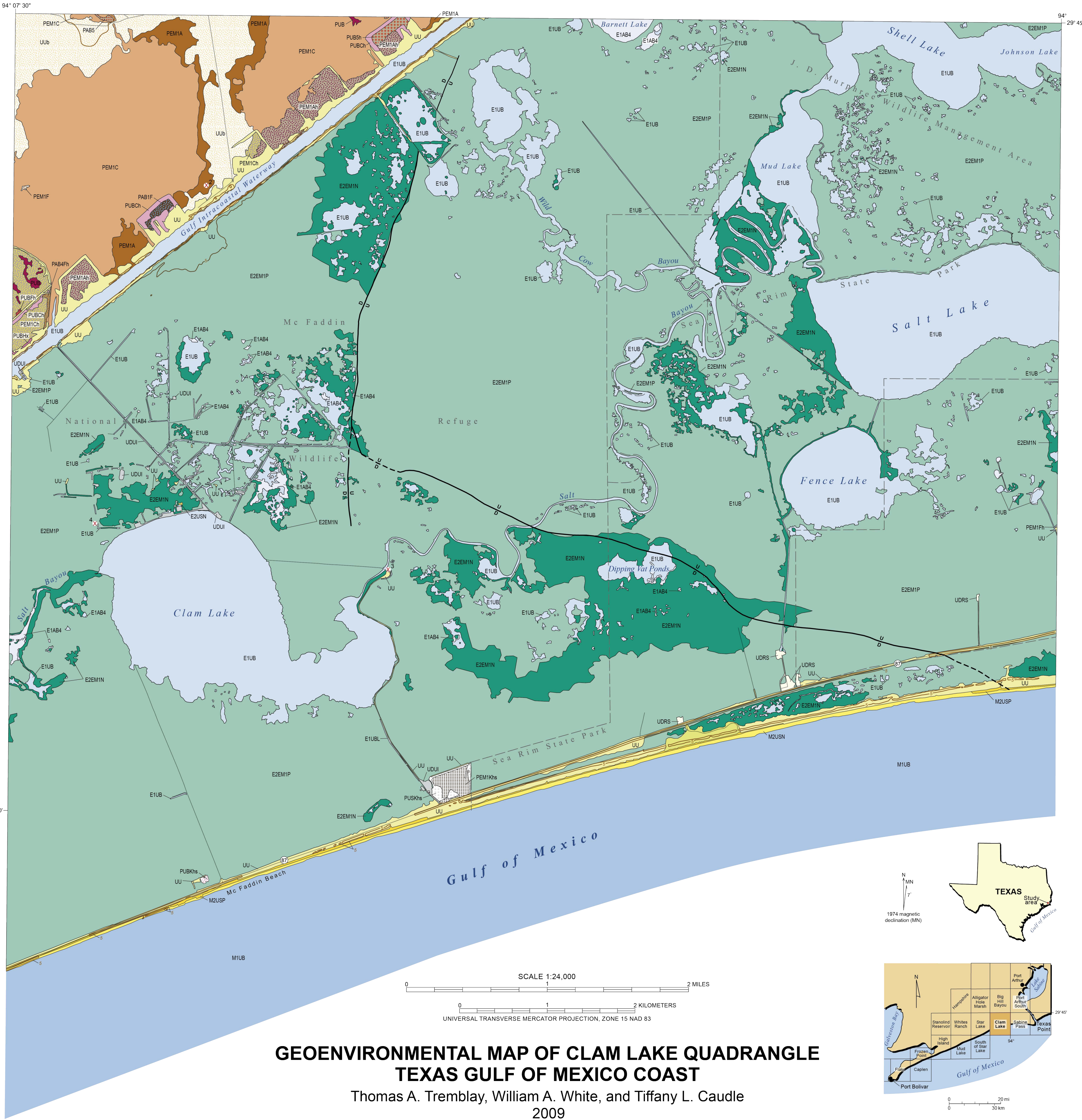




Marsh, Strandplain-Chenier, and Fluvial-Deltaic Settings
(Wetland classification of coastal geologic environments)
(Wetland terminology in *italics*)

**MODERN TO HOLOCENE
Estuarine Environment**

- E2EM1N—Low marsh; *intertidal, emergent, persistent, regularly flooded.*
- E2EM1P—High marsh; *intertidal, emergent, persistent, irregularly flooded.*
- E2USN—Low flat; *intertidal, unconsolidated shore, regularly flooded.*
- E1AB4—Water; *subtidal, aquatic bed, floating vascular.*
- E1UB—Water; *subtidal, unconsolidated bottom.* Gulf Intracoastal Waterway and some small canals excavated.

