Coastal Partnership Completes Freshwater Inflow Management Structure at the Nueces Delta Preserve

The Coastal Bend Bays & Estuaries Program (CBBEP) has completed the installation of a freshwater inflow management structure on the Rincon Bayou at the Nueces Delta Preserve. The Nueces Delta Preserve is a 5,800-acre nature preserve off Highway 77 near Odem, Texas and is home to a vast number of species of birds and wildlife in addition to habitat restoration projects, environmental education programs, research and monitoring, and is the highlight of the CBBEP's conservation efforts.

The success of this project can be attributed to partnership with City of Corpus Christi, National Oceanic and Atmospheric Administration (NOAA) Texas General Land Office - Coastal Management Program (CMP), and Coastal Conservation Association-Texas (CCA).

The construction of the Choke Canyon/ Lake Corpus Christi reservoirs greatly reduced the amount of freshwater that flows into the Nueces Estuary, which includes the Nueces River Delta. The reduction of the freshwater inflows, development, and other human activities caused the Nueces River to become channelized thus bypassing the Delta and flowing directly into Nueces Bay.

The inflow management structure is located in the Rincon Bayou diversion channel, between the Nueces River and the City of Corpus Christi's freshwater diversion pipeline discharge. The structure is designed to redirect water from the pipeline discharge point to the Rincon Bayou and Nueces River Delta.

Jake Herring, Director of Land Conservation with the CBBEP says, "The main objective for installing the fresh water control structure is to keep the pumped freshwater in the Rincon Bayou. Prior to installing the structure the water would take the path of least resistance which was not always to stay in the Delta." CBBEP hired G&W Engineers out of Port Lavaca to design the fresh water inflow management structure

and through a competitive bidding process selected Lester Contracting to construct the project." Herring continued, "Working with both G&W Engineers and Lester Contracting was a pleasant process. Their professionalism and knowledge of water control structures made the design and construction phases of the project go smoothly. The construction process took approximately three weeks."

The water control structure consists of three 4'x4' concrete box culverts equipped with custom built aluminum control gates mounted on the end of the culverts. The control gates will be closed prior to a pumping event; it allows water to remain within the Nueces River Delta to achieve the most significant environmental outcome. By keeping the pumped freshwater in the Rincon Bayou and Nueces River Delta, a flushing of the wetlands occurs.

During pumping events, salinity monitoring stations will be closely watched to achieve a good salinity range for plants and animals in the estuarine marsh. Jace Tunnell, Director of Research and Planning at CBBEP says, "By reestablishing the salinity gradient and increasing connectivity for the animals, we will have restored at least a portion of what nature would have provided for the productivity of these important nursery areas." When the full effect of the pumped fresh water has been achieved the gates will be opened to allow water and aquatic organisms to move freely between the Rincon Bayou and the Nueces River.

The Coastal Bend Bays & Estuaries Program is a non-profit organization dedicated to protecting and restoring bays and estuaries in the 12-county region of the Texas Coastal Bend. CBBEP is partially funded by the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency. For more information about the Coastal Bend Bays & Estuaries Program, contact Shannon Gabriel at (361) 885-6246 or shannon@cbbep.org. This report published in July 2014