THE UNIVERSITY OF TEXAS AT AUSTIN
BUREAU OF ECONOMIC GEOLOGY
W. L. FISHER, DIRECTOR

EXPLANATION

Areas of measured lignite resources.

Areas of indicated lignite resources.

Areas of inferred lignite resources.

Order of characteristics for each unit below follows that given in table 1.

GEOMORPHIC UNITS

BOTTOMLAND UNITS

P1 — **FLOODPLAIN.** Alluvium; clay mud with sand and minor gravel, commonly fines upward; clay and clay loam soils; slopes less than 2 percent, includes terraces less than 10 ft above floodplain elevation; high- to moderate-frequency flooding, recharge, ponding; water-tolerant hardwoods; aquifer, cropland, pastureland.

P2 — **UNDIFFERENTIATED ALLUVIUM AND COLLUVIUM.** Fluvial and slope deposits; clay mud and sand with minor gravel along low-order tributaries; fine sandy loam and clay loam soils; slopes less than 5 percent; low- to high-frequency flooding; pine-hardwood forest; commercial timberland, pastureland.

RIVER TERRACE UNITS

A2 — **SAND TERRACE.** Alluvium; sand with minor clay and gravel, commonly fines upward; fine sandy loam soils; slopes less than 2 percent; rare flooding, recharge; hardwood-pine forest; commercial timberland, minor aquifer, pastureland.

A3 — **SANDY MUD TERRACE.** Alluvium; clay mud and sand with minor gravel, commonly fines upward; fine sandy loam and clay soils; slopes less than 2 percent; rare flooding, recharge; hardwood-pine forest; cropland, gravel pits, minor aquifer, pastureland. Contiguous terraces of different ages separated by solid line.

A4 — **TERRACE MARGIN.** Alluvium; clay mud and sand with minor gravel, dominant material same as that of adjoining terrace; slopes 3 to 10 percent, forms the lower sloping and locally gullied boundary of a terrace; gullying, low-frequency flooding, recharge; hardwood-pine forest; gravel pits, pastureland.

LOW TERRACE OVERLAY. Terraces 10 ft above floodplain elevation; inundated during low-frequency high-magnitude floods; modifies river terrace units only.

MISCELLANEOUS GEOMORPHIC UNITS

G1 — **DENSELY DISSECTED TERRAIN.** Substrate variable, usually sandy; soils absent; slopes 10 to 25 percent; erosion, gullying; sparse pine-hardwood forest; rangeland.

G2 — **DISSECTED SAND AND MUD.** Interbedded sand, mud, and sandy mud; fine sandy loam and clay loam soils; slopes 10 to 25 percent; recharge, erosion, gullying; pine-hardwood forest; pastureland.

G3 — **ALLUVIAL FAN.** Gravel, sand, and clay mud; fine sandy loam soils; slopes less than 2 percent, fan shaped in plan view, low- to moderate-frequency flooding, recharge; hardwood-pine forest; aquifer, pastureland.

SUBSTRATE UNITS

SAND AND MUD UNITS

J1 — **LOW-RELIEF SAND AND MUD—OAK FOREST.** Interbedded sand, mud, and sandy mud, locally indurated; fine sandy loam and loamy fine sand soils; slopes less than 3 percent; recharge; oak forest; minor aquifer, pastureland.

J2 — **MODERATE-RELIEF SAND AND MUD—OAK FOREST.** Interbedded sand, mud, and sandy mud, locally indurated; fine sandy loam and loamy fine sand soils; slopes 3 to 10 percent, forms hillsides and upper ends of drainages; recharge; oak forest; minor aquifer, pastureland.

J3 — **LOW-RELIEF SAND AND MUD—PINE FOREST.** Interbedded sand, mud, and sandy mud, locally indurated and iron-stained; fine sandy loam and loamy fine sand soils; slopes less than 3 percent; recharge; pine-hardwood forest; commercial timberland, minor aquifer, pastureland.

J4 — **MODERATE-RELIEF SAND AND MUD—PINE FOREST.** Interbedded sand, mud, and sandy mud, locally indurated and iron-stained; fine sandy loam and loamy fine sand soils; slopes 3 to 10 percent; forms hillsides and upper ends of drainages; recharge; pine-hardwood forest; commercial timberland, minor aquifer, pastureland.

