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Celebrating and sharing our experiences along "the roads" we take through nature.

Award Winning Newsletter of the El Camino Real Chapter
Milam County Texas Master Naturalist Winter 2016

Sweet Shenanigans by Sheri Sweet

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We have an abundance of Eurasian Col-lared Doves, *Streptopelia decaoto*, around our place. This bird is a non-native dove which has spread into Texas after having moved into Florida, in the 1860s, after having been introduced in the Bahamas. This bird seems to be very adaptable and is spreading throughout North America.

It is a fairly large dove, about 12 1/2 " long. It is a very pretty pale gray to light tan bird with slightly darker back, wings and tail which is rather squared-off on the end. It has a black collar, out-lined with white, which extends around the neck. Both sexes of the bird look the same.



Most of these doves around our place lay 2 or 3 eggs in a very sloppily-built nest. They build these nests about 7 to 9 feet above the ground. I spent last summer visiting the parents incubating the eggs in our Magnolia tree. Year before last, they tried to raise some babies in the winter and the babies froze in the nest. They had a nest in our Bradford Pear tree this winter. They were not particularly afraid of me and would not leave the

nest. I'd talk quietly to them and they would watch me the whole time!

The eggs are a creamy white without any marks. Both parents take turns sitting on the nest to incubate the eggs. When one bird is tired of sitting on the nest, it starts calling for the other partner to come take over! Incubation takes about 12-14 days and then the babies fledge in another 12 - 14

days. The parents keep an eye on them until the babies can fend for themselves. These birds do not seem to migrate, but are around here all the time. They eat off the ground. They eat seeds and grain, especially millet.

This set of parents raised two babies in December and January in our Bradford Pear tree, just outside our kitchen window. The babies were more wary of me than the parents. The first baby fledged and was gone. The second one took a couple of more days. I watched the fledging process. The baby was out on the tree branch, preening - and wishing for food! A parent stayed nearby. Eventually, the baby flew and landed on our porch. I opened the

(Continued on page 2)

Did You Know?

What male animal attracts females with his nose?
See last page for the answer.

door to see where it was and scared it. It then flew into the window which was reflecting the open skies and clouds! It then flew around the corner of the house to some trees along our drive.

A parent was in one of the trees, yapping at the baby. That afternoon, I saw the parent fly in to the nesting tree. She was most perturbed - she couldn't find the baby! She kept looking around and up and down and flying around. After a while, the baby nonchalantly flew in and landed on our window

sill! I guess mama was wanting the baby to eat as she flew down onto the ground. It was quite amusing to watch the process and imagine what the mom (or pop) was telling the baby!

My sources for this article were my own observations in my yard; www.allaboutbirds.org; Birds of Texas, Field Guide - by Stan Tekiela; and The Stokes Field Guide to Birds of North America - by Donald and Lillian Stokes.

Sweet Shenanigans—Part 2

By Sheri Sweet

The Pileated Woodpecker

The first time I ever saw one of these birds that I had admired in bird identification books was when we were driving out of our campground on Lake Eufaula in Oklahoma about 30 years ago! Wes had not realized at that time that when I said to stop, I meant stop right now! I saw this bird on a telephone pole and when he didn't stop, I started yelling, "Stop! Stop! Stop right now!" The poor man about had heart failure because he thought he'd hit something! I then told him to back up, which he started doing, wanting to know why. You have NEVER seen such a disgusted look on his face as when I told him I wanted to see the bird on the telephone pole! This bird remained on the pole and we got back to where we could see it. Yup! It was a Pileated Woodpecker! I could hardly believe my eyes! Even Wes was impressed, as were our children!

Fast-forward to last year and the year before. We were working in the garden when I heard this "Cuk, cuk, cuk, cuk, cuk" sound. There was a Pileated Woodpecker, *Dryocopus pileatus*, up in our large Hackberry tree by our garden! I ran for the camera. When I got back, he flew over to the old dead hackberry tree trunk where I took these pictures. When I mentioned this to people in town, several said that they come around the large trees in town during the Spring.

