



In 1893 a hurricane swept Cheniere Caminada almost clean-four homes survived, no date: (Frank Leslie's Illustrated Weekly, October 26, 1893, p. 269, Biloxi Public Library Archives).



Cheniere Caminada's Our Lady of Lourdes church, 1891: (National Archives, Negative No. 22-FCD-39).



Fisherman's wife next to a typical south Louisiana outdoor (bousillage) oven, which could hold up to 15 loaves of bread at a time, 1891: (National Archives, Negative No. 22-FCD-37).



Leon Theriot's sail-powered lugger Neptune flying the French flag, near Cheniere Caminada, 1891: (National Archives, Negative No. 22-FCD-32).



Father Grima, the Breton priest responsible for building the Catholic Church on Cheniere Caminada, no date: (Harper's Weekly, October 21, 1893, p. 1,000, Biloxi Public Library Archives).

Cheniere Caminada: The Disappearance Of A Community



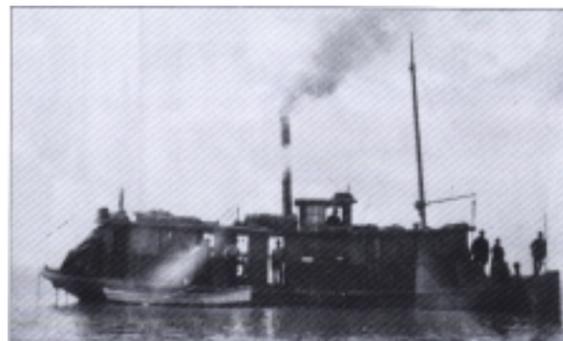
After the 1893 hurricane, the dead were buried in shallow graves, no date: (Frank Leslie's Illustrated Weekly, October 26, 1893, p. 269, the Biloxi Public Library Archives).



The palmetto-covered Chinese camp at Bayou Andre, where 63 people were lost during the 1893 hurricane, 1893: (Harper's Weekly, October 21, 1893, p. 1,000, Biloxi Public Library Archives).



Typical Cheniere Caminada Creole houses, surrounded by a cypress pique fence, 1891: (National Archives, Negative No. 22-FCD-33).



Steamboats were used to bring supplies to Louisiana's coastal fishermen, 1891: (National Archives, Negative No. 22-FCD-246).



John Meralina, a Barataria Bay Malay fisherman, rescued eight persons after the 1893 storm, no date: (Harper's Weekly, October 21, 1893, p. 1,000, Biloxi Public Library Archives).



Grand Isle's Kranz Hotel was depicted as a total loss in this line drawing, no date: (Frank Leslie's Illustrated Weekly, October 26, 1893, p. 269, Biloxi Public Library Archives).



Cheniere Caminada fishermen, 1891: (National Archives, Negative No. 22-FCD-42).



The folk architecture of Cheniere Caminada included palmetto-covered structures built with techniques learned from the indigenous Indian population. Cast nets were hung on the fence to dry, 1891: (National Archives, Negative No. 22-FCD-41).



Of Louisiana's folk boats, the esquif, or skiff, is the most easily distinguished. This sail- and oar-powered boat from Cheniere Caminada would have been identified locally as a peniche, chaloupe, or galere, 1891: (National Archives, Negative No. 22-FCD-47).

CHENIERE CAMINADA

Cheniere Caminada lifts its comb of roof and gray gable and soft-colored adobe chimneys from out the clumps and clouds of the chinaberry tree. Along the shores in the water shallows the fishermen have hung their long seines to dry. (Cole, 1892a, p. 12)

At the west end of Grand Isle, less than a mile across the Caminada Bay, was the "Isle of Cheniere," or "Island of Chetimachas" (Public Lands, 1836). The island, valued at nearly \$20,000 and worked by about 50 slaves, was an operating plantation in 1836 (Swanson, 1975). By 1890 Cheniere Caminada (from the French, meaning *a roadway through oaks*) was an important fishing settlement and the most densely populated community on Louisiana's barrier islands with its ownership roots dating back to 1763 (Public Lands, 1836). It had a cosmopolitan ambience, made up of Yugoslavians, Italians, Chinese, Malays, and a few blacks (Sampsel, 1893).

The island was a thriving hamlet with a population of 1,471. About 250-450 small, gray, pleasant homes were stretched side by side in two long lines-one faced Caminada Pass parallel to the Gulf shore and a short distance from the beach, the other fronted Caminada Bay. Space was precious, so the homes were set close together-as dense as urban row housing (Cole, 1892b).

The palmetto-covered, bousillage homes were spartan but neat, with brick dust floors and huge fireplaces. The smell of coffee was always in the air-"black as sin, hot as the hinges of hell, and strong as revival religion" (Frost, 1939, p. 76). Fences were made of driftwood stuck into the ground (Cole, 1892b). Homemade outdoor ovens, located behind the homes and often in a grove of orange trees, were used to bake water-buck&sized loaves of bread (pain chaud)-12 to 15 at a time; it was some of the "best bread you ever ate" (Lanski, 1943). A Breton priest, Father Grima, built a high, narrow, brown and yellow Gothic church on the island and dedicated it Our Lady of Lourdes (Cole, 1892b). There were also nine grocery stores; each sold seines, castnets, sails, and oil coats, items the native fishermen considered essential (Cole, 1892b). All of Cheniere Caminada's outside needs were met by either these grocery stores or by supply boats that came through the Barataria water system from New Orleans (Van Pelt, 1943).

The chief form of entertainment on Cheniere Caminada was a ball held on Saturday nights. Admission was free to the locals, and soft drinks, gumbo, and coffee were sold, along with a regional specialty, boiled mullet or meul bouille. Guests could attend these functions for 25 cents, which guaranteed a supper with red wine (Cole, 1892b).

Decked in front of each home were the long, shallow boats that under sail were well adapted to both the legal and illegal activities of the fishermen. Jake Kilrain, John L. Sullivan, Buffalo Bill, II Destino, and Nativita di Caminada were stenciled on the bows of these boats. Boats were the net fishermen's transportation. It is quite possible that many of these net fishermen were descendants of the crews of the privateer Jean Lafitte.

Cheniere Caminada was a thriving community. Its population primarily harvested the region's renewable resources: shrimp, oysters, crabs, and fin fish. They practiced their seasonal occupations in virtual isolation. These net fishermen would leave their homes, often for months, to sail to their winter camps where they harvested various aquatic species. Shrimp, oysters, and crabs were shipped to New Orleans and consumed by the city's hotels, restaurants, and steamboats or exported to other markets.

