TEXAS Master Naturalist™
HIGHLAND LAKES CHAPTER

February 2011 Volume 2, Issue 2

MISSION

The Texas Master Naturalist program is a natural resource-based volunteer training and development program sponsored statewide by Texas AgriLife Extension and the Texas Parks and Wildlife Department.

The mission of the program is to develop a corps of well-informed volunteers who provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities for the state of Texas

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GREATER ROADRUNNER (*GEOCOCCYX CALIFORNIANUS*)

Sherry Bixler

The roadrunner is a large cuckoo with no similar species in North America although there are large cuckoos in Central and South America. He is one of a kind in many ways. He prefers to stay on the ground but will fly up to observation posts or to new territories. Since he spends so much time on the ground, his legs are longer and stronger than most other birds.

At first glance he is a drab brown bird streaked with cream. Closer up, his ragged crest and the colorful spots behind his eyes are visible. These red and blue spots are his only color except for hints of green and blue in his tail.

He is found year-round from Texas and Oklahoma west to California and is common in scrub desert and mesquite. His diet, like that of the Great Horned Owl, is quite varied. He consumes snakes, lizards, insects, rodents, small birds, bird eggs and sometimes fruit, especially the tunas of cacti. He prefers to eat grasshoppers, crickets, and cutworms and in California he eats the introduced European snail – good pest control for gardens.

The roadrunner's song is a dove-like descending coo but is infrequently heard. He also makes a rattle or clatter sound with his bill.

At twenty-three inches, he is easy to spot until he takes to cover. As large as he appears, he weighs only about eight ounces.

Roadrunner nests are usually built in cactus or low trees and are roughly one foot across. Two to six eggs are laid and if food supplies are good, a second brood may be attempted. Males do most of the incubation but both parents feed the young,

who hatch in about three weeks. In another three weeks they are able to hunt for themselves.

Despite cartoon depictions of speeding roadrunners, their normal speed is between ten and fifteen miles per hour.

Old names for the roadrunner include chaparral cock, paisano, churca, correo del camino, cock of the desert, lizard bird and ground cuckoo. He is the state bird of New Mexico.

There are 127 species in the cuckoo family with only six in North America. (The Oriental Cuckoo is counted as a North American species but is only rarely seen in the Pribilof and Aleutian islands. (Cuckoos are in the order cuculiformes that also includes the turacos found in Africa.) Cuckoos in North America are the yellow-billed, black-billed and mangrove cuckoos; the smooth- billed and groove-billed anis and the very different roadrunner.

Inside this issue:

March Meeting Program

Fredi Franki

The next HLMN general meeting is Wednesday, March 2 at 1:00pm at the Kingsland Library. Our speaker, Lisa Benton, will discuss water quality in the Highland Lakes.

Lisa is currently a Water Quality Coordinator with LCRA and on the staff of the Colorado River Watch Network. She has a Bachelor Degree from UT Austin in *Biological Sciences* and a Master of Science in *Watershed Management and Ecohydrology* from the University of Arizona, Tucson. She served as a US Department of Agriculture Ecohydrology Fellow investigating ecological effects of climate change. Both in her career and as a volunteer, Lisa has worked extensively on environmental education.

Presidents Message

Billy Hutson

It's been a busy month since our last newsletter and it will get even busier next month as spring starts to break (hopefully). There's fixin' to be a whole lot of volunteer opportunities starting soon so try to take time to participate in your favorite venue.

Our last monthly meeting brought us Mark Klym, who many of us have seen before at different TPWD events and our annual meeting. Mark gave an interesting talk about hummingbirds with many good slides and new facts that most of us didn't know about the little critters.

VP Fredi Franki presents February Speaker Mark Klym with a

Jerry Stacy also gave a slide show about the eagle count that our chapter does every January. There were also several members and one non member recognized for outstanding services to nature in our community. Sue Kersey talked about her continuous effort to "put us on the map" with a new scrapbook of HLMN news articles.

It was an exciting meeting with an almost record of 74 people present. And we definitely had a record setting 18 out of 20 new class members present.

