winning t-shirt artwork! The winning design will become the 15th Anniversary, limited edition t-shirt for the TMN program to become available later this year. In addition to being named the contest winner, the artist will have their name on the design wherever it appears in program materials and will receive five of the limited edition shirts for their own use.

All submitted designs should include the following:

- Reference to TMN program's 15th anniversary
- Must include—but is not limited to-- the official TMN program state logo
- In the event any specific species are depicted, they should be species that can be found in all natural ecological regions of Texas.
- T-shirt design (back) dimensions must fit within up to a 12 in. x 12 in. square
- Consider developing a slogan or quote for the design and our 15th Anniversary year
- Designs can be in pencil, crayon, felt tip or paint, or can be done using photos and/or computer drawing or design software.
- Design must be easily scan able to a high resolution file (at least 300 dpi, and preferably higher!)
- Designs must be your own original work and must not contain any third-party logos, trademarks or copyright material outside of the TMN program.
- Submitted designs should be signed (original or electronic) by the artist in the lower right hand corner.
- Designs must be submitted by July 30th, 2013 for consideration in the contest.

Other helpful things to know about...

- Only one winner will be selected for the 15th Anniversary limited-edition t-shirt design contest.
- Minor modifications may have to be made to the design for screen

July 20, 2013—Lake Mineral Wells State Park—**Spider Walk**—Join Park Interpreter, David Owens, at the Amphitheater to learn the importance of spiders in the wild. We'll show slides and talk about the different types of spiders, then focus on the Wolf Spiders. Afterward, we'll take a walk down the Trailway with flashlights watching for the eye shine reflection of the park's Wolf Spiders. Bring your favorite lawn chair. Held at the Lone Star Amphitheater in Lake Mineral Wells State Park, 100 Park Road 71, Mineral Wells, TX, 76067. Accessible for the mobility impaired. The program is free with paid park entrance fee or a State Park Pass. **Time:** 08:30 PM to 10:30 PM **Contact Email:** david.owens@tpwd.state.tx.us **Contact Phone:** (940) 328-1171

In the Works—Lake Arrowhead State Park—**Save the Night Presentation and Workshop**—We are working on bringing an advanced training session to Lake Arrowhead in the next month or two. Cindy Luongo, coordinator for the Texas IDA Lighting assessment project will be presenting a 3-4 hour training program with the Save The Night Presentation and Workshop.



Date and time are still in the works and I will let you know as soon as I know.

Don't Forget! Turn in your hours.

A form for keeping up with your hours is available on the web site. Hours needed for recertification are: 40 hours of public service and 8 hours of advanced training. Advanced training **MUST** be approved in advance. Fill out the form and submit along with any other information about the class to the Executive Committee at least one week before the event.

printing. In that event, the artist will be able to review the final version of the image to ensure the integrity of the design.

- Remember, fine detail such as sketching can be done, but some of the detail could be lost through the digitizing and screen printing process.
- If original artwork is mailed, please take care to protect the piece during transfer. The Texas Master Naturalist Program is not responsible for damaged, lost or missing artwork.
- Final t-shirt color may be selected by the TMN State Program office in coordination with the screen printer to allow for best imprinting/image transfer possible. A screen printer has been lined up for this project.
- Final digitized winning image becomes property of the screen printer, with permissions for use on other than screen printable items for the Texas Master Naturalist Program on a case by case basis.
- The Texas Master Naturalist Program reserves the right to utilize submitted images for future program marketing and advertising with notification and credit given to the artists.

Designs shall be sent to:

Nadia Gaona

Texas Master Naturalist Program Intern
Texas Parks & Wildlife Department
12861 Galm Rd
San Antonio, TX 78254
E-mail: ngaona24@gmail.com

Chapter Activities

*Great American Backyard
Campout at Lake Arrowhead
State Park*



Top: Tami Davis on the nature trail with guests during the Chapter's event at Lake Arrowhead during the Great American Backyard Campout. **Above:** Jonathan and Amber get a close up view of Captain Andy. Rehabber Lila Arnold appeared courtesy of Wild Bird Rescue during the Great American Backyard Campout June 22 at LASP.

What Makes Rain Smell So Good?

Step outside after the first storm after a dry spell and it invariably hits you: the sweet, fresh, powerfully evocative smell of fresh rain.

If you've ever noticed this mysterious scent and wondered what's responsible for it, you're not alone.



A mixture of plant oils, bacterial spores and ozone is responsible for the powerful scent of fresh rain.

