

Base Location: Petit Bois Island, Gulf Islands National Seashore, Mississippi
Installation Date: 06-09-2009
Julian Date: 160
Site Name: WPTB
Stamping: U.S. GEOLOGICAL SURVEY
Location:

Latitude	30° 12' 35.05466 N	NAD83 CORS96
Longitude	88° 29' 37.36928 W	NAD83 CORS96
Ellipsoid Height (m)	-25.602	NAD83 CORS96
Geoid03	-27.755	GEOID03
Orthometric Height (m)	2.153	NAVD88

Position Determined: All static occupation sessions were post-processed using National Geodetic Service (NGS) Online Positioning User Service (OPUS). All sessions were averaged and erroneous values or bad sessions were removed from the average. The ellipsoid height value is the weighted average of all inclusive occupation sessions, meaning the longer sessions held more weight than shorter sessions. The GEOID03 was calculated using the NGS GEOID03 tool. The orthometric height here is calculated using the equation $O=E-G$.

Installation Crew: USGS

Installation Materials: Aluminum $\frac{3}{4}$ -inch diameter spiral tip (Berntsen)
 Aluminum $\frac{3}{4}$ -inch diameter x 3-foot-long aluminum rods with threads (Berntsen International, Inc.)
 3-inch aluminum cap inscribed U.S. Geological Survey (Berntsen International, Inc.)

Installation: Survey mark is driven 12 feet into the sediment via sledgehammer and capped with a 3-inch aluminum cap. The rod is approximately 12 inches above the sediment and flagged with pink survey tape. The elevated cap will help preserve the benchmark from burial in the short term. Rapid burial may be caused by eolian sediment transport and (or) storm-related deposits.

Reason for Installation: There was a need for a benchmark on West Petit Bois Island to provide 15 -kilometer to 20-kilometer radial coverage of GPS control during bathymetric surveys.

Location: West end of Petit Bois Island, on sound (north) side. Figures 1 through 5 are provided as guidance for benchmark location.

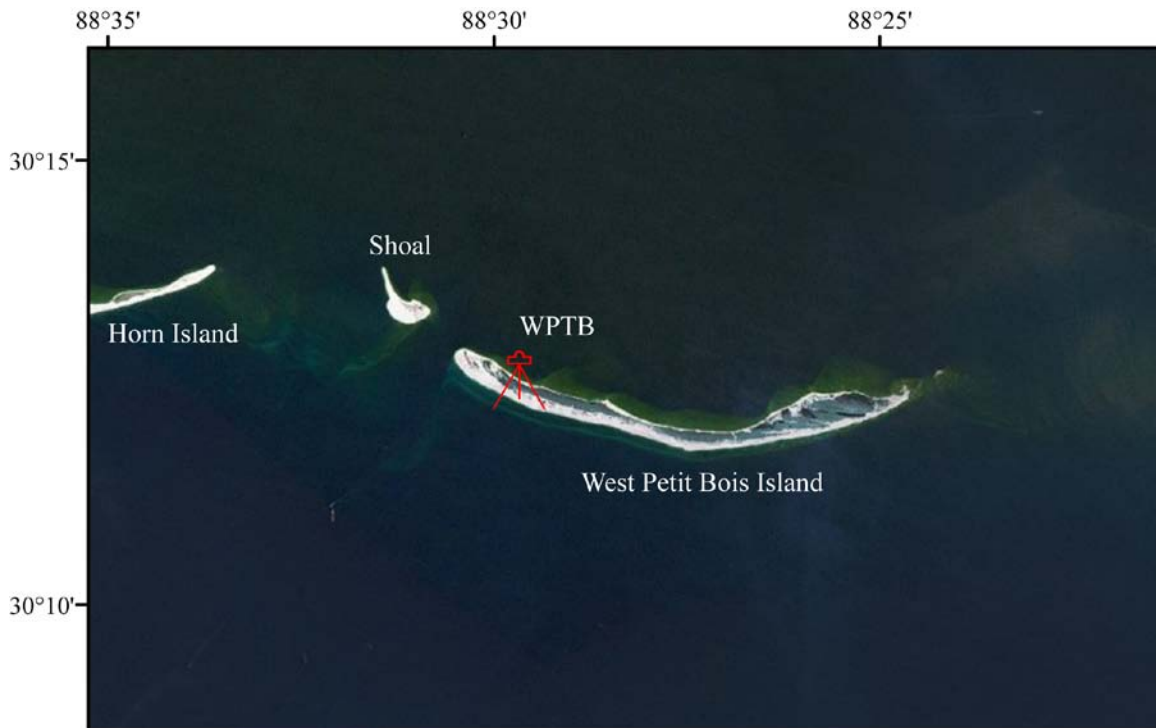


Figure 1. Overview showing location of Western Petit Bois (WPTB) benchmark location. Imagery downloaded from ESRI.

