

# The Midden

January/February 2008

## ***Reflections of 2007 and What's Up for 2008?***

*By Sara Snell, President GBAC-TMN*

“*Setting Direction*” focus continued during 2007 as committees resumed working on the long term and short term goals that were set in January. Committees worked diligently to meet and surpass most of the goals set. Thanks to all of you who have made this year a success. Some of the goal highlights are:

The board reviewed the current board role descriptions and compared them against the State Chapter Operating Handbook template and merged those tasks that we thought were good additions. A separate committee updated the current compendium to match our current by-laws and also drafted an up-graded Bylaws document based on the State Bylaws. This document was submitted to the State Coordinator for either approval or denial and we will move forward after that decision.

Our AT Committee did an outstanding job of providing awesome programs with attendance climbing to the 40-50 people range. We may have to find larger rooms for our training at this rate. By the end of November the AT team will have provided 12 membership training opportunities and the Treasures of the Bay Teachers Workshop. Those activities included:

- Heavenly Bodies
- Cold Blooded Critters Part II
- Diurnal Raptors
- Birding at North Deer Island
- Cruisin’ with *Karma*
- Treasures of the Bay Workshop
- Cow Jumped Over the Moon
- Texas Watch Water Quality Testing Training
- Splish Splash: Arks to Zebra Periwinkles
- Whispering in the Wind
- Kayaking at GISP
- Big (and small) Texas Hair
- Who Gives a Hoot?

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## **Reflections continued**

Stewardship activities continued not only with Projects of the Month but also with the on-going activities. We are very fortunate to have leaders step up to the plate at our on-going sites:

- Prairie Friday (Dick Benoit)
- Prairie demonstration area at Carbide Park (Dick Benoit)
- Prairie restoration at Texas City Prairie Preserve (Marybeth Arnold)
- Reitan and Virginia Point Restoration (Liz Gimmler)
- Sundance Gardens (Trudy Belz)

Projects of the month were conducted at our on-going sites plus Horseshoe Marsh, Anahuac and a special one on December 8 at High Island.

The Community Outreach Committee supported several booth activities, speakers presented locally and nationally, and a chapter brochure was created.

The Spirit Committee continued setting up and cleaning up for our chapter meetings. Cliff and Tawy managed to keep many of our members involved to ensure there is Fun, Food and Friendship at our meetings and activities when needed.

The Bay Adventures education program continues at Morgan School in Galveston, Hughes Road Elementary in Dickinson, and our Jr. Master Naturalist Program is in its second year at Morgan.

GBAC members contributed a cumulative 100,000 hours of volunteer service at \$18.04 an hour – that's a lot of help to our partner organizations. Congratulations to all of you.

### ***What's Up in 2008?***

- The eleventh Master Naturalist Spring class begins 2/14/08 and continues until 5/1/08
- Treasures of the Bay teachers' workshop scheduled for 6/17-6/20/08
- Various school field trips at Galveston Island State Park
- Committees are actively planning, check out the calendar on the web
- The AT committee has training opportunities scheduled through June and working on the rest of the year
- Stewardship activities are scheduled with our on-going partner sites and Projects of the Month scheduled through April
- A family picnic planned for Saturday, March 15 at Carbide Park
- *The Midden* is back in print
- Bay Adventures education program continues
- The board will continue to fine tune the chapter operating guidelines and our by-laws
- Our members continue being involved in a variety of activities and taking a leadership role in many of them. We have over 180+ active members focused on preservation, restoration, monitoring and education about our natural resources

The year 2007 was a busy one – and it looks like 2008 will be just as exciting. I look forward to seeing many of you at the prairie, marsh, beach, and bay. Thank you for a great year.

Sara

FEBRUARY/MARCH/APRIL  
ADVANCED TRAINING OPPORTUNITIES  
By Shirley Foster, AT Chairperson

I hope you have all marked your calendars for the upcoming **SHALL WE GATHER AT THE SEASIDE?** Advanced Training Opportunity **February 26, 29 and March 1** Classroom lecture (class participation, also) by **Claudia Edwards** at the **Extension Office on Feb. 26** with shell gathering and further study at **GISP on Feb. 29 and March 1**. Mel Measeles is Project Leader – Emmeline Dodd [TXDODD@aol.com](mailto:TXDODD@aol.com) is registrar for this and all other AT Opportunities.

