



photo by Rolf Nussbaumer

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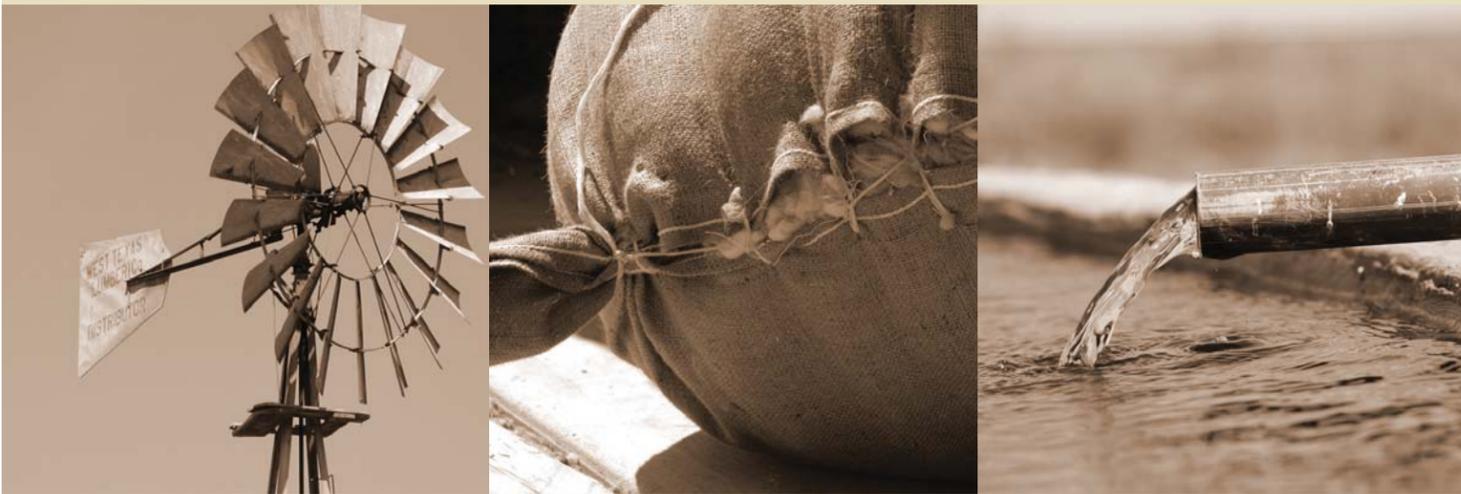
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United States Department of Agriculture
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TEXAS RESOURCES & ISSUES

December 2007

Helping People Help the Land



Information for this document was derived from NRCS National Resources Inventory data, unless otherwise noted.



Helping People Help the Land





Watershed Program

To date, nearly 2,000 floodwater retarding structures have been built in Texas and many are in need of some rehabilitation. Many of the issues involve public health and safety, aging dams, deteriorating/failing components, sediment accumulation in reservoirs, urban development below or near the dams, and current state dam safety regulations.

Watershed Program Facts and Figures for Texas

Watershed Projects

Number of PL-534 Watershed Projects	51
Number of Pilot Watershed Projects	4
Number of PL-566 Watershed Projects	90

Unfunded Federal Commitment (Structures planned but not installed)

Funds needed to install planned PL-534 structures	\$262 million
Funds needed to install planned PL-566 structures	\$165 million

Aging Dams

Total Number of floodwater retarding dams	1,973
Number of dams exceeding evaluated life (50 years) in 2007	208
Number of dams that will exceed evaluated life in 2011	542
Number of dams that need repair	120
Estimated total cost of repairs needed	\$30 million

Dam Safety

Number of dams classified as high hazard	218
Number of high hazard dams, originally designed as low hazard, that need to be upgraded to current safety criteria	112
Number of high hazard dams greater than 50 years of age in 2007	14
Number of high hazard dams greater than 50 years of age in 2011	61

Rehabilitation

Number of high hazard dams rehabilitated to date	10
Number of high hazard dams that need to be rehabilitated (upgraded)	112
Estimated total cost of rehabilitation needs in Texas	\$200 million

Benefits

Federal investment (financial assistance) in Texas to date (2005 dollars)	\$1.2 billion
Capitalized benefits to date (2006 dollars)	\$3.9 billion

The nearly 2,000 floodwater retarding dams built in Texas have provided benefits to 12.3 million people, produced \$2.9 billion in capitalized benefits, improved water quality in downstream reservoirs, provided recreation, increased wildlife habitat, and provided more productive land.



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THE GOVERNMENT

Capital: Austin

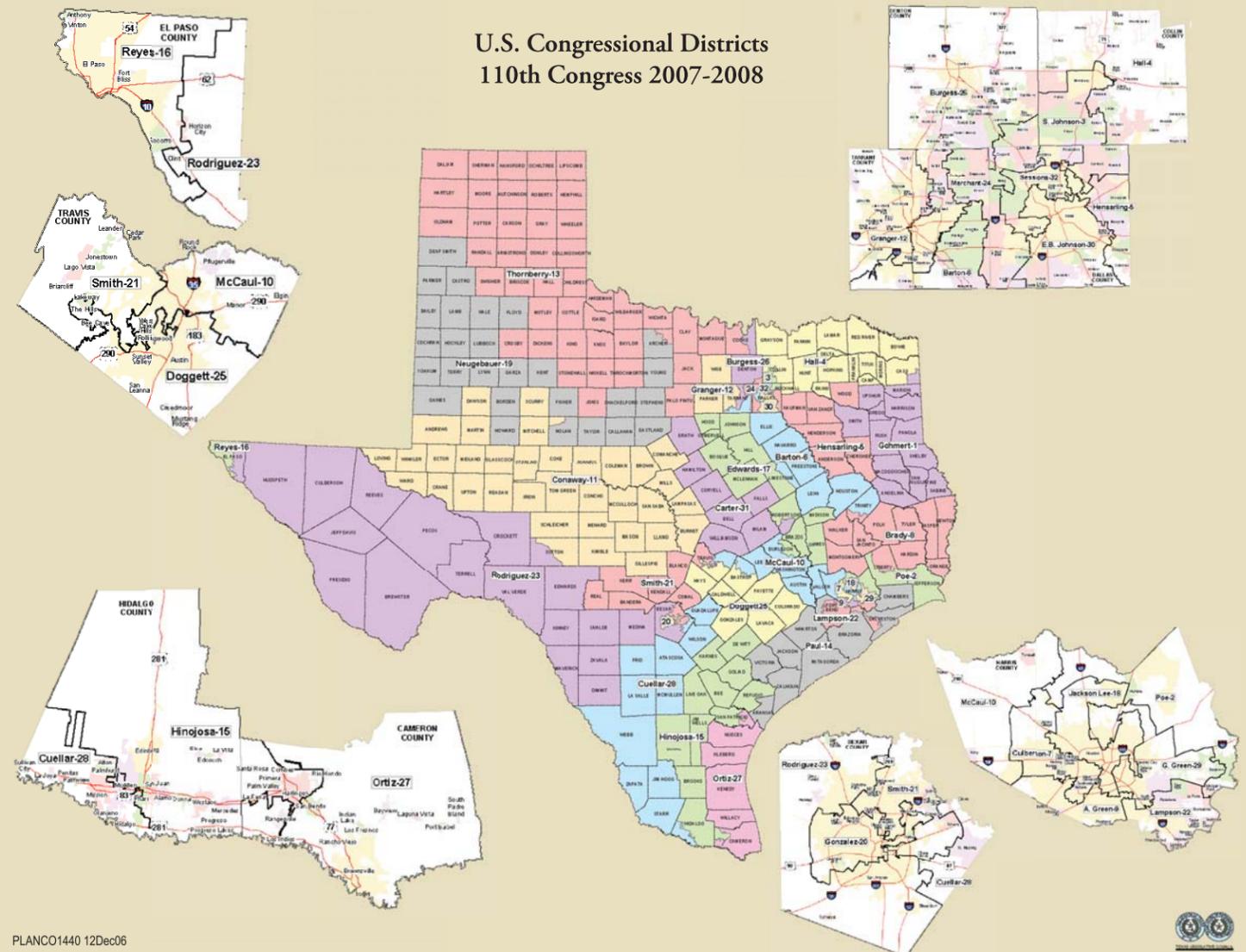
Government: Bicameral Legislature

28th State to enter the Union: December 29, 1845

Present Constitution adopted: 1876

U.S. CONGRESSIONAL DISTRICTS IN TEXAS

Texas has 32 U.S. congressional districts to represent a population of more than 22 million, according to the U.S. Census.



TEXAS FACTS

Texas is the second largest state in the United States, encompassing more than 267,277 square miles or 171 million acres, which is 7.4 percent of the nation's total area.

Texas is large enough to encompass the states of Connecticut, Delaware, Maine, Massachusetts, New Hampshire, Mississippi, New York, Ohio, Pennsylvania, Rhode Island, and Vermont within its borders.

Texas has 254 counties, more than any other U.S. state. The largest is Brewster County in west Texas. It is 6,208 square miles and the state of Connecticut can fit inside this county.

El Paso, Texas, is closer to Blythe, California, (580 miles) than it is to Dallas, Texas (635 miles).

Perryton, Texas, to Brownsville, Texas, is 843 miles and El Paso, Texas, to Texarkana, Texas is 813 miles.

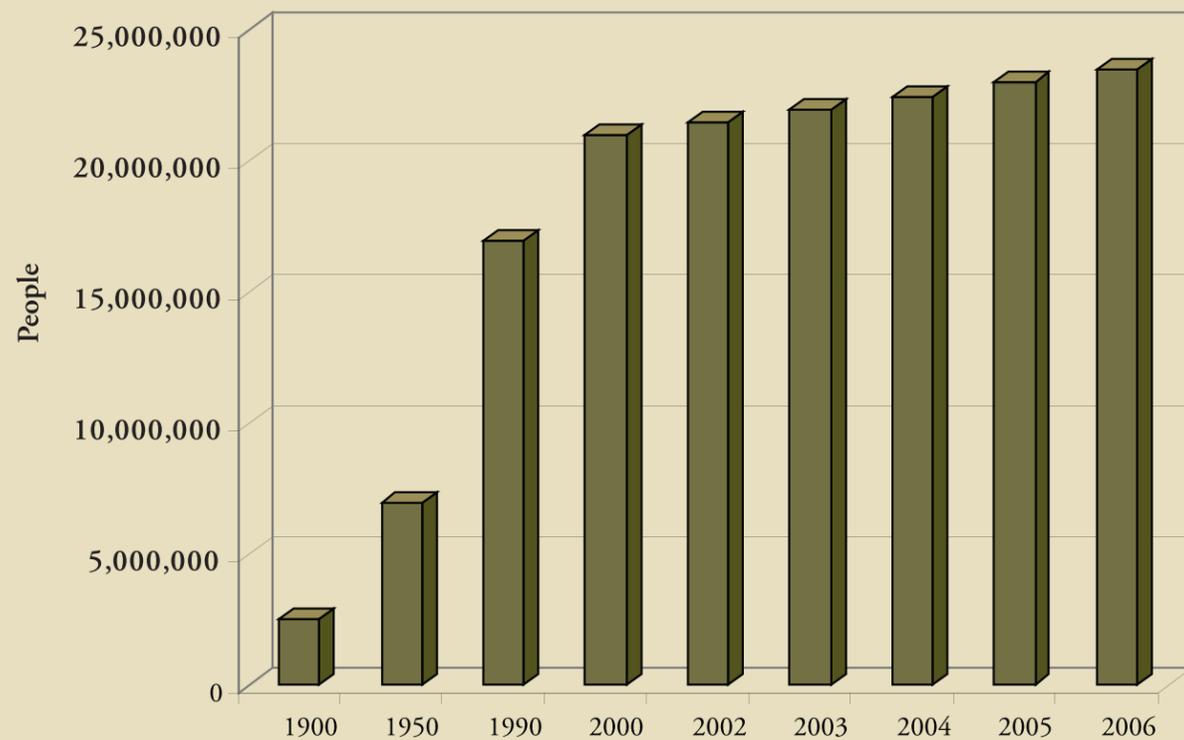
Average annual rainfall in west Texas is less than 8 inches; in east Texas annual rainfall can exceed 56 inches.

