

# The Midden

League City Rain Garden by Chris LaChance

Galveston Bay Area Chapter - Texas Master Naturalists

April 2014

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## Next Chapter Meeting

April 3<sup>rd</sup>

TPWD's Oyster Mapping and Restoration Project: Past, Present and Future

By  
Bill Rodney, Oyster  
Restoration Biologist,  
TPWD

**At Carbide Park**

## President's Corner by Maureen Nolan-Wilde, President 2014

In mid-January, current and former board members took part in a planning day at Galveston Island State Park. The purpose of the day was to build on the Chapter's accomplishments, identify opportunities and help plan for the future.

We developed a "roadmap" that can be used to set goals and focus our efforts for 2014 and beyond. We identified the following areas where we can make immediate improvements:

- Succession planning for key roles (learning exactly what board members and committee chairs do so that, in the future, this knowledge isn't lost),
- Leveraging current technologies (for example, making better use of the website, social media and tools for sending messages to our members),
- Growing our outreach efforts (such as stewardship and education in schools).

Since that meeting, we have launched an image database that contains over 1,000 pictures and has been viewed more than 10,200 times. This database, which is easily accessible and can be viewed 24/7, is a great example of using technology to make us more efficient and effective.

As I am writing this, the sun is shining, reminding me that spring is almost here! Birds are beginning to migrate; Hawk Watch has started; and FeatherFest is right around the corner. I can't help but share the excitement of all birding enthusiasts. In addition, our sea turtle patrol volunteers are trained and ready to go.

Ongoing volunteer opportunities at Sheldon Lake State Park, Armand Bayou Nature Center, Galveston Island State Park, and Texas City Prairie Preserve offer you a chance to enjoy nature while serving the community. The AT team continues to deliver a varied menu of training opportunities, while our 2014 Training Class is going strong - and their enthusiasm and energy are contagious. I hope to see you soon on the beach, at the barn (sea turtle, of course), on the prairie, in the wetlands, or in a classroom.



## Prairie Ponderings: Less than One Percent

by Diane Humes and Dick Benoit

"... my first view of a Texas prairie. An unbroken, level, grassy plain extended for miles before us, on which a few islands of trees and shrubs were scattered in irregular order... May its wide, green prairies become the home of a large and happy population."  
Ferdinand Roemer, 1846.

One hundred and fifty years later, Ferdinand Roemer might wish he had been more careful with his dreams. According to the U.S. Fish & Wildlife Service and U.S. Geological Survey, "over 6.5 million acres of prairie once existed in Texas as a grassland paradise for Native Americans and early settlers. Today less than 1% remains as a refuge for rare and endangered birds, mammals, reptiles, insects and plants. Restoration efforts focus on protection, preservation, establishment of native species, and reduction of invasive species."

Speaking to the 2014 training class, Dr. Barron Rector took it one step further when he opined that, "less than 1% of Texas has NOT been touched by man." He spoke of the early explorers of Texas and some of the difficulties in deciphering the real meanings of their observations. He urged us all to observe the land and its creatures, study and learn for ourselves the ways of nature, and consider the changes we have seen in our world.



Photo by Joyce Davis

Our remaining prairies are under threat - invasives, development, fragmentation, lack of funding - to name a few. It is easy to feel powerless, but we will continue to work to restore prairies. Reed Noss, Provost's Distinguished Research Professor at the University of Central Florida and author of *Forgotten Grasslands of the South: Natural History and Conservation*, said "Upon learning about the plight of grasslands, I pledged to do what I could to protect them and help them recover their former glory. Such is the moral responsibility of a naturalist."

## Wetland Wanderings

by Diane Humes

May's Pond, located behind the farmhouse at Armand Bayou Nature Center, between bison pen and prairie, is beautiful and tranquil - a perfect spot to sit on a bench and contemplate nature or to take a canoe out for a short practice paddle, exploring its edges and island. On sunny days several species of dragonflies whirr about while the resident alligator patrols. You might think of dangling a fishing pole for bass, as you imagine Jimmy Martyn would have done.

You would not guess that May's Pond is a "borrow pit" - its prairie soil dug to create a hole about nine feet deep and used in the construction of Space Center Boulevard in 1983. The rookery pond on the West Bank of ABNC was created at the same time for road construction. Grasses and trees around the pond have been planted; the pond stocked with fish.

On the far side of the pond, at its lowest edge, look for one of the first plantings of gamagrass, *Tripsacum*

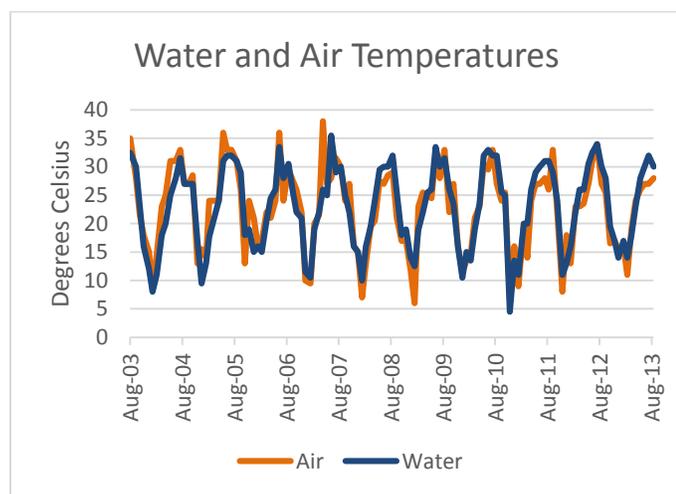


*dactyloides*, on ABNC property when you come around the bison pen to the firebreak. Also notice the bald cypress trees, *Taxodium virens*, surrounding the pond, especially on the backside; these were also planted and are now about twenty years old.