LOUISIANA'S WORST HURRICANE DISASTER

The 1893 storm destroyed Cheniere Caminada. Four homes remained, and these were filled with crowds of survivors (The Weekly Thibodaux Sentinel, 1893b). The land was swept clean, and the death toll varied from 779 to 822, with only 696 people surviving (The Weekly Thibodaux Sentinel, 1893b). Some survivors drifted nearly 100 kilometers across the Gulf to Southwest Pass. There were 78 people in one home; the house collapsed, killing 74 (The Weekly Thibodaux Sentinel, 1893a). Dead were everywhere; the odor endured. Often coffins and separate graves were unavailable, so bodies were buried where they were found. There were so many dead, the graves of those who were recognizable were aligned like the rows in a plowed field (Sampsel, 1893; The Weekly Thibodaux Sentinel, 1893a). Those who survived saved themselves by using timber, roofs, and doors-anything that floated-for rafts. Of the island's fishing schooners and red-sail luggers, only the *Good Mother* and *Counter* survived (The Daily Picayune [New Orleans], 1893). The storm also took its toll on Grand Isle and many shrimp platforms in Barataria Bay, such as at Bayou Andre, Bird Island, and Bayou Dufond. Relief boats from New Orleans brought supplies and ice to be melted for drinking water; crew members were appalled by the destruction (Van Pelt, 1943).

After the hurricane, Cheniere Caminada was abandoned. Some people eventually returned, but their new community was destroyed by a 1915 hurricane (Baker, 1946).



One of the few houses that partially survived the 1893 storm, no date: (in Mark Forrest, *Wasted by Wind and Water: a Historical and Pictorial Sketch of the Gulf Disaster*, Milwaukee, Art Gravure and Etching Company, Louisiana and Lower Mississippi Valley Collections, Hill Memorial Library, Louisiana State University Libraries).



Sixty-two people survived the Cheniere Caminada disaster under the roof of this collapsed shed, no date: (in Mark Forrest, *Wasted by Wind and Water: a Historical and Pictorial Sketch of the Gulf Disaster*, Milwaukee, Art Gravure and Etching Company, Louisiana and Lower Mississippi Valley Collections, Hill Memorial Library, Louisiana State University Libraries).



Out of a population of about 1,500 people, more than half did not survive; dead were everywhere, no date: (in Mark Forrest, *Wasted by Wind and Water: a Historical and Pictorial Sketch of the Gulf Disaster*, Milwaukee, Art Gravure and Etching Company, Louisiana and Lower Mississippi Valley Collections, Hill Memorial Library, Louisiana State University Libraries).



Wash day at a shrimp fisherman's home at Cheniere Caminada, with the Catholic church and other structures in the background, 1892: National Archives, Negative No. 22-FC-34).



Relief steamer, surrounded by loggers, taking supplies to the survivors of the 1893 hurricane, no date: (in Mark Forrest, *Wasted by Wind and Water: a Historical and Pictorial Sketch of the Gulf Disaster*, Milwaukee, Art Gravure and Etching Company, Louisiana and Lower Mississippi Valley Collections, Hill Memorial Library, Louisiana State University Libraries).



Part of the aftermath of the Cheniere Caminada hurricane, date: (in Mark Forrest, *Wasted by Wind and Water: a Historical and Pictorial Sketch of the Gulf Disaster*, Milwaukee, Art Gravure and Etching Company, Louisiana and Lower Mississippi Valley Collections, Hill Memorial Library, Louisiana State University Libraries).



Grand Isle fishermen, burned by thousands of days of exposure to the sun, vividly describe the history of the area's hardy inhabitants, ca. 1940: (in Justin F. Bordenave, ed., Jefferson Parish Yearly Review, Special Collections Division, Hill Memorial Library, Louisiana State University Libraries, p. 50).



A racing hull designed and built in Houma. Annual races were held at Sea Breeze—a community that has been eroded away, ca. 1930: (Randolph Bazet Collection, Houma, Louisiana).



Successfully tonging oysters from Louisiana's prolific oyster beds, no date: (Louisiana Department of Wildlife and Fisheries, Photographic Archives).

Wetlands Harvest



Scooping up blue crabs in Barataria Bay, 1930: (Fonville Winans, Louisiana State Library, Louisiana Photographic Archives).



To maintain navigability many bays were dredged, or canals were cut to connect existing waterways. The dredge Eclipse was active in Lafourche and Terrebonne parishes, no date: (Historic Lafourche Collection, Allen Ellender Memorial Library Archives, Nicholls State University, Thibodaux, Louisiana).



A fishing boat rendezvous, ca. 1920: (Randolph Bazet Collection, Houma, Louisiana).



Fishing has always been a popular recreational activity along Louisiana's coast, no date: (Louisiana Department of Wildlife and Fisheries, Photographic Archives).



December, January, and February were the traditional trapping months. The animal's pelt was fleshed, washed, stretched, and dried, no date: (Louisiana Department of Wildlife and Fisheries, Photographic Archives).



Trappers built rough-hewn camps in the marsh to efficiently harvest their leases during the winter season. Entire families moved into these settlements—schools closed because most of the students were working their families' trapping lines, 1930: (Louisiana Department of Wildlife and Fisheries, Photographic Archives).



A successful shrimp harvest, ca. 1920: (Randolph Bazet Collection, Houma, Louisiana).



The Louisiana prouge (pettyaugre) draws so little water it is said to "float on a heavy dew." This shallow-draft folk boat became an indispensable tool to the coastal dweller, ca. 1935: (in Channing Stowell, ed., Jefferson Parish Yearly Review, Special Collections Division, Hill Memorial Library, Louisiana State University Libraries, p. 54).



In the late 1800's and early 1900's market hunters and sportsmen harvested thousands of birds and millions of eggs for restaurants, glue manufacturers, photographic films, and the millinery trade, ca. 1920: (Randolph Bazet Collection, Houma, Louisiana).



In the late 1800's, one hunter could market more than 1,000 alligator hides annually, ca. 1905: (Louisiana State Library, Louisiana Photographic Archives, WPA Photographic Archives).



Crab fisherman, ca. 1930: (Fonville Winans, Louisiana State Library, Louisiana Photographic Archives).



Mixed Houmas at Little Bayou, Louisiana, 1907: (Smithsonian Institution, Photo No. 14287)



A trainasse machine cut the narrow pirogue trails that allowed trappers access to their trapping areas, 1889: (Donald Davis Collection, Baton Rouge, Louisiana).