Palustrine Environment

- PEM1A—Marsh; *emergent, persistent, temporarily flooded.*
- PEM1Ah—Marsh; *emergent, persistent, temporarily flooded, diked/impounded.*
- PEM1C—Marsh; *emergent, persistent, seasonally flooded.*
- PEM1Ch—Marsh; *emergent, persistent, seasonally flooded, diked/impounded.*
- PEM1F—Marsh; *emergent, persistent, semipermanently flooded.*
- PEM1Fh—Marsh; *emergent, persistent, semipermanently flooded, diked/impounded.*
- PEM1Fx—Marsh; *emergent, persistent, semipermanently flooded, excavated.*
- PEM1Khs—Emergent area; *persistent, artificially flooded, spoil.*
- PAB1F—Aquatic bed; *algal, semipermanently flooded.*
- PAB4Fh—Aquatic bed; *floating vascular, semipermanently flooded, diked/impounded.*
- PAB5h—Aquatic bed; *unknown submergent, diked/impounded.*
- PUBCh—Water; *unconsolidated shore, seasonally flooded, diked/impounded.*
- PUBFh—Water; *unconsolidated shore, seasonally flooded, semipermanently flooded.*
- PUBHx—Water; *unconsolidated bottom, permanently flooded, excavated.*
- PUBKh—Water; *unconsolidated bottom, artificially flooded, diked.*
- PUSKhs—Palustrine flat; *unconsolidated shore, artificially flooded, impounded, spoil.*

Marine Environment

- M2USN—Low shore; *intertidal, unconsolidated shore, regularly flooded. Sand and silt; some broken shell. Includes undivided, local clay deposits that are probably Pleistocene Beaumont Formation.*
- M2USP—High shore; *intertidal, unconsolidated shore, regularly flooded. Sand and silt; some broken shell.*
- M1UB—Water; *subtidal, unconsolidated bottom.*

Uplands Environment

- UU—Undeveloped upland area. Along Gulf Coast Waterway mostly clay and silt, lesser sand; includes human-made levees and some drained marsh. Along Gulf shore, sand ridge of mostly sand and silt.
- UDSP—Developed upland in State park area. Mostly sand and silt near Gulf shore.
- UDRS—Developed upland area within rural and suburban settings. Mostly sand and silt along Gulf shore.
- UDUI—Developed upland area within urban and industrial setting in oil-field area.

PLEISTOCENE

- UUB—Beaumont Formation undeveloped uplands; *mostly clay, silt, and sand of fluvial-deltaic deposition.*

- Fault. Dashed where approximate. U = upthrown block, D = downthrown block
- Contour line and elevation (ft)
- Elevation (ft)
- Road

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Graphics by John T. Ames

Selected References

Aronow, Saul, and Barnes, V. E., 1968, Houston sheet: The University of Texas at Austin, Bureau of Economic Geology, Geologic Atlas of Texas, scale 1:250,000.

Cowardin, L. M., Carter, B., Golet, F. C., and LaRoe, E. T., 1979, Classification of wetlands and deepwater habitats of the United States: U.S. Department of Interior, Fish and Wildlife Service, Washington, D.C., USA, 131 p.

Fisher, W. L., Brown, L. F., Jr., McGowen, J. H., and Groat, C. G., 1973, Environmental geologic atlas of the Texas Coastal Zone—Beaumont-Port Arthur area: The University of Texas at Austin, Bureau of Economic Geology, maps 1:250,000 and 1:125,000, text 93 p.

White, W. A., and Morton, R. A., 1997, Wetland losses related to fault movement and hydrocarbon production, southeastern Texas Coast: Journal of Coastal Research, v. 13, no. 4, p. 1305-1320.

White, W. A., Calnan, T. R., Morton, R. A., Kimble, R. S., Littleton, T. G., McGowen, J. H., Nance, H. S., and others, 1987, Submerged lands of Texas, Beaumont-Port Arthur area: sediments, geochemistry, benthic macroinvertebrates, and associated wetlands: The University of Texas at Austin, Bureau of Economic Geology, 110 p., 67 figs., 16 tables, 6 pls., 3 apps.

Photography used for base and mapping is 0.5-m pixel, color infrared digital imagery photographed in 2004. Previous regional maps that cover this map area include the 1:125,000-scale *Environmental Geology, Beaumont-Port Arthur Sheet* (Fisher and others, 1973), the 1:125,000-scale map of *Distribution of Wetlands and Benthic Macroinvertebrates, Beaumont-Port Arthur Area* (White and others, 1987), and the 1:250,000-scale *Geologic Atlas of Texas Houston Sheet* (Aronow and Barnes, 1968). Fault data from White and Morton (1997) and unpublished Bureau of Economic Geology coastal faults data set. Terminology related to the wetlands classification of the geologic environments mapped follows Cowardin and others (1979). Sojan Mathew and Jeffery S. Vincent contributed map data linked to active processes such as erosion, deposition, and flooding. Boundaries of State park and wildlife management areas are approximate.

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