The Pileated Woodpecker, pronounced either "pill eee ated" or "pile eee ated", is the largest of the US woodpeckers. It can be anywhere from 16.5" long to 19" in length. It is a blackish charcoal gray color with a red crest. Males also have a red mustache. There are white edges on the wings and the underparts of the wings are white. Its beak is long, pointed and gray. It has a wing span of about 29".



The male and female pair excavate a nest in a hollow tree or a utility pole some 15' to 80' above ground. They will produce 1 brood a year from 3 to 5 eggs that are white with no markings. Incubation takes 15 to 18 days. Both the male and female take turns incubating - the female takes the day shift and the male takes the night one.

Both the male and female feed the young regurgitated insects that they have eaten. The babies will fledge in about 26 to 28 days and will remain with the parents for two to three months. These birds protect their territories by drumming loudly and with loud calls.

These woodpeckers will come to suet feeders and eat Carpenter Ants, other insects, and fruit and nuts. About 60% of their diet is Carpenter Ants with another 25% being wild fruits, berries, and nuts. These birds range from Canada to the Southern US, in conifers, woodlots, and mixed and hardwood forests. They do not seem to migrate. That said, we have seen them here only in the Spring.

If you have never seen one of these magnificent woodpeckers, put it on your bucket list of birds you want to see! They are spectacular!

My sources are A Guide to Field Identification Birds of North America by Chandler S. Robbins, Bertel Bruun, and Herbert S. Zim; Birds of Texas Field Guide by Stan Tekiela; A Field Guide to the Birds East of the Rockies by Roger Tory Peterson; The Sibley Field Guide to Birds of Eastern North America by David Allen Sibley; The Stokes Field Guide to the Birds of North America by Donald & Lillian Stokes; and www.audubon.org/field-guide/bird/pileated-woodpecker. The Audubon website has audio of the calls and drumming sounds.

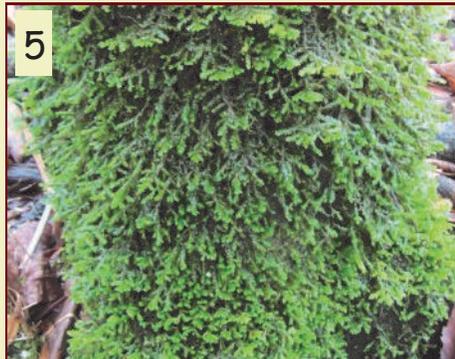
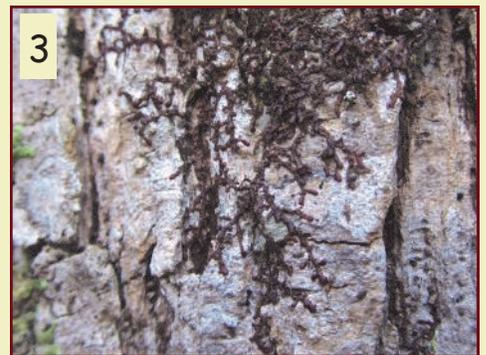
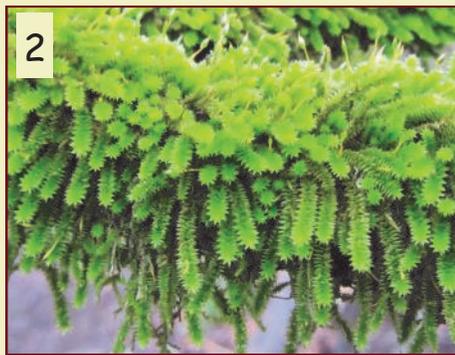
Cryptogamic Botany Quiz

By Dale Kruse

Mosses, liverworts, and hornworts are often referred to as **cryptogams**, essentially meaning hidden gametes, in reference to their microscopic gametes. Other organisms such as ferns, lycopods, and lichens are often lumped into this category as well. In reality, all of these groups have only minimal traits in common.

