

# Environmental Exchange

A publication of the Citizens' Environmental Coalition

Alternative  
Energy Issue  
July 2004

The Houston-Galveston area's most comprehensive coverage of environmental news and events.

## RECs boost renewable energy production

By Chuck Wright

You may now have the option of buying green electricity from your electric provider, or from an alternative provider through Renewable Energy Certificates.

Many states these days have enacted what is called a "Renewable Portfolio Standard," which is a law that requires that

some amount of renewable energy be included in the total electricity mix. To achieve this goal, a system of trading in Renewable Energy Credits has been established, allowing the renewable energy to be generated by anyone.

The Electric Reliability Council of Texas oversees most electricity production and distribution in the state and handles this program in Texas as well. These credits can be bought, sold, and traded by companies, green electricity providers that lack their own green generation capacity, and parties wishing to increase the

amount of renewable generation capacity for altruistic reasons. The "green" resource is usually wind, though it might come from solar, or in some cases hydro or landfill gas.

RECs, sometimes called Renewable Energy Certificates, Green Tags, or Tradeable Renewable Certificates, are certification that a particular unit of electricity (say, a megawatt hour) was generated by some renewable energy producer, and it is given to the entity that generated the energy. For a unit of energy that was generated, there can be only one REC.

Entities that sell electricity to customers are required to "retire", or return to ERCOT, a certain number of RECs each year, this number being related to the amount of electricity that they sell. They may buy these, or they may generate the green energy themselves, and be granted

*Continued on page 3*



*Renewable energy credits certify that a unit of electricity was generated by some renewable energy producer, usually wind power.*

## Nuclear waste travels the states

By Jenny Freytag

On the heels of two Texas train crashes—one north of Dallas and one in San Antonio—and the announcement by the Houston-Galveston Area Council that Houstonians are two-and-a-half times more likely to be killed or injured in a traffic accident than anyone else in the nation, it's clear that ground transportation in Houston is a risky endeavor. It's made even riskier by some of the substances that are transported along the state's highways and rail lines. Of those substances, none seems to be more controversial than nuclear waste.

The cause for controversy is clear—radiation is a potentially lethal health hazard. In

high doses, it can kill within hours. Lower doses can cause cancer and damage DNA. According to the U.S. Environmental Protection Agency, many of the long-term effects of low-level exposure to radiation are hard to pinpoint because we are exposed to so many different sources, both natural and man-made.

Despite the fact that radiation can be dangerous in the long- and short-term, current technology and energy needs have prompted an increase in the everyday use of radioactive materials. Radiation is used to decontaminate certain foods and is essential to medical tests like mammograms. Nuclear energy is also used to create power, providing electricity to millions of homes in Texas.



*Texas is on the map for rail and road nuclear waste transportation.*

The problem comes when the radioactive source is no longer useful. While some sources of radiation are harmless enough to be washed down special drains, some of low- and high-level radioactive wastes and articles contaminated by radiation are transported to specialized storage facilities far from the places where they were used. And, as any Houstonian can attest, getting from place to place can open a Pandora's box of unwellcome possibilities.

*Continued on page 4*

# Environmental Exchange

The Environmental Exchange is published by the Citizens' Environmental Coalition (CEC), an information clearing-house and communications network for environmental issues in the Houston-Galveston area. The CEC mission is to improve the quality of life and health in the region through education, dialogue, and collaboration. CEC serves the general public by bringing many diverse groups together to build awareness and stimulate discussion about environmental issues in the region. Programs include forums that give a balanced perspective on environmental issues, and information vehicles that enhance understanding.

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## Perspectives

# Conversations about conservation with a developer

By Jennifer Lorenz

Trees, trees, and trees were the major topic of discussion when a contingency of Cypress area residents and business representatives met with Houston-based homebuilder and developer, Vincent Kickerillo. As an attendee at this meeting, I feel it is important to share with the CEC community that dialogue with developers is important and can often yield benefits.

On June 16, 2004, Vincent Kickerillo, the multi-millionaire developer, opened his offices to a large group of concerned residents who live in an area where Kickerillo and his partner, Mischer Investments, have recently purchased a wooded tract from Hewlett Packard. The 170-acre property located on the northeast corner of Louetta Road and State Highway 249, (northwest Harris County) has been a long-time green buffer for drivers along the stretch of Louetta Road, as well as a home for area wildlife.

