Galveston Bay Area Chapter – Texas Master Naturalists

The Midden

December 2008

Awesome Year – *by Sara Snell, President*

Another awesome year is rolling to a close. We can look back on a year of fantastic Advanced Training that keeps our members always learning. Our chapter is fortunate to have Stewardship opportunities all around the Galveston Bay where our members can restore and preserve our natural resources. The Bay Adventures, Jr. Naturalist Program and the miscellaneous invitations we receive promotes the education of the Galveston Bay ecosystems.

Prairie Amble AT- ABNC
Photo by Mel Measeles

Next year promises more of the same and perhaps some new opportunities. I look forward to working with our newly elected officers and the newly structured board. I hope each of you will also continue with the many opportunities our Galveston Bay Area Chapter provides.

Happy holidays to all of you. See you on the prairie, in the marsh, on the beach or wherever our activities may lead us.
Sara

Dick Benoit and Diane Humes attended the Citizens Environmental Coalition's 11th annual Synergy Awards luncheon on October 23. Our chapter received the President's Award jointly with the Gulf Coast and Heartwood Chapters for our collective restoration efforts in the Houston area. The award was made from a tree downed by Hurricane Ike.

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December-January

ADVANCED TRAINING OPPORTUNITIES
by Shirley Foster, AT Chairperson

GIS For Dummies
Saturday, Jan 31, 2009
Environmental Center
Computer Lab UHCL
9 AM until Noon- 3 Hours AT
Presenter: Heather Biggs
Geo-Information Specialist
Maximum Class Load: 25
Cost: TBA
Register with TXDODD@aol.com
For more information contact Project Leader Vic Madamba at vik-n-rumi@att.net

January 2009 will see the first of the New Year's Opportunities - a brand new field for most of us. Another tool to be used on the gulf, bayou, bay, prairie, and wetland. Being more than a little electronically challenged I look forward to the GIS workshop for information I can use in the field.

I wish to thank those hard-working members of the Advanced Training Team: Steve Alexander, Louise Bell, Dick Benoit, Frank Budny, Emmeline Dodd, Claudia Edwards, Shirley Foster, Ellen Gerloff, Vic Madamba, Julie Massey, Mel Measeles, Diane Olsen, Sara Snell, Nathan Veatch and Mary Vogas. It has been a most enjoyable year working with these talented and agreeable people.
Shirley Foster, AT Team Leader 2007/2008

THE AT TEAM GIVES SHIRLEY A HEARTY "WELL DONE!" FOR HER OUTSTANDING LEADERSHIP.

STEWARDSHIP OPPORTUNITIES
by Dick Benoit, Stewardship Chairperson
See the Green Sheet which accompanies *The Midden*.

Master Naturalists State Conference
by Dick Benoit; photos by Mel Measeles

The ninth annual statewide meeting at Mo Ranch in Hunt, Texas October 24-26, 2008 was rewarding as usual. The weather was beautiful as 215 state members enjoyed each other and the programs and the fine food.

Julie Massey, Sara Snell, Mel Measeles, Diane Humes, Odie Asscherick, Marie Asscherick, and I represented our chapter. Many attendees were concerned about the condition of our chapter after the storm, and noted the smaller number than usual representation of our chapter.

Sara presented at the Volunteer Projects Training, Developing Teacher Workshop, and Treasures of the Bay and Julie Massey presented the Junior Master Naturalist Program.
Diane Humes presented at the Master Naturalist Volunteer Project and Brays Bayou Restoration Project. All were warmly received.

At the awards ceremony our own Mel Measeles was the only member receiving the 2,500 Service Hours Milestone. Julie made the short list of the new sponsor award and finished a close second. The highlight was the First Place Award of $500 for the Chapter Project that was awarded to the Galveston Bay Area Chapter for their Treasures of the Bay Teacher's Workshop for 2009!

We realize that the aftermath of Ike has left many of our members still piecing their lives together, but you were there in spirit and hope next fall your situation is better and you will join your fellow members in fun, food, and friendship at next year's conference.

