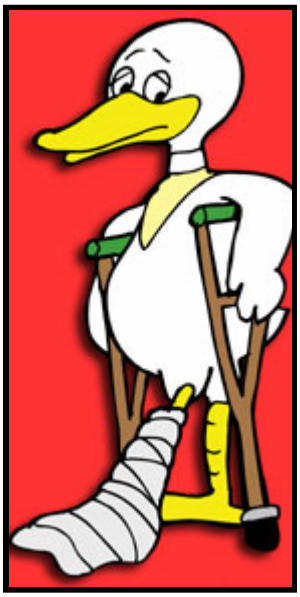
Galveston Bay Area Chapter – Texas Master Naturalists

The Midden

December 2009

I'll Be Seeing You *by Mary Jean Hayden, President 2009*



What a pleasure it has been to serve as your '09 President! I had a superb board to work with and the most dedicated Chapter members in the state. Our volunteer accomplishments and the fun we have together are both admired and envied. Thanks to strong committees, our stewardship and education-outreach efforts are well organized and contribute hundreds of man hours to area ecosystems, our training classes and AT workshops are worthy of college credits, our *Midden* is outstanding, and this year we've gone green. Some individuals handle critical jobs so smoothly and continuously that they almost pass under the radar – sales, Chapter meeting set-up/clean-up, food and coffee for Chapter events, photographs and booth displays, etc. With one exception, I'm not naming names of all these and others who have made my job so easy and enjoyable. That exception is, of course, Julie Massey, our Chapter Representative of the Year (and every year) who was right there all year. Thank you – each and every one of you!

As Margaret Pickell says, GBAC is like a formation of pelicans – as leaders fall back, others smoothly glide up into position. Many of you already know that Lane and I will be moving to Dallas sometime in 2010, so I'll resign from the Board at the December meeting and Sara has agreed to remain in the position of Past President for another year. Until the moving van arrives I'll slip back in the flock and keep flapping away, so**…**

"I'll be seeing you in all the old familiar places . . . "

Slate of Officers for Galveston Bay Area Chapter 2010 – by Sara Snell

Inside This Issue: **Page**

The nomination committee made up of Mel Measeles, Elsie Smith and Sara Snell would like to offer the following as our slate of officers to be voted in on December 3 at our end of year chapter meeting:

President	Diane Humes
Vice President	Verva Densmore
Secretary	Nancy Russell
Treasurer	Sue Sutterby

We would like to thank them for stepping up to the plate in the leadership roles of our organization.

December - January

ADVANCED TRAINING OPPORTUNITIES

Annual Meeting – December 3, 2009
6:00 Social, 6:30 Presentation, 8:00 annual meeting
Carbide Park

Taxonomy– January 16, 2010
Moody Gardens
9 am until Noon 3 Hours AT
Presenter: Nathan Veatch
Project leads- Shirley Foster and Barbara Rabek- MFoster689@aol.com

Ongoing
Galveston Island State Park
Every Saturday- Beach Explorations
Every Sunday- Bay Explorations
10 am. Meet at the Welcome Center
Tours are 1 to 1 ½ hours long.
Prepare for sun and mosquitoes.
Bring water and family.

STEWARDSHIP OPPORTUNITIES

Project of the Year:
Prairie and Dune Restoration
Galveston Island State Park
Tentative Dates:
Dec. 15
9 - Noon
Contact: Shirley Foster MFoster689@aol.com

Prairie Pandemonium at ABNC-Oct.17, 9 - Noon
Brazos Bend Prairie Heritage Day, Nov. 7, 9 - Noon
Sheldon Prairie Plant-a-thon, Nov.14, 9 - Noon
For more information, contact Dick Benoit RBenoitTEX@aol.com

Ongoing Activities:
Mondays – Reitan Point, second and fourth, Contact: Liz Gimmler gimmler@consolidated.net
Tuesdays –

- Sheldon Lakes State Park, Contact: Tom Solomon crandtr@sbcglobal.net
- Texas City Prairie Preserve, Contact: Marybeth Arnold mbarnold@aol.com

Wednesdays – Wetland Restoration Team, Contact: Marissa Sipocz m-sipocz@tamu.edu
Fridays-

- Prairie Friday, ABNC, 9 - Noon Contact: Dick Benoit RBenoitTEX@aol.com
- Sundance Garden, Contact: Trudy Belz trudybelz@aol.com

