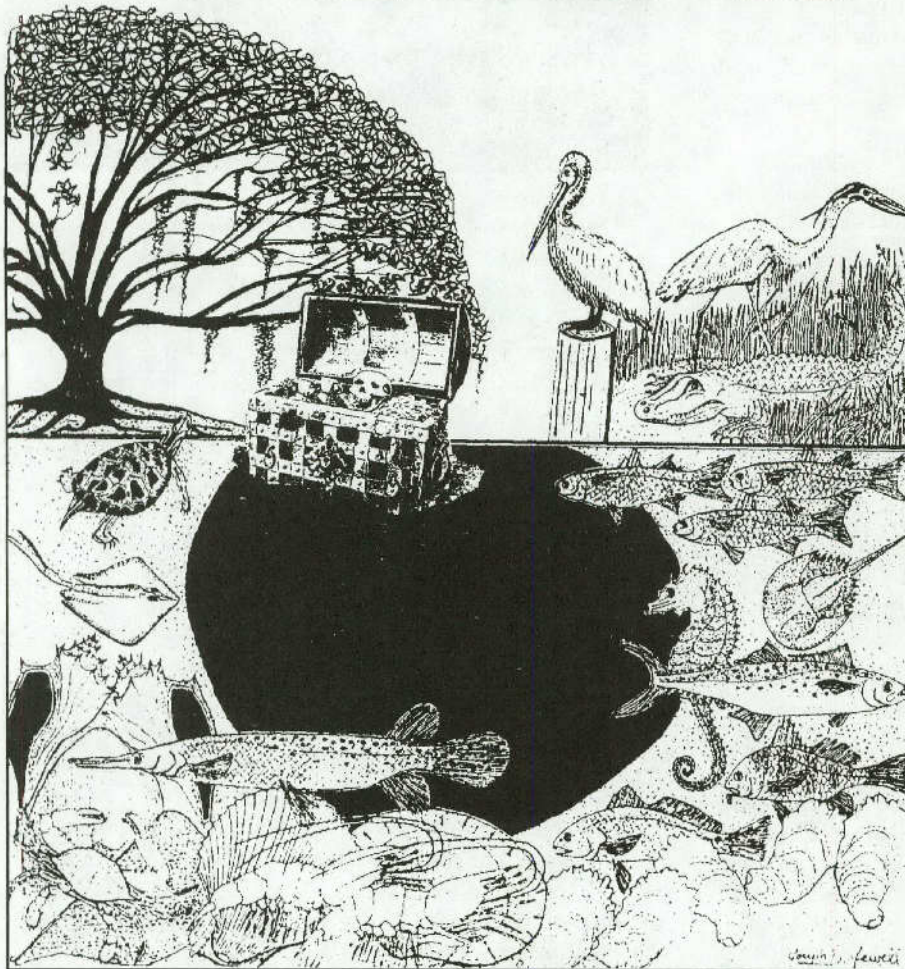


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# Texas Coastal Treasures

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## Ima here...

Hello, Readers:  
We're happy to bring you another edition of *Texas Coastal Treasures*, the **FREE** newsletter written especially for students attending schools located along our beautiful Texas Coast.

In the last issue of **TCT** — that's what we call *Texas Coastal Treasures* — we included updates on Sea Center Texas and the La Salle "dig." This time, we're bringing you two full pages of interesting information about our state's largest bay system, Galveston Bay (Please see Pages 4 and 5). Some of you live there and many of you live near enough that you might travel there this summer.

In addition, we're telling you about Texas crabs, just in case you catch some for good eating this summer. There's also news about sailing adventures!

You also will find out about "surfing" in this issue of **TCT**, but not the kind of surfing you do in the waves. This kind of "surfing" is the kind you do with a computer and the World Wide Web...better known as the WWW.

Please write to us. (Our address is in its usual place, on Page 2.) Tell us what you want to see more of in upcoming **TCTs**.

Whatever you do, wherever you go, have a great summer and look for **TCT** when school starts again in the fall.

Until the fall, Keep the Coast Cool!

*Ima Phish,*  
Editor

## What's the biggest Texas bay?

There are eight coastal bay systems in Texas. From North to South, the bays are: Sabine Lake, Galveston Bay, East Matagorda Bay, San Antonio Bay, Aransas Bay, Corpus Christi Bay, Upper Laguna Madre Bay and Lower Laguna Madre.

