SEA GRANT COLLEGE PROGRAM

TEXAS SHORES

The lure of fishing

NOTES

Public comments on shrimping changes due

The Texas Parks and Wildlife Department (TPWD) is accepting public comment through July on regulations that department officials have proposed for the state's shrimp fishery.

The Texas Parks and Wildlife Commission will consider action on the regulations at its Aug. 31 meeting. Until then, the agency will hold three more public meetings, all beginning at 7 p.m., in July —

July 18, Texas A&M—Corpus Christi Natural Resources Center, Room 1003, 6300 Ocean Drive

July 20, Bay City Service Center, 2105 Avenue M, Bay City

July 20, University of Houston-Clear Lake, Room 2234, 2700 Bay Area Boulevard

Additional public comments also can be sent to Texas Parks and Wildlife, Coastal Fisheries Division, 4200 Smith School Road, Austin, Texas 78744.

The proposed regulations include the following —

- Establishing a minimum count size of 100 shrimp per pound year-round for bay and bait shrimpers, except during the fall bay season where the current 50 count rule would be maintained.
- Increasing nursery areas (off-limits to shrimping) from the current 12 percent of bay waters to 18 percent.
- Increasing bait bays from 34 percent of bay waters to 39 percent.
- Shortening the fall bay season by 15 days (season would end Nov. 30 instead of Dec. 15)
- Establishing a closed shrimping area in the Gulf from the Corpus Christi fish pass to the Texas-Mexico border from the beach out to five nautical miles.
- Extending the current winter Gulf closure by 30 days to run from Dec. 1 to Feb. 15.
- Establishing a Northern Shrimp Zone in the Gulf from the Corpus Christi fish pass to the Texas-Louisiana border from the beach out to five nautical miles. This proposal would also restrict vessels to no more than two trawls with a total width of 130 feet.
- Requiring the use of a bycatch reduction device in all trawls except bait shrimp and recreational trawls.
- Bolstering the agency's shrimp license buyback program through increases to commercial and recreational fishing licenses.

Erosion control subject of national conference

In an effort to help leaders of coastal communities control erosion, the Texas Shore and Beach Technical Conference will give participants the chance to learn what strategies have and have not worked for other coastal communities.

The conference, called "Success Stories and How 'They' Did It," will include sessions on a New Jersey beach nourishment and dune reconstruction project, the use of breakwaters to prevent erosion in Florida and habitat restoration projects. It will be held Nov. 16-17 at the Hilton Hotel-Hobby Airport in Houston and is sponsored by the Texas Shore and Beach Association and the Texas Sea Grant College Program.

Rich Tillman, Sea Grant marine agent for Brazoria County and chairman of the association's scientific and technical committee, said organizers hope the conference proves useful to city officials, public works officials, researchers and coastal property owners.

While similar conferences have been held in other coastal states, such as Florida, Tillman said this is the first time such a conference has been held in Texas.

Conference registration is $50, and people interested in attending may contact Patricia Newsom, executive director of the Texas Shores and Beach Association, at (713) 467-8098 or 9210 Bronco Drive, Houston, Texas 77055 or via e-mail at Pnew1314@aol.com.

Surfing the net for fishing advice

Need a saltwater fishing license? Want to know why people fish? In search of more information about recreational saltwater fishing?

Check out these Web sites:

http://lutra.tamu.edu/rbd/hdnr.htm — Human Dimensions of Fisheries Lab at Texas A&M University.

http://www.tpwd.state.tx.us/fish/coastal.htm — Texas Parks and Wildlife Department's coastal fishing site.

http://www.tpwd.state.tx.us/fish/hatch/seacenbr.htm — Sea Center Texas in Lake Jackson.

http://www.tpwd.state.tx.us/fish/hatch/gccabro.htm — John Wilson Hatchery in Corpus Christi

http://www.ccatexas.org/ — CCA/Texas site.

CONTENTS

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TEXAS SHORES

VOLUME 33, NUMBER 2

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MISSION - TEXAS SHORES is published quarterly by the Texas Sea Grant College Program in an effort to promote a better understanding of the Texas marine environment. Sea Grant is a partnership of university, government and industry focusing on marine research, education and advisory service. Nationally, Sea Grant began in 1966 with the passage of the Sea Grant Program and College Act. Patterned after the Land Grant Act of the 1860s, the Sea Grant concept is a broad-based scientific effort to better the world for all those living in and out of the sea.

HISTORY - In 1968, Texas A&M University received the distinction of being named among the nation's first six institutional award recipients. Three years later the school was designated a Sea Grant College. The university has a rich heritage of oceanography research dating back to 1949 when the program began. In addition, there is an ongoing program to get marine information to the public.

SERVICE - The effort is aided by six county marine agents serving eight coastal counties of Texas. These individuals are backed by a group of specialists in marine education, fisheries and business management, as well as aquaculture, environmental quality and seafood technology.

FUNDING - Sea Grant is a matching funds program. The Texas Sea Grant College Program itself is made possible through an institutional award from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, and appropriations from the Texas Legislature and local governments.

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Cast Away

By Jim Hiney

The sky was overcast and the wind whipped across the 61st Street Pier in Galveston in May as sisters Marcella Padilla and Maria Piscoya passed on a family legacy to Padilla's granddaughter and Piscoya's daughter.

With brand new kid-sized fishing rods and reels still in the packages, the girls walked quietly onto the pier for the first time as anglers and joined about a dozen other fishermen who barely noticed their arrival. That changed after Padilla's granddaughter, 4-year-old Brianna, and Piscoya's 6-year-old daughter Jessica made their first casts into the water and then squealed with delight when they thought they had fish on their lines. They did not but their disappointment, if any, could not fight past their huge smiles to show on their faces.

Melt away some years and move the scene to Lima, Peru, and the excitable girls could have been Padilla and Piscoya.

"My father used to take us fishing when we were very, very small," said Padilla, who runs a small medical supply business in Houston with her sister. "He loved to fish and he taught us that love."

Padilla recalled that her family visited the nearby Peruvian shores often, collecting what they caught and combining it into ceviche, a salad of raw or cooked fish, onion, tomatoes, hot peppers, olives, capers and herbs in lime juice. They made the meal right there on the beach.

Fishing remains a relaxing part of the women's lives. Frequent visitors to the 61st Street Pier, Padilla and Piscoya sometimes spend 24 hours at a time on the pier and "we even sleep here," said Padilla.

Piscoya, who characterized fishing as a "good, healthy sport," admitted that she is not much of a fisherman herself. "I'm the one who cleans the fish," she said with pride. "I help out. I'm the right hand man."

A slight flurry of activity at the end of the pier caught Padilla's attention. In a flash she headed for the action with the girls in tow. Someone had caught a small bonnethead shark. A few minutes later Padilla was back at her spot with the girls and the shark. Doing a bit of a victory jig, Padilla held up the shark and joyfully announced its fate.

"We're going to eat ceviche tonight!"

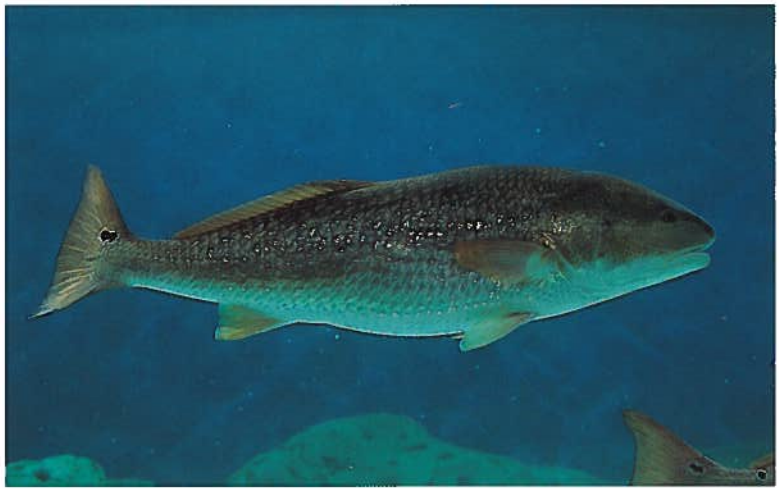
Some things never change.

Padilla's and Piscoya's love of and dedication to saltwater recreational fishing is something they share with thousands, and perhaps a many as a 1 million, other Texans who annually spend about $900 million on equipment, fuel, food, hotels, bait and everything else they need for the thrill of catching saltwater fish.

PHOTO © STEPHAN MYERS

Add in the "output" of the money, which is the multiplier that economists use to figure out how many times the same dollar bill is spent in an area before it leaves in someone's pocket, and recreational saltwater fishing has a $2 billion economic impact on Texas annually and supports about 25,000 jobs.

"Certainly it is a healthy expenditure," said Robin Riechers, management director of the Texas Parks and Wildlife Department's (TPWD) Coastal Fisheries Division. "The money stays in the local economy for awhile and it is certainly big business for the coastal economies, from hotels to guides to ice to fuels to local grocery stores."



Redfish

Texas saltwater anglers fish in the surf; off of piers, jetties and docks; from private boats and hired boats; waist deep in bays both big and small; and miles offshore, often past the state's territorial waters.

Just about anywhere there is access to fish-bearing saltwater an angler is sure to cast a line. Nearshore anglers generally fish for one of three species: red drum or redfish, speckled seatrout or southern flounder.

Offshore enthusiasts are after any one of more than 70 species of sport fish like red snapper, ling, marlin, sailfish, kingfish (king mackerel), wahoo, tarpon, amberjack, gafftop catfish, tuna, Atlantic spadefish and 14 species of sharks and rays.

Talk to saltwater anglers about why they fish and a few common themes recur in their answers. It is fun, relaxing, a chance to get outdoors and a chance for camaraderie with friends and family. Notice that catching the fish themselves is not one of the top answers that anglers immediately give, although studies show that more than 80 percent of anglers fish for the fun of catching something. In fact, many people judge the success of their fishing trips by the number of fish they catch, prompting Dr. Robert Ditton, a professor of wildlife and fisheries science, to observe that "recreational fishing is an activity cursed by the phrase, 'How did you do?'"

"Take somebody who is barely into fishing, like a single mom with a couple of kids. She decides to take the kids fishing to get them into fishing so they can enjoy the benefits that maybe she shared with her dad while fishing," said Ditton as he set up a hypothetical example. "Then they come home with no fish but they had a great day on the water. Everybody thinks they had a good time. They saw turtles in the water, they caught their own bait and they did all of these other things. Then somebody says, 'How did you do?' not 'What kind of a day was it?' Then the family begins to think, 'Maybe we didn't do too well.'"

Ditton, a sociologist who works among biologists in Texas A&M University's Department of Wildlife and Fisheries Science, has made a career of studying the human dimensions of saltwater fishing. He is the creator of the Human Dimensions Laboratory at Texas A&M, which he believes is the only project of its kind that studies exclusively the human dimensions of fishing. He has conducted numerous studies for TPWD and other groups looking at why people fish, what they want from the experience, how much they spend and are willing to spend for a fishing trip and what keeps them coming back for more.

His work helps his wildlife and fisheries science students "deal with the people aspects of wildlife and fisheries," he said. "I happen to think that is the tough part."

In terms of participation in possible outdoor activities in Texas, fishing lies in the middle, somewhere between hunting on the low end and so-called non-consumptive outdoor recreation activities like swimming, bird-watching, biking and walking.

As far as fishing is concerned, freshwater fishing draws two or three times as many participants as does saltwater fishing for obvious reasons. "It's easier to get to freshwater fishing spots and it's an easier type of fishing," said Ditton. "Most people who fish in saltwater probably started in freshwater."

There are enough different types of fishing and ways to fish that Ditton likens the sport to a grocery store. "People ought to be able to find the type of fishing that matches up with the benefits they are seeking from an outdoor recreational activity."

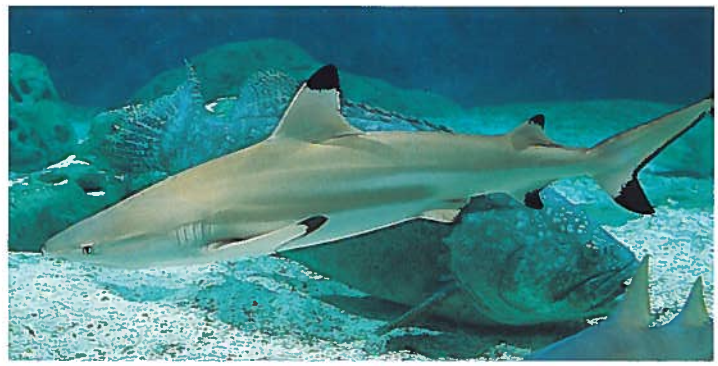
More and more Texans are finding the fishing experiences they want along the state's coast. While some of the state's fisheries show little if any growth, the sale of saltwater licenses continues to grow. More than 740,000 people bought saltwater stamps in 1998-99, the last year for which Riechers had data. Of those, 500,000 were stamps bought in addition to a regular freshwater fishing license. A large number of people obtained saltwater stamps when they bought TPWD's super combo license, a recent addition to the department's license offerings that gives the buyer all of the hunting and fishing permits available.