See if you can match the following images with the correct type of organism. Or better yet, can you put a scientific name on each of them? Fellow chapter members who have visited the S. M. Tracy Herbarium will have a bit of an advantage. Possible answer choices: moss, liverwort, hornwort, or lichen.

All of these species are found in Texas, except one. Can you identify the out-of-state collection? The answers are after the photos—NO PEEKING!



Answers and a brief explanation for each answer.

1. Moss - This picture is a close-up of a moss leaf. In this instance it is easy to tell the leaf is from a moss, and not a leafy liverwort, because the **costa** is very evident running down the middle of the leaf. Although not all mosses have a costa, actually some have more than one, leafy liverworts never have a costa. This leaf is from a moss collected in northeast Texas, *Bryhnia graminicolor*, and is about 2.2 mm long.

2. Moss - *Leucodon julaceus*. One of the more common mosses in the eastern half of Texas. Often found in great abundance on the upper trunk and lateral branches of large trees, especially Oaks (*Quercus* sp.). The leaves are tightly pressed and overlapping when the plants are dry, hence the specific epithet, **julaceous**, meaning "crowded and appressed." However, when wetted the leaves quickly **hydrate** (absorb moisture) and expand at nearly right angles with the stem and the stems then appear more or less round in cross-section.

3. Liverwort - *Frullania* sp. A common leafy liverwort on tree substrates. The plants grow closely adhered to the bark and have a very unique **lobule** on the lower (ventral) surface of the leaf. This lobule looks much like an inverted cup on a short stem. Rotifers are commonly found living in these lobules, that when wetted come to life and can be easily seen filtering water when viewed under a microscope. The leaves of most mosses are **spirally imbricate** (arranged around the stem and closely

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overlapping the leaf above) as opposed to flattened into the same plane. This is an easy way to at least initially distinguish mosses from leafy liverworts.

4. Lichen - *Teloschistes exilis*. A fruticose lichen common in many parts of Texas. The bright orange **apothecia** (rounded spore producing structures) and bushy appearance make this one easy to identify without a microscope or needing to determine the thallus chemistry.

5. Liverwort - *Porella pinnata*. Another very common leafy liverwort in many bottomland forests in the eastern part of Texas. The leaves are somewhat round and are oriented into a single plane giving the plants a flattened appearance. The short side branches are often oriented in pairs or **pinnae**.

Although not strictly aquatic, the plants are very frequently found attached to Bald Cypress (*Taxodium* sp.) knees in or near the water's edge.

6. Lichen - *Umbilicaria mammulata*, this is a very large species of umbilicate lichen. This type of lichen is attached to its substrate (in this case a rock) at a single point by an **umbilicus**, somewhat like an umbrella. Also called Smooth Rock Tripe, this specimen was photographed (and collected) in the mountains on the coast of Maine near Steuben. Individual specimens can reach lengths up to 60 cm and as much as 15 cm wide. When wet, the thallus has a leathery appearance and texture. Although they are considered edible, you may want to consider a more palatable entree.

Controlled Burn—Native Prairie Flora

by Katherine Bedrich

Nannette calls "I am burning a couple acres of the native plants tomorrow. The weather conditions are good. Want to help?"

"Yes", I said.

January 20th - 2:00pm. Arrive at Nannette's. A 25 foot strip was mowed around the area to prepare for the burn. Weather is cloudy, temp in the 50's, low wind, soil moist. Eleven volunteers show up to help. Tasks are assigned to each volunteer. Edge flappers, water hose handlers, propane burner handlers and watchers are all ready.

The "backfire" is lit by the propane burner. The wind is not co-operating. It is not blowing enough. The edge flappers stomp out straggling short flames from escaping. As the lighting continues towards the front to start the "headfires" the wind picks up a bit. The tall grasses whip flames upwards, carrying the fire quickly over the patch of grass. As soon as it is lit, it is burnt. Charred smoking



black grass cover the soil. The water hoses are used to wet down the soil near a shed. The wind direction will keep the burn away from the building, but caution is used to assure us all.