To effectively harvest the marsh, trappers built isolated camps near the areas they trapped, 1947: (Todd Webb, Louisiana State Library, Louisiana Photographic Archives).



The Louisiana muskrat, ca. 1940: (Louisiana Department of Wild Life and Fisheries, Photographic Archives)

WETLANDS TRAPPING IN FRENCH LOUISIANA

Trapping, one of the oldest means for obtaining food and clothing, originally was a profession confined primarily to the taiga and tundra regions of northern Alaska and Canada. Once alligator (Alligator mississippiensis), mink (Mustelavison), otter (Lutra canadensis), and raccoon (Procyon lotor) were recognized as valuable hide- and fur-bearing animals, the belief that quality furs came only from cold climates was dispelled. Within 150 years Louisiana marshes became North America's preeminent fur-producing region. By the early twentieth century, Louisiana's annual harvest was greater than that of Alaska and Canada combined. Louisiana's wetlands were considered an important and easily exploited wildlife habitat (Ashbrook, 1953; O'Neil, 1965).

Before the 1914-22 increase in fur prices from 8 to 50 cents a pelt (Chatterton, 1944), hunting was more profitable than trapping; a brace of ducks sold for 25 cents. Locals changed their winter subsistence activity from hunting to trapping because of the 500 percent increase in fur prices.

Ten years later approximately 20,000 people were involved in Louisiana's essentially uncontrolled trapping industry. A trapper set lines on any land that suited him because he was concerned with productivity, not property ownership. To work this land a trapper went into the marsh with his entire family. Children lived on the trapping lines and returned to school after the three-month season to "catch back" their studies (Frost, 1939).

Marsh dwellers used cane poles to mark their trapping areas and brought order to what could have been chaos. Once staked out, individual plots were respected. Ditches were cut to gain access to the marsh. A trainasse or ditch, could be used to cross someone else's claim, but traps were never set on another person's land (Davis, 1976). It was folk law that trapping grounds were honored and divided according to families: often husband and wife trapped different parcels. When fur prices increased, people from outside the area became involved in the industry (Davis, 1973). These outsiders competed for the choice trapping areas. This disregard for individual rights culminated in a trapper's war in St. Bernard and Plaquemines parishes (Washburn, 1951).

To remedy the situation, the State intervened and established a controlled harvest; pelts were, for the first time, graded to determine their value. In addition, landowners assigned individual trappers parcels of land, and licensed trappers, free-lancers, and bootleggers were unable to work the land easily. Competition and poaching by outlaws and outsiders were eliminated (Washburn, 1951). Arrangements with landowners varied; generally, a trapper worked on a 50-50 basis. When furs were scarce, a 65-35 share was negotiated, with the trapper receiving 65 percent (Frost, 1939).

With the increased value of furs, trappers spent more time in the marsh, so they lived on their trapping leases in small, one- or two-room, palmetto-thatched huts called camps, crude by today's standards but adequate and always clean. The huts were copies of the houses built on the natural ridges by many native Americans. There was no need for a larger structure because trapping families

spent most of their time outdoors.

The camps evolved into more permanent structures with wood-burning or butane stoves to supply heat, white-gas or kerosene lantern lights, and cistern water (Gary and Davis, 1979). These camps were rough-hewn buildings but actively used only in December, January, and February, so they were quite adequate. Everything required at the camp was hauled in by boat (Daspi, 1948). Large boats provided access, but motorized pirogues and mudboats allowed the trapper to increase his trapping from 150 to 400 traps by increasing the territory covered (O'Neil and Linscombe, 1975).

At the camp the pelts were fleshed, washed, stretched, and dried. They were then sold to a local buyer who sold to one of the Louisiana fur dealers. Trapping was and is a labor-intensive industry. In fact, the method employed in trapping and handling the fur has changed little since the invention of the steel trap by Sewell Newhouse in the mid-1800's (O'Neil, 1969).

MUSKRAT AND NUTRIA

Beaver, otter, and mink did not account for Louisiana's trapping growth; it was a result rather of the willingness of the local population to exploit the region's unique resources: muskrat (*Onatra zibethicus rivalicus*) and nutria (*Myocastor coypus*).

Before the late 1800's the muskrat ranged as far south as southeastern Arkansas, but by 1900, it had become a permanent resident of Louisiana's marshes (O'Neil, 1949). Although it inhabited the wetlands, Arthur (1931) and O'Neil (1949) found no documentation linking muskrats to the early French fur trade. Fur buyers were interested in buffalo (*Bison bison*) and the American beaver (*Castor canadensis*). Muskrat pelts were offered to northern markets in 1870, but wholesalers considered them useless. By 1914, however, pelt prices increased. The animal was on the fur market and became the State's number one fur product, a title it eventually lost to the nutria (Chatterton, 1944).

To increase their marketability, muskrat pelts were often specially treated, and sold under the label French Seal or Hudson Seal (Chatterton, 1944). With time, the muskrat gained prestige under its own name. Because each pelt has three distinct colors: black (stripe down the back), light golden brown (sides), and silver (body), they could be used for three different garments (Murchison, 1978).

A muskrat builds its house, made of woven marsh grass and plastered with mud, 1.2 to 1.5 meters above the marsh surface, from which it can forage into the surrounding terrain. These houses are the keys to production because they identify the muskrat's brackish water habitat.

The Argentinian coypu, or nutria, was inadvertently introduced into the Louisiana wetlands in 1938 and is now well established throughout the State. The rodent first was considered a nuisance because it was heavy to carry out of the marsh, difficult to skin, and confined to a single area, but with increased prices, attitudes changed (Dozier and Ashbrook, 1950). By the early 1950's, trappers were harvesting nearly 80,000 pelts annually. Six years later, over 500,000 pelts were processed, a significant increase in less than 20 years (Davis, 1978). During that time, nutria pelts generated over \$7 million a year and represented about half of the State's fur income—all from a dozen coypu that escaped captivity (Daspi, 1950).



A trapper "flashing" the day's catch, no date: (from the U.S. Army Corps of Engineers, New Orleans District, Photographic Archives).



At one time, Louisiana produced more fur than the remainder of the United States and Canada combined, 1884: (Donald Davis Collection, Baton Rouge, Louisiana)



In a good year, a trapper would harvest from 50 to 200 animals a day. When brought back to camp, muskrat and nutria had to be cleaned immediately, ca. 1930: (Louisiana Department of Wild Life and Fisheries, Photographic Archives).



