

# ARMAND BAYOU

*A tender spot of wilderness amid sprawling suburbia*

**E**ach time the bulldozers come to clear the land, herds of whitetail deer run for their fragile lives.

They dart blindly across bustling highways in a desperate and often fatal attempt to escape the thunder of fallen trees, the crush of uprooted underbrush, the invasion of man.

They race to the nearest safe haven. Some peaceful place where the lush forest and the winding waterway are protected.

Leaping across high fences, they flee to one of the few surviving estuaries in the flourishing Houston metropolis.

They come to Armand Bayou, but they won't be able to stay long. There's little room at this safe inn for wildlife now overflowing with victims of coastal development.

Armand Yramategui saw it coming. Before his eyes an undisturbed wilderness was quickly losing ground to Houston's sprawl, the NASA project, the planned community of Clear Lake City, the Bayport petrochemical complex, and the City of Pasadena.

Yramategui, then curator of Houston's Burke Baker Planetarium, was captured by the beauty of Middle Bayou, so called because it was situated in the upper Galveston Bay system between Taylor Bayou on the east and Clear Creek on the west.

Jan. 27, 1970, the night before he was to urge Harris County Commissioners to create a Parks and Recreation Depart-

ment, Yramategui was murdered in a highway holdup after stopping to help some young men change a tire.

But his dream to save the wildlife and

*The expansive unspoiled beauty of the bayou naturally made it prime property for development*

the wildland lived on.

"Armand was a fantastic naturalist and was nationally recognized for his conservation work as well as for his efforts in Texas," reflects his co-worker and friend, Hana Ginzburg, herself an undaunted environmentalist who spearheaded a powerful grass roots group of supporters bound to save the bayou in memory of Armand.

Her first canoe trip along the 3,000 acres of the primeval bayou was unforgettable. "I had never seen anything like

it in my life. It was a gorgeous wilderness away from any signs of civilization. Old trees with Spanish moss hanging over the water, fish jumping, birds everywhere—it was like stepping back in time.

"My first thought was, 'this is something special.' We can't ruin it. This can never be recreated for future generations. That's what kept me going during a five-year fight to preserve Armand Bayou," says the Bel-

laire housewife who fled her native Czechoslovakia in 1939 to escape Hitler's Nazis.

The story that hasn't been told, according to Ginzburg, is the "tremendous struggle" that she and thousands of Armand Bayou nature lovers underwent to preserve one of the oldest and last surviving bayous on the upper Texas coast. The earliest traces of Armand Bayou appear in shell middens found in the