Kickerillo shared his plans for the tract and what they were doing to mitigate their impact. Kickerillo said that they were originally planning on building a large brick wall along Louetta Road but decided to expand the required 20-foot green buffer of trees to 50 feet instead of building the wall. He also stated that they would not cut out the understory of smaller trees and shrubs within this strip.

The property will be home to "Vintage Lakes" a high-end gated residential community of homes from \$350,000 to \$2 million. It will hold two detention ponds, (15 acres rather than just the required six acres) for stormwater runoff, which was a point of discussion during the meeting. Dick Smith, Chairman of the Cypress Creek Flood Control Coalition, shared that Fort Bend County has a much stricter release rate for detention

ponds than Harris County does. Kickerillo and the representative from Mischer Investments promised to look at the possibility of reducing the speed of their outflow, and would be willing to receive more data on the subject, hearing that the community is concerned about further flooding from more hardscape surfaces.

While not conceding on every point, (they didn't agree to hire an arborist as requested during clearing of the tract) the green contingency felt strongly that important dialogue had been opened and all were appreciative of the opportunity to personally share their concerns.

Legacy Land Trust will share more detailed information about conservation easements with the developers, in the hopes that some of the tract, particularly the green strip along Louetta Road and a section of land located near a railroad track, might be permanently set aside. Legacy will also continue to pursue dialogue with both HP and their strategic land planners, Cushman Wakefield, concerning the larger 500-acre tract located just south of the property that was recently sold.

Because of the wetlands and large amount of floodway located on that larger property, there's the opportunity to preserve a portion of the tract for a flood buffer-zone, which could include low-impact hike and bike trails on its perimeter. Whatever happens preservation-wise must happen soon as there are plenty of survey stakes on the 500-acre tract now, and the recently-purchased-for-high-dollar tract across the street is making a siren call for HP.

*Jennifer Lorenz is the executive director of Legacy Land Trust, a group dedicated to the conservation of open spaces with aesthetic, ecological, educational, and recreational values throughout the 13-county Houston area.*



Jennifer Lorenz

# A Tortoise for the Queen of Tonga: Lessons for Life

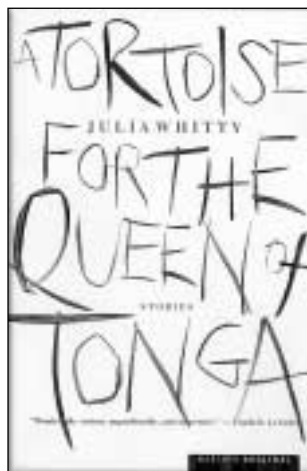
Julia Whitty's *A Tortoise for the Queen of Tonga* demonstrates clearly the difficulty of pigeonholing environmental fiction, offering us a set of short stories with both urban and natural settings, human and non-human characters. Whitty's work clearly fits eco-critic Suzanne Ross' paradigm of eco-fiction: "the literature we cherish speaks of the interconnectedness and interdependence of all life and seeks to reveal the embeddedness of human life in the life of the world."

This set of ten tales is bookended by the opening title story of a giant tortoise stranded for almost 200 years in a human world, and by the closing story "The Dreams of Dogs" in which a city woman and her dog—aptly named Grace and Salvator—learn to become a part of the natural one. The woman learns via the teachings of a Pomo Indian visitor and an encounter with a bear (reminiscent of Old Ben in Faulkner's "The Bear") and the dog by taking local coyotes as her mates. The protagonists in the eight stories in between range from animals in a marine park dreaming of rebellion against their captors and an art student mesmerized by the color- and light-scapes of sky and water in Venice, to a guilt-ridden tracker in

an African game park and an up-tight, insecure Darwin learning humility and happiness from the bats in a Galapagos-like Heaven.

Each of the stories in this slim volume blurs the boundaries between past and present, between unlike species and unlike people, between knowledge, memory and imagination. Whitty does indeed deal with "the deafness of the human heart," but she also writes about the flow of generations, species memory, and connections to a greater whole.

Whitty's style is straightforward, easy to read and thoroughly believable, despite her reliance on extended metaphors, an often dreamlike tone, and the sometimes inexplicable. One such story is "Jimmy Under Water," in which a professional diver removes his mask at the end of each dive in an attempt to re-enact and understand his 38 minutes of out-of-body experience at the bottom of a frozen Minnesota lake 19 years



previously. Whitty's words have the ability to evoke the sight, smell and feel not only of the icy lake water, but also those of the animals on the African veldt, of the dank mustiness of a Cro-Magnon cave in France, of the tropical heat and foliage of a South Seas island, and of the redwood forests of Northern California's Sierras.