Monday, March 10, 7-9 PM at the Extension Office will be **Dick Benoit's** Annual presentation **RAPTOR WORKSHOP** in preparation for Spring Migration. Ellen Gerloff is Project Leader – register with Emmeline.

A new offering is available **Thursday March 20- THE BIG THICKET TREK** – Project Leader is Nathan Veatch. The event will begin at Big Thicket National Preserve at 9:30 AM and end at 1:30 PM. There will be lectures, hikes and observation time. Take a lunch. Carpooling will be encouraged since this site is near Kountze, TX north of Beaumont. Sign-up sheets and information at Chapter Meeting and notices via e-mail.

In the works for spring is a **Birding Workshop tentatively on April 14, at Moody Gardens** and a **Karma Cruise in May**.

I would be remiss if I did not remind you of the time and effort put into these opportunities by a **very hard working AT Team; Steve Alexander, Louise Bell, Dick Benoit, Frank Budny, Emmeline Dodd, Claudia Edwards, Shirley Foster, Ellen Gerloff, Mel Measeles, Diane Olsen, Sara Snell, Nathan Veatch, and Mary Vogas**. We meet monthly, share assignments and have a good time working together. There is always room for one more, so if you would like to join our team, please contact Shirley Foster, [mfoster689@aol.com](mailto:mfoster689@aol.com) via e-mail. You would be warmly welcomed.

STEWARDSHIP OPPORTUNITIES  
By Dick Benoit, Stewardship Chairperson

February Project of the Month  
**Sundance Gardens**, Texas City  
Flower Bed Work  
**Saturday, February 16, 2008, 9AM until Noon**  
Trudy Belz will be in charge of the work morning.  
Contact [RBenoitTEX@aol.com](mailto:RBenoitTEX@aol.com) if interested.

March Project of the Month  
**Horseshoe Marsh Restoration**  
**Tuesday, March 4, 2008 9 AM until Noon**  
Our eighth time helping restore this old railroad bed to a birding trail with Winnie Burkett.

March Special Project of the Month  
**Trash Bash** at various sites  
**Saturday, March 29, 2008 9 AM til Noon or ?**  
Free lunch, Souvenirs, Door Prizes, Entertainment

April Project of the Month  
**Anahuac NWR Butterfly Garden Maintenance**  
**Saturday, April 12, 2008 9 AM until Noon**  
Maintain our adopted garden plot

April Special Project of the Month  
**Texas City Prairie Preserve**  
Tuesday, April 15, 2008  
Prairie Maintenance is necessary for prairie restoration

October Project of the Month  
Prairie Pandemonium at ABNC  
**Saturday, October 18, 2008**  
Second annual restoration of prairie

**Ongoing activities:**

Mondays - **Reitan Point**, second and fourth, Contact Liz Gimmmler [gimmmler@consolidated.net](mailto:gimmmler@consolidated.net)  
Tuesdays - **Texas City Prairie Preserve**, Contact Marybeth Arnold [mbarnold@aol.com](mailto:mbarnold@aol.com)  
Wednesdays - **Wetland Restoration** Team, Contact Charriss York [cyork@tamu.edu](mailto:cyork@tamu.edu)  
Fridays - **Sundance Garden**, Contact Trudy Belz [trudybelz@aol.com](mailto:trudybelz@aol.com)  
**Prairie Friday**, Armand Bayou Nature Center, Dick Benoit [RBenoitTex@aol.com](mailto:RBenoitTex@aol.com) 9AM and lasts until Noon

## **PRAIRIE** by Dick Benoit

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Thanks to the Galveston County Extension Service for providing materials to the Prairie Restoration Team in 2007 to help it restore prairies in the area and educate adults and youth. The material included 600 pounds of clay to construct seed balls to sow seeds into the prairie. Over 400 pounds of the clay has been used to date, which has formed 15,000 seed balls. These seed balls were formed by students at Hughes Elementary in Dickinson and Morgan Elementary in Galveston. Also, Master Naturalists and others have formed seed balls that have been distributed in Texas City Prairie Preserve, Carbide Park Prairie, Armand Bayou Nature Center Prairie, Reitan Point Prairie, and Bray's Bayou Ponds.