EDUCATION-OUTREACH VOLUNTEER OPPORTUNITIES

Bay & Island Adventures - Volunteers teach six in-class hands-on modules (water, Galveston Bay, wetlands, coastal prairies, birds, Gulf of Mexico) on a once a month basis in Dickinson and Galveston schools. Presenters and helpers are needed for eleven 4th and 5th grade classes.
Dickinson Contact: Sara Snell snellsw@verizon.net
Galveston Contact: Mary Jean Hayden
bean1219@earthlink.net

Jr. Master Naturalists Club - Volunteers guide twenty-five 5th graders at Galveston's Austin Magnet School as they conduct experiments, build models and do other activities that give them a deeper understanding of the six topics taught in the Bay & Island Adventures program. The club meets every Wednesday after school and takes six Friday fieldtrips. If you have an interest in conducting one of the modules, helping guide the kids through the activity or observing what goes on, contact Mary Jean Hayden bean1219@earthlink.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 Mary Jean Hayden bean1219@earthlink.net

Partner and Associate Programs - Many organizations sponsor guided walks and education programs or need volunteers to man their nature center. Go to http://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 person.

***The Midden* Deadline**
For the February Issue

January 4, 2010

If you have Advanced Training or Volunteer Opportunities, please submit information to Diane Humes
treimanhumes@earthlink.net

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PRAIRIE *by Dick Benoit*

PONDERINGS

The State Master Naturalist Conference held in Hunt, Texas on the weekend of October 23 – 25, 2009 provided an opportunity to exchange ideas on prairie restoration statewide. We became aware because of the intensive farming/grazing in much of the state that the seed base for restoring prairies is weak compared to the one available to our area.

This fall is abundant in prairie restoration activities. **Sheldon Lake State Park Prairie** will have their Plant-a-thon where they will boost their total plants restored this year to about 7,000 plants. **Armand Bayou Nature Center's Prairie Pandemonium** planted about 3,000 plants to raise their yearly total to near 10,000 plants.

Texas City Prairie Preserve also had their Prairie Chicken Grass Bash planting to raise their total to about 1,000 plants this year.

Reitan Point Prairie has plugged along after Hurricane Ike to restore near 500 plants. Also previously planted plants are beginning to show growth this fall.

Our Project of the Year, **Galveston Island State Park,** has had monthly activities of restoration due to Ike. Along with Artist Boat over 1600 one-gallon plants are staged ready to be planted this spring. We have also helped establish over 2000 dune plants this year.

Brazos Bend State Park was the site of our second Prairie Heritage Day in November where activities and prairie plantings were done on a multi-chapter basis.

On October 31, our chapter along with the Houston Audubon Society began a prairie restoration project at **Fort Travis on the Bolivar Peninsula**, where almost 4000 plants were installed. This project on the Bolivar Peninsula may evolve to another Project of the Year for the chapter.

The Local Prairie Remnants: Their Restoration and Preservation Workshop given on October 8, 2009 at Armand Bayou Nature Center was well received, as were the visits to Texas City Prairie Preserve and U of H Coastal Center. The booklet created by Helen Muller and edited by Diane Humes was well received by the class members.

"Not everything that counts can be counted,
And not everything that can be counted counts."

Albert Einstein

Common Grasses And Forbs of the Coastal Tallgrass Prairies of the Galveston Bay Area of Texas

WETLAND *by Diane Humes*

A N D E R I N G S

Planting at Sheldon Lake State Park, Phase II, has begun! Wetland Restoration Team members have nearly completed removal of plant stock from the "nursery" ditch and transplantation into the first new pond. It's a "drop in the bucket" compared to the whole project, but it's a start.

Also, put December 9, 2009 on your calendars for the annual Team Christmas Celebration, held this year at Sheldon Lake State Park from 11 am – 1 pm. As always, the party is potluck – ham provided – please RSVP to Marissa. M-sipocz@tamu.edu.

Wetlands in the 48 contiguous states of the U.S. are now reduced to less than half of their original area, comprising about 2.5% of land area. Wetlands are the boundary and buffer between land and water. They slow the flow of water, reducing flood volume, cleaning water of pollutants, trapping sediment, buffering nutrient levels, connecting surface and sub-surface hydrology, and providing a unique habitat for large numbers of organisms.

Large wetlands are located in areas with large amounts of water and are necessary for high capacity throughputs of large volumes of water. Large wetlands support quantities and types of organisms not found in more fragmentary wetlands.

The Sheldon Lake State Park Phase II wetland complex, 87 acres, will be a large wetland, ambitious in scale. Consider joining the Team during the next two years – work hard, have fun, learn a lot! See you in the mud!

