Galveston Bay Area Chapter – Texas Master Naturalists

The Midden

February 2009

The Year Ahead – *by Mary Jean Hayden, President 2009*

First, I am delighted to serve as your 2009 president and to welcome new and experienced Directors onto the 2009 Board - Diane Humes, Frank Budney, Nelda Tuthill, Sara Snell, Julie Massey, Terry Jackson, Sue Sutterby, Beverly Williams, Verva Densmore and Jim Duron.

Like the rest of you, we're outdoorsy types and would really prefer devoting all of our volunteer time to environmental education and stewardship projects. Few things are more fun and rewarding than guiding a field trip, counting birds, making seed balls, manning a nature center or planting cordgrass. And few are less exciting than attending meetings or working at a computer. But your board of directors, committee members and program coordinators know that unless some of us step forward to do the administrative work - to plan, recruit, get the money, develop the materials, gather the supplies, and track the stats - our chapter can't run and our volunteer and advanced training opportunities won't happen.

So, as your new president, I'm challenging every member to include some type of administrative task within your 40 or more hours of volunteer work in 2009. Or as your mom used to say, "As soon as we all help, we can all have fun." Please contact this year's Chair of one of our working committees or sub-committees and offer your services. Tell him/her you'll "take on" one of the tasks. *(See page 11 for a list of working committee chairs)*

Don't Miss the February 5th chapter meeting. Allan Treiman will discuss Global Warming: Is it Real? Is it Man-Made?

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President Mary Jean Hayden dons one of her many hats.
Photo by Dick Benoit

January-March

ADVANCED TRAINING OPPORTUNITIES
by Diane Olsen, AT Chairperson dianeo@wt.net

GIS/GPS for Naturalists
Saturday, Jan 31, 2009
UHCL Campus
9 - 12 and 1 - 3 5 Hours AT
Presenter: Heather Biggs,
Geo - Information Specialist
Maximum Class Load: 25
Registration Full - Long Waiting List
For more information contact Project Leader Vic Madamba at vik-n-rumi@att.net
If you have a GPS unit and are registered, please bring it to the class. Bring a lunch.

Global Warming: Is it Real? Is it Man-Made?
Speaker: Allan Treiman, Senior Staff Scientist, Lunar & Planetary Institute
Topic: February 5, 2009 chapter meeting
Carbide Park
1 Hours AT
6:30 social, 7:00 talk, 8:00 business meeting

Ridley's Believe It or Not: Sea Turtles of the Gulf of Mexico
Saturday, February 28, 2009
Extension Office, Dickinson
9 - Noon 3 hours AT
Presenter: Dr. Steve Alexander, GBAC Texas Master Naturalists
Maximum number of participants: 30
Register with Emmeline Dodd at TXDODD@aol.com
For more information, contact Project Leader Mel Measeles at measeles@swbell.net.

Raptor Workshop
March 9, 2009
Extension Office, Dickinson
7- 9 pm 2 Hours AT
Presenter: Dick Benoit
This workshop is intended for those who wish to learn about the diurnal raptors that inhabit and migrate through the area. The workshop is repeated annually in the spring to introduce or refresh the identification of these raptors. Those attending will be encouraged to attend the Sylvan Beach Hawk Watch in its fourteenth spring as observers or counters. This year the results of the last two Winter Raptor Surveys will be shared with the class. If you have a Diurnal Raptors of the Galveston Bay Area booklet bring it along or you will receive your first copy. To register contact: Emmeline Dodd txdodd@aol.com
Project Leader Ellen Gerloff
egerloff@sbcglobal.net

STEWARDSHIP OPPORTUNITIES
See page 12. Please inform Dick of opportunities that will be available to GBAC members this coming year.