Also, 20 bags of potting mix were obtained to grow prairie seedlings. One bag fills about 150 four inch by four inch pots, that is about 3,000 containers. These pots have gone to the above prairies mentioned and are currently in greenhouses growing plants for the 2008 spring plantings. We also had funds to purchase 18 inch colored flags to locate and identify plantings in the ground.

In 2008 please consider helping with restoration of prairies in the area. The Coastal Tall grass Prairies are the most endangered ecosystems in North America. The Galveston County Prairies need You!

## **WETLAND** by Diane Humes

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The Wetland Restoration Team celebrated the holidays at the home of Marissa and Andy Sipocz with a delicious potluck luncheon of ham and all the trimmings. When Team members are out of the wetlands, they obviously clean up very well and practice excellent culinary skills! After dessert, Team members voted for their fellow members – “most likely to throw mud,” “most likely to be thrown mud,” “most likely to stay clean,” and “plant whisperer.” Team Leaders crowned the “Wetland Kings” or “Wetland Queens” – for a real thrill, ask the team to wear their crowns!

Although early December seemed devoted to partying, the Team had two fantastic workdays at the nursery (NRG). The irises and swamp lilies were trying to take over the world; we thought that was OUR job. We separated and re-potted them for future projects – now there are over 400 pots of each, in their proper places, waiting decorously for spring planting.

The WRT has been testing the water at the Mason Park Brays Bayou Treatment Wetland for over two years through the TX Watch Program. December 2007 marks an entire year of also sampling *E. coli* levels at the wetland. *E. coli*, while generally not pathogenic itself, is used as an indicator for presence of bacteria. High levels may indicate contamination from septic systems, improper sewage treatment, leaking sewage infrastructure, farm runoff, pet wastes, etc. You may have read recent reports about high bacterial levels in Houston's bayous – sad, but true, and confirmed by our data.

As most of you know, the water source for the created wetland is a storm water drain from the neighborhood adjoining the site. During a flood, the wetland receives water **from** Bray's Bayou, but drains **into** the bayou during normal weather. Water from the storm drain has had incredibly high levels of bacteria (and, to think, I dropped my water bottle in there – let's hear it for soap and hot water!!!) But, the wetland is doing its job; the water leaving the wetland is **200 times cleaner** than when it entered and also **10 times cleaner** than the water in Brays Bayou!!!

Stay tuned for more projects – the Wetland Restoration Team saves the world, one wetland at a time.

## Naturalist Spotlight of the Month

### Mel Measeles “Mel the Mentor”

By Irene Yodzis and Mary Vogas



Educator, grandpa, craftsman, volunteer, photographer! These words describe the naturalist we are spotlighting for this newsletter. He is our head TMN photographer, Mel Measeles, from the spring 2004 class!

Mel was born in Harlingen, Texas, but spent most of his childhood in Austin. As a child, he was active in Boy Scouts. He loved being outside. In fact, as a child, he wanted to become an Indian since they spend all of their time outdoors. Growing up he enjoyed catching frogs and toads in a local creek and also going on all-night fishing trips. After graduating from high school in Austin, he attended Southwest Texas College in San Marcos and studied industrial arts.

In the 1970's, he accepted a job as a draftsman with Singer Link in Houston in which he worked on the simulator for the Apollo program. He stayed with Singer Link for eight years. Then he went to work for Houston Lighting & Power (HL&P) focusing on environmental state regulations. While at HL&P, he volunteered on

several environmental projects. One project was helping to reestablish land as prairies and another was helping to turn coal ash into oyster reefs in Galveston Bay. In addition, he helped to develop the wetland walkway at Sylvan Beach for Bay Day in which they brought in thousands of plants for the event. He received his first introduction in planting marsh grass at HL&P by planting marsh grass between Tiki Island and Bayou Vista. All of these projects introduced him to the naturalist's world that kindled a flame for the environment that still burns today. He worked for HL&P for over twenty years and then retired.

Mel has lived in Friendswood for 38 years. He was elected to Friendswood City Council in 1991 and ran numerous times for reelection. He was on city council for fifteen years. During that time, he was also mayor pro tem for one year. He holds the record for holding a city council position longer than any other city council member in the history of Friendswood! When he was on city council, his big interest was in the parks. One time he went to look at an area with other city council members to make it into a park. Since it was way too mushy to look at on foot, the city council members went on horseback. Mel helped to get this area developed into Centennial Park, which has been a great addition to Friendswood. This is where the Fourth of July program and fireworks are now held. He wanted to give back to the community and he certainly did that!