Back in 1964, a pair of Australian scientists (Isabel Joy Bear and R. G. Thomas) began the scientific study of rain's aroma in earnest with an article in *Nature* titled "Nature of Agrillaceous Odor." In it, they coined the term *petrichor* to help explain the phenomenon, combining a pair of Greek roots: *petra* (stone) and *ichor* (the blood of gods in ancient myth).

In that study and subsequent research, they determined that one of the main causes of this distinctive smell is a blend of oils secreted by some plants during arid periods. When a rainstorm comes after a drought, compounds from the oils—which accumulate over time in dry rocks and soil—are mixed and released into the air. The duo also observed that the oils inhibit seed germination, and speculated that plants produce them to limit competition for scarce water supplies during dry times.

These airborne oils combine with other compounds to produce the smell. In moist, forested areas in particular, a common substance is *geosmin*, a chemical produced by a soil-dwelling bacteria known as *actinomycetes*. The bacteria secrete the compound when

they produce spores, then the force of rain landing on the ground sends these spores up into the air, and the moist air conveys the chemical into our noses.

"It's a very pleasant aroma, sort of a musky smell," soil specialist Bill Ypsilantis told NPR during an interview on

the topic. "You'll also smell that when you are in your garden and you're turning over your soil."

Because these bacteria thrive in wet conditions and produce spores during dry spells, the smell of *geosmin* is often most pronounced when it rains for the first time in a while, because the largest supply of spores has collected in the soil. Studies have revealed that the human nose is extremely sensitive to *geosmin* in particular—some people can detect it at concentrations as low as 5 parts per trillion. (Coincidentally, it's also responsible for the distinctively earthy taste in beets.)

Ozone—O₃, the molecule made up of three oxygen atoms bonded together—also plays a role in the smell, especially after thunderstorms. A lightning bolt's electrical charge can split oxygen and nitrogen molecules in the atmosphere, and they often recombine into nitric oxide (NO), which then interacts with other chemicals in the atmosphere to produce ozone. Sometimes, you can even smell ozone in the air (it has a sharp scent reminiscent of chlorine) before a storm arrives because it can be carried over long distances from high altitudes. *(Continued on page 4)*

(Continued from page 3)

But apart from the specific chemicals responsible, there's also the deeper question of why we find the smell of rain pleasant in the first place. Some scientists have speculated that it's a product of evolution.

Anthropologist Diana Young of the University of Queensland in Australia, for example, who studied the culture of Western Australia's Pitjantjatjara people, has observed that they associate the smell of rain with the color green, hinting at the deep-seated link between a season's first rain and the expectation of growth and associated game animals, both crucial for their diet. She calls this "cultural synesthesia"—the blending of

different sensory experiences on a society-wide scale due to evolutionary history.

It's not a major leap to imagine how other cultures might similarly have positive associations of rain embedded in their collective consciousness—humans around the world, after all, require either plants or animals to eat, and both are more plentiful in rainy times than during drought. If this hypothesis is correct, then the next time you relish the scent of fresh rain, think of it as a cultural imprint, derived from your ancestors.

Read more: <http://blogs.smithsonianmag.com/science/2013/04/what-makes-rain-smell-so-good/#ixzz2X9gw0dUb> Follow us: @SmithsonianMag on Twitter

Grants Help Bring Back the Monarch

Written by Bill Hopkins, from the current issue of the Native Plant Society of Texas News magazine

The Bring Back the Monarchs grant was processed by Jim Hensley, Rolling Plains Master Naturalist. Jim has spent time at Lake Arrowhead State Park making sure the milkweed seed has been planted in the appropriate places.

Almost \$4,000 in grant money has been provided by the Native Plant Society of Texas and Monarch Watch to fund planting of new Monarch habitat in 18 different community gardens around the state.

The awards were announced March 29 by Cathy

Downs, chair of the Bring Back the Monarch to Texas Committee.

The small grants have been awarded to schools, nature centers and other organizations to create demonstration gardens or "Monarch Waystations" with habitat for the migrating Monarchs. The funds must be used to pay for native milkweeds, native nectar plants, mulch, compost and soil. The application process for grants is described here.

The Bring Back the Monarch to Texas Committee was established by the Native Plant Society of Texas and Monarch Watch to raise public awareness for Monarch But-

terfly conservation, to produce and distribute milkweeds that support reproduction by Monarch butterflies and to restore Monarch habitat throughout the Texas migration flyway. Monarch Watch is an educational outreach program based

terfly numbers to be at their lowest level since reporting began.

Here is a complete list of the projects receiving grants:

- Beacon Hill Community Garden, San Antonio

- Beacon Hill Playground, San Antonio
- Trinity River Audubon Center, South Dallas
- Helbing Elementary School, Fort Worth
- Agrilife Extension Building, Rockport
- Dogwood Canyon, Cedar Hill
- Bergheim VFD, Bergheim



at the University of Kansas that engages citizen scientists in large-scale research projects.

