

# Scott County Comprehensive Plan

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## **CHAPTER 4: RESOURCES PROFILE**

Scott County offers a variety of natural features from rolling hills to river bluffs, from woodlands to farmland, and from lakes to the Mississippi and Wapsipinicon Rivers. The total area of the County amounts to 299,900 acres. (Source: USDA-NRCS Soil Survey of Scott County, Iowa; 1996). Map 4.1 shows total acres in Scott County compared to other counties in Iowa.

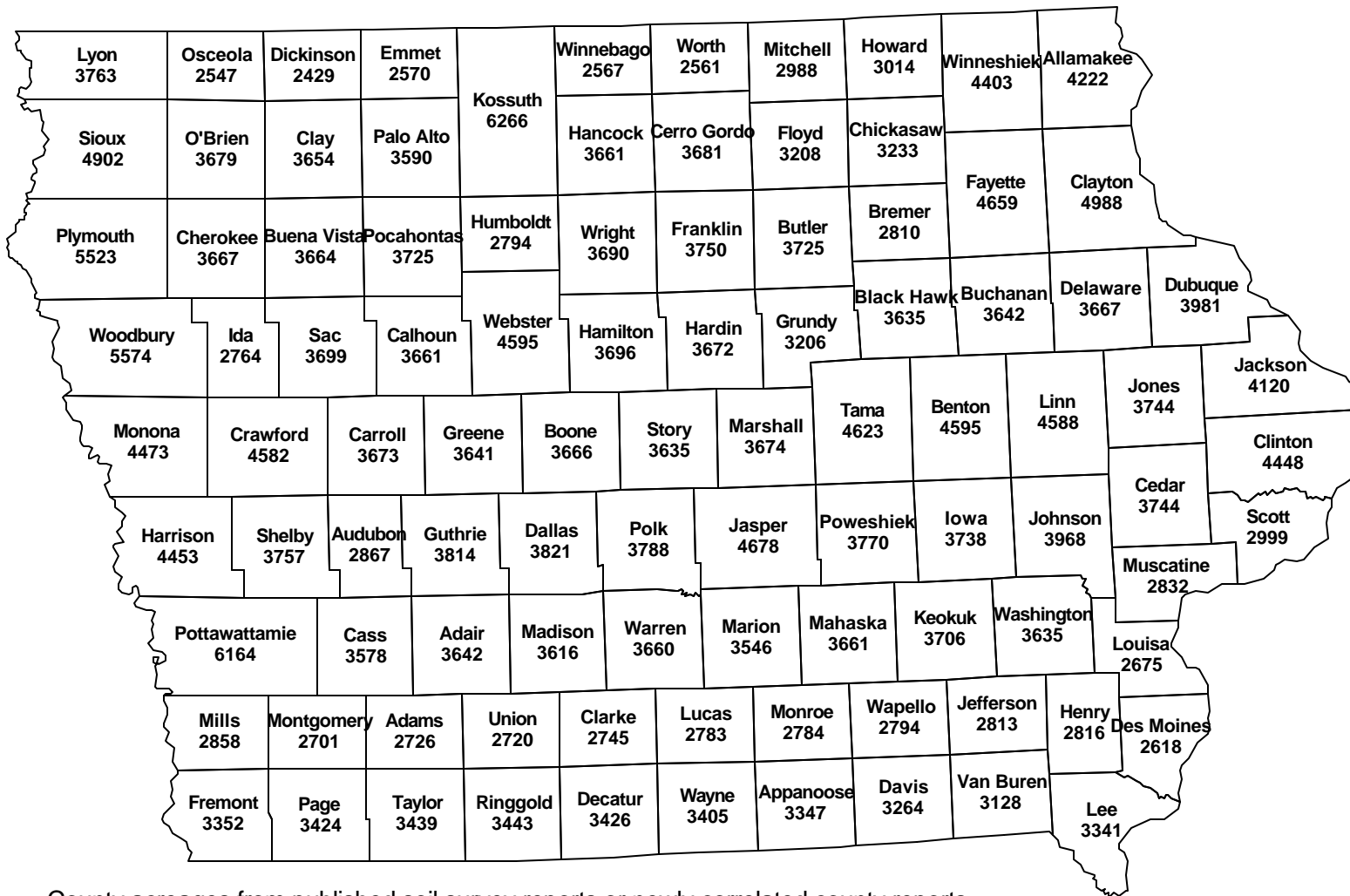
### ***Land Resources***

Scott County is located in two different landform regions, the Southern Iowa Drift Plain and the Mississippi Alluvial Plain. The Southern Iowa Drift Plain contains steeply rolling topography with moderate deposits of loess mantling weathered and fractured glacial tills. This landform can be vulnerable to groundwater contamination. (Iowa Geology 1994, Iowa Department of Natural Resources, Number 19, pages 20-21).

**Topography.** The Mississippi River borders Scott County on the east and south. The topography of the uplands along the Mississippi River consist of some bedrock outcroppings; steep side slopes; and flat, narrow foot slopes with alluvial bottomland extending to the river. These sloped soils were mainly formed under forest vegetation with the bottomlands formed in alluvium. The County is bordered on the north by the Wapsipinicon River. A river terrace parallels the Wapsipinicon, and the topography in this area is not as steep as along the Mississippi. The topography switches to gently rolling land away from the rivers in the central and western parts of the County. These soils are mainly glacial till plains covered with wind blown loess. These soils were primarily formed under prairie vegetation. About half the County drains to the Mississippi River and half to the Wapsipinicon, which flows into the Mississippi in the northeast corner of the County. Map 4.2 shows the topographic contours within Scott County.

**Soils.** Soils in Scott County are deep, silty or loamy, and nearly level to steeply sloping. Scott County has six major soil associations. The most prominent soil association is the Tama Association. This association makes up about 48% of the County. It is found on gently sloping to moderately steep, well-drained soils formed in loess on the uplands. The surface layer of Tama soils is very dark brown, friable silty clay loam about eight inches thick. The subsurface layer is very dark brown to very dark grayish brown, friable silty clay loam about 11 inches thick. The subsoil to a depth of about 60 inches is friable silty clay loam in which the upper part is brown and the lower part is a mottled brown and yellowish brown. There are several minor soil associations within the Tama association. The Tama soils are primarily used for row crops. The main management concerns in the Tama Association are erosion, fertility, and tilth.

**Map 4.1 - Total Acres in County  
(Multiply by 100)**



County acreages from published soil survey reports or newly correlated county reports.

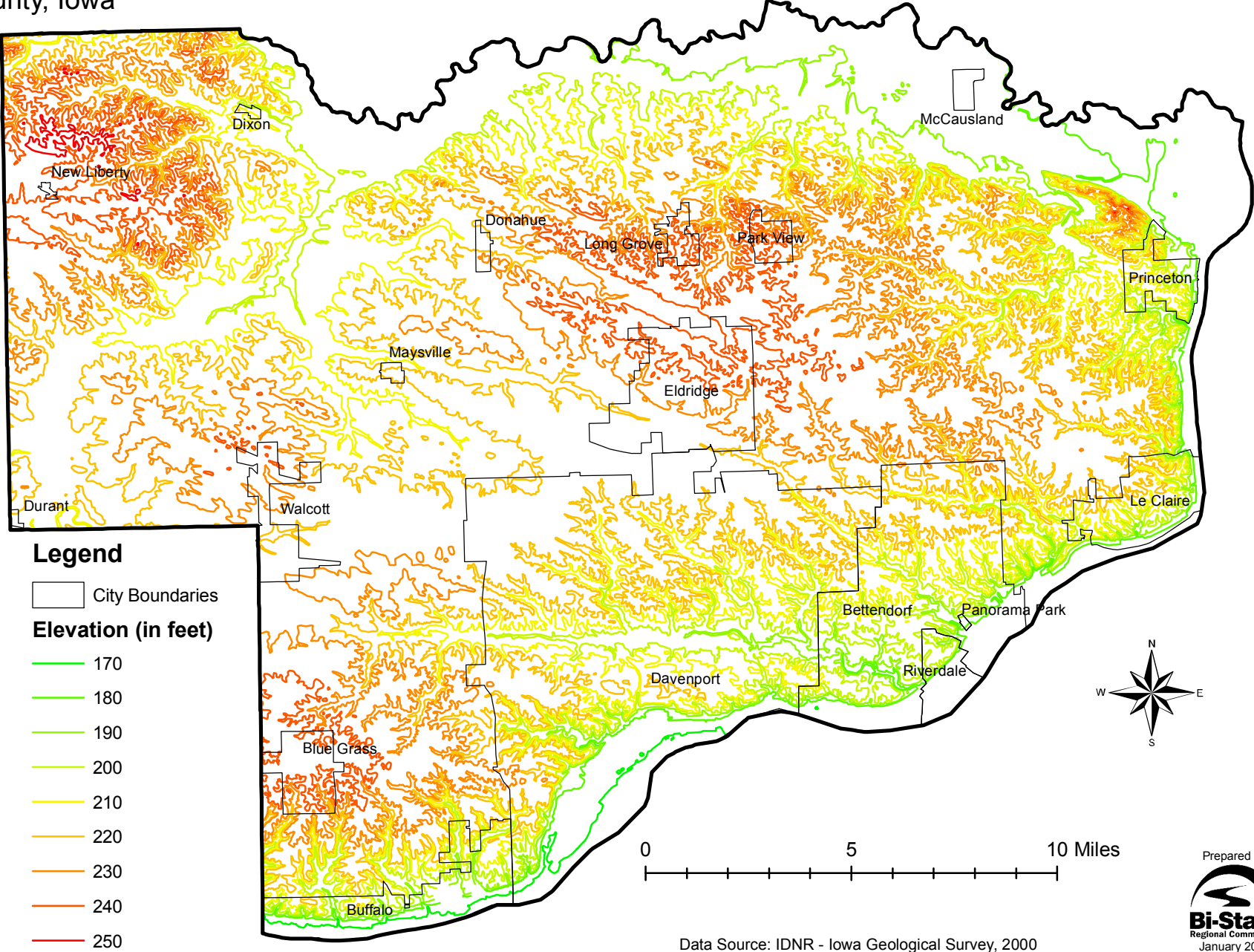
Source: Iowa Cooperative Soil Survey, 1998

Total Acres in State: 35,922,600

Prepared by: Department of Agronomy, Iowa State University

# Map 4.2 - Topography

Scott County, Iowa



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The Muscatine-Tama-Garwin Association consists of soils formed in loess that is more than 40 inches thick. This soil association consists of level to moderately steep, well drained to poorly drained soils on uplands. Waterways are smooth and broad in this association. This soil makes up 19% of the County. This association consists of about 36% Muscatine soils, 28% Tama soils, 20% Garwin soils, and 16% minor soils. The Tama soils are located on broad upland ridge tops and side slopes and are well drained. The surface layer is about eight inches thick and a very dark brown friable silty clay loam. The subsurface is about 11 inches thick and a dark brown to very dark grayish brown silty clay loam. The subsoil is about 60 inches deep and also a friable silty clay loam that is brown in the upper layer and a mottled yellow brown in the lower layer. The Garwin soils are on broad upland ridge tops that are nearly level. These soils are poorly drained with a nine-inch thick surface layer of a black, friable silty clay loam. The subsoil has a depth of about 60 inches and consists of dark gray, grayish brown, and light brownish gray, mottled, friable silty clay loam. The major soils of this association are suitable for row crops. Main management concerns are controlling water erosion and maintaining tilth and fertility. A tile drainage system is needed in some of the poorly drained areas.

The Downs-Fayette Association is gently sloping to steeply sloping on connected ridge tops and side slopes. These are well drained soils formed in loess on uplands. Drainage ways and streams form fingerlike networks throughout this association. Limestone bedrock outcrops occur in a few areas adjacent to major streams. This association also makes up 19% of the County. Thirty-five percent of the association is made up of Downs soils. The surface layer of the Downs is very dark grayish brown silt loam about eight inches thick. The subsoil is a friable silty clay loam about 45 inches thick. The upper part is dark yellowish brown, the next part is yellowish brown and mottled, and the deepest part is mottled brown and grayish brown. The substratum to a depth of 60 inches is mottled brown and grayish brown silty clay loam. The Fayette soils have a surface layer about six inches thick and made up of a brown friable silt loam. It is mixed with streaks of yellowish brown silty clay loam from the subsoil. The subsoil is friable clay loam to 49 inches thick. The layer ranges from dark yellowish brown in the upper part to yellowish brown and mottled on the lowest part. The substratum is yellowish brown to grayish brown mottled silty clay loam. The soils of this association found on ridge tops and side slopes are cultivated. Corn and soybeans are the main row crops. Alfalfa, red clover, and brome grass are the main forage crops. Some areas are used as permanent pasture or woodland. Steeper areas of this association are subject to erosion and are better suited to permanent pasture and woodland. Management concerns are controlling water erosion and maintaining tilth and fertility.

The Dickson-Sparta Association is found in about 4% of the County. This association consists of soils in the shape of dunes with intervening swales primarily along the Wapsipinicon River. Soils were formed in loamy and sandy eolian deposits on uplands and stream terraces. This association contains about 30% Dickinson soils, 24% Sparta soils, and 46% soils of minor extent. Dickinson soils are nearly level to moderately level and somewhat excessively drained. The surface layer is very dark brown and the subsurface is a very dark grayish brown. Both are about eight inches thick and a very friable fine sandy loam. The subsoil is also a very friable fine sandy loam about 31 inches thick. It is dark brown in the upper portion and goes to yellowish brown in the lowest portion. The substratum to a depth of 60 inches is yellowish brown loamy fine sand. The surface and subsurface layers of the Sparta soil are dark brown to very dark grayish brown very friable loamy fine sand. Surface layer is 12 inches thick and subsurface is 11



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inches thick. The subsoil is very dark grayish brown, very friable fine sand about 13 inches thick. The substratum to a depth of 60 inches is dark brown and dark yellowish brown sand and fine sand. The soils in this association are used mainly for row crops. A few areas are used for hay and pasture and a few areas are in trees. The main management concerns are improving fertility and controlling soil blowing and water erosion. Most of these soils are droughty and crop yields are heavily dependant on amount and timeliness of rainfall.

The Richwood-Rowley-Flagler Association consists of nearly level silty soils on flood plains that are bounded by uplands and escarpments to the floodplains. This soil is found in 4% of the County. It is about 25% Richwood soils, 20% Rowley soils, 10% Flagler soils, and 45% minor soils. Richwood and Rowley are found on stream terraces. They are somewhat excessively drained. Richwood soils have a nine-inch surface layer and 14-inch subsurface layer of very dark brown to dark grayish brown friable silt loam. The subsoil is 35 inches thick and consists of dark yellowish brown, mottled friable silt loam and silty clay loam. The substratum to a depth of 65 inches is fine brown sand. Rowley soils have an eight-inch surface layer and 15 inch subsurface layer of black to very dark grayish brown silt loam. The subsoil is 34 inches thick and consists of grayish brown and light brownish gray, friable, mottled, silt loam. The substratum to a depth of 64 inches is fine brown sand. Flagler soils have a nine-inch surface layer and seven inch subsurface layer of dark brown to very dark grayish brown sandy loam. The subsoil is 14 inches thick. The upper section consists of dark yellowish brown and the lower section consists of dark yellowish brown, dark brown and brown, very friable, mottled, sandy loam. The substratum to a depth of 60 inches is yellowish brown and dark yellowish brown loamy sand and sand. It contains some fine gravel. The major soils are well suited to row crops. Corn and soybeans are grown intensively. The main management concerns are soil blowing and maintaining tilth and fertility. A tile drainage system is needed in poorly drained areas.

The final association is the Colo-Lawson-Nodaway association, which consists of nearly level, silty soils on flood plains. The soils are found in major stream valleys dissecting the uplands in various part of the County. This soil is found in 6% of the County. It is about 35% Colo soils, 12% Lawson soils, 12% Nodaway soils, and 41% minor soils. Colo soils are poorly drained and found on flood plains adjacent to upland soils formed under prairie vegetation. The surface layer is about 11 inches thick and subsurface about 20 inches thick. Both consist of black, friable silty clay loam. The subsoil to a depth of 60 inches is a friable, mottled silty clay loam, which is very dark gray to dark gray to grayish brown in the lower part. Lawson soils are somewhat poorly drained and found on flood plains along major streams and rivers. The surface layer of the Lawson soil is about eight inches thick and the subsurface is about 27 inches thick. Both consist of black to very dark gray, friable silt loam. The substratum to a depth of about 60 inches is a stratified very dark gray, black and dark grayish brown, mottled silt loam. Nodaway soils are moderately well drained and found near streams or on flood plains adjacent to upland soils formed under prairie vegetation. The surface layer is about 10 inches thick and consists of very dark grayish brown, friable silt loam. The substratum to a depth of 60 inches is stratified dark grayish brown, brown, dark brown, and very dark grayish brown, friable silt loam. The soils in this association are used for row crops, hay, and pasture. Most of the soils are subject to a seasonal high water table. The major management concerns are fertility and drainage. Protecting the soils from flooding by installing a surface drainage system can be beneficial in some areas.

**Table 4.1**  
**Key to Loess-Derived Soils of East-Central Iowa**

Parent Material	Loess" >60" Thickness						Loess: 40-60" over loam or clay loam till		Loess: 20-40" over loam or clay loam till	
Percent Subsoil Clay	18-27%			27-35%			27-35%		27-35%	
Native Plant Life	Prairie	Transition	Forest	Prairie	Transition	Forest	Prairie	Transition	Prairie	Transition
Organic Matter	 Decreasing Organic Matter			 Decreasing Organic Matter			 Decreasing Organic Matter		 Decreasing Organic Matter	
Internal Drainage										
 Decreasing Slope Well to Moderately Well  Somewhat Poorly  Poorly  Very Poorly	Port Bryon sil (620)	Mt. Carroll sil (662)	Seaton sil (663)	Tama sicl (120)	Downs sil (162)	Fayette sil (163)	Dinsmore sicl (877)	—	Dinsdale sicl (377)	Waubeek sil (771)
	—	—	—	Muscatine sicl (119)	Atterberry sil (291)	Stronghurst sil (165)	Klingmore sicl (884)	—	Klinger sicl (184)	Franklin sil (761)
	—	—	—	Garwin sicl (118)	Walford sil (160)	Traer sil (164)	Maxmore sicl (982)	—	Maxfield sicl (382)	Ansgar sil (760)
	—	—	—	Sperry sicl (122)	—	—	—	—	—	—

(xxx) Denotes soil map symbol for soil series / soil type

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Table 4.1 provides a key to the Loess-Derived soils of east-Central Iowa. Further details on soil descriptions, locations, suitability, limitations, and management for specified uses can be found in the Soil Survey of Scott County, Iowa issued September 1996 by the United States Department of Agriculture, Natural Resource Conservation Service.

## ***Agricultural Resources***

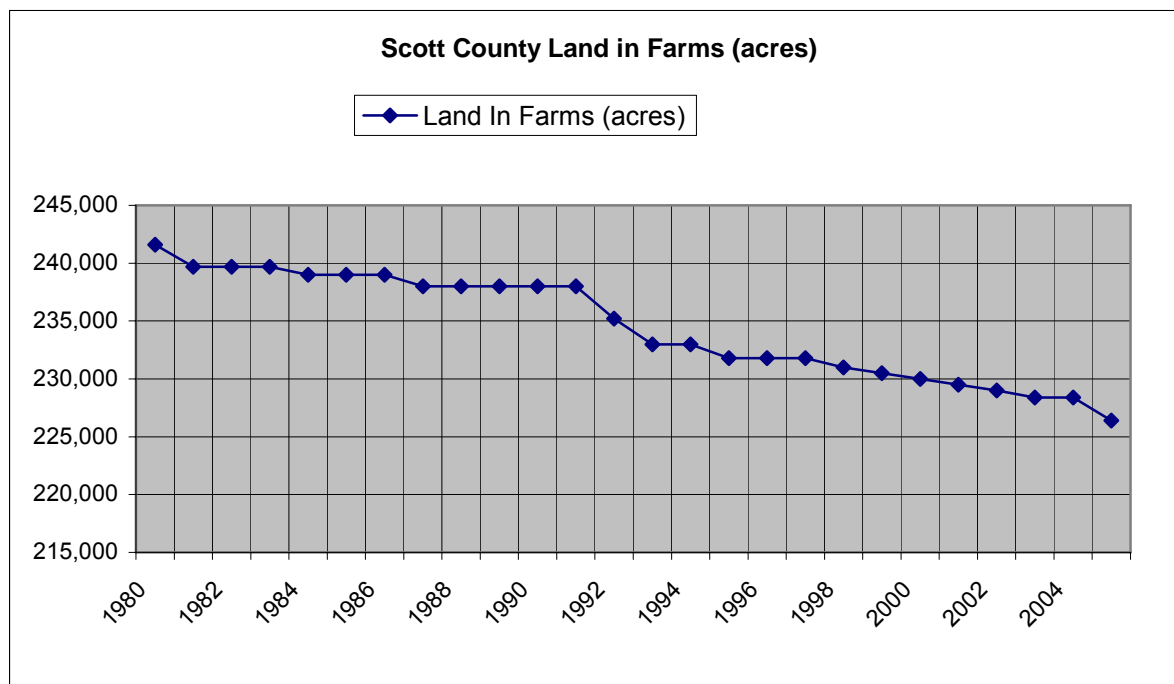
According to the Soil Survey of Scott County 1996, the County has been one of the most agriculturally productive counties in the State of Iowa for over 50 years. This activity continues to this day. The County also has some of the highest priced farmland in the state. However, the agricultural productivity is only a minor portion of the total economy of Scott County due to the large urban center located in the County. The soils of Scott County are naturally acidic and low in potash. This requires the careful application of lime and potash as well as fertilizer to sustain row crops. Very little irrigation is used in the County as most years have sufficient rainfall of 23 inches during the April through September growing season. Even with most years having sufficient rainfall, the County has not escaped some years of considerable drought. Acres in irrigation have increased since 1980 due to unreliability of moisture. Drought will quickly affect the crops grown in the sandier alluvial bottomlands of the Mississippi and Wapsipinicon Rivers. Flooding of these same rivers also has had impact on agriculture production on these bottomlands in many years since 1980. Very few acres of agricultural ground in Scott County are protected by a levee system.

