

*Agricultural Economics & Rural Soc.  
(Texas) ①*

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# RESOURCE AREAS OF TEXAS

# LAND

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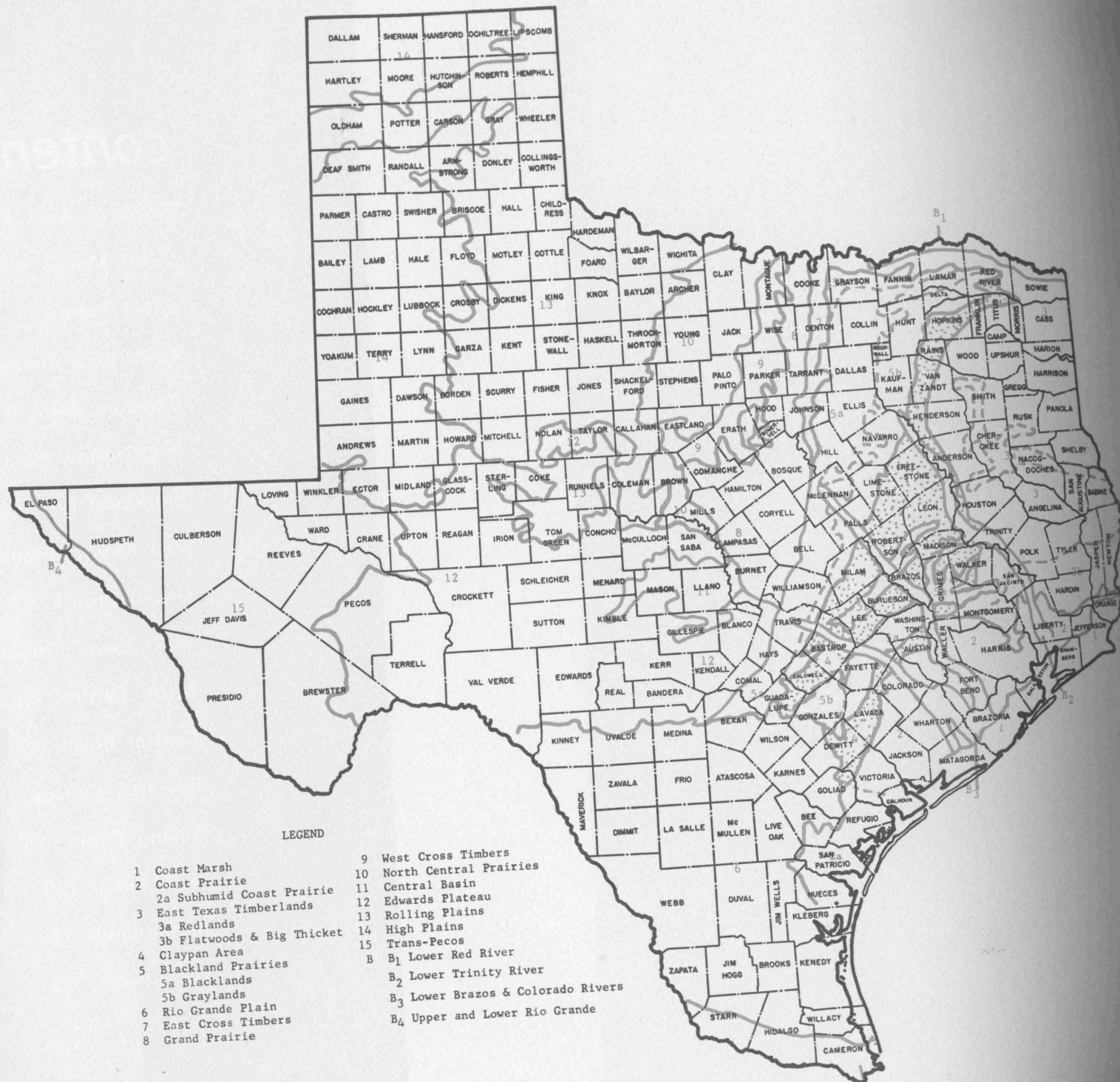




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## RESOURCE AREAS OF TEXAS

Curtis L. Godfrey  
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**T**EXAS HAS AN APPROXIMATE LAND AREA of 168.4 million acres (254 counties) or about 263,000 square miles with an 800-mile span between its east-west and north-south extremities (94 to 107 degrees west longitude; 26 to 37 degrees north latitude). A wide range of climate, vegetation and soils occur. The State is divided into 16 land resource areas, based on similarity of soils, topography, climate and vegetation.

Annual rainfall exceeds 56 inches at the Louisiana border in the east but is less than 8 inches at El Paso, the State's westernmost city. The frost-free period ranges from about 180 days at the Panhandle's north end to 340 or more days at the State's southern tip. This range permits production of many kinds of winter and summer crops, as well as a variety of native grasses, trees and shrubs. The Texas climate, along with its many parks, lakes and beaches, fosters a steadily increasing winter and summer tourist industry.