In Friendswood, Mel has been on the board of the Friendswood Historical Society for about five years. He is also a docent at the museum in Friendswood where he gives tours. Through these tours, he educates others about the history of Friendswood. He especially enjoys helping with the tour for all fourth grade students in Friendswood ISD.

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## Annual Meeting a Big Success

by Steve Alexander. Photos by Nathan Veatch

Eighty Master Naturalists and their guests enjoyed food, fun, and fellowship at the Sixth Annual Graduation Celebration held December 6, 2007 at



Carbide Park. All sat and ate items selected from food-filled tables then leaned back with bulging stomachs to enjoy the fun and fellowship

for the remainder of the evening.

But there was some business conducted between singing “Hi-ho, Hi-ho,” “I’m Dreaming of a Green Christmas,”



and listening to the Bayouphiliacs.



For example, the **2008 Board of Directors** was elected. Board members for 2008 are: **President**, Sara Snell; **Vice-President**, Shane Ferguson; **Secretary**, Nelda Tuthill; **Treasurer**, Frank Budny; and **Membership**, Terry Jackson.

Numerous Master Naturalists were certified, recertified, and recognized for volunteer service milestones. However, the highlight of the evening was the **Treasures of the Bay Awards** presentations.

## Treasures of the Bay Awards



**Chuck Buddenhagen Memorial Education Awards** were presented to Steve Alexander and Dick Benoit.



In addition to these recognitions, a **GBAC Friends** pin was presented to Shirley Measeles for her efforts in helping Mel with the TMN store.

## Treasures of the Bay Awards



**Non-Profit Awards** were given to Galveston Co. Extension Office, Houston Wilderness, and League City Historical Society. The awards were accepted by Julie Massey, Joanna Sharp, Fay Dudney and Doris Heard.



**Chapter Service Awards** were given to (front row, l-r) Marybeth Arnold, Mary Jean Hayden, (back row, l-r) Fran Ryan, Jacque Sobotik, Frank Budny, Emmeline Dodd, and Ellen Gerloff. Liz Gimmler received her award later.

**Making a Difference Awards** were given to Rita Smith, Martha Terrill and Karla Klay of Artist Boat, Marie and Odie Asscherick, Heather Millar (Armand Bayou), and Tom Solomon. Sonny Arnold (TMN Program) and Vic Madamba also received this award but are not pictured.



Our group's emphasis on **GOING GREEN** in 2008 was already on display with each person using their own plate and utensils from home. In addition, each table featured a green initiative designed by a host of creative Master Naturalists. My table's theme, "Recycle Your Plastics", was designed by Pat Turk and featured plastic items recycled as a centerpiece. Many thanks to those who helped make the evening memorable!



Left: "It's not over until it's clean," paraphrases Ellen Gerloff, with helpers Allen and Terry Jackson.  
Above: Lady Liberty put in an appearance!



# REDUCE, REUSE, RECYCLE UPDATE

*By The Green Team*

The 3 Rs Stewardship group (now the "Green Team") met on October 30th to plan ways to engage all Master Naturalists in efforts to Reduce, Reuse, and Recycle. In attendance were Mafalda Faillace, Nelda Tuthill, Mary Gallishaw, Margaret Canavan, and Julie Massey.

You have surely noticed the recycling efforts we have at Chapter meetings and training classes. The Green Theme at our December meeting was great! Our next step is the dissemination of current information to our members so we can all enthusiastically participate. We plan to create and maintain a list of places in our local area that accept recycling material and a list of what they accept, and hope to get it onto our website. Your input is vital in order to do this!

For example, in addition to local recycling centers:

- \* Radio Shack will recycle your used batteries.
- \* Office Depot will take your used printer cartridges and give you a \$3.00 store coupon for each. They must have a metal print head like the HP, Dell, Lexmark and the Office Depot brands. You can bring in a maximum of three at a time.
- \* PetSmart has postage paid mailers to recycle your empty printer cartridges. The store gets a donation per cartridge to help stray animals.
- \* Most Walgreen's will refill your empty inkjet cartridges in the photo department. It's \$10 for black and \$15 for color.
- \* UPS Stores will recycle packing materials including cardboard and packing peanuts.
- \* Half Price Books will buy not only your books and current magazines, but will also buy CDs, DVDs and any old LP records you may have.
- \* Armand Bayou has receptacles for paper and aluminum cans in the parking lot.