PRAIRIE *by Dick Benoit*

O N D E R I N G S

Prairie Lovers,

Prairie Amble AT Workshop

Thursday, October 9, 2008, was a clear cool autumn day perfect for the Prairie Amble Workshop. The Advanced Training Team and especially Diane Humes, Ellen Gerloff, and Tom Solomon made the workshop fun and memorable for the 37 attendees, eight of whom were from surrounding chapters. The highlight of the workshop was the color booklet produced by Helen Mueller, of AgriLife Extension. Thanks again, Helen.

The workshop focused on the 36 plants needed to do the transects set up by Barron Rector in 1999. Each plant species was present in the auditorium for the class to familiarize themselves with before doing the outside plants in the Prairie Demonstration Garden and Prairie Loop near the prairie platform. The attendees enjoyed the weather and the workshop as they ambled the prairie. Last year, prairie grasses were the main focus, this year the focus was prairie transect plants, and next year the request is more for flowering plants of the prairie, this is other than the grasses.

Prairie Pandemonium October 18, 2008, began clear and cool for our Second Prairie Pandemonium at Armand Bayou Nature Center. The work of many months lead by Tom Solomon, Jim Duran, the Stewardship Staff, and mainly the Prairie Friday crew was to find fruition as 123 persons planted 2,500 one gallon grass and forbes plants. About 2,100 were planted where 3.5 acres of Chinese Tallow trees had just been cleared; the remaining plants were placed in the Grimes Prairie.

These plants had been grown from 2007 year's seeds and sprigged from plants rescued during the year. These included mainly Big Bluestem, Eastern Gamma Grass, Switch Grass, American Aloe, Texas Coneflower, Bushmint, and Rattlesnake Master. Tom and Art Carpenter had augured holes in the prairie so that the plants would slip easily into the ground.

Mark Kramer, George Regmund, and Chris Maddox, the Stewardship staff, procured a grant to support the project. It allowed also for T-shirts, prizes, and a Bar-B-Q lunch served at noon.

TCCP Harvest

Tuesday, October 21, 2008, we had our Project of the Month at Texas City Prairie Preserve. We harvested seeds from this year's prairie plants. The day was productive as 10 members spent the morning enjoying a cool fall day of plants and raptors. A goodly amount of seeds were collected to dry for winter planting.

A “prairie schooner” at TCCP!

All You Really Need to Know About Plants

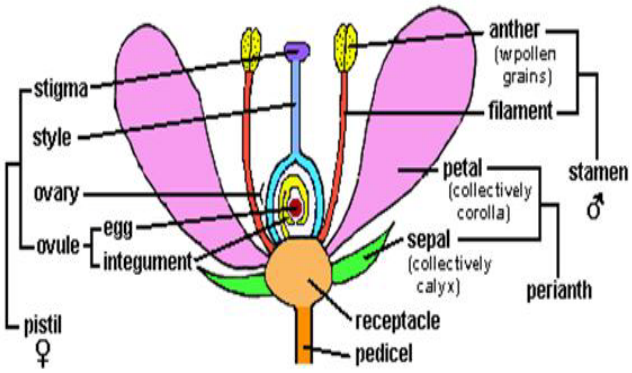
by Diane Humes

For over a million years, a short time geologically speaking, flowering plants or Angiosperms, have lived on Earth. Botanists count 233,887 species of flowering plants alive today. Linnaeus began classifying this incredible diversity in 1735; modern science seeks to classify and decipher ancestral relationships by studying the fossil record, morphological evidence, and DNA analysis. However, there is much to learn, and affinities above the family level may be subject to change as new information is discovered. Currently, the known flowering plant species are grouped into 300+ plant families.

The plant **family** – the taxon whose name ends in –***aceae*** – is actually a very good place to begin study of plants. Plant family characteristics are applicable worldwide and are reliable for predicting the identification of a plant and its location in a plant key, whereas, color, height, leaf type, etc. are often not so useful. The most reliable characteristics are those of the flower, which is why most plant keys require a flower and seed. That is because the flower is the plant reproductive organ; usually the part that is most conservative (and conserved) over the course of evolution!