Primary crops grown are corn, soybeans, and forage crops such as alfalfa and smooth brome. Wheat, oats, barley, sod, some vegetables, nursery stock, and orchard crops are also harvested. The soils and climate are also suitable for grain sorghum, sunflowers, potatoes, sugar beets, sweet corn, popcorn, pumpkins, canning peas and beans, and navy beans. Very few acres of these crops are harvested each year.

Agricultural land in Scott County totaled 241,600 acres in 1980 or nearly 80.5% of the total county acreage. Agricultural land decreased to 226,400 acres in 2005 or 75.5% of total county acreage. This is a loss of 15,200 acres or over 9% of the land in agricultural uses from 1980-2005. The County had 75,308 acres of incorporated area in 2005. Figure 4.1 illustrates these changes over time.

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Figure 4.1

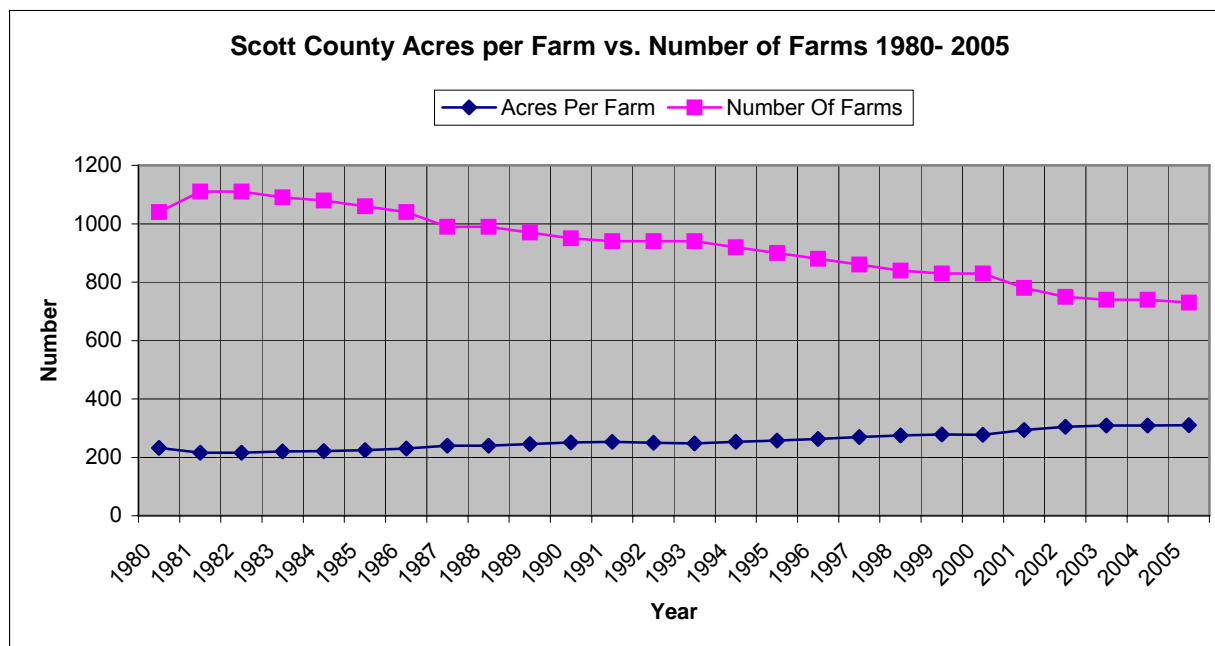


Source: USDA, National Agricultural Statistics Service

**Farms.** The Census of Agriculture defines farms as “agricultural places that produce and sell, or would normally sell, \$1,000 or more of agricultural products.” “Land in farms” is defined as agricultural land used for crops, pasture or grazing, woodlands, and wasteland not under cultivation, land in Conservation Reserve and Wetlands Reserve Programs. This land includes land owned and operated as well as land rented from others. Scott County had 1,040 farms in 1980, with an average of 232 acres per farm. By 2005, the number of farms decreased to 730 while the average size increased to 310 acres. This is a 29.8% decrease in total farms and a 33.6% increase in average acres per farm. This trend shows the consolidation of farms taking place in the rural areas of the County. Figure 4.2 illustrates the acres per farm versus the number of farms. The urbanization of agricultural ground within the city limits of Davenport, Bettendorf, Eldridge, and LeClaire and several small communities in Scott County is the primary contributing factor to the decrease in the number of farms as well as the total acres in farms. There has been very little urbanization outside of the corporate limits of cities in the County.

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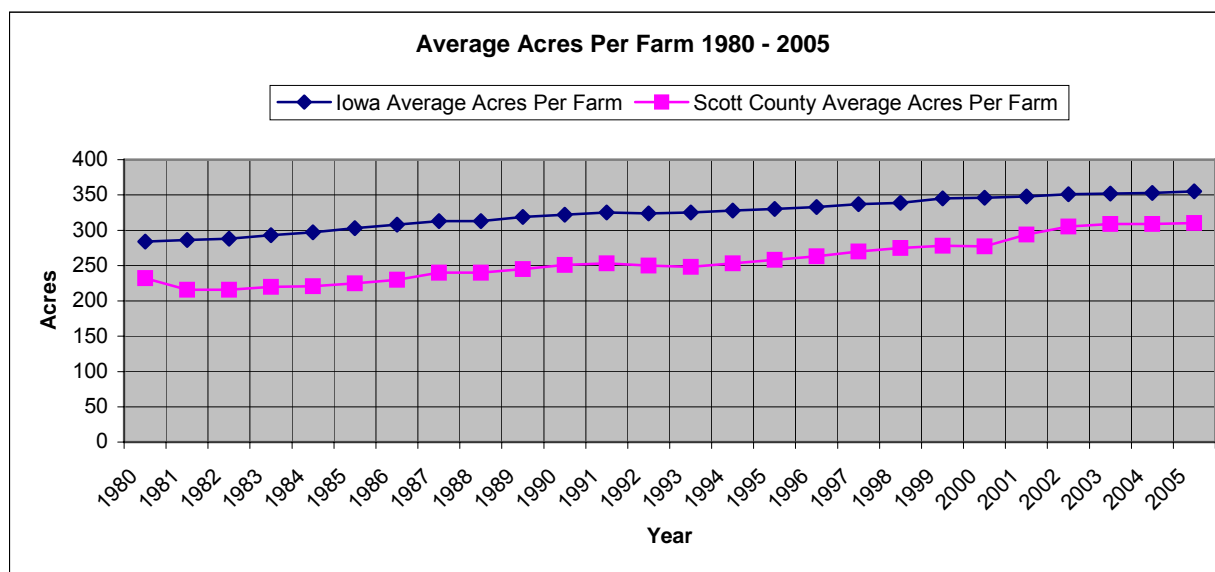
Figure 4.2



Source: USDA, National Agricultural Statistics Service

Figure 4.3 compares Scott County farm size to the average farm size for the State of Iowa. Even though the size of farms continues to increase in Scott County, farms size continues to remain below the State of Iowa average for farm size, but continues to parallel the State pattern.

Figure 4.3



Source: USDA, National Agricultural Statistics Service

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The data in Table 4.2 shows how farm patterns in Scott County are very closely following the trends for the State of Iowa.

**Table 4.2**  
**Farm Patterns 1980 – 2005**

<b>Year</b>	<b>Iowa Land In Farms</b>	<b>Iowa Average Acres Per Farm</b>	<b>Iowa Number Of Farms</b>	<b>Scott County Land In Farms</b>	<b>Scott County Average Acres Per Farm</b>	<b>Scott County Number Of Farms</b>
1980	33,800,000	284	119,000	241,600	232	1,040
1981	33,700,000	286	118,000	239,700	216	1,110
1982	33,700,000	288	117,000	239,700	216	1,110
1983	33,700,000	293	115,000	239,700	220	1,090
1984	33,600,000	297	113,000	239,000	221	1,080
1985	33,600,000	303	111,000	239,000	225	1,060
1986	33,600,000	308	109,000	239,000	230	1,040
1987	33,500,000	313	107,000	238,000	240	990
1988	33,500,000	313	107,000	238,000	240	990
1989	33,500,000	319	105,000	238,000	245	970
1990	33,500,000	322	104,000	238,000	251	950
1991	33,500,000	325	103,000	238,000	253	940
1992	33,400,000	324	103,000	235,200	250	940
1993	33,100,000	325	102,000	233,000	248	940
1994	33,100,000	328	101,000	233,000	253	920
1995	33,000,000	330	100,000	231,800	258	900
1996	33,000,000	333	99,000	231,800	263	880
1997	33,000,000	337	98,000	231,800	270	860
1998	32,900,000	339	97,000	231,000	275	840
1999	32,800,000	345	95,000	230,500	278	830
2000	32,500,000	346	94,000	230,000	277	830
2001	32,000,000	348	92,000	229,500	294	780
2002	31,800,000	351	90,600	229,000	305	750
2003	31,700,000	352	90,000	228,400	309	740
2004	31,700,000	353	89,700	228,400	309	740
2005	31,600,000	355	89,000	226,400	310	730

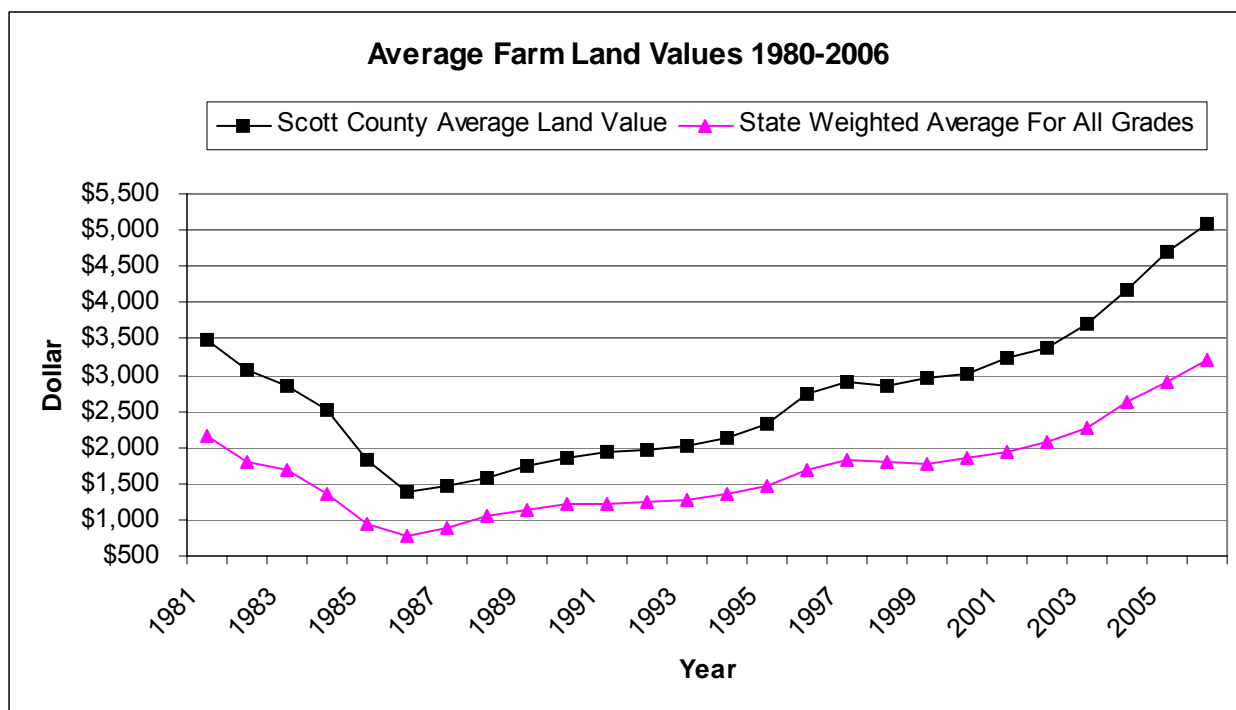
Source: USDA, National Agricultural Statistics Service



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**Farm Values.** Scott County farmland values had reached a peak in 1980. The values then decreased drastically during the mid-eighties, bottoming out in 1985 at \$1,376.00. Since 1985 there has been a steady increase in the value of farmland in the County. The recorded value in 2006 of \$5,073.00 per acre is the highest value ever recorded in Scott County. Scott County farmland values have considerably exceeded the average values for the State of Iowa for the entire period 1980-2006, as illustrated in Figure 4.4. Iowa's average farmland values bottomed out at \$787.00 in 1985 and have only increased to \$3,204.00 in 2006. Scott County had the highest average farmland value in the state in 2006, exceeding O'Brien County in northwest Iowa, its nearest county in land value, by over \$800.00 per acre.

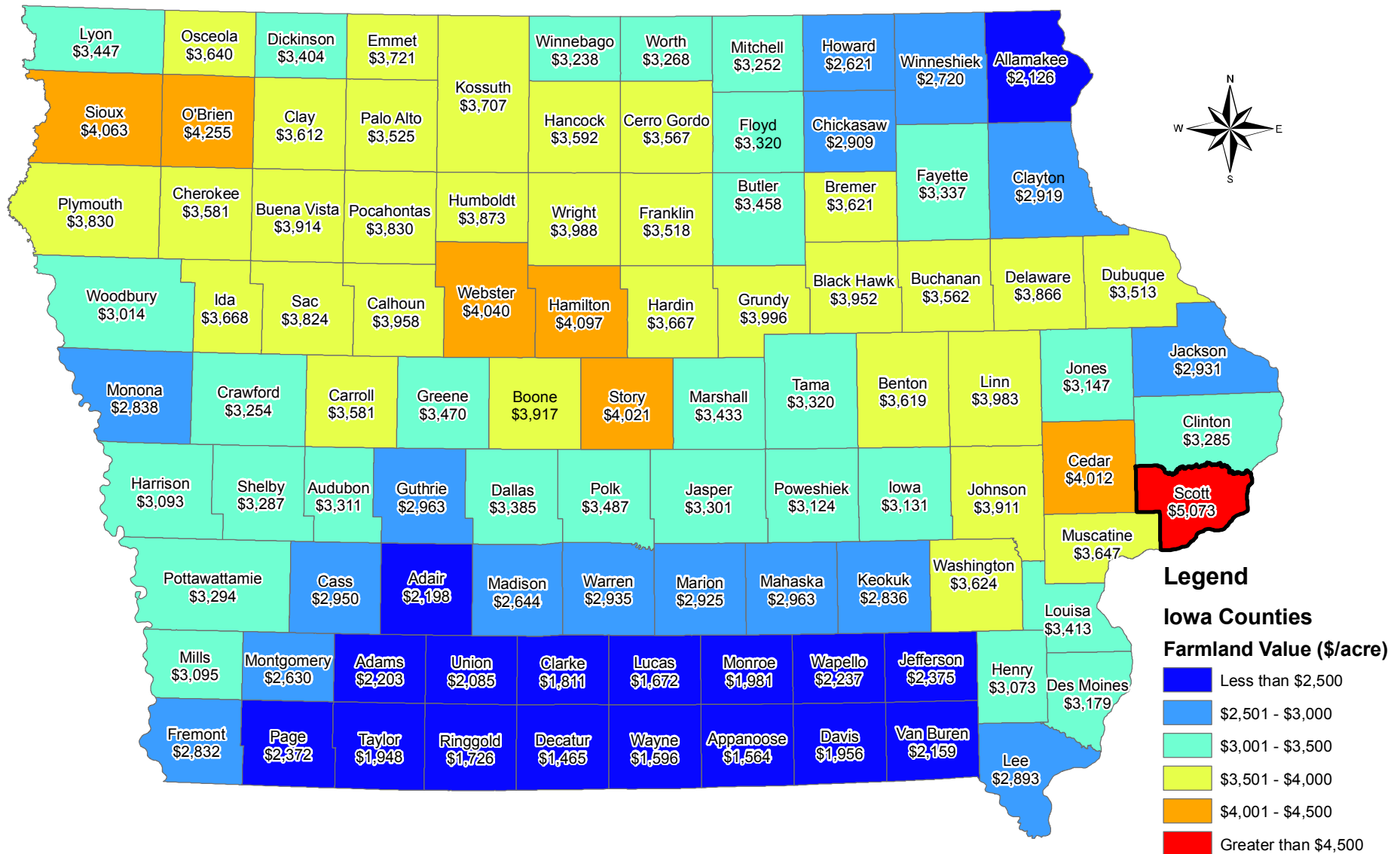
Figure 4.4



Source: Iowa State University Extension for Scott County, Iowa

Map 4.3 illustrates the value by county of farmland as determined by the Iowa Agriculture and Home Economic Experiment Station at Iowa State University. Since 2000, Iowa land values have increased 73% on average across the state. This is substantial, but not as much as in 1972-75 when there was a 125% increase. Today, the differences are the level of inflation, and more land is held without debt by older people. Positive factors for the increase in 2006 are: good crop yields, low interest rates, tax-free land exchanges, and the bio-fuel demand. The negative factors cited are: the recent up trend in interest rates, high input and machinery costs, and land prices are already too high. Fifty-one percent of survey respondents said farm sales were about the same in 2006, 26% said there were more sales, and 23% said there were fewer sales. Existing farmers were buyers 60% of the time, investors 35%, new farmers 35%, and other purchasers 2%.

## Map 4.3 - 2006 Farmland Value of Iowa Counties

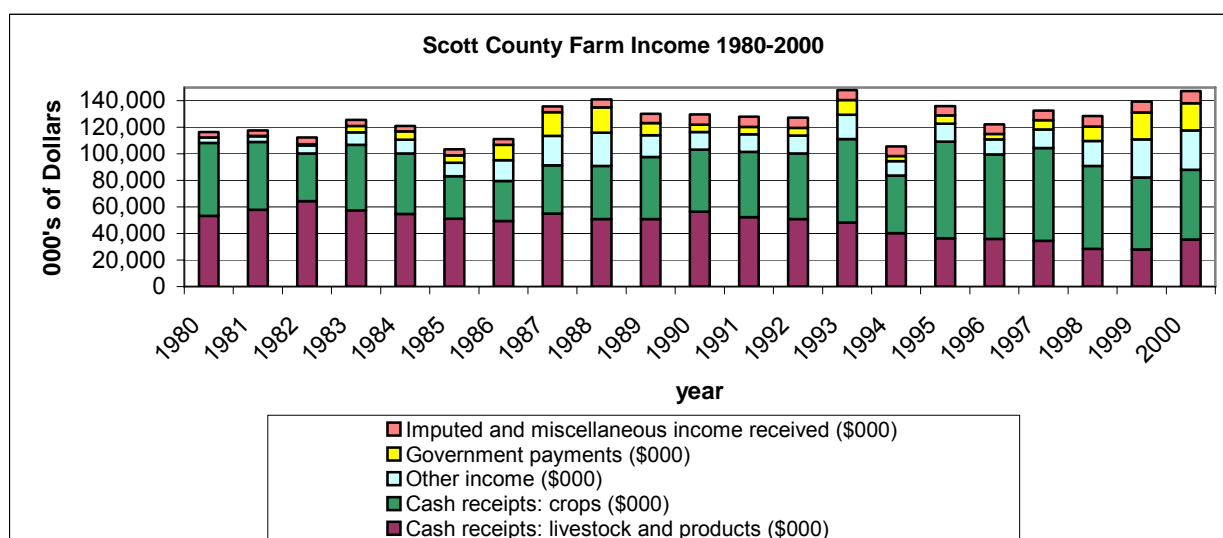


Source: 2006 Farmland Value Survey, Iowa State University, University Extension

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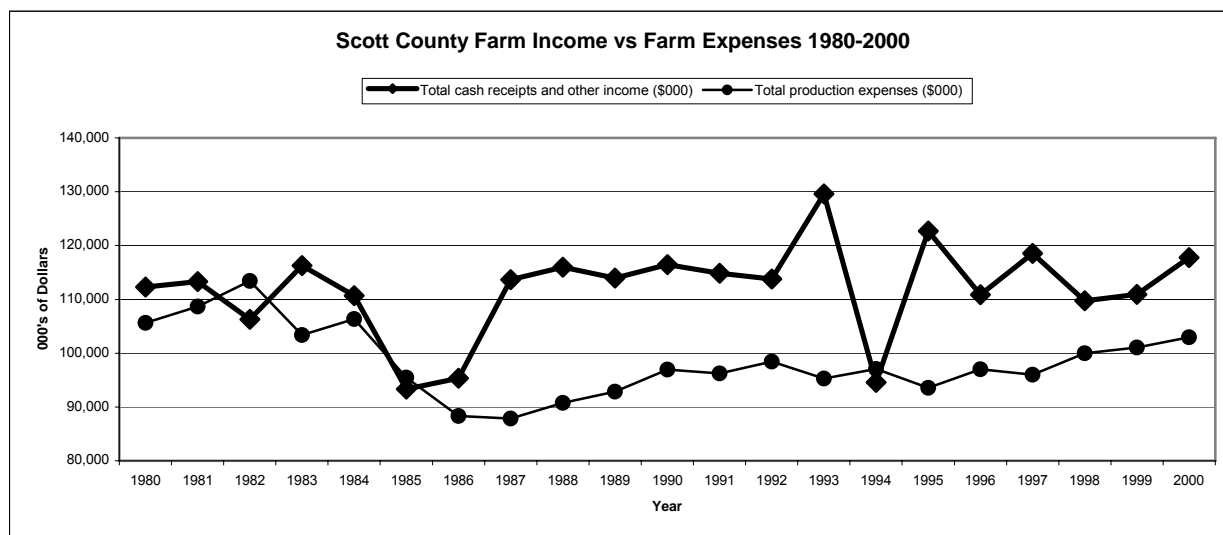
**Farm Income and Expenses.** It should be noted that expenses in this section are limited to those incurred in the operation of farm business. Property taxes paid by landlords are excluded as well as non-farm related activities, farm-related activities such as custom work for others, the production and harvest of forest products, recreational services, and household expenses. Operators producing crops under contract have a history of being unable or unwilling to provide the cost of production inputs furnished by contractors. As a result, extensive estimation is required for contract producers by the Census Bureau. As can be seen in Figure 4.5, Scott County's farm income has only fluctuated within a short range over the entire reporting period 1980-2000. Government subsidies for set-aside programs started in 1983. In 1980, the prime sources for farm income came from receipts for crops and livestock. By 2000, over a third of farm income was coming from sources other than crops and livestock.