The average January temperature for Amarillo, Texas, is 36.7 degrees while in Brownsville, Texas, the average for January is 61.4 degrees.

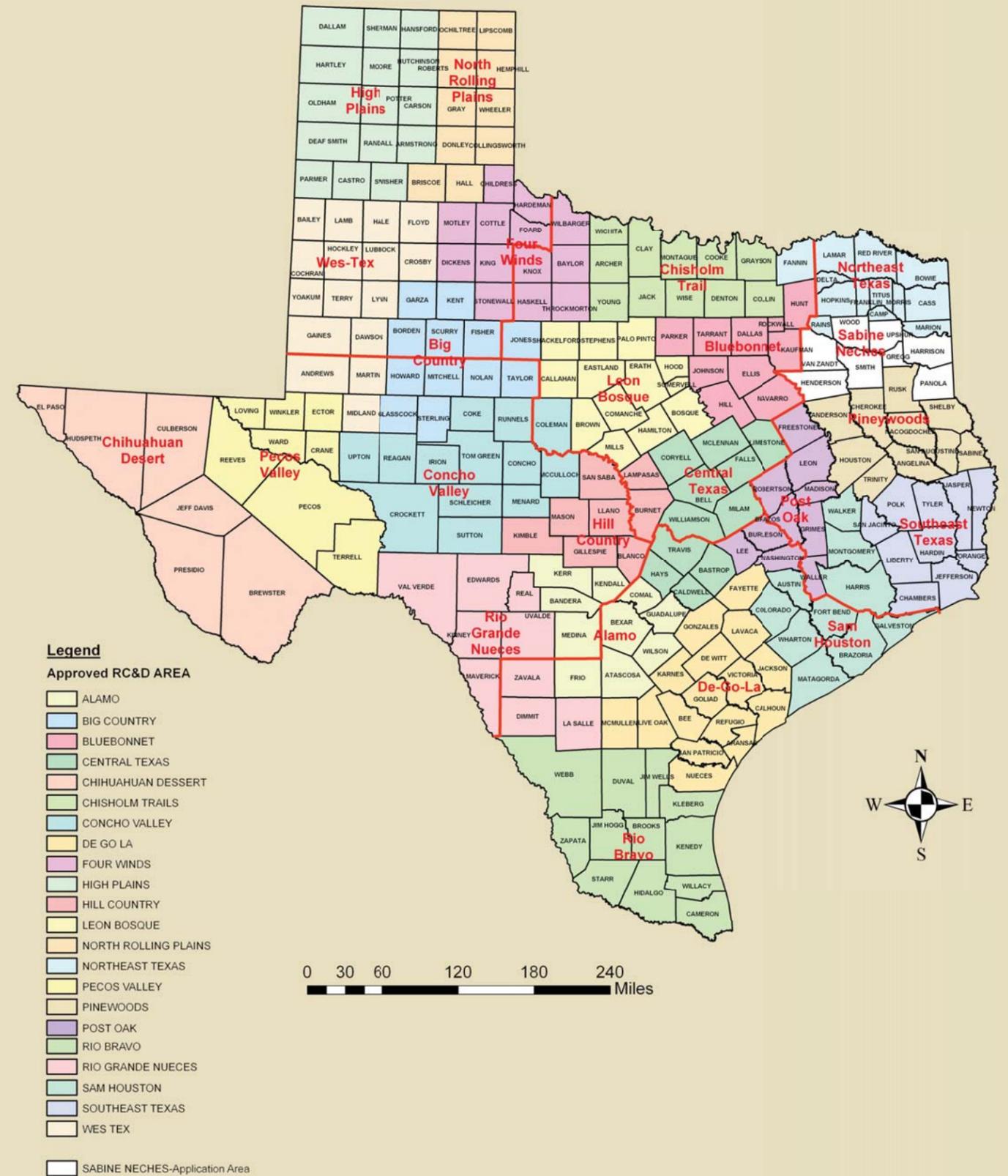
POPULATION

Texas has 32 U.S. congressional districts to represent a population of more than 22 million, according to the U.S. Census.

Population Trends



Texas Resource Conservation and Development (RC&D) Areas



- o Update Needed – 101
- o Out-of-Date – 31
- o Non-project survey area – 1
- o Published – 70

Publications

Texas soil survey manuscripts that have been published:

- Surveys printed in 2007 – 4
 - Colorado
 - Live Oak
 - King
 - Hardin
- Maps sent to printer in 2007 – 6
 - Crockett County
 - Deaf Smith County
 - Lee County
 - Tyler County
 - Edwards and Real counties
 - Young County
- Total published survey areas – 206
 - o Survey areas that are 20 years or newer (1987-2007) – 53
 - o Survey areas that are older than 20 years (prior to 1986) – 153
 - o Survey areas that are out-of-print (loan copies available) – 43

Published Soil Surveys distributed to the public this reporting period:

- Paper copies and CDs mailed out – 2,849 (Mailing surveys has decreased because of survey information available on Web Soil Survey.)
- Published soil surveys currently available on Web Soil Survey – 63

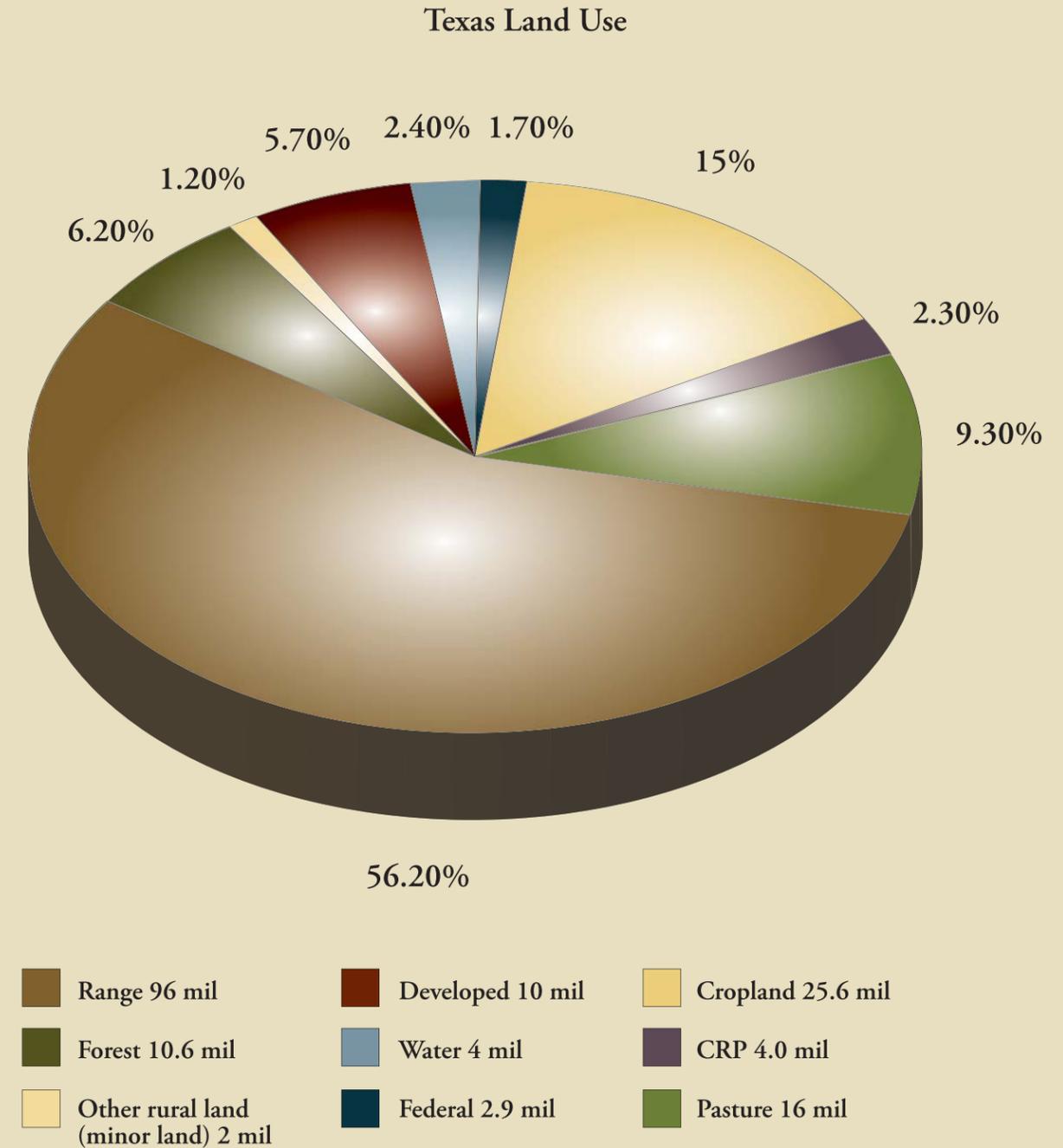
Resource Conservation and Development (RC&D)

The Secretary of Agriculture has authorized 22 RC&D areas in Texas, covering 244 counties. RC&Ds provide resource development and environmental protection in multi-county areas. RC&D council members volunteer their time to guide the work of RC&D and help to establish priorities. RC&Ds in Texas completed 276 projects in 2007. The RC&Ds also developed five watershed or areawide conservation plans. Their projects benefited land and water resources on 75,601 acres. RC&Ds also created or retained 52 local businesses in 2007.

LAND USE

Texas is the second largest, second most-populous state in the United States, encompassing more than 267,277 square miles or 171 million acres. Approximately 94.3 percent of Texas is privately owned.

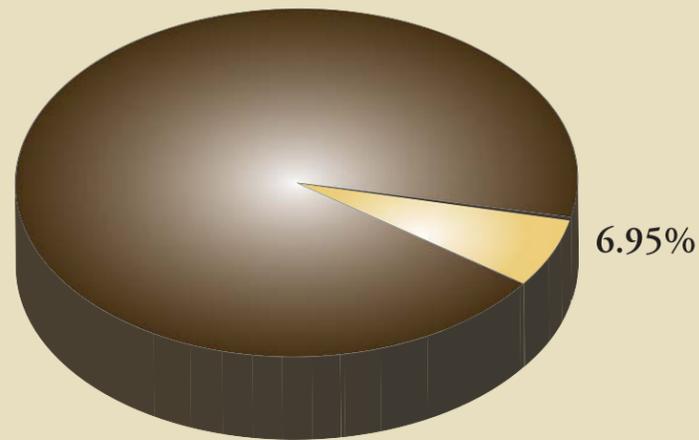
Land use is not static. It is surprisingly dynamic, with annual shifts in and out of different uses. Agriculture is no exception. There are frequent shifts in the use of land among crop, pasture, range, and forestland. Each time land changes use, it may affect erosion potential, contiguity of habitat, or hydrologic features of the landscape.