May's Pond is filled by rainwater and the sheet flow of water across the prairie. It has no outlet, except occasionally flows over its banks toward Armand Bayou at the low end where the gamagrass grows. During drought years, the pond may be replenished from groundwater pumped by the windmill - which may cycle through and re-charge the groundwater, probably after a long time.

From 2003 - 2013, Dick Benoit tested the water in May's Pond, using equipment and methods provided by Texas Stream Team. He sampled the water monthly - with elementary students in his Water Ecology Class for the first 5-6 years - then continued on his own to complete this 10-year study. Dick and students measured air and water temperatures, pH, dissolved oxygen (DO), conductivity and level of the water surface, as measured from the top of the dock.

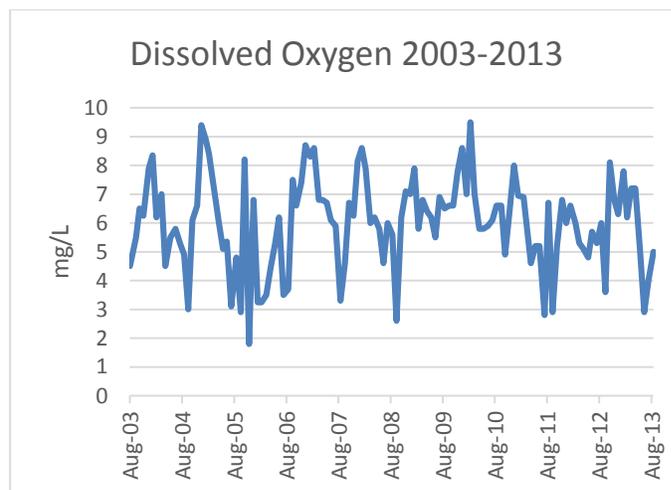
Temperature data show interesting seasonal variations; air temperature fluctuates more quickly than water temperature, as reflected in the data.



pH is a measure of the acidity/alkalinity and ought not to vary too much, especially in such a nearly closed system that is, presumably, pretty well buffered. Most living things prefer a pH range between 6 and 9, with 7 being neutral. Remember that the scale is logarithmic; each number is ten times greater or lesser than the next. The May's Pond pH data show only minor variations, within the normal pH ranges, except for one slightly elevated data point.

The DO test measures the amount of oxygen in mg/L available for aquatic life; fish and other creatures usually die at levels below 2 or 3 mg/L. Mosquito larvae remain happy, however; they have "snorkels" for breathing oxygen directly from the air. Dissolved oxygen levels vary seasonally; cold water can hold more oxygen than warm and aquatic vegetation can deplete a water body of oxygen, especially in summer. May's Pond data

confirms the seasonal variability of DO levels, within acceptable amounts; no fish kills have occurred in May's Pond.



Conductivity is a measure of the electrolytes present - not the same as salinity. This measurement is affected by the amount of total dissolved solids - often ions of potassium, sodium, chlorine, carbonate, sulfate, calcium, and magnesium. Conductivity may vary seasonally; the warmer the water, the higher the conductivity. In addition, streams with low flow and/or drought conditions usually exhibit higher conductivity; after a rain, levels usually decrease.

The most interesting changes can be seen with conductivity and water level measurements. During this study, our area experienced severe drought; water levels were very low and conductivity measurements increased up to three times usual amounts. One data point in 2011 recorded that significant rain had not fallen for 72 days! Was the elevation in conductivity due to drought or pumping from the underground aquifer? Groundwater often has higher levels of dissolved solids because of contact with water and soil. What is the mineral content of the aquifer, anyway? What effect does runoff from the bison pen have on measurements of pH, conductivity, or even DO?

As you can see, study of even a small pond can prove very interesting. The more we study, the more questions arise, chief among them, how best to preserve this data for the future. This 10-year study is a testament to Dick Benoit's dedication to scientific inquiry and tenacity; in 120 sampling months, he missed only one!

*Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.* Margaret Mead

*The whole secret of the study of nature lies in learning how to use one's eyes.* George Sand

## Julie Massey Receives Superior Service Award by Kathleen Phillips (TAMU Press Release)

Julie Massey, Texas A&M AgriLife Extension Service agent for coastal and marine resources in Galveston County, has received the agency's Superior Service Award for volunteerism. The award was presented Jan. 8, 2014 during the agency's Centennial Conference in College Station.



Massey has served as the Galveston Bay Area Texas Master Naturalist chapter advisor for 12 years. The nomination noted "her leadership qualities, her support and her guidance" as being instrumental in attracting and keeping volunteers involved in AgriLife Extension programs.

Her efforts led the Galveston Bay Area Master Naturalists to become collaborators in the Galveston Bay Plan – a comprehensive, 20-year management plan – through education, training and restoration activities. The volunteers coordinate prairie restoration at six sites across the area, including the Texas City Prairie Preserve, Armand Bayou Nature Center, and Galveston Island State Park, according to the nomination. In 2010, more than 135 new acres of prairie were created by the volunteers.