**Figure 4.5**



Source: Department of Economics, Iowa State University, Ames, Iowa

**Figure 4.6**

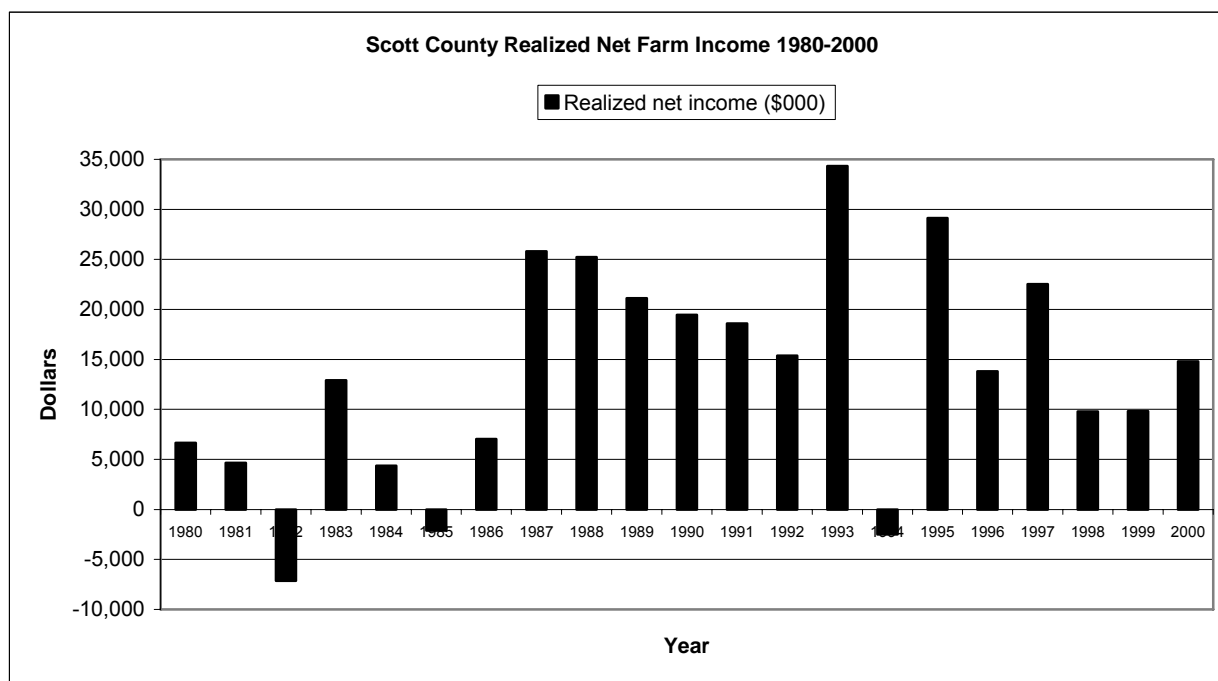


Source: Department of Economics, Iowa State University, Ames, Iowa

# Scott County Comprehensive Plan

Figure 4.6 shows average farm income and average farm expense for farms in Scott County. Income has been able to stay ahead of expenses in the majority of years since 1985. This is primarily due to a reduction in farm expenses, not an increase in farm income. Farm expenses are shown rising, however, in the more recent history on the graph. The Government Payments category includes: disaster payments, loan deficiency payment from prior participation, payments from Conservation Reserve Programs (CRP), Wetlands Reserve Programs (WRP), other conservation programs, and all other federal farm programs under which payments were made directly to farm operators. This category does not include Commodity Credit Corporation (CCC) proceeds and federal crop insurance payments.

**Figure 4.7**

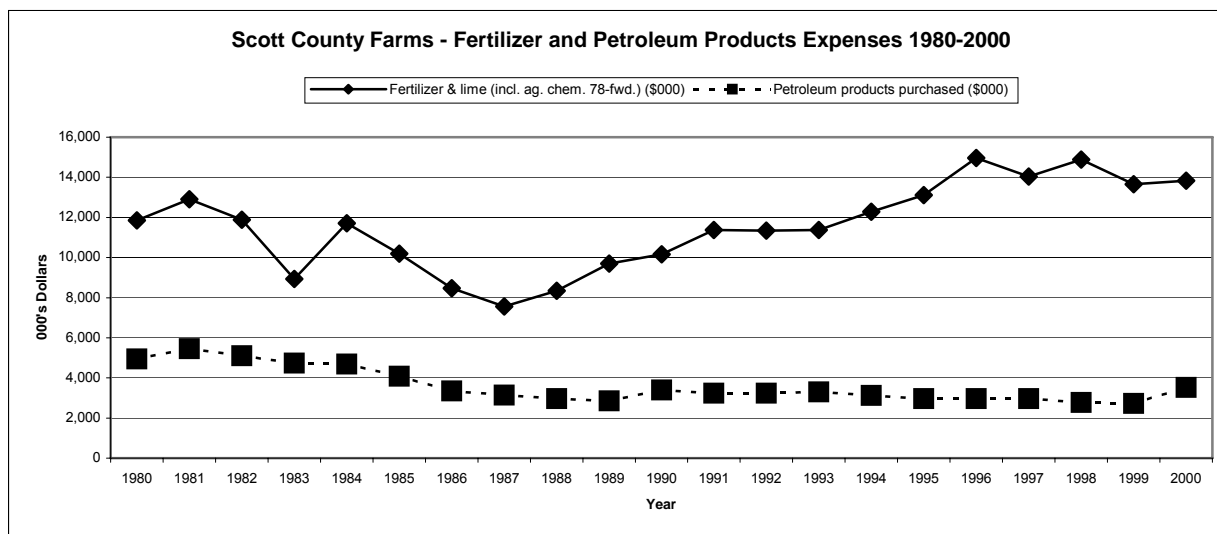


Source: Department of Economics, Iowa State University, Ames, Iowa

Figure 4.7 shows realized net farm income in Scott County from 1980 to 2000. This graph shows the “good years-bad years” reality and uncertainty that farmers in Scott County have to plan for if they want to maintain a viable farm operation and have any savings for retirement. The net farm income is what pays for the household expenses, pays the property taxes, puts the children through school, and is the farmer’s savings. If a farmer does not manage the farm business and household expenses, then lean years could be pretty dire and result in the loss or selling of the farm to another farmer for farming operations or to a developer for some other use.

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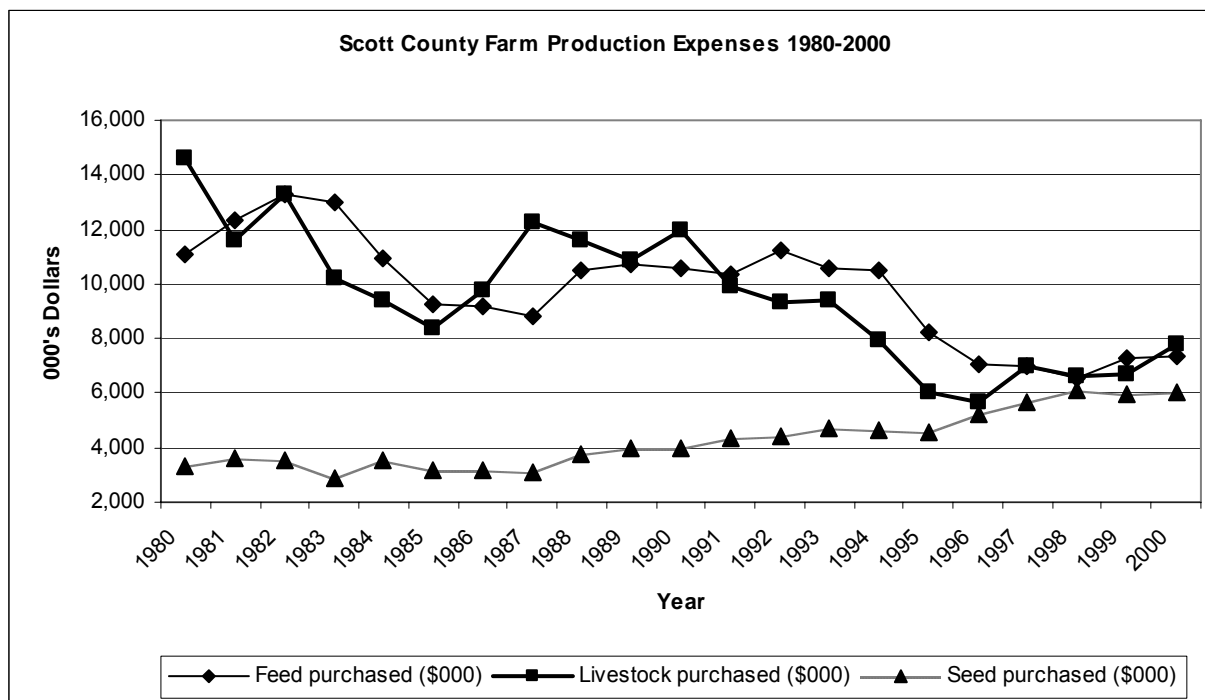
Figure 4.8



Source: Department of Economics, Iowa State University, Ames, Iowa

Figure 4.8 illustrates the fertilizer and petroleum product expenses from 1980 to 2000. The expense of fertilizer and lime reached a 20-year low in 1987 according to this chart and have seen a steady increase up to the levels in 2000. Petroleum expenses fluctuated in a tighter range during this same period. Both commodities have seen significant price increases since 2000.

Figure 4.9



Source: Department of Economics, Iowa State University, Ames, Iowa

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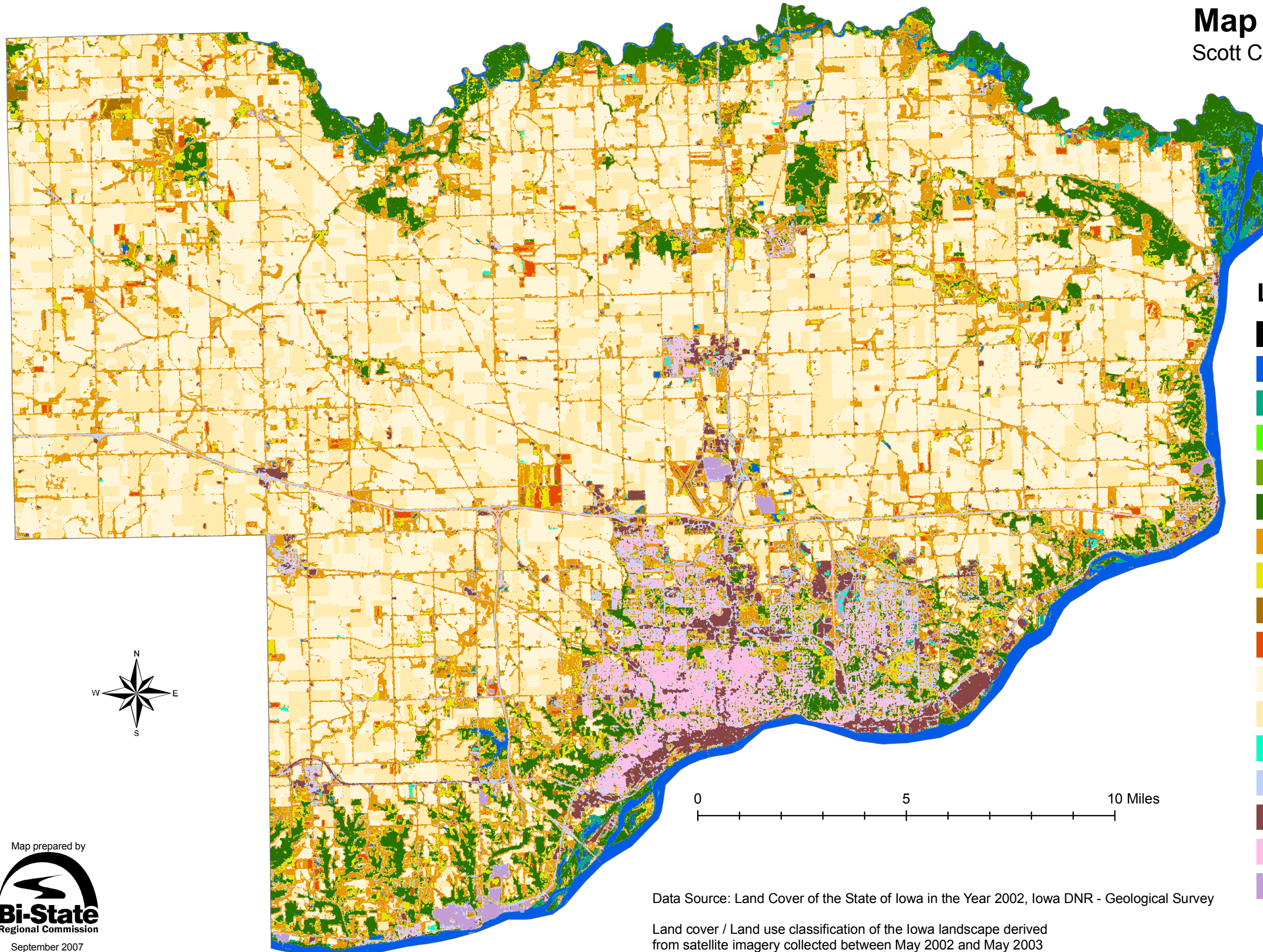
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Figure 4.9 illustrates the farm production expenses from 1980 to 2000. While the feed and livestock purchased expenses show a decline during this period, the expenses spent toward seed have increased.



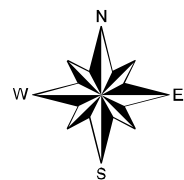
# Map 4.4 - Land Cover

Scott County, Iowa



## Legend

- unclassified
- water
- wetland
- bottomland forest
- coniferous forest
- deciduous forest
- ungrazed grassland
- grazed grassland
- CRP grassland
- alfalfa
- corn
- soybeans
- other rowcrop
- roads
- commercial industrial
- residential
- barren



0 5 10 Miles

Data Source: Land Cover of the State of Iowa in the Year 2002, Iowa DNR - Geological Survey

Land cover / Land use classification of the Iowa landscape derived from satellite imagery collected between May 2002 and May 2003



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**Commodities Produced.** In 1982, Scott County had 214,026 acres used for crops. This decreased to 210,317 acres by 2002. Woodland acres decreased from 5,834 acres in 1982 to 5,024 acres in 2002. Land in pasture also dropped from 18,448 acres in 1982 to 3,393 acres in 2002. Map 4.4 shows the 2002 Cropland Data Layers for Scott County.

Table 4.3 and Figures 4.10-4.18 illustrate commodities produced in Scott County. By number sold, the quantities of selected livestock have decreased steadily through 1997 with a slight upturn for hogs/pigs and cattle in 2002.

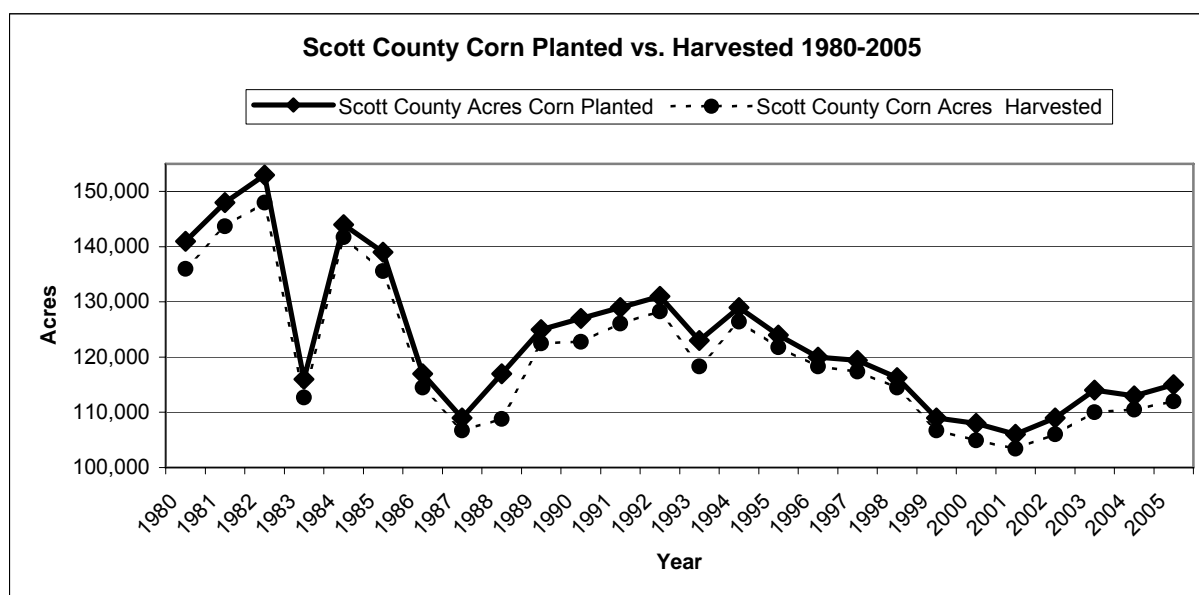
**Table 4.3**  
**Selected Livestock Sales, Scott County**

	Hogs and Pigs		Finished Cattle		Sheep and Lambs		Poultry	
	Farms Selling	Number Sold	Farms Selling	Number Sold	Farms Selling	Number Sold	Farms Selling	Number Sold
1978	591	239,647	377	32,181	NA	NA	NA	NA
1982	465	234,250	317	27,597	112	2,401	NA	NA
1987	353	218,118	268	24,293	105	2,518	NA	NA
1992	308	252,871	189	13,781	76	2,430	NA	NA
1997	162	171,920	147	9,717	56	1,562	NA	NA
Adj. 1997	163	169,755	152	9,733	56	1,577	17	(D)
2002	88	196,820	117	10,882	26	1,065	13	(D)

(D) Withheld to avoid disclosing data for individual farmers.

