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Section 2 GENERAL HISTORY

The Tehama West Watershed has been influenced and changed by both man and nature. The arrival of Europeans in the middle of the nineteenth century has most recently influenced and changed the watershed. In the last 150 years Europeans have molded the watershed environment to fit their needs. The most significant impacts are related to the exclusion of fire, introduction of non-native grasses and brush species, as well as development and urbanization. Prior to the arrival of Europeans, native peoples also managed the landscape to meet their specific needs.

SOURCES OF DATA

The following data sources were used to develop the information presented in this section:

- National Agricultural Statistics Service
- Tehama County Museum
- Tehama County Agricultural Crop Reports
- United States Department of Agriculture Soil Survey of Tehama County
- California Department of Conservation Division of Land Resource Protection
- Tehama County Parcel Data

The National Agricultural Statistics Service (NASS) is responsible for collecting and analyzing agricultural statistical data. The first crop reports were released in July 1863. Subsequent crop reports have been released to provide farmers with detailed market information on a variety of commodities. Agricultural statistical data was available for Tehama County from 1880 to the present. Initially, reports were released in 10-year intervals and have been released in 5-year intervals since 1910. Tehama County Agricultural Crop Reports were analyzed for each of the years between 1950 and 2003. Crop Reports contain reports of acreage, as well as production and value of the agricultural crops produced in Tehama County. The information in these reports is derived directly from growers, processors, and government agencies. Primary soils data for Tehama County was extracted from the United States Department of Agriculture's Soil Survey of Tehama County from 1967. The California Department of Conservation's Division of Land Resource Protection was also an essential source of information regarding historic Williamson Act acreage and farmland protection and conservation. Data was compiled from the California Department of Conservation from 1992 to 2002 to monitor agricultural lands in Tehama County. An in-depth look at the 1998 to 2000 Tehama County Field Report and the 2000 to 2002 Tehama County Field Report were analyzed for this report. Data from the 2002 to 2004 report is not yet available and is not included in this report. Historical books and other documents were used to interpret historical agricultural conditions. Interviews with various farmers and ranchers in the county were also used to provide a source of local information.

NATIVE PEOPLE

The Nomlaki people, a division of the Wintu, were the first inhabitants of the watershed. Their territory extended from the crest of the Coast Range to the west, beyond the Sacramento River to the east, about Cottonwood Creek to the north, and into Glenn County to the south (Goldschmidt,

1951). There were two distinct Nomlaki divisions, the River Nomlaki and the Hill Nomlaki. The River Nomlaki occupied the area adjacent to the Sacramento River. The Hill Nomlaki occupied the areas to the west in the foothills. Much of the recorded information regarding the Nomlaki is sourced from the Hill Nomlaki (Goldschmidt, 1951).

The Nomlaki subsisted upon the natural landscape. Acorns, grass seeds, and tubers were primary vegetative products. Deer, elk, rabbit, misc. small game, birds and fish were primary staples. Fish were taken by hand, net, trap or by harpoons. Salmon were harpooned within shallow pools from the Sacramento River. At least eight varieties of acorns were consumed. Clover was an important food because it was the first fresh green food in the spring (Goldschmidt, 1951).

Only the men of the tribe did hunting. Although all men hunted, certain men specialized in hunting. The Nomlaki used bow and arrows, knotted mahogany clubs, nets, snares, slings, and traps. Slings were used to kill birds. Nets were used to trap deer, rabbits and quail. Deer and elk were run down in relays. Only the hunting specialists hunted bears, as the work was difficult and dangerous.

The Nomlaki selectively altered the natural landscape in settlement areas. It is believed that they recognized “fire weather,” the optimal conditions in which a ground fire could be lit and controlled by natural weather conditions and physiology. Burning specific plant species may have been practiced to improve and/or maintain plant diversity, or to promote the capture of insects or game animals. It is believed that fire was utilized by the Nomlaki in the forested area of the watershed on a small scale. Burning and other plant culture practices were passed from generation to generation, and required a sensitivity and knowledge of the landscape that today exists only with a handful of elders.

The Nomlaki were divided into numerous local groups, and not a unified tribe. Each group had a varied population, ranging from 25 to over 200 residents. Each local group had a central village and associated surrounding land. Each village had from five to fifty family houses. A typical Nomlaki village would contain a chief’s house, multiple family dwellings, a dance house, and a menstrual hut. The villages would commonly be adjacent to springs or creeks. These groups commonly had a second area of land in the higher elevations that they would move to during the summer (Goldschmidt, 1951).

The Nomlaki were hunter-gatherers that lived off the abundant resources. Trade within the Nomlaki was widespread and integral to their survival. The River Nomlaki traded fish to the Hill Nomlaki in exchange for seeds and animals. Trading outside of the tribe was primarily with the Yuki for salt. The pelt of the black bear was probably the most valuable economic item within the Nomlaki. Other hides, such as the otter and foxes, were valuable as quivers to store arrows. Feathers were also very important within the Nomlaki.

At first contact with early settlers, the Nomlaki most likely had a population of approximately 2,000 individuals (Goldschmidt, 1951). During the first decade of contact, their numbers were greatly reduced. During the 1830s, an epidemic decimated the population of the Nomlaki. A tribal fortuneteller tells of the coming settlers, “There are some people from across the ocean who are going to come to this country...They have some kind of boat with which they can cross, and they will make it. They are on the way...they have five fingers and toes; they are built like we are, only they are light” (Goldschmidt, 1951).

In September 1854, the Nome Lackee Indian Military Post was established near Paskenta. The reservation encompassed 23,000 acres. The post contained 600 fruit trees and had 1,000 acres of grain under production (Goldschmidt, 1951). There were five wells on the land and many domestic animals. The Nome Lackee Military Post existed for 7 years (Dutschke, 2004).

Life at Nome Lackee was difficult in the early days. An observation made in October 1854 showed 200 Indians lived on the post with little food or clothing (Goldschmidt, 1951). Conditions changed, and by August 1855, it was reported that about 1,000 well-fed and clothed Indians resided at Nome Lackee. By April 1856 records show between 1,500 and 2,000 Indians in residency. In September 1857 it was reported that between 2,500 and 3,000 Indians resided at the reservation. The Secretary of Interior called for the abandonment of Nome Lackee in 1859. Under the Appropriation Act of 1863, reservation lands were sold by the US government.

EUROPEAN EXPLORATION

The first European to enter the area was probably Hudson Bay trapper Louis Pickett. Pickett headed south in 1820 from the Hudson's Bay company headquarters at Fort Vancouver on the Columbia River in Oregon. It is possible that Pickett ventured as far south as Tehama County. In 1821 a Spanish expedition entered Tehama County. The explorers used the Sacramento River as a guide and followed the path of the meandering river past Red Bluff.

The first known American to enter Tehama County was explorer Jedediah Smith. Smith passed through present-day Tehama County in April of 1828. Smith and his exploration party of 18 men and 300 horses and mules stopped along the Sacramento River near Red Bluff to construct a skin canoe to cross the river. Smith chronicled his adventures as he passed through California seeking a route to Oregon.

The Hudson Bay Company was responsible for sending fur trappers to Northern California throughout the early 1800s. The company had a headquarters at Fort Vancouver, located on the banks of the Columbia River in Oregon. The trappers were responsible for some of the earliest trails, maps, and charts of the area. Beaver was the most prized species for the fur trade. Both beaver and otter were heavily trapped in the region. The unrestricted trapping eventually led to the drastic reductions in beaver and other populations in the local streams. This led to the decline of the fur trade in the region. In 1845 the Hudson Bay Company withdrew their trappers from the region.

In 1833 Hudson Bay Company trapper John Work and his expedition accidentally infected Native Americans with either malaria, influenza, smallpox, or cholera. This initial contact is believed to have spread throughout the entire Native American population in the northern Sacramento Valley. This led to a severe depopulation of the Native Americans in this region (Goldschmidt, 1951).

In 1844 General John Bidwell, William Chard, A.G. Toomes, R.H. Thomes, J.F. Dye, and Pierson B. Reading traveled to the area. These men made notes that the area was occupied only by Indians, large herds of elk and antelope, and an occasional grizzly bear. Wild oats were growing on the soils and grew as high as the skirt of a saddle. These men decided this was the "Promised Land" and immediately put petitions in for a rancho location. These petitions were eventually granted, and became the first Mexican Land Grants established in Tehama County.

Mexican Land Grants

Mexican land grants were the first attempts at permanent settlement in Tehama County. Tehama County had 131,379 acres awarded in seven land grants. The land grants averaged 20,000 acres each. In the Tehama West Watershed, a few large land grants helped pave the way for establishment of Tehama County.

Rancho de Los Saucos (Ranch of the Elder Trees) was granted to Robert Hasty Thomes in 1844. This grant was approximately 6,800 acres and was situated between Thomes Creek on the south and Elder Creek on the north. Rancho de las Flores (Ranch of the Flowers) was granted to William Chard in 1844. This was the smallest of the land grants and included land between Elder Creek and Oat Creek. It contained approximately 13,300 acres and included the present towns of Gerber and Proberta. Rancho Barranca Colorada (Ranch of the Red Banks) was granted to Josiah Belden in 1844. This land grant included land immediately north of Las Flores. This rancho was bounded on the north by Red Bank Creek. This property later became the property of William B. Ide. An area was settled by William C. Moon, Ezekiel Merritt, and Henry L. Ford. These men never received grants for the land nor did they buy it. This land was situated south of Thomes Creek and to the west of the Sacramento River. This land contains the present town of Corning (Tehama County Museum 2005).

Gold Rush Era

In 1848 California was forever changed with the discovery of gold by John Marshall at Coloma. Later that year, Pierson Reading discovered gold at Reading's Bar in Shasta County. Soon, Euro-Americans swarmed to California from all other states. Although gold was not heavily mined in the Tehama West Watershed, the gold rush era played a significant role in the development of early Tehama County.

Originally, Tehama County was a portion of Shasta County (see Figure 2-1). As the southern communities of Shasta County grew, county residents felt the county seat, Shasta City, was too far away. In 1852 the first steps to form a new county were taken, but to no avail. In December of 1855, another attempt to create a new county was made. On February 23, 1856, E.J. Lewis introduced a bill to the state legislature to create Tehama County. On April 9, 1856, Tehama County was created from the neighboring counties of Shasta, Butte, and Colusi (the original name of Colusa County). Initially, the town of Tehama was to be the county seat. On May 17, 1856, the first Board of Supervisors meeting was held at the county seat in Tehama. Many citizens felt the flood-prone location of Tehama was a poor choice and the county seat was eventually moved to Red Bluff.

HISTORY OF TRANSPORTATION

In 1849 the first-known steamboat, the "Washington," owned by Peter Lassen, brought supplies up the Sacramento River. Mr. Lassen had a land grant at Deer Creek, and arrived at his rancho on the mouth of Deer Creek. The steamboat soon sank after the trip. In 1850 the second steamboat to enter the area was the "Jack Hayes." This steamer arrived at the town of Tehama, which, at the time, was the farthest upstream a steamboat had ever been on the Sacramento River. For more than a year Tehama was the head of river navigation for the Sacramento River.