Local Prairie Remnants: Restoration and Preservation

by Louise Bell

The title of Dick Benoit's presentation on October 8 foreshadowed the content of the wonderful workshop presented to 22 Master Naturalists from 3 different chapters. Millions of species of Texas prairies have been lost mainly to construction and over grazing of cattle. We are fortunate to have local prairie remnants within short drives for us to visit, learn, and appreciate. Master Naturalists were invited to do further prairie investigation with Dick at these sites on October 15, 22, and 29, and even actually assist by helping to revitalize the prairies. Contact Dick should you wish to attend and become a part of the restoration and preservation of our local prairie remnants.

Benoit revealed, to no one's surprise, that his favorite place to be and learn is the prairie. In fact, you can find him at work on the Armand Bayou Prairie every Friday. Information about the prairie was enhanced with a beautiful slide show depicting the flora that covers area prairies. A handout booklet accompanied the presentation and contained colored photographs of 36 prairie plants, vines, shrubs, grasses, wildflowers, and trees as well as information about each. This terrific handout is really a guidebook for learning the prairie. Put together by Helen Mueller, the color photography in the guide makes identification simple.

Major grasses found at Armand Bayou, and most other coastal prairies are: switchgrass, gulf cordgrass, big bluestem, little bluestem, bushy bluestem, silver bluestem, broomsedge bluestem, Indiangrass, eastern gamagrass, sugarcane plumegrass, tall dropseed, vasey grass, longspike tridens, knotroot bristelgrass, several species of muhly, and species of paspalum. Forbs, sedges, wildflowers and the dratted western ragweed and Chinese tallows are found there also.

The Armand Bayou Prairie Restoration team did us all a big favor by dividing the prairie into trisects. In each trisect they have identified one major specimen for closer scrutiny. A marker with a pink plastic strip contains the name of the specimen so that the "real deal" can be closely observed and stored in our memory banks. Attendees of the workshop walked to the prairie and quickly identified about 15 different grasses and plants with the help of our instructor and our guidebooks. Although it was around 12:00 when we first went outside, the breeze made the walk through the prairie quite pleasant. It also left us with a desire for more investigations of the remnants of the prairie while we still have time!

Master Naturalist ™

The Midden

This newsletter is published by **Galveston Bay Area Chapter – Texas Master Naturalists.**

Texas AgriLife Extension Service

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For comments on this issue or to suggest content for future issues, please contact **Nathan Veatch at 281-480-6985** or by e-mail at nveatch@swbell.net

Report from Nobel 45: H_2O Uncertain Resource

by Diane Humes

You can survive about a month without food, but only 5 to 7 days without water.

Nobel 45 brought together world leaders in water resources and 3000+ attendees to convene in the basketball/hockey arena at Gustavus Adolphus College and engage in thoughtful discussion of the world's water issues, which included water quantity and quality, ecological water and dams, water management and infrastructure, and water accessibility and world conflict over water, and differences between developed and Third World countries. Following is an excerpt from "Periscope Up" by A.J.S. Rayl. The full text of this article and a complete broadcast of the conference are on the college website: www.gac.edu.

"Water ties together everything we care about," says environmental scientist Peter Gleick, President of the Pacific Institute, Oakland California, renowned for its research on water issues. But, he says, "We are facing a crisis of running out of sustainably managed water."

Of all the water on Earth, just 3 percent is freshwater, two-thirds of which is frozen in glaciers and snowcaps, or locked in deep groundwater, leaving less than 1 percent available for our use. That 1 percent must sustain the billions of people living today, as well as the two billion-plus more to arrive in the next 15 years, all the ecosystems and every living thing, great and small, within each of them.

"We cannot afford to waste the quality of our waters or the quantity of our waters," says marine ecologist Nancy Rabalais, executive director of the Louisiana Universities Marine Consortium, who has spent two decades studying how pollution of the Mississippi River has led to ecological devastation in the Gulf of Mexico.

"The Mississippi River is no longer a 'natural' river," Rabalais points out. "It has been channelized, leveed, and allowed to flow into the floodplain." Synthetic fertilizers and pesticides have washed off farmlands and into various parts of the Mississippi. The mix of chemicals running from the mouth of the Mississippi into the ocean waters has created a "dead zone," a patch in the Gulf of Mexico where there isn't enough oxygen to sustain aquatic life.

Humanity already appropriates more than 50 percent of all renewable and accessible freshwater flows, Gleick says. Yet an estimated 1.2 billion people, of the 6.8 billion on the planet, lack access to safe water.

"There are places in the world where people have to walk several miles just to get a bucket of water," says engineer-economist R. K. Pachauri, chair of the Intergovernmental Panel on Climate Change (IPCC), which shared the Nobel Peace Prize with Vice President Al Gore in 2007. "And another 2.4 billion people lack sanitation facilities." Combined, that's half of humanity.