Massey has a "high retention rate for volunteers with 189 current volunteers and 75 percent reporting volunteer hours and recertifying annually," the citation noted. Superior Service awards are presented to personnel who demonstrate outstanding performance or provide exceptional service to AgriLife Extension, an educational outreach agency of The Texas A&M University System.

## *Asclepias tuberosa*, 2014 Plant of the Year by Doris Heard, Garden Club of Houston

*Asclepias tuberosa*, a native milkweed, is the Garden Club of America's "2014 Plant of the Year". This plant will be awarded the Montine McDaniel Freeman Medal on May 9, 2014 at the GCA Annual Meeting in New Orleans, Louisiana. Each year the medal is awarded to a native plant "that is under-utilized but worthy of preservation, propagation and promotion". A committee of nationally renowned horticulturists and experts in the nursery trade make the selection from the plants nominated by GCA members.

*Asclepias tuberosa*, a native to Texas and much of the United States, is a bushy perennial prized for the beauty of its large clusters of bright-orange flowers. The brilliant flowers are a great addition to any landscape. Once established in a well-drained, sunny location, it is long lived - around 20 years. The nectar attracts a wide variety of butterflies and countless beneficial insects and pollinators. However, its greatest value is serving as the larval host plant to the endangered monarch butterfly that migrates throughout much of the United States as it travels from Mexico to Canada each year. This plant is a



perfect example of why some plants are critical to our landscapes well beyond their ornate qualities. People might confuse this plant with the tropical milkweed, *A. curassavica*, which is easy to propagate and commonly sold in most nurseries.

*Asclepias tuberosa* is at risk of extinction in some areas of the country. It grows in a wide variety of soils, thrives in less than ideal conditions, has a long bloom period, and does not spread aggressively or contain the milky sap of most milkweeds. With raised public awareness of the environmental benefits and culture requirements, it is hoped that this trend can be reversed.

Propagation of this long-taprooted plant can be a challenge, since it does not do well in containers and the fresh seeds require a period of cool, damp stratification. Packets of seeds can be found in stores and are widely available through mail order. You can sow seeds in the fall or spring, but they need a season of cold weather before they will produce blooms.



Dr. Malcolm Vidrine, the author of *The Cajun Prairie*, shared his propagation techniques detailed below:

*I do have suggestions for growing milkweeds in general based upon my experience in Louisiana.*

1. *Grow plants from wild or healthy stock collected as close to your location as possible--the typical mantra of less than 50 miles in radius is too far in my experience.*

2. *Seed collected can be stored in the refrigerator in dry paper until 6 weeks prior to planting (I do this for Mardi Gras celebration). Remove seed and cold moist stratify (cms) seed in damp sand for 6 weeks in the refrigerator prior to planting. When you remove the seed from cms and add water, the viable seeds float--making them easy to remove with a spoon and plant in good potting soil. (This is my Easter entertainment.) Plant in protected area indoors for highest survival rate--seedlings appear as early as in one week. With the appearance of the true leaves (ca. 3 weeks), move the plants into much larger containers (I move them to 5-10 gallon pots with plenty of room for roots to develop.) and grow them for one year. In the winter, you can move the plants to any suitable location. You can even divide the roots into pieces ca. 2 inches in length and multiply your plants. Be prepared to lose up to 50% of your plants due to a variety of stresses in moving them from one location to another.*

3. *I have 15 year old *Asclepias tuberosa* that can be dug up and propagated by root divisions as above. I have good luck rooting cuttings in early spring. So, if there is a mature plant in your area, you can monitor it for seed or make spring cuttings for rooting (remove nearly all the leaves and any flower buds and bury ca. 3 inches into the soil) or dig a portion of its root system and grow plants from the root cuttings.*

The combination of beauty, hardiness and environmental value make this a perennial plant that gardeners and naturalists across the country can grow with pleasure and satisfaction, knowing they are helping not only the monarch butterfly population, but the beneficial insects and the countless birds and wildlife that depend on these insects for food.

(Photos courtesy of Janet Davis [www.beautifulbotany.com](http://www.beautifulbotany.com))

## Early People of Texas AT by Verva Densmore

A chapter-sponsored AT held at the Extension Office February 26, 2014 featured two chapter members: Mike Wehrman and TJ Fox. This AT was unusual, because while Mike was in classroom B talking about the tipi and moving outside to the tipi for further discussion, TJ Fox was in classroom A showing a slide show and conducting a presentation that covered 11,000 years of early people in Texas.



The Comancheria was an area of land that spread from Oklahoma through much of west Texas, New Mexico, Colorado and Kansas. It covered a land area about the size of France and was almost exclusively tall grass and short grass prairie. The Comanche people lived on this land for several hundred years, moving from location to location as their horses needed new pasture and as the need arose to follow the buffalo. Mike Wehrman came to the Extension Office and, using his own tipi (which has been blessed by the Native peoples) as a focal point, talked about the nomadic life of the Comanche and shared his knowledge and enthusiasm with 40 Master Naturalists.

TJ told us that people have lived in Texas for 15,000 years, saying that until about 3 years ago, experts thought that it was closer to 13,000 years. New discoveries at Buttermilk Creek suggest the longer occupation. The Clovis people lived here about 11,000 years ago and were true hunter-gatherers, hunting large mammals (megafauna) like the mastodon and *Bison antiquus*, a much larger predecessor to the modern day bison. TJ discussed the earliest people from different times and locations in Texas. He described artifacts found at Seminole State Park sinkhole, dating to 11,048 years ago then talked of the Bonfire Shelter site from 9,300 years ago and the Richard Beene site and its archaeological finds dating 4,500 years ago, at a time when ancient megafauna had disappeared from Texas. TJ concluded his presentation by discussing the relatively modern Karankawa people, who lived along the coast from Corpus Christi to Galveston for several hundred years, but became extinct in 1858.