The town of Red Bluff was soon established as the primary location for navigation on the Sacramento River. Steamboats traveling up the Sacramento River brought essential supplies for the mining camps in the northern portion of the region. In 1852 Red Bluff was receiving many smaller steamers, better equipped to traverse the Sacramento River.

By 1853 Red Bluff had become a bustling community. Warehouses sprouted up along the banks of the river to handle the incoming supply cargoes and the outgoing cargoes of wool, wheat and other farm goods. The supplies were unloaded in Red Bluff and transported by ground to the various mining camps in the area. Although Red Bluff was a critical location for navigation on the river, the variable Sacramento River made river travel unreliable. Due to sand bars, shallow summer depths and snags, the river passage to Red Bluff was only accessible eight months out of the year. By 1854 the California Steam Navigation Company was in control of river traffic on the Sacramento River.

The arrival of the railroad in Tehama County was critical during the early stages of development of the area. Reliable transportation was critical in the development of the county's infrastructure. In December 1872 the Central Pacific Railroad was completed to Red Bluff. Soon, large warehouses were built along the tracks in Red Bluff to store the agricultural commodities of wool, sheep and cattle, which were being shipped out of the area. This reliable distribution center for agricultural commodities helped shape the area as an agricultural crossroads.

The railroad was granted land by the federal government as a way to defray costs. In addition to the right-of-way, the railroad was granted alternate sections of non-mineral land for each mile of rail constructed. The railroad had the responsibility of selling this land to help defray the construction costs. In 1879 the railroad had received title to the land and immediately established a campaign to liquidate the properties. This land was selling from between 5 and 25 dollars an acre in the 1880s, with the creek land being the most expensive.

SETTLEMENT HISTORY

The settlement of Tehama County was largely based on small communities. Each community played an integral role in the development of the county, especially those of Corning and Red Bluff.

Corning

Corning has probably the most unique history of any town in the Tehama West Watershed. In the 1840s, William Moon and his partners, Henry L. Ford and Ezekial Merritt, settled on land approximately one mile south from the present day Woodson Bridge. A house was constructed that served the purposes of an inn, tavern, and stage station along the California-Oregon Trail. A ferry was also installed to carry travelers across the Sacramento River during the early 1850s.

In the mid 1850s, a cousin of Henry Ford, Nathaniel Merrill, purchased 640 acres south of Moon's place. Merrill was allowed to buy the land due to the Preemption Act of 1853, which enabled squatters to buy public land at \$1.25 an acre. The first reported commercial wheat crop in Tehama County was produced on this land. George Hoag, a native of Scotland, also played a role in the early settlement of Corning. Hoag was the first settler in Tehama County to raise both sheep and grain, and had a ranch that encompassed 4,560 acres. The railroad drew settlers, many of who were

squatters, and by 1872 most of the land surrounding present-day Corning had been settled. These scattered dwellings became known as Scatterville.

In 1872 Charles Rice settled on 160 acres west of present-day Corning and built a general store. He is responsible for changing the name from Scatterville to Farmington. Soon, his general store and hotel attracted 14 other businesses. Many farmers were attracted to the area by the very successful farming of rye, barley and wheat. In 1876 Rice applied for a post office. The application was denied because an existing post office was already established at another Farmington. The Post Office suggested a name change, so Farmington became Riceville. On April 5, 1881, the post office was established.

In 1881 and 1882 the Central Pacific Railroad was expanding through the area. The railroad was situated one mile to the east of Riceville. The residents decided that the future of the town would be with the railroad, so it was decided to move the entire town. In September, 1882, the houses, stores, and workshops were pulled on huge logs to the new location.

Now, with the settlement of Riceville adjacent to the Central Pacific Railroad, the town flourished. The Pacific Improvement Company, a development firm and subsidiary of the Central Pacific Railroad, named the new settlement after John Corning, an executive of the Central Pacific Railroad. Soon, Corning was approximately 161 acres in size and was the shipping center for the area.

As the town of Corning was bustling, two entrepreneurial men, Charles Foster and Warren Woodson, had a dream that would forever change the destiny of Corning. In the early 1890s, 3,107 acres east of Corning were purchased for \$77,675.00 (\$25/acre) to be developed as the Maywood Colony. This land was subdivided into 10-acre plots. The lots were sold with the intent that a family could make a living off the land and afford the mortgage. The intent was for the family to sell fruit as a revenue source.

Extensive advertising in newspapers throughout the nation told the story of the Maywood Colonies, and fueled the development of the town of Corning. Gimmicks were created to entice potential parcel buyers. Ministers were given discounts on the purchase price of their own parcels for each new buyer they could find. They even had a rebate system of \$45 cash to every person who bought a 10-acre parcel before January 7, 1893. The Maywood Colony was also promoted at the Chicago World's Fair in 1893. Over \$500,000 was spent on advertising throughout the years to turn the Maywood Colony dream into reality.

Although there was a large investment in advertising, a large investment was also made in developing the infrastructure of the Maywood Colony. Extensive fruit trees were planted, with 900 trees as the average planting on a 10-acre site. Orchardist George H. Flournoy was hired to assist with planting and developing the orchards. Almonds, apples, black walnuts, cherries, figs, grapes, lemons, olives, oranges, peaches, pears, pecans, and plums were planted extensively. The olives produced the best out of any of the fruit trees. Men were hired to care for the orchards, and by 1893 a crew of 70 men was tending to the newly planted orchards.

In 1893 the Maywood Addition was established 160 acres east of the railroad. This was laid out with the intent to build a cooperative cannery and packing house, and to provide space for a central park, now designated as Woodson Park. In 1895 Maywood Colonies Nursery was established and many

trees were planted around the town of Corning, including many of the palm trees that line the streets today. The palm trees were planted to demonstrate the unique climate of Corning.

In 1899 the Maywood Colonies Fruit Association was established to assist in the processing of fruit. Soon many of the orchards were in full production, and the capacity of the processing facilities soon were increased. In the winter months of 1899 and 1900, the Maywood Colonies Fruit Association was responsible for planting more than 2,000 acres of fruit trees in the Corning area.

Red Bluff

The town of Red Bluff was primarily shaped by the Gold Rush. Once gold was found in 1848, many prospectors headed to California. Once the southern gold fields were inundated with miners, many miners headed to the northern gold fields. The best mode of transportation was steamboats up the Sacramento. For a while, the town of Tehama was the head of navigation on the river. The seasonal flooding at Tehama was not conducive to the establishment of a large-scale community. Looking farther upstream, Red Bluff was chosen as an ideal location for a commercial center that would fit the needs of the northern Sacramento Valley.

The exact location for Red Bluff was chosen by two investors, Colonel Sachell Woods, a Presbyterian Minister, and Colonel Charles Wilson, a partner of Peter Lassen. The site was chosen because of a plateau high above the floodplain. The first survey of the area was completed in 1850.

William Myers was the earliest settler in the area and he established a homestead. This homestead was soon recognized as the Red Bluff House, which served as an inn for travelers through the Sacramento Valley. Additional settlements followed in the area.

The settlement at this time did not have an established name. The names that were associated with this settlement included Reedsburgh, Cavertsburgh, Bulltown, Red Cliff, and Frogtown. Red Bluffs was referred to as the general area of the settlement. By 1856, the town took the name of Red Bluffs and dropped the “s” at the end.

During this formative period for Red Bluff, a devastating fire in Shasta City, the Shasta County seat to the north, established Red Bluff as a permanent settlement. The fire in Shasta City burned nearly everything to the ground, and the settlers soon started re-building the town. Cargo necessary to the development of the town had to be sourced from Red Bluff. This dramatic boom in trade secured the future of Red Bluff.

Over the next few decades Red Bluff prospered. The census in 1870 indicated that the town’s population had swelled to approximately 2,000 residents. During the 1870s, many events helped pave the way for additional development in Red Bluff. The most important event that occurred was the Central Pacific Railroad coming to town in 1871. In 1876 the Sierra Flume and Lumber Company established one of the most complex lumber operations in the world, building a new factory on the east bank of the Sacramento River across from Red Bluff. Also during the 1870s, a water service, gas lights, and a fire company were all established in Red Bluff. The Centennial Free Bridge was completed in 1876, allowing lumber to be transported by rail across the Sacramento River to the Central Pacific Railroad tracks.

FARMING

Number of Farms

The number of farms in Tehama County has fluctuated dramatically over the years. Early in Tehama County history Mexican Land Grants helped pave the way for settlement of the area. These large tracts of land were soon subdivided into smaller farms in the late 1800s and early 1900s (Phillips & Miller, 1915). In the late 1800s, the number of farms reported in Tehama County ranged between 600 and 800. By 1910 over 1,000 farms were in existence, and by 1945 there were 1,890 farms reported, the largest number in county history. Since the 1940s, the number of farms have steadily decreased until the early 1970s, where in 1974, 1,160 farms existed. The reduction in farm numbers most likely was the consolidation of existing farms, creating a larger average farm size. In 2002 Tehama County reported a total of 1,573 farms, down 6 percent from 1,679 farms reported in 1997.

Average farm sizes in Tehama County can be traced back to the late 1800s. In 1880 the average farm size was 820 acres. Since that time, average farm sizes fluctuated between 600 and 1,000 acres. During the 1930s and the 1970s average farm size increased. During the 1920s and between the 1940s and 1950s, the average farm size has decreased. Average farm sizes are depicted on Figure 2-2. More recently, average farm sizes in the county has decreased substantially. In 1974 the average farm size was reported at 1,083 acres. In 2002 the average farm size was reported at 548 acres, the lowest ever recorded for Tehama County. The average farm size in California is 346 acres (National Agricultural Statistics Service, 1987, 1992, 1997, 2002).

Total acreage in farms increased from the 1880s until the mid 1970s. During this time total acreage peaked at nearly 1.3 million acres. From 1970 to the late 1980s, total acreage exhibited a slight decline. Between 1987 and 1997, it was reported that total farm acreage dropped from 1,104,584 acres to 885,426 acres (NASS 2004). Total farm acreage is depicted on both Table 2-1 and Figure 2-3.

Year	Orchard	Cropland	Total Farm Acres
1950	10,673	281,710	1,131,660
1954	11,338	186,859	1,161,699
1959	15,203	N/A	1,254,707
1964	14,620	N/A	1,168,133
1969	21,948	147,752	1,101,562
1974	20,093	138,669	1,256,010
1978	26,985	156,827	1,165,043
1982	32,497	160,359	1,168,247
1987	32,908	131,869	1,104,584
1992	35,422	120,902	1,016,851
1997	36,956	127,019	885,426
2002	45,236	140,987	862,440

Source: National Agricultural Statistics Service

Cropland

Land used for crop production has fluctuated much over the years. Data indicates that at its peak in 1950, over 280,000 acres in Tehama County was designated as cropland (NASS, 2004). Many lands were farmed without irrigation, producing dryland grain hay and other crops. This trend has slowly decreased over the years, with a low in the 1990s around 120,000 acres. In 2002 total cropland was estimated at 140,000 acres. Cropland acreage trends are summarized on Table 2-1 and Figure 2-4. Major crop types over time are included in Figure 2-5.

