

N 330.6  
G 139  
95:20

Galveston  
Bay

Government Publications  
Texas State Documents

NOV 03 1995 pe



Spring 1995

TNRCC Galveston Bay Program

## EPA Gives 'Thumbs Up' For Implementation: Galveston Bay Plan Is Approved!

**T**he Galveston Bay Plan, developed over the past five years by the Galveston Bay National Estuary Program, has been given final approval by the U.S. Environmental Protection Agency.

In a news release issued out of Washington, D.C., EPA Administrator Carol Browner announced that **The Galveston Bay Plan** is the seventh project of the National Estuary Program to receive approval of its Comprehensive Conservation and Management Plan (CCMP). The Galveston Bay estuary system is one of 21 estuaries across the United States to be designated an Estuary of National Significance by the United States Congress because of its impact on the economy of Southeast Texas.

This approval, according to the news release, "reflects EPA's continuing partnership with the

State of Texas to address critical environmental problems facing Galveston Bay...and serves to assist communities in restoring the health of their estuaries while supporting economic and recreational activity."

Browner said, "The Galveston Bay National Estuary Program developed **The Galveston Bay Plan** to foster sustainable use of Galveston Bay's waters over the long-term. **The Plan** identifies more than 80 actions to address environmental problems facing the bay such as habitat loss, alteration of freshwater inflow, shoreline development, and water and sediment quality problems. **The Plan** was developed through a collaborative process involving stakeholders from state and federal agencies, local governments, industry, business, environmental organizations and citizens."

(continued on page 9)



From peaceful bayous for boating, fishing and birding, to the fun-filled beaches where the Galveston Bay system meets the Gulf of Mexico, the Bay area is home and playground to millions of people.

# NOTES FROM THE DIRECTOR

## Galveston Bay Council will Continue Partnership with Bay Stakeholders

Official approval of *The Galveston Bay Plan* marks a major transition in our management of this important bay system. The Galveston Bay National Estuary Program began over five years ago with a vision of finding agreement among the many agencies with bay responsibilities and the bay's numerous stakeholders and concerned citizens. The first step was finding consensus on the Bay's problems. Then, to assure future actions would have a factual basis, we carried out a variety of scientific studies to better define these problems and determine their probable causes. During this stage, we discovered many unexpected truths about the bay's condition and how it works—surprising scientists and bay managers alike. The management implications of the scientific work—along with additional public and stakeholder involvement—then helped give *The Galveston Bay Plan* its final form.

Partners in creation of *The Galveston Bay Plan* have striven to balance planning activities with on-the-ground demonstration actions that would both benefit the bay and “train” us for the upcoming challenge of implementing *The Plan*. Working

cooperatively with numerous agencies and groups, we established two new coastal preserves, sponsored construction of oyster reefs and salt marshes, and implemented a pollution prevention program in partnership with ship channel industries.

Now, we are ready to undertake the much larger and longer-term set of initiatives in *The Plan*. This transition from planning (with a little action) to action (with a little continued planning) brings some significant changes to the program. In a nutshell, these changes include:

- ◆ **A New Name for the Program.** As a Federal-State Partnership enabled by the Clean Water Act, the program was named the Galveston Bay National Estuary Program (GBNEP) in recognition of its national character. Now, the lead for implementing *The Galveston Bay Plan* shifts to a regional approach under the Texas Natural Resource Conservation Commission (TNRCC). Therefore, the GBNEP has become the Galveston Bay Program of the TNRCC.

(continued on page 8)

### Galveston Bay Council



#### Federal Agencies:

U.S. Coast Guard  
U.S. Army Corps of Engineers  
Environmental Protection Agency  
U.S. Fish & Wildlife Service  
U.S. Geological Survey  
National Marine Fisheries Service  
Natural Resource Conservation Services



#### State Agencies:

Texas Department of Agriculture  
Texas General Land Office  
Texas Railroad Commission  
Texas Department of Health  
Texas Department of Transportation  
Texas Natural Resource Conservation Commission  
Texas Parks & Wildlife Department

Texas Soil and Water Conservation Board  
Texas Water Development Board



#### Regional/Local Governments:

Gulf Coast Waste Disposal Authority  
Houston-Galveston Area Council  
Port of Houston Authority  
City of Houston  
Large Local Governments (populations >500,000)  
Medium Local Governments (populations 25,000 - 500,000)  
Small Local Governments (population <25,000)  
Trinity River Authority