Many thanks go to Chuck Snyder for being our photographer (see his photos on our new photo archive webpage at <http://gbamnimages.smugmug.com>) and our tech support and to all those who brought goodies which were enthusiastically enjoyed by everyone.

## Heritage Book Study - Review of *Matagorda Island* by Madeleine K. Barnes

Matagorda Island consists of 57,000 windswept acres as part of a chain of five barrier islands that provide a buffer from the Gulf of Mexico. It happens to be the only island that is completely owned by the public.

This book, written by Wayne H. and Martha K. McAlister, is a thorough and detailed guide to the island. It has been described as one of the best treatments of a natural area. Was this island always "natural"? The authors had the opportunity to live on the island and examine it in a way that few others have.

This guide explores each aspect of this sensitive living ecosystem including human history and impact. The ecology of the island is a delicate balance of biotic community and food webs. While this island is similar in age to the other barrier islands, going back some 4,500 years, the habitat and geographic distribution of plants and animals is unique.

With their writing, the authors paint the picture of the island, exploring each aspect as though you are there riding on their shoulders as they walk across the terrain

explaining what you are seeing and the interrelationships. Although this is an in-depth look at Matagorda Island, the chapters on ecology, vegetation, birds, fish, and invertebrates have commonality to that found on Galveston Island, which is more accessible for us and can serve as a naturalist reference and resource for shared species here along our Texas coastline.

The next selection for the Heritage Book Study is the first fourteen chapters of *An Unreasonable Woman* by Diane Wilson for April 7th with the second half of the book for review on May 5th. Come join us for some great naturalist reading and the discussion of ideas and learning as part of the Advanced Training offered by GBAC.



## Membership Outreach Survey by Stennie Meadours

During the February chapter meeting participants were entertained with a skit "So you think you are a Naturalist?" The skit made the point that there is always something new and fun for a naturalist to learn about. Then participants were asked to fill out a survey that included the top 10 GBAMN areas of interest with levels of expertise and/or interest. The main goals of this membership survey are twofold: one, to establish an inventory of member skills and interests, and two, to use that inventory to increase the chapter's connections with each other, and with our community.

If you did not attend the February meeting and complete the survey, you will have an opportunity to do so, or by the time you read this, you may already have!

So what's next? The data will be entered into a searchable database that will allow searching by subject, expertise, and interest with the result of grouping all, from expert to novice, that are interested in specific subjects. With that information, training, and increase in presenters, we hope to increase our natural history and environmental outreach to our community.

Finally, the Education Outreach Committee will complete a report summarizing the results in the next few months. Thank you for all you do! Stay tuned!

## Coastal Mammals AT by Madeleine K. Barnes

How many defining characteristics of mammals can you name? Dennis Jones, who has spent 29 years with TPWD focused his presentation on Texas coastal mammals on January 14<sup>th</sup> for a group of 41 GBAC Master Naturalists. You were right if you answered with any of the following: hair, mammary glands, a four-chambered heart to pump warm blood, a breathing diaphragm, a single fused jaw bone, reproduces through live birth (viviparous), three bones in the middle ear, able to make and regulate their own temperature (endothermic), and a large cerebellum or neocortex. There are a few more, including the fact that mammals have specialized teeth which enable identification using a dental formula.



For this training session, Dennis, who is the Cultural Interpreter Ranger at San Jacinto Battleground & Battleship Texas State Historical Park, referred to the TMN Handbook section on mammal standards as presentation goals.

Were you aware that the first true mammals appeared in the fossil record at the same time as dinosaurs? Of course, mammals were forced into the role of small animals in order to find a niche for survival. They could not compete directly with dinosaurs for the same food supply.

Why did they come out on top and the dinosaurs die? Mammals survived by becoming generalists, by producing more offspring, and because they needed less food due to their smaller size. Then the tables turned and mammals became the dominant terrestrial vertebrates and they expanded through extensive adaptive radiation into 4,260 named species with 141 being found in Texas.

These include everything from bats to whales, with the largest number of species being rodents. Local species

were identified and discussed with interesting details. Methods used to estimate mammal populations, through monitoring observation, tracking, trapping, and marking, were briefly outlined for general knowledge.

This session was jam-packed with facts, personal knowledge, and observations which enhanced the content. Special appreciation to Dennis for giving us another informative presentation. Many thanks to those who provided the delicious refreshments and others who helped set up the room.

Dennis provided the following references for more information about these amazing animals.

- *Mammals East of the Balcones Fault Zone* by David Schmidly
- *The Mammals of Texas* by William B. Davis
- The Mammals of Texas - Online [www.nsr.ttu.edu/TMOT1/index.htm](http://www.nsr.ttu.edu/TMOT1/index.htm)
- North American Mammals - NMNH - Smithsonian Institution Online <http://www.mnh.si.edu/mna/>

## Pelican AT by Chuck Snyder

On Saturday, January 11, a determined group of Master Naturalists braved the elements (fog) and transportation issues (limited winter schedule on the Bolivar Ferry) to convene at the Crystal Beach fire station for an advanced training lecture and field trip by the incomparable Winnie Burkett on the subject of pelicans. It was definitely a worthwhile trek.