In addition to dealing with the natural world—with or without human im-

fact—Whitty's writings touch on issues of race, class, culture, and gender—in other words—identity in all of its complexity and ambiguity. Whether read solely for personal pleasure or assigned to students in an eco-lit or eco-comp class, *A Tortoise for the Queen of Tonga* has lessons for all of us about humankind's place in the life of the world. 🐢

*Jeri Pollock teaches eco-comp and eco-lit at Moorpark College in Southern California.*

## RECs

*Continued from page 1*

the RECs. The requirement to turn in RECs causes the construction and operation of renewable energy facilities. The number of RECs that are required to be retired is calculated based on the amount of renewable energy that legislators determine they want in the energy mix.

RECs are not the same as energy. When RECs are traded, all that is traded is the certification that some green energy was generated, not the energy itself. What gives RECs value is the fact that certain entities must retire some each year.

Anyone can trade RECs. There are brokers who deal in them, and they can be bought and sold like any other commodity.

Companies that sell green electricity may buy electricity wherever they can get it cheapest to satisfy the needs of their customers. They can then buy enough RECs to cover the electricity that they have sold. An important point is that they are not allowed

to sell these RECs. They must retire them. If they did sell them, then the renewable energy corresponding to the REC would be claimed by more than one party.

An individual might choose to sign up with a green electricity provider. They might also choose to buy enough RECs to cover their electricity consumption, and then buy electricity from their old supplier. They might even choose to buy more RECs than are required to cover their own consumption.

RECs that are retired are unavailable to those parties that are required by law to buy and retire them. The effect of this is that the amount of renewable energy capacity is increased beyond what the law mandates. Large groups of concerned citizens could increase the renewable energy generation base simply by buying and not reselling RECs. Or a concerned environmental organization might collect funds to buy and retire RECs.

While it is complex, the REC trading system has benefits beyond achieving a stated renewables capacity. It allows anyone to

claim credits for their renewable energy generation, it allows concerned citizens to increase the amount of renewable energy capacity beyond the legal requirement by buying and retiring RECs, and it allows anyone to legitimately buy green electricity, whether or not they are served by a company that offers it.

A conscious electricity customer who wishes to use green electricity should not only check into the availability of "green" service, but they may want to consider simply buying RECs in addition to standard service, preferably one with a low percentage of coal and nuclear in their fuel mix. And as always, they should deal with a reputable seller.

Every REC you buy and retire is coal, oil, or gas that isn't burned.

For more information, visit [www.texasrenewables.com/recprogram.htm](http://www.texasrenewables.com/recprogram.htm). 🐢

*Chuck Wright is a renewable energy consultant specializing in system performance monitoring. He has served on the board of the Texas Solar Energy Society, <http://txses.org>.*

# Nuclear waste

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Among the most potentially hazardous wastes that are shipped around the United States are spent fuels from nuclear plants, Transuranic wastes that come mainly from defense projects, and Uranium mill tailings. These are generally distinguished from low-level wastes, which is a large, less clearly defined group. The Nuclear Information Resource Service points out that low-level waste is determined largely by its volume and not its concentration. Since concentration is a large factor in the volatility of a radioactive substance, some low-level wastes, despite their category, are more hazardous than their name suggests.

In light of this danger, just how much radioactive waste passes through the Houston area? It's actually hard to say. The first problem is that so many different agencies have jurisdiction over the waste itself. According to the Texas Commission on Environmental Quality, they, along with the Bureau of Radiation Control, which is an office in the State

have a stake in the process of waste removal and storage, none can offer a clear picture of how much makes its way through Houston. Furthermore, those that may know are prohibited from releasing the information to the public.

Tracking seems to be another issue. While the Department of Energy has an electronic tracking system that it uses to follow certain shipments, other waste is tracked by private companies or not at all. Critics of House Bill 1567, the controversial bill that authorized the privatization of the low-level waste dumps in Andrews County, Texas, point out that the bill does not specify a tracking requirement for shipments in-transit. And while extensive documentation of routes and dates are required, there's no telling what some drivers are doing along the way.

This concerns many opponents of nuclear waste transportation, including environmental groups like the Sierra Club and Public Citizen, who cite instances such as a lost shipment of low-level waste that was destined for Andrews County.