#### Environmental/Citizen's Groups:

Galveston Bay Foundation  
Gulf Coast Conservation Association

Citizens-at-Large  
League of Women Voters  
Low-income Community Representatives  
Minority Representatives  
Other Conservation Organizations



#### Private Sector:

Greater Houston Partnership  
Utilities  
Galveston County Council of Chambers  
Industry  
East Harris County Manufacturer's Association  
Marinas  
Commercial Fisheries



#### Research/Academia:

Major Universities  
Sea Grant Program

## Bay Day Festival '95 Sets Sail June 9-11

The brightly-colored canvases of catamarans will sail by the shore of Sylvan Beach at Bay Day Festival '95. For the first time, the Gulf Coast Catamaran Championship Regatta will be held as part of the Bay Day celebration on June 10 and 11 at Sylvan Beach in La Porte.

1995's Bay Day Festival will be a weekend filled with music, fireworks, on-the-water sports and demonstrations, an air show and exhibits dedicated to the nature, commerce and heritage of Galveston Bay. On Saturday evening, **Asleep At The Wheel** will provide great music in its Grammy-winning style followed by fireworks over the bay.

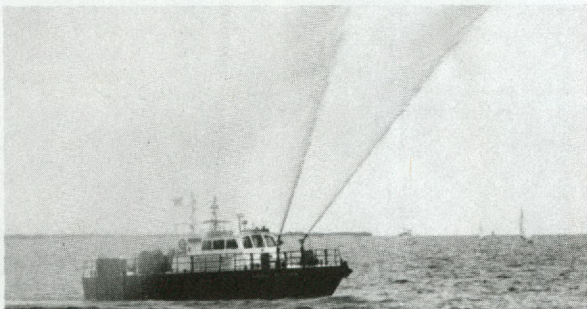
Both days, youngsters can scale an obstacle course, wet a hook in the Fishing Derby, compete for prizes in the annual Scavenger Hunt, or take a spin on the carnival rides.

Bring your family and celebrate the arrival of vacation time on Galveston Bay!

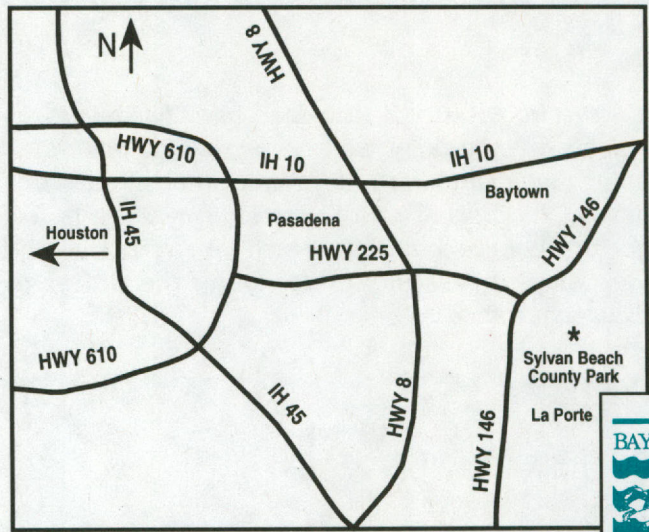
Saturday's hours are 11 a.m. to 10 p.m. On Sunday, the festival will be held from 12 noon to 7 p.m. Tickets are available at the gate. For further information, please call the Galveston Bay Foundation at 332-3381 or the Galveston Bay Program at 332-9937.



Galveston Bay Program staffers and volunteers will be answering Scavenger Hunt questions at the GBP booth.



Patriotic streams of red, white and blue water shoot out from a fireboat in an offshore demonstration of fire-fighting techniques.



Using booms and skimmers, youngsters can participate in the cleanup of a "mock oil spill".

### Events

- \* air show & stunt flying
- \* waterfront exhibits
- \* scavenger hunt for kids
- \* helicopter rescue demonstrations by the U.S. Coast Guard
- \* fire-fighting demonstrations by a fire boat
  - \* gig races
  - \* barbecue cook-off
- \* ASLEEP AT THE WHEEL on stage
  - \* regatta
- \* kayak and canoe races
  - \* a carnival
  - \* nature exhibits
  - \* arts & crafts
  - \* food
- \* fishing derby for kids
- \* FIREWORKS!