While license sales are promising, TPWD has no way of knowing how many people who bought saltwater stamps actually used them. But that is one question Riechers wants to ask on future angler surveys commissioned by TPWD.

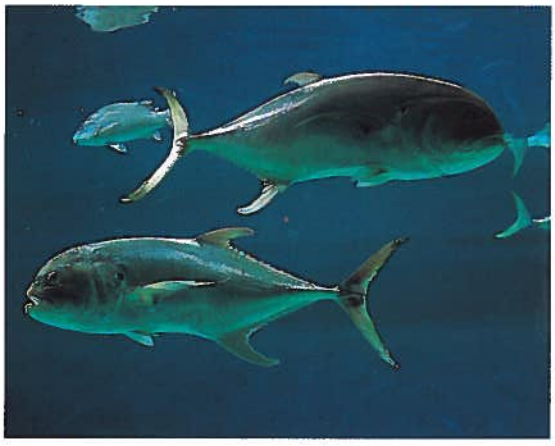
Still, Riechers refers to the state's saltwater recreational fishery as "a growing fishery and it is a healthy, big business fishery."

PHOTOS BY STEPHAN MYERS

Fishing tales



Black tip shark



Jacks

Jack McComb has spent most of his 80 years near Galveston's beaches. He has spent the past 30 years working on a couple of the local fishing piers collecting admission and selling equipment, food and drinks.

Now working the 61st Street Pier, which juts into the Gulf of Mexico at the intersection of 61st Street and Seawall Boulevard, McComb sees all types of fish and fishermen nearly every day. Fishermen range from rank amateurs who have to be shown how to use their rented fishing gear to the seasoned veterans who bring their own equipment and ice chests to haul off their catch. Those are the people who greet McComb by name.

Constant exposure to the same activity day after day might lead to burnout in some people, but not McComb. With a little sparkle in his eyes he points to his own fishing pole, which stands ready in the pier's small store waiting for the moment that "the water clears up and there are trout out there," he said with a grin. "Forget the business, man, I'm fishing."

He comes by his enthusiasm naturally, pointing out that he is the son of a man who was "the type of fisherman that if he saw a damp spot in the road, he'd throw a hook in it. He was something else."

McComb's father died doing what he loved best and his son remembers the day vividly. It was Memorial Day 1929 and McComb and his brother waited in the family car while his parents fished from a wooden groin at 24th Street.

"We saw this big crowd start to gather so we went down to see what it was," McComb said matter-of-factly almost 71 years to the day after it happened. "There were no handrails on the groin. My father had slipped on something, hit his head, fell into the water and drowned."

Still, the accident did not keep McComb from pursuing his father's passion.

"It's a good sport, that's all," he said. "It is a lot of fun. You get out there and you hook something and you lose all of your worries. You are worried about that fish getting on your hook, you're not worried about what's happening at home or something like that. When I worked at the Flagship (hotel) pier I would work the night shift. When I got off duty in the morning I'd be tired but if I went out there and started fishing, I'd perk right up and fish until I had to go to work again.

Black drum

"I'll catch anything, I don't care. I fish right out here on this corner with a jig," he said, pointing to a corner of the pier. "I'll catch flounder and some speckled seatrout out there."

Lest you think McComb fishes only for the catch, he maintains that he can, and has, had fun catching nothing at all.

"Fishing is relaxing. My wife and I used to take the station wagon and go out on the sand and sit out there with two or three rods, I'd have a little television on, we'd eat some lunch and sit down there all day. It didn't matter whether we caught anything or not. I would watch football games, cast out into the surf and stick the poles in the sand. I didn't care if the fish bit or not. We could get out and away from people."

What McComb brings to the practical approach to fishing Jim Ehman brings to the philosophical approach. Ehman has been assistant director of the Coastal Conservation Association (CCA) in Texas for the past 11 years and he spends his time monitoring CCA/Texas chapters from El Campo, Wharton and Bay City all the way to Brownsville, Laredo and San Antonio. Like McComb, Ehman's deep love of nature was instilled by his father during many fishing trips

"I've never considered myself an extremely religious person," Ehman explained. "I believe in God and I believe there are too many things in this world that people try to explain through science or common reasoning that cannot be explained. I can still remember being out in the Gulf and watching the sunrise on the horizon. My father was probably like I am — he wasn't in

church every Sunday although my mother was — and he said, 'Take a look at that.' There was the sun breaking out from behind the clouds and there were rays of sunlight shooting over the horizon and it was just amazing. He told me, 'If you can watch that and not realize something or someone a whole lot greater than us is involved in this world, then something is wrong with you.' To me that was pretty profound. Being out on the water and watching nature is my church."

Ehman is a Boerne native whose family made frequent trips to Port Aransas and eventually moved to Mustang Island because "my dad must have started looking at our hotel bills back in the 1950s," he laughed.

Characterizing himself as the luckiest child on Earth for being able to grow up on the island, Ehman has many fishing stories. One in particular stays etched in his memory. It happened when he was about 5 years old and was fishing for perch off of a dock known as Mathews Dock because it was adjacent to a supply store run by the Mathews family.

"Someone had caught a huge shark and towed it in the day before and drug it up under the dock," Ehman recalls. "One of the charter captains and another guy snuck underneath the pilings on the dock and got a hold of my line and they stuck the hook in the corner of the shark's mouth and pushed it out from under the dock. When it got out deep enough under the dock where it sunk, I felt something pull my line so I started reeling it in. Of course, everyone on the dock but me knew what was going on. I had a huge audience. When I saw that sharks head come up to the edge of the water I let out a yell, dropped the rod and took off running. There are still old folks on the island who say, 'Jimmy, I remember when you had a heart attack after hooking that big shark.' Memories like that are priceless."

McComb and Ehman exemplify why most saltwater anglers like the sport, according to a 1999 study by Ditton and one of his graduate students, Brian L. Bohnsack, done for TPWD. Anglers said they liked fishing as an activity because it is relaxing, they get to be outdoors, they leave their regular routines behind, they get to experience natural surroundings, they experience adventure and excitement, they get away from the demands of other people, it provides family recreation, they get to be close to the water, they share the experience with friends and they experience new and different things.

Focusing on the purpose of fishing, more than 80 percent of the anglers responding said they fish for the fun of catching fish. The vast majority of the anglers also said they like fishing for the experience of catching fish and for the challenge of the sport. Only 32 percent fished to put food on the table and 20 percent said they fished because they wanted to catch a trophy fish.

Ditton has learned from his work that people who fish often are very catch oriented but they also go fishing for all of the enjoyment reasons listed in his study. Conversely, "The people who are just barely into fishing — the people who might buy a license this year but may drop out of fishing next year — are very much into the catch," said Ditton. "They think that recreational fishing is all about catch. Unfortunately, they don't have the skills to do that and unless they go out with a guide they are good candidates to drop out of fishing. They don't appreciate all of the other benefits that come from fishing, such as the relaxation that comes from being outdoors, the getting out of the office, the getting away from the routine, the getting away from obligations. There is a lot of escape in fishing and a lot of quiet time. It's called the contemplative sport. Somebody who is barely into fishing has not realized those benefits yet."

This fisherman in Galveston is well prepared to endure the conditions at one of his favorite fishing spots. Like avid golfers, avid anglers will put up with unpleasant conditions to pursue the sport they love.

The studies that Ditton has done on the demographics of Texas saltwater anglers and future issues in saltwater fisheries management tells him that there "is no average saltwater fisherman in Texas. There are a variety of types of anglers, which is what Texas Parks and Wildlife wants to know. They are not looking for the average point in any of the issues and plan for that point. These documents tells TPWD who saltwater anglers are and where they come from so TPWD gets a sense of who their customers are. We talk about this as taking the pulse of their clientele."

Ditton's studies also give TPWD a feel for the different fishing environments, when fishermen fish and an idea of what anglers are spending and where . The studies reaffirm that less than 10 percent of respondents rate themselves as well skilled fishermen. The vast majority rate themselves as equally skilled or less skilled anglers., which tells TPWD educators and professional sportswriters alike that they need to write to less skilled people and give them the basics like what kind of equipment to buy, what kind of knots to tie and how to tell the difference in fish species.

As the heat of the summer sets in, anglers by the score will squeeze on to

PHOTO BY TEXAS DEPARTMENT OF TRANSPORTATION

Galveston's 61st Street Pier. "We'll have people shoulder to shoulder," predicts McComb, based on his experience. Many will have fish to show for their efforts. A few might even be lucky enough to leave with a one-that-got-away story like the one that McComb recounts from his days working on the Flagship Hotel's pier.

"I had hooked into this stingray and there was this guy there watching me fight it because it was huge," McCombs said. "But he had to leave and go to Houston. When he returned I was still fighting this fish three hours later. I finally got the ray up high enough to gaff him and he was about 200 pounds. While some guys were trying to gaff him they hit my line and broke my line after five hours of fighting that dude. It's okay, though. I would have turned him loose anyway."

Exciting stuff? You bet and it has to be experienced personally, said McComb, who observed, "You can't catch any fish at home."

Wal-Mart or Neiman-Marcus?

Fresh out of dental school, Drs. Peter Thompson and Perry Orchard decided to celebrate their achievement with some male bonding that included Thompson's father, father-in-law and cousin. While their wives shopped in Galveston, the men arrived at Pier 20 and climbed aboard the *Texsun II*, a 70-foot mode of mass transportation for 65 anglers and five crew members to deepwater fishing in the Gulf of Mexico.

The *Texsun II*, operated by Williams Party Boats Inc., is what is referred to as a party boat or "head boat" because customers pay by the head to get a seat and designated fishing spot along the edges of the boat.

About 12 hours later Thompson and Orchard returned with a large stringer of fish and a memorable story about the one that was not about to get away — a 66-inch, 80-pound ling.

"I saw him first. He swam over to the port side of the boat and circled back," said Thompson who had been fishing from the aft of the boat on the port side. "I cast out there and missed him, it was just a bad cast, so I reeled my line back in and cast back out and the bait landed nearly on top of him. He circled right back around and hit my bait. He fought it for a little bit and then he swam around the back of the boat."

Thompson was fishing with a live small blue runner that Orchard had caught minutes before to use as bait. Orchard, a veteran angler, was catching blue runners for their entire party. At the point that Thompson hooked the big ling near a natural gas platform about 38 miles offshore, Orchard threw his own blue runner in the water. The ling, apparently unfazed by being on Thompson's hook, took Orchard's bait as well.

At the command of the *Texsun II*'s captain, Tony Langdon, all of the other anglers on the back of the boat pulled their lines out of the water and backed up, giving Thompson and Orchard room to fight the ling. As soon as they brought the fish to the side of the boat, two of the boat's three deckhands used gaffs to bring the ling aboard.

As Thompson and Orchard congratulated each other, Langdon announced the catch to the other 55 anglers on board saying, "That is what fishing is all about."

Given all of the other family-oriented things to do around Galveston, Thompson picked fishing because his father is from Seattle and his father-in-law is from New Mexico and "They don't have the opportunity to get out in the Gulf very often so I thought it would be a fun day. I love being out on the water and seeing all of the wildlife. We love to fish and we love the meat, we eat it all of the time, but I just love being out on the water in the sun and the camaraderie with the family. It is a male bonding kind of thing."

On the other end of the Texas coast and angler spectrum are those who charter Bryan Ray to lead them on a half day or full day trip from South Padre Island. Ray carries no more than six people on his 35-foot boat, giving them a much more intimate fishing experience.

"I try to give them fun day of fishing," said Ray, admitting that some clients are easier to please than others. "One person can have fun with four or five fish but then the next person thinks you have to sink the boat to have a good day. Those are the folks that we try to stay away from."

Party and charter boats are the only way the majority of saltwater anglers have of reaching deepwater fishing spots that offer the most sought after deepwater prize — red snapper. By their natures, party boats and charter boats rarely if ever compete for customers. A party boat charges in the neighborhood of $70 per person for a day of fishing, Charter captains can charge between $700 and $1,500 for six people on a full day guided trip.

"It's like the difference between going to Wal-Mart and going to Neiman-Marcus," said Langdon. "If you can afford to pay $750 for six people on a charter boat, you are going to get better, more specialized service. You are going to get


21

Drs. Perry Orchard (left) and Peter Thompson pose with the 80-pound ling they landed together on the party boat Texsun II.

one deckhand for six people. We have three deckhands for 60 people. Party boat fishing is discount recreational fishing. It is cheap compared to spending $750 or $1,500 per day for a charter boat."

Charter boats in Texas far outnumber party boats, according to another survey led by Ditton, who is perhaps the busiest man in fishing research. His study, funded by the National Marine Fisheries Service (NMFS) and using data from 1997, found that there were about 185 charter boats and 18 party boats scattered from Galveston to South Padre Island.

In both industries, much of the success depends on the captain's skill and his secret fishing holes. Langdon's fishing spots brought Thompson and Orchard back for more. They first fished off of the *Texsun II* two years ago, after their sophomore year in dental school. As Thompson recalled, the pair had great success fishing then.