Next months speaker will be talking about a subject that is dear to us all- Water Quality in the Hill Country. I'm looking forward to it

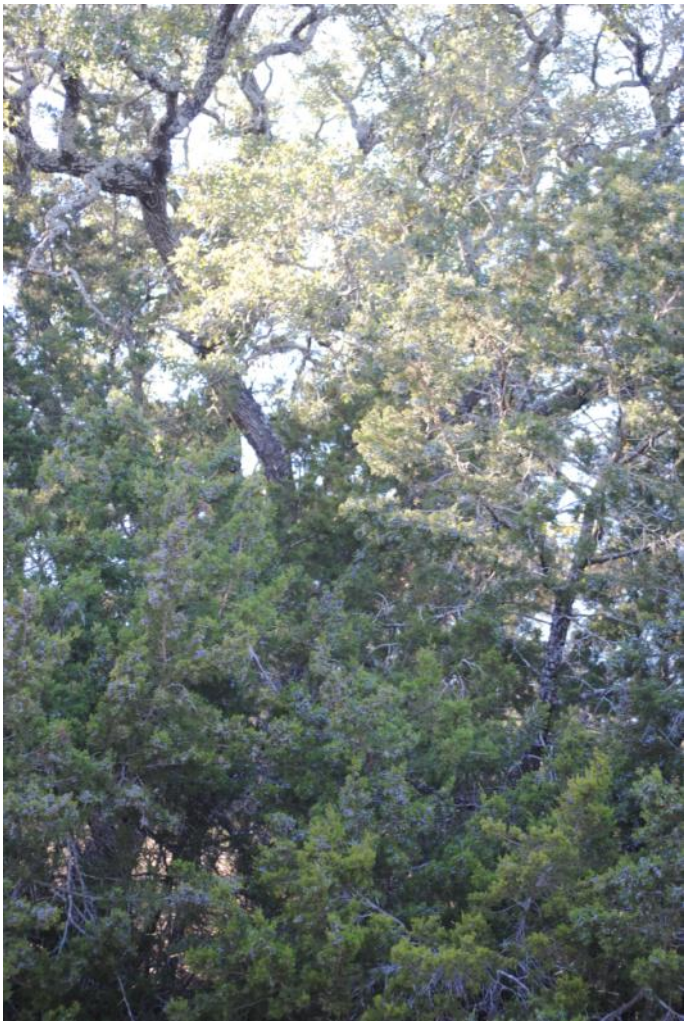
Hope to see you there

Texas Master Naturalist, Claire Ann Harrah, Initiates Community Firewise Program

Interview and Story by Ray Buchanan, Master Naturalist

An ashe juniper tree can ignite in seconds during a dry spell. An entire acre of ashe junipers can be engulfed in minutes, depending on wind and absence of water. Cedar trees catch fire very quickly and spread fast when the water content of the plants drops below the levels of resins and oils. And if you have "lucky" rosemary bushes near your back door, or edible agarita along the sidegarden, or any of those waxy-leafed holly varieties with lovely red berries in the front or across the side of the wooden deck, your house has incurred a wildfire liability from its natural setting. Over the past three years, according to statistics collected by the Texas Forest Service, a yearly average of about 15,000 wildfires in Texas have destroyed almost 500 structures annually.

The personal implications of this information (provided in a 2006 Highland Lakes Master Naturalist Training Class) struck Claire Ann Harrah immediately. Residing in a rural subdivision located on the east side of Lake Buchanan, Council Creek South, she realized the wildfire threat to her home and family: beautiful lakeshore lots and homes, but in an area heavily overgrown with cedar and designed for lake access rather than for roads and traffic.



Having already cleared flammable materials from around their own home, Claire initiated the really challenging next step demanded by safety concerns under those circumstances: make contact with the neighbors through the existing community Property Owners Association with the aim of creating a Firewise Community. The story that began 4 years ago with "how dare you suggest changes on *my* property" but ends with Council Creek South receiving the Firewise Community/USA recognition in November of 2010 confirms the complexity, but achievability, of the Firewise process. It involved energy, self-determination, patient persistence, and no little measure of intuitive creativity on Claire's part, plus some fortuitous events, as well as substantial help from the Urban Wildland Interface Specialist's Office of the Texas Forest Service and from other local authorities.