# Fallout From Airborne Hydrocarbons Affects Bay Quality

By Frank Shipley, Ph.D.

*(In the last issue of Bay Line, we discussed the effects of non-point source petroleum pollutants which wash into the Galveston Bay System. In this issue, the discussion of petroleum pollutants will focus on hydrocarbons which are airborne and deposited across the landscape of the Galveston Bay watershed).*



*Emissions from urban traffic in the Houston-Galveston metroplex may be contributing to the air deposition of hydrocarbons.*

Oil and other petroleum substances are mixtures of many, often hundreds, of individual chemical compounds. One class of compounds is of particular concern because of its toxicity, and propensity to cause cancer. These are the PAHs (Polycyclic Aromatic Hydrocarbons), various aromatic compounds chemically constructed of benzene rings of carbon atoms, with various other chemical groups attached.

Our state of knowledge about where PAHs in Galveston Bay come from is poor. We do know that "produced water" discharges from oil fields include this class of compounds. But, chemically, many PAHs in the bay and in animal tissue from bay organisms differ from compounds discharged in produced water.

One major aspect of hydrocarbon contamination in the bay watershed remains especially obscure. That is the link between air pollution and hydrocarbon contamination of the bay, itself. As noted by several studies, baywide contamination by PAHs

is primarily of the combusted-hydrocarbon variety... meaning emissions to the air.

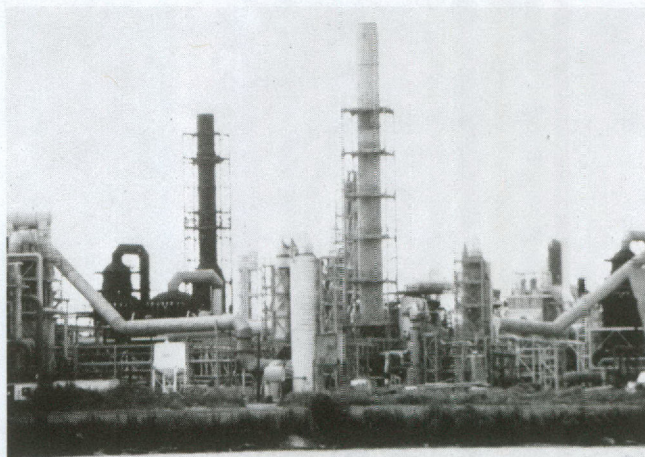
A developing pattern for east coast bays, which have been better studied, is one of significant involvement of atmospheric deposition of PAHs on land surfaces, followed by runoff transport to the bay. In other words, much of the hydrocarbon contamination of the bay could be from such sources as diesel exhausts or auto and industrial air emissions washed into the bay system by heavy rainfall.

The location of the Houston-Galveston metroplex with its 3.5 million vehicles, and the fact that more than half of the nation's petrochemical industry is built along the Galveston Bay shoreline, may lend to the pattern of PAH deposition.

(continued on next page)



*Acre of automobiles and trucks are 3.5 million strong in the bay system's watershed.*



*Elements of incomplete combustion from the engines of industry along the Galveston Bay shoreline add to the PAH problem.*

As an environmental contaminant, PAHs have an interesting history. This class of compounds provides the earliest known cases of environmentally-induced cancer. About 200 years ago, chimney sweeps in England developed frequent cases of cancer. Eventually this was attributed to coal tar, the partially-combusted hydrocarbon (PAH) mixture that coated the inside of chimneys.

In modern times, the potent carcinogenic (cancer-causing) qualities of PAH compounds has resulted in their use by laboratory scientists studying cancer. These compounds are utilized to reliably induce tumors in laboratory animals in cancer pathology studies.

Galveston Bay Program studies indicate that PAHs are the most widespread and significant toxic organic compounds present in the bay system today. A GBP/Texas A&M study of marine organisms in Galveston Bay indicated that, for some subsistence-level consumers, cancer risk from consuming seafood from some locations in the upper bay exceeded an EPA benchmark risk level, in part due to PAHs. (See Spring 1993 BayLine).

The PAHs involved were of a chemical composition which indicated primarily a combustion source, as opposed to spills, dumping or discharges of uncombusted oil products.

