



United States  
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Agriculture



Natural  
Resources  
Conservation  
Service

# Prime Farmland— Texas Criteria



**February 2007**

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# TEXAS CRITERIA FOR PRIME FARMLANDS

## Definition

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is suitable for cropland, pastureland, rangeland, or forestland. It is not suited to urban or water use. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. Prime farmland is defined in the Federal Register, Vol. 6, Parts 400-699, January 1, 2001, Section 657.5(a). Slight modifications are applied to the criteria of slope and soil permeability as outlined in Section 657.4(a),(2).

## Criteria

The unit used to evaluate a tract of land for prime farmland is the soil map unit. Information for evaluating the soil map unit is available in this handout, the soil handbook descriptive legend for specific survey areas, the published soil survey, and on-site inspection. Prime farmland must meet or exceed the following:

**Moisture Supply:** Texas is divided into three moisture zones (see attachment 1, Texas Moisture Zones):

Moisture Zone 1	Soil has a total available water capacity equal to or greater than 4 inches in the upper 40 inches of the soil profile
Moisture Zone 2	Soil has a total available water capacity equal to or greater than 6 inches in the upper 40 inches of the soil profile <b>OR</b> Soil has a total available water capacity equal to or greater than 4 inches in the upper 40 inches of the soil profile and has a developed irrigation water supply that is dependable and meets minimum quality standards for irrigation water. A dependable water supply has water available for irrigating the major commonly grown crops at least 8 out of 10 years. The quality of the irrigation water can be determined by past use (i.e., no apparent damage to soil or plants, or by a water sample test)
Moisture Zone 3	Soil must have a total available water capacity equal to or greater than 4 inches in the upper 40 inches of the soil profile and must have a developed irrigation water supply that is dependable and meets minimum quality standards for irrigation water. A dependable water supply has water available for irrigating the major commonly grown crops at least 8 out of 10 years. The quality of the irrigation water can be determined by past use (i.e., no apparent damage to soil or plants, or by a water sample test)

**Temperature:** The soil temperature at a depth of 20 inches is more than 32 degrees F. For the purpose of classification of prime farmland, all soils in Texas are considered as having a mean annual soil temperature of 59 degrees F or higher

**Hydrogen Ion Concentration (pH):** The soil has a pH between 4.5 and 8.4 in all horizons within a depth of 40 inches or if the root zone is less than 40 inches deep

**Drainage and Water Table:**

- The soil drainage class is either somewhat poorly drained, moderately well drained, or well drained, or the soils do not support major food, feed, fiber, forage, and oilseed crops commonly grown in the area

**OR**

- The soil map unit has an installed water control system such as drainage or irrigation, which prevents a high water table or poor drainage from adversely affecting the production of major food, fiber, forage, and oilseed crops commonly grown in the area (mainly applicable in moisture zone 1)

**Salinity**

- The soil lacks a natric horizon (equal to or more than 15 percent exchangeable sodium)
- Soil can be managed so that the conductivity of saturation extract is less than 4 mmhos/cm in all horizons within a depth of:

18 inches	if the dominant texture is clay, silty clay, or sandy clay, 10 inches if irrigated
30 inches	if the dominant texture is silty clay loam, clay loam, sandy clay loam, silt, silt loam, loam, very fine sandy loam, fine sandy loam, sandy loam, or coarse sandy loam
40 inches	if the dominant texture is loamy very fine sand, loamy fine sand, loamy sand, loamy coarse sand, very fine sand, fine sand, sand, or coarse sand

**Flooding**

- The soil surface is flooded less than once in 2 years (none, rare, or occasional) during the growing season of crops commonly grown in the area
- The soil surface is flooded for less than 2 days (very brief) during the growing season of crops commonly grown in the area

### Slope and Erosion

- Soil is not presently gullied, eroded, or severely eroded (degree of erosion is reflected in the map unit name)
- Soil has a slope gradient equal to or less than 5 percent
- Texas is divided into sectors which determine acceptable soil loss levels from wind currents for each wind erodibility group (see attachment 2, Texas Wind Erodiability Sectors)

Sector A	Wind erodibility groups are not a determining factor
Sector B	Wind erodibility groups, 2, 3, 4, 4L, 5, 6, 7, and 8 are prime farmland if they meet all other criteria
Sector C	Wind erodibility groups 3, 4, 4L, 5, 6, 7, and 8 are prime farmland if they meet all other criteria
Sector D	Wind erodibility groups 5, 6, 7, and 8 are prime farmland if they meet all other criteria
Sector E	Wind erodibility groups 6, 7, and 8 are prime farmland if they meet all other criteria

### Permeability

- The soil has a permeability rate of at least 0.06 inch per hour in the most restrictive horizon on the upper 20 inches of the profile
- Permeability rate is not a limiting factor for Vertisols and Vertic subgroups of Entisols and Mollisols

**Rock Fragments:** Must meet all three of the following requirements:

- Less than 35 percent by volume of gravel (0.04 to 3 inches in diameter)
- Less than 10 percent by volume of cobbles (3 inches to 10 inches in diameter)
- No stones (larger than 10 inches in diameter) or too few stones to interfere with tillage

**Calcium Carbonate Equivalent:** The soil has a weighted average calcium carbonate equivalent, in the fraction less than 1 inch in diameter, of less than 40 percent between depths of 10 to 40 inches, or in the root zone if less than 40 inches. Soils with mollic epipedons are excluded from this criterion.