Grain Production

Grain production in Tehama County has decreased significantly in recent years. Barley, oat, and wheat were widely produced and were very important economic crops. Many areas in the lower rolling foothills on the west side of the county were used historically for dryland grain farming (Smith, 1997). Other than a few remnant producers, dryland grain crops have been nearly eliminated from production in Tehama County. The low prices for grain and the increased costs of production are largely responsible for the decline in grain production. Grain production is depicted on Figure 2-6. Hay production is included on Figure 2-7.

Rice Production

Rice production has also seen a major decline in the past 2 decades. Plantings of rice date back to the early 1980s, when nearly 3,000 acres were produced (NASS 2004). In 2003 only 600 acres were reported (Tehama County 2003). Increases in the cost of water have nearly eliminated water-intensive crops such as rice from agricultural production in Tehama County. Rice production is depicted on Figure 2-8.

Orchard Production

Orchard production in Tehama County was initially reported by the NASS in 1930. During the 1930s to the mid 1960s, orchard production remained stagnant with an approximate 10,000 to 15,000 acres in production. By the late 1960s total orchard production jumped to over 20,000 acres. Since this time, total orchard production has experienced a steady increase to 45,236 acres reportedly in orchards in 2002 (NASS, 2004). Tehama County orchards are predominantly walnuts, prunes, almonds, or olives. Total orchard acreage trends are summarized on Table 2-1 and Figure 2-4. Specific orchard crop production trends are depicted on Figure 2-9.

The combination of the availability of irrigation water, advances in irrigation technologies, relatively good commodity prices for orchard crops, in addition to the availability of processing facilities have been mainly responsible for the drastic increase in the acreage planted in orchards. Many orchards have been established in western Tehama County on clay soils with drip irrigation. Earlier in Tehama County history, other factors that led to the increase in orchard plantings were the construction of Shasta Dam in 1945, which drastically minimized the flood risk of prime agricultural lands adjacent to the Sacramento River; the development of the Red Bluff Diversion Dam combined with the Tehama/Colusa Canal and the Corning Canal; and the reduction in copper mine pollution from lower Shasta County in the early 1900s (Kristofors, 1973).

Walnuts are the most widely planted crop in the county, with a steep increase in plantings occurring in the 1990s. Walnut acreage in the watershed is currently estimated at 14,057 acres (Tehama County 2003).

Almonds have seen a tremendous increase in plantings in the early 1980s and somewhat stagnant growth in the early 1990s. Since the early 1990s, almond acreage has increased gradually, with a reported 7,268 acres in production in 2003 (Tehama County, 2003).

Dried plums have been a steadily high-valued crop in the county for decades. Dried plums were produced on 8,848 acres in 2003 (Tehama County 2003). More recently, overproduction has led to the U.S. Department of Agriculture's (USDA) voluntary tree removal program in Tehama County.

Olives have remained the most stable orchard crop in Tehama County. In 1978 Bell-Carter Foods Inc. purchased the Maywood Olive Company, the only major olive processing facility in the county. The facility, located in Corning, was renovated and opened in 1980. Since that time, Bell-Carter Foods has been the primary olive processing facility in the county, selling olives under the Lindsay Olives brand name (Bell-Carter, 2004). Olives are currently produced on 5,560 acres in Tehama County (Tehama County, 2003). Olives are planted primarily around the Corning area.

Other crops, such as peaches, historically were a large orchard crop in Tehama County. In 1909 it was reported that 2,891 acres were planted to peach production (Grimes, 1983). In 1975 peaches were reportedly produced on 884 acres, and by 1985, the acreage dramatically dropped to 83 acres. The reduction in prices and marketing outlets are a few of the many reasons for the decline of the production of this crop.

Livestock Production

Tehama County serves as winter grazing ground for many northern California and southern Oregon cattlemen. Historically and to the present, cattle are wintered in the lower foothills of Tehama County and summered in the mountain meadows in Tehama County and other surrounding counties (Briggs, 1956). Some livestock producers keep cattle on irrigated pasture on the valley floor during the summer months. Most of the early settlers in Tehama County depended primarily on livestock for their livelihood. In the late 1800s, of the farms reporting inventories, sheep production was much more prolific than cattle or hog production. The large sheep herds of the past are gone, and now beef cattle production is the largest livestock industry in the county. Livestock populations are depicted on Figure 2-10.

General Cattle

Cattle inventories in Tehama County have drastically increased over the years. In the late 1800s cattle numbers ranged near 10,000 head (NASS 2004). Over the next century cattle numbers steadily increased to a peak in the 1970s with around 100,000 head. In 2002 total cattle inventories for Tehama County indicate approximately 68,000 cattle in the county. Two reasons for the drastic increase in cattle numbers was an increase in cattle commodity prices and the reduction of sheep populations in the county (Briggs, 1956).

Urban developments threaten the winter ranges in the foothills. Irrigated pastures serve as a location for cattle in the summer months, and have been slowly reduced over the years. The increasing cost of water and the high land values are challenges to a low-value crop such as irrigated pasture.

Hogs

Hog production was widespread in the late 1800s and the early 1900s, with the average hog population around 20,000 head residing in the county in any given year. Over the years this number has experienced a steady decline. In 2003 only 1,000 domestic hogs were reported in the county (Tehama County 2003). It should be noted that wild pigs have been introduced into certain portions of the county over the years. The lower foothills on the west contain wild pig populations.

Sheep

Sheep were historically the largest livestock commodity in Tehama County. The first reported estimate of sheep populations occurred in 1880, when 121,963 sheep were reported. Sheep production was much more common than cattle production during the early settlement of the county because they were primarily nomadic (Wentworth, 1948). Sheep production in Tehama County peaked in 1930, with nearly 350,000 head. This number has steadily declined since then, and in 2003 only 5,800 head reportedly resided in the county (Tehama County 2003). Reasons for sheep numbers declining include the dramatic increase of predators, reduction in mountain summer ranges available to grazing, low commodity prices, and the availability of labor for sheep-herders (Briggs, 1996).

Poultry

Chickens and turkeys historically were a large commodity in Tehama County. Over the years, these populations have drastically declined. Chickens especially have declined over the years. In 1939 nearly 135,000 chickens were reported in the county. Poultry populations have been declining for many years now. Population estimates are not calculated by the local Ag Commissioner's office due to the low number of poultry in the county.

Grazing

By the late 1800s, most of the agricultural land within what is today the Mendocino National Forest had been used for grazing, preempted, or homesteaded. Congressional authority in the 1850s and 1860s allowed legal land acquisition by Euro-American settlers. Passage of the Homestead Act in 1864 allowed settlers to gain legal title to lands squatted in the 1850s. The general pattern of Euro-American settlement within and around the forest was clearly established by the 1870s.

Range grazing and ranching were California's first major industry. The rangelands of California were rapidly stocked after the Gold Rush, with an increase from 300,000 animals (cattle and sheep) in 1850 to nearly 5 million in 1880. After 1850 and reaching a peak in 1910 to 1920, much grazing occurred in open conifer types and mountain meadows.

Moving sheep into the high country was in large part a response to drought in the 1860s affecting herds in the Central Valley. Following the Civil War, a high tariff was placed on wool to keep out foreign competition. Wool production became one of the country's major industries. Ranching communities began to take on a more gentrified appearance.

Grazing pressures increased due to rapid population growth and demand for meat in the San Francisco Bay Area. There was also a demand for beef in the lumber camps along the coast, and mutton was shipped as an inexpensive substitute for beef. Due to increasing demand and coyote predation, by 1900 many sheep ranchers had switched to cattle.

Grazing caused multiple, cumulative effects and native grasslands were greatly altered by livestock use. Records in diaries, early botanical collections, interviews, and vegetation studies suggest that the replacement of the largely perennial California prairie by annual grassland with few perennials occurred from 1850 to 1880. Sheep introduced from other areas spread non-native plant species, carrying seed on their wool and hooves, and in their manure. These hardy, non-native annual species became abundant, and native grassland vegetation was further reduced by later cultivation, road building, severe droughts, urbanization, and other causes.

Range burning was a major grazing-related impact which altered the ecology and productive capacity of the forest. Sheep herders allowed overgrazing of open grass areas, and as these areas became depleted, began to burn timber and thickets to open them up for browse production. Repeated burning caused permanent soil loss in open areas, and thinning and increased fuel loads in timber. Early officials, likely concerned about the viability of tree seedlings, noted that in the late nineteenth century “it was possible to count over 100 fires from one high point.” Hunters, lumbermen, and others also set fires.

In 1907, Theodore Roosevelt created the Stony Creek Forest Reserve, renamed the California National Forest and finally the Mendocino National Forest in 1932. The Stony Creek Forest Reserve was created to “protect the headwaters of streams that will some day be developed for irrigation”. At the time of its creation, overgrazing, damage due to stockman’s fires, and moving management toward silviculture were the immediate concerns of early Forest Service officials. For over 75 years there was an integral relationship between grazing and wildland fires on the lands that became part of the forest. Early forest officials were torn between allowing grazing-related burning to continue to help in reducing fuel loading for fire protection, and concern over the other effects of fire. Early forest policy focused on the establishment of individual ranges or grazing allotments based on accessibility and the carrying capacity of the land. Between 1910 and 1920, forest officers surveyed and defined specific grazing allotments within the forest. Due to extensive resource damage, the Forest Service undertook gradual reductions in grazing levels, reducing sheep and goat grazing across the forest while increasing cattle grazing, then eventually removing sheep altogether.

Despite efforts to systematize grazing management, a 1924 inventory found that over 100,000 acres across the forest may have been impacted enough to injure forage and affect forage reproduction. Without protection, the A-horizon of the soil in many areas was eroded by winter rains, creating large barren areas devoid of vegetation that still exist today. The intense grazing of the nineteenth century had also degraded riparian and water resources in the forest, despite the numerous, small-scale, early water developments such as log troughs created to preserve local water sources. Despite these impacts, in 1925 grazing was still the largest source of revenue on the forest, exceeding other resource-related industries. Figure 2-11 shows vegetation change over time in the watershed from 1977 to 2002.

In the 1920s and 1930s, massive poisoning programs conducted by the U.S. Biological Survey to reduce livestock predators and rodents on federal lands decimated the targeted species, but also had major impacts on other furbearers, birds, and domestic animals. According to reports filed in the 1920s, U.S. Biological Survey crews had eliminated almost all the ground squirrels on the forest. In addition, the report noted that many “egg-eating animals” were also reduced or eliminated. Ranchers also used poison to eliminate species thought to be a threat to livestock. Coyote, mountain lion, bear, and other predators were affected.