A GBP study of sediment contamination by the U.S. Fish & Wildlife Service (USFWS) showed elevated PAHs at 11 of 24 locations throughout the bay system, particularly related to the produced water discharges noted above. That was the topic of a study summarized in the Summer 1993 BayLine. The discharges were associated with severe reduction or elimination of the bottom-dwelling marine life community near the discharge point, and some biochemical measurements in grass shrimp and mullet indicated possible food chain effects.

Where do we go from here? As for many other bays, studies are needed to define the link between air emissions and contamination of the bay. But in the meantime, controls to reduce air pollution, already implemented, can do nothing but help water quality.

## State of the Bay Book Now Available

*The State of the Bay: A Characterization of the Galveston Bay Ecosystem* is now available through the Greater Houston Partnership at cost plus tax and shipping.

*State of the Bay* is a book published by GBNEP which chronicles the results of many bay studies accomplished over the past five years.

It includes about 230 pages of text, photos, maps and graphics, many of which are in color. The information should be useful to consultants, students, academicians, maritime companies and anyone who is interested in up-to-date scientific data and a comprehensive summary of the condition of the bay and its ecosystem.

### *The State of the Bay: A Characterization of the Galveston Bay Ecosystem*

Please send \_\_\_\_\_ copies to:

Name \_\_\_\_\_

Address \_\_\_\_\_

City State Zip Code \_\_\_\_\_

**To order:** Mail to Publication Sales at the Greater Houston Partnership,  
2 Allen Center, 1200 Smith, Suite 700, Houston, Texas, 77002.

**Phone number:** 713/651-2104

**Mail order cost:** \$23.82 (tax, postage and handling). Copies may also be picked up at the GHP office main desk for \$18.94 (with tax).



## What is Galveston Bay.... ....A Place To Live, Work and Play



*Vacationers feed the gulls as they ride the ferry from Galveston Island to Point Bolivar.*

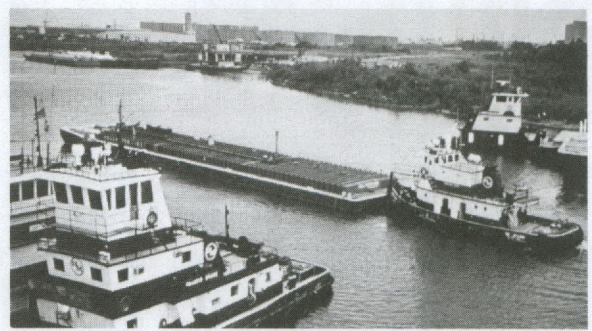
**G**ALVESTON BAY! The place where we live and work and play. It's 600-square-mile watershed is home to more than 3.5 million people whose lives are intricately woven with this vital economic resource which provides more than 110,000 jobs and recreational opportunity for thousands.

From the mouths of the San Jacinto and Trinity Rivers to the point where its waters empty into the Gulf of Mexico, the Galveston Bay system is the site of the third largest port in the United States, the Port of Houston, and more than half of the petrochemical production in the nation. The bays and bayous are home to hundreds of marine species that support a major commercial and sport fishing industry; its widespread waterways make it the "yacht capital" of Texas. And, it is home to a bit of Texas history...the San Jacinto Monument and the Battleship Texas.

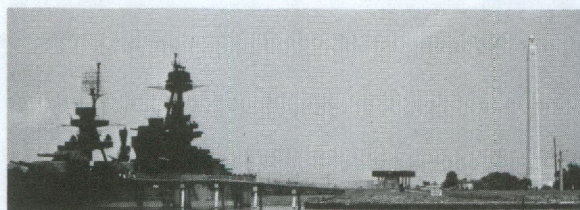
Galveston Bay is a jewel in the Texas crown which the Galveston Bay Plan is designed to protect.



*Fishermen may easily catch their own bait by seining in the salt marshes.*



*Pilot boats and tugs guide millions of tons of international shipping through the Houston Ship Channel each year, making it the third largest port in the United States and the sixth largest in the world.*



*The Battleship Texas, a veteran of World War II, lies at anchor in the shadow of the San Jacinto Monument, both saluting the memory of Texans who gave their lives for their state.*







*Bayous which feed into the bay system provide areas of wetland habitat, a "nursery" for young fish, shrimp, crabs and oysters.*

# Celebrating Texas' Coastal Wetlands

May is "Wetlands Month" in Texas, and this year, the people of Galveston Bay are celebrating this annual event with final approval of *The Galveston Bay Plan* and the first steps to implement its wetland actions.