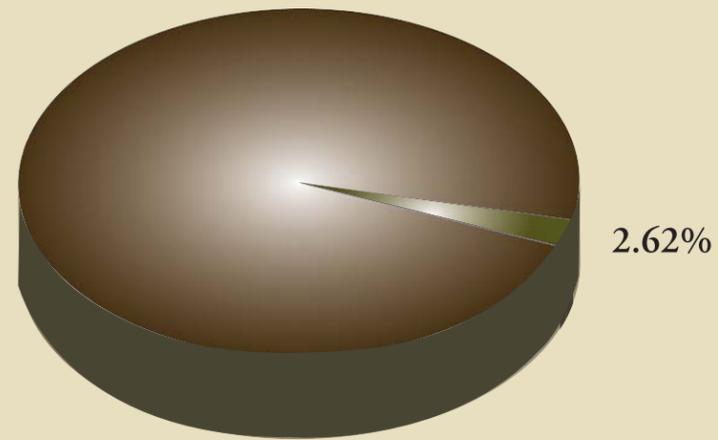
Percentage of Land Uses on Private Lands in Texas vs. the United States

National Resources Inventory Data - 2003

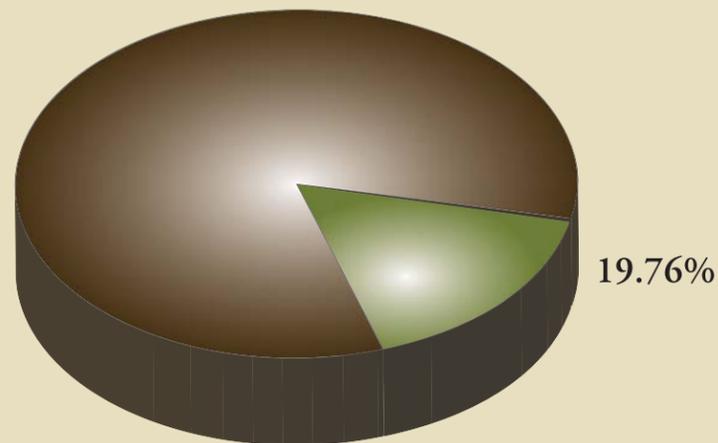
CROPLAND



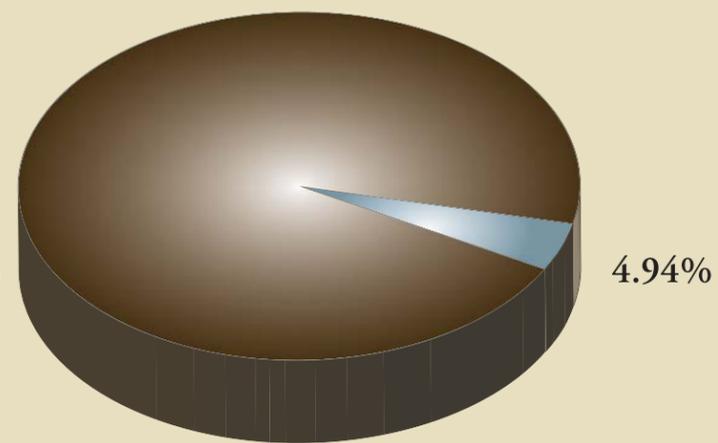
FORESTLAND



GRAZING LANDS



WETLANDS



2007 Conservation Progress Summary for Texas

Through professional technical assistance provided by NRCS, agricultural producers in Texas accomplished the following voluntary conservation efforts in 2007:

- 6,596,862 acres of agricultural land was enhanced for wildlife habitat.
- 301 ag waste management plans were applied and 370 were written to implement effective manure management strategies on agricultural operations.
- Conservation plans were written for 9,526,204 acres.
- Conservation practices were applied to improve the natural resources on 8,445,105 acres of grazing land and forest land.
- Conservation practices were applied to 1,171,542 acres to improve soil quality.
- Conservation practices were applied on 352,287 acres to improve irrigation efficiency.
- Conservation plans were applied on 7,549,092 acres to improve water quality.
- 9,143 acres of wetlands were created, restored or enhanced.

Soil Survey

The total area of Texas is 170,756,333 acres. The land area is 167,890,251 acres. There are 232 soil survey areas in Texas. The following coincide with county or multiple county boundaries.

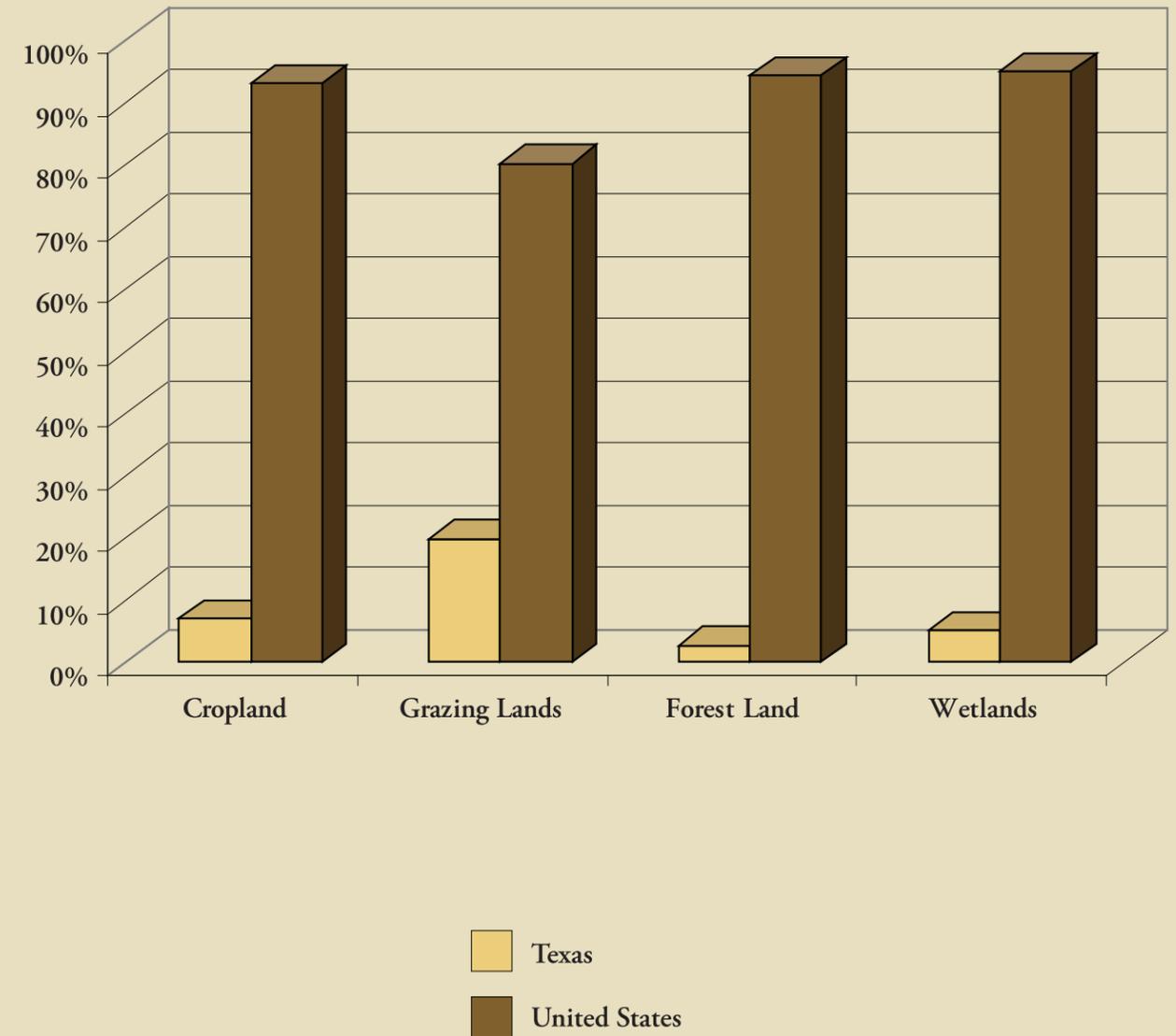
- Cumulative initial acres mapped as of October 1, 2007 – 167,710,463
- Cumulative update acres mapped as of October 1, 2007 – 37,957,011
- Initial acres mapped in 2007 – 1,361,883
- Acres remapped/updated in 2007 – 1,737,282
- Total acres mapped in 2007 – 3,141,594
- Remaining acres to be mapped in Texas – 3,045,870
 - o Initial Mapping Completed – 4
 - o Update Mapping Complete – 8
- Mapping goal for 2008 – 3,000,000
 - o Initial Mapping in Progress – 8
 - o Update Mapping in Progress – 22
- SSURGO county data sets certified 2007 – 8
 - o Duval (90,636 acres)
 - o Goliad (363,230 acres)
 - o Hansford (589,280 acres)
 - o Kenedy-Kleberg (1,787,552 acres)
 - o San Augustine-Sabine (747,948 acres)
 - o Zapata (236,387 acres)
- SSURGO county data sets on Web Soil Survey – 243
- Current NASIS Status of Survey Areas
 - o Initial – 160
 - o Update – 41
 - o Extensive Revision – 16

Conservation Program Funding Trends in Texas

Program Activity

PROGRAM	Year	# Contracts Funded	# Acres Funded	Total \$ Funded
EQIP	2003	4,874	1,844,164	\$40,744,163
Environmental Quality Incentives Program	2004	6,401	2,250,650	\$57,561,019
	2005	7,263	2,632,031	\$68,268,239
	2006	5,035	2,774,892	\$66,252,836
	2007	4,741	2,557,452	\$66,991,839
Total		28,314	12,059,189	\$299,818,096
GSW	2003	622		\$6,005,346
Ground and Surface Water (EQIP)	2004	499		\$5,586,809
	2005	421		\$5,595,049
	2006	360	80,484	\$5,478,268
	2007	338	71,793	\$5,143,473
Total		2,240	152,277	\$27,808,945
WHIP	2003	18	52,345	\$300,000
Wildlife Habitat Incentives Program	2004	46	37,653	\$590,183
	2005	45	26,277	\$589,383
	2006	67	30,532	\$795,611
	2007	39	16,131	\$437,105
Total		215	162,938	\$2,712,282
WRP	2003	12	6,069	\$5,883,191
Wetlands Reserve Program	2004	13	4,107	\$5,544,306
	2005	21	3,697	\$5,159,055
	2006	7	1,996	\$3,776,086
	2007	2	123	\$129,503
Total		55	15,992	\$20,492,141
FRPP	2003	1	862	\$1,285,699
Farm and Ranch lands Protection Program	2004	1	755	\$1,529,023
	2005	1	292	\$689,650
	2006	1	497	\$1,125,424
	2007	1	250	\$1,062,814
Total		5	2,656	\$5,692,610
GRP	2003	19	30,646	\$5,685,855
Grassland Reserve Program	2004	51	53,152	\$9,050,000
	2005	59	21,830	\$7,950,000
	2006	13	3,658	\$430,575
	2007	0	0	\$0
Total		142	109,286	\$23,116,430
CSP	2004	19	32,365	\$112,931
Conservation Security Program	2005	82	414,074	\$2,016,995
	2006	15	121,149	\$2,397,629
	2007	0	0	\$2,374,636
Total		116	567,588	\$6,902,191
GRAND TOTAL		31,087	13,069,926	\$386,542,695