Texas provides critical habitat on the primary migration pathway of Monarchs to their wintering grounds in Mexico. The availability of native milkweed host plants, so necessary to assure successive generations continuing north, has declined in Texas. Herbicide-tolerant crops, mowing of roadsides, parks and open areas and continued drought have all had an impact on the number of Monarchs surviving the southern journey to Mexico. Recently released population estimates for the Monarchs overwintering in Mexico report the but-

- Fort Worth Day School, Fort Worth
- Austin Waldorf School, Lakeway
- Acton Nature Center, Acton
- Milano Junction Memorial Garden, Milano
- Terrell Heights Community Garden, San Antonio
- The Falls at Colorado Museum, Marble Falls
- Bluebonnet Montessori School, Lakeway
- Colorado River Refuge, Bastrop
- Katie Prairie Conservancy, NW Houston
- Clark Middle School, Abilene
- **Lake Arrowhead Nature Trail, Wichita Falls**

FACTOIDS FUN

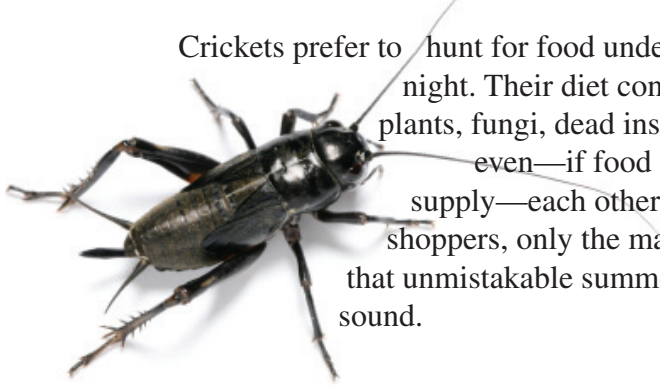


Bobcats live on their own. The home territory of each bobcat stretches over several miles and never overlaps with the territory of another bobcat of the same gender.

The huge ears of the black-tailed jackrabbit can measure up to 6 inches in length. The large ears of this hare help it to lose heat and thereby cooling its body temperature. They have large eyes that are high on their head and placed toward the side. This along with the fact that their head is slightly flat allows them to see almost 360 degrees (a full circle) helping to spot predators.



Crickets prefer to hunt for food under cover of night. Their diet consists of plants, fungi, dead insects, and even—if food is in short supply—each other. Like grasshoppers, only the males make that unmistakable summer chirping sound.



The chapter will have a booth at Deer Fest at the MPEC Exhibit Hall, August 3.

Volunteers will be needed from 9 a.m. to 7 p.m. A sign-up sheet will be available at the July meeting, so please volunteer your time to help out.

Deer Fest proceeds benefit the Adopt-a-Box program which

provides children in need with basic hygiene items and clothing



Celebrity appearances from “Sons of Guns” and “Backwoods Life” will be featured.

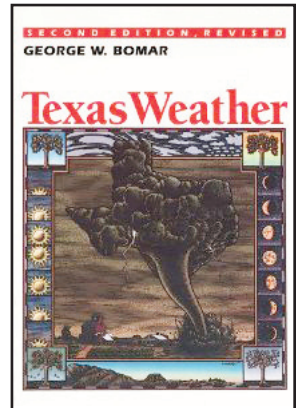


RESOURCE CORNER

Texas Weather

by George W. Bomar
Paperback: 287 pages
ISBN -10: 0292708114
ISBN-13: 978-0292708112
Cost: \$21.95

This is a VERY well-written book for the layman regarding Texas weather.



Bomar begins the 1985 edition with an initial chapter on the atmosphere and how weather conditions are observed, how data is gathered, and how conditions are reported and forecasted by the National Weather Service.

There is then a succession of chapters that describe all of the major weather conditions that affect the Lone Star State--fronts, floods, hurricanes, thunderstorms, tornadoes, heat waves/drought, winter weather, and wind. Most chapters begin with a vignette about how that particular weather condition affected the state in a significant way at some point in the past. The rest of the chapter is devoted to explaining how these phenomena develop and what, if any, precautionary steps should be taken regarding them.

The end of the book contains a glossary and several appendices containing interesting, extensive statistical data about Texas weather conditions.

Chapter Contacts:

Terry McKee, President 766-4097; Jim Hensley, Vice President 569-4713; Sue King, Secretary 761-2511; Larry Snyder, Treasurer 569-4534

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