February Project of the Month
Prairie Restoration
Texas City Prairie Preserve
Saturday, February 21, 2009
9 AM until Noon
Lunch Provided
Plant Prairie Grasses
Contact: Marybeth Arnold mbarnold@aol.com

Ongoing Activities:
Mondays - **Reitan Point**, second and fourth, Contact Liz Gimmler gimmler@consolidated.net
Tuesdays - **Texas City Prairie Preserve**, Contact Marybeth Arnold mbarnold@aol.com
Wednesdays - **Wetland Restoration Team**, Contact Marissa Sipocz m-sipocz@tamu.edu
Fridays- **Sundance Garden**, Contact Trudy Belz trudybelz@aol.com
Prairie Friday, ABNC-Dick Benoit RBenoitTEX@aol.com 9AM - Noon

PRAIRIE *by Dick Benoit*

PONDERINGS

Armand Bayou Nature Center Prairie Friday Team 2008

Jim Duron
Tom Solomon
Gail Gawenis Howie Katz
Ray Parker Jim Crabb Dick Benoit
Laura Bradley Beth Frohme Diane Humes
Jim Frantz Gerre Gurrant Liz Gimmler Sam Williamson
Ellen Gerloff Howard Lindsey Barb Nowakowski Sarah Patterson
Bob Patterson Theresa Rogers Will Roundtree Jim Waligora Art Carpenter
Rebekah Gano Nancy Henninger David Kovak Gib Larson Carolyn Lovell Jim Manley
Sally Paulissen Bob Paxton Rose Presley Janice Schrager Lana Sims John Thayer Steve Upperman
2612 man hours
9769 potted plants
7648 planted plants
$52,240 volunteer value

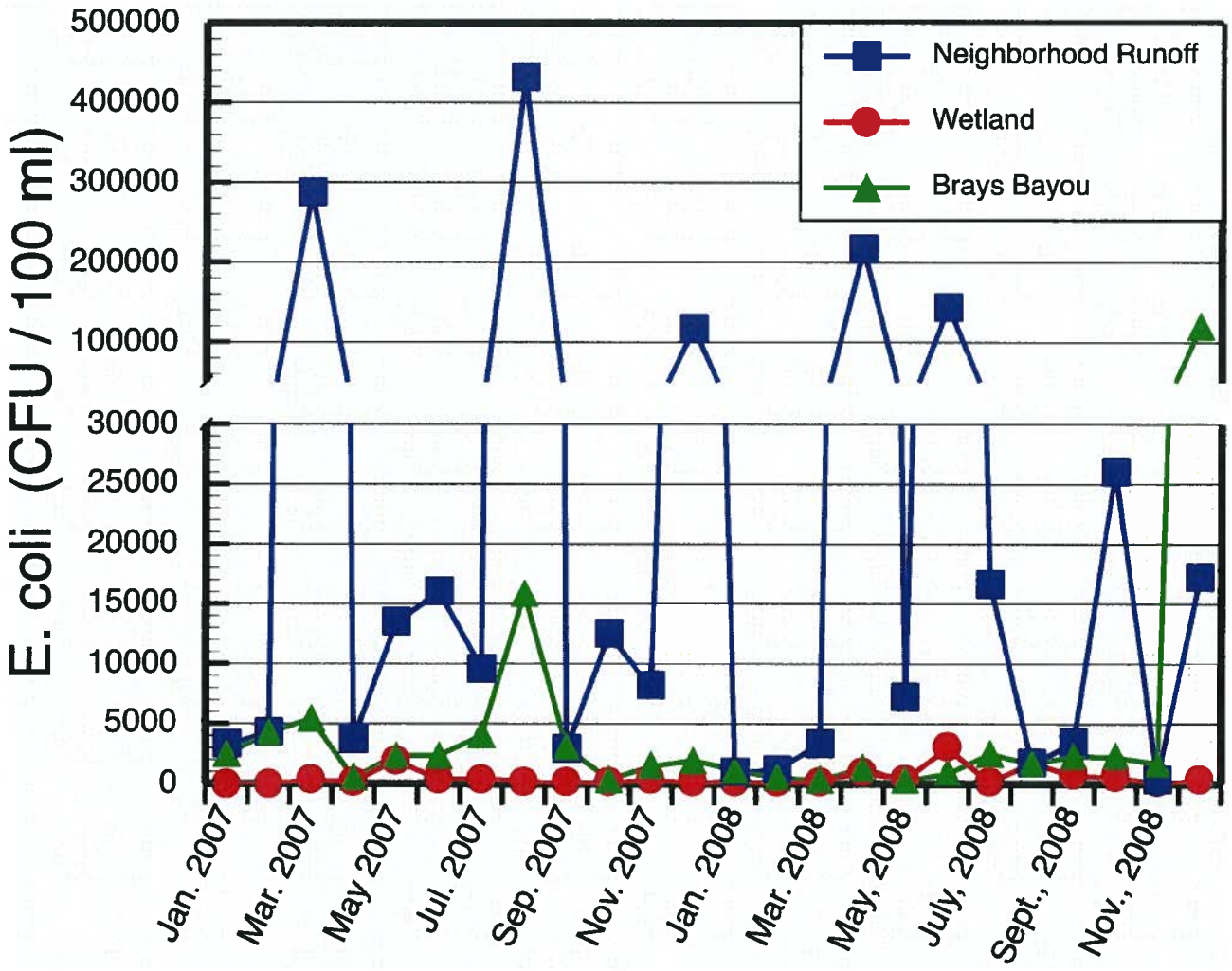
Along with the prairie work done at Armand Bayou Nature Center there was significant work done at Texas City Prairie Preserve, Reitan Point at Scenic Galveston, Sheldon Lakes State Park, Carbide Park Prairie and League City Prairie Preserve during the 2008 year.