"It used to be we had wide open rivers," says geographer and river scientist William Graf, of the University of South Carolina. But humankind has taken over and changed the planet's natural landscapes, building dams that, however inadvertently, devastated entire ecosystems.

"The installation of dams came with "surprising costs," particularly to ecological systems, says Graf, from the Florida Everglades to the once mighty Colorado, causing wholesale extinctions. "The problems—lack of a sufficient amount of water to keep human needs satisfied and, at the same time, operate the system so that it allows the survival of the natural species."

"The era of taking water for granted is over," sums up water chemist David Sedlak, professor at the University of California Berkeley, known for his research into human steroids and pharmaceuticals in drinking supplies. He has found that wastewater-derived contaminants cause adverse effects in aquatic ecosystems at extremely low levels.

Our water supplies have become contaminated with human hormones and chemicals from all the drugs, personal care, and cleaning products we use and everything else we flush out of our homes. Most American water treatment facilities are retrofitted, 19th-century sewage systems, designed "to get sewage out of our cities," Sedlak explains. Over the years, plants have been upgraded to remove nutrients and organics that deplete oxygen in the rivers, but not pharmaceuticals, because—who knew?

Despite all the mistakes and abuse of resources, we are not doomed, says engineer-water manager Asit Biswas, founder of the Third World Centre for Water Management in Atizapan, Mexico. "That the world is facing a crisis right now because of physical scarcity of water, is a bunch of baloney," says Biswas. "Each of the problems can be solved economically, politically, and with science and technology."

"Singapore had one of the worst water management systems in the world when a remarkable leader—Lee Kuan Yew—came in and took special interest in it," Biswas points out. "Now, Singapore has the world's best water management system even though its population has more than doubled. The cost of water is high, but the loss is down from 85 percent in 1993 to 4.5 percent. That's less than New York and other American cities."

It will take cutting-edge science and new technologies, human ingenuity, and a lot of money and commitment. Says environmental ethicist Larry Rasmussen, professor emeritus at the Union Theological Seminary, "there will be changes in the next few years on a scale that we haven't seen before. In most of human history, change of this sort involves a spiritual or religious or a faith dimension. Knowledge itself doesn't suffice in getting people to muster the political will to change the condition."

In the developing countries, the issue will likely be about access. "Cities like Delhi, Madras, Mexico City, Manila, and Bangkok will have a problem, but they will manage because these mega-cities are where the elite of the country sleep," says Biswas. "The real water problem, in just five to ten years, will be the more rural areas, and the small to medium-size cities of 20,000 to 500,000, communities with no money, political power, expertise, no nothing," he says. "Their number is growing exponentially—and not a single country is thinking about this."

Here in the United States and other developed countries, water quality will top the water agenda, in particular, the controversy of upstream communities discharging into the water supply of downstream communities, says Sedlak. “The Trinity River in Texas, for example, flows out of Dallas-Fort Worth downstream to Lake Livingston, a reservoir for Houston,” he says. “Just about everyone’s water supply has someone influencing it upstream, if not a sewage treatment plant, then maybe agricultural runoff or storm-water runoff from the city. That is just the reality now.”

Ultimately, it is not governments, but people, who hold the power. “People who are interested in maintaining high-quality, natural environments outnumber those who think they are unimportant and not worth preserving,” says Graf. “The nation has decided, for example, that we’re dedicated to protecting endangered species. It’s the wild things that are driving river policy and river science in the United States these days. So, I think the decision to preserve and restore will win out.”

“The 20th century may be leaving us with a host of problems, but I’ve also noted that it does seem darkest before the dawn,” Walter Cronkite, one of America’s greatest observers, noted before his passing in July of this year. “There’s reason to hope for the 21st century,” he said.

Every one of these experts—Biswas, Gleick, Graf, Pachauri, Rabalais, Rasmussen, and Sedlak—agree, and at the heart of that hope is water. It is the lifeblood of Earth. It is the lifeblood of every living thing. It is what binds us together. Without water, we shall perish from the Earth.

Suggested readings from the conference include:

- *Ghost Map by Steven Johnson*
- *When the Rivers Run Dry by Fred Pearce*
- *Blue Covenant: The Global Water Crisis and the Coming Battle for the Right to Water by Maude Barlow (2008)*
- *Last Oasis: Facing Water Scarcity by Sandra Postel*
- *Cadillac Desert: The American West and Its Disappearing Water by Marc Reisner*

Photo from *Natural History*, Oct. 2009.

ALL LIVING THINGS NEED WATER!