Although much is debated about angiosperm origins – Charles Darwin called it "the abominable mystery" – it is known that flowers evolved through modification of the branch buds and leaves of ancestral plants. The female flower parts developed an enclosed ovary, fertilized through a tube called a "pistil". Pollen, from the male part of the plant, travels through the pistil to the ovule, where the seed develops. The chemicals used by pollen to burrow through the pistil are identical to some produced by fungi, so it is thought that flowering plants acquired the genes to do this from close relationship to fungi. The enclosed ovary is the distinctive feature of the ***Angiospermophyta*** , the "Enclosed Seed Plants".

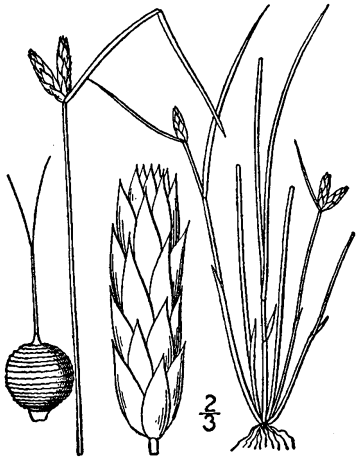
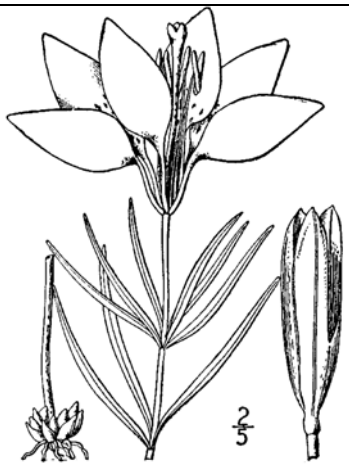
All flowers follow the same pattern and have four rings of flower parts, always in the same order, from the outside of the flower to the inside – sepals, petals, stamens, pistil. The outside ring is always the sepals, which generally resemble green leaves. If a flower has two rings of colored petals, the outer one is sepals that are colored, instead of green. Often botanists lump the two similar rows together and call them all **tepals**. Sometimes a ring is missing. If there is only one ring of colored parts, it is still sepals and the petals are absent.



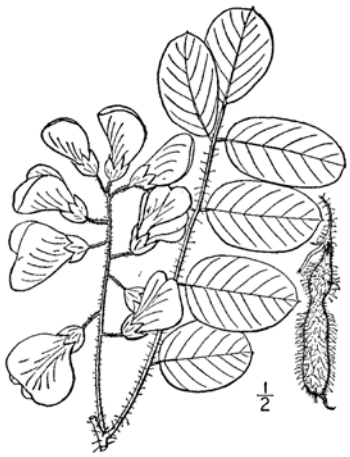
Natural selection has created amazing variants to this basic plan. Generally, **evolution of the flowering plants has led from simple flowers with numerous separate parts to specialized flowers with fewer, often fused parts.** The two great divisions of flowering plants – Monocots and Dicots – separated from each other very early and follow this pattern of complexity. For example, arrowheads in the monocots are considered more primitive then orchids; buttercups are more primitive than asters in the dicots. The first flowers appear with insects in the fossil record; the two may have co-evolved. Wind-pollinated grasses may be the most modern or "advanced" flowering plants.

Of the 180 vascular plant families in the state of Texas, the 10 largest families encompass half of all the nearly 5000 plant species living in Texas. So, a working familiarity with the characteristics of just the **Top 10 Texas Plant Families**, will greatly aid in the identification process!