Source: Iowa State University Extension; National Agricultural Statistics Services

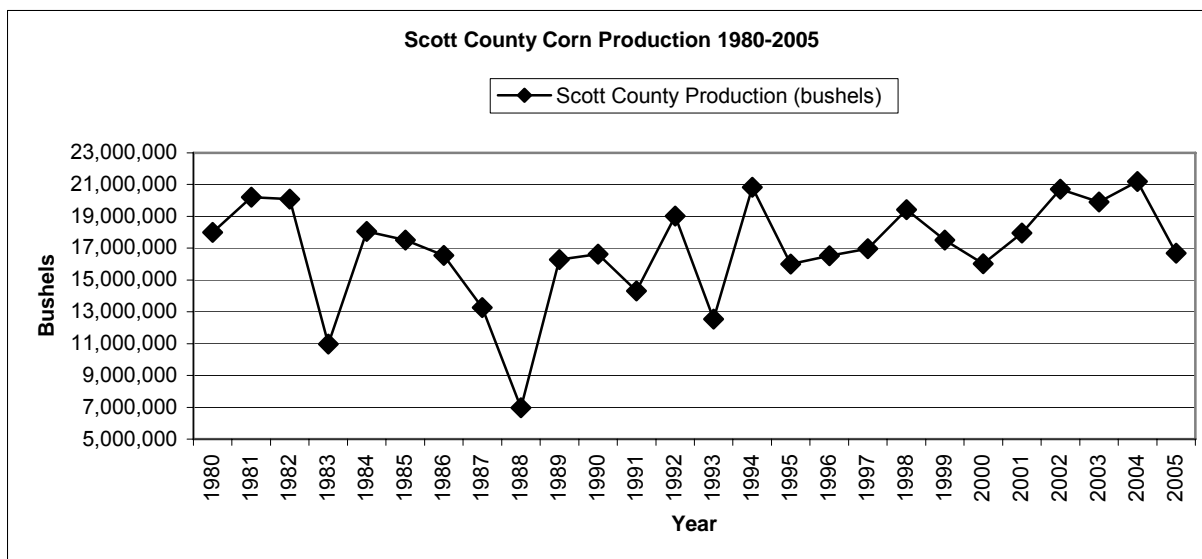
**Figure 4.10**



Source: Iowa State University Extension; National Agricultural Statistics Services

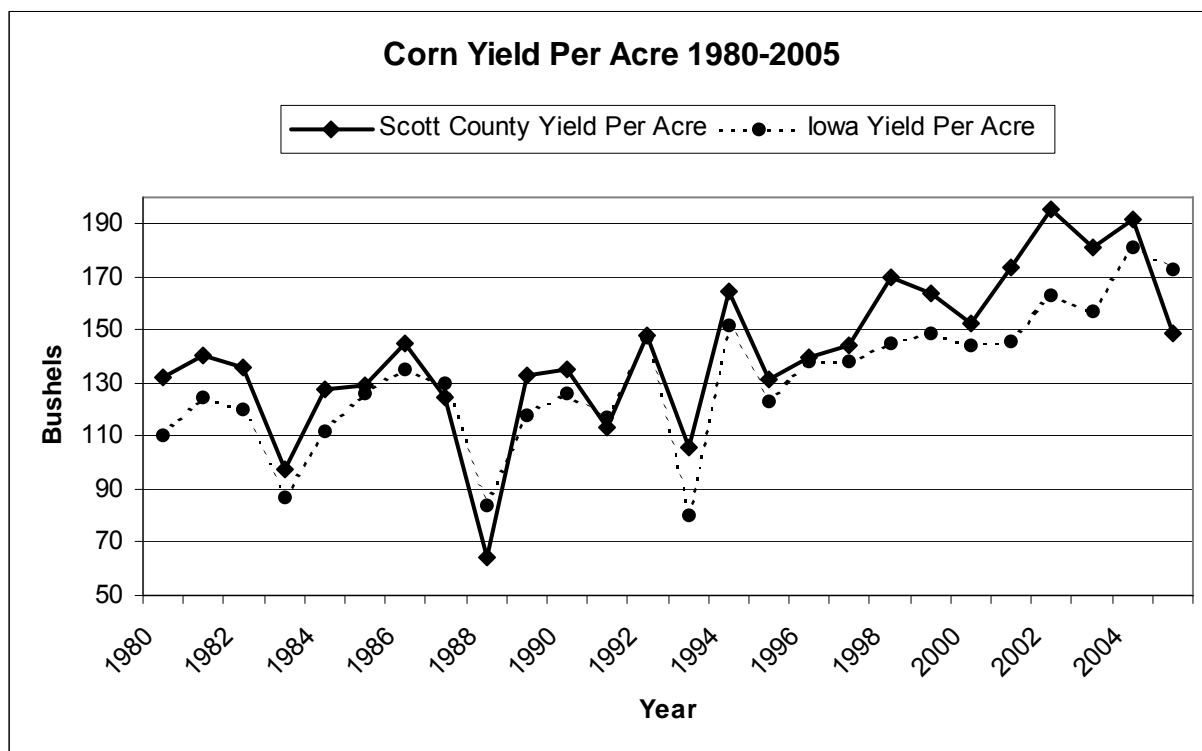
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Figure 4.11



Source: Iowa State University Extension; National Agricultural Statistics Services

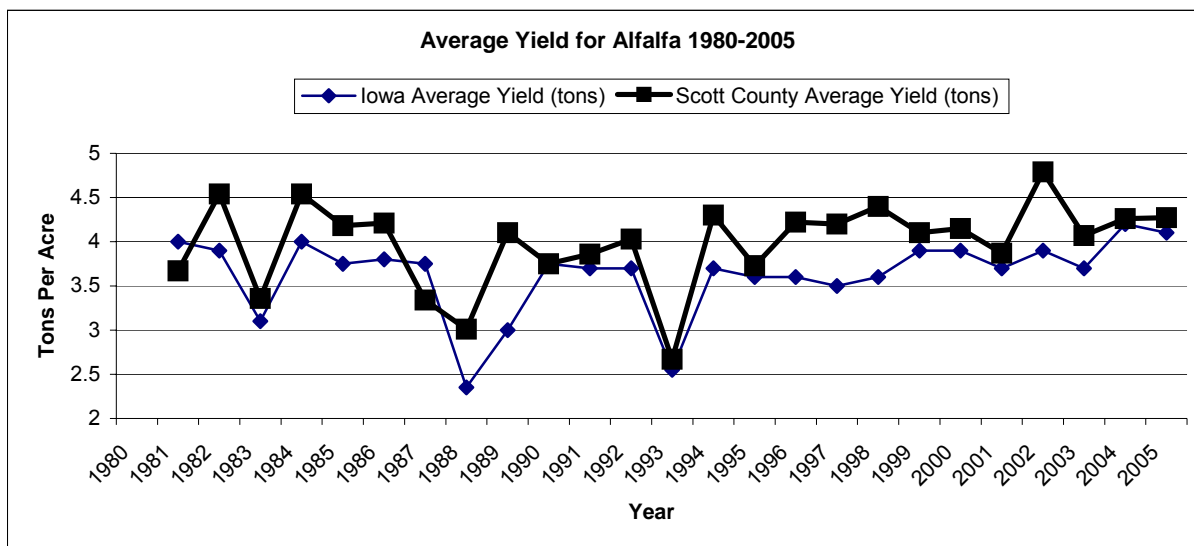
Figure 4.12



Source: Iowa State University Extension; National Agricultural Statistics Services

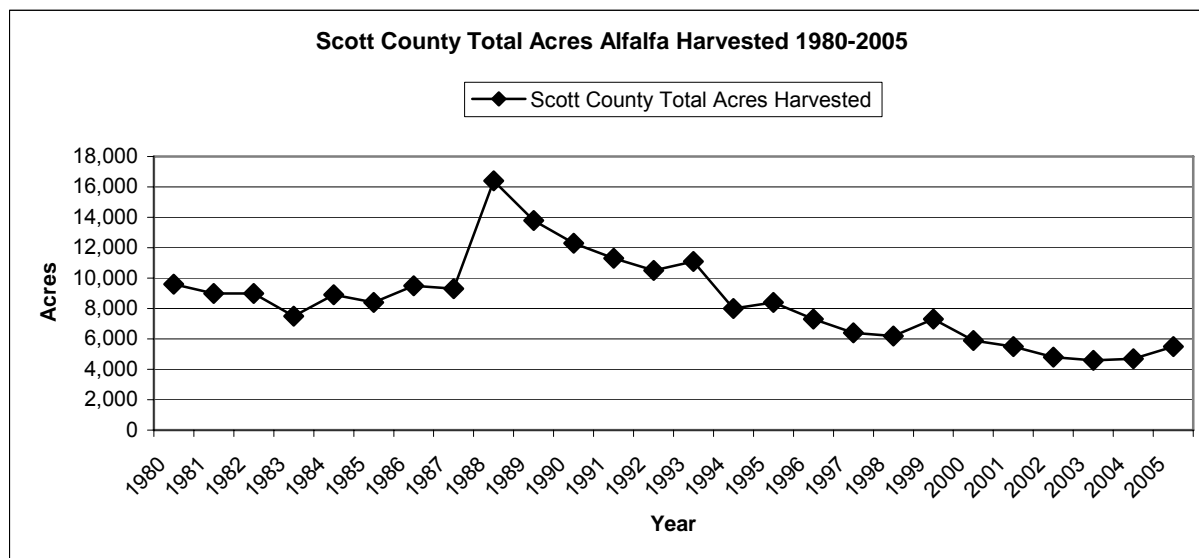
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Figure 4.13



Source: Iowa State University Extension; National Agricultural Statistics Services

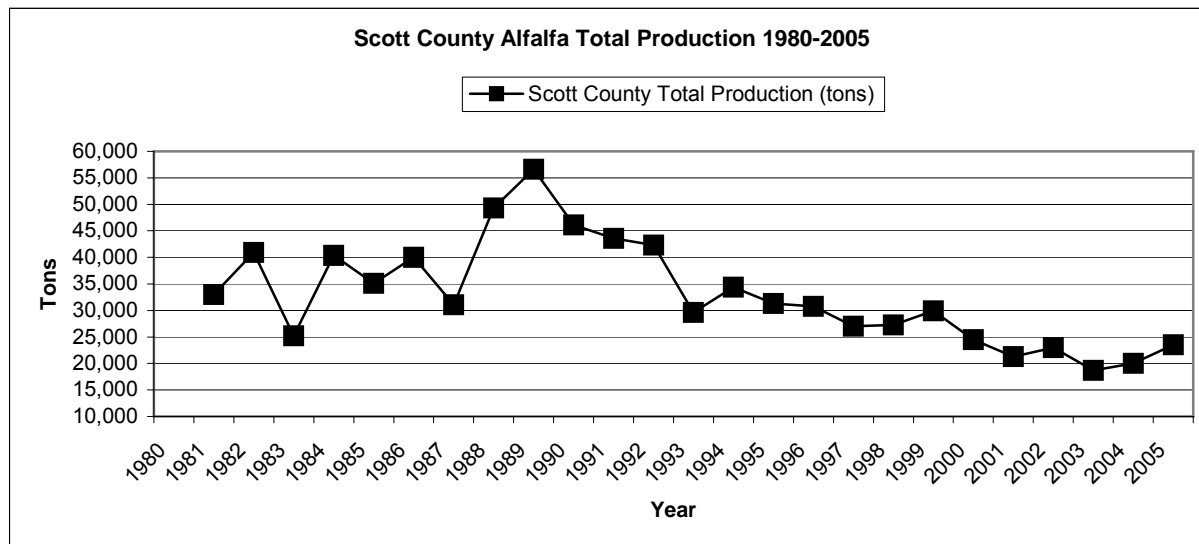
Figure 4.14



Source: Iowa State University Extension; National Agricultural Statistics Services

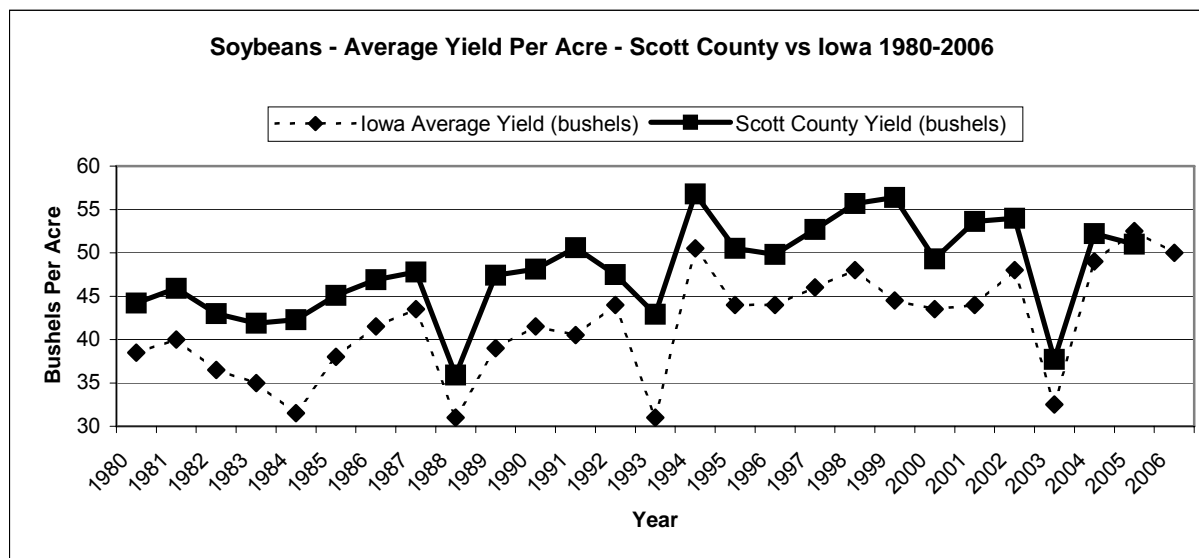
# Scott County Comprehensive Plan

Figure 4.15



Source: Iowa State University Extension; National Agricultural Statistics Services

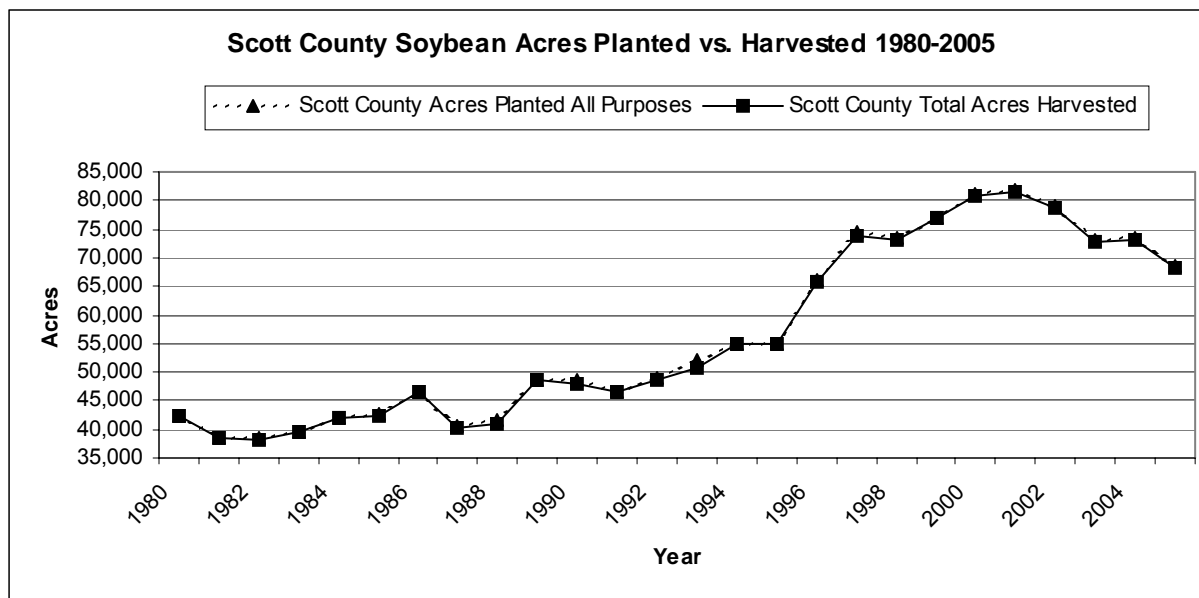
Figure 4.16



Source: Iowa State University Extension; National Agricultural Statistics Services

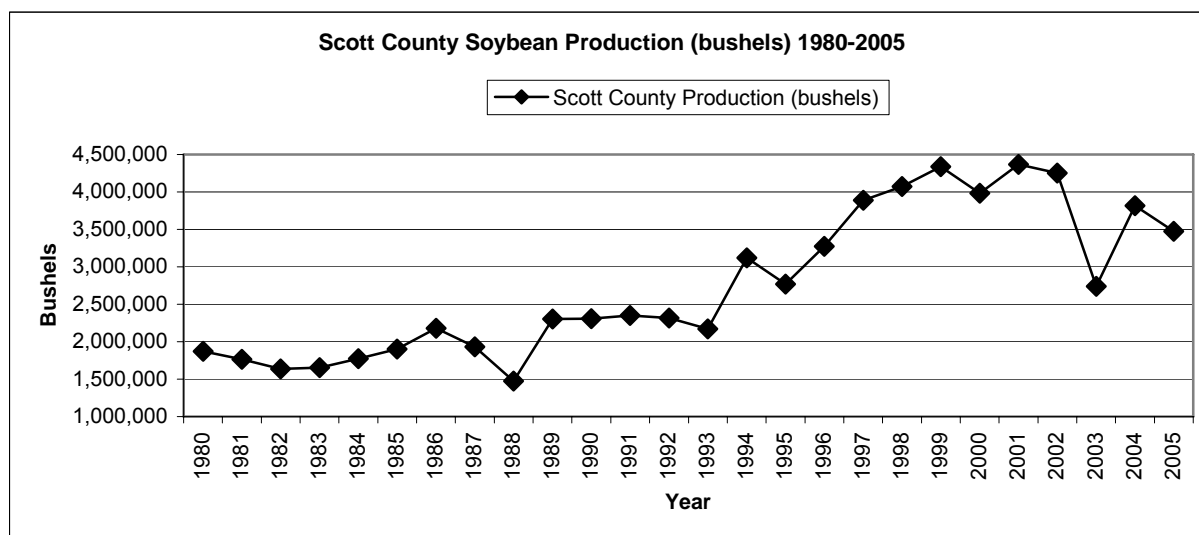
# Scott County Comprehensive Plan

Figure 4.17



Source: Iowa State University Extension; National Agricultural Statistics Services

Figure 4.18



Source: Iowa State University Extension; National Agricultural Statistics Services

The five-year average percent of Scott County farmland planted as corn for crop years 1999-2003 was 47.7%. The five-year average was 34.1% for soybeans.

**Farm Operators.** As defined by the 1987 Census of Agriculture, “the term “Operator” designates a person who operates a farm, either doing the work or making day-to-day decisions about such things as planting, harvesting, feeding, and marketing. The operator may be the owner, or a member of the owner’s household, a hired manager, a tenant, a renter, or a

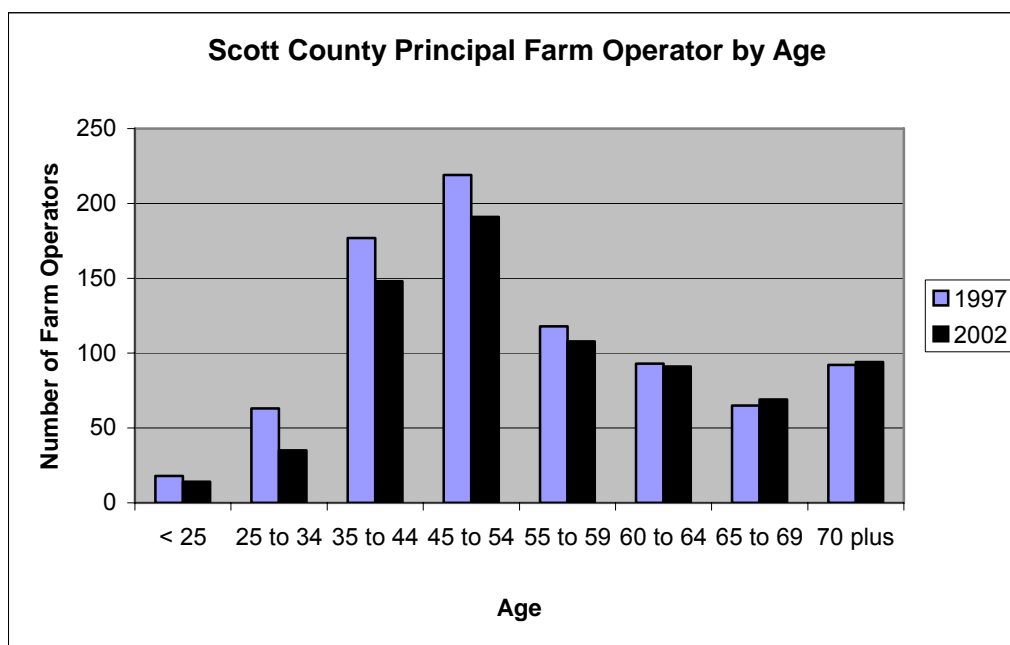


# Scott County Comprehensive Plan

sharecropper. If a person rents land to others or has land worked on shares by others, the individual is considered the operator only if the land is retained for the individual's operation. For partnerships, only one partner is counted as the operator. If it is not clear which partner is in charge, then the senior or oldest active partner is considered the operator. For census purposes prior to 2002, the number of operators was the same as the number of farms. In some cases, the operator was not the individual named on the address label of the report form, but another family member, partner, or hired manager who was actually in charge of farm operation. In 2002, the number of operators does not equal the number of farms. For the first time, this census collected information on the total number of operators, total number of woman operators, and demographic information for up to three operators per farm. Scott County had 750 farms in 2002 and 1,078 farm operators; 476 farms had one farm operator, and 233 had two farm operators. Only 42 farms had three or more operators. Scott County had 223 woman operators. The majority of second operators on a farm were woman/spouses.

