



## BOOK REVIEWS

**Changing Tides: Twilight and Down in the Spanish Sea, 1763-1803**, by Robert S. Weddle, 1995. College Station: Texas A&M University Press, 352p., ISBN 0-89096-661-3.

*Changing Tides* deserves the attention of those studying the littoral sciences because it documents an early period of coastal studies and demonstrates the potential for using primary historical documents to study historical coastal changes. The European conflicts of the Seven Years War spilled over into the Americas, resulting in changes in political hegemony through the Gulf of Mexico in the last half of the eighteenth century. Coastal explorations and surveys by Spain and Britain were initiated so they could increase their knowledge of their newly acquired territory in Louisiana and Florida. *Changing Tides*, the history of these explorations and surveys of the Gulf of Mexico, is divided into four roughly chronological parts, concentrating largely on the Texas, Louisiana, and Florida coastlines.

Spain desperately needed surveys of the coast between the Mississippi River and Galveston after taking possession of Louisiana. Mariners and pilots were brought together in New Orleans in 1769 to write instructions for merchants approaching the mouth of the river. Approaching La Balise, the old French fort at the entrance to North Pass, mariners would evaluate bottom conditions at a depth of fifty fathoms to determine their position. When they brought up fine black and white sand, sand with little or no mud, coarse sand mixed with shell, fine gravel, or hard mud the mariners knew if they were on course or how far and in what direction they had fallen off to enter North Pass. These sailing instructions suggest they had a practical, if unsophisticated, knowledge of the geology around the delta. In 1766, Captain Blas de la Garza Falcón and Diego Ortiz Parilla produced the first map during an early reconnaissance of Padre Island in 1766, while they wrestled to understand the concept of barrier islands, a new phenomenon.

English "publishing travelers," many of whose reports remain available in reprints, added greatly to the knowledge of the coast. Between 1763 and 1770, Lt. Philip Pittman, an army engineer, studied changes in the Mississippi Delta since the arrival of Europeans and explained the rivers distributary system. Pittman used the post at La Balise, established in 1734, as a benchmark for measuring the delta's growth. Spanish installations erected in 1767 across the channel from La Balise were on an island that had not existed twenty years earlier. George Gauld, between 1764 and 1777, surveyed much of the Gulf between Florida and Texas, producing the most detailed surveys up to that time.

The French, with the idea of regaining Louisiana, sent Georges-Henri-Victor Collot to survey the Mississippi Valley in 1796. Collot observed the Mississippi's different channels

and studied the delta's geology. He hypothesized that sediment carrying is minimized when the river's current meets the breaking waves of the sea, forming bars. Slow currents through the distributaries created bars that grow more rapidly, eventually becoming banks that created lakes separated from the gulf. Lakes Borgne, Maurepas, and Ponchartrain, Collot theorized, resulted from the slow current of the Amite River fed by Mississippi floodwaters. These lakes would become shallower as more sediment deposited on the bottoms, eventually to become swamps. Lake Barataria was just such an example, already having lost half its depth and one third of its diameter at that time. These conclusions may seem obvious now, but in the late 1700s they were brilliant new ideas. During this last part of the century cartographers and surveyors began using the chronometer, rather than celestial observations of the sun, Jupiter's moons, and other heavenly bodies, to determine longitude as they surveyed the coast, creating the most accurate maps up to that time.

This is only a brief sketch of the many surveys of the Gulf documented in *Changing Tides*. Weddle's accounts of the hardships of these early coastal surveyors arouses excitement, though some may find the political background a bit dry. The book includes only one map of the entire Gulf, and many larger-scale maps would have allowed the reader to follow the surveys in detail. Reproductions of seventeenth-century maps add to the book, and suggest the value these would have in studying historical changes to the coast. The bibliographic references, from both seventeenth-century and later sources, will prove valuable to any researcher studying historical coastal change in the Gulf of Mexico. Many of the surveys have been published, although many are found only in archives in Europe and North America. For coastal researchers in general, the coastal changes documented by these surveys demonstrate the potential for using primary sources in ascertaining long-term historical changes to the coastal areas.

Taylor E. Mack  
Louisiana State University  
Baton Rouge, Louisiana

**The Corps and the Shore**, by Orrin H. Pilkey and Katharine L. Dixon, 1996. Washington, DC: Island Press, 282p., \$22.95, ISBN: 1-55963-438-3.

Orrin Pilkey and Katharine Dixon have written an insightful assessment of how the U.S. Army Corps of Engineers goes about its business of "guarding" our nation's shoreline. Their book is well written and provides keen criticism of Corps beach protection efforts, and the authors set forth several in-