Top 10 Texas Plant Families

MONOCOT FAMILIES ***One seed leaf • parallel leaf veins • horizontal rootstock • floral parts mostly in 3's***	
Cyperaceae* – SEDGE FAMILY** – 241 species, 14 genera **Perennial grasslike plants of damp, marshy places**. Main stem a rhizome, sometimes short and tuberous. Each **flowering stem is usually a solid culm**, often **triangular in cross section**, seldom branched below the area of flowering. **Leaves alternate**, basally abundant, **basal blade margins coalescing and forming a sheath around the stem**. **Flowers small**, **radially symmetrical**, with **bristles, hairs, or scales in place of sepals and petals**, or none at all. **Stamens usually 3, style 1**. **Fruit an achene**, either lens-shaped or triangular. ***Carex, Cyperus, Eleocharis, Schoenoplectus	
Liliaceae* – LILY FAMILY** – 93 species, 30 genera **Perennial herbs growing from bulbs**, rhizomes, or corm. **Leaves alternate or whorled**, sometimes all basal. **Flowers showy and terminal**, **radially symmetrical**, **with petals, stamens, and ovaries in whorls and multiples of 3's.** Sepals and petals usually identical (tepals), **white or conspicuously colored**. **Conspicuous stamens, usually 6**. **Fruit a capsule**; sometimes a berry. ***Tulipa, Lilium, Amaryllis,	
Poaceae or Graminae* – GRASS FAMILY** – 545 species, 131 genera **Annual or perennial herbaceous plants** or woody plants (bamboo, giant reed) of large size. Stems composed of rhizomes below ground and **hollow culms** above, **circular in cross section**, except at nodes. **Leaves basal or alternate** or both, fundamentally in 2 ranks on the stem, the basal portion forming a sheath enclosing the stem but **leaf margins <u>not</u> coalescent**, with a membraneous **ligule** usually present or represented by a row of hairs at the point of joining of sheath and blade. **Flowers small**, **bilaterally symmetrical,** usually terminal, wind-pollinated, surrounded by bracts – lemma, palea, and two glumes. **Fruit a caryopsis**. ***Agropyron, Panicum, Poa, Zizania.	

DICOT FAMILIES ***Two seed leaves • netted veins • tap roots • floral parts mostly in 4's and 5's***	
Asteraceae or Compositae – **ASTER or SUNFLOWER FAMILY** – 620 species, 121 genera Largest of all plant families, with 20,000+ species worldwide. Plants nearly all **herbaceous**, sometimes shrubs or trees. Members have resinous or milky sap, often with **taproots** or **tubers**. **Leaves are often in basal rosettes**. **Flowers** are **small, perhaps 100+, subtended by bracts, arranged in heads giving appearance of a single flower. Sepals not green** – may be bristles, scales or missing**. Petals (corollas) of two types: ray flowers and disc flowers.** Ray flowers simulate petals; disc flowers contain the stamens and pistils. **Flowers radially symmetrical.** Plants mostly pollinated by insects; seeds have spines, hooks, hairs for dispersal. Fruit is an **achene**. ***Ambrosia*** (ragweed), ***Helianthus*** (sunflower), ***Aster***, ***Taraxacum*** (dandelion).	
Lamiaceae – **MINT FAMILY –** 115 species, 31 genera **Herbaceous,** sometimes shrubby, rarely trees. **Aromatic**, usually with **glandular hairs containing ethereal oils**. **Leaves simple, opposite or whorled. Stems square in cross-section**. Flowers complete, **bilaterally symmetrical**, showy, with **5-lobed tubes** having the **lower lip 3-lobed** and **upper lip 2-lobed**. Flowers often arriving from congested nodes. Fruit is a **nutlet** or small **drupe**. Family members include many herbs – thyme, oregano, lavender, rosemary, and ornamentals such as ***Salvia***, ***Ajuga***, and skull-cap.	
Brassicaceae or Cruciferae– **MUSTARD FAMILY** – 123 species. 46 genera **Herbaceous**, either **annual or biennial**, with **watery, acrid sap**, sometimes a small shrub. Pungent "mustard" taste. Leaves **simple** or some pinnate, **alternate** to rarely more or less opposite. Flowers **radially symmetrical**, with **4 petals in a cross shape**, **4 sepals**, and **6 stamens – 4 longer + 2 shorter**. Fruits are long and slender capsules, **siliques,** that open longitudinally**. Flowers are often yellow**. Family members include ***Alyssum***, cabbages and mustards, radishes, and the weedy species pepper-grass and shepherd's purse. The older family name, ***Cruciferae***, refers to the resemblance of the 4 petals to a cross.	