According to the Fort Worth Star Telegram, a shipment of low-level waste was taken to a North Texas ranch by a truck driver working for a private contracting company. The shipment was sent from Illinois to Andrews County in July 2001, but was lost somewhere along the way until almost a month later. When it was finally pointed out to police, the waste was found on a ranch, piled on plastic and covered with dirt. The driver had apparently convinced the rancher, who was a friend, to store the waste.

Of course, accidents will happen. A Sierra Club report on nuclear

waste transportation in Texas points to flaws in risk assessment conducted by the now defunct Texas Low-Level Radioactive Waste Disposal Authority. The report claims that an independent consulting firm reviewed the risk assessment and found it underestimated the risk of accidents and potential impacts these accidents have. The report goes on to cite a 23-year period in which some 1,485 ac-

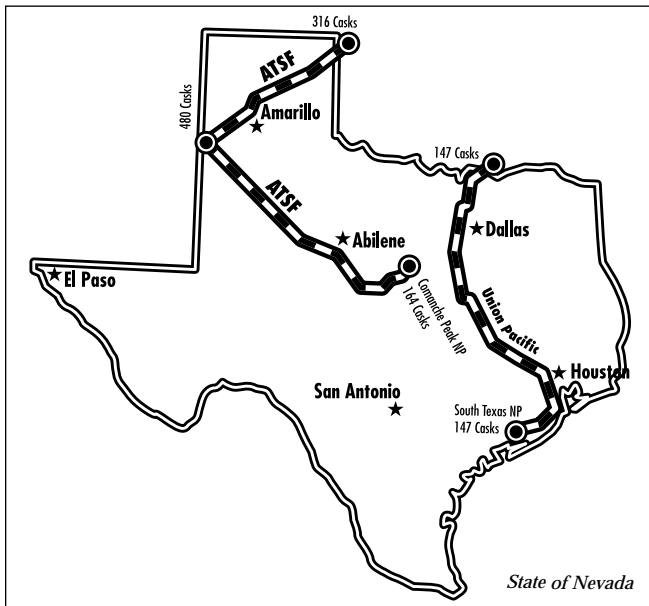
cidents involved radioactive materials and 149 shipping packages released their contents.

Despite these incidents, government agencies like the Department of Energy tout the relatively clean safety record of radioactive waste transportation. The question now is whether or not that record can be maintained. As plans for the high-level waste depository at Yucca Mountain in Nevada proceed and states including Texas agree to store waste from across the United States, more radioactive waste will be on the road than ever. Robert Halstead, a transportation advisor to Nevada, testified to Congress that some 1,185 shipments of high-level waste would travel the United States every year under the Department of Energy's "mostly-rail" scenario, which the department announced was its preferred method of transport this April. This is a staggering increase, considering the total amount of spent fuel that traveled through the United States from 1979-1997 was 1,334 shipments, according to the MapScience Center, published by the Environmental Working Group. Waste that was once stored at its source will now travel, making it, critics argue, more vulnerable than before.

Waste shipment through Texas in particular is likely to increase significantly on several fronts. First, as the Andrews County site continues to fill its millions of cubic feet of waste storage with both government and private nuclear waste, it's likely that more shipments than ever will be heading to Texas. Transuranic waste from the eastern United States continues to move through the northern part of Texas on its way to the Waste Isolation Project Plant in Carlsbad, N.M. Additionally, the high-level waste headed for Yucca Mountain, some of it from the South Texas Plant in Bay City, will travel by rail through the state, with proposed routes moving through the Houston area.

Environmentalists and citizens' groups arm themselves with compelling arguments against nuclear waste transportation, from the potential terrorist target waste carriers might be, to the decrease in property value that occurs along waste routes and the grim accident statistics cities like Houston maintain. Despite their arguments, it's clear that radioactive waste will increasingly ride the roads and rails near places where millions of people live and work. ☐

*Jenny Freytag is a freelance writer and instructor at Houston Community College.*



*Highway and rail routes most likely to be used to transport high-level nuclear waste to Yucca Mountain, Nev. through Texas.*

Health Department, and the Texas Railroad Commission have state jurisdiction over different aspects of waste management and different types of waste. Other waste is under the jurisdiction of the Department of Energy and the Nuclear Regulatory Commission. The Department of Transportation primarily regulates carriers of radioactive waste and approves routes. While all these agencies

# Carbon sequestration: an answer to greenhouse gas?

By Pat Spillman

A solution to climate change may lie in deep geological formations into which greenhouse gases generated by industry could be injected and stored away for centuries instead of being emitted into the atmosphere.