TOTAL LAND USES

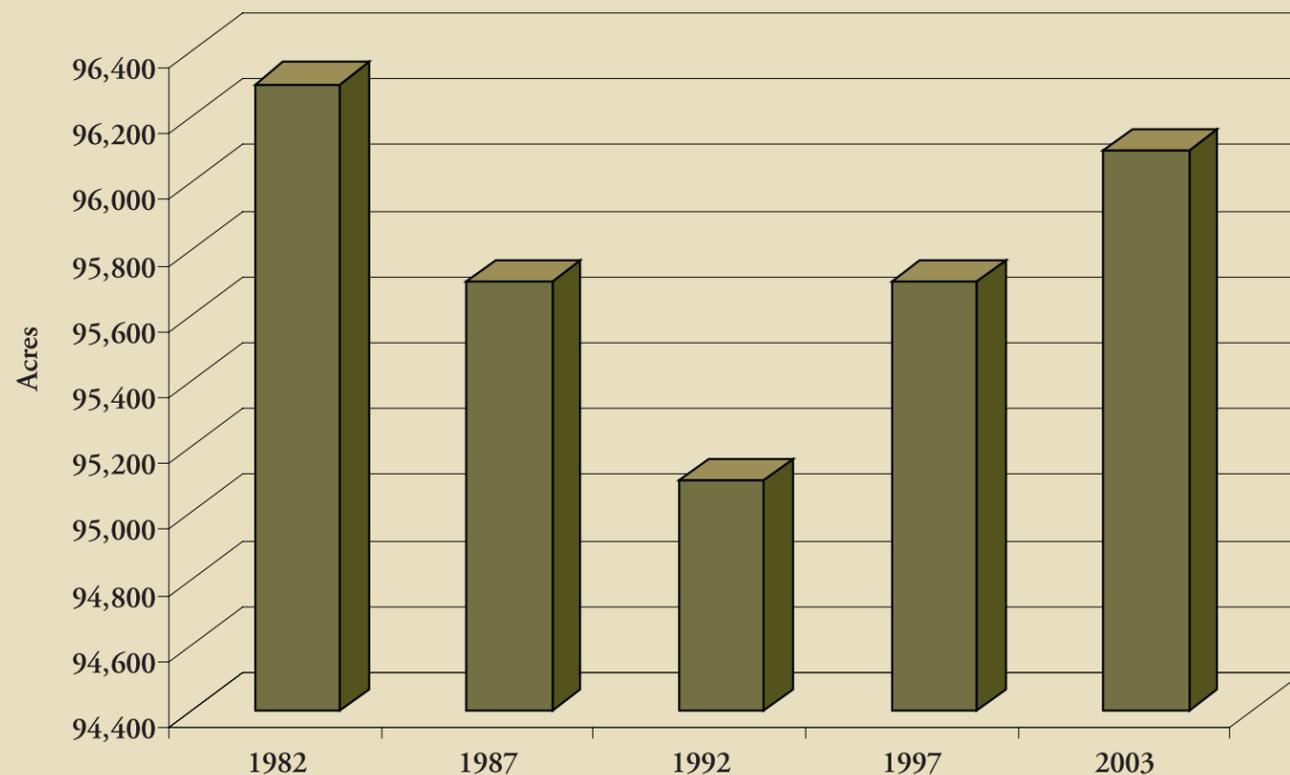




Rangeland

Rangeland is the largest single land use in Texas, encompassing 96 million acres or 56 percent of the state and 19 percent of the rangeland in the United States. Rangeland appeared to be losing ground between 1982 and 1992, having lost 1.1 million acres mostly to urbanization. Since this low in 1992, rangeland has made a slight comeback. This increase has mostly been a result of pastureland and cropland being converted to rangeland.

Rangeland Trends



The State Technical Committee has taken an active role in program implementation. They recommend division of EQIP funds for county base programs, and they identify priority resource concerns where special funding may be needed.

Farm Bill Programs

Environmental Quality Incentives Program

For the past several years, more than 50 percent of the financial assistance funding for EQIP has been allocated to county base and the other 50 percent divided into the following resource concerns:

- AFO/CAFO water and air quality concerns (beef, poultry, swine and dairy)
- Water conservation in six irrigated cropland regions
- Brush management for water conservation in five watersheds
- Invasive species control (salt cedar and Chinese tallow)
- Reforestation
- Surface water quality from livestock (non AFO/CAFO)
- Wildlife habitat for five threatened and endangered and at-risk species
- Habitat for pronghorn antelope in West Texas

Wildlife Habitat Incentives Program

The state objective for WHIP is to restore and conserve native wildlife habitats with emphasis on prairies and savannahs, riparian zones, wetlands, forestland and woodlands and thorn shrub. Emphasis has been placed on restoring native habitats of species experiencing declines or reduced populations due to agricultural impacts. Offers that provide a definite benefit to federally listed threatened or endangered species receive extra points when ranked.

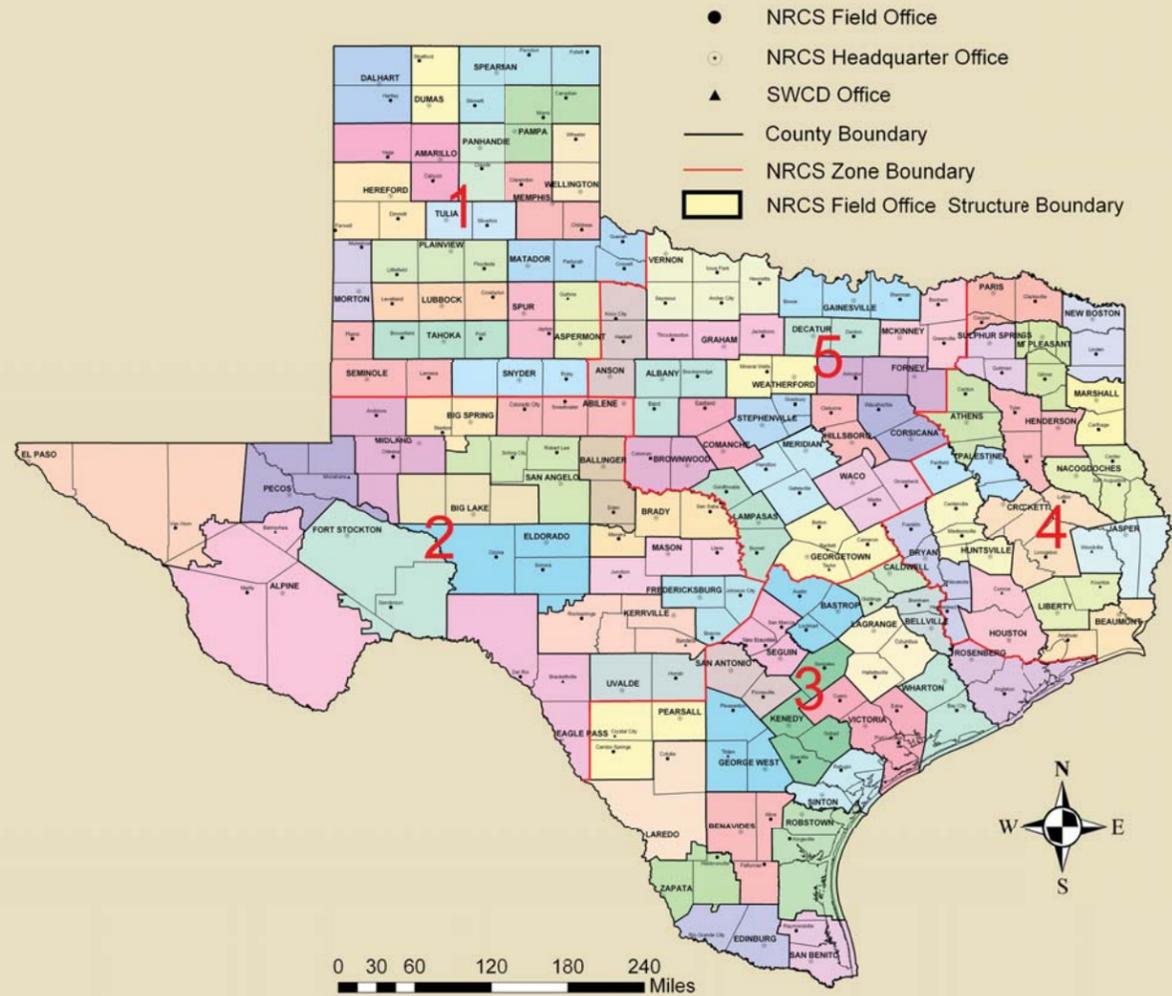
Wetlands Reserve Program

The emphasis of WRP is to protect, restore, and enhance the functions and values of wetland ecosystems to attain habitat for migratory birds and wetland dependent wildlife, including threatened and endangered species; protection and improvement of water quality; attenuation of water flows due to flooding; recharge of ground water; protection and enhancement of open space and aesthetic quality; and protection of native flora and fauna contributing to the Nation's natural heritage.

NRCS STRUCTURE IN TEXAS

Texas has 696 permanent employees and another 118 that work term, temporary, or WAE appointments. These employees work in the 217 service centers in the state, five zone offices, three plant materials centers, 22 RC&D offices, or at the state office in Temple.

Texas Field Office Structure



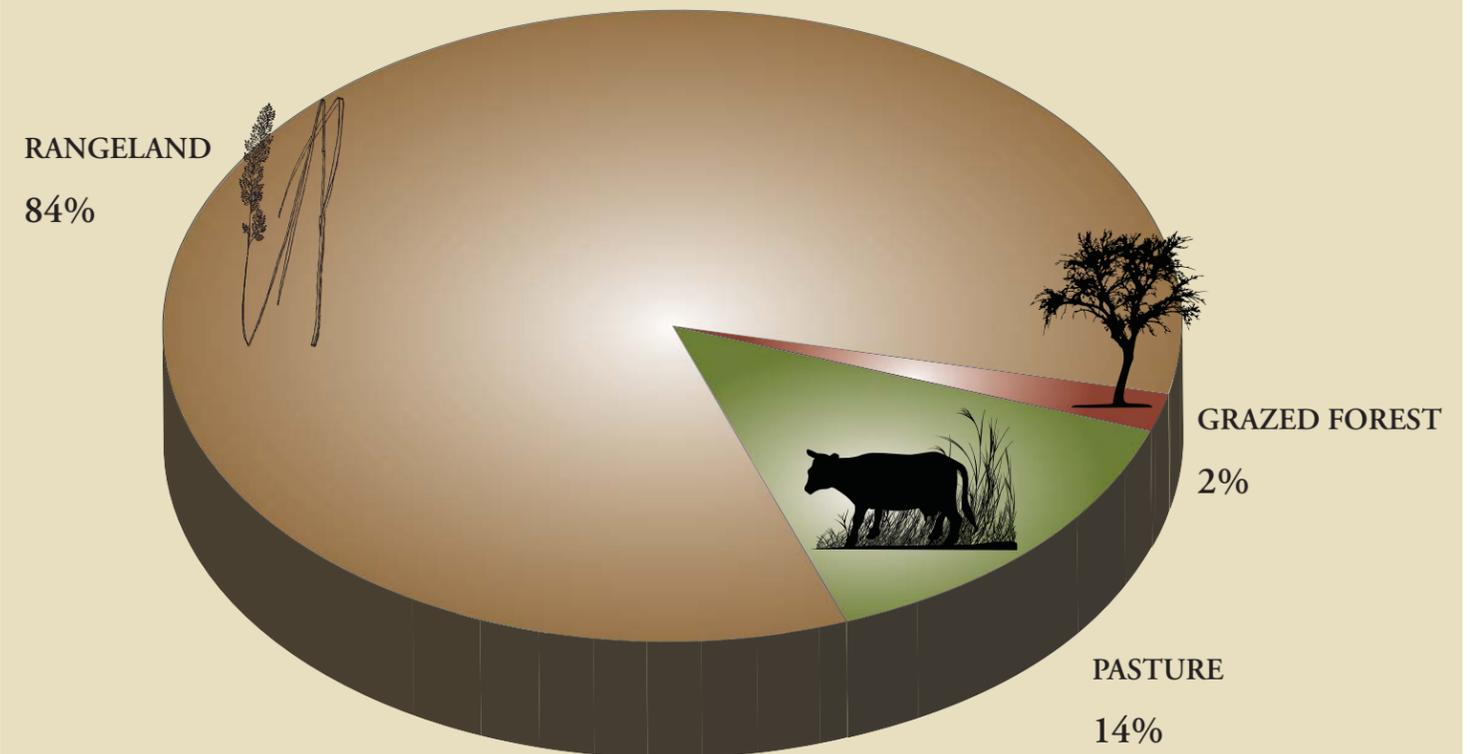
The State Technical Committee

The Texas State Technical Committee consists of 82 members representing state agencies, commodity groups, livestock groups, conservation groups, and farmers and ranchers throughout the state. All have specific concerns, needs and provide recommendations relative to the resource they represent. Many are active in subcommittees and in attending and participating in the full committee meetings. Subcommittees are also set up to review and provide recommendations to the full committee on specific programs/state concerns.