Euphorbiaceae **– SPURGE FAMILY –** 137 species, 20 genera **Herbaceous** to **shrubby**, **sap often milky or acrid.** **Leaves simple** or compound, usually **alternate**, but sometimes opposite or whorled. **Flowers are extremely reduced**, **radially symmetrical**. **Sepals 5** or sometimes none, **petals 5** or sometimes none, **stamens frequently the same number as the sepals and alternate with them**, styles 3. Fruit usually a **capsule**. Most family members are tropical; members include ***Sapium*** (Chinese tallow), ***Euphorbia*** (poinsettia), ***Croton***, rubber plants, castor beans and cassava. Most euphorbs secrete nectar and attract insects, but a few are wind-pollinated.	
Fabaceae or Leguminosae **– LEGUME OR PEA FAMILY –** 360 species, 74 genera Predominantly **herbaceous**, but frequently shrubs and sometimes trees, often with **nitrogen-fixing bacterial root nodules**. **Leaves pinnate to tripinnate.** Flowers **bilaterally symmetrical**, **sepals 5**, coalescent, **petals 5**, separate, or commonly, 2 coalescent**, stamens 10, 20, or more**, **style 1**. Fruit a **legume**. Second largest dicot family after ***Compositae*** with 15,000 – 20,000 species worldwide. Major family members include ***Acacia, Indigofera, Mimosa***, and many food crops – chick peas, soybeans, lentils, beans, peas, alfalfa, and clover.	
Scrophulariaceae **–SNAPDRAGON FAMILY –** 105 species, 32 genera Usually **herbaceous**; sometimes shrubs or vines. **Leaves simple, opposite or whorled.** Flowers are usually **showy** and **brightly colored**, **bilaterally symmetrical**, attractive to hummingbirds and insects. Typically, the flower forms a **tube of 5 petals in a 3/2 arrangement**, with the **fused 3 forming the lower lip** (landing platform), and the **upper 2 petals separate**. Flowers have **4 stamens and 1 stigma**. Stigmas often sensitive and flower lips clamp together when an insect lands, brushing it down the floral tube where it may effect pollination. Fruit is a **capsule**. ***Antirrhinum*** (snapdragon), ***Bacopa*** (hyssop), ***Penstemon***, ***Digitalis*** (foxglove), ***Castilleia*** (Indian paintbrush).	

Malvaceae **– MALLOW FAMILY –** 88 species, 28 genera

Herbaceous, or less frequently, shrubs or trees**. Leaves, young branches, or reproductive parts have stellate hairs** (star-shaped). **Leaves simple**, entire and sometimes lobed. Flowers **radially symmetrical**. **Sepals 5**, **petals 5**, separate, **stamens numerous and fused into a tube, style 1, branched near the apex**. Fruit a **capsule**. The ***Malvaceae*** is a large and worldwide family with many attractive native and cultivated plants. Members include cotton, okra, hollyhocks, hibiscus, and Turk's cap. This family is easily recognized for its 5 showy flower petals, frequently with distinct bracts, and fused staminal column consisting of long style and many stamens. Leaves have star-shaped hairs and seeds are contained in a distinctive **loculicidal capsule**.

Drawings: Britton, N. L. and A. Brown. *Illustrated Flora of the Northern United States and Canada*, 1913.

DEFINITIONS:

Achene – a dry, one-seeded fruit with a firm close-fitting wall that does not open by any regular dehiscence.

Capsule – a dry, many-seeded fruit, splitting open (dehiscent) upon maturity.

- **Loculicidal capsule** – a capsule that splits open along the midrib.
- **Silique** – the elongate capsular fruit of the mustard family.

Caryopsis – the fruit of a grass.

Drupe – a fruit with a fleshy outer layer and a hard, stony inner layer about each seed. Example: plum.

Legume – a dry, several-seeded fruit formed from a single carpel (pistil) that splits open along both margins. This fruit occurs only in the pea family.