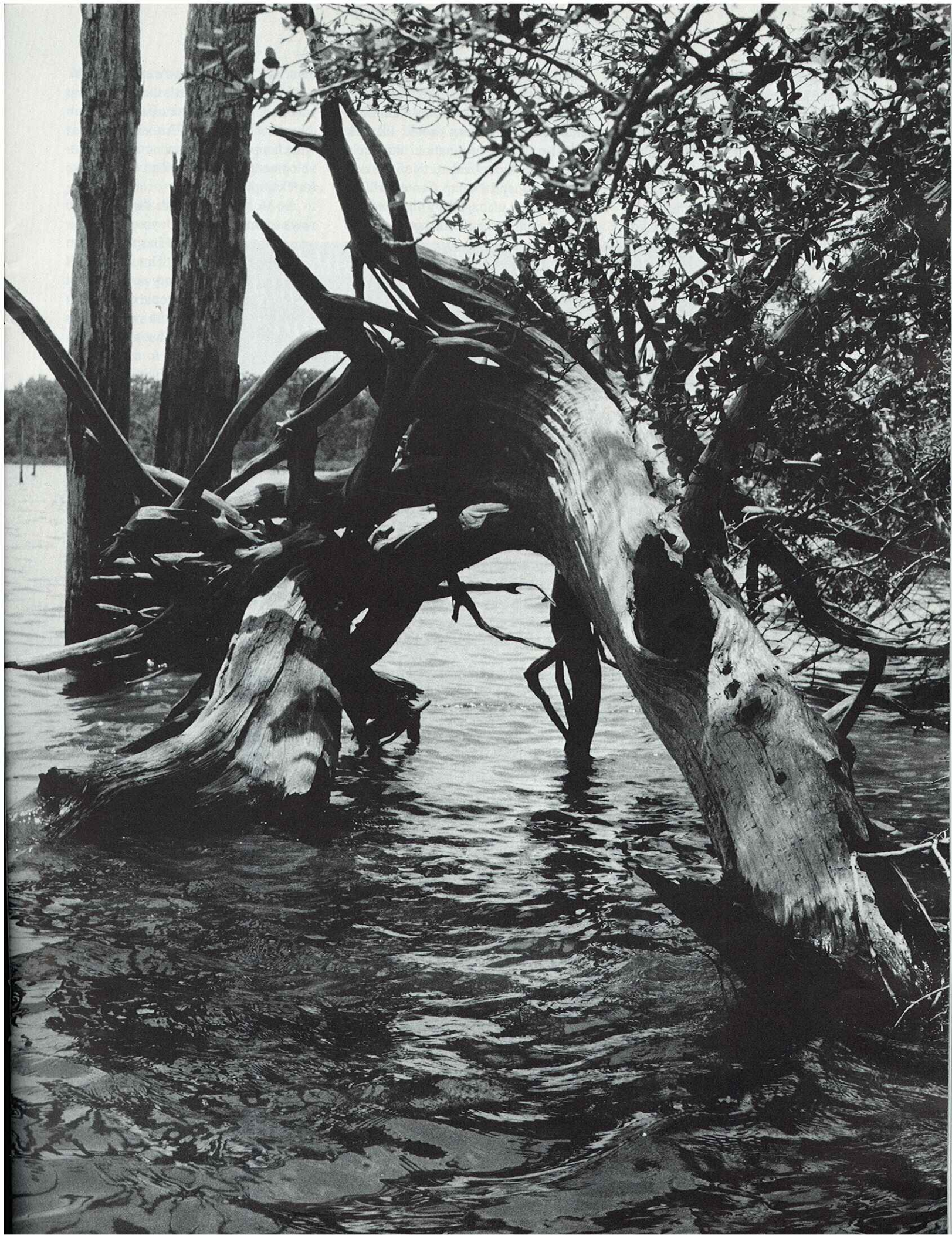
area that date back to 1400 B.C.

The expansive, unspoiled beauty of the bayou naturally made it prime property for its owners, Friendswood Development Co., a subsidiary of Exxon Company U.S.A., which had plans for another subdivision along the bayou at the time the preservation movement began.

Ginzburg says her appeal to Friendswood to donate the land was regarded as "out of the question." Thus began an intense pursuit of millions of dollars,









seemingly endless debates over property value, and a widespread public campaign that has so far spared a fragile ecosystem from the destruction of development. During the peak of the early 1970s movement, *Time* magazine donated a full-page ad with the headline "We urgently need money to build absolutely nothing here" to the Preservation of Armand Bayou Committee.

With federal, state, local and private funds, 2,000 acres were finally sold to the City of Pasadena and Harris County at a total cost of \$6 million or 6 cents per square foot, says Ginzburg, adding with regret that time and money ran out before an additional thousand acres could be bought as originally planned. Part of the lost land has since been developed.

Ginzburg is grateful that Armand Bayou has now been given coastal preserve status because "if we're not careful, we're going to lose the whole thing. These areas are fragile and cannot be broken up into little pieces. The animal species need a genetic pool and a large area to continue to exist, to breed and be supportive. They

all depend on each other and if the area is in little packages it just goes down hill."

Given that what goes upstream must come down, Ginzburg would like the coastal preserve designation ultimately to mean that more land north of Armand Bayou Park and Nature Center will be acquired and managed by the state — specifically, a triangle of land between

ment of land adjoining Armand Bayou.