According to the National Agricultural Statistics Service, U.S. Department of Agriculture, the average age of all U.S. principal farm operators in the 2002 Census was 55.3 years of age. The Iowa average was 54.3 years, and the Scott County average was 53.8 years. The national average has been more than 50 years of age since at least the 1974 Census of Agriculture and has increased in each census since 1978—usually by one year or more from one census to the next. In addition, the percentage of principal farm operators 65 or older has risen consistently since 1978 (when it was about 1 in 6) and reached 26.2% (more than 1 in 4) in 2002. At the other end of the spectrum, the percentage of principal operators with average ages of less than 35 years has been declining since 1982, when it was 15.9%, and was only 5.8% in 2002. (On a relative basis, the percent of principal operators who are 34 years or younger has dropped about 20% in each subsequent census since 1982.)

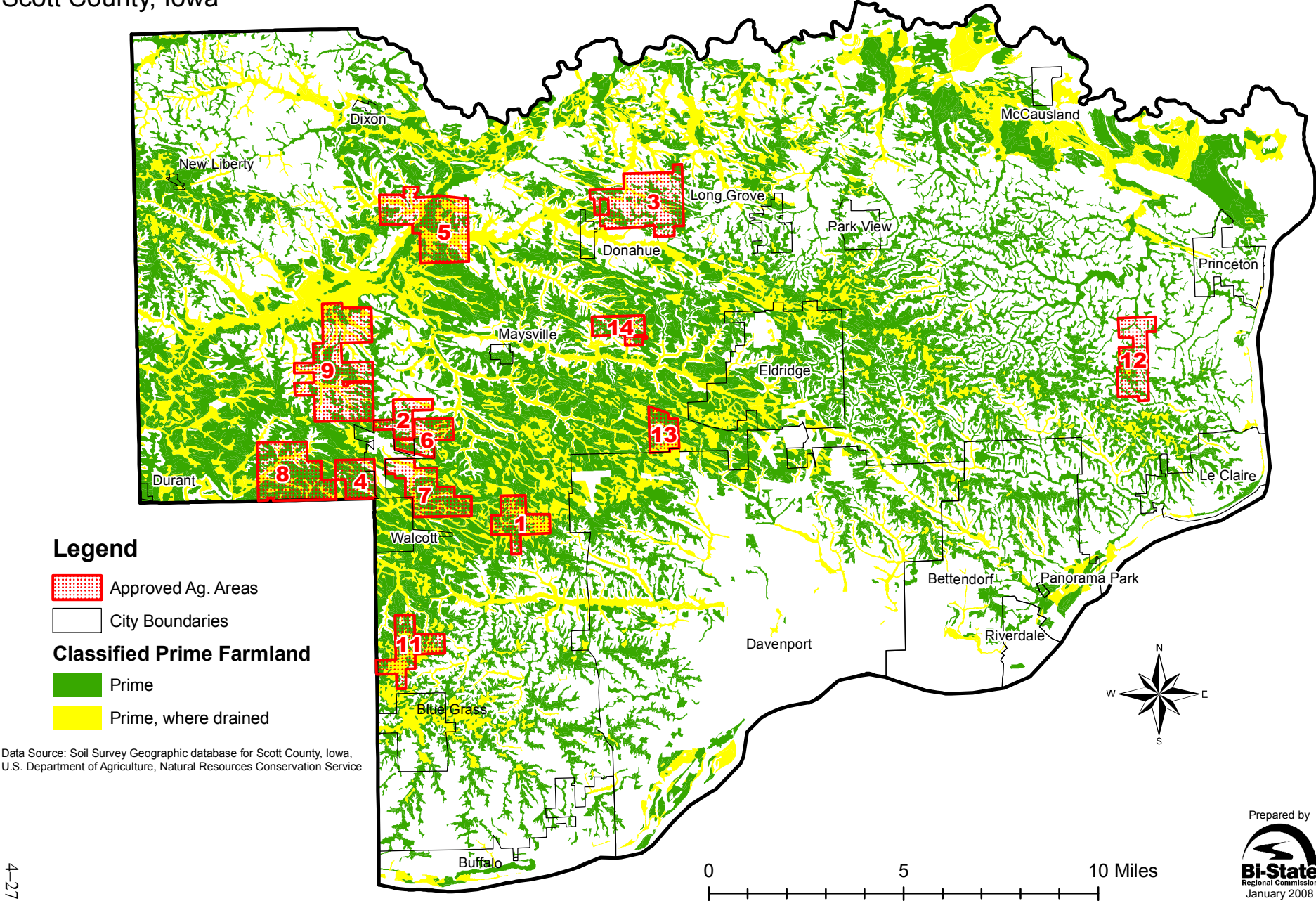
**Figure 4.19**



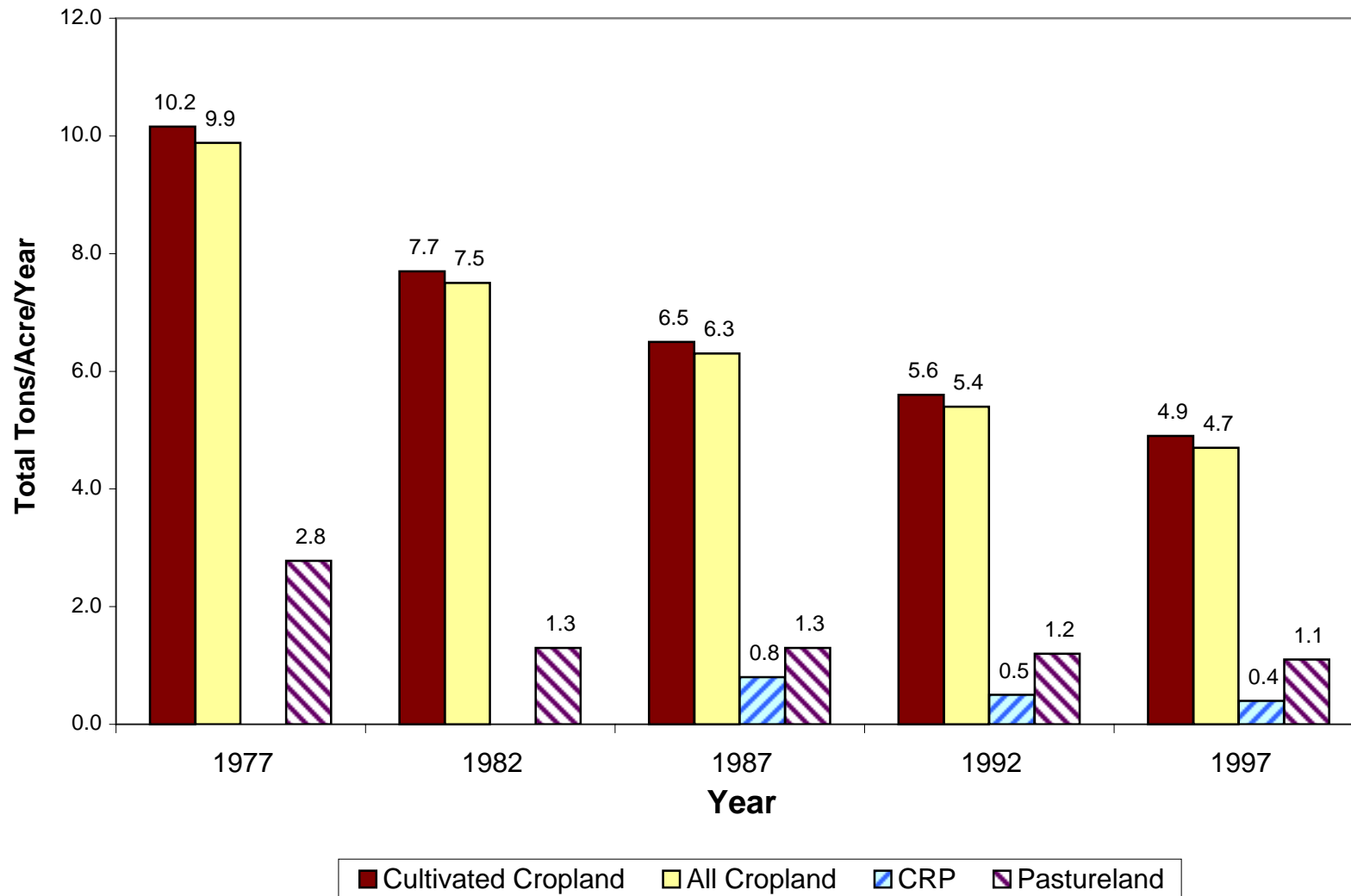
Source: USDA, National Agricultural Statistics Service

# Map 4.5 - Prime Farmland and Approved Agricultural Areas

Scott County, Iowa



**Figure 4.20**  
**Iowa Estimated Average Annual Sheet & Rill (Water) Erosion**



Source: USDA, National Resources Inventory  
Prepared By: Agronomy Department, Iowa State University

# Scott County Comprehensive Plan

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**Prime Farmland.** Defined by the U.S. Department of Agriculture (USDA), prime farmland is land that is best suited to food, feed, forage, fiber, and oilseed crops. It may be cultivated land, pasture, woodland, or other land, but it is not urban and built-up land or water areas. It either is used for food or fiber crops or is available for those crops. The soil qualities, growing season and moisture supply are those needed for a well-managed soil to produce a sustained high yield of crops in an economic manner. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment. (Soil Survey of Scott County, Iowa, September 1996, Pages 80-81.) Map 4.5 identifies the prime farmland and farmland considered prime where it is drained in Scott County. This map also shows the Approved Agricultural Areas, which are discussed further later in this chapter.

**Farmland Preservation.** The following information and definitions are provided from the USDA Economic Research Service Report, Number 14, February 2006.

Farm operators who own their land or who expect to lease it year after year have a profit motivation to ensure that its quality and productivity do not deteriorate over time. Further, many farm operators live near their farms, giving them an incentive to reduce farming-related environmental degradation such as air, noise, and groundwater pollution. Nonetheless, farming remains an important source of sedimentation and nutrient loading in our nation's rivers and streams (Ribaud, 2000; Claassen et al., 2001). Figure 4.20 illustrates how the implementation of various conservation measures reduced the tons per acre of soil loss due to water erosion from 1977 to 1997 in Iowa. Some conservation practices require costly investments that can reduce farm profitability, particularly in the short run. In addition, much of the unintended environmental damage caused by farm production is felt far downstream or only after a considerable time lag. If the farm operator will not benefit enough from adopting conservation practices, farming-related environmental problems are less likely to be addressed. As an incentive to reduce both the onsite and offsite environmental impacts of farming, the federal government provides technical and financial support for farm conservation efforts. USDA's conservation programs share with farmers the cost of adopting conservation practices, but because these programs are voluntary, their cost and effectiveness depend on what farm operators demand in return for altering their farming practices. For the farmers, considerations other than profits and environmental outcomes, such as household budget constraints, farm structure and ownership, and personal goals, can affect the decision.

For specific crops, the U.S. Department of Agriculture lists three groups of conservation-compatible management practices. This list of management practices builds on research reported in USDA – Caswell et al. (2001) and Quinby et al.

The first group, which the department terms “standard practices,” consists of farming practices that do not require highly specialized management skills:

- **Conservation tillage.** Mulch-till, ridge-till, and no-till practices can maintain or enhance soil quality while reducing soil erosion associated with conventional tillage practices. [Mulch tillage allows at least 30% of crop residue to remain on the soil (Massey, 1997). Ridge tillage is a system in which ridges are formed during cultivation or after harvest,

# Scott County Comprehensive Plan

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depending on which crops are planted. Crop residue accumulates between the ridges (Reeder et al., 1992). No-till systems leave the soil relatively undisturbed, with 60-95% of the field surface covered with crop residue (Hoette, 1997).]

- **Crop rotation.** By interrupting the life cycles of some pests and reducing fertilizer needs, crop rotation can reduce the use of chemical inputs and soil erosion. [Conservation crop rotation is used in about 80% of conservation compliance plans (Claassen et al., 2004).]
- **Insect/herbicide-resistant plant cultivation.** Growing crops resistant to insects or tolerant of herbicides can reduce the need for chemical inputs. [Adoption of herbicide-tolerant plants can reduce the need for repeated applications of herbicides and can reduce the toxicity of herbicides that are applied (Fernandez-Cornejo et al., 2002).]

The second group, which we term “decision aids,” provides the farm operator with information needed to pursue farming practices that use moderate chemical input.

- **Soil testing.** This is a first step toward targeted fertilizer application rates that can reduce nitrate leaching and phosphorous run-off.
- **Pest scouting.** As a first step for integrated pest management systems, pest scouting can lead to reduced pesticide applications.
- **Soil mapping.** Information on the soil characteristics enables strategic placement and timing of inputs.

The third group, “management-intensive practices,” requires extra effort on the farm operator’s part to manage inputs. Operators who make this effort can be identified by their use of data, gathered through decision aids, to apply nutrients and chemicals for maximum effect.

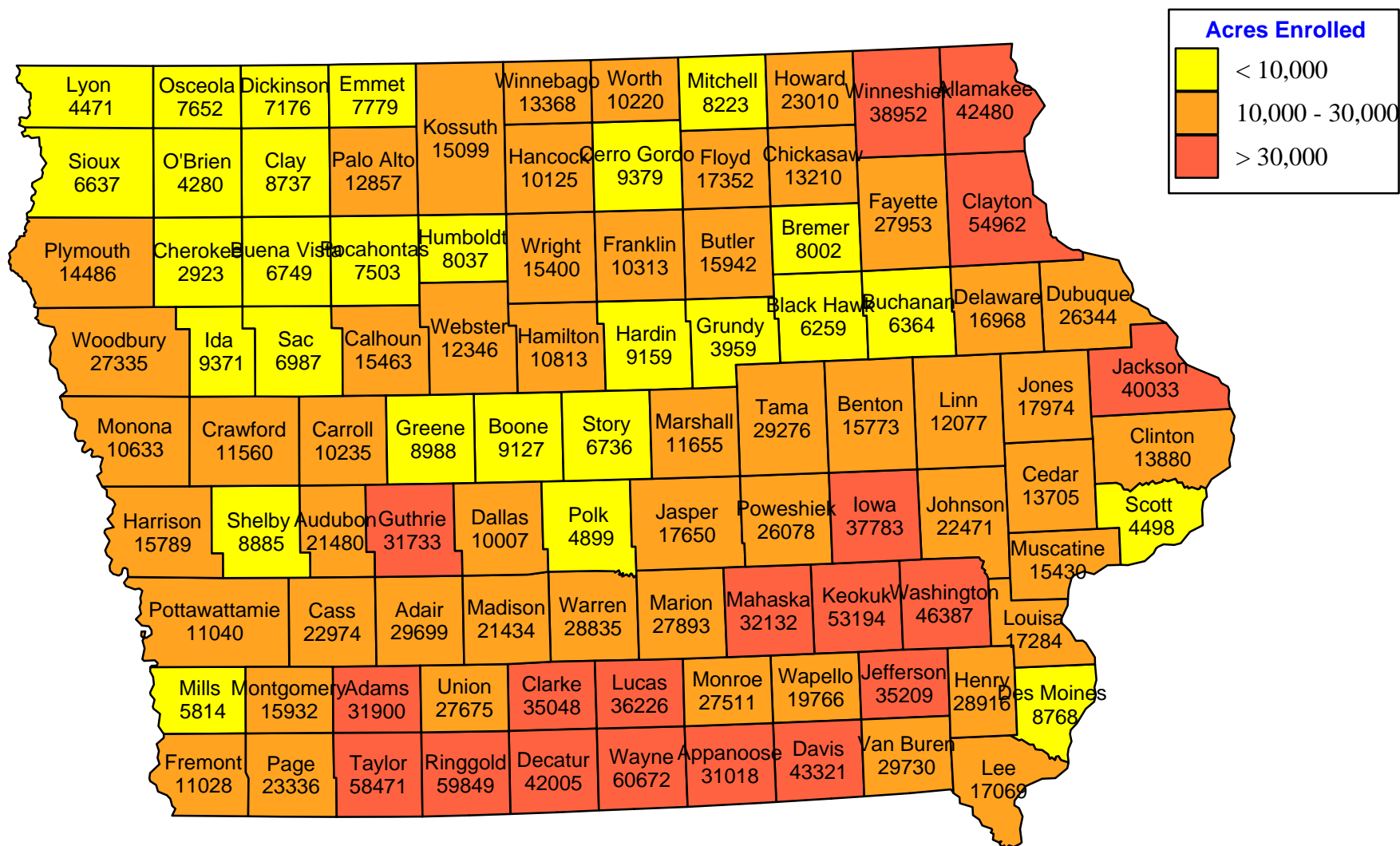
- **Input placement and timing.** Variable-rate application of fertilizers, herbicides, and pesticides may indicate that farm operators are using the results of soil tests and pest scouting to target input applications.

The NRCS and the Farm Service Agency manage several voluntary conservation programs for private land with the objective of fostering good stewardship practices. Total federal funding for voluntary conservation programs was \$3.8 billion in 2006. Federal programs providing conservation funding directly to farmers and ranchers focus largely on either: (1) retiring environmentally sensitive farmland from production or (2) improving conservation practices on working farmland. The following conservation programs are examples provided by the USDA:

- **The Conservation Reserve Program (CRP)** was authorized by the Food Security Act of 1985 (the 1985 Act) to retire environmentally sensitive land from agricultural production for 10 to 15 years. In return for an annual rental payment and partial reimbursement for the cost of establishing and maintaining approved groundcover, participants agree to take enrolled land out of production and plant grasses, trees, and other conservation cover crops. Since 1996, producers have also had the option of enrolling land through a continuous signup program focused on developing riparian buffers and other working-land conservation structures. The program is limited mostly to cropland. According to



# Map 4.6 - CRP Enrollment as of April 2006



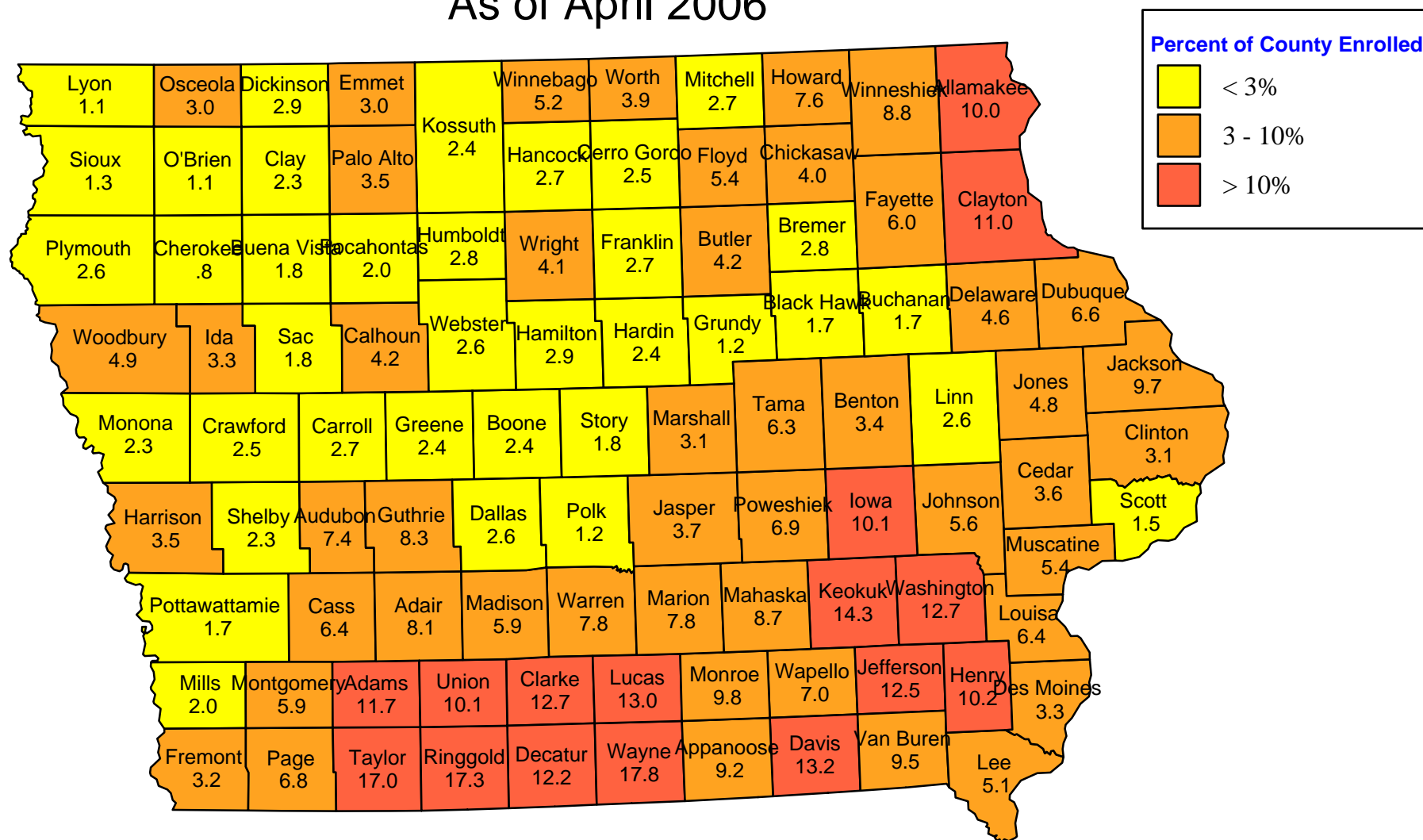
Source: U.S. Department of Agriculture -- Farm Service Agency

Prepared by Gerald A. Miller, Professor of Agronomy, and Brian Tiffany, System Support Specialist  
Department of Agronomy, Iowa State University, Ames, Iowa 50011



# Map 4.7 - Percent of County Enrolled in CRP

## As of April 2006



Source: U.S. Department of Agriculture -- Farm Service Agency

Prepared by Gerald A. Miller, Professor of Agronomy, and Brian Tiffany, System Support Specialist  
Department of Agronomy, Iowa State University, Ames, Iowa 50011

# Scott County Comprehensive Plan

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the USDA Economic Research Service, all CRP land is classified as cropland due to the difficulty of assessing the level of forest cover on CRP lands. The CRP is administered by USDA's Farm Service Agency with technical assistance from USDA's Natural Resources Conservation Service and Forest Service and from other technical service providers. Scott County had 4,200 acres enrolled in CRP as of March 30, 2007. This is a reduction of 298 acres from the amount shown on Map 4.6. In 2006, 1.5% of Scott County farmland was enrolled in CRP as shown on Map 4.7.