Value of annual agricultural production in Texas is second only to minerals. Producing and processing agricultural products and the associated services employ much of the total labor force.

The Texas population, largely urban and suburban, is expanding. Economic opportunities related to land and other resources account in part for the population growth.

### **Adequacy of Land Resources**

Land is used in producing food and fiber and provides space for cities, factories, homes and transportation facilities. When garnished with shade-giving plants and clean water, land provides recreational space away from crowded urban complexes.

The more than 168 million acres of land provides a per capita allotment of 15 acres. Over half the land or nearly 88 million acres are considered arable. However, only about 40 million acres of this is used for crops. Eight million of the cultivated acres are irrigated, but 15 to 30 million or more acres can be irrigated as water is provided and products are needed.

Three-fourths or more of the Texas population lives in urban areas which utilize only about 3 percent of the land. However, more area is required each year.

About 26 million acres of forest and 99 million acres of range furnish timber, grazing for livestock and, in conjunction with water development, provide hunting and fishing facilities and water for domestic and industrial use.

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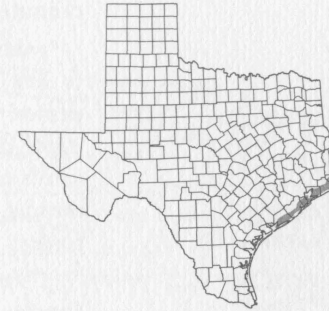
**L**OW, wet, marshy and coastal area, often covered with sea water in places.

**Elevation:** Sea level to a few feet above sea level.

**Annual rainfall:** 40 - 55 inches.

**Annual frost-free period:** 270 - 300 days.

**Vegetation:** Sedges, rushes, salt grasses.



## Coast Marsh 500,000 Acres

### Soils

Dark, poorly drained, sandy loams and clays and light, neutral sands, usually showing little textural change with depth. Some wetter soils are very high in organic matter (peaty); loamy and clayey soils are often saline and sodic. Main series: Harris, Galveston.

### Soil Management Considerations

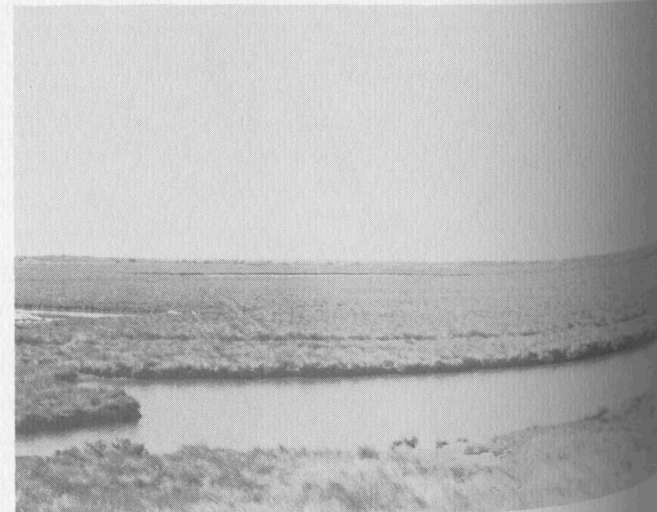
Drainage for some crops, salinity control and nitrogen, phosphorus and potassium fertilizers.

### Land Use and Potentials

Higher areas—range, urban, industrial and recreational developments. Some areas are used for rice and vegetables. Most land is not well-suited for cultivation.

Low marsh—natural wildlife habitat.

Main potentials—industrial development, wildlife preserves, recreation and limited local crop production.





**N**EARLY level, practically undissected plain  
with slow surface drainage.  
**Elevation:** Sea level - 250 feet.  
**Annual rainfall:** 28 - 56 inches.  
**Annual frost-free period:** 240 - 320 days.  
**Vegetation:** Uplands—tall bunch grasses; coastal  
fringe — salt grasses. Bottomlands — hard-  
woods, mainly oak species.

## Coast Prairie 9,000,000 Acres

### Soils

*Uplands*—dark, neutral to slightly acid clay loams and clays, changing gradually with depth to light, calcareous clays. Main series: Lake Charles, Beaumont, Edna, Bernard.

Farther south, in the subhumid Coast Prairie (Coastal Bend), soils are less acid and some are calcareous. Main series: Victoria, Orelia, Clareville.

Light, acid sands and darker, loamy to clayey soils—some saline and sodic—lie in a narrow band along the coast. Main series: Harris, Galveston.

In a narrow belt inland from the dark, clayey soils, lighter, acid, fine sandy loam soils with gray to brown and red mottled clayey subsoils are prevalent. Main series: Katy, Hockley, Kenny, Edna.

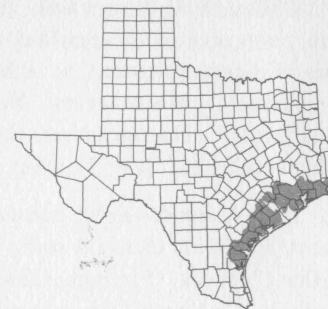
*Bottomlands*—reddish brown to dark gray, slightly acid to calcareous, loamy to clayey alluvial soils. Main series: Miller, Norwood, Pledger (Brazos and Colorado Rivers); Kaufman and Trinity (Trinity River).