"What is a bayou? It's the place where waters collect from runoff so the main thing that will impact Armand Bayou is what happens to the land around the development—nonpoint source pollution, for example."

As McKinney sees it, there are two ways to save Armand Bayou from serving as a basin for urban runoff. "One is stringent regulatory actions about what people can or can't do in the watersheds there. That's obviously difficult to achieve and enforce. The simpler option, if you have the

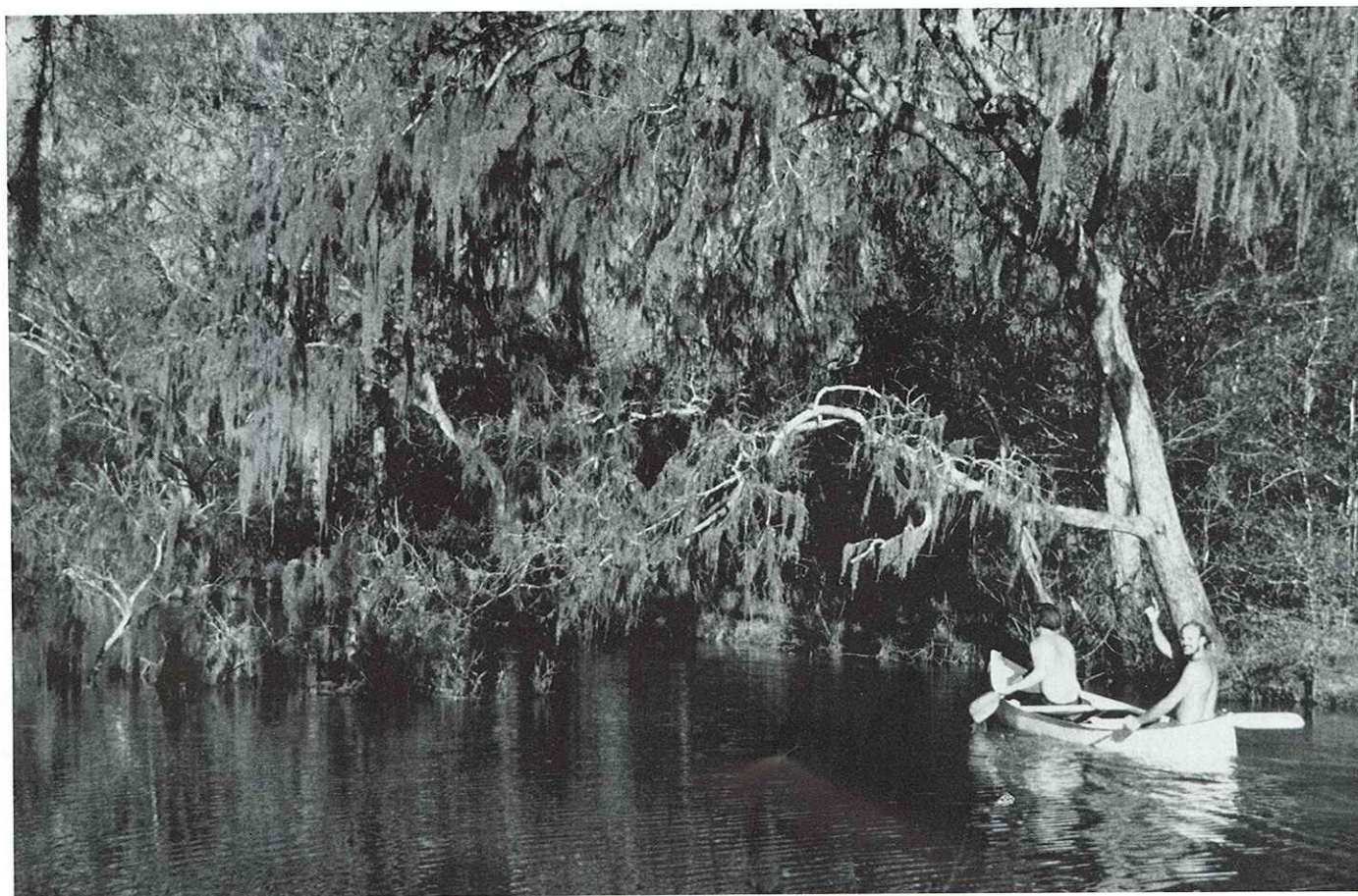
money and wherewithal, is to purchase the watershed or significant parts of it so that you have it under control.

