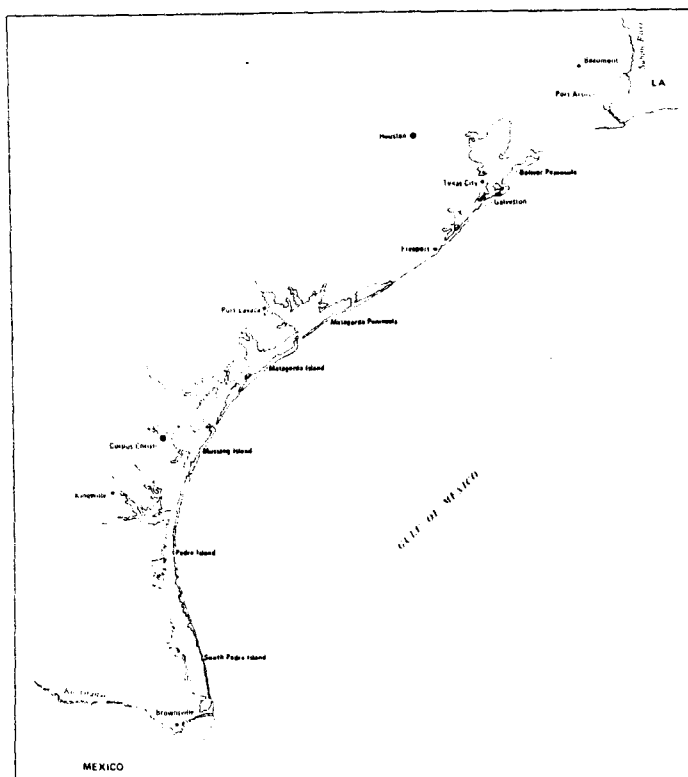


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refining capacity and 40 percent of its petrochemical industry.

All of this means a booming economy, even in recessionary times, for some of the coastal region's people. It also means grave disparities between rich and poor, and serious threats to the health and environment of all.

THE TEXAS COAST MAKES A SWEEPING SOUTHERLY CURVE

Nearly 400 miles long, from the Sabine River border with Louisiana to the mouth of the Rio Grande. Fronting the Gulf of Mexico for most of this length are the sand beaches of barrier islands and long narrow peninsulas — one of the world's longest coastal barrier systems, cut by fewer than a dozen narrow inlets. It shelters a number of bays, most of them shallow lagoons running parallel to the barriers, but also a few large open ones like Galveston Bay, Matagorda Bay, Corpus Christi Bay, Baffin Bay. Coastal marshes and wetlands border the bays, and behind them rises a gently sloping plain crossed by 11 major rivers, three flowing directly into the Gulf and the others into sheltered bays and lagoons. The region has for countless millennia been home to abundant wildlife, including the nearly extinct whooping cranes that winter in the Aransas National Wildlife Refuge.

When the first Spanish explorers

landed on the Texas coast in 1519, the northeast coastal plain, eastward of Galveston Bay, was sparsely settled by a farming tribe of Caddo Indians. From the Bay south toward Mexico, the coastal Indians were Karankawas — hunters, gatherers, wanderers, tall lean people who shot fish with bows and arrows and also fished with nets. None of these people survived the contact with Europeans, succumbing to war and disease over the next few centuries.

The people now living on the Texas coast are the product of successive waves of immigration beginning in the sixteenth century and continuing as strongly as ever today. Though the Spanish "conquered" Texas, there were only a handful of mission towns on the coast until the early 1800s, when the Spanish and Mexican governments encouraged settlers to inhabit this vast territory. Anglo-Americans moved down from places like Tennessee and Kentucky, and immigrants sailed from Europe and Mexico to coastal ports at Galveston, Corpus Christi and Matagorda.