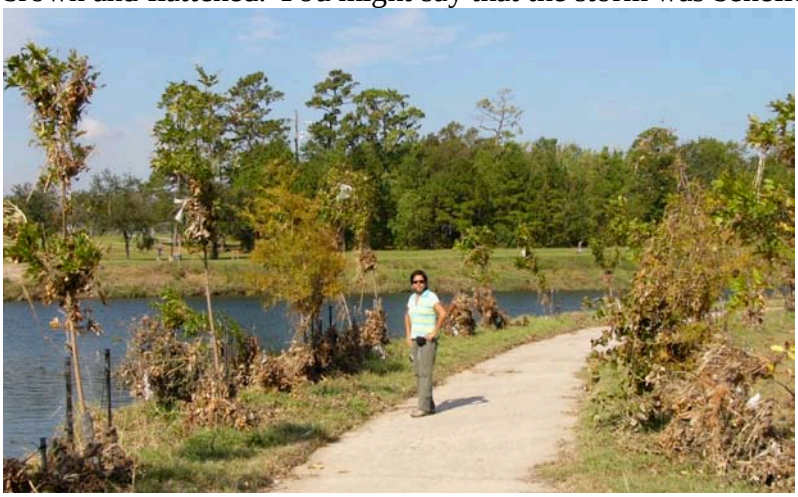
Nutlet – a hard, one-seeded fruit that does not open (indehiscent), small size.

WETLAND *by Diane Humes*

A N D E R I N G S

During flooding, wetlands are subject to total submersion, currents, wave action, debris, and possible saltwater intrusion. Vegetation must be resilient or die. When Hurricane Ike roared through Houston on September 12/13, 2008, the wetland at Mason Park experienced a storm surge, then wind and rain, then the onslaught of storm water coming down Brays Bayou.

So, how did the 10,000+ plants in the wetland fare during Ike? Quite well, actually. Two weeks after Ike, sagittarias are blooming, the bulrushes, iris, crinums, and cutgrass are thriving. Even the irises planted IN the bayou are still happy. Most weedy invaders, on the other hand, are dead-brown and flattened. You might say that the storm was beneficial.



The main effects of the storm were debris and sediment deposition. Plastic trash of all sorts is trapped in leaves and branches. The storm debris line- wrack line- bathtub ring is very high up on the hillside, possibly within 4 or 5 feet of the railroad tracks. The storm water wetland accumulated sediment from Ike; 4 – 6 inches of sand/silt was deposited on the sidewalk and marshes. Debris – mostly plant - chokes the tunnel under the railroad tracks leading to the storm water inlet. The storm also deposited a spotted gar now swimming in the Shallow Marsh. He can't get out, so let's hope he has lots of food!

Every location in our planting site must have been at least 10 feet under water. In fact, the water level marked on the 75th Street Bridge on 9/14 is easily 15 feet higher than normal water level. The rainwater monitoring station is damaged or missing and the trash boom at the end of the Tidal Marsh is washed away.

The Wetland Restoration Team is currently taking care of business at the NRG nursery and Louis Gill in Dickinson. Future projects include working with Galveston Bay Foundation on living shorelines and a big wetland restoration at Sheldon Lake SP in 2009. Stay tuned for details.

In Memoriam - Henry Criss

by Mary Beth Arnold

I first met Henry E. Criss, Jr. on the internet in January of this year. I didn't know what to think. Out of the blue I am contacted by a man I didn't know asking me questions about volunteering at Texas City Prairie Preserve. I thought….. Whatever……come on out on Tuesday! Everyone is welcome! I really didn't expect anyone to show up! Little did I know! Henry arrived the next Tuesday and the rest is history. Those of us who knew Henry understand what happened next! Henry pushed up his sleeves and started talking! I learned pretty quickly that Henry really knows the world he lives in. He knows more about Texas City than anyone I had ever met. And he tells you about it!

We started working in the native beds and Henry worked hard. I would learn over the next few weeks that Henry only knows one speed…..full bore! When I told Henry about the Galveston Bay Area Master Naturalists that first day, he became extremely excited. The class was starting in about a week and I didn't know if there were any vacancies, but that didn't slow down Henry! When he left TCPP that day, he went straight to the Extension Office! He was in the next class! Over the next few months, Henry dug grasses, planted grasses, and invented tools for us to use.

