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TEXAS PARKS AND WILDLIFE

Vol. 2, No. 1, Fall, 1997

second big year for kids

ROCKPORT — Editor Ima Fish predicted that the second year of *Texas Coastal Treasures* — the publication designed exclusively for kids who live and go to school along the Texas Coast — will be bigger and better than ever.

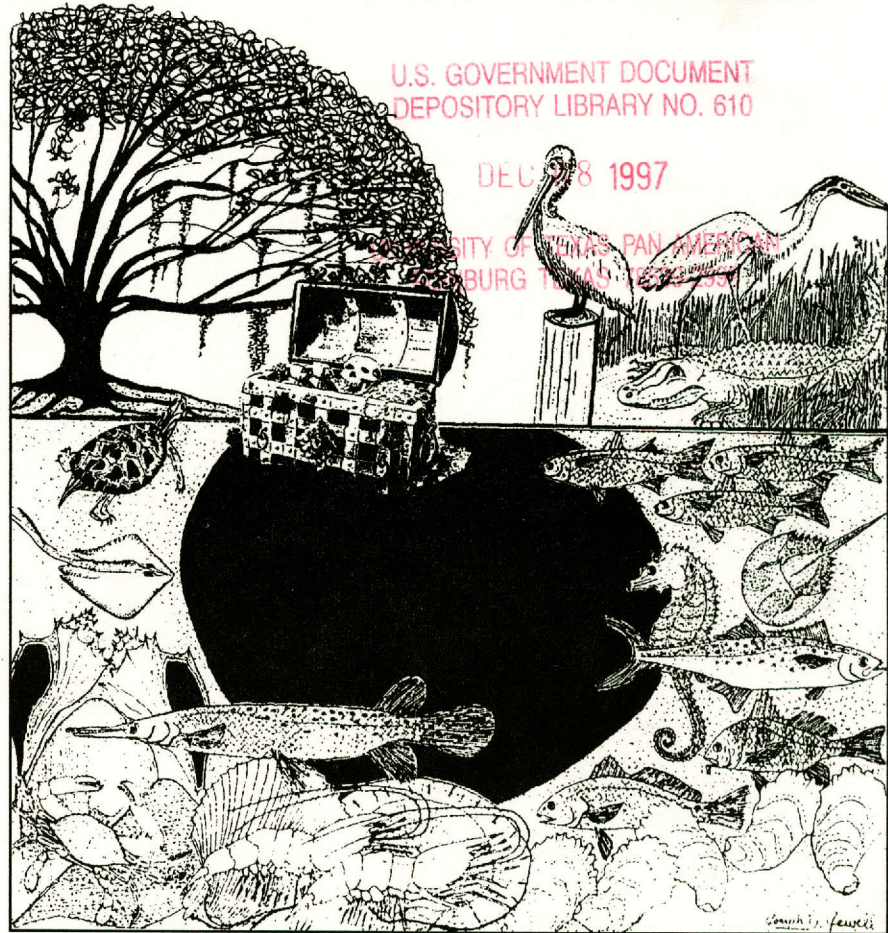
“Last year, we published our first three issues of TCT and each one was full of information for cool Coast kids,” said Fish. “This year we plan to continue our regular features on Texas Coastal attractions, different species of fish found in our coastal waters, and ‘Your Page,’ where kids can learn new words, gain information about special events, and see some of their own work in print. We’ve added some new features, too.”

Fish said the upcoming issues of *Texas Coastal Treasures* include a “Teachers’ Corner,” more World Wide Websites for kids, more in the series of articles about the bay systems in Texas, which was begun in *Texas Coastal Treasures*, Vol. 1, No. 3, Summer, 1997, and more information about things kids can do and places they can go to learn about the area in which they live.

“We’ll have features on Coastal careers, like marine biology, environmental sciences and ecology,” Fish said. “We’ll continue to encourage our young readers to share their compositions, drawings, ideas and suggestions with us, so we can stay focused on what the kids want to see in TCT.”

Kids will see a new feature called “Alphabet Soup,” updates on coastwide events such as beach trash-offs and coastal clean-ups, ideas for science fairs and other projects, things to do during holidays and breaks, and information about opportunities for kids during the summer months.