In the early 1800s, also, Texas was a haven for runaway slaves — whom the Spanish government declared free when they hit Texas soil — and other free Afro-Americans looking for opportunities not available in the American South. The grace period for those escaping bondage was short-lived,

TEXAS

THE COASTAL PLAINS AND WATERS OF TEXAS ARE A MASS of contrasts — host to the densest urban/industrial complexes in this vast oil-and-gas-rich state, but site as well of huge expanses inhabited only by cattle and oil wells. Over the years, Texas has supplied more than a third of all oil and gas ever produced in this nation, with the coastal counties accounting for about one-fifth of the state's oil output and over two-thirds of the natural gas. Though Texas production has been declining since its peak in 1972, oil remains the region's lifeblood, as more and more is imported to sustain the world's largest petrochemical complex here. This string of refineries, storage tanks and chemical processing plants comprises 25 percent of the United States'

however. By the 1820s and '30s, Anglos arriving from slave states brought their captive laborers with them, established a slave market at Galveston and built a plantation system in east Texas just like the one back home.

South of Galveston, the land and climate could not support plantation-style agriculture. Instead, some early Texas cattle ranchers worked slaves as cowboys, herding livestock; they preferred white bronco riders, though, rather than risk monetary loss should a slave be killed or injured. Most of the Southern cattle country was owned and tended by Mexicans, and the area is still predominantly inhabited by people of Mexican descent. But the ownership has largely changed from caballeros on haciendas to millionaires on spreads like the King Ranch.

GENERALLY, THE COASTAL POPULATION OF TEXAS IS

growing at rates well above that of the nation as a whole. Several urban complexes account for much of this growth, with increases of over 50 percent in the 1970s, and demographers project 20 to 30 percent more people will live in the areas around Houston, Corpus Christi and Brownsville by 1990.

Lacking zoning, and receiving the lion's share of "sunbelt" immigrants seeking higher than average wages, Houston especially has sprawled to fill the marshy land around it with housing developments, industrial districts and all the servicing, policing and planning problems such rapid growth brings.

By and large, the still-rural counties do not share this trend: two of them actually lost population in the '70s. Despite urban sprawl, nearly half the land on the coastal plain remains devoted to agriculture. Rice is king on the upper coast, where there is plenty of rain and river water to flood the fields. Further south where the climate is semi-arid, cattle ranches occupy the coastal grasslands and marshes, and grain and cotton crops predominate. At the southernmost tip is the "Magic Valley" of the Rio Grande, rich soil that produces, with the help of extensive irrigation and a 12-month growing season, a wealth of fruits and vegetables, much of it harvested by chicano and Mexican migrants.

Although the fisheries play a rela-

tively minor role in Texas's coastal economy, they have a major share of the problems arising from fierce competition for local resources. Commercial fishing in Texas is of two general types — smaller boats in the protected bays and lagoons, and the more capital-intensive fleets in the open Gulf. The industry is worth about \$136 million a year in dockside landings, providing about 10,500 full-time jobs. Sport fishing is also a major industry; direct expenditures are estimated at \$42 million annually, with about 4,500 jobs provided by servicing businesses.

Most valuable to these fisheries are shrimp, oysters and other shellfish — all species dependent on the bays and estuaries for growth and reproduction and hence seriously threatened by industrial development, channel dredging and oil drilling that pollute these waters and change saline balances, temperatures and critical habitats. At the same time, some Texas fishers complain that they are hurting themselves by overfishing, that they face unfair foreign competition and that their costs are outstripping their incomes.

The critical cost problem is fuel. As one shrimper explains it, for every dollar of revenue, 57 cents goes for fuel and 35 cents for labor, leaving only eight cents to cover all other expenses, including the highest interest rates in history on mortgaged boats and equipment. Fuel cost is also the critical factor in their complaints about foreign competition; Mexican shrimpers trawl on fuel that costs one-fourth to one-third what Texans pay, because the Mexican government owns its oil industry and sells diesel fuel at reasonable prices.

In recent years the total commercial fisheries catch in Texas has been fairly constant — around 100 million pounds — but the number of licenses has grown by leaps and bounds. The number of bay shrimping licenses, for example, more than doubled between 1975 and '81. The general state of acrimony in the industry — charges and countercharges not just between Texans and Mexicans, but between bay shrimpers and Gulf shrimpers, sport fishers and commercial fishers, and between Louisianans and Texans — fills the newspapers of coastal cities and preoccupies politicians in the state capital to a bizarre degree.