The most important part of this effort is to ask yourself how you can think green. Here's a summary of suggestions that anyone can do.

If you have a lawn service you can negotiate the times when you want your lawn mowed. Eliminate at least two mowings in the fall when the grass really doesn't need to be cut. Start a compost pile. Use pine needles for mulch if available. Don't

leave the water running when shaving, brushing teeth, or hand washing dishes. Turn off lights when not in use. Replace your most used incandescent bulbs with compact fluorescent or use lower wattage incandescent bulbs. Turn off computers and monitors when leaving for more than an hour. Unplug electrical chargers when not in use. Walk, cycle, bus, or carpool instead of driving. Use pump instead of aerosol sprays. Use cloth napkins instead of paper. Use a clothesline instead of a dryer whenever possible. Use a cloth grocery bag when you food shop or don't take a plastic bag if you have only a single item.

Please send any other information you have about recycling centers or other ideas that will help keep Mother Earth as healthy as possible. Send your e-mail comments and replies to Margaret Canavan [Margaret@galveston.com](mailto:Margaret@galveston.com), or to any member of the Green Team. We plan to meet again in January so please let us know if you'd like to join in our planning efforts. "Use it up, wear it out, make it do or do without."

**See Bottle vs Tap on page 13**

# Tall Grass Prairie Seed Propagation

By Tom Solomon

The subject of seed propagation has been covered in many books and articles. Such items as seed dormancy and how to break it have been covered in many chapters. My article is basically an attempt to teach anyone what I have found to be the best method to germinate tall grass prairie seed including Eastern Gamma Grass, Switchgrass, Big Blue Stem, Little Blue Stem and Florida Paspalum on a fairly small scale.

Before we discuss seed propagation, I think it would be beneficial to talk a little about seed collection and storage. Non-viable seeds will not germinate no matter how hard you try to propagate them.

Seeds need to be stored in the following conditions to maintain viability:

- a dry condition in low humidity
- a cool place
- a dark condition

Does this explain why the seeds you purchase from Home Depot in October do not do well?

After you first collect seeds, remove the unwanted parts and dry the seed before storage. Remove any insects. I use an open saucer placed on the top of a fluorescent fixture for several weeks before storing the seed in a clean dry lunch bag with all identification included. The bags are folded and stored in a small plastic storage container that is kept in one of our kitchen cabinets. I also use film canisters and prescription bottles for small quantity storage. I usually include the silica gel packages that are inserted in prescription bottles and shoes into the storage container. Dried milk in a lunch bag or an envelope works well in maintaining low humidity.



When I propagate grass seed, I first prepare a tray of 4 x 4 square containers (18 or 20) that have been filled to 75% with any good damp soil-less potting mix that contains little to no fertilizer. To each pot, I add approximately 3/8 to 1/2 inch of soil-less damp germination mix that is usually quite fine and contains considerably more peat moss than does potting mix. To each pot I add

from 4 to 20 seeds depending on my previous germination success rate. I do nothing special to position the seeds since I will separate the plants as soon as they are large enough. After the seeds have been added, I then add approximately 1/16 of an inch of fine vermiculite to the top surface of each pot. I then water the tray completely until water exits the pots. The trays are then positioned in the greenhouse with 1- minute water spray three times a day until

germination occurs.

I have found that most seeds fail because the very small root that breaks the seed coat dries out before the root is large enough to maintain water to the plant. The vermiculite maintains the humidity at the seed surface much better than the potting mix and thus (increases?) the germination rate.

As soon as the plants are large enough, they should be separated into individual pots to maximize growth rate. Surprisingly, the roots usually come out the bottom of the 4 x 4 before I believe the plants are large enough to separate. During transplanting, the most important factor is to minimize the air around the roots so that they do not dry out.

The same type of methodology can be practiced using a 4- inch round styrofoam bowl with holes in the bottom. Good Luck!