### Soil Management Considerations

Local drainage and land smoothing, ample nitrogen and phosphorus fertilizers, and special programs for pasture and range utilization.

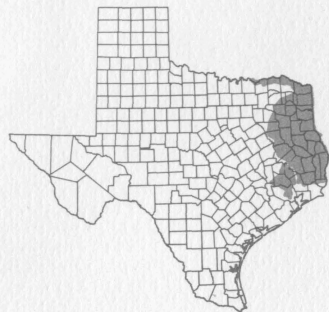
### Land Use and Potentials

Cropland, range, urban and industrial centers are major land use categories. Rice, grain sorghum, cotton, corn and tame pasture are important crops. About one-third of the area is cultivated. Intensive dryland and irrigated cropping and livestock production are major potentials. Urban, industrial and recreational developments are increasing rapidly.





# East Texas Timberlands 16,000,000 Acres



**N**EARLY level to gently undulating forested area, generally well dissected and locally hilly, with slow to rapid surface drainage.

**Elevation:** 200 - 700 feet.

**Annual rainfall:** 40 - 56 inches.

**Annual frost-free period:** 235 - 265 days.

**Vegetation:** Uplands — loblolly, shortleaf and longleaf pine with associated hardwood species, mainly oak. Bottomlands — hardwoods, mainly species of oak and sweetgum with some pine and cypress.

## Soils

*Uplands*—light to red, acid, sandy loams and sands over gray, yellow, red or mottled sandy loam to clay subsoils. Subsoils of finer textures are a few inches to 3 or more feet below the surface. Main series: Bowie, Kirvin, Troup. In the hilly “Redlands:” Nacogdoches, Ruston, Bub. In the poorly drained “Flatwoods and Big Thicket:” Segno, Splendora, Sorter.

*Bottomlands*—light brown to dark gray, acid to calcareous, loamy to clayey alluvial soils; some poorly drained. Main series: Miller, Yahola, Pledger (Red River); Kaufman, Gowen, Tusculumbia, Trinity (Trinity and other major rivers). More acid, loamy soils are extensive in flood plains of minor streams.



## Soil Management Considerations

Local drainage, erosion control and ample nitrogen, phosphorus, potassium fertilizers with applications of lime and secondary and trace elements.

## Land Use Potentials

About two-thirds of the area is forested, with commercial pine and hardwood timber produced in the uplands. Commercial hardwoods are more important in the bottomlands. Tame pasture, feed grains, forages, fruits and vegetables are main crops. Water resource development and recreation are also important parts of the economy.

Forests and lakes make the area especially well-suited for recreation and industrial expansion. A potential exists for additional fruit, vegetable, beef and dairy production.



# Claypan Area 6,900,000 Acres

**N**EARLY level to gently rolling, moderately dissected woodland—savannah to brushy area (“Post Oak Belt”) with moderate surface drainage.

**Elevation:** 200 - 500 feet.

**Annual rainfall:** 30 - 45 inches.

**Annual frost-free period:** 235 - 280 days.

**Vegetation:** Uplands—scattered stands of post oak and blackjack oak with tall bunch grasses; yaupon and other underbrush prevalent in places. Bottomlands—hardwoods, predominantly oak; pecans in some areas.



## Soils

*Uplands*—gray, slightly acid, sandy loams, commonly thin over gray, mottled or red, firm, clayey subsoils. Some deep, sandy soils with less clayey subsoils exist. Main series: Lufkin, Axtell, Tabor (thin surface claypan soils); Freestone, Eufaula (thick surface sandy soils).

*Bottomlands*—reddish brown to dark gray, slightly acid to calcareous, loamy to clayey alluvial soils. Main series: Miller, Norwood, Pledger (Brazos and Colorado Rivers); Kaufman, Trinity, Tuscumbia, Gowen (Trinity River and other smaller streams).

## Soil Management Considerations

*Uplands*—drouthy soils with claypans, nitrogen, phosphorus and potassium fertilizers and cool season cropping to utilize moisture.

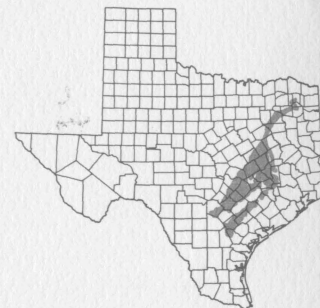
*Bottomlands*—nitrogen and phosphorus fertilizers, local drainage and land shaping for irrigation.