Timber

It was not until the 1920s that the Pacific Southwest Region of the Forest Service began to exploit the timber resources of the Mendocino National Forest. Logging is tied to forest road access. Prior to 1920, timber within the forest was usually harvested by small operators. Mills were established just above the valley floor and moved farther into the forest in the late 1800s when wagon roads were built. In 1925 most of the forest's timber was still considered inaccessible. It was not until after World War II that virgin stands of timber at the higher elevations were harvested.

Timber production in the area of the forest during the nineteenth century was directed almost entirely to markets within the state, but following the development of transcontinental railroads and the opening of the Panama Canal, markets in other regions of the United States and even export markets became important to California mills.

Due to market collapse in the Depression (1930s), logging was not an important activity at that time. However, this period was the greatest episode of trail and road building on the forest. The Civilian Conservation Corp built many roads and trails between 1933 and 1941. Their activities had three important results: establishment of a basic road system within the forest, access to more timber stands, and employment of otherwise jobless workers from throughout the country. During and after World War II large trucks were available to haul timber made accessible by the new road system. Major congressional appropriations for road construction to support timber harvest occurred in the late 1950s and 1960s.

Forest timber outputs remained relatively constant in the early to mid 1980s, but have declined significantly during the 1990s. Although average annual timber sale volumes from the forest during 1978 through 1987 were 84 million board feet (MMBF), the volume sold in 1989 was 54 MMBF. By 1991, 27 MMBF of timber were sold. Current projections are that timber supply levels from the forest during the 1990s will be 65-75 percent below those of the 1980s. Timber prices have meanwhile trended upward.

Starting in the 1960s, as timber harvest became increasingly important on national forest lands, a series of public land management compliance measures came into effect, all of which have affected management of the Mendocino National Forest. The Multiple-Use/Sustained Yield Act of 1960 and the National Forest Management Act (NFMA) of 1976 established a process for managing National Forests including the development of forest plans. In 1969 the National Environmental Policy Act (NEPA) was passed, and in 1994 the Record of Decision for the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species within the Range of the Northern Spotted Owl (NWROD) was signed. This decision established late-successional reserves and is incorporated into the Mendocino National Forest Land and Resource Management Plan (LRMP), signed in 1995.

The Wilderness Act was passed in 1964. In 1977 the Forest Service started a second Roadless Area Review and Evaluation (RARE II) to determine additional backcountry areas meeting the criteria for wilderness. In 1984 the California Wilderness Act was passed, designating some RARE II lands as wilderness. Those areas not designated were officially released to multiple-use management upon Forest Plan signature. However, management such as timber harvest within released RARE II lands remains controversial due to the continued roadless nature of many of the areas.

Timber has always played a large role in the economy of Tehama County. Timber harvesting zones in the county are located on the eastern and western mountain slopes. Timber harvesting over the years has faced an overall decline. Throughout the 1980s timber harvesting in Tehama County extracted an average of 140 million harvested board feet annually. In the 1990s the average timber harvested dropped to below 100 million harvested board feet annually. In the 2000s timber harvesting continues to drop below historical numbers. In 2003 approximately 74 million board feet of timber were harvested. This indicates nearly a 50 percent decrease in production compared to timber harvesting levels from the 1980s. In 2003 the gross value for timber production in the county was estimated at \$17 million. Timber production is shown on Figure 2-12.

HISTORY OF WATER DEVELOPMENT

Throughout the historical past, water was a deciding factor in settlement and land use in and around the forest. Alternating periods of drought and flooding caused California Indians to move their settlements, caused early settlers to move their livestock to the Coast Range to escape high water or diminishing forage, and destroyed valuable crops on the valley floor. Water was a major issue for early settlement and homesteading in and around the forest area of the watershed. Homesteads were frequently abandoned when wells went dry. Drought, rainfall, and flooding affected agricultural and industrial growth and development. Agriculture-related irrigations systems and water impoundments were introduced in the Sacramento Valley as early as the 1850s.

Irrigation has led to the intensification and development of agriculture in Tehama County. The first irrigated field was supposedly located in Rancho Bosque, a Spanish land grant. A gristmill operated by waterpower was supposedly the first water extraction device for irrigation purposes somewhere between 1847 and 1852 (Gowans, 1967). In 1855 an irrigation ditch was created off of Elder Creek, supplying water to a fork of Mill Creek, which provided water to a ranch near Paskenta (Bedford, 1991). Since that time, ditches were commonly constructed adjacent to streams to provide water for irrigation.

The livestock industry has played a significant role in the development of stock ponds and reservoirs. Between 1938 and 1954, 554 stock ponds and reservoirs were constructed in the county, with an estimated storage capacity of 3,349 acre-feet (Gowans, 1967). These stock ponds were primarily constructed in the lower foothills of western Tehama County, and many have the ability to hold water year-round. On the east side of the county, stock ponds were constructed by digging out small basins down to the bedrock. These smaller basins hold water for livestock during the winter and spring months, but soon dry out during the summer.

In 1935 the authorization of the Central Valley Project helped paved the way for the construction of Shasta Dam (United States Bureau of Reclamation, 2004). The construction of Shasta Dam in 1945 was significant to water availability in Tehama County. An extension of the Central Valley Project that directly benefited the Sacramento Valley included the Sacramento Canals Unit, which was designed to provide irrigation water for Tehama, Glenn, and Colusa Counties. The Sacramento Canals Unit was authorized on September 29, 1950. This unit included the construction of the Red Bluff Diversion Dam, Corning Pumping Plant, Tehama-Colusa Canal, and the Corning Canal. The Red Bluff Diversion Dam diverts water from the Sacramento River to the Corning and Tehama-Colusa Canals. This project was completed in August 1964. Central Valley projects are shown on Figure 2-13.

The Tehama-Colusa canal serves water to Tehama, Glenn, Colusa, and Yolo counties. The canal is 110.9 miles long with eight different canal reaches. Reaches six and seven were completed in 1979, and the last reach, reach eight, was complete in May 1980. The Tehama-Colusa Canal has a capacity of 2,530 cubic feet per second (cfs) (USBR, 2004).

The Corning Canal diverts water from the Tehama-Colusa Canal. This canal is 21 miles long and terminates 4 miles southwest of Corning. Construction of the canal started in November 1954 and was primarily completed in May 1957. The entire project was completed in July 1959. The Corning Pumping Plant diverts water at the Red Bluff Diversion Dam from the Sacramento River. The pumping plant was completed in November 1960. The Corning Canal has a capacity of 500 cfs (USBR, 2004).