"There are some fishing spots out here that are mine and no one else knows about," said Langdon, motioning out into the Gulf of Mexico from the wheelhouse of the *Texsun II*. "I want to be able to take my customers there. There are some people who run small charter boats and yachts who come out here and steal — that's what it boils down to — the locations and then bring their boats and customers out here, which is unethical."

To that end, party boat operators do not allow anyone to bring portable satellite positioning devices on board their boats. Langdon has confiscated a few of the devices after seeing customers using them. The most likely offenders are the new faces who board the boat with their own, usually expensive, fishing gear.

Of course, there are times when Langdon pulls up to what he thought was his secret spot only to find that another party boat captain had found the same spot. "It's heartbreaking," he half chuckled.

Like Ray, Langdon wants his customers to have a good time.

"These people are looking to be entertained,' he said. "They want to go out and catch a couple of fish and have a good time. That has changed since I started working here 18 years ago. Then we had people who would come out and fish for poundage. They wanted their money's worth. That clientele has fallen by the wayside because of the limits and changes in the regulations."

Langdon referred to the bag and size limits imposed by NMFS on the capture of many species of fish in federal waters. In particular, NMFS regulates the number and size of red snapper that can be taken by one person in a day. Red snapper is the lynchpin of the offshore fishing industry. The party boat season mirrors the season that NMFS allows red snapper fishing. Currently, NMFS allows each angler to catch no more than four red snapper per day during the season and each fish must be 16 inches or longer.

"Now we are getting more tourists, people who want to go fishing and have fun. I'm looking to come out here and catch everyone a limit if possible. I want to try to catch some big fish, try to catch some red snapper and kingfish. I want to do the best I can and make sure there is some action."

Despite the knowledge and experience that Langdon has gained on the *Texsun II* in almost two decades, the day's action still depends on the whims of nature. Normally good fishing spots may not yield a single keeper. It is a possibility that Langdon passes on to his customers through a pre-departure warning to remember that this is just a fishing trip.

"I am trying to tell them to enjoy themselves for the day," he said "The wrong attitude to have is coming out here expecting to fill your freezer full of fish. The wrong attitude is expecting to go and catch enough fish to justify the ticket price in poundage of fish. If you want that, then you need to go to a fish market and buy fish. You want to come out here to have fun. You want to take your family out fishing and enjoy the day, catch a big fish and get someone to take a picture of it and enjoy yourself. Fishing is all about having fun. Going out, throwing a line in the water and not knowing what's coming back. That is part of the mystery of fishing in the Gulf."

In his 27 years of guiding charters into the deepwater of the Gulf, Ray has run across people with a poundage mentality. He recalled one trip in particular that he regarded as successful because the four or five clients on his boat had caught "a sailfish, a dolphinfish (also know as

PHOTOS BY STEPHAN MYERS

dorado or mahi mahi) and a couple of kingfish. On the way back to the dock I asked if they wanted to stop off and get a few snapper because I happened to know where there was a really good snapper hole. There was a big school of them. Well, they caught about 30 red snapper between four or five guys and so I told them it was time to go in. They got upset. They wanted to sink the boat with snapper. They wanted to keep catching them until they weren't catching them anymore. Those guys have not been back because I left that hole and brought them in.

"In the old days people thought that they could go fishing for one day, fill up the freezer with fish and not go fishing anymore and they would have fish all year to eat. Those days are long gone."

At one point in time, people thought the bounty of fish in the world ocean was limitless. Commercial and recreational anglers alike fished hard to bring home all they needed and more. Then fisheries began crashing around the world. Almost overnight the North Atlantic cod fishery disappeared. In the Gulf of Mexico concerned anglers realized that redfish, seatrout and red snapper were no longer as plentiful as they once were and seemed to be getting harder to find.

Both the state and federal governments stepped in with size and bag limits for some species and prohibitions on keeping other species, such as jewfish, Nassau grouper and certain shark species.

Ditton's surveys indicate that recreational anglers prefer length and bag limits to any other type of resource management measures.

Sitting in his temporary office at Pier 20 in Galveston, John A. Williams does not agree with the size limits that the government says have helped sport fish populations rebound, particularly when it comes to red snapper. Red snapper control their depth with an air bladder. Many times the fish is brought up from the depths more quickly than it can adjust its air bladder. As the fish rises and the water pressure decreases, air in the bladder expands.

That does not pose a problem for legal size fish because they end up on an angler's stringer, destined for a dinner table. But undersized fish are thrown back in the water with what amounts to blown up balloons poking out of their mouths. Those that do not die from the trauma of being caught are left to float helplessly near the water's surface, making them easy prey.

Increasing size limits make the problem worse, said Williams, president of Williams Party Boats Inc., because more undersized fish are caught. He favors a four-fish bag limit with no size limit, thus eliminating the need to throw any fish back in the water

But of more concern to Williams is what he sees as the whimsical way that the federal government has changed some its management regulations regarding red snapper. Since most of the *Texsun II*'s trips take anglers well into federal waters, it is the NMFS-passed regulations that affect the company's operations the most.

"The thing that is concerning us is that once the regulations are in place, they don't seem to stay in place very long," said Williams, who grew up in the family business begun by his father in 1946. "In 1999 we had a 15-inch size limit on January 1. At its May meeting the Gulf of Mexico Fishery Management Council (GMFMC) proposed an 18-inch size limit and NMFS approved it. The next thing we knew in June we had an 18-inch size limit. They changed the regulations in midstream. The year before that we had a five-fish bag limit and in April 1999 they changed it to a four-fish bag limit. At the beginning of the year we don't know if the regulations we start with are going to be the regulations that we end up with. This year they promised us that the regulations will not change, that we will have a four-fish bag limit and a 16-inch size limit and the season is going to be open until Oct. 31."

Regardless of whether the regulations remain the same, both Williams and Ray said their businesses were hurt when NMFS delayed opening the red snapper season this year from January 1 to April 15.

The federal government's logic behind the delayed opening, as it was explained in a regulatory amendment to the GMFMC's reef fish fishery management plan, was that it would allow for the longest recreational season possible — given a four-fish bag limit per person per day — before recreational anglers caught the 4.47 million pounds of red snapper they are allowed each year. The delay also allows the recreational season to be open during the summer and part of the fall, which are peak fishing times

For Williams and Ray, it meant they missed lost valuable business early in the year. Ray capitalizes on the fishing-happy winter Texans who descend on the Rio Grande Valley each year, especially during January and February. Williams said not many tourists climb aboard his boat in the winter but there are many locals who like fishing then. Williams also missed out on spring break vacationers in March and April who he said give his business a jump start heading into the summer. Winter Texans still visited southern Texas and spring breakers still partied in Galveston, but they didn't go fishing because they could not catch red snapper. No other sport fish in the Gulf of Mexico held enough allure to attract the usual winter business, leaving would-be anglers to find something else to do.

"The thing that we're concerned about is that people will get accustomed to doing something else and then they'll forget about going fishing with us when the season does open," said Williams, who has served on the GMFMC's Reef Fish Advisory Panel and is now chairman of the council's Red Snapper Advisory Panel. "More than anything we'd like to see some stability in the fishery. If we knew that we were going to have these regulations in place for three years, then we would know how to operate our businesses. We used to not know what the regulations were going to be from year to year. Now it is very difficult to run a business when you don't know what the rules are going to be month to month."

Langdon fears that the party boat industry may one day be regulated out of business. He has begun taking computer courses at the University of Houston-Clear Lake so he can take up a new career if need be.

Party boat operators all along the coast are trying to diversify so they can keep their businesses open year-round and keep their crews working. Since 1990, Williams has offered 36-hour trips in the winter targeting tuna that gather around oil and gas rigs 100 miles out in the Gulf.

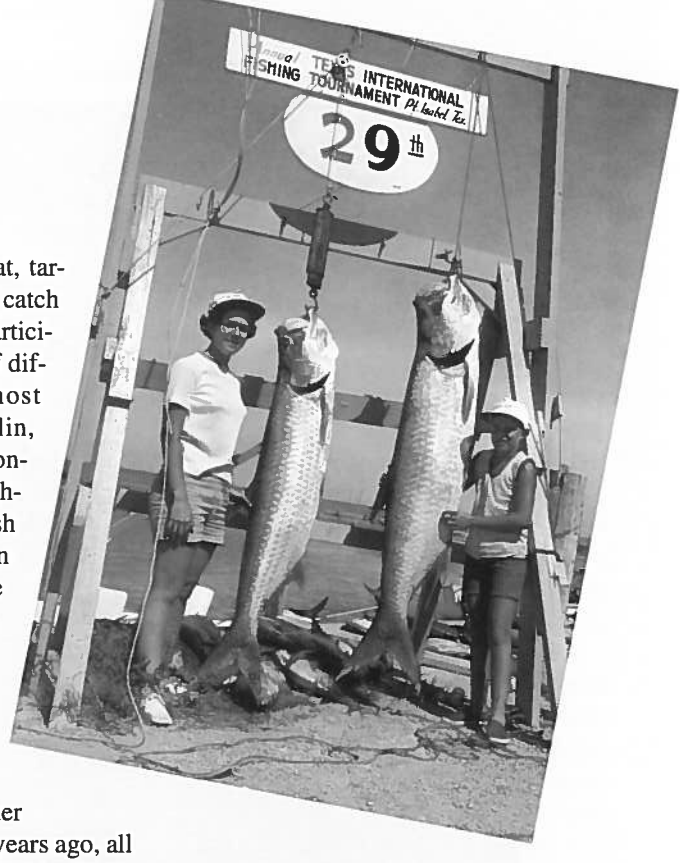
Further down the coast some party boats offer birding trips. Williams has talked with birders about the possibility of similar trips around Galveston, but he has not yet decided if he can attract enough business to make the trips worthwhile.

Ray, too, is doing what he can to diversify. "That's why I'm selling real estate."

John Williams, president of Williams Party Boats Inc., which runs the Texsun II.

PHOTO BY STEPHAN MYERS

Trophy time



More than 1,000 anglers, some professionals but most amateurs, from across the nation and world converged on South Padre Island last year in a quest for one thing — to be named a grand champion in the Texas International Fishing Tournament (TIFT).

The prizes are nothing more that trophies but they are more than sufficient to attract a record number of participants "because of the prestige of the event," said Betty Wells, the woman who has planned and coordinated TIFT for the past 12 years. "People want their names inscribed on the perpetual trophy as a grand champion."

Tournaments, while a small segment of the recreational fishery, can have a tremendous impact on the communities that host them. A study of the 1999 TIFT done by Ditton, Bohnsack and Texas A&M researchers David Anderson and Stephen Sutton found that the 1,272 registrants spent more than $1.3 million, not including tournament-related expenses, during the five-day tournament. Registrants spent an average of $383 per person per day, which is substantially higher than the average visitor spends in the area, thus achieving the goal established for the tournament when Doc Hockaday started it in 1933.

"The tournament was designed to stimulate the growth and development of tourism in the Rio Grande Valley as well as to promote the exceptional fishing that existed here," said Wells. "I think the tournament has remained true to its original purpose throughout the years and has become very much family oriented and a tradition for most participants. What we found in the economic impact survey is that most of our anglers had fished the tournament six times or more."

TIFT is now the largest saltwater tournament in Texas and the second oldest behind the Deep Sea Roundup based in Port Aransas. TIFT awards a total of more than 100 custom made trophies in three divisions: bay, tarpon and offshore.

The bay division fishermen concentrate on catching redfish, speckled seatrout and flounder. Tarpon Division contestants are after just that, tarpon, but they are limited to catch and release only. Offshore participants can catch a number of different species but the most sought after are blue marlin, white marlin and sailfish. Contestants are limited to weighing in their single heaviest fish of each eligible species on each day. They accumulate points over two days of fishing. Participants with the highest scores for each species are crowned grand champions

In one case, a grand champion turned out to be her mother-in-law. About eight years ago, all five feet and 120 pounds of Bobby Wells landed a 170-pound tarpon while she was fishing from the South Padre Island jetty.

"A crowd of people was there watching as she fought that fish for about three hours," Wells recalled. "The media was giving blow-by-blow reports."

Ironically, Bobby Wells' husband, who was a fishing guide, guided Thomas Gibson Jr. to his 210-pound state record tarpon in 1973.

One factor that sets TIFT apart from some other tournaments is that no fish go to waste. Wells spoke with pride about the group of volunteers from the Rio Grande Valley who fillet the fish that the anglers do not want, ice it down and distribute it to boys and girls homes throughout the valley.

The only barrier to TIFT's future growth is a lack of boat slips for the deepwater boats that come in from outside of the Rio Grande Valley. The local marinas fill quickly and Wells finds herself contacting private landowners and asking to sublet space.

"We put them wherever we can find a spot, but we could sure use some more," said Wells. Other than that, Wells sees no reason to change anything about TIFT. "This tournament has survived for 62 years. If it's not broken, then we're not going to fix it."

If TIFT is the largest saltwater tournament in Texas, then the CCA's STAR Tournament is the longest and the one flung most far afield. Open to CCA members only, the STAR tournament began May 27 and will end Sept. 4. Its boundaries are those of the Texas coast between the Louisiana and Mexico borders.