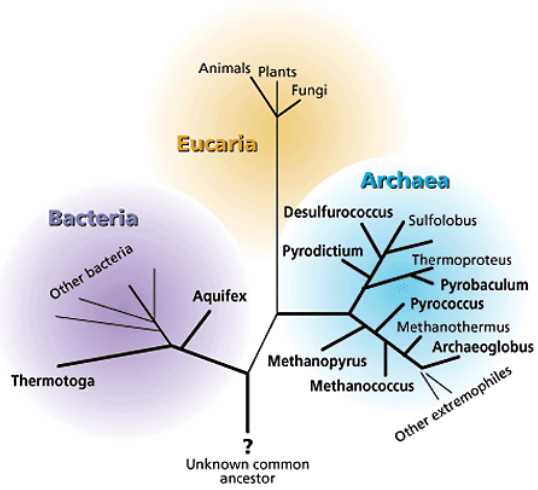
Planet's Nitrogen Cycle Overturned
by 'Tiny Ammonia Eater of the Seas'

submitted by Bob Huntington

Methanogens belong to an ancient group related to bacteria, called the archaea -- thrive without oxygen. (Credit: NASA/JPL)

ScienceDaily (Oct. 1, 2009) — It's not every day you find clues to the planet's inner workings in aquarium scum. But that's what happened a few years ago when University of Washington researchers cultured a tiny organism from the bottom of a Seattle Aquarium tank and found it can digest ammonia, a key environmental function. New results show this minute organism and its brethren play a more central role in the planet's ecology than previously suspected.

The findings, published online September 30 in the journal *Nature*, show that these microorganisms, members of ancient lineage called archaea, beat out all other marine life in the race for ammonia. Ecologists now assume that ammonia in the upper ocean will first be gobbled up by phytoplankton to make new cells, leaving very little ammonia for microbes to turn into nitrate.



"Our data suggests that it's the other way around," said co-author Willm Martens-Habbena, a UW postdoctoral researcher. "Archaea are capable of stealing the ammonia from other organisms and turning it into nitrate. Then it's the phytoplankton that take up that nitrate once again."

Ammonia is a waste product that can be toxic to animals. But plants, including phytoplankton, prize ammonia as the most energy-efficient way to build new cells.

The new paper also shows that archaea can scavenge nitrogen-containing ammonia in the most barren environments of the deep sea, solving a long-running mystery of how the microorganisms can survive in that environment. Archaea therefore not only play a role, but are central to the planetary nitrogen cycles on which all life depends.

"Bacterial nitrifiers were discovered in the late 19th century. One century later this other group of nitrifiers is discovered that is not a minor population, it turns out to be the major population," said co-author David Stahl, a UW professor with appointments in the departments of civil and environmental engineering and microbiology. "We have to revise our basic understanding of the nitrogen cycle."

In the tree of life, archaea occupy its own branch. Archaea were discovered only about 30 years ago and were first thought to exist only in extreme environments, such as hot springs or hydrothermal vents. They are now known to be more widespread.

In the early 1990s scientists collecting seawater found strands of genetic material that suggested at least 20 percent of the ocean's microbes are archaea, and circumstantial evidence suggested they might live off ammonia. Stahl's group in 2005 was the first to isolate the organism, which they got from a tropical tank in the Seattle Aquarium, and demonstrate that it can, in fact, grow by oxidizing ammonia. His lab and others

have since found the organism in many marine environments, including Puget Sound and the North Sea. The microbe is likely ubiquitous on land and in the seas, they say.

The new experiments show that the organism can survive on a mere whiff of ammonia – 10 nanomolar concentration, equivalent to a teaspoon of ammonia salt in 10 million gallons of water. In the deep ocean there is no light and little carbon, so this trace amount of ammonia is the organism's only source of energy.

"What Willm's work has shown is that these archaea can grow at the vanishingly low concentrations of ammonia found in the ocean," Stahl said. "Until we made the measurements, no one thought it would be possible that an organism could live on these trace amounts of ammonia as a primary energy source."

That finding has two important implications for ocean ecosystems. Scientists knew that something was turning ammonia into nitrate in the deep ocean, but could not fathom what organism might be responsible. Now it appears archaea are those mysterious organisms.

And in the sun-dappled upper ocean waters, it appears that archaea can out-compete phytoplankton for ammonia. The same may be true in soil environments, the researchers say.

The archaea in question are small even by the standards of single-celled organisms. At 0.2 micrometers across, about 8 millionths of an inch, the only life forms smaller are viruses. Martens-Habbena speculates that archaea's size could explain how they are able to survive on such a scant energy supply. The strain used in these experiments is named *Nitrosopumilus maritimus*, which means "tiny ammonia-oxidizer of the sea."