At first, despite Clare's charm and persuasiveness, no one was interested and no one listened. And no infrastructure for contacting residents and owners existed – no directory of the 135 property owners (most of whom are absentee owners of cedar-infested lots) and the POA refused to provide information about the 42 existing homes or the 17 full-time residents. The campaign seemed hopeless. But then a near disaster in the

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community proved to be the catalyst for renewed efforts that ultimately led to success with the Firewise program. It was a fire next door, completely destroying a garage filled with valuable tools and antique cars, that caused the turnaround. The local fire department could not find the fire at first. Small roads made it difficult for the fire trucks to maneuver into the vicinity of the fire much less provide access for other trucks to resupply water. Panic, freezing weather at the time, lack of knowledge about stored combustibles, no available water to give the firefighters: all combined to totally consume the garage and frighten the community. And it was sheer luck that the wind blew the flames skyward and that there was no existing path for the fire to spread to other homes. But the community's vulnerability to the spread of wildfires and the community's inability to prevent disaster came to be an acknowledged reality.

Claire's husband, C. B., ran for and was elected President of the POA. A proposal to dramatically increase road use fees passed by one vote. A Firewise Committee was formed in January of 2010. Claire spoke to the annual community picnic in April of 2010 and outlined necessary plans for a firewise community. From then on there was a flurry of activity adeptly organized and orchestrated by Claire. Formal organizational considerations mirrored practical groundbreaking activity. The Firewise Committee Charter was written and approved by July of that year. The Firewise Community Development Plan became a part of the Council Creek South Community Development Plan. Jan Fulkerson, an Urban Wildland Interface Specialist from the Texas Forest Service, came in to conduct a baseline firewise assessment for the community. Recommendations about firebreaks, about opening undeveloped road easements, about clearing flammable trees, about trimming up other trees, about working with the local fire department, about handing out pamphlets and getting community volunteers involved – all targeted practical but very significant physical changes.

Here is where "flair" and "originality" blossomed with an intensity that only Claire could provide.

Gathering together pamphlets and fliers, Claire created packets of firewise materials for new owners and for homebuilders. She developed a community newsletter with a major section on firewise planning and accomplishments. She organized training classes and door-to-door information campaigns. She made presentations at meetings and picnics, using a game to focus on the many details involved in firewise activities: at the house, around the house, road access to homes, water supply, etc. And she set an example of committed action: the community park

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EXPLORING RIPARIAN MYTHS: #1 FLOODS ARE BAD

Sammye Childers

Believe it or not, nature benefits more from natural floods than from not having them at all. Farmers since the time of the ancient Egyptians have known about the benefits that a flood can bring. In fact, the ancient Egyptians planned their farming, and their lives, around the regular flooding of the Nile. They learned over time that, the higher the flood, the better the year's harvest would be.

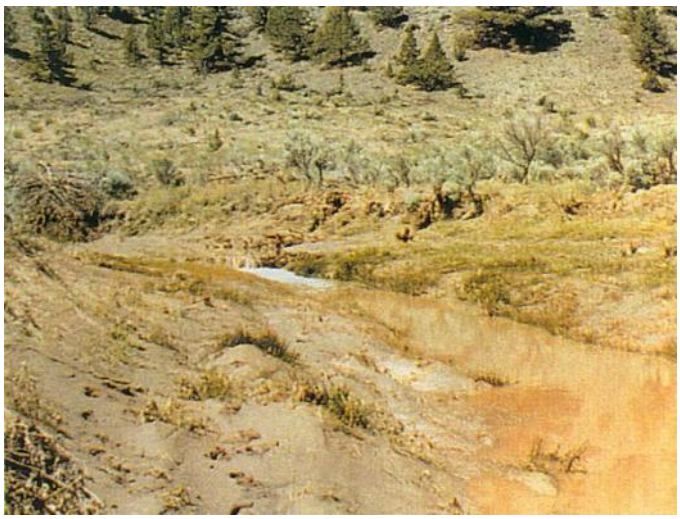
Flooding and the resulting erosion and deposition of sediment are common and natural forces that shape and repair the riparian area and its waterway. Floods are a regenerative process for the riparian habitat. Streams typically transport large amounts of sediment during floods and sometimes channel changes are swift and desirable. Deposition of new sediments is necessary for enrichment of the soil and redistribution of nutrients. Changes in stream morphology may deepen pools for improved rearing habitat or create off-channel quiet water habitats through the deposition of large wood and other organic debris. The rapidly moving water might refresh stream waters and clean and sort gravels used for spawning.