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1850



1860



1870

FIGURE 2-1
EARLY COUNTY BOUNDARY CHANGES
TEHAMA WEST WATERSHED ASSESSMENT

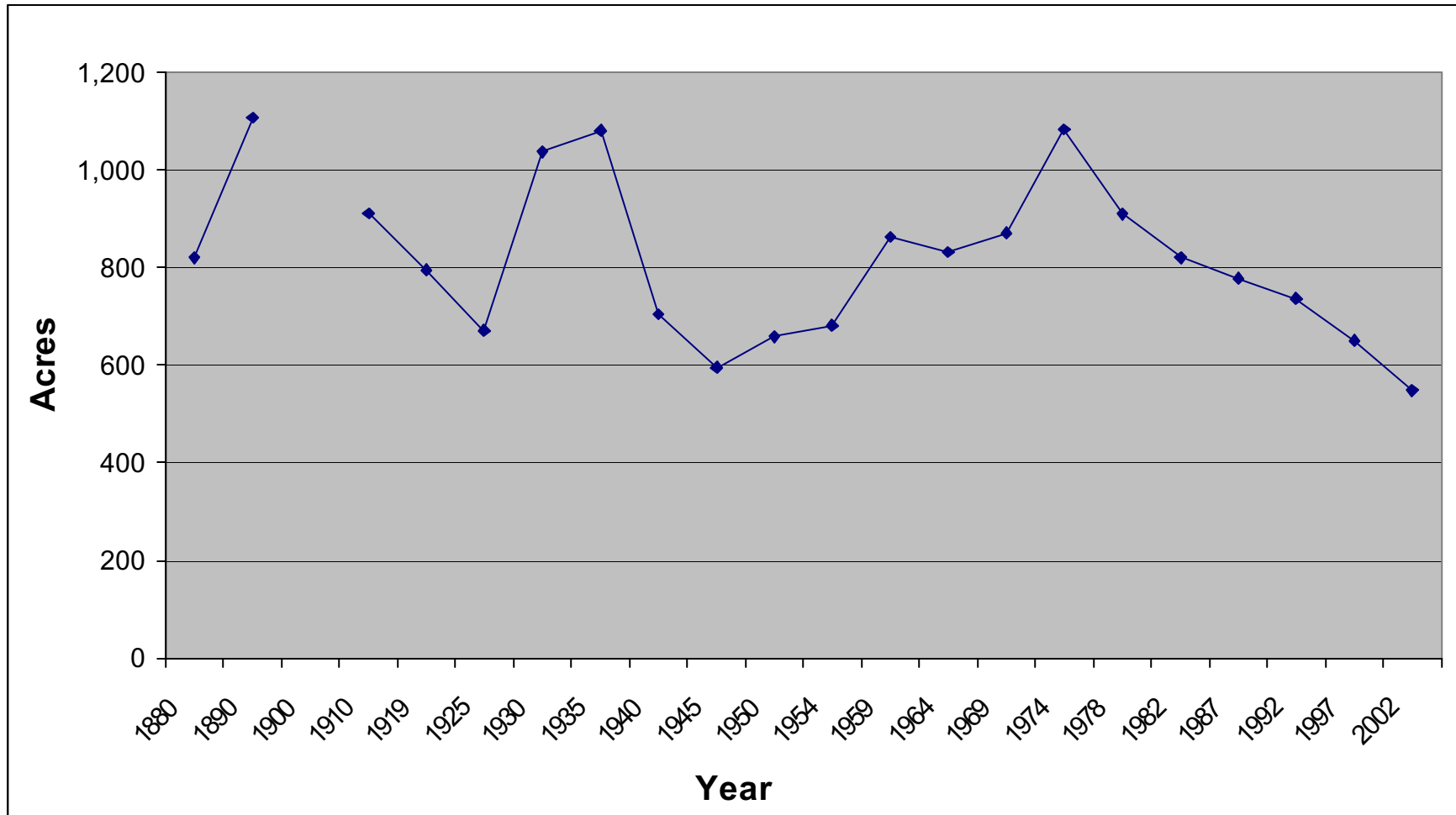


FIGURE 2-2
 AVERAGE FARM SIZE, 1880-2002
 TEHAMA WEST WATERSHED ASSESSMENT



SOURCE: NATIONAL AGRICULTURAL STATISTICS SERVICE

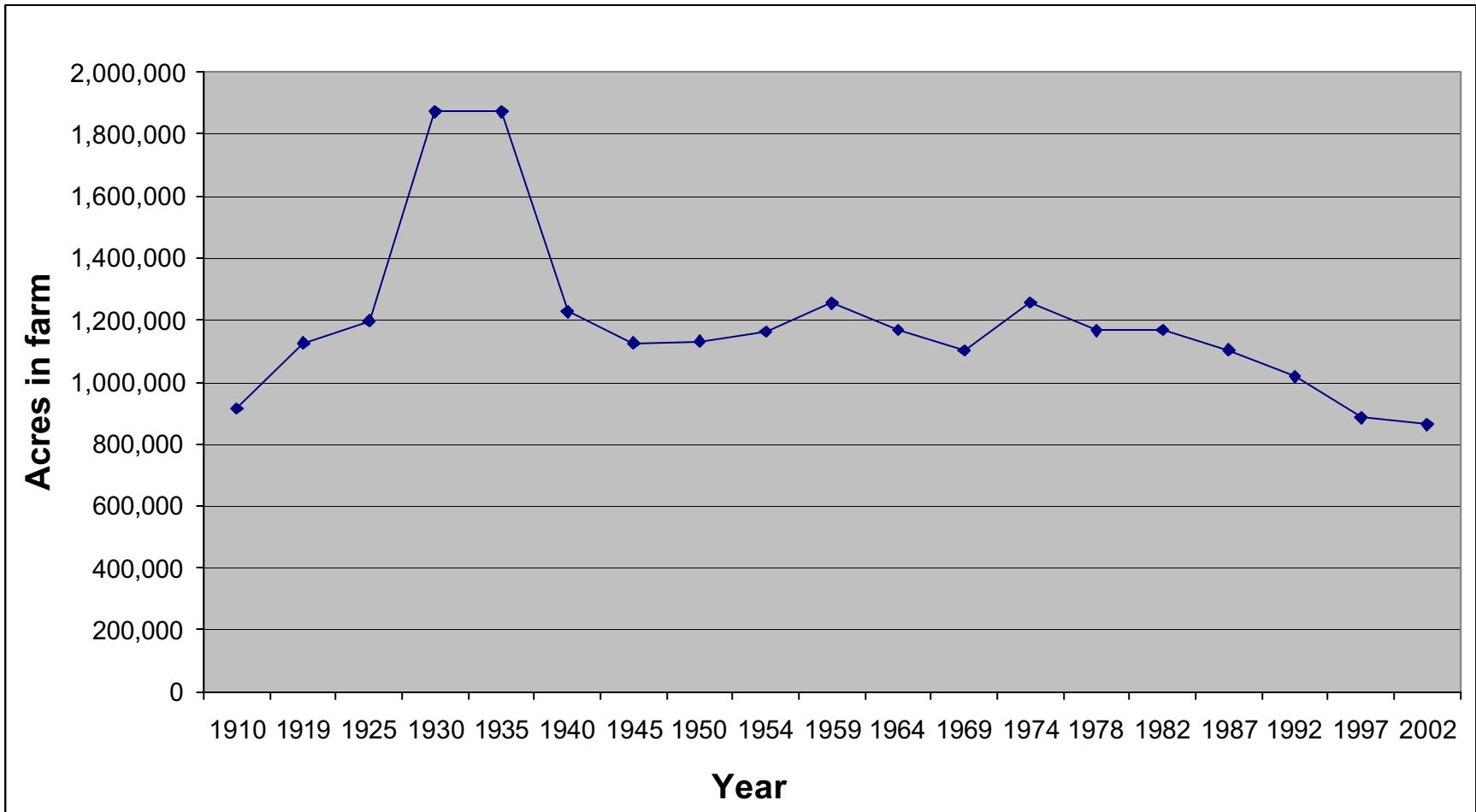


FIGURE 2-3
TOTAL FARM ACREAGE, 1910-2002
TEHAMA WEST WATERSHED ASSESSMENT



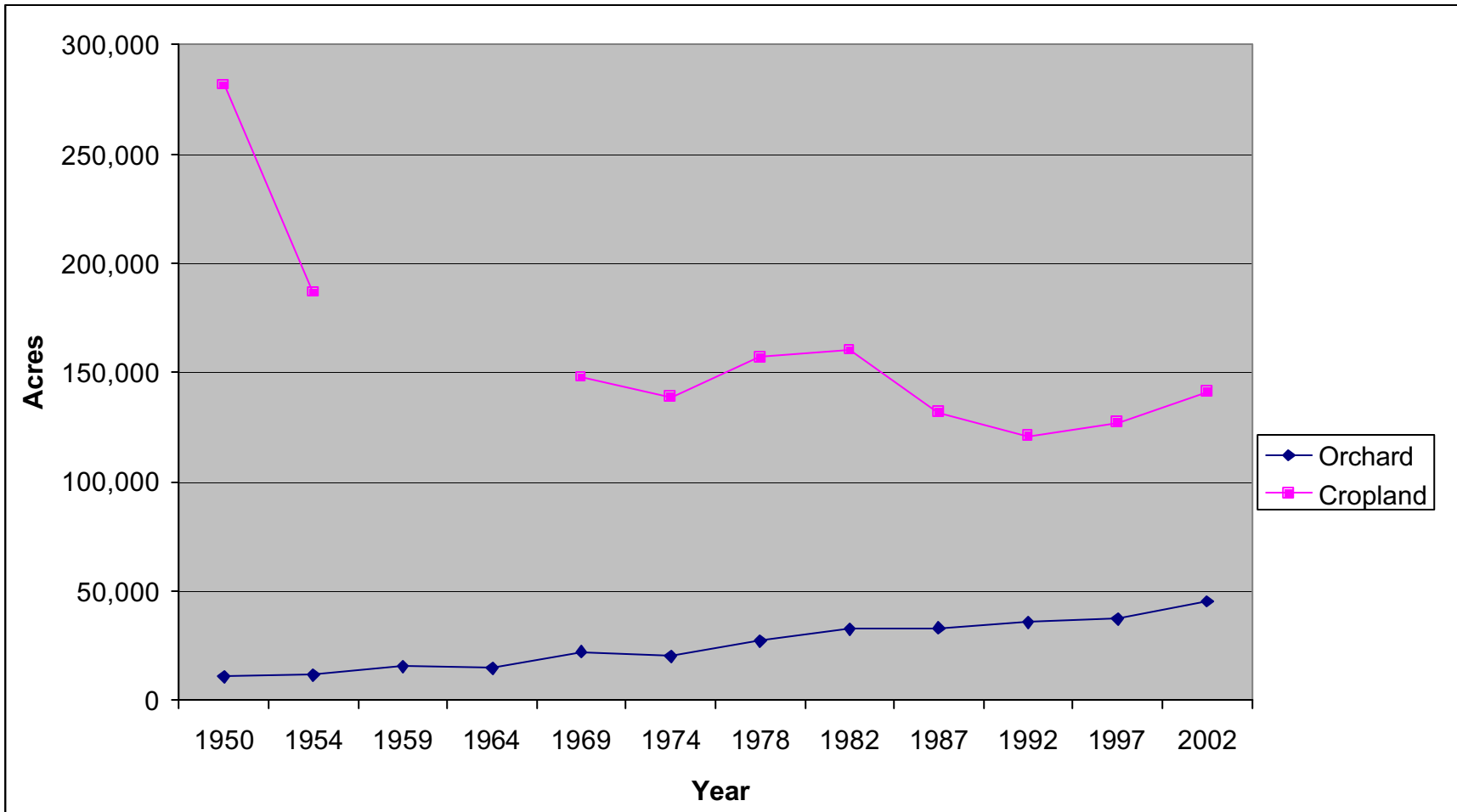