This summer, researchers from UT Austin's Bureau of Economic Geology will test one means of so-called geologic carbon sequestration by pumping carbon dioxide into a formation deep beneath Liberty County to study its ability to permanently and safely store this abundant greenhouse gas.

The three thousand tons of CO<sub>2</sub> for the project will be generated at a Gulf Coast refinery in a processing unit that produces CO<sub>2</sub> for commercial purposes. Then the CO<sub>2</sub> will be trucked in pressurized tanks to a newly drilled well near the town of Dayton. Over a period of several weeks, the CO<sub>2</sub> will be injected in liquid form 5,500 feet down into the Frio Formation, a saline brine formation unfit for human consumption and far below aquifers used for drinking water.

"Based on years of research, we believe saline formations like the Frio can permanently sequester carbon dioxide with little or no environmental impact and this small-

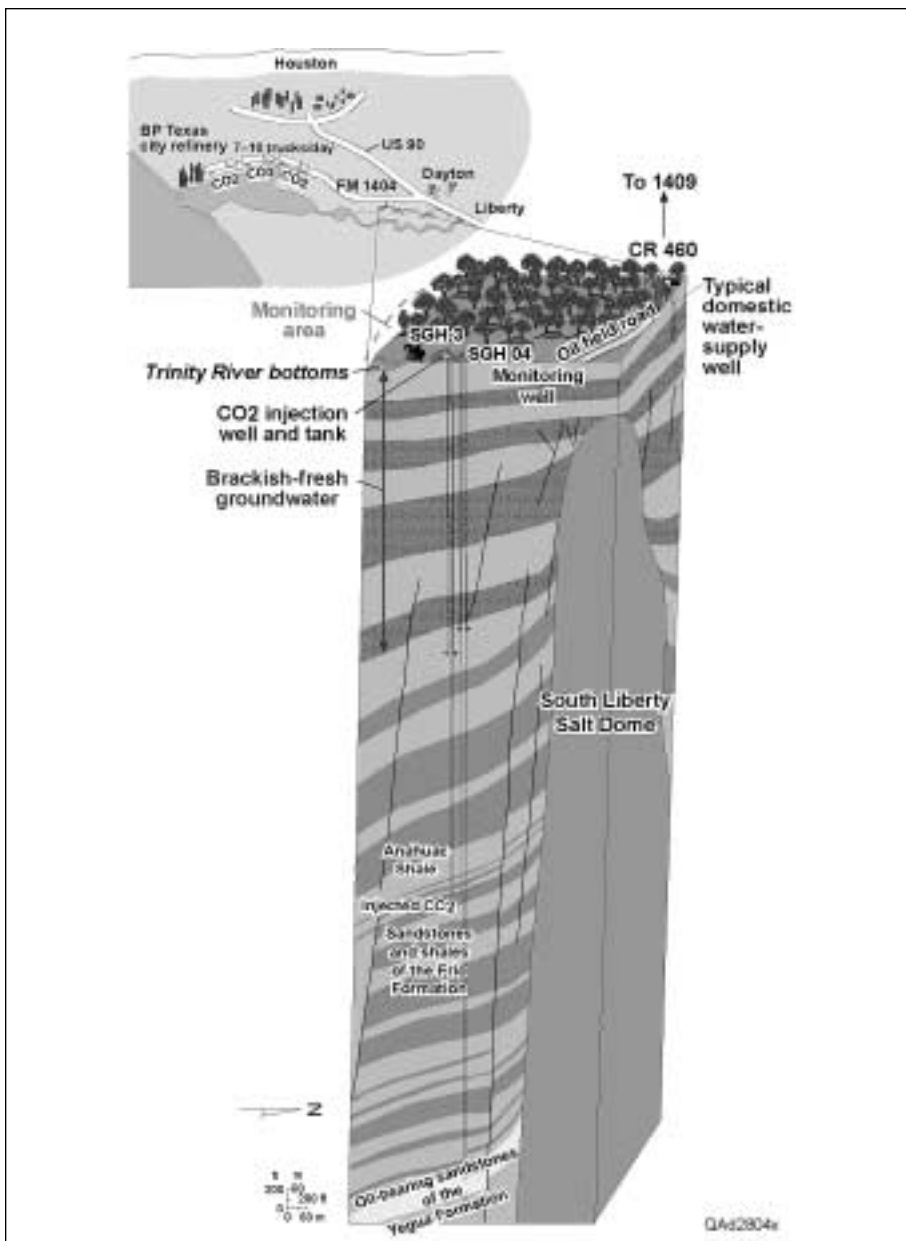
scale pilot project will test our research," said Susan Hovorka, senior researcher at University of Texas Austin's Bureau of Economic Geology and head of the Frio project. Researchers will use instruments placed in an existing well nearby to monitor the movement of the CO<sub>2</sub> and any physical changes in the formation for several months until the system stabilizes, after which the injection well will be plugged and abandoned.