Participants who catch specially tagged redfish win a new truck and accompanying boat/motor/trailer combination. In addition to trucks and boats, the STAR Tournament awards scholarships in two youth categories — STAR Kids and STAR Teens. STAR Kids is open to kids ages 6 to 10. They vie for three $50,000 scholarships awarded to the participants who land the heaviest gafftop catfish, sheepshead or flounder.

STAR Teens is open to participants between the ages of 11 and 17. The participant who lands the heaviest trout receives a scholarship through the Texas Tomorrow Fund, a prepaid tuition program administered by the state of Texas.

Events like the STAR tournament are great ways to get kids involved in fishing and keep them from participating in the less desirable alternatives that tempt kids today, said Ehman.

"I feel that all of us have the opportunity to influence young people in a positive way and we should take advantage of that opportunity," he said.

PHOTOS COURTESY TEXAS DEPARTMENT OF TRANSPORTATION

Catching tarpon has been a part of the Texas International Fishing Tournament since it began as the Rio Grande Valley Fishing Rodeo in 1934 (above). At right, this picture from 1922 shows two fishermen at Port Lavaca with what are believed to be jewfish, members of the grouper family. Jewfish are now protected by state and federal laws that prohibit anglers from keeping them.

More lines in the water

The face of recreational fishing in Texas has definitely changed in the past century. Information compiled in the 1880s by the federal Bureau of Fisheries told of people in Galveston bay catching jewfish and Spanish mackerel — species normally found exclusively offshore.

Anecdotal accounts from the mid-1800s tell of the vast wealth of *sea life* taken from the state's waters, a practice that continued well into the 1900s by an increasing number of both recreational and commercial fishermen.

"I started on the piers in 1969," said Jack McComb from his perch inside Galveston's 61st Street Pier. "They didn't have any limits on how many fish they could catch then like they do now. I've seen a decrease in the number of fish being caught, but I don't know whether it is because of pollution or the way the fishermen acted.

"Many times I saw where guys would cast a net and any fish that were small were left on the beach instead of throwing them back in the water," he continued. "They did that to get the net out quicker to catch more fish to sell. I remember working on the Flagship pier in 1972 and the fishermen there caught 377 bull reds (redfish that today would exceed the state-imposed maximum length of 28 inches) in one day, but there was no limit to it."

On an average day a fisherman might catch 15 or 20 large redfish and then head into Galveston's residential areas. "They'd holler 'fresh fish' and they would sell them for $5 apiece or something like that," McComb said.

Hammered by both commercial and recreational fishermen, the state's popular redfish and speckled seatrout populations were on the decline. By 1977 the situation became so bad that it prompted a group of avid saltwater anglers to meet and discuss solutions to the problem. They formed what is today the Coastal Conservation Association, which boasts 70,000 members in Gulf and Atlantic coastal states from Texas to New England. Texas itself has about 40,000 members.

CCA bills itself as organization of conservation minded sportsmen whose goal is the preservation and enhancement of marine resources. "We want to make sure that in the future we have things to take care of and conserve on the coast," said

Most anglers say they fish because it is a relaxing activity. It is what Dr. Robert Ditton characterizes as a contemplative sport.

PHOTO BY TEXAS DEPARTMENT OF TRANSPORTATION

CCA's Ehman. "We support the intelligent and well thought out use of our resources."

In those early years the group was known as the Gulf Coast Conservation Association. Its list of chapters stopped at the Louisiana border and its membership and perceived political clout were nowhere near where they are today. In the halls of the Texas Legislature, GCCA and recreational anglers as a whole were seen as the Biblical David to commercial fishing's Goliath.

"Issues consolidate and unite sportsmen," said Ehman. "That is where Texas was extremely fortunate at the time we started all of this. There were some real black and white issues. Our trout and redfish populations were crashing. The biologists with TPWD could show us this tailspin cycle that we were in and it pretty much mirrored the advent of the use of monofilament gill nets in our waters."

So in 1981 GCCA pushed for passage of House Bill 1000, which called for the elimination of commercial fishing for redfish and seatrout. Instead, the bill designated the fish as game fish and allocated them to the exclusive use of recreational anglers. Not surprisingly, the bill met strong opposition from the commercial fishing industry.

"There were probably 110 commercially licensed fin fishermen in the state of Texas at that time and a lot more who were not licensed," Ehman remembers. "Even the restaurant association opposed losing the trout and redfish. But even they came to admit that it was a serious problem. They wanted a supply of fish that they could count on and they felt for a long time that the trout and redfish were what they could count on from the commercial fishermen. But it got so bad in the late 1970s that they were having trouble counting on a steady supply of fish because the fish populations were being hammered by commercial fishermen."

To the surprise of some, HB 1000 passed and became what Ditton characterized as "a landmark piece of legislation."

"The Legislature passed HB 1000 with limited scientific information, unlike what happens in other places where fishing pressure rides the stock down into the ground before regulatory agencies do anything," said Ditton. "Texas legislators said, 'We think we know what is happening here but we're not sure and we don't have time to do a 10-year study so we are going to eliminate the commercial pressure nearshore.' While there had not been very many studies done on the recreational fishing industry prior to that, obviously they flexed their political muscle and the state decided that it was in the public interest to reallocate the fish."

CCA was successful in helping get HB 1000 passed because its members took to heart one of Ehman's favorite axioms. "You can beat on your chest all you want about important issues, but you won't get anything done until you go to Austin and beat on your legislator's chest."

CCA takes some heat from critics who claim the group's actions are purely selfish. The group wants only to preserve marine resources so its members have some-

thing to catch.

"That's not a real fair statement," Ehman counters. "We get involved in way too many environmental issues. If you look at our membership compared to the number of people who fish in saltwater, it is a lot like National Public Radio. Everybody who turns on PBS or NPR benefits, but they are not all subscribers or members. If you like fishing on the coast, we are probably the only ones who are really humping it and getting after it to do things that are issue oriented and are improving things."

The Texas Parks and Wildlife Department hopes to reduce shrimp bycatch through use of BRDs and a license buy-back program.

As an example, Ehman points to CCA's involvement in building two saltwater hatcheries that stock redfish and speckled seatrout along the coast. Those fish could be caught by anybody, he said.

"That is not a member deal. We want people to be members because there is strength in numbers whenever you go to try to do something. But the things that we accomplish benefit everybody."

Today, TPWD focuses its energy on managing the state's fisheries so there are plenty of fish for anglers to catch now while at the same time making sure that there will be fish for future generations to enjoy. It is a concept called sustainability.

TPWD enforces strict size and bag limits on species that need protecting. At the same time, the agency assesses fish populations annually by counting samples of fish caught in gill nets, bag seines and trawls. It is a practice TPWD has been using since 1975. Every species caught in a TPWD net, even non-sport fish, are counted and cataloged.

"We're looking at it in a very holistic type manner," said Larry McEachron, science director for TPWD's Coastal Fisheries Division. "We're looking at the prey, the predators and everything that goes with them. The data provide us with status and trends through time so we know how the populations are doing. The information helps us if we need to tweak the regulations for a particular species of fish."

The agency also surveys anglers at dockside about the kind, number and size of fish they catch on any given day. Combine that with a self-reporting system that gathers the same information from commercial fisherman and TPWD has a good idea of how many fish are being harvested.

The numbers for the most popular sport fish are mostly encouraging. The populations of redfish and speckled seatrout are at their highest levels since 1975 and black drum are at their highest levels ever. The southern flounder population, while lower than TPWD would like it to be, is at least sustaining itself at the lower level.

However, populations of Atlantic croaker, sand seatrout and some other species that are important recreationally are down. Many of those species end up as bycatch in the nets of the state's bay shrimpers. To that end, TPWD is looking at possible regulations mandating bycatch reduction devices (BRDs) be installed in the nets of all shrimp boats operating in Texas. BRDs are already required on shrimp boats working in federal waters. NMFS's goal is to cut shrimp bycatch by 50 percent.

"We don't have a defined goal or a percentage decrease in bycatch that we are targeting," said McEachron. "What we are seeing in our sampling now, and we are in the third year of study with bycatch reduction devices, is that the devices we use can reduce bycatch anywhere from 5 percent to 25 percent. We don't have a target percent because the size of the animals in the bay makes them a little bit harder to kick out of the net than the animals in the Gulf of Mexico, where the organisms are bigger. Right now, any reduction that we get in bycatch will have a positive impact because of the size of the animals. We are reducing the mortality on the juvenile fish."

The BRD study will be ongoing for the next few years. It will move from Galveston Bay, its current home, to Aransas Bay next year. There, TPWD will test some innovative BRDs that have shown themselves to be very effective in Australia, said McEachron.

Texas has already implemented a license buy-back program in an effort to decrease the number of shrimpers in Texas waters. But at an average price of $6,000, it is readily apparent that the people who are giving up their licenses did not rely on shrimping as their primary income. Few people would give up a livelihood for $6,000 so the shrimpers putting the most pressure on the resources are still working the bays.

"There is no doubt that TPWD is buying out the marginal ones at first," Ehman readily admits, "but with this new initiative I believe we are going to get new dollars to work with. I don't think the state has had enough dollars to really make a reasonable offer."

Ehman referred to a recently passed proposal that will add $3 to each saltwater fishing license sold in the state. The added revenue is earmarked for the buyback program

Part of the credit for the increasing redfish population rests with TPWD's restocking programs. The agency runs three saltwater hatcheries, one in Corpus Christi, one near Palacios and one in Lake Jackson. They had tremendous help building and maintaining two of the three from CCA and third partners. Central Power & Light donated 60 acres of land adjacent to its Barney M. Davis power station southwest of Corpus Christi for the CCA/CPL Marine Development Center. CCA contributed $1.4 million in construction costs and the hatchery opened in 1982. It began restocking redfish in 1983.

Dow Chemical donated 75 acres of land in Lake Jackson and helped TPWD

PHOTO © STEPHAN MYERS

and CCA raise $13 million to construct Sea Center Texas, which became the largest redfish hatchery in the world when it opened in 1997. CCA, Dow and CP&L remain cooperative partners in both hatcheries, which are run by TPWD staff.

The third hatchery is the Perry R. Bass Marine Fisheries Research Station, which was built and is run by TPWD.

Between the three hatcheries, about 30 million redfish fingerlings are released into the state's coastal waters each year, said Connie Stolte, Sea Center Texas' hatchery manager.

"In some areas we are seeing some enhancement that's going on with the red drum stocking,' said McEachron. "We've detected coast-wide enhancement in at least two of seven years, which is really phenomenal because when you look at the coast-wide area and the masking of all of the environmental effects that go on, it is just amazing you can even detect that we've seen stocking success or enhancement on a coast-wide basis."

Each of these 3,500 gallon tanks at Sea Center Texas holds adult redfish or trout that produce the young fish that are restocked into the state's bay systems.

TPWD is also restocking speckled seatrout, but not to the same extent as they are stocking redfish because the project is still in the research stage, said McEachron. "We're basically holding the brooders in case we have a freeze or red tide event that decimates a local trout population. We're mainly stocking trout in Galveston and Matagorda bays and the upper and lower Laguna Madre.

Speckled seatrout pose a different situation than redfish. While redfish reared at either hatchery can be restocked anywhere along the coast, researchers have found that speckled seatrout differ slightly genetically from bay system to bay system. To maintain a population's genetic integrity, fingerlings have to be released back into the same bay system where their parents were captured.

Still, TPWD does release about 2 million speckled seatrout fingerlings into each of the four bay systems.

Contrary to popular belief, "Our goal is not to create a super redfish or a super trout,' said Stolte. "Our goal is to enhance the natural populations that are already out there."

The hatcheries also promote education about marine resources. Sea Center Texas in particular offers a spectacular 15,400-square foot visitors' center that focuses on marine life in Texas Bays and the Gulf of Mexico. Visitors first see a 20-foot touch pool that allow them to handle blue crabs, hermit crabs, clams, starfish and snails.

After that, visitors begin a long, u-shaped walk past five aquarium tanks that replicate different ecosystems: coastal marsh, coastal bay, jetty, artificial reef and offshore Gulf of Mexico. The tanks range in size from 1,000 gallons in the coastal marsh exhibit to the 53,000 gallon offshore tank.

Children in particular are drawn to the offshore tank partly because it features sharks and snappers but mostly because it is home to Sea Center Texas' mascot, a 300-pound grouper named Gordon.

"At Sea Center Texas you see a grassroots level of education where the staff is taking every opportunity to get people to understand about the natural resources of Texas, to understand the environment, to understand how to protect those resources and how to have fun doing it," said TPWD's Robin Riechers.

Compared to other states, Texas' fisheries management program is "light years ahead of everybody," said McEachron. "I really believe that mainly because of our programs. We've got the longest running monitoring program going. We also have a Parks and Wildlife Commission that is not made up of industry members and that takes an objective view on preserving and protecting the natural resources of Texas. They take their job very seriously and we have a lot of support for them to do what is right biologically, socially and economically. They let us do our job. We make recommendations and they make the final decision. In a lot of other states and in the federal government the political process dictates the management of the fisheries. Our commissioners, our staff and the Governor's office are very visionary, very forward thinking when it comes to fisheries management. I think other states tend to be more reactionary."