FIGURE 2-4
 ORCHARD AND CROPLAND ACREAGE TRENDS, 1950-2002
 TEHAMA WEST WATERSHED ASSESSMENT



SOURCE: NATIONAL AGRICULTURAL STATISTICS SERVICE

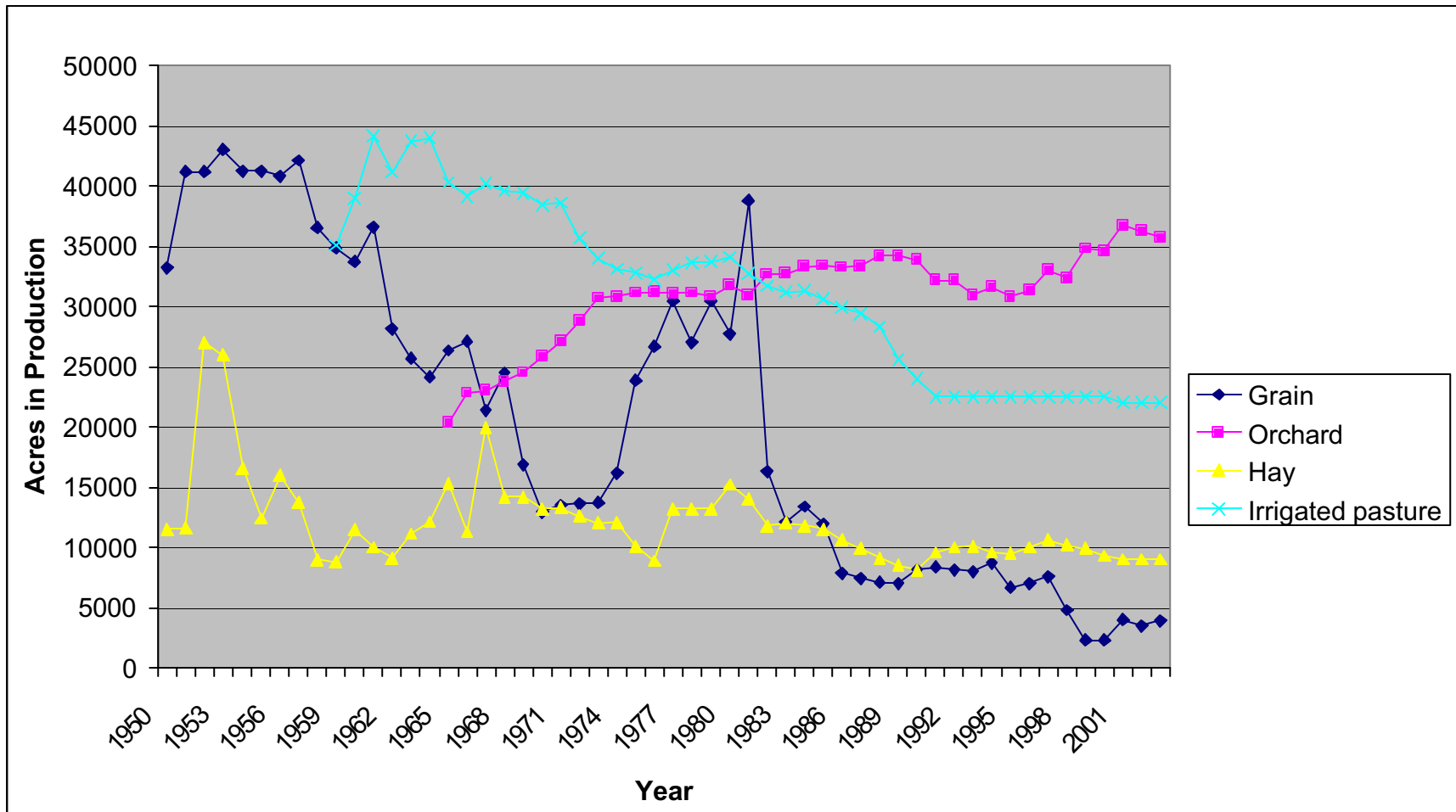


FIGURE 2-5
 MAJOR CROP TYPES, 1950-2003
 TEHAMA WEST WATERSHED ASSESSMENT



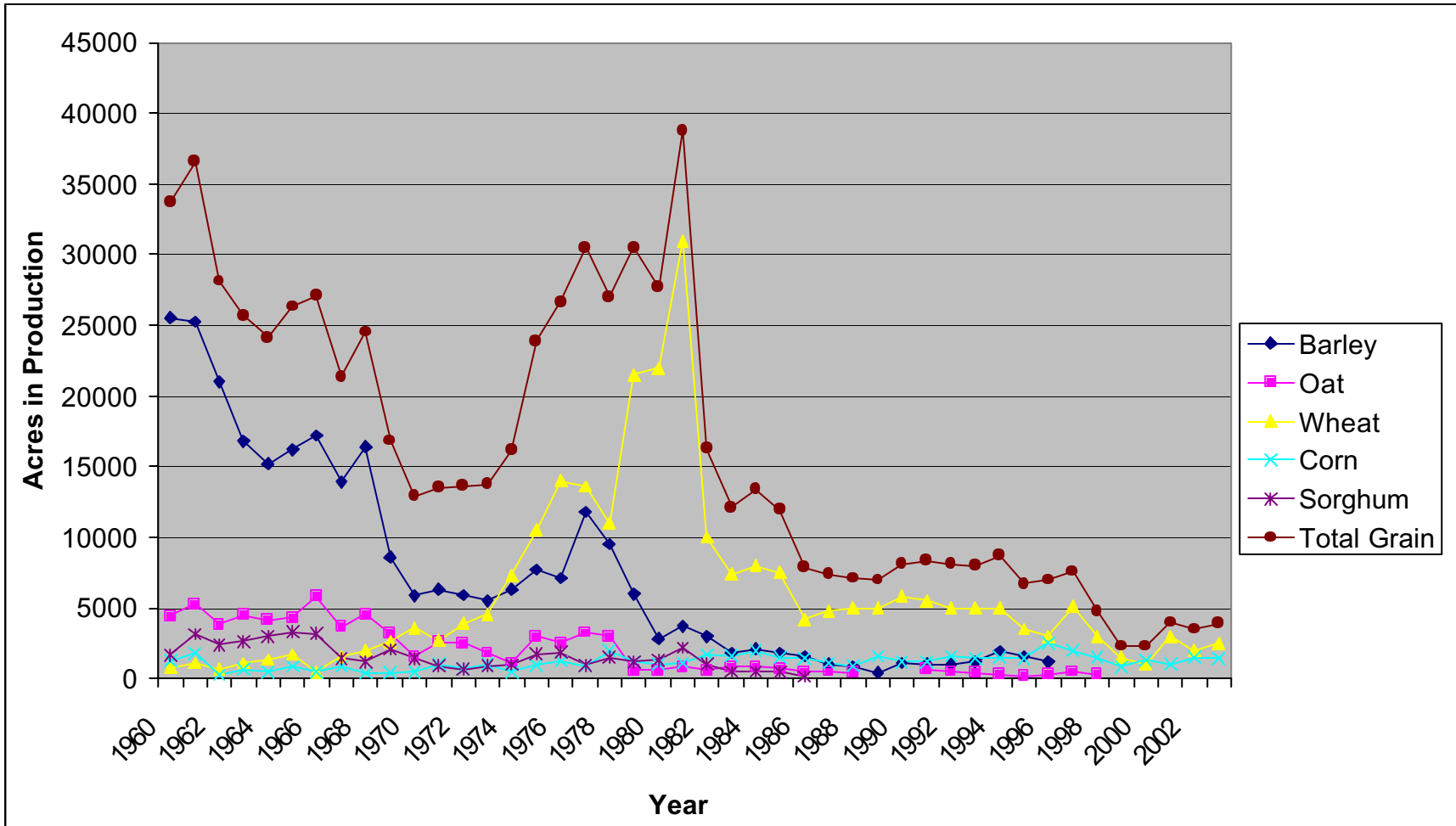


FIGURE 2-6
 GRAIN PRODUCTION, 1960-2002
 TEHAMA WEST WATERSHED ASSESSMENT



SOURCE: TEHAMA COUNTY AGRICULTURAL CROP REPORTS

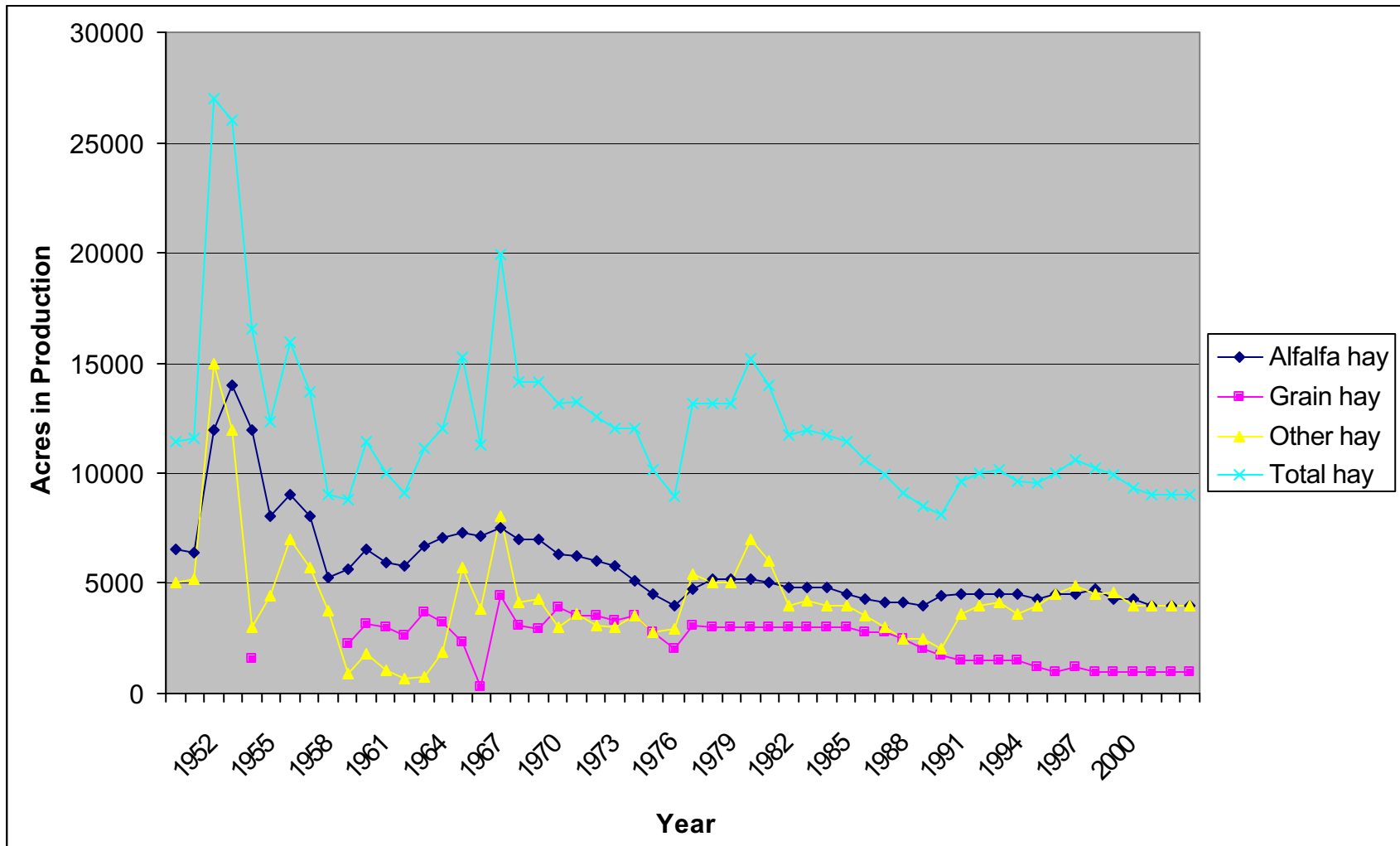


FIGURE 2-7