WETLAND *by Diane Humes*

A N D E R I N G S

Wetland Restoration Team members enjoyed food, fellowship, and fun at the annual Christmas party held at Dick Benoit's house. The weather outside was raw and cold, but Team spirit was warm inside; all Team members are great cooks and clean up pretty well! The WRT can look forward in 2009 to a major new wetland project at Sheldon Lake State Park and preparing plants for landowner living shoreline projects in Dickinson.

The Team has now completed three years of water testing for Texas Stream Team and two years of *E. coli* data for the Mason Park Stormwater Treatment Wetland. Water enters the wetland from a culvert carrying neighborhood stormwater runoff; this is the water source for the wetland except, of course, for rainfall and tidal surge. The runoff water is of extremely low quality with low to immeasurable levels of dissolved oxygen and often incredibly high bacterial levels. But, we can say that the wetland system created at Mason Park is making a difference – 99% of *E. coli* is removed before the water returns to Brays Bayou! Here is a sneak preview of the data to be presented at the State of the Bay meeting and a Texas Stream Team meeting on January 24.



The office has a new address: 1250 Bay Area Blvd. Meet there to ride the A&M van (save gas!), bring a lunch, and enjoy the company of fellow wetlanders.

'Twas the 12th of September, all sunny and bright
When a storm headed toward us, a fellow named Ike.
The mayor said to pack up and leave our hometown
'Cause the weather expected might cause us to drown.

Margaret left first with the dog and the cats.
Her violin, paintings, and all she could pack.
From Round Rock she watched with fear and alarm
While waiting for Stan to abandon the farm.

The windows were closed and covered with tin
In hopes that Ike's weather wouldn't get in.
Stan packed up the car with all that would fit
And left just hours before Ike would hit.

They watched and they waited, and nervous they stayed
Their friends were all over and phone calls were made.
Most were in safety, a few stayed behind
(we all thought that those were out of their mind).

When storm clouds had passed and Stan sneaked back in
The scene that he saw caused him major chagrin.
Boats on the highway, cars upside down,
Mess and destruction all over town.

Two feet of salt water had covered our yard
So Margaret's garden was hit pretty hard.
Although the whole town was covered with mud,
Our house—glory be!—was too high for the flood.

Sadly, the big oak that grew to the south
Had settled itself all over our house!
The damage was minor, though frightful it seemed.
We moved right back in and started to clean.

Adjusters, repairmen, no gas and no lights!
The stars were so sparkly & bright those dark nights.
Grocery stores were the first to reopen
And others would follow, is what we were hopin'.

Free meals from the Salvation Army, Red Cross
Helped all to keep on despite the great loss.
Many dear friends had more damage than we,
And had to find homes temporarily.

Three months have passed since this terrible storm
Our lives now are changed, no longer the norm.
Our town is rebuilding. There's lots of debris.
We're missing some houses and lots of our trees.

Shops and houses are shuttered, but workers are there.
Restoring historical buildings with care.
Our spirits are up, but they're still on the mend
It seems the repair work never will end!