"The question then becomes the matter of acreage. We have limited amounts of money and we have to try to work all across the state. Quite frankly, it comes down to are we better off to buy 100 acres of Friendswood land for a very high price to protect Armand Bayou, or could we take that same amount of money and buy 10,000 acres around Christmas Bay, another Galveston Bay coastal preserve.

*Pollution problems could continue to grow until "Armand Bayou would be nothing more than a glorified sewer..."*

Bay Area Boulevard and Red Bluff Road, along the Big Island slough that is still owned by Friendswood. "It's a lot of money," she says, "and the only way to acquire it would be with the help of a public body like Texas Parks and Wildlife Department. It would also help if they could take over the nearby oil fields when they stop being productive."

Dr. Larry McKinney, director of TPWD's Resource Protection Division, says Ginzburg is "absolutely right" in wanting to guard against further develop-





Would that be a better choice? That's the question that comes up here.

"Texas hasn't really realized what some states have. Floridians, for example, didn't blink an eye when they recently passed a \$3 billion bond program to do just what Ginzburg is talking about. They are very conscious and very aware of marine estuary involvements because every county in Florida is a coastal county. They understand watershed protection."

McKinney hopes that kind of understanding and support will spread throughout the entire Gulf of Mexico with all the states involved in a coastal preserves system.

Although a viable management plan in Texas will be some time in the making, McKinney says Armand Bayou has already benefited from its coastal preserve designation. Plans to nourish the greens of a golf course were changed when the state water commission set a limit on the amount of water that can be taken out of Armand Bayou.

McKinney adds that without coastal preserve status, the nonpoint source problems could continue to grow "until Armand Bayou would be nothing more than a glorified sewer like many of the bayous are."

Development, be it residential or industrial, means jobs and more cash flowing into Texas' strained economy. But, that's a short-term view that could kill an even more strained environment, says McKinney, who believes environmental protection is a legitimate role of government.

"We have to look at what's needed for the whole. Yes, it may harm some particular industry that they can't build here or there, but for all the people living there, it may mean an environment they can live in. I receive from 25 to 35 projects every day for evaluation. We hear, 'We need the jobs so bad. Can't we do just this one project?' But they all add up over time. Take for example, what is happening in Eastern Europe where decisions have been made on an economic basis and the pollution laws have been

overridden. At the present rate of pollution, the Black Sea will be totally dead within 10 years; one-third of all of Czechoslovakia forests are now dead and 40 percent of its rivers have no life at all. In Poland, only 10 percent of the water is usable for any purpose, and only one percent is drinkable. It's going to take \$200 billion just to turn the corner in stopping the environmental damage in Eastern Europe that has occurred over the last 20 years.

"Political leaders have to make a hard decision and not look at the short-term. It's difficult for them to do because their votes are today, not tomorrow and that's where the term 'statesman' comes in — they must look ahead and see that without a good quality environment there won't be anything worth living in," warns McKinney.

But these times of building at any cost are changing. In the near future he sees where "taking care of environmental concerns is just another cost of doing business in the state."

Charles Monaghan, Friendswood operations manager for the Clear Lake City/Bayport Project, says his company has "an open dialogue with the environmental community. We may disagree on what

needs to be done, but we agree that the bayou needs to be protected."