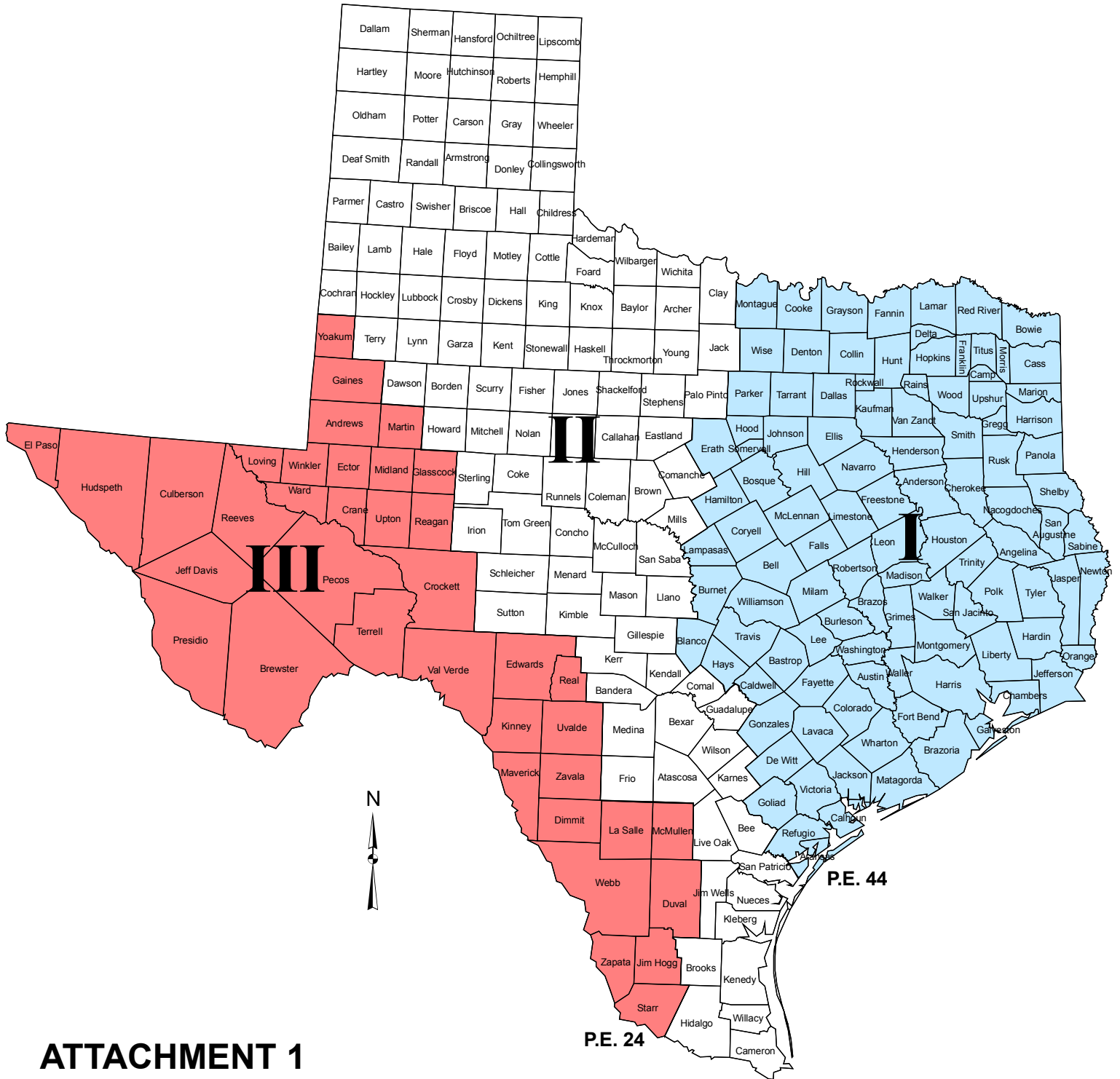
### Additional Sources of Information

Information on FPPA program policies and forms can be found at the Farmland Protection Policy Act (FPPA) website (<http://www.nrcs.usda.gov/programs/fppa>). Additional information can be found at the USDA-NRCS website (<http://soildatamart.nrcs.usda.gov>) and the Web Soil Survey website (<http://websoilsurvey.nrcs.usda.gov>). Questions regarding Prime Farmland should be referred to James Greenwade at 254-742-9960, or e-mail [James.Greenwade@tx.usda.gov](mailto:James.Greenwade@tx.usda.gov).