Habitat destruction emerged as the single greatest environmental problem affecting the Galveston Bay system. Galveston Bay has lost some 30,000 acres of coastal wetland habitat since the 1950's. These valuable habitats are responsible for the great productivity of commercially and recreationally valuable fish and shellfish in Galveston Bay as well as for protecting shoreline and upland property from erosion and flooding. Coastal wetlands also protect the estuary by removing sediment and contaminants from urban and agricultural stormwater runoff.

*The Galveston Bay Plan* identified four management initiatives as keys to the continued productivity and biological diversity of the estuary:

-  Wetlands Management and Protection
-  Erosion Mitigation
-  Beneficial Uses of Dredged Materials
-  Subsidence Reduction

These initiatives provide for optimal fish and wildlife by effectively managing wetland habitat to preclude net losses; conserving habitat on public lands; implementing habitat creation, restoration, and improvement programs; reducing the adverse impacts from dredging and filling; and ensuring management practices that maximize beneficial uses of dredged material.

**Join the Celebration!**

**Galveston Bay offers many opportunities to experience Texas Coastal Wetlands**



Galveston Bay Studies Program, wetland related activities and courses. Galveston Bay Foundation.

For information call 713-332-3381.



Take a Walk on the Wild Side. The Armand Bayou Nature Center.

For information call 713-474-2551.



Adopt-A-Wetland and Become a Wetland Watcher.

For information call 512-994-9005.



## NOTES FROM THE DIRECTOR (continued from page 2)

A Galveston Bay Program Office located in the bay region oversees *Plan* activities.

- ◆ **Creation of the Galveston Bay Council.** Unlike past management initiatives, *The Galveston Bay Plan* is a comprehensive plan. The complex issues facing the bay cannot be addressed without continued involvement of multiple resource agencies and stakeholders. The "Management Conference" created for planning will be replaced by a Galveston Bay Council appointed by the TNRCC, to act in an advisory capacity during *Plan* implementation. The membership of this council directly reflects the *Plans* actions: appointed to the Council are those entities which are either involved in implementing the actions, or which will be affected by these actions (see box on page 2).
- ◆ **A Change in Program Funding.** Previously, the program has been funded from federal National Estuary Program funds (75%) and State General Revenue (25%). Federal Approval of *The Galveston Bay Plans* signals the end of eligibility to receive federal planning moneys. For implementation, *The Galveston Bay Plan* proposes \$ 1.5 million per year be allocated for base program funding by the Texas Legislature. These funds can then be used to match federal funds from a variety of grant programs. Currently the appropriation for this purpose, through the TNRCC's agency appropriation, is pending before the Texas Legislature.
- ◆ **Taking Action Now: The Dickinson Watershed Project.** Implementation of *The Galveston Bay Plan* is slated to begin in September, 1995. In the meantime, however, one of the Bay's watersheds has been chosen for early implementation on a limited geographic scale. Several agencies have begun work, funded under various programs, to address concerns in the Dickinson Bayou watershed. These issues will be described in the next BayLine.

Although change can be challenging, I am optimistic about the future of Galveston Bay. Today, more than ever, those concerned about the bay's future are committed to working together to assure its values are maintained.

—Frank S. Shipley



Cynthia Jennings and M.A. Bengtson staff the GBP booth at the Boat, Sport & Travel Show.

## Outreach Team Brings Bay Facts to Public

Hundreds of people were touched with the Galveston Bay Program's message in events both local and national in scope during the past four months.



At the Program's booth at the Houston International Boat, Sport & Travel Show early in the year, more than 2,600 visitors stopped to talk about ***The Galveston Bay Plan*** and clean water issues. Folks averaged taking home three pieces of literature (that's almost 8,000 publications!) and 357 signed up to receive *Bay Line*.



At the National Estuary Conference in New Orleans in February, Frank Shipley and M.A. Bengtson made a slide presentation on "Habitat Restoration" and Julie Massey, the Texas A&M Marine Extension Agent based in Dickinson, reviewed "Potti-Training for Boaters," and education project funded by the program.