Slowly the flames continue towards the back side of the area. And before you can shake a stick, the burn is over. It was great.

I was home before 4:00pm.

Eleven volunteers helped; several had been involved in prairie burns. The event was organized and managed with understanding, responsibility, and experience.

Here are four conditions you need to check before a controlled burn is set:

1. Temperature
2. Humidity
3. Wind speed and direction
4. Soil Moisture

Controlled burning can help stop the spread of invasive species and unwanted non native plants. Burning the prairie was a normal event before the pioneers moved into the plains.

Prairie fires were started by lightning and Native People. These fires helped with germination, to flush wildlife for food and remove competing tribes from the territory.



Birding—Looking for Winter Birds

By Katherine Bedrich



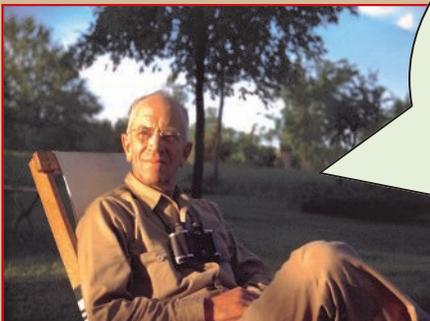
In January the tanks around this county are a wintering home for many ducks and other migratory water birds.

Ann Collins, Katherine Bedrich and Nancy Webber went birding one cool winter day near Buckholts. Ducks, cormorants, gulls, egrets, and pelicans had been sighted on several of the tanks. A pretty flock of pelicans showed up at one area. At another, the group was identifying several ducks when a lone big white bird showed up. Ann and Nancy identified the bird, with much excitement, as a snow goose.

It was a good day for birding.



Aldo Leopold Says:



"When we hear [the crane's] call we hear no mere bird. We hear the trumpet in the orchestra of evolution. He is the symbol of our untamable past, of that incredible sweep of millennia which underlies and conditions the daily affairs of birds and men."

Cataclysmic Events

By Don Travis

There have been five mass extinction events in earth's history, and numerous lesser events.

In the worst one, the End-Permian 250 million years ago, 96 percent of marine species and 70 percent of land species died off. It took millions of years to recover. [I wonder who took this photo?]

There is a lot we still don't know about what really caused all these events. We know some were massive asteroid impacts and some were massive volcanic events or other climate changes due to unknown underlying geological causes.

Scientists describe five mass extinction events starting with the 1st, the End-Ordovician Extinction 450 million years ago and ending with the 5th, the End-Cretaceous Extinction that killed off the dinosaurs 66 million years ago. That very first extinction event [the end-Ordovician], seems to have been caused by some kind of sudden cold snap, but no one's exactly sure how or why that happened.

The worst mass extinction of all time came about 250 million years ago. This was the 3rd one, called the end Permian extinction event. There's a pretty good consensus that this was caused by a huge volcanic event that went on for a very long time and released a lot of carbon-dioxide into the atmosphere. But what caused all the volcanos? Was it the movement of earth's plates? That one is pretty ominous considering that we are releasing a lot of CO₂ into the atmosphere and people are increasingly drawing parallels between then and now.

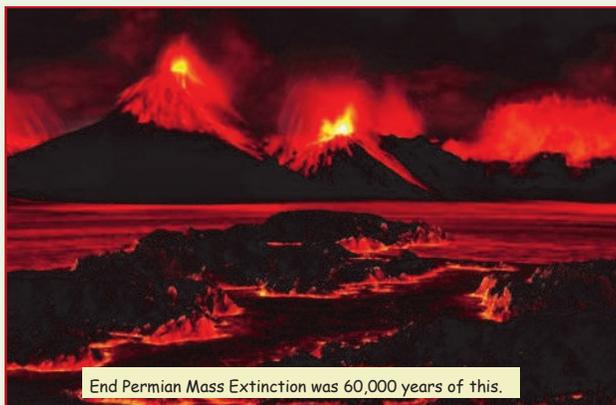
With the 2nd and 4th events, the causes of those are pretty murky and people have tried to come up with a unified theory for these extinctions, but that hasn't worked at all. The causes seem to be pretty disparate.