Bear Creek, Oregon August 1986 - Healthy

Streams by nature meander and they will seek balance in sinuosity. Flooding may erode outside banks but the soil material eroded away will often deposit a short distance downstream on the next inside bend increasing the sinuosity and meandering. This, in turn, will reduce the gradient of the streambed and the velocity of the flood waters. The eroded materials not deposited nearby will be carried downstream to build and enlarge floodplains. Floodplains are a major source of recharge of shallow alluvial aquifers. Slow moving, out of bank flood waters inundating the floodplains maintain the aquifers which in turn helps sustain base flow of the stream during dry times.

In the best sense, flooding also helps distribute the seeds of native riparian grasses, sedges, trees and shrubs needed for restoration.

We often automatically assume that floods inevitably have undesirable impacts. While flood damage may be great in watersheds with deteriorated riparian and upland areas, floods are not always catastrophic when riparian zones have sufficient diversity and cover. The native flora and fauna are adapted to the short term impacts and



Bear Creek, Oregon June 1987 - Badly Flooded

Bear Creek, Oregon July 1987 - Recovering very well

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RIPARIAN (Continued from page 5)

long term benefits provided by periodic flooding. In most cases, the ecosystem recovers quickly. Preventing flood waters from entering riparian zones will create an imbalance to the natural state of things and could greatly impair or destroy natural habitats and various species of animals and plants.

Floods are best when there is good, healthy riparian vegetation in place to dissipate energy and to trap the sediment. Through proper planning and careful stewardship of our riparian areas, floodplains can be managed with buffer zones designed to reduce the threat to human life, health and property in ways that are environmentally sensitive. We must be mindful that most floodplains are areas with valuable assets that sustain and enhance human existence. We must shift our mindset and concentrate on the preservation and enhancement of our essential riparian zones

FIREWISE (Continued from page 4)

was cleared and those who predicted heavy erosion after such radical changes got to see the grasses beginning to grow, especially after hand cut mitigation (rather than with a bulldozer) left roots and seeds undisturbed and ready to flourish. Before and after photos were circulated and captured people's attention. Then, most imaginative of all: she contacted reasonably priced cutters and allowed burning on their own lots in order to "make the process easier and more acceptable" for even the most reluctant!! She kept the required records of volunteer hours, costs incurred in making changes, and administrative activities (to satisfy the Annual Firewise per-Capita Spending Requirement). She solicited and received help and support from local firefighters, from the local Burnet County Commissioner (Bill Neve), and (most important) from her husband, C.B. And the results were dramatic and well deserved: formal recognition as a Firewise Community/ USA by the fall of 2010.

This designation must be reapplied for annually. And there is a 5-year plan involved: an evacuation plan for the community (cars going out do not allow for fire trucks coming in), expanding participation from property owners, creating a phone chain to facilitate emergency responses, more space on roads for large truck access, information about where combustible materials are located in and around homes, and so on. For more details consult www.firewise.org.

What does Claire get out of it personally? She says it is the thrill of new ideas and information as well as the personal satisfaction of taking an active role in facilitating a safe and good living within a beautiful community, nestled, now much more safely, in the woods on the side of a lake – a "nature" community at its best. And fortunately for that community, they had the "best" in Claire Harrah.

www.firewise.org

Photo Album

Snow-enhanced sunset at Denney Ranch 2, February 4, 2011. (Photo by Thomas Fisher, M.D.)

A ladder-backed woodpecker that we have been watching. He and his girlfriend did a number on a mesquite tree. Submitted by by Jerry Stone

State of the Birds, Part III - The Potential Impact of Climate Change on the U.S. Bird Population