Some characteristics bays have in common are: inflow of fresh water from rivers that mixes with the saltier waters of the Gulf of Mexico; and barrier islands that protect the bays from the Gulf of Mexico. The upper bays tend to have more freshwater inflow from rivers, while the lower bays are more tropical and the water is saltier — it has higher salinity. The bays differ, too, in the way they are oriented to the winds. The Intercoastal Waterway winds through most of the bays. The bays of Texas are vital to fishing, recreation and shipping. There are passes in most of the bays. Fish and people use the passes to get to the Gulf, or travel back and forth between the bays and the Gulf.

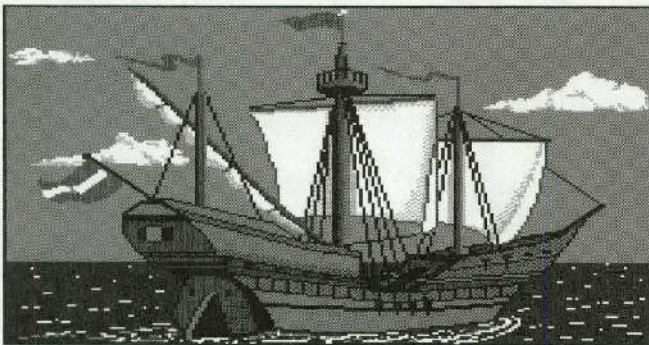
The largest of the eight Texas coastal bays is **Galveston Bay** (Pages 4-5).

# Navigate the Nina, Pinta or Santa Maria? How about sailing lessons?

This year, you can experience some of the thrills and risks Columbus' crews experienced as they sailed across the vast Atlantic, looking for the New World. Powered only by the wind, crossing bays beside schools of dolphins, marveling at the jumping of the mullet, you can step back in time, to 1492.

Here's how: The Texas Marine Advisory Service and the Columbus Fleet Association of Corpus Christi have formed an alliance that allows Texas youth to taste life aboard replicas of Columbus' 1492 fleet.

**Children, ages 8 to 10**, can participate in an overnight living history program aboard replicas of the Pinta or Santa Maria. They will assume the roles of



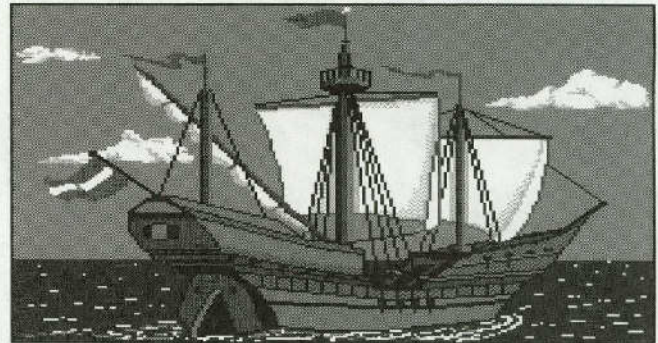
15th century sailors, including full costumes. Classes are open to **groups only** and will be scheduled as requested. The cost is \$40.

**Students 14 to 18** can learn to sail the full-scale, in-the-water, working replica of the Nina. **Courses will be held June 16-21; June 23-27; and July 7-11 in Corpus Christi, and are open to 4-H or other project groups of 12 to 15 members.** Two adult chaperones are required per group. Sessions are \$80, for four days of classroom work and one day of sailing. There is no cost to the chaperones. Assistance in finding lodging is available.

Completing the 24-hour sailing course qualifies students as crew apprentices, allowing them to receive special invitations to sail Corpus Christi Bay aboard the Nina. Apprentices can then earn "crew member" status by accruing 15 days of actual sailing experience aboard the Nina or successfully completing the adult crew member course. Students must be 16 to take the adult course. Certified crew members can apply for the adventure of a lifetime: the fleet's cruise into New York Harbor as part of the tall ship reunion.

#### How to enroll:

Contact the Columbus Fleet Association sailing staff at 512-882-1232, or the Marine Advisory Service's Marine Education Programs at 512-972-5370, for more information.



#### Sailing, sailing, over the bounding bay....

The Texas Sea Grant's Marine Education Program, the Palacios Regatta Team and the US Sailing Association have established the South Texas Sailing Academy in Palacios. This is an opportunity for kids and others to learn sailing skills, history and lore. Some financial assistance is available for Texas kids.

