Post-Harvey Texas Mid-coast Habitat Damage Report

Coastal Bend Bays & Estuaries Program
Coastal Bird Program
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Executive summary

In the two weeks following the passage of Hurricane Harvey, CBBEP Coastal Bird Program biologists conducted reconnaissance visits to rookery islands throughout the central coast of Texas to assess the extent of damage. This is a preliminary report on the impacts to colonial waterbird rookery islands which received the most direct wind, surge, and erosion impacts resulting from Hurricane Harvey. Most of these are islands managed by CBBEP's Coastal Bird Program. Many species of colonial nesting waterbirds nest exclusively on these small coastal islands. The hurricane's impacts include complete loss (erosion/submersion) of several islands, severe habitat degradation on nearly all islands, near complete loss of protective signage, and many tons of large debris strewn across former nesting habitat. The Coastal Bird Program faces a daunting task to restore lost signage, install nesting structures, and conduct as much habitat restoration as is possible within the next four months before nesting season begins again in February. The program has the structure and management experience to begin to undertake this effort immediately, and will also require the help of our many friends and partners in order to achieve this.

In addition to the damage to islands, intertidal flats and beaches used by shorebirds such as Piping Plovers and Red Knots were also affected. The Nature Preserve at Charlie's Pasture in Port Aransas experienced major habitat damage and alteration. The rock revetment and part of the bulkhead along the Corpus Christi Ship Channel was destroyed in several places and several wide, deep channels have incised into the tidal flats. The boardwalk is almost completely destroyed and sand was deposited across broad stretches of formerly productive algal flat habitat. CBBEP staff are communicating with Port Aransas Parks and Recreation Department to be of assistance as they undertake to repair the extensive damage to infrastructure and adapt to the new configuration of habitats. Migratory shorebird surveys (a collaboration with American Bird Conservancy) continue and will provide data to inform managers on how birds are adapting to the area and where protection efforts are most important.

Overview

Hurricane Harvey made landfall as a category 4 on the Texas coast at around 2200 hours on August 25th, 2017, bringing sustained winds between 100-130 mph near the eye in locations such as Corpus Christi, Port Aransas, Rockport, and Aransas Pass. The maximum recorded storm surge was 12.5 ft in the Aransas National Wildlife Refuge area. Heavy rainfall resulted in major flooding over a large portion of the upper Texas coast, causing the Brazos and Colorado rivers to crest at historic or near-historic levels. The 51.88-in rainfall total recorded at Cedar Bayou is a record high for the contiguous US. Total economic impact from Hurricane Harvey as of this report is estimated at $180 billion US.

Evidence indicates that nearly every rookery island in the CBBEP programmatic area north of Bird Island Basin (as of this report we have not surveyed south of BIB) was completely or mostly inundated, with the only exceptions being the largest islands like Pita, Pelican, and Causeway Islands. It is not clear how long the islands were under water – likely less than 12 hours – but the majority of the existing non-halophytic vegetation on rookery islands throughout the region appears to be damaged or dead from saltwater intrusion, wind, and/or strong tidal movement.

Major amounts of debris can be found on rookery islands near populated centers. Debris ranges from boats, residential/construction material like lumber, sheet metal, plastics, etc., household appliances, electronics, personal items, channel markers and buoys, and natural materials like limbs, palm leaves, and marine vegetation. Area waters are likely contaminated with fecal matter, oil and gasoline, and a number of other household chemicals that have washed in from nearby cities.

Erosion was extensive in certain areas, not just on rookery islands, but in areas near passes or low-lying habitat and even gulf beach. A number of low-lying islands consisting of primarily sand/shell substrate were heavily eroded or washed away completely, while several larger islands suffered shoreline erosion of 15-75 feet or more.

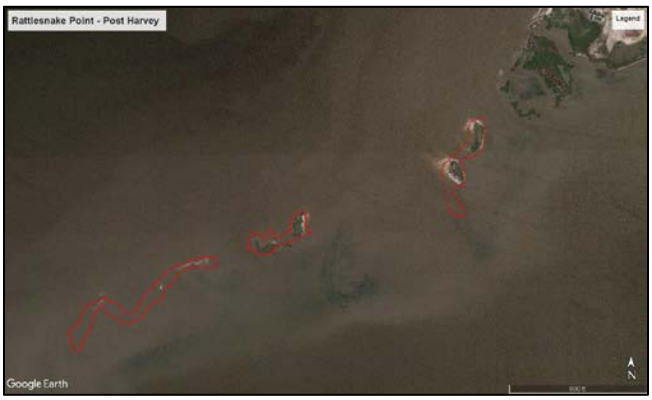
Photos

Rookery Islands

An uprooted Mesquite tree leaning on a destroyed heron nesting platform on Tern Island, Upper Laguna Madre.

Erosion damage on Tern Island; approximately 15-40 feet of shoreline loss. A floating cabin and debris are visible.