The Argentinian coypu, or nutria, was accidentally introduced into Louisiana's coastal lowlands, where it has proliferated, 1886: (Donald Davis Collection, Baton Rouge, Louisiana).



Mule carts were used to transport pirogues to access points, ca. 1930: (Randolph Bazet Collection, Houma, Louisiana).



Once an endangered species, the alligator has been reestablished in the wetlands. Each September, Louisiana has a controlled alligator hunt, 1888: (Donald Davis Collection, Baton Rouge, Louisiana)



At the turn of the century, pirogues were used to harvest the swamps, ca. 1900: (courtesy of Milton Newton, Louisiana State University Department of Geography and Anthropology, Bowie Lumber Company Collection).



Palmetto homes were a visible part of the wetlands landscape, 1910: (Swanton Collection, Smithsonian Institution, Photo No. 244).



Once dried, pelts were graded and sold to local buyers, ca. 1920: (Randolph Bazet Collection, Houma, Louisiana).



In some places, an isolated trapping village was constructed to meet the needs of several families, ca. 1930: (Louisiana Department of Wild Life and Fisheries, Photographic Archives).



For over 100 years Louisiana's waterpeople have harvested oysters from the State's estuarine habitats, ca. 1940: (Louisiana State Library, Louisiana Collection, WPA Photographic Archives).



To facilitate processing, oyster shops often were built on isolated sites near the oyster beds. This shop was located in the Terrebonne-Timbalier complex, south of Houma, ca. 1920: (Randolph Bazet Collection, Houma, Louisiana).



Fishermen often sold their oysters, crabs, or shrimp to larger boats, so they could remain at work, rather than losing time travelling to market, 1891: (National Archives, Negative No. 22-FCD-247).



In Terrebonne Parish, at Boudreaux Canal on Bayou Pettit Callou, Andrew St. Martin built an oyster-shucking plant to quickly process the region's harvest, 1911: (Randolph Bazet Collection, Houma, Louisiana).



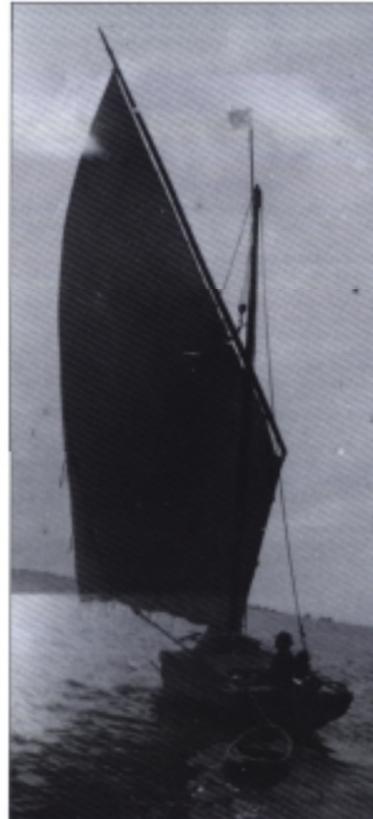
Although New Orleans was recognized as Louisiana's principal oyster market, oyster-shucking houses were built in many delta-plain communities. Houma developed into one of these regional centers, no date: (Randolph Bazet Collection, Houma, Louisiana).



Eight members of the Descaricadores, a quasi-organization of Sicilians and Italians that controlled the unloading of New Orleans' oyster vessels, 1891: (National Archives, Negative No. 22-FCD-266).



In 1887, the oyster industry was well established in coastal Louisiana. Approximately 200 luggers, employing more than 600 men, supplied New Orleans' Ligger Bay with oysters, 1891: (National Archives, Negative No. 22-FCD-17).



Historically, movement through the coastal wetlands presented people with a special challenge and resulted in development of unique folk boats. The shallow-draft, self-driven Louisiana lugger became the preferred working vessel of the region's fishermen, 1891: (National Archives, Negative Number 22-FCD-32).



Oyster luggers at the New Orleans' French Market, 1891: (National Archives, Negative No. 22-FCD-18).



Locks at Empire allowed oyster luggers to move easily between the Mississippi River and the estuarine complex west of the river, ca. 1938: (Forville Winans, Louisiana State Library, Louisiana Photographic Archives).

LOUISIANA'S PROLIFIC OYSTERBEDS

Estuarine-dependent oystermen rely almost totally on one species, the American oyster (*Crassostrea virginica*). At the turn of the century, Louisiana and Mississippi were leaders in the production of this important bivalve. To harvest their oysters, Louisiana's watermen leased the right to harvest the state's water bottoms. Isolated settlements were established to watch the leases to ensure that poachers would not disturb the tonging grounds.

To exploit the beds, oystermen used a pair of tongs, which resembled two long-handled rakes tied so the teeth were facing each other. Leaning out over their luggers, oystermen spread and lowered their tongs into the water. The opened tongs were shoved into the reef and forced closed, grabbing several bivalve clusters. The oystermen then dumped their catches into their boats. One man would tong and another would cull the undersized product. This process was repeated until the boat was full, the catch too small, or darkness or bad weather set in and forced the men to return to camp. Using this technique, oystermen could harvest 20 barrels a day.

Tongs were eventually replaced by the oyster dredge—a large basket-like framework with curved teeth that was dragged through the beds to snag the oysters. With this new technology, the harvest increased. Luggers were customized with a false deck and temporary sides to accommodate the expanded catch. The dredge's deck became an extension of the vessel's hold and could carry from 50 to 80 barrels of oysters (Zacharie, 1898; Prindiville, 1955). The watermen who lived near their beds used small boats to work their leases, but sold to owners of larger boats. In this way, they could remain at work, rather than lose time traveling to the market.

Eight boats from the Barataria communities of Bayou Cook, Bayou Chalous, and Four Bayous unloaded their catches in New Orleans every week. Thirty luggers delivered the harvest from Southwest Pass and Salina. From the Timbalier region another 15 luggers transported their harvest to the city from "considerable villages composed of rude camps of the oystermen built upon piles on the sea marsh" (Moore, 1899, p. 71). In all, an estimated 4,000 people were involved, directly or indirectly, in the oyster trade (Stems, 1887).

By 1887 approximately 200 luggers, employing over 600 men, supplied New Orleans' Ligger Bay with oysters (Stems, 1887). These sailing vessels delivered from 50,000 to 125,000 barrels annually; a barrel held approximately 200 pounds of oysters and sold for \$2.00 to \$3.50. Wholesalers paid 40 cents for a sack of oysters and transported them to New Orleans where city vendors sold them for about 70 cents a sack—a profit of almost 75 percent (Ross, 1889b).