Grazing Lands

Total Grazing Lands

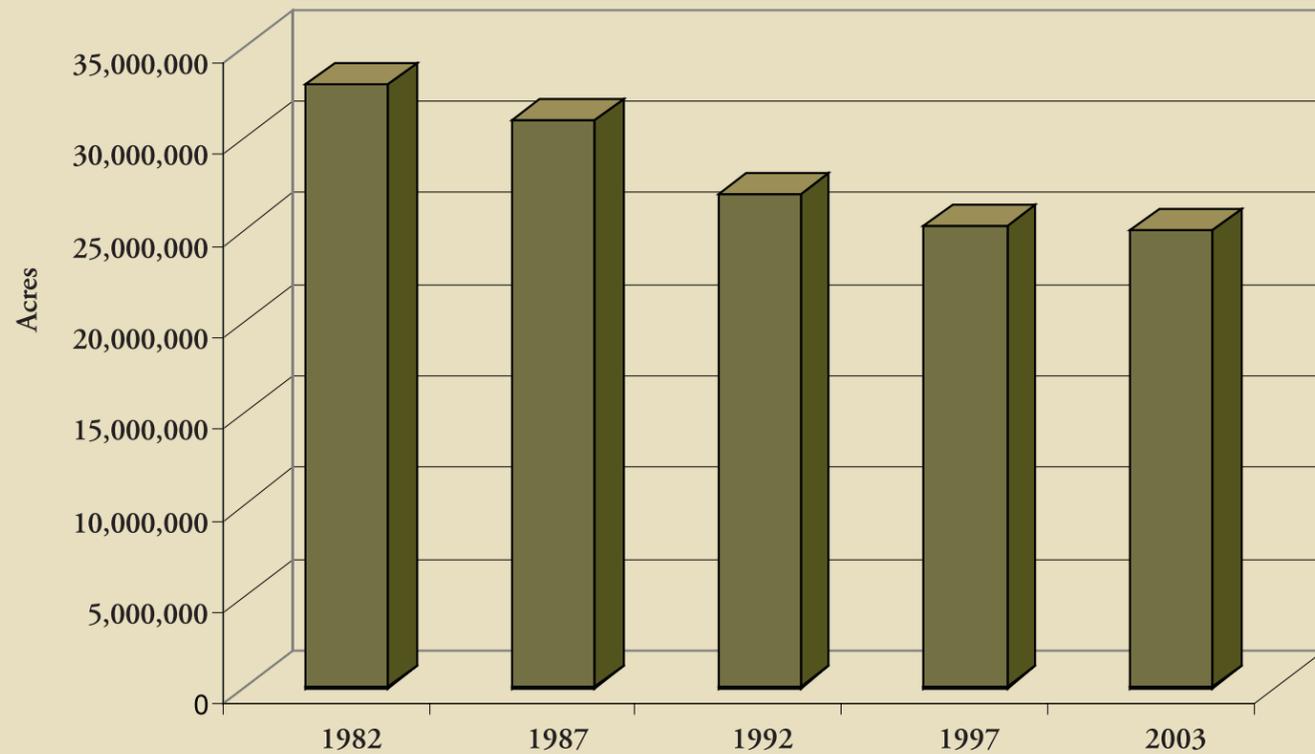




Cropland

In 1982, cropland accounted for 19.5 percent of the Texas landscape. By 2003, cropland had declined by 7.8 million acres to make up only 15 percent of the land. Four million acres went into the Conservation Reserve Program, while the other 3.8 million were converted to other land uses such as pasture, range, forest, minor land, and urban.

Cropland Trends



Prime Farmland

Between 1982 and 2002, Texas lost 1.6 million acres of prime farmland mostly to urban development. Texas leads the nation in high-quality acres lost, followed by Ohio, Georgia, North Carolina and Illinois. According to the American Farmland Trust, for each of the top 20 states, the problem is getting worse.

Water Quality

Texas has approximately:

- 191,228 miles of streams and rivers, of which 40,194 miles (21 percent) are considered perennial;
- nearly 6.5 million acres of inland wetlands and
- 1.7 million acres of coastal wetlands;
- more than three million acres of reservoirs and lakes, including 211 major reservoirs greater than 5,000 acre-feet that encompass 1,994,600 surface acres;
- 2,394 square miles of bays and estuaries; and
- 3,879 square miles of open gulf water along its 624 miles of coastal shoreline.

Source: Texas Center for Policy Studies

Of the 30.1 percent of the Texas rivers and streams that have been assessed and classified as impaired, agriculture sources have been identified as causing 10 percent of known sources of pollution.

Source: Texas Center for Policy Studies

Of the 38.2 percent of the Texas lakes/reservoirs that have been assessed and classified as impaired, nonpoint source runoff from irrigated crops have been identified as causing 14 percent of the known sources of pollution. Source: Texas Center for Policy Studies Both agricultural nitrates and pesticides have been found in groundwater in Texas.





Texas Agriculture

Top 5 agriculture commodities, 2005

	Value of receipts thousand \$	Percent of state total farm receipts	Percent of US value
1. Cattle and calves	7,580,168	46.3	15.4
2. Cotton	1,839,437	11.2	31.7
3. Broilers	1,436,644	8.8	6.9
4. Greenhouse/nursery	1,323,040	8.1	8.2
5. Dairy products	981,801	6	3.7
All commodities	16,355,268		6.8

Top 5 agriculture exports, estimates, FY 2006

	Rank among states	Value million \$
1. Cotton and linters	1	1,246.60
2. Live animals and meat	4	421.1
3. Other	7	345.1
4. Hides and skins	3	314.8
5. Feeds and fodders	2	301.5
Overall rank	3	3,805.40

Top 5 counties in agricultural sales 2002

	Percent of state total receipts	Million \$
1. Deaf Smith County	6	841.8
2. Parmer County	4.3	603.9
3. Castro County	4.2	592.6
4. Hartley County	3.2	447.3
5. Dallam County	2.6	369.7
State total		14,134.70

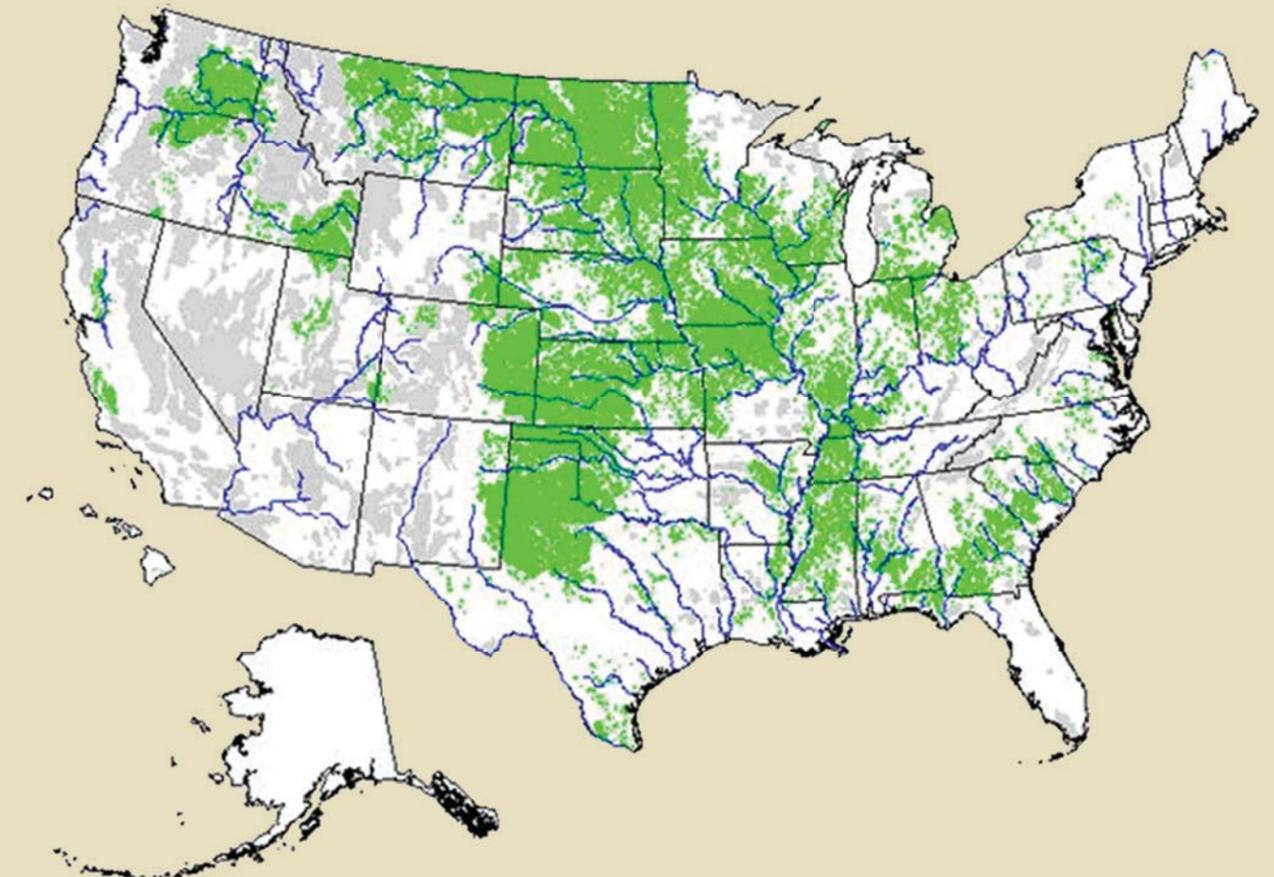
Source: Texas Fact Sheet: USDA Economic Research Service



Conservation Reserve Program

Texas has more land in CRP than any other state. More than 80 percent of CRP acres, as well as 60 percent of the participating farmers, are in the High Plains and Rolling Plains.