Texas bay shrimpers and crabbers

were recently projected into the national limelight when some of them engaged in a bit of nastiness with Vietnamese refugees. The Vietnamese had been resettled on the Texas coast by seafood processors looking for cheap, dependable labor. Many of the refugees, though, soon surprised their sponsors by turning to shrimping themselves and making successful entries into the market. As a distinct group of racially different newcomers with different work habits and fishing methods — some of which conflicted with long-established local practices — the immigrants just as quickly became the focus of the native-born shrimpers' frustration with their industry's hard times. Tensions periodically erupted into violence, peaking in early 1981 in a handful of towns where the Ku Klux Klan tried to organize white fishers to drive the Vietnamese out of business. After the Vietnamese got a court order halting Klan activity, the situation eased: 1981 turned out to be a good year for shrimping, and the state legislature clamped a moratorium on new bay shrimp-boat commercial licenses.

The 1981 battle over redfish (red drum) is one of many illustrations of conflicts and politics in Texas fisheries. Redfish are popular: sport fishers love to catch them, and the commercial fishing industry depended on them for a steady several-million-pound crop until the late '70s, when the catch fell off sharply.

The state legislature passed a conservation act in 1977 limiting the commercial catch, in response to widely disputed claims by the State Parks and Wildlife Department that redfish were over-exploited. Still the harvest numbers fell until, in 1981, the legislature banned commercial red-fishing entirely. During loud and angry legislative hearings before the ban was enacted, state experts testified with one set of figures "proving" the declining number of redfish, and commercial fishers brought in federal marine fisheries officials to claim the opposite. The sport fishers' lobby was particularly effective: for instance, one Houston senator complained of threatening phone calls and telegrams from powerful people like John Connally and James Baker, President Reagan's chief of staff. Even Governor Bill Clements got into the act, siding with the lobby but moaning that he would have to go to New Orleans to eat

redfish. When asked about the fortunes of other Texas folks who could not afford a trip to Louisiana any time they longed for this popular staple, the governor said, "Let them eat catfish."

Recreational fishing in coastal Texas is such a favorite pastime — among all income levels of the population — that over 14,000 citizens signed petitions recently to save one bountiful fish pass through the Bolivar Peninsula from extinction. The Committee to Save Rollover Pass claimed that this tiny inlet annually drew 250,000 visitors to harvest its seasonal runs of speckled trout, flounder, croaker and redfish. Ironically, the target of the citizens' ire is the state of Texas, which in the mid-1950s created Rollover Pass to increase salinity in the bay behind the peninsula and improve its fisheries habitat potential. The state succeeded in making a tidal pass that lured bountiful supplies of marine life, but soon found that the perpetual expense required to keep an artificial, bulkheaded inlet from succumbing to tidal currents and storms was too high a price to pay for recreation. When the state decided to cease maintenance efforts at Rollover Pass, they had not reckoned with the inlet's popularity. Those fighting to save the pass have charged that many expensive channels and inlets are maintained elsewhere, for shipping and in politically powerful coastal communities, so why not Rollover Pass?

TEXAS BEACHES ARE DESERVEDLY POPULAR WITH THE PUBLIC

as well. During peak tourist season, for example, the daytime population of Mustang Island swells by 500 percent, a small influx of visitors compared to the 4,000 percent seasonal increase in the tiny city of South Padre Island. The 1970s and '80s have seen exponential growth and development in a number of beachfront areas — especially on Mustang and South Padre — yet there are still long stretches of near-wilderness, most notably the 80 miles of Padre Island National Seashore, largely inaccessible to anyone without a boat or a four-wheel-drive vehicle.

Unlike most coastal states, Texas has a history of protecting the public's right to use its beaches. The hard-won 1959 Open Beaches Act was a response to broad public realization that accessible beaches were becoming private-property enclaves for the wealthy.



photo courtesy Texas Highway Dept.

Generally, the act prohibits developers from building on the beaches. But growing coastal populations threaten its effectiveness. Realizing the value of the shore when access to it is inhibited, resort communities have been gradually undermining the Open Beaches Act by enacting local ordinances that prohibit vehicles from driving on the beaches while not supplying other adequate accessways or adjacent free parking. Steve Frishman of the citizens' Texas Environmental Coalition says the act needs "refining," but that free-access forces have been reluctant to push the issue with state legislators for fear they may water down the act's primary objective — free and unrestricted ingress and egress to the beaches of Texas.