Winnie presented an informative lecture and slide show on a wide variety of topics: worldwide and North American pelican varieties; the near extinction of the Brown Pelican and its remarkable recovery; breeding, nesting, and caring for its young; feeding behavior; and a

number of other little-known facts about these remarkable birds.

Worldwide, there are eight recognized separate species of pelicans, with one or more species found on every continent except Antarctica. In North America, we have two: the familiar Brown Pelican of the coastal areas, a year-round resident here; and the American White Pelican, which breeds in the north central region of the US and southern Canada, but winters along our coast.

The Brown Pelican, so common to us now, became nearly extinct in the Texas Gulf Coast area by the early 60's. The widespread use of DDT in agriculture led to the chemical entering the food chain, ultimately causing a severe thinning of the shells of the bird's eggs; the eggs could not hold up to the weight of the birds during incubation. Only after DDT was banned and the food chain purged of its residue was a successful reintroduction of pelicans from unaffected areas accomplished. From a low of two remaining pairs, the population has grown to more than 3,000 nesting pairs. Most Brown Pelicans build their nest on the ground, favoring offshore islands where predatory mammals are unable to reach their young.

The feeding behaviors of the two American species are distinctly different. The Brown Pelican's usual approach is to dive headlong into the water, surfacing with a bill full of fish. It tends to be a lone hunter. The American White



Pelicans, on the other hand, generally fish as a coordinated group, sitting on the surface of the water and

herding their prey before dipping their bills to capture their meals.

Following the lecture, Winnie led the group to two viewing spots where pelicans are often found in abundance. Unfortunately, the pelicans hadn't gotten the word about our class, so only a few of each species were observed. However, armed with the knowledge and images imparted by Winnie, we'll know what to look for the next time we encounter these magnificent birds in their habitats.

As always, thanks to the participants who brought food and coffee over land and water and a special thanks to Winnie Burkett, who always stimulates our interest in birds!

(Photos courtesy of Alan Wilde)

## Diurnal Raptors AT by Diane Humes

Raptors are birds with powerful beaks and talons, including hawks, owls and vultures, usually in shades of brown, white and black; immature birds are streaked, rather than barred. Dick Benoit has observed and counted raptors during migration for 39 years in Michigan and Texas. On March 3, 2014, he presented his annual Raptor Workshop to 50 intrepid potential hawk watchers. His goal was to help us learn the Top 10 Hawks of our area.



Photo Mel Measeles

In 1972, bird watchers noted the complete absence of peregrine falcons east of the Mississippi - absent due to multiple causes including use of DDT. Dick became interested to help count raptors; since then bird numbers have increased - peregrines now number 1200 pairs east of the Mississippi - as organizations and individuals have made it their business to count all raptors, track population trends, and preserve and restore habitat.

Dick described the diurnal (active in daytime) raptors of Galveston Bay to prepare prospective and returning hawk watchers for the spring migration count. He spoke of identification tips and challenges of counting raptors during migration. Remember: OMG is a count of over 500! Migration begins now; birds are "all dressed up and ready to go" after the vernal equinox. The hawks take advantage of rising thermals and avoid going over bodies of water. They travel about 300 miles per day, often at heights of up to two miles.



He presented results of the Winter Raptor surveys that he, and Bob and Sarah Patterson have completed between Galveston Bay and Brazoria National Wildlife Refuge each winter. Spring hawk watch sites are Sylvan Beach, for a north wind, and Little Cedar Bayou Park, for a southerly wind, both in La Porte. For the nineteenth year, we will count hawks during March and April. Be there, prepared for sun, wind, cold, hot, and, perhaps, a great day with thousands of hawks overhead!

## Galveston Bay Area Clan by Diane Humes

Despite living in the Greater Houston Metropolitan area, with a population of about six million people, my neighborhood in outer suburbia feels like a small town to me. Houses are close together and the kids go to the elementary school next door. Within our subdivision's borders we have scout troops, swim team, adult activities and a park. Moms and Dads know each other's kids - spies are everywhere - with overlapping circles of friends and acquaintances; it seems that everybody pretty much knows everybody. We think we have the "good old days".



Actually, with 800 homes, nobody really knows everybody. Studies have determined that an average number of people anyone can have a friendly relationship with - that you know well enough to ask a favor - is 135. And, according to Professor Robin Dunbar, at the University of Liverpool, nobody can really have a close relationship with more than 150 people. This is an average - the range might go up to 230 - but it has been called the "Dunbar number". He bases this on primate research - humans are primates, too - studies of primate groups, primitive human groups, linguistic studies, psychology and fossil evidence.

Humans and other primates are social; gossip and grooming behaviors are the glues that hold us together, cementing trust in personal interactions. Humans and apes are able, in various degrees, to discern what others are thinking - communication is not solely through words. Our modern human brain, especially the neocortical area where thinking and reasoning reside, is unusually large for our body size and uses a disproportionate amount of our energy. This must be important; human linguistic abilities far surpass those of other primates and we live in far larger social groups, which correlates with neocortex size. Dunbar proposes that our mental abilities and language allow us to live in larger groups than other primates, but there are limits to brain size and the human brain's computing power.