A better understanding of archaea's lifestyle and role in nitrogen cycles not only would rewrite ecology textbooks. It could also have practical applications, such as devising natural ways to boost a soil's nitrogen content without needing to use chemical fertilizers, or designing sewage treatment plants that employ microbes to remove nitrogenous waste more efficiently, or understanding which microbes produce global-warming gases such as nitrous oxide.

The new findings will also affect the equations used in global climate models, researchers say. Computer models use global cycles of nitrogen and other chemicals to estimate how much carbon dioxide the oceans will absorb and ultimately sink to the bottom of the sea. The new findings suggest that most of the nitrate in the surface water comes from recycling of biomass, and not from the deep water as currently assumed.

"Our data suggest that the carbon pump is weaker than currently assumed, so current climate models may overestimate how much carbon can be absorbed by the oceans," Martens Habbena said.

Other co-authors are the UW's Paul Berube, Hidetoshi Urakawa and Jose de la Torre. The research was funded by the National Science Foundation.

2009 State Master Naturalists Meeting Highlights

by Sara Snell and Diane Humes

On the weekend of October 23-25, 2009, seventeen members, spouses and friends of our chapter attended the Texas State Master Naturalist Meeting at Mo Ranch in Hunt, Texas. Sara Snell, Dick Benoit, Diane Humes, Terry O'Connell, Mel and Shirley Measeles, Sharon and Jerry Pels, Becky and Bill Edmundson, Kathryn Dawson, Ann Abernathy, Mary Jean Hayden, Carey Battle, Sandra Linton, Judy Anderson, and Julie Massey enjoyed a weekend of glorious fall weather, food, fun, friendship and advanced training.

Our chapter covered itself in glory when our own Julie Massey was awarded "Outstanding Chapter Advisor." Jumping with excitement, Julie accepted her plaque and monetary award. Some of the nice things that were said about her were: "Julie makes one want to learn it all and do it all." "Julie is the glue that holds the Chapter together." " Julie continues to learn and to take on new responsibilities and she encourages Chapter members to do the same." and "Julie isn't worth her weight in gold; she's worth her weight in platinum!" Congratulations, Julie, on receiving this well-deserved award!

In addition, our chapter junior naturalist project at Austin Middle School took top honors for chapter projects. Mary Jean Hayden wowed the judges with her display of the aquifer well and the description of the Junior Master Naturalist club and received a $400 award from the Magnolia Charitable Trust grant. Congratulations to Mary Jean Hayden and all the rest of you who have made this project such a success for the last four years.

Chapter members receiving milestone awards:

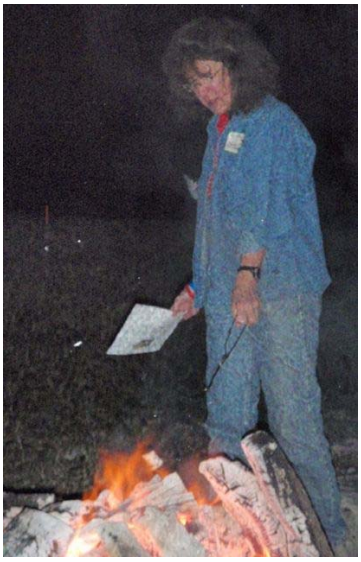
Mary Jean Hayden	5000 volunteer service hours
Sara Snell	2500 volunteer service hours

Congratulations! Many thanks for all your hard work!

Our chapter participated in the chapter newsletter competition; Verva Densmore entered two beautiful photographs in the art contest. Mel Measeles and Julie Massey donated items to the silent auction, which supports the scholarship program.

Attendees spent an enjoyable weekend connecting with old friends from around the state, working and playing in the fresh, clear Hill Country air. While other chapters hosted the nightly bonfires, ours provided the songbooks - to the amazement of all! We ate s'mores, watched the stars (deep in the heart of Texas), and sang to the

awesome accordion accompaniment. We learned about chapters far from us and told a bit about ourselves. Dick Benoit spoke about our Chapter of the Month program and projects, while Diane Humes presented our chapter's efforts to restore Galveston Island State Park for this year's Project of the Year.



Although some of the younger Mo Ranch guests availed themselves of the water slide and the swimming area on the Guadalupe River, no Master Naturalist was seen performing such an activity. However, at least one of us did take out a canoe, and fortunately did NOT go over the dam!