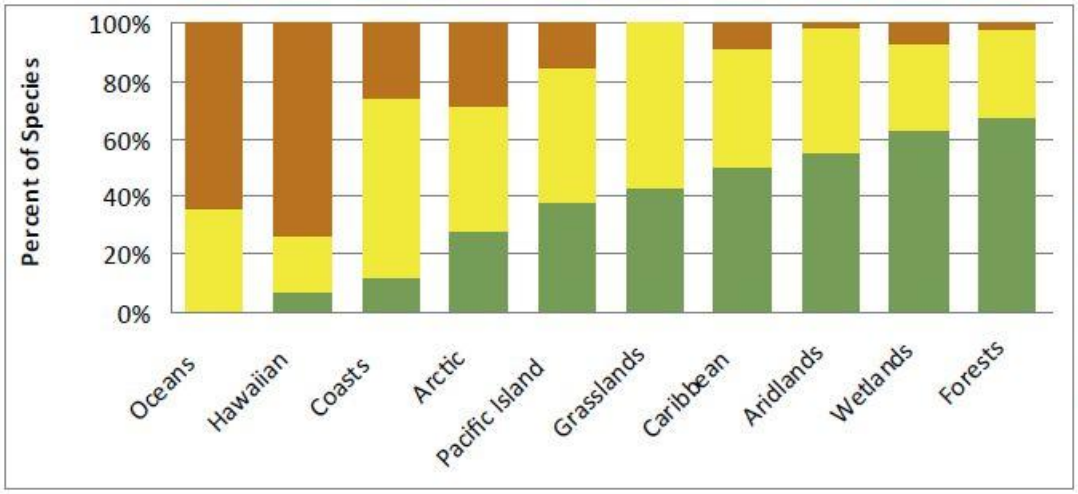
Sherry Bixler and Ray Buchanan

Over the past 40 years there has been a distinct decline among most of the some 800 bird species in the U.S.: aridland species have declined by 75% and Hawaii now counts 71 extinct species and 10 more that have not been seen in 4 decades [see Parts I & II on the State of the Birds in previous issues of this Newsletter].

Now it is time to ask the question: how will our birds fair as they encounter the inevitable consequences of climate change, which constitutes "one of the greatest environmental challenges of our time" (p.2 of full report). The results of a new study of this critical issue have been published by the North American Bird Conservation Initiative, U.S. Commit6tee, 2010. The State of the Birds: 2010 Report on Climate Change "presents the first systematic analysis of what may happen to bird populations in each major biome of the U.S. as a consequence of climate change" (p.3) [the full 32-page Report can be found at www.stateofthebirds.org].

Judging the potential vulnerability to climate change of birds in the 10 major biomes in the U.S. was achieved in this study by evaluating each according to five basic sensitivity traits: migration status, breeding habitat obligate, dispersal ability, niche specificity, and reproductive potential. Viewed from a temporal, spatial, ecological, and evolutionary perspective, the resulting scale of adaptability showed that: (1)the majority of birds that depend on oceans plus a majority of Hawaiian birds were highly vulnerable to climate change; (2)grassland habitats along with Caribbean and other Pacific island birds demonstrate intermediate levels of vulnerability; while (3)birds of aridland, wetland, and forest habitats show lower overall levels of vulnerability

From a spatial and temporal perspective, long-distance migratory birds that traverse many different habitats and use day length timing as a primary cue for migration will experience high sensitivity to climate change. This is because changes may cause a mismatch between the availability of food and the timing of arrivals at critical stopover areas. As well, those birds that are obligates of a single habitat are highly sensitive to ecological changes in their habitat type because they are less likely to be able to adapt to new conditions caused by climate change. Likewise, those bird species that have evolved specialized behaviors such as narrow elevation requirements or high site fidelity lack the ability to shift with changing conditions. Hence, they will exhibit a high sensitivity to climate change, as is the case with most island species and many continental species such as the lekking grouse. Similarly, niche specificity as a significant trait will cause high sensitivity for those birds that specialize in limited resources such as food, nest sites, or microhabitats when disrupted or depleted due to climate change. And finally, evolutionary traits affecting life history, specifically, reproductive potential, result in these species being highly sensitive to change. Various combinations of low annual reproductive effort and long generation time (species that raise only one or fewer young per year) are much less able to adapt



Relative Vulnerability of U.S. Bird Species by Habitat

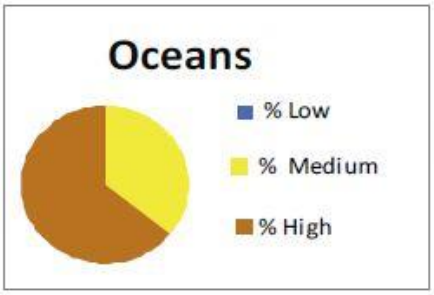
Red = high vulnerability

Yellow = medium vulnerability

Green = low vulnerability

to climate changes.