## Land Use and Potentials

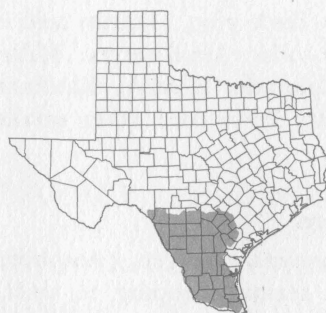
*Uplands*—much land is in woodland and brushy range. Many areas are under lease for deer hunting. Tame pasture and cool-season forage crops are important.

*Bottomlands*—grain sorghum, cotton, corn, forage crops, tame pasture and pecans. Irrigation is common.

Winter pastures, deer hunting, dairy and beef production are major upland potentials. Intensification of presently irrigated agriculture and increased production of vegetables and pecans are bottomland potentials.







## Rio Grande Plain 20,500,000 Acres

**A** NEARLY level to rolling, slightly to moderately dissected brushy plain with slow to rapid surface drainage.

**Elevation:** Sea level to 1,000 feet.

**Annual rainfall:** 18 - 30 inches.

**Annual frost-free period:** 260 - 340 or more days.

**Vegetation:** Uplands—thorny shrubs, mesquite, tall and short grass. Bottomlands—thorny shrubs, mesquite, hardwoods, bunch grasses.

### Soils

*Uplands*—dark, calcareous to neutral, clayey soils over firm clayey subsoils. Main series: Catarina, Montell. Grayish to reddish brown, neutral to slightly acid, loamy to sandy soils over red to gray, yellow and red mottled subsoils at varying depths. Main series: Duval, Webb, San Antonio, Miguel, Nueces, Eufaula. Brown, loamy, calcareous to neutral soils over brown to reddish subsoils. Main series: Uvalde, Knippa, Willacy, Hidalgo, Brennan.

In the coastal fringe, gray, clayey, saline and sodic soils mainly of the Lomalta series are extensive, along with Galveston soils which are deep sands.

*Bottomlands*—brown to gray, calcareous silt loams to clayey, alluvial soils. Main series: Matamoros, Camargo, Grulla, Frio, Rio Grande. On adjacent low terraces—Harlingen, Laredo, Raymondville, Lagloria.