Texas has done even less about protecting the beaches themselves from deleterious human interference. Over half of the state's beaches are eroding, with 13 percent losing more than 10 feet a year. Though erosion is partly the result of rising sea level and natural sand migration, it is also caused by a dramatic reduction in the supply of sediments that built the beaches; nearly all the rivers that carried these sediments to the Gulf and Texas bays have been damned upstream. As is true elsewhere, coastal erosion is only termed "critical" when it threatens beachfront developments, placing people and their expensive cottages and condos in jeopardy, and the response has been seawalls, jetties and bulkheads that further disturb the natural system and often create still more erosion.

Flooding is another problem along much of Texas's coast because the land is low-lying and loses its natural drainage ability as it is covered with concrete and asphalt, and when its wetlands are filled. Already chronic in the Houston area, flooding is expected to worsen in other developing areas in coming years.

Far worse than the drainage problem, though, is land subsidence, caused primarily by the heavy withdrawal of groundwater for industrial and municipal use. As the water is pumped out, the subsurface sediments compact and the land surface sinks. There are any number of places near the coast where measurable subsidence has occurred in the last 40 years; 3,000 square miles have subsided by a foot or more. In the Houston area, land near Galveston Bay has sunk as much as 10 feet, with severe losses of homes and productive land. In a neighborhood in Baytown on the north shore of the bay, for example, dozens of homes have been abandoned, and the people who remain must evacuate five or six times a year. Since the community is now located at mean sea level, any abnormally high tide is a real threat.

And hurricane-induced high water and storm surge are certain to come. Hurricanes have struck Texas at average intervals of two-and-a-half years since 1900, killing 7,000 people and causing \$3 billion in property damage. Most of the deaths came in just one storm — the one that destroyed Galveston on a weekend in September, 1900. The entire island was under water, and at least 6,000 people died.

Despite all known probabilities that another storm is only a matter of time, coastal communities are simply not prepared to evacuate their residents or to control building standards and booming growth in potentially hazardous areas. Former state senator Babe Schwartz, himself from Galveston, has described the dangers to the growing Gulf-front population as "a slowly unfolding tragedy," and blasts state government for not regulating burgeoning island growth and shoddy construction practices. Until Schwartz (who previously was known in Texas as "Senator Coast") was washed out of the legislature by the considerable Republican forces accompanying Ronald Reagan's ascension to the presidency, he attempted time and again to give coastal communities zoning power in unincorporated areas and

authority to adopt and enforce building codes. But "unscrupulous" lobbies defeated the bills, says Schwartz, who calls the real estate interests in particular "the sorriest-motivated group as a whole in Texas."

A typical case of development that is hazardous to life and property can be found on South Padre Island, where a 1967 hurricane cut an inlet through the island. The channel eventually silted in, but geologists say it is almost certain to reopen in the next major storm. This time the surge of waves will undercut a new development located right on the channel site.

THE "TYPICAL" WORKER ON MOST OF THE TEXAS COAST

does not fish or farm for a living, but rather works on an oil rig, in a refinery or in one of the plants that turn crude oil or natural gas into plastic, synthetic rubber, paint thinner, pesticides or polyester. The companies are household names — Dow, DuPont, Celanese, Goodrich, Union Carbide, Velsicol, as well as all the major oil corporations. Their heaviest concentrations are in the "Golden Triangle" of Beaumont, Port Arthur and Orange (which some of the residents have taken to calling the "Septic Triangle") and around greater Houston, but the industry is also important in Corpus Christi and Brownsville.

The refineries started going up in Houston even before oil was discovered in the area and expanded quickly

in the next decades as new oil and gas fields were discovered up and down the coast. The petrochemical plants were the gift of World War II, when German and Japanese chemical and rubber imports were cut off and the federal government turned to Texas to fill in. The result is a complex that one writer has christened the "Spaghetti Bowl" for the thousands of miles of pipelines running from one plant to the next and connecting to national pipeline networks.