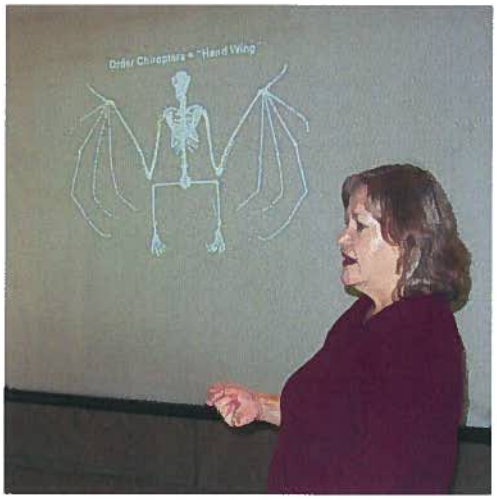
Season's Greetings and all best Holiday Wishes From Galveston!

Love from
Margaret & Stan
Tiny Elvis, Lola and Kali

We're all stubborn Islanders, staying right here.
And find our community ever more dear.
Season's Greetings to all, and there's a good reason:
We're thankful it's no longer hurricane season!

TMNs GO BATTY

By Claudia Edwards



Bats aren't everyone's idea of cute and snuggly. Diana Foss, Urban Wildlife Biologist with Texas Parks and Wildlife, spoke to 28 Master Naturalists at Armand Bayou Nature Center on November 16 and generated a great deal of respect for our furry, flying relatives. Her talk focused on the local and state species of bats, their habits and characteristics, with particular attention to the myths and fallacies that surround them.

Odie and Marie Asscherick told us about the Waugh Street Bridge Bat Colony, and the volunteer opportunities that exist for us to help educate the public. They have become local celebrities along with the bats! For more information, check out: *http://community2.webtv.net/masternaturalist/THEWAUGHBATMONITOR/*, which has a link with the KTRK (13) WeatherBlog.

Next, Jessalyn Ballard of the Buffalo Bayou Partnership informed us of the tourist boat cruises that are operational during the bat-active spring and summer months. The tours should resume in March and provide additional volunteer opportunities for those crewing the boat and talking to visitors. She conjured up a picture of dinner at the Spaghetti Warehouse and then a cruise on the bayou surrounded by the lights of downtown and the aerial antics of furry flying critters.

Lastly, we had some activities that provided visual, hands on, demonstrations of bat behavior. Nathan Veatch led an activity that mimicked the three ways that momma bats and young find each other in their bat caves and Claudia Edwards led an activity that demonstrated how the long-nosed bats pollinate flowers.

Teaming Up 2 Clean Up

By Vic Madamba

The weather was perfect for a paddle, slightly overcast, cool December morning. Ten of us showed up at the Wallisville Lake Project Visitor's Center for the day's cleanup activity. The Wallisville Lake Project is over 23,000 acres along and on either side of the Trinity River from just below the lock and dam, north to just south of the community of Moss Bluff. The project is under stewardship and control of the U.S. Army Corps of Engineers, Galveston District. The Visitor's Center is located at the lock and dam and is open Monday - Friday 7:30 a.m. - 4:00 p.m., Saturday and Sunday 8:00 a.m. - 5:00 p.m. A variety of outdoor recreation opportunities abound and for more information, please call 409-389-2285. However, the Wallisville Lake Project's primary purpose is not recreation, but to prevent saltwater from the bay going upstream, and protecting domestic and irrigation water supply. To get to the Center, take I-10 going East, take exit 806 and follow the feeder road to Lock and Dam Road, then turn right and follow Lock and Dam Road to the Visitor's Center.