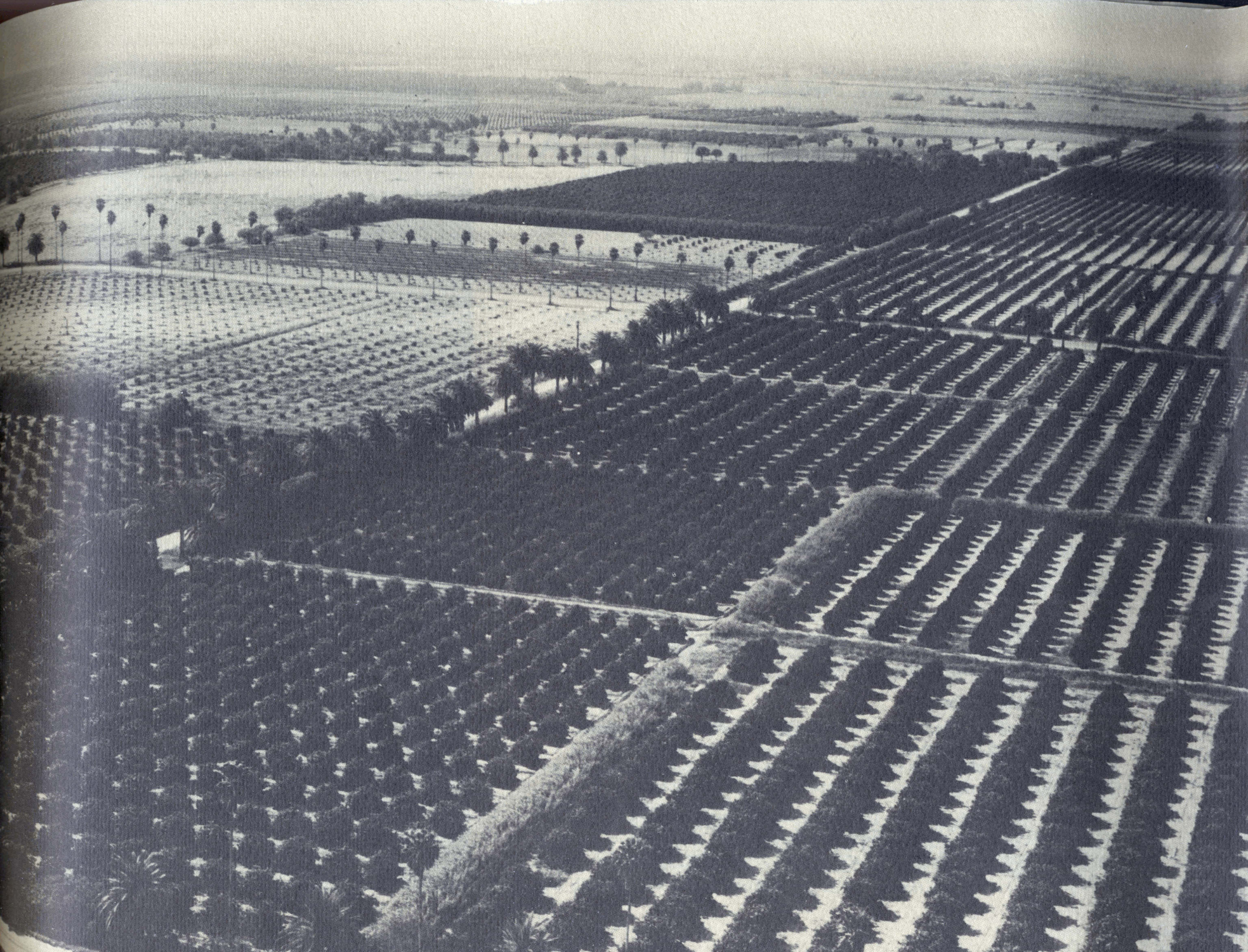
### Soil Management Considerations

Drainage, salinity control, water management for irrigation, nitrogen and phosphorus fertilizers and brush control.

### Land Use and Potentials

Range is the major land use, but irrigated and dryland cropping of citrus, vegetables, cotton and forages are also important in the economy—along with white wing dove hunting and winter tourism. Expanded irrigation and dryland agriculture, livestock production, recreation and winter resorts have good potentials.







**N**EARLY level to rolling, well-dissected prairies, with moderate to rapid surface drainage. The flood plains are slowly drained; some areas are wooded.

**Elevation:** 250 - 700 feet.

**Annual rainfall:** 30 - 45 inches.

**Annual frost-free period:** 230 - 280 days.

**Vegetation:** Uplands—tall bunch grasses; some mesquite and oaks in the “graylands.” Bottomlands—mainly species of oak, elm, cottonwood, including native pecan trees.

### Soils

*Uplands*—“Blacklands”—dark, calcareous, clayey soils changing gradually with depth to light marls or chalks. Main series: Houston Black, Austin, Heiden. “Graylands”—neutral to slightly acid clays to sandy loams over firm, dark gray to red, mottled, clayey subsoils, all becoming calcareous in the substratum. Main series: Burleson, Wilson, Crockett.

*Bottomlands*—reddish brown to dark gray, slightly acid to calcareous, loamy to clayey, alluvial soils. Main series: Miller, Norwood, Pledger (Brazos and Colorado Rivers); Kaufman, Frio, Trinity, Tuscumbia (Trinity River and minor streams).

### Soil Management Considerations

Moisture utilization, erosion control, cotton root rot disease and nitrogen and phosphorus fertilizers.

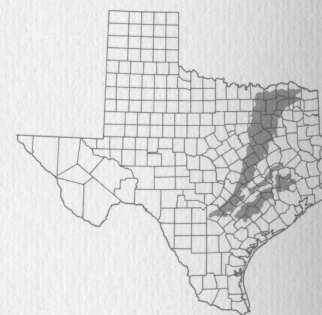
### Land Use and Potentials

Nearly half the area is cropland, with cotton, grain sorghum, corn, wheat and forages as major crops. Tame pastures and meadows occupy about one-fourth the land area. Pecan groves and dryland and irrigated crops are important in the floodplains.

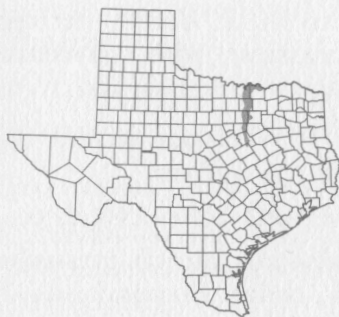
Major potentials include intensification of production of cotton, food and feed grains, forages and pecans, with additional output of beef and dairy products for an expanding urban complex.



## Blackland Prairies 13,000,000 Acres







**A** GENTLY rolling, moderately dissected, narrow strip of scrub oak woodlands, with moderate to rapid surface drainage.

**Elevation:** 500 - 700 feet.

**Annual rainfall:** Approximately 35 inches.

**Annual frost-free period:** 230 - 250 days.

**Vegetation:** Uplands—oak trees and tall bunch grasses. Bottomlands — hardwoods, mainly oak.

## East Cross Timbers 1,000,000 Acres



### Soils

*Uplands*—light, slightly acid, loamy sands and sandy loams over yellowish brown to red clayey subsoils. Main series: Windthorst, Galey, Konowa.

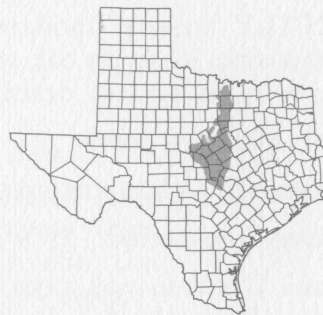
*Bottomlands*—minor areas of brown, slightly acid, loamy alluvial soils, mainly the Gowen series, along minor streams; also some minor areas of dark, clayey, neutral to calcareous alluvial soils. Main series: Kaufman, Trinity (Upper Trinity River and tributaries).