GBP and U.S. Fish & Wildlife staffed a booth at the annual Hunting & Fishing Show in Houston in March. They were joined by the Texas A&M Marine Extension Service and the Galveston Bay Foundation in handing out information to 350 visitors. Another 160 people signed up to receive *Bay Line*.



## 'Thumbs Up' For Implementation (continued from page 1)

Dr. Frank Shipley, Galveston Bay Program director, said, "With this announcement, our program is now ready to move into the implementation phase beginning in early Fall. The various federal and state agencies and local governments that have jurisdiction over the bay waters will now begin to undertake the actions specified in **The Galveston Bay Plan** in order to restore and protect this vital economic resource for the future of our citizens."

Senator Rodney Ellis, who served as chairman of the GBNEP Policy Committee, said "The approval of this comprehensive management plan for the Galveston Bay system is the result of the dedicated efforts of the stakeholder members of our Management Conference over the past five years. They have given us more than 124,000 hours of their time and expertise to move the research and planning phase of our program toward completion of **The Plan**. This partnership with business, industry, government and the environmental community has been invaluable in reaching consensus on a plan for the future of our bay. This is reflected in the endorsements **The Plan** has received."

When Senator Phil Gramm launched the program in October of 1989, he noted, "We are now spending tremendous amounts of money to deal with the problems in Chesapeake Bay that have been building for many years. The National Estuary Program is an effort to see we don't make the same mistakes with our other estuaries."

At that time Gramm said the estuary program officials, scientists and citizen members can study the threats to the bay and the costs of abatement and come up with a management plan that makes both environmental and economic sense. \*

Dr. Shipley added, "We took Senator Gramm's message to heart as we drafted **The Galveston Bay Plan**. And, we are looking forward to implementation of a plan that truly serves all of the bay's users. The future of the Houston-Galveston area is tied to the economic and environmental health of this great waterway. **The Galveston Bay Plan** provides us with a way to protect our bay system for the future."

### Community Endorses Plan's Actions

◆ I am in support of **The Plan** as a mechanism to ensure that the ecological future of Galveston Bay is protected. All those who contributed to **The Plan** did an excellent job in determining the vital environmental issues and balancing those issues with the fiscal realities that governments and business face today.

- *Bob Lanier, Mayor of Houston*

◆ The concept of initially studying from a scientific viewpoint the state of the bay, and using those findings to draft the current plan, lends a special credibility and weight to **The Plan**.

**The Galveston Bay Plan** currently bears the imprints of both the careful science and the consensus building process from a number of involved and concerned Bay users...We think **The Galveston Bay Plan**, as currently drafted has the promise of creating a real difference in the environment of Galveston Bay. We strongly support its implementation.

- *Mayor's Advisory Committee on the Environment (Houston), and The Texas Chemical Council*

◆ The Galveston Bay Foundation enthusiastically supports the proposed **Galveston Bay Plan**. The Foundation supports the concept of sustainable development of the Galveston Bay area, and believes that it is possible to have a healthy productive bay and continued economic development in the surrounding area. The Foundation believes that the proposed **Galveston Bay Plan** is an important next step in the process of maximizing the potential of Galveston Bay for all users.

- *Galveston Bay Foundation*

◆ The Houston-Galveston Area Council supports the concept of a comprehensive **Galveston Bay Plan** to coordinate the management of this important resource...We also appreciate the fact that local government input was invited and that our concerns have been addressed in major revisions to **The Plan** and financing strategies.

- *The Houston-Galveston Area Council Board of Directors*

◆ The Partnership believes it is possible to sustain a healthy productive and useful bay while maintaining the sound economic development of the Galveston Bay area. We recognize the proposed **Galveston Bay Plan** to be the next step in the important ongoing process of maximizing Galveston Bay's value for all of its stakeholders.

- *The Greater Houston Partnership*

◆ We recognize the significant potential to our economy in protecting the bay and the challenge of managing our water quality for our area's large population. We feel that much can be accomplished through a comprehensive, cooperative approach of local, regional, and state governments and organizations to improve storm water management, habitat protection, and shoreline erosion. We must be ever mindful of realistic potential for funding and seek to prioritize recommendations to address our most serious problems.

- *Sandra Pickett, Liberty City Councilwoman*

# Publication List

## of the Galveston Bay Program

The following publications are available to the public at no charge. You may obtain these at one of the offices listed below.