Six of us "enjoyed" a bunkhouse experience - just try to tiptoe through a room full of sleepers, haul yourself to the top bunk in the dark, and see if you can find your clothes, or get past the screechy door! We were tired and a little dirty, but full of new ideas and inspiration, as we packed our bags and headed for home. Start thinking about next year - October 22 - 24, 2010, T bar M Resort, New Braunfels.

Master Naturalists Rocked at CAST 2009!

by Nathan Veatch, Frank Budny and Sara Snell; Photos by Mel Measeles

The Conference for the Advancement of Science Teaching (CAST) was held in Galveston from November 5th through the 7th and our chapter members played a very important part in its success. Over 6000 teachers who are members of the Science Teachers Association of Texas (STAT) attended. This conference is the largest science teachers' conference of any state or national organization. Texas always does everything bigger.

GISP Fieldtrip- November 6- "Galveston Island State Park- A Learning Laboratory."
Eight members of our chapter hosted a great fieldtrip to Galveston Island State Park (GISP) for 24 teachers on Thursday, November 6th. The field trip was divided into three sites into which all the teachers rotated to in small groups. This was a great day for a visit to the beach as Mary Jean Hayden, Bill Ashby and Frank Budny greeted each group. Mary Jean talked about the condition of the beach following hurricane Ike and the recovery since then. Park volunteers had planted a few grasses in the spring on the dunes and now nature has filled the gaps providing a lush and thick carpet of vegetation holding the sand in place. We measured the salinity in a small pond near the boardwalk at less than 10 parts per thousand. A few months ago, this pond was the same as seawater. It is now fresh enough to provide a habitat for the birds and other animals.

Numerous holes extending from the dunes to the water line were observed and the ghost crabs that occupy these burrows were discussed. A few small ghost crabs even came out of their holes as a visual aid to the discussion.

The beach was extensive due to low tide and a north wind. There were several wrack lines on the beach, with the highest line near the dunes. This area contained the usual trash and driftwood typically dumped by a storm tide. It also contained an interesting assortment of sea beans including small coconuts, mangroves, and even a hamburger bean. The last high tide line contained an assortment of shells, but mostly shell fragments. We were able to identify many of the common shells including arks, whelks, angel wings, pen shells, disk dosinias, and channeled duck clams.

The most common items on the beach were worm tubes. The Diopatra worm produces a mucous secretion to which it attaches shell fragments and lives within the tube, coming out to feed. Normally these tubes are anchored in the sand, however it is not unusual for waves to break them off and deposit them on the beach.

The surf line was fairly calm and the tide low. Digging at the water line produced a couple of mole crabs and one coquina clam. Ghost shrimp holes however, were plentiful. Several of our visitors were able to extract a ghost shrimp with the Creature Catcher suction tube to their delight. There were also a number of moon jellies washed up on the beach.

Seining near the shore produced a few organisms including moon jellies, silversides, larval ladyfish, and a juvenile red fish.

It was a wonderful day at the beach. There were plenty of things to discover and discuss, and the teachers left with fond memories of their day at the beach. - Frank Budny

Dick Benoit and Ellen Gerloff conducted the exploration of the Prairie habitat with a hike through the prairie to view many plants and ended with the groups making seed balls to take home. They also were given a 13- page Prairie Activities handout which included worksheets and instructions on how to make seed balls and plant presses. A number of plant presses were also passed out. Jill Veatch was the Welcome Center Hostess along with Ellen Gerloff and kept the building tidy and made sure snacks and hot coffee were available to each group. Mel Measeales rotated to all the sites and photographed the days' activities.

Steve Alexander and Nathan Veatch did their usual tag team presentation of the salt barrens, marsh and the waters of the bay-shore at Lake Como. The life history of the fiddler crabs was examined by observing the holes and then the living crabs. The question of whether fiddler crabs are "born" right handed or left handed was not answered. Several very small fiddlers were captured by the group and many were seen to have both large right and left pincers on the male crabs. Marsh periwinkles defied gravity and their "elevator" life was observed. Striped hermit crabs coming out of their lightning whelk shell homes fascinated many of the teachers. The catch in the seine was typical of the bay-shore but a few special organisms were collected. A hogchoker, a little flat fish, and several pipefish

were in the catch. Shoal grass, one of the sea grasses, was noticed growing on the bottom. An arrow shrimp, Tseuma, was found in the catch. Both Steve and Nathan had never seen this member of the sea grass community in Galveston Bay. The restoration of the sea grass beds in the park has finally led to the reestablishment of those organisms that live in this habitat.

The group ate the box lunches provided by the conference lunch coordinator and enjoyed the sunshine. After lunch the group watched the video on the effects of hurricane Ike on the Park. Then Mary Jean put on the DVD, "Mollusks in Action," and many lamented that they could not see the complete DVD.