Many scientists would say that what we're doing to the chemistry of the oceans could end up being the most significant. One-third of the carbon-dioxide that we pump into the air ends up in the oceans almost right away, and when CO₂ dissolves in water, it forms an acid reducing the pH value. Ocean acidification has been called the "evil twin of global warming".

The chemistry of the oceans tends to be very stable, and to overwhelm those forces is really hard. But we are managing to do it. When people try to reconstruct the history of the ocean, the best estimate is that what we're doing to the

oceans, or have the potential to do, is a magnitude of change that hasn't been seen in 300 million years. And changes of ocean chemistry are associated with some of the worst extinction crises in history.

Back in the 18th century, no one even knew that there were any extinct species. Folks generally thought what we saw had been here forever. How did we get from there all the way to realizing that there had been five of these mass extinction events in earth's history? How is it that we have what we consider to be a rich and diversified natural world of today after all the extinctions? Did evolutionary speciation (thank you Darwin) between these events compensate for losses due to the



End Permian Mass Extinction was 60,000 years of this.

extinctions, at least in terms of number of species?

A lot of people are trying to tease out what survived previous extinctions and determine the characteristics of those that survived. It's called the selectivity of extinction events. Why did some groups survive and others didn't? Well, here we are 65 million years after the last one it still appears very difficult to analyze and understand.

But speaking very broadly, scientists say the species that tend to survive mass extinction events often tend to be very widely distributed, or groups that have a lot of species. They're not sure whom that's going to help today, but that seems to be the pattern. Since we homo sapiens are widely distributed, maybe that's one in our favor? Hopefully being the most intelligent species will also help. Ya think?

One issue is that the older the fossil record gets, the more difficult it is to read. This is due to several reasons: older fossils are harder to find as they are usually buried at a considerable depth; dating older fossils is more difficult; productive fossil beds are researched more than unproductive ones therefore leaving certain periods un-researched; prehistoric environmental events can disturb the deposition process; and the preservation of fossils varies on land, but marine fossils tend to be better preserved than their more sought after land-based counterparts.

Many scientists are predicting that we're on track for a sixth mass extinction. Rather than a meteorite or large volcanic eruption, the alarming decline of biodiversity may lead to another mass extinction. The world's species already seem to be vanishing at an unnaturally rapid rate with animals going

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extinct 100 to 1,000 times (possibly even 1,000 to 10,000 times) faster than at the "normal" background extinction rate, which is about 10 to 25 species per year. Humans are altering the earth's landscape in far-reaching ways. We've hunted animals to extinction like the great auk, carrier pigeon, dodo bird, Tasmanian tiger, and Carolina Parakeet (to make ladies hats). We've cleared away broad swaths of rain forest and native prairies. We've transported invasive species from their natural habitats to new continents. We've polluted many of our rivers, aquifers and oceans. We have serious over population in many areas of the world. We've pumped billions of tons of carbon-dioxide into the atmosphere and oceans, transforming the climate.

Where will it all end up? How will it evolve? There's lots of conjecture on that. Man's few hundred years of involvement in this chart's timeline doesn't even show up.