Texas Coastal Treasures



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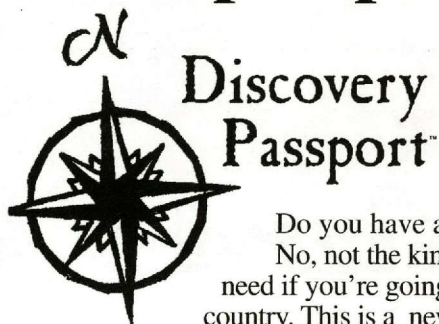
“Thanks to Texas Parks and Wildlife, TCT will continue to reach the cool school kids of our beautiful coast,” said Fish.

She added, “We wish all our readers a happy, safe and successful 1997-98 school year. We’ll be right there in their classrooms with them. TCT is committed to kids and the future of this wonderful area in which we live. Our mission — since we started publication in 1996 — continues to be preserving, exploring and enjoying all that the Texas Coast has to offer.”

Inside This Texas Coastal Treasure

- Page 2 Discovery Passport, A Science Fair Riddle
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- Pages 4 & 5 Aransas Bay
- Page 6 How Hurricanes Affect Our Coastal Waters
- Page 7 Your Page
- Page 8 Plan a Field Trip to Expo '97

This passport leads to great discoveries



Discovery Passport

Do you have a passport?
No, not the kind of passport you need if you're going to travel to another country. This is a new Texas Parks and Wildlife "Discovery Passport?"

With a Discovery Passport, you'll be able to earn up to 11 colorful, fun patches – one patch every time you visit a different, participating Texas State Park, the Texas Freshwater Fisheries Center and Sea Center Texas.

And there's more fun in store with this Passport.

With your Discovery Passport, every time you visit one of the four kinds of theme sites in any of the state's seven regions, you'll get a stamp cancellation for your passport, too.

The theme site categories are: US Frontier Forts of Texas; Historic Inns and Homes; Shrines of Texas

Independence; and Native American Sites and Rock Art.

That is still not all the fun you can have with your new Discovery Passport. During the "off season," which runs from November through February, if you camp for five nights at any participating Texas State Park, you'll get one night's free camping just by showing your Discovery Passport.

Do you think a passport that points the way to so much fun will cost a lot?

Well, it doesn't.

The Discovery Passport – offered for the first time in July, 1997 – costs only \$1.

For more information about the new Discovery Passport, visit a State Park near you, or call the Texas State Park Information Line, 1-800-792-1112, extension 3.

Dial it up, check it out, pick it up, but don't pass up the new Discovery Passport!

Start collecting those patches this weekend.

(Source of Information: *Texas Parks & Wildlife Magazine*, July, 1997.)

Science Fair Fun:

Why is a dolphin like a bat?

You may not think our Texas Coastal dolphins and our furry, strange (sort of scary) bats have anything in common, but they do. For your Science Fair project this year, explore this riddle further.

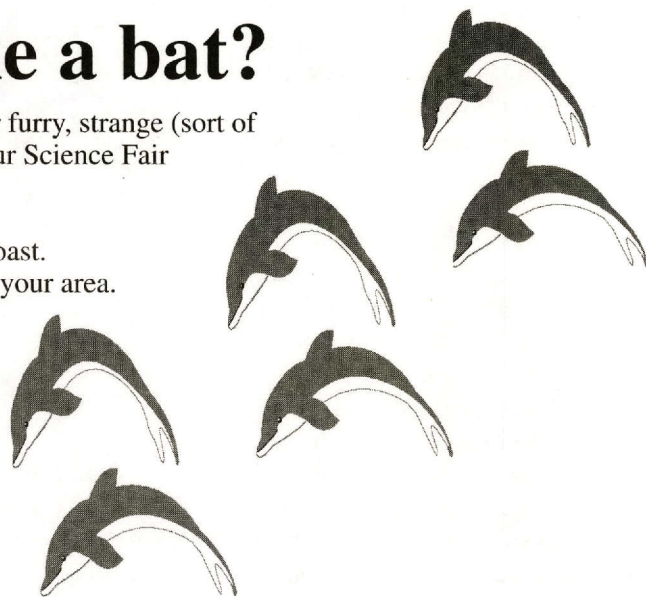
Here are some hints:

1. Dolphins and bats are common along the Texas Coast.
Find out how many species of each animal live in your area.
2. Dolphins and bats travel by using high-frequency sound. Find out how scientists have described this sound and how high-frequency sound works.
3. If you can answer this question, you're on the way to a cool Science Fair project. The way dolphins and bats travel, or "see" where they're going is called:
 - A. Navigation
 - B. Relocation
 - C. Echolocation
 - D. Orientation.