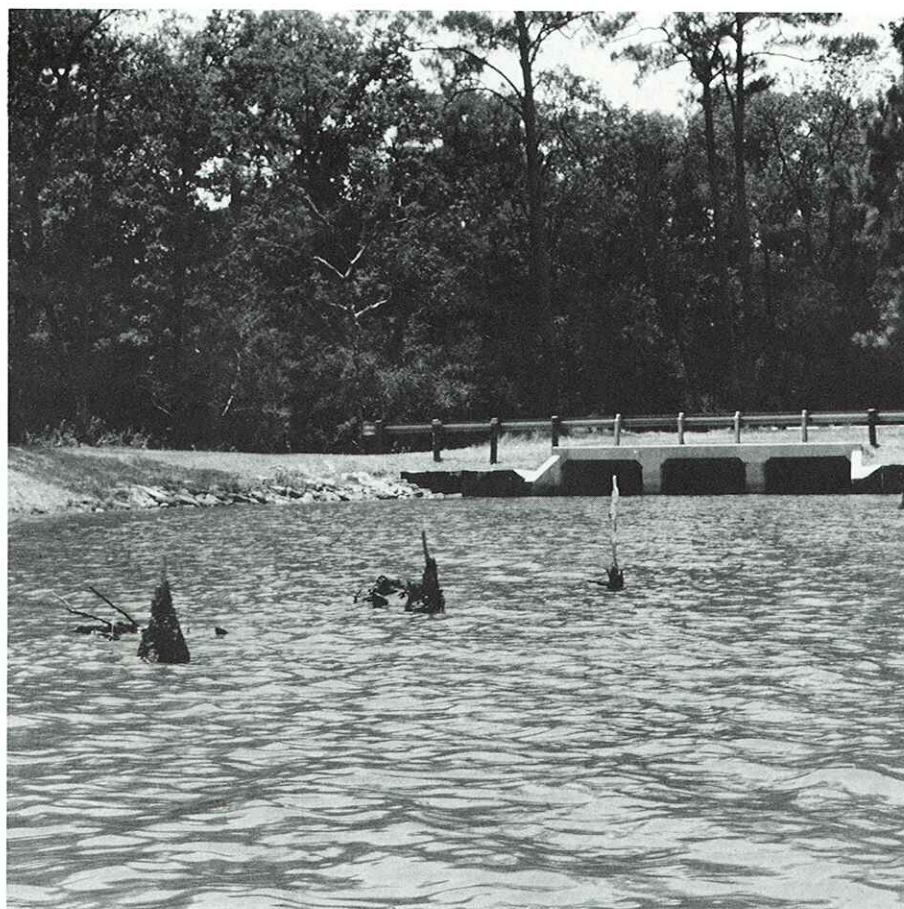
Friendswood's first project, building Clear Lake City, began in 1963. Today, the planned community of Brookwood surrounding Armand Bayou will house 850 single families and cover 370 acres when fully developed.

In an agreement with the Houston Audubon Society and the Clear Lake Sierra Club, Monaghan says his company has placed grates on the subdivision's storm sewers to trap floating debris before it enters the bayou and, during construction, filter screens are placed over storm sewer inlets to help keep out silt.

Proposed for the Brookwood community's outfall drainage is a water quality sedimentation basin, which has recently been permitted by the Corps of Engineers and is now awaiting approval from the Harris County Flood Control District, according to Monaghan.

The offsite basin is intended to deal with the contaminants in the first flush of rainfall, considered the most toxic since it contains a rush of used oil leaked from automobiles, plus pesticides and fertilizers from lawns.

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*Only canoes or electric powered boats are permitted on Armand Bayou (left). Environmentalists are concerned that the Friendswood Development Company drainage ditch (right) that empties directly into Armand Bayou may be eroding valuable marshland.*



## ARMAND BAYOU

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If and when the sedimentation basin is approved, Monaghan says a rock dam will divert most of the runoff from Brookwood that now drains directly into Armand Bayou. The Houston Audubon Society is reviewing a Friendswood proposal to fund a study on the impact of a sedimentation basin.

The existing Friendswood drainage ditch greatly concerns Doug Myers, staff marine biologist at the Armand Bayou Nature Center. The culvert comes into the bayou at a 90 degree angle, eroding the marsh directly across from it, says Myers, noting that over the years the marshes have decreased by 90 percent.