Acres of Cropland Converted to Conservation Reserve Program (CRP) Land, 1982-1997



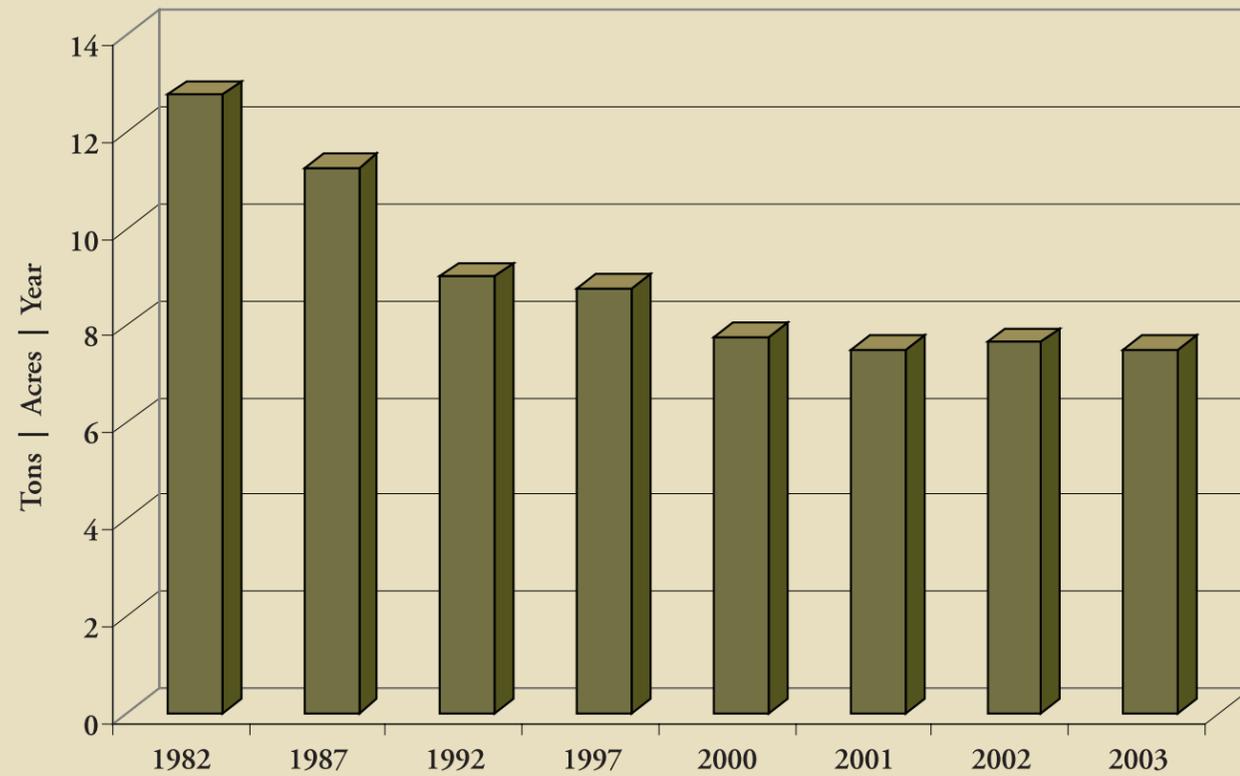
 Each green dot represents a 1,000 acres





Soil Erosion

Average Annual Wind Erosion



Texas has made great strides in reducing soil erosion on cropland. We have seen wind erosion go from 12.2 tons/acre/year in 1982 to 7.5 tons/acre/year in 2003. Water erosion decreased from 2.6 to 2.5 tons/acre/year.

However, cropland soil erosion is still a major concern in Texas. In 2003, we were still losing 190.5 million tons per year with an average of 7.5 tons/acre/year to wind erosion, mostly in far West Texas and the Plains region. We were still losing 64.8 million tons of soil or 2.5 tons/acre/year to water erosion, mostly in the central and eastern parts of the State. Both wind and water erosion are concerns in the Rolling Plains and in the southern part of Texas.

In 2003, Texas had approximately 9 million Highly Erodible Land (HEL) cropland acres. Of this, 2.6 million acres of HEL cropland were eroding at or below soil loss tolerance rates, while almost 6.4 million acres of HEL cropland were eroding above soil loss tolerance rates.

Of the 16.6 million acres non-HEL cropland, 10.9 million acres were eroding at or below soil loss tolerance rates, while approximately 5.7 million acres were eroding above.



Water Bodies

Small water bodies (less than 40 acres) increased by 194,000 acres from 1982 to 2002, mostly in the central and eastern part of the state. Census water (greater than 40 acres in size) increased by 206,000 acres over the same period.

Other Lands

Federal land (2.9 million acres) has remained the same since 1992 and takes up less than 2 percent of the total land uses. Minor land increased almost 400,000 acres from 1982 until 1997. From 2000 to 2003, minor land has remained stable with approximately 2.3 million acres, 1.4 percent of the total land uses.

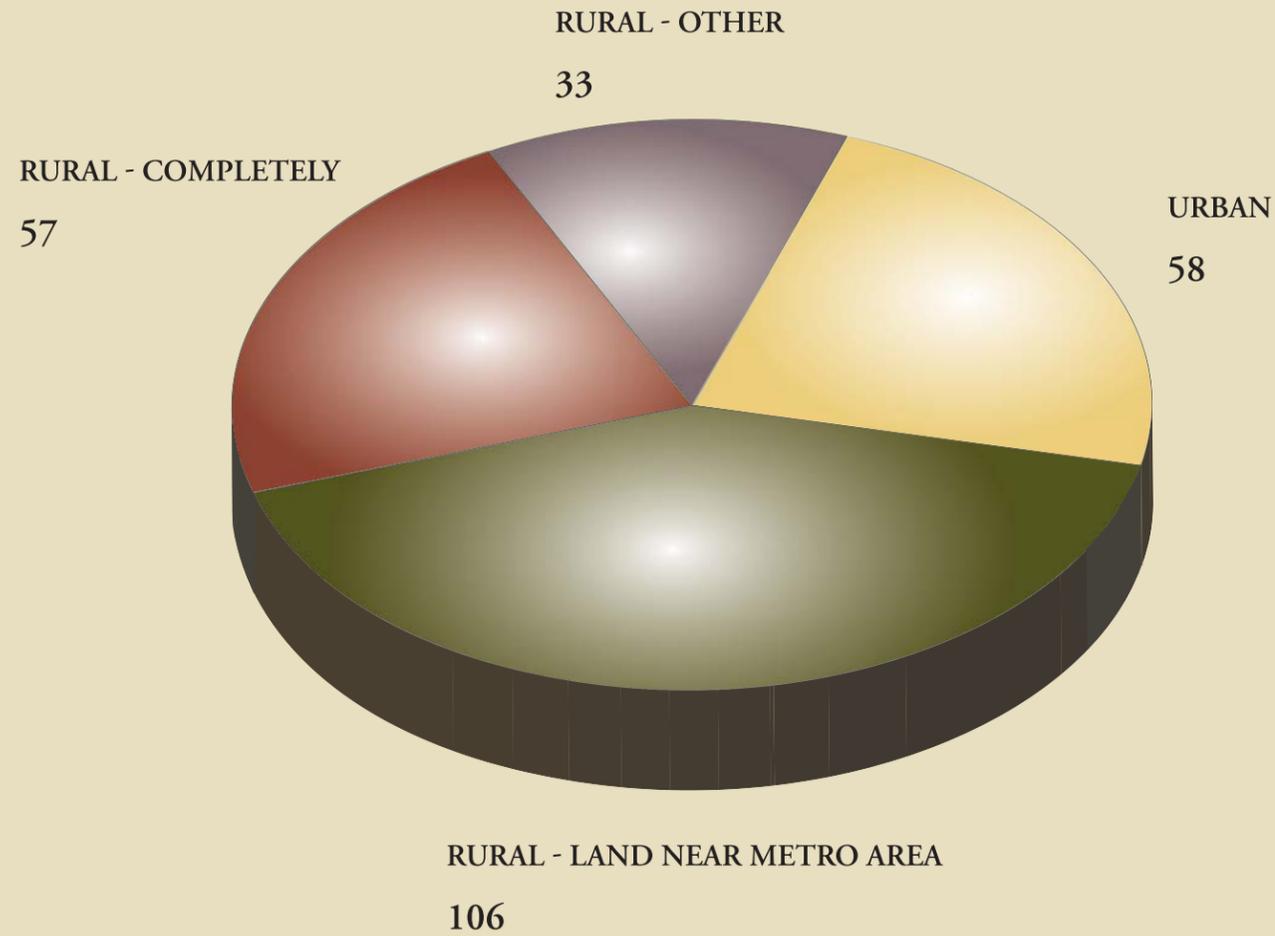


photos by Rolf Nussbaumer



Texas Counties

Source: USDA



According to the U.S. Department of Agriculture (USDA), 196 of Texas's 254 counties are rural and, of these, 106 are located near one of the state's 27 metro areas. Less than a quarter (58) of Texas's counties can be considered urban. Almost the same number (57) of counties is completely rural—containing no town with a population of 2,500 or more—and the rest lie somewhere in between.

Income	Rural	Urban	Total
Poverty rate (percent)			
1979	19.1	13.7	14.7
1989	23.5	17.1	18.1
1999	18.7	14.8	15.4
2004	17.9	15.9	16.1

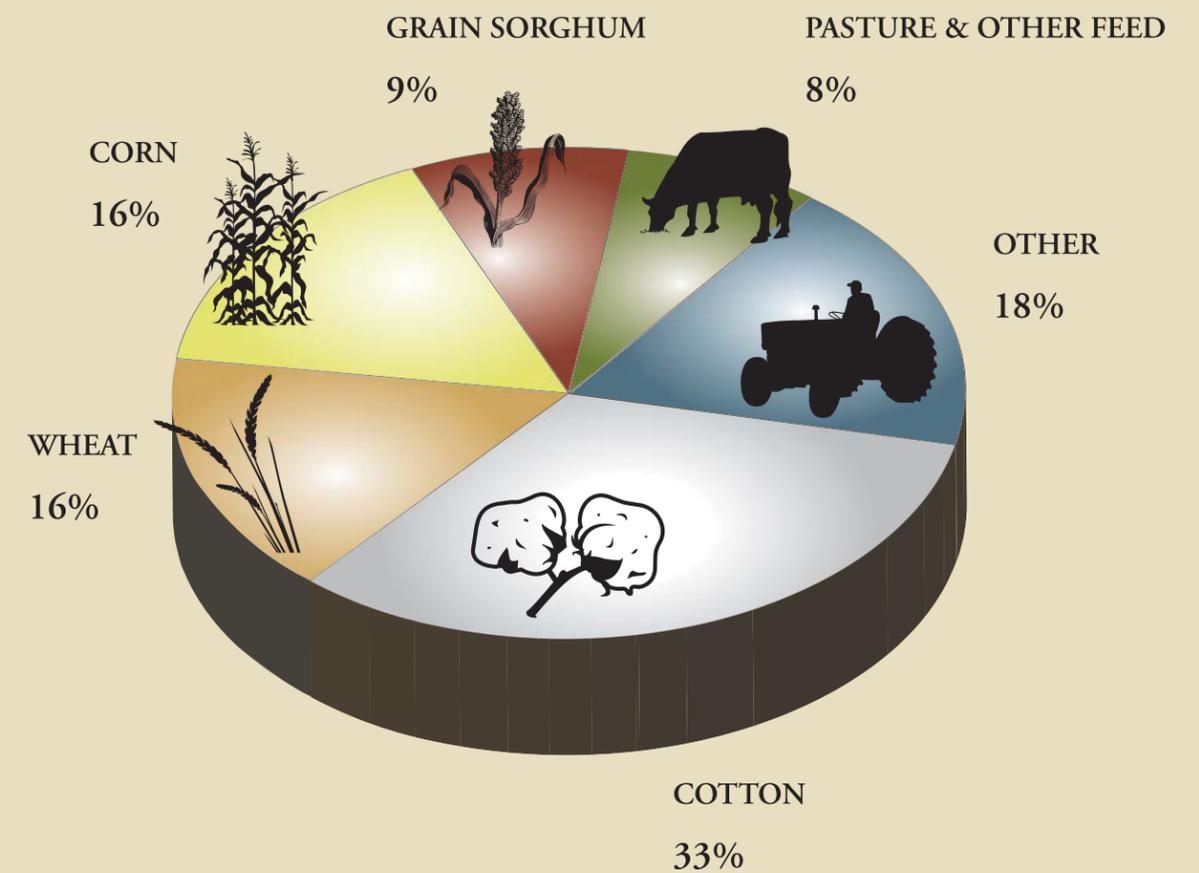
Source: USDA Economic Research Service, 2007

Irrigation Use

The major irrigation systems of the state depend upon two water sources: surface streams and underground water. The main regions that use streams are the lower Rio Grande Valley, the Colorado River basin, and the Pecos River basin. Most of the water in these areas is considered good for irrigation, although the sodium content is slightly higher in the waters of the more western streams. The High Plains, the El Paso Valley (also partly supplied by the Rio Grande), the Winter Garden district, and the Gulf Coast area mainly use underground water.