My neighborhood is about 50 years old. Houston, the city, never mind the metropolitan area, began on the

banks of Buffalo Bayou in 1836, less than 200 years ago. According to anthropologists, the first cities appeared on the human landscape about 3,000 years ago; agriculture had its beginnings 10,000 years ago. Prior to that, going back maybe 400,000 years, humans lived as hunter-gatherers, probably much as groups (which have been studied) still live in Australia, Africa, and South America.

Modern hunter-gatherers form their smallest unit with around 35 people - 5 or 6 families that collaborate and camp together. The largest unit is the tribe, with 1500 to 2000 members, more or less, who form a linguistic group, all speaking the same language or dialect. Other groupings may occur: mega-bands of about 500 people; and the clans with nearly always around 150. The clan is the unit that meets periodically for ritual functions. Everybody in the clan knows how they are related to each other.

The clan unit, the Dunbar Number of 150, is common in most societies. Archaeologists think that early farming villages from 5000 BC typically had about 150 people, as do modern villages of Indonesia, the Philippines and South America. Hutterite farming communities in the U.S. and Canada are around 110 people; a community always splits when it reaches 150, because it is impossible to control a group any larger than that by peer pressure alone. In other words, above 150 you need a police force.



The Church of England has concluded that an ideal size for a church congregation is 200. When Brigham Young sent his congregations on the Great Trek from Illinois to Salt Lake City, he broke his 5000 into groups of 150 that he believed could operate independently and efficiently. The largest stand-alone military fighting force is the company - varying from 80 - 225 - a battle tested organization, presumably the number of men that can

know each other well enough to work together as a functional unit.



Speaking about business, Christopher Allen, [www.lifewithalacrity.com](http://www.lifewithalacrity.com), noted that Dunbar's Number marked the point at which a small business became unmanageable. He said that, "once a company grows past 200 you are really starting to need middle-management, but often you can't afford it yet. Only when you get up past that, maybe at 350-500 people, does middle-management start really working, primarily because you've once again segmented your original departments, possibly again reducing them to Dunbar-size groups."

## 150 Friends

Says Robin Dunbar, "taken together, these results suggest that human societies contain buried within them a natural grouping of around 150 people. These groups do not have a specific function: in one society they may be used for one purpose, in another society for a different purpose. Rather, they are a consequence of the fact that the human brain cannot sustain more than a certain number of relationships of a given strength at any one time. The figure of 150 seems to represent the maximum number of individuals with whom we can have a genuinely social relationship, the kind of relationship that goes with knowing who they are and how they relate to us... Thus it seems that, even in large-scale societies, the extent of our social networks is not much greater than that typical of the hunter-gatherer's world."

The Galveston Bay Area Chapter, holding pretty steady with 198 members, is, perhaps, one clan of the tribe of Texas Master Naturalists. Our clan gathers six times a year for food, fun and friendship, members receive recognition, hear the news and pay tribute. We meet with other clans - not the whole tribe - at the yearly State Meeting, sharing news and friendly rivalry. The tribe itself is getting close to 8000 members, led by Michelle Haggerty and the tribal elders in Kerrville, but we are all Texans and, perhaps, linguistically similar. We rarely, if ever, communicate with the tribes in other states or countries, but there is a higher level of organization called ANROSP - Alliance of Natural Resource Outreach and Service Programs - of which Michelle is President! Perhaps she is like a Commander-in-Chief?

All of which brings me back to the question that Dick Benoit has asked for the last ten years, "How big should the chapter get? What is the right number?" Do we want the mega-church, traffic control, papers, forms, and punch clocks or village church, small-town, personal, everybody knows everybody or some new version? How best can we support our mission? Only we can decide, but long live Food, Fun and Friendship!

### CHAPTER MISSION STATEMENT

*The Galveston Bay Area Chapter-Texas Master Naturalist is dedicated to the conservation, preservation and restoration of our natural resources and the promotion of ecological education for all. The Galveston Bay Area Chapter-Texas Master Naturalist will encourage and support trained Master Naturalist volunteers in providing and/or assisting community programs and projects that increase appreciation of our natural environment, promote the maintenance of and sustainable use of public open spaces; and protect and preserve native flora and fauna and their habitats.*

To learn more:

*Grooming, Gossip and the Evolution of Language.* Robin Dunbar. 1997

*How Many Friends Does One Person Need? Dunbar's Number and Other Evolutionary Quirks.* Robin Dunbar. 2010

## WaterSmart Program Receives Award (Press release edited by Chuck Snyder)

WaterSmart, a program of the Texas A&M AgriLife Extension Service and Texas Sea Grant, received special recognition recently from the Houston-Galveston Area Council for its WaterSmart Rain Garden at Heritage Park in League City. Project leader Chris LaChance, Texas AgriLife WaterSmart Coordinator and GBAC Master Naturalist, accepted the award on behalf of the organization.



The WaterSmart garden was one of 22 entities recognized by the council's parks and natural areas subcommittee for their "outstanding model natural area" projects for the Houston-Galveston region, according to Charriss York, Texas Coastal Watershed Program specialist in Clear Lake.

York said the program included the installation of a 655-square-foot demonstration rain garden at Heritage Park to help treat stormwater runoff from the adjacent 17,190-square-foot parking lot and sloped grassy area.

"In partnership with the city, the site was excavated and prepared," she said. "Completion of the rain garden project was in conjunction with a hands-on workshop that included classroom instruction, followed by the 32 participants performing the final garden installation."

Participants included engineers, stormwater managers, landscape architects and designers, parks superintendents, AgriLife Extension Master Gardeners and Master Naturalists, and homeowners, York noted.