Beginner classes for 1997 are: **•Class II, July 7-10; and •Class III, August 2, 3, 9 and 10.** The four days (32 hours) of classroom and on-the-water instruction cost \$100 per youth (12-17 years) and \$150 per adult and include all boats, books and facilities for the course. Participants are responsible for food, lodging and transportation to Palacios. There is help for finding places to stay in Palacios. There also are classes for youth groups, school, Scout, or 4-H programs.

Anyone 12 years or older in good physical condition and with a US Coast Guard-approved personal flotation device (PFD) may take this course.

Contact Warren Pierce, sail training coordinator, South Texas Sailing Academy, 1001 Main, Palacios, TX 77465, telephone 512-972-3066 or 800-457-2403; or Willie Younger, marine education specialist, Texas Marine Advisory Service, PO Box 1283, Palacios, TX 77465, telephone 512-972-5370, for more information on the South Texas Sailing Academy.

#### Where to write to us:

with suggestions, ideas or any other information:



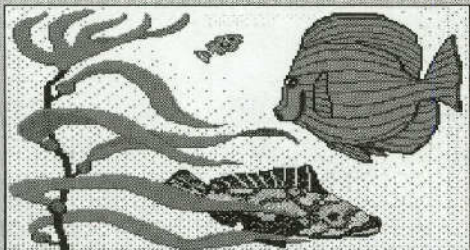
*Texas Coastal Treasures*  
TPWD  
Coastal Fisheries Division  
702 Navigation Circle  
Rockport, TX 78382

An exciting photo contest is being held in Texas for divers and anglers who like to take pictures. The contest is called "Discover TEXAS Artificial Reefs," and it was organized by Texas Senator J. E. "Buster" Brown and Texas Parks and Wildlife. There are many fine corporate sponsors of this contest, too.

Here's what you have to do to enter the contest:

**First**, get the rules by contacting Texas Parks and Wildlife Coastal Fisheries Division, 512-389-4686 or 512-912-7005.

**Second**, make sure you follow all the instructions and return your photo entry by **September 1, 1997**.



## Focus on TEXAS Artificial Reefs

**Third**, remember that the contest started last June (1996) so there's no time to waste if you want to try for one of the contest prizes — cash, equipment, and fishing and diving trips. Also, the winning photos will be shown on a rotating basis at Sea Center Texas and at the Texas Parks and Wildlife Expo held in Austin after the winners are announced.

**Fourth**, remember that the entry categories are: **Category I:** Underwater Artificial Reef Habitat and Sea Life; **Category II:** Fishing Over Artificial Reefs; and **Category III:** People Underwater at Artificial Reefs.

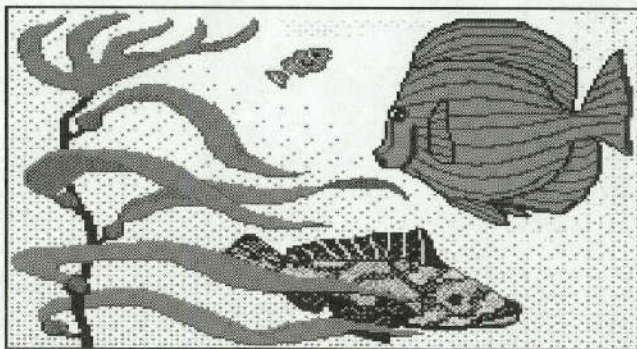
There are subcategories for each entry category, with first, second and third prizes for photographers under 17 years of age; amateur photographers (An amateur photographer is a person who has not sold a photograph for publication); and professional photographers.

### What is an Artificial Reef?

Artificial reefs along the Texas Coast enhance fishery resources and enhance fishing and diving opportunities. There are 27 artificial reef sites managed by the Texas Parks and Wildlife Department and there are many unintentional artificial reefs in the form of petroleum platforms scattered throughout the Gulf of Mexico.

Petroleum platforms make ideal artificial reefs. They are environmentally safe, are constructed of highly durable and stable material that withstands displacement or breakup, and already support a thriving reef ecosystem.

So far, 37 rigs have been donated to the Artificial Reef Program by cooperating oil and gas companies. Many of those companies have also donated half of the money they saved by not having to haul the used rigs to shore. That means the Texas Artificial



Reef Program is self-sufficient and doesn't have to use tax dollars.