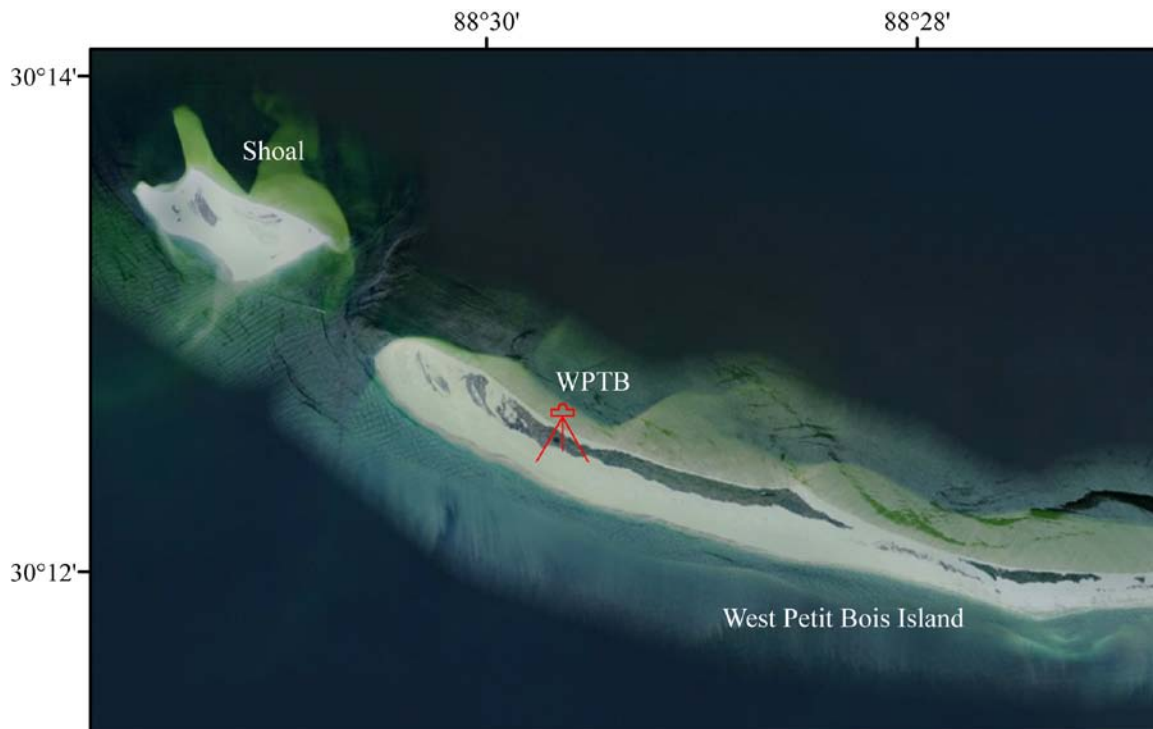


Figure 2. Closer approach of the aerial view showing location of WPTB benchmark. Imagery downloaded from ESRI.

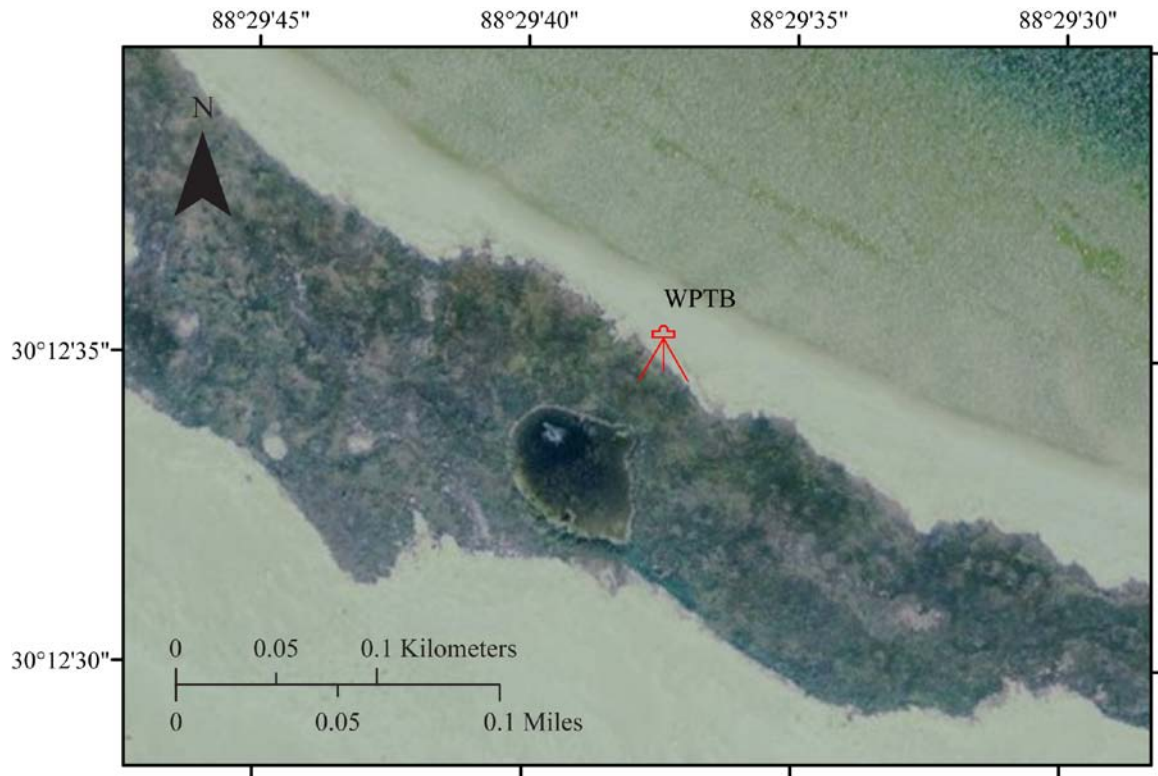


Figure 3. Aerial view of WPTB benchmark location showing detailed topography and vegetative cover. Satellite imagery downloaded from ESRI.



Figure 4. USGS oblique aerial photograph taken in 2007 showing detailed vegetative cover and approximate location of WPTB benchmark as indicated by the arrow.



Figure 5. WPTB benchmark. The view is looking west.