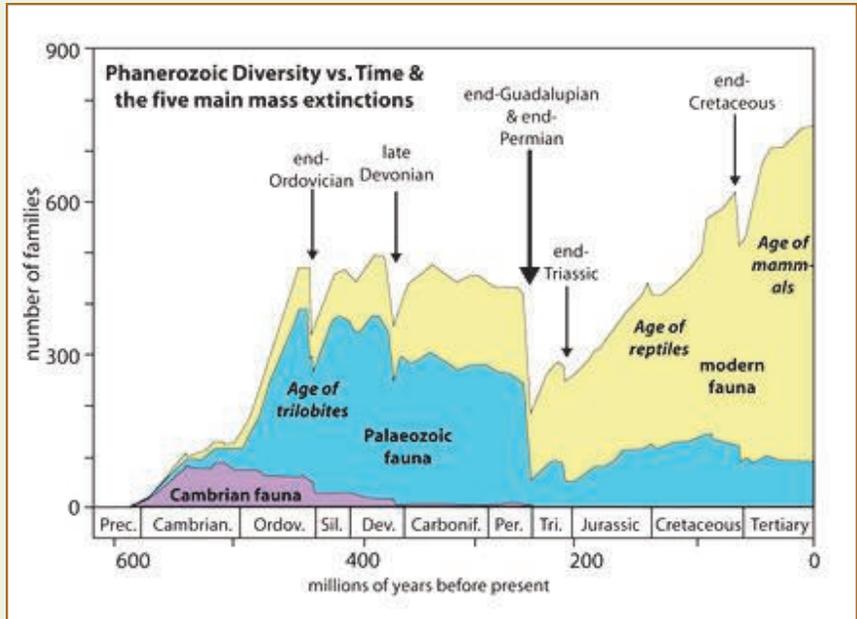
Using the geologist's term "Ma" to mean "millions of years ago", here is a brief summary of the 5 major extinction events, beginning with the oldest.

1. End Ordovician extinction events 450-440 Ma. Two events occurred that killed off 27% of all families, 57% of all genera and 60% to 70% of all species. Together they are ranked by many scientists as the second largest of the five major extinctions in Earth's history in terms of percentage of genera that went extinct.

2. Late Devonian extinction: 375-360 Ma. This prolonged series of extinctions eliminated about 19% of all families, 50% of all genera and 70% of all species. This extinction event lasted perhaps as long as 20 million years, and there is evidence for a series of extinction pulses within this period.

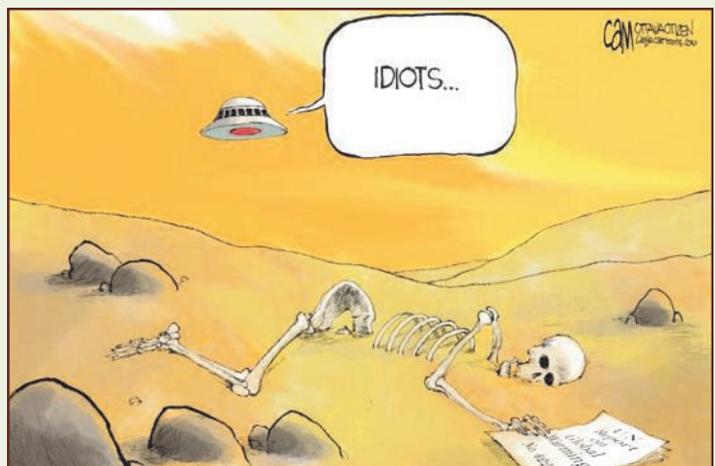
3. End Permian extinction. 252 Ma. Earth's largest extinction killed 57% of all families, 83% of all genera and 90% to 96% of all species. The "Great Dying" had enormous evolutionary significance. On land it ended the primacy of mammal-like reptiles. The recovery of vertebrates took 30 million years, but the vacant niches created the opportunity for archosaurs to become ascendant. In the seas, the percentage of animals that were sessile (those unable to move about) dropped from 67% to 50%. The whole late Permian was a difficult time for at least marine life, even before the "Great Dying".

4. End Triassic extinction event. 200 Ma. About 23% of all families, 48% of all genera (20% of marine families and 55% of marine genera) and 70% to 75% of all species went extinct. Most non-dinosaurian archosaurs, most therapsids, and most of the large amphibians were eliminated, leaving dinosaurs with little terrestrial competition.