The rain garden shows citizens that a natural feature such as a garden can function as an effective resource-efficient onsite stormwater management tool, she said.

"As the population of coastal Texas and urban sprawl continue to grow and replace prairies, wetlands, and forests with impervious surfaces, runoff from these surfaces carries with it large amounts of pollutants and creates a significant water quality problem," York explained.

"With increased flow from paved or compacted surfaces, there is less opportunity for groundwater recharge. This rain garden project demonstrates that this technique has the potential to mitigate polluted runoff and loss of infiltration by capturing stormwater from impervious surfaces, in this case an adjacent parking lot and grassy area, during a rain event."

The process slows down runoff and allows a percentage to be absorbed in the soil, she said. The stormwater passes through and is filtered by the soil, plant material, and mulch – a process which helps to remove pollutants that would otherwise flow into Clear Creek. With the use of native plants, the rain garden is a habitat for wildlife that also highlights the landscape.

## GBAC 1st Annual Camp Out by Tawy Muehe

For those who are new to the Galveston Bay Area Chapter (GBAC), you will soon find out that this is the "BEST" chapter in the State of Texas. WHY? Because we fulfill our motto "FOOD, FUN and FRIENDSHIP" every time we meet. Whether it is a volunteer or advanced training event or being together just for fun, we always seem to enjoy being with each other.

Well, the campout was a very exciting weekend filled with laughter, conversation, plenty of food, playing games, a nice warm place to be with friends and plenty of room for



all. We had visitors from the Gulf Coast MN Chapter, Waco, and many members of our chapter and their spouses. In all, we had 30 people who came to the event; some stayed in the Maco Stewart House, some stayed in the ranch house, some brought tents and RV's, some stayed in a son's beach house, and some came in from their homes in Galveston.



While I played a game of '42 with Jason Miles and Mel and Shirley Measeles, I watched and listened to sounds of friends having fun. There was a group visiting in the living room, about 10-12 learning the "art of knot tying" with the help of Root Choyce in the dining room, a group in the kitchen cleaning up from the potluck dinner and preparing the egg and potato casserole for breakfast, and those milling around munching on snacks and drinks.



On Saturday, we started the day with a good breakfast and made a slow start to the advanced training event - birding with Scott Buckel. We began with a casual walk through the trails at the Nature Center. At the Clapper Rail trail and platform, we watched an osprey carrying a

fish and spied roseate spoonbills, great egrets, sparrows and eastern phoebes. For lunch, we returned to the house for Subway sandwiches and soup followed by a short rest. After lunch, with warmer temperatures, it was time for a kayak trip, led by Vic Madamba, Frank Budny and Rick Becker. Everyone had a great time and came back hungry.

Nathan Veatch led a group on a Bay Walk, teaching about the critters and shells to be found along the bay. Some just stayed home and had a nice nap. At dinner time, it was cold outside; everyone found a place to eat inside where it was warm, cozy and friendly and enjoyed the feast. Chad McLein from GISP led a discussion of "The City of South Galveston", which was very informative and everyone seemed to enjoy the information. NOW LET THE FUN BEGIN! The games, visiting, and sitting around the open fire outside were very nice until about 11:00pm.

On Sunday, some went birding with David Peak, a regular park birder, while some ate breakfast and began to clean up and get ready to go home. Even the cleanup was fun, with conversation about anything and everything that came to mind.



Just think, I almost fizzled out from lack of interest, but I am so glad I didn't. Thanks to Sara and Bob Snell for helping Cliff and me get all the food and supplies to the event. And a big Thank You to all who helped in the kitchen with the food preparation, cleanup, and kept the event moving.

(Photos courtesy of Helle Brown and Carolyn Miles)

**Save the Date for Next Year - January 30th, 2015  
For the GBAC 2nd Annual Camp Out.**



**Training Class Fun**  
(Photos from the chapter's new online photo database!)



## Guppies from Julie

Thank You from Dolphin Challenge!

Fifteen teams from across the nation rolled into Galveston for Dolphin Challenge in early February! These high school students had been preparing for the ocean sciences quiz bowl for months and the time had arrived!

Wait a minute . . . just because these kids are bright - they still wanted to have fun on the Texas coast! So many headed to Galveston Island State Park to experience a beach and bay field trip with Master Naturalists Nathan Veatch, Steve Alexander, and Bill Ashby.

The students participating in the field trip had a blast checking out fiddler crabs, learning to use a refractometer, and checking out the seines for fish, crabs, comb jellies, and more! One student from Arkansas had never been to the ocean before and was thrilled!

On the day of the competition, 30 Master Naturalists and 25 Texas A&M Galveston students arrived ready to volunteer. The high school competitors were ready - many wearing team t-shirts and my favorite - geeky glasses held together with tape in the middle!

The students with buzzers in hand were nervous as were the volunteers. After a practice round, everyone settled in for a long, brain teaser of a day! Finally Dolphin Challenge was off and running!

Texas Master Naturalist and TAMUG Sea Aggies served as officials during the competition. They were moderators, science judges, rules judges, score keepers, and time keepers. Dolphin Challenge could not have happened without you!

The Galveston Bay Area Chapter also sponsored snacks and goodies for the students. Thank you! In the final rounds, Houston's Langham Creek defeated the "A" team from The Village School, a private school also located in Houston, by only three points after two tie-breakers! Master Naturalist, Nicole Bonicamp, noted "the competition was better than a Super Bowl!"