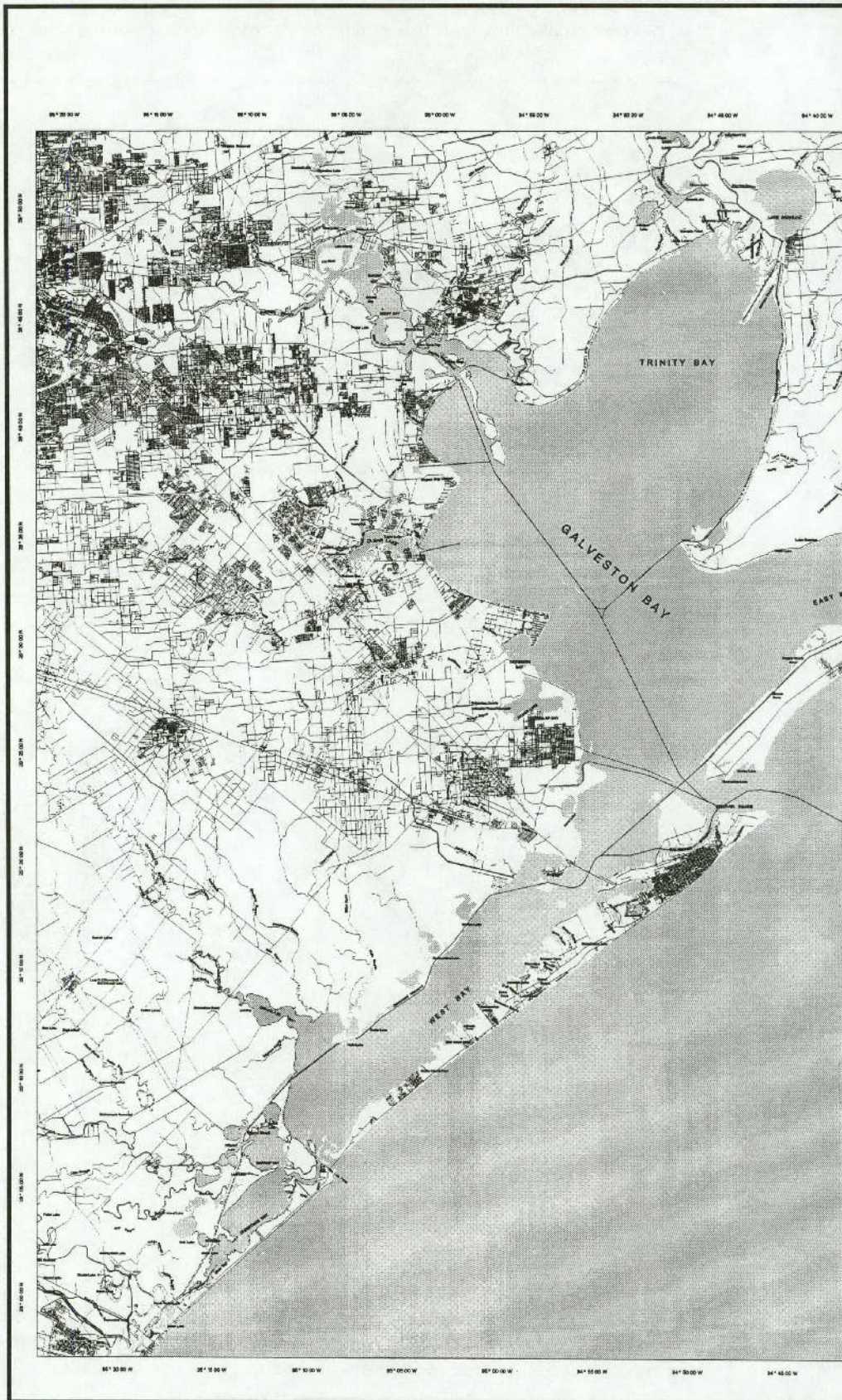
Many other items become artificial reefs, like tires, automobiles, boats, ships, and construction rubble. Those items aren't very stable and will move around or break apart in winds and storms.