# Who Gives a Hoot?

By Claudia Edwards Collage By Mel Measeles

November 13, 2007 was a dark night, after a rain, and the frogs and other unnamed critters created a chorus as we walked to the Education Building at Armand Bayou Nature Center. The setting was perfect for Dick Benoit's talk on Owls. I thought I knew a lot as I came in, but he added some depth to my understanding. I never made the connection between types of birds and their habitats. For example, the Red-tailed hawk hunts rabbits by day, while the Great-horned owl hunts rabbits by night in the same area. The hunting styles of each pair, owl and hawk, are similar, and some even have noticeably similar coloration.

Dick often made references to the Owl Trunk, which we may borrow for educational purposes. I've already been plotting to borrow it for my kids' classes. Owl pellets are fascinating to everyone, from the youngest to the oldest, and Dick mentioned a student who said it was full of surprises, just like a museum. It's a mini lesson on anatomy, and as the kids are learning the names of shrew bones, they are learning the names of people bones, because the corresponding names are the same. What a delightful way to study for the TAKS test section on the Human Body! When they see those names again, they'll be able to connect them to a fun experience.

After Dick had finished, we headed off into the night with Martha Hood and her helpers. She told us ahead of time where she would be going, which was helpful to me because I am very familiar with the area and I felt oriented even though it was dark. We kept our flashlights pointed downward to avoid tripping hazards. Our first stop was the Barn, where a couple of Barn Owls are known to live. As I approached the group, I looked up, and for a fleeting second it seemed as though the horizon was on fire. Then I realized that it was the Chemical Plant Complex nearby. What a contrast! We listened and watched for owls as Martha played their sounds, and then moved on to the next place. It was a pleasant walk but I never saw or heard anything. In the future, though, I'll be more aware of owls and maybe someday I'll look up and see a shadow as the silent hunters fly overhead.



GBAC Volunteers at TCCP  
*Collage by Mel Measeles*



# BOTTLED vs. TAP: WHAT WOULD A MASTER NATURALIST DRINK?

*By Diane Humes*

Most Americans get their drinking water from one of 53,000 community water systems. It comes from the faucet at an average cost of \$0.002 per gallon. The states and the EPA regulate 91 drinking water contaminants with stringent and rigorous testing and reporting, as required by the U.S. Safe Drinking Water Act, enacted in 1974 after a nationwide study showed water quality problems in communities across the U.S. Since 1999 providers have been required to send each household a yearly water report by July 1. This allows you to know how well your tap water conforms to safety standards. By 1994, 83% of community water systems met all requirements; by 2002, 91% had met all standards. Drinking water in the U.S. is some of the safest in the world. However, the nation's drinking water infrastructure is aging; many cities installed water pipes before World War 1. In 2003 the EPA estimated that almost \$300 billion in infrastructure repairs would be needed in the next 20 years to ensure the nation's safe drinking water. This has led some to feel that bottled water may be safer.

U.S. sales of bottled water, at a cost of \$3.00 - \$4.00 per gallon, have grown from nearly negligible to over 60 billion bottles per year in the last 10 years. That's 200 bottles for very man, woman, and child in America. That is big business! The marketing images on the bottles evoke towering mountains, pristine glaciers, and crystal clear springs, but this is not necessarily true. Fiji Water does come all the way from Fiji, but not all are so exciting. One quarter to 40% of bottled water is municipal tap water re-packaged, possibly with additional treatment. The FDA regulates bottled water; however, standards are weaker than EPA standards for tap water. For example, *E. coli* is allowed in bottled water, but not in tap water. Reporting and testing requirements are in no way comparable. Whereas

the EPA requires water testing 100+ times per month, FDA requires testing once a month. Also, the 60-70% of bottled water that does not cross state lines is exempt from the any FDA standards. The NRDC stated that there was no reason to assume that bottled water was superior to tap water or had fewer microbial or chemical contaminants. The plastic bottle itself may leach phthalate (regulated by EPA) into the water, for which there is no bottled water standard.

We are entitled to drink safe, clean water. If you are really concerned or have health needs, you need stricter water purification. You should make **sure** your water has been further treated by **reverse osmosis distillation, UV radiation**, or use of **absolute 1 micron filtration** to eliminate smaller or resistant disease-causing organisms. Find out what is in that bottle of water. Consider installing a home filtration system. Carry your water in a stainless steel thermos.