Sanger High School's "A" team received the Ralph Rayburn Sportsmanship Award, which is given to the team judged by competition officials to best embody the spirit of earnest competition while demonstrating exemplary decorum and character.

Thank you, Texas Master Naturalists, for making Dolphin Challenge a great success and so memorable for the students!



### *The Midden*

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For comments on this issue or to suggest content for future issues, please contact **Diane Humes** by e-mail at [treimanhumes@earthlink.net](mailto:treimanhumes@earthlink.net).

#### **Midden Editorial Team**

Steve Alexander  
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Editor  
Madeleine K. Barnes

### *The Midden Deadline for the next issue*

**May 5<sup>th</sup>**

If you have Advanced Training or Volunteer Opportunities, please submit information to  
Cindy Howard, [howardc@uhcl.edu](mailto:howardc@uhcl.edu).

**TEXAS A&M  
AGRI LIFE  
EXTENSION**

Texas A&M AgriLife Extension programs serve people of all ages regardless of socioeconomic level, race, color, sex, religion, disability, or national origin. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Court of Texas cooperating.

## April and May Activities

### ADVANCED TRAINING OPPORTUNITIES

#### Chapter Meeting - April 3<sup>rd</sup>

TPWD's Oyster Mapping and Restoration Project:  
Past, Present and Future  
Speaker: Bill Rodney, Oyster Restoration Biologist,  
TPWD  
6:30 Social, 7:00 Presentation, 8:00 business meeting  
AgriLife Extension Office 1 Hour AT

#### Rainwater Harvesting - April 15<sup>th</sup>

1-4pm, 3 hours AT Cost \$45  
Location: Extension Office  
Presenters - Tim Jahnke, Master Gardener  
Register with Emmeline Dodd [txdodd@aol.com](mailto:txdodd@aol.com)

#### Estuarine Smorgasbord - May 3<sup>rd</sup>

9am -Noon, 3 hours AT  
Location: GISP  
Presenters - Dr. Steve Alexander, TMN  
Register with Emmeline Dodd [txdodd@aol.com](mailto:txdodd@aol.com)

#### Ongoing

##### Galveston Island State Park

10 am at the Welcome Center (Starting Mid-March)  
Every Saturday- Beach Explorations  
Every Sunday- Bay Explorations  
Tours 1 to 1 ½ hours long. Bring water and family.

##### Heritage Book Study Group

First Monday of every month. AgriLife Extension Office  
10am-Noon, 2 hours AT  
Contact: Elsie Smith (409)945-4731  
We are currently reading: *An Unreasonable Woman* by  
Diane Wilson.

### STEWARDSHIP OPPORTUNITIES

#### Ongoing Activities:

##### Tuesdays -

- Sheldon Lakes State Park, Contact: Tom Solomon [crandtr@sbcglobal.net](mailto:crandtr@sbcglobal.net)
- Texas City Prairie Preserve, Contact: Jim Duron [wishkad@yahoo.com](mailto:wishkad@yahoo.com)
- Environmental Institute of Houston at UHCL,  
Contact : Wendy Reistle [reistle@uhcl.edu](mailto:reistle@uhcl.edu)

Wednesdays - Wetland Restoration Team, Contact:  
Marissa Sipocz [m-sipocz@tamu.edu](mailto:m-sipocz@tamu.edu)

##### Thursdays -

- Horseshoe Marsh Prairie, third Thursday of  
each month, 9 - Noon. Contact: Tom Solomon  
[crandtr@sbcglobal.net](mailto:crandtr@sbcglobal.net)

- San Jacinto State Park, Contact: Tom Solomon  
[crandtr@sbcglobal.net](mailto:crandtr@sbcglobal.net)

Fridays - Prairie Friday, ABNC, 8:30 - 11:30am,  
Contact: Dick Benoit [RBenoitTEX@aol.com](mailto:RBenoitTEX@aol.com)

### EDUCATION - OUTREACH VOLUNTEER OPPORTUNITIES

Bay & Island Adventures - Volunteers teach six in-class hands-on modules on a once a month basis in Dickinson and Galveston Schools. Presenters and helpers are needed for eleven 4th and 5th grade classes. Contact: Sara Snell [snellsw@verizon.net](mailto:snellsw@verizon.net).

Education and Outreach Committee - Lots of work to do and we can use your help developing a speakers bureau; responding to requests for exhibit booths, fieldtrip guides and presenters, planning Camp Wild and Treasures of the Bay; and developing a library of education-outreach materials. Contact Stennie Meadours [Stenmead@aol.com](mailto:Stenmead@aol.com)

Partner and Associate Programs - Many organizations sponsor guided walks and education programs or need volunteers to man their nature center. Go to [www.gbamasternaturalist.org](http://www.gbamasternaturalist.org) click on "Volunteer Opportunities," then click on "Partners, Sponsors and Associates" for the list, then click on their website for information and contact.

### BOARD AND COMMITTEE MEETINGS

**Board Meetings** - April 1<sup>st</sup>, May 6<sup>th</sup>  
2-4 at the Extension Office

#### Committee Meetings

Communication - May 6<sup>th</sup>  
9-Noon at Extension office  
Advanced Training - April 21<sup>st</sup>, May 19<sup>th</sup>  
10-Noon at Extension office  
Education/Outreach - Meets as needed.  
Stewardship - Meets as needed.