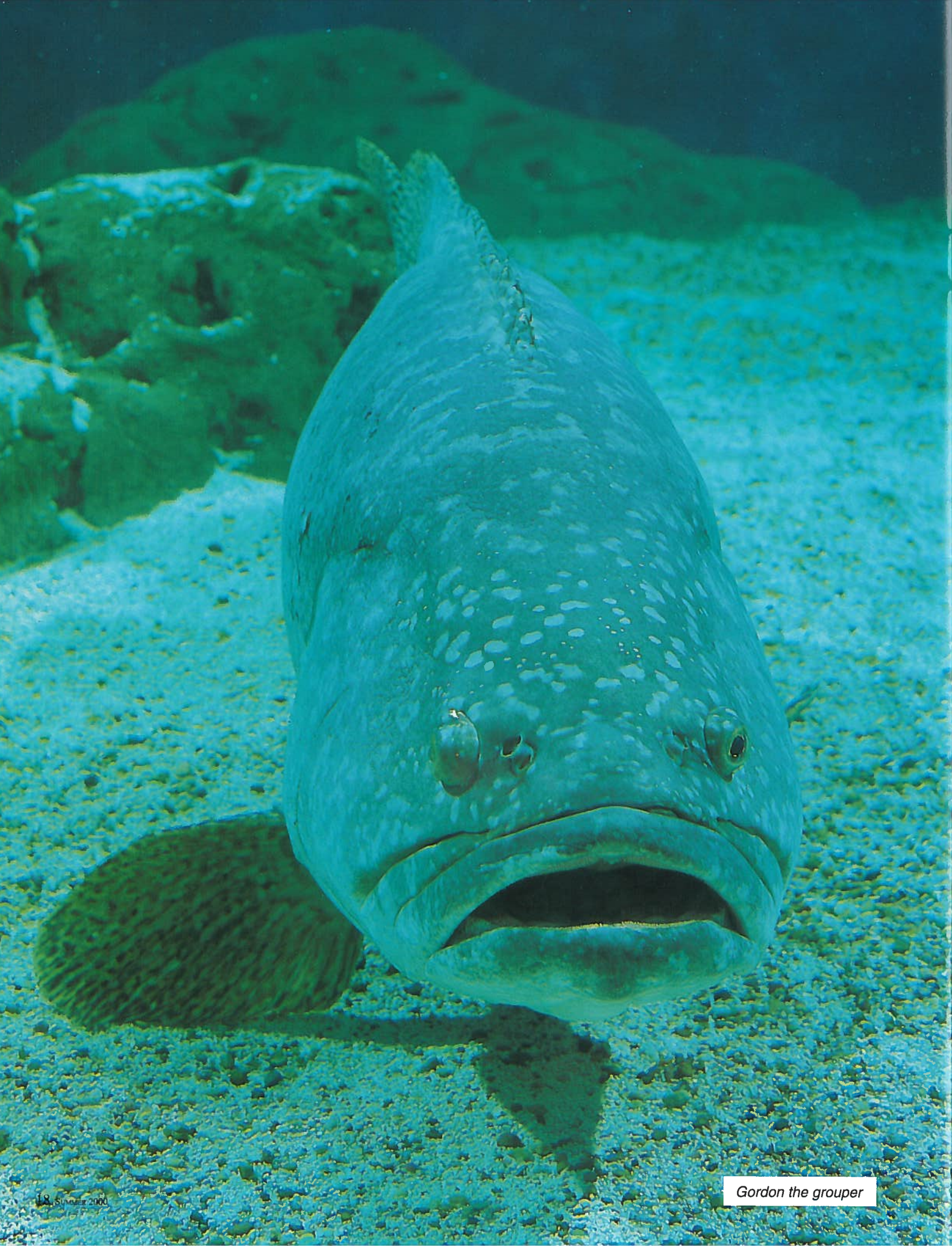
NMFS protects deepwater fish species in federal waters much the same way that TPWD manages fish in state waters — through size and bag limits, population monitoring and setting seasons for catching some species. The species that draws the most attention is red snapper and it has been at the center of a heated debate between shrimpers, the government and both recreational and commercial fishermen for years.

At issue is how many juvenile and undersize red snapper die each year and who is responsible. Shrimpers claim that recreational and commercial anglers kill thousands of undersize red snapper — those less than the 16 inches long — when they throw them back in the water to die from trauma or as dinner because their inflated air bladders cause them to swim helplessly near the water's surface.

NMFS and the anglers say that up to 30 million of the youngest red snapper, those under 2 years old, die as bycatch in shrimp nets annually. One group of anglers claims that shrimp nets annually catch 80 percent of juvenile red snapper.

John Williams, whose living depends largely on having lots of red snapper or his customers to catch, chuckled at the last claim. "I think there are probably a lot of

PHOTO BY STEPHAN MYERS



Gordon the grouper

fish killed in the nets by shrimpers but as far as red snappers are concerned I have always contended that I don't think the problem is as severe as NMFS says. It is difficult for me to believe that the shrimpers can catch 80 percent of the juvenile red snapper that would be available for the directed fishery when they can't even catch 80 percent of the shrimp out there."

Given the talk about how increased fishing pressure hurt sport fish populations, TPWD finds itself in the odd position of trying to attract more people to buy fishing licenses. The majority of the agency's funding comes from license fees. While saltwater stamp sales have increased, sales of generic fishing licenses are relatively flat.

TPWD does receive some federal funds each year, more than $12 million. NMFS gives TPWD a few thousand dollars each year for programs that monitor resources in the Gulf of Mexico. The majority of the funds, about $12 million, comes from the Federal Aid in Sport Fish Restoration Program which was created in 1950 by the Federal Aid in Sport Fish Restoration Act (SFR). Its shorter, more manageable nickname is the Dingell-Johnson Act, so named for its congressional sponsors. Based on the 1937 Federal Aid in Wildlife Restoration Act, SFR sought to create firm financial footing for sport fish restoration programs across the nation.

Money for the original program came from excise taxes that sportsmen paid on boats, fishing gear and other fishing-related items. The Wallop-Breaux Amendment to the act, passed in the 1980s, expanded the number of items subject to tax collection under SFR

The funds are distributed to the natural resource agencies in each state. The amount of money each state receives is based on a formula that considers the size of the state and the number of fishing licenses sold.

In general, the $12 million is split 70 percent for freshwater activities and 30 percent for saltwater projects. The split is based on the percentage of fishing licenses sold for each fishery, said Nick Carter, the TPWD federal aid coordinator in charge of handling Sport Fish Restoration Program money.

Some of the money, 15 percent to be precise, must be earmarked for boater access facilities, which means maintaining or building new structures, like boat ramps, that provide boaters with safer access to the water. The remaining $3 million apportioned to the saltwater fishery can be used for any program that deals with the management of sport fisheries. Carter said some of the money supports research at the state's fish hatcheries and about $1 million goes to paying for the angler and sport fish surveys.

Spread over that wide of an area, $3 million does not go very far. While the money is important, Carter said SFR's most important benefit is that it protects the state's fishing license fee revenues and SFR funds from being used for anything other than operation of the fisheries portion of TPWD. Any money diverted to parks projects must be paid back to the federal government before a state is again eligible to receive SFR funds, Carter said.

SFR aside, Texas finds itself in a position shared by many other states — declining fishing license sales. Texas has weathered the storm better than some other states because TPWD was able to convince the Legislature that it needed to keep the cost of licenses up to offset declining sales.

"In contrast, the cost of a license in Minnesota today, in adjusted dollars, is less than it was in 1970, so they are pinched dollar wise and their numbers are down slightly," said Ditton. "But there are states where there have been sharp declines in anglers. I guess the take home message from this is that attracting new anglers should be important to agencies because they derive 96 percent to 98 percent of their state fishery management budget from anglers."

The state's first job is to hang on to the anglers they already have and build on that base, which Ditton admits is not an easy task.

"For TPWD to promote fishing and to double the base they would have to take on computers, the extreme games and all of these other kinds of things that are vying for young people's attention," he said. "They will have to take an activity that is contemplative and reinvent it for people with a short attention span today. I don't think that is going to happen but I think as far as renewing the message that this activity is out there, that it is a contemplative sport, that it does have these kinds of benefits and remind people of that, hopefully it will play with youth and play with people who have fished previously and will return to fishing."

TPWD has turned to Ditton and his surveys to find out what Texas saltwater anglers want and expect from the state. While his previous studies have focused on identifying TPWD's fishing clientele and why they fish, he is currently conducting a survey that asks anglers how they feel about a variety of issues, from where they get their fishing information to environmental topics like where they stand on catch-and-release programs and how they want to see TPWD protect habitat.

The survey, which should be completed by the end of the summer, looks at all aspects of TPWD's work in saltwater fisheries, including law enforcement and state parks. To do that, Ditton had to get representatives from TPWD's various divisions together to help design a cross-cutting study that even asks anglers to say how satisfied they are with the job TPWD is doing in all areas.

"This is the first time we've been able to do a survey like this," said Ditton

In a survey completed in 1998, Ditton did note some niche markets TPWD can explore. He and fellow researchers noted that the majority of Texas' saltwater anglers are middle-aged white men and they suggested that TPWD try to achieve a better understanding of the needs of minority anglers in an attempt to lure more minorities into the sport.

"When you talk about fishing as an outdoor recreational activity you are marketing an activity," said Riechers. "Within any activity or market you can have marketing niches. We are basically in the business of trying to provide recreation and a quality experience. If fly-fishing is important, then there may be ways that we can create better fly-fishing experiences. If kayaking and fishing are important, then there may be ways we can create better experiences there.

"We need to know how and where those people are participating. If we know that those needs and wants are there, then we can do a better job trying to fill them. If we don't know who those people are or how many of them there are or what those needs are, then we are blindly providing a service that we think is being utilized. In our human dimensions work we are trying to find out as much as we can about the participants so we can provide better service."

PHOTO BY STEPHAN MYERS

Passing on the legacy

As much fun as it is to fish for hours and possibly bring home a stringer of big fish, Ehman and others believe the real excitement is getting kids involved in fishing so that they can have a hobby for a lifetime.

Intimated in that feeling is the reality that in order to pass on the legacy the adults of today must make sure that there will be fish of tomorrow.

"I would like to think that there are some things that we can still do so that my grandchildren might have some of the same opportunities that I did to go fishing and enjoy the water and enjoy being on the coast," said Ehman.

There is only so much regulating a regulator can do. Size and bag limits protect fish populations from the anglers who seek them but not from the pressures applied to the ecosystem by an ever growing coastal human population. The freshwater people use, waste they create and runoff pollution that comes with more hard-topped surfaces pose just as much danger, if not more, than a hook in the water.

"I remember my favorite author growing up was John D. MacDonald," said Ehman. "He was a fiction writer from Florida who was extremely intelligent and a good writer. He was also an environmentalist and he talked about how people would move to Florida from the Midwest and as soon as they moved there they wanted to lock the gate. They wanted it to stay just like it was when they got there. You can't do that. You can't put a glass jar over the coast anymore than you can over the mountains in Colorado.

"People confuse conservation with preservation. If you conserve something, my feeling is that you make it last as long as it possibly can so that more people will have the opportunity to benefit from what is here without destroying it. But you can't just put a glass jar over the coast and say that no one else is moving down to the coast and we are going to make it like it was 100 years ago. That will never happen."

The answer, said Ehman, is getting kids involved in fishing and in doing so making them aware of how their actions affect the environment. Fishing can also make a huge difference in a child's life, which is a lesson Ehman learned in earnest about eight years ago when he was working with CCA's Corpus Christi chapter on a kid's fishing day there. The day was not planned for the children of the chapter members. Instead, one member suggested that the chapter invite kids from a YMCA program for children who came from disadvantaged home. Some of them came from single parent homes while others had physical problems.

Ehman got hold of 40 rods and reels that Zebco, the large tackle manufacturer had used in a summer camp and then reconditioned to sell to programs like CCA's kid fishing days.

"We had a rod and reel for each of the 40 kids who participated that day," said Ehman. "Well, there was a little girl there and she was about 6 years old at the time. The little girl had been raised in a foster home and at that time had a severe speech impediment. She was just as sweet as she could be.

"We were catching hardhead catfish and croaker right there off the bulkhead. I was standing there talking to Buddy Gough who was the outdoor writer then for the Corpus Christi Caller Times, when this little girl came up to me and pulled on my shirt sleeve. She asked, 'Are you Mr. Ehman?' I said, 'Yes honey, I am.' She said, 'Mr. Smith our supervisor told me that you are the man who got the rods and reels for us and made arrangements to get us here to go fishing. Nobody has ever done anything like that before and I just want to thank you because I've never had more fun.' I hugged her but I had to turn away because I was crying," Ehman continued in a quivering voice. "All of my life I had fished. My kids fished and I took their friends fishing as they were growing up. It was something I had always taken for granted. But here was this little kid whose life had not been very damn easy and here she was coming up to me and thanking me for taking one day and giving her the opportunity to get out to the water. It was a little more than I could face.

