

THE LAFOURCHE FLOODPLAIN: STUCK BETWEEN A MARSH AND A SOFT PLACE

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Introduction

The innate problems of planning for a community located in the middle of estuarine wetlands which measures in thousands of acres, requires a broad range of understanding from all members of the community. The divergent interest of commercial shrimp and oyster fishermen, developers, oil and gas industry, the tug boat and supply boat industry, local merchants, trappers, hunters and marsh managers require that each group appreciate the advantages and limitations of the South Louisiana floodplain. Each group of people has had to learn the lessons of the Mississippi River System and its gift to America; South Louisiana.

Development of the Marsh

The Mississippi River took approximately 5,000 years to build all the land south of Baton Rouge and east of Lafayette. This area is the location of the majority of the Louisiana population which lives on and around the ridges formed by flood events. These communities are bordered by bayous, canals, rivers, swamps, marshes, lakes and bays.

The most notable community, New Orleans, exists on land elevations of plus ten feet above sea level to minus five feet below sea level. New Orleans is bordered by the Mississippi River, Lake Borne, Lake Ponchartrain, marsh and swamp. In this water saturated environment, over 1,000,000 people live a land based existence. This city exists at the end of the fourth largest river drainage basin in the world.

Thirty miles south southwest of New Orleans is the southern part of Lafourche Parish. These rural communities have existed for nearly 100 years on the ridge land formed by Bayou Lafourche. These communities were settled 20 miles from the coast by

fishermen who relocated from the barrier islands of Grand Isle and Cheniere after flooding from the Hurricane of 1893 and the Leeville Hurricane of 1915.

The communities developed strong fishing and trapping industries with farming and cattle operations. Increased population occurred with the beginning of oil discoveries in the 1930's. During this development buildings were still built above the ground. These buildings were always on the highest elevation, which was on the Bayou Lafourche ridge.

In the early 1960's the people became aware of the American dream house – the brick slab house constructed on the ground. These houses had little upkeep compared to the typical Creole cottage or shotgun house found in the area. Middle America was influencing people away from house designs which proved successful for South Louisiana. You may even say that “Leave it to Beaver” increased house flooding in the bayou communities.

The building boom which accompanied the oil price increases took place from 1975 to 1983. This resulted in some development taking place off of the Bayou Lafourche ridge. People began building further from the ridge where elevations were lower than plus three feet above sea level. This compared unfavorable to the plus eight to plus five elevations on the Bayou Lafourche ridge.

Oil development covered all areas of South Lafourche from the ridge land to the marsh, from parish line to parish line. Land wells used traditional road access and board road. Wells in the marsh were accessed by bayous, lakes, bays, and canals. Canal dredging for location or access crisscrossed the marsh, disrupting natural water flows, and the natural exchange of fresh and salt water.

Flood protection began for the area when Bayou Lafourche was cut off from its source; the Mississippi River. Subsequently the U.S. Army Corps of Engineers greatly increased the efficiency of the flood prevention by forcing the River to remain in its channel. This reduced flooding, but also deprived the area of the fresh water and sediments which formed South Lafourche.

Although the river flooding was reduced, hurricane flooding continued to affect the area. The United States Congress approved a hurricane protection system in 1965 after the disasters of Hurricane Hilda and Betsy. This system will be near practical

completion by 1992. It will prevent flooding from all but the most powerful storms. It has also set the limits of traditional development with useable land inside and the marshes on the unprotected side.

The Delta Biology and Geology

Louisiana leads the nation in fisheries landings and is second in value. South Lafourche, situated between Barataria Bay estuary and the Terrebonne-Timbalier Bay estuary, is one of the most productive fishing areas in Louisiana and the United States.

The research of the 60's, 70's, and 80's provided the link between the estuarine dependent species and the wetlands. This data pointed to the fact that the marsh supports the production of the major commercial species such as shrimp, crabs, and oysters, worth millions of dollars and responsible for thousands of jobs. It was shown to support a multi-million dollar sports fishery as well as a critical part of the water fowl migration for the Mississippi flyway.