After receiving a welcome briefing from the ranger on duty and our team leader, we gathered at the ranger's boat ramp. Our mission: to accomplish a mini trash bash along several small bayous about half a mile north of the Locks. The area designated for cleanup could only be accessed by paddle crafts. Some people had canoes and others had kayaks. The team consisted of volunteers from the local area, Sierra Club members and me, the lone Master Naturalist representing the Galveston Bay Chapter. The plan was to pick up debris left by Hurricane Ike and transfer the trash bags to john boat provided by the Park Ranger, which was positioned at the area. By 10:30 a.m., we were paddling along, singing our songs and everyone was having a great time paddling up the Trinity River. Approaching the site, we were surprised at what Ike had done to the marsh, wetland and forest - it was a disaster area. Debris included roofs, refrigerators, coolers, trashcans and just about anything imaginable. To make matters more interesting, the water was getting too shallow for our paddle crafts; we had to land and pickup the debris by hand. We spread out with bags in hand and did our best to clean up the land. The canoes were loaded several times and transferred to the john boat. When the john boat was full, along with the canoes, we departed the area back to the lock and ranger boat ramp. Although the team made a great effort, it was an initial step in restoring a small part of the 23,000 acre Wallisville Lake Project.

Future Teaming Up 2 Clean Ups are forth coming. If you are interested in volunteering for a clean up, contact Vic at vik-n-rumi@att.net

Claviceps purpurea, a Moldy Oldie

by Steve Alexander

Claviceps purpurea is a fungus that infects rye (ergot of rye), wheat and other grasses. It infects seed heads, leading to the production of numerous purplish-black curved rods called sclerotia (at the end of each arrow). These reproductive structures of the fungus fall to the ground and remain dormant until favorable growth conditions reappear. When this occurs, they germinate to give rise to the spores of a new generation.

One of the other grasses infected by *C. purpurea* is smooth cordgrass, *Spartina alterniflora.* I saw this fungus for the first time on smooth cordgrass while working as a LSU graduate student in the salt marshes of Barataria Bay, Louisiana some 36 years ago.

More recently, I spotted it infecting smooth cordgrass growing in the Pine Gully salt marshes of Galveston Bay (see picture of sclerotia projecting from seed heads).

While these observations reveal that this fungus is common and widespread, researchers believe *C. purpurea* has been around for centuries, perhaps even making history. For example, this fungus has been suggested as the cause of the infamous Salem witch trials.

In Salem, Massachusetts in January 1692, some individuals of the community began falling ill, displaying strange symptoms, such as convulsions, hallucinations, garbled speech, crawling sensations on the skin, and trancelike states. Unable to explain these events, the townspeople concluded witchcraft was to blame. This set the stage for the tragic affair known as the Salem witch trials, which resulted in the death of 25 people. The hysteria ended some eight months later only after the governor ordered the trials to stop.

This event still attracts considerable interest today. THE CRUCIBLE, a modern-day play by Arthur Miller, is about the Salem witch trials. The play is presented annually by many high school drama departments and studied in many English classes as part of the high school curriculum. And the city of Salem still draws many curious tourists (I am one of their numbers).

With such an ability to attract interest, it is understandable why modern day theorists have tried to explain how it all happened. One researcher has come up with a cause that is both logical and compelling, the fungus *Claviceps purpurea.*

Rye, the staple grain of the people of Salem, is the most common host of *C. purpurea* and is especially susceptible to infection under wet conditions. Records indicate that the growing season of 1691 was especially wet, so any grain put up for that winter would have been susceptible to attack by fungi, especially *C. purpurea.*

During growth, *C. purpurea* produces a class of chemical compounds called alkaloids, one of which is called lysergic acid, a molecule from which LSD is made. Alkaloids affect both the central nervous system and smooth muscle contraction.

During the winter of 1691-1692, the grain put up from the 1691 growing season was consumed by the people of Salem. Consumption of this grain coincided with the appearance of strange behaviors. The grain consumed likely contained *C. purpurea* and its alkaloids, which could have caused the strange behaviors, sensations, and convulsions noted by the townspeople. In fact, the alkaloids produced by this fungus cause the same symptoms as those recorded during the trials.

If you are interested in more detail, the original article implicating *C. purpurea* can be found in the 1976 issue of *Science*, Volume 192, pages 21-26. The article by Linda Caporael is entitled "Ergotism: The Satan Loosed in Salem?"