Hovorka helped found the Bureau's Gulf Coast Carbon Center, to assess candidate reservoirs from Texas to Mississippi for carbon sequestration. "From a geological standpoint, the Gulf Coast area offers significant opportunities for carbon storage because it has thick saline formations capped by hundreds of feet of shale that should prevent CO<sub>2</sub> from escaping," said Hovorka.

The Department of Energy estimates saline formations, which underlie much of the United States, could store an estimated 500 billion metric tons of CO<sub>2</sub>, an amount greater than fifty times estimated annual CO<sub>2</sub> emissions worldwide from human activity. As large as that estimate sounds, it could be overly conservative. "The storage potential of these reservoirs is enormous with the Frio, alone, probably capable of storing 200 billion metric tons of carbon dioxide," says Hovorka.

The Gulf Coast, like much of Texas, also has an abundance of oil and gas reservoirs that could store vast amounts of carbon dioxide with the added benefit of recovering oil and natural gas displaced by the injected gas. Millions of tons of CO<sub>2</sub> have been injected into oil fields in West Texas over the past twenty years to prolong the productive life of reservoirs. Large-scale commercial sequestration projects are now operating in Saskatchewan, Canada and in the North Sea where CO<sub>2</sub> created in the processing of natural gas is re-injected into reservoirs.

The need to find solutions to global warming caused by increasing atmospheric CO<sub>2</sub> is accelerating carbon sequestration research across the country. The DOE is currently evaluating carbon storage potential in deep saline formations in Ohio and West Virginia, and is conducting sequestration field tests in depleted oil fields in New Mexico and Wyoming. DOE researchers are



Drawing courtesy of Gulf Coast Carbon Center

# Eco Notes

## Rebuilding potholes as prairie conservation tool

Lorri Jones, *Ag N More*

In Harris County, the idea of restoring a pothole to its original condition would not be popular with commuter traffic. However, volunteers from the Texas Master Naturalist Program are helping to restore a prairie pothole complex that is not part of the highway system, but is part of a habitat in Sheldon Lakes State Park.

Prairie potholes are pockets of still water characterized by few trees, warm, dry climates and prairie plants that establish around the water holes. They are critical resting, feeding and nesting habitats for migratory waterfowl and other wildlife, such as coyotes, burrowing owls, prairie dogs, and insects.

The pothole complex in Sheldon Lakes Park has a common history with many North American potholes. For the past 40 years it has gradually been flattened and drained by farming because prairie potholes are highly suitable to agricultural production.

The class started planting in November, and the project has not been easy.

"Mind you, at our first visit to the site, it was nothing more than some wooden surveyor's stakes and flagging marking the boundaries of what would someday become a seasonal wetland prairie pothole," Richard Conner, a Master naturalist project coordinator, said.

Several groups have partnered for this eight-acre project including Texas Parks and Wildlife, Ducks Unlimited, and Texas Cooperative Extension's Coastal Watershed Program. Marissa Sipocz, wetlands restoration team leader, said planting native grasses and other vegetation was a perfect match for Master Naturalists.

## USGS says most U.S. fresh water contaminated by pesticides

*Beyond Pesticides*

A new nationwide study of streams and groundwater by the U.S. Geological Survey finds that a majority of the nation's fresh water sources, particularly in agricultural and urban development areas, are contaminated with low concentrations of chemicals.

The USGS study found pesticides in 94 percent of all the water samples and in 90 percent of fish samples, according to a May 22 article in Science News. In urban areas, insecticides such as diazinon and malathion which are commonly used on lawns and gardens were found in nearly all of the streams that were sampled. Streams in agricultural areas were more likely to contain herbicides—especially atrazine, metolachlor, alachlor, and cyanazine.

While the report conceded that such widespread contamination is cause for concern, it highlighted that the concentrations found were well below the U.S. Environmental Protection Agency's recommended limits in most places, according to Science News. However, USGS Chief Hydrologist Robert Hirsch said that, "Concentrations of contaminants in water samples from wells

were almost always lower than current EPA drinking-water standards and guidelines. However, the possible risk to people and to aquatic life can only be partially addressed because of the lack of criteria for many chemicals and their degradation or "breakdown" products. In addition, criteria were developed for individual chemicals

and do not take into account exposure to mixtures or seasonal high pulses in concentrations." EPA also does not collect adequate information to determine the impacts on human health and the environment of constant low-level exposure to pesticides over time.