One of the best examples of this Report's analysis of how these characteristic traits work to predict vulnerability to climate change is among all 67 species of seabirds. Species such as albatrosses, petrels, shearwaters, boobies, tropical terns, tropicbirds, frigate birds, and puffins exhibit many traits that result in their being highly sensitive to climate change .



The 67 ocean birds assessed have medium to high vulnerability to climate change; 43 are at the highest level.

Low reproductive potential (advanced age of first breeding and high mortality rate for young birds) causes ocean birds to be unable to adapt or very slow to recover from adverse conditions. Ecological changes such as the inundation of low-lying islands by rising sea levels will drastically affect the nesting and reproductive capability of seabirds, which show a strong fidelity to breeding sites. Other nesting areas such as saltmarshes, sandy beaches, and barrier islands, along with mudflats, tidal flats, and inland freshwater marshes will be similarly threatened. Laysan Albatross and Bonin Petrel as well as beach-nesting terns and saltmarsh sparrows are potential casualties of sea-level rise, changing wind patterns, and more frequent catastrophic storm events].

Layan and Black-footed albatross by Eric VanderWerf

Equally significant will be the effect of climate change on ocean productivity and food webs. When oceanic upswellings fail to occur or are slowed there are fewer nutrients available for photoplankton, which is the foundation for marine food chains. Increased water temperature and alterations in water chemistry from increasing atmospheric carbon dioxide that acidifies the ocean decrease marine food availability. Sensitivity to these changes is increased during breeding when young chicks need large amounts of food. Some seabirds, like the Common Murres time their breeding by temperature cues; so changes can result in chicks hatching when food is no longer in abundance. Timing issues also affect many seabirds whose migratory patterns include specific stopovers and wintering habitats. Changes in marine food production can result in a mismatch between arrivals and food availability. Also, migratory birds might not have enough food available to achieve a certain body weight, making them unable to reach their breeding grounds and raise their young. Hence, seabirds exhibit most of the characteristic high vulnerability traits: strong fidelity to specialized breeding sites and, therefore, poor dispersal ability; low reproductive potential; and migratory foraging over vast areas of ocean, which makes them highly sensitive to the availability of niche specific marine food (especially during breeding).

One of the most significant insights to be gained from this Report is the urgency with which we must prioritize and plan our conservation efforts in light of all the potential consequences of climate change. Facilitating the movement of birds from changed habitats and the resilience of birds facing altered circumstances requires careful attention to the unique characteristics of different birds and their habitats. Solutions for the highly threatened seabirds include the reduction of existing problems: pollution, predators and plants that destroy nesting colonies, and over-harvesting of fish by fishing fleets. For birds losing nesting sites on low-lying islands and beaches intense restoration and site protection projects on higher ground that provide predator free breeding sites will help. New marine protected areas and national wildlife refuges and sanctuaries can restore marine feeding areas. And finally, like the whooping cranes, the translocation of very threatened birds provides a possible solution. And, of course, we can renew our efforts to stem the tide of global climate change!!

Honey Bee Decline Update

Since last year's articles in this newsletter on the worldwide decline in the population of honey bees, some further research has brought more information about this crisis.

A past chapter member, Mike Harris, offered this information from the Washington Post 1/25/2011 regarding Ecologist Colin Henderson who co-authored a study that may have identified the cause of the honeybee illness that has plagued U.S. bees since 2006. Henderson, 59, is an associate professor of biology at the University of Montana. He and colleagues there found a correlation between colony collapse disorder (CCD) and a lethal combination of a parasite and a virus. Their first study hasn't proven that the two infections are the cause of colony collapse but 100% of the bees from collapsed colonies that were tested, had both the parasite and the virus. Their next step is to isolate them and purify [the virus and the parasite] so they can infect a colony on their own, experimentally, and watch that colony die. That's will prove it.

Member Joan Mukherjee submitted the following information sent to her by Credo Action (**http://preview.tinyurl.com/CredoActionBee**).

Scientists have been scrambling to understand the crisis -- termed Colony Collapse Disorder -- but have yet to find a single, definitive cause. There are likely multiple interacting causes, and mounting evidence suggests that one widely used class of pesticides may be a critical factor.

One such chemical, called clothianidin, is produced by the German corporation Bayer CropScience. It is used as a treatment on crop seeds, including corn and canola, and works by expressing itself in the plants' pollen and nectar. Not coincidentally, these are some of honey bees' favorite sources of food.

