

Texas A&M AgriLife Research-Restoration of Magnolia Beach to Indianola Marsh

TEEA 2016 Winner: Civic/Community



Coalition restores marsh.

In a small town where relationships truly matter, a community embarked on a collaborative quest to restore a once flourishing ecosystem. A diverse coalition of citizens, landowners, federal and state agencies, non-profit groups, engineering firms and educational institutions led by researchers with Texas A&M AgriLife Research were assembled in 2013 with the goal of restoring a large area of salt marsh wetlands that was degrading and eroding.

Multiple barriers blocked the exchange of tidal flow to several miles of marsh extending from the town of Magnolia Beach to the town of Indianola, causing water quality to decline. Salinity was high and dissolved oxygen too low, making it a struggle for aquatic organisms to sustain themselves. This created a ripple effect on the native bird populations living in the marsh as well. Fishing was on the decline, landowners were losing property to erosion, and businesses reliant on recreation were suffering. In response, the coalition set out to remove barriers restricting tidal flow and restore the ecosystem.

Over the last three years, the coalition enhanced approximately 770 acres of habitat, restored 112 feet of shoreline and reconnected over 5 miles of tidal channel networks. Surveys have found significant increases in the population of fish, birds, invertebrates, and vegetation within the salt marsh. Dissolved-oxygen and salinity levels are now sustaining aquatic life. Access to fishing has improved and has brought more visitors to the local community. The space the marsh occupies is expected to expand even more over the coming years now that tides are properly flowing.

What makes this project unique is how this restoration has become a model system for similar projects. The project was highlighted by the National Oceanic and Atmospheric Administration's Coastal Restoration Center as a leading example of "hydrological restoration". Although most of the heavy lifting is now done, quantitative monitoring of the restored landscape is still being conducted to assess the benefits to the ecosystem, the people, and the overall economic vitality of the community.

The largest challenge that the team faced was to align the interests of the various collaborators, so that everyone would benefit. This project is a prime example of an eclectic group of people coming together to restore an ecosystem that once flourished and shall flourish again.