Additionally, Myers says fertilizers and pesticides sprayed on subdivision lawns can severely affect water quality. In essence, the fertilizers cause an excessive blooming of the phytoplankton, which in turn leads to dissolved oxygen levels so dangerously low that death and decay of marine life becomes the trend.

"Armand Bayou is the second most eutrophicated waterway in Texas; first is Clear Creek, which is right next to us. The entire area's development has indirectly caused a massive change in the physiographic nature of Armand Bayou. It is now much wider and has more open water and less marsh. Thus, its own filtering capacity has been diminished greatly and there's a whole lot of erosion and subsidence," says Myers.

Another of Myers' concerns is Friendswood's proposal to extend Highway 2351, which he fears will pass through critical wildlife habitat and, thus, prohibit free migration.

Monaghan, however, says he has "met with environmentalists and come to a compromise alignment that would be north of the Armand Bayou Park and would cross at a narrow section outside of the park. It will span the bayou and the adjacent wetlands and be designed so that the water will be trapped and the rainfall runoff caught and treated before it goes into the bayou." The extension of 2351, which will run from Highway 3 to Highway 146, is awaiting approval from the state highway department, and if granted, Friendswood will then seek a permit from the Corps of Engineers.

With or without the controversial



roadway, Monaghan says Friendswood will "continue with the development that we have planned. If the road goes in, we'll benefit by the enhanced regional mobility, meaning traffic in the area will move better. Certainly, our subdivisions and developments would benefit from it; however, we can build without it. The Cities of Houston, Pasadena and Shore Acres as well as Harris County have all gone on record as supporting the roadway."

Monaghan believes that the preservation of the bayou is essential to the well-being of Friendswood's projects. "We feel that it's a great amenity for Clear Lake City, of which it was once a part. We sold it to Harris County and the City of Pasadena for below-market rate, so yes, we think it's a great attribute for the area. It would not be to our advantage to have the bayou degraded."

Ginzburg, however, argues that the property was sold below market value "only because most of it was underwater. We nearly lost a HUD grant because it wasn't sold at market value, which forced the county to come up with a large amount of money to make up the difference."

Media reports that the 64-square mile watershed is relatively undeveloped are

misleading, says Monaghan. "I don't think a lot of people know that it's a very intensely developed watershed. They have been led to believe otherwise, and attention needs to be given, not just to Friendswood, but to the thousands of people currently living in the watershed and those that come in the future."

The ultimate protection of the environment must come from individuals, says Monaghan. "Pointing at large corporations as being the culprit is pushing the problem under the rug. Corporations wouldn't be producing these products if there weren't a demand for them. It's always easier to point the finger at somebody else and not take responsibility for ourselves."

It's simply a matter of supply and demand.

Myers is concerned about the demand on the bayou to supply enough clean water and forested marsh land to sustain the existing fish and wildlife.

"We have large herds of whitetail deer, there are coyotes and bobcats. Many of these animals have huge natural ranges but we keep fragmenting and cutting down the range. Every time Friendswood does another development project, we get another influx of deer running into the nature center, which means there are more dead deer on the highways.

"We are not protecting the integrity of the habitat when we are clearing out the underbrush and building houses. They are leaving some of the larger trees, which is fine, but a forest is more than large trees. It's the underbrush, the thicket that's the wildlife habitat. When you clear that out, you're displacing all the wildlife that lives in that area."

Myers says the Armand Bayou preserve has become so overpopulated with deer that it may be necessary to work with TPWD on a trap and release program. But where do we put them, he asks.

"This development scourge is moving in all directions away from Houston. We should preserve the naturalness of the area as best we can to support the wildlife populations that are here."

That idea of guarding our natural resources is in harmony with a motto adopted by TPWD, says McKinney.

"We have not inherited the world from our forefathers, we have borrowed it from our children. That's rather profound, and that's the way we should look at things." — P.C. ■



# CHRISTMAS BAY

*Saving the last of the seagrasses:  
A 'David and Goliath kind of fight'*

Heaps of ancient oyster and clam shells discarded by the extinct tribe of Karankawa Indians can still be seen on the banks of Christmas Bay.