Each boat was unloaded by stevedores, who controlled the discharge of New Orleans' cargo. A quasi-organization of Sicilians and Italians was solely responsible for unloading the oyster vessels (Stems, 1887) and overseeing the crews that worked the docks.

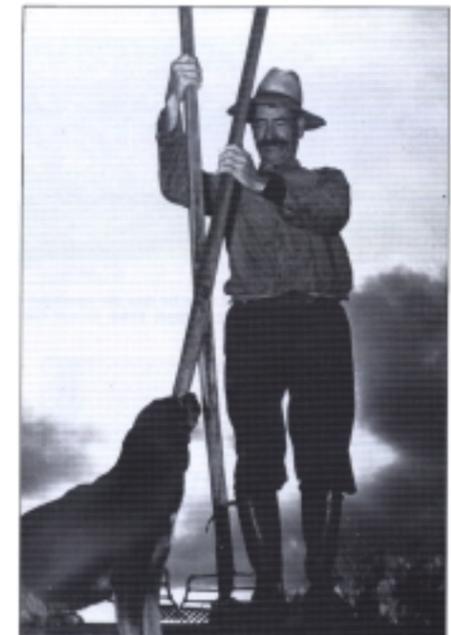
Competition between Louisiana and Mississippi over the oyster beds east of the Mississippi River became so keen, men were accused of being "oyster pirates." Using a fleet of lumber schooners capable of carrying from 1,000 to 2,000 barrels a trip, Mississippi-based watermen reportedly harvested hundreds of schooner loads of St. Bernard Parish oysters (Zacharie, 1898). The issue became a heated one, and in 1905, armed boats began patrolling the State boundary to ensure that only licensed fishermen were exploiting Louisiana's oyster beds (Fountain, 1985). Bohemians manned Biloxi schooners that operated for weeks in the marshes of the Mississippi River delta country—often illegally in Louisiana waters (Fountain, 1966).

Predators were also a problem. To protect the beds from schools of drum or sheepshead, which could devour hundreds of barrels of oysters in a single night, pens were constructed of old seine supported on pickets or hardware cloth (Zacharie, 1898). At times lines with rags attached to them were used to frighten the fish away.

OYSTERING IN BAYOU COUNTRY

Jack's Camp, Camp Malnomme, and Bayou Landry were important harvesting sites in the barrier-island-protected leases of south central Louisiana. Small fishing villages were near these sites. Oysters harvested in one area sometimes were used to restock other beds. In this way, oystermen accumulated catches that would warrant a trip to the New Orleans' market. Fishermen worked beds at the Chandeleur Islands, Bayou Cook, Grand Bayou, Bayou Lachute, Timbalier Bay, Isles Dernieres, Barataria Bay, Wine Island Lake, Vermilion Bay, and Calcasieu Lake. Bayou Cook oysters were generally considered the State's best (Zacharie, 1898). Prized oysters were also being harvested in Lake Felicity, Lake Barre (especially at Mud, Hatchet, and Muddy Bayous), and Bay Jocko (Moore, 1899).

In the late 1800's there were at least 20 camps along Grand Bayou du Large between the Gulf of Mexico and Sister Lake. Oyster camps were also located on Pelican Lake, and the Timbalier region's oyster grounds were quite productive. Even with a relatively small number of people working the beds, Sister Lake alone yielded from 4 to 8 barrels of oysters per day (Moore, 1899). It is a region that continues to save the oyster industry well.



A pair of tongs resembling two long-handled rakes tied so their teeth were facing each other was used to harvest Louisiana's oyster beds, ca. 1930: (Forville Winans, Louisiana State Library, Louisiana Photographic Archives).



Shrimp used in the shrimp-drying business were boiled in a hypersaline solution. When removed from the vats, the shrimp were taken by wooden wheelbarrows to the platform's drying area, ca. 1920: (Randolph Bazet Collection, Houma, Louisiana).



At the southern limit of Dupre Cut-Off canal in Barataria Bay was the shrimp-drying settlement of Manila Village. Dominated by a large platform, this was the largest shrimp-drying community in Louisiana's alluvial wetlands, 1938: (Fonville Winans, Louisiana State Library, Louisiana Photographic Archives)



Manila Village's buildings and wharf, built over the shallow water on hand-driven pilings, were used to unload the newly arrived unprocessed shrimp, no date: (Louisiana State Library, Louisiana Collection, WPA Photographic Archives)



Hand-woven china baskets, along with wheelbarrows, were used to move shrimp around the platform, no date: (Louisiana State Library, Louisiana Collection, WPA Photographic Archives)

SHRIMP DRYING: AN ANCIENT CHINESE ART

The shrimp-drying procedure used in Louisiana originated in the Orient and diffused to Louisiana from the United States' west coast. In 1871, Chinese immigrants began to harvest San Francisco Bay shrimp (Jordan, 1887; Bonnot, 1932). These fishermen were quite successful and found it profitable to supply the markets with shrimp at three cents a kilogram. "From the very start they dried the bulk of their catch for the Oriental export trade. The shrimp industry quickly grew to large proportions and fishing was carried on at many places in San Francisco Bay" (Scofield, 1919, p. 2). By 1873, Chinese migrants from California had introduced the lucrative sun-dried-shrimp process to Louisiana, hoping to duplicate the profits generated from the San Francisco Bay enterprises as well.

Shrimp-drying villages were well-organized hamlets established to overcome the early problems of food preservation in Louisiana. The sites were dominated by large, undulating, wooden platform-a term which locally had two meanings; one referred to the drying area only, the other included the associated support structures as well.

Shrimp in Louisiana had been a source of income and a basic food item since the colonial period. As early as 1718, the Dutch historian A. S. Le Page Du Pratz, stated

The Shrimps are diminutive crayfish usually about three inches long, and of the size of the little finger in other countries they are generally found in the sea in Louisiana you will meet with great numbers of them more than a hundred leagues up the rivers. (Le Page Du Pratz, 1774, p. 277)

Le Page Du Pratz also noted that shrimp were not limited to the sea. Indeed, the majority of shrimp used in the sun-drying process was caught in Louisiana's inland waters. As a result, Barataria, Timbalier, Terrebonne, Cailou, and Atchafalaya bays, and Breton and Chandeleur sounds are important to the production of marketable shrimp. These estuarine or estuarine-like areas also served as settlements because before ice and modern freezing techniques were available, shrimp caught in these fishing grounds were taken to one of the nearby platforms to be dried, packaged, and sold.

