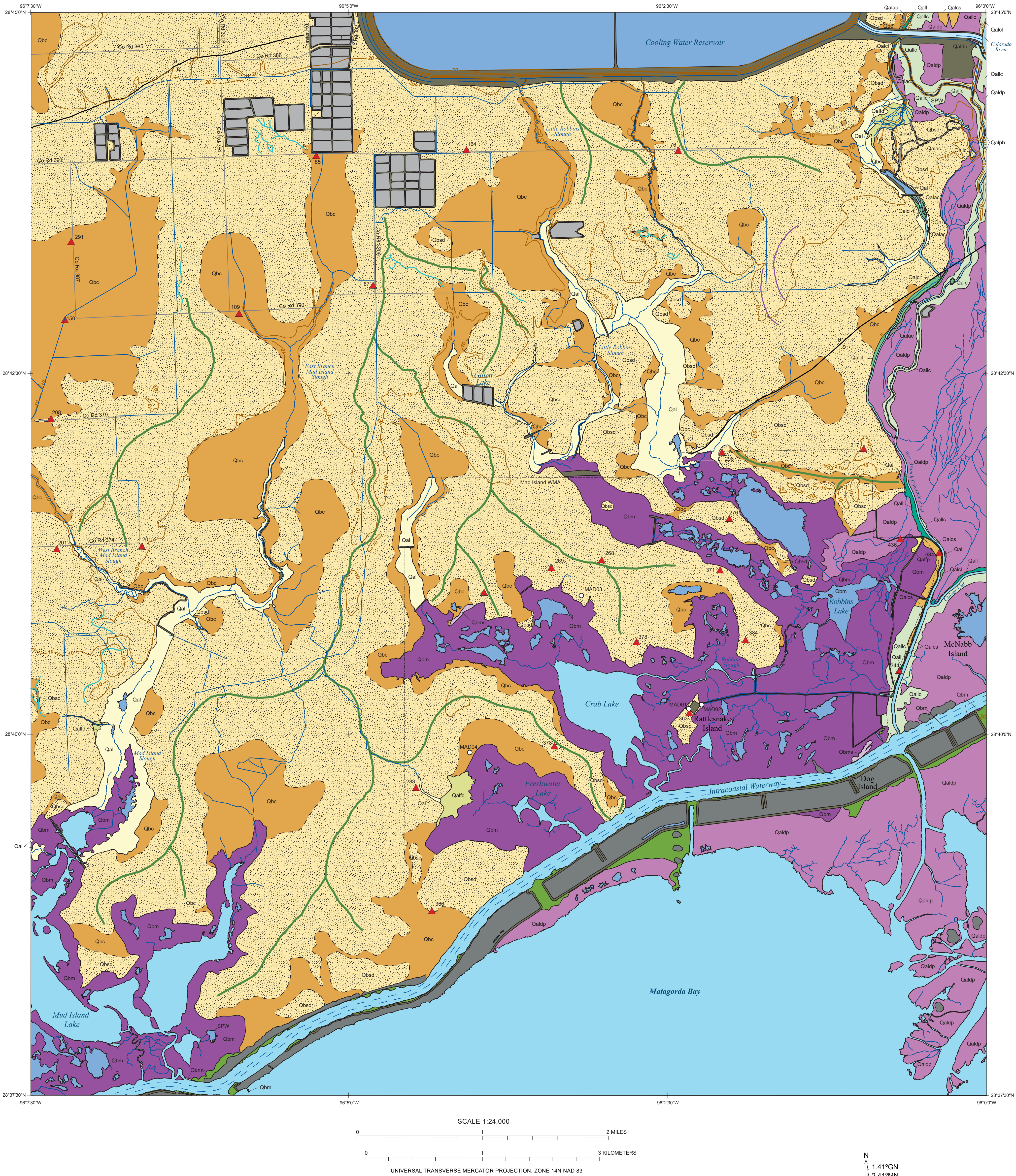


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GEOLOGIC MAP OF THE PALACIOS NE QUADRANGLE, TEXAS GULF OF MEXICO COAST