Bottled water is sold in durable, cheap, convenient PET (polyethylene terephthalate) containers, an easily recyclable form of plastic, but recycling rates for plastic bottles are less than 25%. Most head for a landfill – but the rest create lots of litter. Plastic is light and floats and is blown about in the wind. All rivers lead to the sea; the Houston Ship Channel is a frightening repository of plastic of all types, probably washed down storm drains. The Wetland Restoration Team had to stretch a trash boom across the treatment marsh on Bray's Bayou to keep out all the bags and bottles that floated in. Of the 200 billion pounds of plastic (not all for bottles) produced in the world, Greenpeace estimates 10% ends up in the ocean.

Once a plastic bottle gets to the ocean, it can float on winds and currents for miles. The Great Pacific Garbage Patch or North Pacific Gyre is an area in the Pacific Ocean twice the size of Texas where currents circle lazily in a clockwise fashion and trash has collected – the largest landfill in the world in the middle of the ocean. Trash accumulates in the gyre, churning in the waves, more plastic by weight than plankton.

Studies estimate that 80% of ocean trash has originated on land and 60 – 80% of it is plastic. Actually, the oceans are awash in plastic trash and there are 6 gyres swirling around the globe. Many studies document the harm to marine life from ingesting or becoming entangled in plastic; when the plastic bits become small enough to be eaten by zooplankton the plastic will work its way up the food chain until it is truly in all living tissue on the planet.

Plastic has been around for about 50 years. It is made from oil; it takes 1.5 million barrels to manufacture a year's worth of those handy bottles. It can photo-degrade, meaning sunlight will cause it to become brittle and crumble, but it does not decompose. No microbes have yet evolved to eat it – break it down into its building blocks. It can break into smaller and smaller bits, but will remain a man-made polymer – possibly hang around in the environment for 1000 years.



Total world water is finite and freshwater for drinking constitutes a mere 1% of the world's water. The WHO estimates individual basic water requirements are 50 liters (13.2 gal) per day—for drinking (5), cooking (10), bathing (15), sanitation and hygiene (20). Worldwide water use varies greatly, with sub-Saharan Africans using 10 - 20 liters per day, Europeans using 200 liters per day, and Americans using 300 - 400 liters per day. World human population exceeds 6 billion people. In 2000 about one third of the world's people had less water than the WHO basic water requirements; more than half the world's rivers are polluted or depleted in their lower reaches from overuse. World population is projected to rise to 9.3 billion by 2050, and industrial water use is expected to increase along with the population. It is projected that within 25 years humans will consume 90% of the world's water, leaving only 10% for other species.

We have a steady, reliable and cheap source of clean, freshwater for drinking, available at few other times in world history and few other places in the world today. Yet, many people, Americans and others, are choosing to forsake ordinary tap water for the convenience and perceived benefits of bottled water, in favor of a product that is the same or lesser quality, higher price, uncertain safety, whose production can ruin water tables,

packaged to be discarded and not degrade for 1000 years. We are very wealthy, indeed, to be so heedless. The convenience and perceived benefits of bottled water seem dubious when we consider the added costs for transportation and packaging and the cost to the environment. What would a master naturalist drink?

Most drinking water comes from surface water – lakes and rivers – or groundwater – wells and springs. Freshwater may become salty or polluted; desalinization and purifying water comes at great cost of energy and resources.

As Gulf Coast residents, we are quite familiar with one of the consequences of groundwater pumping – subsidence, along with salt-water intrusion. Over-pumping can also cause rivers and lakes to dry up. The Santa Cruz River in Tucson, Arizona was once a perennial stream in the desert, lined with cottonwoods. Fish, beaver, and waterfowl were abundant, and the water flow powered two gristmills until the 1940's. Pumping water for agriculture and the increasing population's needs have lowered the water table; today the river is a dry wash, a thoroughfare for joy-riding pickup trucks and horseback riders, except during a storm.

The laws governing water use were written before the science of hydrology was well understood. The law assumes little or no connection between groundwater and stream/river/lake water, but the science is becoming clearer that this is not so. Water rights issues are complicated.