Even though I didn't know Henry for a long time, I consider him one of my life-long friends. I really got to know him sitting on the back of a pickup truck for eight hours as smoke monitors watching the firefighters burned TCPP. You really get to know someone when they talk for eight hours. I learned about his cancer and his loves - his wife, his son, and HIS KAYAK! Boy, did he love that boat! One day while waiting for the diagnosis on his cancer, he took out his boat and saved three people from drowning, two adults and one very young child. He wanted to chew out the parents, but they only spoke Spanish. All he could say was "God is good". There were many tears and hugs, but Henry told me about that day with gratitude, not pride. He was glad he was there to save them. That's Henry.

I knew that Henry's cancer had returned and I didn't see him for a few months. I tried to find him and failed. On Tuesday, September 23, Henry showed up with his son, Henry, 3. It was very difficult to see him in the shape he was in. When I asked Henry's son why he brought his father out, Henry 3 said he did it because his father told him to! I was blessed to be able to give Henry one last ride out on the prairie and the levee. He was so excited to see a blue heron! He pulled out his camera and clicked away. Henry died September 26, just three days after his last trip out on the prairie.

There will be a hole in my life now that Henry isn't here with us. I do know that where Henry has gone he will hear, "Well done, good and faithful servant". That's all he wanted.

Galveston Island State Park Beaches Post-Ike

by Steve Alexander

On Saturday, October 4, three weeks post-Ike, I traveled with Dr. Tom Linton's wetlands class to Galveston Island State Park to view bayside changes produced by the hurricane. Oddly, not much had changed.

Although cattails and a few upland plants didn't do well in the saltwater surge, the inhabitants of the salt marsh, and the salt marsh itself, appear unchanged. Standing on the shore of Lake Como, the scene appeared as I had seen it many times before, with cordgrass swaying in the wind, periwinkles clinging to grass stems, and fiddler crabs picking at the mud.

Unfortunately, this cannot be said for the beach side of the state park. I saw the front side on Wednesday, October 15, four weeks post-Ike. I parked at Mary Jean Hayden's and walked west toward the park. Although I knew it wouldn't be a pleasant site, I was unprepared for what I saw.

Looking west from the east side of the park.

The beach is now gone. Some 300-plus feet of sand has been removed. The dunes and their vegetation are now gone. Both beach and dunes were completely stripped away by Ike's storm surge.

All the over-the-dune walkways are gone as well. Nothing remains. Waves now wash ashore along the edge of the parking lots, restrooms, covered picnic tables, and park headquarters. Piles of debris litter the entire area and fill the structures that remain, including the inside of park headquarters.

I know firsthand the effort and hours that were required to clean the small area we call home in Bayou Vista. After seeing the beach side of the state park, I think it safe to say that it will take much time and a monumental effort to restore the beach many of us knew to the way she was pre-Ike.

The park's office

Guppies from Julie

by Julie Massey

Hurricane Ike has changed our lives since the last issue of *The Midden* was published. It is difficult to see the changes in our landscape and deal with the mess Ike has left for many.

Our focus as Master Naturalists is to continue to be leaders in natural resource restoration and education. Our wetlands, prairies, beaches and parks will need extra care over the next year. Please watch for upcoming projects that will help restore these habitats and be ready to volunteer!

Also, the Junior Master Naturalist and Island/Bay Adventure Programs are underway once again in Galveston and Dickinson ISD. Education leads to restoration! Please contact Mary Jean Hayden or Sara Snell to volunteer to work with these students!

Restoring the land and waters, and having fun teaching kids about our resources will heal us - individually and as a community. I hope to see you in the marshes and on the prairies as we restore Galveston Bay's natural resources.

Spring 2009 Class – A Great Way to Volunteer!

The Spring 2009 Class will begin in late February. Help spread the word about the new class! Potential class members can contact me at 281-534-3413, Ext. 2, 2 or by email at jmassey@ag.tamu.edu.

If you would like to volunteer, please drop me a note or give me a call. Thank you!

Take care and see you soon, Julie

AgriLIFE EXTENSION
Texas A&M System

Improving Lives. Improving Texas.

Texas AgriLife Extension Service 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.

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