Irrigation of agricultural lands accounted for 60 percent of the water used in Texas in 2000. Five crops in Texas made up more than 80 percent of the irrigated land in 2000: cotton (33 percent), wheat (16 percent), corn (16 percent), grain sorghum (9 percent), pasture and other feed (8 percent) and other (18 percent). Source: Texas Center for Policy Studies

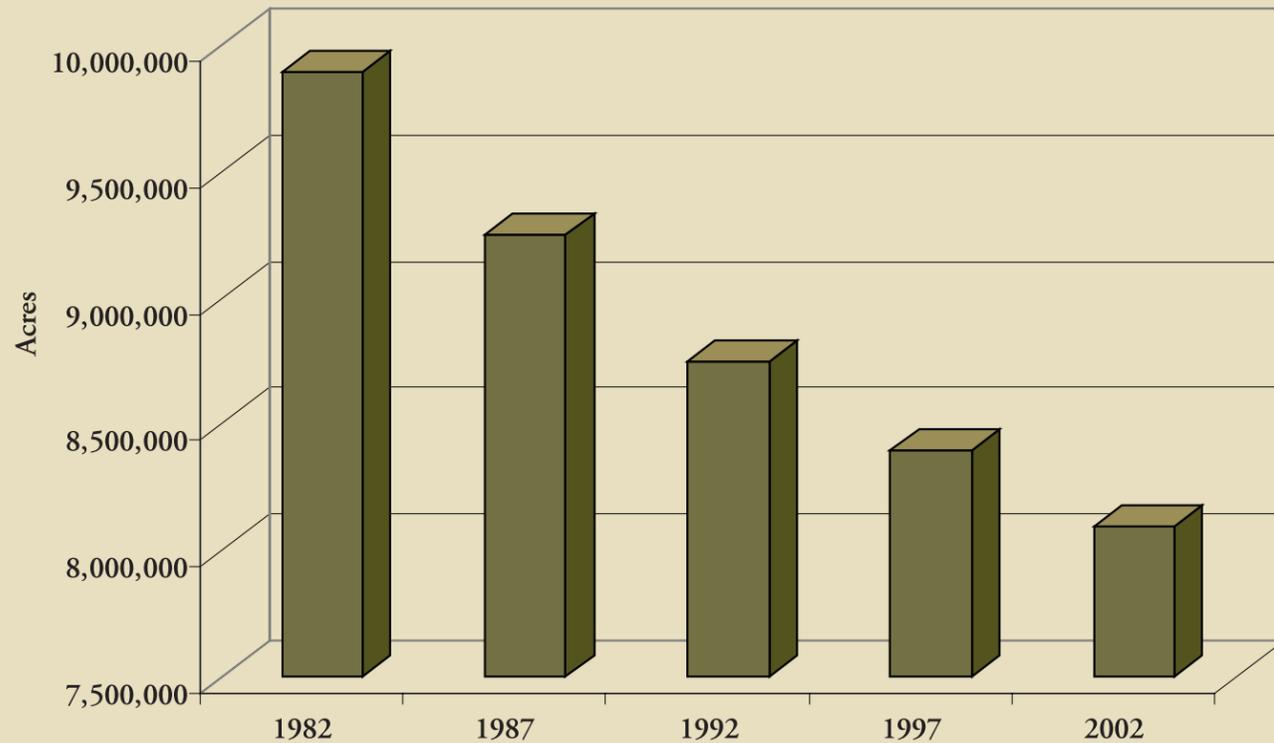
Irrigation of Agricultural Lands by Crops



Source: Texas center for Policy Studies, 2000.

The number of irrigated acres continued to decline in the West and south central United States. Irrigated acres in Texas decreased by nearly 1.9 million acres from 1982 to 2002, from 10 million acres to 8.1 million acres.

Irrigation Trends



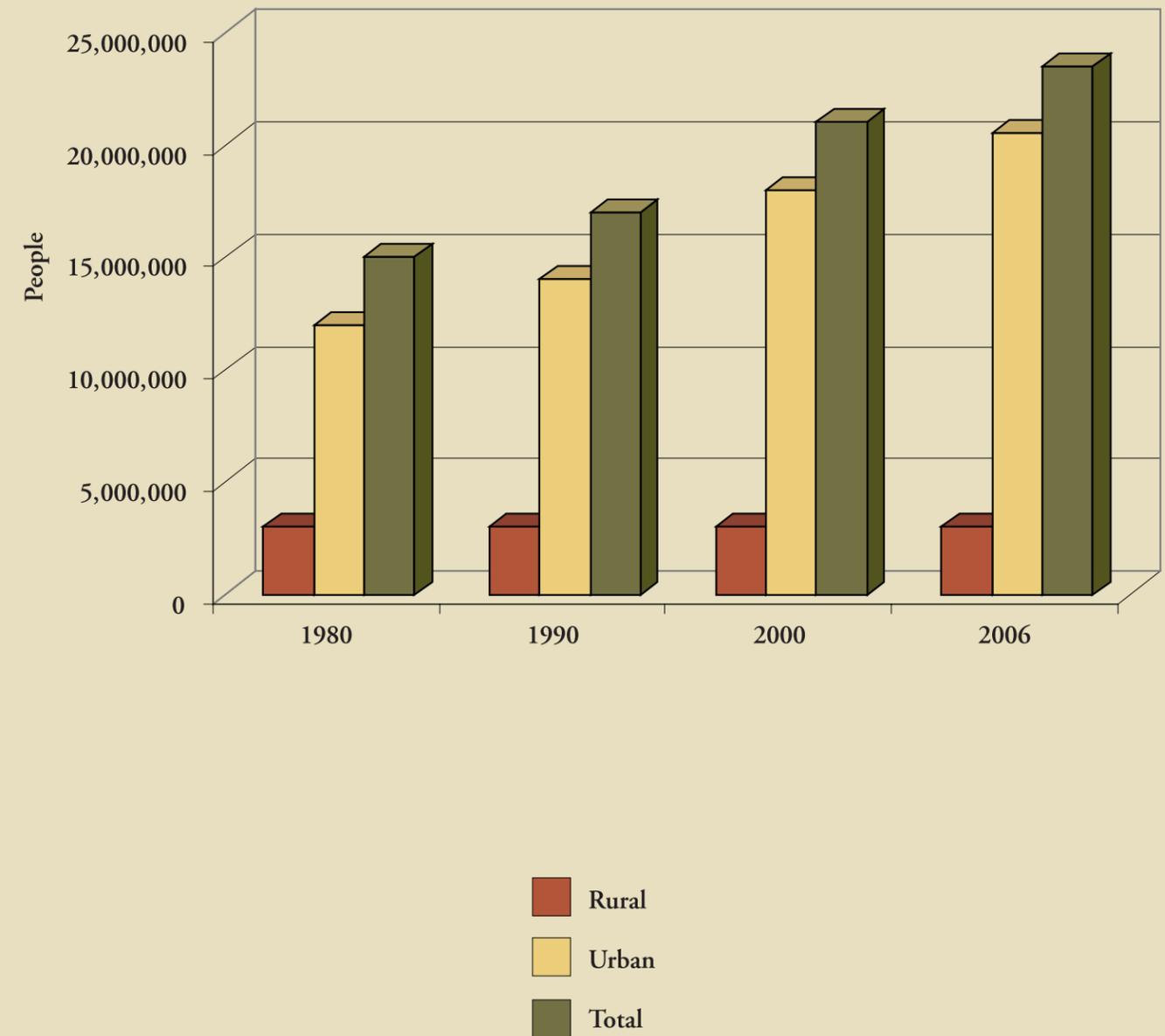
Continued and prolonged droughts may lead to concerns about surface and groundwater withdrawals in irrigation growth areas. This may lead to water supply issues in areas where it has not been of major concern in the past.

The general decline is expected to continue over the next 50 years, with projected agricultural use in 2050 of 8.5 million acre-feet, according to the most recent projections. This projection assumes the adoption of water efficient technology in areas of the state using groundwater and enhanced conveyance efficiency in areas using surface water. Source: Texas Center for Policy Studies

Rural Texas Now

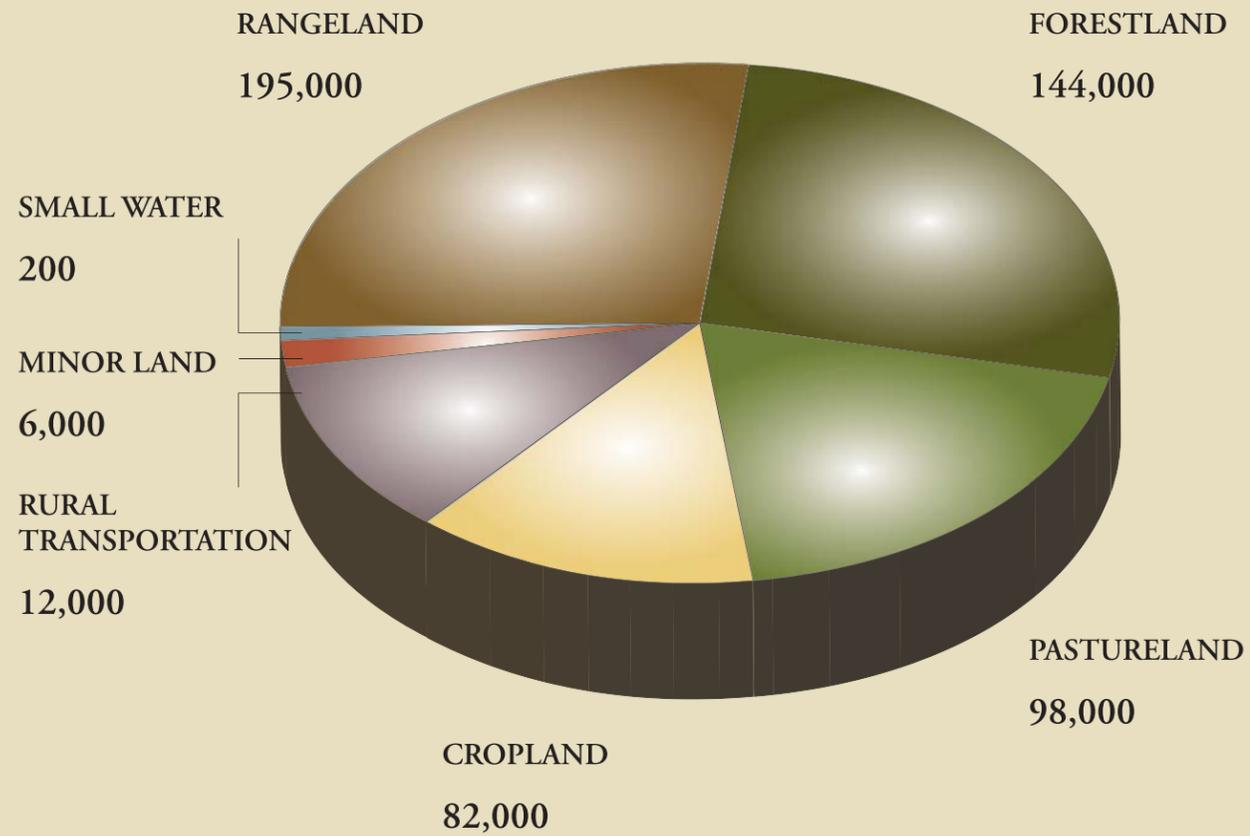
Today, Texas has fewer rural counties than ever before. Urban centers continue to sprawl outwards, taking in smaller towns. Places that once were “out in the country” are now in town. For example, Waxahachie and Weatherford are rapidly becoming integrated into the Dallas/Fort Worth metroplex, while the dividing line between New Braunfels and San Antonio is difficult to see from a car window.

Texas Population



Source: U.S. Census estimates, 2006.