There are conflicting reports on the original practitioner of his art in Louisiana: it was either Lee Yeun, Chen Kee, or Lee Yim (Adkins, 1973). Although the person responsible for starting his occupation is apparently lost to history, it is fairly well agreed that the first crude drying platform was built on the

south side of the mouth of Grand Bayou in Barataria Bay, at a site later to be Cabinash. This camp was originally used in an effort to sun

dry oysters, but when this proved to be impractical the men began to dry shrimp. (Padgett, 1960, p. 142)

Louisiana Land Office records show that in the early 1880's Oriental immigrants purchased, for \$1.25 a hectare, several small islands in Barataria Bay for platform sites (Adkins, 1973). These tracts were ideally suited for this purpose. By 1885, the industry was well established when

Yee Foo was issued Patent Number 310-811 for a process to sun-dry shrimp. Actually, the Chinese have used this method for preserving shrimp and other animal foods for centuries, but the patent made the process and established method of food preservation. (Love, 1967, p. 58)

Originally, the primary market for dried shrimp was the large Oriental communities on the Pacific coast: nearly \$100,000 in dried products a year were shipped there from each camp (Cole, 1892a). As production increased, distribution expanded to the Far East: the greatest volume was exported to China, the Philippine Islands, and Hawaii. Smaller quantities were shipped to the West Indies and South America (U.S. Department of Interior, 1950).

PLATFORM SETTLEMENTS

Settlements at Bassa Bassa, Manila Village, Camp Dewey, Chenier Dufon, Cabinash, Fifi Islands, and Bayou Brulleau were established for shrimp preservation and shipment to the various markets. In Barataria Bay there were six or more of these camps, occupied by hundreds of people (House Document, 1917).

Most of the shrimp seining was done by the French, the Chinese, or the Malays. Although Oriental peoples dominated the platform population, other ethnic groups also were involved. Platform crews frequently were a melange of representatives from water-oriented cultures. As many as 15 seine crews and a year-round platform population of about 100 contributed to a maximum of 500 people living on one platform. Most did not leave these isolated settlements because they were in this country illegally. It is rumored that some were smuggled into Louisiana by commercial fishermen who placed the aliens in barrels to bring them through coastal waters.

THE GEAR REQUIRED

In Louisiana's inland waters shrimp fishermen used the sail-driven Louisiana lugger. This vessel used lugsails—quadrilateral sails that bend upon a yard that crosses the mast obliquely. Effective in Louisiana, the boat never diffused from its area of

origin, the State's inside waters. Prior to motor-powered vessels this was the major craft used to harvest platform shrimp.

Before the introduction of the otter trawl, most of the catches were taken with haul seines operated by a single boat with a crew of from 8 to 20 men (Cole, 1892a; Johnson and Linder, 1934). Barataria seines were some of the largest in the world. Local informants claim that a good crew could harvest up to 900 kilograms a day. At times the catch was so great, a platform would work continuously to keep up with its seine crews.

Seines were efficient, but the otter trawl, introduced in 1917, revolutionized shrimping and increased production.

The haul seine could be used only in shallow waters, requiring a large crew. It could be operated for only a limited time during the summer and fall months, the otter trawl was adaptable for use over a much greater range, could be operated with fewer men, yielded a greater production per man, and was a much more efficient type of gear. With its introduction, entirely new fishing grounds were opened up and a rapid expansion of the fishery followed. (Padgett, 1960, p. 147)

In 1930, the total shrimp harvest in Louisiana was over 13 million kilograms, nearly twice that of the preceding year (Padgett, 1960). Catch statistics normally fluctuate, but this increase in harvest was attributed directly to the acceptance and use of the otter trawl, the availability of ice, and improved boats.

Coastal fishermen used a rig called a butterfly net (in French, *poupien*) with haul seines and otter trawls—invented to provide smaller and cheaper shrimp to the sun-drying industry (Love, 1967). These nets were mounted on boats and wharves, rigged on iron-pipe frames from 2.1 to 4 m², and equipped with small mesh bags about five meters long.



To insure uniform dehydration, the shrimp were spread evenly over the cypress platform's surface with wooden rakes, no date: (Louisiana State Library, Louisiana Collection, WPA Photographic Archives)



Most shrimp-drying platforms were constructed with cypress. The size of the drying surface varied with each site, but most had a capacity of 1,000 baskets of shrimp—about 50,000 kg, ca. 1920: (Randolph Bazet Collection, Houma, Louisiana)



When the shrimp were thoroughly dried, the heads and shells were removed by laborers who "danced the shrimp" in shoes wrapped with cloths or sacks, ca. 1920: (Randolph Bazet Collection, Houma, Louisiana)



From isolated platform sites, waterpeople depended on their luggers to harvest the region's renewable resources, 1891: (National Archives, Negative No. 22-FCO-47)



The Chandeleur lighthouse after the 1893 hurricane, October 1, 1893: (National Archives, Negative No. 26-LG-35-4E).



Chandeleur lighthouse and the outbuildings that survived the 1893 storm, 1893: (National Archives, Negative No. 26-LG-35-47G).



Point-Au-Fer lighthouse, ca. 1945: (National Archives, Negative No. 26-5-686).



The "floating" Chandeleur lighthouse after the 1893 storm leveled the island, ca. 1893: (National Archives, Negative No. 26-LG-35-47A).



Oyster Bayou lighthouse, ca. 1945: (National Archives, Negative No. 26-5-756).



After the 1893 hurricane, the Chandeleur lighthouse was replaced by a steel tower, ca. 1945: (National Archives, Negative No. 26-5-153).



Travelling the Mississippi River has always required navigational aids. The Southwest Pass Lighthouse, connected by a boardwalk, guided ships into the river's navigable channel, October 8, 1815: (National Archives, Negative No. 26-LG-39-32Q).



The unique architecture of the wood-framed Southwest Pass Lighthouse, ca. 1890: (National Archives, Negative No. 26-LG-39-14).

THE COMMUNITY OF BALIZE

To safely navigate the Mississippi River, a lighthouse and community, Balize (from the French word balise, meaning beacon), were established near the mouth of the river's northeast pass. When the French first occupied Balize in 1722, it was a little flat island the locals called Toulouse (Roland, 1740): boats used a five-meter channel there to gain access to the Mississippi River.