"I see that child every year because we make sure that if they still like fishing, then they come back with their group. She is showing the little kids how to fish now. She probably has had five more surgeries and is going to be a pretty young lady."

Ehman said he already sees positive signs that give him hope for the future of recreational fishing. There has been greater participation by kids in youth fishing events and, perhaps more importantly, greater environmental awareness on the part of kids.

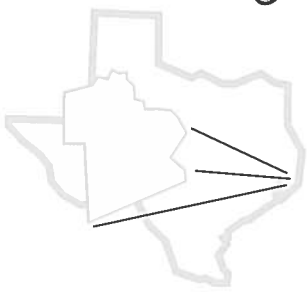
"When I grew up here on Mustang Island, throwing an empty can or bottle in the water was the norm. Thank goodness it is now the exception," he said "I see a lot of kids who are 6 or 7 and are more aware of ecology and what is going on with our natural resources than I was aware of when I was 20.

"We can all be stewards of the resource for young kids, but if we don't do things to enhance the resource and enhance the populations of fish and shrimp and crabs — and everything is interdependent — then we are not going to have anything to be stewards of." ■

PHOTO BY TEXAS DEPARTMENT OF TRANSPORTATION


CAT
DIESEL POWER

At the Water's Edge



Jefferson County

Editor's Note: In an effort to identify the coastal issues facing the state, Texas Shores is launching a series of articles profiling each of Texas' coastal counties. The series kicks off with a look at the coastal issues facing Jefferson County – the state's easternmost coastal county. As the series continues, each issue of Texas Shores will include an article examining another coastal county.

By Mark Evans

Bounded by the Big Thicket National Preserve on the north, the Neches River and Sabine Lake on the east and the Gulf of Mexico on the south, Jefferson County is the most eastern of Texas' 18 coastal counties.

This is the land of Spindletop, the oil well that gushed forth on Jan. 10, 1901 and sent the county and the state racing into the petroleum age. The petrochemical industry still plays a prominent role in the local economy, providing 75 percent of county taxes. Refineries dot the shoreline along the Sabine-Neches ship channel, and Beaumont and Port Arthur operate ports that rank behind only Houston, Corpus Christi and Texas City in tonnage.

While petroleum and shipping may dominate the county's economic landscape, Jefferson County also is home to thousands of acres of coastal marshes. Much of this land is protected in the McFaddin and Texas Point National Wildlife Refuges, Sea Rim State Park and the J.D. Murphree State Wildlife Management Area. With the possible exception of Padre Island National Seashore, nowhere else along the Texas Gulf Coast is so much shoreline – more than 68,000 acres — held by the government.

Jefferson County has only recently begun recovering from the 1980s oil bust. As part of this recovery, local officials are turning toward the county's coast for help in diversifying the economy and bringing prosperity to southeastern Texas.

Jefferson County Commissioner Waymon Hallmark said the oil and petrochemical business is responsible for a large part of the county's tax base. During the 1980s' downturn in the oil business, he said, many of the area's refineries cut back their number of employees and their number of oil tankers. Several shipyards along the coast also shut down.

"It was devastating to this area because so many people lost their jobs and had to retrain in another area or they simply left," he said. "It was a lot to overcome."

The county has started to make a comeback. The Clark and FINA refineries in Port Arthur recently completed major expansions. In addition, Hallmark said the county expects to benefit from money poured into the area by industries that sell to the refineries.

"In the last year and a half, we've had approximately $3 billion worth of expansion in the area (local petrochemical industry)," he said. "That was a real shot in the arm for us."

While the '80s oil bust may have brought some hard times to Jefferson County, it may have helped the county in the long run by forcing it to diversify its economy. Until the 1980s, Hallmark said, the area's economy relied mainly on the oil and petrochemical industries. Since that time, however, the economy has diversified. One example is the one federal and four state prisons that have opened between Beaumont and Port Arthur.

Another way the county hopes to diversify its economy is by drawing tourists to the area. Officials will soon break ground on a $55 million entertainment complex on Interstate 10 that will include a regional information center showcasing the attractions of southeastern Texas.

Hallmark also hopes to re-open State Highway 87, which ran along the coast from Sabine Pass to Galveston until storms forced officials to close a portion of the road 10 years ago because of washout. Parts of the road now lie in the Gulf of Mexico.

Whereas the state park and national refuges along State Highway 87 used to see a lot of tourists, Hallmark said, people now bypass the area altogether because the road is a dead-end.

"It impacted us terribly because of Sea Rim State Park, McFaddin National Wildlife Refuge and Dick Dowling (Sabine Pass) State Park," he said. "All of these are down in the Sabine Pass area, and people love to go stay at those parks."

Hallmark is working to have the road rebuilt. The issue becomes complicated because rebuilding the road would entail running it through federally protected wildlife refuge lands. But even if no road is built, he said, steps need to be taken to control erosion.

He also is supporting another coastal project – the deepening and widening of the Sabine-Neches ship channel. The U.S. Corps of Engineers is currently conducting a preliminary study into the proposed project.

"We want to be able to stay in the loop because so much of our economy in this area is due to the oil and petrochemical industry," he said.

Dave Foster, executive director of the Port Arthur Economic Development Corp., said the area's ship channel and easy access to the Gulf of Mexico make it ideal for many businesses. Widening/deepening the ship channel will help the area remain competitive in a global market, he said.

"We are in an excellent position," he said. "With all of the oil coming from Venezuela and the exporting we do to South and Central America, it's critical for the future of Southeast Texas and coastal Texas to make sure we have access to the Gulf of Mexico."

Even with the ship channel, he said, the area still must stabilize and diversify its economy because of its heavy dependence on oil. Between 1982 and 1994, Port Arthur lost 30 percent of its population. The city still faces problems. Its unemployment rate is 12.1 percent (The state unemployment rate hovers around 4.1 percent to 4.4 percent.). Yet, Foster said, last year one-third of the state's new economic growth occurred in Jefferson County.

"We need to diversify this economy to get away from the dependence on the oil market," he said. "We need to diversify our economic base. Our opportunity to do

that is through exporting and value-added processing."

The area also needs to take advantage of tourism, he said. The area is an outdoorsman's and bird-watcher's paradise.

From an economic point of view, it's a brave, new world, and a good environment means lots of money, he said. Birders spend more per capita than any other type of tourist. The area needs to tap into that market and draw "Snowbirds," or tourists from the north who come to the southern United States to enjoy milder winters, he said.

Ike Mills, deputy director of the Port Arthur Economic Development Corp., said that while Port Arthur is not nationally known as a tourism mecca, it is one.

"Around the state and country, it's predominately known for the oil and gas industry," he said. "That kind of overshadows the quality of life issues here – the birdwatching and other amenities we have. It's hard to shake that stereotype."

Foster said he'd like to see a well-balanced economy based on service, manufacturing, a healthy retail/commercial industry and tourism.

"I'd like to see Port Arthur's image change from that of the oil patch to the ecotourism capital of Texas," he said.

Any plans to boost tourism to Jefferson County, especially tourism along the county's coastline, include the re-opening of State Highway 87. If re-opened, Foster said, the highway would have a tremendous draw for bird watchers. Birders could travel a loop from Houston to Galveston to Port Arthur and back to Houston via I-10.

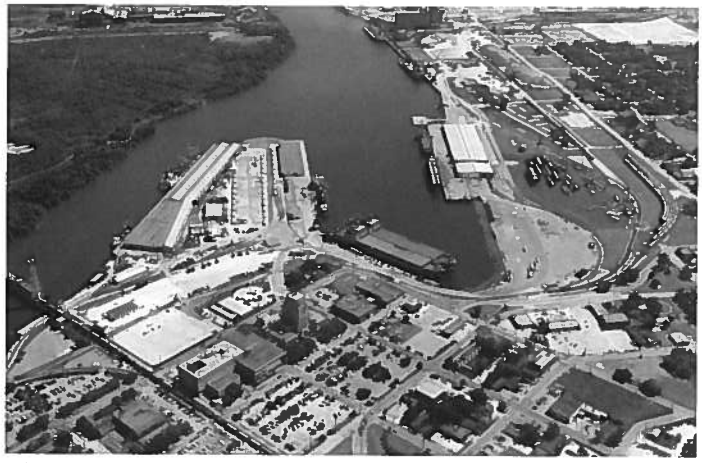
The Texas Department of Transportation (TxDOT) closed the road in 1989 after Hurricane Jerry washed out parts of a 17-mile segment between Sabine Pass and High Island.

Marc Shepherd, public information officer for the Beaumont district of the Texas Department of Transportation, said the road has a history of closures resulting from high water.

"The road was constantly being closed because of storms," he said. "It was a constant battle for state forces to get out there and maintain the roadway."

State Highway 87 stretches along the coastline from Sabine Pass to Galveston. The road dates to before the Civil War. It follows an old Indian trail and was one of the first roads connecting to Galveston, Shepherd said.

Originally, the road was 240 feet from the high tide line, but over the years, erosion has taken its toll, leaving the road close to the water's edge. Parts of it now rest 50 to 100 feet in the Gulf of Mexico.



The Port of Beaumont, along with that in Port Arthur, ranks behind only Houston , Corpus Christi and Texas City in tonnage.

The road has been rebuilt and repaired six times since 1933, but each time the tides have eventually caught up with it.

Before the road was closed, Shepherd said, TxDOT recorded an average of 1,100 cars a day using the road to get to Sea Rim State Park. Now, only 210 cars a day use the road.

Todd Imboden, assistant manager of Sea Rim State Park, said the number of visitors to the park fell by half after portions of the highway closed. A lot of people want to travel from Sea Rim to Galveston, but they can no longer make the trip with the road closed.

"It's a long way for people to come, especially if they're pulling big rigs," he said

Right now, Shepherd said, TxDOT is in a holding pattern in regards to the highway. Jefferson County must first obtain a permit from the federal government before any action can be taken toward rebuilding the road. That permit won't be easily obtained because if the road is rebuilt further inland it will cut through the McFaddin National Wildlife Refuge, he said.

Andy Laranger, project leader for the Texas Chenier Plain National Wildlife Refuge Complex that includes the McFaddin and Texas Point refuges, said the agency has several concerns about rebuilding State Highway 87. These concerns include the environmental impact of filling coastal wetlands, the impact on wildlife and the effects on habitat and the fragmentation that could occur when an animal's territory is split in half by a roadway.

"You have a project that takes out nearly 300 acres of coastal wetlands," he said. "That's a fairly significant total of wetlands that would be filled by this project."

Coastal marshes are the most biologically diverse and productive types of habitats in the world, he said. The marshes are extremely productive from a fisheries standpoint and from a migratory bird standpoint. They also protect people from flooding and storm surges and filter water before it enters bays and estuaries, he said.

"On a nationwide basis, we're continuing to lose our coastal wetlands at a rate that is perhaps higher than for any other wetland type in the country," Laranger said. "It's very important that we protect those that we have."

The national wildlife refuges were established primarily to protect the migratory paths of birds, he said, but they also have become popular destinations for people. For example, he said, the Anahuac National Wildlife Refuge, which is in the same system as McFaddin and Texas Point, attracts people from all over the world and all 50 states. The refuges are popular for birding, wildlife observation and recreational fishing.

While Laranger said he understands the reasons officials want State Highway 87 rebuilt, he is concerned that if the decision is made to rebuild the highway, the highway be rebuilt in a way that minimizes impacts to habitat and wildlife and gives the project a reasonable life span.

"One of the aspects that concerns us, and we need to deal with in regards to this project, is that we don't want to be rebuilding this road every 10 years," he said. "We need to look at solutions that help us address this sediment deficit, give the project a longer life span and give it some protection from storms."

The Jefferson County coastline is eroding, he said. The beaches have lost their

PHOTO COURTESY OF PORT OF BEAUMONT

supply of sediment that nature normally uses to replenish that lost to erosion. The area also lacks a major system of sand dunes, which would normally provide protection to anything behind it and provide a sand source to beaches, he said.

"It's not about stopping erosion, but re-establishing a sediment supply to provide, perhaps, the ability for the system to respond the way it has historically," Laranger said.

As the rebuilt highway would cross lands owned by the refuge, the U.S. Fish and Wildlife Service, which oversees the national wildlife refuges, will have to determine if the highway is compatible with the mission of the refuge.

"We need to let the process take us forward," he said. "We need to look at all of the alternatives the environmental impact statement is going to review and use that analysis of alternatives in the decision-making."

State Highway 87 follows not only the coastline, but portions of it also weave its way up to Port Arthur along the Sabine-Neches ship channel. While high tides and the Gulf of Mexico threaten the coastal portion of the highway, plans to deepen and widen the ship channel could mean portions of the highway would have to be moved inland.

The U.S. Army Corps of Engineers is studying the potential of deepening and widening the ship channel. Similar studies were completed in the early '80s, but the plans were put on hold when the oil bust hit.

Tom Jackson, assistant director of the Jefferson County Navigation District, said many things have changed since that time. For example, ships are much larger now then they were 20 years ago.

"We're back to square one, and we're starting all over again," he said. "Whenever this current study is completed, we'll end up with a book very similar to the old one. The numbers will change some, but we're confident the ultimate outcome will still say to widen or deepen the channel."