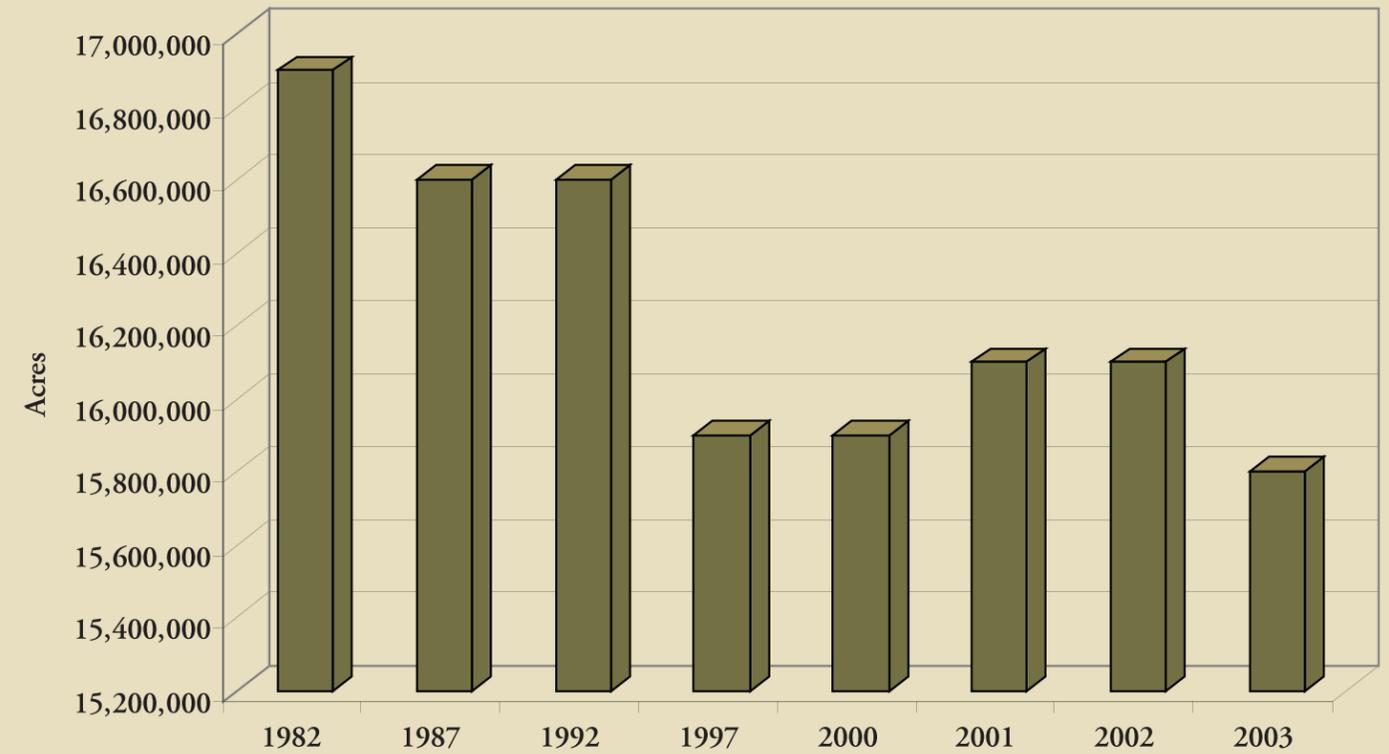
Texas Acreage Lost to Urban Development, 1997-2000



From 1997 to 2000, Texas lost 537,200 acres to urban development: 195,000 acres came from rangeland, followed by 144,000 acres of forestland, 98,000 acres of pastureland, 82,000 acres of cropland (including prime farmland), 12,000 acres of rural transportation, 6,000 of minor land, and 200 acres to small water.

Pastureland

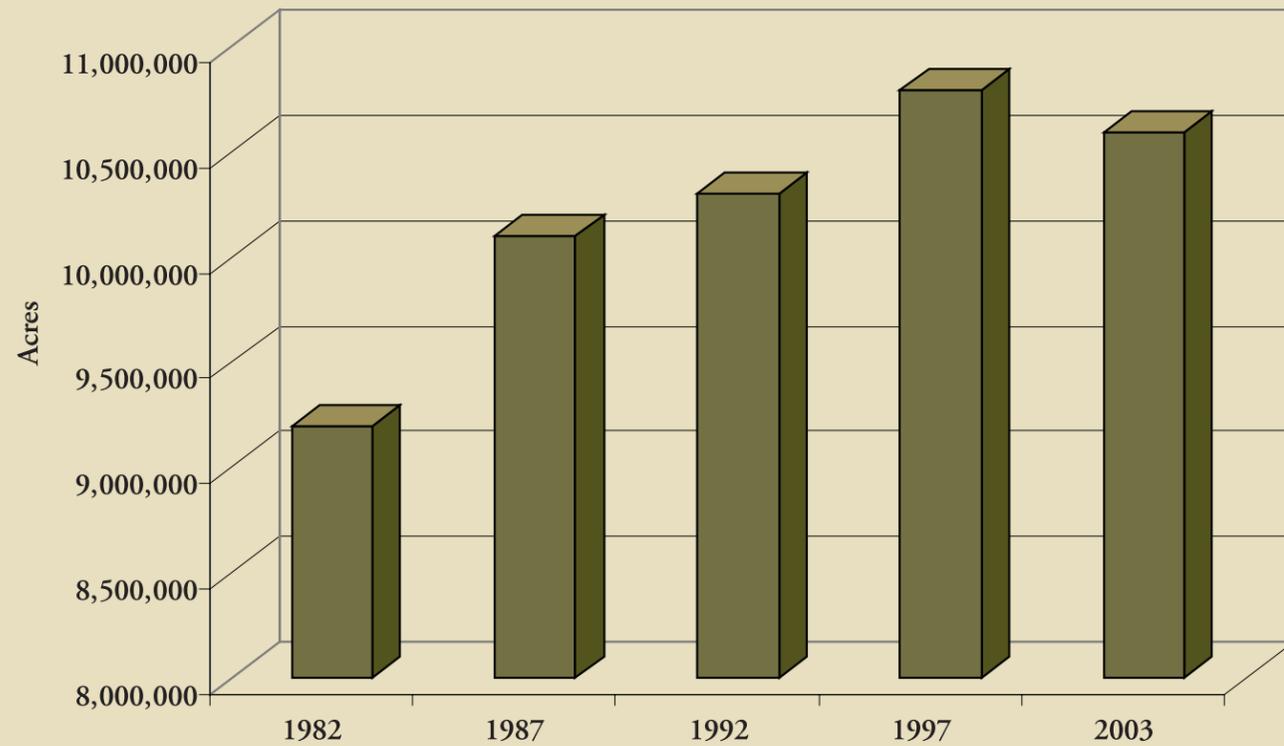
Pasture Trends



Pastureland has been on an overall slow decline since 1982. Where it once was 10 percent of the landscape, it now is only 9 percent, having lost 1.1 million acres overall. Most of this conversion has been to range, forest, or urban uses.

Forestland

Forestland Trends



From 1982 until 1997, private forestland acres were increasing. This increase had been mainly from conversion of pastureland to forestland followed by the conversion of cropland, minor land, and rangeland. Since 1997, Texas forestland has declined by 1 million acres due largely to urbanization.

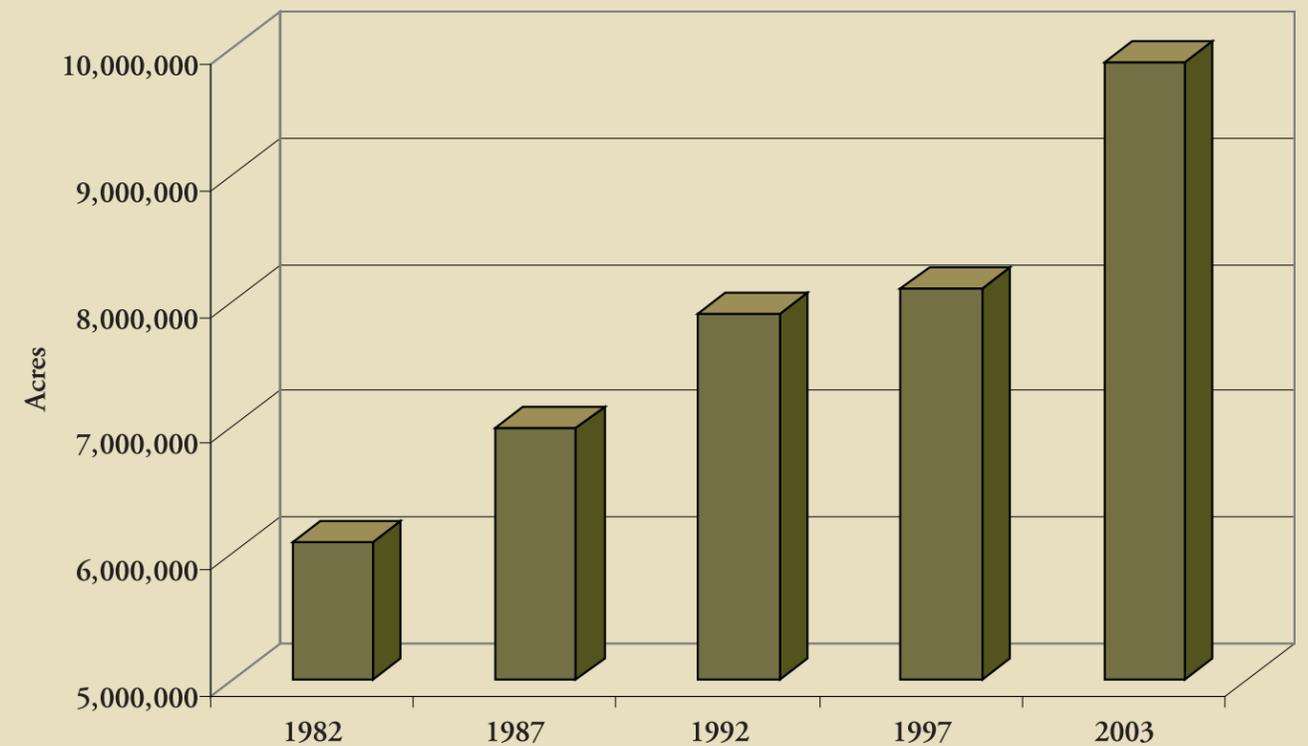
According to the Texas Center for Policy Studies, 89 percent of the timber harvested in Texas, including 90 percent of the pine and 80 percent of hardwood, was used to manufacture wood products.

PROJECTING LAND COVER AND USE CHANGES

The total area of forest and rangeland is projected to decrease slightly by 2040. The projected reduction in forestland area will result mainly from conversion to other land uses such as reservoirs, urban expansion, highways, and surface mining. Source: Texas Center for Policy Studies

Urban Build Up

Trends in Surface Area of Developed Land



An upward trend in urban development is taking place in Texas. In 1982, 6.3 million acres, or almost 4 percent of the state's total surface area, was urban. By 1997, urban acreage had increased 2.3 million acres to 8.6 million acres, or 5 percent of total surface area. Presently, there are 9.7 million acres of developed land, almost 6 percent of the total land uses.

Harris County, which includes the city of Houston, represents another dramatic example of urban expansion. In 1982, urban areas within the county covered 516,000 acres; by 1992, it had expanded 17 percent to cover approximately 606,000 acres. From 1982 to 1992, Bexar County (San Antonio) added 43,000 acres of urban land, Dallas County (Dallas) added 56,000 acres, and Tarrant County (Fort Worth) added 83,000 acres. Source: Texas Center for Policy Studies

Land Fragmentation

Fragmentation of rural lands in Texas is accelerating because of its large, growing urban population. Texas leads all other states in the loss of rural farming and ranching lands. Source: American Farmland Trust