In 1803, Balize was composed of "a small block-house and some huts of the pilots, who reside only here" (American State Papers, 1803, p. 347). The structures were erected on piles; the community was so narrow there was no room to cultivate a garden. Goods had to be imported at three to four times their normal retail cost.

By 1815 traffic on the Mississippi had become so great a lighthouse was needed at the access point to the river (Louisiana Gazette, 1815). Twenty-thousand dollars was appropriated in 1812, but with the end of the War of 1812, it was deemed an unnecessary expenditure. Local interests still favored its construction, however. New Orleans "in strict truth, is the emporium of Western America; and the [Mississippi] is not a mere local avenue of trade and navigation" (Magruder, 1815, p. 2). The city's Gulf of Mexico trade depended on safe passage into the Mississippi River. This argument prevailed, but justifying the Federal expenditure was a difficult task. The lighthouse was built eventually at Southwest Pass.

In 1851, the community was large enough to put on a ball for a number of ladies from New Orleans and all of the "belles of the Pass and Balize" (Daily Delta [New Orleans], 1851, p. 2). One account notes

the village had three large grocery stores and a dry goods store, a large church where services were held every Sunday and a good-sized town hall

There were houses on both sides of the bayou, some of them two stories in height, and the town was full of children. We had two schools for them. There were fine shell roads around the Balize and levees to protect it from the Mississippi River

It was a large settlement and there were possibly a thousand people there when it was abandoned. Fifty bar pilots made their headquarters in the village, and nearly everybody trapped, fished or had oyster beds (New Orleans Times-Picayune, 1921, p. 12)

This community, like all of those along the coast, had to endure the hardships of hurricanes. In 1741 the French government was informed

that the battery at the Balize was so much damaged that, if attacked, it could be carried by four gunboats. There was such a scarcity of everything that a cask of common wine was sold for five hundred livres of Spanish money, and eight hundred livres in the currency of the colony, and the rest in proportion. As to flour, it could be commanded by no price, as there was not to be had. (The Daily Picayune-New Orleans, 1863, p. 3)

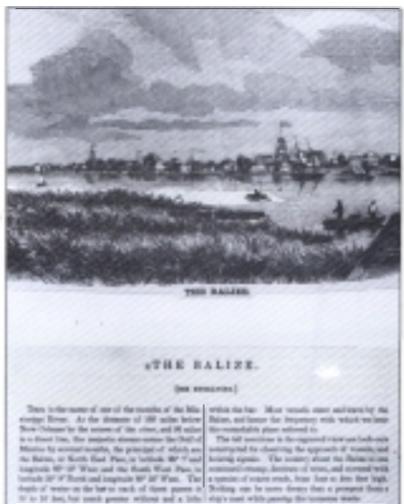
In addition, there were

many families reduced to such a state of destitution that fathers, when they rise in the morning, do not know where they will get the food required by their children. (The Daily Picayune-New Orleans, 1863, p. 3)

In 1831, a storm destroyed the "pretty little village" (Daily Delta [New Orleans], 1846, p. 2). Logs as long as 15 meters battered the community's homes, wharves, and fences. The storm surge was knee-deep in many homes. Gardens were covered with salt water and destroyed (Daily Delta [New Orleans], 1846).

In the hurricane of 1860, the water rose nearly two meters and washed away nine homes, three look-out houses and assorted boats and sheds. The telegraph house survived, but a number of flatboats used as homes were destroyed. Several "large house, more than half finished" floated away, and two buildings "belonging to and occupied by fishermen were destroyed" (New Orleans Daily Crescent, 1860, p. 1).

Balize was utilized for 150 years; during that time, the Spanish spent over 20,000 pounds sterling to fortify the position (New Orleans Times-Picayune, 1921). About 1865, a crevasse diverted the flow of the Mississippi River away from Balize (New Orleans Times-Picayune, 1921). Bar pilots were forced to move to Pilottown Bayou because Southwest Pass was used to gain access to the Mississippi. In a short time Balize was completely deserted. Eventually, the land subsided, so that the town hall, church, shell road, homes, and tombs were below sea level-captured by the Gulf of Mexico.



In order to safely navigate the Mississippi River, a lighthouse was built near the mouth of the river's northeast pass, at the community of Balize (from the French word balise, meaning beacon), no date: Louisiana State Library, Louisiana Collection, Photographic Archives).



The Mississippi River's Pass-a-Loutre lighthouse before the 1893 storm, 1893: (National Archives, Negative No. 26-LG-37-17C).



The substantial lighthouse that served traffic navigating Southwest Pass, 1890: (National Archives, Negative No. 26-LG-39-34).



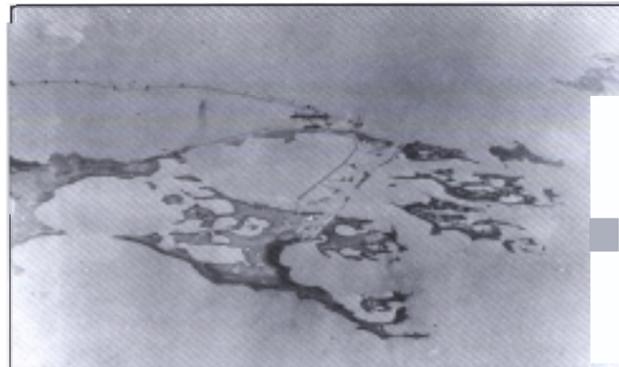
The community associated with the South Pass lighthouse, with ships anchored in the channel, ca. 1893: (National Archives, Negative No. 26-LG-39-28A).



Barataria Bay lighthouse on the western end of Grand Terre, before the October 1893 hurricane, 1893: (National Archives, Negative No. 26-LG-34-10B).



Barataria Bay lighthouse after the 1893 storm. The picket fence and big house were destroyed. The light sustained only minor damage, December 18, 1893: (National Archives, Negative No. 26-LG-34-10A).



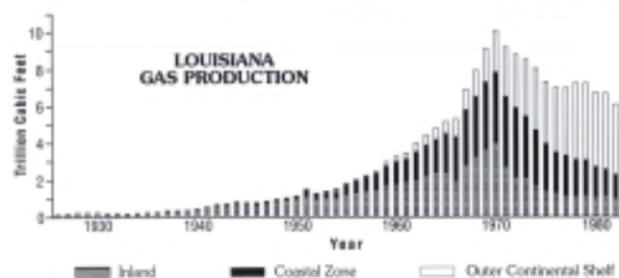
Drilling in coastal Louisiana has had a significant impact on the wetlands, no date: (Bernard Davis Collection, Houma, Louisiana).