It wasn't many years before residents discovered one dramatic aspect of life in the Spaghetti Bowl: accidents happen and people get hurt. The worst single incident came in 1947 when two ships, one loaded with ammonium nitrate, collided and exploded at the dock in Texas City, on Galveston Bay, setting fire to the adjacent Monsanto plant. People 15 miles away could see and hear the explosion. More than 4,000 were injured, and 576 died.

Smaller-scale collisions, explosions and toxic spills occur regularly in the state's industrial port waters. Experts worry most about the possibility of an explosion on the Houston Ship Channel, that umbilical cord which has transformed an inland city into the nation's third-busiest port, and which accommodates ships and barges carrying more than 70 known toxic materials, according to the Environmental Protection Agency. The ship channel is narrow, curving and dangerous, and even the Coast Guard's Vessel Traffic Service office in Houston tells tales

of ships encountering each other in fogs, on blind curves, and sometimes playing a "game" called "The Texas Chicken" — in which vessels approaching from opposite directions stay in the center of the channel as long as possible, then veer off sharply, bounce off the water compressed between their hulls and the banks and come back to midchannel, each pilot praying that the other ship is out of the way in time.

Chemical plants, refineries and other industries abut each other for 50 miles from Galveston Bay into the heart of Houston along the ship channel, and it is so polluted that some fear even the water might burn, spreading conflagration up and down its entire length.

Jobs in petrochemical plants pay well, but they carry a heavy cost: in a *Texas Observer* article, a Union Carbide worker ticked off this list of life-threatening hazards at his plant in Texas City: "Ethylene diamine will burn your skin. Phenol can kill, even if only eight percent of your skin is covered. Ethylene gas could kill you if you were in a confined space. Ammonia could explode. Sulphuric acids can burn and cause death." His plant is typical. Government investigators have counted 10 recognized carcinogens at the same plant. The reason they were counting is that an unusual number of the workers there were dying of brain cancer, and the federal study concluded that those Union Carbide workers stood twice the risk of dying of brain cancer than did all other white male residents in their county.

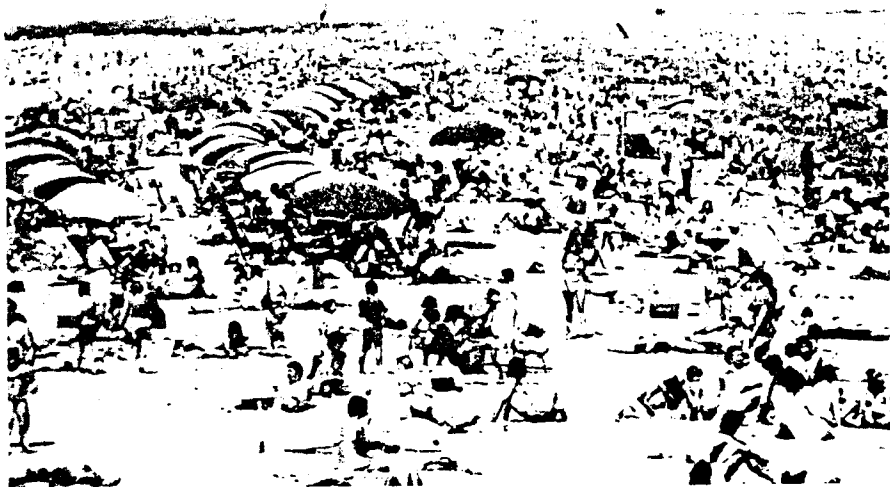
Similarly, the Oil, Chemical and Atomic Workers Union, which represents most of the workers in this industry, found in a recent informal survey that the average lifespan of their members is 55, while company executives live about 20 years longer.

And now there is disturbing evidence that the industry's victims are not limited to its employees. In Port Neches, between Beaumont and Port Arthur, lies the world's largest synthetic rubber complex, and people there are discovering an unusual susceptibility to leukemia among not only the plant workers but also people who live or go to school nearby.

