

The Mobile Harbor Operation and Maintenance Project

Working With Nature

The Objective: Manage the annual dredging and placement of sediment in the most environmentally responsible, economically sound, and operationally feasible manner.

The Science: Mobile Bay is a natural estuary, serving as the endpoint for the sixth-largest river system in the United States (see 1974 image of bay sediment). Mobile Bay is the primary depositional basin for the 6th largest river system in the U.S. by area and 2nd in terms of flow as it drains approximately 44,000 square miles or 28.4 million acres of Alabama, Mississippi, Georgia, and Tennessee (Cordi et al., 2003). Historically, maintenance of the Federal navigation channel through Mobile Bay involved dredging and placing sediment alongside the channel. Beginning in 1986, most of the dredged sediment was removed entirely from Mobile Bay and placed offshore in the Ocean Dredged Material Disposal Site (ODMDS). A 2013 study of Mobile Bay's sediment budget, Byrnes et al., concluded that removing sediment completely from the bay system was causing loss of elevation within the Bay, and redistribution of the sediments within Mobile Bay was needed to maintain a resilient balance of sediment inputs and outputs.

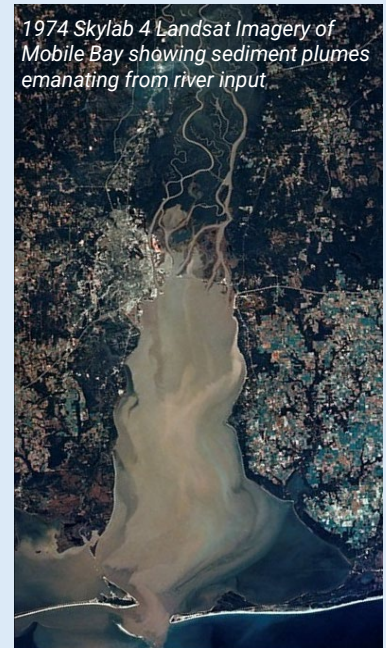
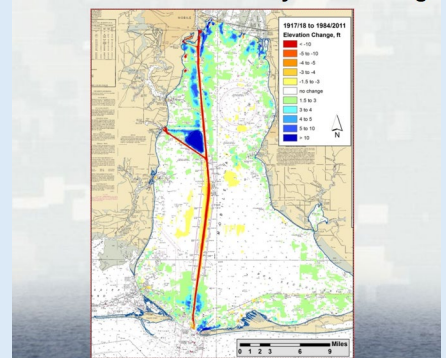


Image Credit: MPNEP
https://www.mobilebaynep.com/the_issues/sediments

The 2013 study led to efforts between the Mobile Bay National Estuary Program (MPNEP) and the USACE Mobile District with collaboration of other state and federal agencies to better understand the Bay's sediment budget and provide a recommended strategy for management of dredged material. This involved a historical shoreline and bathymetric survey analysis ranging from 1917 to 2011, and a detailed review of channel dredging and placement records. A hydrodynamic and sediment transport model was also developed to evaluate sediment volumes and movement within Mobile Bay to refine the sediment budget and determine the benefits of thin layer placement and potential impacts on existing ecological resources (Gailani et al 2014).

1917/18 to 1984/2011 Bathymetric Change



Results confirmed that strategic placement of material into the bay system does not negatively impact existing ecological resources, bathymetric relief, or total suspended sediments above natural levels; however, it does ensure sediment remains in the system lessening impacts from sediment deficits. The results were independently reviewed by State and Federal agencies during environmental consultation.

What This Means for Mobile Bay: Placing sediment within Mobile Bay through TLP is NOT "mud dumping." It is a scientifically-backed decision to work with the bay's natural and historical function and prevent sediment deficits by keeping the sediment within the system.