There are two primary ways for farmers and ranchers to participate in the CRP: general sign-up and continuous sign-up. Continuous sign-up includes the Conservation Reserve Enhancement Program (CREP) and the Farmable Wetlands Pilot Program.

- **General Sign-up.** Landowners and operators with eligible lands compete nationally for acceptance based on an environmental benefits index (EBI) during specified enrollment periods. Producers may submit offers below soil-specific maximum rental rates to increase their EBI ranking.
- **Continuous (Non-CREP) Sign-up.** Landowners and operators with eligible lands may enroll certain high priority conservation practices, such as filter strips and riparian buffers, at any time during the year without competition. In addition to annual soil rental payment and cost-share assistance, many practices are eligible for additional annual and one-time up-front financial incentives.
- **The Conservation Reserve Enhancement Program (CREP)** is a voluntary land retirement program, which the Department of Agriculture began funding in 1997 as a federal-state cooperative conservation effort. This program helps agricultural producers protect environmentally sensitive land, decrease erosion, restore wildlife habitat, and safeguard ground and surface water. Landowners and operators implement projects designed to address specific environmental objectives through targeted CRP enrollments. Sign-up is held on a continuous basis, general sign-up practices may be included, and additional financial incentives are generally provided. Like CRP, CREP contracts require a 10- to 15-year commitment to keep lands out of agricultural production. CREP provides payments to participants who offer eligible land.
- **State Areas for Wildlife Enhancement (SAFE)** is a new 500,000-acre Conservation Reserve Program practice to improve habitat for high-priority wildlife species, which was announced March 2007. State Areas for Wildlife Enhancement (SAFE) will be nationwide with acres allotted to each of the 50 states.
- **The Farmable Wetland Program (FWP)** is a voluntary program to restore up to 500,000 acres of farmable wetlands and associated buffers by improving the land's hydrology and vegetation. Eligible producers in all states can enroll eligible land in the FWP through the CRP. FWP is limited to no more than one million acres, and no more than 100,000 acres in any one state. Eligible acreage includes farmed and prior converted wetlands that have been effected by farming activities. The maximum acreage for enrollment of wetlands and buffers is 40 acres per tract. A producer may enroll multiple

## Scott County Comprehensive Plan

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wetlands and associated buffers on a tract as long as the total acreage does not exceed 40 acres.

Acreage must meet the following FWP eligibility requirements:

- Land must be cropland planted to an agricultural commodity 3 of the 10 most recent crop years and be physically and legally capable of being planted in a normal manner to an agricultural commodity.
  - A wetland must be 10 acres or less. Only the first five acres may receive payment.
  - A buffer may not exceed the greater of three times the size of the wetland or an average of 150 feet on either side of the wetland.
  - Participants must agree to restore the hydrology of the wetland to the maximum extent possible.
- **The Wetland Reserve Program (WRP)** was first implemented in the early 1990s to retire and restore wetlands that had been converted to cropland (Heimlich et al., 1998). The Farm Security and Rural Investment Act of 2002 (the 2002 Act) authorized enrolling slightly over two million acres in WRP. The WRP program restores and protects wetlands through cost-share assistance as well as 30-year and permanent easements. Since the beginning of the program, Scott County has had six permanent easements on 808 acres.
  - The Emergency Wetland Program was started after the 1996 flooding. Funding ran out after a couple years. Scott County has four permanent easement contracts on 478 acres along the Wapsipinicon River.
- **The Environmental Quality Incentives Program (EQIP)** provides financial and technical assistance to help participants install or implement conservation practices on eligible agricultural land. EQIP is a working-land program designed to help farmers institute conservation practices and integrate conservation structures into their farming operations. For structural or vegetative practices, EQIP can reimburse up to 75% of the installation costs. Producers can also receive incentive payments for adopting management practices. Since EQIP's inception in 1996, \$720 million in EQIP funds has helped nearly 46,500 ranchers and farmers improve air, soil, and water quality on private working land (USDA, 2005a). At least 60% of EQIP funds go to livestock producers, including large confined livestock operations.

The following are Scott County resource concerns to be addressed by EQIP:

- A.) **Water Quality:** Excessive nutrients and organics in surface waters, harmful levels of pesticides in surface waters, excessive suspended sediment and turbidity in surface water
- B.) **Soil Erosion:** Sheet and rill erosion, ephemeral gully erosion, classic gully erosion, streambank erosion

# Scott County Comprehensive Plan

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- C.) **Domestic Animals:** Inadequate quantities and quality of feed and forage, inadequate stock water
- D.) **Fish and Wildlife:** Inadequate cover/shelter, threatened and endangered species
- E.) **Water Quantity** – Inefficient water use on irrigated lands

These resource concerns address the following national EQIP priorities:

- 1.) Reduction of non-point source pollution, such as nutrients, sediments, pesticides, or excess salinity in impaired watersheds consistent with Total Daily Maximum Loads (TDMLs), where available, as well as the reduction of groundwater contamination and the conservation of ground and surface water resources
- 2.) Reduction in soil erosion and sedimentation from unacceptable high levels on agricultural land.
- 3.) Promotion of at-risk species habitat conservation.

The goal of the locally led group was to recommend a ranking system that rewarded and gave priority to those producers that help most to address the above resource concerns. The ranking will be completed for the specific practices to be applied through the EQIP contract. Sign-up is continuous at the NRCS field office. The ranking of the applications will be done periodically as funding allocations become available, announced through the NRCS Iowa State Office, and publicized by all levels of NRCS.

The local work group also recommended a list of conservation practices to be addressed and the cost-share rates and/or incentive payments that are the most cost-effective, longest duration, and help most to address these priority resource concerns in the district.

Since 1999, Scott County has received \$534,221 to address erosion and water quality concerns on 9,400 acres.

- **Emergency Conservation Program (ECP).** USDA Farm Service Agency's (FSA) Emergency Conservation Program (ECP) provides emergency funding and technical assistance for farmers and ranchers to rehabilitate farmland damaged by natural disasters and for carrying out emergency water conservation measures in periods of severe drought. Congress appropriates funding for ECP.

County FSA committees determine land eligibility based on on-site inspections of damage, taking into account the type and extent of damage. For land to be eligible, the natural disaster must create new conservation problems that, if untreated, would:

- impair or endanger the land
- materially affect the land's productive capacity
- represent unusual damage that, except for wind erosion, is not the type likely to recur frequently in the same area

## Scott County Comprehensive Plan

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- be so costly to repair that federal assistance is or will be required to return the land to productive agricultural use

Conservation problems existing prior to the applicable disaster are ineligible for ECP assistance.

- **The Conservation Security Program (CSP)** was authorized by the 2002 Act. It is a working-land program that rewards ongoing environmental stewardship and provides producers incentives to adopt additional conservation practices. But unlike EQIP, CSP can reimburse farmers for continuing conservation practices already in place. In 2004, the first year of the program, 2,200 farmers received \$35 million for conservation practices on roughly two million acres of working land (USDA, 2005a). NRCS has imposed eligibility requirements based on nationally selected priority watersheds. Only producers located within these watersheds will be eligible for a given sign-up. A majority of the agricultural operation must reside in the selected watershed. The watersheds are selected based on objective information from natural resource, environmental quality, and agricultural activity data. The watershed prioritization process considers several factors, including the vulnerability of surface and groundwater quality, the potential for excessive soil quality degradation, and the condition of grazing land in the watershed. Scott County has no watersheds currently enrolled in this program.

Land enrolled in the Conservation Reserve Program, Wetlands Reserve Program, and Grassland Reserve Program, as well as land converted to cropland after the enactment of the CSP legislation is not eligible.

- **Wildlife Habitat Incentives Program (WHIP)** is a voluntary program that provides cost share to private and public landowners to establish wildlife habitat. The Natural Resources Conservation Service (NRCS) works with participants to develop a wildlife habitat management plan. This plan becomes the basis for entering into a 5 to 10-year agreement with landowners to implement the plan. Projects that focus on establishing habitat for threatened and endangered species or declining species receive a higher priority. Applications are accepted through a continuous signup process at the local NRCS office. Scott County had one WHIP contract in 2006 for \$4,368 and 14 acres. WHIP Priority Area Maps for Scott County can be found at <http://www.ia.nrcs.usda.gov/Programs/WHIPmaps.html>

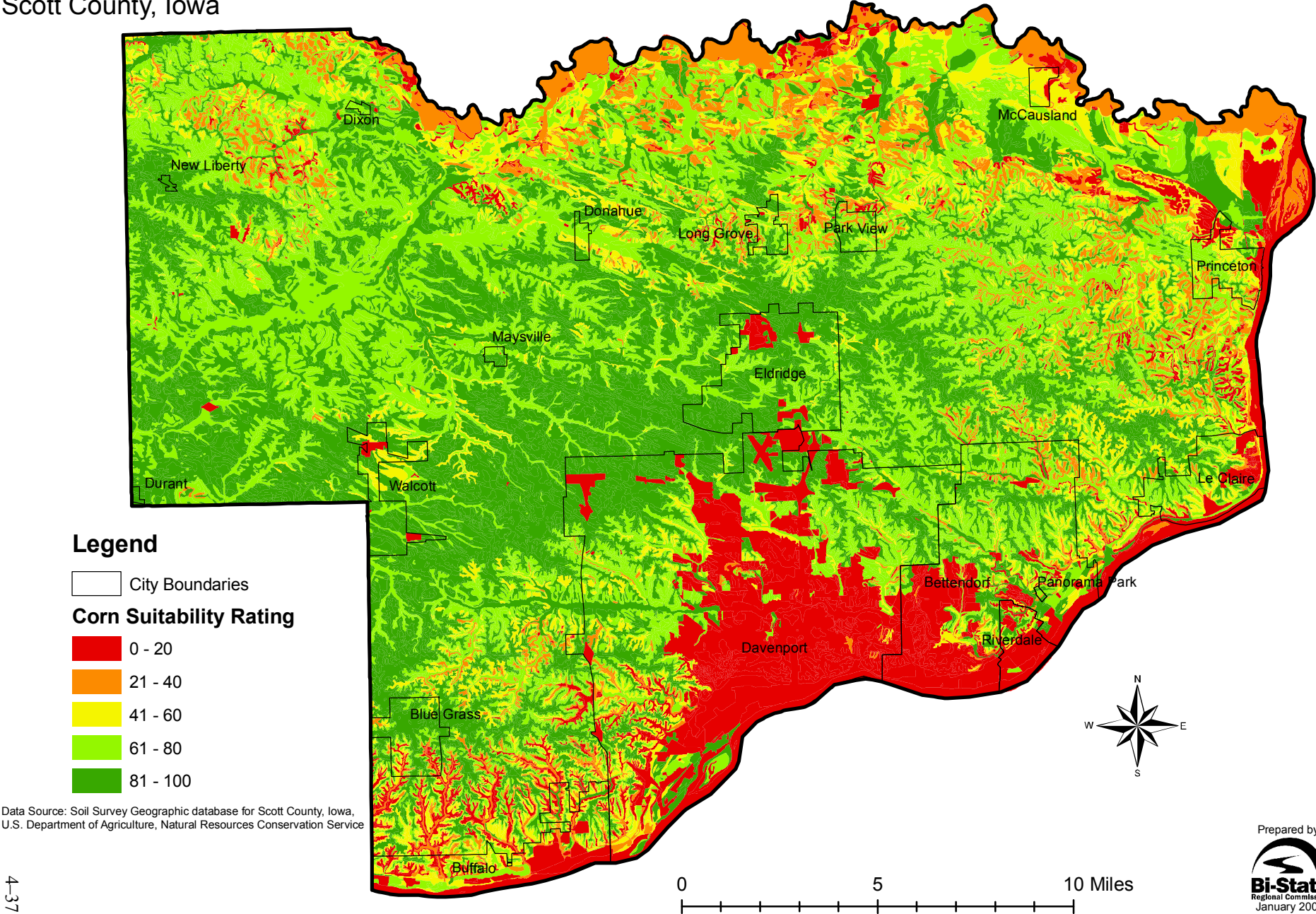
Other programs include the Farm and Ranch Lands Protection Program, the Grassland Reserve Program, and Agricultural Management Assistance. The 2002 Act provided a \$17 billion increase above the baseline spending for these programs over 10 years, with the major recipients being CRP, CREP, EQIP, and WRP (USDA, Lovejoy and Doering 2002).

**Corn Suitability Ratings.** According to the Iowa State University Extension, a Corn Suitability Rating (CSR) is an index procedure developed in Iowa to rate each different kind of soil for its potential row-crop productivity. Soil profile properties and weather conditions are the dominant factors that affect productivity.

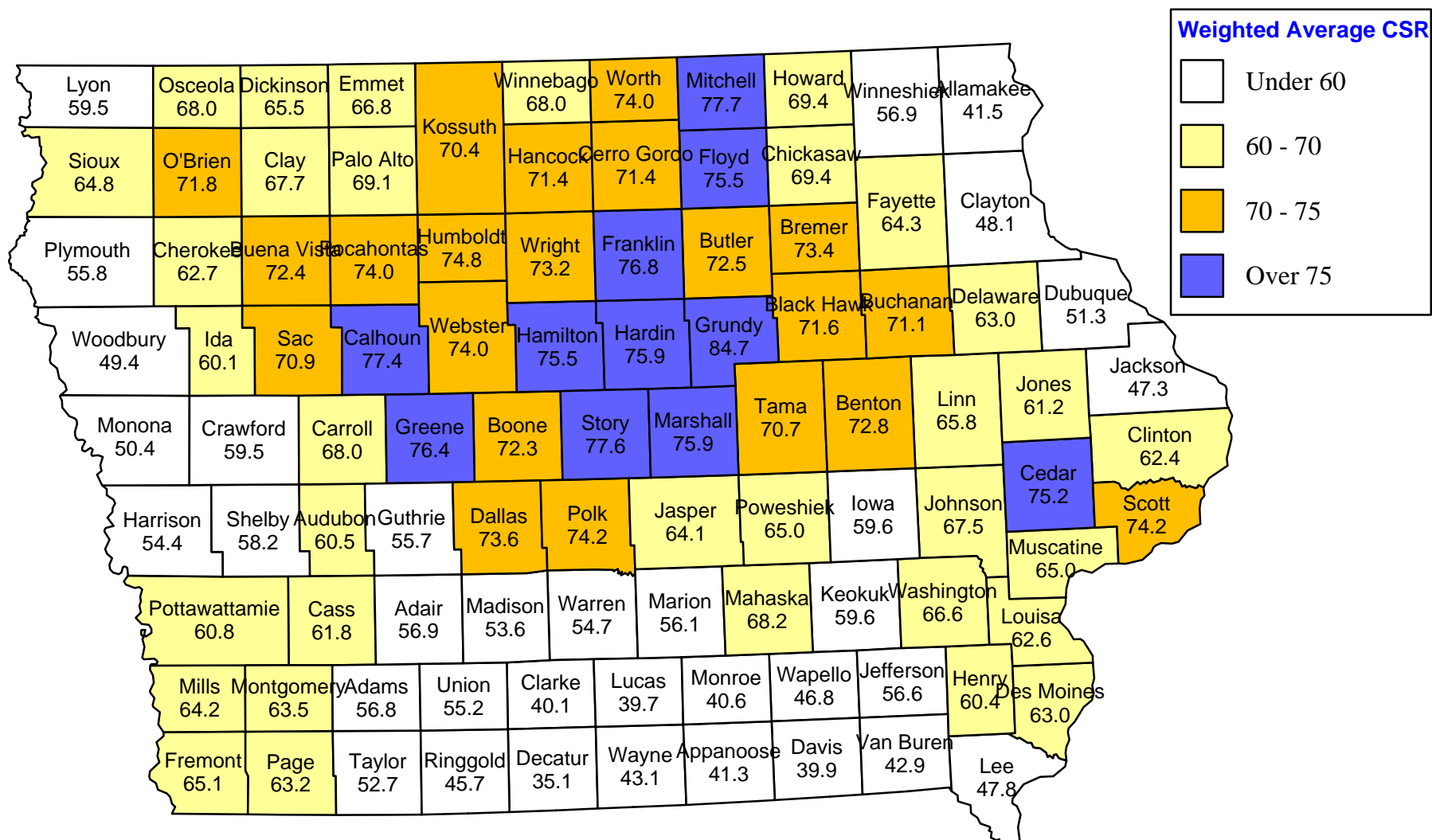


# Map 4.8 - Corn Suitability Rating

Scott County, Iowa



# Map 4.9 - County Weighted Average Corn Suitability Rating



Calculated from acreages and CSR's contained in ISPAID (Iowa Soil Properties and Interpretations Database)

As of November 1, 2006

Prepared by Gerald A. Miller and Thomas E. Fenton, Professors of Agronomy, and Brian Tiffany, System Support Specialist  
Department of Agronomy, Iowa State University, Ames, Iowa 50011

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Slope characteristics are major factors that determine how land should be used. Slope gradient and slope length affect potential erosion rates, water infiltration, and ease and efficiency of machine operation. CSRs provide a relative ranking of all soils mapped in the State of Iowa based on their potential to be utilized for row-crop production.

The CSR is an index that can be used to rate one soil's potential yield production against another over a period of time. The CSR considers average weather conditions as well as frequency of use of the soil for row-crop production. Ratings range from 100 for soils that have no physical limitations, occur on minimal slopes, and can be continuously row-cropped, to as low as 5 for soils with severe limitations for row crops. The CSR assumes: (a) adequate management, (b) natural weather conditions (no irrigation), (c) artificial drainage where required, (d) soils lower on the landscape are not affected by frequent floods, and (e) no land leveling or terracing.

The CSR for a given field or farm can be modified by sandy spots, rock outcroppings, field boundaries, wet spots, and other special soil conditions. Predicted yields are expected to change with time, CSRs are expected to remain relatively constant in relation to one another. CSRs can be used to quantify the productivity potential for individual fields, farms, or larger tracts of land.

Map 4.8 illustrates the Corn Suitability Ratings across Scott County. A very large portion of the County is shown in green or CSRs of 81 to 100. Urbanized areas and deep ravines moving inland from the Mississippi River bluffs have CSRs of 0 to 20 as is to be expected for those areas.

Map 4.9 gives the County weighted average CSR for all counties in Iowa. Scott County has one of the highest weighted averages in the State of Iowa with a 74.2 rating. Only 12 counties exceed that rating in Iowa. The county with the highest weighted CSR is Grundy with 84.7, and the lowest is Decatur along the Missouri border in central Iowa with 35.1.

**Land Conversion.** In Scott County, when land is proposed to be converted from agricultural land to another use by a zoning amendment, a review is performed similar to a Land Evaluation and Site Assessment (LESA) to determine the merits of the conversion. This review performed by the County with input from Bi-State Regional Commission and others, evaluates projects based on: land use/agriculture; agricultural economic feasibility; land use regulations; alternatives to the proposed uses; impact on the environmental, surrounding area, and governmental burden; compatibility with municipal and County comprehensive plans; and the proximity to urban infrastructure. The County Zoning Board uses this information to determine agricultural land conversions. It is proposed that the County develop and adopt a formal LESA process and classification.

**Approved Agricultural Areas.** Between December 1991 and December 1994, 13 areas were approved as "agricultural areas" in Scott County. An agricultural area, at its creation, must include at least 300 acres of farmland. However, a smaller area may be created if the farmland is adjacent to an existing agricultural area. Land shall not be included in an agricultural area without the consent of the owner. Agricultural areas shall not exist within the corporate limits of the city. Agricultural areas may be created in a county that has adopted zoning ordinances.