 HAY PRODUCTION, 1950-2003
 TEHAMA WEST WATERSHED ASSESSMENT



SOURCE: TEHAMA COUNTY AGRICULTURAL CROP REPORTS

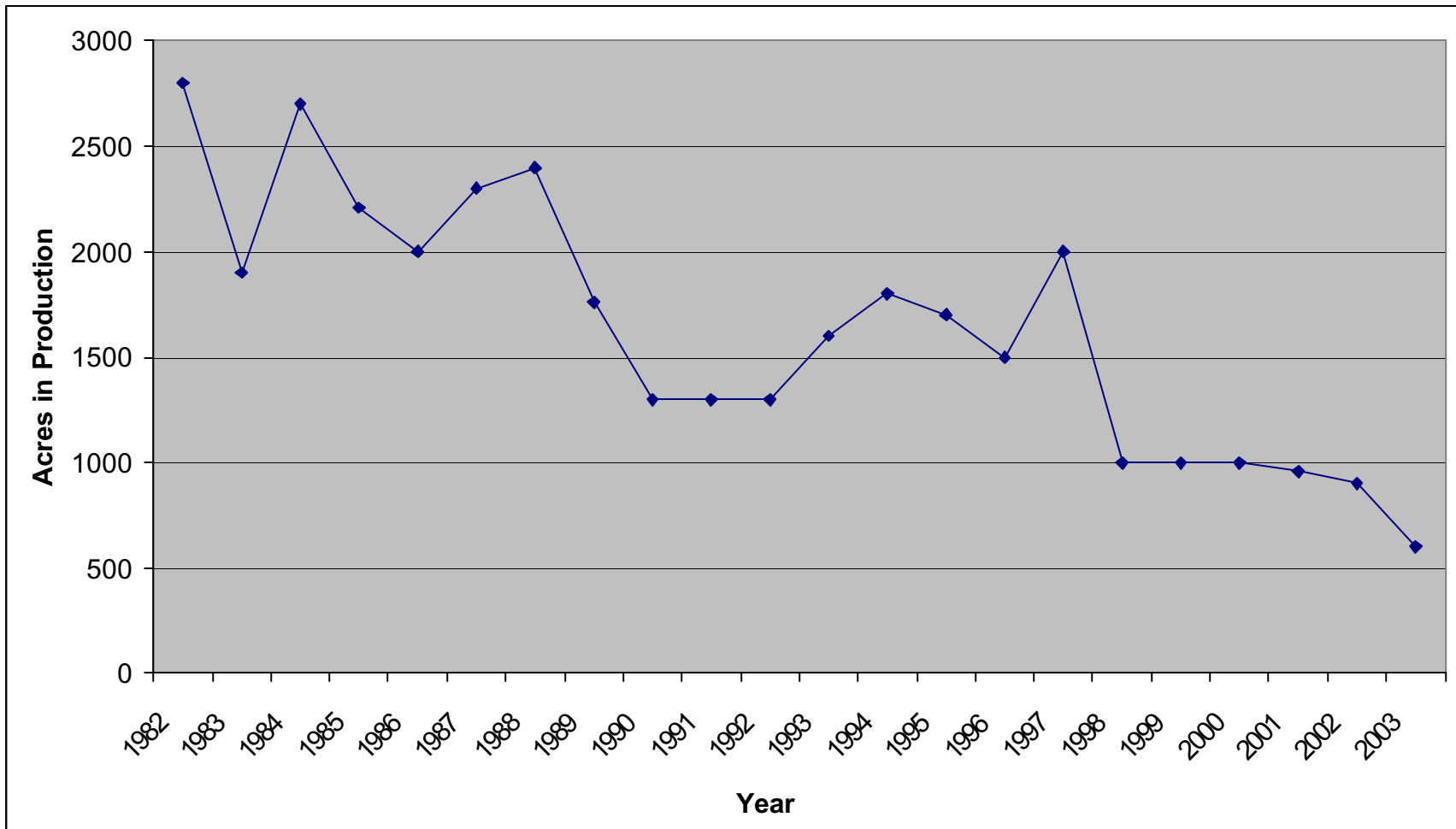


FIGURE 2-8
 RICE PRODUCTION, 1982-2003
 TEHAMA WEST WATERSHED ASSESSMENT



SOURCE: TEHAMA COUNTY AGRICULTURAL CROP REPORTS

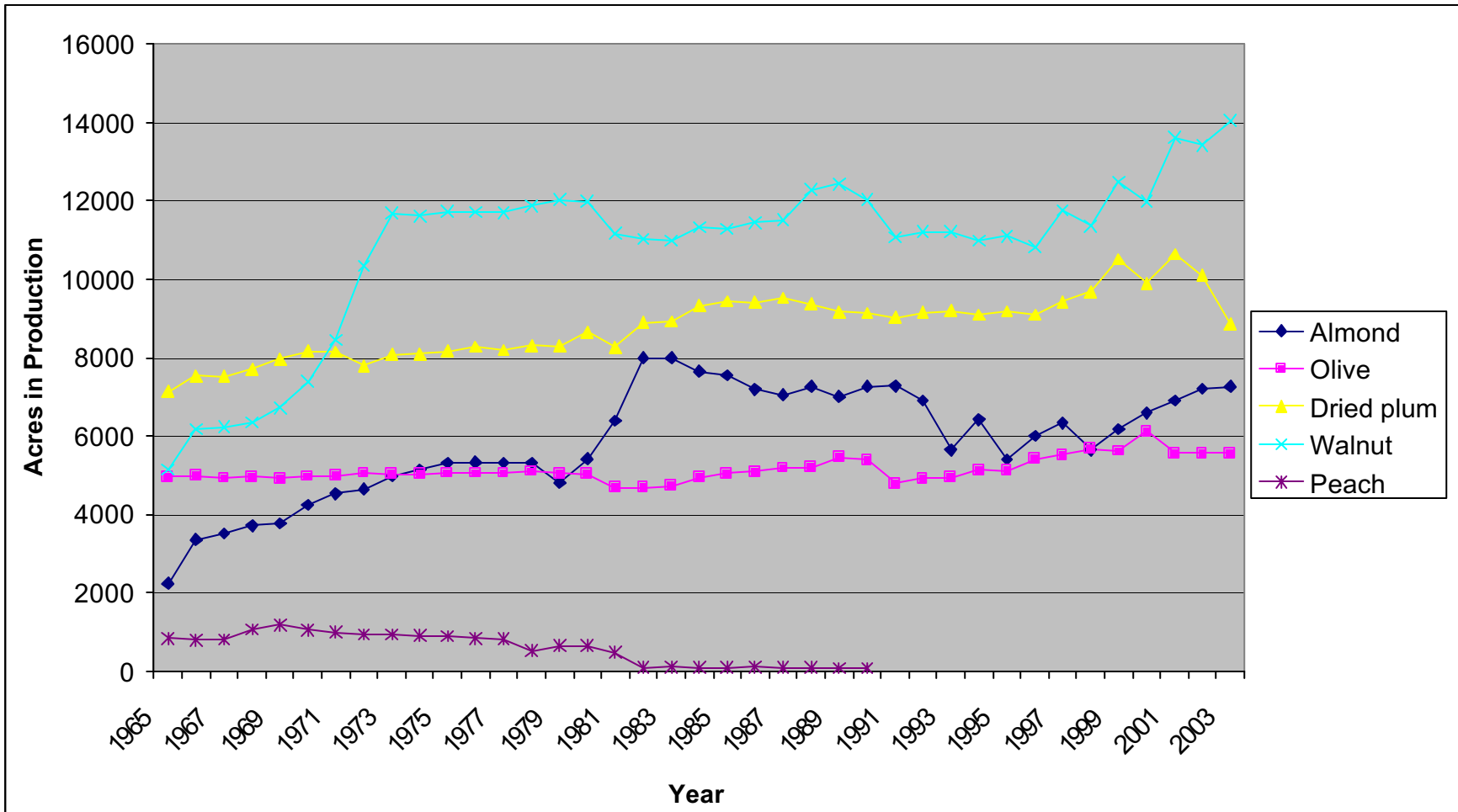


FIGURE 2-9
 ORCHARD PRODUCTION, 1965-2003
 TEHAMA WEST WATERSHED ASSESSMENT



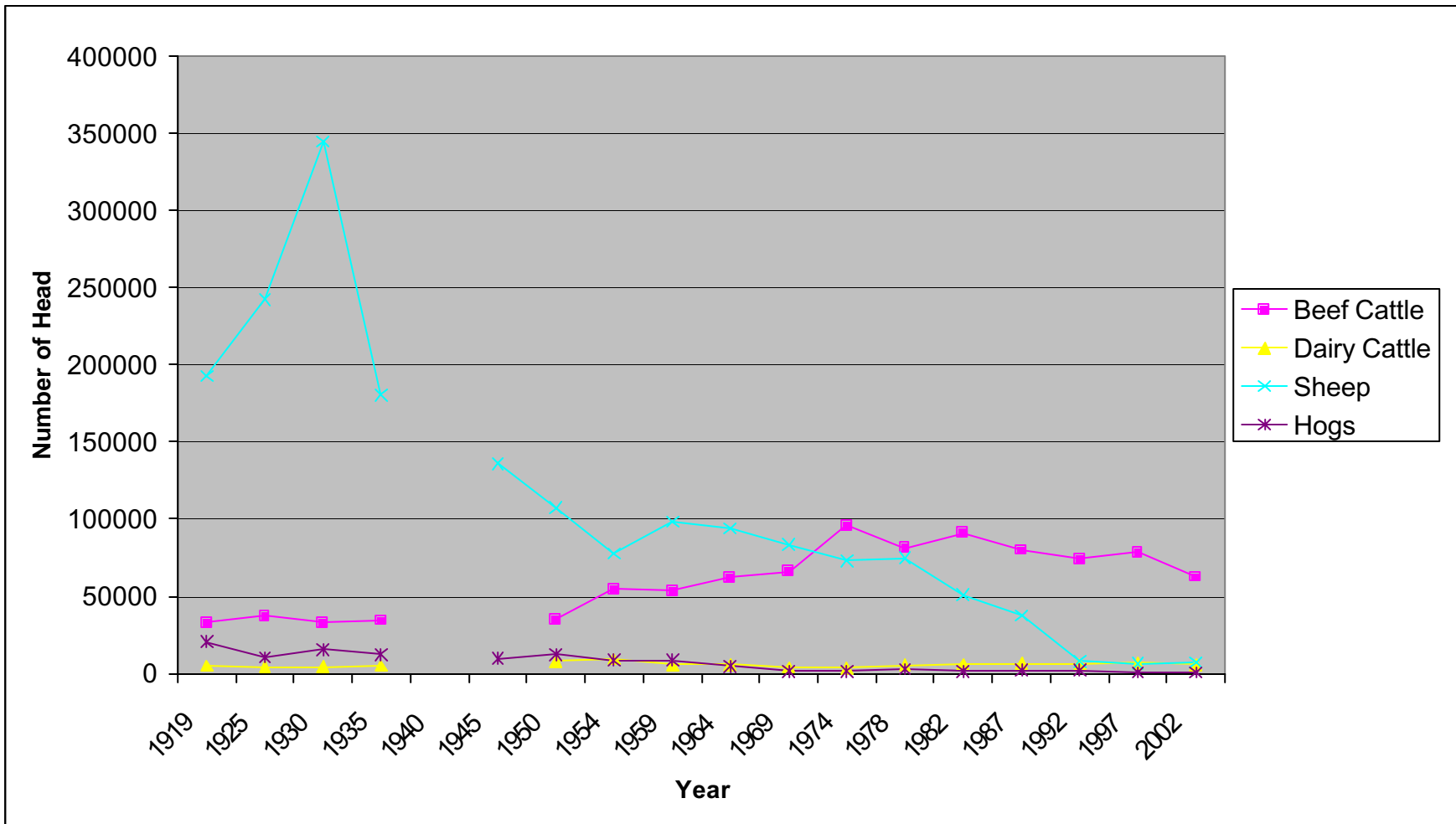
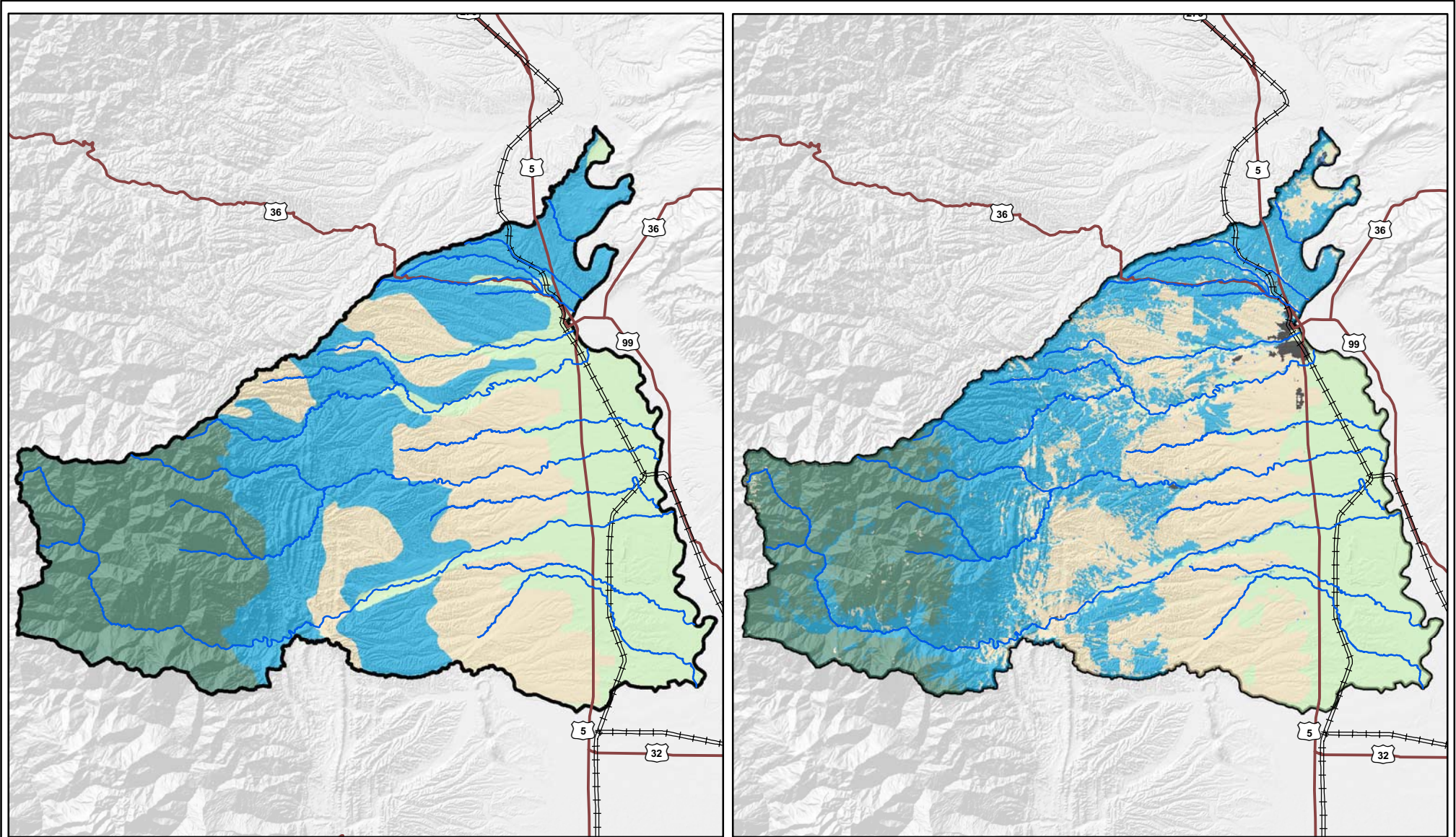