Rubber Ducky

by Diane Humes

Rubber Ducky, you're the one,
You make bathtime lots of fun,
Rubber Ducky, I'm awfully fond of you...by Jeff Moss

Those darling duckies are at it again! In September 2008, while we here in Houston-Galveston were somewhat distracted by Hurricane Ike, Dr. Alberto Behar from the Jet Propulsion Laboratory was sending a team of 90 yellow toy ducks into meltwater fissures in the Jakobshavn Glacier in Greenland to find out where the water is going and what this might portend for sea level change caused by melting glaciers. In other words, can anyone determine whether the meltwater is acting to separate the Greenland Icecap from its bedrock foundation? Although the ducks have not yet reappeared, it is hoped that they may be able to help track the changes to the Greenland ice, which has measurably lost mass since 1997. This is important because world sea level is predicted to rise 24 feet if all the Greenland ice melts - an uncomfortable position for most of the world's population, including us.

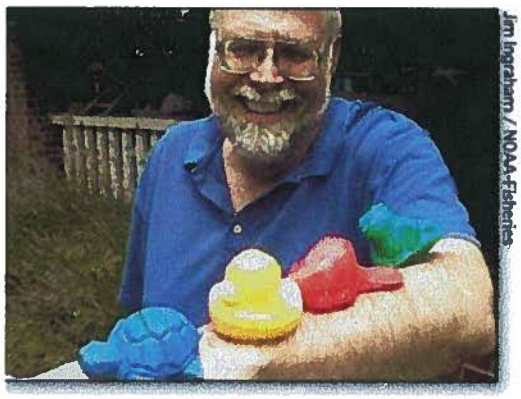
Dr. Behar and JPL needed a low-budget and tested alternative to his robotic device. And chose – bath toys! Rubber duckies became explorers for science the first time in 1992, when a container ship en route from China to the U.S. lost part of its load in a storm in the northern Pacific Ocean. One shipping container ruptured, sending nearly 29,000 plastic bath toys – yellow ducks, green frogs, blue turtles, and red beavers – overboard. Ocean currents, winds, and wave action propelled the toys around the globe and they became a tracking tool for oceanographers. Tough enough to bathe with two-year olds, the ducks have survived four and five trips around the North Pacific Subpolar Gyre and been found in Australia, Hawaii, and Alaska. Others traveled through the Bering Sea, under the North Pole, entered the North Atlantic Ocean and washed up in Maine and Scotland. Toys found after 16 years in water and ice are often punctured, worn, and discolored; ducks and beavers are now bleached white, while the turtles and frogs are still blue and green.

Bathtub toys are not the only items to be lost overboard during trans-oceanic shipping. Global manufacturing firms ship more than 100 million containers around the world every year. A small (8-foot by 40-foot) container can hold 58,000 pounds of cargo and 10,000 containers are lost at sea each year. This translated into approximately 61,000 Nike shoes lost in 1990 and 34,000 hockey gloves, shin guards, and chest protectors in 1994, in the Pacific Ocean, and 5 million Lego blocks in 2000 in the Atlantic, whose movements have been studied. The shoes washed up on beaches all along the West Coast of the U.S., prompting people to organize to help each other locate matching shoes. Sneakers can apparently float for 10 years at sea, if you can just find a proper pair!