If you guessed C – Echolocation – you're right. Now you've got the first part of your Science Fair project! Develop a hypothesis, do your research, and create a display of this phenomenon shared by dolphins and bats – Echolocation.

Check out your Websites, encyclopedias, science books, and your local TPWD marine biologist.

Have fun... but don't go "batty!"

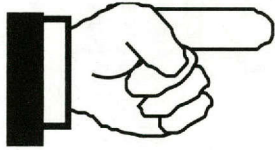


Where to write to us:

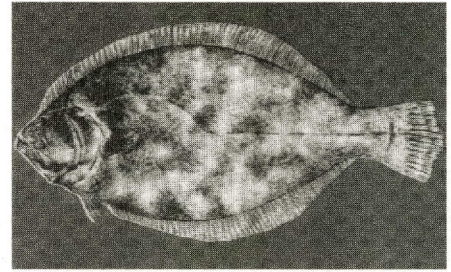
with suggestions, ideas or any other information:



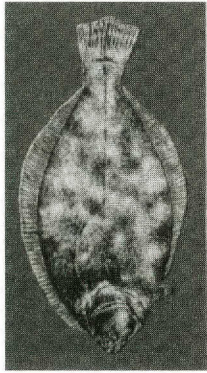
Texas Coastal Treasures
TPWD
Coastal Fisheries Division
702 Navigation Circle
Rockport, TX 78382



Ye Olde



Lost and *FLOUNDER* Department



The Southern Flounder – *Paralichthys lethostigma* for those of you who speak Latin – is one weird-looking fish! It’s flat, both of its eyes are on the same side of its head, and it spends most of its life lying or swimming on its side along the bottom of its watery home. As weird-looking as this fish is, however, it’s fun to catch and very tasty to eat.

The southern flounder is called a “flatfish,” and it is just one of 25 species of flatfish in the world’s waters. Like many other species of Texas Coastal fish, the southern flounder moves between the bays and the Gulf each year.

Newly-hatched flounder don’t look like full-grown flounder. When they’re hatched, flounder swim upright, not sideways. Their eyes are on opposite sides of their heads. As flounder grow, their right eyes “migrate” or move, to the left sides of their heads and they get into their side-up, or sideways, position. All of that happens when newly-hatched flounder are less than one inch long!

In the winter and spring, the tiny *Paralichthys lethostigma* move back to the passes and shallow, grassy bay waters. Some of them move into coastal rivers and bays, too.

After both their eyes are on the left sides of their heads and they begin to swim on their sides, southern flounder grow very quickly. By the time they’re only one year old, they may be a foot long. Female flounder usually grow longer than male flounder.

When they are still young, southern flounder like to feed on crustaceans – animals that have shells, like shrimp. When they get older, flounder will hide, sometimes partly buried in the grassy, shallow water, and wait for other fish to eat.

Many people catch southern flounder at night, when the fish are in shallow water waiting to eat. Flounder can be caught with rod and reel and bait, but wade fishing with a “gig” is very popular along the bays of the Texas Coast. Maybe you’ve seen people standing or moving slowly in the shallow bay waters at night

and using lanterns to search for flounder. These folks use a “gig” – a stick with one or more sharp barbs, or points on the end.

Once a flounder is within the light from a lantern, it usually won’t move, but that doesn’t mean flounder are easy to catch.

Remember that flounder like to bury themselves while they wait for their dinner to swim by?

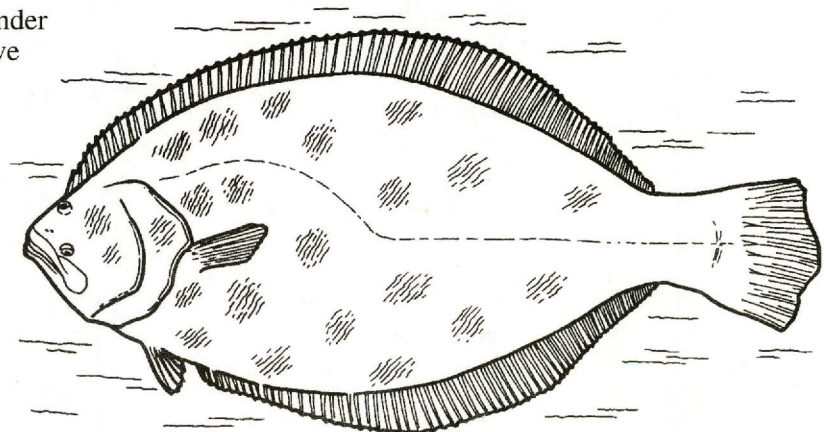
Many flounder go unnoticed by the “gigger” because they’re too well-hidden. Others swim away because the angler misjudged the fish’s position or depth, or didn’t “gig” the fish with enough force.