### Soil Management Considerations

Use of nitrogen, phosphorus and potassium fertilizers, erosion control and utilization of moisture.

### Land Use and Potentials

Range, pasture and urban development are major land uses; some peanuts, fruits, vegetables and forage crops are produced. Urban development, intensification of present cropping and dairying for urban markets are major potentials.



**UNDULATING** to hilly, deeply incised (locally stony) prairies, with moderate to rapid surface drainage.

**Elevation:** 600 - 1,100 feet.

**Annual rainfall:** 30 - 35 inches.

**Annual frost-free period:** 230 - 240 days.

**Vegetation:** Uplands—tall bunch grasses, short grasses, live oak, cedar. Bottomlands—hardwoods, mainly species of oak, elm and native pecan.

## Grand Prairie 7,000,000 Acres

### Soils

*Uplands*—dark, deep to shallow and stony, calcareous clays with subsoils of lighter, limy earths and limestone fragments. Main series: San Saba, Denton, Crawford, Tarrant, Brackett.

*Bottomlands*—minor areas of reddish brown, loamy to clayey, calcareous alluvial soils. Main series: Miller, Norwood, Yahola (Red and Brazos Rivers). Some dark, clayey, calcareous to neutral, alluvial soils. Main series: Frio, Trinity, Gowen (minor streams).

### Soil Management Considerations

Use of nitrogen and phosphorus fertilizers, water management and brush control.

### Land Use and Potentials

About three-fourths of the area is in range. Some small grain, grain sorghum, corn, wheat and forage crops are grown. Range is the major land use potential, but grain and forage crop production can be intensified locally.



**UNDULATING** to gently rolling, well-dissected scrub oak woodland area, with rapid surface drainage.

**Elevation:** 900 - 1,500 feet.

**Annual rainfall:** 28 - 32 inches.

**Annual frost-free period:** 230 - 240 days.

**Vegetation:** Uplands — scrub oak, tall bunch grasses. Bottomlands—hardwoods, mainly oak and elm species.

## West Cross Timbers 2,000,000 Acres

### Soils

*Uplands*—light, slightly acid, loamy sands and sandy loams over yellowish brown to red clayey subsoils. Main series: Windthorst, Nimrod, Duffau.

*Bottomlands*—small areas of dark, neutral to calcareous, clayey and loamy alluvial soils along minor streams. Main series: Frio, Gowen.

### Soil Management Considerations

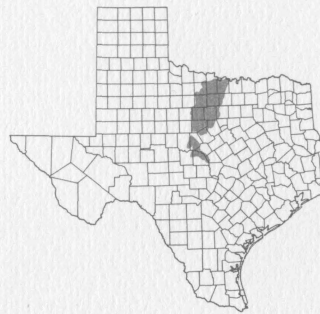
Use of nitrogen, phosphorus and potassium fertilizers, erosion control and rainfall utilization.

### Land Use and Potentials

Range and pasture utilize over half the land. Peanuts, fruits, vegetables and forage are major crops. Intensification of farming and pasture and range improvement are main potentials.



# North Central Prairies 6,000,000 Acres



**UNDULATING** prairies and nearly level valleys with slow to rapid surface drainage, interspersed with rapidly drained sandstone and shaly ridges and hills with scrub oak and mesquite vegetation.

**Elevation:** 900 - 1,400 feet.

**Annual rainfall:** 25 - 30 inches.

**Annual frost-free period:** 225 - 240 days.

**Vegetation:** Uplands—scrub oak, mesquite, tall and short grasses. Bottomlands—hardwoods, mesquite.

## Soils

*Uplands*—brown, sandy loam to silt loam, slightly acid soils over red to gray, neutral to alkaline, clayey subsoils. (Some contain limestone fragments; some have dense claypans). Main series: Truce, Waurika, Bonti. Brown, moderately deep to shallow, calcareous, clayey soils over shaly subsoils are also common. Main series: Owens.

*Bottomlands*—minor areas of brown to dark gray, loamy and clayey, neutral to calcareous alluvial soils. Main series: Miller and Norwood (Brazos River); Frio and Gowen (minor streams).

## Soil Management Considerations

Moisture utilization, brush control and nitrogen and phosphorus fertilizers.

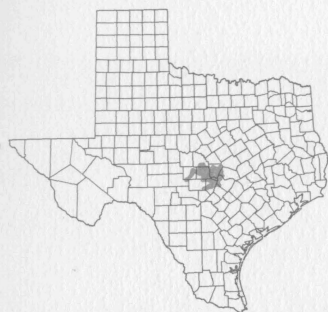
## Land Use and Potentials

Over three-fourths of the land is in range. Grain sorghum, wheat, oats, peanuts and fruits are grown on the better soils. Intensification of farming and range improvement are best potentials.