The group assembled at 2:30 pm for a wrap up session and a raffle of door prizes. Our chapter donated eight half –moon aquariums as door prizes for the conference. Everyone took home a CD of beach and bay animals and most teachers got more than one door prize. One of the teachers was heard to say that "Master Naturalists Rock!"



TCPP Fieldtrip-November 6 and 7

Twenty-seven teachers visited the Texas City Prairie Preserve during the CAST Conference. They came from a variety of places and several were Master Naturalists!! Tim O'Connell presented an overview of the Conservancy and the importance of the Texas City Prairie Preserve. Marybeth Arnold and Sara Snell talked about the restoration efforts and assisted with the bus tour into the preserve. The teachers were able to see a White Tailed Hawk, Harriers, and even the elusive Attwater's Prairie Chicken!! All agreed that a day on the prairie was a great day to have. -Sara Snell

Workshops- November 7, San Luis Hotel

Julie Massey and Nathan Veatch presented workshops on Friday at the San Luis Hotel to full rooms of eager teachers. Each workshop had 45 to 50 participants, many staying for both workshops.

Julie Massey presented "Something Fishy for Your Class" and the group got to dissect fish and fish print, which was quite an accomplishment with so many people attending the session. The group was treated to very fresh specimens that made the dissections superb and not quite so smelly. Julie passed out a CD with a fish and squid dissection PDF on it for the teachers to use in their classrooms.

Nathan Veatch presented a workshop

entitled “Have Fun With Squid Form and Function” which many of our chapter members may have seen as part of our Master Naturalists Training Class. The group “got into it” and really enjoyed when Julie pulled out at an 18-inch squid. An immediate appeal went out from the group to dissect out the pen and ink sac, which two participants promptly did. Time ran out and the next group came in but it was a very good session. Julie and Nathan are planning a combined session next year when the CAST conference will be in Houston.

Conference Volunteers

Several members of our chapter volunteered their time to help out with the conference in several ways. Those included Emmeline Dodd, Sara Snell, and “The Runner” Steve Alexander. I am sure CAST appreciated all their efforts. I apologize if I have missed the names of anyone else that volunteered at the conference.

Julie lectured on fish anatomy, dissected and fish printed!

Squids still rule.

Above: A very big squid showed off all its organs.

This striped hermit crab was worn out after having to share his shell with so many slipper shells.

Right: Steve Alexander said that shore birds really like to eat fiddler crabs. How was it?

Guppies from Julie

by Julie Massey

"Master Naturalists are Awesome! Master Naturalists Rock!" These are the words of the science teachers, Junior Master Naturalists, students during field trips and many, many others!

As Master Naturalists, you are changing people's knowledge about our natural resources! You are training people to restore habitats! You offer unique experiences and knowledge that changes people and you are leading others to make a difference on the planet!

I have the privilege to hear from others about the difference each of you makes as a Master Naturalist. People tell me how you influence their lives and how they are changed by working with you. It is in a word …. AWESOME!

As 2009 comes to an end, 2010 will offer many new volunteer and training opportunities! I look forward to seeing you on the marsh and in the prairie with students, teachers, and others as you share your Master Naturalist experience!

A Milestone Reached!
After beginning his Master Naturalist journey with the Gulf Coast Chapter in the fall of 1999, Dick Benoit reached 10,000 Master Naturalist volunteer service hours in September 2009!

Dick is the first Master Naturalist in the State of Texas to achieve this milestone!

Dick wrote "My first (Master Naturalist) hours in October of 1999 were working on prairie transects, monitoring prairie birds, and manning a hawk watch. Not much has changed over the years…. Along the way, we have shared many friendships, broken bread, and had an enjoyable trip."

Congratulations, Dick!

Plans for the Spring 2010 Class are Underway!

The Spring 2010 class will begin on February 18, 2010. 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.

The Training Class Steering Committee will be working on new ideas for the class! If you would like to volunteer, please drop me a note or give me a call!

Save the Date – Saturday, March 6, 2010!
On March 6, 2010, Master Naturalists will have the opportunity to volunteer with the Dolphin Challenge in College Station. Dolphin Challenge is the regional competition for National Ocean Science Bowl (NOSB).

NOSB is an academic competition that tests high school students' knowledge of the marine sciences including biology, chemistry, physics and geology. Volunteers are needed for all aspects of the competition from registering teams to serving as judges – training will be provided!

Save Saturday, March 6, 2010 for Dolphin Challenge! If would like to volunteer, please contact Julie at jmassey@ag.tamu.edu or 281-534-3413, Ext. 2, 2.

Julie

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