The best time of year to “flounder” is between October and December, when the adult flounder are moving towards the Gulf. A calm, dark night, when the tide is coming in, may be just the right time to catch a weird-looking, sideways, flat southern flounder.

BE CAREFUL! Stingrays also like to hang around in the shallows! Sometimes they are mistaken for flounder. If you gig something you think is a flounder, pin it firmly to the bay bottom with your gig. Wait for the water to settle and clear. Look CAREFULLY at what you’ve giggered, then you can either bring it up for a tasty flounder dinner, or let it go and move out of its way!

(Source of Information: *The Southern Flounder in Texas*, by Gary M. Stokes, PWD BR N3400-008 (1/94))

SOUTHERN FLOUNDER (*Paralichthys lethostigma*)



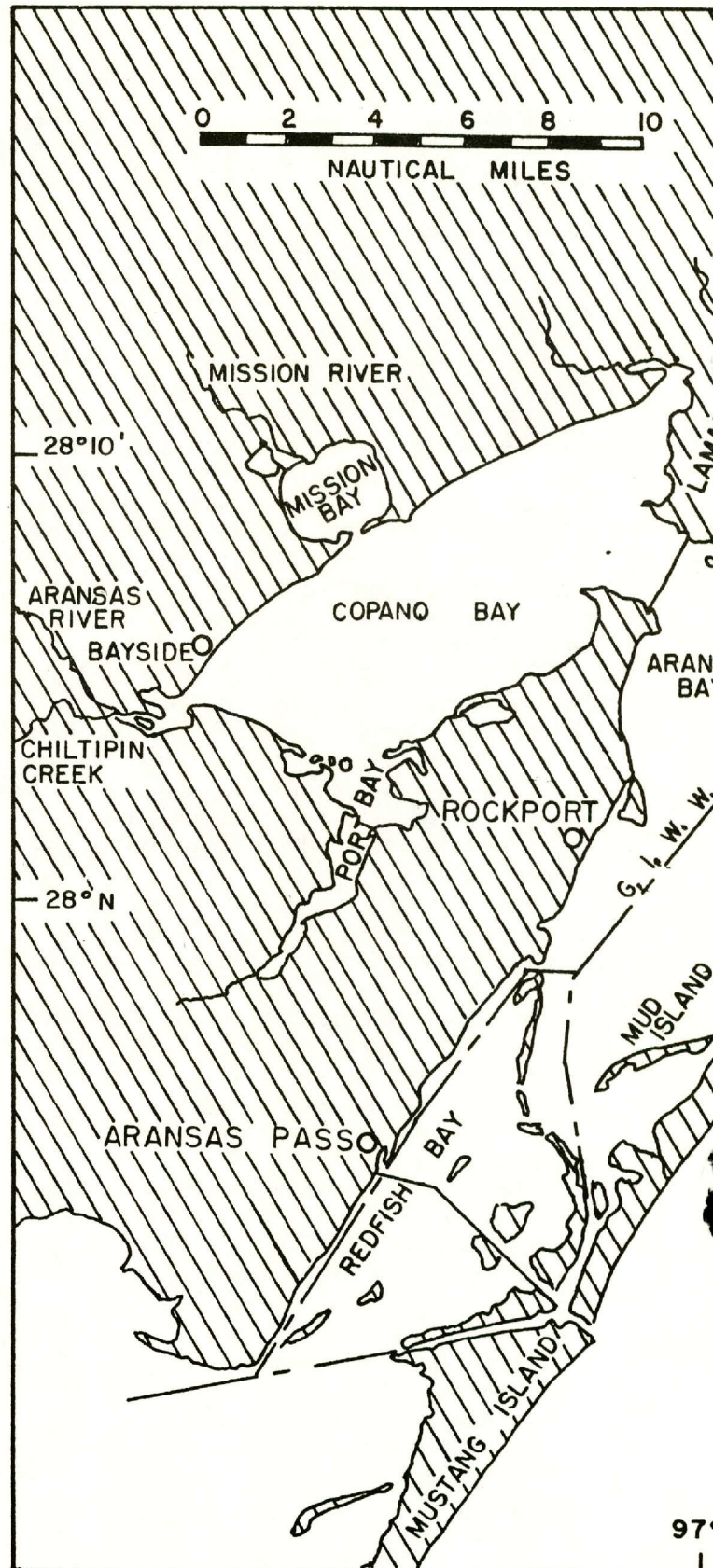
What do you say

- **ARANSAS BAY** is really a system of bays on the middle Texas coast.

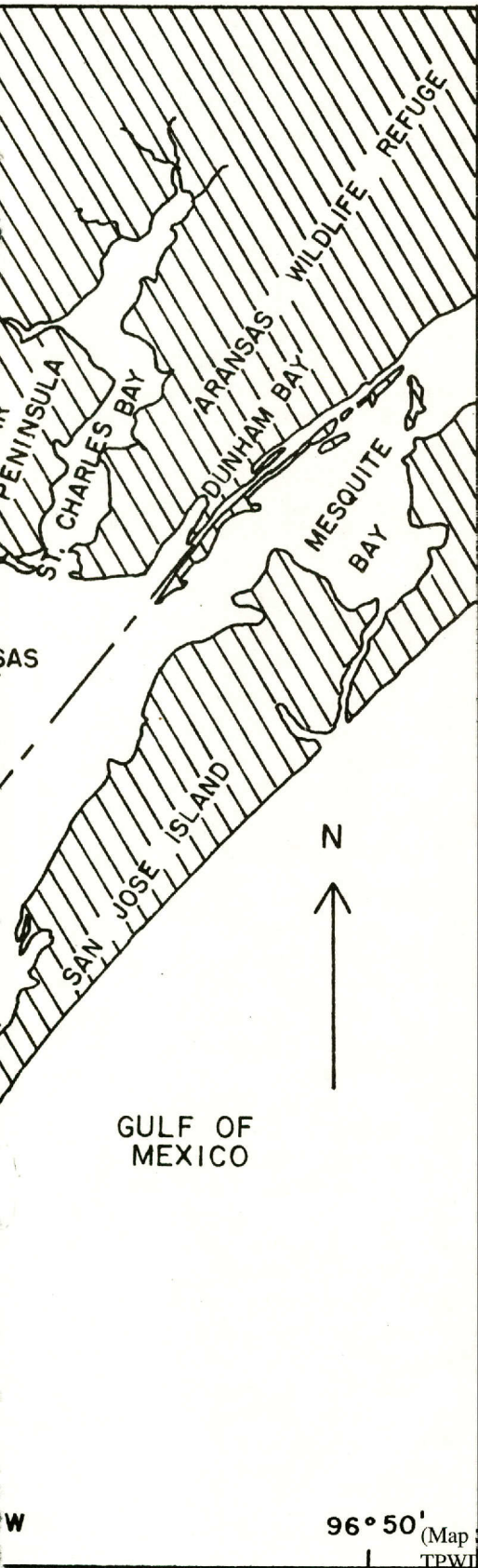
The ARANSAS BAY SYSTEM

includes these bays:

- Mesquite
 - Carlos
 - Aransas
 - St. Charles
 - Copano
 - Mission
 - Port and
 - Redfish
- The **ARANSAS BAY SYSTEM** has a total of 220 square miles of surface area. Its total shoreline is 226.3 miles long.
 - **ARANSAS BAY** and Copano Bay are the largest bays in this system. **ARANSAS BAY** covers 92.3 square miles. Copano Bay covers 69.5 square miles. Redfish, St. Charles and Mesquite Bays are medium-sized and are under 17 square miles each; Mission, Port, and Carlos Bays together cover only 14.3 square miles.
 - **ARANSAS BAY** is the deepest in the system at a maximum of 14 feet and average depth of 6.3 feet. Copano Bay has a maximum depth of 8 feet. The other bays vary in maximum depth from Mesquite, 5.5 feet; to Redfish and St. Charles, 5 feet; to Port and Carlos Bays, 4 feet; and Mission Bay, only 2.8 feet.
 - Mustang and San Jose are the **barrier islands** that separate **ARANSAS BAY** from the Gulf of Mexico. Both are of historical interest and significance.
 - **The Aransas National Wildlife Refuge**, winter home of the endangered whooping crane and home of many other species, is located on this bay system.
 - Freshwater flows into the **ARANSAS BAY** system from the Aransas and Mission Rivers. Sloughs and creeks empty into Port, Copano and St. Charles Bays. Water with reduced **salinity** enters this bay system from the San Antonio Bay region.