There is also the matter of how to dispose of the staggering amounts of toxic wastes from petrochemical manufacturing. The numerous "problem"



photo by Roger Powers/The Houston Post



GALVESTON ISLAND, EASTER WEEKEND, 1977

sites in coastal communities include dumps where poisons and carcinogens have been abandoned and slowly leach into groundwater and soil — like the one in Galveston County that the Environmental Protection Agency ranks as a bigger threat than Love Canal. (See *Southern Exposure*, Fall, 1981, on toxics in Texas and elsewhere.)

The industry has less measurable impacts, too. One man who lives on the Bay near Houston says the quality of life has deteriorated significantly in the past 10 or 12 years: "We have the aura of a whole horizon of lights. It's difficult to see the stars at night because of the general lights of the city sky. In fact, if it's cloudy the light reflects, and it's like sunset all the time. Houston's become the new Land of the Midnight Sun."

AT THE ROOT OF THE PETRO-CHEMICAL INDUSTRY, OF course, is the petroleum itself. Although land-based extraction has been declining for several years, the offshore industry is expanding, and the state of Texas stands to gain a great deal more than neighboring Louisiana from this bonanza. Texas territorial waters extend three leagues out (10.35 miles) instead of the three miles that Louisiana is allowed to claim (see Kaufman article, page 49). But it is the local governments along the coast that pay the price of municipal services to the people and companies drilling and servicing the wells.

The most ingenious response to this

drain on city coffers came when Port Arthur annexed one of the world's most prolific natural gas wells nine-and-a-half miles off its shores. Galveston and Corpus Christi had long included two or three miles of Gulf in their city limits, but when Port Arthur sent Superior Oil a property tax bill of \$775,000 in 1981, the oil companies started a battle royal. They have not fared well in the courts — a state district court and an appeals court both ordered Superior to pay its taxes to Port Arthur. But the battle has been extended into the political arena. After much commotion last year, legislators decided to put a moratorium on further offshore annexations so it could "study" the matter.

Texas is also taking pains to assure its refineries and petrochemical plants a steady supply of imported crude oil. There are plans in various stages of development for superports (both offshore and onshore) capable of handling supertankers from the Middle East. Questions about reliable foreign supplies, public costs and environmental effects have delayed construction to date, but what is certain about the superports is that their appearance on Texas's coast would mean increased risk of oil spills, a familiar hazard there already.

Sometimes everything seems to go wrong at once, as in 1979, when the Mexican oil well Ixtoc I blew out in June in the Bay of Campeche. It wasn't capped until March, 1980, having spilled at least 140 million gallons, much of which ended up in

Texas waters and on Texas beaches. In the midst of this, in November, 1979, the oil tanker *Burmah Agate* collided with a freighter near the entrance to the Galveston Ship Channel. The *Burmah Agate* burned for 69 days and spilled over 16 million gallons of oil. Nine other incidents brought 1979's total spill to nearly 150 million gallons.

Oil spills, like every other threat to the Texas coast, will continue unabated until stringent regulations and penalties are imposed by the state. But responsibility for regulating coastal affairs is divided among a bewildering array of state boards, agencies and commissions, none with overriding authority. In a critique of the state's attempt at dune and shorefront protection, coastal hazard mitigation and growth management, the Sierra Club labeled those efforts "illusionary."

Recognizing this, the state's small but determined cadre of environmental activists and planning advocates, along with a few sympathetic politicians, worked hard through the 1970s to get Texas to join the national coastal zone management effort. The Texas Land Office spearheaded the effort, submitting three different management plans to the federal coastal office and the state legislature for approval, without success. They did achieve what one participant described as "tremendous consciousness raising" among coastal citizens during the struggle, while the state spent millions in federal grants, and considerable funds of its own, on its half-hearted attempt.

Following the failed coastal management effort, Republican Governor Clements added insult to injury by moving coastal planning activities out of the generally protectionist Land Office and into his own Energy and Natural Resources Advisory Council, which one insider recently described as "passive in the extreme" when it comes to environmental affairs. In this region of intense industrial and urban development, with so much potential for damage to human life and the environment, passivity offers little hope for the future well-being of the Texas coast.

By Linda Rocawich, with thanks to Dan Stroh, Steve Frishman, Babe Schwartz, Sally Davenport and Paul Sweeney.

photo courtesy Texas Coastal and Marine Council