**For list of sources, go to GBAC Web Page**  
@ <http://gbamasternaturalist.org/>

### **~~Mel Measeles continued from page 5~~**

Mel is very active in our TMN group. He is on the education team, leads beach walks at Galveston ISP, is an instructor for water monitoring, and is involved in the educational programs in which our naturalist group goes to schools and teaches the students about Galveston Bay. He also uses his industrial arts training and has made over 150 half-moon miniature aquariums, which are used on the beach and bay walks for students and adults. You probably have seen him manning the table at our TMN meetings selling TMN apparel. He orders, stores, and takes charge of this great service for our group! He also is the lead photographer for our chapter. He likes learning new things about nature in which one door opens doors to other areas of interest to him. Of all the TMN activities he participates in, his favorite is educating others.

Mel enjoys reading guidebooks on nature, especially on birds. Of all the places he has visited, his favorite is a trip to Alaska in 2001. He wants to go back and visit again. Mel and Shirley have been married for 46 years and have three daughters and nine grandchildren from ages 8 to 18. He loves doing things with his grandchildren. Mel and Shirley also enjoy their 2 dogs, 2 rabbits, 4 doves and 1 fish. Their home is open to their grandchildren's pets when they need a home! Mel is a very busy person, but wants to do more. He plans to take the Master Gardener's class next.

Mel is a wonderful mentor for anyone interested in nature, how to give back to your community and how to protect the environment. He is a

wonderful role model for anyone that wants to volunteer. All of us could use Mel's flame to make this world a better place.

### **Check out the GBAC Web Page**

@ <http://gbamasternaturalist.org/>

Carolyn Miles is doing a fantastic job with the web page. Make a bookmark or favorite and visit it often.

### **Find out about the Brazos Bend Camp out Feb. 1-3**

### **View Vic Madamba's breathtaking photos from his recent visit to Japan.**

### **See Mel Measeles' collage of photos and a recap of the fall Hughes Road Elementary trip to TCPP.**

The April edition of *The Midden* will have an article on Sea Turtles by Steve Alexander and information on the Galveston Turtle Patrol.

If you are interested in attending a workshop on Sea Turtles check out **Sea Turtle Saturday at the Houston Zoo on Feb. 22, 2008** for a day with great speakers on Sea Turtle Restoration at <http://www.houstonzoo.org/en/cev/?57>

Take this link for a list of speakers and times. <http://www.houstonzoo.org/sts/>

Pre-registration required. \$5 fee.

## Reminders from Julie

by Julie Massey

Class Number 11 Starts Soon!

The Spring 2008 Master Naturalist Training Class will begin on February 14, 2008! Yes, Valentine's Day! Classes will be held on Thursdays!

Volunteering with the training class is a great way to meet new class members and get them interested in your favorite projects!

If you would like to volunteer to help with the new class, please contact Barb Ellisor, Training Class Coordinator. You can reach Barb at [fun51747ti@yahoo.com](mailto:fun51747ti@yahoo.com) or 409-771-0414.

Last year's Treasures of the Bay Educators Workshop was a great success!

Many thanks to everyone who helped make that workshop so successful!

The **Treasures of the Bay Workshop** for 2008 is scheduled for **June 17-20, 2008!** We can use lots of help so please plan to join us!

Thanks for a wonderful year! Have a great spring! Julie

## The Midden

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

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## Why I Walk on the Prairie

By Marybeth Arnold

Another day.....down, dragging  
No! Today I go to the prairie. Today.....  
I'll listen to the wind.

I'll see crested caracaras.

I'll watch for hawks and harriers.

I'll gather seeds. Is it Harvest time?

I'll see the last of the Attwater's doing their mating dance.

I'll hear monk parrots.

I'll curse the deep-rooted sedge.

I'll see wobbled-legged newborn calves bawling for their mommas.

I'll watch the "amber waves of grain."

I'll wrack my brain for the name of that grass or spartina.

I'll hike on irregular grounds in areas that should be home to snakes and snails and fiddler crabs, tripping

but not falling (at least most of the time).

I'll wear my boots...my multicolored mud boots.

I'll wear my boots in mud, gumbo mud, the worst kind of mud.

I'll drop my blood pressure 20 points just standing there.

I'll laugh...with joy and relief that it is still here.

I'll pray that my great grandchildren will have the blessing to be here too.

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