**Galveston Bay Program**  
711 West Bay Area Boulevard  
Suite 210  
Webster, Texas 77598  
Phone: 713-332-9937

**Galveston Bay Information Center**  
Texas A&M University, Galveston  
Jack K. Williams Library  
P.O. Box 1675  
Galveston, Texas 77553  
Phone: 409-740-4703

### Report Publication Series

Proceedings: Galveston Bay Characterization Workshop	Feb. 1991	GBNEP-6
Christmas Bay Environmental Inventory	Mar. 1991	GBNEP-7
Armand Bayou Environmental Inventory	Mar. 1991	GBNEP-8
Christmas Bay Regulatory Survey (out of print)	Mar. 1991	GBNEP-9
Armand Bayou Regulatory Survey (out of print)	Mar. 1991	GBNEP-10
Fiscal Year 1992 Work Plan	Aug. 1991	GBNEP-11
Shoreline Survey Unpermitted Discharges to Gal. Bay (out of print)	Aug. 1991	GBNEP-12
Armand Bayou Regulatory Effectiveness Study	Dec. 1991	GBNEP-13
Christmas Bay Regulatory Effectiveness Study	Dec. 1991	GBNEP-14
Characterization of Nonpoint Sources and Loadings (out of print)	Jun. 1992	GBNEP-15
Wetland Plant Communities, Gal. Bay System	Mar. 1992	GBNEP-16
Fiscal Year 1993 Work Plan	Aug. 1992	GBNEP-17
Segmentation Development for Gal. Bay	May 1992	GBNEP-18
Characterization of Selected Living Resources in Gal. Bay	Jun. 1992	GBNEP-19
Toxic Contaminant Characterization of Aquatic Organisms in Gal. Bay	Jul. 1992	GBNEP-20
Characterization of Selected Public Health Issues in Gal. Bay	Aug. 1992	GBNEP-21
Ambient Water and Sediment Quality of Gal. Bay	Aug. 1992	GBNEP-22
Proceedings: The Second State of the Bay Symposium - Feb. 4-6, 1993 (out of print)	Feb. 1993	GBNEP-23
Environmental Management Inventory of Gal. Bay	Oct. 1992	GBNEP-24
Recreational Fishery By-Catch in the Gal. Bay System	Nov. 1992	GBNEP-25
Galveston Bay Bibliography	Apr. 1993	GBNEP-26
Framework for Action: Galveston Bay Management Evaluation	Jan. 1993	GBNEP-27
Dredge and Fill Activities in Galveston Bay	Apr. 1993	GBNEP-28
Non-Fishing Human Induced Mortality of Fisheries Resources in Gal. Bay	May 1993	GBNEP-29
Sediment Quality Assessment Survey of Galveston Bay	May 1993	GBNEP-30
Trends and Status of Wetland and Aquatic Habitats in the Gal. Bay System	Apr. 1993	GBNEP-31
Fiscal Year 1994 Work Plan	Aug. 1993	GBNEP-32
Probable Causes of Trends in Selected Living Resources	Sept. 1993	GBNEP-33
Trawling Bycatch in the Galveston Bay System	Aug. 1993	GBNEP-34
Sources & Distribution of Bay Debris in the Galveston Bay Estuary	Aug. 1993	GBNEP-35
Point Source Loading Characterization of Galveston Bay	Sept. 1993	GBNEP-36
The Economic Value of Improving The Environmental Quality of Galveston Bay	Jun. 1994	GBNEP-38
Galveston Bay Data Inventory, Volumes I & II	Dec. 1991	GBNEP-40
A Conceptual Model of the Galveston Bay Ecosystem	Oct. 1993	GBNEP-42
DRAFT-The Galveston Bay Plan; A Comprehensive Conservation & Management Plan	Apr. 1994	—
The State of the Bay: A Characterization of the Galveston Bay Ecosystem, is available at cost through the Greater Houston Partnership. (See page 5)	Mar. 1994	GBNEP-44

### Videos

<i>Balancing Act</i> (Armand Bayou and Christmas Bay)	Oct. 1990
<i>Oyster Harvesting and Conservation in Galveston Bay</i>	Oct. 1991
<i>Conflicting Uses of Galveston Bay</i>	Oct. 1991
<i>The Galveston Bay Ecosystem</i>	May 1992
<i>Will Galveston Bay Go Down the Drain?</i>	Feb. 1994

**Special Publications**

**Composting Wheels**—an easy to use “wheel” with helpful information about home composting projects to enrich your lawn and garden without using chemicals that are hazardous to the environment.