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Explanation

- Holocene**
- Qal**—Alluvium. Sand, silt, and clay.
 - Qalpb**—Point bar deposits. Sand, silt, and clay.
 - Qalcl**—Undivided channel and levee deposits. Sand and mud.
 - Qall**—Levee deposits. Sand and mud. Low, narrow deposits subparallel and adjacent to active and abandoned stream and tidal channels.
 - Qallc**—Undivided levee and crevasse-splay deposits. Sand and mud.
 - Qalcs**—Crevasse-splay deposits. Sand and mud. Commonly fan-shaped deposits adjacent to stream channels and levees.
 - Qalfp**—Floodplain deposits. Clay, silt, and sand. Includes undifferentiated fluvial levees, crevasse splays, and active and abandoned stream channels.
 - Qalfd**—Alluvial fan and fan-delta deposits. Sand and clay. Small, lobate deltas formed by streams flowing into bays and larger lakes and onto low-relief surfaces.
 - Qalac**—Abandoned channel and channel-fill deposits. Clay, silt, and sand.
 - Qaldp**—Delta-plain deposits. Mud and sand. Includes some undifferentiated, minor fluvial levees, crevasse splays, tidal-channel levees, and active and abandoned stream and tidal channels.
 - Qbm**—Bay-margin deposits. Mud and sand.
 - Qbms**—Bay-margin spit deposits. Sand, shell, and mud.

Pleistocene

- Qbc**—Beaumont Formation clay facies. Clay, silt, and minor sand in a fluvial-deltaic, interdistributary, and distributary setting. Contacts with Beaumont Formation sandy facies, Qbsd, are gradational.
- Qbsd**—Beaumont Formation sandy facies. Sandy clay, silt, and minor sand in a fluvial-deltaic, interdistributary, and distributary setting. Contacts with Beaumont Formation clay facies, Qbc, are gradational.

Map Symbols

- Contact (distinct)
- Contact (gradational)
- Axis of Beaumont Formation channel complex
- Axis of Beaumont Formation paleochannel
- Meander loop axis
- Fault—showing sense of motion
U = upthrown block; D = downthrown block
Dashed where inferred; dotted where concealed
- Stream (active or intermittent), drainage ditch, canal, or tidal channel
- Elevation (ft); contour interval 10 ft
- Road
- Dredged channel
- Apparent electrical conductivity (in millisiemens per meter, or mS/m) of the ground measured using a Geonics EM31 ground-conductivity meter in the vertical dipole coil orientation. Value shown is bulk conductivity from the surface to depths of 10 to 20 ft (McNeill, 1980a, 1980b).
- Well logged with gamma and conductivity tools for subsurface-lithostratigraphic interpretation

- Water; bay, tidal channel, or large stream
- SPW; selected ponded water
- DCP; dredged canal or pond
- Fill; land artificially elevated by fill material
- Pit
- DMDA; dredged material disposal area
- DMR; dredged material, reworked

Acknowledgments

Photography used in the study was 0.6-m-pixel, natural color, National Agriculture Imagery Program digital imagery, photographed in 2020. Photography was obtained from the Texas Natural Resources Information System (TNRIS). Photography was supplemented by 1-m-cell size digital elevation models (DEMs) constructed from data acquired during an airborne lidar survey flown by the U.S. Geological Survey (USGS) in January to March, 2019. Previous regional maps that cover this area include the 1:250,000-scale Geologic Atlas of Texas, Beeville–Bay City Sheet (Aronow and others, 1975; revised 1987), the 1:125,000-scale Environmental Geologic Atlas of Texas, Bay City–Freeport (McGowen and others, 1976a) and Port Lavaca (McGowen and others, 1976b) areas; and the 1:125,000-scale map of Distribution of Wetlands and Benthic Macroinvertebrates from the Submerged Lands of Texas, Bay City–Freeport (White and others, 1988).

The study included field observations of surficial deposits, collection and interpretation of surface and subsurface electrical conductivities measured using ground-based electromagnetic induction conductivity meters (Geonics EM31 and EM38, McNeill, 1980a, 1980b) and a time-domain electromagnetic induction instrument (ABEM WalkTEM), and borehole gamma and conductivity logging measurements. Elevation contours were obtained in GIS format from TNRIS. Roads were obtained in GIS format from the Texas Department of Transportation. Water bodies, streams, canals, ditches, and tidal channels were mapped from aerial imagery and the lidar-derived DEM.

The authors express gratitude to Lang Alford (Area Manager, Mad Island Wildlife Management Area) who allowed access to acquire water well, borehole geophysical log, and ground-conductivity data.

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System	Series	Time (ka)	Map Units			
			Fluvial-Deltaic System		Bay and Estuarine System	
Quaternary	Holocene	12	Qal	Qalpb	Qalcl	
			Qall	Qallc	Qalcs	Qbm
Pleistocene	2,600	2,600	Qalfp	Qalfd	Qalac	Qbms
			Qaldp			
Pleistocene	2,600	2,600	Qbc	Qbsd	Qbc	Qbsd