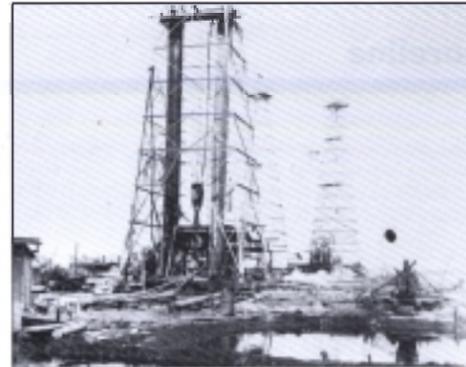
At Leoville, along Bayou Lafourche, the marsh was blanketed with oil wells, ca. 1938: (Fonville Winans, Louisiana State Library, Louisiana Photographic Archives)



Seismic crews used marsh buggies to run their profiles, ca. 1950: (Louisiana Department of Wild Life and Fisheries, Photographic Archives)



From Lindstedt, D.M. and others, 1991, History of oil and gas development in coastal Louisiana: Resource Information Series No. 7, Baton Rouge, Louisiana, Louisiana Geological Survey.



Petroleum exploration was relatively easy in the peats and mucks of the coastal marshes, 1935: (Randolph Bazet Collection, Houma, Louisiana).

THE WETLANDS' MINERAL FLUIDS

Since World War II, Louisiana's coastal lowlands have seen rapid economic growth, much of which can be attributed directly to development of its hydrocarbon resources. In the 1600's, sailors exploring the Texas and Louisiana coasts reported oil floating on the Gulf's surface. This seepage was an early clue to the enormous reserves locked in a geosyncline, or fold in the bedrock below the land and sea surfaces from Mississippi to Texas.

Commercial oil production began in Titusville, Pennsylvania, in 1856; 50 years later, wildcatters were drilling in South Louisiana. In 1901, W. Scott Heywood completed south Louisiana's first producing oil well in Jennings. Even with this discovery, oilmen ignored the wetlands for over 20 years; they favored north Louisiana's more easily exploited fields.

Between 1901 and 1923, only eight fields were discovered in south Louisiana because accessibility was a problem. Wetland exploration and development required a fleet of amphibious vessels. Everything had to float or fly, so conventional methods were impractical.

As geophysics and its new technologies emerged, promising fields were investigated. Also, required floating equipment was refined and further developed. In the 1930's, petroleum engineers moved aggressively into Louisiana's swamps and marshes. Systematic exploration required a well-developed infrastructure of support facilities on high ground. These logistic support sites were essential in providing the supplies drilling crews required, and evolved with the industry gradually changing the area's demographic character.

To gain access to promising exploration sites, powerful suction and bucket dredges excavated navigable channels into well locations. The one-well, one-canal system evolved into an interlocking network of human-made channels, and often over 30,000 m³ of material were removed per kilometer to open the wetlands to hydrocarbon exploration.

In less than a century, the complex canal system has become a dominant part of the State's coastal geography and has expanded into well-defined, but unplanned, patterns. The canal system met the industry's needs and evolved into the most visible structural modification of the coastal zone. As oil exploration and development moved across the coastal lowlands, virtually no section of the coast was spared canalization.

Gaining access to well sites was a relatively simple matter because the wetlands' waterlogged soils were easy to channelize. Dredging contractors encountered few problems. Drilling engineers, however, were frustrated by the hydric soil's low weight-bearing capabilities and were forced to rethink their drilling methods because the marsh lands would only support 1,200 kg/m². Wooden mats did work in some shallow water areas, but they were cumbersome. Piling were used in open water, but drilling preparation was a labor- and time-intensive operation. Conventional equipment was too heavy to work in this environment. The industry needed a floating drilling platform.

In 1932, the Texas Company developed a patented submersible drilling barge. Equipped with a derrick, this vessel could drill easily on the extensive leases petroleum firms obtained in south Louisiana. Within 10 years, over 70 oil and gas fields were developed in Louisiana's delta country.

With the advent of World War II, the industry was well established; new fields were added constantly to the regional inventory. Wildcatters intensified their efforts in the tidal flatlands and backwater swamps. New wetland technology spurred some of this development, but the word was getting out about the impressive exploration results in south Louisiana. Nearly one out of every three wells drilled produced marketable hydrocarbons. Early pessimism turned to unbridled optimism.

By the mid-1940's it was apparent that operations on a "sea of mud" were no different from those on a sea of water. From a rather quiet beginning in 1947, when the first oil well out of sight of land was completed, the search for offshore hydrocarbons grew rapidly. Expectations were exceeded, particularly in the 1950's when the marine technological revolution began. Boat builders used diesel rather than gasoline; steel hulls rather than wooden-hulled boats were added to the support fleet. Shipyard fabricated vessels that operated in the Gulf of Mexico's hostile waters.

Onshore and offshore, the industry expanded rapidly. Early wildcatters and major firms who discovered the mineral fluids trapped below Louisiana's alluvial wetlands were right; the region was a significant hydrocarbon province. Over 25,000 wells onshore and at least 3,000 drilling and production platforms offshore made Louisiana's coastal lowlands one of the county's dominant forces within the oil and natural gas industry.



First oil well in Houma, Louisiana, March 18, 1927: (Bernard Davis Collection, Houma, Louisiana).



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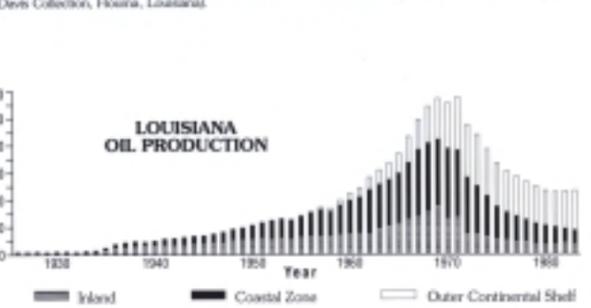
After the discovery of easily recoverable and marketable petroleum and natural gas, the marsh became a labyrinth of petroleum-oriented facilities, ca. 1940: (Bernard Davis Collection, Houma, Louisiana).



After purchasing a fleet of airplanes used to carry mail from ships anchored in the delta to New Orleans, Texaco became a pioneer in using aircraft to support their marsh operations, ca. 1930: (Bernard Davis Collection, Houma, Louisiana).



LOUISIANA OIL PRODUCTION (Millions of Barrels)



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