Second Chain of Islands, Mesquite/Ayres Bay. Picture on left from fall 2016, picture on right two weeks after Hurricane Harvey.



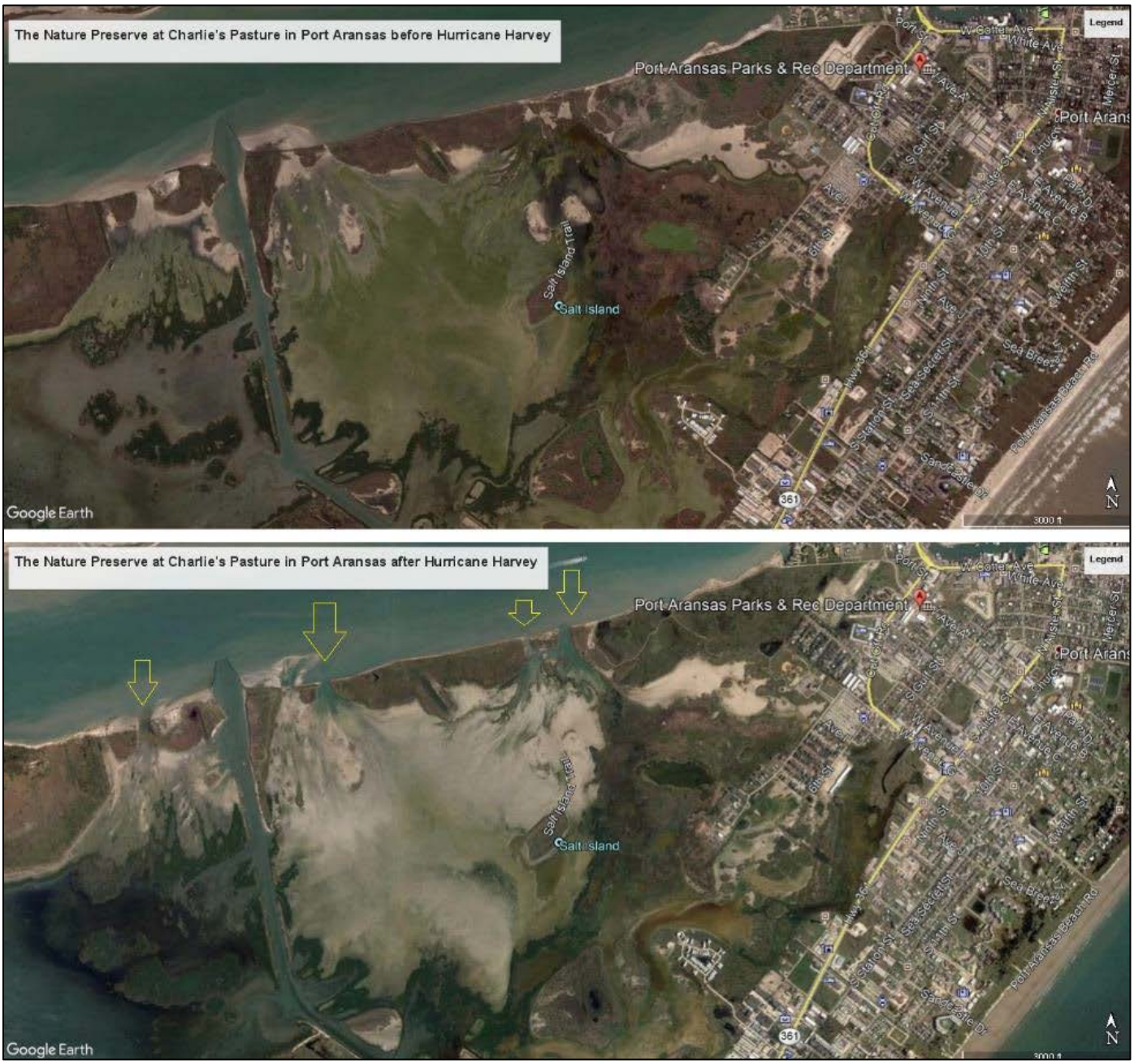
Rattlesnake Point, Copano Bay. Image on left pre-hurricane, image on right post-hurricane.

Big Bayou Spoil, Redfish Bay. Image on left pre-hurricane, image on right post-hurricane.

Deadman Island, Aransas Bay. Image on left pre-hurricane, image on right post-hurricane.

Photos (courtesy Kristina Macaulay)

Port Aransas/Mustang Island



Before and after imagery of Nature Preserve at Charlie's Pasture.

Road leading to Nature Preserve along CC Ship Channel.

Remains of boardwalk, which was almost completely destroyed.

Sailboat stranded on Mollie Beattie/Packery Flats (since removed).

Large volumes of debris came ashore on area beaches following hurricane and associated flooding

Extensive damage to infrastructure at Mustang Island State Park will take many months to repair before it can reopen to public.