Shockingly, no major independent study has verified the safety of this pesticide. While clothianidin has been used on corn -- the largest crop in the U.S. -- since 2003, it was officially approved by the Environmental Protection Agency last year on the basis of a single study, conducted by Bayer. However, recently leaked documents show that the study was actually debunked by the agency's own scientists, so the pesticide was effectively approved with no scientific backing.

Additional independent studies have shown that neonicotinoid pesticides like clothianidin are highly toxic to honey bees, providing compelling evidence that they should be immediately taken off the market until the E.P.A. can conduct a full and valid scientific review.

Stewardship

An ethic that embodies cooperative planning and management of environmental resources with organizations, communities and others to actively engage in the prevention of loss of habitat and facilitate its recovery in the interest of long-term sustainability

Volunteer Opportunities and AT/Events Calendar

Mike

FEBRUARY EVENTS & VOLUNTEER OPPORTUNITIES		MARCH EVENTS & VOLUNTEER OPPORTUNITIES	
Great Backyard Bird Count www.birdsource.org/gbbc	18th-21st	2011 HLMN Training Class Start Kingsland Library	3rd 12:30pm
Great Backyard Bird Count Blanco State Park	19th All Day	Fishing with a Ranger Inks Lake State Park	4th,11th,18th,25th 4-5pm
Trails Maintenance Day Inks Lake State Park	23rd	Boy Scout Camporee Near Llano	5th
Instructor Training - Bridges to Birding & Going Buggy Flying X Ranch, Balcones Canyonlands NWR	24th 9am-4pm	Going Buggy Program Balcones Canyonlands NWR	9th 9:30am-1:30pm
Romper Rangers Blanco State Park	24th 10-11:30am	TAS/FOB Field Trip Balcones Canyonlands NWR friendsofbalcones.org	13th 7:30-11:30am
Fishing with a Ranger Inks Lake State Park	25th 4-5pm	Central Texas Water Conservation Symposium Cedar Park Recreation Center www.texaswater.org	22nd 8:30am-3pm
Fish with a Ranger Blanco State Park	26th 2-3pm	Bridges to Birding Balcones Canyonlands NWR	22nd - 23rd 8:45am-2:15pm
Volunteer Day Blanco State Park	26th 9am-Noon	Lawn and Garden Show Burnet, TX	26th 9am-3pm
Basic Trail Building & Maintenance Workshop McKinney Falls State Park, Austin, TX	26-27th	Bridges to Birding Balcones Canyonlands NWR	26th 9:30am-2pm
FUTURE EVENTS & VOLUNTEER OPPORTUNIES			
Great Outdoors Program Inks Lake State Park	Apr 4-6, 13-15. 2011 9am-Noon	Bridges to Birding Balcones Canyonlands NWR	May 6, 2011 8:45am-2pm
Going Buggy Program Balcones Canyonlands NWR	Apr 9, 2011 9:30am-2pm	Flying Wild GSA Balcones Canyonlands NWR	May 7, 2011 9:30am-1:30pm
TAS/FOB Field Trip Balcones Canyonlands NWR friendsofbalcones.org	Apr 10, 2011 7:30-11:30am	TAS/FOB Field Trip Balcones Canyonlands NWR friendsofbalcones.org	May 8, 2011 7:30-11:30am
Going Buggy Program Balcones Canyonlands NWR	Apr 14, 2011 9am-2pm	Going Buggy Program Balcones Canyonlands NWR	May 13, 2011 8:15am-1:30pm
Texas Outdoor Family Blanco State Park	Apr 16-17, 2011 9:30am - Noon	Texas Outdoor Family Inks Lakes State Park	May 21-22, 2011
Songbird Festival Balcones Canyonlands NWR friendsofbalcones.org	Apr29-May 2, 2011	2011 Intnt'l Urban Wildlife Mgmt/Plan Conf Austin, TX www.urbanwildlife2011.org	May 22-25, 2011
Texas Ornithological Society Spring Meeting Junction, TX	May 5-7, 2011	Going Buggy Program Balcones Canyonlands NWR	May 24, 2011 9am-2pm

Please submit pictures, articles, reports, stories, calendar and event entries, etc. to chili865@gmail.com. Photos should have captions and appropriate credits. The deadline for submissions to each months newsletter is the 10th of the month and publication will be by the 15th.