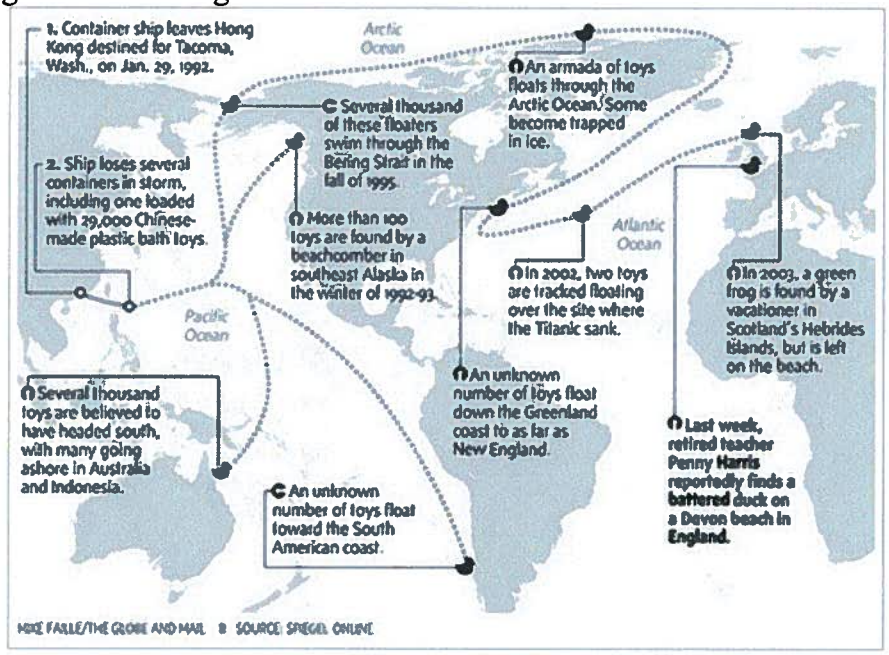
These "accidental experiments" have actually proved useful to oceanographers tracking ocean currents and the effects of wind and wave. After all, scientists have been dropping bottles in the ocean since 1846 in order to learn about ocean currents, although they now tend to use floating buoys and satellite tracking. The recovery rate for bottles, toys, or sneakers is very low – 1 or 2% - so, the lost cargoes have provided many additional data points to the traditional MIBs - Messages in Bottles.

Many inhabitants of the world's oceans are wanderers and floaters. Many animal species have larval forms that drift with wind and current. Young sea turtles drift in the sargassum for the first three to five years of

their lives. Plant seeds also drift on ocean currents; sea beans have been capable of floating around the ocean for 30 years and may still be viable. Dr. Curtis Ebbesmeyer has studied the flotsam of the ocean and tracked the sea beans, baby turtles, rubber duckies, and Nike shoes since 1966. His modeling of ocean currents allows him to predict where a floating object will be headed. For example, Dr. Ebbesmeyer predicts that the Legos spilled in the Atlantic in 2000 are drifting north into the Arctic Ocean and will traverse the Northwest Passage, arriving on beaches in Alaska in 2012 and Washington State in 2020. So, keep your eyes open.



Researchers in flotsam science have used other floatables to study ocean currents to try to trace invasive species (or colonizers, depending on your perspective) and oil spills. In 1979 plastic discs were scattered to study oil spills at Prudhoe Bay, some of which are still being found on Alaskan beaches; now biodegradable drift cards are used. If a 1% recovery rate holds true for whatever floats or spills into the ocean, you could expect 10,000 gallons of oil to wash up on the beach after an oil spill of a million gallons, in the opinion of Dr. Ebbesmeyer. These are sobering numbers, but we now have the ability to predict quantity and location, thanks to all the experiments deliberate and impromptu. All the junk in the ocean is disheartening and detrimental, but also has a story to tell. So, let's hear it for the shoes and little yellow duckies, especially next time you go beachcombing.



Sources:

Ebbesmeyer, Curtis C. "Beachcombing Science from Bath Toys."

Ebbesmeyer, Curtis C. and W. James Ingraham, Jr. "Pacific Toy Spill Fuels Ocean Current Pathways Research." *EOS*, Vol. 7, No. 2, October 1994, pp. 7-9, 14.

Hotz, Robert Lee. "The Sober Science of Migrating Rubber Duckies." *Science Journal*. 11/14/2008. http://www.careerjournal.com/article/SB122660041840925005.html

Podsada, Janice. "Lost Sea Cargo: Beach Bounty or Junk?" National Geographic.com.news 6/19/2001.

Let's mark our calendars for the Adopt-a-Beach 2009, April 25, - www.texasadoptabeach.org. **Texas Master Naturalists are like rubber duckies – tough, intrepid, inexpensive, fun, and give their all for science!**

Working Committee Chairs

Continued from page 1 Mary Jean's Challenges
"I'm challenging every member to include some type of administrative task within your 40 or more hours of volunteer work in 2009."

Communications (Steve Alexander) - Keeps website current, handles e-mail communications with members, publishes *The Midden.* steve4817@sbcglobal.net

Host Committee (Tawy & Cliff Muehe) - Provides the fun, food and fellowship for Chapter events - sets up and cleans up the meeting place and serving tables, oversees decorations and entertainment, provides beverages and frequently even the food.gbacmuehe@earthlink.net

Chapter Sales (Mel Measeles) - Orders, sells and keeps inventory and accounts of MN items available for purchase by chapter members. measeles@swbell.net

Historical Archives (we don't yet have a chair - what an opportunity for you!) - Collects and maintains Chapter documents and memorabilia that recall our progress and the fun we've had from 2002 to the present.