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Except as provided in this section, the use of land in agricultural areas is limited to farm operations.

1. The following shall be permitted in an agricultural area:
  - a. Residences constructed for occupancy by a person engaged in farming or a family farm operation. Non-conforming, pre-existing residences may be continued in residential use.
  - b. Property of a telephone company, city utility, or public utility.
2. The county board of supervisors may permit any use not listed in Subsection 1 in an agricultural area only if it finds all of the following:
  - a. The use is not inconsistent with the purposes set forth in this act.
  - b. The use does not interfere seriously with farm operations within the area.
  - c. The use does not materially alter the stability of the overall land use pattern in the area.

To join an established agricultural area, an adjacent landowner must simply follow the same procedure as the initial participants. However, there would be no acre minimum.

Agricultural land within an agricultural area is protected from special tax assessment such as sewer, water, lights, or nonfarm drainage improvements unless the benefit assessments or special assessments were imposed prior to the formation of the agricultural area, or unless the service is provided to the landowner on the same basis as others having the service.

## Incentives for Agricultural Land Preservation

1. *Nuisance restriction.* A farm or farm operation located in an agricultural area shall not be found to be a nuisance regardless of the established date of operation or expansion of the agricultural activities of the farm or farm operation. In 1993, the following sentence was added, “This paragraph shall apply to a farm operation conducted within an agricultural area for six years following the exclusion of land within an agricultural area other than by withdrawal as provided in Chapter 352.9.” The subsection does not apply if the nuisance results from the negligent operation of the farm or farm operation or from the violation of state or federal regulations. This subsection does not apply to actions or proceedings arising from injury or damage to person or property caused by the farm or farm operation before the creation of the agricultural area. This subsection does not affect or defeat the right of a person to recover damages for injury or damage sustained by the person because of the pollution or change in condition of the waters of a stream, the overflowing of the person’s land, or excessive soil erosion onto another person’s land unless the injury or damage is caused by an act of God.

The 1993 changes made two additional modifications in the nuisance restrictions. First, mediation as provided for in Chapter 654B of the *Iowa Code* must be utilized prior to proceeding with a nuisance claim. Second, the new law provides that if the defendant prevails, and if the court determines that the claim of nuisance is frivolous, the plaintiff shall pay court costs and reasonable legal fees incurred by the defendant.

2. *Water priority.* In the application for a permit to divert, store, or withdraw water and in the allocation of available water resources under a water permit system, the Iowa Natural

# Scott County Comprehensive Plan

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Resource Council shall give priority to the use of water resources by a farm or farm operations, exclusive of irrigation, located in an agricultural area over all other uses except the competing uses of water for ordinary household purposes.

(Source: Iowa State University Extension)

Map 4.5 shows the locations of the Scott County agricultural areas listed in the following table.

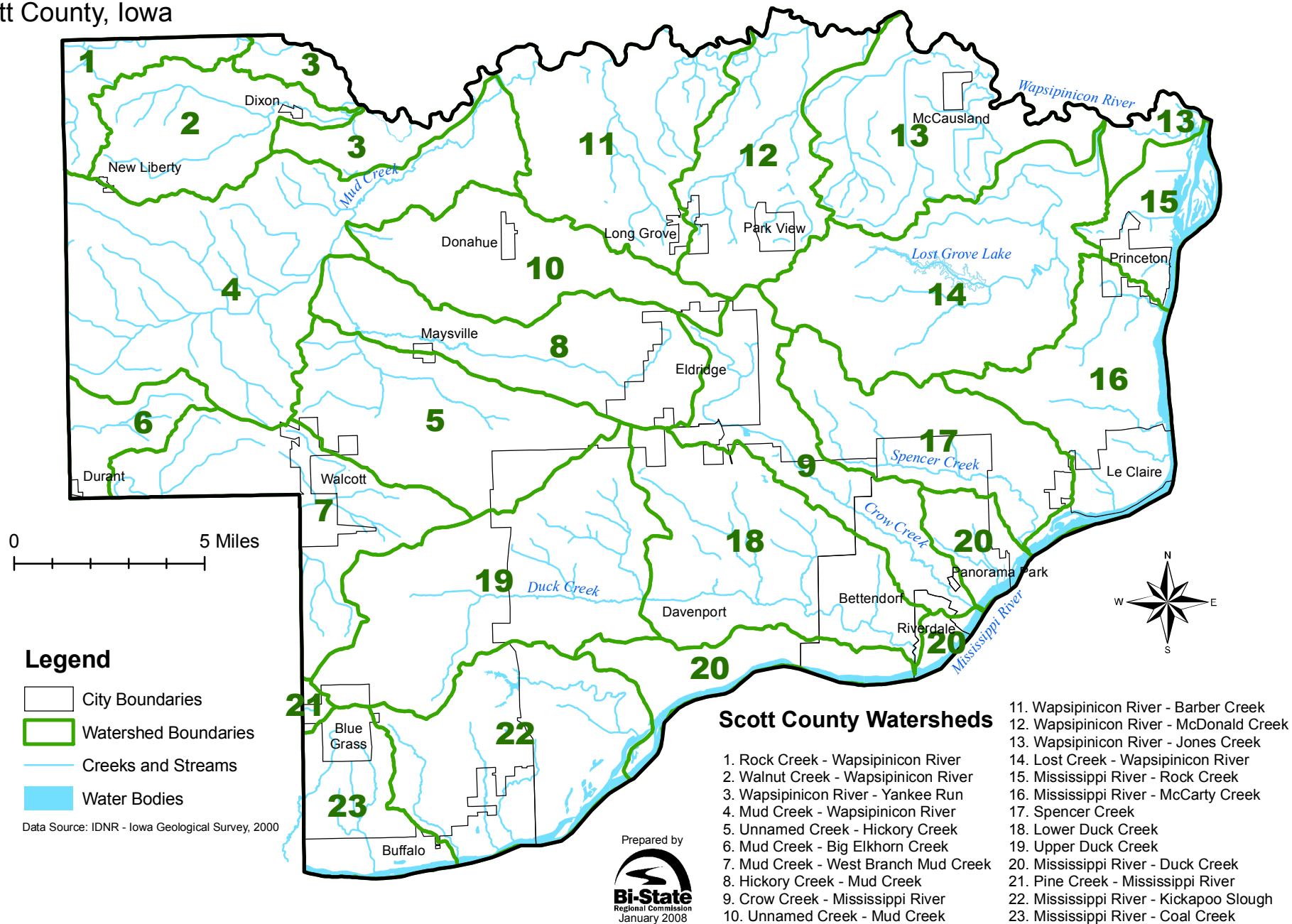
**Table 4.4**  
**Approved Agricultural Areas in Scott County**

Agricultural Area	Approved Date	Size (Acres)
#1	March 26, 1992	672
#2	December 19, 1992	638
#3	January 16, 1992	985
#4	January 16, 1992	510
#5	January 30, 1992	1,125
#6	February 11, 1992	635
#7	January 16, 1992	873
#8	January 16, 1992	1,644
#9	January 2, 1992	2,130
#10	Proposed 500 acres in Jan. 1992 – never approved.	
#11	January 30, 1992	1,115
#12	February 27, 1992	1,050
#13	December 15, 1994	399
#14	December 15, 1994	378

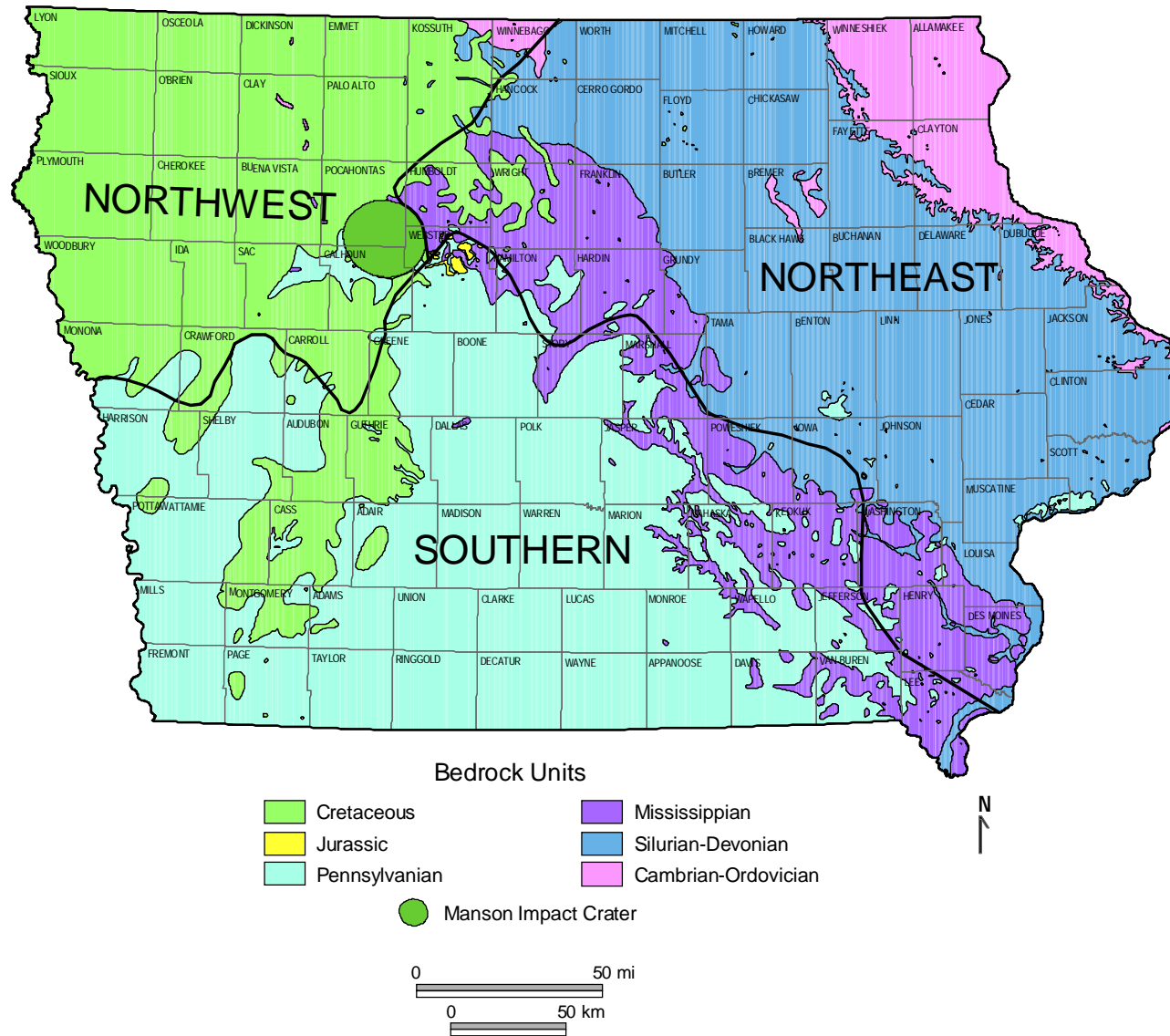
Source: Scott County Planning and Development

# Map 4.10 - Water Resources and Watersheds

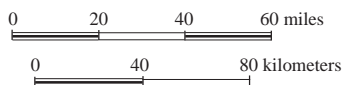
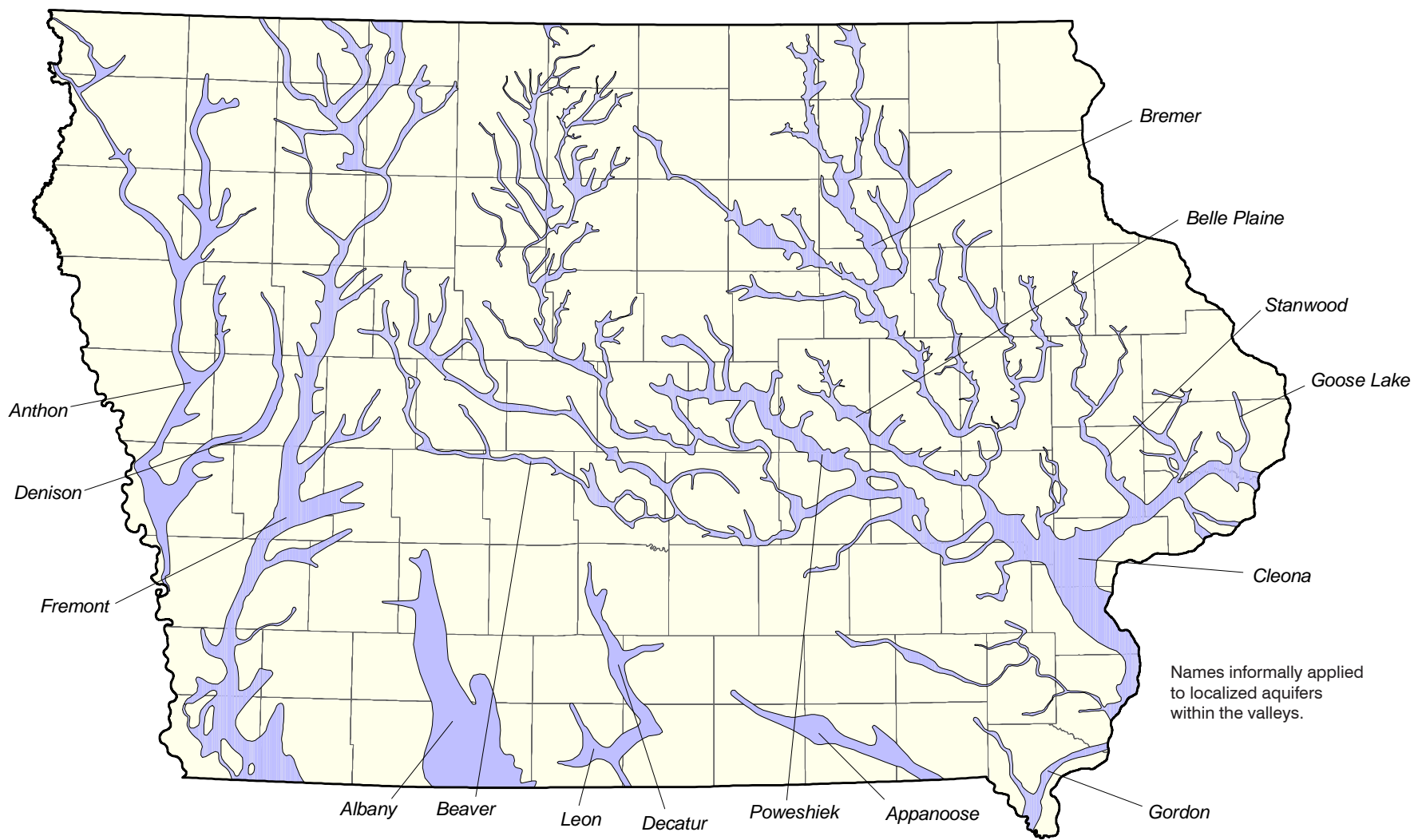
Scott County, Iowa