The marshlands perform many functions. Besides the transfer of energy from sunlight to food, it acts as a nursery for the eggs, larval and young stages of the estuarine dependent species. The marshes also help water quality and buffer the effects of tidal surges from storms.

The marshes evolved through the building process of the Mississippi River Delta. As the River changed its course through Southern Louisiana, between the finger ridges of highland, the silts and lighter clays formed the extensive marsh complexes. The four major Mississippi River course changes formed the toe of the boot shape of Louisiana.

This area experiences both the tremendous land growth by the river with its tons of sediment forming new land on the continental shelf, and the erosive forces of the Gulf of Mexico in the area abandoned by the river. In Louisiana today, the erosive forces far outweigh the River's constructive forces.

Each new course change of the River built a delta lobe through overflow flooding and its sediment deposit. The channel remained in use until a new, shorter channel to sea level captured the main flow of the River. The river channel change occurs in the range of every 1,000 years. The most recently abandoned lobe experiences the greater amount of erosive forces.

The building process has been tremendously reduced by several factors. The channelization of the River with its flood prevention levees does not allow the periodic layer of sediment being deposited by overflow flooding. The river channel has extended to the edge of the continental shelf resulting in the loss of sediment into water too deep to create land.

The loss of the river overflow leads to 60 square miles of wetland lost each year. With the loss of river sediment and fresh water, some marsh areas become more susceptible to subsidence. Salt water attacking non-salt tolerant marsh plants result in loss of wetlands. Man's activities in the marsh have greatly increased the effects and results of these natural erosive forces.

Navigation, oil location canals, oil access canals and pipeline canals cut through natural barriers allowing accelerated rates of salt water intrusion and wetland loss. These cuts have increased the tidal flow of saline water and reduced the retention of fresh water from drainage basins and direct rain fall.

Oil and gas extraction, marsh reclamation projects, oil field waste, flood protection, and other activities by man have also had great cumulative effects in Louisiana's wetland loss problem.

The formation of the Sea Grant Advisory Services and the Coastal zone Management Act helped greatly in providing the mechanism of transferring knowledge of coastal processes from the college campus to the public. The process began with convincing the public of the problems causing wetland loss. The final and ongoing step is finding and encouraging the most efficient method of conserving our wetlands with the cooperation of the private landowners, the public and elected officials.

Conclusion

With the marshlands of Lafourche Parish experiencing some of the highest rates of loss, the Parish Coastal Zone Management Advisory Committee proceeded with an approved Parish plan which set specific policies and goals for each environmental management unit. Once this data base was established, the Committee preceded with its education objectives.

The committee used several means of accomplishing its educational goals. Public informational meetings have been conducted. A slide presentation has been developed with copies supplied to the school system. Pamphlets have been developed identifying coastal wetland benefits and problems.

A subcommittee composed of some members of the Advisory Committee, science educators in the parish, and state education department developed a resource unit for grades 7 through 10. This unit incorporates the history of the land and the people, basic biological principles occurring in the Mississippi River Basin and the social dilemma of conflicting uses of the coastal area.

The ultimate goal of the Advisory Committee was to perform work in the marsh that would build or maintain 123,000 acres of wetland. With the work of a consultant company, Coastal Environments, Inc., and the Soil Conservation Service, the Coastal Zone Committee is ready to apply for a permit to perform the necessary work. The cost of the project is to be shared between the Soil Conservation Service and the State of Louisiana. Only persistence and education will allow the conservation of a national treasure, Lafourche's wetlands.

References:

Van Beek, J. L. and S. M. Gagliano

1988 Protection and Management Requirements
for Lafourche Parish

Van Beek, J. L.

1989 Wetland Protection and Maintenance
Between U.S. Highway 90 and the Clovelly
Oil and Gas Field on Lafourche Parish