In the mid-1970s, a dozen obsolete Liberty Ships were sunk at five different sites in the Gulf. These sites are still productive reefs and are being enhanced with other durable, stable materials. In the next decade, when offshore oil and gas production slowed down in the Texas offshore fields, more and more rigs were scrapped, so that's how the Program got its start. It officially began in 1990 when it was approved by the Texas Parks and Wildlife Commission.

Want a map of the Texas Artificial Reef Program sites? Call the TPW Seabrook office, 713-474-1418.

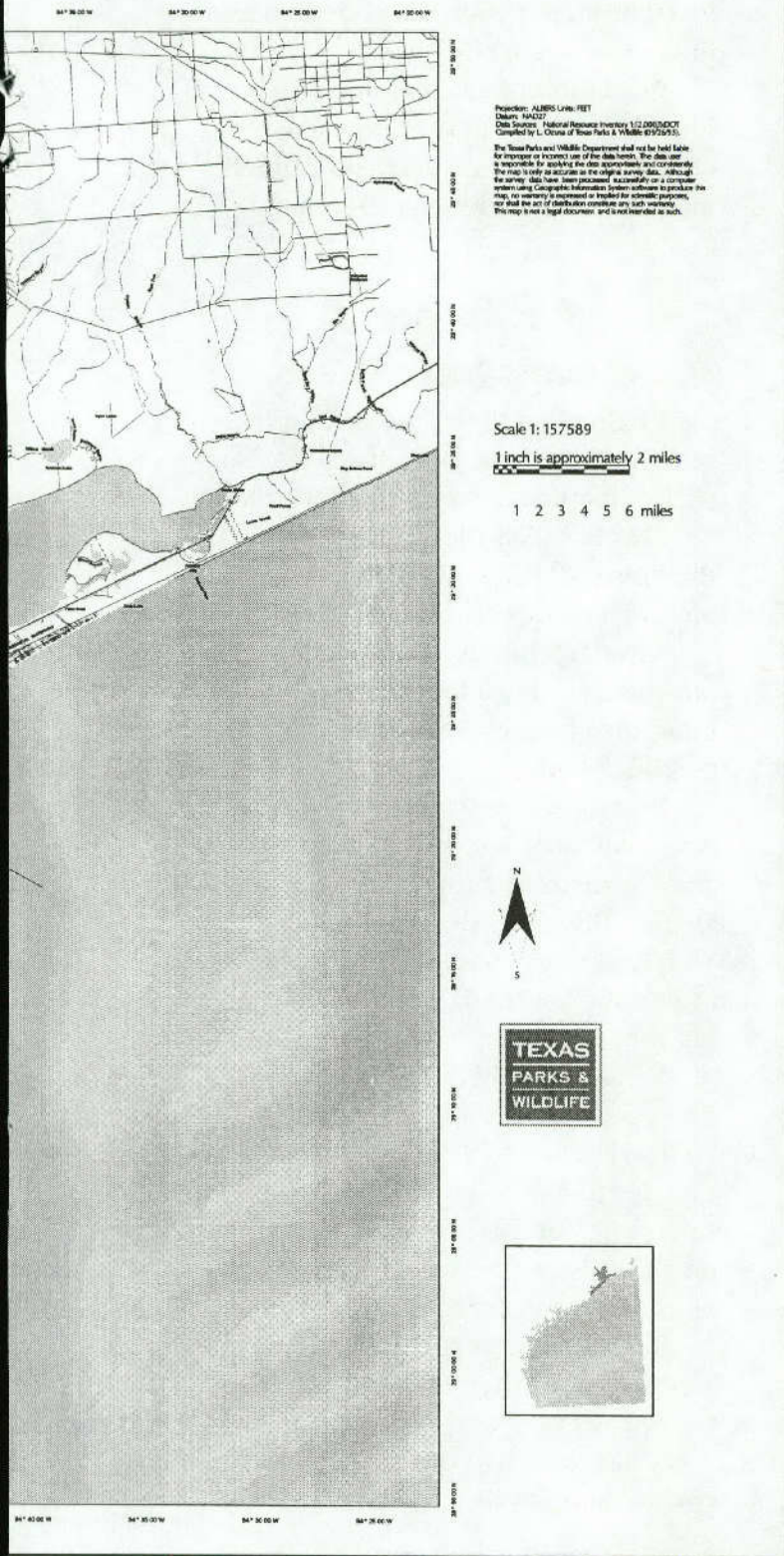
# Say, let's visit Ga

- **GALVESTON BAY** is the largest estuary on the Texas coast. An **ESTUARY** is made of **BRACKISH** water that is formed when rivers and bayous meet saltwater from the ocean.
- **GALVESTON BAY** has 600 square miles of surface area. Its average depth is about seven feet. It is divided into four sub-bays: Galveston Bay proper; West Bay; Trinity Bay; and East Bay.
- Three **passes** allow tidal flows from the Gulf of Mexico to the bay. **BOLIVAR ROADS** is the largest pass. **ROLLOVER PASS** and **SAN LUIS PASS** are smaller. The passes allow many species of fish and shellfish to move back and forth from the bays and the gulf. Barrier islands separate and protect the bay from the Gulf. Winds and weather can wear away the islands, or cause new islands to form.
- Trinity Bay and Galveston Bay receive freshwater from the **Trinity and San Jacinto Rivers**. The rivers are important to the health of the bay **ECOSYSTEM**. Rivers carry nutrients into the bay that the bay plants need. Rivers also carry in the tiny organisms the juvenile fish in the bay need for food.
- **GALVESTON BAY** is the largest bay in Texas but it is small compared to bays on the East and West Coasts. For example, Chesapeake Bay, which separates Maryland and Virginia, is over 200 miles long.
- **GALVESTON BAY** is used by many people for recreational and commercial fishing. It is used by the oil and gas industry. It also is very important for transportation.



# Galveston Bay, okay?

## GALVESTON BAY



### *Knock, knock: Who's there?*

Many species of **finfish** and **shellfish** live in the bay. These include red drum, spotted seatrout, flounder, shrimp, blue crab and oysters.