J5 — **LOW-RELIEF MUD WITH SAND—PRAIRIE.** Interbedded sand, mud, and sandy mud; fine sandy loam and clay loam soils; slopes less than 3 percent; minor recharge; prairie grasses and scattered oaks; cropland, pastureland, rangeland.

J6 — **MODERATE-RELIEF MUD WITH SAND—PRAIRIE.** Interbedded sand, mud, and sandy mud; fine sandy loam and clay loam soils; slopes 3 to 10 percent; minor recharge; prairie grasses and scattered oaks; cropland, pastureland, rangeland.

SAND UNITS

H1 — **SAND HILLS.** Friable to loose sand and silty sand; fine sandy loam soils; slopes 3 to 10 percent, expressed as individual steep rounded hills; recharge, gullying; pine-hardwood forest; aquifer, commercial timberland, pastureland.

H2 — **LOW ROLLING SANDS.** Friable to loose sand and silty sand; fine sandy loam soils; slopes less than 3 percent, forms low hills and hillsides; recharge, gullying; pine-hardwood forest; aquifer, commercial timberland, pastureland.

H3 — **FINE SAND.** Friable to loose fine sand and silty sand; fine sandy loam soils; slopes less than 10 percent; recharge, gullying; pine-hardwood forest; aquifer, commercial timberland, pastureland.

H4 — **INDURATED SANDSTONE.** Silica-cemented sandstone; thin fine sandy loam soils; slopes less than 3 percent, locally caps steep knobs; sheetwash; pine-hardwood forest; rangeland.

BLACKSOIL UNITS

B1 — **LOW-RELIEF BLACKSOIL.** Tuffaceous quartz sand, mud, sandy mud, and local conglomerate, locally silica-cemented; fine sandy loam and sparse clay soils; slopes less than 3 percent; recharge, gullying; pine-hardwood forest; pastureland, prime farmland, quarries.

B2 — **MODERATE-RELIEF BLACKSOIL.** Tuffaceous quartz sand, mud, sandy mud, and local conglomerate, locally silica-cemented; fine sandy loam and sparse clay soils; slopes 3 to 10 percent; recharge, gullying; pine-hardwood forest; pastureland, prime farmland, quarries.

MISCELLANEOUS SUBSTRATE UNIT

L2 — **ROLLING IRONSTONE AND SAND.** Interbedded iron-cemented sand and minor mud; fine sandy loam soils; slopes less than 10 percent; minor recharge; oak-pine forest; quarries, rangeland.

MAN-MADE UNITS

M2 — **SURFACE-MINED LAND.** Land disturbed by mining for clay, sand, gravel, or ironstone; soils absent; slopes variable; erosion; vegetation sparse; land use minimal if not currently mined.