For an overview, go to [www.water.usgs.gov/pubs/circ/2004/1265/](http://www.water.usgs.gov/pubs/circ/2004/1265/).

## Caucus pushes waterway needs

*Wilmington Star—5/21/04*

The newly-formed Waterways Caucuses, which includes 60 members from both the House Senate, spoke out against critics of the Army Corps of Engineers and a Bush administration that would allow many portions of the intracoastal waterways to close rather than spend federal money on them.

Critics of water projects by the Corps of Engineers have worked to end projects they deem wasteful or ecologically damaging. The Corps Reform Caucus, for example, has helped block authorization of new water projects, and it is that kind of resistance that the new bipartisan groups want to counter.

Keith Ashdown, spokesman for the watchdog group Taxpayers for Common Sense, which helped form the Corps Reform Caucus, said the new groups pose a challenge. Dozens of caucuses in Congress push myriad agendas, often sparked by special interest groups. In this case the push comes from recreational boating groups, promoters of tourism, ports and those seeking improvements on rivers for commercial traffic. "They are sort of the starting point for new campaigns that any special interest are undertaking," Ashdown said.

Bush's budget plan would cut operation and maintenance spending, such as dredging, by about \$30 million in 2005, to just more than \$1.9 billion. Many sections of the 3,000-miles of intracoastal waterways along the East Coast and Gulf of Mexico would get nothing for dredging. Some sections with heavier commercial traffic would get money. Louisiana, for example, would receive about \$17.5 million, a section in Texas \$15.5 million and Alabama \$5 million. The caucus also includes lawmakers pressing for lock construction on the Mississippi, which environmental groups and waste watchdogs are fighting. The National Waterways Alliance wants an additional \$300 million for dredging and other maintenance activities.

Texas Cooperative Extension



Marissa Sipocz, wetlands restoration team leader, and Richard Conner and Wally Ward, master naturalists, plant underwater grasses that are native to the Sheldon Lakes prairie pothole.

# Coalition Notes

## Natural legacy transition and new program

Natural Legacy is a non-profit organization focused on raising the level of awareness in education for schools concerning the environment through areas of land stewardship, nature education, and hands-on experience in programs that allow the students to artistically express themselves. Debbie Rhodes, Founder and executive director for the past four years, is leaving for Sydney, Australia in June and passes the torch to the new director, Lisa Caruthers.

In a farewell letter posted on their Web site, Caruthers says, "Through Natural Legacy, I was able to take small steps towards this vision. I am happy to have discovered countless others in this community



Natural Legacy

*Students and teachers from Matthys Elementary create environmental art as part of a Natural Legacy's after school program.*

who are helping Houston's youth learn about and conserve our natural environment." Along with a new director, beginning June 12, Natural Legacy begins a new program with the Harris County After-School Initiative—a program focused on the nature education and creative use of green space.

This program is a collaboration between the Education Foundation of Harris County and CASE (Cooperative for after school enrichment), a division of Harris County Department of Education. Lisa Caruthers believes "the program will broaden their services to the communities and serve as a clearinghouse for after school programs." For more information, contact Lisa Caruthers at (713) 696-1336, email:

[lcaruthers@hcde-texas.org](mailto:lcaruthers@hcde-texas.org) or visit [www.naturallegacy.com/index.htm](http://www.naturallegacy.com/index.htm).

## SWIM program launched

### *Buffalo Bayou Partnership*

The Storm Water Management Joint Task Force has launched their SWIM program, a program created to mark storm drains throughout Harris County.

The program is an environmental public education program intended to raise awareness of the storm water quality issues in Harris County communities, connecting residents to their neighborhood storm drains and local waterways, while encouraging them to protect their water resources.

Much of the pollutants in area creeks and bayous comes from common, every day materials like household chemicals, fertilizers, pesticides, gasoline, used motor oil and antifreeze. These substances run off into storm drainlets by rainwater from our streets, yards, driveways and parking lots.

The storm drain markers will be colorful reminders that let people know that everything that goes into the storm drains goes straight into Galveston Bay.

The program needs volunteers around Houston to help mark the drains with the free markers. For information, log onto [www.cleanwater-clearchoice.org](http://www.cleanwater-clearchoice.org).