As it stands, the waterway faces stiff competition from other ports. Houston-Galveston is already in the middle of deepening their ship channel to 45 feet, and many other ports are doing the same. Corpus Christi is already at 45 feet. With a channel depth of 40 feet, Jackson said, the Sabine-Neches ship channel cannot easily cater to larger vessels.

"Some of these companies have ships that handle 750,000 barrels of crude oil," he said. "They have to stop offshore in 45-foot water and pump out that material onto smaller boats."

Forcing large ships to lighten their loads and pump out oil before entering the channel is inefficient not only for the oil and gas industries but also for the area, he said. Ports and waterways that have 45-foot deep channels operate more efficiently, and the petrochemical industry is investing in those ports.

The old adage "old roads lead to the sea" may have been coined for State Highway 87, which literally leads both to and into the Gulf.

"Through this efficiency comes prosperity," he said. "It's the waterway of choice for companies moving into this area that look to water as a major source of transportation."

Safety also is a concern, he said. If an accident were to happen in the ship channel, it could force the temporary closing of the waterway, and that could force refineries along the channel also to close. Refineries typically have only a three- to five-day supply of raw material on hand. If this supply were cut off, he said, they would have no choice but to close.

"The refineries are very dependent on this waterway," he said. "We're very reliant on this waterway, and we need this waterway as an international waterway and not just as a shallow vessel waterway."

John Roby, transportation manager for the Port of Beaumont, said his port would benefit the most from a widening rather than a deepening of the channel because he already has ships waiting in line to get in.

"We're at the upper end of a 40-mile channel, so we tend to feel the effects of congestion more than if we were only four or five miles from the Gulf," he said.

The port handles 3 million to 4 million tons of cargo a year, including mainly grain, forest products, iron, steel and military hardware. All of the port's business is closely tied to the global economy, he said.

"When U.S. producers are exporting, we're very busy with exports," he said. "When the global economic conditions dictate that the U.S. is an importer, we're very busy with imports. We see this swinging. Our business is sort of a microcosm of world economic conditions."

The port – and the channel – must keep up with other ports in order to stay in business, he said. The Port of Beaumont saw its business grow in the '80s and '90s, but while business and the size of ships grew, he said, the channel has not changed. The port recently completed a $20 million expansion and work is underway on a new wharf.

"The channel is the lifeblood of the port," he said. "If the lifeblood dries up, the port dies, so it's very important to us."

Texas Parks and Wildlife biologist Terry Stelly said that before the 1880s, Sabine Pass was only five feet deep. Dredging it to 45 feet will worsen the area's problems with saltwater intrusion and erosion, especially along Pleasure Island.

"They want to widen the channel to 500 feet, and something is going to have to give," he said. "It'll probably be the island that's going to have to give."

Pleasure Island separates Sabine Lake from the ship channel. The U.S. Army Corps of Engineers built it using sediments dredged to form the ship channel. It is a narrow slit of land that extends for 20 miles north from Sabine Pass. It also is home to a housing development and marina. If the ship channel is widened, Pleasure Island could face the most erosion as wakes from passing ships have

PHOTO BY STEPHAN MYERS

Tourists still come to explore Sea Rim State Park but the trip is more complicated since the closure of State Highway 87.

already made erosion a problem for the island.

While Stelly said erosion on Pleasure Island is a concern — his office is located on the island not far from the channel, he also warns of the consequences to the county's Gulf Coast unless erosion is slowed.

"With the continual sea level rise, storms and local weather changes, losing more beach is a constant threat," he said. "We've already lost three or four roads in the Gulf. If things keep moving, eventually the roads will be back there on the Intracoastal Canal, and we'll have no marsh between the Intracoastal and the Gulf anymore."

Finding a solution to erosion in the area will not only help keep State Highway 87 but also protect the animals that live in surrounding wetlands, he said. Marshes serve as nurseries for fish and shrimp.

"Marine organisms have free roam of this marsh, and they seek out the conditions they prefer the most," he said. "The marsh provides protection as well as a food source."

While erosion threatens Jefferson County's marshes, he said, so does the intrusion of salt water, which can raise salinity levels and make survival tough for species of plants and animals that are unable to adjust. Saltwater intrusion can also threaten the area's supply of drinking water.

The Sabine and Neches rivers can produce the highest volumes of freshwater than any of the river systems in Texas, Stelly said. If enough freshwater is flowing down, the rivers can keep salt water from the Gulf of Mexico at bay, pushing it 15 miles out into the Gulf of Mexico. In periods of little rain, salt water can make its up way up the rivers and threaten the intake systems of Beaumont's water supply.

To prevent saltwater intrusion, officials install saltwater barriers near the water intake pipes. These barriers are dams across rivers that are set low enough to allow water flow over top and not impede fish while still protecting from salt water.

The Lower Neches Valley Authority is currently building a permanent saltwater barrier near one intake for Beaumont's water supply, and others are being planned.

Salt water – its presence or absence – can also affect the region's shrimp crops, Stelly said. Even when catch rates of brown and white shrimp are low along the Texas coast because of drought and high salinities, he said, Jefferson County shrimpers may still see record catches. This year, however, the catch has been low.

This region of the state is home to 1 percent of the state's commercial seafood industry and accounts for 10 to 20 percent of the white shrimp caught in the Gulf of Mexico, he said.

Louisiana's outlawing of commercial gill-netting several years ago has helped boost the number of fish available for Sabine Lake fishermen, he said. The area has seen more seatrout showing up.

"Anglers are starting to see a lot more numbers of legal-size trout and larger trout, which are in contention for state records," he said. "We've finally reached that level."

While these may be the key coastal issues facing Jefferson County, Jefferson/Chambers County marine extension agent Terrie Ling said many residents have no idea what's going on unless they bump into an issue, such as seeing their favorite beach disappear as a result of erosion.

Ling spends a lot of her time taking schoolchildren on trips to the coast where she teaches them good stewardship, the importance of marshes and the need to ensure freshwater continues to nourish wetlands.

The children not only get to spend the day at the beach and see some unique animals, but they also develop an awareness of how important the coast is to their lives, she said.

Jefferson County has more people than nearby coastal counties, such as neighboring Chambers County, so there's a lot more impact on the area's natural resources, she said.

"In Jefferson County, you've got a lot more port traffic and a lot more people living by the water," she said. "In Chambers County, people are spread out. There's not as much impact on the water."

But the situation may soon change, she said. Chambers County is starting to get some of the urban spread from the Houston area. Ling said the county will soon start seeing more people wanting to build on the water and the resulting impact from run-off pollution.

Jefferson County is already fairly well developed, she said, and little room is left to build houses on the water.

While no one knows what the future holds for the county, Hallmark said he sees the petrochemical and oil industry being good for the county for the next 20 years. He also sees the area's shipping industry facing changes under new environmental laws.

"We will do whatever we have to do to keep those channels to where the ships can operate in them because they are the lifeblood of our community," he said.

Tourism also plays a role in his vision of the future. If the economy stays like it is, he said, more people will retire with money to spend on traveling. People love to come to the beach, and a good highway system will allow them to access areas of the county with beautiful sites and wildlife, he said.

"I think we'll eventually get Highway 87 done," he said. "There's still a few hoops left to jump through. We're still optimistic because it means so much for tourism and is so vital to this area. I don't see a downturn in our future."

This series will continue with a visit to Chambers County in the Fall issue of **Texas Shores**.

PHOTO BY JACK LEWIS FOR TEXAS DEPARTMENT OF TRANSPORTATION

M A R I N E

By Mark Evans

Seventeen years have passed since Hurricane Alicia swept ashore in Galveston and made its way through Houston, killing 21 people and causing $2 billion in damages. With the exception of Hurricane Bret in 1999, which went ashore in a relatively unpopulated section of the Texas coast, Alicia was the last major hurricane to strike the Texas coast. That was in 1983.

Around the United States, experts estimate that 80 to 90 percent of people living in coastal areas have never experienced a major hurricane. Meanwhile, coastal populations are growing. The Texas Parks and Wildlife Department estimates that in the next 50 years, Texas' coastal population will more than double from its current 18,000,000 people to 37,000,000 people.

As coastal populations grow and meteorologists warn of more active hurricane seasons, emergency managers and government officials face the task of educating an increasingly unaware public about the dangers of these mega-storms and ways to protect themselves if one hits.

Eliot Jennings, operations and planning coordinator for Galveston County's Office of Emergency Management, said his county has seen 75,000 to 100,000 people move into the area in the 17 years since Hurricane Alicia. Many of these people have no experience with hurricanes.

"Along the Texas Gulf Coast, about 70 percent of people have never been through a hurricane," he said. "It has been so long since we've had one that people tend to forget. My biggest concern is complacency – that people aren't aware of the hazards that exist."

A lot of Galveston County is low-lying and subject to flooding from storm surges, he said. Even relatively weak hurricanes – category 1 or 2 – may produce winds of 74 to 110 mph and storm surges of three to eight feet, prompting evacuations in some of the more flood-prone areas of the county.

The storm surge and high tides from a category 4 or 5 storm would likely inundate almost the entire county with water, Jennings said, forcing officials to ask more than 750,000 people to evacuate from Galveston and neighboring counties.

"You're looking at evacuating a couple hundred thousand people just from Galveston County," he said. "It becomes a regional problem. All of those people are going to be on the same roads that we have to go through to get out."

Even with the latest advances in weather forecasting, evacuating for a category 4 storm still takes at least 30 hours, he said, and that's assuming no construction delays or traffic accidents. In reality, he said, the evacuation would take longer.

Jennings said he is always trying to find better ways to handle evacuations by watching how officials in other areas of the state and in other states handle hurricane evacuations. Texas is unique when compared to other coastal states because it does not have mandatory evacuation. Officials can only recommend, not demand, people evacuate their homes.

Galveston is unique in that its primary evacuation route is through Houston – a major population area – which also sits close to the coast, Jennings said. In an evacuation, officials in Galveston, Brazoria and Harris Counties would advise residents to go all the way to Dallas.

"We don't advise people to go west to San Antonio or Austin because it's a very realistic scenario that the mid-coast region of Texas could be called for an evacuation at the same time and send their people to San Antonio or Austin, " he said.

While evacuations may not be necessary for all storms, Jennings said county officials start preparing for a storm at least 72 hours before tropical storm winds hit the area. If the storm continues on a path toward the area, then officials will mobilize for the storm by staffing the county's emergency operations center, releasing non-essential personnel and coordinating fire, police and other essential services. At some, county officials may call for evacuations, but Jennings advises people not to wait for that call.

"We advise people that if it's not essential that you be here, certainly go ahead and evacuate early," he said. "You don't have to wait for an official word recommending it."

Any action taken during a hurricane involves input from all parts of the county, Jennings said. The emergency operations center has room set aside for representatives from the various cities within the county, county agencies, the Red Cross, Salvation Army and the U.S. Coast Guard.

William "Ski" Zagorski, head of emergency management for the city of Galveston, said this sharing of information is essential in an emergency such as a hurricane, and officials in lot of Texas counties are surprised at it because they don't share information with each other.

Preparedness is key, Zagorski said. When a crisis hits, officials need to know what resources are available from other cities.

"You can mitigate to a point, but we're a barrier island," he said. "If we're not here, the mainland becomes a barrier itself."

In the 17 years since Hurricane Alicia hit, a lot of high-value development has occurred on the west end of Galveston Island. A lot of the people living out there have no idea about living the coast or dealing with hurricanes, Zagorski said.

One way the city tries to prepare people on the island about hurricane season is by hosting a "hurricane day" each May. The city invites speakers from the National Hurricane Center and the state emergency management division and gives away door prizes.

For his part, Zagorski said he always tries to feature some new technology to use as a hook to capture people's attention about preparing for hurricanes. This year he showed off HeaterMeals – meals that cook themselves and can be used in case of power outages. Last year, he showed off clips for plywood that allowed people to protect windows by simply pushing the wood into place.

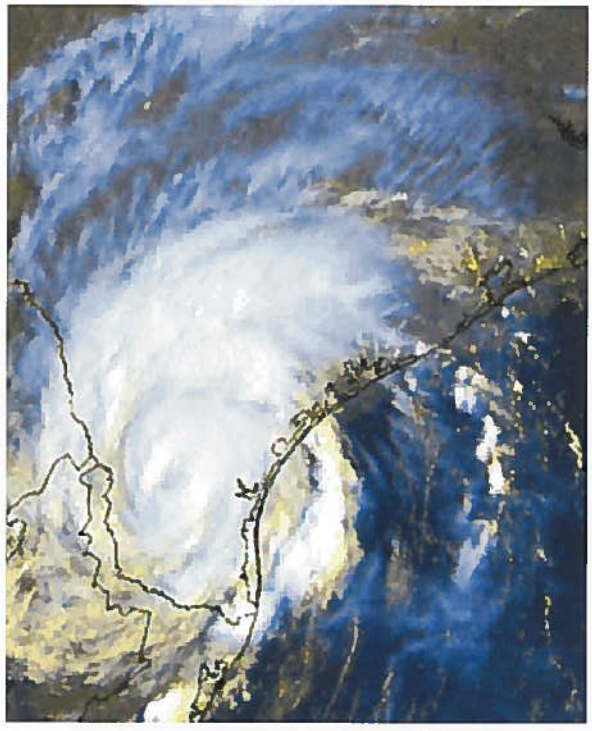
A D V I S O R

"New technology is what we have to stay ahead of for the population because it keeps them thinking about hurricanes," he said.