Other fish and **animals** that live in or near the bay are dolphins, sharks, and nutria. Alligators can be found in the parts of the bay where there is fresher water.

**BIRDS** use Galveston Bay and its habitat, too, for food and for nesting areas where they raise their young. Some bird species you might see around the bay are: Avocets, oystercatchers, sandpipers, egrets, herons, ibis, roseate spoonbills, skimmers, pelicans and ducks

### *What's imPORTant?*

There are many channels through Galveston Bay. They give ships from all parts of the world access to ports in Galveston, Houston and Texas City.

The Port of Houston is one of the largest ports in the US. The Port of Galveston is the third largest port in Texas.

Every year, more than 5,000 ships use these channels. A channel is a deep passage cut in the bay. The Houston Ship Channel, for example, is 50 miles long, 45 feet deep and 100 feet wide. Other channels are the Texas City Channel, Galveston Channel, and the Intercoastal Waterway.

### *A little history, please?*

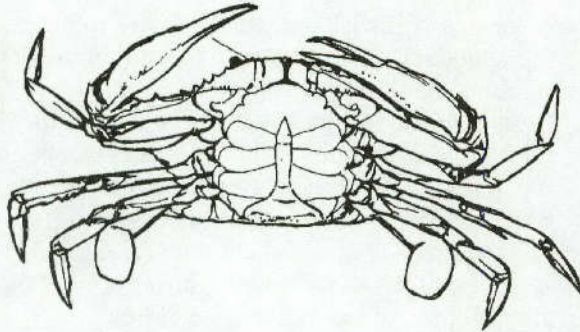
More than 14,000 years ago, the people who lived around Galveston Bay may have hunted woolly mammoths, mastodons and large bison. They also ate oysters and clams from the bay.

Spanish and French explorers arrived in the area between 1528 and 1722. In 1815, mercenaries — even pirates — and pioneers began to settle around the bay and harbor, or search there for treasure. The first settlers raised cattle that were sometimes herded across the bay from island to island so they could get to market. The islands were washed away by the waves from ships and by strong storms and hurricanes.

In 1900, Galveston was the most populated city in Texas. A terrible hurricane killed thousands of people, wrecked the town, damaged the bay and destroyed islands.

Today, there are 3.75 million people living in the Galveston Bay/Greater Galveston area.

# Crustacean blues ...or crabs to you



More than 90 kinds of crabs live in Texas coastal waters, from the saltiest Gulf to the fresh water back bays. Crabs hide from their enemies on the muddy bottoms of the Gulf or bays. While they hide, they wait for their next meal to come floating by. Crabs eat almost any vegetable or animal matter, but they prefer freshly dead or freshly caught food like young oysters and clams.