Training Class (Beverly Williams, Sara Snell, Verva Densmore) - Plans and manages the class - setting the schedule, arranging for sites and speakers, signing up participants, developing and duplicating notebook materials, recruiting and managing class volunteers. beverlyjwill@comcast.net

Advanced Training (Diane Olsen) - Does the same as above for every one of our amazing Advanced Training courses. dianeo@wt.net

Education and Outreach (Mary Jean Hayden) - Again does the same for Treasures of the Bay educator workshop and for Camp Wild; oversees our Jr. MN and Bay and Island Adventures programs; develops materials to promote the GBAMN program and handles requests from outside organizations for interviews, articles, presenters or booths .Bean1219@earthlink.net

Stewardship (Dick Benoit) - Coordinates the Chapter's monitoring, restoration and preservation efforts with our sponsors, partners and natural resources groups; sponsors a Project of the Month stewardship task; and offers to provide at least one program each year for Advanced Training. rbenoittex@aol.com

Green Team (Sally Paulissen) - Although not currently a Standing Committee, this team develops and coordinates Chapter efforts to "go green," initiating our bring-your-plate policy, writing articles for *The Midden.* paulissens@aol.com

Guppies from Julie

As The Midden is going to press, your fellow Galveston Bay Area Master Naturalists are presenting at the State of the Bay Symposium held in Galveston on January 13 and 14, 2009!

Mary Jean Hayden will serve on a panel to discuss Master Naturalist education programs including our Treasures of the Bay Educators Workshop. Diane Humes, Marybeth Arnold and Dick Benoit are presenting a poster which features Master Naturalist restoration activities across the Bay system!

The State of the Bay Symposium is designed to evaluate where we stand, as a community, in implementing the Galveston Bay Plan (a twenty year management plan for Galveston Bay). The Galveston Bay Area Master Naturalists are instrumental in achieving the goals of The Plan and improving the long-term health of Galveston Bay and its ecosystems.

The Spring 2009 Class – A Great Way to Volunteer! The Spring 2009 Class will begin February 26, 2009. We have lots of new volunteers interested in taking the class! Potential class members can contact me at 281-534-3413, Ext. 2, 2 or by email at jmassey@ag.tamu.edu.

Beverly Williams, Sara Snell and Verva Densmore are coordinating the spring class! If you would like to volunteer, please contact Beverly beverlyjwill@comcast.net!

Sterwardship Opportunities

by Dick Benoit, Stewardship Chairperson
RBenoitTex@aol.com

In order to facilitate and organize activities, the chapter is setting our calendar for 2009. If you would like your activity listed, please contact me (Dick Benoit). After I have compiled a complete list, I will set the 2009 Stewardship Calendar which will be published in *The Midden* and on the website.

Below are potential stewardship opportunities for 2009.

Invasive Species Monitoring
Water Monitoring
Sea Turtle Monitoring
Hawk Migration/Winter Raptor Monitoring
Prairie Chicken Monitoring

Wetland Restoration Team Activities
    Wetland Wednesday
Armand Bayou Nature Center
    Prairie Friday/Pandemonium
    Transect Monitoring May/October
    Prairie Schooner Rides
    Pontoon Boat Rides
    Burning/Mowing
Texas City Prairie Preserve
    Prairie Tuesday
Galveston Island State Park
    Restoration
Scenic Galveston/Reitan Point
    Second and Fourth Mondays
Carbide Park Prairie
    To Be Determined
Wildlife Rehab Facilities/Friendswood
    To Be Determined
Texas City Sundance Garden
    Garden Friday
Horseshoe Marsh Birding Trail
    TBD
Anahuac NWR Butterfly Garden
    TBD
Challenger Park Wetland/Prairie
    TBD
League City Prairie Preserve
Longhorn Project

AgriLIFE EXTENSION
Texas A&M System

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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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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

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