## Central Basin 1,500,000 Acres



**ROLLING** to hilly and stony, scrub oak and brush covered area, with moderate to rapid surface drainage.

**Elevation:** 1,000 - 1,800 feet.

**Annual rainfall:** 25 - 30 inches.

**Annual frost-free period:** 220 - 230 days.

**Vegetation:** Uplands—mesquite, live oak, post oak, tall and short grasses. Bottomlands — hardwood species, including oak and pecan.

### Soils

*Uplands*—reddish brown to brown, neutral to slightly acid, mostly gravelly and stony, sandy loams shallow over granite, limestone, gneiss and schist; deeper, less stony, sandy loam soils in the valleys. Main series: Tishomingo, Pontotoc, Pedernales, Katemcy, Hensley.

*Bottomlands*—minor areas of dark gray, neutral to calcareous alluvial soils. Main series: Frio, Gowen.

### Soil Management Considerations

Brush control, moisture management and nitrogen and phosphorus fertilizers.

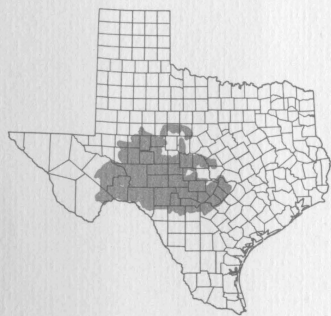
### Land Use and Potentials

About 90 percent of the area is rangeland. Deer hunting leases are common. Some small valleys are cultivated to peanuts, fruits and grain crops. Range, wildlife and recreation with local intensive cultivation are major potentials.





## Edwards Plateau 24,000,000 Acres



**D**EEPLY dissected, rapidly drained, brush and grass covered, stony plain with broad, flat to undulating divides; hilly, broken and very stony adjacent to the incised, less sloping stream valleys.

**Elevation:** 1,200 - 3,000 feet.

**Annual rainfall:** 12 - 32 inches.

**Annual frost-free period:** 220 - 260 days.

**Vegetation:** Uplands—live oak, shin oak, cedar, mesquite, short grasses, changing to desert shrub in the westernmost counties. Bottomlands—hardwood species, including oak and pecan.

### Soils

*Uplands*—dark, calcareous clays and clay loams, mostly shallow and stony. Some deeper, less stony soils on the flat divides. Main series: Tarrant, Brackett and Tobosa (eastern two-thirds); Ector, Upton, Reagan (western one-third).

*Bottomlands*—minor areas of dark, calcareous, clayey alluvial soils. Main series: Frio.

### Soil Management Considerations

Brush control, range management for cattle, goats, sheep and deer and nitrogen and phosphorus fertilizers.

### Land Use and Potentials

About 98 percent of the land is in range. This is a major region of wool and mohair production. A large deer population also utilizes the ranges. Production of small grain, grain sorghum, forage and hay crops is limited. Range for cattle, goats, sheep and deer, with hunting and other recreation, are major potentials.



## Rolling Plains 24,000,000 Acres

**B**ROAD, nearly level to rolling, grass and brush covered plains with moderate to rapid surface drainage and entrenched well-drained stream valleys.

**Elevation:** 1,000 - 3,000 feet.

**Annual rainfall:** 18 - 28 inches.

**Annual frost-free period:** 185 - 235 days.

**Vegetation:** Short and bunch grasses with mesquite and local areas of scrub oak and shin oak.

### Soils

*Uplands*—pale brown through reddish brown to dark grayish brown; neutral to calcareous sandy loams, clay loams and clays over reddish, calcareous, loamy to clayey subsoils. Soils are saline in places; some are shallow and stony; some are deep sands. Main series: Miles, Woodward, Springer, Vernon, Nobscot (northern two-thirds); Abilene, Rowena, Mereta, Tarrant (southern one-third).

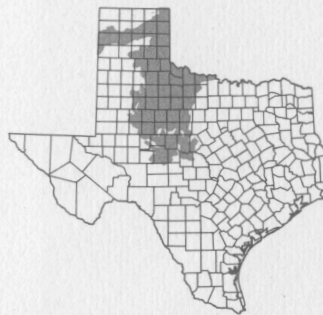
*Bottomlands*—minor areas of reddish brown, loamy to clayey, calcareous, alluvial soils. Main series: Miller, Port, Yahola (Red, Wichita, Brazos and Colorado Rivers); Spur (Canadian and minor streams).

### Soil Management Considerations

Wind erosion, salinity control, soil moisture, conservation, range utilization and nitrogen and phosphorus fertilizers.

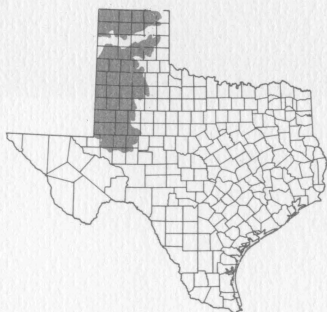
### Land Use and Potentials

Over three-fourths of the land is in range, but dryland and irrigated grain sorghum, wheat, cotton and forages are important crops. Intensification of present land use is the main potential





## High Plains 19,000,000 Acres



**N**EARLY level, practically undissected, high tableland with slow-to-moderate surface drainage and many small, shallow lakes or "playas."