Crabs are crustaceans, like shrimp, lobsters, crayfish and barnacles. They have no backbone and they have jointed legs. The hard shell of a crab is made of stuff called "chitin." Crabs have five pairs of legs; the front pair are pinchers, so be careful if you pick up a crab! Their back four legs are used for walking and paddling. Crabs can move FAST!

The blue crab — *Callinectes sapidus* — is the most common edible crab along our Gulf Coast, the eastern coasts of North and South America, and the coasts of France, Holland and Denmark. Blue crabs are the most valuable for commercial catches, in Texas. Every year, as much as 10 million pounds of blue crabs are caught. Their value can be over \$1,000,000.

It's fun to catch crabs. There are no bag limits, but there is a five-inch minimum body width (spine to spine.) It is illegal to keep females that have eggs on their abdomens.

To catch crabs, use fish heads or chicken necks tied to a piece of strong twine long enough to reach the bay bottom. Put the baited line in the water from a pier, bank or boat and wait until a crab grabs it. When you feel a pull on the end, slowly retrieve the line until you see the crab.

Use a net to dip it out. Don't let the crab come out of the water first; it will release the bait.

Clean crabs quickly. Boil them before or after you clean them.

Remove the claws by holding the body in one hand and twisting the claws off with the other hand. Hold the legs in one hand, put the fingers of the other hand under the shell at the back and pull the shell up and off.

Scoop out and discard the internal organs. Cut the top off each side of the body. Scoop out the meat from the exposed chambers.

Chill the crabmeat as soon as possible.

## Is a blue crab really blue?

The back of the blue crab is dark or brownish green and extends out on each side into a long spine.

When fully grown, a blue crab may be eight inches wide. Its abdomen and lower legs are white.

Its claws are various shades of blue, but female blue crabs have red claw tips; that's one way you can tell male and female blue crabs apart.

## Crabs don't always have shells

Crabs shed their shells when their bodies outgrow their shells. A new soft shell is formed beneath the hard one.

This is called the "peeler" stage. In the "buster" stage, the hard shell splits and the crab starts to back out of it.

After freeing itself from the small, old shell, the crab takes in large amounts of water to expand its soft, wrinkled body.

During this soft stage, the crab is easy prey, so it seeks shelter. Its new shell hardens in two to three days. During this time, the crab is called "buckram" or "paper shell." Once the crab's shell is hard, it will begin looking for food again.

Crabs shed their shells and grow new ones — or "molt" — as many as 20 times. They can increase one-quarter to one-third their size each time. The number of "molts" depends on a crab's age, water temperature, and food availability.

Crabs can also regrow pinchers or legs they lose when they fight or when they protect themselves.

A lost limb will be replaced after two or more molts.

# This is Your Page

The **TEXAS STATE AQUARIUM**, located at Corpus Christi's bayfront, is a great place to visit in the summertime (or any time). Explore the mysteries of the deep! See the playful North American River Otters in — where else —

Otter Space, at the Aquarium. See "Islands of Steel," an underwater oil rig teeming with sea life. See an explosion of color at Flower Gardens Coral Reef.

Touch a real shark and a real singray! Explore Conservation Cove, where you'll meet the endangered Kemp's Ridley Sea Turtles. See the Octopus Garden, too, with its giant purple octopus.

Call **1-800-477-GULF**, or **512-881-1200**, for the latest Texas State Aquarium update. Admission is free with an Aquarium membership.

**SEA CENTER TEXAS**, near Lake Jackson, is a great place to visit and learn about the various habitats along the Texas Coast. You can visit the **FISH HATCHERY**, where the baby seatrout live. Call **409-292-0100**. Sea Center Texas is open Tuesday through Saturday.

## Fun Stuff to do this Summer

For Talented and Gifted kids entering Grades 8-12, **GALVESTON ISLAND ADVENTURE** is a great way to spend the summer.

There are sessions in June, July and August with topics like marine biology, emergency room medicine, veterinary medicine, robotics, photography, oceanography, and sea scapes/art.

For more information, just call **409-740-4921**.

## Galveston Island Adventure

## SEA CAMP

There are many opportunities this summer for kids from 10 to 16 to attend one of the Sea Camps at (or based at) Galveston.