## The Children's Museum of Houston's Ecostation

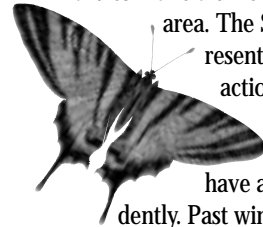
The Children's Museum of Houston is determined to ignite a passion for learning and to develop good environmental stewards for Houston's future through its child center. The children's museum serves around 642,000 people annually and is considered one of the highest attending youth museum in the country. There are 14 galleries for kids to experience hands-on adventure with some that include stops at the Eco and Weather Station, Face Painting, Kids' Café, KID-TV Studio, and starting June 12-September 6, a new one of kind bilingual exhibit, Everyone Counts! *!Todo el mundo cuenta!*, a Big Adventure where kids can explore and discover the mysteries of Mayan filled

with games and hands-on activities and an opportunity to learn how to count in different languages.

For more information contact (713) 522-1138 or visit online [www.cmhouston.org/stage.htm](http://www.cmhouston.org/stage.htm).

## Synergy Award 2004: Call for nominations

The Citizens' Environmental Coalition is seeking nominations for the 2004 Synergy Awards. Each year, the CEC acknowledges individuals and groups who are working hard to make a difference in the Houston area. The Synergy Awards represent cooperative action where the total effect is greater than what each would have achieved independently. Past winners include people from all different backgrounds from community



activists and environmental organizations, to reporters and government officials. However, each winner has portrayed a commitment to progress, achievement, hard work and resourceful stewardship in their environmental endeavors in the Houston-Galveston area. There are eight award categories including awards in the areas of conservation, community activism, corporate awareness, environmental education, media, government, sustainable planning, and lifetime achievement.

The 2004 Synergy Awards ceremony will be held on October 12. Please email [synergy@cechouston.org](mailto:synergy@cechouston.org) for details or to submit nominations. Nomination deadline is July 30, 2004.

## Texas Marine Mammal Stranding Network volunteer training day

The Texas Marine Mammal Stranding Network, an organization dedicated to responding to all marine mammal strandings along the Texas Gulf Coast, will hold its next volunteer training day on July 10. Anyone interested in volunteering with the Network is invited to attend, and training is required for anyone wishing to work with live animals. Most recently, the group rescued Memory, a 310-pound melonheaded whale who was found stranded at Bolivar peninsula at the end of May, and is currently undergoing rehabilitation at the Network's Galveston center. For more volunteer information, visit [www.tmsn.org](http://www.tmsn.org).

# Carbon sequestration

*Continued from page 5*

also studying deep, unmineable coal seams in the eastern United States for CO<sub>2</sub> storage. To make sequestration a viable solution to climate change, the CO<sub>2</sub> to be stored must be captured from large sources such as power plants and refineries that would otherwise release it into the atmosphere.

"The Houston area could be well-positioned for a future carbon sequestration industry because it has its numerous refineries and petrochemical plants that generate large amounts of carbon dioxide in close proximity to geological carbon sinks," said Mike Moore, Managing Partner of Houston-based Falcon Environmental Services, which is developing CO<sub>2</sub> sequestration projects in Texas. CO<sub>2</sub> could be captured from the exhaust gases of boilers, heaters and process units at these industrial sites, and from the area's fossil fuel power plants, compressed to liquid form and piped short distances to injection wells.

The high cost of compressing, transporting, and injecting CO<sub>2</sub> is a major challenge



Gulf Coast Carbon Center

*Carbon sequestration test well being drilled in Liberty County.*

to establishing viable sequestration projects.

"At present, enhanced oil and gas recovery offers the only economic payback for sequestering carbon dioxide, so opportunities are relatively limited. Storage in saline reservoirs does not generate a return and deep coal seams remain somewhat unproven," said Moore.

However, Moore said the economics of carbon sequestration could change dramatically if states or the federal government impose caps on CO<sub>2</sub> emissions. That could foster an expansion of emission allowance trading and give value to sequestered CO<sub>2</sub> as emission reduction credits. At least one Canadian power producer is already purchasing CO<sub>2</sub> credits from oil producers in Texas to meet its future greenhouse emissions targets.

More information about carbon sequestration and the Frio Project is available at [www.gulfcoastcarbon.org](http://www.gulfcoastcarbon.org).

*Pat Spillman is an environmental attorney who lives and works in Houston.*

## Citizens' Environmental Coalition

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