Across the bay out into the Gulf are the eroded remains of the sunken Confederate blockade runner, *Acadia*.

But the truly historic site is basically why Christmas Bay has been added to the list of Texas coastal preserves.

Seagrass... the largest and the last surviving seagrass beds in the Galveston Bay system.

Not only that, but Christmas Bay has four of the five species of seagrasses that grow along the Texas coast and it is the only bay in the Galveston Bay system with more than one species of seagrass. A dubious distinction, but one well worth noting given that in the past 30 years, 90 percent of the seagrass in the Galveston Bay complex has been lost and replaced by a burgeoning population and intense industrialization.

Man-made alterations to Christmas Bay and its surrounding habitats have been minimal, which is why the area serves as a productive nursery ground for gamefish, including the Atlantic croaker, spotted seatrout, red drum, southern flounder and sand seatrout.

The bay and surrounding marshes of the Brazoria National Wildlife Refuge



are a part of the Central Flyway and, each winter, a wide variety of approximately 15,000 ducks and 40,000 geese flock to this relatively pristine region a few miles southwest of San Luis Pass.

Fifteen threatened or endangered species have been spotted in the Brazoria County/Christmas Bay area, and, while it

no longer boasts the production of decades past, the bay now serves as the only open shellfish waters in the county.

With the exception of a few so-called "squatters" cabins perched on pilings sunk in the bay and a small subdivision nearby, Christmas Bay has been spared the often harmful effects of coastal development. Mostly because local residents won't have it any other way.

In early 1988, Continental Savings of Bellaire, principal owners of the 40-unit Peregrine town home complex and beach houses of the Lazy Palms subdivision, applied for a permit to discharge treated domestic waste water into the bay. What followed was a loud and sustained protest by residents, fishermen, environmentalists, and local, county and state officials.

Several months into the battle, the U.S. Environmental Protection Agency added the Galveston Bay system, including Christmas Bay, to its list of protected

estuaries.

In the end, a compromise was reached between Brazoria County residents and Continental Savings officials, who agreed to build a sewage treatment plant that would discharge into the Gulf of Mexico, not Christmas Bay.

Precinct 1 County Commissioner







Ronnie Broaddus described the compromise as a precedent-setting decision that would benefit future generations. The *Brazosport Facts* reported Broaddus as saying, "This was a David and Goliath kind of fight. Winning the battle shows that a group of people can make a difference."

As for the cabins built directly on bay water, which is state-owned, there may come a time when these too will go, says Sally Davenport, coastal division director for the Texas General Land Office. Many of the cabins have been there since the 1930s and although they are very popular among the people permitted to

occupy them, Davenport says, "They are basically a headache. On the lower coast they are a necessity if you want to go fishing in some isolated areas, but this is not so much the case on the upper coast."

"We know the recreational cabins on Christmas Bay are going to be very much an item of discussion as we do our coastal preserve management plan. We may ultimately phase them out of that area, but there has been no real data on the damage—if any—that they do. It has been brought up that they might shade areas that could be productive for grasslands and there are also concerns about raw sewage coming from them that could

contaminate the bay," says Davenport, adding that during the 1970s there were as many as 700 cabins coastwide, but many were destroyed by hurricanes or by barges running over them and some were abandoned.

Throughout the entire coast, there are now about 450 cabins, which can be transferred from one person to another or rebuilt if they are destroyed. However, no additional cabins will be permitted. They are privately leased and permitted by the Land Office for five years at a time, but the state office has the authority to relocate them if necessary, says Davenport.

Oystering is prohibited only in the vicinity of the cabins because many of them are built on oyster reefs, says Jeffrey Kirk Wiles, environmental quality specialist with the Texas Department of Health's Shellfish Sanitation Control Division.