Few people have written plans for what to do in case of a hurricane or if asked to evacuate, he said. To be effective, he said, emergency managers have to do what they can to make it easier for people to plan ahead.

Dr. Michael Lindell, director of Texas A&M University's Hazard Reduction and Recovery Center, said communities need to have good hazard awareness programs in place, and families need to know how vulnerable their community is to hurricanes and how to respond.

"If people think about these things ahead of time and make a family plan, that's going to make it easier for them to start taking action when a hurricane is forecast and they're told they need to start evacuating," Lindell said.



Hurricane Bret moved across the South Texas coast in 1999, bringing flooding rains and tornadoes.

Too often, people don't take action because they aren't certain the hurricane will affect them, don't understand its severity or don't know how long they have to prepare, Lindell said.

When an evacuation is called, he said, few people automatically jump in their cars and head out immediately. They have to find and assemble their families, pack up their belongings, find pets, load up cars, board up their houses, etc. People tend to treat evacuations as a vacation, he said.

"San Antonio is apparently everybody's favorite evacuation destination," he said. "Even in Beaumont, a large proportion of people say they'll go to San Antonio (in an evacuation). Frankly, a lot of people look at an evacuation as an unscheduled vacation."

However, he said, the problem is that people typically spend a lot of time preparing for vacations, and this time is distributed over a fairly long period. They also are not competing with other people on the roads.

"If you want to be sure you get out, be the first in line and not the last," he said. "That just requires getting an early start and preparation."

By providing essential information, he said, officials also can remove some of the obstacles that keep people from preparing for hurricanes or evacuating. If people know where to go, what route to take and where they will stay, then they are more likely to evacuate.

"The problem is we're entering a cycle where there are going to be more hurricanes, so the vulnerability seems to be increasing simply because the events are becoming more frequent," he said. "It's also increasing because there are more people in coastal areas."

The population density on the coast has been increasing, Lindell said, and it's increasing at a faster rate than science's ability to forecast hurricanes. Meteorologists have models to predict where a storm surge will go, but those are just models and not real-life.

"We want to try and minimize the amount of lag time between when a particular event occurs and when information about that event is available to state, county and community emergency operations centers," he said. "We're trying to get people information in as accurate and as timely a manner as possible so they can make the best possible decisions as to when they need to initiate an evacuation."

Researchers in his center already started using Geographic Information Systems (GIS) to pinpoint the locations of an area's key facilities, such as schools, hospitals, roads, fire stations, etc.

By using this computer program to superimpose images of the various locations prone to flooding under various categories of hurricanes, Lindell said, emergency managers can better determine which areas to evacuate, depending on a storm's strength. The program also can help officials make better judgments about where to best position repair crews so they can start the cleanup as soon as the storm passes.

The center also has studied the reasons why some people choose to evacuate while others choose to ride out a hurricane.

In the long term, he said, communities need to turn toward mitigation as a way of preventing hurricane damage. Emergency preparedness can only go so far, Lindell said, and its limits are already being reached.

"The most sensible thing to do for a lot of these areas is build out of the surge area and to construct buildings so that they have adequate wind resistance," he said

Square buildings, hipped roofs and storm shutters provide protection from wind and wind-blown debris. Building elevated homes or homes with deep foundations can prevent water damage. Setting aside flood-prone land for agricul-

(Continued on inside back cover)

SATELLITE PHOTO FROM NATIONAL WEATHER SERVICE

A weekend in September revisited

By Mark Evans

GALVESTON, Texas – On Sept. 8, 1900, a hurricane struck Galveston Island, killing at least 6,000 people and destroying 3,600 buildings. Galveston was decimated. Every building in the city — the second richest in the United States and one that boasted more millionaires per square mile than even Newport, Rhode Island —suffered some type of damage.

Now, a century later, on Sept. 8, 2000, Galveston will pause to remember the death and devastation that tore it apart a century ago. While the city will commemorate what it had and what it lost, it also will celebrate what it has and how far it has come.

Michael Doherty, chairman of the 1900 Storm Commemoration Committee, said every event the committee is doing stresses recovery and is built around remembering and paying tribute to those people who stayed and rebuilt the city.

"We want to talk about the recovery," he said. "This place was totally devastated, and 6,000 to 8,000 people out of a population of 37,000 died in one night. It would have been so easy to just give up, but they stayed and rebuilt."

The committee has planned a candlelight memorial for Friday, Sept. 8 and a city party, called "One Great Night," for the evening of Sept. 9. "One Great Night" will consist of events all over town celebrating the recovery of the city and the good things about the city, Doherty said.

The city started its commemoration in September 1999 with a "Day of Reflection, Year of Remembrance." Other events have taken place since, including a session with Erik Larson, author of "Isaac's Storm," which tells the story of the 1900 hurricane from the perspective of the U.S. Weather Bureau's local weatherman.

The committee has put together four traveling exhibits, various displays and a speaker's bureau on the storm. It will place a 12-foot, bronze sculpture on the seawall to commemorate the storm. It also is collecting historical information and artifacts about the storm. Committee members want to educate the public about the storm and the city's rebirth, Doherty said.

Most people don't realize how staggering the 1900 storm was, he said. Instead, when they think of natural disasters, they think of the 1906 San Francisco earthquake or the Johnstown floods. When they learn about the storm, he said, they become mesmerized by the scale of the tragedy and the number of people who died.

At the time, the highest point on the island was only 8.7 feet above sea level. Most of the island was 4.5 feet above sea level. The storm surge that swept over the island was 17 feet. What saved much of the city was a two-story mound of debris formed when beachfront homes broke up, Doherty said. While that wall did not keep water out, it did stop the force of the water.

Alice Wygant of the Galveston Historical Foundation said that at one point, the storm surge rose 4 feet in four seconds.

"It rose so fast people didn't have time to react," she said. "People didn't know how to swim and their clothes dragged them down."

The storm swept away houses. At that time, many homes in Galveston were built on pylons, or stilts, and were not secured to a base. The 1900 hurricane was a category 4 storm with estimated wind speeds of 131 to 155 mph. It left many people with only the clothes on their back, and some didn't even have that, she said.

While the storm continued on a track that carried it across the Great Plains to the Great Lakes and eventually over Canada's Nova Scotia, Galvestonians were left to clean up their city. Writer Mark Twain, publishing magnate William Randolph Hearst and the Red Cross' Clara Barton all led efforts to help the people of Galveston in the aftermath of the storm.

As a result of the storm, city leaders embarked on ambitious projects to protect the city from future storms. They built a three-mile-long seawall to protect the island's Gulf side. They also raised the island's elevation by pumping in sand. Homeowners paid to have their houses jacked up, sand filled in underneath and new foundations built. These improvements were tested in 1915 when another strong hurricane hit the island. The city survived with relatively little damage and only a few dozen deaths.

While the 1900 storm and the damage to Galveston got worldwide play in the media, Wygant said, most people in the United States and even in Texas probably would not have heard a lot about the storm.

"The people in Galveston didn't play up the 1900 storm because they didn't want to remind people of how ephemeral the city was and that you could be blown away during tourist season," she said.

In some ways, Wygant said the city never fully recovered from the storm. In one sense, she said, it did not take any time at all for the city to recover from the storm. In another sense, it never got back to the way it was.

Before the storm, bathhouses on stilts stood over the Gulf of Mexico. Boardwalks connected the buildings to land. The city had more saloons than New Orleans. The city had been dubbed the "New York of the Gulf."

"It was beautiful but precarious," Wygant said. "There are several descriptions, given by people coming in by ship, that talk about how buildings looked like they were floating on the water because the island was so flat."

But, the city also had its problems. It sat on a low-lying barrier island in an area

known for hurricanes. Just down the coast on Matagorda Bay, hurricanes in 1875 and 1886 wiped out the once-prosperous town of Indianola, which residents abandoned after the 1886 storm.

Before 1900, the last major hurricane to hit Galveston was in 1875 when only 14,000 people lived in Galveston. In 1900, 37,000 people lived in the city, and Wygant said most of those people had never experienced a hurricane.

"You had a very similar situation as what you have on the Gulf Coast today where most of the people that live here have never been through a hurricane," she said. "In addition to problems of evacuation, unless you've been through it, it's pretty incredible, and you don't believe how bad it can be."

The 1900 storm is probably the definitive event in the history of Galveston, she said. Every Galvestonian has a story about it, she said.

"I think it should be a big, cautionary tale, but it's not," Wygant said.

Bill Read, meteorologist in charge at the Houston-Galveston office of the National Weather Service, said the United States has been very lucky that the major hurricanes it has seen have made landfall in sparsely populated areas. The last time Houston-Galveston saw a major hurricane was in 1915, he said.

"We've had more than 50 years without the level of catastrophe seen with the 1900 storm," he said. "If people begin to think we've solved the problem, that's when we'll have the problem. Hurricanes aren't any different now than they were in 1900."

The major difference between 1900 and 2000 is the early warning system in use today, he said. Back then, people didn't know a hurricane was on the way until it was on top of them. In 1900, weather forecasting relied heavily on what could be observed.

"If you were a resident in Galveston, for example, and you observed trends in the clouds, that meant there was a hurricane somewhere," he said.

Falling barometric pressure could usually give residents 12 to 24 hours notice of a coming storm, he said, but weathermen had no way of knowing where the storm was going. They also had a tough time notifying residents of a coming storm. There was no radio or television, he said, so forecasters used signal flags and the local newspaper to warn people.

While the technology may not yet have existed to implement the plans, Read said, the 1900 storm did plant the seeds for a hurricane early warning system that was created with the advent of radio. And, he said, Isaac Cline – the U.S. Weather Bureau's Galveston weatherman in 1900 – later conducted studies on tropical storms that helped forecasters better understand the storms.

The 1900 storm also showed scientists the potential damage that can be caused by a hurricane's storm surge, which led to the building of Galveston's seawall and the raising of the island, he said.

"Back then, the idea was to build a seawall and get people away from the immediate beachfront, and it'll be ok," he said. "That worked in 1915. Now, our goal is to get them totally off the island."

But even in the 100 years since the storm, Read said, some things haven't changed – people still build on sandbars and areas vulnerable to hurricanes. Even if a home is well-built, he said, a strong enough hurricane can still blow it away. And, he said, it's only a matter of time before another large one hits Galveston.

Marine Advisor

(Continued from page 27)

tural or recreational use also can minimize the damage done by storm surges, he said.

"We want to encourage people to develop more effective land use practices and better building construction practices, so they will recognize what areas are vulnerable within their community and will build in areas that are less vulnerable," he said.

Scientists will never have models that will tell with perfect accuracy exactly where the storm is going to hit, he said. While scientists can increase the accuracy of prediction, he said, they're never going to get perfect accuracy, so society is stuck with that.

Bill Read, meteorologist in charge at the Houston-Galveston office of the National Weather Service, said that 30 years ago, scientists could identify hurricane landfall sites to within a 200-mile margin of error only 36 hours before that storm made landfall. Now, they can make the same forecast three days before the storm hits.

The accuracy of hurricane forecasts is improving, he said. Scientists soon hope to narrow down potential landfall sites to within 50 miles 24 hours before the storm hits and to within an area of 100 miles 48 hours ahead of time.

But, Read said, that may be as close as forecasters can get. And, researchers still don't know how to accurately predict whether a storm will intensify and by how much.

"The problem is the growth in coastal areas requires the decision to evacuate to be made earlier and earlier," he said.

In the 1950s and '60s, he said, many coastal areas could be easily evacuated with 12 to 18 hours. Now, communities need at least 36 hours for evacuation, and cities such as New Orleans may require as much as 60 hours.

The dilemma is that even if scientists could forecast landfall more accurately, these forecasts would still not be accurate enough to give a precise location where the storm would hit early enough for emergency managers to safely evacuate coastal residents, he said. The forecasts would still carry a degree of uncertainty. This uncertainty could be enough to keep people from evacuating.

"It's obvious that we're not the kind of country that's going to regulate ourselves to death, but we're going to continue to grow," Read said. "That's where the setup for disaster is. You have so many people in coastal areas that evacuation is difficult, and people will refuse to go."

In large cities, he said, even if 80 percent of the population evacuates, that still means a minimum of 20,000 to 30,000 people stay behind to ride out the storm. A major hurricane could easily kill 1,000 of those people, he said.

Ultimately, Jennings said, safety is an individual's responsibility. He provides as much information as he can on what to do in emergencies but it's an individual's responsibility to take action when it's needed.

"Timelines are nice and neat scenarios," he said. "Unfortunately, in the Gulf of Mexico, probably one-third of storms don't follow a nice, neat timeline. They may develop 40 hours from landfall, so you're behind the curve already."

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