5. End Cretaceous extinction event. 66 Ma. This was the famous asteroid hitting earth near Cancun, creating massive dust clouds around the earth. About 17% of all families, 50% of all genera and 75% of all species became extinct. In the seas it reduced the percentage of sessile animals to about 33%. All non-avian dinosaurs became extinct during that time. The boundary event was severe with a significant amount of variability in the rate of extinction between and among different clades. Mammals and birds, the latter descended from theropod dinosaurs, emerged as dominant large land animals.

When we read about stuff this old, our little life time here on earth seems so miniscule. But as Master Naturalists let's make the best of it, shall we?



[Sources for this include: Brad Plumer's February 11, 2014 Washington Post interview with Elizabeth Kolbert, a Williams College Professor and author of "The Sixth Extinction: An Unnatural History"; endangered-species-international.org; and several Wikipedia articles.]

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Certifications, Etc. By Cindy Bolch

New since the Fall 2015 newsletter **are in this color. (none)**

2015 Re-Certifications (Bluebonnet pin). Lucy Coward, Cindy Bolch, Don Travis, Dorothy Mayer, Katherine Bedrich, Linda Jo Conn, Debbie Harris, Donna Lewis, Ann Collins, Sheri Sweet, Wesley Sweet, Minnie Pesl, Darlene Anglen, Barbara Cromwell, John Pruet, Sandra Dworaczyk, and Joyce Conner.



Highest Level of Lifetime-to-date Milestone Achievement Levels earned by current members as of December 2015 include:

5000 Hours—Katherine Bedrich, Cindy Bolch

4000 Hour Presidential Award—Katherine Bedrich, Cindy Bolch

2500 Hours—Don Travis, Ann Collins, Donna Lewis, and Debbi Harris.

1000 Hours—Paula Engelhardt, Sue Taylor, Lucy Coward, Dorothy Mayer, Phyllis Shuffield, Sandra Dworaczyk, Linda Jo Conn.

500 Hours—Anne Barr, Barbara Cromwell, John Pruet and Sheri Sweet

250 Hours—Lucile Estell, Shawn Walton, Vivian Dixon, Cindy McDaniels, Janice Johnson, Gary McDaniels, Kim Summers, Rusty Thomas, Cindy Travis, Sherry Colley, Kathy Lester, Wesley Sweet, Pam Neeley and Darlene Anglen.

Our December 2015 Year-to-Date and Total Accumulated hours for Advanced Training are: **926 and 6,534** respectively. Our December 2015 Year-to-Date and Total Accumulated hours for Volunteer Events are: **8,652 and 54,648** respectively.

Congratulations to All

Did You Know?

What male attracts females with his nose?



The Proboscis monkey males use their prominent noses to attract mates. It's believed that their noses create an echo chamber to amplify their mating call. Their noses can exceed 4 in. in length, and hangs lower than the mouth. The nose of the female is also fairly large for a primate.

The proboscis monkey is endemic to the island of Borneo and can be found on all three nations that divide the island: Brunei, Indonesia, and Malaysia. It is most common in coastal areas and along rivers. It is perhaps the most aquatic of the primates and is a fairly good swimmer, capable of swimming up to 66 ft underwater. They're unfortunately endangered due to habitat loss from logging and human expansion and are hunted for meat and bezoars (stone-like objects found in their stomachs that are used in traditional Chinese medicine). Proboscis monkeys are known to make various vocalizations. When communicating the status of group, males will emit honks. They have a special honk emitted towards infants, which is also used for reassurance. Males will also produce alarm calls to signal danger. Both sexes give threat calls, but each are different. In addition, females and immature individuals will emit so-called "female calls" when angry. The proboscis monkey eats primarily fruit and leaves, and flowers, seeds and insects to a lesser extent. Predators of the proboscis monkey include crocodiles, clouded leopards, eagles, monitor lizards and pythons. Source: Wikipedia.