Map 4.11 - Groundwater Provinces of Iowa

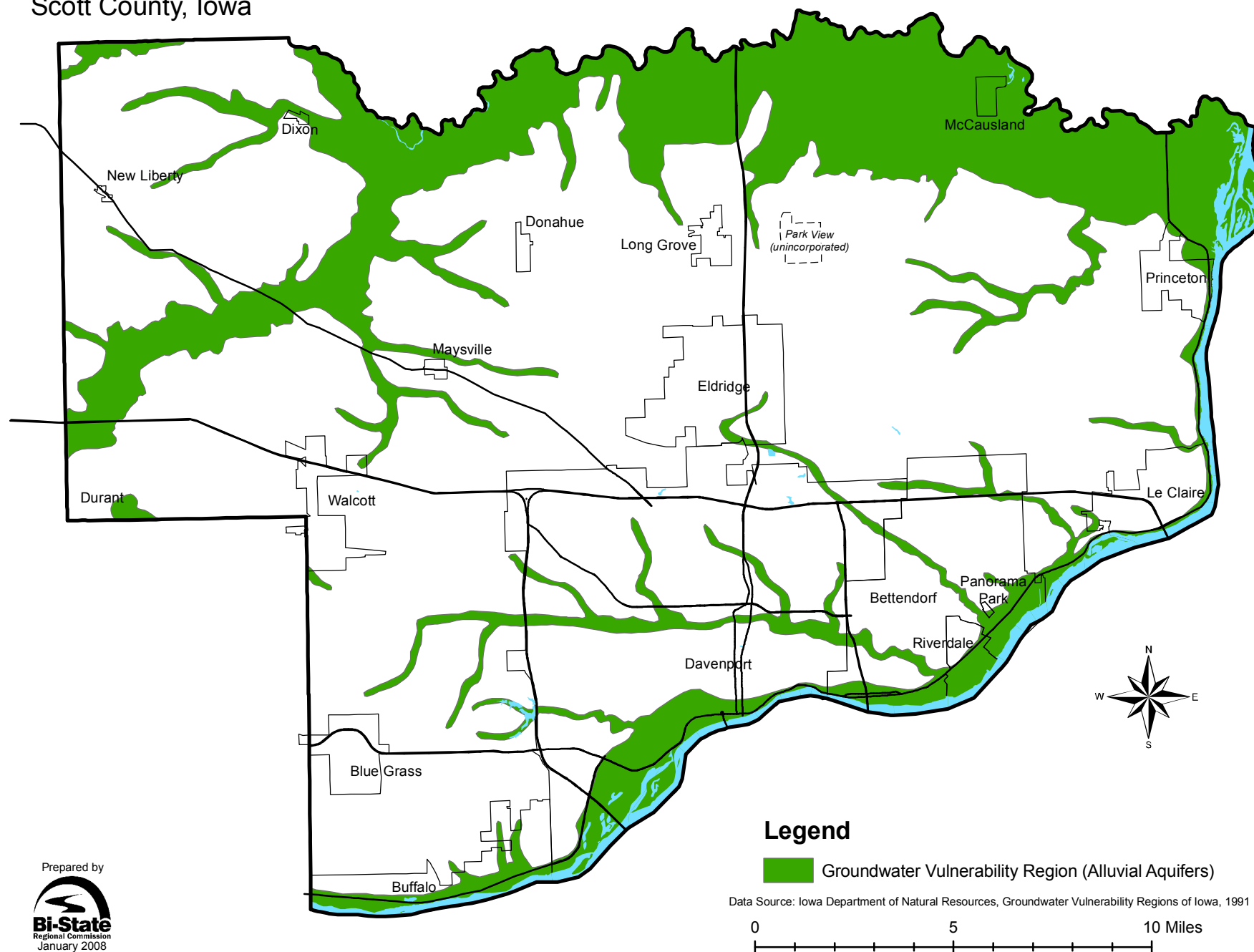


# Map 4.12 - BURIED-VALLEY AQUIFERS OF IOWA 2004



# Map 4.13 - Groundwater Vulnerability

Scott County, Iowa

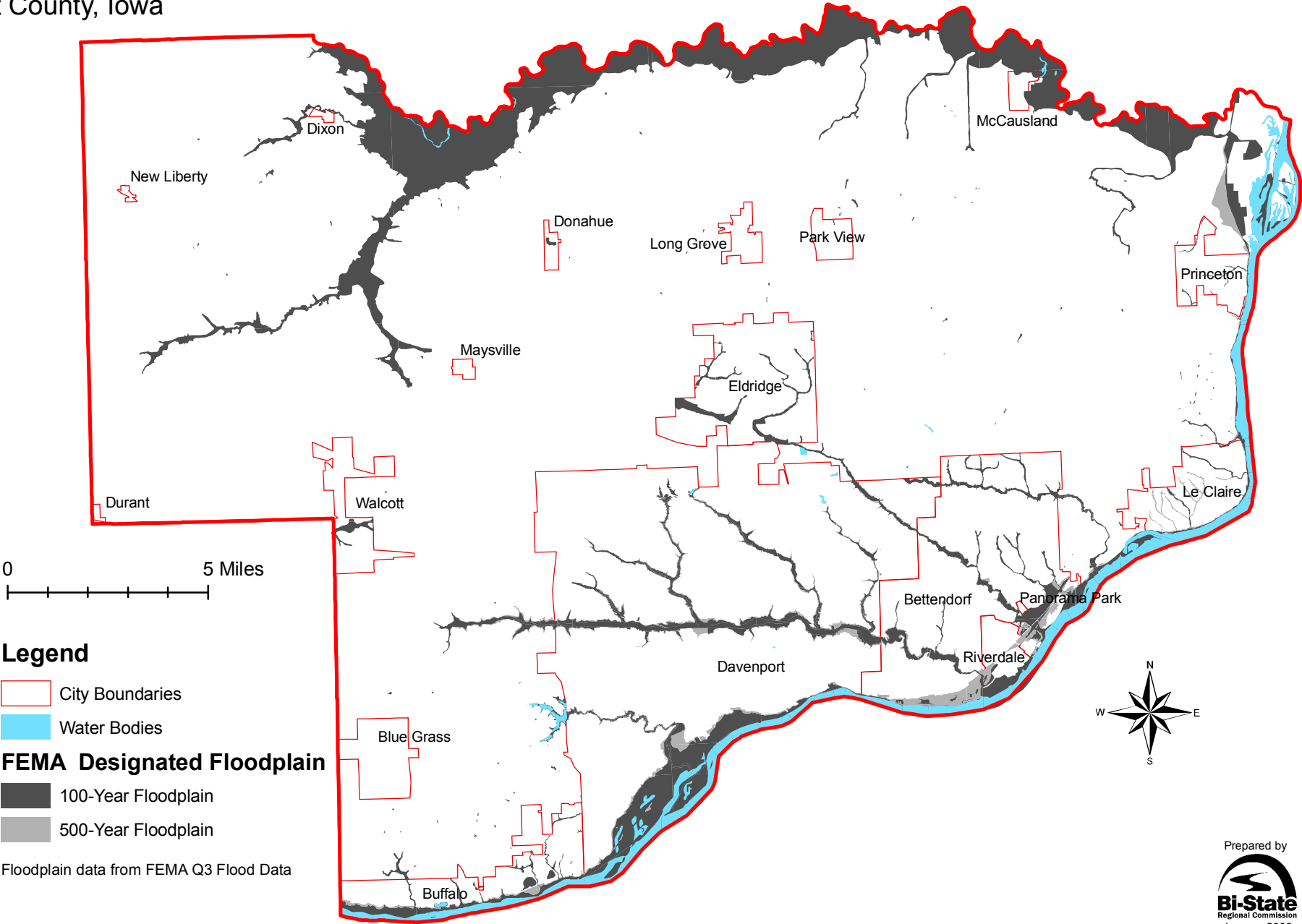


Prepared by



# Map 4.14 - Flood Hazard Areas

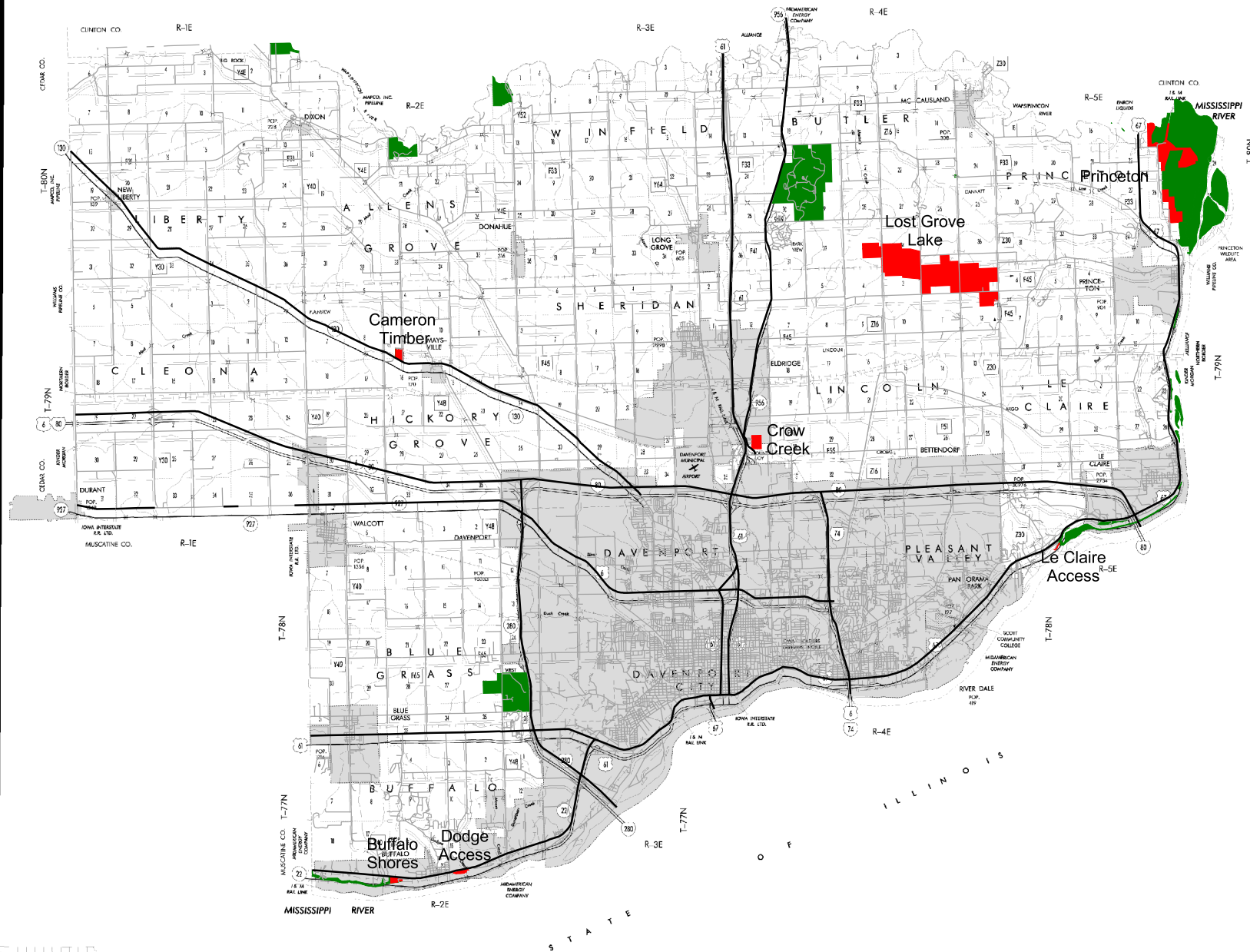
Scott County, Iowa





# Map 4.15 – Scott County Wildlife Management Areas

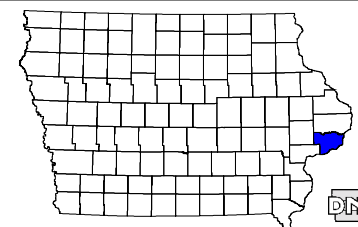
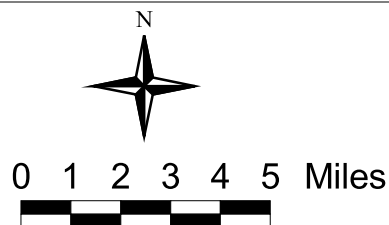
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Wildlife Areas

Other Public Lands

\*Northeast District  
Office Phone: (319)-927-3276  
\*Biologist Phone: (319)-652-3132





# Scott County Comprehensive Plan

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## Water Resources

Scott County possesses a number of water resources including the Mississippi and Wapsipinicon Rivers and their tributaries. Refer to Map 4.10 for water resources and watersheds in Scott County. The Mississippi River is one of the County's greatest natural resources. Geological forces of uplift and erosion created the ancient river valley, which evolved through four major glacial periods to the present river of today. Present day lowlands are remnants of ancient pathways of the river, now occupied by smaller rivers and streams. These lowlands are very level and poorly drained. Bluffs flank the river corridor from 100-200 feet (30-60 m) in height. The bluffs are capped by unconsolidated sand and gravel, forming alluvial terraces, which rest on sedimentary bedrock, including sandstone, limestone shale, and dolomite. Many underground aquifers produce high quality groundwater yields. Map 4.11 illustrates the groundwater provinces of Iowa.

Map 4.12 shows the buried valley aquifers of Iowa. The Cleona aquifer dissects the County from the northeast above Princeton to McCausland and heads west. The County has restricted the digging of sandpoint wells in the area of this aquifer. Scott County Code states: *"Driven and direct push wells. Sandpoint wells are typically constructed in sandy areas with a high water table. Groundwater in these areas is often susceptible to contamination. This type of construction is not recommended for potable water supply. In areas where nitrate level is above 45 mg/l, administrative authority approval shall be obtained to construct a sandpoint well. Sandpoint wells shall meet the requirements of this chapter except for casing depth and grouting requirements."* Wells in these areas have been known to contain high nitrates and atrazine. Map 4.13 shows the restricted area for sandpoint wells in Scott County.

There are no wild and scenic rivers and no sole source aquifers designated in Scott County.

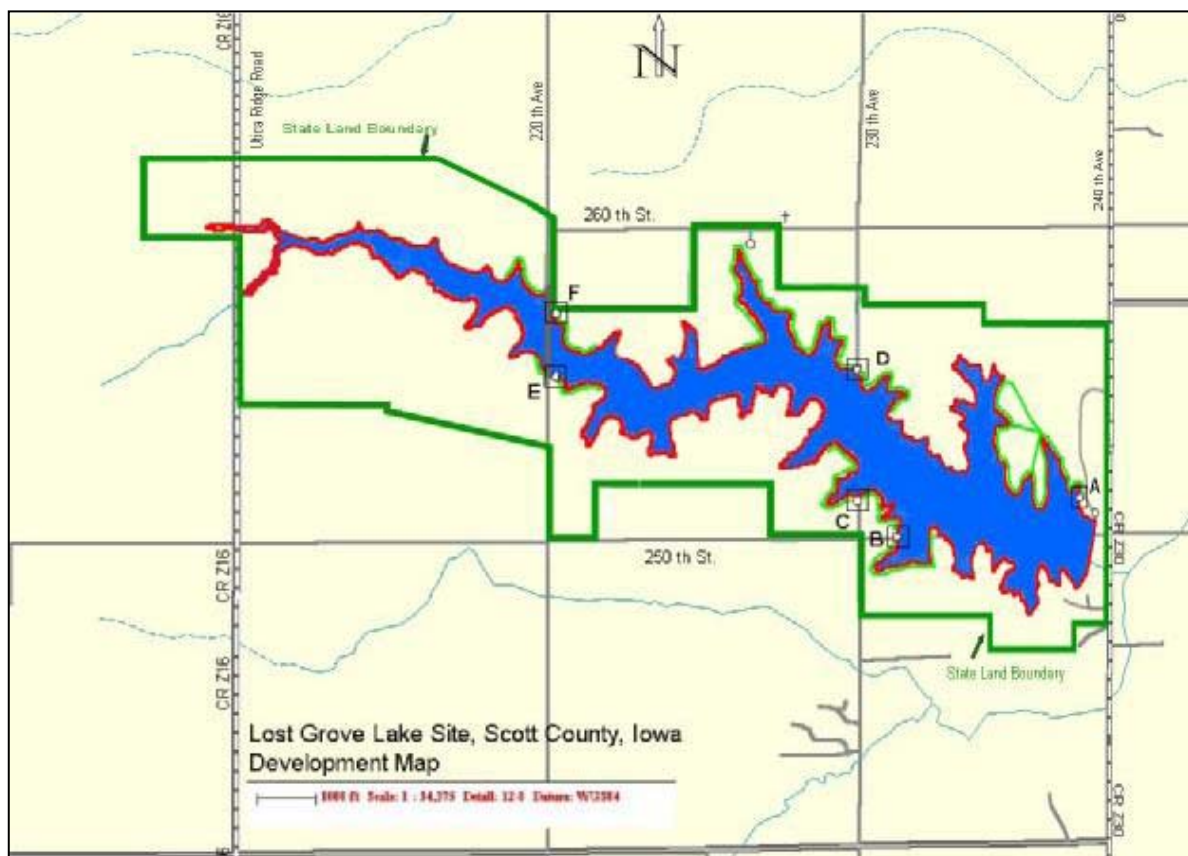
The Mississippi and Wapsipinicon Rivers and their tributaries overall provide relatively good drainage throughout Scott County. The Federal Emergency Management Agency (FEMA) has mapped Scott County for special flood hazard areas. There are a few communities protected by levees along the Mississippi River while others are not. It is important to examine how floodplains may impact land development. The U.S. Army Corps of Engineers regulates navigable waterways and should be consulted as development planning occurs in Scott County. Map 4.14 identifies flood hazard areas in Scott County.

Additionally, there are many wetlands in the County. Wetlands can be identified using U.S. Fish and Wildlife National Wetland Inventory Maps. Two of the largest wetlands are Nahant Marsh and the Princeton Wildlife Area. Map 4.15 shows the wildlife management areas in Scott County.

Lost Grove Lake located five miles northeast of Davenport is currently under construction. The feasibility study completed in 1987 determined it would be feasible and beneficial to Scott County to develop a 350-acre fishing lake. Between 1988 and 2003, 1,682 acres were purchased. The process of building the dam and relocating electrical lines in the basin started in August 2003, and the lake is currently filling. Map 4.16 shows the proposed Lost Grove lake shore and boat access areas.

# Scott County Comprehensive Plan

Map 4.16



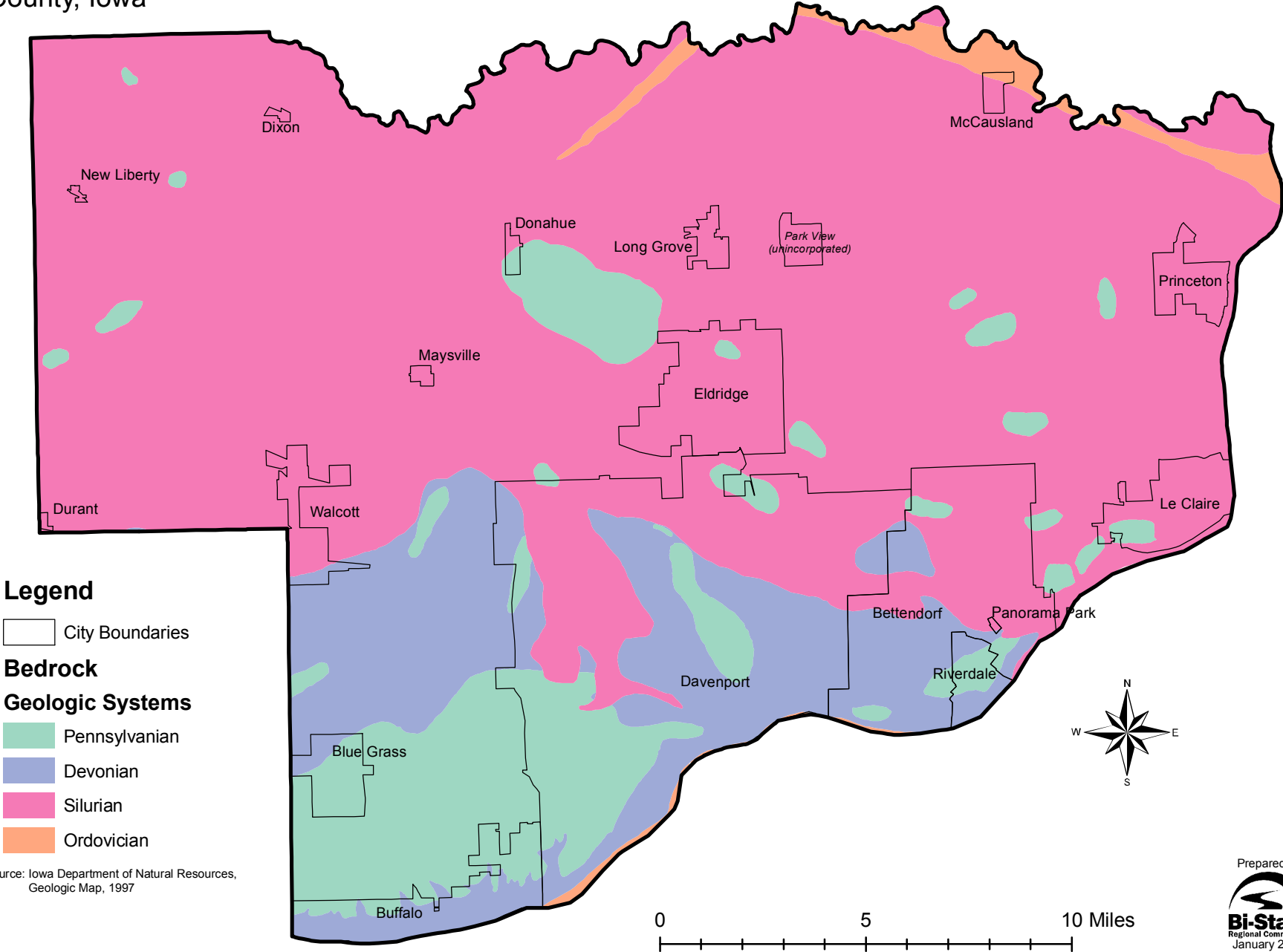
Proposed Lost Grove Lake shore and boat access areas.

## Natural Resources

The river setting provides critical resources for both humans and wildlife. The Mississippi River is a major water supply for several communities in Scott County. From a wildlife perspective, the Mississippi River is recognized as a “Nationally Significant Ecological Resource” by Congress. Area wetlands offer fish and wildlife habitats. The area of Scott County is part of the Mississippi Flyway for migratory birds. A significant population of eagles can be found wintering in the Quad City Metropolitan Area adjacent to the open waters of the Mississippi River and its tributaries. The river is also home to a tremendous variety of aquatic organisms. Extensive sport and commercial fishing activities occur in Scott County. The river contains over 30 species of freshwater mussels including the federally listed endangered Higgins’s eye pearly mussel. Other federal listed endangered species in the Quad City Metropolitan Area include at least 10 plants, 10 fish, 5 mammals, 2 insects, 2 reptiles, 7 birds, and 12 mussels.

# Map 4.17 - Bedrock Geology

Scott County, Iowa



Data Source: Iowa Department of Natural Resources,  
Geologic Map, 1997

# Scott County Comprehensive Plan

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## **Geology**

Map 4.17 shows the bedrock geology of Scott County. The County has had a long history of limestone and sand and gravel mining. The Silurian variety of limestone can be found in the eastern counties of Iowa including Scott County. The Linwood mine near Buffalo is the largest in the County and one of the largest underground mines in the country. According to the Linwood website “the quarry started in 1897 after high quality limestone deposits were uncovered in an existing quarry. Underground mining started in 1956. Two distinct ledges of operation yield high-calcium limestone. Both ledges meet Iowa's highest level of classification for concrete aggregates. In addition, the high purity of Linwood limestone makes it ideal for chemical production.

The Linwood mine operates 12 months a year and mines roughly 32 acres or 22 million tons annually. A proven limestone reserve of more than 400 million tons assures that Linwood will operate at high capacity levels into the 22nd century. In addition to limestone production, the mine also serves as a site for additional activities. A subterranean shop and office area allow for onsite equipment upkeep and careful monitoring of mining operations. Safety and corporate training also take place below, as well as fabrication and water storage.

There is some karst topography in Scott County in the area of the Linwood mine and in northwestern sections near New Liberty and Dixon. The Linwood mine area and nearby caves have also produced several types of crystals. The LaFarge quarry, west of the Linwood mine, contains Devonian-age Pinicon Ridge and Coralville Formations of barite, calcite (crystals, fluorescent), dolomite, marcasite (crystals), pyrite (iridescent), and sphalerite (Garvin 1998). The Linwood Mining and Minerals Corporation mine and quarry contains Devonian-age Pinicon Ridge and Otis Formations: barite (bladed, rosettes, dendritic), calcite (crystals), chalcopyrite (microcrystals, some included in calcite), dolomite, gypsum, marcasite, melanterite, pyrite, quartz, and sphalerite (Garvin and Crawford 1992; Dopier 1994). In quarries near Princeton in Silurian-age Niagarian Dolomite, pyrolusite (dendritic) has been found.

Some coal can be found in Scott County, but it has for the large part remained unmined. The coal seam is most likely the same as the Rock Island No.1 seam found in Illinois. Sand and gravel are also mined in several locations in Scott County.

## **Historic/Cultural Resources**

Scott County hosts a wealth of historic and cultural resources. There are areas of potentially archaeologically significant sites within Scott County. Native Americans historically lived along the shores of the area rivers and streams where remains of their culture can be found. There is a rich history of settlement as westward expansion of the United States created a crossroads of rail and river navigation in the heart of the Quad City Metropolitan Area. The first railroad bridge across the Mississippi River was located between Davenport and Rock Island. The Rock Island Arsenal was the site of Civil War activities, and there are many fine examples of Victorian era architecture among other building styles.

## **Scott County Comprehensive Plan**

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The area of Scott County was first settled in 1833 in a place called Valley City. Today it is an unincorporated area known as Pleasant Valley. By 1836, the first survey of public land in Iowa was called for, and by March of 1837, the Scott County area had been completely surveyed. Scott County was established in 1837 and was named in honor of General Winfield Scott, who presided at the signing of the treaty ending the Black Hawk War. The County's first elections were held in 1838 with the first courthouse being built by 1841. It was located on land donated by Antoine LeClaire in Davenport, at the same site as the courthouse today. The current courthouse was rebuilt in 1955 and continues to serve in a legal capacity. In addition to Mr. LeClaire and General Scott, another famous resident was William Cody who was born at the Cody homestead in rural Scott County in 1846 and became Buffalo Bill of wild west fame. (Source: <http://www.scottcountyiowa.com/history/> )

Today, Scott County residents can easily access cultural and recreation opportunities with the greater Quad Cities area including art galleries, botanical gardens, museums, an I-Max theater, historic sites, festivals, and professional sports venues such as John O'Donnell Stadium. Additionally, the 11,000-seat civic center, The iwireless Center in Moline, the Galvin Fine Arts Center, and the Alder Theater in Davenport provide settings for nationally touring plays, musicians, and other performance artists.