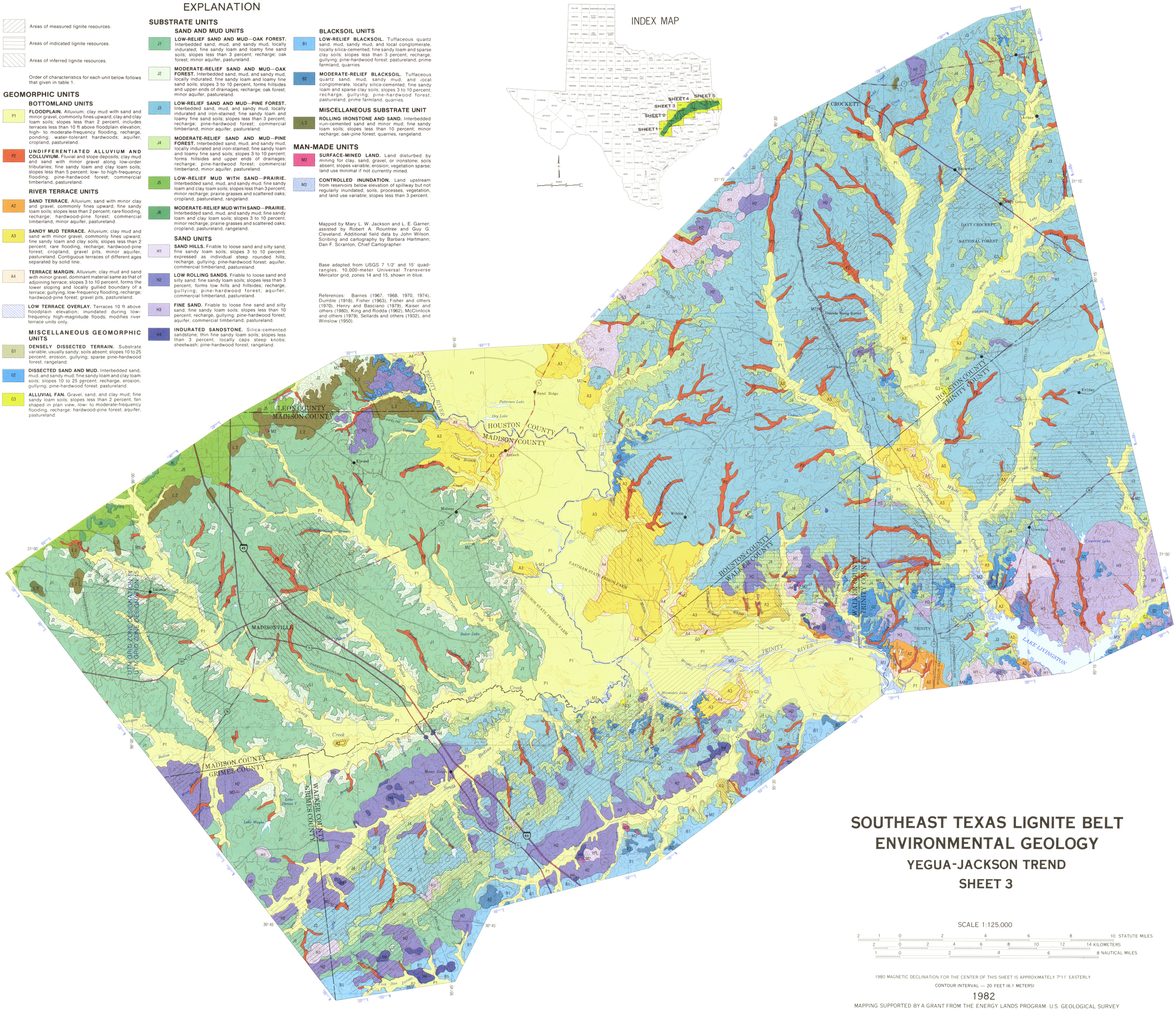
M3 — **CONTROLLED INUNDATION.** Land upstream from reservoirs below elevation of spillway but not regularly inundated; soils, processes, vegetation, and land use variable; slopes less than 3 percent.

Mapped by Mary L. W. Jackson and L. E. Garner; assisted by Robert A. Rountree and Guy G. Cleveland. Additional field data by John Wilson. Scribing and cartography by Barbara Hartmann; Dan F. Scranton, Chief Cartographer.

Base adapted from USGS 7 1/2' and 15' quadrangles. 10,000-meter Universal Transverse Mercator grid, zones 14 and 15, shown in blue.

References: Barnes (1967, 1968, 1970, 1974), Dumble (1918), Fisher (1963), Fisher and others (1970), Henry and Basciano (1979), Kaiser and others (1980), King and Rodda (1962), McClintock and others (1979), Sellards and others (1932), and Winslow (1950).

INDEX MAP



SOUTHEAST TEXAS LIGNITE BELT
ENVIRONMENTAL GEOLOGY
YEGUA-JACKSON TREND
SHEET 3

SCALE 1:125,000

2 1 0 2 4 6 8 10 STATUTE MILES
2 0 2 4 6 8 10 12 14 KILOMETERS
1 0 2 4 6 8 NAUTICAL MILES

1980 MAGNETIC DECLINATION FOR THE CENTER OF THIS SHEET IS APPROXIMATELY 7°11' EASTERLY

CONTOUR INTERVAL — 20 FEET (6.1 METERS)

1982

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