"Sea Campers" might explore salt marshes and learn to seine. They might have a "hands on" learning experience about **MARINE ECOLOGY** and see alligators or dolphins.

They might learn about the Marine Mammal Stranding Network or they might travel and camp along the Texas coast from Sabine Pass to Padre Island National Seashore.

There's even a Sea Camp session in Belize!

Call **409-740-4525**, but hurry! Sea Camp spaces are limited.

Let us know how you spent your summer along our cool Texas Coast.

Look on Page 2 for our address. Send cards, letters, photographs and drawings to us.

### BE SAFE THIS SUMMER!

Use insect repellent, watch your step when you're in the woods, on the beach, or in the water, swim with a buddy, don't forget to put on the sunscreen, and be sure to wear your Personal Flotation Device (PFD) when you're in a boat.

## Memo to: TCT Kids!

# Everybody's gone surfin' the Web

Summertime can mean you'll have time to learn something new, like how to fly fish, how to swim, how to identify constellations, how to play baseball or softball...maybe even how to "surf" the World Wide Web, commonly known as the www.

There are more places to go than we can name here, but here are some of the places you can "surf."

**REMEMBER:** To "surf" the www, you need a computer with lots of memory, software that gives you access to the World Wide Web; a modem and phone line to connect your computer to the www; and permission from your parents or adult caregiver to use your computer in this manner.

Most large towns have local access providers that, for a monthly fee, will sell you an access telephone number you can use with your computer and "surfing" software. Some examples of the companies and software you might use are: Compuserve, Netscape Navigator, Infonet, AT&T, Southwestern Bell, Trip Net, and America Online.

**BOOKS:** If computers are new to you, two books by Osborne Electronics might be helpful. They are: **The Osborne Guide to Computers**, A Simple and Colourful Introduction for Beginners, by Brian Reffin Smith, Lisa Watts, editor, Osborne Electronic World, EDC Publishing, Tulsa, OK; or **The Osborne Computer Dictionary for Beginners**, by Anna Claybourne, EDC Publishing, Tulsa, OK. For those who are more advanced, check out IDG Books Worldwide's **The Internet for Dummies**; the latest **World Wide Web Secrets**, or similar books at your library or bookstore.

## Surf's Up

**1) Kids' Space and Kids' Connection:** Accessible through America Online by clicking the icons, or by calling up both, or either of these two sites:

<http://www.kids-space.org>

<http://www.KS-connection.com>

Categories include Storybook, Gallery, OnAir Concert, Beanstalk, Penpal Box, Bulletin Board, Web Kids' Village and Go! Outside. Best viewed with Netscape 3.0 or later on a full-color monitor.

**2) Texas General Land Office home page, Adopt-a-Beach home page, or WetNet:**

<http://www.glo.state.tx.us/>

[http://www.glo.state.tx.us/res\\_mgt/adopt-a-beach/aab.html](http://www.glo.state.tx.us/res_mgt/adopt-a-beach/aab.html)

<http://www.glo.state.tx.us/wetnet/>

Lots of information about GLO activities and programs.

WetNet has Home, Data, Wetland Species, Wetland Publications, Wetland Links, Other Links, and Participating Agencies categories.

**3) Texas Parks and Wildlife and Sea Center Texas:**

<http://www.tpwd.state.tx.us>

Texas Parks and Wildlife also has a Kids Page at:

<http://www.tpwd.state.tx.us/adv/kidspage/kidspage.htm>

with categories like Texas Dinosaurs, Slithering Ssnakes, Birds of the Wild, The Sound Safari, Outdoors

**4) SeaCamp: Texas A&M, Galveston.**

<http://www.tamug.tamu.edu/~seacamp>

**5) Talented and Gifted Galveston Island Adventure:**

<http://www.tamug.tamu.edu/~cned/tag/tag/htm>

**6) The LaSalle Exhibit: Texas Historical Commission:**

<http://www.thc.state.tx.us/belle/Index.htm>

*Happy Surfing! Tell TCT what you find.*

### Acknowledgements:

**Cover Art:** Courtesy of Gulf States Marine Fisheries Commission  
**Pages 4-5, Map of Galveston Bay:** Texas Parks and Wildlife  
**Page 6, Drawing of Crab:** Texas Parks and Wildlife brochure prepared by L. W. McEachron, Coastal Fisheries