"Few, if any, of these cabins have sewage treatment devices. We can't find fecal coliform bacteria on a particular day coming from a specific cabin. However, from a public health standpoint, anytime there is a possible discharge of human sewage on top of an oyster reef, we have to make a closure."

Aside from the questionable water quality around the cabins, Texas Water Commission hydrologist and marine biologist Jeff Kirkpatrick summarizes four years of water quality data on Christmas Bay as "real good, almost excellent. Our samples show that the nutrients are low, chlorophyll is low, the dissolved oxygen is normal, and the fecal coliform bacteria are low."

Isolation from development, the absence of waste water discharge and healthy circulation account for it being "just a clean little bay," says Kirkpatrick. "It's between the Gulf Intracoastal Waterway and the Gulf, so there's good circulation through there. On an incoming tide, it draws in clean Gulf water and on the outgoing tide, it's flushed. It's pretty well remained in its natural state."

A lack of turbidity in the bay and unobstructed sunlight enable the valuable sea grasses to hold on and flourish.



Dennis Emiliani (left) and Dr. Pete Sheridan (right) with National Marine Fisheries Service frequently sample the seagrass habitats to determine what species use them.



Dr. Pete Sheridan, fishery ecologist with the National Marine Fisheries Service, frequently conducts ecological assessments of the area.

"We take samples to compare the various habitats in the area—whether it's the intertidal marsh grass or the subtidal sea grasses and bare sand areas—to see what value each habitat has for the various species that use them, for example juvenile blue crabs, small brown shrimp and fishes.

"What we've found over eight years of work throughout the bay system is that when the intertidal marsh is flooded, many animals will move up onto the marsh surface. There are also many animals out in the seagrass, but when we look at the bare sand area right next to them, there are very few animals."

"So, if you want to have good shrimp, crab and fish habitat, it's better to have marsh and seagrass than bare sand and bulkheads," says Sheridan, who finds Christmas Bay's coastal preserve status a relief. "I'm sure developers have had their eye on it but now we don't have to worry about it."

Brazoria County Texas Marine Advisory Service agent Charles Moss also believes that naming the bay a preserve has reduced the opportunity for commercialization.

"It's a little jewel of a bay locked in with marsh and protected from pollution. That's one of the reasons Brazoria County is so attractive to petrochemical companies and other marine resource users. Our tender spots are protected by the Refuge and salt marshes. Our development areas are all front beach with the sand dunes serving as barriers."

Moss says the primary users of shallow Christmas Bay are recreational fishermen, adding that the highest number of tournament winning trout are caught there. Before being "exceedingly overfished," he says there were large populations of quahog clams, which is the

preferred clam for chowder on the East Coast.

Although the bay is still open to clamming, he adds that "it's awfully hard work to get a mess of them. The odd thing is, we'd find these mature clams in the bay—in fact, there was a prize winner in excess of four pounds. There were some historic, heavy shell clams about the size of a quarter horse hoof."

Because of the prevailing southeast breeze, Christmas Bay is also becoming a popular place for wind surfing, says Moss. "It's a very kind, non-consumptive sport that just utilizes the buoyancy of the water and the energy of the wind. If I had to pick a sport that made the least impact on the environment, wind surfing would be right at the top."

Other than what Moss jokingly calls the "visual intrusion of gaudy sails" of the surfboards, Christmas Bay has re-

mained an oasis in the Galveston Bay system. He also joined in the fight against discharging treated sewage into the bay because "the tidal influence is minimal and whatever goes into bay water will stay there awhile before being flushed out."

And, while he still can't quite figure out why the majority of the bay has been overlooked by developers, Moss says preservation status came just in time.

"We were really concerned that somebody was going to come in and say, 'Man, this is an undiscovered paradise, so let's put in this monster condo, bring in a bunch of river sand to build our own beach, and off we'll go.'" — P.C. ■

*Christmas Bay is primarily used by recreational fishermen (top). The nearby Brazoria National Wildlife Refuge is a part of the Central Flyway and attracts a wide variety of birds each winter (bottom).*

