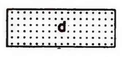
EXPLANATION

Spoil banks and artificial fill

Material ranging from sand to mud, in part shelly, cast aside during channel dredging or dredged for the specific purpose of raising the level of the land. a. Upland, bare to vegetated. b. Wind-tidal (inundated at least several times a year by wind-driven sheets of water), in part redeposited by waves and rain runoff, bare or covered by algal mats. c. Subtidal, in part redeposited by waves and currents, bare to partially vegetated by marine grasses, largely shoal grass, Halodule beaudettei



Sand beaches and washover fans

Sand, in part shelly, deposited above mean low water by waves and currents along shorelines (beaches) and in places where water has washed over the barrier islands during hurricanes (washover fans). Sand beaches in the mapped area occur along the gulf shores of Mustang and San José Islands. The only washover fan that has been active in recent years occurs at North Pass on San José Island. Bare

Foredunes

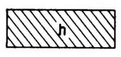
Sand deposited by wind, constituting an irregular ridge or series of ridges immediately landward of the sand beaches on Mustang and San José Islands. Vegetated, largely by upland grasses

Barrier-island flats and low mounds

Sand deposited by wind or by waves and currents, constituting flats and low mounds on the mainland sides of Mustang and San José Islands. Vegetated, largely by upland grasses but in lower areas by fresh-water marsh plants

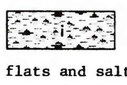
Shell beaches

Shell gravel and shelly sand deposited above mean low water by waves and currents along shorelines. Shell beaches in the mapped area occur along parts of the bay shorelines that are relatively exposed to waves



Storm ridges and mounds

Shell gravel and shelly sand deposited by waves and currents during hurricanes or other major storms, constituting a ridge, series of ridges, or irregular mounds above the normal beach level. Storm ridges and most mounds in the mapped area occur in association with shell beaches along parts of the bay shorelines that are relatively exposed to waves. Some of the mounds are mantled by wind-blown sand. Partly to densely vegetated by upland grasses and shrubs



Wind-tidal flats and salt marshes

Sand, muddy sand, and locally mud deposited from water on flat areas ranging in elevation from about 2 feet (0.6 m) above to about half foot (0.2 m) below mean sea level. The wind-tidal flats (area inundated at least several times a year by wind-driven sheets of water) are either bare or covered by algal mats and tend to occur at levels above those on which salt marshes occur. The salt marshes are vegetated largely by salt marsh cordgrass, Spartina alterniflora, but in part by glasswort, Salicornia perennis, and sea blight, Suaeda linearis. The salt marshes include tidal creeks and numerous shallow ponds too small to map separately. In most of the mapped area, the wind-tidal flats and salt marshes form a complex mosaic of interlocking areas too small to map separately; however, the area on the mainland side of Mustang Island consists entirely of wind-tidal flats

Mangrove swamps

Sand to muddy sand and locally mud on flat areas ranging in elevation from slightly above to about a foot (0.3 m) below mean sea level. Vegetated largely by the black mangrove, Avicennia nitida, but in part by salt marsh plants. The mangrove swamps include some tidal creeks and ponds too small to map separately

Ponds

Sand to mud, in shallow salt-water to brackish ponds. The ponds in the mapped area occur between storm ridges, in salt marshes and in mangrove swamps

Shallow subtidal flats

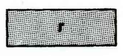
Sand to muddy sand and locally mud on flat areas ranging in elevation from near mean sea level to a depth of about 6 feet (2 m). Parts of the flats, especially those parts shallower than about a foot (0.3 m), are bare or covered by algal mats. Most parts of the flats, especially those parts lying at depths of from about 1 to 3 feet (0.3 to 1 m) are vegetated by shoal grass, Halodule beaudettei, accompanied locally by Ruppia maritima. Some of the deeper parts of the flats or areas of free circulation, lying at depths of from 2 to 6 feet (0.6 to 2 m), are vegetated by turtle grass, Thalassia testudinim. The lower limit of the shallow subtidal flats is defined as the lower limit of marine grasses

Oyster reefs and banks

Living and dead oyster shells forming a rigid framework (reef) or loose accumulation (bank). The crests of the reefs and banks lie at water depths ranging from near mean sea level to about a foot (0.3 m). Most of the reefs and banks in the mapped area border tidal channels such as Corpus Christi Bayou

Bay-margin and channel-margin shelves, slopes and shoals

Sand and shelly sand deposited below mean low water by waves and currents, forming gently sloping shelves, relatively steep slopes, and irregularly shaped shoals along the margins of bays and channels. The shelves, slopes and shoals are located along parts of the bay shoreline that are exposed to waves and along channels having strong tidal currents. p. Bare, commonly with sand bars. q. Partly to densely vegetated by marine grasses, largely shoal grass, Halodule beaudettei, in shallower areas and turtle grass, Thalassia testudinum, in deeper areas



Bay-floor flats, tidal channels and creeks, and dredged channels

Mud and muddy sand, with sand in tidal channels near the tidal inlet (Aransas Pass), in water depths generally greater than 6 feet. Bare

Boundary, township or county

Boundary incorporated city

Tank

Oil Well

Lighted Beacon

Primary Roads

Secondary Roads

.....6.....

Depth contours -- Soundings in feet

Contours discontinuous where precise data not available

Contact

Dashed where approximately located or gradational

Note on Mapped Features

Because the features mapped are subject to change, this mapping cannot be considered a final record but rather must be thought of as a reference point in time from which future changes can be measured. The rate of change of different features is variable, as evidenced by comparisons of the latest aerial photographs with older maps and aerial photographs. The present mapping is based largely on high-altitude color aerial photographs taken by the National Aeronautics and Space Administration on January 19, 1973. The mapped area was field checked from May through August, 1974.

References

Hoover, Richard A., 1968, Physiography and Surface Sediment Facies of a Recent Tidal Delta, Harbor Island, Central Texas Coast: University of Texas dissertation (covers mapped area of Harbor Island north of Aransas Channel)

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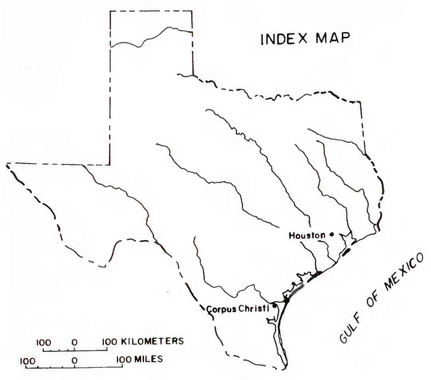
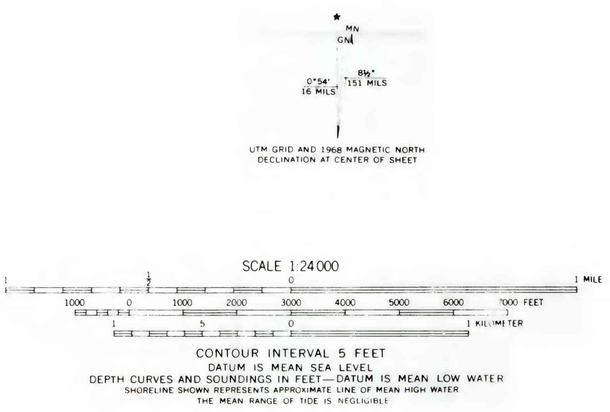
U.S. Geological Survey, 1971, Aransas Pass Quadrangle, 7.5 minute topographic series





ENVIRONMENTAL GEOLOGIC MAP OF THE HARBOR ISLAND AREA, TEXAS

By

SUSAN M. CASBY

1975

In Two Sheets