# TEXAS

## Moisture Zones



### ATTACHMENT 1

## MOISTURE ZONES

This map was produced by the  
USDA -- Natural Resource Conservation Service  
MO-9 Soil Survey Office; Temple, TX  
November 22, 2005

USA Contiguous Albers Equal Area USGS

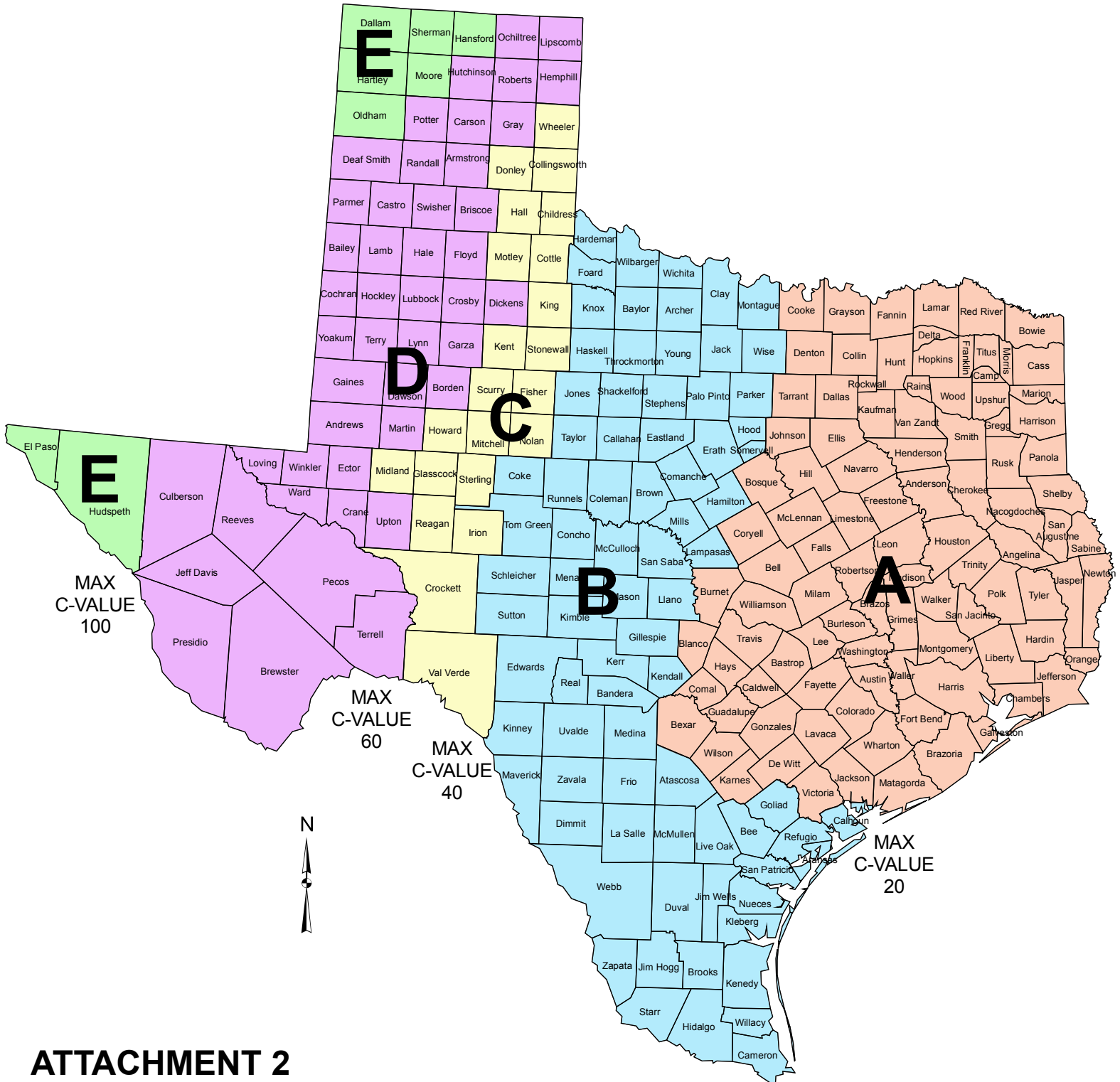
0 75 150 300 Miles

0 120 240 480 Kilometers



# TEXAS

## Wind Erodibility Sectors



## ATTACHMENT 2

### WIND ERODIBILITY SECTORS

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USDA -- Natural Resource Conservation Service  
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November 22, 2005

USA Contiguous Albers Equal Area USGS

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0 120 240 480 Kilometers