**Elevation:** 3,000 - 4,000 feet.

**Annual rainfall:** 14 - 21 inches.

**Annual frost-free period:** 180 - 220 days.

**Vegetation:** Predominantly short grasses with limited areas of mesquite, sand sage, yucca and juniper.

### Soils

*Uplands*—dark brown to reddish brown, mostly deep, neutral to calcareous clay loams, sandy loams, and sands with subsoils of calcareous earths, varying from loamy to clayey and from pink to brown. Caliche is present under many soils at various depths. Main series: Pullman, Mansker, Richfield ("Hardlands"); Amarillo, Portales ("Mixed Lands"); Brownfield, Tivoli ("Sandy Lands"); Potter (loamy soils, shallow over caliche).

*Bottomlands*—very minor; small acreages of brown, loamy, calcareous alluvial soils. Main series: Spur.

### Soil Management Considerations

Water conservation for dryland and irrigation farming, wind erosion, nitrogen and phosphorus fertilizers.

### Land Use and Potentials

About 60 percent of the area is cropland, one-half of which is irrigated, but range is also important. Cotton, grain sorghum, wheat, vegetables and sugar beets are major crops. Urban industries are expanding. Intensification of irrigated and non-irrigated agriculture, expanded ranching and livestock industries and additional urban development are main potentials.



**FLOOD** plains of major importance for dry-land and irrigated agriculture along the lower Red, Trinity, Brazos, Colorado Rivers and the upper and lower Rio Grande. (Also see the discussion of alluvial soils under other Land Resource Areas.)

### Soils

Reddish brown to dark gray, calcareous, loamy to clayey alluvial soils. Main series: Miller, Yahola, Norwood, Pledger (Red, Brazos, Colorado Rivers); Kaufman, Trinity (Trinity River); Harlingen, Rio Grande, Laredo, Harkey and Glendale (Rio Grande).

### Soil Management Considerations

Drainage, land shaping, salinity control, water management for irrigation, nitrogen and phosphorus fertilizers.

### Land Use and Potentials

About one-fourth of the land is cultivated. A fourth of the cultivated land is irrigated. About 20 percent of the area is in tame pastures. Cotton, feed grains, vegetables, forages and pecans are main crops. Hardwood forest and range for cattle utilize over half the land. Intensive production of row crops, pecans and forages under dryland and irrigation, along with hardwood timber production and recreation are main potentials.

<sup>1</sup>Acreage is included in totals for the various Land Resource Areas which Bottomlands traverse.



## Bottomlands 2,000,000 Acres



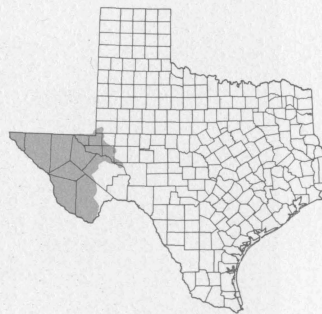
**M**OUNTAIN ranges and rough rock lands, intermixed with flat basins and plateaus. Drainage is rapid in the mountains, slow in the basins and absent in the bolsons; evaporation is high.

**Elevation:** 2,500 - 8,751 feet, the highest point in Texas (Guadalupe Peak in Culberson County).

**Annual rainfall:** 8 - 18 inches; mostly less than 12 inches.

**Annual frost-free period:** 220 - 245 days.

## Trans-Pecos 18,000,000 Acres



**Vegetation:** Uplands — at higher elevations, short grasses, some oak, pinon and ponderosa pine; at lower elevations, short grasses, desert shrubs including salt-tolerant plants. Bottomlands — bunch grasses, mesquite, desert shrub.

### Soils

*Uplands*—light reddish brown to brown clay loams, clays and sands (mostly calcareous, some saline) over reddish, loamy to clayey, calcareous, gypsic or saline subsoils. Many areas of shallow soils and rock lands. Sizeable areas of deep sands. Main series: Hoban, Reeves, Reagan (lower basins); Brewster, Verhalen, Musquiz (mountains and valleys); Lozier, Rockland (stony plateaus); Hueco, Wink, University (sandy soils); Cottonwood (gyptic soils).

*Bottomlands*—dark grayish brown to reddish brown, silt loams to clayey calcareous, alluvial soils (some saline). Main series: Harkey, Glendale, Saneli (Rio Grande); Pecos, Arno (Pecos River).

### Soil Management Considerations

Irrigation water, salinity control, nitrogen and phosphorus fertilizers and range utilization.

### Land Use and Potentials

*Uplands*—over 95 percent of the area is rangeland, but irrigated crops contribute much to the economy. Cotton, alfalfa, grain sorghum, cantaloupes and sugar beets are grown.

*Bottomlands*—cotton, alfalfa, grain sorghum and vegetables are main crops.

Mountains, parks and access routes to Mexico attract many tourists. Further development of rangelands, recreation facilities and irrigation agriculture are main potentials.