? Let's look at Aransas Bay?



What's the "pass" word?

The two main passes connecting the **ARANSAS BAY SYSTEM** with the Gulf of Mexico are Cedar Bayou and the pass at Port Aransas. When the tide is coming in from the Gulf, salt water travels through the passes in a northerly direction towards Copano Bay.

Breezes are fairly constant on the **ARANSAS BAY SYSTEM**, blowing mostly from the southeast. "Northers" are not uncommon in winter and these continental breezes can do much damage to the coast.

What's a GIWW?

The Gulf Intracoastal Waterway (GIWW) runs north and south through **ARANSAS BAY**. The GIWW is a canal that has to be dredged periodically to maintain its 14-foot depth. Ships, barges, trawlers and sailboats travel the GIWW, as do private boats and tour boats on their way to "hot" fishing spots or popular birdwatching areas, such as the **Aransas National Wildlife Refuge**.

When the GIWW is dredged, the material removed is called "spoil," and that material has been used to create new islands that have become thriving habitat for whooping cranes and other shorebirds near the Refuge.

A little data, please?

The largest towns on or along **ARANSAS BAY** are Rockport and Fulton, which are located in Aransas County. Commercial fishing, especially for shrimp, is big business there, but tourism, eco-tourism and recreational fishing also are major parts of the local economies.

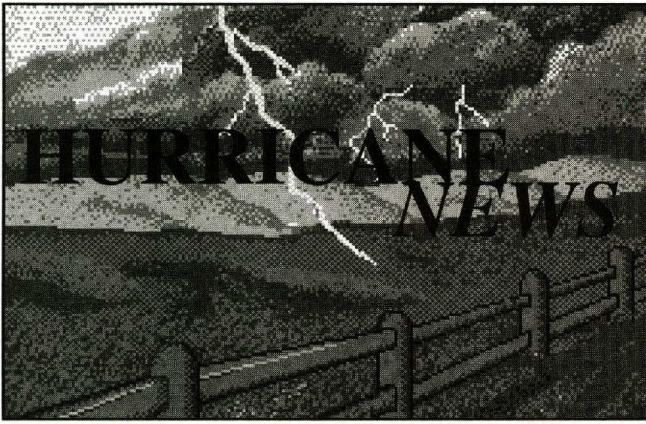
Oyster reefs, shallow grasses, artificial reefs, especially abandoned oil rigs, and "flats" are productive and popular areas for shrimp, fish, and birds. Dolphins are often seen frolicking in the bays.

The Fulton Mansion State Historical Park is located in Rockport and has a spectacular view of **ARANSAS BAY**. The house was called "Oakhurst" when it was built over 100 years ago by George W. Fulton.

The remains of the historic Lamar townsite, the historic Lamar Cemetery and Stella Maris Chapel are located across the LBJ Causeway from Rockport and Fulton. The Causeway spans **ARANSAS BAY** and Copano Bay. The Lamar Peninsula is a popular residential area, as is Holiday Beach, north of Lamar.

The world-famous "Big Tree" – the largest and oldest champion coastal oak, at over 1,000 years old – is located at Goose Island State Park at Lamar.

(Source of Information: Coastal Management Project (Draft) Lower Coast, Fishery Resources of the Aransas Bay System and Factors Relating to their Viability, TPWD Coastal Fisheries, 1975.)



Hurricanes on the Coast

By Dennis Pridgen, CSIII
Texas Parks and Wildlife Coastal Fisheries

Living near the Gulf of Mexico is great, isn't it?

We get to enjoy the beach, the water, the sun. We get to catch fish and watch the dolphins play, but our shores also become dangerous places when great storms called **hurricanes** develop and come ashore.