**GBP Publication Series Distribution**

**These libraries should have complete sets on file:**

- Bureau of Economic Geology Library,  
The University of Texas at Austin
- College of the Mainland Library  
Texas City, Texas
- The Fondren Library  
Rice University, Houston, Texas
- Texas & Local History Department  
Houston Public Library
- Life Sciences Library  
The University of Texas at Austin
- Marine Science Institute Library  
The University of Texas at Austin
- M.D. Anderson Library  
The University of Houston Libraries
- Medical Sciences Library  
NASA-Johnson Space Center
- Neumann Library  
University of Houston—Clear Lake
- Pasadena Public Library, Pasadena, Texas
- Rosenberg Library, Galveston, Texas

- Sterling C. Evans Library  
Texas A&M University, College Station, Texas
- Sterling Municipal Library, Baytown, Texas
- School of Public Health Library  
University of Texas Health Science Center, Houston

**The following libraries began receiving GBNEP publications in January, 1993, and may not have complete sets. They will receive all future publications.**

- Brazoria County Library System libraries:  
Main Library, Angleton, Texas  
Alvin, Texas Branch Library  
Pearland Branch Library
- Brazosport College Library  
Lake Jackson, Texas
- Chambers County Library System, Main Library  
Anahuac, Texas
- Juanita Hargraves Memorial Branch Library  
Winnie, Texas
- West Chambers County Branch Library  
Mont Belvieu, Texas

**GET INVOLVED**

**Yes! I would like to be involved in the Galveston Bay Program.**

Please put me on the mailing list for the Galveston Bay Program Information Letter "Bay Line" and other Galveston Bay information

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zip \_\_\_\_\_

Daytime Phone Number \_\_\_\_\_ Evening Phone Number \_\_\_\_\_

I would like to help with special projects: \_\_\_\_\_

I am currently a member of these environmental, civic, or business organizations: \_\_\_\_\_

\_\_\_\_\_

# Symposium on Energy and Environment

The 1st Annual Symposium on Energy and Environment will be held at Rice University May 17-19.

Sponsored by the University's Energy and Environmental Systems Institute, the theme of the symposium will focus on "Sustainable Energy, Environment and Economy: Is It Possible?"

International and local representatives from industry, government and the environmental community will offer varying perspectives, with the goal of the symposium to be an opportunity for industry and environmental representatives to exchange views on Sustainable Development and Collaborative Problem Solving.

The last half of the symposium will be a workshop on the Houston Ship Channel. The successful improvement of the ship channel has been used as an example for consensus building and problem solving between government, industry and the environmental community.

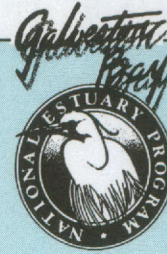
There is no attendance fee, however, registration is required. For information, call 713/527-4700 or 527-4685.

**Bay Line** is a quarterly publication of the Galveston Bay Program (GBP), a program of the Texas Natural Resource Conservation Commission (TNRCC).

**Editor - M. A. Bengtson,  
Public Outreach Director  
Design and Printing - TNRCC**

For information on how to receive Bay Line or for additional copies, call 713/332-9937. Or use the coupon printed inside to request Bay Line or other GBP information.

This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement (CE-006550-01) to the TNRCC. The contents of this document do not necessarily represent the views of the US EPA, nor does the mention of any products constitute an endorsement or recommendation for use.



## What's Inside Issue #20:

"Thumbs Up" For Implementation EPA Approves Galveston Bay Plan By M.A. Bengtson.....	1
Notes from the Director By Frank Shipley.....	2
Bay Day Festival '95 Set Sail June 10-11.....	3
Fallout From Airborne Hydrocarbons Affect Bay Quality By Frank Shipley, Ph.D.....	4
State of the Bay Book Now Available.....	5
What is Galveston Bay.....	6
Celebrating Texas' Coastal Wetlands By Cynthia Jennings.....	7
Publication List.....	10

Galveston Bay Program  
Bay Plaza One  
711 West Bay Area Blvd.  
Suite 210  
Webster, Texas 77598

U.S. Postage Paid  
Bulk Rate  
Webster, Texas  
Permit No. 208