FIGURE 2-10
LIVESTOCK TRENDS, 1919-2002
TEHAMA WEST WATERSHED ASSESSMENT





1977 VEGETATION PATTERN

2002 VEGETATION PATTERN

Legend

-  Railroad
-  Major Highway
-  Major Tributary
-  Tehama West Watershed
-  Agriculture
-  Annual Grassland and Cropland
-  Oak Woodland
-  Timberland
-  Urban

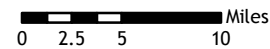


FIGURE 2-11
VEGETATION CHANGE OVER TIME
TEHAMA WEST WATERSHED ASSESSMENT



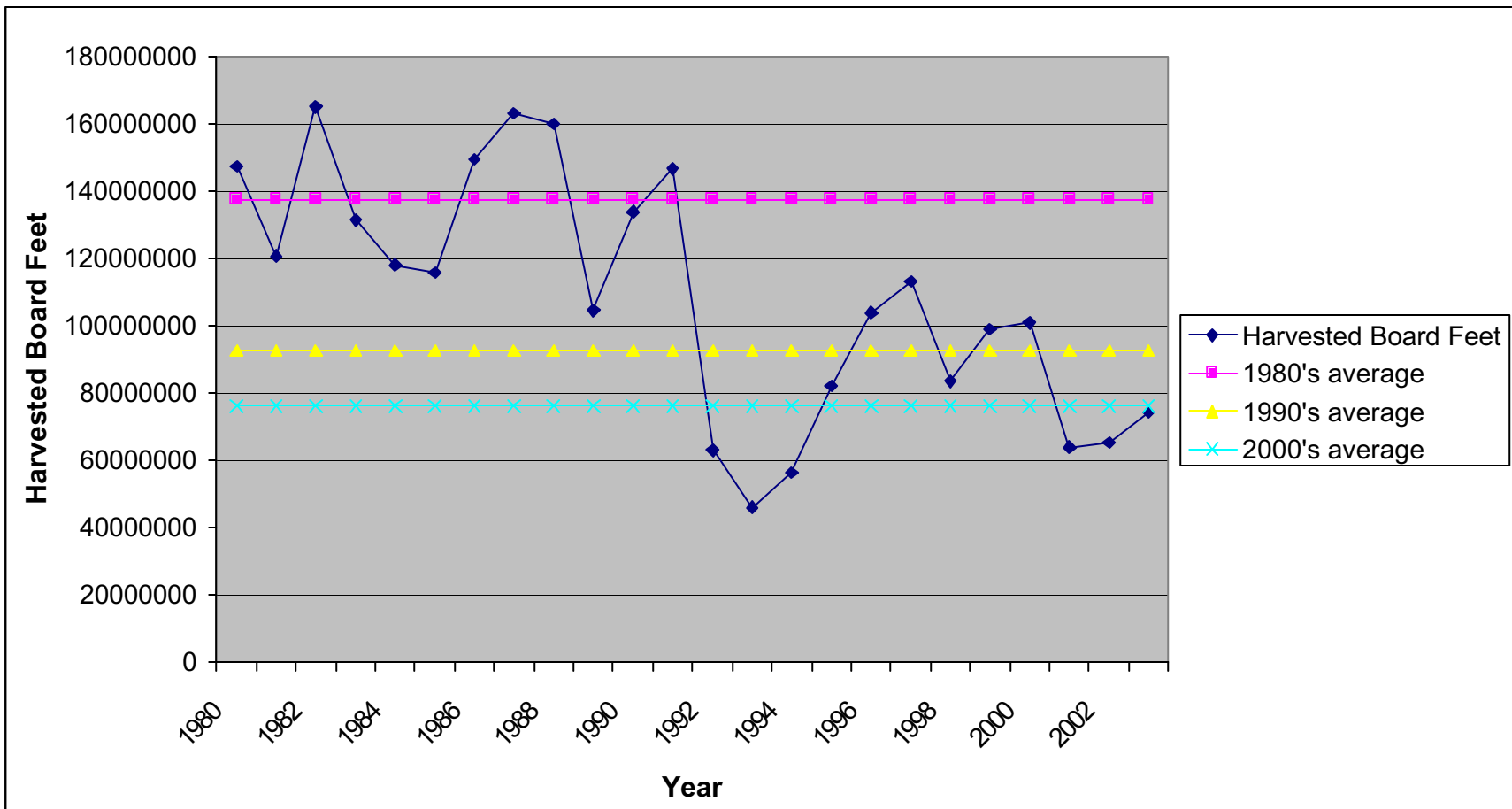
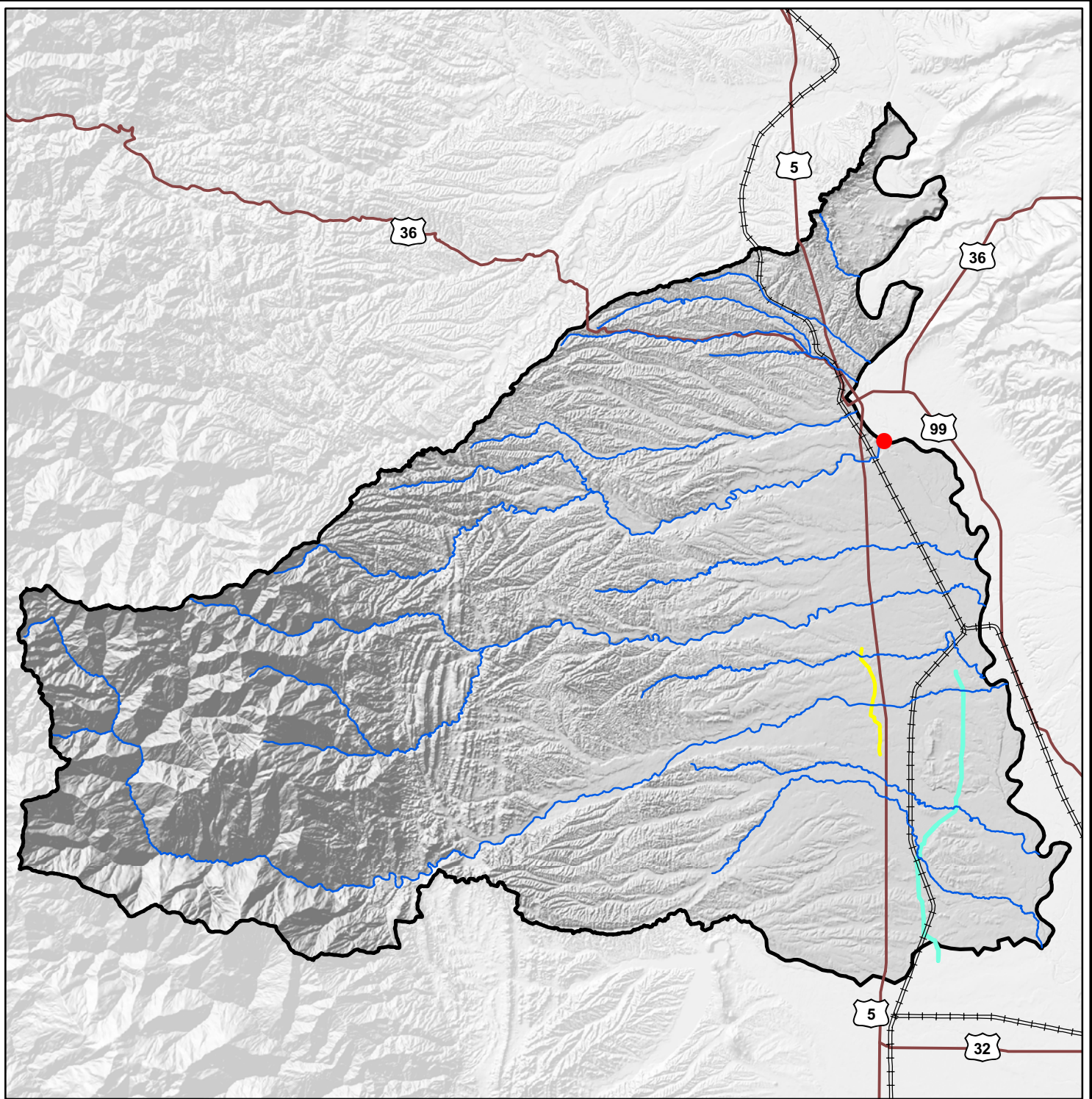









FIGURE 2-12
 TIMBER PRODUCTION, 1980-2003
 TEHAMA WEST WATERSHED ASSESSMENT





Legend

-  Railroad
-  Major Highway
-  Major Tributary
-  Tehama West Watershed
-  Red Bluff Diversion Dam
-  Corning Canal
-  Tehama-Colusa Canal

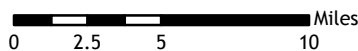


FIGURE 2-13
CENTRAL VALLEY PROJECT
TEHAMA WEST WATERSHED ASSESSMENT