For all the destruction that can take place, however, hurricanes can also have some beneficial effects for our coastal bays.

•What is a hurricane?

A **hurricane** is an area of extremely low air pressure with winds that are over 75 mph circling it in a counter-clockwise direction.

In some ways, a hurricane is like a tornado, except that hurricane winds are not as fast, a hurricane covers a much larger area than a tornado, and a hurricane can last for days, instead of minutes or hours.

Hurricanes always develop in the warm, moist air over the world's oceans. Most of the hurricanes that hit Texas develop in the Gulf of Mexico, the Caribbean Sea, or the Atlantic Ocean and travel in a westerly direction.

Hurricanes can be very unpredictable. Sometimes they can stop, change directions, and move in the opposite direction they were traveling in.

•What comes with a hurricane?

Hurricanes always bring three things when they hit land: very high tides and waves; lots of wind; and torrential rains. The high tides are caused by "storm surge," a bulge of water accompanying the low pressure in the middle, or eye, of the hurricane.

Very strong winds pushing water from the ocean onto the land create the huge waves we see with hurricanes. The high tides and waves together cause flooding of low-lying coastal areas, and push saltwater many miles further inshore than normal.

Seawater can be 20 feet above sea level many miles inland. Flood waters probably cause more physical damage and erosion than any other element of a hurricane.

•What do high water, rain, saltwater and wind do?

Animal and plant life flooded by high waters can be killed. Imagine a whole colony of nesting sea birds whose eggs are flooded. The wind not only creates destructive waves, but can be strong enough to blow down trees, change the sand dunes on the beach, and destroy our human homes. Hurricane winds also stir up the sediments on the bottoms of the bays.

The rain which accompanies a hurricane can be tremendous. When that much rain falls inland from the coast, it causes all the rivers to rise and flood. This flooding just gets worse in the days after a hurricane has moved on or disintegrated over land.

•What else happens after a hurricane is gone?

The surge of saltwater pushed into the bays, plus all the runoff from so much rain, will start pushing back out to the sea because the water level in the bays will be higher than the level of the Gulf. Many times, in pouring back into the ocean, all that water cuts new channels or "passes" in the barrier islands. Existing channels may change their course.

Flooding waters inland will also cause erosion of topsoil and stream banks. Soil and nutrient are carried back into the bays. Our bays get a double "flush," you might say. First, they fill with saltwater, then they are churned like a washing machine, then they get filled and flushed again as freshwater pours into the bay and the bay empties back into the Gulf.

•What about the bay and coastal ecosystems?

After the initial damage and changes caused by the storm, the ecosystem begins to recover. With the new nutrients brought by floodwaters, new plant growth is rapid. The **replenished** food chain will support all the creatures which live and grow in the bay.

Entire estuaries can be filled with fresh water for awhile after a hurricane. Some species of plant and animal life can be destroyed when their **brackish** (saltwater and freshwater) homes are filled with freshwater. The ecosystems of many bay and Gulf species can be very unstable because of a hurricane, but not all the long-term effects are bad.

Hurricane winds add to erosion and stir up sediments and plant life in the bays. With the water stirred up, it is sometimes difficult for oxygen to reach plants, or for sunlight to penetrate. **Photosynthesis** of the bay plants is interrupted.

Erosion, caused by winds, tides, flooding or all three, can carve new beach lines, destroy dunes and barrier islands, and even cut new passes between the bays and the Gulf. **Debris** carried by winds and water can be deposited after a hurricane. The debris can be organic material, or it might be chemicals, toxic materials, garbage, trees, parts of houses or boats, dead animals, or anything else washed toward the Gulf by the high waters brought on by a hurricane.

•Where's the best place to be during a hurricane?

Someplace else!

This is Your Page

True or False:

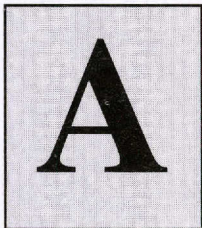
Mark a T or F in each space. Check your answers on Page 8, but **NO FAIR PEEKING!**

1. ____ An octopus has three hearts.
2. ____ A bird must eat at least two-thirds its own weight in food every day.
3. ____ At any given moment, there are 1,800 thunderstorms in progress all over the world.
4. ____ Lightning strikes the earth 206 times every second.
5. ____ When running at top speed, a jackrabbit can broad jump up to 25 feet.
6. ____ Aransas Bay is the largest bay system in Texas.
7. ____ Crabs can regrow pinchers or legs they lose from fighting or trying to protect themselves.

(Source: *Texas Parks and Wildlife Magazine* and *Texas Coastal Treasures*, Vol. 1, No. 3 and Vol. 2, No. 1)

Invent a foolproof flounder gig. Draw your plans here. Send your drawing, with your name, grade, and school, to TCT. Our address is on Page 2.

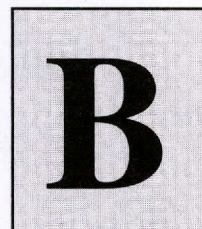
alphabet soup



is for:

- Aransas Bay •Artificial Reefs
- Abandoned Oil Rigs •Anglers

Find each word in the pages of this TCT. Circle the word each time you see it. On a separate piece of paper, write down your best definition of each word.



is for:

- Bay •Bay System
- Brackish Water •Barrier Islands
- Big Tree

Check out the Texas Parks and Wildlife website at:
<http://www.tpwd.state.tx.us>

From the home page, you can go to "Wildscapes" and learn how to create an outdoor classroom. You can try the "Education" and "Kids Page" sites, visit state parks and historic sites, or gather information about special events in which your pupils may participate.

For more resources, including the annual Adopt-a-Beach events, try the General Land Office's website, too, at:

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

and the GLO's "Wet Net," at:

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

Also, in every edition of TCT, new vocabulary words are in bold type so you can review them with your students.

Teacher's Corner

Check out the excitement at Expo '97

AUSTIN — If you want to take a cool field trip the first week of October, we've got just the place for you to go! The place is Austin and the event you won't want to miss is the **1997 Texas Wildlife Expo...** usually just called **Expo**.

Expo includes a great variety of outdoor activities and sports for boys and girls of all ages, and for adults, too. It gets better and better every year; this year is no exception. **Expo '97** is an expanded version of earlier Expos.

Expo focuses on fun-to-try, hands-on learning experiences that help **Expo** visitors learn about our state's many outdoor recreational opportunities. While kids and adults are learning about so many things at **Expo**, they're also learning a very important, big lesson: Their responsibilities as users of the outdoors.

Baseball legend and former Texas Rangers pitcher Nolan Ryan, one of the TPWD commissioners, is vice-chairman of this year's **Expo**. He has been a big supporter of **Expo** for the past five years.

Mr. Ryan said, "**Texas Wildlife Expo** has become an occasion where families come together to enjoy the outdoors and pass on a legacy of conservation."

Ryan added that **Expo '97** gives kids the chance to learn to fish, see live animals, and ask questions about habitat preservation.

Kids and adults can also learn about rock climbing, canoeing, Texas' cultural heritage, boating safety, wildscaping, game calling, freshwater and marine life, and more.

There will be all kinds of attractions at **Expo**, such as interactive displays, demonstrations, exhibits, workshops just for kids, and much more, besides.

A new feature at this year's **Expo** is called *The 101 Outdoor Seminar Series* and it is devoted to camping. There will be lots of information about equipment, different techniques you can use when you camp, and other valuable lessons to make camping easier and more fun for you and your friends and families.

Talk with your teacher, church youth leader, Scout leader, and the adults in your family to see if you can come to Austin for **Texas Wildlife Expo '97**.

We sure hope to see you there!

(Source of Information: *TPWD News*, June 23, 1997)



1997 Wildlife Expo

WHEN: Saturday, October 4 and Sunday, October 5. From 9 a.m. to 5 p.m. each day.

WHERE: TPWD Headquarters southeast Austin, 4200 Smith School Road.

COST: FREE to the public. Onsite parking is also FREE.

FOR: Youth and adults who want to learn more about hunting, fishing, bird watching, kayaking, camping and other outdoor pastimes.

For MORE Information: Call 1-512-389-4472 or contact <http://www.tpwd.state.tx.us>

Answers to True or False, Page 7

1. **True**
2. **False.** A bird must eat at least half its weight in food every day.
3. **True.**
4. **False.** Lightning strikes the earth 100 times every second.
5. **False.** When running at top speed, a jackrabbit can jump up to 15 feet.
6. **False.** Galveston Bay is the largest bay system in Texas.
7. **True.**